



**EFFECTS OF FINANCIAL DEVELOPMENT, INSTITUTION AND
FINANCIAL INCLUSION ON SECTORAL OUTPUT, FIRM
AND INCOME INEQUALITY**

By

LEE HUAY HUAY

**Thesis Submitted to the School of Graduate Studies,
Universiti Putra Malaysia, in Fulfilment of the
Requirement for the Degree of Doctor of Philosophy**

May 2020

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment
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May 2020

Chair: Law Siong Hook, PhD
School: Business and Economics

This thesis combines three empirical and theoretical chapters on the relationship between various microeconomic and macroeconomic variables and aims to answer three questions: First, are financial development and institution significant in determining sectoral output? Second, are financial development and institution significant in influencing firm's external financing or growth opportunities in determining firm growth? Finally, what are the relationship between financial inclusion, financial developments, financial institutions and income inequality? In general, this study aims to examine the effects of financial development and institutions on sectoral output, firm and income inequality.

The first objective of this thesis is motivated by theoretical and empirical arguments (Robinson, 1952 and Lucas, 1998) amongst the economists of the earlier school of thought asserts that financial development plays a limited role in promoting development of real activity. In contrary, Bagehot (1873), Schumpeter (1911), MacKinnon (1973) and Levine (1997) firmly support the causality linkages from finance to economic development and in later stage only then financial development leads on to growth. In more specific, this study first using dynamic panel system generalized method of moments (GMM) estimation (Blundell and Bond, 1998) to test the annual data covering from 1996 to 2013 for 74 countries - services sector, manufacturing sector and agriculture sector value-added as dependent variable to determine if financial development and institutions play a role in promoting sectoral output. A dynamic system GMM approach is employed to address the endogeneity and serial correlation concern. Findings suggested financial development positively promoting service sector in all countries of different income levels except for upper middle income countries. Institutions are found to have positive role in promoting services sector except in high income level countries. In contrast, financial development and institutions are negatively linked to agricultural sector growth,

suggesting possibility of crowding-out effect. The results for manufacturing sector are mixed and inconclusive across countries at different income levels. The policy implications are rather clear, government or policymakers must uphold and strengthen financial structure and development of institutions in order to effectively channel finance resources to productive sectors and raising their sectors' value-added in countries experiencing greater competition for funds for more expansion and growth.

The second objective is motivated by Modigliani and Miller's (1958) financing constraints theory (FCT) and others like Rajan and Zingales (1998), Fisman and Love (2007), and Manganelli and Popov (2013) also sharing similar enthusiasm that firm growth are dependence on access to external finance but subject to macroeconomic environment. Using firm-level data from firms listed in Bursa Malaysia for 2006-2014 period, the study applies system GMM to estimate how a country's embedded financial development and institutional quality impacts the linkage of firms' external financial dependence and growth opportunities to firm growth. Firms which have greater growth opportunities actually grow faster with better financial development with embedded good institutions in the case of Malaysia. So findings concluded that firms experience higher growth through better allocation of finance since they have good potential to grow. This has shed important lights to policymakers in formulating the design of many financial development policies across a wide set of countries aimed at fostering financial markets and banking services sector to provide the vital sources of external financing needed by corporations in financing their investments. A well-functioning financial systems is a necessary condition for promoting firm growth.

Finally, the third of objective of the study is motivated by Law et al. (2014) that noted financial development decreasing income inequality after certain threshold of institutional quality and new evidence of the role financial inclusion as the main key in reducing income inequality (Garcia-Herrero and Turegano, 2015; Park and Mercado, 2015; de Haan and Sturm, 2016) and this study aims to provide some empirical evidence on the relationship between the three variables. Specifically, this study examines using system GMM for 54 countries over the 2004 – 2010 period from the Standardized World Income Inequality Database (SWIID) and also financial inclusion index by Sarma (2008). Financial inclusion directly has narrowing effect on income inequality when their relationship is assumed linear. However, findings significantly have proven existence of nonlinear U-shaped relationship between financial inclusion both in the presence or without the presence of institutions. Summing up, upholding and strengthening the institutions is a necessary condition and should be strongly noted by policy makers who aspire in using financial inclusion as strategy for fighting income inequality.

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

**KESAN PEMBANGUNAN KEWANGAN, INSTITUSI DAN INSKLUSIF
KEWANGAN TERHADAP HASIL SEKTOR, FIRMA
DAN KETIDAKSAMAAN PENDAPATAN**

Oleh

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Tesis ini menggabungkan tiga bab empirikal dan teori mengenai hubungan antara pelbagai pemboleh ubah mikroekonomi dan makroekonomi yang bertujuan untuk menjawab tiga soalan: Pertama, adakah pembangunan kewangan dan institusi penting dalam menentukan pengeluaran sektoral? Kedua, adakah pembangunan kewangan dan institusi penting dalam mempengaruhi pembiayaan luaran atau peluang pertumbuhan firma dalam menentukan pertumbuhan firma? Akhir sekali, apakah hubungan antara inklusi kewangan, institusi, dan ketidaksamaan pendapatan? Secara umum, kajian ini bertujuan untuk mengkaji kesan pembangunan kewangan dan institusi terhadap pengeluaran sektoral, firma dan ketidaksamaan pendapatan.

Objektif pertama tesis ini didorong oleh hujah teori dan empirikal (Robinson, 1952 dan Lucas, 1998) di kalangan ahli ekonomi sekolah pemikiran terdahulu menegaskan bahawa pembangunan kewangan memainkan peranan terhad dalam mempromosikan pengembangan aktiviti sebenar. Sebaliknya, Bagehot (1873), Schumpeter (1911), MacKinnon (1973) dan Levine (1997) dengan tegas menyokong hubungan sebab-akibat dari kewangan dengan pembangunan ekonomi dan pada tahap kemudian barulah pembangunan kewangan menuju ke arah pertumbuhan. Secara lebih spesifik, kajian ini pertama kali menggunakan kaedah dinamik sistem generalisasi momen anggaran GMM (Blundell dan Bond, 1998) untuk menguji data tahunan yang merangkumi tahun 1996 hingga 2013 untuk 74 buah negara - sektor perkhidmatan, sektor pembuatan dan sektor pertanian nilai tambah sebagai pemboleh ubah bersandar untuk menentukan sama ada pembangunan kewangan dan institusi berperanan dalam mempromosikan pengeluaran sektoral. Hasil kajian menunjukkan perkembangan kewangan mempromosikan sektor perkhidmatan secara positif di semua negara dengan tahap pendapatan berbeza kecuali untuk negara berpendapatan sederhana tinggi. Institusi didapati berperanan positif dalam mempromosikan sektor perkhidmatan kecuali di negara-negara berpendapatan tinggi. Sebaliknya,

pembangunan dan institusi kewangan terkait secara negatif dengan pertumbuhan sektor pertanian, yang menunjukkan kemungkinan berlakunya peningkatan. Hasil untuk sektor perkilangan bercampur dan tidak meyakinkan di kalangan negara dengan tahap pendapatan yang berbeza. Implikasi dasar agak jelas, kerajaan atau pembuat dasar harus memperkuat struktur kewangan dan pengembangan institusi agar dapat menyalurkan sumber pembiayaan kewangan dengan lebih berkesan ke sektor produktif, justera meningkatkan nilai tambah sektor ekonomi bersaing mendapatkan dana kewangan bertujuan memesatkan lagi pertumbuhan sektor ekonomi.

Objektif kedua dimotivasikan oleh teori kekangan pembiayaan Modigliani dan Miller's (1958) dan lain-lain seperti Rajan dan Zingales (1998), Fisman dan Love (2007), dan Manganelli dan Popov (2013) juga berkongsi pemikiran yang sama bahawa pertumbuhan firma bergantung pada akses kewangan luaran tetapi tertakluk kepada persekitaran ekonomi makro. Dengan menggunakan data mikro dari firma yang disenaraikan di Bursa Malaysia untuk periode 2006-2014, kajian tersebut menganggarkan bagaimana pengembangan kewangan dan kualiti institusi yang tersekat mempengaruhi hubungan ketergantungan kewangan luaran dan peluang pertumbuhan firma dengan pertumbuhan firma. Firma yang mempunyai peluang pertumbuhan yang lebih pesat sebenarnya berkembang lebih pantas dengan perkembangan kewangan yang lebih baik dengan institusi yang baik dalam Malaysia. Oleh itu, hasil kajian membuat kesimpulan bahawa firma akan mengalami pertumbuhan yang lebih pesat dengan peruntukan kewangan yang lebih baik kerana meningkatkan potensi kemajuan. Ini memberi isyarat penting kepada para pembuat dasar dalam membuat perancangan bijak dalam pengembangan kewangan di negara-negara yang bertujuan untuk memupuk pasaran kewangan dan sektor perkhidmatan perbankan untuk menyediakan sumber penting pembiayaan luaran yang diperlukan oleh firma dalam membiayai pelaburan mereka. Sistem kewangan yang berfungsi dengan baik adalah syarat yang diperlukan untuk mendorong pertumbuhan firma.

Akhir sekali, objektif kajian yang ketiga didorong oleh Law et al. (2014) yang mencatat perkembangan kewangan mengurangkan ketidaksamaan pendapatan setelah tahap kualiti institusi tertentu dan bukti baharu mengenai peranan penyertaan kewangan sebagai kunci utama dalam mengurangkan ketaksamaan pendapatan (Garcia-Herrero dan Turegano, 2015; Park dan Mercado, 2015; de Haan dan Sturm, 2016) dan kajian ini bertujuan untuk memberikan beberapa bukti empirikal mengenai hubungan antara ketiga-tiga pemboleh ubah tersebut. Secara khusus, kajian ini menguji menggunakan 54 negara dalam tempoh 2004 - 2010 menggunakan Pangkalan Data Ketidaksamaan Pendapatan Dunia Standardisasi (SWIID) dan indeks inklusi kewangan oleh Sarma (2008). Inklusi kewangan secara langsung mempunyai kesan pengurangan ketidaksamaan pendapatan yang tidak seimbang apabila hubungan mereka dianggap mempunyai hubungan linear. Walau bagaimanapun, penemuan kajian telah membuktikan wujudnya hubungan ketidaksamaan pendapatan berbentuk U-tidak-linear antara inklusi kewangan baik di hadapan atau tanpa kehadiran institusi yang baik. Kesimpulannya, memperkuat institusi yang baik adalah pra-syarat yang perlu dan harus diperhatikan oleh pembuat dasar yang berhasrat menggunakan inklusi kewangan sebagai strategi untuk memerangi ketidaksamaan pendapatan.

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Lastly, the thesis is dedicated to the loving memories of my late father, Lee Cheng Hai and my late mother, Lim Siyu Kem.

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Sectoral output or sector value added for services is growing steadily but not for manufacturing sector and also agriculture sector. There is great disparity across countries with different income level in services sector value-added where high income countries have highest amount of value-added approximate USD24,000 billion (which represents more than 85% of USD28,000 billion of world services total value added. Middle income countries and low income only contribute the remaining portion of world's total value-added of services sector (which is less than 15% of world total value-added in services sector.

The relationship between services growth and overall economic growth has become stronger in the past two decades as services' average contribution to GDP and value added has increased. Services, with their rising importance in the global economy alongside manufacturing, are becoming more vital in many countries' economic growth according to World Bank (2017) and OECD (2017). It took centuries for the world's economies to shift from agriculture to manufacturing, but the rise of the services sector is occurring more quickly. The global economy is in the midst of a radical shift, with the share of total output or world GDP accounted for by services experiencing a sharp increase in almost all countries (63% of world GDP in 1997 increasing to 69% of world GDP in 2015). Indeed, a few countries, such as India and Sri Lanka, have broken the historical convention by heading straight to services without developing a significant manufacturing sector at all. This growth in services has likely transformed not only the composition of the world's economic production and employment, but potentially global trading patterns over the past few decades.

The service sector makes an important contribution to GDP in most countries, providing jobs, inputs and public services for the economy. Trade in services can improve economic performance and provide a range of traditional and new export opportunities. For example , the service sector in India is growing fast. Services overall have grown at a rate of 6% since 1994. In contrast, manufacturing presence in GDP has remained virtually unchanged since 1970. Manufacturing has grown to become only 22% of the GDP from 15% in the early 1960s.

