THE EFFECTS OF SYSTEMATIC RISKS ON BANK ASSET QUALITY: EVIDENCE FROM ORGANISATION OF THE PETROLEUM EXPORTING COUNTRIES (OPEC)

ISMA'IL TIJJANI IDRIS

DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
August, 2017

THE EFFECTS OF SYSTEMATIC RISKS ON BANK ASSET QUALITY: EVIDENCE FROM ORGANISATION OF THE PETROLEUM EXPORTING COUNTRIES (OPEC)

By

ISMA'IL TIJJANI IDRIS

Thesis Submitted to
School of Economics, Finance and Banking,
Universiti Utara Malaysia,
in Fulfilment of the Requirement for the Degree of Doctor of Philosophy

PERMISSION TO USE

In presenting this thesis in fulfilment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the Universiti Library may make it freely available for inspection. I further agree that permission for the copying of this thesis in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence, by the Dean of School of Economics, Finance and Banking. It is understood that any copying or publication or use of this thesis or parts thereof 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 Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, 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

The global position of Non-Performing Loans (NPLs) is persistent and on the rise which indicates a global deterioration of bank asset quality. The problem is more pronounced among the Organisation of the Petroleum Exporting Countries (OPEC) whose ratio of NPLs is on the verge of the banking crisis. The objective of this study is to investigate the effects of the prevalence of systematic risk factors in the OPEC countries on the deterioration of their bank asset quality. In achieving this objective, the study employed the panel data set of the entire OPEC countries spanning 1996-2015. Further, to account for NPL persistence, the study employed Pooled Mean Group (PMG) model in its estimations. The findings reveal that an increase in oil price improves bank asset quality which signifies that a rise in oil price inversely affects NPLs. On the other hand, a rise in the level of corruption increases the level of NPLs which indicates that corruption positively affects NPLs. Further, an increase in the level of political instability deteriorates the level of bank asset quality which means that an increase in the level of political instability positively affects NPLs. Additionally, the result reveals that an increase in environmental risks raises the level of NPLs which denotes that an increase in the occurrence of environmental risk positively affects NPLs. Overall, the findings imply that the prevalence of systematic risks in OPEC countries adversely affect bank asset quality and are key to financial stability. Consequently, the results imply that policymakers should design appropriate prudential policies that will curtail the impact of these systematic risks on bank asset quality and diversification of their economies which will ensure sustainable financial stability amongst OPEC countries.

Keywords: bank asset quality, OPEC, panel data, PMG, systematic risks
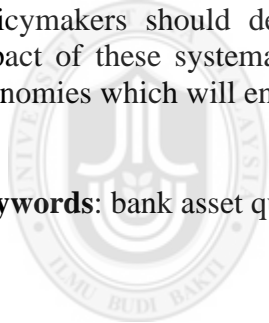
ABSTRAK

Kedudukan berterusan dan semakin meningkatnya Pinjaman Tidak Berbayar (NPL) di peringkat antarabangsa menunjukkan kemerosotan *global* kualiti aset bank. Masalah ini lebih menekan dalam kalangan Pertubuhan Negara Pengeksport Petroleum (OPEC) yang nisbah NPL berada di ambang krisis perbankan. Objektif kajian ini adalah untuk meneliti kesan-kesan faktor risiko sistematik di negara-negara OPEC terhadap kemerosotan kualiti aset bank mereka. Dalam mencapai matlamat ini, kajian ini menggunakan set data panel bagi keseluruhan negara-negara OPEC sepanjang tempoh 1996-2015. Tambahan pula, bagi menjelaskan keberterusan NPL, kajian ini menggunakan model *Pooled Mean Group* (PMG) untuk membuat anggaran. Keputusan menunjukkan bahawa kenaikan harga minyak meningkatkan kualiti aset bank yang menandakan bahawa kenaikan harga minyak menyumbang kepada NPL. Sebaliknya, peningkatan tahap rasuah meningkatkan tahap NPL yang menunjukkan bahawa rasuah mempengaruhi NPL secara positif. Selanjutnya, peningkatan tahap ketidakstabilan politik melemahkan tahap kualiti aset bank yang bermaksud bahawa peningkatan ketidakstabilan politik mempengaruhi NPL secara positif. Selain itu, kajian turut mempamerkan bahawa peningkatan risiko alam sekitar meningkatkan tahap NPL yang menunjukkan bahawa peningkatan risiko alam sekitar memberi kesan positif kepada NPL. Keseluruhannya, penemuan ini menyimpulkan bahawa kelaziman risiko sistematik di negara-negara OPEC menjejaskan kualiti aset bank dan merupakan kunci kepada kestabilan kewangan. Hasil kajian ini turut menyimpulkan bahawa pembuat dasar perlu merangka dasar berhemah yang sesuai yang akan mengurangkan kesan risiko sistematik terhadap kualiti aset bank dan kepelbagaian ekonomi mereka demi memastikan kestabilan kewangan yang mapan dalam kalangan negara-negara OPEC.

Kata kunci: kualiti aset bank, OPEC, data panel, PMG, risiko sistematik

ACKNOWLEDGEMENT

TABLE OF CONTENTS

LIST OF TABLES

Table

LIST OF FIGURES

Figure

LIST OF APPENDICES

Appendix

LIST OF ABBREVIATIONS

Abbreviation	Full Meaning
ADF	Augmented Dickey-Fuller
AIC	Akaike Information Criterion
AR	Autoregressive
ARDL	Autoregressive Distributed Lag
BA	Banque D'Algeria
BRICS	Brazil, Russia, India, China and South Africa
BACP	Business Anti-Corruption Portal
BBC	British Broadcasting Corporation
BE	Banco del Ecuador
BNA	Banco Nacional de Angola
BOS	Brent Oil Spot
CBI	Central Bank of Iran
CBIQ	Central Bank of Iraq
CBK	Central Bank of Kuwait
CBL	Central Bank of Libya
CBN	Central Bank of Nigeria
CBUAE	Central Bank of United Arab Emirate
CI	Corruption Index
CIA	Central Intelligence Agency
CORR	Corruption
CPI	Corruption Perception Index
CRED	Centre for Research on Epidemiology of Disasters
DL	Doubtful Loan
ECOWAS	Economic Community of West African States
EDF	Expected Default Frequency
ER	Environmental Risks
EU	European Union
EFCC	Economic and Financial Crimes Commission
FAVAR	Factor Augmented Vector Autoregressive
FDI	Foreign Direct Investment
FE	Fixed Effect
FER	Flexible Exchange Rate
FSI	Financial Soundness Indicators
GARCH	Generalised Autoregressive Conditional Heteroskedasticity
GCC	Gulf Cooperation Council
GDFS	Global Development Finance System
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GFSR	Global Financial Stability Report
GIPSI	Greece, Ireland, Portugal, Spain and Italy
GMM	Generalised Method of Moments
GVAR	Global Vector Autoregressive
IAGS	Institute for the Analysis of Global Securities
IFRS	International Financial Reporting Standard
IFS	International Financial Statistics
IGO	Intergovernmental Organisation

IMF	International Monetary Funds
IPS	Im, Pesaran and Shin
ISIS	Islamic State of Iraq and al-Sham
LIR	Lending Interest Rate
LL	Loss Loan
LM	Lagrange Multiplier
LNG	Liquedified Natural Gas
MG	Mean Group
MLL	Maximum Log Likelihood
MS	Markov-switching
MS-ARCH	Markov-switching ARCH
MW	Maddala and Wu
MWALD	Modified WALD Test
NIDS	National Insurance Deposit Schemes
NOC	Net Oil Consuming
NOP	Net Oil Producing
NPL	Non-Performing Loan
OBS	OPEC Basket Price
OECD	Organisation of Economic Cooperation and Development
OLS	Ordinary Least Squares
OP	Oil Price
OPEC	Organisation of Petroleum Exporting Countries
ORB	OPEC Reference Basket
PIP	Polity IV Project
PI	Political Instability
PMG	Pool Mean Group
PII	Political Instability Index
PSAVTI	Political Stability and Absence of Violence /Terrorism Index
PTS	Political Terror Scale
QCB	Qatar Central Bank
RDGP	Real Gross Domestic Products
RE	Random Effect
RER	Real Exchange Rate
RVF	Residual Value Fitted
SAMA	Saudi Arabian Monetary Agency
SBC	Schwerz Bayesian Criteria
SL	Substandard Loan
TGARCH	Threshold GARCH
TI	Transparency International
UNEMP	Unemployment
UUM	Universiti Utara Malaysia
USD	United States Dollars
VAR	Vector Autoregression
VECM	Vector Error Correction Model
VIF	Variance Inflation Factor
VS	Versus
WDIs	World Development Indicators
WGI	Worldwide Governance Indicators
WSJ	Wall Street Journal
WTI	West Texas Intermediate

CHAPTER ONE

INTRODUCTION

1.1   Background to the Study

The financial system is an integral part of any economy that facilitates economic growth and development of every nation state. Further, financial institutions are the bedrock of economic development of any nation that stimulus the allocation of resources across space and time (Levine, 2005). Economies around the world organise their financial activities on certain parameters that are in consonance with their individual nations' needs or based on certain opportunities or threats which they are confronted with, perhaps because of their internal strengths or weaknesses. In most cases, these financial systems are compositions of financial institutions, financial markets and financial regulators (see, for example, Madura, 2014; Mishkin & Eakins, 2012). Depending on the political-economy of a country the financial institutions may consist of finance companies, banks, insurance companies, mutual fund, pension funds, and stock exchanges.

