UNIVERSITI PUTRA MALAYSIA

FISCAL CONSOLIDATION, INSTITUTIONAL QUALITY, AND DEBT-GROWTH NEXUS IN DEVELOPING COUNTRIES

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FISCAL CONSOLIDATION, INSTITUTIONAL QUALITY, AND DEBT-GROWTH NEXUS IN DEVELOPING COUNTRIES

By

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FISCAL CONSOLIDATION, INSTITUTIONAL QUALITY, AND DEBT-GROWTH NEXUS IN DEVELOPING COUNTRIES

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NG CHEE HUNG

June 2014

Chair: Associate Professor Law Siong Hook, PhD
Faculty: Economics and Management

This study examines the impact of institutional quality on fiscal consolidation and it influences on debt-growth nexus in developing countries during 1980 to 2008. There are three specific objectives, namely (i) to examine the influence of institutional quality on fiscal consolidation program, (ii) to determine the causality effect between debt ratio and economic growth, and (iii) to identify the threshold level of debt-to-GDP ratio in developing countries.

Motivated by the lacks of studies regarding the role of institutions on the fiscal consolidation efforts, the first objective of this thesis aims to provide some empirical analysis on the effect of institutional quality on the progress of fiscal consolidation program, using a core sample of 71 developing countries over the period 1980 to 2008. The empirical results based on the panel generalized method of moments (GMM) indicate that better institutions tend to reduce deficit budget account in developing countries, but failed to do so in the level of debt accumulation. In other words, fiscal consolidation programs through reducing budget deficit account are more attainable with better quality of institutions. In addition, stronger institutions may allow these countries to involve in more fiscal expansionary programs and achieve higher sustainable level of debt.

The second objective is motivated by the fact that the issues of debt and growth has been gaining attention most recently especially in the study by Reinhart and Rogoff (2008) on their paper entitled "Growth in a Time of Debt". However, far too little attention has been paid to the causality relationship between debt and economic growth. This thesis seeks to find out the direction of causality between these two variables in developing countries with the inference of institutional quality using the panel causality based on system generalized method of moments (GMM) estimations. The empirical results show that there is a causality effect running from economic growth to debt. The findings also demonstrate that other causal effects are detected, running from growth and debt to institutional quality, but no direct causal effect running from institutional quality to both economic growth and debt.

The last objective of the thesis, which is motivated by the inappropriate threshold estimation of debt which overlooked the study in developing countries as well as the improper use of methodology, aims to provide some empirical evidence on finding the sustainable debt threshold value for developing countries. In the literature, the debt-to-gross domestic product (GDP) threshold for developed countries is 90 per cent, whereas for developed and developing countries is 77 per cent. A dynamic panel threshold model is employed to estimate the threshold value for the debt-to-GDP ratio on a growth model. The empirical results suggest a threshold of 44 per cent of debt-to-GDP level in developing countries. This finding reveals that developing countries have a lower threshold of debt-to-GDP ratio compared to developed countries, as well as the combination of developed and developing countries in the literature. The findings also reveal that debt-to-GDP is negatively associated with economic growth especially above the threshold level.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KONSOLIDASI FISKAL, KUALITI INSTITUSI, DAN PERTALIAN HUTANG-PERTUMBUHAN EKONOMI DI NEGARA MEMBANGUN

Oleh

NG CHEE HUNG

Jun 2014

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Tesis ini bertujuan meneliti kesan kualiti institusi ke atas program konsolidasi fiskal dan pertalian hutang-pertumbuhan di negara-negara membangun dari tahun 1980 sehingga tahun 2008. Tesis ini merangkumi tiga objektif khusus, iaitu (i) untuk mengkaji pengaruh kualiti institusi mengenai kemajuan program konsolidasi, (ii) untuk mengenal-pasti hubungan penyebab antara kadar hutang dan pertumbuhan ekonomi, dan (iii) untuk menyelidik tahap ambang mampan nisbah hutang-kepada-keluaran dalam negara kasar bagi negara-negara membangun.

Bermotivasi dengan kehausan dalam kajian mengenai peranan institusi ke atas usaha-usaha konsolidasi fiskal, objektif pertama bagi tesis ini bertujuan menyediakan analisis empirika mengenai kesan kualiti institusi ke atas kemajuan program konsolidasi fiskal, dengan menggunakan sampel teras 71 negara-negara membangun dalam tempoh tahun 1980 hingga 2008. Keputusan empirika berdasarkan kaedah panel generalized method of moments (GMM) menunjukkan bahawa tahap institusi yang lebih cenderung berjaya mengurangkan belanjawan akaun defisit di negara-negara membangun, tetapi gagal berbuat demikian bagi tahap pengumpulan hutang. Dalam erti kata lain, program-program konsolidasi fiskal yang bertujuan mengurangkan akaun defisit boleh dicapai dengan kualiti institusi yang lebih baik. Di samping itu, institusi-institusi yang lebih kuat membenarkan negara-negara ini melibatkan diri dalam program-program pengembangan fiskal dan mencapai tahap hutang mampan yang lebih tinggi.

Objektif kedua adalah bermotivasi dengan hakikat bahawa isu-isu mengenai hutang and pertumbuhan telah menarik perhatian di masa kini terutamanya dalam kajian oleh Reinhart dan Rogoff (2008) bertajuk "Growth in a Time of Debt". Walaubagaimanapun, terlalu sedikit perhatian ditumbuhkan ke atas hubungan penyebab di antara hutang dan pertumbuhan ekonomi. Tesis ini bertujuan untuk menyelidik arah penyebab antara dua pembolehubah ini di negara-negara membangun dengan menggunakan kaedah panel causality berdasarkan system generalized method of moments (GMM). Keputusan empirika menunjukkan bahawa terdapat kesan

penyebab dari pertumbuhan ekonomi ke hutang. Keputusan kajian ini juga menunjukkan bahawa terdapat kesan-kesan penyebab lain seperti dari pertumbuhan dan hutang masing-masing ke kualiti institusi, tetapi tiada kesan timbal-balik terus dari kualiti institusi ke pertumbuhan ekonomi dan hutang.

Objektif terakhir tesis ini, yang didorong oleh ketidaksesuaian anggaran ambang hutang yang terlepas pantang di negara-negara membangun serta pengunaan kaedah kajian yang kurang wajar, bertujuan untuk menghasilkan bukti-bukti empirika dengan mencari nilai ambang hutang yang mampan untuk negara-negara membangun. Dalam kesusasteraan, nilai ambang mampan bagi nisbah hutang-kepada-keluaran dalam negara kasar (KDNK) bagi negara-negara maju adalah 90 peratus, manakala untuk negara-negara maju dan membangun adalah 77 peratus. Model dynamic panel threshold digunakan untuk menganggarkan nilai ambang mampan bagi nisbah hutang-kepada-KDNK ke atas model pertumbuhan. Keputusan empirika mencadangkan had sebanyak 44 peratus tahap hutang-kepada-KDNK untuk pertalian hutang-pertumbuhan di negara-negara membangun. Hasil kajian ini menunjukkan bahawa negara-negara membangun mempunyai tahap ambang yang lebih rendah daripada nisbah hutang-kepada-KDNK berbanding dengan negara-negara maju, serta gabungan negara-negara maju dan membangun dalam kesusasteraan. Hasil kajian ini juga menunjukkan bahawa hutang-kepada-KDNK adalah negatif dikaitkan dengan pertumbuhan ekonomi terutamanya di atas paras ambang.

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Last but not least, I want to deliver my deepness grateful to my loving parents and my whole family for their endless supports and motivations in completing this study. It is not less that to thank my helpful course-mates for their invaluable assistance, constant personal advices and concerns will always be remembered.