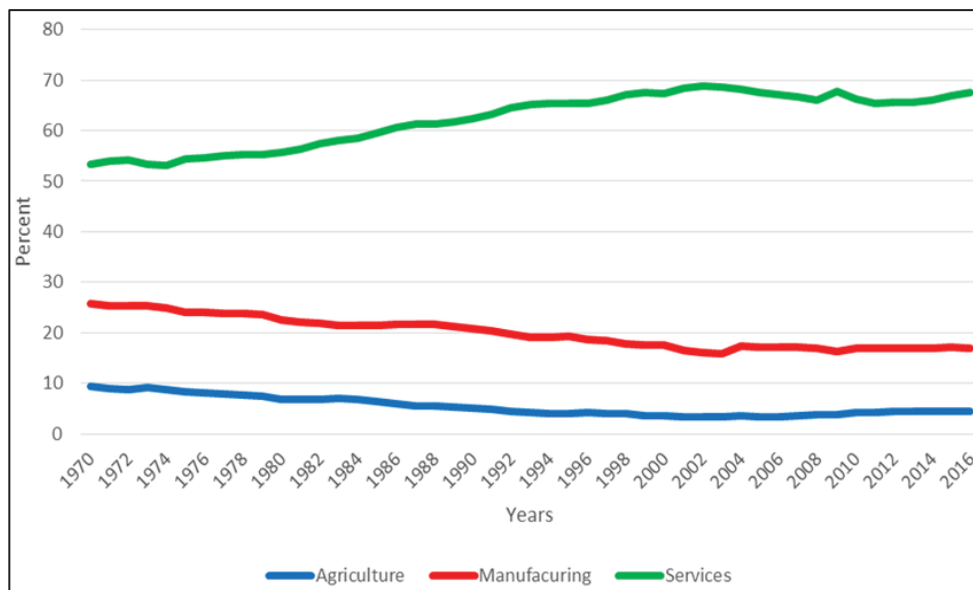


Figure 1.1: Global Trend in Sector Value-Added Shares (% of Total GDP), 1970 - 2016
 (Source: World Bank, 2017).

According to World Bank (2017), the developing and developed economies alike are experiencing a decline of their manufacturing sectors, which are becoming less and less important for national incomes. During the 1980s, industrial production contributes a quarter or more of nation GDPs around the world but that share has been in ongoing decline. Even the share of value added of services sector are growing steadily but not for manufacturing sector as well as agriculture sector which continues declining. It is becoming a major concern of all economies around the world.

As the IMF notes, the loss of manufacturing jobs has been a source of anxiety across developed countries, as many fear the disappearance of well-paying jobs for low and middle-skilled workers and ultimately worsening inequality. President Donald Trump, for instance, has made the attempt to keep manufacturing jobs in the U.S. one of his important agendas.

The loss of manufacturing jobs can in fact have devastating effects on regions that have relied on certain industries for decades. But increased automation also means that many jobs that appear to be “moving overseas” actually never arrive there. In developing economies, workers are shifting from agriculture straight to the services industry, leapfrogging employment in manufacturing.

While a growing services sector shows that a country is growing wealthier, this might not be the case for workers shifting from manufacturing to the services industry – and taking the pay cut that can come with this change. However, whether a worker is employed in the manufacturing, or the services sector is not the biggest predictor of their level of salary. According to the IMF, salary inequality within different

economic sectors has been growing much faster than salary differences in between sectors.

In sum, global declining trend of manufacturing value-added is real and not happening in developed nations such as Germany, Japan, U.K. and U.S. but also in developing nations such as China and India as shown in the figure below. The trend of declining in manufacturing value-added share is still ongoing.

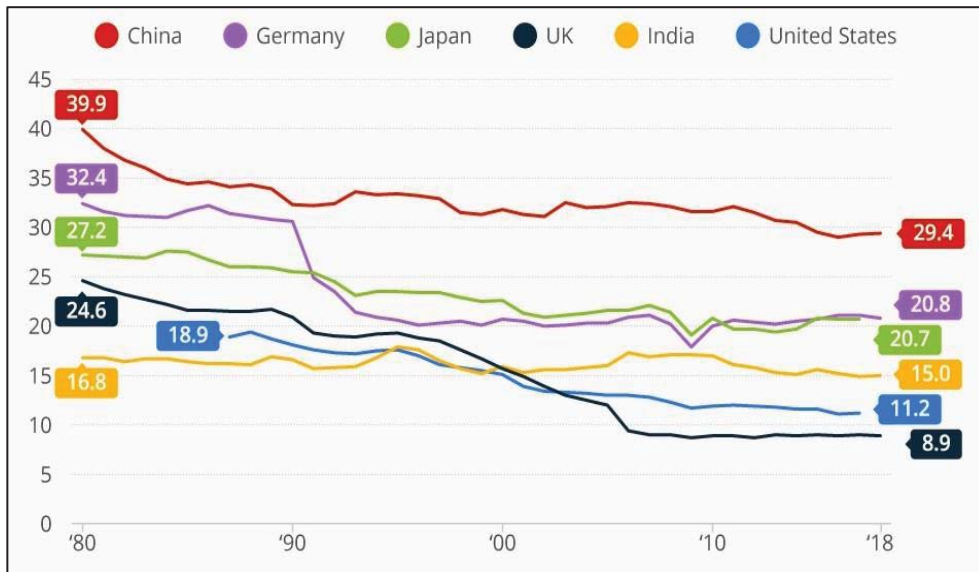


Figure 1.2: Manufacturing Value-Added as a percentage of GDP in Selected Countries, 1980 – 2018
(Source: United Nations and World Bank, 2017).

The Kuala Lumpur Stock Exchange, now the Bursa Malaysia Exchange, is one of the more significant and most active exchanges in Asia with nearly 1,000 companies listed. Stocks, bonds, derivatives, and ETFs trade each day on the exchange. It has a fully automated trading system which launched in late 2008. Its main index is the Kuala Lumpur Composite Index (KLCI), composed of the top 30 companies on the Bursa Malaysia Exchange. Market Capitalization data of Bursa Malaysia was reported at RM1,747.910 bil. in April 2019. This records an increase from the previous number of RM1,729.502 bil. for March 2019. The FKLCI decreased 36 points or 2.15% since the beginning of 2019, according to trading on a contract for difference (CFD) that tracks this benchmark index from Malaysia. Historically, the Malaysia Stock Market (FTSE KLCI) reached an all-time high of 1895.18 in April of 2018 and a record low of 89.04 in April of 1977. In 2018, the top five companies on the Bursa Malaysia Exchange were AMMB Holdings Bhd, Astro Malaysia Holdings Bhd, Axiata Group Bhd, CIMB Group Holdings Bhd, and DiGi.Com.

These listed companies, just like other firm establishments in Malaysia need sources of financing from internal financing to external financing to expand and grow. External financing for firms is definitely not perfect substitute for internal financing,

firms actually experience differences in access to capital markets. Hence, younger or smaller or even large businesses in need of obtaining financing help from other available banking services at affordable costs is challenging. A firm without access to external capital probably never meet the end ability in reaching optimal investment goal and obstructing firm's future growth.

Sustained economic expansion around the world has successfully lifted millions out of poverty. Poverty, however, remains a stubborn challenge across the region with evidence pointing to deteriorating of income inequality around the world in recent year (see Figure 1.3). Across countries, the average level of inequality has not changed: The rises and falls seen in the Gini index in different countries more or less cancel out, the average Gini across countries fell marginally from 39.6 to 38.6. The global income inequality has marginally fall but remain high and persistent in certain parts of South African and Latin American countries. As noted, countries of higher GDP per capita are not necessarily a nation with lower income gap, for instance, in Japan, Singapore, US and among others.

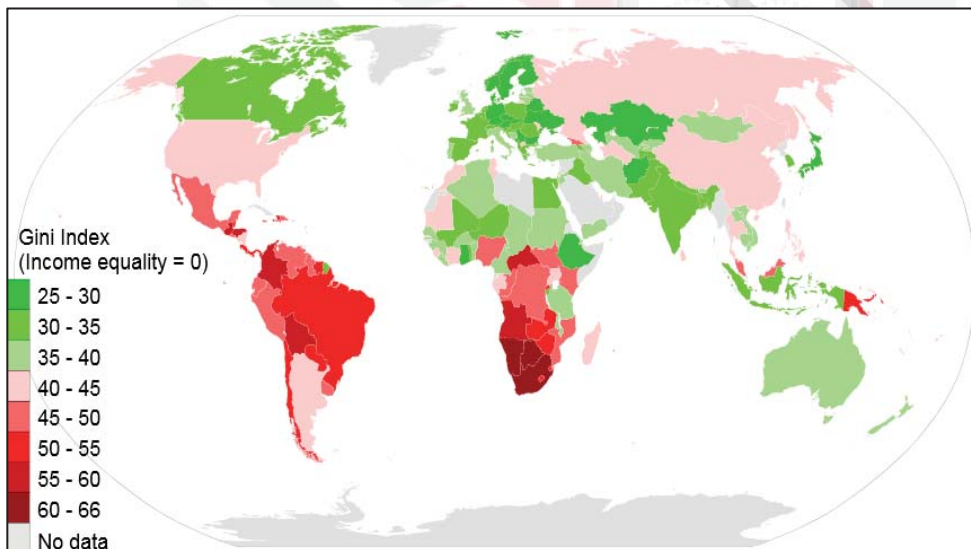


Figure 1.3: Income Gini Coefficient World Map, 2014

(Source: World Bank, World Development Report 2014, Table 2.9 of World Development Indicators: Distribution of Income or Consumptions.

Note: Differences in national income equality around the world as measured by the national Gini coefficient. The Gini coefficient is a number between 0 and 100, where 0 corresponds with perfect equality (where everyone has the same income) and 100 correspond with absolute inequality (where one person has all the income, and everyone else has zero income)).

Figure 1.4 below compares levels of inequality of a country in year 2015 with year 1990, a generation ago. Countries below this 45-degree line saw a fall in the Gini index between the two years; countries above saw an increase. Over the last 25 years, inequality has gone up in many countries and has fallen in many others. In fact, there is no clear indication of general trend to higher inequality as many have perceived as

globalization deepening take place. Again, the scenario suggests that politics and policy at the level of individual countries can make a difference.

As well as there being different trends, it is noticed how very different the level of income inequality is across countries. The distributions with the highest income inequality countries in Latin America and Sub-Saharan Africa, to the lowest-inequality countries in Scandinavia – is much larger than the changes in individual countries over this period. There are clear regional patterns where almost all Latin American and Caribbean countries show very high levels of inequality, but considerable declines from 1990 to 2015.

Conversely, advanced industrial economies show lower levels of income inequality, but rises in most, though not all, instances. A number of Eastern European countries experienced rising in income inequality as they transitioned from socialist regimes. Across the six countries in our sample from the Middle East and North Africa region, we mostly see falls. In Sub-Saharan Africa and East Asia and Pacific, the trends are more mixed. Last but not least, across countries, the average level of inequality has not changed: The rises and falls seen in the Gini index in different countries more or less cancel out, the average Gini across countries fell marginally from 39.6 to 38.6.

