

Spring 2018

## Does Financial Liberalization Increase Corruption?: Evidence from a Panel Analysis

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### Recommended Citation

Ghatе, Pranjal Sudhir, "Does Financial Liberalization Increase Corruption?: Evidence from a Panel Analysis" (2018). *Senior Projects Spring 2018*. 274.  
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# Does Financial Liberalization increase Corruption? : Evidence from a panel analysis

A Senior Project submitted to  
The Division of Social Studies  
of  
Bard College

by  
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Annandale-on-Hudson, New York  
May, 2018



# Abstract

This project investigates whether financial liberalization increases corruption on a global level. Arguments put forward by international institutions such as the World Bank and the IMF claim that financial globalization will reduce corruption. However, the experience of India suggests that opening up financial markets might have increased corruption. This project tests whether this experience is generalizable worldwide. I find evidence for the conjecture that financial liberalization increased corruption in a panel analysis using random effects and lagged independent variable.



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# Acknowledgments

First of all, I want to thank professor Aniruddha Mitra, without whom I would not have been able to finish this project. From motivating me to write this project to helping me circumvent problems on a week by week basis, he has gone above and beyond the role of an academic advisor. Also, learning from him has been a great pleasure.

Secondly, I want to thank six particular peers who have not only helped me through my times of distress but have also made it a fun experience to learn from one another. Sofia Hardt, Ayateru Maeda, Vikramaditya Joshi, Noor Sethi, Austin Clark and Sofia Thompson thank you all for being there for me. Special thanks to Simon DeBevoise , Chibuzo (Praiz) Anyanwu, Hunter Factor, and Noor Sethi (STATA mom) for all the help with coding.

Thirdly, I want to thank the Economics department of Bard College, in particular, professor Sanjay DeSilva, professor Pavlina Tcherneva and professor Michael Martell who have taught me Economics, and have made it a fun experience. I am sure your teachings will profoundly influence my worldview and my future doings.

Lastly, I want to thank my family, my sister Shalmalee Ghate in particular. She has been the guiding force behind my life, and I largely attribute my educational achievements to her. Also, I want to thank coach Craig, and Kathy from Admissions for helping me learn life lessons, which form an integral part of my well being in this college.

Thank you for reading this project.





# Introduction

”The longer I live, the more I feel that the individual is not so much to blame - not even the worst individuals, not even the 'best' citizens - as the system of corruption which has grown up about us, and which rewards an honest man with a mere living and a crook with all the magnificence of our magnificent modern life.”

- Lincoln Steffens

## 1.1 Introduction

After India implemented repressive financial policies, it observed a below-par economic growth compared to China and the East Asian counterparts. At the same time, India experienced rampant government corruption, as it involved a great deal of state intervention in the economy, thereby magnifying the importance of the discretionary decisions taken by bureaucrats who are corruptible. India launched its liberalization policies in the late 1980's, with the purpose of giving markets a central role in the growth of the economy. These policies also increased anticipation for lesser government corruption and better governance. However, India's experience was contradictory. Government corruption increased with prominent money laundering cases

coming into the limelight. Does this mean that financial liberalization increased corruption in the Indian context? If yes, is it a generalizable phenomenon?

In the last quarter of the 20th century, a wave of economic liberalization policies transpired in many parts of the world. Liberalization policies diminish rules and regulations on the economy, reducing government's role in intervening in the markets, letting the private sector pursue their interests more freely. Financial liberalization constitutes one dimension of this multifaceted policy which also facilitates a greater integration of the financial markets across borders. It is a complementary advancement to globalization, is even referred to as financial globalization by some economists. Initially, the excitement of this phenomenon drew academics to study the implications of these policies. Soon they realized that liberalization policies increased capital and financial flows across borders, which lead to volatility, and in this environment, the role of the state in establishing stability was of utmost importance.

State's responsibility is to maintain law and order and protect people and their public interests. Sometimes, these responsibilities are not met, like in the case of government corruption. Government corruption is broadly defined as the abuse of public office for private gain (World Bank, 1997, p.102). According to the World Bank, public corruption is "the single greatest obstacle to economic and social development. It undermines development by distorting the role of law and weakening the institutional foundation on which economic growth depends." (Transparency International, About, n.d). While hardly anyone would disagree that governments hold responsibilities of establishing good governance by reducing corruption, there is disagreement as to whether or to what extent they have the responsibility of intervening in the financial markets. The state intervention in the financial markets is a long-standing and ongoing debate. Historically, governments have always intervened in the financial sectors by imposing capital controls, interest rate controls, directing credit and so on. While neoliberal economists may term this as financial repression, others hold the view that certain levels of intervention are necessary for maintaining stability.

Several global financial crises in some countries that followed in the aftermath of liberalization alarmed many policymakers about the potential negative impacts of liberalization. The primary concern was that it might give the banks the freedom to take on excessive risk, causing financial fragility. The quality of political institutions plays a vital role in determining the impact of financial liberalization. Asli Demirg-Kunt, Enrica Detragiache [1998] studied the effect of financial liberalization on financial fragility. Their seminal study highlighted that stronger institutional quality made crises less likely. Also, it has been suggested that financial liberalization may impact the quality of institutions themselves [Kose et al., 2009; Blackburn et al., 2010; Graeff and Mehlikop 2003]. Financial globalization has posed new challenges to the state. As a result, it needs to re-evaluate its role in accommodating stable economic growth constantly. A group of senior World Bank economists, led by Ahyan Kose, in their highly influential paper *Financial Globalization: A Reappraisal*, say the following,

“There is evidence that poor public governance (as measured by severity of bureaucratic corruption or lack of government transparency) discourages inward FDI and portfolio equity inflows. But whether the prospect of more inflows has actually led to improvements in public governance remains an open question” (Kose et al., 2009, p.45).

In this paper, the World Bank economists continue by claiming that financial liberalization has collateral impacts that may improve institutional quality (Kose et al., 2009). Its a claim made by many [Levine, 2005], but as they admit not much research has been done to unravel the relationship. Simultaneously, other economists have argued the opposite. For instance, Blackburn et.al [2010] theoretically hypothesize that financial liberalization may, in fact, increase corruption levels. Basing their arguments on several other significant findings, such as Graeff and Mehlikop [2003],<sup>1</sup> they hypothesize channels through which corrupt officials find new ways to perpetuate their actions in a liberalized environment. This project aims to provide insight into this area, by empirically testing whether greater financial integration through liberalization help or hurt institutions, more specifically, government corruption.

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<sup>1</sup>Graeff and Mehlokop [2003] show that economic freedom rises corruption in developing countries

The experience of India might make a compelling case to investigate a global pattern in this regard. India has a rich history of employing many financially repressive policies, and it has gradually implemented liberalization policies. Many economists have criticised Indian economic history for its repressive state policies in the second half of the 20th century, that is understood to have caused below-par economic growth (Demetriades et al, 1996). In the 1950s, India had reasonably liberal policies with not much state intervention in the market. Only after the 1960s, “government tightened its control over the financial system by introducing lending rate controls, higher liquidity requirements, and by establishing state development banks for industry and agriculture. This process culminated in the nationalization of the 14 largest commercial banks in 1969” (Demetriades et al., 1997, p.311) Later, in the 1980’s interest rate ceilings were rigidly applied.

The critique of such policies began with the seminal argument made by McKinnon and Shaw. The McKinnon and Shaw’s original approach to the role of finance in development claims that interest rate controls inhibit financial growth (Demetriades et al., 1997). Their hypothesis forms the seminal critique of the financial repression policies. On the other hand, arguments for financial repression stress the critical role interventions can play in maintaining stability. According to Stiglitz [1993], interest rate restrictions may be able to address moral hazard in the form of excessive risk-taking by banks. In the case of India, it had not only repressed financial markets, but it also opted for planned domestic industrialization under a policy called the ‘Licence Raj.’ Licence Raj was a “system of central controls introduced in 1951 regulating entry and production activity in the registered manufacturing sector” (Aghian et al., 2008, p.1397). The cost born by India under the combination of these repressive policies has been well documented [Aghian et al., 2008; Demetriades et al., 1997; Fry, 1980]. The vast amounts of cost have incentivized the emergence of gradual, both internal and external liberalization policies in India.

During this period, India experienced growth in corruption. The critics blamed financial repression and planned industrialization for rampant corruption. Many economists voiced that internal and external financial repression in India boosted corruption activities. Under the Li-

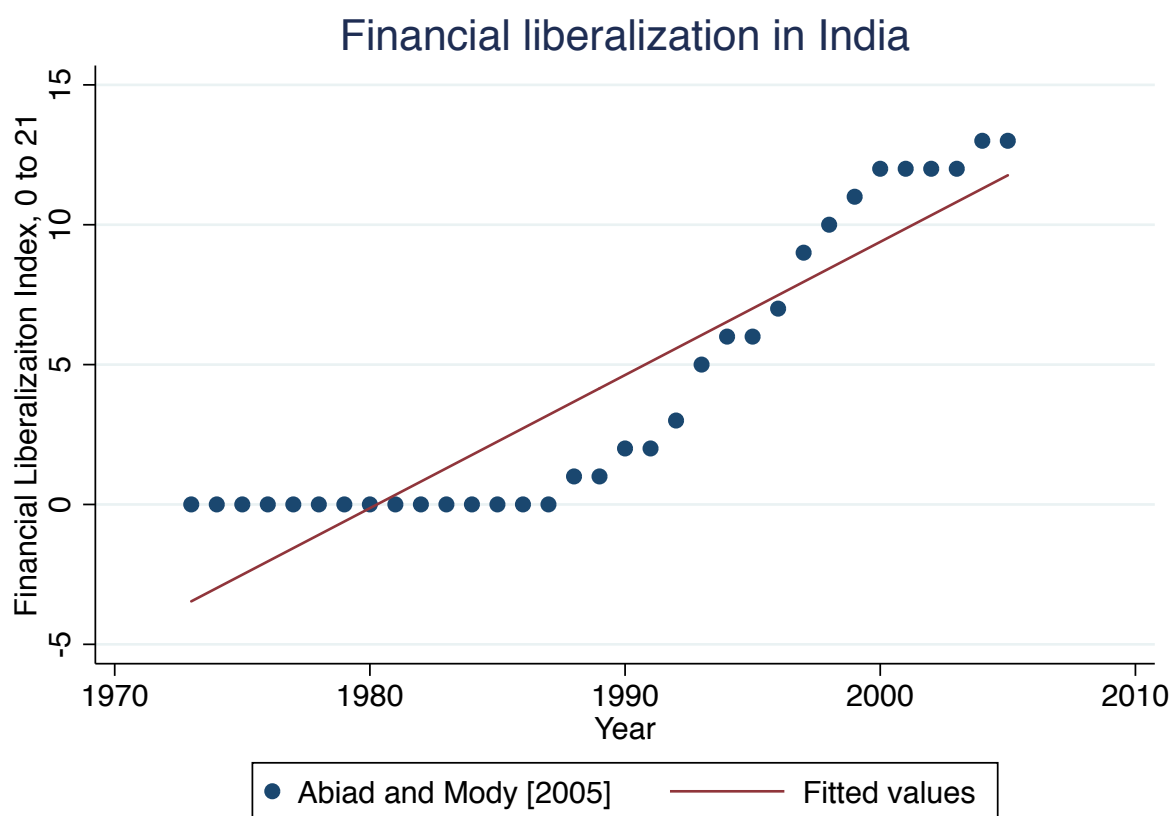
licence Raj, “the need for businesses to obtain a license to alter any aspect of their activities, including to expand output or even alter product design, created extraordinary levels of corruption, as firms sought to speed licence application through rigid bureaucracy...” (Lindsey and Dick, 2002, p.152). The repressive policies encouraged bribery and embezzlement. The rampant corruption under repression added cost to economic activities. All of these made a strong case for liberalization. The implementation of liberalization policies raised hopes among Indians that market freedom could curb corruption.