However, these financial institutions and markets operate in a business environment, which is an interrelationship of many societal factors that shape and determine their activities. This business environment is made up of economic, political, environmental (ecological), technological, social and legal factors that affect and shape the activities of the financial institutions and markets.

1

The contents of the thesis is for internal user only

REFERENCES

Abid, L., Ouertani, M. N., & Zouari-Ghorbel, S. (2014). Macroeconomic and bank-specific determinants of household's non-performing loans in Tunisia: A dynamic panel data. *Procedia Economics and Finance*, *13*(December 2013), 58–68.

Abu, N. (2015). *The effects of corruption and political instability on savings :The case of Economic Community of West African states*. Universiti Utara Malaysia. Retrieved from http://etd.uum.edu.my/4982/1/s94140.pdf

Abu, N., Karim, M. Z. A., & Aziz, M. I. A. (2013). Low savings rates in the economic community of west African states (Ecowas): The role of the political instability-income interaction. *South East European Journal of Economics and Business*, *8*(2), 53–63.

Abu, N., Karim, M. Z. A., & Aziz, M. I. A. (2014). Corruption, political instability and economic development in the Economic Community of West African States (ECOWAS): Is there a causal relationship? *Contemporary Economics*, *9*(1), 45–60.

Abu, N., Karim, M. Z. A., & Aziz, M. I. A. (2015). Low savings rates in the economic community of west African states (Ecowas): The role of corruption. *Journal of Economic Cooperation and Development*, *36*(2), 63–90.

Acharya, V. V. (2009). A theory of systemic risk and design of prudential bank regulation. *Journal of Financial Stability*, *5*(3), 224–255.

Adebola, S. S., Wan Yusoff, W. S., & Dahalan, J. (2011). An ARDL approach to the determinants of non- performing loans in Islamic banking system in Malaysia. *Kuwait Chapter of Arabian Journal of Business and Management Review*, *1*(2), 20–30.

Admati, A., & Hellwig, M. (2012). *The bankers' new clothes*. Oxford: Princeton Universiti Press.

Aguiar-Conraria, L., & Soares, M. J. (2011). Oil and the macroeconomy: using wavelets to analyze old issues. *Empirical Economics*, *40*(3), 645–655.

Ahamed, M. M. (2017). Asset quality, non-interest income, and bank profitability: Evidence from Indian banks. *Economic Modelling*, *63*, 1–14.

Aintablian, S., Mcgraw, P. a., & Roberts, G. S. (2007). Bank monitoring and environmental risk. *Journal of Business Finance & Accounting*, *34*(1–2), 389–401.

Akinlo, O., & Emmanuel, M. (2014). Determinants of non-performing loans in Nigeria. *Accounting & Taxation, Institute for Business & Finance Research*, *6*(2), 21–28.

Al-Khazali, O. M., & Mirzaei, A. (2017). The impact of oil price movements on bank non-performing loans: Global evidence from oil-exporting countries. *Emerging Markets Review*, (InPress).

Alhassan, A. L., Kyereboah-Coleman, A., & Andoh, C. (2014). Asset quality in a crisis period: An empirical examination of Ghanaian banks. *Review of Development Finance*, *4*(1), 50–62.

Ali, A., & Daly, K. (2010). Macroeconomic determinants of credit risk: Recent evidence from a cross country study. *International Review of Financial Analysis*, *19*(3), 165–171.

Allen, F., & Santomero, A. M. (1998). The theory of financial intermediation. *Journal of Banking & Finance*, *21*, 1461–1485.

Allen, F., & Santomero, A. M. (2001). What do financial intermediaries do? *Journal of Banking & Finance*, *25*(2), 271–294.

Amuakwa-Mensah, F., Marbuah, G., & Ani-Asamoah Marbuah, D. (2017). Re-

examining the Determinants of Non-Performing Loans in Ghana's Banking Industry: Role of the 2007–2009 Financial Crisis. *Journal of African Business*, *0*(0), 1–23.

Anastasiou, D. (2017). *The interplay between ex-post credit risk and the cycles: Evidence from the Ialian banks. Munich Personal RePEc Archive*.

Anastasiou, D., Louri, H., & Tsionas, M. (2016a). Determinants of non-performing loans: Evidence from Euro-area countries. *Finance Research Letters*, (InPress).

Anastasiou, D., Louri, H., & Tsionas, M. (2016b). *Non-performing loans in the euro area: are core-periphery banking markets fragmented?* Working Paper of Bank of Greece Eurosystem.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, *58*(2), 277–297.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, *68*(1), 29–51.

Associated-Press. (2014, August). Shell Nigeria oil pollution clean-up. *The Guardian. Retrieved from http://wwwtheguardian.com/environment/2014/aug/04/shell-Nigeria-Oil Pollutionclean-up-Amnesty*.

Athanasolou, P. P., Brissimis, N. S., & Delis, D. M. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *International Financial Markets, Institution & Money*, *2*(18), 121–136.

Athukorala, P., & Resosudarmo, B. P. (2006). The Indian Ocean tsunami : Economic impact , disaster management , and lessons. *Asian Economic Papers*, *4*(1), 1–39.

Azam, M., & Siddiqui, S. (2012). Domestic and foreign banks' Profitability :

Differences and their determinants. *International Journal of Economics and Financial Issues*, *2*(1), 33–40.

BA. (2015). Banque D'Algerie. *Retrieved from Http://www.bank-Ofalgeria.dz/html/banque .htm*.

BACP. (2015). Countries profiles. Business Anti-Corruption Portal. *Retrieved from Http://www.businessanti-Corruption.com/country-Profiles*.

Bae, K. H., & Goyal, V. K. (2009). Creditor rights, enforcement, and bank loans. *Journal of Finance*, *64*(2), 823–860.

Bai, J., & Ng, S. (2005). Tests for skewness, kurtosis, and normality for time series data. *Journal of Business & Economic Statistics*, *23*(1), 49–60.

Balkan, E. M. (1992). Political instability, country risk and probability of default. *Applied Economics*, *24*(9), 999–1008.

Baltagi, B. H. (2008). Forecasting with panel data. *Journal of Forecasting*, *27*(2), 153–173.

Baltensperger, E. (1980). Alternative approaches to the theory of the banking firm. *Journal of Monetary Economics*, *6*, 1–37.

Bangake, C., & Eggoh, J. C. (2012). Pooled mean group estimation on international capital mobility in African countries. *Research in Economics*, *66*(1), 7–17.

Bankscope. (2015). Bankscope datasteam. *A Private Datastream Firm That Keeps Global Banks Data across Countries of the World*.

Bankscope. (2016). Bankscope datastream. *A Private Datastream Firm That Keeps Global Banks Data across Countries of the World*.

Bardhan, P. (1997). Corruption and development: A review of issues. *Journal of Economic Literature*, *35*(3), 1320–1346.

Barseghyan, L. (2010). Non-performing loans, prospective bailouts, and Japan's slowdown. *Journal of Monetary Economics*, *57*(7), 873–890.

BaselII. (2006). International convergence of capital measurement and capital standards. *Bank for International Settlements*, (June), 285. Retrieved from http:// www. bisorg/ publ/bcbs128.pdf

Bassanini, A., & Scarpetta, S. (2002). Does human capital matter for growth in OECD countries? A pooled mean-group approach. *Economics Letters*, *74*(3), 399–405.

Batabyal, a. a., & Beladi, H. (2001). Aspects of the theory of financial risk management for natural disasters. *Applied Mathematics Letters*, *14*(7), 875–880.

Baum, C. F. (2006). *An introduction to modern econometrics using Stata*. Texas: A Stata Press Publications.

BBC. (2015, October). Can Nigeria's president defeat oil industry corruption? BBC News Africa. *Retrieved from Http://www.bbc.com/news/world-Africa- 34580862*.

BE. (2015). Banco del Ecuador. *Retrieved from Http://www.bce.fin.ec/*.