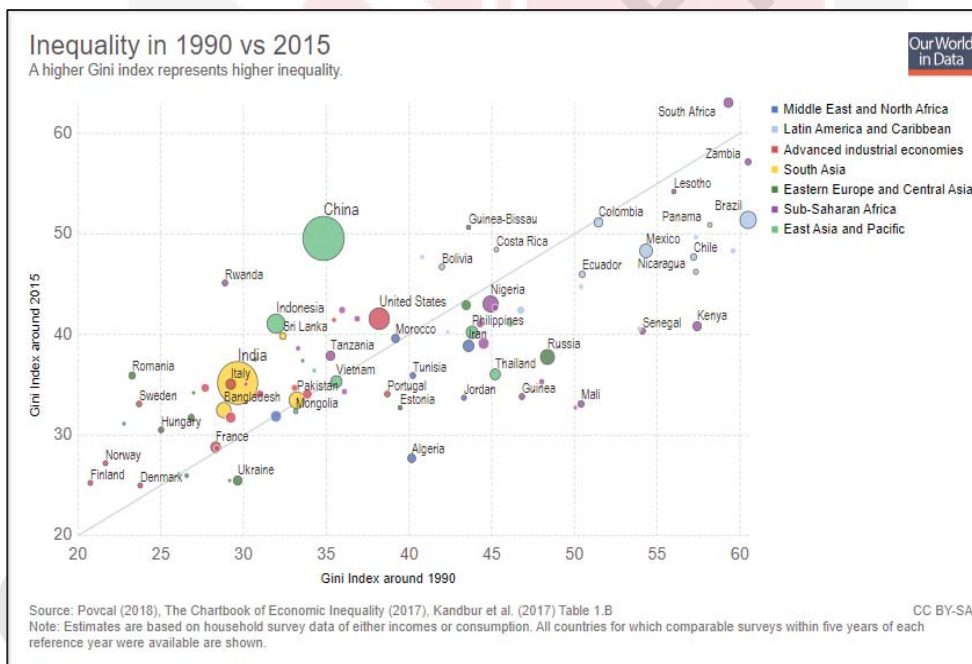


Figure 1.4: Income Inequality of Selected Countries in 1990 vs 2015

(Source: Povcal (2018), The Chartbook of Economic Inequality (2017), Kandbur et al. (2017) Table 1.8)

It is important to note, rising income inequality is not just an inevitable outcome of global economic forces, completely beyond our control. National institutions, politics and policy play a key role in shaping how these forces impact incomes across the distribution. Being attentive to the differences between countries is an important step in knowing what can be done to reduce income inequality.

1.2 Financial Development and Financial Inclusion

Financial development can be defined as the policies, factors, and the institutions that lead to the efficient intermediation and effective financial markets. A strong financial system offers risk diversification and effective capital allocation. The greater the financial development, the higher would be the mobilization of savings and its allocation to high return projects. Levine (1993) emphasized to consider the importance of financial sector in economic growth.

Financial development can be measured by a number of factors including the depth, size, access, and soundness of financial system. It can be measured by examining the performance and activities of the financial markets, banks, and financial institutions. It is observed that higher the degree of financial development in a country, the wider will be the availability of financial services. A developed financial system offers higher returns with less risk.

The more comprehensive dimension of financial development in trend across countries can be detailed out from Figure 1.5 through 1.9. Bank accounts per 1,000 adults in higher income countries are double the number of middle-income countries. Similar trend in bank branches is found between the two groups. Higher income countries easily have establishment of more bank branches per 100,000 adults (27 bank branches) and number of bank branches in local of lower income countries is far below (3 bank branches).

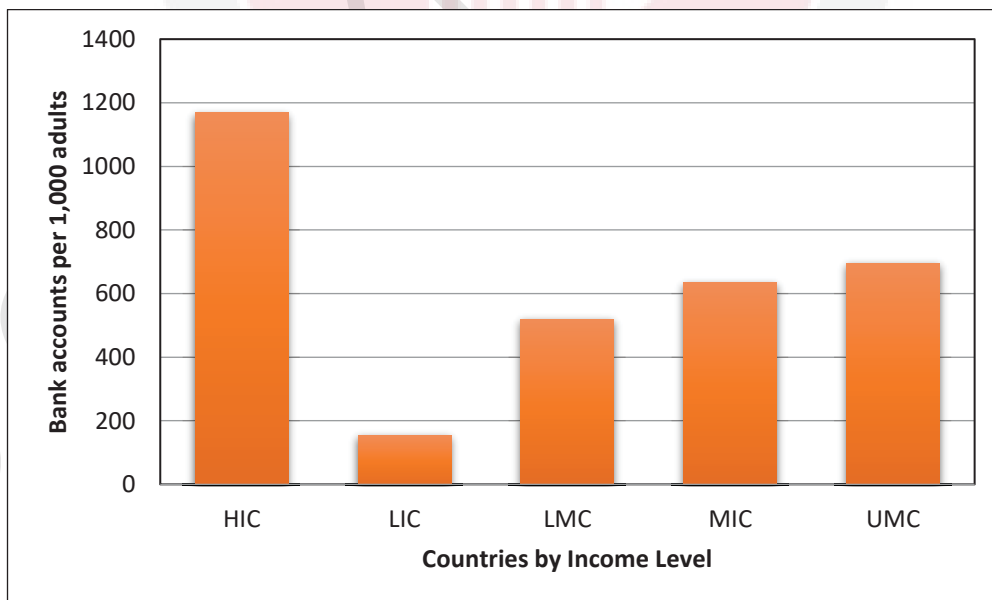


Figure 1.5: Bank account per 1,000 adults, 2011

(Source: Global Financial Development Database, World Bank.)

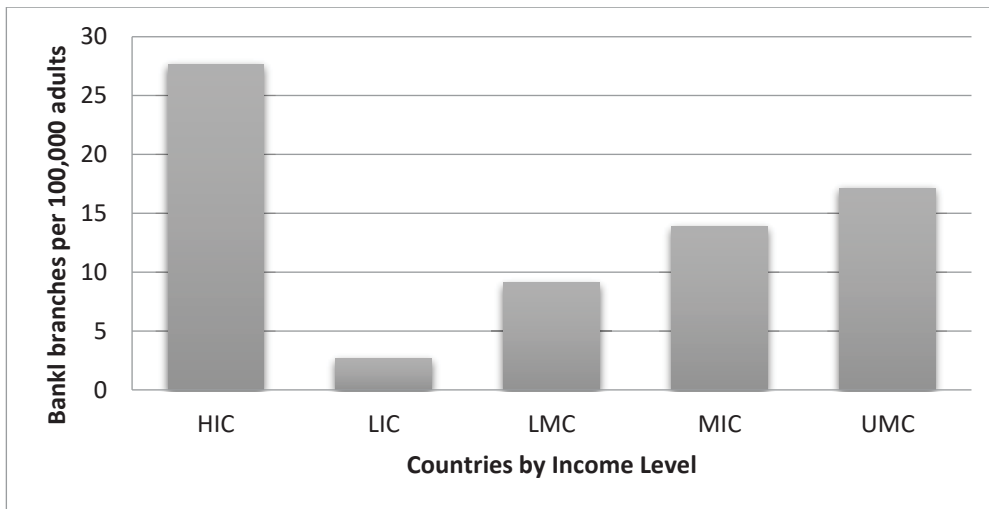


Figure 1.6: Bank branches per 100,000 adults, 2011
 (Source: Global Financial Development Database, World Bank.)

The bank lending-deposit spread measures the difference between lending rate and deposit rate. Lending rate is the rate charged by banks on loans to the private sector and deposit interest rate is the rate offered by commercial banks on three-month deposits. The bank lending-deposit spread rate in within high income countries are relatively lower (approx. 5%) but the rate is relatively high in upper-middle income countries (close to 6%), lower-middle income countries (approx. 7%) and lower income countries far above 10%. The level of financial efficiency in lower income countries are falling far behind higher income countries.

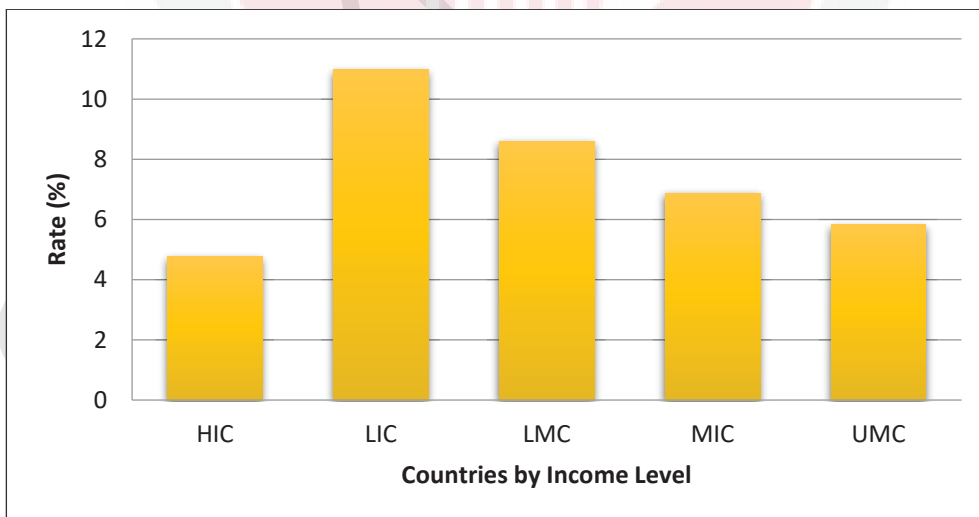


Figure 1.7: Bank lending-deposit spread, 2011
 (Source: Global Financial Development Database, World Bank.)

The bank Z-score (or the best available proxy for financial stability) captures the probability of default of a country's banking system. Z-score compares the buffer of a

country's banking system (capitalization and returns) with the volatility of those returns. The Z-score amongst the high income countries or middle-income countries are high with the score of approximate 14% (score of about 17% in lower-middle income countries). The banking stability or the bank insolvency risks across countries regardless of income level are quite similar.

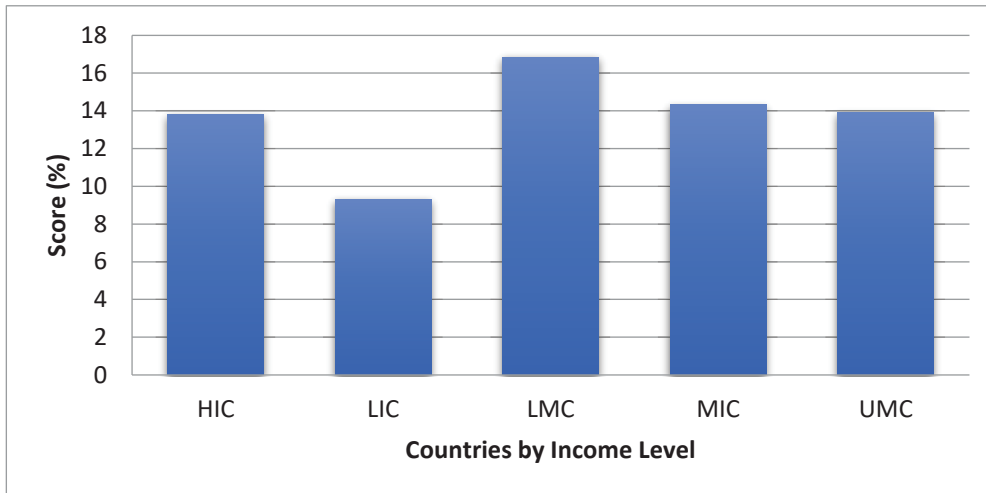


Figure 1.8: Bank Z-score, 2011

(Source: Global Financial Development Database, World Bank.)

The most traditional measure of level of financial development using the private credit by deposit money to GDP captures the financial depth (size) of an economy. The high income countries, as expected, are leading the rest of the groups. The ratio against GDP level amongst the higher income countries are far above 90%. On contrary, the depth of financial level in upper-middle income countries is approximate 45% over GDP level. The size of financial sector in lower income countries is alarming low (only close to 20% over GDP level). The larger size of financial sectors in higher income countries or smaller (limited) size of financial sectors in lower income countries can both driven into different set difficulties or challenges in supporting productive investments in the real sectors.

The overall performance level of financial development can be analyze further from Table 1.1 that reports on Financial Development Index by World Economic Forum in The Financial Development Report. FDI denotes the Financial Development Index of seven “pillars” grouped into three broad categories namely (i) Factors, policies and institutions (Institutional Environment, Business Environment and Financial Stability), (ii) Financial Intermediation (Banking Financial Services, Non-banking Financial Services and Financial Markets, and (iii) Financial Access (Financial Access) which ranks 60 of the world leading financial system. Hong Kong is ranked 1st (score of 5.31), followed by U.S. (5.27), U.K. (5.21), Singapore (5.1), Australia (5.01), Malaysia (4.24) and other ranks as found in Table 1.1. The overall comprehensive level financial development as capture using this index generally closely associates the level of financial development with the countries income level. The higher index commonly found to be higher income countries, moderate index range about 3 to 4 out of full index of 7 are those of middle income countries.