Liberalization in India began in the late 1980’s. Financial liberalization policies abolished the ceilings on the lending rates in 1988, and directed credit relaxed later in 1990 and 1992. (Demetriades et.al, 1997). The internal economic liberalization abolished the rigid Licence Raj. The abolition of Licence Raj and financial repression policies indicated less government activity in the market, hence, less opportunity for corruption. At the time, an influential work by the World Bank titled, *The State in a Changing World*, prescribed, “policies that lower controls on foreign trade, remove entry barriers for private industry, and privatize state firms in a way that ensures competition all of these will fight corruption” (World Bank, 1997, p.8). While the impact of financial liberalization on growth is ambiguous, the majority believed that liberalization would lead to institutional reform, hence, lower corruption (Kose et al., 2009).

(Data Source : Abiad and Mody, 2005)

However, India’s experience with corruption after liberalization was contrary to these expectations. What transpired was opposite to the long anticipation of a better institutional environment through transparent, less oppressive policies. Liberalization brought no reduction in corruption levels, in fact, there is evidence that corruption might have slightly increased. “Ironically, the liberalization that brought an end to License Raj, arguably reducing corruption, has given scope to the pursuit of personal interest, thereby enhancing corruption” (Riley and Roy, 2016).

The liberalization policies of 1991 was a substantial policy shift undertaken by the Prime Minister Narasimha Rao. He advocated fiercely for liberalization along with his finance minister, Manmohan Singh, who later on became the Prime Minister of India in 2004. After nine years of



**Figure I : Fully repressed to liberalization**  
(Source: Abiad and Mody, 2005)

liberalization, Narasimha Rao himself faced corruption charges and spent three years in prison (Riley and Roy, 2016). This incident acts as a simile to the experience of the whole country. High magnitude corruption scandals were reported in the aftermath of liberalization. As Shashi Tharoor commented, “Hardly a month goes by without a new scandal emerging” (Tharoor, 1997, p. 260) (Quoted in Riley and Roy, 2016). 2G spectrum scam, Coalgate scam, The Common Wealth Game scam are some of the major examples of high-level government corruption that occurred after liberalization. Government corruption soon became the leading topic national concern, and in fact, the anti-corruption stance took by Prime Minister Narendra Modi primarily won him the 2014 elections at the national level.

The post-liberalization rise in corruption level in India sets the case for broader investigation. The traditionally understood channels through which corruption persists must be questioned first. India’s experience with the rise in corruption levels post liberalization suggests either one or any combination of the following:

1. Liberalization policies open up new avenues for corrupt activities
2. Corruption levels are not impacted by repression or liberalization; it is a cultural or traditional inclination
3. Liberalization was accompanied by confounding variables that increased corruption
4. The global increase in corruption that is unrelated to liberalization

The example of India may indicate a relationship that is worth an examination at the global level. If my hypothesis 1 is true, India’s story is merely a subset of the worldwide experience that has not been studied extensively. From the experience of India, this project tests whether there exists a global pattern which may suggest that financial liberalization can potentially increase corruption.

This project conducts an econometric analysis and sheds light on this unexplored topic. In a panel of 76 countries over 1984-2005, I find robust and significant evidence for the claim that financial liberalization increases corruption. The project is organized as follows. Chapter 1 explores the concept of financial liberalization and its implications, Chapter 2 explores the



idea of government corruption and its determinants, Chapter 3 establishes channels of impact of financial liberalization on corruption, Chapter 4 will cover the quantitative analysis and explore the results, and Chapter 5 concludes.

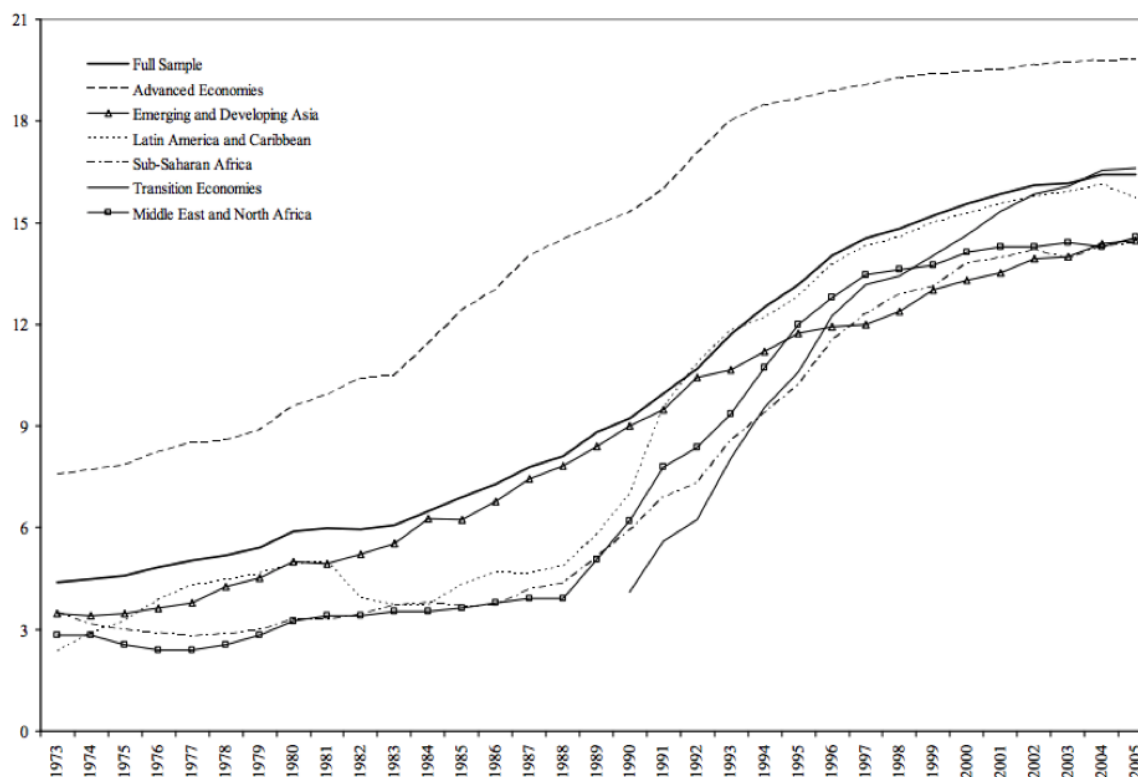
# 1

## Financial Liberalization

The importance of financial liberalization, in the global context, was highlighted towards the last quarter of the 20th century. The financial development which took place in the 1980's and 1990's was part of the general transition towards enabling markets to have a more significant role in development. From financial repression to financial liberalization, countries across the world have experienced a transformation in the way the modern economies function. The financial markets around the world work together as a result of financial globalization. A shock in a single financial market can potentially cause a viral effect. For example, during the financial crisis of 2008, the subprime homeowners who could not pay the house mortgages in Texas, hurt the stringent availability of credit in European countries like Sweden (Financial Times, 2007).

Financial reforms went beyond the interest rate liberalization that had been recommended by the so-called 'Washington Consensus' (World Bank, 1997, 2007). It is a multifaceted policy that eases restrictions on many markets. Although it has a reputation to be aligned with the western global economic policy agenda, increasingly, the internal policy makers in the ministries of the developing countries are opting for liberalization with the idea that it is a necessary step for the general better functioning of the domestic financial markets (Ghosh, 2005). Abiad and Mody [2005] through their extensive research in this area categorize scenarios that lead to financial

Figure 1. Financial Liberalization Index by Country Groups, 1973-2005



(Source: Abiad and Mody, 2005)

liberalization into three categories: 1) shocks, 2) learning and 3) ideology (Abiad and Mody, 2005).

Economic shocks sometimes push a country to undertake radical steps to reform. A country may resort to taking steps to liberalize their financial markets after an economic shock that may change the balance of ‘decision-making power.’ Secondly, a country may take steps to liberalize after careful planning and assessing the costs and the benefits. This scenario would be considered a ‘learning’ step to liberalization. Thirdly, a country may liberalize due to the political ideology of the ruling government. According to Abiad and Mody, these different scenarios leading to liberalization may have different implications. For example, the liberalization that occurs after a shock might be immediate, whereas, if it is a ‘learning’ step, then it would be more gradual. Besides, the World Bank report on *Financial Liberalization: What went right? What went wrong?*, claims that under financial repression, which was the state of nature before

liberalization, countries experienced “poor results, high costs, and pressure from globalization” (p.208), that incentivized the economies to liberalize. The causes behind financial liberalization are political-economic.

Several financial crises that followed liberalization “raised questions whether financial liberalization was the wrong model, what had gone wrong, the appropriate direction of future financial sector policy” (World Bank, 1997, 207). Along with this red flag, there came an assemblage of literature that was also set out to criticize the impacts of financial liberalization on financial fragility, and volatility.

## 1.1 Defining Financial Liberalization

Financial liberalization (FL) refers to the removal of the restriction on the domestic financial markets and domestic financial institutions that would not only allow for more financial innovations but also liberalize the domestic markets to foreign interests. It is designed to make the central banks more independent to relieve ‘financial repression,’: freeing interest rate to allow for financial innovation and to reduce subsidized credit, and to allow for greater freedom regarding the external flow of capital (Ghosh, 2005). It may include the deregulation of the domestic markets and liberalization of capital accounts. It may also include abandoning of measures like ‘priority sector’ lending targets, the government imposed interest rates, restrictions on ownership of banks and so on. It is a multifaceted measure that does not come in a package; it is a combination of the all these measures aimed at removing barriers and facilitating integration.

Economist Jayati Ghosh provides a structure to this multifaceted policy (Ghosh, 2005). The following is a summary of the structure provided by her.

Broadly, the term financial liberalization is divided into two categories: Internal and External financial liberalization. The internal financial liberalization seeks to limit the role of the central bank to supervision and monitoring while allowing for the integration of financial markets within the economy. It encompasses,

1. Reduction or removal of controls on interest rates charged by the financial agents
2. Privatization of the banking system

3. Greater freedom in domestic equity markets
4. Removal of financial regulatory walls between different domestic financial sectors.

The external financial liberalization typically involves changes in exchange control regimes and it can take place in 3 different ways:

1. Measures that allow foreign residents to hold domestic financial assets
2. Measures which allow domestic residents to hold foreign financial assets
3. Measures that allow foreign currency assets to be freely held and traded within the domestic economy.

Financial liberalization and its impact are naturally of great interest to economists. To address this question, a large amount of economic literature, both empirical and theoretical, has focused on the effects of financial liberalization on the economy. Most of the literature on financial liberalization has been around its impact on growth which questions the need for financial regulations against highly risky endeavors. Increasingly, the need for liberalization has been stressed in the development agenda of the emerging and developing economies.

## 1.2 Previous Work

Growth and volatility are the two parameters that have been used to study the impact of financial liberalization. The arguments made on the effects of financial liberalization has been on extreme ends. While some say that financial liberalization leads to positive growth, others argue that the effect is growth vaporizing through crises caused by extreme consumption volatility. In other words, the arguments shift between two polarities of economic growth and crises, suggesting a trade-off between the two (Ranciere, n.d). The nature of the arguments here is not just theoretical, but also empirical.

Many have claimed the causation between financial liberalization and number of financial crises as well. A famous example of the destabilizing effects of financial liberalization is the East Asian Economic crisis of 1997. Stiglitz (1998) had raised reasonable objection towards financial liberalization when he argued that East Asian success was mainly due to a state-led

credit allocation, a form of financial repression. In fact, liberalization in East Asia seems to have led to the crisis in 1997. Also, the uncontrolled extensive capital outflows experienced by the ‘transition economies ‘ like the former Soviet Union republics, capital flight suffered by several African countries (especially in the Sub Saharan region) are examples of volatility that is accompanied by financial liberalization.

### **Theoretical Pros**

The arguments for financial liberalization started with seminal papers by Mckinnon (1973) and Shaw (1973) who critiqued ‘financial repression.’ Financial repression referred to the idea that “government regulation, laws, and other non-market restrictions prevent the financial intermediaries of the market from functioning at their full capacity” (Gemech et al., 2003). Their critique of financial repression included rules such as “interest rate ceilings, liquidity ratio requirements, high bank reserve requirements, capital controls, restrictions on market entry into the financial sector, credit ceilings or restrictions on directions of credit allocation, and government ownership or domination of banks” (Gemech, 2003). According to them, these unnecessary controls led to excessive demand and inefficient allocation of capital (Bumann et al., 2013). Financial repression is said to have a depressive effect on savings rates resulting in capital shortages. Furthermore, it continues the financial repression is ‘inimical to financial deepening, which is shown to have a negative impact on growth in their empirical study (Ghosh, 2005, p.2).

