Not so Bad After All?

The Effect of IMF Conditions on Investor Perceptions

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Marius Swane Wishman

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Acknowledgements

Abstract

This thesis focuses on the role of IMF conditions in resurrecting investor sentiments following a severe economic crisis. Much of the existing empirical literature on the subject of IMF programs and investment find no effect, or even a negative effect of such arrangements. This thesis argues that IMF programs do not automatically improve investor sentiments for a crisis-ridden country. I argue that what matters for investors is the credible commitment of countries to undertake reform. Crisis-ridden countries can signal this commitment by incurring the political costs associated with accepting a large amount of IMF conditions. Using panel data for 166 countries over a 22 year period, from 1992-2013, I find that contrary to what much of the previous literature predicts, there is a positive effect of prior action and performance criteria conditions on Institutional Investor rating following a severe economic crisis.

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1. INTRODUCTION

This thesis seeks to answer the research question of whether countries can resurrect investor sentiments following severe economic crisis using the conditionality contained in the International Monetary Fund (hereafter IMF) programs as a signalling device. In the aftermath of a severe economic crisis investors naturally downgrade their perceptions of the crisis-ridden countries. In an attempt to cut their losses investors pull out on their commitments and avoid further investments in the country, thus causing capital flight and lingering difficulties in attracting capital for the country in question (Cuddington 1986). In order to stabilize their economy and restore growth, revitalizing investor sentiments therefore becomes critical.

Of the many international actors involved in economic crisis, the IMF has become a fundamental actor in correcting balance of payments difficulties. Nevertheless, the IMF has also become infamous for its insistence on harsh conditionality that critics say only benefit the upper echelons of society and forces austerity upon the society as whole. The Fund itself argues that conditionality is a way to help crisis-ridden countries complete necessary economic policy reform that will benefit the borrowing country in the long term. The IMF also claims their programs are welcomed by the international investor community and can prevent capital flight and even help the borrowing country gain access to other sources of much needed capital.

1.1 The Catalytic Hypothesis

My thesis builds on the academic literature surrounding the so-called catalytic hypothesis. In relation to IMF programs, this hypothesis can be summarized as the extent to which IMF lending increases the propensity of private investors to lend or invest in the recipient country (Cottarelli & Giannini 2002, 4). The idea is that IMF programs can signal to investors that a government is committed to economic policy reforms and in this way restore capital market confidence. Although there is no definite source of the concept, the catalytic hypothesis is not in any way a novelty. Both policy makers and the IMF have long assumed that their programs can not only boost investor confidence but also increase investments, improve maturities or interest rates on government loans (IMF 1997; Bird, Mori & Rowlands 2000, 484). Based on these assumptions it has been theorized that IMF programs can act as a so called catalyst for other sources of finance.

In the academic literature, the catalytic effect has been the subject of much debate. Empirical results range from strong negative effects of IMF programs on investment to positive effects under the right circumstances. A key mechanism through which the catalytic hypothesis might work is the conditions attached to most IMF programs. These conditions typically contain macroeconomic goals such as reduction of government deficits, inflation and devaluation of the national currency, along with various policy reform measures and often painful restructuring of the national economy. By binding themselves to tough but necessary reforms, governments can send a signal to the international market that they are committed to these reforms, which should provide a more hospitable business environment. Despite the likelihood of a theoretical relationship between the signalling effect of IMF conditionality and the catalytic hypothesis, very few papers have examined this relationship empirically in any detail. Previous literature have tested whether participating in IMF programs can lead to increases in foreign direct investment flows (FDI hereafter), portfolio flows, loan maturities, interest rates and debt rescheduling. Yet empirical research on how the Fund's programs and *conditions* in particular affects *investor sentiments* remain scant. My thesis attempts to fill this is the gap in the literature.

I argue that the inconsistent results of previous empirical research into the catalytic effect have been caused by a failure to examine in detail how conditionality sends signals to investors. After suffering a severe economic crisis, investor sentiments will have suffered. As such, restoring faith in the country's economy and in the competence of its government becomes paramount. In this thesis, I will explain how accepting a large number of conditions involve significant ex-ante and ex-post political costs for the government in a country faced with severe economic crisis. I will further explain how these costs increase the credibility of the signals that the government is sending to investors. By accepting a large number of tough IMF conditions, the government can signal that they are committed to reforms aimed at restoring macroeconomic stability and in this way resurrect investor sentiments. I argue that this is particularly evident in countries post crisis, when the need of reforms is most acutely felt, when investor expectations are low and the political costs of conditionality are greatest.

1.2 Main Findings

The hypothesis that crisis-ridden countries can improve their Institutional Investor rating with the number of conditions attached to an IMF agreement, was tested empirically using fixed

effects ordinary least squares (OLS hereafter) regression. A second hypothesis, that Institutional Investor rating for a crisis-ridden country improves with an increase in the number of prior action and performance criteria conditions attached to an IMF agreement, was tested using the same method. The regressions were conducted on panel data covering 166 countries between 1992 and 2013. Change in Institutional Investor rating was used as a proxy for investor perceptions of borrowing countries' macroeconomic fundamentals. This is a country rating based on interviews with senior economists, investors and international bank CEOs who are asked to rate countries between 0 and 100, where 100 represents least likely to default. My main independent variable of interest is IMF conditions per quarter. I use both aggregated data on conditions per quarter as well as disaggregated into prior action conditions, performance criteria conditions and structural benchmark conditions. The data on conditionality has been taken from the Fund's own website, which in 1999 made data on conditionality available from the year 1992 through the Monitoring of Fund Arrangements database, herby referred to as the MONA database. My other independent variable of interest is a measure of economic crisis taken from Laeven and Valencia (2008, 2013).

My results show that while economic crisis leads to a lingering decrease in Institutional Investor rating, even three years post crisis, participation in an IMF program containing prior action conditions and performance criteria conditions, can not only halt this continuing slide in investor perceptions, but even turn the tide entirely. A country having the maximum number of prior action conditions per quarter observed in the sample, can expect an impressive 12-point increase in Institutional Investor rating. Likewise, a country having the maximum amount of performance criteria conditions per quarter witnesses a five-point increase in Institutional Investor rating. These results survive a number of robustness tests.

1.3 Structure of the Thesis

The thesis consists of seven chapters. Following this introductory chapter is a chapter that will present the IMF in general terms, including a brief review of the Fund's history, its operations and a brief discussion of criticisms of the Fund and how the IMF has responded to these critiques. Chapter 3 will explain the theoretical work that has been conducted on the IMF and the catalytic effect, it further presents the key findings on the catalytic hypothesis in the literature, and concludes with my own theoretical perspective and hypotheses. Chapter 4 presents a detailed summary of the data that was used in this thesis, along with theoretical

discussions of each variable. In chapter 5 I explain the methodological choices that were made in the process of writing this thesis. The empirical results of my thesis along with the main analysis will be presented in chapter 6. Chapter 7 concludes the thesis, sums up my main findings and their theoretical and practical implications, in addition to pointing out a few possibilities for future research.

2. THE INTERNATIONAL MONETARY FUND

In order to get a clear understanding of how IMF programs and conditionality can act as a signalling mechanism to international investors it is necessary to briefly examine what the IMF is, how it operates and for what purpose. In this chapter, I will cover the most important factors concerning the founding and evolution of the IMF, along with the most important elements of its organization. This chapter will also cover some of the criticism that the Fund has received over the years, as well as a brief account of how the IMF has responded to these critical voices.

2.1 Founding

On July 22 1944, representatives from 44 countries signed the Bretton Woods Agreements that established the IMF and its sister organization, the World Bank. The need for global international institutions to regulate and stabilize international trade and national economies had become evident during the collapse of the global laissez faire trade in the buildup to the First World War. This necessity became even more evident a few years later when the global economy crashed during The Great Depression and countries reverted to autarky, raising tariffs and devaluating currencies (Boughton 2004: 4-7). The Bretton Woods conference therefore institutionalized the existing system of currency convertibility that relied on pegged but adjustable exchange rates that were backed by the gold standard.

2.2 The Bretton Woods System

The gold standard and fixed but adjustable exchange rate system, together with the institutions responsible for maintaining it, The World Bank and the IMF, was dubbed the Bretton Woods System. This system implied that each currency was exchangeable with gold and other currencies at fixed rates. The central bank of each country was responsible for holding stockpiles of gold or foreign currency to guarantee exchange at these fixed rates (Vreeland 2007, 5). The dollar was the central currency to the system; the Federal Reserve backed the dollar with the reserves of gold held at Fort Knox, while other national currencies were typically

backed by reserves of dollars. When a country had a balance of payments problem, for example arising from a long run trade deficit, when a country's imports were larger in terms of value than its exports, it would have to buy back its own currency, either with gold or foreign currency. As the supply of gold or dollars, went down, so did the money supply. This in turn made imports more expensive, which forced economic austerity on the country until the system had balanced out. This austerity caused domestic consumption to fall and often meant a slowdown in economic growth and rise in unemployment rates. The flaw in the system that had become evident during the build-up to the First World War and in the interwar period was that countries could avoid the austerity by engaging in "beggar thy neighbor"-politics of competitive devaluations and erection of barriers to trade (Bird 2007, 686). According to fundamental liberal economic theory, this situation is akin to a prisoner's dilemma. Imagine country A and B; if there are no tariffs they both earn $10 billion, but if A introduces a slew of new tariffs they can increase their earnings to $15 billion. However, this reduces country Bs' earnings to -$1 billion. To address their trade deficit country B devalues their currency to make its exports outcompete country A, and the countries reach a new equilibrium at a level lower than at the start of the game. To solve this prisoner's dilemma the purpose of the IMF was to monitor and regulate the system of fixed but adjustable rates, rather than solely relying on its self-regulating mechanism (Vreeland 2007, 5-6). The Articles of Agreement created the IMF to fill the role as a lender that could ease the austerity of the rebalancing of the system, by providing countries with short-term loans of foreign currency (Bird 2007, 686). These loans would allow the indebted country to avoid pursuing policies that the IMF deemed detrimental to the global economy, such as competitive devaluations and raising tariffs (Vreeland 2007, 8).

2.3 How Countries Borrow Money

Although much has changed concerning the IMF since its conception, its fundamental set-up and the way in which countries borrow money still works in essentially the same way. The maximum size of the loans that are available to a country in need is determined by the size of its "quota" (IMF 2016a). Each of the IMF member states are assigned a "quota" that they have to pay upon becoming a member. However, it is not a membership fee, but rather functions more like a bank account that every member country has with the IMF. When countries borrow from the IMF, they draw from this quota, and subsequently repay it, with or without interests depending on the arrangement. Quotas are denoted in Special Drawing Rights (hereby SDR), which can be regarded as the IMF's own currency. SDR is pegged to a basket of the most

influential and stable currencies. Currently, the SDR basket consists of the U.S. dollar, the euro, Japanese yen, and pound sterling. On October 1 2016, the IMF will expand the basket to include the Chinese renminbi (IMF 2015a). Pegging the SDR to a basket of stable currencies has the benefit of making it even more stable than any of the basket currencies individually. The current value of one SDR is around $1.4 (as of February 2016). Upon becoming a member, one quarter of the initial quota payment must be in SDR or widely accepted foreign currency. The remaining three quarters are paid in the country's own currency (IMF 2015a). A weighted average of gross domestic product (hereby GDP) (weight of 50 percent), openness (30 percent), economic variability (15 percent), and international reserves (5 percent) determines the size of a country's quota (IMF Factsheet 2016a).

2.4 Governance of the Fund

In addition to determining the size of loans available to a country, the size of each quota determines the country's voting power within the Board of Governors. This means that quota sizes are very important, as they translate directly into voting power and influence in the Fund. Each IMF member's votes are comprised of basic votes plus one additional vote for each SDR 100,000 of quota. A 2008 reform fixed the number of basic votes at 5.502 percent of total votes (IMF 2016a). Because the quotas determine influence within the fund, changes in quota size have to be approved by an 85% majority. The Board of Governors generally reviews quotas at five-year intervals, but in rare cases, they can increase quotas on an ad hoc basis.

The United States has had the biggest quota in the fund throughout its history and currently controls 17.46% of the votes (despite contributing a quota equivalent to 18.45% of the Fund). Considering how the media often portrays the IMF as a "puppet" of the United States, and that United States' dominant influence within the Fund is well documented by academic research (Barro & Lee 2005; Biglaiser & DeRouen 2010; Dreher & Jensen 2007), 17.46% is perhaps a surprisingly small share of the votes. However, voting share is not equal to voting power. Voting power can be defined as the frequency with which an actor casts the pivotal votes that make, brake or block major coalitions (Shapley & Shubik 1954). Following this logic Vreeland (2007) argues that if the United States and its most influential allies, Japan, Germany, France and the United Kingdom vote as a block they control a majority of the voting power in the IMF. Additionally, 17.46% of the votes is still enough though, for the United States to have an important de facto veto power over increases in quotas.

The Board of Governors is the fundamental source of power in the IMF, and as such, the Board of Governors delegate power by electing 24 directors to make up the Executive Board, which conducts IMFs daily business (IMF 2016b). Every member country elects a governor to be its representative in the IMFs Board of Governors, usually the Minister of Finance or the head of the national bank. The five biggest countries in terms of quotas are automatically appointed directors in the Executive Board. The rest of the countries form coalitions, often by regions, linguistic groups or special interest groups, and elect a director to represent and vote for all of them. For example, Fernando Jimenez Latorre from Spain currently represents Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Spain and Venezuela on the Executive Board, and thus controls the votes of these eight countries in the Executive Board[1].

Figure 1: Stylized view of IMF governance

Source: Martinez-Diaz 2008
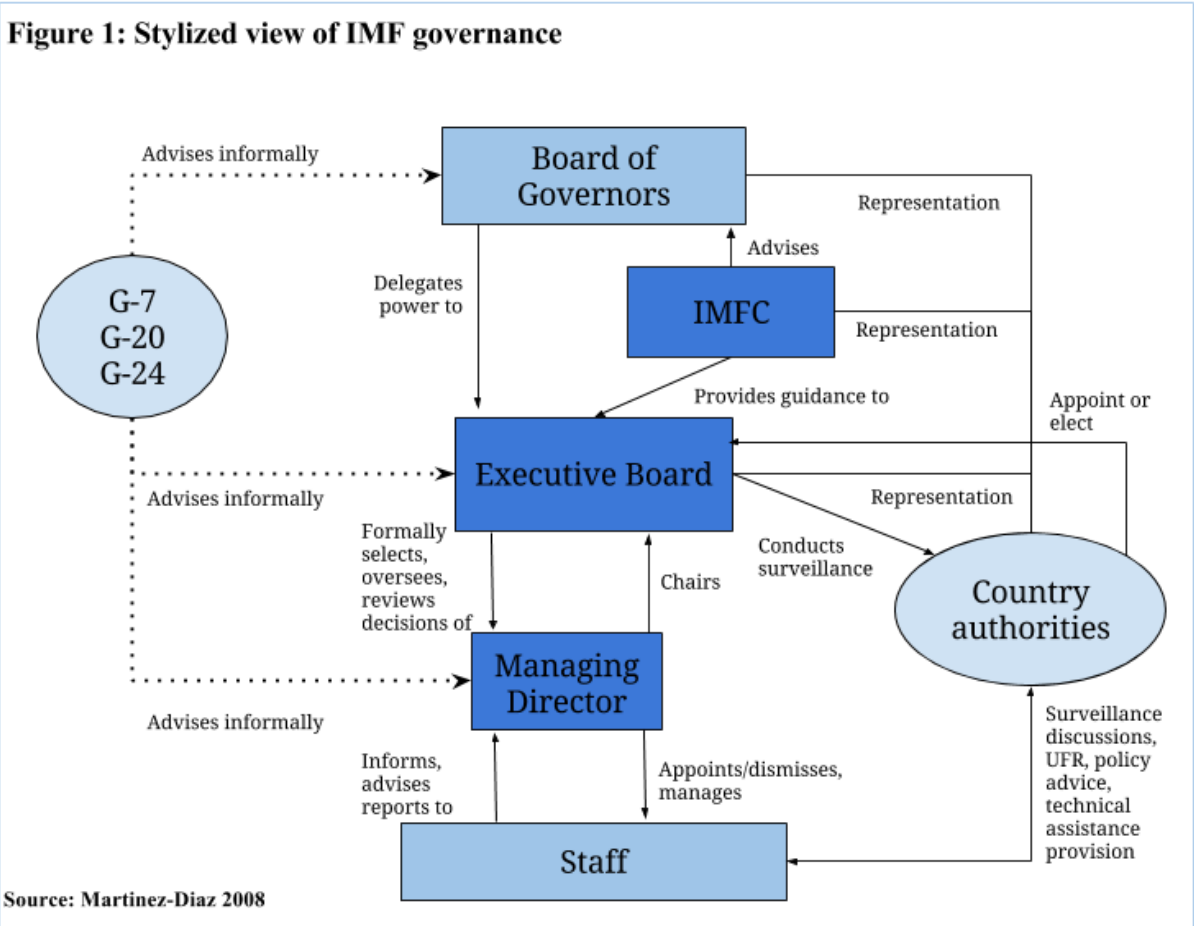
As can be seen in this organization chart the IMFC (International Monetary and Financial Committee, previously the Interim Committee) sits between the Board of Governors and the

[1] http://www.imf.org/external/np/sec/memdir/eds.aspx

Executive Board. It consists of a subset of 24 governors and its main role is to be an advisory body to the Board of Governors (Martiez-Diaz 2008). An important organ of the IMF that this organization chart does not cover is the Independent Evaluation Office (IEO). Established in 2001 the purpose of the IEO is "to conduct independent and objective evaluations of Fund policies and activities"[2]. The IEO publishes working papers and reports evaluating the Fund's conduct. A portion of the research that has been done on the catalytic hypothesis, and is cited in this thesis, has been published through the IEO, for example the 2007 evaluation rapport on structural conditionality (IEO 2007).