I certify that a Thesis Examination Committee has met on 9 June 2014 to conduct the final examination of Ng Chee Hung on her thesis entitled "Fiscal Consolidation, Institutional Quality, and Debt-Growth Nexus in Developing Countries" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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Declaration by graduate student

I hereby confirm that:

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This is to confirm that:

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LIST OF ABBREVIATIONS

A	Total Factor Productivity
AIC	Akaike Information Criterion
AR	Autocorrelation
AR(1)	Autocorrelation of Order 1
AR(2)	Autocorrelation of Order 2
CAPB	Cyclically Adjusted Primary Balances
CAPD	Cyclically Adjusted Primary Budget Deficit
CPIA	Country Policy and Institutional Assessment
CRA	Credit Rating Agency
DAC	Development Assistance Committee
DEBT	Debt-to-GDP Ratios
ECT	Error Correction Term
EMU	European Monetary Union
EU	European Union
G7	Group of Seven
GITD	Growth in a Time of Debt
GMM	Generalized Method of Moments
GDP	Gross Domestic Product
GNI	Gross National Income
HIPC	High Indebted Poor Countries Initiative
ICRG	International Country Risk Guide
iid	Independent and Identically Distributed
IMF	International Monetary Fund
IS-LM	Investment Saving – Liquidity Preference Money Supply
IV	Instrument
LDC	Less Developed Countries
LSDV	Least Square Dummy Variable

NCBD	Non-Cyclically Budget Deficit
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
PRS	Political Risk Service
RGPDCG	Real Gross Domestic Product per Capita Growth
S&P	Standard & Poor
TFP	Total Factor Productivity
US	the United States
VAR	Vector Autoregressive
WDI	World Development Indicators
WGI	Worldwide Governance Indicators
2SLS	Two-Stage Least Squared

CHAPTER ONE

INTRODUCTION

Nowadays, countries' bankruptcy becomes quite an essential issue throughout worldwide. However, the issue of bankruptcy is not a totally new brand issue since many countries have been facing this problem since a century ago. For examples, Germany has gone bankrupt twice since 1923 and after 1945 and Russia in 1998, while Argentina's bankruptcy in 2002 where the country was incapable to handle its debt problems, following by a severe economic downturn. These countries face consequences such as high level of unemployment, bank account's congealing, as well as restriction on maximum withdrawal in a day or a week basis as to avoid another problematic issue namely banking insolvency. However, there are other reasons why countries that may end up in this final stage such as the result of war or apparent mis-management which gambled away all trusts from the investors. Thus, they no longer can service their debts or convince anyone to provide funding, although they are willing to offer high interest rates payment.

Recently, the popularity of bankruptcy earns its credit again through the global financial crisis which elapsed during 2008 due to the mortgages' bubbles where borrowers continuously defaulting on their housing loan. The effect from this crisis is more crucial in the United States (US) where most of the mortgage lenders felt terrify when the housing prices started to fall dramatically while homeowners began to default on their payments due to the loss of values. Government tries to offer bailout aids to overcome the problem of bad debt on mortgage. However, the efforts of the government unable to persistently overcome the problem but eventually lead to bankruptcy if money is simultaneously pulled out from shares and stocks while the government facing difficulty in obtaining addition lending from the financial institutions to exercise the aid packages. Fortunately, the US able to survive from this crisis but there are critical possibilities that some countries may fall into this downward spiral and facing bankruptcy due to the breaking-down of banking system, demand distortion, and also political crisis.

There is a growing list of nations who may slip into the verge of bankruptcy, including Ukraine, Kazakhstan, Argentina, Ireland, Pakistan, Greece, Spain, Italy, and others due to the spillover effects from the US crisis. For example, in the case of Ireland, the crisis which leads to the wholesale funding market seized up follows by the failure of banking systems which brings a mountain of foreign debt to the country. While in less developed country such as Pakistan, the fallen of rupee to an extremely low level followed by the downgrading of the country's sovereign debt to near write-off level of CCC-plus by Standard & Poor (S&P), leads to the possibility of defaulting because of the inability to re-pay debts or paying its imports. Generally, it is clearly noticeable that the edge of bankruptcy can be reached due to various reasons. However, many researchers agree that the major factor of bankruptcy is undistinguishable from the inability of countries to control their budget deficits and public debts.

Table 1 Global Country Risk Table (Most risky country ranked first)

	Country	Economic Indicators						Ratings & CDS		Overall Score
		2009 Current Account Balance	2009 Government Budget Balance	2009 Government Debt	Private Sector Credit	Net External Assets	Potential GDP Growth	CDS Spreads	Credit Ratings	
		as % of GDP								
	Weighting	**11%**	**11%**	**11%**	**11%**	**21%**	**5%**	**11%**	**21%**	
1	Iceland	-8%	-13%	106%	478%	-239%	4.0%	638	BBB+	46.0
2	Greece	-12%	-13%	107%	78%	-71%	1.9%	389	BBB+	42.3
3	Hungary	-2%	-4%	83%	61%	-97%	3.5%	249	BBB-	38.1
4	Portugal	9%	8%	77%	151%	36%	1.3%	184	A+	36.7
5	Spain	-5%	-12%	58%	172%	-76%	2.1%	122	AA+	36.4
6	Latvia	8%	-8%	20%	98%	-75%	4.0%	475	BB	36.0
7	Ireland	-2%	-12%	64%	194%	-55%	2.6%	129	AA	35.4
8	Ukraine	-1%	-9%	25%	67%	-22%	5.8%	875	B-	34.0
9	Romania	-4%	-8%	14%	42%	-48%	5.0%	249	BBB-	33.5
10	Lithuania	2%	-9%	16%	69%	-50%	4.0%	273	BBB	33.3
11	Turkey	-2%	-6%	46%	29%	-27%	3.5%	191	BB	32.3
12	Bulgaria	10%	1%	14%	47%	103%	5.0%	230	BBB	32.1
13	Egypt	-2%	-7%	67%	35%	-17%	6.0%	270	BBB-	30.7
14	India	-1%	-8%	77%	58%	-7%	8.1%	na	BBB-	30.0
15	Italy	-3%	-5%	123%	87%	-20%	1.9%	104	A+	29.9
16	United States	-3%	-10%	87%	226%	-24%	2.1%	30	AAA	29.5
17	Estonia	5%	-4%	5%	109%	-72%	4.0%	140	A-	28.4
18	Poland	-2%	-2%	48%	48%	-40%	4.0%	135	A	26.7
19	Kazakhstan	-2%	-3%	9%	46%	-29%	7.5%	210	BBB	26.6
20	Indonesia	2%	-1%	30%	27%	-32%	6.3%	198	BB+	26.5
21	New Zealand	-3%	-5%	27%	164%	-73%	3.3%	62	AAA	26.3
22	Argentina	4%	-1%	64%	11%	18%	3.0%	995	B-	26.3
23	Philippines	5%	-4%	57%	27%	-16%	4.5%	196	BB+	26.3
24	Brazil	-1%	-3%	64%	58%	-17%	3.7%	137	BBB+	25.9
25	Czech Republic	-2%	-6%	36%	44%	-30%	4.0%	93	A	25.7
26	Colombia	-2%	-3%	44%	30%	-22%	4.5%	166	BBB+	25.4
27	Australia	-4%	-4%	16%	253%	-48%	3.0%	50	AAA	25.1
28	Japan	3%	-7%	190%	146%	51%	1.8%	81	AA	24.6
29	United Kingdom	2%	14%	75%	222%	3%	2.0%	79	AAA	24.5
30	South Africa	-5%	-6%	29%	84%	-4%	4.5%	157	A+	24.3

Source: The Coming Depression – Real List of Countries on Verge of Bankruptcy. Retrieve from: http://www.thecomingdepression.net/countries/north-america/real-list-of-countries-on-verge-of-bankruptcy/#axzz20HCqO3Z6

Table 1 shows the top 30 rankings of countries with high risk of falling into the verge of bankruptcy in 2009. The highlighted countries are developing countries which are included in the sample countries selected for this study. It is obvious that countries in higher risk ranking suffer more for negative budget balance and higher government debt. Besides, it is notable that most of the highlighted countries are operating in negative budgetary conditions except for Bulgaria and the government debt-to-GDP ratios are as high as 67 per cent with average potential GDP growth around 4.7 per cent. These indicate that the expansionary programs in developing countries have been kicked-in to generate more growth and accompany by the risks of falling into the verge of bankruptcy. Hence, prevention tools should be adopted to avoid the issues of bankruptcy especially for developing countries. This is because it is typically hard for developing countries to rebuild their reputation no matter in terms of economics or politics after the mist of falling into bankruptcy.