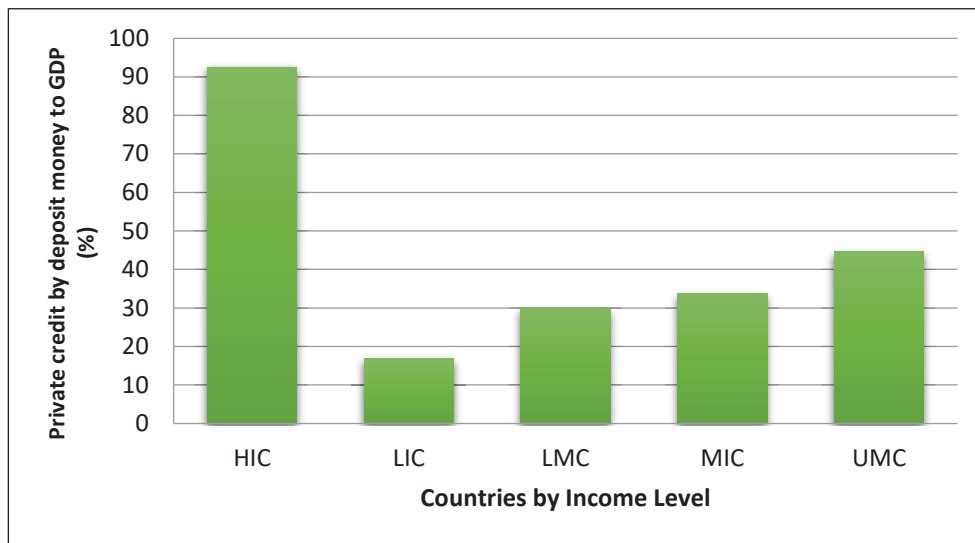


Figure 1.9: Private credit by deposit money to GDP, 2011
 (Source: Global Financial Development Database, World Bank)

According to Antzoulatos (2008), the degree of asymmetric information reduces with the development of financial system. Developed financial systems offer specialized services and efficient operations that help to reduce information asymmetry in the market. Investors can trust and put more faith in the experienced forecasts of the financial intermediaries in developed financial systems. In this way the value and trust of information raises and more investments can be attracted. In short, a well-structured financial system is important to boost the economy, by and large promoting long-run economic growth, stimulating firm growth and also narrowing income inequality.

Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment. The financial corporations include monetary authorities and deposit companies, money lenders, insurance corporations, pension funds, and foreign exchange companies. In this study, domestic credit to private sector is chosen as major proxy for financial development indicator in Chapter 3 and Chapter 4.

Table 1.1: Financial development index, 2012 (Full index= 7)

Country	FDI	Rank	Country	FDI	Rank
Hong Kong	5.31	1	Brazil	3.61	32
US	5.27	2	Jordan	3.56	33
UK	5.21	3	Thailand	3.55	34
Singapore	5.1	4	Czech Republic	3.49	35
Australia	5.01	5	Panama	3.42	36
Canada	5	6	Poland	3.41	37
Japan	4.9	7	Slovak Republic	3.34	38
Switzerland	4.78	8	Russia Federation	3.3	39
Netherlands	4.73	9	India	3.29	40
Sweden	4.71	10	Peru	3.28	41
Germany	4.61	11	Turkey	3.27	42
Denmark	4.53	12	Mexico	3.25	43
Norway	4.52	13	Hungary	3.16	44
Fance	4.43	14	Morocco	3.15	45
Korea, Rep.	4.42	15	Colombia	3.15	46
Belgium	4.3	16	Kazakhstan	3.13	47
Finland	4.24	17	Greece	3.12	48
Malaysia	4.24	18	Philippines	3.12	49
Spain	4.22	19	Indonesia	2.95	50
Ireland	4.14	20	Romania	2.93	51
Kuwait	4.03	21	Vietnam	2.92	52
Austria	4.01	22	Egypt	2.78	53
China	4	23	Kenya	2.75	54
Israel	3.94	24	Argentina	2.68	55
Bahrain	3.93	25	Ghana	2.67	56
UAE	3.84	26	Bangladesh	2.62	57
South Africa	3.71	28	Ukraine	2.56	59
Chile	3.69	29	Tazania	2.55	60
Italy	3.69	30	Nigeria	2.46	61
Saudi Arabia	3.68	31	Venezuela	2.37	62

(Source: The Financial Development Report 2011, World Economic Forum.

Note: FDI denotes the Financial Development Index of seven “pillars” grouped into three broad categories namely (i) Factors, policies and institutions (Institutional Environment, Business Environment and Financial Stability), (ii) Financial Intermediation (Banking Financial Services, Non-banking Financial Services and Financial Markets, and (iii) Financial Access (Financial Access) which ranks 60 of the world leading financial system.)

1.3 Institution

Institutional quality is defined as the quality of contract enforcement, property rights, shareholder protection, and...[]. It measures dimensions of Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law and

Control of Corruption¹. In the words of North (1990): “Institutions are the rules of the game in a society, [...] the humanly devised constraints that shape human interaction. [...] They structure incentives in human exchange, whether political, social or economic”. Institutions comprise for example contracts and contract enforcement, protection of property rights, the rule of law, government bureaucracies, and financial market. Habits and beliefs, norms, social cleavages and traditions in education, however are so-called informal institutions. Typically formal institutions tend to be the crystallization of informal institutions (North, 1990) but social norms in the realms of gender, class and caste, for instance, determine rules of political participation and representation, methods of economic exchange, and inclusion of different groups in society (Pateman, 1988).

In a broad overview across the quality of institutions (in Figure 1.10 through Figure 1.15) based on six indicators of World Governance Indicators (WIG) of World Bank, a standard patterns are revealed. The higher income countries as a group usually tend to out-perform the rest and leading in every dimensions (they score approximate 74.2% for control of corruption, 75.6% for government effectiveness, 71.9% for political stability and absence of violence or terrorism, 75% for regulatory quality, 76.7% for rule of law and 71.2% for voice and accountability). The quality of institutions for the rest of countries, for example, upper-middle income countries score range of 50% for all dimensions, lower-middle income countries score range of 30% for all dimensions and low income countries score range of 15% to 22% for all dimensions.

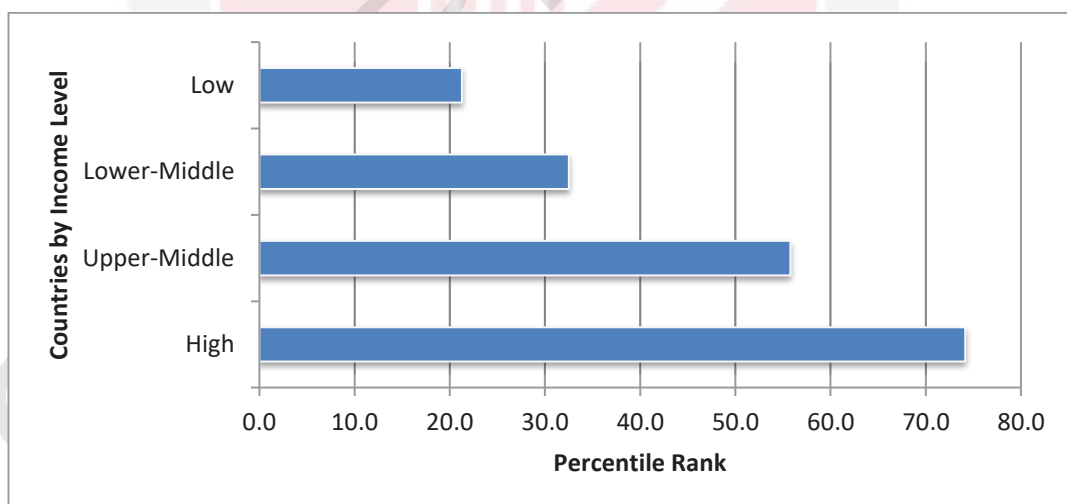


Figure 1.10: Control of corruption, average 2010-2013
(Source: World Governance Indicators, World Bank.)

¹ Refer to seminal work of Kaufmann et al. (2010).

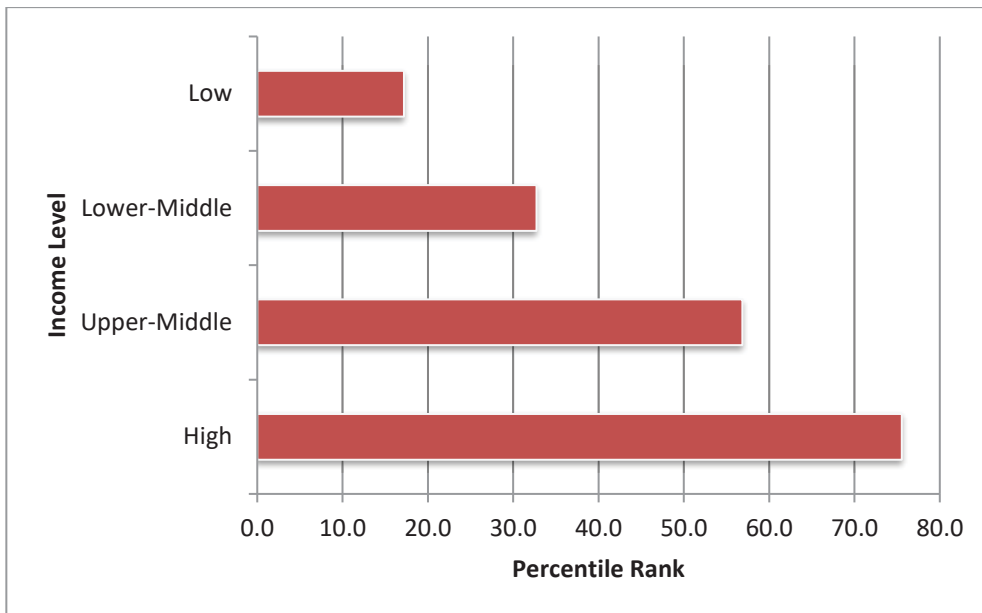


Figure 1.11: Government effectiveness, average 2010-2013

(Source: World Governance Indicators, World Bank.)

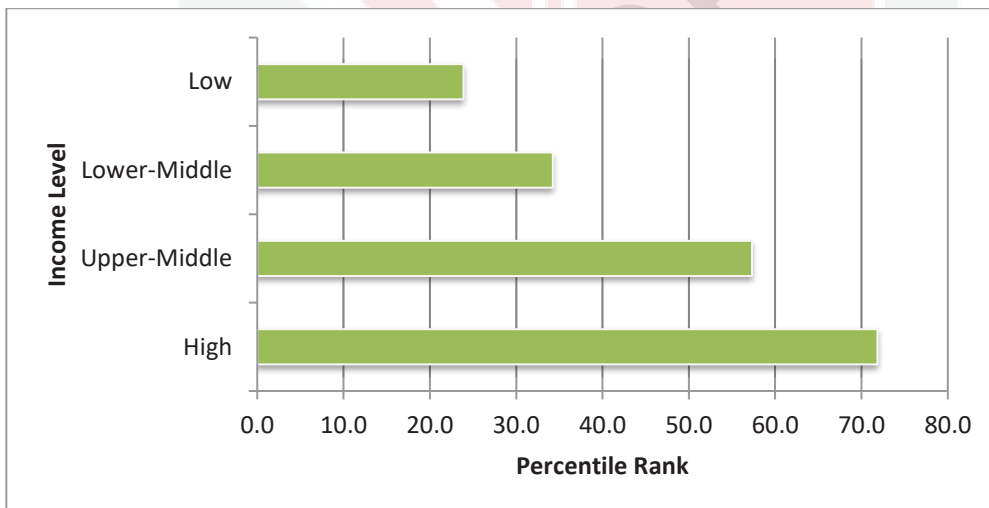


Figure 1.12: Political stability and absence of violence or terrorism, average 2010-2013

(Source: World Governance Indicators, World Bank.)