2.5 Conditionality

When a government approaches the IMF in the hopes of obtaining a loan, most of the Fund programs that are available are conditional upon economic policy reform. As such, the agreements contain a set of conditions that the country must fulfill in order to be eligible to draw from their quota (i.e. loan). What conditions become part the agreement is the result of negotiations between the Fund and the government in question. Based on when and how the IMF monitors compliance with the conditions there are three types of IMF conditions: prior action conditions, performance criteria conditions and structural benchmark conditions (IMF 2015b). What they usually contain in terms of reforms and their theoretical implications will be covered in chapter 5 THEORY. For now, the most important thing to note is that for the Fund the primary purpose of conditionality has always been to serve as a mechanism for the IMF to get its money back. Conditionality ensures this by obliging the government to pursue reforms that will make the borrowing country better able to repay its debt to the IMF and other creditors in the future (IMF 2015b).

Notice also how conditionality in this way works as a mechanism against moral hazard. The problem of moral hazard is inherent in all forms of insurance systems, and IMF loans can be thought of as insurance against balance of payments problems. Imagine a driver who is insured against every little dent and dingy. The moral hazard of such an insurance would undoubtedly cause the driver to take greater risks, for example while parking, he might not worry about bumping into the car behind him. Likewise, if a country assumes the IMF in the case of balance of payments problems will bail it out, it might as well continue following irresponsible

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[2] http://www.ieo-imf.org/

economic policy. Conditionality counteracts moral hazard because countries in a balance of payments crisis, caused by irresponsible economic policy, will be forced to address these policies and refrain from them in the future.

Conditionality also prevents moral hazard by being a deterrent to IMF loans. Countries want the loans provided by the Fund, which induces moral hazard, but as I will explain more thoroughly in chapter 5 THEORY, IMF conditions are politically highly unpopular. The threat of having conditionality imposed on them should motivate governments to avoid bad economic policies.

After the Bretton Woods conference, the United States was particularly concerned with moral hazard. As the biggest creditor to the IMF, they were worried they would become a perpetual sponsor of bad macroeconomic policies. According to Great Britain's main negotiator at the Bretton Woods conference, Johan Maynard Keynes, the United States wanted the Fund to have "wide discretionary and policing power" (as quoted in Vreeland 2007, 21) to prevent moral hazard. Great Britain on the other hand was worried about the Fund's encroachment on sovereignty. In the end IMF conditionality landed somewhere on the middle ground, not as intrusive as Great Britain had feared while not as far reaching as the United States had hoped (Vreeland 2007, 21).

2.6 IMF Programs

Loans can be obtained by countries from the IMF through several different programs, with differing levels of conditionality. Broadly speaking these programs can be divided into non-concessional and concessional loans, i.e. loans with and without interest. Stand-By Arrangements (SBA) are historically the most widely used IMF programs. SBAs are non-concessional programs that are intended to address short-term balance of payments problems through conditional lending. These arrangements typically last 12-24 months, with repayments made over 3-5 years (IMF 2016c). The IMF established the Extended Fund Facility (EFF) after they and other observers, discovered that many countries, especially developing ones, entered consecutive SBAs. This recidivism reflected prolonged balance of payments issues and deep structural distortions in the economies of these developing countries. To address the deep structural difficulties in developing countries EFFs are broader and deeper in the scope of conditionality than SBAs. They are non-concessional in nature and are designed to last three years, with the possibility of a four-year arrangement if balance of payments problems persist

(IMF 2016c). Other non-concessional programs include Precautionary and Liquidity Line (PLL) and Flexible Credit Line (FCL), which are intended for countries with strong macroeconomic fundamentals and therefore include limited and no conditionality respectively (IMF 2016c).

In 2010, the IMF began giving concessional loans to low income countries. In other words, zero or close to zero interest loans. There are three types of such programs, ranging from urgent assistance with limited conditionality through Rapid Credit Facility (RCF), to short term Standby Credit Facility and medium-term Extended Credit Facility. These loans all contain conditionality to address necessary reforms in borrowing countries (IMF 2016c).

2.7 Evolution of the Fund

In the first two decades of its existence, the IMF functioned more or less as intended, with two important exceptions. Firstly, in the reconstruction of Europe after the Second World War, the loans needed were too big for the IMFs budget, and the United States (as the de facto creditor) wanted more control than IMF conditionality would allow. Thus, the Marshall Aid effectively pushed the IMF out of a role in post-war Europe (Vreeland 2007, 8). Secondly, even though the IMF was conceived by and for the western developed world to address short term balance of payments problems, developing countries were borrowing from IMF, and entering consecutive agreements from the very beginning (Vreeland 2007, 9).

The system that the IMF was meant to monitor and help maintain, did not last either. As international capital mobility increased during the 1960's, it became harder to uphold pegged rates. In addition, the gold-standard-fixed-exchange-rates-system aggravated the instability when a country eventually gave in to pressures and adjusted their rates (Vreeland 2007, 8-9). The pressures of increased capital mobility coupled with the expenses of the Vietnam War lead the United States under President Richard Nixon, to eventually leave the gold standard in 1971, and by 1973, the system of pegged exchange rates was abandoned (Boughton 2004; Vreeland 2007, 9). Without its original raison d'être the IMF was forced to reinvent itself.

The decolonization of large parts of Africa and Asia, led to the creation of many new states, and provided the IMF with a new purpose. In fact, most IMF loans from as early as 1956 onward had gone to developing countries, so from early in the organization's history it was involved in economic issues of developing countries (Vreeland 2007, 9). Rather than stemming from temporary balance of payments deficits, most developing countries had deep systemic issues

that were not remedied by short-term conditional loans. Developing countries instead ended up undertaking consecutive IMF programs. When the Bretton Woods system collapsed, the IMF was already involved in lending, advising and promoting reforms in developing countries, making the shift to an economic growth focus the natural direction for the organization in its existential crisis. As Michel Camdessus, IMF Managing Director put it before the United Nations Economic and Social Council in Geneva, July 11, 1990, as quoted by Przeworski & Vreeland (2000):

> Our primary objective is growth. In my view, there is no longer any ambiguity about this. It is toward growth that our programs and their conditionality are aimed. It is with a view toward growth that we carry out our special responsibility of helping to correct balance of payments disequilibria and, more generally, to eliminate obstructive macroeconomic imbalances (Przeworski & Vreeland 2000, 385).

In accordance with an increased focus on developing countries and economic growth, the IMF also became increasingly involved in managing international economic crisis. Boughton (2004, 12) identifies the 1982 international debt crisis that hit countries including Hungary, Morocco, Poland, Yugoslavia, Mexico and Brazil, as the first international debt crisis where the IMF played the role of the central agency for coordinating the crisis resolution. Globalization had increased the diversity of countries and creditors involved, creating the need for a coordinating actor. Most notably, the IMF has coordinated temporary official financing, reform-policies and attempted to restore creditor and investor confidence and commitment in the aftermath of the Cold War, the East Asian crisis of 1997, and more recently in the 2008 global financial crisis and the following Greek debt crisis.

2.8 Criticism of the IMF

The Fund's handling of economic crisis and continued involvement in many developing nations across the world has not been without its controversies. These can be categorized in two groups, popular protests and intellectual criticism. The first manifest itself as for instance antigovernment or anti IMF protests or even riots[3]. While journalists, politicians and academics on the other hand have expressed that IMFs conditions have been deemed too austere, or judged as "Washington consensus" neo liberal extremes, harmful to democracy, too "cookie-cutter" and micro managing in their approach, and unlikely to lead to real reforms (Beazer & Woo 2015; Brown 2009; Dreher 2002; Dreher & Rupprecht 2007; Hertz 2001; Stiglitz 2000;

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[3] See Caffentzis & Federici 2001 for a relatively comprehensive list.

Vreeland 1999; 2003). It is important to understand this criticism and how the Fund has responded to it in order to understand the current trajectory of IMF conditionality. Moreover, it is important in order to be able to recognize how the results of this thesis fit into this larger picture.

The Fund tends to present its policy reforms as the result of consensus among leading economist, and as more or less the only appropriate way forward for the crisis-ridden country in question (Sachs 1998). However, although there is still debate within the academic community, countries that enter IMF programs seem to be worse off than those who do not, in terms of economic growth (Vreeland 2003; 2007; Przeworski & Vreeland 2000; Dreher 2006; Hutchison 2003). This begs the question: If IMF indeed prescribes the correct medicine, why has it not had a better impact on the patients? There are two answers to this question; critics say the IMF prescribes the wrong medicine. While the Fund itself claims that governments have lacked political will to reform (Vreeland 2003, 5). Low compliance rates with IMF conditionality may imply that the Fund has a point (Beveridge & Kelly 1980; Dreher 2006). Dreher & Rupprecht (2007) even found that IMF programs had a negative net effect on market-oriented reforms, while Bookmann & Dreher (2003) found that the programs of the IMF had no effect on a measure of economic freedom, both among important goals of such programs. Low compliance rates contribute to this, but there is also the problem that governments have incentives to implement reforms to get loans, only to then revers these reforms to placate domestic opposition and recreate structural imbalances in order to get another IMF loan (Dreher & Rupprecht 2007, 322).

2.9 Ownership

In order for IMF programs and conditionality to work, that is, to generate real reform in the countries they affect, there have been several suggestions from the literature. For example, Beazer & Woo (2015) recommend prioritizing left-wing governments, and show that such governments have more successfully implemented reform, because they face less political opposition. Nevertheless, the most frequent suggestion, and one that has come from within the IMF itself, is to increase country ownership of programs and conditions (Bird & Willett 2004; IMF 2002; IEO 2007; Drazen 2002).Ownership can be thought of as the degree to which a country participating in an IMF program believes the reforms included in the program are appropriate. The idea is to find more common ground between the IMF and the borrowing

country in the hopes that ownership can avoid micro managing countries and instead let them forge their own path to development. Consequently, increased ownership should also increase compliance with IMF conditions.

The Fund has taken this criticism to heart, and the reduction in the number of conditions contained in IMF agreements observed in the early 2000s (see Figure 4 in chapter 4.3) is a direct consequence of the Fund's effort to increase country ownership (Vreeland 2007, 23; IEO 2007). In 2009 and 2012, the Fund reaffirmed its focus on country ownership and tailoring of programs, and the IMF began shifting away from ex-ante conditionality and towards relying more on structural benchmark conditions (IMF 2015b; IMF 2002). This shift is clearly visible in Figure 2. Whether the policy of increasing country ownership has been successful in increasing compliance, reforms and eventually economic growth in the target countries remains to be seen, but the results of this thesis may be able to shed some light on how this policy has affected countries chances of catalyzing finance.

Figure 2: Yearly mean number of structural benchmark conditions per quarter
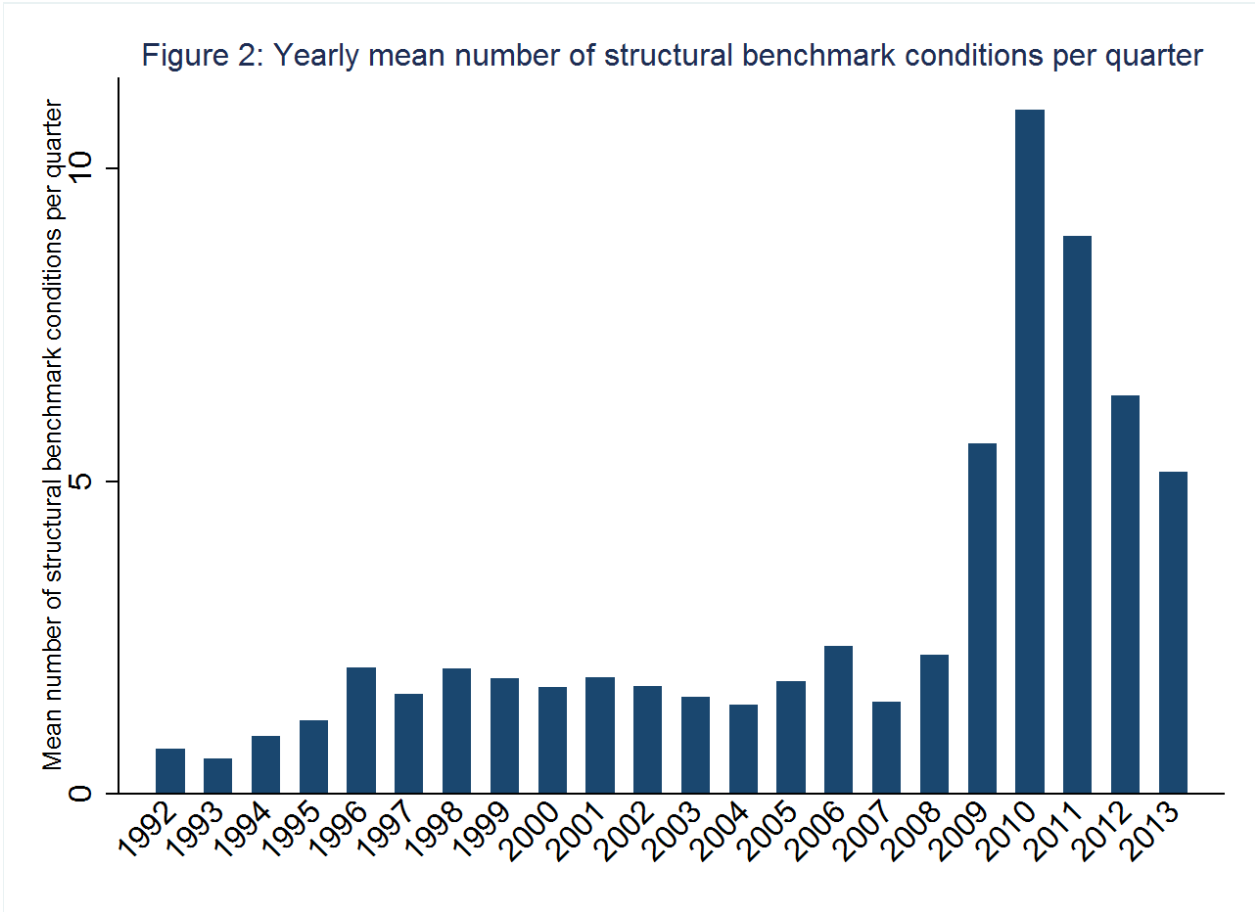
2.10 Global Membership

Nevertheless, after decolonization and the end of the Cold War, IMF membership has steadily grown to the point where membership today is virtually universal. At the time of writing, the membership in the United Nations includes 193 states, while IMF has 188. Those who are members in the United Nations and not in the IMF are mostly small countries without their own currency, like Lichtenstein and Nauru, in addition to the two communist states of Cuba and North Korea. Its broad membership, in addition to its deep involvement in economic crisis management and borrowing countries' internal politics, makes the IMF one of the most influential and often most controversial nongovernmental organizations in the world.

3. THEORY

In this chapter, I will cover the theoretical work that has been done on the catalytic hypothesis. This chapter will also present the main empirical findings in the literature. Based on this theoretical discussion, the lack of clear answers from the empirical research and the gaps in the existing literature, I will present my own theory and the resulting hypotheses.