Beck, R., Jakubik, P., & Piloiu, A. (2015). Key determinants of non-performing loans: New evidence from a global sample. *Open Economies Review*, *26*(3), 525–550.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2006). Bank supervision and corruption in lending. *Journal of Monetary Economics*, *53*(8), 2131–2163.

Becker, G. S., & Stigler, G. J. (1974). Law enforcement, malfeasance, and compensation of enforcer. *The Journal of Legal Studies*, *3*(1), 1–18.

Bellotti, T., & Crook, J. (2009). Credit scoring with macroeconomic variables using survival analysis. *Journal of the Operational Research Society*, *60*(12), 1699–1707.

Beltratti, A., & Stulz, R. M. (2012). The credit crisis around the globe: Why did some banks perform better? *Journal of Financial Economics*, *105*(1), 1–17. 5

Benedick, R. E. (1990). Comment : Environmental risk and policy response. *Population and Development Review*, *16*, 201–204.

Berg, G., & Schrader, J. (2012). Access to credit , natural disasters , and relationship lending. *Journal of Financial Intermediation*, *21*(4), 549–568.

Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking & Finance*, *21*(6), 849–870.

Bernanke, B. S., & Gertler, M. (1989). Agency costs, net worth, and business fluctuations. *The American Economic Review*, *79*(1), 14–31.

Bernanke, B. S., & Gertler, M. (1995). Inside the black box: The credit channel of monetary policy transmission. *The Journal Of Economics Perspectives*, *9*(4), 27–48.

Bertalanffy, L. Von. (1968). General system theory. *New York George Braziller*, *1*(1), 1–10.

BNA. (2015). Banco Nacional de Angola. *Retrieved from http://www.bna.ao/ Conteudos /Artigos/lista_artigos_medias.aspx?idc=142&idsc=83 4&idl=1*.

Bohachova, O. (2008). The impact of macroeconomic factors on risks in the banking sector: A cross-country emperical assessment. *Working Paper of Institute for Applied Economic Research (IAW)*, (44).

Bollen, B., Skully, M., Tripe, D., & Wei, X. (2015). The global financial crisis and its impact on Australian bank risk. *International Review of Finance*, *15*(1), 89–111.

Boudriga, A., Taktak, N. B., & Jellouli, S. (2009). Banking supervision and nonperforming loans: a cross-country analysis. *Journal of Financial Economic Policy*, *1*(4), 286–318.

Breitung, J. (2000). The local power of some unit root tests for panel data. In

Nonstationary panels, panel cointegration, and dynamic panels (Vol. 15, pp. 161–177). Emerald Group Publishing Limited.

Breuer, J. B. (2006). Problem bank loans, conflicts of interest, and institutions. *Journal of Financial Stability*, *2*(3), 266–285.

Breunig, R. V., & Chia, T. C. (2015). Sovereign ratings and oil-exporting countries: The effect of high oil prices on ratings. *International Review of Finance*, *15*(1), 113–138.

Brewer, T. L., & Rivoli, P. (1990). Politics and perceived country creditworthiness in international banking. *Journal of Money, Credit and Banking*, *22*(3), 357–369.

Brooks, C. (2008). *RATS handbook to accompany introductory econometrics for finance*. New York: Cambridge University Press.

BSRI. (2015). *Bank Sentral Republik Indonesia/Bank Indonesia*. Retrieved from http://www.bi.go.id/en/perbankan/ikhtisar/lembaga/Contents/Default.aspx

Busse, M., & Hefeker, C. (2007). Political risk , institutions and foreign direct investment. *European Journal of Political Economy*, *23*, 397–415.

Calmès, C., & Théoret, R. (2014). Bank systemic risk and macroeconomic shocks: Canadian and U.S. evidence. *Journal of Banking and Finance*, *40*(1), 388–402.

Cameron, A. C., & Trivedi, P. K. (1990). Regression-based tests for overdispersion in the Poisson model. *Journal of Econometrics*, *46*(3), 347–364.

Casti, J. L. (1992). Risk, natural disasters, and complex system theory. *Wiley Periodicals, Inc., 7*(2), 11–13.

Castrén, O., Dées, S., & Zaher, F. (2008). Global macro-financial shocks and expected default frequencies in the Euro Area. *Working Paper of European Central Bank*, (875), 1–42.

Castro, V. (2013). Macroeconomic determinants of the credit risk in the banking system: The case of the GIPSI. *Economic Modelling*, *31*(1), 672–683.

Cavallo, E., Galiani, S., Noy, I., & Pantano, J. (2013). Natural disasters and economic growth. *The Review of Economics and Statistics*, *95*(5), 1549–1561. Retrieved from https://biblioteca.udesa.edu.ar/files/UAEconomia/Seminarios/2010/Noy.pdf

CBI. (2015). Central Bank of Iran. *Retrieved from http://www.cbi.ir/simplelist/1462.aspx.*

CBIQ. (2015). Central Bank of Iraq. *Retrieved from http:// www.cbi. iq/ index. php? pid =IraqFinancialInst.*

CBK. (2015). Central Bank of Kuwait. *Retrieved from Http://www.cbk.gov.kw/en/supervi sion/financial-Units/kuwaiti-Banks.jsp.*

CBL. (2015). Central Bank of Libya. *Retrieved from http://cbl.gov.ly /eng/index.php? option=com_content&view=article&id=263&Itemid =127.*

CBN. (2015). *Central Bank of Nigeria*. Retrieved from www.cenbank.org

CBUAE. (2015). Central Bank of the UAE. *Retrieved from http://www.centralbank.ae /en/index.php?option=com_content&view=article&id=11 7&Itemid=97.*

Chaibi, H., & Ftiti, Z. (2015). Credit risk determinants: Evidence from a cross-country study. *Research in International Business and Finance*, *33*, 1–16.

Cheng, H. (2003). *Analysis of panel data* (2nd ed.). New York: Cambridge University Press.

Chincarini, B. L. (2012). *The Crisis of crowding : quant copycats , ugly models , and the new crash normal*. New Jersey: John Wiley & Sons, Inc.

CIA. (2015). Central Intelligence Agency's Factbook 2015. *Retrived from Https://www. cia.gov/library/publications/the-World-Factbook/.*

263

Citron, J.-T., & Nickelsburg, G. (1987). Country risk and political instability. *Journal of Development Economics*, *25*, 385–392.

Clarke, P., Crawford, C., Steele, F., & Vignoles, A. (2010). The choice between fixed and random effects models: Some considerations for educational research. *IZI Discussion Paper*, (IZA DP No.5287), 1–34.

Cochrane, H. C. (2004). Indirect losses from natural disasters: measurement and myth. In A. Luc, M. M. Fischer, G. J. D. Hewings, N. Peter, & S. Folke (Eds.), *Modeling Spatial and Economic Impacts of Disasters* (pp. 37–52). Springer-Verlag Berlin Heidelberg GmbH.

Cohen, A. (2015). Systemic violence threatens Middle East oil outlook. *Journal of Energy Security. Retrieved from http://www.ensec. org/index .php?option = com_ c ontent&view=articled=576:systemic-Violence-Threatens-Middle-East oiloutlook&catid=146:cenrg&Itemid=439*.

Cohen, B. H., & Lea, R. B. (2003). *Essentials of statistics for the social and behavioral sciences*. New Jersey: John Wiley & Sons, Inc. Retrieved from http://books. google. com/books?hl=en&lr=&id=Ki8DL7Yuq48C&oi=fnd&pg=PR9&dq

Collier, B., Katchova, A. L., & Skees, J. R. (2011). Loan portfolio performance and El Niño, an intervention analysis. *Agricultural Finance Review*, *71*(1), 98–119.

Collier, B., Miranda, J., & Skees, J. (2013). Natural disasters and credit supply shocks in developing and emerging economies. *Working Paper of University of Pennsylvania*, (2013–3). Retrieved from http://opim.wharton.upenn.edu/risk/library/WP2013-03_ Collier-etal_CreditSupplyShocks.pdf

Collier, B., & Skees, J. (2012). Increasing the resilience of financial intermediaries

through portfolio-level insurance against natural disasters. *Natural Hazards*, *64*, 55–72.

Collier, B., & Skees, R. (2013). Exclusive finance : How unmanaged systemic risk continues to limit financial services for the poor in a booming sector. *Working Paper Wharton Risk Management Center, University of Pennsylvania*, *2013–4*.

Conaghan, C. (2012). Prosecuting presidents: The politics within Ecuador's corruption cases. *Journal of Latin American Studies*, *44*(4), 649–678.

Craigwell, R., & Wright, A. (2011). Foreign direct investment and corruption in developing economies: Evidence from linear and non-linear panel Granger causality tests. *Economics Bulletin*, *31*(3), 2272–2283.