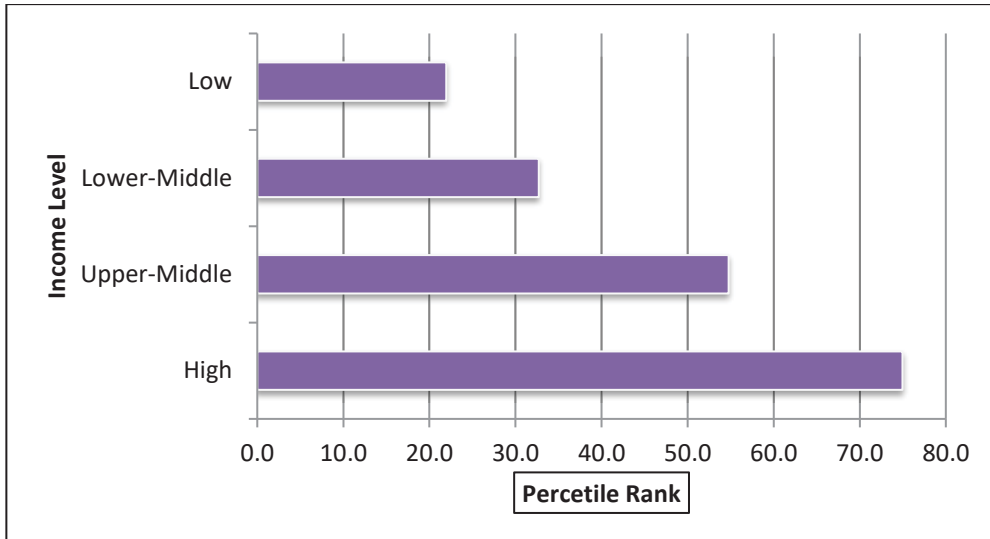


Figure 1.13: Regulatory quality, average 2010-2013
 (Source: World Governance Indicators, World Bank.)

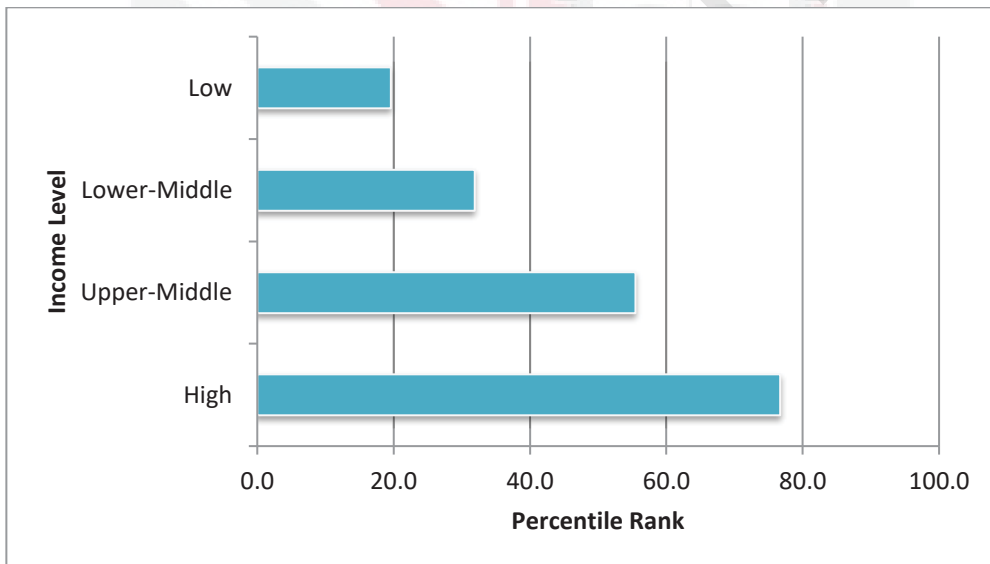


Figure 1.14: Rule of law, average 2010-2013
 (Source: World Governance Indicators, World Bank.)

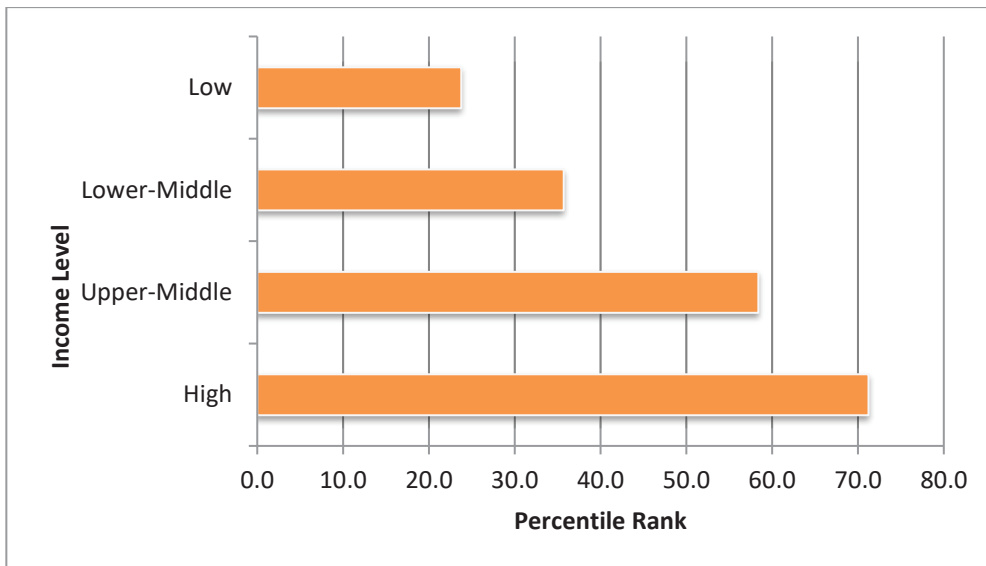


Figure 1.15: Voice and accountability, average 2010-2013

(Source: World Governance Indicators, World Bank.)

1.4 Sectoral Output

Value added of few major sectors like industry, manufacturing and services across countries of higher income level to middle income level are greatly in disparity (refer Figure 1.16 to 1.19). The middle-income or lower income countries only perform better and competitive in agriculture sector. They have not strived well in other sectors even in manufacturing sector mainly due to their involvement in lower value-added activities. These economies are likely to be constraint not only in technology advancement but also in financial depth and financial inclusion.

Therefore, the better financial development in higher income countries could be the reason to capture high value-added in the manufacturing and services sector. They are at the frontier of advance technology and their countries' environment of better financial development and institutions are conducive in allowing them to earn higher value-added into major sector like services and manufacturing. It is no clear certainties if better financial development is pro-growth to services or manufacturing sectors. Of course, the type of production or activities of a sector, whether it is relative capital-intensive, higher R&D concentration etc. will explain the needs of more mature level of financial development along with sound institutions. Therefore, in this study, examination at disaggregate-level using sectorial output growth will allow us to understand how better financial development may affect different economic sectors differently.

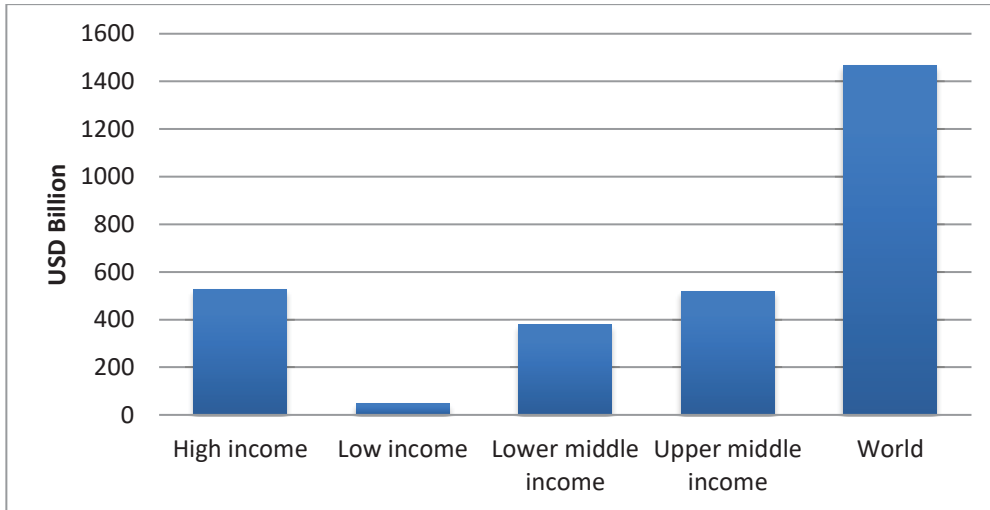


Figure 1.16: Agriculture Sector Value-Added, average 2005-2013
 (Source: World Development Indicator, Bank.World Bank.)

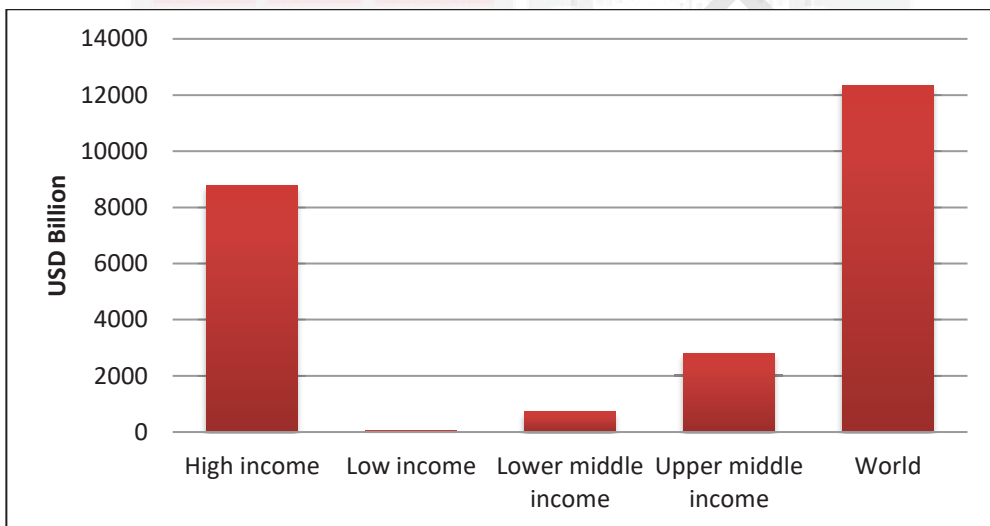


Figure 1.17: Industry Sector Value-Added, average 2005-2013
 (Source: World Development Indicator, Bank.World Bank.)

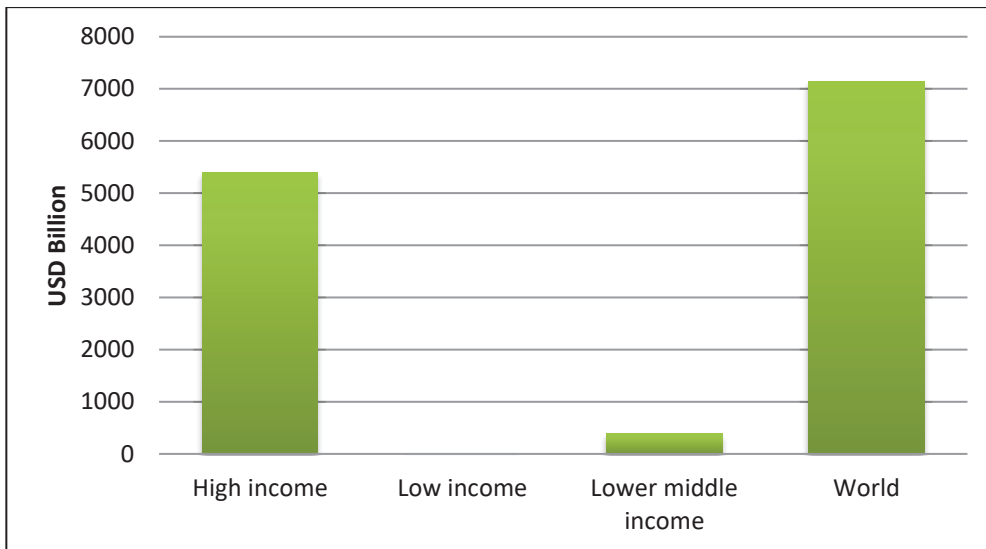


Figure 1.18: Manufacturing Sector Value-Added, average 2005-2013
 (Source: World Development Indicator, Bank.World Bank.)

