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International Organizations as Information Providers: How Investors and Governments Utilize Optimistic IMF Forecasts

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International Organizations as Information

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by

Abdulhadi Sahin

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ABSTRACT OF THE DISSERTATION

**International Organizations as Information
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Professors Nathan Jensen and Andrew C. Sobel, Co-chairs

A large literature in political science has examined International Monetary Fund's (IMF
or Fund) lending and monitoring activities and has shown that the Fund sometimes
deviates from its original mandates and provides preferential treatment to certain
countries. The studies suggests that geopolitical and financial interests of the major
shareholders of the Fund and the Fund's bureaucratic incentives to preserve its power
and prestige are the main determinants of this behavior. There are also a few studies
that demonstrate the same pattern in the Fund's forecasting activities. What is missing
in this literature is how other actors such as investors and incumbent governments
respond to this behavior and utilize optimistic macroeconomic forecasts. This
dissertation argues that optimistic IMF forecasts provide non-economic information to
the investors, therefore they respond to them accordingly. Moreover optimistic forecasts

enable incumbent governments to pursue expansionary policies and help them to portray the future in a positive light. By comparing IMF forecasts to those of private institutions this dissertation shows that investors respond positively to the IMF optimism for countries that are closely allied with the United States and that have large outstanding debt to the Fund. The empirical analyses also show that optimistic forecasts encourage public spending and thus increase government's chances for reelection.

Chapter 1

Introduction

One of the most important characteristics of international organizations (IOs) is their ability to provide quality information. IOs provide information on the current state of the member countries and their intended policy positions. By providing this information, IOs reduce transaction costs and problems of incomplete information, and therefore, facilitate international cooperation and policy coordination. Keohane (1982) argues that the ability of IOs to provide such information is one of the reasons IOs are created in the first place and why they continue to survive.

The value of any information depends on its accuracy and utility. As for the accuracy, Abbott and Snidal (1998) argue that two properties of IOs increase the quality of information they provide: centralization and independence. Centralization enables IOs to pool their resources and exploit the economies of scale. They can devote large amounts of intellectual and physical resources in gathering and evaluating information. Independence makes the information they provide more neutral especially vis a vis that provided by national governments. As for the utility, IOs can gather information that

may be unacceptable if performed unilaterally. For instance, no government would allow another national government to scrutinize their economy as much as the International Monetary Fund (IMF or Fund) does. Governments allow this because they believe IOs are neutral and free from national biases. Therefore, the utility of the information IOs provide can be higher than that provided by other institutions.

On the other hand, the comparative advantage in information gathering can be a strategic resource for IOs and powerful members of the organization. IOs can hide information that leads to questioning of their competence and disseminate false information in order to preserve their power and prestige (Venzke, 2008; Vaubel, 1996). Dreher, Marchesi and Vreeland (2008) and Aldenhoff (2007) argue that to defend their lending practices, the IMF provides overly optimistic forecasts to countries that are under an IMF agreement and/or that have prolonged relationship with the Fund. Further, powerful members of the IOs can use their influence over the organization to pursue their private agendas. For instance, they can provide cheaper loans to their close allies through the IMF if bilateral financial aid is domestically and internationally controversial. IOs can selectively publicize information that is pleasant to the powerful members which share the bigger burden of the cost of the organization. On this regard, Dreher, Marchesi and Vreeland (2008) and Aldenhoff (2007) show that the Fund provides favorable forecasts to countries that are closely allied with the United States.

On one hand, some studies argue that IOs should be providing quality information. On the other hand, some others argue that they sometimes disseminate optimistic information that benefit themselves or their major shareholders. Given this puzzle, my dissertation asks how other actors in the international system, specifically

investors and governments, respond to this information. Do investors respond positively, or do they disregard it given that there are alternative information providers? Do governments utilize favorable information for their electoral benefits? To examine these questions, my dissertation looks at IMF macroeconomic forecasts. I specifically look at IMF GDP growth and inflation forecasts as they provide valuable information about a country's economic conditions. Investors may use this information to decide whether to invest into a country or to expand their existing investment. This information is especially valuable for country's where alternative information providers are not very reliable. Governments may use this information when they plan their spending budgets and pursue certain economic policies. And most important to domestic politics, public can use IMF forecasts as an alternative to the information provided by their governments.

This dissertation uses quantitative analyses to test these theories. In Chapter 2, I compare the performance of IMF forecasts with that of three private forecasters in predicting the sign, direction and magnitude of economic growth and inflation. The analyses provide me with two important findings. First, overall private forecasts perform better than the IMF forecasts. Second, private forecasts are also not free from error and generally they err in the same direction with the IMF forecasts. Thus, I conclude that studies on political economic determinants of IMF bias should compare IMF forecasts with that of its competitors and not with the actual values.

Chapter 3 examines the characteristics of countries receiving optimistic IMF forecasts. Earlier studies of IMF bias compare IMF forecasts with that of actual values. This chapter differs from these studies in that, I measure forecast optimism as the

difference between IMF and private forecasts. I argue that IMF forecasts differ from the private forecasts due to political and bureaucratic motivations. Powerful members of the Fund use their influence at the organization to adjust the forecasts towards optimism for their close allies. The IMF, as a bureaucratic institution, publishes favorable forecasts to defend its lending and monitoring activities. I define these biases as politically and bureaucratically motivated bias.[1] The empirical analyses confirm earlier studies and show that countries that share similar interest with the United States and that have large outstanding debt to the Fund receive overly optimistic growth forecasts. This effect was less pronounced in the inflation forecasts.

Chapter 4 examines how investors respond to the favorable IMF forecasts. I argue that the sources of forecast optimism provide noneconomic information to the investors. Politically and bureaucratically motivated bias signals about the Fund's and US commitment to help a country in times of economic difficulties. Politically motivated bias also signals about long-term improvements in economic conditions and investment climate. Therefore, rather than discounting the favorable information, investors respond to them positively by taking higher risks and increasing investment. I test my theory by examining the effect of biased IMF forecasts on foreign direct investment inflows and sovereign bond spreads. The results show that investors respond more positively to the IMF forecasts as they differ from private forecasts for political and bureaucratic considerations.

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[1]Forecast bias is defined as a systematic over or under prediction of a macroeconomic indicator of a country or type of countries by a forecasting institution.

In Chapter 5, I examine the effect of optimistic IMF forecasts on domestic politics. Governments seeking reelection have powerful incentive to increase public spending during election years. Therefore, I argue that favorable IMF forecasts help governments to pursue expansionary policies, especially during election years. Optimistic forecasts may also help governments to shed a positive light on the future. Thus, they may increase their popularity. Through these direct and indirect mechanisms, I argue that optimistic forecasts increase incumbent governments' chances for reelection. The analysis shows that government budget deficit increases following optimistic IMF forecasts. Moreover, the results show that as optimism in IMF forecasts increases incumbent government's prospect for reelection increases.

This dissertation makes three contributions to the literature on international organizations. First, IOs' role as a quality information provider has been studied extensively in the literature. Some scholars study how IOs help governments to make credible commitments by making noncompliance more transparent.[2] Others examine how information from IOs increases cooperation.[3] These studies generally do not test the effect of information directly; they discuss and test the implications of that information. This dissertation contributes to this literature by providing a direct analysis of informational effects of International Organizations.

Second, my dissertation contributes to the public choice approaches to international organizations. Previous studies have examined the characteristics of countries that receive favorable forecasts, but have not analyzed how investors and

[2]See Simmons (2000); Fang and Owen (2011)
[3]See Fearon (1998); Dai (2005)

governments utilize these forecasts. This study provides a comprehensive analysis of political economy of IMF forecasts by looking at how these forecasts are perceived by some of the main actors. Finally, previous works on the IMF forecasts look at the differences between IMF forecasts and actual values as a measurement of bias. Instead, this dissertation suggests using the difference between IMF and private forecasts. I believe this provides a better measurement of bias since it eliminates some forecast errors that are common both in the IMF and private forecasts. This choice also enables me to examine how investors and governments respond to the differences in the IMF and private forecasts as they are available at the same time periods.

Chapter 2

Accuracy, Unbiasedness and Efficiency of IMF and Private Forecasts

This dissertation examines the informational effects of International Organizations by focusing on International Monetary Fund's (IMF or Fund) forecasts in its World Economic Outlook (WEO) reports. These reports are published biannually as a part IMF's surveillance activities where the IMF discusses global and national economic trends, points out the weaknesses and alerts about the economic risks. WEO reports also include IMF staff projections on several economic and financial indicators including GDP growth and inflation.

The forecast of international organizations receive considerable coverage in the media. However, there are also other institutions that publish forecasts on the same economic indicators, including private sector forecasters and research institutes. Some of them are on a more frequent basis than the IMF. Private sector, government agencies and policymakers have been utilizing these forecasts in their decisions. In 1998, in his

address to New Zealand Society of Actuaries, the Governor of the Reserve Bank of New Zealand Donald T Brash said:[1]

> We do not ourselves make forecasts of the international economy, but instead use the monthly Consensus Forecasts, produced by Consensus Economics Inc. in London...We certainly have no reason to believe that we could produce better forecasts for our overseas markets than can the forecasters 'on the ground' in the countries concerned.

In this chapter, I compare the performance of IMF forecasts to those of three private forecasters. I concentrate only on GDP growth and inflation forecasts as they provide important information about a country's economic conditions. These indicators also attract more attention among the public as they are easier to interpret (Aldenhoff, 2007)

2.1 Previous Studies of Forecasts

There is an extensive literature in economics that explores the size, nature and sources of forecast errors and compares the accuracy and efficiency of forecasts with each other. In this section, I briefly discuss their arguments and findings.

The sources of forecast errors can be classified broadly into three categories. First, there is uncertainty about the future. Forecasts are made on the basis of current and announced policies; but we don't know for certain how committed the governments are to implement those policies. There are also uncertainties about the world economic

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[1]The whole speech can be reached at "Reserve Bank forecasting: should we feel guilty?"

situation. For instance, fluctuations in oil prices can affect the growth and inflation rates or an economic crisis in a neighboring country may have unexpected spillover effects. Thus, forecasters need to use their judgments about the consequences of the current events and judgments are inherently open to errors. Even current-year forecast for the Spring and Autumn from the same institution can sometimes substantially differ from each other.

Information reduces uncertainty. Studies show that forecast errors decrease as the time horizon shortens (Artis, 1996; Batchelor, 2001, 2007; Juhn and Loungani, 2002; Abreu, 2011). Dovern and Weisser (2011) also show that dispersion among forecasts decreases as forecast horizon decreases. Thus as the available information increases, the forecasts become more accurate and differences among forecasters diminishes.

Moreover, forecasting macroeconomic indicators might be more difficult for countries that face deep structural changes and that have high output volatility. Studies show that there are regional differences in forecasting difficulty. Examining the accuracy of private forecasts for 25 transition economies, Krkoska and Teksoz (2009) show that forecast errors are largest for Commonwealth of Independent States (CIS), and smallest for Central Europe and the Baltic states (CEB) and forecast errors for South-Eastern Europe (SEE) are somewhere in between.

The second source of forecast errors comes from behavioral biases. In this category, the problem is not the availability of the information but how forecasters utilize the information including their past forecasts errors and forecasts from other institutions. Some researchers show that forecasters are slow to adopt to new information such as a downward trend in economic growth (Batchelor and Dua, 1992;

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Artis, 1996; Dovern and Weisser, 2011). Others find that forecasters overreact to the new information and sometimes overcorrect their past errors (Ashiya, 2006).

There is also a tendency among forecasters to converge towards a consensus (Juhn and Loungani, 2002; Glück and Schleicher, 2005). The reputational cost of being wrong and alone is greater than the rewards of being right and alone. Thus, forecasters avoid to be too different. On the other hand, the opposite is also true for some forecasters. Frenkel, Rülke and Zimmermann (2013) show that individual forecasters from Consensus Economics anti-herd from forecasts of the Organization for Economic Cooperation and Development (OECD) and the IMF.

Finally, forecasters may willfully introduce bias in response to political, reputational and/or financial incentives. Some researchers have shown that forecasters adopt consistently optimistic and pessimistic views. One of the reasons for this behavior is to differentiate themselves from other products (Batchelor and Dua, 1992). Some consumers of the forecasts might be interested in pessimistic or optimistic forecasts in order to push for certain economic policies. Thus, forecasters may target certain groups as consumers and blend their judgments accordingly. Also, forecasts generally come with comments and policy recommendations. In order to maintain their credibility forecasters may persist in their pessimistic or optimistic view for a while (Batchelor, 2007). There is also the perception that good forecasts do not make frequent changes (Batchelor and Dua, 1992). This makes forecasters more conservative in their revisions.

Forecasts of national governments might be biased towards optimism for political concerns. Optimistic forecasts can help governments to cast a favorable light on current

policies, or justify future course of action (Batchelor, 2007; Dovern and Weisser, 2011). Estrin and Holmes (1990) argue that in 1980s French and Japanese governments used optimistic forecasts in order to stimulate private investment. Similarly, Heinemann (2006) show that Germany have based its budget plans on overly optimistic forecasts for decades.

We also can not exclude political and reputational biases in the forecasts of international organizations. First, bias in government forecasts might be transmitted to the forecasts from these institutions during the technical adjustment process (Artis and Marcellino, 2001). Second, influential members of the organizations may tamper with the forecasts for their own benefit or for the benefit of their allies. Lastly, the organizations may use optimistic or pessimistic forecasts to justify their positions on a particular issue. Aldenhoff (2007) shows that long-term IMF forecasts of industrialized countries are biased towards optimism and this optimism coincides with election years for the United States. He also shows that IMF's optimism for developing regions correlates with increase in IMF loans to that region. Likewise, Dreher, Marchesi and Vreeland (2008) show that IMF publishes optimistic forecasts for countries that vote in line with the United States at the UN General Assembly and that have large outstanding debt to the Fund.

Now, I will discuss the studies that examine the relative performance of forecasts in terms of their accuracy and efficiency. Some researchers compare the forecasts from international organizations. Artis and Marcellino (2001) examine IMF, OECD and EC budget deficit forecasts for G-7 countries, and find that no single agency is best for all countries, although some agencies perform well for certain countries. Pons (1999)

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analyzes OECD and IMF forecasts and finds that OECD forecasts are slightly better than the IMF forecasts.