Crook, J. N., & Banasik, J. L. (2005). *Explaining aggregate consumer delinquency behaviour over time* (Vol. 5). University of Edinburgh Credit Research Centre Working Paper, 05/03. Retrieved from https://www. researchgate. net/profile / Jonathan_Crook/publication/215991102_Explaining_Aggregate_Consumer_Delinq uency_Behaviour_over_Time/links/53d02b700cf2f7e53cfb6ff1.pdf

CSR. (2017). Systemic risk. *Systemic Risks Centre, London School of Economics and Political Sciences*. Retrieved from http://www.systemicrisk.ac.uk/systemic-risk

Cuadra, G., & Sapriza, H. (2008). Sovereign default, interest rates and political uncertainty in emerging markets. *Journal of International Economics*, *76*(1), 78–88.

D'Agostino, G., Dunne, J. P., & Pieroni, L. (2012). Corruption, military spending and growth. *Defence and Peace Economics*, *23*(6), 591–604.

D'Hulster, K., Salomao-Garcia, V., & Letelier, R. (2014). *Loan classification and provisioning: Cureent practices in 26 ECA countries. World bank Working Paper*

Series.

Darby, M. R. (1982). The price of oil and world inflation and recession. *The American Economic Review*, *72*(4), 738–751.

Davis, P. (1995). *Debt, Financial Fragility, and Systemic Risk. Oxford University Press*. Oxford: Clarendon press-Oxford.

De Bandt, O., & Hartmann, P. (2000). *Systemic risk: A survey. European Central Bank*.

De Morais, R. M. (2015). All Africa online. Angola: Oil and cement don't mix with corruption in Angola.

Demirgüç-Kunt, A., & Detragiache, E. (1998). The determinants of banking crises in developing and developed countries. *IMF Staff Papers*, *45*(1), 81–109.

Demirgüç-Kunt, & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. *The World Bank Economic Review*, *13*(2), 379–408.

Dewatripont, M., Rochet, J.-C., & Tirole, J. (2010). *Balancing the banks global lessions from the financial crisis*. New Jersey: Princeton Universiti Press.

Diamandis, P. F. (2009). International stock market linkages: Evidence from Latin America. *Global Finance Journal*, *20*(1), 13–30.

Dinç, I. S. (2005). Politicians and banks: Political influences on government-owned banks in emerging markets. *Journal of Financial Economics*, *77*(2), 453–479.

Domar, E. D. (1947). Expansion and employment. *The American Economic Review*, *37*(1), 34–55.

Edwards, S. (1996). Why are Latin America's savings rates so low? An international comparative analysis. *Journal of Development Economics*, *51*(1), 5–44.

Edwards, S., & Tabellini, G. (1991). Political instability, political weakness and

inflation: An empirical analysis. *National Bureau of Economic Research Working Paper Series*. Retrieved from http://www.nber. org/papers /w3721%5Cnhttp ://www.n ber.org/papers/w3721.pdf

EFCC. (2016). Economic and financial crimes commission.

EM-DAT. (2015). International disaster database. *Research on Epidemiology of Disasters. D. Guha-Sapir, R. Below, Ph. Hoyois - EM-DAT: The CRED/OFDA International Disaster Database – Www.emdat.be – Université Catholique de Louvain – Brussels – Belgium.*

EM-DAT. (2016). International disaster database. *Research on Epidemiology of Disasters. D. Guha-Sapir, R. Below, Ph. Hoyois - EM-DAT: The CRED/OFDA International Disaster Database – Www.emdat.be – Université Catholique de Louvain – Brussels – Belgium.*

Endut, R., Syuhada, N., Ismail, F., & Mahmood, W. W. M. (2013). Macroeconomic implications on non-performing loans in Asian Pacific region. *World Applied Sciences Journal*, *23*, 57–60.

Evans, P. (1997). How fast do economies converge ? *The Review of Economics and Statistics*, *79*(2), 219–225.

Farzanegan, M. R., & Markwardt, G. (2009). The effects of oil price shocks on the Iranian economy. *Energy Economics*, *31*(1), 134–151.

Filip, B. F. (2013). The quality of bank loans within the framework of globalization. *Procedia Economics and Finance*, *20*, 208–217.

Filip, B. F. (2014). Non-performing loans - dimension of the non-quality of bank lending / loans and their specific connections. *Theoretical and Applied Economics*, *XXI*(5), 127–146.

Fofack, H. L. (2005). Nonperforming loans in Sub-Saharan Africa : Causal analysis and macroeconomic implications. *Working Paper of World Bank Policy Research*, (WPS3769), 1–36.

Frankel, R., Kim, B. H., Ma, T., & Martin, X. (2011). Bank monitoring and accounting recognition : The case of aging-report requirements. *Working Paper of Washington University In. St. Louis*.

Frees, E. W. (2004). *Longitudinal and panel data analysis and applications in the Social Sciences*. New York: Cambridge University Press.

Gelman, A., & Hill, J. (2007). *Data analysis using regression and multilevel/hierarchical models*. New York: Cambridge University Press.

Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans : Evidence from US states. *Journal of Financial Stability*, *20*, 93–104.

Ghosh, A. (2017). Impact of non-performing loans on US product and labor markets. *Journal of Financial Economic Policy*, *9*(3), 1–32. https://doi.org/10.1108/JFEP-01-2017-0003

Glen, J., & Mondragón-Vélez, C. (2011). Business cycle effects on commercial bank loan portfolio performance in developing economies. *Review of Development Finance*, *1*(2), 150–165.

Goel, R. K., & Hasan, I. (2011). Economy-wide corruption and bad loans in banking: International evidence. *Applied Financial Economics*, *21*(7), 455–461.

Goswami, G. G., & Junayed, S. H. (2006). Pooled mean group estimation of the bilateral trade balance equation: USA vis-à-vis her trading partners. *International Review of*

Applied Economics, *20*(4), 515–526.

Gregory, A. W., & Hansen, B. E. (1996). Residual-based tests for cointegration in models with regime shifts. *Journal of Econometrics*, *70*(1), 99–126.

Gupta, E. (2008). Oil vulnerability index of oil-importing countries. *Energy Policy*, *36*(3), 1195–1211.

Gurley, J. G., & Shaw, E. S. (1955). Financial aspects of economic development. *American Economic Review*, *45*(4), 515–538.

Haddad, M., & Harrison, A. (1993). Are there positive spillovers from direct foreign investment?. Evidence from panel data for Morocco. *Journal of Development Economics*, *42*(1), 51–74.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Haldane, A. G., & May, R. M. (2011). Systemic risk in banking ecosystems. *Nature*, *469*, 351–355.

Hallak, I. (2013). Private sector share of external debt and financial stability: Evidence from bank loans. *Journal of International Money and Finance*, *32*(1), 17–41.

Hamilton, J. D. (1983). Oil and the macroeconomy since World War II. *Journal of Political Economy*, *91*(2), 228–248.

Harrod, R. F. (1939). An eassay in dynamic theory. *The Econometrics Journal*, *49*(193), 14–33.

Hausman, J. A. (1978). Specification tests in Econometrics. *Econometrica*, *46*(6), 1251–1271.

Hester, D. D. (1994). On the theory of financial intermediation. *De Economist*, *142*(2), 133–149.

Hodge, A., Shankar, S., Rao, D. S. P., & Duhs, A. (2011). Exploring the links between corruption and growth. *Review of Development Economics*, *15*(3), 474–490.

IAGS. (2015). The geopolitics of oil. Institute for the analysis of global security. *Retrieved from Http://www.iags.org/geopolitics.html*.

Idris, I. T., & Nayan, S. (2016). The moderating role of Loan monitoring on the relationship between macroeconomic variables and non-performing loans in ASEAN countries. *International Journal of Economics and Financial Issues*, *6*(2), 402–408.

Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics*, *115*(1), 53–74.

Ivashina, V., & Scharfstein, D. (2010). Bank lending during the financial crisis of 2008. *Journal of Financial Economics*, *97*(3), 319–338.

Iwata, H., Okada, K., & Samreth, S. (2011). A note on the environmental Kuznets curve for CO2: A pooled mean group approach. *Applied Energy*, *88*(5), 1986–1996.

Jain, V. (2007). *Non-performing assets in commercial banks*. New Delhi: Regal Publications.

Janvisloo, M. A., & Muhammad, J. (2013). Sensitivity of non-performing loans to macroeconomic variables Malaysia banking sector : Panel evidence. *World Applied Sciences Journal*, *28*(12), 2128–2135.

Ji, Q., & Guo, J.-F. (2015). Oil price volatility and oil-related events: An Internet concern study perspective. *Applied Energy*, *137*, 256–264.

Johansen, S., Mosconi, R., & Nielsen, B. (2000). Cointegration analysis in the presence of structural breaks in the deterministic trend. *The Econometrics Journal*, *3*(2), 216–249.