1.1 Definitions of Fiscal Consolidation

During late forties, a US envoy, Joseph Dodge, advices that fiscal deficit should be reduced to ensure balanced budget for most countries especially the high debt to gross domestic product (debt-to-GDP) ratio countries, in order to avoid insolvency from happening in these countries. As to secure the level of budget deficit and debt accumulation, fiscal consolidation is the most directly and effective measure to reduce the fiscal deficit and high debt accumulation for developed as well as developing countries. In most literatures, the start of a fiscal consolidation is defined by a change in the cyclically adjusted primary budget deficit[1] (CAPD) while some studies taking account of debt-to-GDP ratio.[2] In order to identify whether sustainability[3] or success consolidation is accomplishable, these indicators are typically measured again in the two to three years after the consolidation took place and compared with the threshold set by researchers.[4]

More specifically, according to Ardagna (2007), there are three major definitions regarding fiscal consolidation or fiscal adjustment, namely, (1) large fiscal adjustment, (2) expansionary fiscal adjustment, and (3) successful fiscal adjustment. Researchers may use these three definitions in order to classify the effectiveness of fiscal consolidation. Fiscal adjustment considers to be large if the cyclically adjusted primary balance[5] (CAPB) increases by at least 2 per cent of gross domestic product (GDP) or

[1] The budget deficit before interest payments on the national debt are taken into account.

[2] Some studies also take account of debt-to-GDP ratio, and then change varies from a constant ratio over the period to a reduction of 10 per cent such as Nickel et al. (2010), Sutherland et al. (2012), OECD (2012), and Eyraud and Weber (2013).

[3] The definition of a sustainable consolidation focuses on both budget deficit (looking for around a 2 percentage of reduction) and debt-to-GDP ratio (ranging from the measure staying constant to 10 per cent of improvements).

[4] Threshold of achieving fiscal consolidation can be slightly different according to the benchmark of each researcher.

[5] The cyclically adjusted primary balance is measured the budget surplus after the government expenditures minus from the government revenues and it is an imperfect measure of discretionary policy actions. It can be affected for instance by asset price cycles (Girouard and Price, 2004) and one-off measures (Koen and van den Noord, 2005) that do not reflect the policy stance. Debt-interest payment (as well as interest incomes) are excluded as they are largely outside the control of the fiscal authorities and thereby do not reflect directly the policy stance.

1.5 per cent of GDP per year in a period of two consecutive years while expansionary fiscal adjustment indicates that the average growth rate of GDP, in difference from the G7 average (weighted by GDP weights), is greater than the average value of the same variable in all episodes of fiscal adjustment in the period of the adjustment and in the two years after. Lastly, if the ratio of the debt-to-GDP is 5 per cent of GDP below its level in the year of the fiscal adjustment for three years after the fiscal adjustment, this shows that the fiscal consolidation is successful. Conversely, if an episode did not fulfill any of these three criterions as mentioned above, the fiscal consolidation effort is considered fail or unsuccessful, for example, the CAPB declining persistently, low average growth rate of GDP, and the ratio of debt-to-GDP increasing continuously no matter during or after the consolidation.

According to Ahrend et al. (2006), a full cycle of an episode of fiscal consolidation is started while the CAPD increases by at least one percentage point of the potential GDP in a specify year or at least half a percentage point enhancement in the first of the two consecutive years following by a continuous improvement in CAPD. However, an interruption is acceptable without terminating the episode as long as the CAPD does not decline more than 0.3 per cent of GDP which is more than offset in the following year. Terminations are allowed when the CAPD stops increasing or the CAPD improves by less than 0.2 per cent of GDP in one year and then declines. This is illustrated in Figure 1.1.

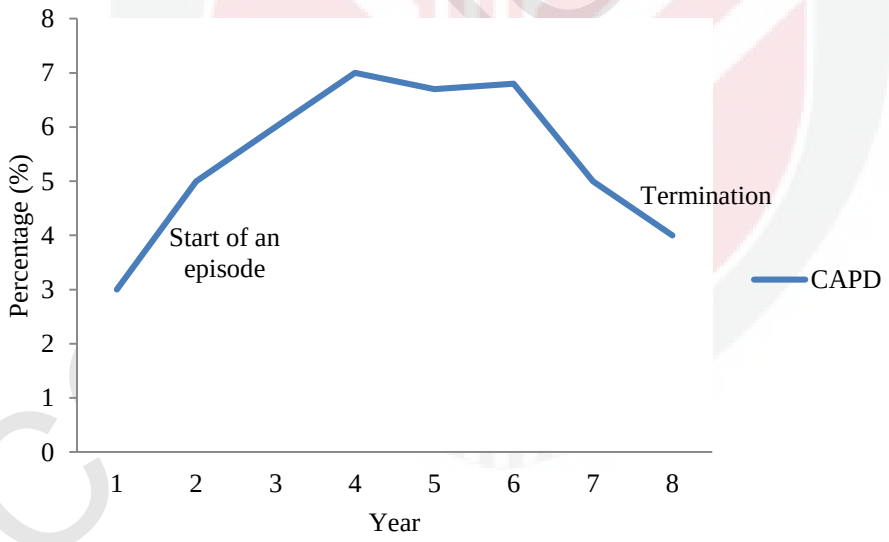

Figure 1.1. An Example of a Cycle of Consolidation Episode

Generally, the successfulness of fiscal consolidation is determined by several factors as found in previous literature. Nonetheless, the main and most unambiguous findings show that successful fiscal consolidations are characterized by a cut in primary expenditures rather than taxation hikes. In other words, successful adjustments are almost exclusively focused on expenditure-based compare to revenue-based (see Alesina and Perotti 1995, 1997; von Hagen et al. 2002; Alesina and Ardagna, 1998).

Governments tend to cut transfer payments and government wage expenditures in order to achieve successful consolidations.

Besides, the relevancy of the size and persistency of the fiscal adjustment have been proved by several studies such as Giavazzi and Pagano (1990 and 1996), Alesina and Ardagna (1998), and Ardagna (2004) which highly related with the initial stage of underlying budgetary and economy conditions in the efforts of achieving successful adjustments (see von Hagen and Strauch, 2001; Ardagna, 2004; Heylen and Everaert, 2000; Alesina, Perotti and Tavares, 1998; Alesina and Ardagna, 1998; Alesina and Perotti, 1995).

Moreover, the successes of major fiscal adjustments with monetary and exchange rate policies have been discussed by Lambertini and Tavares (2005) and Ahrend et al. (2006) recently. Regrettably, there is no clear consensus found on how much the size of fiscal consolidation is needed as well as on the monetary stance, exchange rate movement and GDP growth rate that might affect consolidation outcomes. Thus, it is worth to go in details on the effects of these factors in order to get a clear view of achieving successful adjustments.

Yet, the above mentioned definitions are not commonly agreed by all researchers, neither for the term of "consolidation" nor "successful consolidation". This is because the definitions of consolidation are governed by at least three different elements including the measures of fiscal consolidation, the reference periods over which a given size of consolidation is implemented, and the criterions which discriminating between success and failure.[6] Hence, there is not clear consensus on the definitions of consolidation and researchers tend to choose definitions that may fit their research questions.

1.2 The Needs of Fiscal Consolidation

Most of the developing countries are in the verge of severe budget deficit condition as a result from the highly expansion fiscal acts which use to spur economic performance in these countries. As to finance the deficit, these countries tend to borrow money either domestically or externally or both. The availability of these financing sources may spur the level of debt accumulation in these countries and leads to further unhealthy budgetary balance [7] which drives these countries into the tunnel of bankruptcy. Hence, a more directly and efficient act[8] should be adopted as a remedy to avoid the up-shooting of reversed outcomes from fiscal expansions.

In year 2004, according to a speech given by Mr. Rodrigo de Rato, the Managing Director of the International Monetary Fund in Spain, he mentions that the postponing

[6] As summarized by the European Commission.
[7] According to Easterly et al. (1994), healthy budgetary balance is required to achieve growth.
[8] An act which may shorten the duration of the effectiveness outcomes as to avoid obstacles of economic shocks should adopt.

of fiscal reforms and adjustments will end up paying a much higher price. Therefore, the needs of fiscal consolidation are crucial and act as a direct and effective preventive tool to reduce government budgetary deficit and debt accumulation especially for most developing countries.