There are also studies that compare forecasts of international organizations to those of the private institutions. Comparing IMF, OECD and Consensus Economics forecasts for G7 countries, Batchelor (2001) finds that Consensus Economics forecasts perform better than the IO forecasts in 63 percent of the cases. Abreu (2011) studies EC, IMF, OECD, Economist and Consensus Economics forecasts for 9 developed economies. The results show that the accuracy of international organization and private forecasts is similar. But, in most of the cases one of the international organizations, but not always the same one, perform better than the private forecasts.

The findings on larger sample of countries are also similar. Timmermann (2007) compares IMF and Consensus Economics forecasts in 23 advanced and emerging economies. He finds that overall the performance of IMF forecasts is similar to that of Consensus Economics forecasts. But, the findings are highly sensitive to the reference month of the private forecasts. For instance, when we look at the April and September forecasts, consensus forecasts perform better than the IMF in the majority of the cases. Juhn and Loungani (2002) examine the forecasts of Consensus Economics and the IMF in 63 developing countries. They find that Consensus forecasts perform slightly better than the IMF forecasts in both developed and developing countries. The difference is marginal for developed economies, but substantial in developing countries.

These studies compare forecasts of international organizations with Consensus Economics forecasts. Consensus Economics takes the average of several private forecasts, and thus does not give us an idea about how IO forecasts fair against

individual private forecasts. Krkoska and Teksoz (2009) analyze the performance of 13 intergovernmental and private forecasts (individual). They find that GDP growth forecasts of EBRD, UN and the IMF are biased towards optimism, but EC and OECD forecasts are unbiased. They also find that the forecasts of private institutions, except Dun & Bradstreet are not biased. With respect to inflation forecasts, the difference between intergovernmental organizations and private forecasts disappear. Only forecasts of Economist Intelligence Unit and Global Insight among the private forecasts continue to be unbiased.

The studies I have discussed in this section have shown that, overall, private forecasts perform similar to the forecasts of international organizations. Private forecasts, like the forecasts of the intergovernmental organizations, may deviate from true expectations due to uncertainty about the future and behavioral bias. But, there is also some evidence that private forecasts perform slightly better than the forecasts from the international organizations.

2.2   Data

In this chapter, I examine the relative performance of forecasts from the IMF, and three private institutions; Economist Intelligence Unit (EIU), the Global Insight (GI), and Business Monitor International (BMI). I concentrate only on economic growth and inflation forecasters, because these macroeconomic indicators generally attract greater attention among policymakers and the public, and thus more suitable to test my

research questions (Aldenhoff, 2007). In the following chapters, I will discuss how the public respond to these forecasts and how governments utilize this information.

The IMF forecasts are from the World Economic Outlook (WEO) reports which are published biannually in the Spring and Autumn and which include two sets of forecasts; current-year and next-year forecasts (IMF, 2002-2013). The IMF has been publishing the WEO reports since 1993, but these reports started providing forecasts for all member countries in 2002. Thus my data cover the period from 2002 to 2013. The EIU forecasts are collected from EIU *Country Reports*; the GI forecasts are from *Country Monitor* reports; and the BMI reports are from BMI regional monitor reports such as *Africa Monitor* and *Asia Monitor*. These three private forecasts are published on a monthly basis, and like the IMF reports, contain both current-year and next year forecasts.

In order to investigate the relative performance of these forecasts, we first need to establish a reference point. The Spring IMF WEO forecasts are published in April and the Autumn forecasts in September (or October for some years). Thus, I take these months as the reference points and only include the private forecasts that are published in the same month of IMF publication. If the data were not available, I use the data from the closest month preceding the IMF forecasts. With regard to the sample, the EIU, GI and BMI data cover 99, 75 and 87 countries respectively. The IMF data cover 111 countries and include all countries covered by these three private forecasts. Next, we need to decide which outcome data to be used to measure the forecast errors. The conventional wisdom is to use the first available actualization values.[2] Instead I utilize

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[2]See Krkoska and Teksoz (2009); Abreu (2011)

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the latest GDP growth and inflation forecasts as they are provided by the World

Development Indicators dataset (WB, 2013). There are three reasons why I make this

choice. First, for some countries the actualization values in the next-year reports are not

the actual values but still estimates from that institutions. Thus, they might still contain

some kind of bias/error and this can complicate the comparison.

Second, until 2009 the IMF published GDP deflator values instead of consumer

prices for most of the advanced economies. The WDI data provide me with the

flexibility to solve this problem.[3] Lastly, using next-year actualization values from EIU

and WEO reports provide similar results to those obtained by using the WDI data.[4]

Therefore, I use WDI data for the actualization values. I measure forecast errors as the

difference between the actualization values and the forecasts.[5] I denote actualization

values as $X_{i,t}$ where i indicates the country and t is the time period. $X_{i,t|t}$ and $X_{i,t|t-1}$

denote current-year and next-year forecasts respectively. According to this notation, the

GDP growth forecast errors are calculated as below:

$$e_{i,t}^{\text{Spring}} = X_{i,t|t} - X_{i,t} \qquad \text{(Spring current-year forecast error)}$$

$$e_{i,t-1}^{\text{Spring}} = X_{i,t|t-1} - X_{i,t} \qquad \text{(Spring next-year forecast error)}$$

$$e_{i,t}^{\text{Autumn}} = X_{i,t|t} - X_{i,t} \qquad \text{(Autumn current-year forecast error)}$$

$$e_{i,t-1}^{\text{Autumn}} = X_{i,t|t-1} - X_{i,t} \qquad \text{(Autumn next-year forecast error)}$$

---

[3]I use GDP deflator form the WDI Database for years before 2009 and average inflation values after that. As for private forecasts I use only average inflation.
[4]I do not report these analysis here, but I can provide them if requested.
[5]For both GDP growth forecasts and inflation forecasts positive numbers indicate optimism.

And the inflation forecasts are measured as:

$$e_{i,t}^{\text{Spring}} = X_{i,t} - X_{i,t|t} \qquad \text{(Spring current-year forecast error)}$$

$$e_{i,t-1}^{\text{Spring}} = X_{i,t} - X_{i,t|t-1} \qquad \text{(Spring next-year forecast error)}$$

$$e_{i,t}^{\text{Autumn}} = X_{i,t} - X_{i,t|t} \qquad \text{(Autumn current-year forecast error)}$$

$$e_{i,t-1}^{\text{Autumn}} = X_{i,t} - X_{i,t|t-1} \qquad \text{(Autumn next-year forecast error)}$$

2.3   The Distribution of Forecast Errors

This section provides some summary statistics of the forecast errors. I use three measurements which are commonly used in the literature.[6] The first is the mean absolute error (MAE) which is the arithmetic average of forecast errors over all years and countries, disregarding the sign of error. The second measurement is the root mean square error (RMSE) which is the square root of mean of the squared forecast errors.

$$\text{RMSE} = \sqrt{\frac{1}{n} \sum_{t=1}^{n} e_{i,t}^2}$$

Finally, I look at the standard deviation (SD) of the errors. This measurement gives information about the uncertainty around the forecasts (Abreu, 2011).

$$\text{SD} = \sqrt{\frac{1}{n-1} \sum_{t=1}^{n} (e_{i,t} - \bar{e}_{i,t})^2}$$

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[6]See Arora and Smyth (1990); Pons (1999); Abreu (2011)

Table 2.1 reports summary statistics for GDP growth forecast errors. In the table, the forecasting horizon increases from column 1 to 4, the first two columns displaying the results for the current-year forecast errors. As in the previous studies, the findings show that the MAE and RMSE increase as the forecasting horizon increases.[7] Similarly uncertainty, measured as standard deviation of forecast errors, increases with the time length. This confirms earlier studies which argue that information decreases uncertainty and therefore reduces forecast errors. Regarding the relative performance of the forecasts, GI and EIU forecasts have smaller errors than the IMF forecasts, GI having the smallest. This finding remains the same across all horizons. The results also show that BMI forecasts are the least accurate one. The BMI data do not cover developed economies which tend to have smaller forecasts errors. This might explain why BMI forecasts perform differently from other private forecasts.

Table 2.1: Summary statistics for GDP growth forecasts

		$e_{i,t}^{\text{Autumn}}$	$e_{i,t}^{\text{Spring}}$	$e_{i,t-1}^{\text{Autumn}}$	$e_{i,t-1}^{\text{Spring}}$
MAE					
	IMF	1.374	1.829	2.471	2.708
	GI	1.225	1.637	2.242	2.416
	EIU	1.348	1.782	2.321	2.597
	BMI	1.861	2.308	2.848	3.003
RMSE					
	IMF	2.292	2.893	3.838	4.081
	GI	2.144	2.618	3.408	3.661
	EIU	2.313	2.709	3.533	3.923
	BMI	2.835	3.418	4.253	4.494
SD					
	IMF	2.203	2.817	3.835	4.081
	GI	2.085	2.569	3.409	3.663
	EIU	2.239	2.608	3.524	3.915
	BMI	2.732	3.341	4.244	4.486

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[7]See Pons (1999); Timmermann (2007); Abreu (2011)

Table 2.2 presents the summary statistics for inflation forecast errors. Here, I do not include BMI inflation forecasts because the measurement of inflation differs from those of the IMF, GI and EIU.[8] Similar to the findings in Table 2.2, RMSE, MAE and SD of forecasts increase with increasing time horizon. As in the GDP growth forecasts, private forecasts, the GI and EIU, perform better than the IMF forecasts. But overall the difference between IMF and private forecast errors is larger in inflation forecasts.

Table 2.2: Summary statistics for inflation forecasts

		$e_{i,t}^{\text{Autumn}}$	$e_{i,t}^{\text{Spring}}$	$e_{i,t-1}^{\text{Autumn}}$	$e_{i,t-1}^{\text{Spring}}$
MAE					
	IMF	0.955	1.712	2.744	2.887
	GI	0.505	1.268	2.147	2.174
	EIU	0.681	1.452	2.573	2.790
RMSE					
	IMF	1.899	3.116	4.600	5.012
	GI	1.320	2.404	5.504	3.975
	EIU	1.493	2.670	5.077	5.787
SD					
	IMF	1.899	3.084	4.523	4.788
	GI	1.321	2.396	5.505	3.926
	EIU	1.491	2.671	5.071	5.771

Next, I examine how forecasts perform in advanced and EME/Developing economies. The intuition is that estimating macroeconomic indicators for advanced economies should be easier as their economies are more stable and predictable compared to developing economies. Thus, we should observe smaller forecast errors and the differences among forecasters should be smaller. Table 2.3 presents the results.[9]

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[8]BMI provides year-end inflation forecasts for some countries, while other forecasters publish average inflation forecasts.

[9]Only 5% of the BMI data are for advanced economies. Therefore I didn't include them in the analysis. Also, as discussed before I didn't include BMI inflation forecasts due to the measurement differences.

Table 2.3: Forecast errors for advanced versus developing economies

		Advanced		EMEs and Developing	
		GDP growth	Inflation	GDP growth	Inflation
MAE					
	IMF	2.045	1.192	2.899	3.393
	GI	2.051	0.950	2.621	2.885
	EIU	1.967	1.023	2.807	3.402
	BMI			3.016	
RMSE					
	IMF	2.981	1.712	4.347	5.633
	GI	2.930	1.306	4.014	4.897
	EIU	2.887	1.393	4.212	6.665
	BMI			4.523	
SD					
	IMF	2.931	1.646	4.336	5.346
	GI	2.837	1.307	4.003	4.805
	EIU	2.839	1.387	4.178	6.644
	BMI			4.512	

In the case of GDP growth, the forecasts perform similarly in advanced economies while private forecast do slightly better in developing economies. BMI forecasts perform worst even if the data is restricted to the EME/Developing economies. For inflation forecasts, GI forecasts perform better than the IMF both in advanced and developing economies. For developing economies, the EIU forecasts perform very similar to the IMF forecast in terms of mean absolute error, but do worse in RMSE and SD. RMSE and SD measurements are more susceptible to the outliers. This may explain the variation in the EIU performance.

Finally, I examine how forecasts perform over the years. I concentrate only on mean absolute errors of Spring current-year and next-year forecasts. Figure 2.1 displays the results. First, overall forecasts perform very similarly, but the MAE of the forecasts

Figure 2.1.: Mean absolute errors by year, 2002-2012
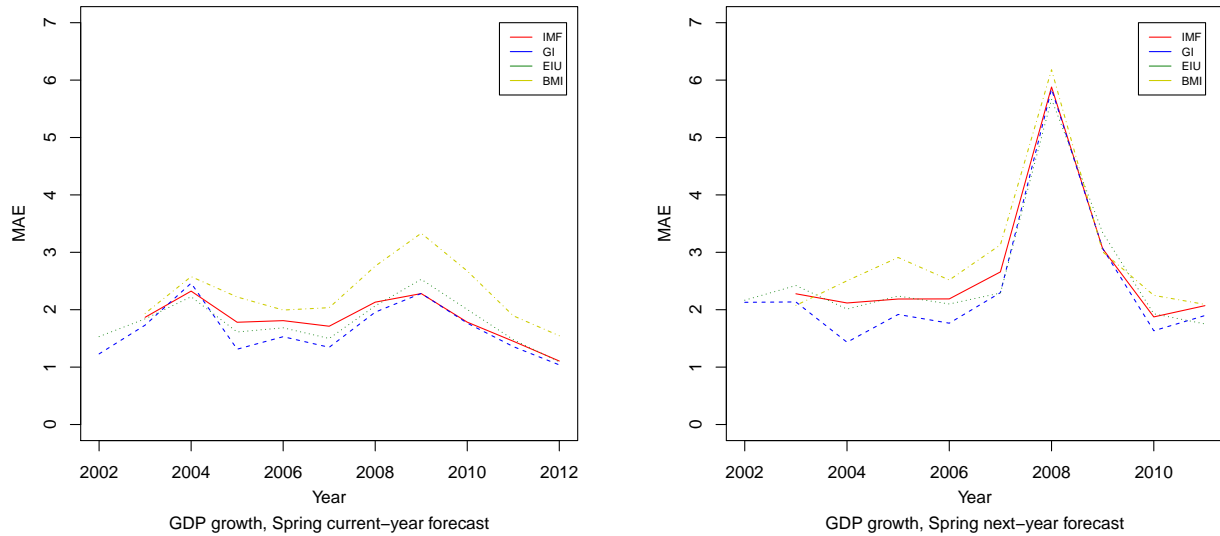
are smallest for GI forecasts and biggest for BMI forecasts. Second, the graph on the

right panel shows a spike in 2008.[10] This is expected since financial crises of 2007-2008

increased economic uncertainty and make forecasting more difficult. On the other

hand, the graph on the left panel does not show a similar pattern during financial

crisis. Thus, forecasts are better in predicting crisis in the current year but not in the

following year.