3.1 Mechanisms of Catalysis

The theoretical literature on the catalytic effect identifies several mechanisms through which IMF lending arrangements could act as a catalyst for private finance (Cottarelli & Giannini 2002, 31-36; Racenberg 2012, 7). For this thesis, I identify five such mechanisms. First, IMF disbursements increase the liquidity in the borrowing country, which is especially beneficial to portfolio investors who seek to benefit from the short-term boost that the increased liquidity provides (Racenberg 2012, 7). Portfolio investment is often defined in contrast to FDI, as the purchase of non-controlling stakes in firms or various kinds of debt instrumentalities (Jakobsen 2012, 36). Non-controlling stakes means that the shares bought in a given company are too small as to assume any control of said company. IMF uses a cut-off of investments below 10% of a company's shares to denote portfolio investment (IMF 2009, 110). The World Bank defines portfolio flows as consisting of bonds, equity and money market instruments such as certificates of deposits and commercial papers (Agarwal 1997, 217). Portfolio investments can be sold with significant ease and speed and are therefore liquid and unstable in nature (Jakobsen 2012, 36). Gooptu (1993) theorizes that portfolio investment can occur as "herding", where inflows of portfolio investments to a country precipitates further inflows (and likewise with outflows). In this sense portfolio investors could act as a herd, responding to the liquidity influx caused by the IMF. Moral hazard on the part of investors could potentially also cause an increase in portfolio investment following the announcement of an IMF agreement. If the IMF demonstrates its dedication to back up a country's economy, then investors have an incentive to take bigger risks. Even though moral hazard can increase inflows, the difference between these inflows and those resulting from catalysis is that they could lead to capital flight in the medium or long term and/or the need for further IMF loans.

Secondly, IMF lending arrangements signal that the Fund approves of economic policies already in place in the recipient country (Racenberg 2012; Diaz-Cassou, Garcia-Herrero & Molina 2006). According to this line of argument, such a stamp of approval from the Fund should boost private and foreign investor confidence. However, the credibility of this seal of approval depends on an informational advantage on the part of the Fund (Bordo, Mody & Oomes 2004, 230). Unless the Fund possesses information that the international investor community does not have, and is able to communicate this information transparently in relation to its programs, no new information reaches investors. With no new information, there is no signal to which investors can respond.

The third mechanism is that after signing IMF lending arrangements local governments get access to IMF technical assistance and advisors, which could significantly improve the quality of policy reforms, and increase the likelihood of such reforms taking place (Cottarelli & Giannini 2002, 31). While private actors could provide this assistance as well, Cottarelli & Giannini (2002, 31) argues that as an international institution the Fund might be a more acceptable advisor than private agencies. Additionally, the IMF has literally put its own money on the line, which means the Fund has strong incentives to deliver high quality technical assistance (Cottarelli & Giannini 2002, 31).

Though not yet fully explored, a potential fourth mechanism is that the leverage which the Fund holds over the borrowing country can act as a policing force that keeps the government from making decisions that could hurt investors. Indeed, a recent study by Biglaiser, Lee & Staats (2015) found that countries under IMF agreements are less likely to nationalize foreign firms. The reduced political risk, could theoretically lead to an increase in FDI.

Fifth, IMF lending comes with conditions attached. The borrowing countries use conditionality to signal investors that they are committed to reforms such as financial market reforms, privatization of inefficient public sector units, slashing wasteful subsidies, labor market reforms and reduction of government deficits. The reforms should benefit investors and thus improve their perceptions of the borrowing country (Cottarelli & Giannini 2002, 33; Racenberg 2012, 8).

3.2 Previous Findings

All of these mechanisms contribute to the underlying theory of the catalytic hypothesis, that IMF lending programs will benefit the borrowing country's economy, or at least lead to a better

and friendlier business environment. Going by this line of argument, investors should respond favorably to a country's participation in an IMF program. Thus, the fundamental theoretical work predicts that IMF programs should be able to catalyze other sources of finance, in all but exceptional cases. IMF officials and policymakers have long assumed this to be the case (Woo 2013, 293; IMF 1997; Bird, Mori & Rowlands 2000: 484). Yet, the results of empirical research have so far remained mixed. The question therefore is: When does the catalytic effect work and what factors determine if countries are able to catalyze or not?

For instance, while some studies have found no effect of IMF agreements, others find a negative effect on foreign investment. Using a simple binary measure of IMF program participation on 68 countries between 1970 and 1998, Jensen (2004) found that countries under an IMF agreement on average attracted 25% less FDI inflows, even after controlling for non-random selection into Fund programs.

A number of papers and literary works have even found a negative effect of IMF programs on economic growth (Vreeland 2003; Przeworski & Vreeland 2000; Barro & Lee 2005; Dreher 2006). Using data covering 135 countries from 1951 to 1990 Vreeland (2003) controls for both observed and unobserved factors[4] that can affect both selection into an IMF program and economic performance, and find a clear negative effect of IMF programs on economic growth. While not differentiating between the type of IMF program or the conditions attached, Vreeland (2003) improves upon previous research by measuring program participation in spells of consecutive agreements. Dreher (2006) further improved the existing literature by taking into account compliance with conditionality. Using panel data for 98 countries over the period 1970 to 2000, Dreher (2006) too finds a significant negative effect of IMF programs on economic growth prospects. Nevertheless, he also finds significant positive effect of compliance with conditions (Dreher 2006). Yet, this positive effect of compliance is not enough to counteract the negative effect of the programs as a whole (Dreher 2006).

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[4] The prime example of what Vreeland terms unobserved factors is "political will" to reform (2003). Political will is often referenced by the Fund as an important reason for program failure (lack of) or success (Vreeland 2003).

If IMF programs are in fact harmful to the economy and economic growth prospects, that would undermine the catalyst effect. The IMF programs would signal economic downturn, rather than reform and eventually growth.

This is precisely the argument put forward by Jensen (2004, 207) and Edwards (2006, 46), who conclude that IMF programs have a negative effect on various forms of capital inflows. The latter finds that the austerity administered by the Fund even deters international portfolio inflows, and argues that by signing IMF agreements countries send negative signals to portfolio investors about the possibilities of short-term returns, rather than signalling commitment to reform (Edwards 2006, 46). Barro & Lee (2005, 22-23) find a negative effect of IMF loans on the ratio of investment to GDP even after accounting for the negative effect of the IMF program on economic growth. Additionally, they conclude that the negative effect of Fund programs on investment ratio further suppresses economic growth (Barro & Lee 2005, 22-23). The main weakness of these papers however, is that they use a binary measure of IMF participation, and loan size in the case of Barro & Lee (2005). That means that they implicitly assume that all IMF arrangements send the same signal. In other words, they fail to consider how program design and differing levels of conditionality can affect the signals that are sent.

Though not examined sufficiently by the theoretical literature, IMF programs can conceivably send negative signals to investors in several ways. First, if investors see the IMF agreement as unconvincing because they believe the reform measures are wrong, it is likely to damage investor sentiments and potentially capital flows. Likewise, if reforms are interpreted as insufficient to address fundamental problems in the economy or if compliance seems unlikely. Yet another scenario could be that the announcement of an agreement comes as a surprise to investors. Investors might then interpret an IMF agreement as a signal that macroeconomic flaws were deeper than initially assumed, which could erode confidence and lead to capital flight. Racenberg (2012, 8) dismisses this outcome. She argues that the IMF does not possess any information that investors do not already know. However, governments frequently try to hide underlying problems in the economy.[5] Because the Fund can withhold information from the market, and simultaneously provide advice, the government has an incentive to inform the IMF. This provides the Fund with access to channels of information that are not available to

[5] For example, Brazil's president Dilma Rousseff is currently facing impeachment proceedings accused of using accounting trickery to hide the size of budget deficit (the Economist 2016).

the market. For instance, Fischer (1998, 104) claims that the IMF knew that Thailand's economy was "extremely vulnerable" long before the East Asian financial crisis broke out, but decided not to inform markets for fear of triggering a crisis that might not otherwise occur.

In order to avoid the assumption that all IMF programs send the same signals, some researchers have focused on the different types of arrangements offered by the Fund. One can differentiate between either concessional or non-concessional arrangements, like Racenberg (2012), or disaggregated to examine different IMF program such as SBAs or ECFs explicitly like Edwards (2005; 2006) and Bird & Rowlands (2002). The results of these studies remain mixed, with most papers finding no catalytic effect for any program, positive or negative, on measures such as FDI, portfolio inflows or loans (Bird & Rowlands 1997; 2000; 2002; Diaz-Cassou, Garcia-Herrero & Molina 2006). Racenberg (2012) finds that countries, which have IMF arrangements of a concessional nature,[6] receive no extra FDI because of Fund programs. Racenberg (2012, 36-38) attributes this to the relatively mild conditionality of these arrangements, in addition to the limited macroeconomic policy tools the Fund has for enforcing implementation in these countries. The mild conditionality in these arrangements is a result of the critique levelled against the IMF, and against the design of conditionality in particular. In addition to extremely low or no interest rates, countries under these programs are given more freedom to choose which reforms to pursue, in an effort to increase country ownership. Bird & Rowland (1997) find no effect of program participation (operationalized as a dummy variable) on loan commitments private or official in their study of 90 less developed countries in the period 1975-1989. In a similar examination of 96 less developed countries between the early 1980s and 1995, they found no increase in FDI, portfolio flows or official capital flows resulting from IMF arrangements. When Bird & Rowlands (2002) later examined disaggregated IMF programs over different periods of the Fund's history and countries at different levels of development, they still found no significant effect on FDI or portfolio investments for most programs. Some of the programs even had negative effects on both FDI and portfolio investments, especially in the earlier period they examined (Bird & Rowland 2002). However, none of the papers of Bird & Rowlands control for selection.[7]

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[6] In other words, the least developed countries that unfortunately are in the most need of FDI.

[7] The problem of non-random selection into IMF programs will be covered in chapter 5.1.

On the other hand, a limited number of studies do find some support for the catalytic hypothesis. For instance, Biglaiser & DeRouen (2010) hypothesize that because of the United States influence in the IMF, reforms are particularly well suited for American investors. They find that SBA's are indeed able to catalyze increased FDI from American companies. They also suggest that loan duration and size, country ownership of the program, and the country's influence with the Fund and the United States all influence the ability to catalyze American FDI (Biglaiser & DeRouen 2010, 73). Eichengreen & Mody (2001) find that for countries with a sufficient capacity for reform, IMF programs are "ways for borrowers to send a credible signal of commitment to the market" (Eichengreen & Mody 2001, 181). Other researchers have confirmed Eichengreen & Mody's (2001) assertion that the catalytic effect is strongest for countries with mid-range economic fundamentals that are not so bad that reforms are not credible, but not so good that reforms will have little effect (Bird & Rowland 1997; 2002; Mody & Saravia 2006; Racenberg 2012).

3.3 The Politics of IMF Lending

Interestingly though, the ways in which countries relate to the United States can also determine their ability to catalyze. The influence of the United States in the Fund is not surprising considering it pays by far the largest quota and thus has the biggest voting share of all member countries (see chapter 2.4). How the United States chooses to wield this influence in relation to IMF loans, and in turn how this affects the catalytic effect, however is less obvious. Nonetheless, it is well documented in the literature (Thacker 1999; Barro & Lee 2003; Dreher & Jensen 2007; Dreher, Sturm & Vreeland 2009, 2015; Midgaard, Vadlamannati & de Soysa 2013; Stone 2002; 2004). Just as a neorealist theoretical perspective of international politics predicts, the political concerns of major powers, the United States in particular, overrule the institutions own goals. Even if economic growth in developing countries, and therefor punishing non-compliance according to performance, is in the long-term interest of major powers, this concern is trumped by short-term political concerns (Stone 2004). IMF programs and conditionality can essentially be used as tools of the major power in two ways, either as a carrot or as a stick. Pakistan is a telling example on both accounts. Following a nuclear arms test their IMF program was suspended, only to have the program restored when they agreed to support the United States operations in Afghanistan in 2001 (Stone 2004, 577). Other researcher have confirmed that countries that are gravitating towards the United States politically, as measured by voting patterns in the United Nation, are rewarded with a greater chance of

receiving IMF loans, and perhaps not surprisingly vice-versa for countries moving away from them has (Thacker 1999). Due to the United States' influence of the Fund, countries of strategic importance to the United States receive larger loans with fewer and lighter conditions, and punishment for non-compliance has been shown to be less strict (Barro & Lee 2003; Dreher & Jensen 2007; Dreher, Sturm & Vreeland 2009, 2015; Midgaard, Vadlamannati & de Soysa 2013; Stone 2004). This undermines the catalytic effect in two important ways, which are really two sides of the same coin. Firstly, having fewer conditions sends a weaker signal to investors because it means the government will incur less political costs[8]. Secondly, the commitment to those conditions is less credible because the IMF punishes non-compliance too lightly or not at all for countries that it deems important. Fewer negative consequences for non-compliance makes non-compliance more likely, which makes investors less liable to trust that the government will push reforms that the investors want. Conversely, for countries that are on less amicable terms with the United States, IMF programs should have a more positive impact on investor perceptions, both because they are likely to get more and tougher conditionality, and because the market knows that they did not get the program as a political favor.

After controlling for borrowing countries' strategic importance to the United States, Moon & Woo (2014) find that both signing an IMF agreement and being under an IMF program, have a positive effect on FDI. Chapman, Fang and Stone (2011), Racenberg (2012) and Woo (2013) corroborate that being important to the United States negatively affects the catalytic effect. Racenberg (2012) concludes that failure to catalyze is due to lack of credibility that countries will enact necessary economic policy reforms. The problem of credibility is a serious one for crisis-ridden countries, due to often-poor historical records of reforms. The fact is that many countries have not delivered reforms as promised, or have passed half-baked reforms that were quickly repealed (Beveridge & Kelly 1980; Dreher 2006).

3.4 The Role of Conditionality and Political Costs

I argue that the continuing lack of empirical evidence of a catalytic effect is due to a failure to explicitly model the signalling effect of IMF conditions. Crisis-ridden countries use IMF

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[8] I will cover the theory of how political costs and signalling relates in detail in chapter 3.4 The Role of Conditionality and Political Costs.

conditions to signal that they are committed to undertaking the necessary reforms to stabilize their economy and create a hospitable business environment. In fact, results using data on conditionality have generally supported the theory that crisis-ridden countries use conditions to signal commitment in order to achieve catalysis. For example, Dang and Stone (2015) find that financial conditions significantly increase the odds of American firm's mergers and acquisitions. Mercer-Blackman & Unigovskaya (2000) studied transition economies, and found that even after controlling for the extent of stabilization of the transition country, there was a positive relationship between compliance with performance criteria conditions and economic growth, which in turn could lead to catalysis. Woo (2013) studies different kinds of conditionality in more detail and finds that catalyzing FDI is conditional on conditionality. Specifically he argues that politically unpopular conditions serve as more credible signals of commitment (Woo 2013, 313). The theory behind this merits further explanation.

I will argue that accepting IMF conditions can significantly enhance the credibility of reforms for a crisis-ridden country. IMF conditions are associated with large political costs. A government that is not committed to reform would not be willing to risk such large costs by signing a large number of IMF conditions. Research has shown that economic policy reform is particularly costly for a government during severe economic crisis (Dreher & Gassebner 2012; Krugman 1998). Serious economic crisis is characterized by deep crisis in the banking sector, which often leads to exchange rate, inflation and default crisis (Reinhart 2009). Each IMF condition that a crisis-ridden country has should send an even more credible signal than in countries without such a deep economic crisis, due to the increased costs associated with having IMF conditions during a severe economic crisis. Indeed, Diaz-Cassou, Garcia-Herrero & Molina (2006) found that only countries that had experienced sovereign, banking or exchange rate crisis witnessed an increase in FDI as a result of IMF programs.

The political costs associated with IMF conditions work in two ways, ex ante and ex post[9]. Ex ante, political costs work as a sunk costs mechanism that the government and its leading politicians, incur when pursuing and signing an IMF agreement (Woo 2013, 298). A politician who is considering advocating an IMF agreement knows that the conditions the Fund is likely to demand are unpopular with the voters. Mass protest, strikes and riots related to IMF

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[9] Ex ante means before the event. Conversely ex post means after the event.

conditions are common and examples include the Dominican Republic, Egypt, Ghana, Indonesia, Jamaica and more recently in Greece and Portugal in relation to the 2008 financial crisis (Vreeland 2003; Dreher & Gassebner 2012; Caffentzis & Federici 2001; BBC 2013; The Guardian 2013). For instance, Dreher and Gassebner (2012) find that countries participating in IMF programs face massive resistance in the form of anti-government demonstrations and strikes. That governments seek to avoid IMF loans is well documented, as countries have been found to prefer private capital market loans with higher interest rates in order to avoid Fund conditionality (Merchesi & Thomas 1999, 114; Bird 1995, 58). An illustrating example of how cautious politicians are of entering IMF agreements can be seen in the case of Nigerian president Shehu Shagari in 1982-1983. Nigeria was in a deep economic crisis following a drop in oil prices in 1981-1982, and had one of the worst balance of payments deficits in the world (Vreeland 2003, 38; The New York Times 1983a; 1983b; 1984). In 1982, hoping to avoid vehemently opposed conditions, Shagari had signed an unconditional IMF loan that proved insufficient to address the crisis (Vreeland 2003, 36). Despite Nigeria's dire need, Shagari turned down two IMF arrangements because of specific conditions that were thought to have dashed his chances of reelections later the same year (Vreeland 2003, 37; The New York Times 1983a; 1983b; 1984).