Figure 1.2 shows the trend of the average non-cyclical budget deficit across country over the time period from 1980 to 2008 for 71 selected developing countries. There is an apparent upward trend of negative budgetary balances since 1981 until 1999 especially during the period of economic crisis at late 1997 where most developing countries are affected. This is because developing countries tend to implement expansionary fiscal policies to counteract the negative impacts on economic growth from the crisis. It is clear that the needs of fiscal adjustment are crucial in these periods to control the budget deficit. Then, there is a downward trend after 1999 where the economy condition may start to recover.

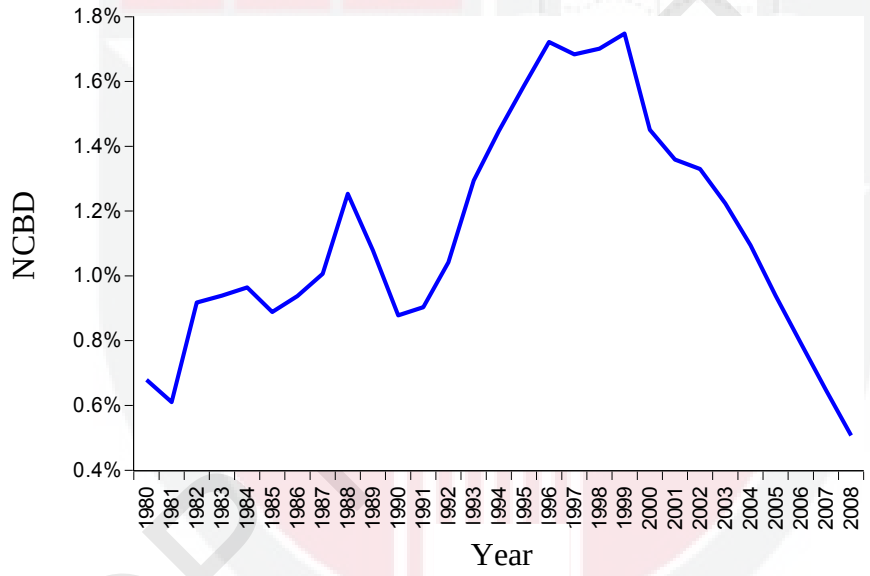

Figure 1.2. Trend of Average Non-Cyclical Budget Deficit across 71 Developing Countries
(Source: International Monetary Fund, 2009)

On the other hand, there is a drastically increases in debt accumulation among developing countries in 1989 which almost reaches 100 per cent of debt[9] on average as showed in Figure 1.3. Afterward, the debt shows a deceasing trend but still remains in a higher range of percentage which is above 50 per cent of debt. This may also signal the crucial needs of consolidation in developing countries. For specification, refer to Table 3 in Appendices for the average level of budgetary condition and debt for the selected developing countries in this study.

[9] The debt is represented the ratio of debt-to-GDP.

1.3 The Importance of Institutional Quality

It is worth to pay attention to the notion of institutions as it has earned its popularity in recent literatures. The term typically refers to a wide range of structures that affect economic outcomes such as contract enforcement, property rights, investor protection, political system, and rule of law. As defining by North (1990), institutions are the human constraints that structure political, economic, and social interactions which consist of both formal rules and informal constraints. Formal rules are like property rights, constitutions, and laws while informal constraints included unwritten taboos, customs, traditions, and codes of conduct. Thus, quality of institutions will be affected when the rules are persistently undergoing alteration or unrespectable, corruption issues are uncontrollable, rule enforcements are fragile as well as indefinable of property rights.

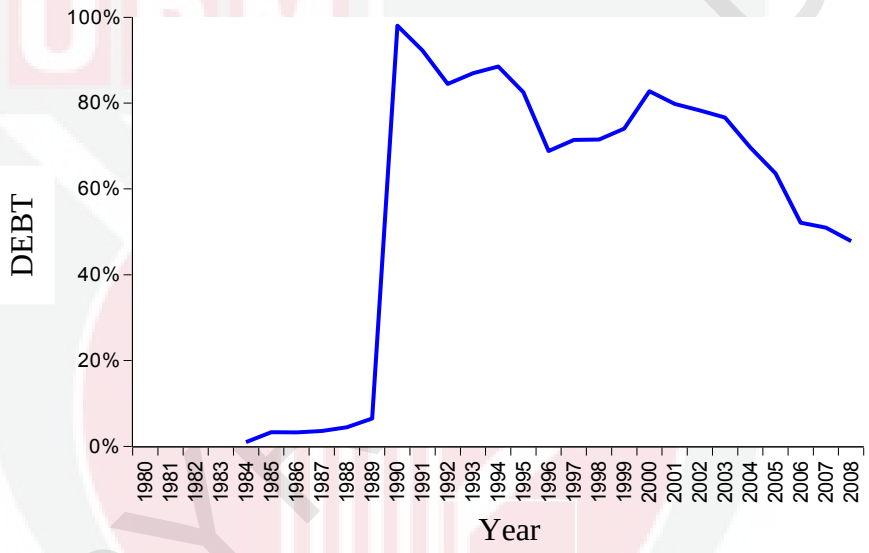

Figure 1.3. Trend of Average Debt-to-GDP Ratio across 71 Developing Countries (Source: International Monetary Fund, 2012)

In Figure 1.4, it is notably that the relationship between economic growth and institutions is positive among developing countries which indicate that better institutional quality tends to boost economic growth. This is consistent with the empirical evidences found by La Porta et al. (e.g. 1997, 1998) and Acemoglu et al. (e.g. 2001, 2002), who suggest two important facts. Firstly, institutions matter a great deal for economic performances since 1990s as shown by Knack and Keefer (1995), Mauro (1995), Tanzi and Davoodi (1997), and Hall and Jones (1999). Hence, problems related to institutional quality may translate into an increased degree of uncertainty that might send misleading signals to the market and affecting the productive economic processes. In other words, poor quality of institutions may indeed manifest itself on lower measured productivity in the institutionally intensive sectors, for variety of reasons. [10] Furthermore, there is evidence shows that lacks of proper contract

[10] For example, according to Cowan and Neut (2002), institutions may affect firms' decisions on production process.

enforcement will lead to significant distortion.[11] Secondly, developed countries have much better institutions than developing countries due to the progress of financial development which aids in channeling resources to finance productive activities.

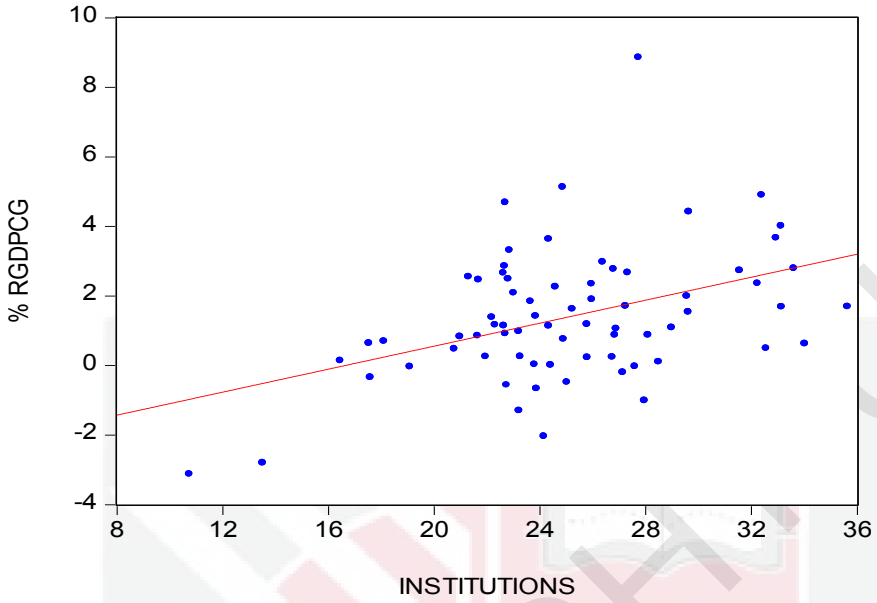

Figure 1.4. Relationship between Institutional Quality and Economic Growth for 71 Developing Countries
(Sources: Real Gross Domestic Product per Capita Growth from World Development Indicators and Institutional Quality from Political Risk Service Group)

In the literature of economics, political economy, and political science, the concept of institutional quality has been translated into attempts to measure property rights and governance. The World Bank has been taking greater efforts in exploring and developing the ways to improve the governance in recent years. Some main instruments are being used in the country diagnostic study, which may tabulate in-depth results through country-specific survey of thousands of public-service users, firms and public officials, in order to gather specific information about institutional vulnerabilities in the country.