For some economists, financial liberalization leads to strictly positive growth in emerging and developing economies. This view is often based on an analogy with trade liberalization, the benefits of which are rarely disputed (Blackburn, 2010, p1233). Theoretical macroeconomic arguments for globalization stem from the neoclassical argument that “financial globalization should lead to a flow of capital from capital-rich economies to capital-poor economies because, in the latter, the return to capital should be higher” (Kose et al., 2009, p.12). The notion of ‘efficient financial markets’ is also central to this argument. Under this assumption, “capital markets are seen as being competitive and informationally efficient when they ensure the availability and full utilization of the information required together, in the value of the assets as well as to

identify the best investment” (Ghosh, 2005, p.2). Furthermore, liberalization makes it possible for people to hold assets in foreign countries, which leads to greater diversification of risks. They can insure themselves against country-specific shocks. Greater risk diversification, in turn, helps reach “higher productivity and economic growth through greater specialization” (Kose, 2009, p.12).

Some of the main theoretical arguments for financial liberalization are as follows:

1. The competition between banks created through privatization of the Banking sector leads to higher interest rates on savings, which allow for higher investments.
2. If the financial liberalization includes capital account liberalization, the capital inflows to the country in terms of credit and equity market investment will increase, creating more opportunities for growth and investment.
3. Financial liberalization may include removal of financial regulatory walls between different domestic financial sectors, which would allow for greater diversification of risk for financial institutions.
4. Through FL there may be an import of bank and risk management techniques, as well as new financial instruments and services (Bumann et al., 2013).
5. A globally integrated and competitive financial system is presumed to offer greater opportunity for diversifying risks and to incentivize to enhance and maintain efficiency
6. Financial integration can also spur technological know how spillover adding to the benefits of capital poor countries.

### **Theoretical Cons**

However, the relevance of these theoretical arguments in the real world come under considerable skepticism. The neoclassical theoretical arguments that highlight the positive impact of

financial liberalization on growth has come under skepticism. Some economists deal with this skepticism on a theoretical level, and others look at the empirics as an instrument to convey the argument.

At a theoretical level, economists (Lucas, Joseph Stiglitz, and others) have confronted the neoclassical argument. It predicts capital flow from rich countries to developing countries instead of restrictions due to higher return to capital has been famously refuted by Lucas (1990), which has later gone on to be known as the Lucas Paradox. It is an observation that capital does not flow from rich countries to developing countries, despite the latter having lower levels of capital per workers.

Furthermore, Stiglitz argues that information asymmetries stemming from lack of transparency in financial institutions could lead to inefficient allocation of financial flows, which generate maturity mismatches and result in costly crises (Kose, 2009, p.14). Since information show characteristics of public goods (non-rivalry in consumption and non-excludability in provision), inadequate acquisition of information leads to improper regulations within the financial system (Ghosh 2005, p.2). Improper regulation, in turn, leads to inadequate risk-taking which might be the cause of crises.

### 1.3 Collateral Impact

The empirical arguments on the impact of financial liberalization on growth are inconclusive. Depending on the choice of measurements, theoretical biases, selection biases, areas of interests, studies have ended with one of the three conclusions: positive impact, mixed impact or no impact. Based on this, some economists argue that when the empirical results of the impact are so inconclusive, it is reasonable to believe that other factors influence the impact on growth.

Whether economic impacts of financial integration is good or bad is dependent on a number of context-specific factors (Blackburn, 2010, p.1322). Evidence has suggested that the impact of financial liberalization on growth is subject to an institutional threshold (Demirg-Kunt, 1998; Blackburn 2010; Alfaro et al., 2008). Asli Demirg-Kunt and Enrica Detragiache in their seminal



research paper argue that the effect of financial liberalization on the fragility of the banking sector is weaker when the institutional environment is strong. While Lucas's argument confronts the theoretical neoclassical model, Alfaro et al. (2008) hold the empirical investigation of the same. In their research, they conclude that institutional thresholds play the utmost important role in examining the capital flow from rich to poor countries. Some researchers, study the combined impact of financial liberalization and institutional threshold on growth. "Financial Liberalization is more likely to be beneficial for more developed economies in which these structures are more mature, more advanced and more robust" ( Blackburn, 2010, p.1323). The argument here would be that in a country with low levels of corruption, financial liberalization will have a positive impact on growth, as opposed to a country with high levels of corruption.

When there are so many disagreements in the present argument, this project will argue that when studying the impact of financial liberalization, growth should not be the primary area of interest. The reason for this argument is because of the idea that financial liberalization might have a significant role to play in other markets, which should be thoroughly studied first to study the impact on growth. The government that decides to liberalize can itself benefit or suffer from liberalization. For example, Kose argues that financial integration can generate significant indirect or 'collateral' benefits that, in quantitative terms, are likely to be the most critical sources of enhanced growth and stability for a country engaged in financial globalization (Kose et al., 2009). The argument continues that the central collateral effects reforms institutions in the long run (Kose et al., 2009).

## 1.4 Measuring Financial Liberalization

Financial liberalization can be measured in two different ways, (1) *de jure* financial liberalization and (2) *de facto* financial liberalization. The *de jure* financial liberalization measures the policy decisions and the *de facto* financial liberalization measures the actual capital flows. " Many countries have capital controls that are quite strict on paper but toothless in practice so their *de facto* level of integration—as measured by capital flows or stocks of foreign assets and liabilities—

is quite high” (Kose et al., 2009, p.11). These two measures have different implications. *De jure* financial liberalization addresses the policy implications directly, whereas *de facto* measures the collateral benefits of financial liberalization. This project uses *de jure* financial liberalization in this project as the project tries to capture the policy implications. This will be further addressed in chapter 4.

Bekaert and Harvey [2000] measure the *de jure* financial liberalization by a dummy variable as a one time change to liberalization. This measure limits the scope for investigation by not only ignoring the different extents of liberalization but also the continuous changes in the policies. Rajan and Zingales [2002] measure financial liberalization through continuous proxies like the level of financial development. This kind of measure accounts for the time-variant factor but fails to measure policy implications directly. To account for both of these factors, an index is needed that combines both of these two factors. Abiad and Mody [2005] construct an index to measure financial liberalization which accounts for the multifaceted nature of liberalization by using six dimensions to measure openness. The six dimensions are 1) directed credit/reserve requirements 2) interest rate control 3) entry barriers 4) restrictive operational regulations 5) the degree of privatization in the financial sector and 6) the degree of controls on the international financial transactions (Abiad and Mody, 2005, p.5). Chinn and Ito [2006] create a similar index called the KAOPEN index. However, it measures only the capital account liberalization, a subset of financial liberalization. Chapter 4, which covers the quantitative analysis will extend the conversation in this matter.



## 2

# Corruption

Corruption is considered one of the oldest professions known to humanity; its beginnings can be traced back to the beginnings of government itself (Seldadyo et al., 2006, p. 2). Corruption is an indicator of something gone wrong in the governance of a country. No region in the world historically has been immune to corruption (Shabbir et al., 2007). From top-level political scandal to the low levels such as a bribe given to a policeman, corruption can take various forms and sizes.

Corruption, with its widespread nature, is considered to be the biggest impediment faced by emerging and developing countries in their growth agenda. Corruption is defined as the use of public office for private use (World Bank, 1997, p.102). According to the World Bank, corruption is “the single greatest obstacle to economic and social development. It undermines development by distorting the role of law and weakening the institutional foundation on which economic growth depends.” (Transparency International, About, n.d). Corruption is an interdisciplinary issue. Its determinants, dynamics, and impacts transcend any single discipline. According to Andvig “corruption is a meeting place for research from the various disciplines of the social science and history” (Andvig, 1991, p.58). Many different disciplines study corruption - anthropological, economic, historical, sociological, moral, psychological, philosophical, and political.

Research in corruption is usually multi- and interdisciplinary and includes descriptions and corruption scandals, country cases and cross-country studies (Seldadyo et al., 2006, p.2).

By corruption, this project refers to the government corruption, and it does not refer to the corruption in the private sector. The focus here will be mostly in the public sector and sectors where the government meets the private sectors to carry on projects. Corruption occurs not just in a public setting, but also in the private one. For example, a passenger on an airline might bribe a low-level agent to get promoted to first class; a credit agency may collude with institutions to mark up the credit scores. When these acts are still considered corruption, this project will not discuss or consider any kind of private corruption in its investigation.

While in its essence private sector corruption might not differ from the public sector corruption, it has very different implications for social welfare. The problems caused by the public sector corruption is far greater than its private sector counterpart. The logic here is that, if an institution in a private sector is corrupt, as long as markets are competitive, the customer has the liberty to switch to another institution for the same service. Corruption, when understood in this sense, can cause a tax on its products. The customer then has the choice to switch to the non-corrupt private firm with a lower price for the same product. Consequently, the corrupt firm will make an inferior profit in the long run compared to the non-corrupt institution. Under perfect competition, corruption can self-destruct. On the other hand, government and monopolistic sectors do not provide the alternative in the same way as a competitive market would. Taxpayers and citizens cannot rely on other institutions to provide the service of the government such as healthcare, public safety. This innate monopolistic nature of governments coupled with corruption causes a bigger menace to the social welfare than the private sector corruption.

Corruption can take various forms. It may be bribery, extortion, embezzlement, concessions, nepotism, obtaining major contracts, buying political influence and judicial decisions. Corruption encompasses all of these acts. 'The the central problem of corruption is that it "may endanger the stability and security of societies, undermine the value of democracy and morality and jeopardize social, economic and political development" (UNDP, 1997, Introduction). Corruption

occurs when institutions designed to govern the relationship between citizens and the state are used instead for the benefit of the public official and the corrupt. Its existence is universal, and its intensity varies across countries, and over time. How does corruption perpetuate in government institutions.

## 2.1 Government Corruption

Institutional quality is essential for economic growth of a country. As Acemoglu [2004] famously put it, “countries with better ”institutions,” secure more property rights, and less distortionary policies will invest more in physical and human capital, and will use these factors more efficiently to achieve a greater level of income” (p.1369). Many along with Acemoglu and Robinson argue that institutional quality is the main reason for the long run growth of an economy. Political institutions and economic institutions are two kinds of institutions, and they both impact growth considerably. Some countries have better institutions than others. The factors that determine institutional quality are several, history being a quintessential one.

How can we measure institutional quality? Different factors are used to measure institutional quality. Most of the studies that measure institutional qualities measure different dimensions of the government through an index to determine its quality. The most popular indices on institutional quality will include some combination of the following: law and order, the extent of bureaucratic delays, the quality of contract enforcement, quality of bureaucracy, and the degree of corruption. Public sector corruption is one of the measures of institutional quality. High corruption indicates poor institutional quality, weak governance and poor law enforcements. Corruption not only deteriorates the quality of institutions but also threatens their existence.

Political corruption can be difficult to determine. Many confuse corruption with rent-seeking activities where interest groups try to influence the politicians to obtain economic favors (Roland, 2016, p.510). This practice is not necessarily corrupt as long as the activities are transparent in the legal context. What is considered to be corruption also differs from country to country with different legal codes. The one common theme that corruption entails is that it invariably

leads to breaking the law. Under the rule of law, activities that break the law are punishable. To avoid punishment, the perpetrators must weigh the costs of indulging in corrupt activities (the probability of conviction) against the benefits (the pay off from the transactions). In countries where corruption has little legal consequences, the incentive to engage in corruption will be high. As Becker analyses, it, “the incidence of illegal behaviour is directly related to the potential gains from illegal activity and indirectly related to the probability of conviction and the severity of punishment” (quoted in Goel and Nelson, 1998, p.110). However, the same is not apparent for political corruption. The electoral accountability disincentivizes politicians from engaging in corruption. In countries with stronger government enforcement of the law, corruption persists in somewhat a covert manner. This shows how corrupt activities will also be secretive in nature. Corrupt systems have an incentive to be non-transparent and engage in activities without being apparent. The more corruption there is, the less transparency will be government decisions (Roland, 2016, p.510). Corruption self-perpetuates in the institutions.