Furthermore, the political costs of IMF programs have been shown to be particularly high prior to elections, and programs frequently break down in such periods (Dreher 2003; 2004). Fearing that IMF programs hurt government's re-election chances, fewer programs are concluded prior to elections (Dreher 2004). In several cases, IMF reforms have caused enough popular dissent to lead to government crisis and political instability (Dreher & Gassebner 2012). In addition to popular dissent, powerful and traditionally privileged groups who risk losing their privileged position if reforms are implemented are also likely to lobby against any Fund conditionality that threaten their status quo bias (Vreeland 1999, 15; Mayer & Mourmouras 2005, 4).

The ex-ante costs make IMF programs a risky policy to pursue and only governments who are seriously committed to reform would do so. Additionally, the ex-ante political costs vary according to the number, scope and focus of IMF conditions (Woo 2013, 299). Thus, theory suggests that signing an IMF agreement with many tough conditions would send a powerful signal to the broader international investor community that the government is serious enough to undertake politically costly reform measures.

On the other hand, the ex post political costs are the costs incurred by the incumbent government for breaking off an agreement with the Fund once the agreement has been signed. I identify three sources of ex post political costs associated with IMF programs and conditionality. First, there is the direct "punishment" by the Fund. This would involve suspension of the further disbursements, and as the IMF would lose confidence in the country, it would make future programs more costly through either tougher conditionality or even exclusion from subsequent loans for a period of time (Stone 2004; Bird 2002, 802)[10]. Second, failure to complete the initiated policies, signals the incompetence of the leader, both to the international investor community and to his or her domestic constituency. Third, breaking with the IMF would send a strong negative signal to capital markets, undermining trust, which has been shown to lead to capital flight (Stone 2002, 27; Edwards 2005; Vreeland 2003, 29). Tanzania provides a telling historical example of how investors discipline breaking with the Fund. After having entered an IMF program in 1980 because of an economic crisis, Tanzania failed to comply with conditions on government borrowing and by November of that same year, the IMF suspended the program (Vreeland 2003, 28). Initially, this halted an ongoing increase in investment (as a percent of GDP), but by 1982, when it became clear that Tanzania would not accept the conditions that the Fund required for reentry into the program, investment dropped from 11.8% of GDP to 8.9%, the lowest level since 1964 (Vreeland 2003, 29).

The political costs, both ex ante and ex post, that are clearly associated with IMF conditions can strengthen the credibility of a crisis-ridden country's commitment because the government would not be willing to risk such substantial costs unless they are truly committed to undertaking the reforms. The Tanzanian rejection of the IMFs conditions in 1982, after the suspension of their IMF program in 1980, is an example that even crisis-ridden countries are sometimes willing to ride out an economic crisis alone, because they wish to avoid the costs associated with IMF conditions. In this case the Tanzanian government incurred ex post cost (from the previous program) in order to avoid the ex-ante and further ex-post costs associated with renewal of the IMF program.

Severe economic crisis dramatically increases the political costs of having IMF conditions. The political costs for the government of a crisis-ridden country, therefore depend on the number of

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[10] Stone (2004) argues that the severity of this punishment would vary with the importance of the borrowing country, both in terms of the size of its economy and its strategic importance to the United States (Stone 2002).

conditions it accepts. The high political costs increase the credibility of the signal. A more credible signal will be more effective in restoring investors and market sentiments, which in turn should lead to better access to capital for the borrowing country. From this theoretical discussion, I derive the following hypothesis:

Hypothesis 1: Institutional Investor rating for a crisis-ridden country improves with an increase in the number of conditions attached to an IMF agreement.

3.5 Disaggregation of IMF Conditions

However, not all IMF conditions are equal in terms of credibility. As I briefly mentioned in Chapter 2, based on when and how the Fund measures compliance, the IMF disaggregates conditions into three types: prior action, performance criteria and structural benchmark conditions. I argue that it is essential to use the disaggregated data because the differences in how and when the IMF measures compliance, has a big impact on the credibility that the different types of conditions will lead to reforms.

Prior action conditions are measures that the IMF requires to be in place before they make any disbursements of the loan[11]. These measures are intended to provide a foundation for further reforms to build on, or to put derailed programs back on track (IMF 2015b). Typical reform measures included as prior action conditions are the elimination of price controls, or formal approval of a budget consistent with the program's fiscal framework (IMF 2015b). Performance criteria conditions are in many ways similar to prior action conditions. These conditions are explicitly defined measures, and the Fund makes disbursements in tranches upon completion. Performance criteria conditions are quantitative macroeconomic targets that the borrowing country is expected to reach. Examples include minimum levels of net international reserves, maximum levels of central bank net domestic assets, or maximum levels of government borrowing (IMF 2015b). Structural benchmark conditions on the other hand, are often non-quantifiable measures that are intended as markers to assess program implementation (IMF 2015b). Disbursements are not made based on direct monitoring and completion of structural benchmark conditions. Instead, the IMF monitors them in the context of periodic program

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[11] A more accurate description might be that the Fund makes disbursements *available*. The government itself chooses whether to draw of the available funds. In fact, researchers have suggested that completing reforms without drawing, sends a strong commitment signal to investors (Mody & Saravia 2006, 848).

reviews (IMF 2001). Examples of structural benchmark conditions include a wide range of measures such as curtailment of corruption, privatization of loss-making state owned companies, trade liberalization, tariff reform, and public-sector investment programs (Goldstein et.al. 2003, 387).

The crucial elements to distinguish the credibility of IMF conditions are threefold: How they are defined, how they are monitored, and their timing. Prior action and performance criteria conditions are defined precisely, quantifiably and verifiably, whereas structural benchmarks are often qualitative measures. This means that monitoring and measuring compliance of prior action and performance criteria conditions are far easier for the Fund than is the case for structural benchmark conditions. For example, the IMF might evaluate whether the government has accumulated the stipulated amount of foreign reserves (prior action or performance criteria conditions), versus has there been a considerable or sufficient curtailment of corruption (structural benchmark condition).

In terms of timing, prior action conditions are particularly well suited for signalling. Unless the government has fulfilled the agreed prior action conditions, the borrowing country will not receive any funds. Thus, by taking on particular reforms as prior action conditions rather than as performance criteria or structural benchmark conditions, the government signals that they are willing to tackle reforms head on. In fact, the government can signal that they are willing to stake the entire IMF program on these particular reforms being implemented. Performance criteria conditions are also credible in terms of timing because loan tranches are paid out consecutively according to completion. Punishment for noncompliance is therefore automatic for prior action conditions and performance criteria conditions. Until the government can prove that they have implemented the reforms, they do not receive any money (which is one form of punishment). On the other hand, there is no timing attached to structural benchmark conditions. Lack of quantifiable measures and timing means monitoring of structural benchmark conditions is limited to periodic program reviews. Goldstein et. al. (2003, 387) found that failure to meet structural benchmark conditions did not automatically render a country ineligible to draw. Because the IMF does not necessarily punish non-compliance, compliance rates for structural benchmark conditions are lower than for prior action and performance criteria conditions. According to the Fund's own data, only 57% of structural benchmark conditions were fully implemented between 1987 and 1999, in contrast to 83% of all prior action conditions and 66% of all performance criteria conditions (IMF 2001, 70). What this means is that structural

benchmark conditions are far less credible signalling mechanisms than prior action and performance criteria conditions. I summarize the implication of this in the following hypothesis:

Hypothesis 2: *Institutional Investor rating for a crisis-ridden country improves with an increase in the number of prior action and performance criteria conditions attached to an IMF agreement.*

4. DATA

This chapter will cover the data material used in this thesis, and it will cover the scope of the thesis in terms the countries and years included. I will present all variables used in the analysis, discuss their validity, the theoretical arguments for why they were chosen and account for their various sources. The chapter is structured as follows: I begin with presenting the scope of the data, and then I discuss my dependent variable, before moving on to my main independent variables and lastly the control variables used in my analysis.

4.1 Scope

For the empirical analysis of this thesis, I use panel data covering 166 countries (see Table 7: Country List in the Appendix) over the period 1992-2013 (22 years) to examine the impact of IMF conditions in crisis-ridden countries on investor perceptions. This yields a total of 3652 country-year observations. The sample period of the thesis begins in 1992 because the IMF only made the data on conditionality available through the MONA (Monitoring of Fund Arrangements) database from that year. The number of countries selected for the analysis and the end date of 2013 is a result of the availability of data on all the variables. Studying such a recent period has its benefits and its drawbacks. The benefit is that it the results are more closely related to real world events than more "out dated" papers. The main disadvantage is that focusing on a different period than large parts of the literature means that direct comparison of the results are problematic.

4.2 Investor Perceptions

My dependent variable is *yearly change in Institutional Investor rating* from institutionalinvestor.com [12]. Institutional Investor is an international business-to-business publisher, focused primarily on international finance. In addition to research data, they publish magazines, newsletters, journals, books and more. This country credit rating is the result of interviews with institutional investors, senior economists, risk analysts and bank CEOs of international banks, money management and securities firms. Interviewees rated countries on

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[12] My supervisor kindly provided access to this data. The data can be found at:
http://www.institutionalinvestor.com/Research/6150/Global-Rankings.html#.VztN2DNE7cs

a scale from 0 to 100 where 100 represents least likelihood of default (Institutional Investor 2016). I consider Institutional Investor rating as a proxy for investor perceptions of a country's macroeconomic fundamentals, as perceptions of default risk should be based on perceptions of macroeconomic fundamentals. One of the reasons I chose Institutional Investor rating above other measures of investor perceptions is that it more closely relates to investor perceptions of macroeconomic fundamentals.

I could have used country credit ratings like Standard & Poors, Fitch Ratings or Moody's, but these typically only rate countries across nine different scores (C, CC and CCC etcetera) in addition to default and non noté (not scored). These indexes would be too imprecise, and categorical in nature to detect small and moderate changes in investor perception. Using these ratings would also have a substantial problem of missing data, as many developing countries particularly in Africa and Central Asia are simply not scored (non noté). Moreover, these big credit rating companies may not reflect the true picture in light of their role in causing the American subprime crisis, which lead up to the 2009 global financial crisis (White 2009). The Institutional Investor rating avoids this problem because it an average score of ratings, given by a range of with institutional investors, senior economists, risk analysts and bank CEOs (Institutional Investor 2016).

A more suitable alternative might have been the Investment Profile Index from the International Country Risk Guide (hereby ICRG). This is a zero to 12 index of expert opinions on a country's general attitude toward foreign investment, based on risk of expropriation, profit reparations and payment delays (Neumayer & Spess 2005, 19-20). I ultimately chose Institutional Investor rating over the Investment Profile Index based on the additional accuracy that a 0-100 scale provides.

I use *change* in Institutional Investor rating index as my dependent variable because I want to examine how much change can be witnessed among the investors (from the previous year) as a result of IMF conditions. In other words, whether crisis-ridden countries can turn the tide of deteriorating investor perceptions in which they are likely to find themselves. The index itself only measures the level of rating, whereas I am interested in the *degree* of change in the sentiments of investors that IMF conditions can cause. That is, how much the Institutional Investor index jumps (or drops) in percentage terms from t-1 (last year) to t (current year) as a result of IMF conditions. Another benefit of using change in rating as my dependent variable

is that it reduces the problem of autocorrelation, though there are other ways of handling autocorrelation. Autocorrelation can occur when the score of a variable at t-1 is highly correlated with its score at t. For example, a country with a score of 46 in the Institutional Investor rating in the year 2001 is far more likely to get a score close to 46 in 2002, than it is to get a score of 83. This leads to non-random errors, which breaks one of the fundamental assumptions of OLS regression (Hill, Griffiths & Lim 2012, 172).

Figure 3: Yearly mean change in Institutional Investor ratings
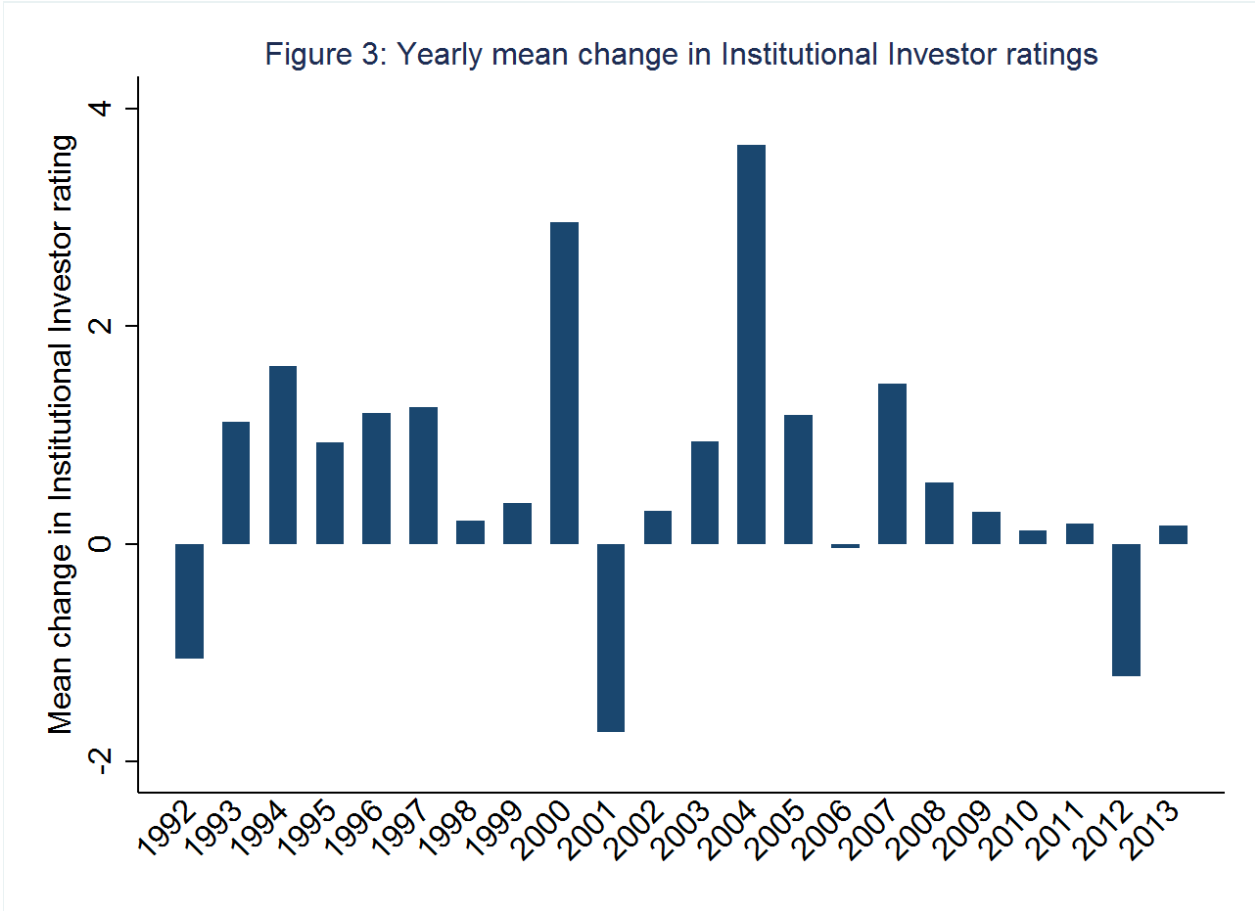
Figure 3 shows the yearly mean change in Institutional Investor rating. The mean year on year change in Institutional Investor rating is 0.65, indicating that throughout the sample period ratings have generally improved. The largest change observed on one country in my sample is the drop by Greece in 2008 of 27.5 points in Institutional Investor rating compared to the previous year. By contrast the largest positive change is Slovakia in 1994 an increase 19.5 points (see chapter 4.5 Descriptive Statistics).

Focusing on investor perceptions has several benefits over conventional measures of the catalytic effect. Many articles examining the catalytic hypothesis use net capital flows directly.

However, this approach has two disadvantages. First, a decrease in net capital flows is likely to be the result of repayments (Mody & Saravia 2006, 848). As IMF disbursements increase liquidity the borrowing country will start repayments of foreign held depts. Unless one separates these repayments from the net flow, it would look like capital flight rather than the constructive attempts to avoid default that it actually is, and results will be biased against the catalytic hypothesis. Second, in floating exchange rate systems a decline in foreign exchange rate[13], which is a frequent goal of IMF programs, leads to a decline in net capital inflows as the balance of payments are by definition in equilibrium (Cottarelli & Giannini 2002, 18). This also creates a bias against detecting a catalytic effect.

Much of the previous literature on the catalytic hypothesis focus on some measure of loan maturities, interest rates, FDI or portfolio flows. By examining investor perceptions, I attempt to fill a gap in the existing literature. In a crisis-ridden country, investor perceptions become especially important. In order to avoid capital flight and to be able to secure vital financing in the future, restoring market confidence is extremely important. Changes in investor perceptions should also be easier to detect than the outcomes of investment or loan decisions. Investment in a crisis-ridden country is a decision that is likely to involve more than the average amount of risk. Investors are therefore likely to scrutinize the target country even closer than they otherwise would, before making a final decision on the investment. This long deliberation time means that changes in FDI flows could be lagged many years after the effect of an IMF agreement and therefore be difficult to detect.