On the other hand, in the field of economic interactions, institutions are used to decrease the problem of information asymmetry through channeling information about market conditions, goods, and participants in order to achieve a comprehensive and mutual co-operation among market actors. As stated by Rodrik et al. (2004), property rights, contracts, and rule of laws are the most prominent institutions. This is because effective and trustworthy property rights or rule of laws might aid in reducing the costs of transaction which enhance the establishment of new businesses, facilitate the emergence and functioning of markets and contribute to higher efficiencies. Besides, high-quality institutions allow operation on larger scales and using of more efficient

[11] Indeed, there is both macro-level (e.g. Blanchard and Kremer, 1997; Claessens and Laeven, 2003), and micro-level evidences (e.g. McMillan and Woodruff, 1999; Johnson et al., 2002a, 2002b) that institutional arrangements do influent agent's behavior in important ways.

technology instrument. This may increase productivity, improve competitiveness, facilitate structural changes, and contribute to a better division of labor in national as well as international contexts.

Above all, quality of institutions is resulted from the efficiency of the rule of economic interactions and the effectiveness of their enforcement. Governance and the rule of governance are particularly important for selection and designation of efficient rules, their diffusion and finally, for their enforcement including surveillance, dispute settlement, and sanctioning of violations. Specifically, according to Knack and Keefer (1995), there are five major indicators that categorized to measure the institutional quality of a country, namely (1) law and order, (2) bureaucracy quality, (3) corruption, (4) government stability, and (5) democratic accountability.

Figure 1.5 and Figure 1.6 show the effects of institutional quality on the two indicators of fiscal consolidation used in this study namely non-cyclical budget deficit and debt-to-GDP ratio. Figure 1.5 shows that the budgetary conditions in developing countries can be worsen by better institutions where well-established institutions may allow these countries to strengthen their government expenditures without tax distortion. Conversely, Figure 1.6 illustrates a clear negatively correlation between debt and institutional quality which indicates that better institutions tend to reduce the level of debt accumulation. This is true and explainable through a systematic debt repayment system with good institutional governances.

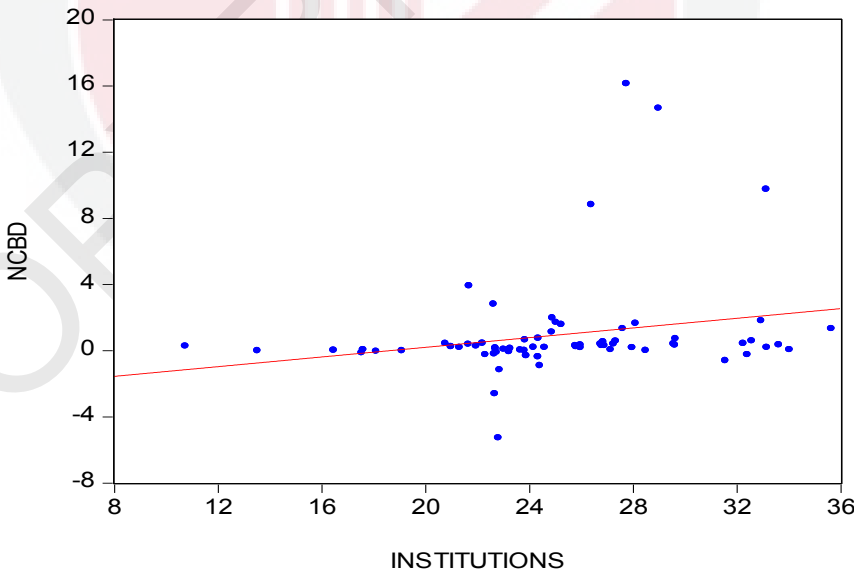

Figure 1.5. Effect of Institutional Quality on Non-Cyclical Budget Deficit for 71 Developing Countries
(Sources: Non-Cyclically Budget Deficit from International Monetary Fund and Institutional Quality from Political Risk Services Group)

However, it materializes a contradiction in terms of theoretical perception between budget deficit and debt, which appears to be positive related despites of institutional framework. Hence, the role of institutional quality should be further explored as it may

help to solve the ambiguity in policy implementations under the study of fiscal consolidation.

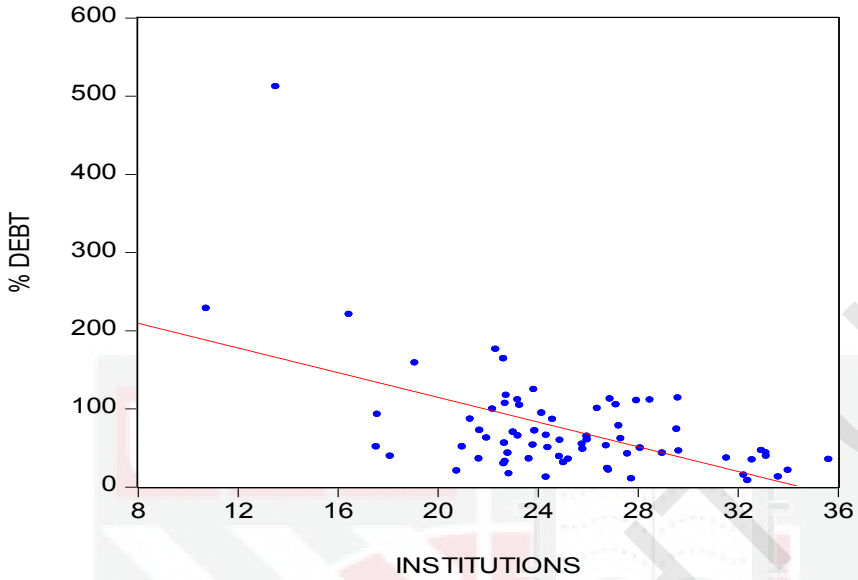

Figure 1.6. Effect of Institutional Quality on Debt-to-GDP Ratio for 71 Developing Countries
(Sources: Debt-to-GDP Ratio from International Monetary Fund and Institutional Quality from Political Risk Services Group)

1.4 Institutional Transmission Mechanism on Fiscal Consolidation and Debt-Growth Nexus

As discussed earlier, quality of institutions may affect the successfulness of fiscal consolidation process, but how it effects transmitted to the progress of consolidation may not clearly define. Based on theoretical points of view, better institutional quality may help to enhance the credibility of governance, policy transparency, and enforceability which make fiscal policy rules become more effective and produce better outcomes. In other words, better institutions may guarantee sound fiscal policies in controlling the budgetary conditions of a country from highly deficits. The increasing probability of fiscal distress can be significantly avoided with high quality of institutions. This is because strong institutions may aid in fostering higher revenues through an efficient and effective tax system where agents trust that taxes are collected and used-unfairly and wisely ways. Thus, priory reformation in fiscal institutions which associates with better fiscal performance would strengthen the credibility of fiscal adjustment.

Besides, the institutional quality which proxies by law and order, democratic accountability, bureaucratic quality, government stability, and corruption may also help to improve the successfulness of fiscal consolidation. Better rule of law may limit the power of rent-seeking vest interests, such as subsidies and transfers as suggested

by Alesina and Perotti (1995) and Gupta et al. (2002),[12] on the total government expenditures which may circumvent the occurrence of deficit bias (Lane and Tornell, 1998). Consequently, with weak institutions, the cut back of government spending on vested interests may not help to mitigate the situation of fiscal deficit but further impose negative burden on budgetary condition.

Nevertheless, in the cases of developing countries which provide higher level of transfers and subsidies as to improve their nations' welfare may increase the probability of successful fiscal adjustment through legislative majority. A stable government majority may effectively control over the fiscal decisions and its importance on consolidation progress through government credibility. The study of Bohn and Inman (1996) has proved that the stringency of balanced-budget rules able to improve the fiscal policy discipline. This may affect the chances of successful fiscal efforts. Conversely, coalition or minority governments are prone to fiscal indiscipline due to short tenures and the difficulty of reaching an agreement among different political parties. Hence, quality of institutions can be improved with the operation of independent fiscal agencies in the assessment of fiscal development while fiscal policies are in-charged by the elected representatives and this may aid in enhancing the credibility of fiscal consolidation.