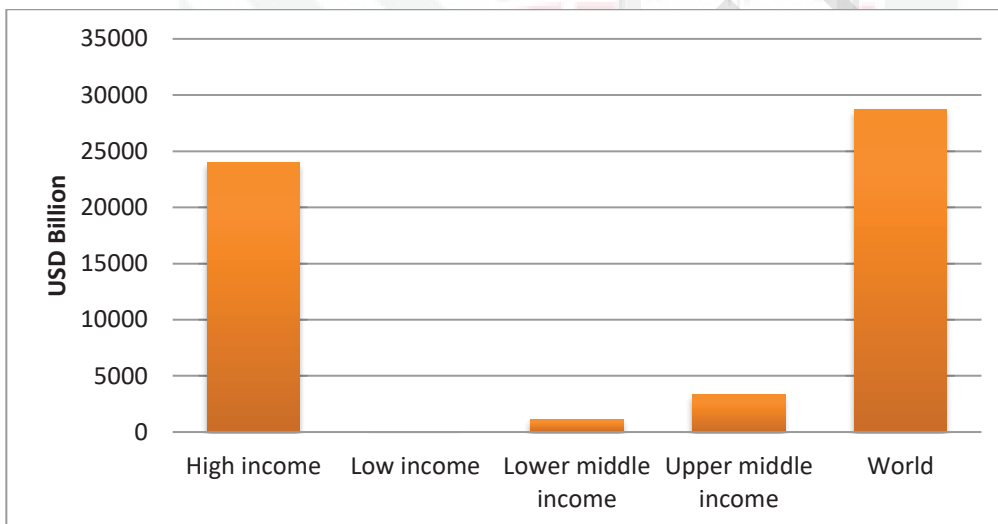


Figure 1.19 Service Sector Value-Added, Average 2005-2013
 (Source: World Development Indicator, Bank.World Bank.)

1.5 Income Inequality

Economic inequality refers to how economic metrics are distributed among individuals in a group, among groups in a population, or among countries. Economists generally think of three metrics of economic disparity: wealth (wealth inequality), income (income inequality), and consumption. In this study, however, concept of income inequality is the focus.

The Standardized World Income Inequalities by Solt (2009, 2014) original has comparable Gini coefficient for 153 countries and now expanded to cover 174 countries from 1960. Among the high income countries, Chile has highest Gini

coefficient (47.2%) and followed few others like Hong Kong (45%), Russia Federation (41.6%), Singapore (41.7%), Uruguay (41.7%) and Argentina (39.4%). The income distribution for the rest of high income countries fall into the range of between 35% and 25%. The upper-middle income countries are found to have higher income inequalities in the range between 40% to 50%. The highest record of income inequalities among the countries in the group is South Arica (58.5%). One interesting observation, the average range of the income inequalities amongst the lower-middle income countries fall into lower range of 30% to 40% (as compared to 40% to 50% amongst the upper-middle income countries. The trend in a way, suggests an inverted-U shaped relationship. The upper-middle income at this stage of development faces increase in income inequalities as they progress before achieving higher income stage. Further evidence found on the range of Gini amongst the lower-middle income countries are lower between 30% to 40%. The range of Gini amongst the available lower income countries (very few) generally are larger in the range of 30% to 50%.

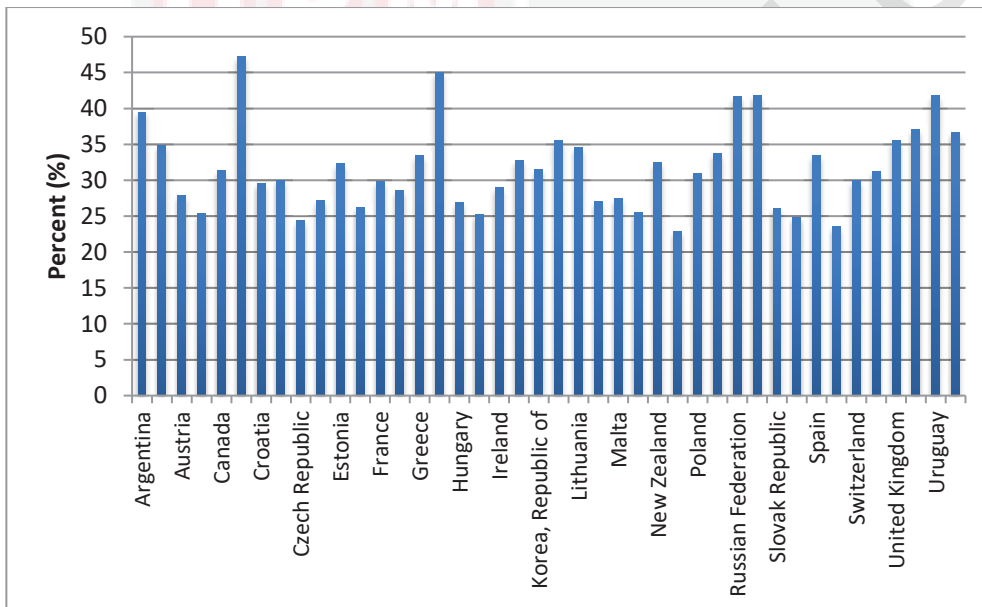


Figure 1.20: Income Inequality (Gini Coefficient) of selected High Income Countries, 2011

(Source: The Standardized World Income Inequality Database by Solt (2009 & 2014)).

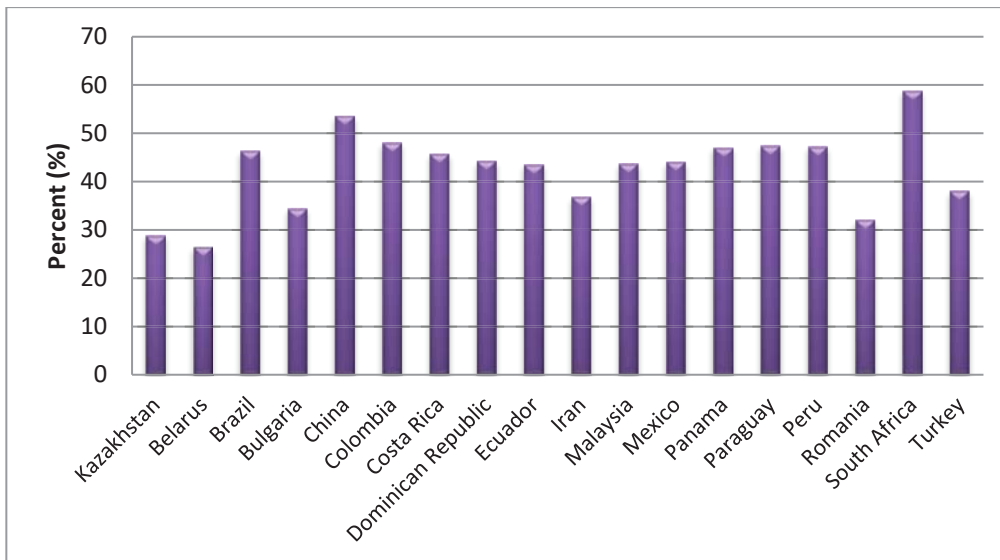


Figure 1.21: Income Inequality (Gini Coefficient) of selected Upper-Middle Income Countries, 2011

(Source: The Standardized World Income Inequality Database by Solt (2009 & 2014)).

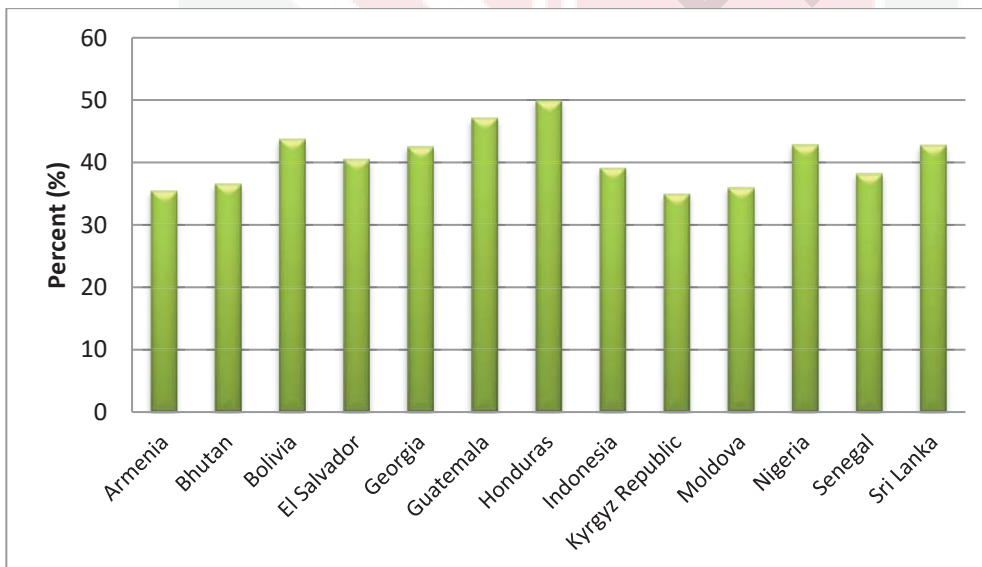


Figure 1.22: Income Inequality (Gini Coefficient) of selected Lower-Middle Income Countries, 2011

(Source: The Standardized World Income Inequality Database by Solt (2009 & 2014)).

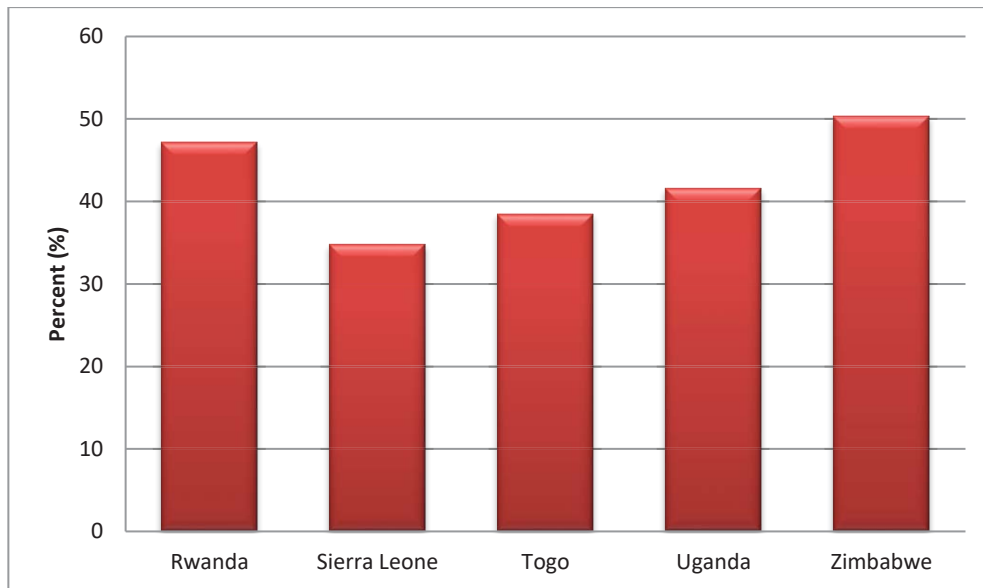


Figure 1.23 Income Inequality (Gini Coefficient) of selected Low Income Countries, 2011

(Source: The Standardized World Income Inequality Database by Solt (2009 & 2014)).

The rising inequality is not just an inevitable outcome of global economic forces, completely beyond our control. National institutions, politics and policy play a key role in shaping how these forces impact incomes across the distribution. Being attentive to the differences between countries is an important step in knowing what can be done to reduce inequality especially through the role of financial inclusion and sound institutions.

1.6 The Linkages of Financial Development, Institutions and Income Level

Many researchers have affirmed that a well-functioning financial markets or quality financial markets come in after the environment of sound institutions.² The following scatter plots explain the possible spells cast on economic growth that sound institutions environment works to promote more efficient financial market and positively influences on growth.

The simple analysis using scatter plot such as Figure 1.24 and 1.25 clearly point to the direction that as economy is progressing or more advanced, three variables move toward the same direction, higher income level, higher institutional quality and better financial development leads growth.

² See Demetriades and Law (2006), Law et al. (2013) and Law and Nivikar (2014).