2.4   Accuracy of Forecasts

I have analyzed the MAE, RMSE, and SD of IMF and private forecasts. Although

these measurements give an idea about the distribution of forecast errors, they do not

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[10]Next-year inflation forecasts show an increase in MAE in 2007 and 2008, but the spike is not as dramatic
as in the GDP growth forecasts.

inform us about the overall direction of the forecasts. But more importantly, they do not provide a statistical test for forecast accuracy.

In this section, I employ some statistical tests to analyze the accuracy of forecasts. A forecast is accurate if it is unbiased and efficient. An unbiased forecast is one with random forecast errors where the average of the forecasts errors sum up to zero overtime. Holden and Peel (1990) suggest a simple test to examine forecast bias. Basically, they suggest regressing forecast errors on a constant. The regression is expressed as follow:

$$e_{i,t} = \mu + \epsilon_{i,t}$$

where $e_{i,t}$ is the forecast errors, μ is a constant, and $\epsilon_{i,t}$ is the error term. Forecasts are unbiased, if μ is statistically significantly not different from zero.

Table 2.4 and 2.5 present the analysis for GDP growth and inflation forecasts. For GDP growth, I control for the *year[=2008]* since Figure 2.1 shows a spike in mean absolute errors in that year. In inflation analysis, I do not include crisis year as forecast errors do not show the same pattern. As in the previous tables, the forecast horizon increases from column 1 to 4. The results show that both IMF and private forecasts show a pessimistic bias. The coefficients are negative and statistically significant. EIU forecasts perform similar to the IMF forecasts, but slightly better. GI forecasts have the smallest average error. As in the previous analysis, BMI forecasts has the highest magnitude in negative bias. The coefficient of *Year[=2008]* is positive and statistically significant indicating that all forecasters overpredict growth in the crisis year. In the

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Table 2.4: Unbiasedness, GDP growth forecasts

	$e_{i,t}^{\text{Autumn}}$	$e_{i,t}^{\text{Spring}}$	$e_{i,t-1}^{\text{Autumn}}$	$e_{i,t-1}^{\text{Spring}}$
IMF	-0.707	-0.763	-0.754	-0.810
	(0.056)***	(0.079)***	(0.101)***	(0.110)***
Year[=2008]	1.293	1.524	6.030	6.546
	(0.186)***	(0.250)***	(0.317)***	(0.328)***
N of observations	1191	1086	1083	976
N of countries	111	111	111	111
GI	-0.567	-0.600	-0.619	-0.547
	(0.065)**	(0.085)**	(0.114)**	(0.120)**
Year[=2008]	1.279	1.613	5.421	6.192
	(0.215)**	(0.282)**	(0.353)**	(0.376)**
N of observations	732	742	659	668
N of countries	76	75	76	75
EIU	-0.698	-0.864	-0.754	-0.884
	(0.057)**	(0.077)**	(0.103)**	(0.111)**
Year[=2008]	1.228	1.712	5.123	6.319
	(0.189)**	(0.255)**	(0.322)**	(0.350)**
N of observations	1065	1066	968	968
N of countries	99	99	99	99
BMI	-0.902	-0.848	-0.980	-1.068
	(0.085)**	(0.117)**	(0.131)**	(0.144)**
Year[=2008]	1.350	1.450	6.849	6.842
	(0.276)**	(0.364)**	(0.399)**	(0.418)**
N of observations	868	821	777	723
N of countries	87	87	87	87

Notes. Standard errors are in parentheses. *p< .05; **p< .01.

case of inflation, IMF and GI current-year forecasts in the Autumn are unbiased, but

they are biased towards optimism for all other forecasting horizons. EIU current year

forecasts are unbiased, while next-year forecasts show negative and statistically

significant bias. Overall, the results show that all forecasts are biased towards optimism

Table 2.5: Unbiasedness, inflation forecasts

	$e_{i,t}^{\text{Autumn}}$	$e_{i,t}^{\text{Spring}}$	$e_{i,t-1}^{\text{Autumn}}$	$e_{i,t-1}^{\text{Spring}}$
IMF	-0.098	0.413	0.811	1.340
	(0.052)	(0.087)**	(0.134)**	(0.130)**
N of observations	1150	1051	1052	946
N of countries	109	19	109	109
GI	0.002	0.155	0.390	0.678
	(0.038)	(0.078)*	(0.124)*	(0.128)**
N of observations	712	726	640	654
N of countries	76	76	76	75
EIU	-0.061	0.027	0.435	0.697
	(0.041)	(0.070)	(0.135)*	(0.137)**
N of observations	1030	1030	938	937
N of countries	98	98	98	98

Notes. Standard errors are in parentheses. *p< .05; **p< .01.

in their next-year forecasts, while IMF forecasts are relatively more optimistic than the other two private forecasts.

Next, I analyze how efficient the forecasts are in using all available information during the time of forecasts. If forecasters are optimal in gathering and evaluating the information, than there shouldn't be any information in the past and current information set that reduces forecast errors. Scholars have examined this aspect of forecasts in several ways. Drechsel, Giesen and Lindner (2014) study how using some common leading indicators, such as oil price, world trade, world-industrial production, can improve forecast quality. Some others examine the forecast revisions (Ashiya, 2006; Krkoska and Teksoz, 2009). Here I focus on the existence of serially correlated errors

Table 2.6: Forecast efficiency, GDP growth

	$e_{i,t}^{\text{Autumn}}$		$e_{i,t}^{\text{Spring}}$	
	γ	β	γ	β
IMF	-0.430	0.206	-0.422	0.159
	(0.058)**	(0.025)**	(0.081)**	(0.027)**
GI	-0.341	0.154	-0.369	0.145
	(0.069)**	(0.031)**	(0.090)**	(0.033)**
EIU	-0.476	0.137	-0.588	0.164
	(0.060)**	(0.025)**	(0.083)**	(0.030)**
BMI	-0.542	0.176	-0.476	0.232
	(0.098)**	(0.034)**	(0.112)**	(0.033)**

	$e_{i,t-1}^{\text{Autumn}}$		$e_{i,t-1}^{\text{Spring}}$	
	γ	β	γ	β
IMF	-0.044	0.205	0.165	0.081
	(0.116)	(0.030)**	(0.134)	(0.031)**
GI	0.053	0.173	0.120	0.135
	(0.133)	(0.038)**	(0.144)	(0.038)**
EIU	-0.133	0.187	-0.161	0.178
	(0.116)	(0.032)**	(0.130)	(0.032)**
BMI	-0.009	0.138	0.012	0.134
	(0.162)	(0.037)**	(0.176)	(0.038)**

Notes. Standard errors are in parentheses.
* p< .05; ** p< .01.

and examine whether it would be possible to improve the forecasts by looking at the past errors.[11] To examine forecast efficiency I use the following equation:

$$e_{i,t} = \gamma + \beta e_{i,t-1} + \epsilon_{i,t}$$

[11]See Dreher, Marchesi and Vreeland (2008); Abreu (2011) for similar analyses.

Table 2.7: Forecast efficiency, inflation

	$e_{i,t}^{\text{Autumn}}$		$e_{i,t}^{\text{Spring}}$	
	γ	β	γ	β
IMF	-0.040	-0.002	0.393	-0.008
	(0.050)	(0.025)	(0.082)**	(0.026)
GI	-0.010	0.021	0.205	0.003
	(0.053)	(0.038)	(0.081)	(0.036)
EIU	-0.0052	0.059	0.110	0.185
	(0.034)	(0.022)*	(0.070)	(0.026)**

	$e_{i,t-1}^{\text{Autumn}}$		$e_{i,t-1}^{\text{Spring}}$	
	γ	β	γ	β
IMF	0.689	0.058	1.141	0.101
	(0.131)**	(0.029)*	(0.141)**	(0.031)**
GI	0.393	0.135	0.507	0.184
	(0.128)**	(0.022)**	(0.130)**	(0.032)**
EIU	0.453	0.105	0.504	0.428
	(0.123)**	(0.024)**	(0.146)**	(0.027)**

Notes. Standard errors are in parentheses.
* p< .05; ** p< .01.

Where $e_{i,t}$ denote current-year forecast errors, $e_{i,t-1}$ are the past year's forecast errors, and $\epsilon_{i,t}$ are the random errors. i and t denote the country and year respectively. If $\beta = 0$, than it means that forecast errors are not serially correlated. And if both $\beta = 0$ and $\gamma = 0$, than it indicates that forecasts are efficient.[12]

Table 2.6 and 2.7 present the efficiency analysis for GDP growth and inflation forecasts respectively. Regarding GDP growth forecasts, the results show that both IMF

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[12]This is defined as "weak efficiency" requirement in the literature. See Krkoska and Teksoz (2009); Abreu (2011).

and private forecasts are inefficient for all forecast horizons. This means that the forecasts could have been improved if past errors were taken into consideration. As for inflation, the IMF forecasts are efficient for Autumn current-year forecasts. The GI current-year forecasts in Autumn and Spring are efficient. On the other hand, the evidence shows that all next-year inflation forecasts are inefficient.

The summary of this section is that both IMF and private forecasts show pessimism in GDP growth and optimism in inflation forecasts. This supports Batchelor's (2001) argument that forecasts may consistently adopt optimistic and pessimistic view. However, the GI and EIU forecasts perform slightly better than the IMF forecasts. The results from the efficiency test clearly shows that all forecasters can improve their forecasting performance by considering their past errors.

2.5   Directional accuracy of forecasts

Forecasts can provide valuable information even if they are inaccurate and/or inefficient. They can provide information about the general outlook of the economy such as acceleration or deceleration of growth. In this section I evaluate the performance of forecasts in predicting the sign of change in GDP growth and inflation. I use the following equations to measure the trend in growth and inflation:

$$\Delta X_{i,t} = X_{i,t} - X_{i,t-1}$$

$$\Delta \widehat{X}_{i,t} = X_{i,t|t-1} - X_{i,t-1|t-1}$$

$\Delta X_{i,t}$ is the actualization value of GDP growth (or inflation) in time t minus in $t-1$. $\Delta \widehat{X}_{i,t}$ is the difference between next-year forecasts and current-year forecasts. $\Delta X_{i,t} > 0$ and $\Delta \widehat{X}_{i,t} > 0$ indicate actual and predicted deceleration in growth (or inflation) respectively.

I compared the sign of the change in actualization values and in forecasts using contingency tables. Table 2.8 present the directional analysis. Overall, forecasts predict the direction of change in approximately 60% of the cases. The success ratio is similar across the forecasts, but EIU forecasts have a slightly higher success ratio. The chi-squared independence tests confirm that there is a significant relationship between the sign of change in actualization values and IMF Autumn forecasts. As for EIU the association is significant for Autumn GDP growth forecasts and for both Autumn and Spring inflation forecasts.

Table 2.8: Directional analysis

	GDP Growth		Inflation	
	Autumn	Spring	Autumn	Spring
IMF	0.649	0.616	0.575	0.545
GI	0.631	0.614	0.624	0.619
EIU	0.670	0.627	0.602	0.583
BMI	0.600	0.596		

Note: p-values above 0.05 are shaded in dark gray.

Finally, I examine the performance of forecasts in predicting the recessions. Following Abreu (2011), I define recessions as the years in which there is a negative GDP growth. I compared the recession years in the forecasts with those in the

actualization values. Table 2.9 presents the years for all forecasting horizons.[13] The results shows that forecasters are better in predicting the recessions in the current year. For instance the IMF and EIU predict approximately 50% of the cases. On the other hand, forecasters do not perform well in predicting recession in the following year. They predict at most about 11% of the cases.

Table 2.9: Forecast performance during recession

	Current-year forecasts		Next-year forecasts	
	Autumn	Spring	Autumn	Spring
IMF	0.578	0.429	0.096	0.059
GI	0.427	0.378	0.075	0.029
EIU	0.548	0.449	0.111	0.059
BMI	0.301	0.204	0.022	0.022

2.6   Conclusion

In this chapter, I examine the relative performance of IMF, GI, EIU and BMI forecasts. I analyze their success in predicting the level, direction, and sign of GDP growth and inflation forecasts. I also investigate whether forecasters were optimal in utilizing all available information during the time of forecasts.

In general, I find that forecast accuracy increases with decreasing forecast horizon. Uncertainty, measured as the standard deviation of forecast errors, also decreases as the time horizon shortens. Overall, IMF and private forecasts perform similarly; the GDP

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[13]I analyze only GDP growth forecasts as negative values in inflation are very infrequent.

growth forecasts from these institutions are pessimistic while inflation forecasts are optimistic.

Regarding the accuracy of forecasts, the RMSE and MAE of private forecasts, excluding the BMI, are smaller than the IMF forecasts. Statistical tests for unbiasedness show that all GDP growth forecasts show negative bias while inflation forecasts are biased towards optimism. On the other hand, GI and EIU forecasts have slightly smaller average bias. As for the efficiency, both IMF and private forecasts fail to use all available information. IMF and GI inflation forecasts are efficient in Autumn current-year forecasts, the GI forecasts are also efficient in Spring current-year forecasts. All forecasts fail to pass efficiency test in the next-year forecasts.

As for directional accuracy, forecasts perform similarly and predict approximately 60% of the cases. EIU forecasts slightly do better than the other forecasts. IMF and private forecasts are also comparable in predicting recession, measured as negative GDP growth. Forecasts are relatively successful in predicting recessions in the current-year but not in the following year. Again, EIU forecasts are slightly better than the other forecasts.

Overall, the analyses in this chapter show that private forecasts perform slightly better than the IMF forecasts. Thus, it merits studying why IMF forecasts underperform and examine whether political economy factors explain this difference. On the other hand, the results show that private forecasts have similar accuracy problems and they generally show the same direction of bias. Thus, studies of IMF bias that look at IMF vs actual values are probably overstating the unique impact of the IMF on bias. Therefore, in the following chapters I concentrate on the difference between IMF and private

forecasts. In the next chapter, using the difference between IMF and private forecasts, I will examine the characteristics of countries receiving optimistic IMF forecasts.