Moreover, a credible government may also ensure the effectiveness use of government resources, implementation of sound microeconomic policies as well as reducing the susceptibility of corruptions and abuses which aid in controlling the expenses of government. Low corruption as one of the proxy of better institutions may able to perform a lasting structural fiscal reform and positively enhance the probability of continuing fiscal consolidation spell. Additionally, effective structural reforms can support fiscal adjustment efforts through revenue mobilization which may help to restrain the rise in long-term interest rates and debt servicing costs (IMF, 2009b). The reformations can be efficiently implemented with democratic accountability especially during the time of uncertainty where consensus for a prolonged fiscal effort is failed to form. In advances countries, strong democratic institutions may encourage sound fiscal policies in determining the overall macroeconomic stability and have positive and robust effects in avoiding the situation of fiscal difficulties.

However, strong institutions are generally imposing greater rigor on fiscal policy which may constrain the actions of government in times of fiscal duress and impeding the fiscal adjustment processes. This is because both explicit and implicit constraints on fiscal policies may result in less volatility in terms of discretionary changes in fiscal policy. Thus, weak institutional frameworks which may provide authorities with more flexibility in the adoption of unorthodox policies where governments are obliged to break contract, imposed legal restriction, and violated property rights to accomplish large and sustainable fiscal adjustment during times of crisis. In other words, governments are allowed to take drastic actions especially in fiscally vulnerable

[12] In economies transition, subsidies, tax breaks and directed credits which introduced by the authorities are exploited by vested interests at the expenses of macroeconomic stability.

countries as to ensure implementations of essential fiscal measures without influencing the integrity of their legal and democratic frameworks.

Alternatively, institutional constraints may also affect the likelihood of successful implementation of a public austerity program and determine whether a country might fall into situations of fiscal distress in the first place or not. This also can be assists through the clarification of contingent policies as well as the transparency of the institutions. This is supported by Kilpatrick (2001) who finds that the trade-off between credibility and flexibility can be alleviated by improving the transparency of the budgetary process. Increases in fiscal transparency may provide a way for different agents with more information about the intention behind a fiscal policy and the actual action taken as well as the immediate and long-term consequences of specific policies which may ease the task in forecasting fiscal policies, attributing fiscal outcomes to policies, and also fiscal policies to political decisions. Hence, the investor uncertainty in times of crisis and the risk of encountering institutional resistance will reduce with a clear disclosure of government actions in necessary fiscal adjustment efforts.

On the other hand, Alt and Lassen (2006) and Fatàs (2009) show that transparency may help to reduce the level of debt. This is because more transparency can help to lower the budget deficit by easily control the spending of government, thus the needs of borrowing to finance over excessive spending can be eliminated. The level of debt accumulation may also provide a further dimension of fiscal vulnerability, thus reduction in the level of debt may help to sustain fiscal stabilities. Besides, the burden of debt services may squeeze the discretionary spending to a low level and making additional cuts in government outlay politically difficult. Moreover, good fiscal governance and the existence of constraints as discussed earlier may also aid in reducing the level of debt with restricted controls on government fiscal budgetary as well as the restriction in debt-borrowing rules.

Conclusively, there are clear channels on how the quality of institutions influents the fiscal consolidation progress in reducing the level of budget deficit as well as debt accumulation which may significantly affect the growth performance of a country. Strong and credible institutions can enhance the fiscal disciplines and effectively increase the probability of achieving successful fiscal consolidation. However, in the time of crisis, weak institutional quality which may provide flexibility is proven to be more efficient in consolidation progress due to the volatility of policy implementations.

1.5 Problem Statement

Since the global financial crisis in 2008, the US and the Eurozone seem to be either in the middle of, or on the verge of, major sovereign debt crisis which leads to the downgrading of the US credit rating from AAA to AA+[13] with a negative outlook for

[13] A credit rating is issued by a credit rating agency (CRA) to justify the debt repayment ability of each country.

the first time in August 5, 2011. This may significant affect most of the developing countries which economies are highly correlated to the economy-leading country such as the US in terms of financial aid especially in sub-Saharan Africa.[14] Besides, the 2008 crisis also lead to a rapid spread of financial turmoil to developing countries via their closely interconnected financial system as well as trading activities. For example, there are severe impacts on exports and capital flows for commodity-based countries namely Congo Republic, Guinea, Gabon, and Madagascar who are relying on developed countries on their commodities exportations such as oil and textiles to cover their domestic countries expenses. On the other hand, the capital inflows in developing countries are also affected especially for oil industries and mineral producing countries such as Cameroon, Guinea, Nigeria, Mauritania, Zambia, Tanzania, and Togo. This may put a lot of pressures on developing countries in terms of losing financial aids, reducing exporting revenues, and disruptions of capital flows which may worsen their budgetary conditions as well as debt accumulation and eventually lead to the path of easy defaulting and declaration of bankruptcy.

The country which faces bankruptcy may need to encounter several critical problems such as stock market crashes and credits seize-up, failure of all financial institutions, end of all government funded programs, mass rioting due to failure of daily demand fulfilment, changes of democracy system to dictatorship, and hyperinflation. All these consequences of country bankruptcy may further drive down the growth and development of the country and trapped this country in economic distress situation for a long period. Hence, precautionary move like fiscal consolidation to avoid the rise in debt accumulation to the ceiling is a wiser decision compare to recovery steps after the fall into bankruptcy.[15] This is because the chances for a country to move on in the path of growth is more rigid if the country goes bankrupt, thus precautionary is better than solution. As to maintain a good fiscal consolidation status, good institutions may play an important role as stated by Mulas-Granados (2003).

For example, a better law and order may help to evaluate the system of law, conventions, and behaviors that support market economies, encourage investments, and protect public goods which aid in fostering a more efficient public sector, minimizing corruption, and translating it into better use of revenues and increased tax collections. This may efficiently improve the budgetary conditions as well as the debt accumulation of a country. Moreover, quality of democratic institutions and sound bureaucracies may help to lower market risk and the needs of adjustment especially in emerging-market countries. However, the scope regarding these issues in literature is broad and lack of unified framework. Besides, the institutional quality are playing

[14] Since 1970, the world's rich countries agreed to give 0.7% of their gross national income (GNI) as official international development aid to help the poor countries for development. The aid is come from the Development Assistance Committee (DAC) which consists of 22 members of the OECD.

[15] There is no much example of developing countries efforts on fiscal consolidation progress because most of the developing countries with high debts may rely on the financial and debt aids from developed countries to reduce their debt burdens especially during the non-crisis periods. However, the developing countries might face severe bankruptcy problems when developed countries reduce their financial aids during a crisis such as the global financial crisis in 2008. Hence, developing countries may no longer rely on the aids and should prepare themselves on securing their budgetary as well as debt level in order to avoid the verge of bankruptcy. Thus, fiscal consolidation programs are necessary to developing countries to reduce their dependency on developed countries.

different roles in different country regimes such as developed and developing countries, hence, the research question here is what is the role plays by institutional quality in developing countries in the efforts to attain successful fiscal consolidation?

Secondly, the successful fiscal consolidation episodes may efficiently reduce the deficit budgetary account as well as the debt accumulation. This may enhance their credit ratings and accessibility to more financing sources with lower interest rates which further encourage the implementation of growth development activities. In other words, the reduction of debt accumulation as a result from successful consolidation is closely related to the economic growth of a country. In the study of Reinhart and Rogoff (2008) on the debt threshold estimation, they shows a simple correlation of high debt level with slower growth, but they did not provide any evidence on causality where economic downturn is more likely leads to higher debt level. Hence, this leads to a question of whether the causality relations between debt and growth exist? If they are existed, is debt accumulation will cause economic growth or the economic growth will cause debt accumulation? These questions are still remained ambiguous and may bring significant impact on the overall development of a country in terms of policy implementations. This is because policymakers are concerned on the implementations of pre-mature tightening due to the level of debt which might defeat the growth of a country. This is crucial as different policies adoption inspired by the way of causation to ensure the righteous acts.