## 2.2 Literature on Corruption

Most of the academic literature written on corruption has addressed either one of these issues or both: (1) impact of corruption, especially on economic growth, or (2) determinants of corruption. The literature is both theoretical and empirical. The earlier work has focused more on the theoretical work. In the last couple of decades, many academics have tried to find empirical support for these theories.

Most of the earlier work in corruption was mainly theoretical. Nye [1967] wrote a cost-benefit analysis of corruption. Later, a new set of economists, following Becker and Stigler [1974] focused on the principal-agent models of corruption. Some of the famous ones include Rose-Ackerman [1975] and Klitgaard [1991]. These models looked into the relationship between the top-level government official and the low-level official (agent) who is susceptible to bribery. Over time, many other models of corruption came into the limelight that not only aspired to describe the dynamics of corruption but also to mention its impact on growth, investment, production, trade

and other business activities. Most agree that the principal cost of corruption is that the cost of capital for firms tend to be higher where bribery is prevalent. Shleifer and Vishny [1995] suggest that distortion entailed by the necessary secrecy of corruption makes corruption a costlier affair than its sister activity, taxation (Shleifer and Vishny, 1995, p.616 ).

However, not all economists believe that corruption reduces economic growth. The argument put forward by Leff (1964) and Huntington (1968) imply that corruption may increase growth. First, corrupt practices like ‘speed money’ would enable individuals to avoid bureaucratic delay. In their understanding, bribery acts as a market clearing price that can increase efficiency in an inefficient bureaucracy. Second, government employees who are allowed to levy bribes work harder, especially in cases where bribes act as a market price rate (Mauro, 1995).

‘Grease the wheel’ hypothesis was put forward by Leff (1964), Huntington (1968) and Leys (1965). Huntington (1968) stated: ”In terms of economic growth, the only thing worse than a society with a rigid, overcentralized, dishonest bureaucracy is one with a rigid, overcentralized, honest bureaucracy” (Meon and Sekkat, 2003). This hypothesis claimed that in countries with a high number of bureaucratic obstacles, where the rules are themselves inefficient, corruption might help enhance efficiency, which should theoretically result in the growth of the economy. The ‘speed money’ characteristics of corruption should increase investment and by extension increase growth. Speed money in this context acts as an economic incentivize. The idea here is that the private individual must pay a certain price to obtain the service of the bureaucrat, just like how he/she would pay a price to get a price from a private institution. In addition to that, ‘grease the wheel’ view also assumes that resources will be allocated to the highest bidder.

This view of corruption is misleading for many reasons. Firstly, this model assumes that bureaucrats are economic agents whose service can be bought at a fair price. Public institution by nature does not face competition. Hence, the price for the service provided by the bureaucrat will be far above the market equilibrium. Besides, it ignores the enormous degree of discretion that many politicians and bureaucrats can have, particularly in corrupt societies (Kauffman, 1997). They have discretion over interpretation, regulation, execution and other counterproductive



work. Therefore, corruption might exacerbate the inefficiencies in the system. For Leff [1964] specific levels of corruption are desirable in the certain sections of the government. Economist Rose Ackerman [1978] critiqued this argument by arguing that it is rather difficult to limit corruption to areas in which it might be economically desirable (Mauro, 1995). Kauffman [1997] points out that another major problem with the idea of speed money is that it assumes that both the parties will stick with the deal with no further demand for the price (p.3). Moreover, some resources are not supposed to be given to the highest bidder<sup>1</sup>. Also, these bribes impair macroeconomic stability by diverting funds from treasury revenues (Kauffman, 1997, p.3).

Most of the empirical evidence tends to bear a pessimistic idea of corruption, showing very little empirical support for the ‘grease the wheel’ hypothesis. Empirical investigation gained much attention with a seminal paper written by Paolo Mauro [1995] addressing the impact of corruption on growth. A ton of literature has followed addressing many variations of this basic model, where he measured the impact of corruption on growth by regressing the subjective perception of corruption on macroeconomic growth indicators. In his paper, he concluded with robust evidence that corruption lowers private investment. However, its impact on growth is inconclusive in his analysis (Mauro, 1995, p.683). Tanzi and Davoodi [1997] argue that corruption may reduce growth through 5 different channels: 1) higher public investments, 2) lower government revenues, 3) lower expenditures on operations and maintenance, 4) lower quality of public infrastructure, and 5) lower quality of roads. Shang Jin-Wei [2000] has examined the impact of corruption on foreign direct investments. He found a strong reduction in foreign direct investment as corruption increases. This argument supports Mauro’s empirical findings as the cost disincentivizes investors to invest in the countries with high levels of corruption, leading to slower economic growth.

Others argue that it is not just the level of corruption that affects investments, but it is also the nature of corruption [Campos et al., 1999]. While Shleifer and Vishny, and Kaufman analyze theoretically how different types of corruption -monopolistic vs. independent supplier models-

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<sup>1</sup>Refer to the Coalgate scam in the Indian context to see how bidding can lead to a scam.

function, Campos and his colleagues provide evidence for how different natures of corruption have a different impact on the economy. They correctly argue that regimes in which corruption is more “predictable” all else held equal, have a smaller negative impact on investment than those in which it is less predictable (Campos et al., 1999).

## 2.3 What Determines Corruption?

The empirical analysis is an excellent way to understand the cross-country determinants of corruption. One way to identify the factors that determine corruption is to survey the control variables used to determine corruption. There have been plenty of empirical analyses that infer the determinants of corruption. While the variables used as determinants are up for debate, some of the following are noted with some consistency. “Some variables have a positive relationship with corruption like government involvement in the economy and income inequality; others have a negative relation like the level of education, level of development and economic freedom” (Shabbir et al., 2007). The determinants of corruption can be broadly categorized into 1) political, 2) economical, 3) cultural and 4) judicial.

Seldadyo and Haan survey the empirical studies that have tried to determine corruption. According to them, the most common economic factor used to determine corruption is income (Seldadyo et al., 2006). Usually proxied by gross domestic product, it is found to have a negative relationship with corruption. The most common political factor, according to their research, is democracy/civil liberty. Most studies determine the higher the civil liberty, the lesser corruption. The main reason it reduces corruption is that civil and political liberty imposes transparency. Some studies use religious and cultural affiliations in determining corruption. For example, some studies find that Protestant countries are more likely to be less corrupt (Paldam 2001, La Porta 1999). Lastly, judicial and administrative factors like bureaucratic wage are used to determine corruption. Chapter 4 will extend this conversation.

## 2.4 Measuring Corruption

Many researchers propose different methods of measuring corruption. The central challenge faced by researchers while measuring corruption is its secretive nature. The clandestine property of this phenomenon makes it harder to measure. Micro-level data entails gathering survey data drawn from firm-level surveys. Macro-level data can be measured in two different ways 1) general or target-group perception and (2) indices of corruptive activities (Seldadyo et al., 2006,p.4). Many indices try to merge both micro and macro level data into a composite index. However, each of these types of measures bears strengths and weaknesses that are unique to their methodology.

There are mainly two methods of measuring corruption: an objective measure of corruption and subjective measure of corruption. The objective measure of corruption quantifies acts of corruption, and the subjective measures evaluate perceptions of corruption by those who are either confronted with it or with its consequences (Roland, 2016, p.216).

The objective measure of corruption also referred to as ‘incidence-based’ measure of corruption, is comprised of the measure based on ‘incidences’ of corruption scandals. “The incidence-based approach is based on surveys among those who potentially bribe and those whom bribes are offered. Through this approach, a researcher can get information on how frequently corruption occurs in various types of transactions” (The Hungarian Gallup Institute 2000) (Cited in Seldadyo et al., 2006, p.5). Also, this measure of corruption also intakes indictment of corruption. While one might attempt to keep an account of all the scandalous deals that are published in the media to measure corruption, this will always lead to a severe underestimation of what the actual level of corruption would be. For instance, low-level corruption will never get the media attention equivalent to the grand scale corruption that takes place at the helm of politics.

The subjective measure of corruption or the general or target-group perception data gives a ‘perception of corruption’ rather than an actual measure of corruption. It brings out a feeling of a particular group towards the injustice happening in governance. The group of people might as well be a group of ‘experts’ in the field.

The most popular perception-based approach is the Corruption Perception Index produced by Transparency Berlin. Starting in 1993, Transparency International has worked towards creating an international awareness to fight against corruption. One of its contributions has been the survey-based data on corruption. It is a polls-of-polls index, meaning, they create the index by creating indices based on different surveys. The respondents for these surveys are “businessmen, protected journalists and experts from institutions” (Transparency International, n.d, methodology). In addition, they do not survey the general public. For example, “the CPI 2017 is calculated using 13 different data sources from 12 different institutions that capture perceptions of corruption within the past two years” (Transparency International, n.d, methodology). Transparency International’s effort to create the index was the first of its kind, and it has inspired many other researchers and organizations to create a similar cross-country standardized indices. However, the polls-of-polls survey based ‘perceptive indexes’ possess certain qualities that are undesirable to a researcher.

Golden and Picci [2005] critique these survey-based research for its ‘inherent weaknesses’. According to them, first, the real degree of reliability of survey information is unknown. The persons involved in corruption activities may have incentives to underreport the corruption levels. Moreover, people who perceive corruption may not be making their judgments on reliable information. Transparency International tries to remove this bias by aggregating the data collected by many surveys (as much as 13 different data sources and 12 different institutions for 2017). However, Golden and Picci continue that for countries where more surveys are available, the perception might be more reliable than countries with lesser surveys. Also, the availability of surveys and institutional perceptions are highly correlated with the level of growth, making the analysis unreliable. In other words, “the Corruption Perceptions Index is probably more reliable precisely where corruption is typically less prevalent” (Golden and Picci, 2005, p.40). The second problem that they point out is that the popularity and the wide availability of the corruption perception index may act as self-referential, making the index endogenous to itself

(p.40). The more people have access to their indices on corruption, the respondents may make perceptions from the previous year's index.

An excellent example of a poll-based corruption index is the index provided by the International Country Risk Guide (ICRG), who produce data for sale. The data produced by ICRG is used by many multinational investor institutions, academics, and banks. The widespread use of ICRG is mainly due to their coverage both across countries (140+) and over time (1984 to present). The ICRG surveys experts in numerous institutions worldwide, collecting primary data to create indices. Kaufmann and Kraay (2002) argue that the survey among experts are incredibly reasonable for a cross-country analysis. Unlike the CPI produced by Transparency International, the indices formed by ICRG is its own (whereas the former is the aggregate of many different indices). The ICRG data also costs thousands of dollars whereas CPI is made free to the public. Chapter 4 will discuss this topic further.

# 3

## How does Financial Liberalization impact Corruption?

Williamson (1990) in his paper summarized the set of policies that Washington based institutions (Including the world bank) thought would be good for Latin American countries. As he recounts, interest rate liberalization, trade liberalization and liberalization of the inflows of foreign direct investments formed the three out of ten primary policies (Williamson, 1990).

Pushing towards economic liberalization policies has always been one of the implicit agenda of the international institutions like the World Bank and the IMF. Some argue that by 1980, these international institutions, who are also the donor agencies carrying out economic and political reforms, provided prescriptions to countries on ensuring good governance. Barber Conable, who was the president of the World Bank in the 1990's, emphasized four objectives for economic growth. They were: increased government spending on education and healthcare, greater competition in domestic markets, greater integration of the domestic economy with the global economy and the creation of a macroeconomic environment (Munshi, 2004). Financial liberalization helps achieve the objective of greater integration of the domestic economy with the global economy by opening up the domestic markets to foreign interests. According to the prescriptions provided by the international institutions, policies like financial liberalization must facilitate quality growth and good governance.