Chapter 3

The political economy of IMF forecast optimism: international organizations' versus private analysts' forecasts

In the previous chapter, I examine the accuracy and efficiency of IMF and private forecasts. I aggregated forecast errors across years and countries to have a general look at their performances. Overall, the results show that private forecasts perform relatively better than the IMF forecasts. In this chapter I study the differences between IMF and private forecasts more closely to understand the political economy of IMF optimism. I show that IMF forecasts are more optimistic for countries that realign their foreign policy preferences towards the United States and that have large outstanding debt to the Fund. These findings lend support to the earlier studies which argue that geopolitical and financial interests of the major shareholders of the Fund and the Fund's bureaucratic incentives to defend its lending activities lead to overly optimistic IMF forecasts.

The chapter is structured as follows. Section 1 briefly discusses the literature on IMF forecast bias. Section 2 presents the theory and hypotheses. Section 3 describes the data and method. Section 4 discusses the results, and a conclusion follows.

3.1 Sources of IMF Forecast Bias

Forecasts on macroeconomic and financial indicators of a country can be quite different from their realization values. They may contain errors due to uncertainty about the future; governments may change their economic policies or a random shock to the world economy may change the expected economic outcomes (Pons, 1999). If forecast errors only occur due to uncertainty about the future, they should add up to zero overtime. However, errors of some forecasts do not show a random pattern, and the cumulative forecast error is significantly different from zero. Earlier studies show that IMF forecasts contain more errors than the forecasts of other IOs such as the Organization for Economic Cooperation and Development (OECD), and both IOs have larger forecast errors than private forecasts (Pons, 1999; Batchelor, 2001; Vaubel, 2009). In the previous chapter, I revisit these studies and compare IMF forecasts with forecasts from three private institutions. My results confirm earlier findings and show that private forecasts perform slightly better than the IMF forecasts.

The literature provides two main explanations to this deviation (Dreher, Marchesi and Vreeland, 2008; Aldenhoff, 2007). The first one is the influence of powerful member countries. According to the literature these countries may use their influence over the Fund either to pursue their geopolitical and financial interests by providing preferential treatment to their close allies. The second explanation for this deviation is IMF's

bureaucratic incentives. The intuition is that the IMF, as any other bureaucratic institution, is concerned about increasing its power and preserving its prestige and reputation (Vaubel, 1996). Thus, it may pursue actions that would help furthering these goals. They may provide optimistic forecasts to defend their lending activities or to hide program failures.

There are a few studies that focus on the political economy of bias in IMF forecasts, but there is extensive literature on bias in IMF lending activities. Following Dreher, Marchesi and Vreeland (2008), I assume that the factors that determine bias in the IMF's lending activities can also explain bias in the IMF forecasts. Therefore, in the following section I will discuss the sources of bias in all IMF activities.

3.1.1 The Influence of Powerful Members

Members of IOs do not have equal powers in the decision making process. The preferences of the powerful members weigh more than the preferences of the less powerful ones. First, most of these organizations are initiated by a group of powerful states and their organizational structures are shaped through negotiations among them. Therefore, the formal structures of these organizations, to some degree, reflect the distribution of power in the international system. Second, in order to ensure their participation, IOs provide some informal rules to accommodate the interests of the powerful members (Stone, 2011). Powerful members of IOs rarely practice these powers in order not to diminish the legitimacy of the organization, but they use them when they have high preference intensity (Copelovitch, 2010). Thus, even though IOs do not

have formal rules that provide an advantage to the powerful members; informal rules provide opportunities to influence the outcomes.

The IMF is no exception; it has both formal and informal rules that give powerful members more leverage in affecting the outcomes. When discussing the influence of the most powerful members over the Fund's decisions, following other studies, I primarily focus on the United States.[1] One reason for this focus is that no other state comes close to matching the US influence over the organization (McKeown, 2009).

Regarding the formal rules, each member of the IMF contributes a quota subscription to the Fund proportional to their economic size. The quota shares then determine the weight of votes for each country. The US has 17.70%, Japan 6.57%, Germany 6.12%, and France and England 4.51% of the total quota shares. Thus, five of the most powerful members of the Fund control approximately 46% of the votes. Additionally, 85% of the votes is required to pass important Fund decisions. Thus powerful members of the Fund, in cooperation with each other, can veto important Fund decisions including the appointment of the managing director.[2]

Second, there are 24 members on the executive board of the IMF; eight of them are appointed by the eight major share holders of the IMF while the other sixteen are elected by groups of remaining countries (Barro and Lee, 2005).[3] It is normal to expect that governments' representatives on the board of IMF serve in the best interests of

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[1]See Thacker (1999); Barro and Lee (2005); Dreher, Marchesi and Vreeland (2008)

[2]These decisions include revision of quota subscriptions, appointment of the managing director and his deputy, the sale of IMF gold reserves, and amendments of the Articles of Agreement (Hexner, 1964). The veto power of the Executive Board does not include IMF lending decisions; loan decisions only require a simple majority (Dreher, Marchesi and Vreeland, 2008)

[3]The eight major shareholders are the United States, Japan, Germany, France, The United Kingdom, Saudi Arabia, China and Russia (Barro and Lee, 2005).

their respective governments. On the other hand, the remaining members of the board which represent 172 member countries can not exert the same influence over the Fund unless every country in this group have a united voice. Moreover, the remaining sixteen members of the executive board are subject to higher levels of turn-over compared to the other eight members (Babb, 2003; Kwitney, 1983). Due to their short employment on the board, these members may have less experience in communicating with the IMF staff and influencing the Fund's decisions.

The voting share and veto power of the US and other major shareholders may not be decisive, since voting is not practiced frequently and countries rarely exercise their veto power (Babb, 2003). The Fund prefers to make decisions on a consensus basis (Mussa and Savastano, 2000). Moreover, the executive board is not directly involved in the IMF's lending and monitoring activities; the IMF staff designs programs and negotiates them with the member countries. On the other hand, even if decisions are made on a consensus basis, powerful countries may exert control over the decisions through informal rules. The IMF staff works in the shadow of the executive board and has to consider the preferences of the major shareholders (Copelovitch, 2010). For instance, the US and French executive directors regularly interview with the IMF staff before and after their missions to member countries. In some cases, such as Mexico, Korea, and Argentina, the US treasury was directly involved in negotiations (Stone, 2011).

The IMF may also conform to the preferences of the US and other major shareholders due to bureaucratic incentives. Fratianni and Pattison (1982) argue that international institutions value self-preservation and the prestige of their institutions.

Straying too far from the powerful members' preferences may reduce prestige and chances for self-preservation. Therefore, the IMF may respond to the preferences of the US and major shareholders more attentively even though the formal structure of the Fund has not provided more power to them.

Finally, many of the top staff members of the Fund are educated in the United States and thus share similar economic views with those in the United States. This provides a unique opportunity for the United States in terms of communicating and making connections within the Fund. Moreover, the IMF headquarters in Washington DC makes monitoring Fund activities much easier for the United States (Babb, 2007; McKeown, 2009). McKeown's (2009) study shows that the US evaluates its own influence over IOs through its dominance in financing these institutions, in the employment of US nationals or US educated/English-speaking individuals, and the ability to monitor and communicate with the staff because of their presence in the United States.

Empirical studies support the claims that powerful members of the IMF, particularly the United States, influence the Fund's decisions. Thacker (1999) shows that US friends are more likely to receive loans from the IMF, especially for countries that move politically closer to the United States. Dreher and Jensen (2007) find that closer allies of the US receive fewer conditions for IMF loans, especially during election times. Similarly, Barro and Lee (2005) find that governments closely allied with the United States are more likely to get loans, and these loans are generally much larger. Stone (2002, 2004) shows that countries allied with the US receive lighter punishments when they do not comply with the IMF programs. Lastly, Dreher, Marchesi and

Vreeland (2008) and Aldenhoff (2007) find that countries which are close allies of the United States receive more favorable forecasts especially during election times.

3.1.2 IMF's Bureaucratic Incentives

Countries delegate authority to the IMF, because it provides global public goods of financial and monetary stability. However, the IMF may undermine the provision of these public goods by providing preferential treatment to certain countries, especially those who are closely allied with the major shareholders of the Fund. On the other hand, even if all major shareholders' preferences were in agreement, the existence of multiple principals and a long chain of delegation would make it difficult to monitor and motivate the Fund's activities (Vaubel, 2006). Thus the Fund can enjoy some level of autonomy.

Independence of the IMF from its principals might be a good thing, since this may insulate the Fund from the political influence of the major shareholders. However, the IMF as any other bureaucratic institution has its own preferences which are increasing its prestige and power by expanding its budget, staff and independence (Vaubel, 2006; Fratianni and Pattison, 1982). Vaubel (1991) shows that the IMF uses "hurry-up lending" activities before a regular quota review in order to convince the members that there is need for quota increase. The IMF staff members also do not want to be seen as unsuccessful when they prescribe policy adjustments to borrowing countries and monitor their compliance. They may extend loans to countries which have large outstanding debt to the IMF and have payment difficulties (Dreher, Marchesi and

Vreeland, 2008). Empirical studies support this argument, showing that countries that borrow from the IMF are more likely to enter into IMF agreements in the future (Broz and Hawes, 2006; Pop-Eleches, 2008).

To maximize its budget the IMF should also convince its shareholders that the borrowing countries are creditworthy. Thus, the IMF may also engage in "defensive forecasting" by providing optimistic forecasts for countries that are under IMF arrangements (Dreher, Marchesi and Vreeland, 2008). Dreher, Marchesi and Vreeland (2008) show that countries under IMF agreements receive overly optimistic forecasts. Beach, Schavey and Isidro (1999) find that IMF forecasts errors increase as IMF funding increases for that region. Similarly, Aldenhoff (2007) shows that IMF's spring and autumn forecasts for Asia and spring forecasts for Latin America are overly-optimistic when IMF lending to these regions is the largest.

3.2   Theory and Hypotheses

As discussed, political and bureaucratic considerations can create incentives to bias IMF forecasts. But why should the IMF risk its reputation as a quality information provider and disseminate inaccurate information? The benefits of preferential treatment in lending activities are tangible, and can outweigh the cost of occasional deviations from the Fund's original mandate. But, do really countries benefit from optimistic forecasts?

One explanation is that the IMF publishes optimistic forecasts as an outcome of favoritism in Fund's other activities. We know from the literature that countries closely

allied with the United States, receive larger loans with fewer conditionalities and these countries are punished lightly for noncompliance.[4] Optimistic forecasts may help the IMF to justify these preferential treatments. We also know that the IMF provide loans to countries that have difficulty in paying their earlier debts. This way, unpaid loans do not show as a loss on their balance sheet (Dreher, Marchesi and Vreeland, 2008). For instance, in 2000 the IMF approved a three year Stand-By Arrangement (SBA) with Argentina and then they augmented the program by $6.5 billion in 2001, despite the fact that Argentina was not complying with the IMF prescriptions. Later, the IMF was criticized by the US for encouraging irresponsible behavior of Argentina (Damill, Frenkel and Rapetti, 2006). The IMF may publish optimistic forecasts for these countries in order to avoid criticisms, at least in the short-run. On the other hand, this does not always mean that the Fund always consciously withhold information about these countries. Some of the forecast bias might arise due to the Fund's underestimation of the country risks and overestimation of the positive economic effects.

Optimistic forecasts can also benefit the incumbent governments directly. In the short-run, economic stabilization programs may generate hardship for the public. Governments can use optimistic forecasts to gain support for certain economic reforms or to reduce public concerns about its outcomes (Fratianni and Pattison, 1982). Further, optimistic forecasts can help governments electorally (Aldenhoff, 2007; Dreher, Marchesi and Vreeland, 2008). Incumbent governments have an incentive to increase public spending and avoid necessary budget cuts during elections years. This way, they hope to convince the public that the economy is doing well. Optimistic forecasts can

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[4]See Thacker (1999); Barro and Lee (2005); Stone (2002)

help governments to justify increasing spending during election years. Finally, governments can use optimistic forecasts to portray the future in a positive light. Voters will reward the incumbent government at the ballot box if they believe the economy will do well in the future (MacKuen, Erikson and Stimson, 1996).

Therefore, I argue that powerful members of the Fund can use their influence at the IMF to receive optimistic forecasts. Aldenhoff (2007) show that IMF forecasts for G-7 countries are optimistic, and for the United States, this optimism is correlated with elections years. Powerful members of the Fund can also reward foreign policy loyalties by helping friendly governments to get favorable IMF forecasts, and thus help them pass economic reforms or get reelected. Finally, major shareholders of the Fund can defend their financial interests in another country with optimistic IMF forecasts, especially if that country's economy is fragile.

This chapter builds on Aldenhoff (2007) and Dreher, Marchesi and Vreeland's (2008) studies, but differs from them in that it focuses on the deviation of IMF forecasts from private forecasts rather than the actualization values. There are three reasons for this choice. First, as shown in Chapter 2, although private forecasts perform slightly better than the IMF forecasts, both IMF and private forecasts show similar errors. Thus, a study of political economy of IMF forecasts should consider private sector forecast errors as well. Second, both private and IMF forecasts are subject to the same random external shocks. By taking their difference, I eliminate forecast errors that are caused by random shocks.

Lastly, I utilize private forecasts as a benchmark for unbiasedness. Private sector forecasters do not have political incentives to bias their forecasts because they are

independent from policymakers. Therefore, Aldenhoff (2007) suggests that a comparison of IMF forecasts with that of private sector can reveal the strategic behavior in IMF forecasting. However, there might be institutional incentives; as discussed in Chapter 2, private forecasters may avoid being too different or they may stick to their earlier mistakes due to reputational concerns. On the other hand, the dual roles of the Fund as the lending and monitoring agency opens doors to more serious institutional incentives to bias the results.[5] Thus relative to the IMF, I assume that private sector has less institutional incentives for bias. I test the following hypotheses:

Hypothesis 1*: Countries that have more formal power at the IMF are more likely to receive optimistic forecasts.*

Hypothesis 2*: Countries that share similar interests with the United States are more likely to receive optimistic forecasts, especially during election years.*

Hypothesis 3*: Countries that have high outstanding debt to the private banks from the powerful members of the Fund are more likely to receive optimistic forecasts.*

Hypothesis 4*: Countries that have prolonged relationship with the Fund are more likely to receive optimistic forecasts.*

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[5]On a similar note, Marchesi and Sabani (2007) argue that these dual roles of the Fund lead to unsatisfactory implementation of the IMF programs.