Kambhu, J., Weidman, S., & Krishnan, N. (2007). *New directions for understanding systemic risk: a report on a conference cosponsored by the Federal Reserve Bank of New York and the National Academy of Sciences*. *National Research Council*. Washington, D.C.: The National Academic Press. Retrieved from http:// scholar .google.com/scholar?hl=en&btnG=Search&q=intitle:New+Directions+for+Underst anding+Systemic+Risk#4

Kao, C. (1999). Spurious regression and residual-based tests for cointegration in panel data. *Journal of Econometrics*, *90*(1), 1–44.

Kashyap, A. K., Rajan, R., & Stein, J. C. (2002). Banks as liquidity providers: An explanation for the coexistence of lending and deposit-taking. *The Journal of Finance*, *57*(1), 33–73.

Kaufmann, D. (2009). Governance Matters VIII Aggregate and Individual Governance Indicators. *Policy Research Working Paper*, *21*(June), 1–105.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues. *Hague Journal on the Rule of Law*, *3*(2), 220–246.

Kaufmann, D., Kraay, A., & Zoido-Lobatón, P. (1999). Aggregating governance indicators. *Policy Research Working Paper*, (2195).

Kauko, K. (2012). External deficits and non-performing loans in the recent financial crisis. *Economics Letters*, *115*(2), 196–199.

Kennedy, C. R. (1988). Political risk management : A portfolio planning model. *Business Horizons*, 26–33.

Kennedy, P. (1993). A guide to econometrics. *Journal of Macroeconomics*, *15*(2), 402–403.

271

Kerry, P. (2000). *An introduction to applied Econometrics: A time series approach*. New York: St. Martin's Pres.

Keynes, J. M. (1936). *The general theory of employment, interest, and money*. London: A Harvet/HBJ Book Harcourt Brace Jovanovich, Publishers.

Keys, B. J., Mukherjee, T., Seru, A., & Vig, V. (2009). Financial regulation and securitization: Evidence from subprime loans. *Journal of Monetary Economics*, *56*(5), 700–720.

Kjosevski, J., & Petkovski, M. (2016). Non-performing loans in Baltic States: Determinants and macroeconomic effects. *Baltic Journal of Economics*, *17*(1), 25–44.

Klein, N. (2013). Non-performing loans in CESEE: Determinants and impact on macroeconomic performance. *IMF Working Papers*, *13*(72), 1.

Klomp, J. (2014). Financial fragility and natural disasters: An empirical analysis. *Journal of Financial Stability*, *13*, 180–192.

Konstantakis, K. N., Michaelides, P. G., & Vouldis, A. T. (2016). Non performing loans (NPLs) in a crisis economy: Long-run equilibrium analysis with a real time VEC model for Greece (2001–2015). *Physica A*, *451*, 149–161. Retrieved from http:// linkinghub.elsevier.com/retrieve/pii/S0378437116000960

Krueger, R. (2002). International standards for impairment and provisions and their implications for financial soundness indicators (FSIs).

Kumar, T. K. (1975). Multicollinearity in regression analysis. *The Review of Economics and Statistics*, *57*(3), 365–366.

Laeven, L., & Valencia, F. (2012a). Systemic banking crises database. *International Monetary Fund*, *61*(2), 225–270.

Laeven, L., & Valencia, F. (2012b). Systemic banking crises database: An update. *International Monetary Fund*, *61*(2), 225–270.

Lagarde, C. (2016, January 13). Lagarde's visit to Nigeria: Maters arising. *The Guardian. Retrieved from Http://guardian.ng/business-Services/lagardes -Visitto-Nigeria-Matters-Arising/*.

Lahcen, A. (2013, April). Algeria held back by corruption, poor planning. *Almonitor. Retrieved from http://www.almonitor.com/pulse/business/2013/04/algeria-Corruption-Growtheffect.html*.

Langbein, L., & Knack, S. (2010). The Worldwide Governance Indicators: Six, one, or none? *Journal of Development Studies*, *46*(2), 350–370.

Laurin, A., & Majnoni, G. (2003). Bank loan classification and provisioning practices in selected developed and emerging countries. *World Bank Working Paper*, (1), 1–47.

Law, H., & Tan, S. (2012). Nonlinear dynamics of the finance-inequality nexus in developing countries. *Jounal of Economic Inequality*, *10*, 551–563.

Law, & Habibullah, M. S. (2009). The determinants of financial development: Institutions, openness and financial liberalisation. *Sauth African Journal of Economics*, *77*(1), 45–58.

Le, Q. V. (2004). Political and economic determinants of private investment. *Journal of International Development*, *16*(4), 589–604.

Lee, K., Pesaran, M. H., & Smith, R. (1997). Growth and convergence in a multi-country empirical stochastic solow model. *Journal of Applied Economics*, *12*(4), 357–392.

Levine, R. (2005). Finance and growth: Theory and evidence. *Handbook of Economic Growth*, *1*(SUPPL. PART A), 865–934.

Levy Yeyati, E., Sturzenegger, F., & Reggio, I. (2010). On the endogeneity of exchange rate regimes. *European Economic Review*, *54*(5), 659–677.

Loayza, N. V, Olaberri, E., Rigolini, J., & Christiaensen, L. (2012). Natural disasters and growth : going beyond the averages. *World Development*, *40*(7), 1317–1336.

Louzis, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking and Finance*, *36*(4), 1012–1027.

Love, I., & Turk Ariss, R. (2014). Macro-financial linkages in Egypt: A panel analysis of economic shocks and loan portfolio quality. *Journal of International Financial Markets, Institutions and Money*, *28*(1), 158–181.

MacDonald, R., Sogiakas, V., & Tsopanakis, A. (2015). An investigation of systemic stress and interdependencies within the Eurozone and Euro Area countries. *Economic Modelling*, *48*, 52–69.

Macrae, J. (1982). Underdevelopment and the economics of corruption: A game theory approach. *World Development*, *10*(8), 677–687.

Maddala, G. S., & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and Statistics*, *61*(Special Issue), 631–652.

Maddala, G. S., Wu, S., & Liu, P. (1999). Do panel data rescue Purchasing Power Parity (PPP) theory? In J. Krishnakumar & E. Ronchett (Eds.), *Panel Data Econometrics: Future Directions*. Retrieved from https://www.econbiz.de/Record/do-panel-data-rescue-the-purchasing-power-parity-ppp-theory-maddala-gangadharrao/1000148798

Madura, J. (2014). *Financial markets and institutions* (11th editi). Stamford: Cengage learning.

Makri, V., Tsagkanos, A., & Bellas, A. (2014). Determinants of non-performing loans: The case of Eurozone. *Panoeconomicus*, *61*(2), 193–206.

Malik, F., & Ewing, B. T. (2009). Volatility transmission between oil prices and equity sector returns. *International Review of Financial Analysis*, *18*(3), 95–100.

Mardia, K. V. (1980). 9 tests of univariate and multivariate normality. *Handbook of Statistics*, *1*, 279–320.

Martínez-Zarzoso, I., & Bengochea-Morancho, A. (2004). Pooled mean group estimation of an environmental Kuznets curve for CO2. *Economics Letters*, *82*(1), 121–126.

Masih, R., Peters, S., & De Mello, L. (2011). Oil price volatility and stock price fluctuations in an emerging market: Evidence from South Korea. *Energy Economics*, *33*(5), 975–986.

Mauro, P. (1995). Corruption and growth. *The Quarterly Journal of Economics*, *110*(3), 681–712.

May, R. M., Levin, S. A., & Sugihara, G. (2008). Complex systems: Ecology for bankers. *Nature*, *451*(7181), 893–895.

Mcdermott, B. T. K. J., Barry, F., & Tol, R. S. J. (2014). Disasters and development : natural disasters , credit constraints , and economic growth. *Oxford Economic Papers*, *66*, 750–773.

Mengze, H., & Wei, L. (2013). A comparative study on environment credit risk management of commercial banks in the Asia-Pacific region. *Business Strategy and the Environment*, (24), 159–174.

Méon, P. G., & Sekkat, K. (2005). Does corruption grease or sand the wheels of growth? *Public Choice*, *122*(1–2), 69–97.

Messai, A. S., & Jouini, F. (2013). Les déterminants de prêts non performants. *La Revue Gestion et Organisation*, *5*(1), 9–15.

Mileris, R. (2012). Macroeconomic determinants of loan portfolio credit risk in banks. *Inzinerine Ekonomika-Engineering Economics*, *23*(5), 496–504.

Mileris, R. (2015). The Impact of economic downturn on banks ' loan portfolio profitability. *Inzinerine Ekonomika-Engineering Economics*, *26*(1), 12–22.