4.3 Conditions and Crisis

The main independent variable of interest is the number and type of IMF conditions per quarter. Unfortunately, the MONA database only provides the data on conditions in cumulative numbers evaluated in each quarter of the year(s) an arrangement is in effect. In practice, IMF programs are in constant development, some conditions are added, and others are removed, while still others are in effect throughout long periods or during the whole arrangement (Mussa & Savastano 1999, 117-118). Looking at the data provided by the IMF I can only discern the total number of conditions evaluated in each quarter. In order to avoid over-counting, I follow previous researchers by using the total number of conditions divided by the number of quarters

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[13] I.e. a strengthening the local currency.

the arrangement has been in effect for each year (Dreher, Sturm & Vreeland 2015). In other words, for the first year of an arrangement I divide the total number of conditions by 4, for the second year I divide by 8 and so on. By using this method I avoid over counting, additionally the variables get the correct order of magnitude in a yearly setup. In essence, there will be fewer conditions for each year the arrangement is in force, as the country completes conditions.

I improve on a number of previous studies of the catalytic hypothesis by not only examining the total number of conditions (like for example Chapman, Fang & Stone 2011) or type of IMF program (like for example Eichengreen & Mody 2001), but by also examining conditionality by type, following others like Dreher, Sturm & Vreeland (2015).

Over the years, the number of conditions attached to IMF agreements have changed. As shown in Figure 4, while there were between three and five conditions per quarter in the early 1990's the average number of conditions per quarter rose, and spiked in 2001, before returning to the early nineties levels in 2007. After the global financial crisis, the average number of conditions per quarter rose to around 13 in 2010, but has since gone down somewhat. Similar figures for prior action and performance criteria conditions can be found in the Appendix.

Figure 4: Yearly mean number of conditions per quarter
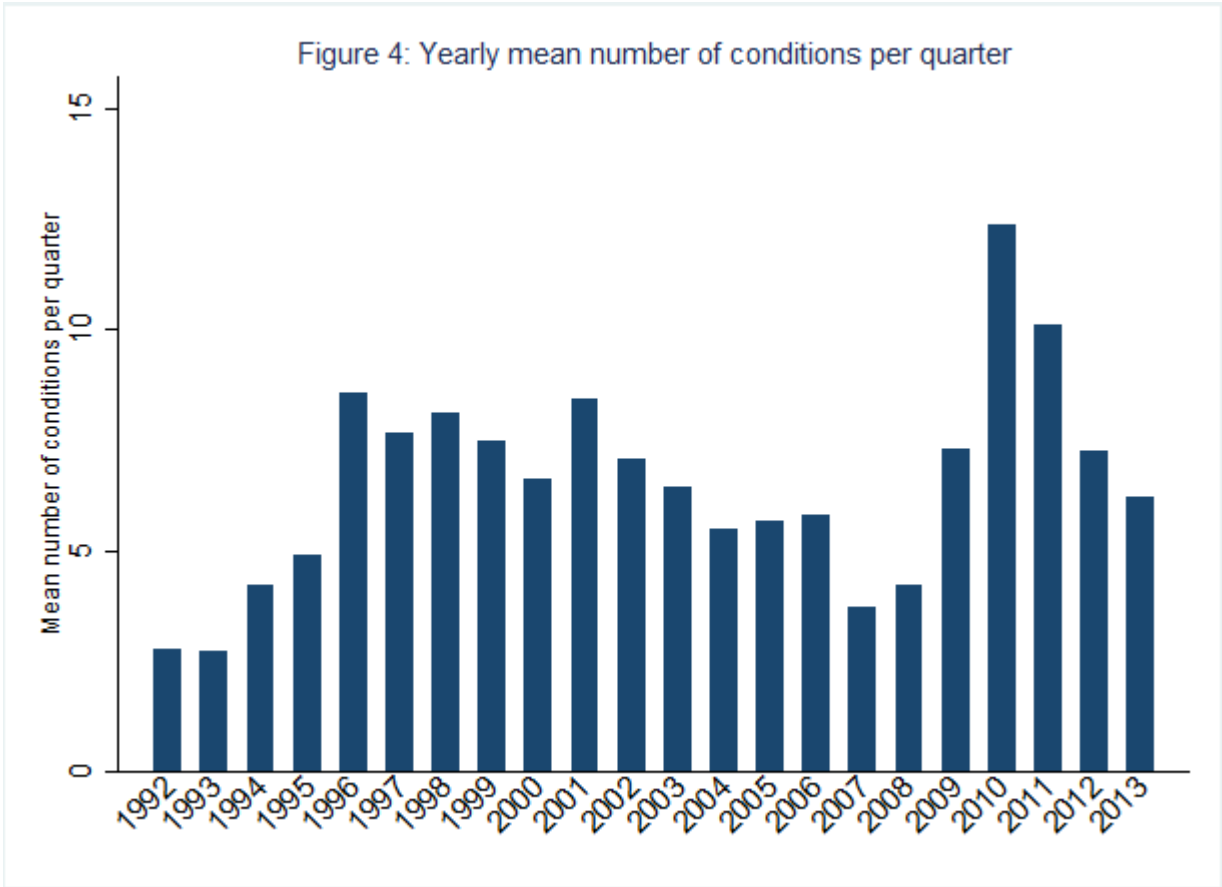
The maximum number of conditions per quarter found in my sample is Rwanda in 2010 with 152.5 conditions per quarter[14]. The average amount of conditions per quarter observed in my sample is 6.56. Looking at the disaggregated conditions the least common type of condition is prior action condition, of which there are only 0.79 on average per quarter and a maximum of 52.3 conditions per quarter for Greece in 2013. Performance criteria conditions are more common and the average country in an IMF program has 2.85 conditions per quarter. The maximum number of performance criteria conditions per quarter in my sample is 84.5 for Azerbaijan in 1996[15]. Structural benchmark conditions are the most frequent type of conditions in my sample, with a mean value of 2.95 conditions per quarter (see chapter 4.5 Descriptive Statistics).

The last independent main variable is economic crisis. The literature indicates that excessive levels of external debt and a threat of default have significant negative influence on investor perception (Corsetti, Pesenti, & Roubini 1999; Chang & Velasco 2001; Reinhart, Rogoff & Savastano 2003). Researchers have also found that political costs associated with IMF conditions are higher during severe economic crisis (Dreher & Gassebner 2012; Krugman 1998). Accordingly, I use a crisis dummy that is coded 1 if during a given year a country has experienced one or more of the following crisis: currency crisis, debt crisis or systemic banking crisis. The variable is sourced from Laeven and Valencia (2008) and updated in Laeven and Valencia (2013). Based on both quantitative and qualitative data they define banking crisis as a situation where "a country's corporate and financial sectors experience a large number of defaults and financial institutions and corporations face great difficulties repaying contracts on time.", which results in non-performing loans exhausting banking system capital (Laeven & Valencia 2008, 5). Currency crisis is defined as a nominal depreciation of the currency of at least 30 % that is also at least a 10% increase in the rate of depreciation compared to the previous year (Laeven & Valencia 2008). Lastly, a sovereign debt crisis is defined as sovereign debt defaults (Laeven & Valencia 2008). The mean of the economic crisis variable in my sample is 0.05, which indicates that roughly 5% of the countries in the sample have experienced an economic crisis of this form during the period covered by this study.

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[14] Over the next two years, Rwanda experienced an increase of 3.83 % in Institutional Investor rating.

[15] Unfortunately, there is no data in Institutional Investor rating available on Azerbaijan until 2001.

Preliminary analysis showed none of the models were significant until three years post crisis. Thus, the economic crisis variable is lagged by three years in the models presented in chapter 6. This is fortunately not without theoretical reasoning. Firstly, a three-year lag accommodates the fact that reforms can take a long time to implement (Thomas & Grindle 1990). Moreover, severe economic crisis has a strong negative effect on investor perceptions, and as my results will show (see chapter 6) even three years after the economic crisis Institutional Investor rating continues to decline. I would argue that after three years, investor perceptions have reach a low point from which they can bounce back. Keeping in mind that the lower rating a country has, the easier it will be to get a positive change in the following year. For example, in 2002 Djibouti had a very low Institutional Investor rating of 18.2, and over the next two years their rating improved by 9.2 points. Going lower than 18.2 was not likely, though not impossible, because their score was already approaching the bottom limit of the rating[16].

4.4 Control Variables

Concerning control variables, I follow previous studies on determinants of investor perceptions: Alquist (2006), Arabaci & Ecer (2014), Jensen (2003) and Reinhart, Rogoff & Savastano (2003). Firstly, I control for the previous year Institutional Investor rating, because being in either the lower end or higher end of the index has a large influence on the rate of change. For example, in 2006 Denmark got a strong positive rating of 94.4. From there it is difficult for Denmark to improve, because it is already close to the upper limit of the index. Thus, they were likely to get a negative change in Institutional Investor rating in the following year (which they did). This is the same logic as for Djibouti in the previous paragraph, only at the other end of the index. In other words, I expect a highly significant negative relationship between the dependent variable and lagged Institutional Investor rating. Thus, not including a lagged level of Institutional Investor rating might bias the results.

As a proxy for the level of development in the country, I include gross domestic product (hereafter GDP) per capita. I expect investors to prefer more developed countries. Following Arabaci & Ecer (2014) and Jensen (2003), GDP growth rate is included as well. The variable is log-transformed in order to prevent extreme values. Log-transformation entails using the

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[16] For a familiar comparison, consider that Greece at no point during its ongoing economic crisis has had an Institutional Investor rating below the 19.1 score it obtained in 2012.

natural logarithm of the initial variable instead of the originally observed value. I expect GDP growth has a positive impact on the perceptions of Institutional Investors. Both GDP per capita and GDP growth rate were sourced from the United Nations Conference on Trade and Development (hereafter UNCTAD) database.

I include a measure of democracy based on the Marshall and Jaggers (2002) POLITY IV index, as proxy for property rights and stability. I transform the variable which is originally coded on a scale from -10 (full autocracy) to +10 (full democracy) into a 0-20 scale. Previous studies have found a "democratic advantage" (Biglaiser, Hicks & Huggins 2008). Investors prefer democracies and confidence is likely to be higher with these regimes (Biglaiser, Hicks & Huggins 2008; Jakobsen 2012; Jakobsen & De Soysa 2006; Jensen 2003, 612). Bauer, Cruz & Graham (2012) even found that democracies under IMF programs were better able to attract FDI, while for autocracies there was a weak negative effect of IMF participation.

It is important to note that how to appropriately measure democracy for the purpose of large-N datasets, and which datasets are suitable in a given statistical analysis, has been the subject of much debate (Munck & Verkuilen 2002; Cheibub, Gandi & Vreeland 2010). Cheibub, Gandi & Vreeland (2010) argue that in most cases a minimalist binary measure of democracy or dictatorship is the best approach. They warn that measures like Freedom House and POLITY IV are in fact not interchangeable, even if they are often used in that way, and that the substantive measures that are used to generate scores are less clear-cut than in a dichotomous approach (Cheibub, Gandhi & Vreeland 2010). Munck & Verkulien (2002) point out that by expanding the notion of democracy (beyond the question of whether or not there are contested elections) one risks including aspects of the state and its institutions rather than regime type. Nonetheless, that is more critical for studies of democracy (or regime type), than for studies using democracy as a control variable. For example, it could well be that institutions often found in democracies are what investors find to be important, but whether this is controlled for separate from democracy or not is not critical. Munck & Verkulien (2002, 26) also criticize POLITY IV in particular for having a convoluted aggregation rule using different weights for the five attributes that compromises the index[17], without providing any theoretical justification

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[17] Munck & Verkulien list the following five attributes that make up the Polity IV index: competitiveness of participation, regulation of participation, competitiveness of executive recruitment, openness of executive

for those weights. Despite certain weaknesses, I decided on a continuous index following Elkins' (2000) view that a continuous measure of democracy can capture important information that is lost in dichotomous indexes. The availability of data was also a concern in this regard as the Democracy and Dictatorship (DD) index, which Cheibub, Gandhi & Vreeland (2010) recommends, does not cover the whole period in question in this thesis. POLITY IV was preferred over Freedom House because of the multiple problems of measurement in the latter (Munck & Verkuilen 2002, 28).

It should come as no surprise that investors dislike corruption. Corruption raises the uncertainty of business transactions both in terms of costs and in terms of time (Cuervo-Cazurra 2006, 807). The president of the World Bank James D. Wolfensohn stated:

''We need to deal with the cancer of corruption. (…)We can give advice, encouragement, and support to governments that wish to fight corruption — and it is these governments that, over time, *will attract the larger volume of investment*.'' (Emphasis added) (Wolfensohn 1996: 9).

Previous studies have also found that long-term investors prefer regimes with strong property rights and a low corruption reputation (Cuervo-Cazurra 2006; Li & Resnick 2003; Wei 2000). Accordingly, I add a corruption variable, measured on a six-point scale from 0 to 5 where 5 represents the worst corruption. The variable is sourced from the ICRG published by the Political Risk Group[18]. The measure places most emphasis on forms of corruption such as patronage, nepotism, secret party funding, and suspiciously close ties between business and politics, but it also takes into account more common forms of corruption such as demands for special payments and bribes connected with import and export licenses, exchange controls, tax assessments and police protection (ICRG 2012).

I also include total trade (sum of imports and exports) as a share of GDP (logged to avoid extreme values), as a measure of trade openness. I expect investor perceptions to react positively to trade openness in line with previous research on long-term investments (Yang 2007). Data on trade as a share of GDP has been sourced from UNCTAD.

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recruitment and constraints on executive. However, Marshall & Jagger (2007) also include regulation of chief Executive Recruitment.

[18] My supervisor kindly provided me with access to this data.

Finally, I follow previous research and include a measure of consumer prize index inflation (Bird & Rowlands 2008). I transform the inflation variable between -1 and +1, where +1 is the largest observed value in the sample, and -1 is the largest observed deflation. The inflation variable has been sourced from the World Development Indicators (World Bank 2015). I expect investors to react negatively to high levels of inflation.

4.5 Descriptive Statistics

In order to get a good overview of the data I present a table containing mean value, standard deviation, minimum value, maximum value and number of observations on each of the variables that was used in the regression analysis. This is presented in Table 1.

Table 1: Descriptive Statistics

Variables	Mean	Standard Deviation	Minimum	Maximum	Observations
Δ Institutional Investor rating	0.65	3.01	-27.50	19.50	3289
Total Conditions/quarter	6.56	12.54	0.00	152.50	2443
Prior Action Conditions/quarter	0.79	2.35	0.00	52.30	2443
Performance Criteria Conditions/quarter	2.85	5.66	0.00	84.50	2443
Structural Benchmark Conditions/quarter	2.95	8.83	0.00	152.50	2443
Economic Crisis	0.05	0.23	0.00	1.00	3652
Institutional Investor rating	41.62	24.98	4.40	96.10	3289
Per capita GDP (log)	7.87	1.66	3.44	11.12	3651
Democracy	13.31	6.57	0.00	20.00	3464
Inflation	0.09	0.15	-0.22	1.00	3630
GDP Growth	3.93	6.60	-61.27	106.28	3642
Trade/GDP (log)	4.10	0.60	1.82	7.21	3637
Corruption	2.36	1.08	0.00	5.00	2856
IMF program	0.69	0.46	0.00	1.00	3652

The standard deviation is a measure of the spread around the mean of a variable (Ringdal 2009, 260, 471). It is measured as the square root of the variance of a variable (Ringdal 2009, 259). A small standard deviation indicates that most observations are relatively close to the mean value. When interpreting the standard deviations in Table 1 it is important to remember that standard deviations are relative to each variable, and therefore not directly comparable. Thus, for example the standard deviation of GDP growth of 6.6 is actually smaller, relative to its minimum and maximum values than the ICRG corruption index's standard deviation of 1.08. For the case of GDP growth, a mean of 3.94, minimum of 61.27 and maximum of 106.28, the standard deviation indicates that there is moderate variation around the mean in addition to a few extreme values. In Table 1, there are a few notably high standard deviations. The standard deviation of 24.98 for Institutional Investor rating is very high, and indicates there is a big

spread in where countries find themselves in the index. In all likelihood, this variable does not follow a normal distribution, however that is not problematic for my analysis. Democracy also has a high standard deviation relative to its 20-point scale of 6.57. Again, this indicates countries score at all levels of the POLITY IV index, and are not normally distributed around zero on the original index (10 on my recoded variable). In fact, this is not surprising at all considering countries in each end of the autocracy-democracy scale have been found to be more stable than those around the middle (Elkins 2000, 296-297). Additionally there is the question of whether democracy can accurately be measured as a continuous variable at all (Cheibub, Gandi & Vreeland 2010). In any case, both theoretical perspectives predict this large spread. As with the Institutional Investment rating, this does not pose a problem for my analysis.