3.3 Data and Method

3.3.1 Method

The data has time-series-cross sectional (TSCS) structure covering up to ninety-nine developed and developing countries from 2002 to 2012. The data is limited to this period and sample due to data availability.[6] The dependent variable, *Forecast optimism*, is a continuous variable, thus requires a linear model. The Hausman test indicate a significant difference between fixed and random effects specifications. Therefore, to test the hypotheses I use OLS fixed effects model. To control for serial correlation, I include lag of dependent variable. The full model testing the hypotheses is as follows:

$$\text{Forecast optimism}_{i,t+1} = \alpha + \text{Forecast optimism}_{i,t} + \beta_1 \textit{Actual Value}_{i,t}$$

$$+ \beta_2 \textit{Hypotheses}_{i,t} + \textit{Country}_i + \textit{Year}_i + \epsilon_{i,t}$$

Where $e_{i,t}$ denotes the IMF forecast optimism (either for GDP growth and inflation) for a country i and in year t; α and $\epsilon_{i,t}$ are the constant and error terms. *Actual Value*$_{i,t}$ indicates the actualization value of the forecasted indicator in year t. *Hypotheses*$_{i,t}$ is the vector of independent variables. Finally, I use multiple imputation to deal with the missing values. I utilize the whole datasets in imputing the missing values, but use only two variables from the imputed dataset in the final analysis. All coefficients and standard errors are adjusted according to the variation across imputed datasets.

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[6]IMF forecasts for the developing countries are available only after 2002. Also private forecasters do not cover all the countries that the IMF covers.

3.3.2 Data

The dependent variable, *Forecast optimism*, is measured as the difference between IMF and private forecasts.[7] IMF forecast are from IMF World Economic Outlook (WEO) reports which are published biannually in the Spring and Autumn. I concentrate only on Spring next-year GDP growth and inflation forecasts. Because they have the longest time horizon, and thus they are more open to discretionary forecasting.

I use two measurements of private forecasts; one takes Economist Intelligence Unit (EIU) forecasts which are gathered from EIU *Country Reports*, the other takes the average of EIU and Global Insight (GI) forecasts. The GI forecasts are from GI *Country Monitor* reports.[8] Both EIU and GI forecasts are published on a monthly basis. I use the private forecasts that correspond the months the IMF forecasts are published. Forecast optimism is calculated in a way that positive values indicate IMF optimism relative to the private forecasts. I use the following equations to calculate *Forecast optimism*:

$$\text{Forecast optimism}_{i,t+1}^{\text{Growth}} = Forecast_{i,t}^{IMF} - Forecast_{i,t}^{EIU}$$

$$\text{Forecast optimism}_{i,t+1}^{\text{Inflation}} = Forecast_{i,t}^{EIU} - Forecast_{i,t}^{IMF}$$

$$\text{Forecast optimism}_{i,t+1}^{\text{Growth}} = Forecast_{i,t}^{IMF} - \left(\frac{Forecast_{i,t}^{EIU} + Forecast_{i,t}^{GI}}{2}\right)$$

$$\text{Forecast optimism}_{i,t+1}^{\text{Inflation}} = \left(\frac{Forecast_{i,t}^{EIU} + Forecast_{i,t}^{GI}}{2}\right) - Forecast_{i,t}^{IMF}$$

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[7]This might be confusing as forecast optimism and bias are sometimes used interchangeably in the literature. I define forecast optimism as the difference between IMF and private forecasts. I use its interactions with political and bureaucratic variables to define bias; either politically or bureaucratically motivated bias.

[8]In the first chapter I examine three private forecasts; EIU, GI and BMI and compare their accuracy and efficiency to the IMF forecasts. BMI forecasts were the least accurate one, therefore here I only include EIU and GI forecasts. For more detailed discussion of the forecast data please look at the data section of chapter 2.

I have two sets of independent variables. The first set is related to politically strategic motivations in IMF forecasting. A country's formal powers at the IMF increases with its economic size. Therefore, I measure a country's influence at the Fund with the log of *Total GDP*. To measure the financial interests of the powerful members of the Fund, I include a country's *Arrears on private debt* (as a % of GDP) as suggested by (Gould, 2003). Both *Total GDP* and *Arrears on private debt* are from World Bank (WDI) database (WB, 2013).

Political interest is measured by a country's *Political affinity* to the United States.[9] This measurement is based on a country's voting similarity with the United States at the UN General Assembly, but uses a distance-based measure to calculate the preference similarity. The data range from -1 to 1, 1 being the most similar interests. I also include a country's *UN voting* similarity with the US as an alternative measurement. The data are form Strezhnev (2013). Lastly, I interact *Political affinity* with *Elections* to examine whether US allies receive more favorable forecast during election years. The *Elections* data include both executive and legislative elections and are from the Database of Political Institutions (DPI) (Beck et al., 2001).

The second set of variables focus on the Fund's bureaucratic incentives. The primary measurement is the log of a country's *Use of IMF credit*. The data are from WDI Database. As an alternative measurement, I include *IMF arrangements*. This variable is coded as 1 if a country is under an IMF agreement for at least 5 months in a particular year, and 0 otherwise. The data are from Dreher (2006). I supplemented the data for the

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[9]Copelovitch (2010) concentrates on the largest five shareholders of the Fund, but most studies focus only on the United States (see Thacker, 1999; Barro and Lee, 2005).

years 2012 and 2013 from IMF's Monitoring of Fund Arrangements (MONA) database.[10]

IMF forecasts can deviate from the actualization values due to Fund's financial stability concerns. During financial distress, pessimistic forecasts may trigger or exacerbate capital flight. Thus, the IMF might be overcautious in assessing these countries' economies to avoid worsening of the situation. I include two variables, to control for this effect. *Short-term debt*, which is a country's debt that has a maturity of one year or less as a ratio of GDP, controls for a country's liquidity problems. The data are from WDI Database. *Exchange rate regime* controls for a country's vulnerability to the inflation fluctuations. This variable is a five-point index which goes from fixed to floating exchange rate systems. The data are from Ilzetzki, Reinhart and Rogoff (2011) and cover the years from 2002 to 2010. This variable is included only in the inflation analysis.

I expect forecast optimism to increase with the magnitude of the actual values. For instance, we should see more difference between IMF and private forecasts in high levels of inflation. Therefore, I include the actual values of GDP growth and inflation to control for this effect. The data are from WEO Database.[11]

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[10]http://www.imf.org/external/np/pdr/mona/index.aspx

[11]See Table 3.5 in the Appendix for the summary statistics of the data.

3.4   Results

Table 3.1 presents the results for GDP growth forecasts.[12][13] Model 1 is the basic model in which a country's economic size, measured as total GDP, is the only main explanatory variable. Contrary to my expectation, the effect of *Total GDP* is negative and statistically significant. Thus, this result does not lend support to Hypotheses 1 which argues that influential members of the IMF receive more optimistic forecasts. The coefficient of *GDP growth* is positive and statistically significant, suggesting that the difference between IMF and private forecasts increases with the magnitude of the forecasted variable. *Short-term debt* is positively correlated with forecast optimism as expected, but does not reach statistical significance. The findings on these variables remain similar across all models.

Model 2 adds political and financial considerations of Fund's influential members. The effect of *Political affinity* is positive and statistically significant, meaning that countries that share similar interests with the United States receive favorable IMF forecasts. 0.5 unit increase in the affinity score increases forecast optimism by approximately 0.8 point. The coefficient of *Arrears on private debt* is positive as expected, but fails to achieve statistical significance.

In Model 3, I include the interaction between affinity and *Elections* to examine whether close allies of the US receive more favorable forecasts during election years. The coefficient of the interaction term is negative contrary to my expectation, but fails to achieve statistical significance. I do not include elections in the following models.

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[12]Outliers were diagnosed by using Cook's distance test and eliminated from the analyses.
[13]I also tested the hypotheses one at a time. Please see the Appendix for the results.

Table 3.1: Determinants of IMF optimism; IMF vs. EIU GDP growth forecasts

	Model 1	Model 2	Model 3	Model 4	Model 5
Forecast optimism$_{t-1}$	0.017	−0.002	−0.005	−0.005	−0.004
	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)
GDP growth	0.066	0.086	0.090	0.087	0.086
	(0.014) ∗ ∗∗	(0.015) ∗ ∗∗	(0.015) ∗ ∗∗	(0.015) ∗ ∗∗	(0.014) ∗ ∗∗
Total GDP (log)	−0.309	−0.548	−0.576	−0.615	−0.505
	(0.163)∗	(0.172) ∗ ∗∗	(0.174) ∗ ∗∗	(0.178) ∗ ∗∗	(0.174) ∗ ∗∗
Political affinity		1.664	1.789	1.479	
		(0.389) ∗ ∗∗	(0.410) ∗ ∗∗	(0.406) ∗ ∗∗	
Arrears on private debt		0.032	0.021	0.022	0.019
		(0.075)	(0.077)	(0.074)	(0.074)
UN voting					3.497
					(0.934) ∗ ∗∗
Use of IMF credit (log)				0.112	
				(0.071)	
IMF arrangements					0.336
					(0.178)∗
Short-term debt	0.008	0.002	0.003	0.003	0.003
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Elections			−0.167		
			(0.161)		
Political affinity × Elections			−0.090		
			(0.281)		
Number of observations	879	879	870	879	879
Number of countries	99	99	98	99	99
R-squared	0.448	0.354	0.357	0.356	0.356

Notes. Standard errors are in parentheses. * p< .1; ** p< .05; *** p< .01.

Model 4 adds *Use of IMF credit* to Model 2 to test whether IMF's bureaucratic incentives have an effect on IMF optimism. Although the effect is in the expected direction, it is not significant. Model 5 replaces affinity score and *Use of IMF credit* with *UN voting* and *IMF arrangements* variables. The effect of both variables are in the expected direction and statistically significant.

Table 3.2: Determinants of IMF optimism; IMF vs. EIU inflation forecasts

	Model 1	Model 2	Model 3	Model 4	Model 5
Forecast optimism$_{t-1}$	0.451	0.460	0.462	0.460	0.461
	(0.030) ***	(0.019) ***	(0.019) ***	(0.019) ***	(0.019) ***
Inflation	0.108	0.138	0.132	0.135	0.137
	(0.032) ***	(0.026) ***	(0.023) ***	(0.023) ***	(0.023) ***
Total GDP (log)	−0.145	−0.161	−0.104	−0.192	−0.179
	(0.367)	(0.287)	(0.278)	(0.284)	(0.281)
Political affinity		1.028	0.950	0.978	
		(0.597)*	(0.626)	(0.622)	
Arrears on private debt		0.115	0.127	0.112	0.103
		(0.103)	(0.106)	(0.104)	(0.103)
Short-term debt	0.006	−0.004	−0.004	−0.003	−0.004
	(0.021)	(0.020)	(0.019)	(0.019)	(0.019)
UN voting					2.646
					(1.444)*
IMF arrangements					0.225
					(0.286)
Use of IMF credit				0.032	
				(0.112)	
Exchange rate system	−0.049				
	(0.034)				
Elections			0.005		
			(0.253)		
Political affinity × Elections			−0.148		
			(0.441)		
Number of observations	672	872	863	872	872
Number of countries	97	99	98	99	99
R-squared	0.677	0.648	0.649	0.648	0.648

Notes. Standard errors are in parentheses. * p< .1; ** p< .05; *** p< .01.

The coefficient of *Forecast optimism* is positive and statistically significant in all models, suggesting that the direction of IMF inflation forecast optimism persists over the years. *Inflation* is positively and statistically significantly associated with IMF optimism. As in the GDP growth forecast analysis, this suggests that the level of optimism is correlated with the magnitude of the forecasted variable. The results

provide some support for Hypothesis 2. The effect of *Political affinity* is positive and significant in Model 2, but fails to achieve statistical significance in other models. The alternative measurement, *UN voting* is positively and statistically significantly associated with inflation forecast optimism. The results do not lend support for the rest of the hypotheses.

Table 3.3: Determinants of IMF optimism; IMF vs. average private growth forecasts

	Model 1	Model 2	Model 3	Model 4	Model 5
IMF forecast optimism$_{t-1}$	-0.082	-0.094	-0.097	-0.100	-0.105
	$(0.041)**$	$(0.041)**$	$(0.040)**$	$(0.041)**$	$(0.041)**$
GDP growth	0.034	0.044	0.044	0.047	0.046
	(0.012)	$(0.013)***$	$(0.013)***$	$(0.012)***$	$(0.013)***$
Total GDP (log)	-0.271	-0.334	-0.335	-0.435	-0.258
	$(0.138)*$	$(0.148)**$	$(0.149)**$	$(0.154)***$	$(0.152)*$
Political affinity		0.658	0.662	0.506	
		$(0.306)**$	$(0.318)**$	$(0.312)*$	
Arrears on private debt		0.109	0.110	0.096	0.098
		$(0.053)**$	$(0.053)**$	$(0.053)*$	$(0.053)*$
UN voting					2.646
					$(1.444)*$
Use of IMF credit (log)				0.137	
				$(0.058)**$	
IMF arrangements					0.485
					$(0.168)***$
Short-term debt	0.002	-0.002	-0.003	-0.003	-0.002
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Elections			-0.094		
			(0.118)		
Political affinity × Elections			0.038		
			(0.217)		
Number of observations	601	601	601	601	601
Number of countries	70	70	70	70	70
R-squared	0.378	0.390	0.393	0.396	0.399

Notes. Standard errors are in parentheses. * p< .1; ** p< .05; *** p< .01.

Table 3.3 and 3.4 presents the robustness tests on my results. In this analysis, I take the difference between IMF forecasts and the arithmetic average of two private forecasts (EIU and GI). The intuition is that an individual private forecast may deviate from the actual values due to behavioral and/or technical biases. Therefore, the average of private forecasts may give a better assessment of the available information. Thus, comparing IMF forecasts to the average private forecasts is more ideal to understand politically and bureaucratically motivated adjustments in IMF forecasts. The only problem with this choice is that it substantially reduces my sample due to the availability of GI forecasts.