Miller, J. I., & Ratti, R. A. (2009). Crude oil and stock markets : Stability , instability , and bubbles ☆. *Energy Economics*, *31*(4), 559–568.

Mingst, K. A. (1980). Continuity and discontinuity in OPEC : Member interaction patterns, 1959-1974. *International Interaction*, *7*(3), 241–258.

Minton, B. a., Stulz, R., & Williamson, R. (2009). How much do banks use credit derivatives to hedge loans? *Journal of Financial Services Research*, *35*(1), 1–31.

Mishkin, F. S., & Eakins, S. G. (2012). *Financial markets and institutions* (7th editio). Boston: Pearson Education, Inc.

Miyajima, K. (2016). An empirical investigation of oil-macro-financial linkages in Saudi Arabia. *IMF Working Paper*, *WP/16/22*.

Mork, K. A. (1989). Oil and the macroeconomy when prices go up and down: An extension of Hamilton's results. *Journal of Political Economy*, *97*(3), 740–744.

Mottaleb, K. A., Mohanty, S., Hoang, H. T. K., & Rejesus, R. M. (2013). The effects of natural disasters on farm household income and expenditures: A study on rice farmers in Bangladesh. *Agricultural Systems*, *121*, 43–52.

Nair-Reichert, U., & Weinhold, D. (2001). Causality tests for cross country panels: a new look at FDI and economic growth in developing countries. *Oxford Bulletin of Economics and Statistics*, *63*(2), 153–171.

Ndambendia, H., & Njoupouognigni, M. (2010). Foreign aid, foreign direct investment and economic growth in Sub-Saharan Africa: evidence from pooled mean group estimator (PMG). *International Journal of Economics and Finance*, *2*(3), 39–45.

Ng, W. (2012). Oil price volatility and the Singapore macroeconomy. *The Singapore Economic Review*, *57*(3), 1–26.

Nguena, C. L., & Nanfosso, R. T. (2014). Banking activity sensitivity to macroeconomic shocks and financial policies implications : The case of CEMAC Sub - region. *African Development Review*, *26*(1), 102–117.

Nikolaidou, E., & Vogiazas, S. (2017). Credit risk determinants in Sub-Saharan banking systems: Evidence from five countries and lessons learnt from Central East and South East European countries. *Review of Development Finance*, (InPress).

Nkusu, M. (2011). *Nonperforming loans and macrofinancial vulnerabilities in advanced economies*. *IMF Working Paper*.

Noy, I. (2009). The macroeconomic consequences of disasters. *Journal of Development Economics*, *88*(2), 221–231.

Nye, J. S. (1967). Corruption and political development: A cost-benefit analysis. *The American Political Science Review*, *61*(2), 417–427.

Okada, K., & Samreth, S. (2014). How does corruption influence the effect of foreign direct investment on economic growth? *Global Economic Review*, *43*(3), 207–220.

OPEC. (2015). *Brief history of Organisation of the Petroleum Exporting Countries (OPEC). Retrieved from: http://www.opec.org/opec_web/en/about_us/24.htm.*

OPEC. (2016a). Brief history of Organisation of the Petroleum Exporting Countries (OPEC). *Retrieved from: http://www.opec.org/opec_web/en/about_us/24.htm.* https://doi.org/Retrieved from: http://www.opec.org/opec_web/en/about_us/24.htm

OPEC. (2016b). *Oil price by Organisation of the Petroleum Exporting Countries (OPEC).* Retrieved from http://www.opec.org/opec_web/en/data_graphs/40.htm

Park, J. (2012). Corruption, soundness of the banking sector, and economic growth: A cross-country study. *Journal of International Money and Finance*, *31*(5), 907–929.

Pedroni, P. (2004). Panel cointegration: Asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. *Econometric Theory*, *20*, 597–625.

Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American Satistical Association*, *94*(446), 621–634.

Pesaran, M. H., & Smith, R. (1995). Estimating long-run relationships from dynamic heterogeneous panels. *Journal of Econometrics*, *68*(1), 79–113.

Pesola, J. (2011). Joint effect of financial fragility and macroeconomic shocks on bank loan losses: Evidence from Europe. *Journal of Banking and Finance*, *35*(11), 3134–3144.

Petrou, A. P., & Thanos, I. C. (2014). The "grabbing hand" or the "helping hand" view of corruption: Evidence from bank foreign market entries. *Journal of World Business*, *49*(3), 444–454.

Pieroni, L., & D'Agostino, G. (2008). Military spending , corruption and economic

growth. *Peace Economics, Peace Science and Public Policy*, *14*(3), 1–14.

Pierse, R. G., & Snell, A. J. (1995). Temporal aggregation and the power of tests for a unit root. *Journal of Econometrics*, *65*(2), 333–345.

Podobnik, B., Shao, J., Njavro, D., Ivanov, P. C., & Stanley, H. E. (2008). Influence of corruption on economic growth rate and foreign investment. *European Physical Journal B*, *63*(4), 547–550.

Poghosyan, T., & Hesse, H. (2009). Oil prices and bank profitability: evidence from major oil-exporting countries in the Middle East and North Africa. *IMF Working Papers*, *9*(WP/09/220), 1–22.

Pyle, D. H. (1997). Bank risk management: Theory. *Research Program in Finance Working Paper*, (RPF-272), 1–14.

QCB. (2015). *Qatar Central Bank. Qatar Central Bank. Retrieved from http://www. qcb. gov.qa/english/supervisionapproach/licensingandregistration/pages/registration.as px*.

Quagliariello, M. (2007). Banks' riskiness over the business cycle: a panel analysis on Italian intermediaries. *Applied Financial Economics*, *17*(2), 119–138.

Rafiq, S., Salim, R., & Bloch, H. (2009). Impact of crude oil price volatility on economic activities: An empirical investigation in the Thai economy. *Resources Policy*, *34*(3), 121–132.

Ree, J. J. K. (2011). Impact of the global crisis on banking sector soundness in Asian low-income countries. *IMF Working Paper*, (WP/11/115).

Rehman, R. U., Zhang, J., & Ahmad, M. I. (2016). Political system of a country and its non-performing loans : A case of emerging markets. *International Journal of Business Performance Management*, *17*(3), 241–265.

Richard, E. (2011). Factors that cause non – performing loans in commercial banks in Tanzania and strategies to resolve them. *Journal of Management Policy and Practice*, *12*(2002), 50–58.

Rivoli, P., & Brewer, T. L. (1997). Political instability and country risk. *Global Finance Journal*, *8*(2), 309–321.

Salas, V., & Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks. *Journal of Financial Services Research*, *22*(3), 203–224.

SAMA. (2015). Saudi Arabian Monetary Agency. *Retrieved from Http://www. sama .gov.sa/en-US/BankingControl/Pages/LicensedBanks.aspx.*

SAMA. (2016). Saudi Arabian Monetary Agency. *Retrieved from Http://www.sama.gov.sa/en-US/BankingControl/Pages/LicensedBanks.aspx.*

Sealey, C. W., & Lindley, J. T. (1977). Inputs , outputs , and a theory of production and cost at depository financial institutions. *The Journal of Finance*, *32*(4), 1251–1266.

Shabnam, N. (2014). Natural disasters and economic growth : A Review. *International Journal of Disaster Risk Science*, *5*(2), 157–163.

Sharfman, M. P., & Fernando, C. (2008). Environmental risk management and the cost of capital. *Strategic Management Journal*, *29*(6), 569–592.

Shehzad, C. T., de Haan, J., & Scholtens, B. (2010). The impact of bank ownership concentration on impaired loans and capital adequacy. *Journal of Banking and Finance*, *34*(2), 399–408.

Simonsohn, U. (2000). How taxing is corruption on international investors. *The Review of Economics and Statistics*, *82*(1), 1–9.

Skarica, B. (2013). Determinants of non-performing loans in Central and Eastern

European Countries. *Working Paper Series of University of Zagreb*, *13*(7), 1–19.

Skidmore, M. (2001). Risk , natural disasters , and household savings in a life cycle model. *Japan and the World Economy*, *13*, 15–34.

Skidmore, M., & Toya, H. (2002). Do natural disasters promote long run growth? *Economic Inquiry*, *40*(4), 664–687. Retrieved from http://onlinelibrary.wiley.com/ doi/10.1093/ei/40.4.664/pdf

Slesman, L., Baharumshah, Z. A., & Ra'ees, W. (2015). Institutional infrastructure and economic growth in member countries of the Organization of Islamic Cooperation (OIC). *Economic Modelling*, *51*, 214–226.

Slesman, L. Y., Baharumshah, A. Z., & Wohar, M. (2015). Capital inflows and economic growth: Does the role of institutions matter? *International Journal of Finance & Economics*, *20*, 253–275.