Looking at the number of observations in Table 1, reveals there is no problem of having a large amount of missing observations, as no variables have problematically few observations. The variable with the most complete data for the 166 countries over the period included in the data, is the dummy variable of economic crisis, with 3652 observations. The variables with the least data are the variables of IMF conditions of which there are 2443 observations. Although this is far fewer than for economic crisis, it is not problematically few. The reason for the relatively fewer observations is in the way the variables are coded. In order to separate countries who are in an IMF program during the period, but have zero of one or more of the condition types, from those who are simply not in any IMF programs, the IMF conditions variables are coded as missing for countries who are not in a program. For example, Sweden has no prior action conditions in 2003, but is coded as missing, because it is not part of any IMF program during the 1992-2013 period. Djibouti on the other hand is in an IMF program for 11 of the 22 years covered by my sample, and as a result when Djibouti had no prior action conditions per quarter in 2003, it is coded as 0. I included the IMF variable at the bottom of Table 1 to provide some information on how many of the country years observations are left after countries who have not participated in an IMF program are effectively dropped. As can be seen in Table 1, there are 3652 observations of countries having been in an IMF program at some point during the sample period.

If some of the variables in a regression analysis are highly correlated with each other, it could indicate there is a problem of collinearity. This represents a problem because it might suggest

variables to a large degree describe the same phenomenon, or at least that the effects of each variable is difficult to separate (Skog 2013, 287). Accordingly, all variables were tested for collinearity using the pwcorr (pairwise correlation) command in Stata. The result is the pairwise correlation matrix displayed in Table 2. Though there are no absolute rules on the subject Skog (2013, 288) suggests caution of any correlations above $r = 0.6$ as a rule of thumb. Table 2 shows that total conditions per quarter breaks this rule of thumb concerning the other conditionality variables. This is not surprising or problematic, as total conditions per quarter is the aggregate measure of the others, and none of them are used in the same model. The only other variables who break Skogs' rule of thumb are Institutional Investor rating and per capita GDP (log), with a correlation of 0.84. This is not surprising either, as investors would naturally prefer more developed countries. Despite Skogs' warning, I choose to include them both in the regression analysis because they are both of theoretical importance, and not including them would lead to biased results.

Table 2: Pairwise Correlation Matrix

Variables	Δ Institutional Investor rating	Total Conditions /quarter	Prior Action Conditions /quarter	Performance Criteria Conditions /quarter	Structural Benchmark Conditions /quarter	Economic Crisis	Institutional Investor rating	Per capita GDP (log)	Democracy	Inflation	GDP Growth	Trade/ GDP (log)	Corruption
Δ Institutional Investor rating	1												
Total Conditions/quarter	0.0013	1											
Prior Action Conditions/quarter	0.0028	0.7097	1										
Performance Criteria Conditions/quarter	0.0533	0.6158	0.4221	1									
Structural Benchmark Conditions/quarter	-0.0299	0.8454	0.4868	0.1256	1								
Economic Crisis	-0.1639	-0.0012	0.0252	0.0196	-0.0204	1							
Institutional Investor rating	0.0536	-0.1609	-0.0899	-0.1947	-0.0824	-0.0586	1						
Per capita GDP (log)	0.0141	-0.0842	-0.0207	0.1308	-0.03	-0.05	0.8362	1					
Democracy	0.0245	0.0005	0.0342	-0.0252	0.0083	-0.0063	0.4187	0.3415	1				
Inflation	-0.1448	-0.0522	-0.0269	0.0157	-0.0757	0.1846	-0.3399	-0.2229	-0.1336	1			
GDP Growth	0.2108	-0.013	-0.0198	0.0003	-0.015	-0.1103	-0.051	-0.0563	0.1125	-0.2051	1		
Trade/GDP (log)	0.0302	-0.0239	-0.0096	-0.0564	0.0053	-0.0495	0.1047	0.0456	0.0477	-0.088	0.1354	1	
Corruption	0.0561	0.0099	0.0018	0.0706	-0.0325	0.0409	-0.1003	-0.0454	-0.0191	0.0843	0.0187	0.0098	1

Notes: correlations are rapported with Preasons r

5. METHOD

This chapter covers the methodological choices that were made for this thesis. I will discuss why I chose the approach that I did as well as what alternative methods I rejected. The chapter concludes with a model specification.

5.1 Methodological Choices

For the purpose of this thesis, I have adopted an empirical approach using OLS regression on panel data. Additionally, I employed fixed country and year effects and all results are reported with robust standard errors. The methodological literature generally advices letting the research question determine which methods are most appropriate and not the other way around, and also weighting the tradeoffs involved in the choice of research design and methods (Moses & Knutsen 2012; Collier & Brady 2010). Subsequently, I considered applying qualitative methods to answer the question of whether countries can resurrect investor sentiment following severe economic crisis using IMF conditionality as a signalling device. So far, only a modest amount of literature of this nature has covered the subject of the catalytic hypothesis. Bird, Mori & Rowlands (2000) did a case study of 17 developing countries, which concludes that there remains little evidence of any positive catalytic effect. Based on the material they present however, I disagree somewhat with their conclusion. As they themselves argue, it is conditionality and a credible commitment to reform which matters (Bird, Mori & Rowlands 2000, 490-491). My critique is that they failed to show clearly the difference between what reforms the government made of their own volition, from which reforms were the result of IMF influence. Instead, they attribute all reforms that receive positive market reactions to the government's own initiatives, and conversely all measures receiving negative reactions to the Fund. Take for example the case of Bulgaria, "It was only after the government—initially reluctantly but then enthusiastically—accepted advice from the Fund concerning the advantages of a currency board that things began to improve and the capital account began to strengthen." (Bird, Mori & Rowlands 2000: 490). From this, they draw the conclusion that, "it was not the involvement of the multilaterals *per se* that impressed capital markets." (Bird, Mori & Rowlands 2000: 490). I believe that a strong focus on conditionality, not just in the theoretical discussion, but also in the following analysis, would be beneficial to such case studies as well.

Having said that, they clearly demonstrate that the mere presence of an IMF loan program was not sufficient to gain a positive capital market reaction in the cases they covered.

There are also certain methodological problems with this set of case studies, problems I would probably also struggle with had I chosen a similar approach. In an effort to overcome the ever-present weakness in qualitative studies of lack of generalizability, they extend the number of cases to 17. The result is that each case is covered only briefly, typically a paragraph of around a third of a page. Another reason for this approach could simply be a lack of solid qualitative data. They claim that their research is founded on previous case studies like Killick (1995; 1998) which they further supplement with more recent data and other published material (Bird, Mori & Rowlands 2000, 488). Yet there are very few sources actually cited, neither any other case study literature, any documents, newspapers nor data. Going back to the example of Bulgaria there is not a single source citied throughout the entire discussion of that country.

I believe a more scientifically valid approach would be to study market perceptions directly through interviews of senior investors and bankers. Tthe obvious weakness of such a study however, would be the number of senior investors and bankers available for interviewing. On the other hand, through the improving transparency of the IMF and various online databases quantitative date is now widely and easily accessible on most countries covering many years, making an empirical approach far more realistic for a master's thesis.

Among the empirical research conducted on the effects of IMF programs in general and on the catalytic hypothesis in particular, most of the recent literature controls for the non-random selection into Fund programs. The problem they try to address is the problem of self-selection or non-random selection into IMF programs. For example regarding the catalytic hypothesis, it could be that the lower levels of FDI observed in countries participating in Fund program is due to factors which simultaneously determined why they are in a program in the first place. In fact this is very likely as countries with poor macroeconomic fundamentals are both likely to attract less FDI than others, and more likely to need IMF loans. Without random selection, methods like OLS does not work well (Hill, Griffiths & Lim 2012, 620). Many papers control for this problem by using a two-step rational choice model, though there are other approaches as well. Two-step probit models or Heckman regression models are widely adopted methods for tackling this problem. In both cases selection into the IMF is modelled separately prior to the main model in order to remove any effects of the non-random selection. The reason most

papers do this is that they essentially compare countries under IMF programs to countries who are not under any such program (on how they fare concerning the dependent variable). In contrast, my thesis only focuses on countries that are already part of Fund programs, to see how the conditionality contained in these programs can affect changes in Institutional Investor rating. Because my analysis only compares within the group of countries under IMF programs and does not attempt to generalize outside this group, I avoid the problem of non-random selection. Additionally, neither two-step probit nor Heckman models allow interaction terms, which would interfere with my model.

I employ a model using fixed country and year effects because I cannot assume that the differences between countries and between years are random. In other words, both countries and years are correlated with several of the other variables. By fixing countries and years (in essence adding a dummy variable for each country and each year), I control for any unobserved variance between countries and between years. This helps reduce omitted variable bias. Garrett & Mitchell argue panel data analysis at country level should include country dummies to account for the "underlying historical fabric of a country that affects the dependent variable and that is not captured by any of the time and country-varying regressors" (2001, 163). As my analysis does not include any time invariant variables, the use of fixed effects should not pose a problem (Plümper, Troeger & Manow 2005, 330).

Lastly, I report all results with robust standard errors. These standard errors are acquired using the "robust" option in Stata 14. By using this option, I deal with a range of minor problems with normality, heteroscedasticity, large residuals and heterogeneity (Chen et.al. 2003, Chapter 4).

5.2 Model Specification

Based on the hypotheses I derived in chapter 3, and the methods chosen I specify the following general model equation:

$$y_{it} = \phi_i + \beta1(crisis_{it-3} \times IMFC_{it}) + \beta2 crisis_{it-3} + \beta3 IMFC_{it-1} + \beta4 Z_{it-1} + \lambda_t + \gamma_i + \omega_{it} \quad (1)$$

Where y_{it} is my dependent variable *change in Institutional Investor Index* for a given country i in year t. The constant is denoted ϕ_i. $\beta1(crisis_{it-3} \times IMFC_{it})$ is the estimated predictor of the interaction term for a country i year t. $\beta2 crisis_{it-3}$ and $\beta3 IMFC_{it-1}$ are the predicted estimators of economic crisis and IMF conditions respectively. $\beta4 Z_{it-1}$ is a vector in which all

the controls are included, while λ_t signifies time fixed effects, γ_i represents the country fixed effects and ω_{it} is the overall error term. This equation remains primarily the same for all models, only type of IMF conditions, and control variables change.

6. EMPIRICAL RESULTS

Tables 3-6 in this chapter present my main results. Table 3 presents results of interaction effects between total IMF conditions and crisis on change in Institutional Investor ratings. Tables 4-6 report results on the interaction effects where I replace total IMF conditions with prior action conditions, performance criteria conditions, and structural benchmark conditions respectively. Control variables are added in all of these tables in a stepwise manner. The chapter is structured according to the tables, which present the results and the discussion that follows. Subsequently I discuss the results of the control variables. The chapter concludes with an analysis of the assorted robustness checks applied to the models.

6.1 Total IMF Conditions

I begin with Table 3, which reports the results of total IMF conditions on Institutional Investors rating during the 1992-2013 period.

Table 3: Total IMF conditions and Institutional Investor rating interaction with Crisis

	(1) Δ Institutional Investor Rating	(2) Δ Institutional Investor Rating	(3) Δ Institutional Investor Rating
Total Conditions /quarter (t-1)	-0.00895	-0.0115*	-0.015*
	(0.00610)	(0.00654)	(0.0079)
Total Conditions/quarter (t-1) X Economic Crisis (t-3)	0.0235	0.0292	0.035
	(0.0203)	(0.0234)	(0.0238)
Economic Crisis (t-3)	-0.644*	-0.667*	-0.639*
	(0.339)	(0.351)	(0.3577)
Institutional Investor Rating (t-1)	-0.101***	-0.125***	-0.119***
	(0.0161)	(0.0220)	(0.0229)
Per capita GDP (log) (t-1)		1.133	0.730
		(0.765)	(0.7926)
Democracy (t-1)		0.0827*	0.073
		(0.0442)	(0.0452)
Inflation (t-1)		-4.235***	-4.375***
		(0.697)	(0.8562)
GDP Growth (t-1)			0.088***
			(0.0279)
Trade/GDP (log) (t-1)			0.401
			(0.3568)
Corruption (t-1)			0.476**
			(0.2022)
Constant	3.395***	-3.819	-2.226
	(0.410)	(5.095)	(5.3361)
Estimation Technique	**OLS Fixed Effects**	**OLS Fixed Effects**	**OLS Fixed Effects**
Year Fixed Effects	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes
Number of Countries	112	108	87
Number of Observations	1,930	1,844	1,544

Notes: Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

As seen here, the interaction effect remains statistically insignificant across all columns, contrary to my first hypothesis. This suggests that the impact of total IMF conditions on Institutional Investor rating is insignificant even three years post crises. Plotting the interaction effect on a conditional plot shows that the impact of crises on investor ratings is statistically insignificant at all the class intervals of total IMF conditions per quarters. Notice that total IMF conditions on its own (i.e. when crises is set equal to zero) is also statistically insignificant in the first column. Interestingly, there is a negative effect of economic crises (even three years after crises) on change in Institutional Investor ratings, which is significantly different from

zero at the 10% level. The substantive effects suggest that Institutional Investor rating drops by 0.64 points in countries three years into a severe economic crisis. Notice that these results remain similar in column 2 and 3 when I add a range of control variables. The only change is that the total IMF conditions per quarter variable is now statistically significant at the 10% level.

6.2 Prior Action Conditions

Table 4: Prior Action conditions and Institutional Investor rating interaction with Crisis
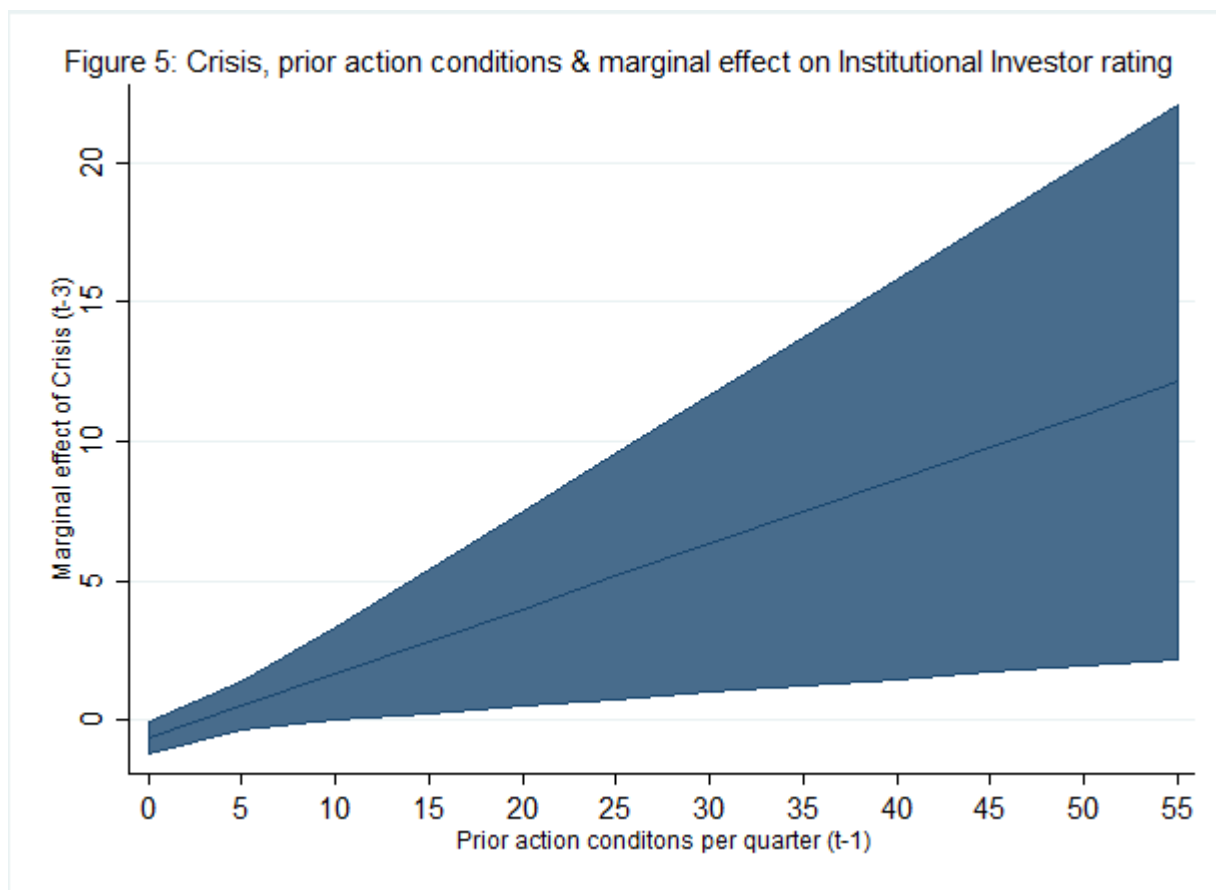
	(1) Δ Institutional Investor Rating	(2) Δ Institutional Investor Rating	(3) Δ Institutional Investor Rating
Prior Action Conditions /quarter (t-1)	-0.0768**	-0.0891**	-0.094**
	(0.0387)	(0.0402)	(0.0442)
Prior Action Conditions/quarter (t-1) X Economic Crisis (t-3)	0.206*	0.209*	0.233**
	(0.116)	(0.117)	(0.1128)
Economic Crisis (t-3)	-0.698**	-0.682**	-0.657*
	(0.320)	(0.331)	(0.3417)
Institutional Investor Rating (t-1)	-0.102***	-0.125***	-0.118***
	(0.0155)	(0.0217)	(0.0228)
Per capita GDP (log) (t-1)		1.109	0.461
		(0.769)	(0.8029)
Democracy (t-1)		0.0820*	0.070
		(0.0439)	(0.0451)
Inflation (t-1)		-4.260***	-4.347***
		(0.702)	(0.8620)
GDP Growth (t-1)			0.088***
			(0.0278)
Trade/GDP (log) (t-1)			0.404
			(0.3597)
Corruption (t-1)			0.477**
			(0.2012)
Constant	3.391***	-3.644	-2.302
	(0.389)	(5.120)	(5.3963)
Estimation Technique	**OLS Fixed Effects**	**OLS Fixed Effects**	**OLS Fixed Effects**
Year Fixed Effects	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes
Number of Countries	112	108	87
Number of Observations	1,930	1,844	1544