As for GDP forecasts, the results remain similar to those of Table 3.1. But there are some differences that are worth mentioning. In Table 3.3, the coefficient of *Forecast optimism* is negative and statistically significant, indicating that the IMF over corrects past errors. The results also provide stronger support for bureaucratically adjusted forecasts. The effect of *Use of IMF credit* and *IMF arrangements* are both positive and statistically significant. The effect of *Arrears on private debt* is positive as before, but reaches to statistically significance, lending support to Hypothesis 3 which argues that forecasts are adjusted due to financial interests of the powerful members. As for inflation, the results confirm those of Table 3.4. There is some support for politically adjusted forecasts. The coefficient of *Arrears on private debt* becomes statistically significant and remains so in all models. But, the results do not lend support for the remaining hypotheses.

Table 3.4: Determinants of IMF optimism; IMF vs. average private inflation forecasts

	Model 1	Model 2	Model 3	Model 4	Model 5
Forecast optimism$_{t-1}$	0.448	0.448	0.449	0.447	0.448
	(0.030)***	(0.025)***	(0.025)***	(0.025)***	(0.026)***
Inflation	0.110	0.102	0.106	0.102	0.106
	(0.032)***	(0.026)***	(0.027)***	(0.026)***	(0.027)***
Total GDP (log)	−0.173	−0.221	−0.219	−0.275	−0.267
	(0.367)	(0.280)	(0.280)	(0.292)	(0.289)
Political affinity		0.845	0.927	0.762	
		(0.534)	(0.553)*	(0.549)	
Arrears on private debt			0.191	0.184	0.200
			(0.101)*	(0.100)*	(0.103)*
Short-term debt	0.003	−0.004	−0.004	−0.004	−0.005
	(0.021)	(0.017)	(0.017)	(0.017)	(0.017)
UN voting					2.72
					(1.306)**
IMF arrangements					0.221
					(0.309)
Use of IMF credit				0.069	
				(0.106)	
Exchange rate system	−0.236				
	(0.345)				
Elections			0.093		
			(0.213)		
Political affinity × Elections			−0.279		
			(0.393)		
Number of observations	471	599	599	599	599
Number of countries	69	70	70	70	70
R-squared	0.677	0.659	0.661	0.663	0.660

Notes. Standard errors are in parentheses. * p< .1; ** p< .05; *** p< .01.

3.5   Conclusion

In this chapter, I revisit earlier studies that examine the political economy of IMF forecasts. But instead of measuring forecasts errors as the difference between IMF forecasts and actualization values, I compare IMF and private forecasts.

The results mostly confirm earlier findings. I find strong support for politically adjusted forecasts in GDP growth forecasts and a limited one in the inflation forecasts. The results show that countries that share similar interests with the United States receive optimistic forecasts. I also show that countries that are heavily indebted to private banks from powerful members of the Fund receive favorable forecasts, suggesting that these countries use their influence at the Fund to defend their financial interests in the host country. The analysis on GDP growth provide support for bureaucratically adjusted forecasts. The IMF GDP growth forecasts are more optimistic for countries that are under an IMF program or that have large outstanding debt to the Fund. However, I do not find the same pattern in the inflation forecasts.

Overall, this chapter shows that IMF forecasts are systematically more optimistic than the private forecasts for certain countries. This finding is important given that one of most important function of the Fund is to monitor member countries' economic performances. So now the question is how other actors in the international system, such as market forces and governments, respond to this information. In the following chapter, I will examine how investors respond to the IMF forecasts as they differ from those of private firms and ask whether investors discount this information or utilize it in their investment decisions as it may contain some non-economic information.

3.6 Appendix

Table 3.5: Summary statistics, Forecast optimism

Variable	Mean	Std. Dev.	Min	Max
GDP growth forecast optimism	0.199	1.488	−7.800	21.300
Inflation forecast optimism	0.531	4.57	−14.900	105.700
GDP growth forecast optimism	0.055	1.062	−3.850	12.900
Inflation forecast optimism	0.406	3.36	−13.050	61.150
Total GDP (log)	24.86	1.876	20.360	29.74
GDP growth	4.227	5.109	−62.080	104.500
Inflation	7.235	16.108	−9.863	325.000
Political affinity	−0.437	0.362	−0.938	0.962
UN voting	0.337	0.153	0.088	0.941
Arrears on private debt	0.750	1.444	0.000	19.780
Use of IMF credit (log)	11.41	9.781	0.000	24.09
Short-term debt (% GDP)	8.296	7.081	0.000	55.590
Exchange rate system	2.037	0.97	1	5

Notes. Forecast optimisms in bold text utilize average private forecasts

Table 3.6: Determinants of IMF optimism; IMF vs. EIU GDP growth forecasts

	Model 1	Model 2	Model 3	Model 4	Model 5
Forecast optimism$_{t-1}$	0.006	0.017	0.007	0.012	0.013
	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)
GDP growth	0.089	0.072	0.087	0.077	0.074
	$(0.015) * * *$	$(0.014) * * *$	$(0.015) * * *$	$(0.014) * * *$	$(0.014) * * *$
Short-term debt	0.006	0.008	0.007	0.010	0.009
	(0.015)	(0.016)	(0.015)	(0.015)	(0.015)
Political affinity	1.195				
	$(0.367) * * *$				
Arrears on private debt		0.060			
		(0.077)			
UN voting			2.545		
			$(0.869) * * *$		
Use of IMF credit (log)				0.131	
				$(0.064) * *$	
IMF arrangements					0.448
					$(0.177) * *$
Number of observations	887	887	887	887	887
Number of countries	99	99	99	99	99
R-squared	0.331	0.321	0.328	0.320	0.325

Notes. Standard errors are in parentheses. * p< .1; ** p< .05; *** p< .01.

Table 3.7: Determinants of IMF optimism; IMF vs. EIU inflation forecasts

	Model 1	Model 2	Model 3	Model 4	Model 5
Forecast optimism$_{t-1}$	0.467	0.464	0.466	0.468	0.468
	$(0.018)***$	$(0.018)***$	$(0.018)***$	$(0.018)***$	$(0.018)***$
Inflation	0.131	0.126	0.132	0.127	0.127
	$(0.022)***$	$(0.022)***$	$(0.023)***$	$(0.022)***$	$(0.022)***$
Short-term debt	-0.001	0.000	-0.001	0.002	0.001
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Political affinity	0.885				
	$(0.537)*$				
Arrears on private debt		0.118			
		(0.102)			
UN voting			2.354		
			$(1.275)*$		
Use of IMF credit				0.080	
				(0.099)	
IMF arrangements					0.324
					(0.279)
Number of observations	880	880	880	880	880
Number of countries	99	99	99	99	99
R-squared	0.646	0.647	0.646	0.646	0.646

Notes. Standard errors are in parentheses. * p< .1; ** p< .05; *** p< .01.

Chapter 4

The Effect of IMF Forecasts on Investors' Behavior

Previous chapter shows that the Fund provides optimistic forecasts to countries that are closely allied with the United States and/or that have a prolonged relationship with the Fund. In this chapter, I examine how investors respond to these favorable forecasts, given that private forecasters provide similar, but more accurate information. I argue that the sources of forecast optimism provide additional non-economic information to the investors and investors respond to this information accordingly. Defensive forecasting signals about the Fund's commitment to help a country with balance of payment difficulties. Forecast bias due to US influence reinforces these expectations but it also suggests long-term improvement of economic conditions and investment climate. Employing a fixed effects model for eighty-six emerging and developing economies from 2002 and 2012, this chapter shows that the marginal effect of forecasts on FDI inflows increases with politically motivated bias. Sovereign spreads markets respond positively both to the politically and bureaucratically motivated bias.

The chapter proceeds as follows: The next section discusses the theory and hypotheses. Section 2 describes the data and method. Section 3 presents the results and a brief conclusion follows.

4.1   Theory and Hypotheses

In this section, I theorize that forecast bias provide new information to the investors. Before outlining my theory, I briefly discuss how IMF forecasts might provide additional information beyond that of private forecasts.

IMF forecasts provide valuable information to the market if they reflect the objective condition of the economy. The IMF has extensive resources and can exploit the economies of scale in gathering information about member countries. This is especially important for developing countries where there are some concerns about the quality of information provided by domestic institutions. Moreover, Private forecasters and rating agencies may not have enough resources in these countries to fully evaluate the economic conditions, and therefore they may prefer to be conservative in their forecasts.[1] Thus IMF may have special information on the economies of these countries which could be conveyed through the macroeconomic forecasts.

Additionally, investors consider the political situation as well as macroeconomic fundamentals when they invest in a foreign country. The democracy level of a regime and a governments' commitment to property rights increases FDI inflows (Li and

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[1]Ferri (2004) argues that rating agencies underinvest in developing countries. Increasing efforts from these agencies lead to increases in ratings of non-OECD countries, proving that these agencies have lower investment capacities in developing countries.

Resnick, 2003; Jensen, 2008). Regarding sovereign credit markets, scholars argue that not only governments' ability to pay their debts but also their willingness to pay is important in calculating the default risk of a country (Cantor and Packer, 1995; Larraín, Reisen and Von Maltzan, 1997). Thus, politics matter to the investors and perhaps it matters more in the cases of developing countries where there is more uncertainty. Mosley (2003) argues that for "good credit risk" countries, investors look at broad economic indicators such as inflation and budget deficit. On the other hand, investors consider a wide range of country specific information for "bad credit risk" countries. Biased forecasts may include some information other than what the forecast indicator actually measures that would be useful for the investors. For example investors may not take favorable inflation forecasts at face value, but as an indicator of IMF's trust in the government's management of the economy.

Thus, by publishing favorable forecasts, the IMF may provide some additional information about member countries' political and economic climates or the Fund's resolve to help these countries in difficult economic conditions. There are a few studies which examine the political economy of IMF forecasts. Their findings show that IMF forecasts are biased due to US influence and the Fund's bureaucratic incentives (Dreher, Marchesi and Vreeland, 2008; Aldenhoff, 2007). However, to my knowledge, there are no studies that analyze the effect of biased forecasts on investors. The closest to this project is Fratzscher and Reynaud's (2011) work which analyzes the effect of the IMF's Public Information Notice (PIN) releases on financial markets.[2] They find that financial

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[2]The IMF issues PINs after Executive Board discussions of Article IV consultations with member countries. These reports assess member countries' economic and financial policies and long-term program engagements.

markets react more positively to PIN releases for the countries that have political influence at the IMF. However, they do not examine the mechanisms or the causes of this effect. This chapter fills the gap in this literature by analyzing the effect of biased forecasts on investors. To do so, I differentiate forecast biases according to their sources: bias due to the US influence and bias due to the IMF's bureaucratic incentives.

The two sources of bias can have different effects on investors. First, forecast bias due to US influence indicates a country's geopolitical and financial importance to the United States. Since the United States is concerned about the political and economic stability of these countries, forecast bias strengthens the idea that the US will pressure the Fund to support these countries during bad economic times. Previous scholarship on IMF shows that the United States uses its influence over the Fund to provide larger loans to its allies (Thacker, 1999; Copelovitch, 2010). US allies also receive fewer conditionalities and they are punished lightly for noncompliance (Dreher and Jensen, 2007; Stone, 2002, 2004). Stone (2011) finds that IMF loans are larger for US allies, especially if they are vulnerable to sudden reversals of international capital flows.

The possibility of financial support from the IMF may have positive effects on sovereign credit markets.[3] Investors may increase lending to high risk countries if they believe that the United States will intervene and bail them out through the IMF. For less mobile capital markets, long-term economic conditions are more important. Preferential treatment from the IMF due to the political closeness to the United States may indicate long-term improvements in economic conditions such as an increase in

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[3](Eichengreen, Kletzer and Mody, 2006) show that spreads on bonds are lower for countries that are under IMF programs.

trade volume and economic cooperation. Studies show that countries that have similar national preferences and that have peacefull relationships have higher levels of trade (Gartzke, 1998; Pollins, 1989; Dixon and Moon, 1993). The United States also sometimes pursue bilateral and regional trade agreements to reward foreign policy loyalties, to solidify partnership or to encourage further democratization and liberalization (Feinberg, 2003; Rosen, 2004). These agreements provide each country with market access and create more stable and transparent investment environment. Hence, they increase FDI inflows (Büthe and Milner, 2008).

Moreover, previous studies of US foreign trade have shown that political and strategic considerations are important determinants of aid allocations (Alesina and Dollar, 2000). Thus, favorable IMF forecasts due to US influence may indicate that the country will receive aid from the United States. Foreign aid improves the investment environment by having a positive effect on economic growth and human capital or by decreasing investment risk.[4] Hansen and Tarp (2001) show that increased aid flows are associated with increased investment for most of the receiver countries. The United States also encourages investment in allied countries by providing insurance to the investors through Overseas Private Investment Corporation (OPIC). For example, OPIC allocated $2 billion to support private investment in the Middle East and North African region in order to encourage private investment and help peaceful transformation of the region after the Arab uprisings.[5] To summarize, having close relationship with the

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[4]For foreign aid's effect on economic growth and human capital see Kosack and Tobin (2006) for investment risk see Asiedu, Jin and Nandwa (2009).
[5]Letter from the President, OPIC 2011 Annual Report

United States may provide a country with some economic advantages and preferential treatment from the IMF due to US influence may reinforce these expectations.

A country's political and financial importance to the United States is generally known by the market. It's not the political closeness, but the United States' willingness to use its influence over the Fund that signals new information to the investors. As discussed earlier, powerful members of international organizations refrain from using their influence over the IOs frequently because it may decrease the legitimacy of the organization. Thus, by providing a favorable forecast, the United States is sending a costly signal to the investors. Moreover, favorable forecasts may indicate particularly good relationship between the United States and the incumbent government. Therefore, I test the following hypotheses:

Hypothesis 1: FDI will respond more favorably to IMF forecasts if they are biased due to political proximity to the United States.

Hypothesis 2: Sovereign credit markets will respond more favorably to IMF forecasts if they are biased due to political proximity to the United States.

Forecast bias due to bureaucratic incentives signals investors about the Fund's commitment to help that country with payment problems. This may create moral hazard problems and encourage investors to take higher risks. Haldane and Scheibe (2004) show that around IMF bail-out times, creditor banks' share prices increases significantly. The effect is especially substantial when the IMF announces larger loans.