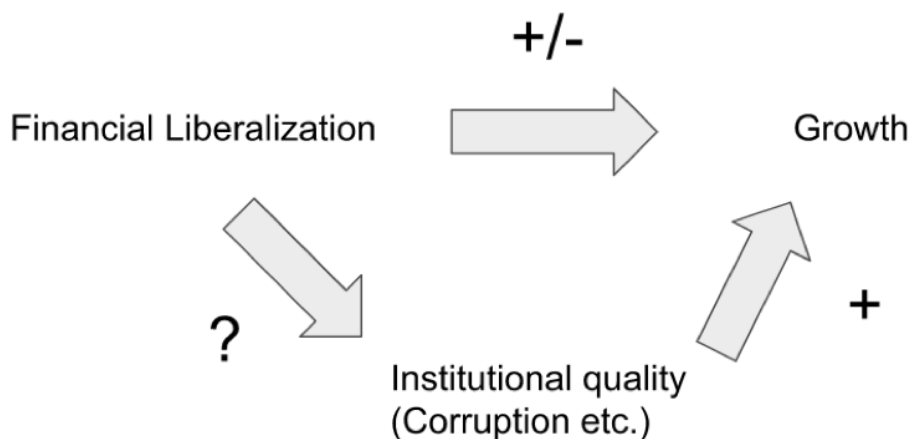


Figure 3.1

The impact of globalization on institutional factors is theoretically ambiguous. In the ever-changing environment of globalization, the states have to adapt to the newer challenges through constant re-evaluation. The economic integration of the world through liberalization policies reduces the government's involvement in the market. However, the same accessibility can lead to an outflow of illegal money to international safe havens like the Swiss Bank.

In this chapter, I will try to establish the causal link between the financial liberalization policies and corruption and try to assess the directionality of the impacts.

In the financial liberalization literature, not many studies have tried to identify the impact of liberalization on corruption. As discussed in Chapter 1 most academic studies examining the impact of financial liberalization have focused on its impact on growth, while using different factors to explain the mechanism behind its mixed impact. Research conducted by Ash Demirguc-Kunt and Enrica Detragiache [1998] test for the impact of financial liberalization on financial fragility.

Their intuition is that financial liberalization gives financial institutions and banks more freedom of action, which can increase the opportunity to take the risk. The higher opportunity of risk might lead to more fragility, but this impact can be different in different institutional environments (Demirguc-Kunt et al., 1998). They notably investigated "...whether the relationship between banking crisis and liberalization is stronger in countries with weaker institutional environments, as proxied by GDP per capita and various measures of institutional quality"

(Demirguc-Kunt et al., 1998, p.97). In this study, they use government corruption as one of the measures of institutional quality. They conclude that weak institutions make liberalization more likely to lead to a banking crisis; specifically, where the rule of law is weak, corruption is widespread, the bureaucracy is inefficient (1998). In this way, institutional factors like corruption have mostly been brought up in the literature as an interactive factor.

The impact of financial liberalization on institutional quality has not been studied with the same rigor. From my research, the only two studies that tested the impact of financial liberalization on corruption and institutional quality. Alzer and Dadasov [2013] find that financial liberalization improved institutional quality for all variables, except corruption levels. “We suggested that financial opening is interpreted by investors as a signal to provide better protection of property rights by local governments, which results in a lower perception of expropriation risks. On the contrary, our findings verify predictions, according to which, economic liberalization might provide a ground for rent-seeking activities, thereby increasing the level of corruption” (Alzer and Dadasov, 2013, p.445). The paper continues that increased interests from opening doors might lead to nepotism and patronage. However, if simultaneous democratization accompanies financial liberalization, the paper argues, “these institutional malfunctions can be prevented” (Alzer and Dadasov, 2013, p.443). This evidence supports the argument made by Tavares [2003], who argues that trade liberalization might increase corruption, but when accompanied by democratization this effect might be eliminated. The authors use KAOPEN index as a proxy to measure financial liberalization and the ICRG index for institutional quality. This project considers that KAOPEN index instead measures capital account liberalization which is a subset of financial liberalization. By using Abiad and Mody [2005], data set my research will differ from Alzer and Dadasov’s [2013] analysis.

Secondly, Chandan Kumar Jha [2015] investigates the impact of financial liberalization on corruption. He finds that some aspects of financial liberalization lead to decrease in corruption. His evidence shows “The findings of this paper suggest that the removal of entry barriers to the financial sector, easing credit controls, developing security markets, and supervising the banking



system may help combat corruption” ( Jha, 2015, p.5). These findings lead to a suggestion that while liberalizing the economy, certain aspects of liberalization needs to be emphasized more than the others. He continues, “the empirical evidence presented in this paper refutes their (Blackburn et al. 2010) hypothesis and strengthens the case for liberalization” (Jha, 2015, p.5). Blackburn et al. [2010] theoretically argue that financial liberalization may, in fact, increase corruption. Their arguments are summarized later in this chapter. Jha’s study, therefore, counters Blackburn’s hypothesis. Jha [2015] uses the same dependent (ICRG index) and independent variables (Abiad and Mody [2005]). His research is the closest to this project, but the results of my project are anti-thesis to his. This difference is partially due to the different methodology I employ in my analysis and partly the omitted variable problem in his research. Jha’s findings and how it differs from the result of this project will be discussed in Chapter 5.

Other studies have used variables that are usually associated with a product of financial liberalization or as an accompanying factor in their analysis testing the effect of corruption. Financial development and deepening are one of those factors. Levine [ 2005] advocates financial deepening where he mentions its possible benefits to governance. Recent literature on the impact of financial development helps his argument. For example, Altunbas and Thornton[2011] show that financial development reduces corruption in a panel analysis using the country’s legal origin as an instrumental variable.

Foreign aid and corruption is also a significant topic in this literature. Corruption has been considered a significant impediment faced by foreign aid donor countries. Donor countries donate money for the development of a particular sector in a developing country. Corrupt officials in the beneficiary economy may divert the donation to powerful pockets or embezzle the money themselves. Also, the leaders of these countries have an incentive to stay poorer, as poorer countries or needier countries get more aid than its compatriots [Alesina and Dollar, 2000]. Many leaders in developing countries hence have an incentive to embezzle the money and stay poor to enjoy more aid in the future. However, donations that channel through the hands of non-governmental organizations [NGOs] have helped to uproot this problem. In addition to that,

many studies have found that foreign aid, in fact, reduces corruption in the beneficiary country. For instance, Tavares [2003] finds a negative impact of foreign aid on corruption. Okada and Samreth [2012] show the same result.

### 3.1 The Channels of Impact

#### 3.1.1 *Arguments that suggest financial liberalization may reduce corruption*

1. *Financial repression increase opportunities for corruption, so liberalization must decrease corruption.*

The financial repression by the states before the liberalization in the last quarter of the 20th century “reflected a mix of state-led development, nationalism, populism, politics, and corruption” (World Bank, Chapter 7, p.207). It acted as an implicit tax and added an additional price. “If price controls are listed, market prices will express scarcity values, not bribes” (Rose-Ackerman, 1996, p.3). Governments also chose to favor private sector entities in development stimulating nepotism and favoritism. Capital controls increased corruption as the repression demanded discretionary decisions by the bureaucrats and policymakers, and these decisions are by nature, influenceable. The persistence of high corruption, coupled with limited mobilization and allocation of resources motivated liberalization policies. Under liberalization, theoretically, the markets freely determine prices, and private sector entities act on these prices. According to this argument, financial liberalization must give less power to the bureaucrats and the public sector in general hence, reduce corruption.

2. *Political economic incentives of the status quo discourage liberalization, hence, liberalization must hurt the status quo and reduce corruption*

Rajan and Zingales [2003] construct the ‘political power of incumbent’s’ hypothesis. According to their hypothesis, the variability in the development of financial industries for countries with the similar stage of development can be explained by the role of political interest groups (Arestis and Sawyer, 2003, p.28). These interest groups are inherently opposed to financial openness as it potentially brings competition from new entrants thereby threatening the interests of the elite

or the status quo. “In times of crisis or conflict, the elite gains a firmer grip over its political influence and thereby can push through legislation protecting their interests” (28, Arestis and Sawyer). The same elite groups may indulge in acts of bribery to gain either political or bureaucratic influence against policies set to open the economy. This set of arguments focus on the group interests. The interests of the status quo would be preserving the financial repression as a mechanism to maintain their power. Developing economies frequently experience this. “The concentration of economic power which are characteristic of many developing countries likely contribute to such difficulties” (Caprio et al., 2006, p.35) By the logic of this argument, countries that switch to liberalization must diminish the power of the status quo, therefore, must experience a decrease in political corruption.

### *3. Financial liberalization increases competition and competition decreases corruption*

Rose-Ackerman writes, “policies that lower the controls on foreign trade, remove entry barriers for private industry and privatize state forms in a way that assures competition, all contribute to the fight against corruption” (1996, p.3). Many hold the conjecture that economic liberalization brings in more competition, which leads to higher efficiency. For instance, banking sector corruption is one of the most common types of corruption that acts as a tax on loans for firms who wish to borrow. Chandan Kumar Jha [2015] argues that an appropriate degree of banking supervision (an important dimension of financial reforms), thus, may lower corruption in the banking sector (2015, p.2). The argument continues that higher levels of competition in the private sector lead to lower corruption. Research conducted by Ades and Tella [1999] shed evidence on the impact of competition on corruption. They conclude, “we find that corruption is higher in countries where domestic firms are sheltered from foreign competition by natural or policy-induced barriers to trade, with economies dominated by a few numbers of firms or where antitrust regulations are not effective in preventing anti-competitive practices” (Ades and Tella, 1999, p.992). Financial repression reduces competition and acts as an anti-competitive policy, giving rise to few dominant firms that control the economy. Less competition helps bureaucrats to maintain their rent-seeking power. Competition can reduce the rent-seeking ability of the bu-

reaucracy. This leads to the suggestion that higher competition induced by liberalization policies might play a role in decreasing domestic corruption.

4. *Financial liberalization reduces the size of the government and hence, reduces corruption.*

Becker's [1995] popular argument, "If you want to cut corruption, cut government" summarizes the idea expressed by this set of arguments. Extraneous regulations require the more active involvement of the government which leads to more opportunities for corruption. Becker in his *Crime and Punishment* [1968] creates a model for corruption. Becker's claim of higher government spending as the root cause of corruption is a common claim held by many. Government spending, which essentially measures the size of the government, has been evidenced by Goel and Nelson [1996] to increase corruption. They find, "our results show that government size, in particular, spending by state governments, does indeed have a strong positive influence on corruption" ( Goel and Nelson, 1996, p.117). Financial liberalization by definition leads to lesser involvement of the state. According to this argument, financial liberalization leads to a reduction in the size of the government resulting in lower corruption.

3.1.2 *Arguments that suggest the financial liberalization may increase corruption*

Contrary to all the arguments above, some economists have hypothesized that financial liberalization, may, in fact, increase corruption. K. Blackburn and Gonzalo F. Forgues-Puccio [2010] theoretically make this claim. Although they provide no empirical evidence to this conjecture, the arguments they make are qualitatively and theoretically sound. The impact of opening up on corruption may differ for different ranks of political and bureaucratic hierarchy. They argue that liberalization might have a smaller effect on the politicians and bureaucrats of highest ranks. Due to the power leveraged by these top-ranked agents, it is possible to circumvent many regulations irrespective of the repressive or liberalized policies. They continue that for officials at the lower ranks, the presence or absence of capital controls would mean very little. The primary reasons they indulge in corrupt practices is to compensate for their lower salaries. However, in their model, financial liberalization impacts the corruption levels of the middle-level officials the most, who can raise large amounts of illegal money but do not possess the power to circum-

vent regulations like the high-level officials. “These middle-ranking officials are sophisticated enough to extract large amounts of illegal income but lack the power and influence to circumvent restrictions on the transfer of their wealth overseas - an obstacle that disappears when these restrictions are dismantled” (Blackburn et al., 2010, p.1324). In this way, liberalization can facilitate and also motivate their desire to money launder. Moreover, the money obtained unlawfully will be sent outside the borders where the individual countries have less power over financial transactions. Perpetrators will have an incentive in laundering the illegally obtained money out of the country, rather than keeping it within the country as overseas, it is less likely to be discovered and brought back by the authorities. For instance, in the case of India, corrupt Indian politicians and bureaucrats have allegedly saved billions of US\$ in European banks like the Swiss Bank. Central Bureau of Investigation of India (CBI) estimates that the amount of illegally stored sum of money is \$500 billion (Times of India, 2012). These banks in Northern Europe allow the depositor to save money anonymously, which helps these demands. Financial liberalization that liberated the Indian economy at the end of the 20th century possibly opened doors for the corrupt politicians to transfer money to safe havens like the Swiss Bank.