The influences of different level of development in institutional quality as exhibited in the scatter plots show no significance differences in explaining the gap in income level of higher or lower institutional quality countries through financial development. Nevertheless, it is not too certain if quality financial development actually increases the growth of different real sectors in value added? But the simple and direct finance and growth linkage analysis at aggregate level may have limitation to investigate if the different real economic sectors really experience growth in value added. The following section shall discuss more about the importance to incorporate the examination of finance-growth linkage using sectoral output growth.

As mentioned earlier, there is no major difference of patterns observed in the scatter plots between Figure 1.24 and 1.25 except that they have different intercept points. In both cases of higher and lower institutional quality, financial development index is positively related to real GDP per capita.

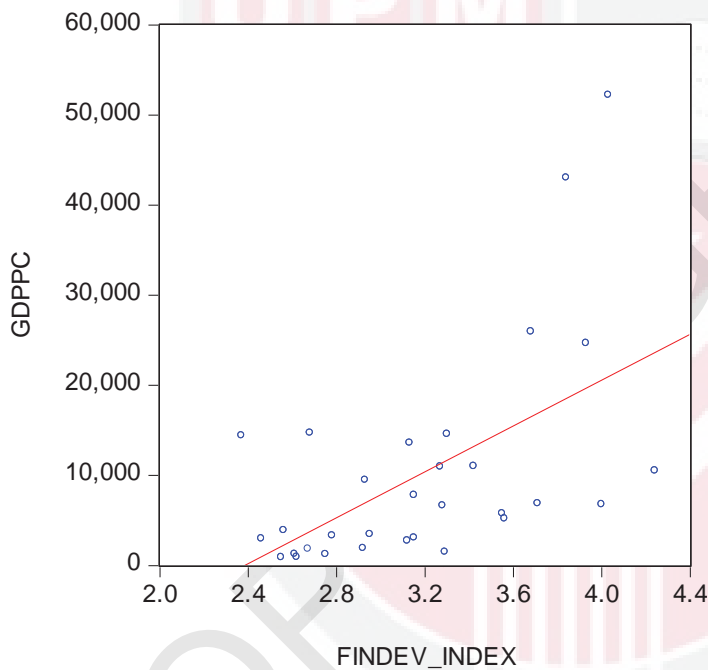


Figure 1.24: Scatter Plot of Financial Development and Income for Countries with Lower Level of Institutional Quality

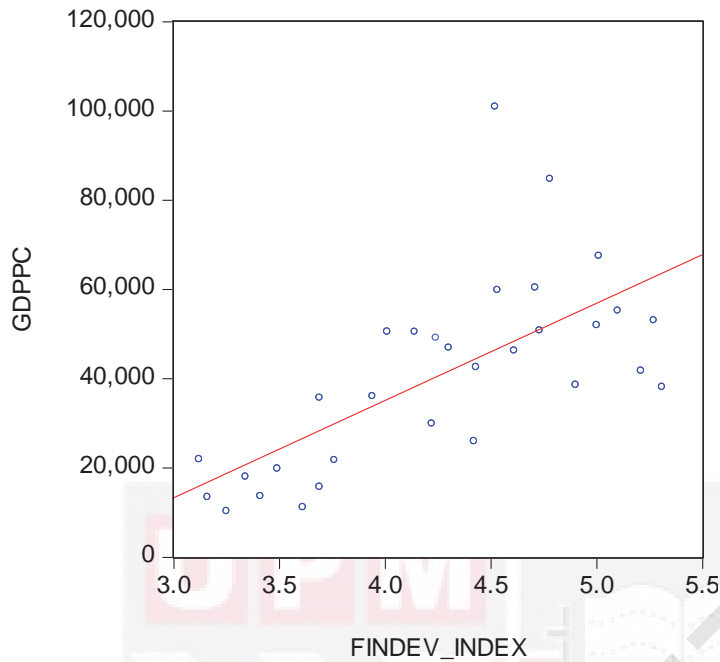
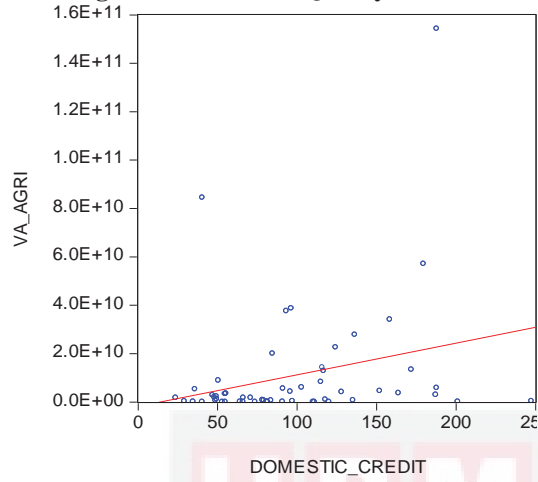


Figure 1.25: Scatter Plot of Financial Development and Income for Countries with Higher Level of Institutional Quality

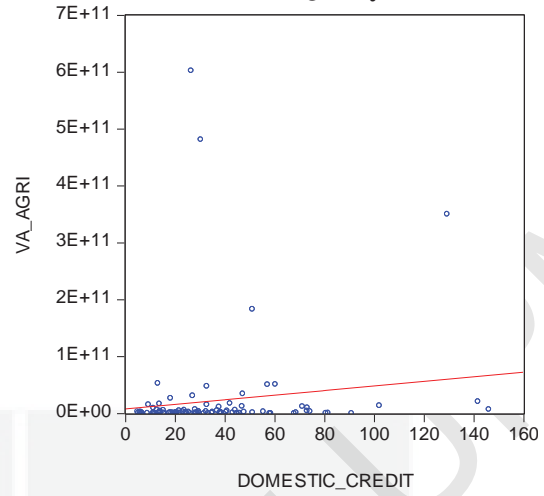
1.7 The Linkages of Financial Development, Institutions and Sectoral Output

The scatter plots in Figure 1.26 which set the use of domestic credit against value-added of various sub-sectors for comparisons of countries of higher institutional level and lower institutional level. The impact is more gradual in agriculture and services sector for lower institutional quality countries but no such pattern is observed in manufacturing sector. The poorer governance practices in these countries likely to impede growth of value-added in services or even in agriculture sectors. Nevertheless, situations of sub-sectors growth in better institutions environment are observed to be positive but mild too.

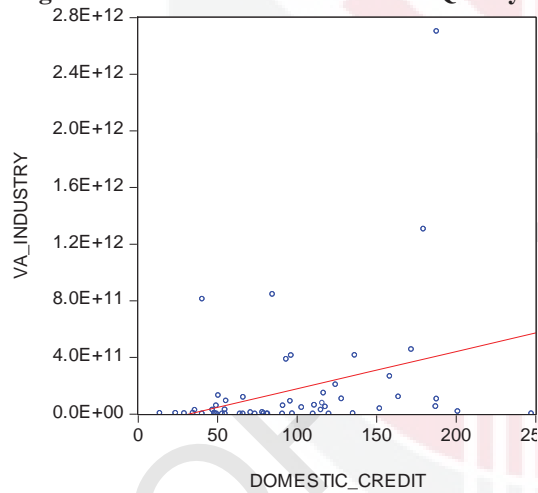
Panel A: Agriculture Sector for Countries with Higher Institutional Quality



Panel B: Agriculture Sector for Countries with Lower Institutional Quality



Panel C: Industry Sector for Countries with Higher Institutional Quality



Panel D: Industry Sector for Countries with Lower Institutional Quality

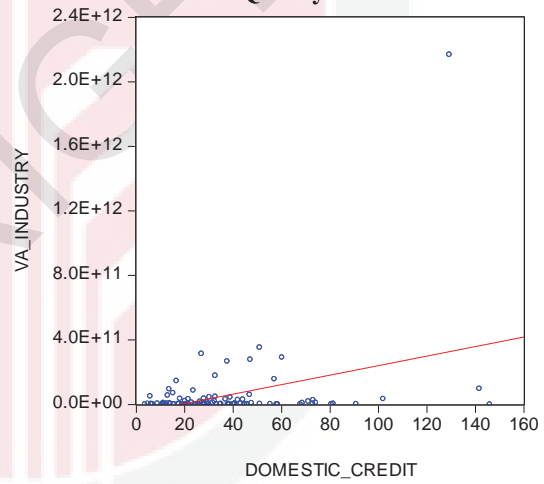
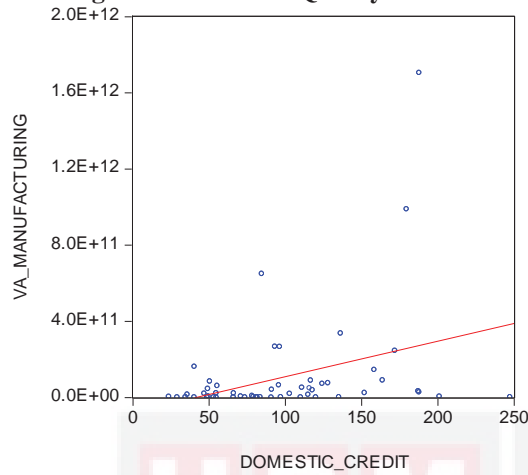
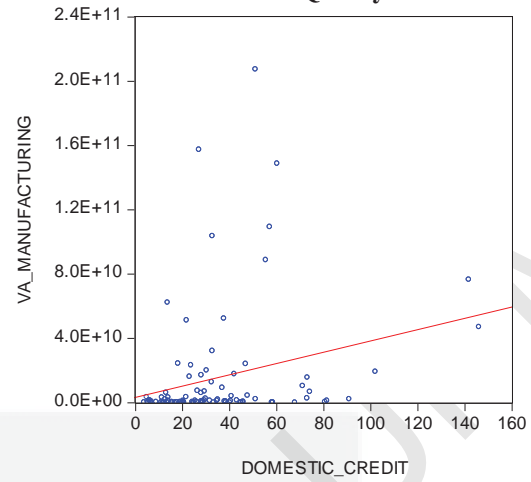


Figure 1.26: Scatter Plots for Financial Development and Sector Output Growth

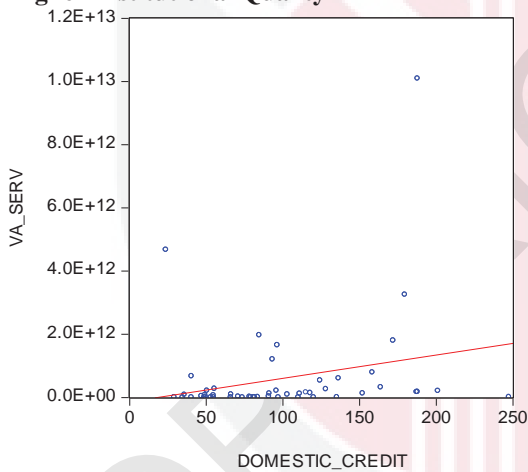
Panel E: Manufacturing Sector for Countries with Higher Institutional Quality



Panel F: Manufacturing Sector for Countries with Lower Institutional Quality



Panel G: Service Sector for Countries with Higher Institutional Quality



Panel H: Service Sector for Countries with Lower Institutional Quality

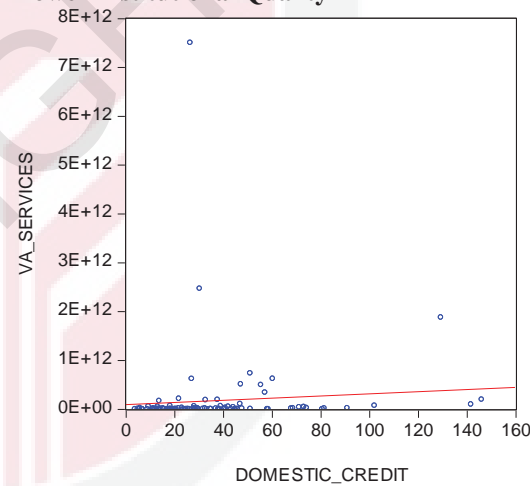


Figure 1.26: Continued

1.8 Problem Statement

The differences in development of services, manufacturing and agriculture sectoral output value-added across countries are likely correlates with the differences in countries' level financial development as well as institutions. The great disparity of value-added of these sectors across higher income countries to lower income countries are another critical concerns and the gap continues to widen and is still ongoing. While global services sector value-added indicating increasing trend and contributing more and more to GDP share but manufacturing sector value-added remain low key in performance and is affecting the job opportunities of many. Many research works

have contributed to examine the role of financial development and institutional quality in promoting economic growth at aggregate-level data. The advantage of examining the role of finance and institutions using sectoral output data or disaggregate-level data as mentioned by Rajan and Zingales (1998), Fisman and Love (2003), Manganelli and Popov (2013) and among others are able to address well on issue of reverse-causality and concerns of possibility the growing of enterprises that leads to growing of financial sector rather than existence of well-functioning financial sector that promotes entrepreneurship activities and expansion (Robinson, 1952 and Lucas, 1988). Evidently, most documented researches generally have not paid attention on investigating the role or impacts of financial development and institutions on sectoral output growth.