On the other hand, institutional quality is considered has a significant impact on growth as suggested by La Porta et al. (1997, 1998) and Acemoglu et al. (2001, 2002) while it also may influence the performance of fiscal consolidation, hence the causality effects between debt and growth might also be affected by the role plays by institutional quality in developing countries. Thus, policymakers may interest to know the causality effect between institutions and growth as well as institutions and debt to aid in their policymaking decisions.

Lastly, there are several arguments on the complicated dynamic relations found by some researchers regarding the issues of debt and growth. As documented in the literatures, the relationships in the debt-growth nexus studies have provided ambiguous results on whether debt has either positively or negatively influences on growth. Hence, the study of threshold effect on debt-growth analysis which has been popularized by Reinhart and Rogoff (2008) should be given much attention. In their published findings, they suggest that the appropriate threshold for debt as to bring negative effects on growth is the exceeding of 90 percentage point in debt while below the threshold, debts may bring positive effects on growth. This is because sufficient borrowing for a country may allow more fiscal expansionary policies to be implemented to promote higher growth. However, over-borrowing might increase the burden of a country in terms of debt services and repayment. Hence, this may bring deleterious effects on growth. Nevertheless, the estimated threshold mentioned above is more relevant to developed countries such as Organization for Economic Co-operation and Development (OECD) countries and starts to be questioned in the study of developing countries.

Additionally, study from Caner, Grennes and Köhler-Geib (2010) on a selected 99 samples of developing and developed countries reports a threshold of 77 percentage point of public debt where beyond this threshold will cost 0.017 percentage point of annual real growth with an additional percentage point of debt. A smaller threshold is typically found for emerging market with 64 percentage point of debt. This indicates developed countries able to sustain growth with a larger burden of debt compare to the less developed or emerging countries. Hence, it is worth to take note on the analysis of threshold with cautionary as this may help in the decision of initiation of fiscal consolidation process while sustaining the economic growth simultaneously.

However, there is no general consensus benchmark on the tipping point of the debt level especially for developing countries. Hence, here rises a question on what is the suitable benchmark of debt threshold for developing countries as a signal on their debt accumulation? Furthermore, existing literature regarding the study on threshold estimations on growth is employed a non-dynamic threshold model such as Reinhart and Rogoff (2010), Hansen (1996, 2000), and Caner et al. (2010) where the endogeneity of initial income is ignored in their estimations. This might lead to biased estimates and misleading conclusions.

1.6 Objective of the Study

1.6.1 General Objective

The general objective of this study is to examine the effect of institutional quality on fiscal consolidation and it influences on debt-growth nexus in developing countries.

1.6.2 Specific Objectives

- To examine the effect of institutional quality on the fiscal consolidation program.
- To examine the causality effect between debt level and economic growth with the inference of institutional quality.
- To identify the threshold level of debt-to-GDP ratio in developing countries.

1.7 Significance of the Study

Even though numerous studies (Lavigne, 2006; Tagkalakis, 2007; Ardagna, 2003, 2007; Fatàs, 2009) have been conducted to investigate fiscal consolidation since last decade, most of them are focused on OECD countries. However, the issues of debt

accumulation in developing countries have becoming more crucial as the ability of these countries in borrowing is increasing over time. Besides, most of the existing studies are mainly focused on the determinants of the successfulness of fiscal consolidation such as initial conditions, composition of consolidation, and the size of consolidation. Nevertheless, the role of the institutional reforms on fiscal consolidation is not that fully developed. It is crucial to investigate the effect of institutional quality on the effort to achieve successful fiscal adjustment in developing countries. Hence, in this study, a more comprehensive measure of institutional quality with the aggregation of five major indicator namely corruption, law and order, bureaucratic quality, government stability, and democratic accountability is used to capture the overall effect of institutional quality on fiscal consolidation efforts.

First of all, the main focus in this study is on the endeavor of institutional reform to achieve successful fiscal adjustment. Firstly, a joint-testing of all institutional factors is conducted to scrutinize the overall effect of institutions to successful fiscal consolidation. This may provide a more general and comprehensive view of the role of institutions in developing countries and policymakers are provided some insight on the importance of well-tuning their institutional level to aid in reducing budgetary as well as debt level in developing countries. After that, each of the institutional factors is tested separately as to refine the recommendations regarding the area of institutional vulnerability that should be addressed solely as part of fiscal consolidation strategies. Thus, the role of institutional reform in reducing the consequences of high budget deficit and high debt among developing countries is more visible. Policymakers can able to detect and focus on a specific area on institutional reforms in order to secure their budgetary and debt conditions effectively. In other words, this may provide a clear guidance for policymakers in their policy designations especially regarding the fiscal conditions.

Secondly, the issues of debt on growth have been gaining much attention recently especially the study by Reinhart and Rogoff (2008) on their paper entitled "Growth in a Time of Debt" (GITD). However, the causality relations between debt and growth are still not well-discussed. Thus, this study intends to fill the gap in the literature by analyzing the causality relations between debt and growth with the inference of institutions variable. This might aid in the process of policy-making because the way of causation between debt and growth might inspire policymakers on the choice of policy implementation in order to well-turn the economy conditions of a country. For example, if debt causes growth, policymakers may only need to focus on their debt managements either on restraining or requiring debt in order to attain their economic policy goals. While if growth causes debt, policymakers should focus on their fiscal policy especially on fiscal expenditures in order to avoid over-accumulates of debt due to their goals of economy development. Hence, these may provide a clear guidance to policymakers in terms of policy implementations.

Besides, this study is different from the existing studies due to the inclusion of institutions indicator to examine the influence of institutional quality on the causation between debt and growth in developing countries. This is because the role institutional quality is considered important in influencing the economic growth as well as the

accumulation of debt level in developing countries. For example, better institutional quality may enhance the credibility of the developing countries in terms of business operations and management which build up the confidence of creditors to lend to these countries. Thus, with better financial availability, these countries may adopt various expansionary policies to enhance their growth. On the other hand, better institutions may also lead to better growth developments which strengthen the economy conditions in developing countries, hence, these countries may reduce their dependency on outside financing sources.

Lastly, the existing studies on fiscal consolidation and debt-growth nexus are mainly focused on developed countries such as OECD countries, while researchers have not treated developing countries in much detail in both issues. It is acknowledgeable that the structure of developed countries is significantly different from the developing countries. Hence, the debt threshold level found by Reinhart and Rogoff (2008) in developed countries might not be applicable to developing countries as a benchmark due to the difference in economic and political structures. Thus, this study provides threshold level of debt for developing countries in the study of debt-growth nexus. In addition, the application of dynamic threshold modeling on the debt-growth nexus provides more reliable debt threshold estimation. This is crucial in order to give a clear insight to policymakers with respect to debt accumulation in developing countries to avoid pre-mature tightening policies.

1.8 Organization of the Study

The remainder of the study is organized as follows. Chapter 2 reviews the existing literature. Chapter 3 focuses on the effect of institutional quality on fiscal consolidation progress. Chapter 4 discusses the causation effect between debt-growth nexus. Chapter 5 shows the debt threshold estimation on debt-growth model and Chapter 6 concludes and summarizes the empirical results with its implications and suggestions for further studies in this area.

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APPENDICES

Table 2 List of Country Sample

Middle-Income (Emerging Countries)	Low-Income
Angola	Albania
Azerbaijan	Armenia
Belarus	Bolivia
Botswana	Burkina Faso
Bulgaria	Cameroon
China	Congo, Dem. Rep
Colombo	Congo, Rep.
Costa Rica	Cote d'lvoire
Croatia	Egypt, Arab Rep.
Dominican Rep.	El Salvador
Ecuador	Ethiopia
Gabon	Gambia, The
Iran, Islamic Rep.	Ghana
Jamaica	Guatemala
Jordan	Guinea
Latvia	Guinea-Bissau
Lebanon	Guyana
Libya	Honduras
Lithuania	Kenya
Malaysia	Liberia
Mexico	Madagascar
Namibia	Malawi
Panama	Mali
Peru	Morocco
Poland	Mozambique
South Africa	Nicaragua
Suriname	Niger
Thailand	Pakistan
Tunisia	Paraguay
Uruguay	Philippines
Venezuela, RB.	Senegal
	Sierra Leone
	Syrian Arab Rep.
	Tanzania
	Togo
	Uganda
	Ukraine
	Vietnam
	Yemen, Rep.
	Zambia

Source: The World Bank Classification.