Sotoudeh, M. A., & Worthington, A. C. (2014). Long-term effects of global oil price changes on the macroeconomy and financial markets: a comparative panel co-integration approach. *Applied Economics Letters*, *22*(12), 960–966.

Steindl, G. F., & Weinrobe, D. M. (1983). Natural hazards and deposit behavior at financial institutions. *Journal of Banking and Finance*, *7*, 111–118.

Stevens, P., & Hulbert, M. (2012). *Oil prices : energy investment , political stability in the Exporting countries and OPEC ' s dilemma*. *EEDP Programme paper* (Vol. 2012/03).

Sufian, F., & Habibullah, M. S. (2010). Does economic freedom fosters banks' performance? Panel evidence from Malaysia. *Journal of Contemporary Accounting and Economics*, *6*(2), 77–91.

Svensson, J. (1998). Investment, property rights and political instabillity: Theory and

evidence. *European Economic Review*, *42*, 1317–1341.

Swift, A. L., & Janacek, G. J. (1991). Forecasting non-normal time series. *Journal of Forecasting*, *10*(5), 501–520.

Sy, W. (2007). A causal framework for credit default theory. *Working Paper of Australian Prudential Regulation Authority*, (October), 28. Retrieved from http://www-test.apra.gov.au/AboutAPRA/Research/Documents/A-casual-framework-for-credit-default-theory-September-2007.pdf

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate Statistics* (6th ed.). New Jersey: Pearson Education, Inc.

Tan, K. Y. (2009). A pooled mean group analysis on aid and growth. *Applied Economics Letters*, *16*(16), 1597–1601.

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

Tauringana, V., & Afrifa, G. A. (2013). The relative importance of working capital management and its components to SMEs' profitability. *Journal of Small Business and Enterprise Development*, *20*(3), 453–469.

Tawfiq, N., & Olsen, D. A. (1993). Saudi Arabia's response to the 1991 Gulf oil spill. *Marine Pollution Bulletin*, *27*(C), 333–345.

Tobin, J. (1963). Commercial banks as creators of "money." *Financial Markets and Economic Activity*, (159), 408–419. Retrieved from 01.pdf%5Cnpapers2://publicatio n/uuid/A6FD0F97-1B5A-49FC-8A76-1FA3890A050B

Tobin, J. (1969). A general equilibrium approach to monetary theory. *Journal of Money,*

Credit and Banking, *1*(1), 15–29.

Torres-Reyna, O. (2011). Getting started in Fixed/Random Effects models using R. *Retrived from Http://dss.princeton.edu/training/*. https://doi.org/Retrieved from: http: //dss.princeton.edu/training/P

Torres, A. (2003). Monetary policy and interest rates: evidence from Mexico. *The North American Journal of Economics and Finance*, *14*(3), 357–379.

Transparency-International. (2015). Corruption perception index reports. Retrieved from http://www.transparency.org/news/feature/corruption_perceptions_index

Us, V. (2016). Dynamics of non-performing loans in the Turkish banking sector by an ownership breakdown: The impact of the global crisis. *Finance Research Letters*, *20*, 109–117.

Vogiazas, S. D., & Nikolaidou, E. (2011). Investigating the determinants of nonperforming loans in the Romanian banking system: An empirical study with reference to the Greek crisis. *Economics Research International*, (ID214689), 1–13.

Walonick, D. S. (1993). General systems theory. Retrieved from http://www.statpac.org /walonick/organizational-theory.htm

WDIs. (2015). *The World Bank world development indicators-World Bank*. Retrieved from http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators

WDIs. (2016). The World Bank world development indicators-World Bank. Retrieved from http://data.worldbank.org/data-catalog/worldwide-governance-indicators

Weber, O. (2012). Environmental credit risk management in banks and financial service institutions. *Business Strategy and the Environment*, *21*(4), 248–263.

Weber, O., Fenchel, M., & Scholz, R. W. (2008). Empirical analysis of the integration of

environmental risks into the credit risk management process of European banks. *Business Strategy and the Environment*, *17*(July 2006), 149–159.

Weill, L. (2011). How corruption affects bank lending in Russia. *Economic Systems*, *35*(2), 230–243.

Werner, R. A. (2015). A lost century in economics: Three theories of banking and the conclusive evidence. *InPress International Review of Financial Analysis*, *InPress*.

WGIs. (2016). *World Governance Indicators-World Bank*. Retrieved from http://data.worldbank.org/data-catalog/worldwide-governance-indicators

Wooldridge, J. M. (2002). *Econometric analysis of cross section and panel data*. London: The MIT Press.

WSJ. (2015, October). Cash crunch clouds future for oil firms. *The Wall Street Journal. Retrieved from Http://www.wsj.com/articles/cash-Crunch-Clouds- 115 Future-for-Oil-Firms-1445816429.*

Yurdakul, F. (2014). Macroeconomic modelling of credit risk for banks. *Procedia - Social and Behavioral Sciences*, *109*, 784–793.

Zaib, A., Farid, F., & Khan, M. K. (2014). Macroeconomic and bank-specific determinants of non-performing loans in the banking sector in Pakistan. *International Journal of Information, Business and Management*, *6*(2), 53–82.

Zeng, S. (2012). Bank non-performing loans (NPLS): A dynamic model and analysis in China. *Modern Economy*, *3*(1), 100–110.

Zhu, N., Wang, B., & Wu, Y. (2014). Productivity, efficiency, and non-performing loans in the Chinese banking industry. *The Social Science Journal*, *InPress*.

Appendix A

Table 1.3
OPEC Member States' TI Corruption Perception Index
Corruption Perception Index

Year	ALGERIA	ANGOLA	ECUADOR	IRAN	IRAQ	KUWAIT	LIBYA	NIGERIA	QATAR	S/ARABIA	UAE	VENEZUELA
2000	NA	1.7	2.6	NA	NA	NA	NA	1.2	NA	NA	NA	2.7
2001	NA	NA	2.3	NA	NA	NA	NA	1	NA	NA	NA	2.8
2002	NA	1.7	2.2	NA	NA	NA	NA	1.6	NA	NA	NA	2.5
2003	2.6	1.8	2.2	3	2.2	5.3	2.1	1.4	5.6	4.5	5.2	2.4
2004	2.7	2	2.4	2.9	2.1	4.6	2.5	1.6	5.2	3.4	6.1	2.3
2005	2.8	2	2.5	2.9	2.2	4.7	2.5	1.9	5.9	3.4	6.2	2.3
2006	3.1	2.2	2.3	2.7	1.9	4.8	2.7	2.2	6	3.3	6.2	2.3
2007	3	2.2	2.1	2.5	1.5	4.3	2.5	2.2	6	3.4	5.7	2
2008	3.2	1.9	2	2.3	1.3	4.3	2.6	2.7	6.5	3.5	5.9	1.9
2009	2.8	1.9	2.2	1.8	1.5	4.1	2.5	2.5	7	4.3	6.5	1.9
2010	2.9	1.9	2.5	2.2	1.5	4.5	2.2	2.4	7.7	4.7	6.3	2
2011	2.9	2	2.7	2.7	1.8	4.6	2	2.4	7.2	4.4	6.8	1.9
2012	34	22	32	28	18	44	21	27	68	44	68	19
2013	36	23	35	25	16	43	15	25	68	46	69	20
2014	36	19	33	27	16	44	18	27	69	49	70	19

Source: Transparency International (2015)

Appendix B

Table 1.4
OPEC Member States' Political Instability Index
US State Department Political-Terror Scale and Ranking

Year	ALGERIA	ANGOLA	ECUADOR	IRAN	IRAQ	KUWAIT	LIBYA	NIGERIA	QATAR	S/ARABIA	UAE	VENEZUELA
2000	4	5	3	3	5	1	3	3	1	3	1	3
2001	4	4	3	3	5	1	3	4	1	3	2	3
2002	4	4	3	3	5	2	3	4	1	3	2	4
2003	4	4	3	3	5	2	3	4	1	3	2	3
2004	4	4	3	3	5	2	3	4	1	3	2	3
2005	4	4	3	3	5	2	3	4	1	3	2	3
2006	4	3	3	3	5	2	3	4	1	3	2	4
2007	3	4	3	3	5	2	3	3	2	3	2	4
2008	3	3	3	3	5	2	3	4	1	3	2	4
2009	2	4	3	4	4	2	3	4	1	4	1	4
2010	3	3	2	3	4	2	3	5	1	3	2	3
2011	3	3	3	3	3	2	5	4	1	3	2	3
2012	2	3	3	3	4	2	4	4	1	3	2	4
2013	2	3	2	3	5	2	4	4	2	3	3	3
2014	3	3	2	3	5	2	4	5	2	3	3	4

Source: The Political Terror scale (2015)