Notes: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

When I examine the disaggregated results of prior action conditions only, the interaction effect becomes positive and statistically significant (at the 10% level). In line with my second

hypothesis, this suggests that three years post crisis, prior action conditions lead to an increase the Institutional Investor rating. Notice that the individual effect of the crisis variable is still negative and significantly different from zero at the 5% level. This suggests that when prior action conditions per quarter are set equal to zero, the impact of crisis (three years post) on change in Institutional Investor rating is negative. Thus, in the absence of prior action conditions, investors react negatively even in the three years post crisis period. Interestingly, the results in Table 4 also show that prior action conditions per quarter, when crisis variable is set equal to zero, is negative and significant at the 5% level. This means that prior action conditions on their own, in the absence of severe economic crisis, leads to a downgrading of investor rating. This is a plausible scenario as most of the short-term institutional investors see participating in an IMF program as a signal of liquidity crisis in the first place. After adding various control variables in a stepwise manner in column 2 and 3, the interaction term notably becomes statistically significant at the 5% level, while crisis absent of conditions now becomes significant at the 10% level. It is important to note that the interpretation of the interaction term even in a linear model is not straightforward. Consequently, a simple t-test on the coefficient of the interaction term is not sufficient to see whether the interaction is statistically significant. I therefore rely on the conditional plot as shown in Figure 5, which depicts the magnitude of the interaction effect.

Figure 5: Crisis, prior action conditions & marginal effect on Institutional Investor rating

To calculate the marginal effect of an increase in the number of prior action conditions per quarter, I take into account both the conditioning variable (prior action conditions per quarter) and the interaction term, and show the total marginal effect conditional on prior action conditions graphically. The y-axis of Figure 5 displays the marginal effect on the change in Institutional Investor rating. The x-axis shows the number of prior action conditions per quarter at which the marginal effect is evaluated. In addition, I include the 90% confidence interval in the figure. As seen there, and in line with the results shown in Table 4, crises ridden countries, three years after crisis events, witness an increase in Institutional Investor rating (at the 90% confidence level) if the prior action conditions per quarter is greater than 15 conditions per quarter, which is significantly different from zero at the 10% level. Notice that three years after crises, a country with 55 prior action criteria conditions per quarter, which is the maximum value in the sample, witness a striking 12-point increase in the change in Institutional Investor rating, which is significantly different from zero at the 5% level. Figure 5 also shows that there is no effect in the change in Institutional Investor rating in crisis-ridden countries when the prior action conditions are less than 15 per quarter. In fact, the conditional plot shows that when IMF prior action conditions per quarter is set equal to zero, the investor rating in crisis-ridden

countries changes to negative, i.e. declines by 0.66 points, which is significantly different from zero at the 10% level. Thus, the marginal effects are significant, albeit negative, when the lower bound of the confidence interval is below zero. My results suggest that countries hoping to signal commitment need to commit to far more prior action conditions than has hitherto been the norm.

6.3 Performance Criteria Conditions

Table 5: Performance Criteria conditions and Institutional Investor rating interaction with Crisis

	(1) Δ Institutional Investor Rating	(2) Δ Institutional Investor Rating	(3) Δ Institutional Investor Rating
Performance Criteria Conditions /quarter (t-1)	-0.0345* (0.0180)	-0.0384** (0.0183)	-0.044** (0.0211)
Performance Criteria Conditions/quarter (t-1) X Economic Crisis (t-3)	0.0661* (0.0372)	0.0762** (0.0383)	0.083* (0.0433)
Economic Crisis (t-3)	-0.702** (0.320)	-0.735** (0.333)	-0.6599** (0.3286)
Institutional Investor Rating (t-1)	-0.102*** (0.0155)	-0.126*** (0.0216)	-0.119*** (0.0218)
Per capita GDP (log) (t-1)		1.136 (0.770)	0.474 (0.7982)
Democracy (t-1)		0.0834* (0.0440)	0.074 (0.0456)
Inflation (t-1)		-4.252*** (0.695)	-4.38*** (0.8429)
GDP Growth (t-1)			0.088*** (0.0277)
Trade/GDP (log) (t-1)			0.406 (0.3637)
Corruption (t-1)			0.478** (0.2007)
Constant	3.478*** (0.408)	-3.763 (5.143)	-2.313 (5.3792)
Estimation Technique	**OLS Fixed Effects**	**OLS Fixed Effects**	**OLS Fixed Effects**
Year Fixed Effects	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes
Number of Countries	112	108	87
Number of Observations	1,930	1,844	1,544

Notes: Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

The results of performance criteria conditions are similar to those of prior action conditions. The interaction term is positive and significantly different from zero at the 10% level, further supporting my second hypothesis that three years after a severe economic crisis, IMF

performance criteria conditions increase Institutional Investor rating. The crisis variable remains negative and significant at the 5% level. This suggests that when performance criteria conditions per quarter are set equal to zero, the impact of economic crisis (three years after) on Institutional Investor rating is negative. Notice also that the performance criteria conditions variable is negative as well, which is significant at the 10% level. These results hold after adding various controls in a stepwise manner in column 2 and 3. To further examine the interaction effect I rely on conditional plot depicting the magnitude of the interaction effect.

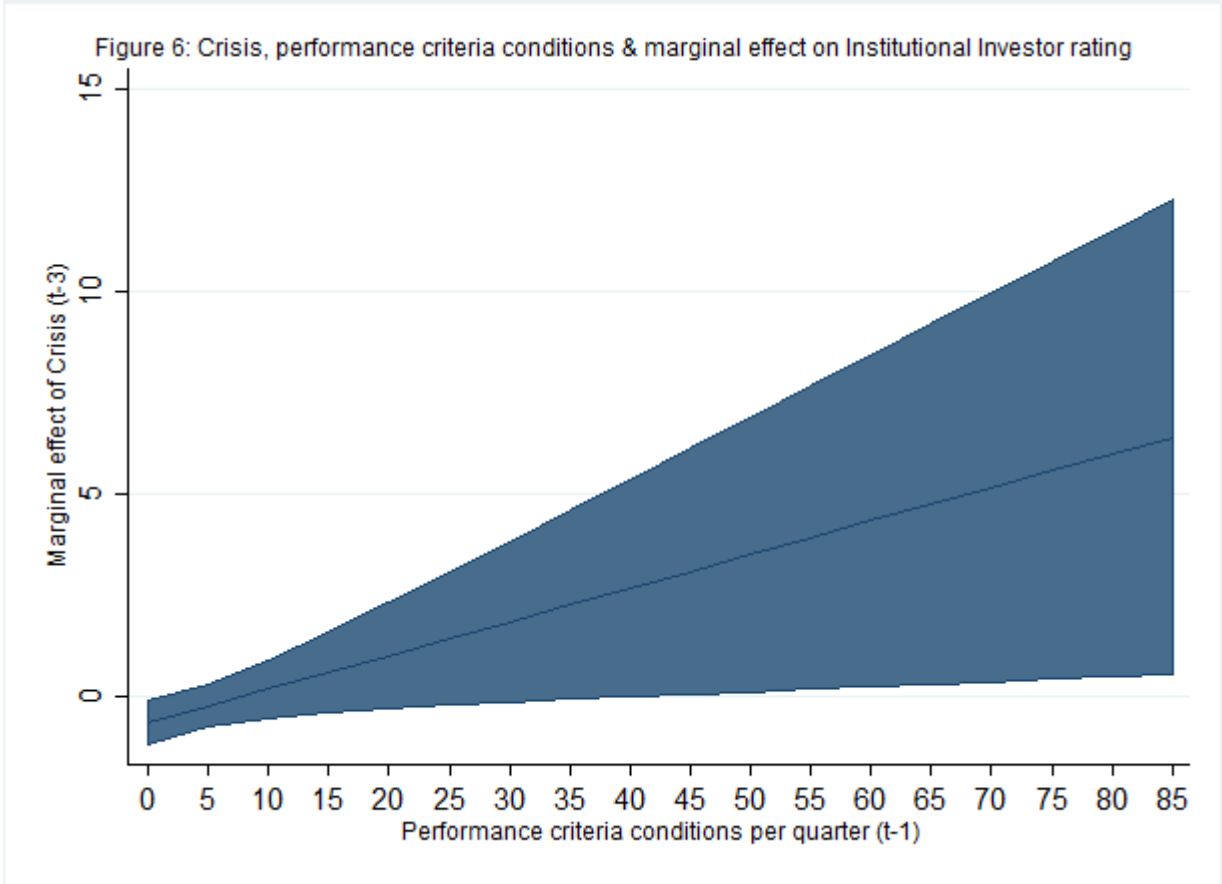Figure 6: Crisis, performance criteria conditions & marginal effect on Institutional Investor rating

Figure 6 displays the marginal effect of an increase in the number of performance criteria conditions per quarter while simultaneously taking the interaction with crisis (t-3) into account. The y-axis of Figure 6 shows this marginal effect of crisis on the change in Institutional Investor rating. The x-axis shows the number of performance criteria conditions per quarter at which the marginal effect is assessed. A 90% confidence interval is included in Figure 6 as well. As seen in Figure 6, crisis-ridden countries witness a significant 2-point increase (at the 10% level) in Institutional Investor rating when there are at least 45 performance criteria conditions per quarter. Having fewer than 45 conditions is not significantly different from zero. Interestingly,

when performance criteria conditions are set equal to zero, countries witness a drop in Institutional Investor rating that is significantly different from zero at the 5% level. In addition, the country with the maximum number of performance criteria conditions per quarter observed in the sample (which is about 85), witnesses a five-point increase in Institutional Investor rating three years after crisis, which is significantly different from zero at the 10% level.

6.4 Structural Benchmark Conditions

Table 6: Structural Benchmark conditions and Institutional Investor rating interaction with Crisis

	(1) Δ Institutional Investor Rating	(2) Δ Institutional Investor Rating	(3) Δ Institutional Investor Rating
Structural Benchmark Conditions /quarter (t-1)	-0.00297 (0.00650)	-0.00545 (0.00703)	-0.008 (0.0091)
Structural Benchmark Conditions/quarter (t-1) X Economic Crisis (t-3)	0.00328 (0.0291)	0.00312 (0.0463)	0.017 (0.0456)
Economic Crisis (t-3)	-0.446 (0.307)	-0.432 (0.323)	-0.405 (0.3403)
Institutional Investor Rating (t-1)	-0.100*** (0.0160)	-0.124*** (0.0219)	-0.116*** (0.0230)
Per capita GDP (log) (t-1)		1.188 (0.766)	0.476 (0.7908)
Democracy (t-1)		0.0812* (0.0444)	0.072 (0.0455)
Inflation (t-1)		-4.165*** (0.684)	-4.263*** (0.8344)
GDP Growth (t-1)			0.089*** (0.0283)
Trade/GDP (log) (t-1)			0.394 (0.3609)
Corruption (t-1)			0.4697** (0.2005)
Constant	3.313*** (0.402)	-4.294 (5.107)	-2.478 (5.3516)
Estimation Technique	OLS Fixed Effects	OLS Fixed Effects	OLS Fixed Effects
Year Fixed Effects	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes
Number of Countries	112	108	87
Number of Observations	1,930	1,844	1,544

Notes: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6 captures the results of the structural benchmark conditions and crisis interaction. As seen here, the interaction term remains statistically insignificant across all columns. Notice also how neither the crisis variable nor the structural benchmark conditions variable is statistically significant. The conditional plot capturing the marginal effect of crisis on Institutional Investor

rating confirms that the interaction term is statistically insignificant at all the class intervals of the structural benchmark conditions per quarter. The lack of any clear signalling effect, in any direction, is not surprising considering the fact that the IMF does not strictly monitor the implementation of structural benchmark conditions by the recipient countries.

Although I find no evidence to back my first hypothesis, the results support my second hypothesis, which states that Institutional Investor sentiment in a crises ridden country improves, although three years after the crises, with the number of prior action and performance criteria conditions attached. In times of financial crises, restoring investor confidence becomes essential to prevent massive macroeconomic problems. Thus, crises ridden countries are under tremendous pressure to restore international investor confidence. Accepting IMF conditions, as discussed in the previous chapter, can enhance credibility of a crisis ridden government's actual commitment to economic policy reforms.

6.5 Control Variables

As I covered in the section 4.4 my models contain the following control variables: Institutional Investor rating (lagged), GDP (lagged and log-transformed), GDP growth (lagged), democracy (lagged), corruption (lagged), inflations (lagged) and trade openness (lagged and partly log-transformed).

In line with my expectations, the results show that the level of Institutional Investor rating from the previous year is negatively associated with change in Institutional Investor rating. These results are significantly different from zero at the 1% level across all columns in all tables. The implication, and the interpretation of the coefficient, is that in the linear prediction if a country finds itself 1% higher in the previous year rating that results in a 0.1 point lower change in the rating, and vice versa. These results do not change much when additional controls are added in a step-wise manner in the subsequent columns.

I do not find any significant effect of per capita GDP (log) on change in Institutional Investor rating in any of the model specifications. This is perhaps not surprising, after all a country's level of wealth is more likely to influence what level of rating a country is awarded rather than the change in rating. Furthermore, it is entirely possible that much of the effect of per capita GDP (log) is captured by the Institutional Investor rating considering the collinearity that was discovered in Table 2 (see chapter 4.5 Descriptive Statistics). On the other hand, the economic growth variable remains positive and statistically significant at the 1% level across the models.

My results indicate that a country experiencing growth rates of one standard deviation (6.6) above the mean of the sample (3.93%) can expect a 0.93-point jump in change in Institutional Investor rating.

I also find that Institutional Investors prefer democracies. This is in line with previous research on investment and democracy, though the effect is not very strong (Jakobsen 2012). For example a country moving through the entire spectrum of the POLITY IV index, going from a strict autocracy (-10 on the Polity IV index) to a liberal democracy (+10 on the Polity IV index) only witness a relatively modest 1.64-point increase in the change of Institutional Investor rating. The effect of democracy is significant at the 10% level in the second specification of all tables. Notice however that this effect becomes insignificant after I add corruption and trade openness to the control variables.

Somewhat counterintuitively, there appears to be a significant positive relationship between corruption and change in Institutional Investor rating. I attribute this to the dependent variable being *change* in Institutional Investor rating. The existing literature suggests that countries with high levels of corruption are likely to have low investor perception ratings (Cuervo-Cazurra 2006; Li & Resnick 2003; Wei 2000)[19]. The low scores of these countries mean they have a greater potential for positive change of investor perceptions. Going back to the example of Denmark in 2006, they had an almost perfect corruption score of 0.5, on the 0 to 6 index. They also had the near perfect 94.4 Institutional Investor rating, which was difficult to improve, i.e. get a positive change in rating. However, had Denmark seen their corruption score go up after a scandal of some sort, their Institutional Investor rating would probably go down to a level that would be much easier to improve upon the following year. Thus, a one-point increase on the corruption index is actually associated with a 0.48-point jump in change of Institutional Investor rating the next year, which is statistically significant at the 5% level.