Similarly, Lee and Shin (2008) show that as the likelihood of IMF lending for a country increases the relationship between sovereign spreads and economic fundamentals decreases, thus suggesting that creditors are more likely to take risks when IMF is involved. Although other scholars find mixed empirical support for the moral hazard argument, taken together these results show that the safety net IMF provides increases moral hazard problems.[6]

I argue that international creditors will respond to optimistic forecasts favorably if they are adjusted bureaucratically. This bias signal investors that IMF will support that country with balance of payment difficulties. I do not expect a similar relationship between FDI inflows and bias. Foreign direct investors are more likely to be concerned about the macroeconomic fundamentals of the country. They may not see IMF involvement as a sign of progress, but rather as a sign of weakness. Jensen (2004) find that a country that participate in IMF agreement receives 25% less FDI inflows than a country that does not participate. Therefore, I test the following hypotheses:

Hypothesis 3: *FDI will respond less favorably to IMF forecasts if they are biased due to the Fund's bureaucratic incentives.*

Hypothesis 4: *Sovereign credit markets will respond more favorably to IMF forecasts if they are biased due to the Fund's bureaucratic incentives.*

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[6]There are also studies that find no support for this argument. Lane and Phillips (2000) find that few of the IMF interventions in 1990s led to significance decrease in spreads on bonds. Similarly Kamin (2004) find little support for moral hazard argument after 1998.

4.2 Data and Method

4.2.1 Method

I examine the effect of optimistic IMF forecasts on two variables; FDI inflows and sovereign bond spreads. The data on FDI inflows have time-series-cross sectional (TSCS) structure covering up to eighty-six emerging and developing countries from 2002 to 2012.[7] Because of the data structure, I expect some heterogeneity across countries and years; the dependent variable, FDI inflows as a percentage of GDP, is a continuous variable. Therefore, to test the hypotheses I employ an OLS model with fixed effects specification. I also include the lag of dependent variable to control for serial correlation.

Sovereign bond spreads analysis covers up to sixteen emerging economies from 2002 to 2012.[8] I take the natural log of sovereign spreads to have a normally distributed dependent variable which is a common practice in the literature.[9] As in the FDI analysis, I employ a fixed effects model with country and year effects. Both for FDI and sovereign spreads, I lagged all control variables by one year to control for reverse causality.[10]

I assume that IMF forecasts on emerging and developing economies are more relevant for the investors. First, because investors show concerns about the quality and availability of information provided by their governments and there is some evidence

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[7]See Table 4.3 in the Appendix for the list of the countries

[8]See Table 4.3 in the Appendix for the list of the countries. The countries in bold character are included in the sovereign spreads analysis.

[9]See Cantor and Packer (1997); Min et al. (2003)

[10]Outliers and influence points are identified using Cook's distance and removed from the analyses.

that private information providers underinvest in these countries (Mosley, 2003; Ferri, 2004) Second, advanced economies rarely need financial support from the IMF.[11] Thus, it is safe to assume that investors are less attentive to IMF information on these countries. Hence, the analyses in this section concentrate on only emerging and developing countries.

4.2.2 The Data

The first dependent variable, FDI inflows, is measured by foreign direct investment inflows (% GDP) into a country each year. The data are from the World Bank's World Development Indicators (WDI) database. The second dependent variable, sovereign bond spreads, is calculated as the premium paid by an emerging market over a US government bond. The data on yields are from JP Morgan's Government Bond Index-Emerging Markets (GBI-EM) indices. The data are quarterly; I use the second and fourth quarter values which correspond to the periods in which the IMF publishes its inflation and GDP growth forecasts.

The main independent variables for both analyses are; *IMF inflation* and *GDP growth forecasts* and their interactions with politically and bureaucratically motivated bias.[12] The IMF forecasts are collected from the IMF's World Economic Outlook (WEO) reports. These reports are published biannually and include four types of forecasts: Spring forecasts for the current and the following year, and Fall forecasts for the current

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[11]It is only very recently that some advanced economies such as Greece, Portugal, Ireland, and Cyprus entered into agreements with the IMF.

[12]Politically and bureaucratically motivated bias are two-way interactions between forecast optimism and political/bureaucratic variables. Thus, in practice, I have three-way interaction terms

65

and the following year. For FDI analysis, I use Fall forecasts for the following year. For sovereign spreads I use both Spring and Fall forecasts for the following year so that they correspond to second and fourth quarter sovereign spreads values. I focus only on next-year forecasts, because they have longer time horizon, and therefore there is more room for discretionary forecasting (Dreher, Marchesi and Vreeland, 2008). Next-year forecasts also enable me to avoid reverse causal relations.

Building on the findings in Chapter 2, I consider private forecasts as a benchmark for political and bureaucratic unbiasedness. Therefore, I measure *Forecast optimism* as the difference between IMF and private forecasts. Private forecasts are gathered from Economist Intelligence Unit (EIU) *Country Reports*. EIU publishes monthly forecasts, but I use only the forecasts that are published in the same month of IMF forecasts. If forecasts were not available for that month, I use the closest forecast preceding the month of IMF publication.

To measure politically motivated bias, I interact forecast optimism with change in a country's *Political affinity* score. This measurement is based on a country's voting similarity with the United States at the UN General Assembly, and indicates how much a country realigns its foreign policy towards the United States.[13] The data range from -1 to 1, with higher values indicating movement towards US preferences. Similarly, to measure bureaucratically motivated bias I interact IMF forecast optimism with a country's *Use of IMF credit* as a percentage of its quota at the Fund. As noted earlier the Fund provides optimistic forecasts to countries that have large outstanding credit in order to defend its lending practices (Dreher, Marchesi and Vreeland, 2008). Also these

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[13]See Strezhnev (2013) for the details of the measurement.

countries are likelier to receive IMF loans in the future (Ramcharan, 2003). Thus, the variable, *Use of IMF credit*, captures the Fund's incentives to adjust the forecasts due to bureaucratic motivations.

4.3   Results

Finally, I control for other determinants of FDI and sovereign bond spreads. For FDI, I control for market size, economic development, *trade openness*, *Natural resource rents*, *Democracy level* and *State fragility*. Market size, economic development and trade openness are proxied by the log of *Total GDP* (in current US dollars), the log of *GDP per capita* and the sum of exports and imports (% GDP); all form WDI Database. I expect these variables to have a positive effect on FDI inflows. Democracies have higher policy stability and fewer property rights violations (Jensen, 2003). Therefore, I expect *Democracy level* to encourage more FDI inflows. Stable political regimes also provide predictable environment for the investors. To measure stability, I include *State fragility* which is a composite index of a country's economic, political, social and security effectiveness and legitimacy. The data range from 1 to 24, higher values indicating high state fragility. I expect a negative association between *State fragility* and FDI inflows. The data on both *Democracy level* and *State fragility* are from Polity IV dataset (Marshall and Jaggers, 2012). Countries with natural resources provide lucrative profits to investors. Therefore, I expect a positive relationship between FDI inflows and *Natural resource rents*. The data are from WDI database.

Table 4.1: The effect of IMF GDP growth forecasts on FDI inflows

	Model 1	Model 2	Model 3
IMF growth forecast		0.164	0.147
		$(0.064)**$	$(0.062)**$
Forecast optimism		−0.258	−0.460
		$(0.118)**$	$(0.133)***$
Δ Political affinity		−1.746	
		(1.751)	
Use of IMF credit			−0.131
			(0.170)
IMF growth forecast × Forecast optimism		−0.014	0.037
		(0.012)	$(0.013)***$
IMF growth forecast × Forecast optimism × Δ Political affinity		0.348	
		$(0.152)**$	
IMF growth forecast × Forecast optimism × Use of IMF credit			−0.045
			$(0.011)***$
FDI$_{t-1}$	0.522	0.377	0.368
	$(0.023)***$	$(0.033)***$	$(0.032)***$
Total GDP (log)	−0.111	−0.328	−1.084
	(0.904)	(1.066)	(1.003)
GDP per capita (log)	−0.408	0.033	0.778
	(1.023)	(1.212)	(1.154)
Trade openness	0.016	0.021	0.017
	$(0.008)*$	$(0.010)**$	$(0.009)*$
Democracy Level	0.033	−0.016	−0.027
	(0.062)	(0.067)	(0.064)
State fragility	−0.034	0.000	0.048
	(0.089)	(0.102)	(0.097)
Natural resource rents (% GDP)	0.045	0.046	0.047
	$(0.016)***$	$(0.017)**$	$(0.016)***$
Inflation	−0.033	−0.027	−0.025
	$(0.012)***$	(0.019)	(0.018)
Number of observations	891	698	700
Number of countries	86	75	75
R-Squared	0.420	0.330	0.344

Notes. Standard errors are in parentheses. *p< .1; **p< .05; ***p< .01.

For sovereign bond spreads, I control for *Balance of trade* (as of GDP), *Fiscal balance* measured as the overall budget balance relative to GDP, *GDP per capita* and *Total GDP* (log). An increase in these variables indicates an increase in the governments' ability to pay their debt. Therefore, I expect a negative relationship between these variables and sovereign spreads. The data on the *Balance of trade* and *Fiscal balance* are from the Business Monitor International (BMI) Database. *GDP per capita* and *Total GDP* are from WDI Database. I also control for *Total external debt* (as of GDP) and *Default history*. I expect *Total external debt* to have a positive effect on sovereign spreads. The data are from BMI Database. *Default history* is coded as 1 if a country has defaulted on foreign currency-dominated debt since 1970. Countries that defaulted on their debts have the difficulty of tapping into international financial markets (Ozler, 1991). Therefore, I expect a positive association between default history and sovereign spreads. The data on default history are from Tomz and Wright (2010); I supplemented the data for the recent years using Standard and Poor's resources.[14]

Moreover, to control for external shocks, I use *three-month US Treasury bill rate* and *Oil prices*. I expect positive coefficients for the Treasury bill rate and crude oil prices. The data are quarterly, but I use only values of second and fourth quarter. The data on US T-bill are from Datastream database. The data on oil prices are gathered from the European Central Bank's (ECB) Statistical Data Warehouse Database.[15]

Table 4.1 presents the results on the impact of IMF forecasts on FDI inflows conditional on the type of bias. Model 1 is the base model in which I only include the

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[14]http://www.standardandpoors.com
[15]Summary statistics are provided in the Appendix.

control variables. The coefficient of the lagged dependent variable is positive and statistically significant meaning that previous foreign investments into a country creates inertia and attracts new foreign investments. *Natural resource rents* is positively associated with FDI inflows as expected indicating that countries with natural resources such as oil, attract more foreign investment. *Trade openness* is also positively associated with FDI inflows. The effect of these variables remain similar across all models. The coefficient of *Inflation* is negative and statistically significant, but loses significance in the Models 3 and 4.

Model 2 examines the effect of IMF GDP growth forecasts on FDI inflows conditional on politically motivated bias. The three-way interaction between *GDP growth forecasts*, *Forecast optimism* and ∆*Political affinity* captures this effect.[16] The coefficient of the interaction term is positive and statistically significant as expected.[17] Still, the effect of interaction term can not be understood properly by focusing only on the coefficients (Brambor, Clark and Golder, 2006). Thus, I calculate the marginal effects of GDP growth forecasts and graphically displayed them with 90% confidence intervals in Figures 4.1 and 4.2.

In regard to the marginal effect of GDP growth forecasts there are three possible outcomes: first, if investors do not trust the IMF information, the marginal effects of forecasts on FDI inflows should decrease as bias increases; second, if investors trust the IMF information but bias does not provide any additional information, the marginal effect of forecasts should remain the same across all bias levels; finally, if bias provides

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[16]Note that the interaction between forecast optimism and affinity score measures politically motivated bias.

[17]The analysis include all components of the three-way interaction term as suggested by Brambor, Clark and Golder (2006). But I do not report all of them for reasons of brevity.

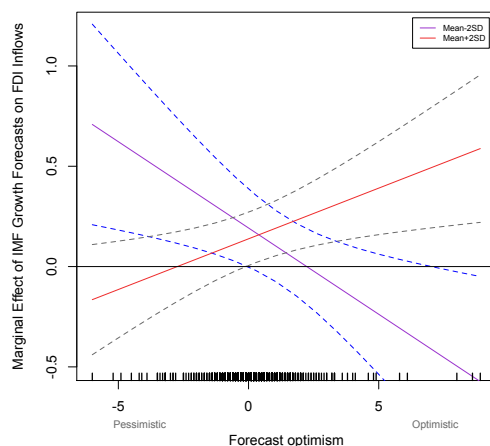positive information to the investors, the marginal effect of forecasts should increase as bias increases.

Figure 4.1.: Marginal effects of IMF GDP growth forecasts on FDI inflows conditional on politically motivated bias. Δ*Political Affinity* is set constant.
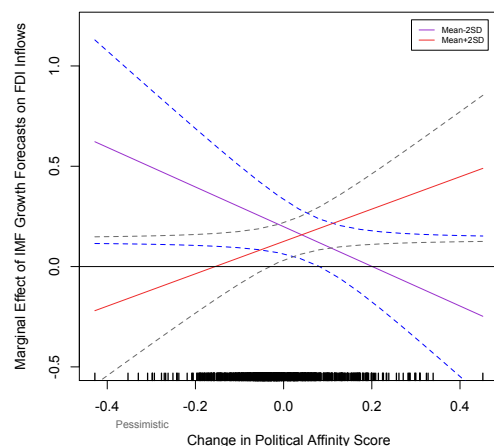
Figure 4.2.: Marginal effects of IMF GDP growth forecasts on FDI inflows conditional on politically motivated bias. *Forecast optimism* is set constant.