Other economists address topics that are similar to financial liberalization, like Graeff and Mehlkop [2002], who examine the impact of economic freedom on corruption. Many studies use economic freedom indices to study its impacts, but the innovation of this particular study is that it dissects the indices into different components [Blackburn et al., 2010]. They inspect different aspects of economic freedom such as freedom of choice, freedom to supply any goods and resources, fair competition in markets, the availability of reliable money, secure property rights, and freedom to trade with others and the allocation of capital by the markets (Graeff et al., 2002). They find different results for rich countries and underdeveloped countries. In low-income countries, “if money could be hidden abroad or is easily taken across borders, it is much easier to launder money from corrupt deals or other criminal acts” (Graeff et al., 2002, p.614-615). The freedom to hold foreign currency bank accounts at home is thus shown to have a significant positive impact on corruption. Liberalization, in this case, leads to more opportunities for

corruption. “Financial liberalization may be seen as expanding these opportunities by allowing funds to be taken more freely across borders where they can be concealed more easily if necessary” (Blackburn et al., 2010, p.1323). This finding makes a strong case for the argument that financial liberalization may also increase corruption.

## 3.2 Hypothesis

The argument put forward by Blackburn et al. [2010] forms the motivation for this project. As shown above, the direction of the impact of financial liberalization on corruption is theoretically ambiguous. From the experience of India, where corruption increased post-financial liberalization, this project wants to test whether the pattern is generalizable. Therefore, I would like to test the following hypothesis

*Hypothesis: Does financial liberalization increase corruption?*

The null hypothesis in this analysis would assume that financial liberalization would reduce corruption. This project also aims to test whether the impact of financial liberalization on corruption is systematically different for high-income and low-income countries. The succeeding chapter will cover the quantitative analysis.



# 4

## Quantitative Analysis

This chapter will cover the quantitative analysis undertaken in this project. Section 4.1 will discuss sources and descriptions of the data. Section 4.2 will discuss the methodology, and section 4.3 will discuss the result.

### 4.1 Sources and the descriptions of the data

#### *4.1.1 The dependent and the independent variables*

##### 1. Corruption:-

I have used the data from the International Country Risk Guide, which contains a variable on government corruption. International Country Risk Guide is a country risk guide provided by the PRS Group, NY who primarily sell the data for overseas investors like investment banks, offshore investment companies and so on. The measure of corruption is assigned a maximum numerical value, with the highest number of points (6 points) describing the least amount of risk and the lowest number of points (0 points) representing the highest amount of risk. For the convenience of interpretation, I have inverted the data. So in my analysis, the higher the points for corruption indicates higher corruption. The interpretation of the inverted data set is more intuitive in regression analysis, as a higher number would show an increase corruption. The data spans from 1984-2014 for 146 countries.



The use of this data for academic purposes began with Knack and Keefer [1995], which has inspired many other studies to use this data. The International Country Risk Guide (ICRG) rating comprises 22 variables in three subcategories of risk: political, financial, and economic (The PRS Group, 2015). One of the key variables under the political risk is the ‘corruption in government.’ “The political risk assessments are made by subjective analysis of the available information” (The PRS Group, 2015, methodology) which means the measure of corruption here is the ‘subjective measure of corruption’ discussed earlier in Chapter 2.

## 2. Financial Liberalization:-

This project uses Abiad and Mody [2005] index on financial reforms as its primary independent variable of interest. This index is a *de jure* measure of financial liberalization. This dataset contains six different variables, one of them is ‘finreform’ which measures the financial liberalization. The data ranges from 0 (fully repressed) to 21 (fully liberalized). They also include the normalized version of the data 0 (fully repressed) to 1 (fully liberalized). Another proxy for financial liberalization is the KAOPEN index constructed by Chinn and Ito [2016]. This index measures the extent of openness in capital transactions (Chinn and Ito, 2006). The index accounts for the “regulatory controls over current or capital account transactions, the existence of multiple exchange rates, and the requirements of surrendering export proceeds” (Chinn and Ito, 2006, p.3) in its construction. The IMF’s Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) is the basis for the index. The higher the index score, the more liberalized the countries are regarding capital account freedom. The variable ranges from -1.9 to 2.3. They also include a normalized version of KAOPEN that ranges from 0 (Completely under capital controls) to 1 (Completely liberalized).

Both KAOPEN (Chinn & Ito, 2016) and financial reform [Abiad and Mody, 2005] are *de jure* accounts of liberalization and not *de facto*. *De jure* financial liberalization differs from *de facto* liberalization where the former accounts for the political decision to liberalize and the latter look into the actual inflows of finances and capital. The principal difference between the two is that *de jure* financial liberalization is driven by policy decision and *de facto* financial

liberalization can be driven by market factors. “While actual capital flows are driven by various factors (among others by institutions themselves), regulations of financial account transactions are the direct results of political decisions, and therefore under the control of policy-makers” (Alzer et al., 2013, p.424). The implications of these two different measures are thus different. The *de jure* measure provides policymakers with the immediate consequences of policy decisions. This project aims to contribute to the literature that is meant to help policymakers, hence, the choice of a *de jure* measurement.

#### 4.1.2 Control Variables in the main multivariate model

This project uses a set of macroeconomic measures as the control variables. Chapter 2 briefly discusses the determinants of corruption. The same discussion continues with the following. The rationale behind employing these variables are as follows

1. Resource Rent (Mineral rents, % of GDP, WB<sup>1</sup>)

It measures the percentage of GDP that is determined by the use of mineral resources. Use of this variable in this project is tied to the idea of the resource curse. Sachs et al. [1995] raised the concept of the resource curse. Ades and Tilla [1999] showed that resource abundance might stimulate corruption. The idea here is that state’s who are faced with abundant resources might have an incentive to take part in rent-seeking activities. Moreover, the private sector companies who extract these resources usually involve themselves in bribing the state to prevent competition. For these reasons, I have used mineral rents as one of the variables in my specifications.

2. Size of the government (General government consumption, 2010 US \$ constant, WB)

I have used the general government final consumption as a proxy to measure the size of the government. The size of the government will also theoretically be a significant factor in determining corruption. There is no consensus as to whether the size of the government affects

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<sup>1</sup>WB indicates that the data for the variable is sourced from World Bank data bank

corruption positively or negatively. Some argue that the smaller the size of the government, the lack of per capita public sector service experienced by the individual, creating incentives to bribe, which increases corruption. Others argue that the more the government takes control of the economy, the more officials who are susceptible to be influenced. Hence, there arise more opportunities for corruption. There are a number of ways to measure the size of the government. This paper chooses to look at the rate of government consumption as a percentage of GDP to get an estimate of how much the government is involved in intermediating transactions within the country. It also shows how prominent the country's involvement is in the state.

### 3. Gross Domestic Product (GDP, 2010 US \$ constant, WB):-

The gross domestic product is the macroeconomic factor that indicates the wealth of an economy. This is a useful measure to control for the income differences between countries. In general, income would be considered to be a significant factor for predicting corruption. One can argue that the more prosperous the country tends to be, the lower should be the corruption. Therefore, the Gross Domestic Product (GDP) per capita is included in the model. Here, it is presumed that the wealthier the country is, the less corrupt it must be due to stronger institutions and regulatory framework.

### 4. Polity (Polity IV project, Center for Systemic Peace, 2006) :-

The nature of the government is also estimated to be a significant factor in explaining corruption. The main reason why political liberty tends to reduce corruption is that political freedom imposes transparency and provides checks and balances within the political system (Center for Systemic Peace, 2016). The polity index supplied by the Polity IV Project is used as the proxy for political freedom. Polity is the variable which is created by subtracting the autocratic index from the democratic index (they deem that every country has aspects of democracy and autocracy, hence, mutually not exclusive). Center for Systemic Peace is the source for this data.

### 5. Trade Openness [(Exports + Imports/ GDP), 2010 US \$ constant, WB] :

Trade openness for a given country and year is calculated by adding total exports + total imports, and the sum is divided by the GDP the country in that given year. The higher the trade openness also known as trade liberalization is assumed to lower corruption levels. Kruger[1974] first observed the relationship between trade openness and corruption. She found “quantitative trade restrictions shift resources from directly productive activities to rent-seeking activities, such as corruption” (quoted in Torrez, 2010, abstract). This evidenced is critiqued by Torrez [2010] who claims that the result is not uniform across different measures of corruption. In any case, sticking to the neoclassical explanation of trade openness, I expect a negative impact of trade openness on corruption.

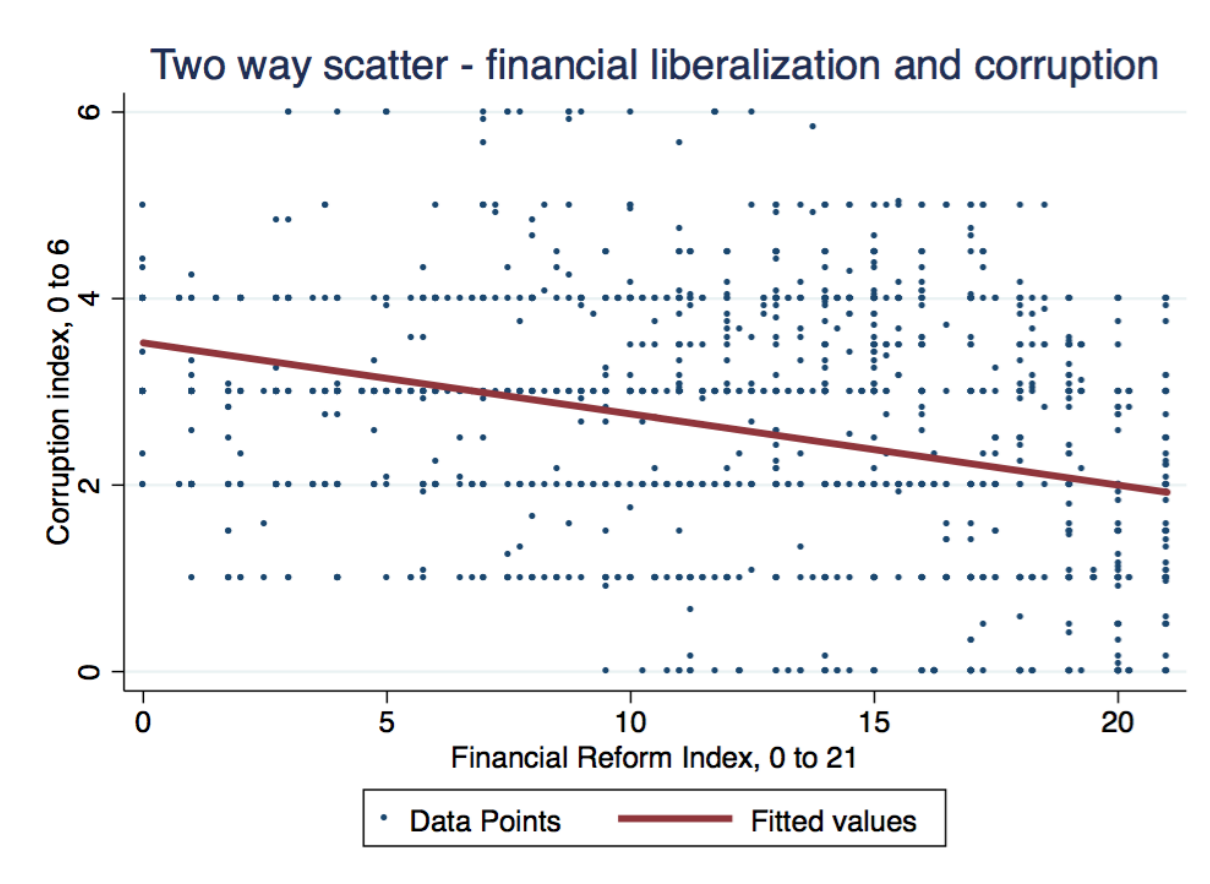
6. Counter Corruption Commission ( The Comparative Constitutions Project, 2013) :-

This is a dummy variable. Counter corruption regulation is one of the leading determinants of corruption. The existence of counter-corruption committee indicates the country’s active participation in reducing corruption. The penalties and the extensiveness of these penalties play a huge role in an individual’s decision in participating a corrupt activity. The data for this is drawn from the Comparative Constitutions Project which summarizes the cross-country characteristics of constitutions.