Notice also that inflation influences change in Institutional Investor rating with a negative effect, which is significantly different from zero at the 1% level. This is not surprising, as high levels of inflation are associated with economic instability and thus denting investor confidence. The inflation variable has been transformed to a scale from -1 to 1, which means

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[19] A quick regression of Institutional Investor rating and corruption with appropriate control variables supports the previous literature for my data as well.

the coefficient estimates the effect of going from zero inflation to the maximum observed in the sample. The substantive effect suggests that a standard deviation increase over mean (of the transformed inflation variable) is associated with a 0.66 points decline in the change in Institutional Investor rating, which is significantly different from zero at the 1% level.

Interestingly, trade openness measured by total trade (exports plus imports) as a share of GDP is positive, but not statistically significant in any of the models. A natural assumption would be that the lack of any effect of trade openness is due to collinearity with democracy (democracies are more open to trade). However, a relatively low correlation of $r = 0.0424$ suggests that is not the case (see Table 2: Pairwise Correlation Matrix in chapter 4.5 Descriptive Statistic).

6.6 Robustness Checks

To check the validity and reliability of the significant interaction effects I performed a number of robustness checks on the results from the models for prior action conditions and performance criteria conditions. First, I applied a kitchen sink approach and added even further control variables. A dummy variable measuring civil conflict coded 1 if there have been more than 25 battle related deaths in one year, sourced from the Uppsala Conflict Data Program (2014), was added as investors might shy away from conflict ridden countries (Collier & Gunning 1995, Collier, Hoeffler & Pattillo 1999)). Theory has suggested that newly established democracies are less stable than both more established democracies and entrenched autocracies (Elkins 2000). As such, a dummy variable coded 1 for five years after a country has scored higher than 5 on the Polity IV index was included as a measure of such new democracies. Having close ties to the United States has previously been shown to affect a country's ability to catalyze private finance (Racenberg 2012; Moon & Woo 2014; Chapman, Fang and Stone 2011; Woo 2013). I used a variable measuring voting alignment with the United States in the United Nations General Assembly as a proxy for close ties with the United States. Lastly, a measure of rule of law sourced from World Bank data was added as investors have been shown by previous research to reward countries with a strong rule of law (Jakobsen 2012). None of these additional variables were statistically significant, and the results of the main variables of interest remain for the most part unchanged. Concerning the measure of close ties to the United States, I find it somewhat surprising that it is not significant considering the amount of theoretical literature on the subject (see chapter 3.3). However, this could be due to a poor choice of operationalization. Because there are so many votes in the United Nation General Assembly

and only some have significant importance to the United States, Dreher & Sturm (2012, 371) suggest focusing on a subset of key votes instead.

Second, I created minimal models using only the statistically significant control variables. These were previous year Institutional Investor rating, inflation, GDP growth rate and corruption. The results remain robust. Lastly, I follow Dreher et.al. (2015) and use the original cumulative count measure of the prior action and performance criteria conditions from the MONA database. In other words undivided by quarter. This approach does not change the sign of the coefficients, in fact it only increases the statistical significance of the results of the original models.

7. CONCLUSION

In this concluding chapter, I summarize the main findings of the thesis. I also discuss the theoretical and practical implications of these findings, as well as suggest some avenues for future research.

7.1 Main Findings

In this thesis, I have explored the research question of whether countries can use IMF conditionality to resurrect investor sentiment following severe economic crisis. Based on the existing theoretical literature I argue that having IMF conditions do in fact signal to investors that the borrowing country is committed to economic policy reform. This commitment signal is credible due to the large ex ante and ex post political cost incurred by the government signing an IMF agreement and having conditions placed upon them. In turn, investors update their perceptions of the crisis-ridden country. The hope of the borrowing government is that by sending a strong signal to the international investor community, perceptions of the crisis-ridden country will improve, reducing the risk of capital flight and improving future access to much needed capital markets. However, because of how the IMF measures compliance with conditions, I also argue that only prior action and performance criteria conditions are able to send credible signals to investors.

The following two hypotheses were tested empirically using fixed effects OLS regression:

Hypothesis 1: *Institutional Investor rating for a crisis-ridden country improves with an increase in the number of conditions attached in an IMF agreement.*

Hypothesis 2: *Institutional Investor rating for a crisis-ridden country improves with an increase in the number of prior action and performance criteria conditions attached in an IMF agreement.*

The results of this analysis show that while there is a lingering negative effect of severe economic crisis on change in Institutional Investor rating even three years after the crisis, there appears to be a significant positive effect of both prior action conditions and performance criteria conditions. Nevertheless, the effect only appears after disaggregating the data on conditionality. The findings of this thesis suggest that, contrary to my first hypothesis, overall

IMF conditions do not have a significant effect on change in Institutional Investor rating. I attribute the absence of any clear effect of the aggregate conditions to the prevalence of structural benchmark conditions. These conditions are unable to serve as signalling devices as a consequence of their relatively loose definition, which causes insufficient monitoring, and how disbursements are not directly tied to the completion of the conditions, they lack the necessary credibility. The results reported in this thesis survive multiple model specifications and a number of robustness tests.

7.2 Theoretical and Practical Implications

These results have key implications. First, there are implications for the theory surrounding the catalytic hypothesis, as there appears to be divergence in the literature on what is expected of the IMF and the borrowing country I order to achieve a catalytic effect. On the one hand, there are those who expect any IMF program, or a specific type of arrangement to cause an influx of investment more or less immediately. I would argue this approach is too crude. Because it overstates what can realistically be expected of Fund arrangements, this branch of the literature tends to find no evidence of any catalytic effect, or even a negative one. On the other hand, there are those who see IMF programs more like a tool, which can be used by countries in the hopes of achieving a catalytic effect. From this perspective, only countries that choose to, or are able to use this tool, will be able to evoke a catalytic effect. Furthermore, from this perspective the mixed results of the empirical literature are not surprising, because so much of it has failed to take conditionality into account. My results demonstrate that the second approach is the more appropriate. By casting a more finely meshed net, and examining how crisis-ridden countries can use conditionality as a tool, one can uncover when and why catalysis may occur.

Second, the results of this thesis have important policy implications for crisis-ridden countries. Governments entering Fund programs after severe economic crisis should be aware of the effect that the number of prior action and performance criteria conditions could have on investor sentiments. This means not just how signing many such conditions can aid the country in reassuring the investor community, but also how not having any of these conditions can actually damage their perception among investors.

Third, these results have direct policy implications for the IMF as well, because they imply that the Fund's shift in focus away from prior action and performance criteria conditions, toward a

heavier reliance on structural benchmark conditions, might in fact be doing crisis-ridden countries a disservice.

However, it is important to note that countries still need to weigh the costs and benefits of signing IMF agreements and conditions. The political costs that imbue prior action and performance criteria conditions with credibility are the same costs that can topple governments or lead to lasting resentments and short-lived reforms that are done away by domestic opposition. An overconfident government that signs more conditions than public opinion or political opposition can accept risks, leaving their country in situation even worse than when they signed the agreement, should the program collapse. Even if the program survives, it might not have been worth it if the government has compromised democracy in order to quell social unrest, as Brown (2009) suggests might have happened in Latin America.

7.3 Further Research

Overall, the findings in this thesis suggest that further research is needed into how the conditionality in IMF programs affects the relationship between the borrowing country and investors. I have demonstrated that prior action and performance criteria conditions can improve investor perceptions, but more research, for example using a different measure of investor perceptions, could reinforce the results. Additionally, the question of whether this materializes into improved access to capital markets remains open. Research into the disaggregated effect of IMF conditions, specifically prior action and performance criteria conditions, on portfolio investment, FDI, loans and loan maturities are still lacking.

Thorough qualitative research and case studies are perhaps even more lacking on the subject of the catalytic hypothesis. When it comes to investor perceptions, the natural approach would be sources such as those on which the Institutional Investor rating is based directly related to IMF agreements and programs. Though perhaps difficult or impractical to realize, such a study could provide interesting answers to questions relating to optimal program design with regards to signalling.

Based on my data I would recommend a handful of countries as interesting candidates for future case studies. Present day Greece provides an interesting though unusual example, as it is a case that the international media has followed closely, and one that should be familiar to the reader. The fact that Greece is a member of the EU and Eurozone, meant that certain fiscal policies that the IMF would recommend in similar situations was not available, for example devaluation of

the currency in order to stimulate exports and tourism. The EU membership and the tied currency also means that the external pressure on Greece for reforms has been abnormally strong, for fears that the Greek crisis would spread to the rest of Europe. Thus, even though politicians and hoi polloi[20] alike have staunchly resisted reforms, in 2013 Greece had the highest amount of prior action conditions per quarter observed in my sample (52.3). Though not included in my data, Greece accordingly saw a considerable positive change of 8.5 in Institutional Investor rating in the following year. This is substantially higher than the five-point increase that my model predicts for 2014 (see chapter 5.1), but well within the 90% confidence interval of the model. However, following a standoff against its Eurozone partners that saw Greece approach the brink of default, its rating took a dive of 10.5 points in 2015 (Institutional Investor 2015).

Azerbaijan could be another interesting case. In 1996, it had the highest amount of performance criteria conditions in my sample. Unfortunately, Institutional Investor only began rating Azerbaijan in 2001. How did investors react following the Azerbaijani dedication to economic policy reform? My data gives little indication other than the position of the Institutional Investor rating when it begins in 2001. A relatively low score of 24 does not suggest much. This is why I would suggest a deeper investigation, which lies beyond the scope of this thesis.

Finally, there is post-Soviet Slovakia. In 1994, Slovakia entered a 2-year program with the IMF, and already in that same year Institutional Investor rating shot up by 19.5 points, the biggest increase in my sample. This despite a relatively modest 16 performance criteria conditions (4 per quarter in the first year), and no prior action or structural benchmark conditions. How was Slovakia so successful? My data gives only hints; in addition to the IMF program, the only variables in my data that hint toward such an increase in Institutional Investor rating is a relatively healthy, though by no means extraordinary, GDP growth rate of 6.2% and a slight increase in the rule of law. A systematic case study is needed to uncover a more reliable causal connection.

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[20] Greek expression for "the masses" (Oxford Dictionary 2016)

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APPENDIX

Table 7: Country List

Afghanistan	Czech Republic	Kyrgyzstan	Rwanda
Albania	Denmark	Lao PDR	Sao Tome and Principe
Algeria	Djibouti	Latvia	Saudi Arabia
Angola	Dominican Republic	Lebanon	Senegal
Antigua	Ecuador	Lesotho	Seychelles
Argentina	Egypt	Liberia	Sierra Leone
Armenia	El Salvador	Libya	Singapore
Australia	Equatorial Guinea	Lithuania	Slovakia
Austria	Eritrea	Macedonia	Slovenia
Azerbaijan	Estonia	Madagascar	Solomon Islands
Bahrain	Ethiopia	Malawi	South Africa
Bangladesh	Fiji	Malaysia	Spain
Barbados	Finland	Mali	Sri Lanka
Belarus	France	Mauritania	Sudan
Belgium	Gabon	Mauritius	Suriname
Belize	Gambia	Mexico	Swaziland
Benin	Georgia	Moldova	Sweden
Bhutan	Germany	Mongolia	Switzerland
Bolivia	Ghana	Morocco	Syria
Botswana	Greece	Mozambique	Taiwan
Brazil	Grenada	Myanmar	Tajikistan
Brunei	Guatemala	Namibia	Tanzania
Bulgaria	Guinea	Nepal	Thailand
Burkina Faso	Guinea-Bissau	Netherlands	Togo
Burundi	Guyana	New Zealand	Trinidad & Tobago
Cambodia	Haiti	Nicaragua	Tunisia
Cameroon	Honduras	Niger	Turkey
Canada	Hungary	Nigeria	Turkmenistan
Cape Verde	India	North Korea	Uganda
Central African Republic	Indonesia	Norway	Ukraine
Chad	Iran	Oman	United Arab Emirates
Chile	Iraq	Pakistan	United Kingdom
China	Ireland	Panama	United States of America
Colombia	Israel	Papua New Guinea	Uruguay
Comoros	Italy	Paraguay	Uzbekistan
Congo	Jamaica	Peru	Venezuela
Congo, Democratic Rep	Japan	Philippines	Vietnam
Costa Rica	Jordan	Poland	Yemen
Cote de Ivoire	Kazakhstan	Porgtugal	Zambia
Croatia	Kenya	Qatar	Zimbabwe
Cuba	Korea, Republic of	Romania	
Cyprus	Kuwait	Russia	

Table 8: Data Definitions and Sources

Variables	Data definitions and sources
Institutional Investor Rating	Country credit rating based on information provided by senior economists and sovereign risk analysts at leading global banks and money management and securities firms. The respondents have graded each country on a scale from 0 to 100, with 100 representing the least likelihood of default. Weighted according to institutions' global exposure. Sourced from Institutionalinvestor.com
Prior Actions Conditions/quarter	Count of prior actions conditions divided by the number of quarters in which country i has been in these conditions. Sourced from Dreher et al. (2015) and MONA dataset.
Performance Criteria Conditions/quarter	Count of performance criteria conditions divided by the number of quarters in which country i has been in these conditions. Sourced from Dreher et al. (2015) and MONA dataset.
Structural Benchmarks Conditions/quarter	Count of structural benchmarks conditions divided by the number of quarters in which country i has been in these conditions. Sourced from Dreher et al. (2015) and MONA dataset.
Economic Crisis	Coded the value 1 if country l in year t faced with either/or debt, currency and banking crisis and 0 otherwise. Sourced from Laeven and Valencia (2013).
Per capita GDP (log)	GDP per head in 2000 US$ constant prices. Sourced from UNCTAD.
Democracy	Based on Polity IV index (-10 to +10), recoded to 0 to 20.
Population (log)	Count of total population. Sourced from World Development Indicators 2015, World Bank.
Trade/GDP (log)	Total exports and imports as a share of GDP. Sourced from UNCTAD statistics 2015.
Inflation	Consumer price index inflation transformed between -1 and 1. Sourced from the World Development Indicators from the World Bank.
GDP Growth	GDP growth rate. Sourced from UNCTAD.
Corruption	ICRG Corruption Index measures control of corruption from 0 to 5 where 5 reflects the worst corruption.

Figure 7: Yearly mean number of prior action conditions per quarter
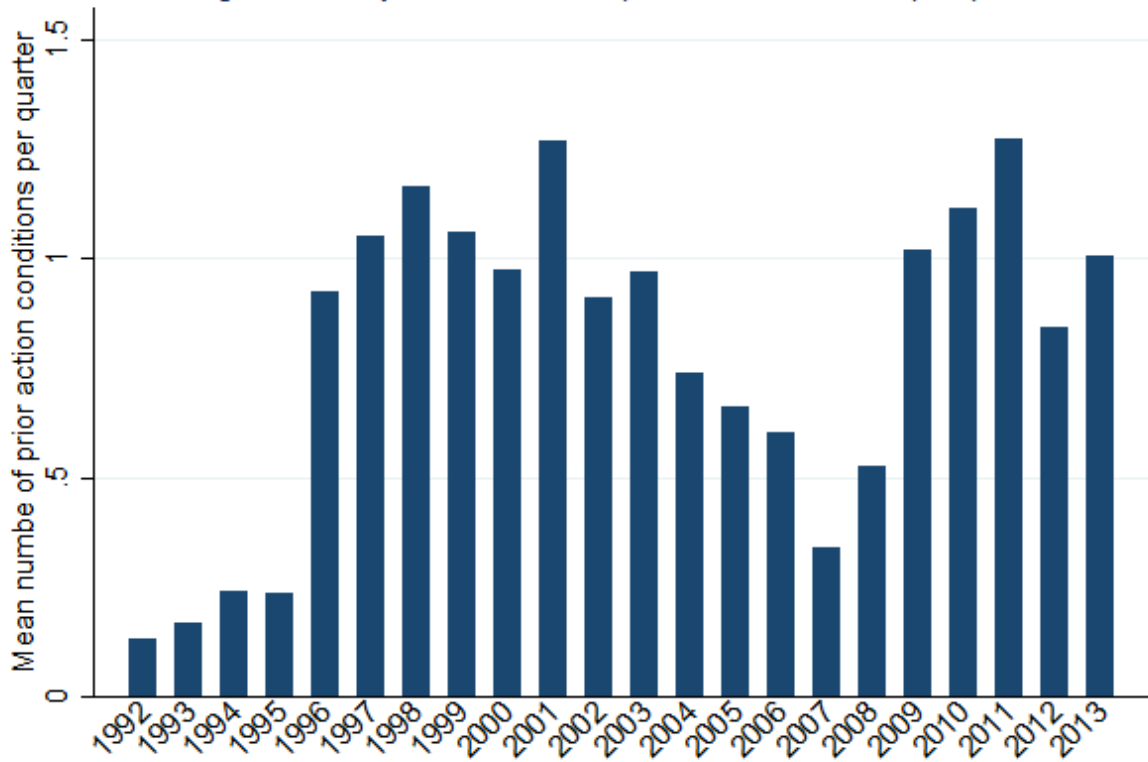

Figure 8: Yearly mean number of performance criteria conditions per quarter