Many economies, developed or developing nations' economic growth like Malaysia today is more and more driven by private-sector's productivity. However, firm's growth and productivity, and labour productivity in Malaysia are unusually lower when compared to firms of similar range in other developing countries and developed countries. Many of these firms facing fierce competition from informal sectors and having constraints in access to finance. So do the level of financial development and quality institutions directly or indirectly improves firm's access to external financing and growth opportunities and later on promote more business growth and expansion to firms and the whole economy? Although there are many studies conducted to understand the factors that influence firm growth it is firms' own internal determinants or external determinants or macroeconomic factors like country's own level of financial development and sound institutions (Rajan and Zingales, 1997; Rajan and Zingales, 1998; Fisman and Love; 2007; Manganelli and Popov, 2013) but there is still no consistent explanation as to date and limited studies done in the context of Malaysia in providing more understanding and shed more lights onto the effects of financial development and institutions on firms' growth in Malaysia.

Recent researchers such as Arcand et al. (2012), Barajas et al. (2013), Law et al. (2013), Law and Singh (2014) have even gone beyond to suggest that "better finance, more growth" is a more important proposition than "more finance, more growth." They in generally point to support for better finance and more appropriate size of finance that promotes sustainable growth than over-sized and poor financial system which causes financial and economic instability. Among developed countries, the income distribution seems to have worsened among many of them during the last few decades. In the same vein, some emerging economies show significant deviations from the Kuznets curve when looking at the relation between their GDP per capita and degree of income inequality. To give two examples, this is the case of Vietnam or Bangladesh. In fact, low-income individuals are the one who cannot smooth their income-savings path due to the lack of access to financial instruments. The less privilege or the poor are usually denied to access of credit. Easier access and use of credit should, thus, help to reduce income inequality. Many are aware of the importance of financial constraints for the income of poorer households to grow. Large financial system does not necessary coincide with easy access to and use of financial services by those that are most financially constrained. In other words, financial inclusion should be more conducive than financial deepening in reducing income inequality. World Bank economists, in recent, have come to point that it is

financial inclusion or financial depth that fully benefiting more people only if policymakers consider to expand the access of finance more inclusively for everyone. Other researchers also suggest the issue of income distribution in the developing countries or less-developed are partly due to financial deepening process are to exclusive benefiting to certain segments of the society. Of certain, the real gain of introducing financial inclusion can only be materialize with the presence of financial deepening before hand.

Hence, the following research questions are formed:

- 1) What are the effect of financial development and institutions on determining sectoral output?
- 2) What are the effects financial development and institutions significant determining firm growth?
- 3) What are the relationship among financial inclusion, financial developments, financial institutions and income inequality?

1.9 Research Objectives

In general, the study aims to examine the effects of financial development, institutions and financial inclusion on sectoral output, firm and income inequality. Specifically, the study has carefully detailed out three specific objectives as follows:

- 1) To determine the effect of financial development and institutions on sectoral output in selected high income, middle income and low income countries.
- 2) To investigate the effect of financial development and institutions on firms' growth in Malaysia.
- 3) To examine the relationship among financial inclusion, financial development, institutions, and income inequality.

1.10 Contribution and Significance of the Study

This study significantly contributes to the existing literatures in several aspects. The first investigation in measuring the impacts of financial development and institutions on sectoral output growth significantly gives more enrich insights of how finance sector operates in the real sectors. To my best knowledge, majority of past empiric works from institutions to financial development and growth employ data at aggregate-level. Studies based on disaggregated data are least popular in finance-growth nexus but Rajan and Zingales (1998) in their work have highlighted the importance of industry-level studies as well as firm-level studies (Beck and Levine, 2000; Boubakri and Saffar, 2016; Daway-Ducanes and Gochoco-Bautista, 2019; Fowowe, 2017).

This sectoral output estimation has advantage of delving the extent of sectoral value-added differences could be attributable to quality of financial development. The consideration of examination of the influences of six dimensions (indicators) from World Governance Indicators (World Bank) aid the study to explain level of quality financial development that sufficient to exert positive impact on growth at industry level. The study will be able to discuss how the different industries of different development level likely influenced by different level of financial needs to grow and they are possibly to benefit from the country's level of quality financial development (Rajan and Zingales, 1998; Fisman and Love, 2003; Manganelli and Popov, 2013).

Understanding of how finance sector actually operates in the real business sectors should not be undermined. This study also deals with these aspects in more detail framework using the model of firm growth based on external financing dependence and growth opportunities. The nature of study which explores how quality financial development impacts on sectoral growth and firm growth, is well recommended by Rajan and Zingales (1998). They advocated that disaggregate-level analysis assisted them to avoid any misspecification or bias of concluding financial development may simply be a leading indicator rather than a causal reason in empiric works which merely linking finance to growth.

The classical empirical method of Rajan and Zingales (1998) and Fisman and Love (2007) have examined the relationships of firm's financial dependence, growth opportunities and growth for industry-level across country-level. The important role of finance in easing firm's financial constraint is well-noted. Studies have included interaction term of external finance dependence conditioned to financial development as well as growth opportunities conditioned to financial development. Some previous studies at most tried to associate to institutional characteristics only, including legal framework that plays a part in explaining firm financing obstacles but not institutional quality (Beck, 2007; Demircuc-Kunt and Maksimovic, 1998; 2002). The current literature on external financing and firm growth have not seriously considering the role of financial development embedded within sound institutional framework that eases financial constraint firms and later promote firms growth.

This study will fill in the gap by considering the interaction term of financial development and institutional quality with the firm external financing and firm growth opportunities variables. Firm growth, nevertheless, is not subject to its own characteristics, financial constraint or even growth prospects, but also influence by own country's level of financial development and soundness of institutions. Hence, this study will significantly contribute to the current literature with blending in micro-level data and macro-level data in modelling specification. (see Rajan and Zingales, 1998; Fisman and Love, 2003; Maganelli and Popov, 2013).

This study contributes to literatures by large in relying on firm-level micro data. An advantage of these empirical design is that there is less potential for reverse causality problem. While it is possible that the level of development (as measured by GDP per capita, for example) would affect institutions, it is unlikely that firm-level access to

external finance would affect institutions, especially in the short run. The nature of the study using firm-level data investigating role of financial development and institutions unlikely to stir up dilemma of whether financial development is a natural outcomes of growth and development in the economy as pointed by Robinson (1952) that “where enterprises lead, finance follows” and Lucas (1988) concluding of over-emphasizing of the role of financial sectors in economic growth.

This exclusive study also focus on firm-level data for Malaysia countries offers new insights into understanding the behaviour and performance of Malaysian firms, and this would assist in developing new and innovative development policies for promoting private enterprises growth and long-term sustainable business growth in Malaysia.

This study also adds on to existing literatures of institutional quality, finance and growth nexus. This study contributes positively to existing literatures that take account of interaction term. An interaction effect occurs if there is an interaction between the independent variables that affect the dependent variable. This study has done it differently and correctly using Brambor et al. (2006) approach. According to Brambor et al. (2006), multiplicative interaction models are common in the quantitative political science literature and institutional arguments frequently imply that the relationship between political inputs and outcomes varies depending on the institutional context.

Following their approach, models of the strategic interaction models have typically produce conditional hypotheses as well even though the conditional hypotheses are ubiquitous in political science. Yet the multiplicative interaction models have been found to capture their intuition quite well. A survey done for the top three political science journals from 1998 to 2002 concludes that the conduct of these models is mostly flawed and inferential errors are found to be common. Hence, Brambor et al. (2006) believe that considerable progress in the understanding of the political world can take place if scholars follow the simple checklist of dos and don'ts while consider using multiplicative interaction models as presented in his article. Considerably low with only 10% of the articles in their survey followed right procedures in estimation for multiplicative interaction model.

Most of the empirical works (Tan and Law, 2012; Law et al. 2004 and others) which examined the influences of financial development on income inequality, employed the traditional measure of financial development, for example, financial depth. This study will explore using financial inclusion and various measures of financial development from World Bank in investigating the effects on income inequality. The examination on financial development of various measures³ including financial depth

³ See World Bank's Global Financial Development Database, is an extensive dataset of financial system characteristics for 203 economies. It contains annual data, starting from 1960. It has been last updated in November 2013 and contains data through 2011 for 105 indicators, capturing various aspects of financial institutions and markets for 105 indicators, capturing various aspects of financial institutions and markets.

(the most traditional measure in the literature), financial access, financial efficiency and financial stability and on income inequality are necessary and indefinitely give opportunities to test the impacts of financial sector has on reducing income inequality and allowing more deliberate strategies of a sound financial framework to be look into. The financial deepening captures the process of increasing financial intermediation or engagement within the financial system. Financial deepening is sometimes used as a synonym for financial inclusion however it is important to note that these two are not the same. Deepening can happen without financial inclusion if volumes of financial flows increase while only a fraction of the population participates (Hasan, Wachtel, and Zhou, 2009; Hamori, and Hashiguchi, 2012).

Another issue is the possibility of endogeneity bias arising from reverse causality. This study which relies on the Blundell and Bond (1998) system GMM dynamic panel estimator has another advantage to address reverse causality associated with ordinary least squares estimation . Last but not least, the application of the system GMM dynamic panel estimation brings another important contribution within this study dealing with endogeneity issue. Since, the institutions variable applied in this study is possible to be endogenous due to feedback from financial development to institutions or because of common effects of omitted variables on both financial development and sound institutions, then the employed generalized method of moments (GMM) estimations aid to deal with problem of endogeneity.

1.11 Scope of the Study

Firstly, the study investigates whether financial development and institutions have impact on sectorial growth employing disaggregate level data. The list of countries included for aggregate level study and the list of sectors and countries of different income level⁴ considered for sectoral-output level study are listed in Appendix A1. The scope of the study under objective one in general captures economies of high-income level, upper-middle income level, lower-middle income level and low income level. The level of economic development, in some way, reflects the level of financial development and also level of institutional development. The scope of study which includes diversities of countries of different economy level allowing the study to examine if the different growth rate at aggregate level or disaggregate level across countries are partly due to differences in financial development level and institutional quality.

Secondly, firm level data are utilized in further to determine whether financial development and institutions influence firm growth in Malaysia. Literatures on firm growth mostly have pointed that firms, big or small, established or young, all firms will face challenges to excess to finance for their company expansion and growth. Hence, for convenience, the study will utilize 602 firms listed under Bursa Malaysia for the period within year 2006 to 2014 and include in the study for investigation on firm growth in Malaysia.

⁴ The country classification follows the World Bank's report on Country and Lending Groups.

Thirdly, in order to test the influences of various measures of financial development and financial inclusion on income inequality, the study uses panel cross-countries of both developed and developing constructed based on the Standardized World Income Inequality Database (SWIID) available. However, the database has limitation. The scope of countries is more narrow to includes higher income countries and lesser data covering a more balance number of countries from middle-income countries and lower income countries. Hence, the study may not be able to precisely examine the income inequality comprehensively to capture more developing countries. Further details on list of countries included in the sample are described in Appendix A2.

1.12 Organization of the Study

The study is organized as follows: Chapter Two presents the review of the related literatures of this study. Chapter Three, Chapter Four and Chapter Five each focuses on the data collection, research methodology, theoretical framework and formulation of the relevant hypotheses, presentation of results and findings and discussions for three independent works that include (i) financial development, institutions and real sector growth, (ii) financial development, institutions, and firm growth and (iii) Financial inclusion, institutions and income inequality. Finally, Chapter Six summarizes, concludes, providing policy implications, and also recommendation for future study.

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