Table 1 describes the summary statistics of the variables in use. Since both corruption and financial liberalizations are indices with different scale and standard deviation, it is complicated to interpret the results obtained by regressing unstandardized variables. When the standard deviations are standardized (to 1), the impact is more natural to measure, as we can look at the change in standard deviation as a unit of these indices. Since, corruption and financial liberalization are both proxied by indices with different range and standard deviations, I have standardized these two variables to help interpretation. The table 2 below describes the standardized variables for both corruption and financial liberalization.

<b>Descriptive Stats</b>					
<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Corruption	4,175	3.026903	1.344302	0	6
Financial Liberalization	2,671	10.32085	6.332531	0	21
Log (GDP)	8,693	23.60435	2.406205	16.88086	30.45954
Log (Government consumption)	5,959	22.49528	2.305481	13.50215	28.55616
Polity	12,102	0.6821187	7.28554	-10	10
Trade Openness	6,154	0.7321491	0.5793185	0.00175	7.478939
Mineral rents	7,924	1.069887	3.576996	0	46.90562
Counter Corruption Commission	5,248	0.0514482	0.2209311	0	1
Ethnic Fractionalization	13,045	0.443646	0.2569038	0.001999	1

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Standard Dev.</b>	<b>Min</b>	<b>Max</b>
Standardized finlib	2,671	-3.01E-09	1	-1.629815	1.686395
Standardized corruption	4,175	-1.61E-08	1	-2.251653	2.211628



## 4.2 Methodology

A first glance at the data suggests that financial liberalization has a negative impact on corruption. Graph 1 represents the scatterplot with the best fit line. Corruption index constitutes the y-axis, with a higher number representing higher corruption. Similarly, the higher index value in the financial reform index refers to higher liberalization. Later analysis will control for other variables that will possibly impact this relationship.

Ordinary Least Square Multivariate Analysis

### Model 1 - Basic Multivariate Model

The analysis will use panel data from 86 countries over 1984-2005. Financial liberalization is our variable of interest and corruption is our dependent variable. Rest of the X's in this model are the control variables. describes the error term. I have used the functional form natural log on gross domestic product per capita as I suspect a nonlinear relationship.

The following model is used in the multivariate analysis.

$$\begin{aligned} Corruption_{it} = & \beta_0 + \beta_1 financialliberalization_{i(t-1)} + \beta_2 \log(GDPpercapita)_{it} + \beta_3 polity_{it} \\ & + \beta_4 mineralrents_{it} + \beta_5 tradeopenness_{it} + \beta_6 governmentconsumption_{it} + \epsilon_i + \epsilon_{it} \end{aligned}$$

Model 1 has two main problems. Firstly, the model does not account for country-specific characteristics. While fixed effects estimator is a useful tool to control for country-specific characteristics this analysis employs random effects. The main reason for using random effects estimation instead of fixed effects is due to the time-invariant property of the dependent variable. The assumption here is that corruption does not systematically vary over time within a country. Since regression analysis tries to account for the variation in the dependent variable and try to explain it by the variation in the explanatory variable, time-invariant dependent variables do not efficiently allow us to use fixed effects. On the other hand, one might claim that random effects model compares countries with significantly different characteristics, in which case, the error term  $\epsilon_i$  might be correlated with one of the  $X$ 's, in which case the estimated coefficients will be biased. To tackle this issue, in Model 2, I have decided to use dummy variables at the region level. By using the dummy variables, it is possible to control for the region-specific effects that may drive corruption. In addition to that, region dummy variables give an insight into the region-specific differences that can help us infer more information regarding the inter-region variation on corruption.

Secondly, the model is suffering from reverse causality or simultaneity problem. In this model, it is impossible to separate whether the explanatory variable is impacting the dependent or whether the dependent variable effects the explanatory variable. In this instance, if higher financial liberalization is found to decrease corruption, then it is perfectly valid to argue that the higher corrupt countries are more likely to be less financially liberated. This problem occurs when both of the variables are endogenous in the system. As the decision to financially liberate

and corruption are both tied to the political institutions<sup>2</sup> of the country, it is tough to categorize the former as an exogenous variable. Secondly, the model is suffering from reverse causality or simultaneity problem. In this model, it is impossible to separate whether the explanatory variable is impacting the dependent or whether the dependent variable effects the explanatory variable. In this instance, if higher financial liberalization is found to decrease corruption, then it is perfectly valid to argue that the higher corrupt countries are more likely to be less financially liberated. This problem occurs when both of the variables are endogenous in the system. As the decision to financially liberate and corruption are both tied to the political institutions of the country, it is tough to categorize the former as an exogenous variable.

While the use of instrumental variables is the most efficient way to solve the problem of endogeneity, its effectiveness in this particular literature regarding corruption is unclear. Many academic papers have used invalid instrumental to treat this problem. Paolo Mauro (1995) uses ethnic fractionalization as the instrumental variable in his analysis. Even though this paper is widely renowned, it has been at the receiving end of critiques by econometricians. Instrumental variables require an assumption that it does not correlate with the dependent variable, which is hardly the most of the times. This is called the ‘exclusion restriction,’ that demands no impact of the impact of instruments on dependent variables. The other requirement is that the instruments need to have a causal impact on the explanatory variable. Without the strong impact, it is hard to separate the two. In Mauro’ [1995] paper, he could not make a valid case for the non-correlation between ethnic fractionalization and growth and investments. Hence, the critique.

Another way to deal with the problem of reverse causality is to lag the independent variables by a year. The lagged independent variable would mean that the variation in the dependent variable is contingent on the past values of liberalization. The present level of corruption can not impact the previous values of liberalization. Therefore, by lagging financial liberalization by

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<sup>2</sup>The decision to liberate the economy started in the thinking of the policy makers who are affected by other institutional factors. Corruption is inherent in these institutions.



one year, I partially treat reverse causality. In model 1, the financial liberalization variable has been lagged by a year. The limitations of this technique will be discussed in the results section.

Model 3 tries to estimate if the impact of financial liberalization on corruption is systematically different for wealthier countries compared to developing countries. Graeff and Mehlkop [2003] make a similar argument, in their study, they showed that economic freedom in advanced economies reduces corruption, but the relationship is opposite to the developing countries. I have interacted dummy variables- upper middle income, lower middle income and low income, high income being the reference dummy- provided by the World Bank. However, this kind of investigation is spurious as it can be shown that countries with similar income levels geographically cluster around each other and these clusters would make it hard to differentiate between income effect from regional effect. Therefore, to get a better sense of rich and developing countries I have included the OECD dummy variable which would separate the relationship in OECD countries from the non-OECD countries.

Model 4 tests the impact of capital account liberalization on corruption, where I have used the KAOPEN index in the place of financial liberalization. Some of the literature on financial liberalization have used the KAOPEN index constructed by Chinn and Ito [2006] as a proxy in their analysis [Alzer and Dadasov 2015; Kose et al. 2009]. The rationale behind employing this measure is that if the relationship is consistent between two different liberalization policies (more precisely, one is the subset of the other), then it strengthens my finding. The analysis will use panel data from 86 countries over 1984-2005. Financial liberalization is our variable of interest and corruption is our dependent variable. Rest of the X's in this model are the control variables. describes the error term. I have used the functional form natural log on gross domestic product per capita as I suspect a nonlinear relationship.

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While the use of instrumental variables is the most efficient way to solve the problem of endogeneity, its effectiveness in this particular literature regarding corruption is unclear. Many academic papers use invalid instrumental to treat this problem. Paolo Mauro (1995) uses ethnic fractionalization as the instrumental variable in his analysis. Even though this paper is widely renowned, it has been at the receiving end of critiques by econometricians. Instrumental variables require an assumption that it does not correlate with the dependent variable, which is hardly the most of the times. This is called the 'exclusion restriction,' that demands no impact of the

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Another way to deal with the problem of reverse causality is to lag the independent variables by a year. The lagged independent variable would mean that the variation in the dependent variable is contingent on the past values of liberalization. The present level of corruption can not impact the previous values of liberalization. Therefore, by lagging financial liberalization by one year, I partially treat reverse causality. In model 1, the financial liberalization variable has been lagged by a year. The limitations of this technique will be discussed in the results section.

Model 3 tries to estimate if the impact of financial liberalization on corruption is systematically different for wealthier countries compared to developing countries. Graeff and Mehlkop [2003] make a similar argument, in their study, they showed that economic freedom in advanced economies reduces corruption, but the relationship is opposite to the developing countries. I have interacted dummy variables- upper middle income, lower middle income and low income, high income being the reference dummy- provided by the World Bank. However, this kind of investigation is spurious as it can be shown that countries with similar income levels geographically cluster around each other and these clusters would make it hard to differentiate between income effect from regional effect. Therefore, to get a better sense of rich and developing countries I have included the OECD dummy variable which would separate the relationship in OECD countries from the non-OECD countries.

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Table 4.1

Random-effects GLS regression		Number of obs	=	1,599		
Group variable: <b>countrynum</b>		Number of groups	=	79		
R-sq:		Obs per group:				
within	= 0.1267	min	=	1		
between	= 0.4385	avg	=	20.2		
overall	= 0.3410	max	=	23		
corr(u_i, X) = 0 (assumed)		Wald chi2(6)	=	76.85		
		Prob > chi2	=	0.0000		
(Std. Err. adjusted for 79 clusters in countrynum)						
Corruption	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
lagFinancialLiberalization	.3518806	.0879033	4.00	0.000	.1795932	.5241679
LogGDPpercapita	-.5273049	.0969131	-5.44	0.000	-.7172512	-.3373587
Tradeopenness	.0103459	.0033134	3.12	0.002	.0038517	.0168401
Polity	-.0134781	.0153405	-0.88	0.380	-.043545	.0165888
GovernmentConsumption	-.0137609	.0114838	-1.20	0.231	-.0362687	.0087469
MineralRents	.0152294	.041913	0.36	0.716	-.0669186	.0973775
_cons	6.673472	.8081954	8.26	0.000	5.089438	8.257506
sigma_u	.74096272					
sigma_e	.68981797					
rho	.53570043	(fraction of variance due to u_i)				

### 4.3 Results

Results of the basic multivariate model (model 1) are displayed in table 3. Few important notes are observed from this model: This model shows a sample of 79 countries over ~20 years. When controlled for GDP per capita, polity, trade openness and mineral rents, on average, one standard deviation increase in financial liberalization index in the year before predicts an increase of .2634 standard deviation units in corruption. This result is significant at 99% confidence. I have implemented robust standard errors to control for the heteroskedasticity in this model. The result is robust, and it shows that financial liberalization has a positive impact on corruption.

#### Model 1

As expected, GDP per capita has a negative impact on corruption, ceteris paribus. The richer the country, the countries are more likely to be less corrupt. Polity, size of the government,

and mineral rents have insignificant impacts, whereas, trade openness has a significant positive impact. Contrary to theory discussed earlier in this chapter, in this model, on average, when an increase in trade openness by 1 percent increases corruption by 0.07 standard deviation when controlled for GDP, polity, mineral rents, and financial liberalization. This model constitutes the basic multivariate OLS model. The succeeding models add variables to this basic model and the results are discussed below.

### **Model 2 - Interregional differences**

Table 4 represents model 2 with six different sets of regression specifications. The first specification represents the basic model with four variables - financial liberalization, income, trade openness and polity. The succeeding models add a new variable to check for its unique relationship. All the variables are not included in the same regression line to avoid multicollinearity. In all of the six specifications, the results stay significant for lagged financial liberalization, GDP per capita and trade openness. The coefficient of financial liberalization strictly stays positive around 0.26 in all the specifications. While an increase in GDP per capita strictly reduces corruption, increase in trade openness strictly increases corruption. The last regression with region dummies, I have specified all the regions except North America, as it is the reference region in this model. The results are significant for the Middle East and North Africa, South Asia, and Latin America and the Caribbean.

The coefficients are the highest for South Asia followed by Latin America. These results indicate that when compared to North America, the corruption increases 1.2 standard deviations for South Asia, and 1.04 for Latin America and 0.927 for the Middle East and North Africa when controlled for GDP per capita, financial liberalization, trade openness and size of the government.