Table 3 Sample of Developing Countries with Average Non-Cyclical Budget Deficit and Average Debt-to-GDP Ratio Data from 1980 to 2008

Country	T	NCBD mean	DEBT mean	Country	T	NCBD mean	DEBT mean
Albania	29	0.34	64.69	Liberia	29	0.01	511.97
Angola	29	-2.60	56.18	Libya	29	-5.27	43.11
Armenia	29	0.16	32.36	Lithuania	29	0.44	15.00
Azerbaijan	29	-1.16	16.86	Madagascar	29	0.18	110.39
Belarus	29	-0.36	12.51	Malawi	29	0.13	104.42
Bolivia	29	0.28	62.33	Malaysia	29	1.80	46.39
Botswana	29	-0.24	8.02	Mali	29	-0.13	51.39
Bulgaria	29	-0.61	36.97	Mexico	29	14.65	43.21
Burkina Faso	29	0.05	35.82	Morocco	29	0.41	73.77
Cameroon	29	-0.90	50.23	Mozambique	29	0.19	86.18
China	29	16.14	10.41	Namibia	29	0.05	21.16
Colombia	29	1.58	35.30	Nicaragua	29	0.06	105.08
Congo, Dem. Rep.	29	0.27	228.39	Niger	29	-0.05	65.50
Congo, Rep.	29	-0.24	176.12	Pakistan	29	3.93	72.34
Costa Rica	29	0.20	39.05	Panama	29	0.08	70.00
Cote d'lvoire	29	0.21	94.58	Paraguay	29	-0.04	39.09
Croatia	29	1.33	35.04	Peru	29	-0.19	29.70
Dominican Rep.	29	0.30	23.30	Philippines	29	1.98	59.56
Ecuador	29	1.65	49.66	Poland	29	9.76	43.57
Egypt, Arab Rep.	29	8.83	100.28	Senegal	29	0.25	48.30
El Salvador	29	0.38	36.09	Sierra Leone	29	0.00	158.39
Ethiopia	29	0.46	99.38	South Africa	29	0.59	34.51
Gabon	29	-0.30	71.70	Suriname	29	0.02	53.50
Gambia, The	29	0.02	111.03	Syrian Arab Rep.	29	0.66	124.34
Ghana	29	0.76	65.84	Tanzania	29	0.18	60.33
Guatemala	29	0.44	20.40	Thailand	29	0.73	45.97
Guinea	29	0.12	106.79	Togo	29	0.05	92.81
Guinea-Bissau	29	0.03	220.41	Tunisia	29	0.57	61.63
Guyana	29	0.06	111.35	Uganda	29	0.19	86.53
Honduras	29	0.25	51.29	Ukraine	29	1.71	31.15
Iran, Islamic Rep.	29	0.54	21.34	Uruguay	29	0.40	78.20
Jamaica	29	0.32	112.55	Venezuela, RB.	29	1.32	42.44
Jordan	29	0.34	113.75	Vietnam	29	1.12	38.79
Kenya	29	0.40	52.59	Yemen, Rep.	29	0.30	54.66
Latvia	29	0.36	12.75	Zambia	29	-0.09	117.27
Lebanon	29	2.81	164.18				

Source: International Monetary Fund.

Table 4 Sample of Developing Countries for Debt Threshold Estimation

Country	T	% DEBT mean	% RGDPCG mean	Country	T	% DEBT mean	% RGDPCG mean
Albania	5	66.67	5.96	Liberia	1	511.97	2.97
Angola	4	61.74	7.65	Libya	3	28.43	2.15
Armenia	4	33.77	9.75	Lithuania	4	15.54	6.66
Azerbaijan	4	17.11	13.02	Madagascar	7	107.77	-0.19
Belarus	2	12.34	10.33	Malawi	3	103.72	1.45
Bolivia	4	61.16	1.73	Malaysia	7	47.62	3.93
Botswana	4	7.91	3.74	Mali	4	57.83	2.39
Bulgaria	3	34.76	6.38	Mexico	5	43.23	1.35
Burkina Faso	3	35.59	2.36	Morocco	7	73.08	2.12
Cameroon	4	54.58	1.43	Mozambique	4	85.96	4.88
China	9	10.39	8.84	Namibia	6	20.77	1.99
Colombia	5	34.34	1.75	Nicaragua	2	105.08	2.54
Congo, Dem. Rep.	4	284.33	-0.25	Niger	5	62.13	0.46
Congo, Rep.	7	169.71	-0.30	Pakistan	6	72.15	1.96
Costa Rica	4	38.52	3.19	Panama	7	72.21	3.78
Cote d'lvoire	5	96.83	-0.09	Paraguay	7	39.34	0.76
Croatia	3	34.66	4.13	Peru	2	30.57	6.52
Dominican Rep.	4	22.20	4.01	Philippines	7	58.73	1.70
Ecuador	3	47.44	3.46	Poland	5	43.73	4.85
Egypt, Arab Rep.	3	98.97	3.13	Senegal	4	50.70	1.71
El Salvador	6	36.27	3.01	Sierra Leone	4	150.08	3.69
Ethiopia	6	95.84	3.29	South Africa	4	35.14	2.16
Gabon	7	72.04	-0.08	Suriname	7	54.45	1.63
Gambia, The	4	106.75	1.03	Syrian Arab Rep.	7	122.64	1.68
Ghana	7	62.59	2.36	Tanzania	3	59.17	4.10
Guatemala	4	20.20	1.43	Thailand	5	44.22	2.46
Guinea	7	105.66	0.80	Togo	3	92.71	0.08
Guinea-Bissau	4	215.85	-2.71	Tunisia	7	61.24	3.36
Guyana	5	110.49	1.37	Uganda	5	82.54	4.02
Honduras	4	52.16	2.19	Ukraine	5	30.00	3.18
Iran, Islamic Rep.	4	20.78	3.39	Uruguay	3	76.45	2.98
Jamaica	4	111.14	0.85	Venezuela, RB.	6	44.90	1.01
Jordan	7	116.00	1.37	Vietnam	3	39.34	6.13
Kenya	4	52.05	0.97	Yemen, Rep.	4	55.32	0.92
Latvia	4	12.68	6.90	Zambia	3	107.16	2.76
Lebanon	4	160.97	2.68				

Source: International Monetary Fund and World Development Indicator.

BIODATA OF STUDENT

The student Ng Chee Hung was born in Sandakan, Sabah on 4th July 1984. She has finished her Bachelor Degree in Economics (Financial) with first class degree at Universiti Putra Malaysia in 2007. In year 2008, she continues her study on Master of Economics at the same university and successfully obtained her Master degree in 2009. In the year of her study on Master degree, she has worked as Research Assistant under Dr. Marial Yol and also part-time tutoring in Universiti Putra Malaysia. After she obtained her Master degree, she has been contributed her services at Universiti Tunku Abdul Rahman as lecturer for one and half years before continues pursuing her Degree of Philosophy in Economics at Universiti Putra Malaysia.

After enrolled as a PhD student in Universiti Putra Malaysia, she successfully obtained a Graduate Research Fellowship sponsorship for two and a half years offered by Graduate School of Studies Universiti Putra Malaysia. During this period, she has given chances to participate in the organization of faculty activities such as the Colloquium for Graduate Students at Faculty of Economics and Management, Universiti Putra Malaysia. Then, she started on her part-time lecturing and tutoring in Universiti College Tunku Abdul Rahman upon the end of the Graduate Research Fellowship contract.

During her years of study, she has attended two conferences such as National Research and Innovation Conference for Graduate Students in Social Sciences organized by Universiti Putra Malaysia and International Conference on Economics and Business Research organized by Universiti Teknologi MARA Kedah Malaysia as a paper presenter. Besides, she also took part in the Three Minutes Thesis Competition organized by Faculty of Economics and Management as one of the candidates. Both paper presented on the conferences and the Three Minutes Thesis Competition were part of this thesis.