Table 1.5
OPEC member States' Major Environmental Disasters
EM-DAT: The CRED/OFDA International Disasters Epidemiology

Year	ALGERIA	ANGOLA	ECUADOR	IRAN	IRAQ	KUWAIT	LIBYA	NIGERIA	QATAR	S/ARABIA	UAE	VENEZUELA
2000	6	14	7	16	1		1	54		4		2
2001	1	12	4	19				44		2	1	2
2002	9	3	9	24			2	38		5	1	2
2003	12	4	4	19	3	1		23		6		3
2004	9	8		17	3		2	25		2	1	4
2005	6	2		23	3			32		2		9
2006	4	4	4	12	5			22		3		1
2007	7	5	3	6	3			20		3		1
2008	3	6	2	13	3		1	15		2	1	4
2009	6	6	2	6	2	1	1	12	1	1		2
2010	2	3	7	10	3		1	11		2	1	3
2011	1	5	2	5	1		1	13		2		5
2012	3	2	4	8	1		1	11	1	3		2
2013		2	5	6	1		3	11		2	1	1
2014	4	1	5	4			9	9	1	1	1	

Source: EM-DAT-Centre for Research on the Epidemiology of Disasters (2015)

Appendix D

Table A1

Pooled Estimate of ARDL (1,1,1,1,1,1,1): Mean Group: NPLs for OPEC Countries

Variables	Coefficient	Std. Error	t-stat	Prob. Value	95% Conf. Interval	
OP	1.350186	1.387445	0.97	0.330	-1.369156	4.069528
CORR	9.95931	4.72412	2.11	0.024	-16.33893	96.25754
PIS	5.8119	3.15195	1.84	0.076	-28.76437	140.3882
ERS	-.5870548	1.078531	-0.54	0.586	-2.700936	1.526826
RGDP	-4.581622	0.581622	-7.87	0.000	-4.398193	13.56144
UNEMP	25.99688	24.76539	1.05	0.294	-22.5424	74.53615
Speed of Adj.	-.6517094	.2948404	-2.21	0.027	-1.229586	-.0738329

Table A2

Pooled Estimate of ARDL (1,1,1,1,1,1,1): Pooled Mean Group: NPLs for OPEC Countries

Variables	Coefficient	Std. Error	t-stat	Prob. Value	95% Conf. Interval	
OP	-.0196904	.0063031	-3.12	0.002	-.0320443	-.0073364
CORR	4.492702	.9073558	4.95	0.000	2.714317	6.271087
PIS	4.276017	.8024085	5.33	0.000	2.703325	5.848709
ERS	.1744239	.0607458	2.87	0.004	.0553644	.2934835
RGDP	-4.089691	.9735577	-4.20	0.000	-5.997829	-2.181553
UNEMP	.249103	.0861685	2.89	0.004	.0802159	.4179902
Speed of Adj.	-.4678951	.1812658	-2.58	0.010	-.8231696	-.1126205

Table A3

Pooled Estimate of ARDL (1,1,1,1,1,1,1): Dynamic Fixed Effect: NPLs for OPEC Countries

Variables	Coefficient	Std. Error	t-stat	Prob. Value	95% Conf. Interval	
OP	.1170435	.2278736	0.51	0.608	-.3295806	.5636676
CORR	-22.20999	21.12722	-1.05	0.293	-63.61859	19.1986
PIS	-4.425497	11.43852	-0.39	0.699	-26.84459	17.99359
ERS	.7428581	1.277382	0.58	0.561	1.760765	3.246481
RGDP	40.01993	28.37915	1.41	0.158	15.60218	95.64204
UNEMP	-.3221543	1.809064	-0.18	0.859	-3.867854	3.223546
Speed of Adj.	-.2011697	.052498	-3.83	0.000	-.3040638	-.0982755

Appendix E

Table B1
Static Panel Model: Pooled OLS: NPLs for OPEC Member States

Variables	Coefficient	Std. Error.	t-stat	Prob>|t|	95% Conf. Interval	
OP	-1.908997	.6174873	-3.09	0.004	-3.170074	-.6479193
CORR	2.850602	1.013195	2.81	0.009	.7813825	4.919821
PIS	2.007778	.9681731	2.07	0.047	3.985052	-.0305053
ERS	-.0968959	.3600678	-0.27	0.790	-.8322524	.6384607
RER	-1.039404	.9156386	-1.14	0.265	-2.909388	.830579
RGDP	-.441077	.8439357	-0.52	0.605	-2.164624	1.28247
LIR	-2.34756	1.116433	-2.10	0.044	-4.627621	-.0674984
INF	2.123405	.9541383	2.23	0.034	.174795	4.072016
UNEMP	-1.181169	1.044535	-1.13	0.267	-3.314395	.9520564
CONS	16.70586	7.345995	2.27	0.030	1.703341	31.70839

Table B2

Static Panel Model: Fixed Effect: NPLs for OPEC Member States

Variables	Coefficient	Std. Error.	t-stat	Prob>|t|	95% Conf. Interval	
OP	-1.906311	.5542309	-3.44	0.002	-3.043499	-.7691232
CORR	4.172629	1.278972	3.26	0.003	1.548396	6.796863
PIS	3.20318	.8510897	3.76	0.001	-4.949472	-1.456889
ERS	.299915	.1345291	2.23	0.033	-1.071261	.4714306
RER	-1.178005	.8512924	-1.38	0.178	-2.924713	.5687025
RGDP	-1.046278	1.148223	-0.91	0.370	-3.402236	1.30968
LIR	-3.189375	.9337393	-3.42	0.002	-5.10525	-1.2735
INF	1.926914	.8057014	2.39	0.024	.2737516	3.580077
UNEMP	.8369624	1.074839	0.78	0.443	-1.368424	3.042349
CONS	16.35046	7.8498	2.08	0.047	.2440035	32.45692

Table B3

Static Panel Model: Random Effect: NPLs for OPEC Member States

Variables	Coefficient	Std. Error.	t-stat	Prob>|t|	95% Conf. Interval	
OP	-1.908997	.6174873	-3.09	0.002	-3.11925	-.6987438
CORR	2.850602	1.013195	2.81	0.005	.864777	4.836427
PIS	2.007778	.9681731	2.07	0.038	3.905363	.1101942
ERS	-.0968959	.3600678	-0.27	0.788	-.8026158	.6088241
RER	-1.039404	.9156386	-1.14	0.256	-2.834023	.7552142
RGDP	-.441077	.8439357	-0.52	0.601	-2.095161	1.213007
LIR	-2.34756	1.116433	-2.10	0.035	-4.535729	-.1593903
INF	2.123405	.9541383	2.23	0.026	.2533287	3.993482
UNEMP	-1.181169	1.044535	-1.13	0.258	-3.228421	.8660823
CONS	16.70586	7.345995	2.27	0.023	2.307979	31.10375

Appendix F

Table 1.1 Total Assets and Liabilities of Banks of OPEC member states

Years	Total Assets	Total Customers Deposits	Gross Loans	Total Equity
2000	587.00	336.00	214.00	70.13
2001	534.00	301.00	187.00	72.20
2002	595.00	329.00	224.00	83.02
2003	664.05	358.00	256.01	82.11
2004	860.47	474.04	340.01	121.52
2005	1196.00	652.10	437.38	166.59
2006	1479.00	886.00	566.58	185.36
2007	2084.00	1221.00	808.97	232.04
2008	2439.00	1472.00	1002.00	243.55
2009	2480.00	1506.00	983.00	267.09
2010	2738.00	1646.00	1052.00	288.00
2011	3027.00	1802.00	1208.00	340.00
2012	3652.00	2214.00	1437.00	368.00
2013	3864.00	2224.00	1411.00	382.00
2014	3577.00	2186.00	1401.98	318.27

Appendix G

Table 1.2 Average NPL Ratios of Global, OPEC, G7, G8 AND BRICS

Year	OPEC	G7	BRICS	G8	GLOBAL
2000	9.99	2.05	12.22	2.06	na
2001	8.74	2.37	11.99	2.28	na
2002	8.36	3.14	12.19	2.99	na
2003	6.99	2.74	11.19	2.60	na
2004	5.82	1.95	6.96	1.89	na
2005	5.56	1.69	4.67	1.62	na
2006	4.31	1.26	4.72	1.29	3.10
2007	4.43	1.36	4.17	1.40	2.70
2008	5.75	1.98	3.94	2.07	3.00
2009	8.19	2.64	5.33	3.10	4.20
2010	6.29	2.47	5.08	2.96	4.10
2011	8.00	2.59	11.78	2.76	4.00
2012	8.94	2.19	4.01	2.30	3.80
2013	8.31	1.99	4.16	2.16	4.20
2014	8.00	1.84	4.00	2.07	4.20