### **Model 3 - Income interacted variables**

Table 5 described below illustrates specifications distributed across income levels. The difference in this model is that instead of regional dummies, this model uses income dummies and income interacted dummies to observe if financial liberalization impacts corruption differently in richer countries compared to developing countries. In this model, the income classifications

Table 4.2: Model 2

## Impact of financial liberalization on corruption

	1	2	3	4	5	6
	Corruption	Corruption	Corruption	Corruption	Corruption	Corruption
lag Financial Liberalization	0.260***	0.260***	0.262***	0.346***	0.259***	0.263***
	-0.066	-0.067	-0.065	-0.105	-0.067	-0.068
log (GDP per capita)	-0.400***	-0.391***	-0.392***	-0.384***	-0.384***	-0.337***
	-0.076	-0.074	-0.072	-0.078	-0.085	-0.1
Trade Openness	0.008***	0.008***	0.008***	0.004	0.008***	0.007***
	-0.002	-0.002	-0.002	-0.003	-0.002	-0.002
Polity	-0.009	-0.01	-0.01	-0.015	-0.01	-0.012
	-0.011	-0.011	-0.011	-0.015	-0.011	-0.012
Government Consumption		-0.011	-0.01	-0.014	-0.011	-0.009
		-0.009	-0.009	-0.01	-0.009	-0.009
Mineral Rents			0.011	-0.023		
			-0.031	-0.029		
Counter Corruption Commission				0.317		
				-0.569		
Ethnic Fractionalization					0.091	
					-0.345	
East Asia & Pacific						0.485
						-0.453
Middle East & North Africa						0.933**
						-0.434
South Asia						1.257**
						-0.566
Sub-Saharan Africa						0.601
						-0.509
Europe & Central Asia						0.498
						-0.391
Latin America & the Caribbean						1.039**
						-0.413
Constant	2.600***	2.714***	2.713***	2.973***	2.618***	1.586
	-0.632	-0.606	-0.601	-0.633	-0.791	-1.072
Observations	1602	1599	1599	1084	1599	1599
p	4.72E-12	1.70E-12	1.59E-14	1.50E-09	5.92E-13	9.49E-18
R squared (overall)	0.3079	0.3403	0.341	0.3311	0.3376	0.396

(Robust standard errors are described in parenthesis. \* Significant at 10%; \*\*Significant at 5%;  
\*\*\* Significant at 1%)

Table 4.3: Model 3

	(1)	(2)	(3)	(4)	(5)
	Corruption	Corruption	Corruption	Corruption	Corruption
lag Financial					
Liberalization	0.213*** (0.076)	0.202*** (0.077)	0.396*** (0.076)	0.221*** (0.069)	0.219*** (0.078)
log (GDP per capita)	-0.077 (0.121)	-0.359*** (0.068)	-0.333*** (0.086)	-0.455*** (0.073)	-0.184 (0.118)
Trade Openness	0.006*** (0.002)	0.007*** (0.002)	0.007*** (0.002)	0.008*** (0.003)	0.006** (0.002)
Polity	-0.007 (0.011)	-0.009 (0.011)	-0.006 (0.011)	-0.016 (0.011)	-0.008 (0.011)
Government					
Consumption	-0.009 (0.008)	-0.014 (0.009)	-0.021*** (0.007)	-0.010 (0.008)	-0.010 (0.008)
High Income	-1.437*** (0.358)				
highincomeinteract	0.089 (0.113)				
Upper-Middle-					
Income		0.445*** (0.165)			
uppermiddleinteract		0.211 (0.137)			
Lower-Middle-					
Income			0.596*** (0.186)		
lowermidinteract			-0.437*** (0.108)		
Low-Income				-0.674*** (0.239)	
lowincomeinteract				0.361** (0.158)	
OECD					-1.025*** (0.343)
OECDinteract					0.110 (0.110)
Constant	0.648 (0.916)	2.405*** (0.570)	2.179*** (0.741)	3.315*** (0.590)	1.402 (0.907)
Observations	1599	1599	1599	1599	1599
p	2.04e-29	6.52e-17	3.18e-25	1.21e-18	3.22e-21
R-squared (overall)	0.4188	0.3929	0.368	0.4071	0.3613

(Robust standard errors are described in parenthesis. \* Significant at 10%; \*\*Significant at 5%;  
\*\*\* Significant at 1%)

interact with lagged financial liberalization index. I find partial evidence for Blackburn's conjecture that financial liberalization can exacerbate corruption in low-income countries, and the impact might be the opposite for more affluent countries (Blackburn et al. 2010). In fact, in low-income countries, one standard deviation increase in financial liberalization increases corruption by 0.361 standard deviations of the corruption index, when controlled for all the other variables. This result is significant at 95% confidence level. The impact is precisely the opposite for lower middle-income countries. In lower-middle-income countries, one standard deviation increase in financial liberalization decreases corruption by 0.437 standard deviations of the corruption index, *ceteris paribus*. The different channels through which this can happen in detail in chapter 3.

As mentioned in section 4.2, the impact of income differences can also include region-specific impacts, as countries with similar income levels usually tend to be geographically clustered around each other. To deal with this problem, Model 3 includes an additional dummy variable for OECD countries that can differentiate the impact of financial liberalization on corruption in OECD countries from non-OECD countries. The model predicts that OECD countries experience -1.025 standard deviation of corruption index in general, compared to non-OECD countries, but I find a positive but insignificant result for the interacted variable. This model does not show any signs that the relationship may be systematically different for OECD countries compared to non-OECD countries.

#### **Model 4:- Impact of Capital Account Liberalization on Corruption**

The results displayed in Table 6 strengthens the initial findings. In this model, on average, increase in KAOPEN index by one standard deviation in the previous year, predicts an increase in corruption by 0.149 standard deviation units, when controlled for all the other variables. The coefficient is positive and significant across all models. The coefficient in this model is smaller compared to Model 2, where a standard deviation increase in lagged financial liberalization increases corruption in the following year by 0.263 standard deviations. The smaller coefficient



is probably because capital account liberalization is only a subset of financial liberalization, hence does not capture the whole impact. The interesting difference in this model, compared to the previous model is that ethnic fractionalization seems to have a positive and significant impact on corruption, which was not the case in the previous model. In addition to that, government consumption which is the proxy for the size of the government has a significant and negative impact across all models. This result is contrary to what is expected as it is assumed that a higher government consumption provides more opportunities for corruption. Trade openness continue to have a significant and positive impact, whereas, GDP per capita has a significant negative impact in four out of the six models. Lastly, in the 6th specification, all the region dummy variables have a significant and positive impact on corruption, in comparison to North America.

Table 4.4: Model 4

Impact of capital account liberalization on corruption						
	1	2	3	4	5	6
	Corruption	Corruption	Corruption	Corruption	Corruption	Corruption
lag KAOPEN	0.157*** -0.051	0.155*** -0.052	0.157*** -0.051	0.152** -0.06	0.155*** -0.051	0.149*** -0.052
log (GDP per capita)	-0.155** -0.071	-0.157** -0.066	-0.158** -0.071	-0.179** -0.071	-0.107 -0.082	-0.05 -0.085
Trade Openness	0.006*** -0.001	0.006*** -0.001	0.006*** -0.001	0.004** -0.002	0.005*** -0.001	0.005*** -0.001
Polity	-0.009 -0.008	-0.006 -0.008	-0.009 -0.008	-0.013 -0.009	-0.008 -0.008	-0.005 -0.008
Government consumption		-0.016** -0.007				-0.016** -0.007
Mineral rents			0.005 -0.009			
Counter Corruption Commission				0.36 -0.342		
Ethnic Fractionalization					0.851** -0.336	
East Asia & Pacific						1.038** -0.443
Middle East & North Africa						1.617*** -0.377
South Asia						2.021*** -0.465
Sub-Saharan Africa						1.786*** -0.457
Europe & Central Asia						0.924** -0.372
Latin America & Caribbean						1.619*** -0.379
Constant	0.942 -0.585	1.178** -0.56	0.961* -0.582	1.329** -0.583	0.163 -0.784	-1.078 -0.944
Observations	2872	2839	2870	1960	2856	2839
p	0.00000101	4.22E-08	0.00000306	0.00186	2.19E-08	2.21E-16
R-squared (overall)	0.1178	0.1696	0.125	0.1882	0.1249	0.2493

(Robust standard errors are described in parenthesis. \* Significant at 10%; \*\*Significant at 5%;  
\*\*\* Significant at 1%)



# 5

## Conclusions and Discussion

### 5.1 Conclusions

Contrary to the popular arguments made by the World Bank and the IMF economists, the results of my experiments show a strong positive relationship between financial liberalization and corruption. The evidence is robust and consistent across different specifications. The results support the finds evidence for the phenomenon that was hypothesized by Blackburn et al. [2010] and contradicts the findings of Jha [2015] which are discussed in much detail in Chapter 3. It is clear from this analysis that the very policy that provides accessibility to diversify risk renders convenience for corrupt activities.

The impact cannot be called a causal impact because as this project was not able to efficiently solve the problem of reverse causality. Due to the lack of valid instruments in this literature, this strategy could not be applied. However, by using lagged financial liberalization by one year, it partially treats the problem.

Chapter 4 covered the quantitative analysis of this project. This project has employed 4 different models to test the relationship between financial liberalization and corruption. The results of the quantitative analysis can be summarized as follows,

1. Model 1, which is the primary multivariate model, suggests that on average, one standard deviation increase in financial liberalization increases corruption by 0.263 standard deviation units in the following year when controlling for income, size of the government, polity, trade openness and mineral rents. Income and trade openness can observe the two other significant impacts. While income has a negative impact on corruption, trade openness has a positive impact.
2. Model 2 suggests that financial liberalization has a significant positive relationship with corruption across six different variations of specifications. The region-specific characteristics play a significant role in describing this relationship. For instance, in comparison with North American countries, the South Asian countries drive up the impact of corruption by 1.2 standard deviation units of the corruption index. The strong intra-regional differences may suggest that random effect models which do not control for country-specific characteristics, might measure inaccurate coefficients.
3. Model 3, the income interacted model suggests that impact of financial liberalization on corruption may be different for rich and developing countries. In line with Graeff and Mehlkop [2003] evidence on the impact of economic freedom on corruption, my findings suggest that financial liberalization in poor countries significantly increases corruption. However, the result is the opposite for lower middle-income countries. This result might be indicative of Graeff and Mehlkop's conclusion that the ability to hold foreign bank accounts in poor countries increases corruption. Besides, poor countries have weaker legal and political institutions. Therefore, financial liberalization in these settings can exacerbate corruption.
4. Model 4, which uses KAOPEN index instead of the index constructed by Abiad and Mody [2005], strengthens my evidence of a positive relationship between

liberalization and corruption. This model shows that the result is significant and positive across different proxies of capital account liberalization. The coefficients of impact for capital account liberalization is smaller than that of financial liberalization which is mainly because capital account liberalization is merely a subset of the broader policy, financial liberalization.

The results of this project are broad ranged. While these results give a sense of the impact of a broad policy shift such as financial liberalization, more nuanced studies must be undertaken to pinpoint the channels of influence. One way to do it is to use different subcomponents of financial liberalization as the explanatory variable in different models. The results of these studies will be able to make better claims on channels of impact.

## 5.2 Policy Implications

As mentioned earlier in Chapter 4, this project uses *de jure* measure of financial liberalization, which measures the extents of liberalization policies and not the level of inflow or outflow of finances and capital. This measure is better captures policy implications. A strong and positive relationship between financial liberalization and corruption has been discovered in this project. The first step for policymakers would be to assess what specific policies under financial liberalization make corruption possible. Second step would be to plan and implement specific anti-corruption policies combined with the liberalization policy. Historically, we have observed how counter corruption policies are incorporated as a part of a larger policy shift in the case of trade liberalization. If the findings of this project are correct, anti-corruption policies must be a part of the financial liberalization package. Furthermore, more nuanced investigations must be conducted to measure which policies under the umbrella of financial liberalization specifically impact corruption positively.

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Note: This project uses STATA for its quantitative analysis. The 'do-files' of this project are made accessible upon request.