Figure 4.1 displays the marginal effect of forecasts on FDI inflows conditional on forecast optimism and Δ*Political Affinity*. The latter variable is set constant at two standard deviations below and above its mean value. The graph shows that marginal effects of IMF growth forecasts increase with optimism for countries that move politically closer to the United States. The opposite is true for countries that move politically away from the US. Figure 4.2 displays the marginal effects of IMF growth while forecast optimism is set at constant values. The graph shows that for an optimistic forecast, the marginal effects of growth forecasts increases as countries move politically closer to the United States. Overall, the results show that investors respond bias more positively for countries that move closer to the United States. Thus, the

results support Hypothesis 1 which argues that FDI inflows will respond more favorably to optimistic IMF forecasts if the optimism is motivated by US political interests.
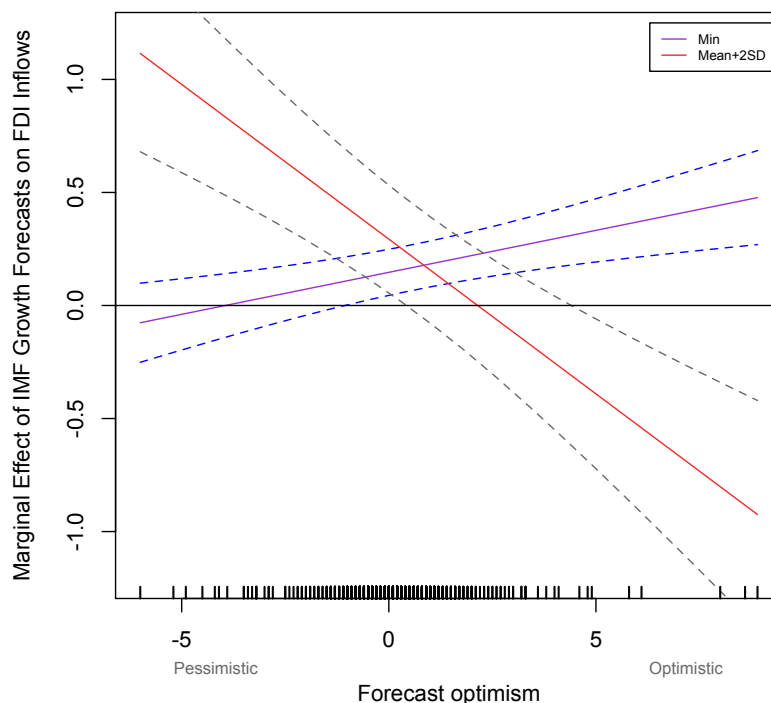
Figure 4.3.: *Marginal effects of IMF GDP growth forecasts on FDI inflows conditional on bu-reaucratically motivated bias. Use of IMF Credit is set constant.*

Model 4 examines the effect of GDP growth forecasts on FDI inflows conditional on bureaucratically motivated bias. Thus, it replaces the Δ*Political affinity* variable in Model 2 with *Use of IMF credit*. The coefficient of GDP growth forecast is positive and statistically significant as in Model 2. The triple interaction term is negatively and statistically significantly associated with FDI inflows as expected. But, to further

analyze the effect of bureaucratically motivated forecasts, Figure 4.3 displays the marginal effects. The figure shows that marginal effects of growth forecasts decreases with IMF optimism for countries that have large outstanding debt to the Fund. Thus, foreign investors discounts IMF optimism when it is bureaucratically motivated. On the other hand, this effect is significant only for overly optimistic forecasts. The graph also shows that investors respond positively to the forecast optimism for countries that have no outstanding debt to the Fund. Thus, according to my theory when there is no reason for bureaucratically motivated bias. To summarize, the results lend limited support to Hypotheses 3 and show that foreign investors discount IMF forecasts when they are adjusted due to Fund's bureaucratic incentives.

Table 4.2 presents the results from estimation of sovereign bond spreads. Model 1 includes only the control variables; *Balance of trade* has a negative and statistically significant effect on sovereign spreads. The coefficient of *Total external debt* is positive and statistically significant meaning that as a country's ability to pay its debt increases the costs of future borrowing decreases. Thus, liquidity and solvency concerns are important indicators of sovereign spreads. These results remain similar across all models. *Fiscal balance* is negatively associated with sovereign spreads as expected, but it loses statistical significance in the following models. Inflation reduces returns on investment, thus countries with high levels of inflation borrow more costly. As expected the results show that *Inflation* has a positive affect on sovereign spreads. Contrary to my expectation, the coefficient of *Oil prices* is negative, suggesting that an increase in oil prices increases a country's ability to pay their debt obligations. This can be true for

Table 4.2: The Effect of IMF forecasts on sovereign bond spreads

	Model 1	Model 2	Model 3	Model 4
IMF inflation forecasts		0.083	0.083	
		(0.019) ***	(0.023) ***	
IMF growth forecasts				−0.129
				(0.024) ***
Forecast optimism		0.146	0.122	0.071
		(0.035) ***	(0.035) ***	(0.080)
ΔPolitical affinity		0.855		
		(0.537)		
Use of IMF credit			0.086	−0.055
			(0.032) ***	(0.038)
IMF forecasts × Forecast optimism		−0.015	−0.009	0.023
		(0.005) ***	(0.004) **	(0.015)
IMF forecasts × Forecast optimism × ΔPolitical affinity		−0.182		
		(0.079) **		
IMF forecasts × Forecast optimism × Use of IMF credit			−0.003	−0.023
			(0.005)	(0.008) ***
Balance of trade	−0.057	−0.058	−0.061	−0.058
	(0.009) ***	(0.010) ***	(0.010) ***	(0.009) ***
Fiscal balance	−0.019	−0.018	−0.013	0.006
	(0.012)*	(0.012)	(0.013)	(0.010)
Total external debt	0.010	0.009	0.004	0.005
	(0.002) ***	(0.002) ***	(0.003)*	(0.002)*
GDP per capita (log)	−0.042	0.040	0.004	−0.242
	(0.103)	(0.108)	(0.110)	(0.106) **
GDP growth	0.010	−0.005	−0.000	
	(0.008)	(0.010)	(0.010)	
Inflation	0.033			0.020
	(0.007) ***			(0.008) ***
Default history	0.153	0.148	0.198	0.111
	(0.299)	(0.294)	(0.298)	(0.280)
3 Month US Treasury Bill rate	0.002	0.009	0.010	0.007
	(0.014)	(0.014)	(0.015)	(0.014)
Oil prices	−0.003	−0.002	−0.004	0.001
	(0.002)*	(0.002)	(0.002) **	(0.002)
Number of observations	269	263	263	272
Number of countries	16	16	16	16
R-Squared	0.289	0.357	0.331	0.400

Notes. Standard errors are in parentheses. *p< .1; **p< .05; ***p< .01.

countries that are oil-exporters. Thus, oil-producing countries in my data might be driving this result.

Model 2 of Table 4.2 examines the effect of inflation forecasts on sovereign spreads conditional on politically motivated bias. The three-way interaction term between *IMF Inflation forecasts*, *Forecast optimism* and Δ*Political affinity* tests this effect. As in the GDP growth forecasts, there are three possible ways in which the interaction term can affect sovereign spreads. They follow the same logic, but since higher inflation is not desirable the expectations are in opposite with those of the GDP growth forecasts. First, the marginal effects of inflation forecasts should increase with bias, if investors do not have confidence in the IMF forecasts. Because inflation should be higher than the IMF's projections. Second, if investors believe that the IMF forecasts reflect the true conditions of the economy, the marginal effect of inflation forecasts should remain the same for any bias level. Lastly, if forecast bias provides additional information to the investors, the marginal effect of inflation forecasts should decrease as bias increases.

Inflation forecasts is positively associated with sovereign spreads. The effect of forecast optimism is positive and and statistically significant indicating that sovereign bond investors discount IMF forecasts when they are more optimistic than the private forecasts. As expected, the coefficient of the three-way interaction term is negative and statistically significant. To analyze the interaction effects better, I plot the marginal effects of inflation forecasts with corresponding confidence intervals in Figures 4.4 and 4.5. In Figure 4.4, Δ*Political Affinity* variable is set constant at two standard deviations below and above its mean value. The graph shows that the marginal effects of IMF inflation forecasts on sovereign spreads decreases with forecast optimism for countries

that realign their foreign policy preferences towards the United States. Thus, investors

discount the negative effect if inflation on their investment for these countries. In

Figure 4.5, *Forecast optimism* is set at constant values. Similarly, the graph shows that for

an optimistic forecast, the marginal effects of the inflation decreases as countries move

politically closer to the United States. Thus, both results support Hypotheses 2 which

argues that sovereign credit markets respond positively to IMF forecasts if they are

biased due to political proximity to the United States.

Figure 4.4.: Marginal effects of IMF inflation forecasts on sovereign spreads conditional on politically motivated bias. ΔPolitical Affinity is set constant.

Figure 4.5.: Marginal effects of IMF inflation forecasts on sovereign spreads conditional on politically motivated bias. *Forecast optimism* is set constant.

Model 3 analyzes the effect of inflation forecasts on sovereign bond spreads

conditional on bureaucratically motivated bias. Thus, I replace ΔPolitical affinity in

Model 2 with *Use of IMF credit*. The triple interaction term has a negative effect on

sovereign spreads but does not reach statistical significance. Figure 4.6 displays the

marginal effects of inflation forecasts with the corresponding 90% confidence intervals. The figure shows that the marginal effect of inflation forecasts decreases as forecast optimism increases. The slope is steeper for countries that have large outstanding credit to the Fund, however the confidence intervals for both category of countries overlap, thus there is no statistically significant difference between low and high borrowing countries.
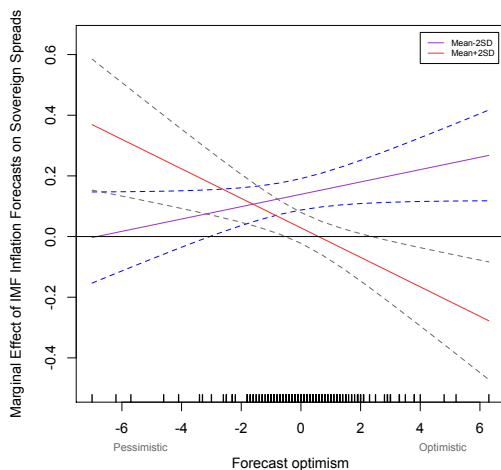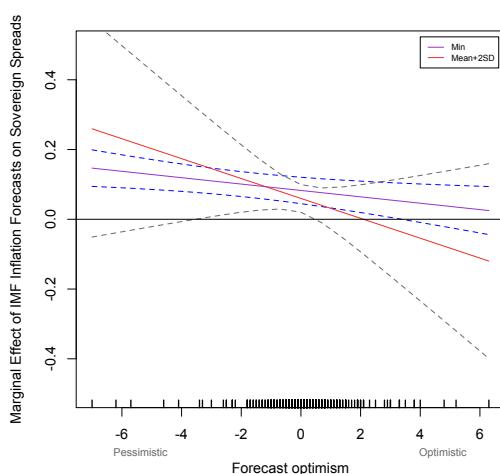

Figure 4.6.: Marginal effects of IMF inflation forecasts on sovereign spreads conditional on bureaucratically motivated bias. *Use of IMF Credit* is set constant.
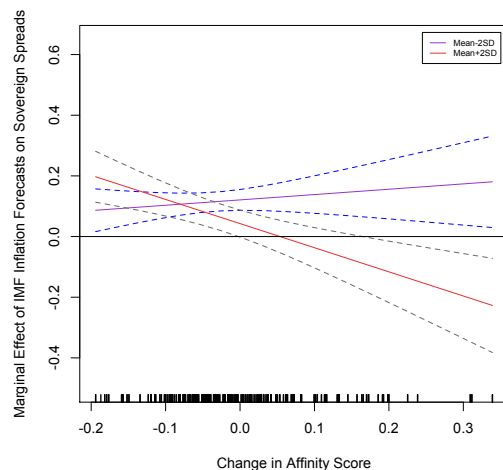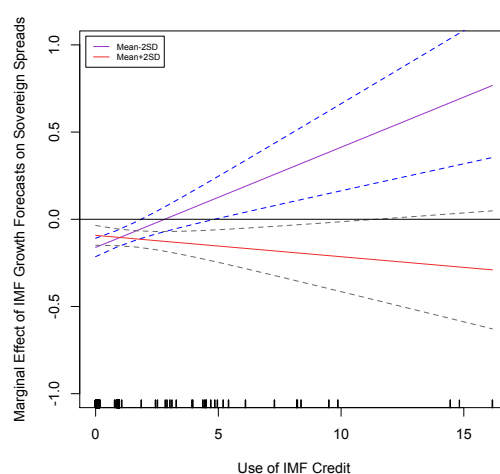
Figure 4.7.: Marginal effects of IMF GDP growth forecasts on sovereign spreads conditional on bureaucratically motivated bias. *Forecast optimism* is set constant.

Chapter 3 shows that GDP growth forecasts are more optimistic than private forecasts for countries that are closely allied with the United States and that have large outstanding debt to the Fund. This effect was less pronounced in the inflation forecasts. Therefore, I replicate the analysis in Model 3 with *IMF growth forecasts*. Model 4 includes *IMF growth forecasts*; the coefficient is negative and statistically significant

meaning that prospective economic growth reduces the cost of borrowing. The effect of the triple interaction term is negative and statistically significant. To analyze the interaction effect better, I plot the marginal effect of GDP growth forecasts in Figure 4.7. In the graph, *Forecast optimism* is set constant at two standard deviations below and above its mean value. The graph shows that for an optimistic forecast, marginal effect of growth forecasts increases as countries become more indebted to the Fund. To put it in another way, investors respond positively to the forecast optimism if it coincides with a country's special relationship with the Fund. Thus, this results lends support to Hypotheses 4 which argues that sovereign credit investors respond positively to the bureaucratically motivated optimism.

4.4   Conclusion

Previous scholarship on the IMF shows that the Fund provides preferential treatment in lending to countries that are closely allied with the United State and that have prolonged relationship with the Fund. IMF forecasts for these countries are also systematically more optimistic. This paper examines how investors respond to these optimistic forecasts especially given that there are other information providers such as the private forecasters.

I argue that bias in IMF forecasts provides noneconomic information to the investors. Politically motivated bias signals about long-term improvements in economic conditions and investment climate. Both bureaucratically and politically motivated biases reinforce the expectation that the IMF will help these countries in times of

economic difficulty. The empirical findings support these arguments and show that investors, according to their type, respond positively to the bias. The effect of IMF forecasts on FDI inflows increases with politically motivated bias as political bias indicates long-term improvements in the economy. Sovereign bond investors are more concerned about a government's ability to pay their debt obligations. Sovereign credit markets respond positively (spreads decrease) to both types of biases as they signal about the Fund's commitment to help a country with balance of payment problems.

This chapter shows that investors in general respond positively to the information coming from the IMF, despite other available sources of information. Even if forecasts are biased and the bias is well-known, the sources of bias still provide additional information for the investors and the investors respond to this information accordingly. In the following chapter, I examine how governments utilize these optimistic IMF forecasts.

4.5 Appendix

Table 4.3: List of countries in the sample

Angola	Ghana	Pakistan
Albania	Honduras	Peru
Argentina	**Hungary**	Paraguay
Armenia	**Indonesia**	**Philippines**
Azerbaijan	**India**	**Poland**
Algeria	Iran	Qatar
Bahrain	Jamaica	**Russia**
Bangladesh	Jordan	Romania
Belarus	Kazakhstan	Saudi Arabia
Bulgaria	Kenya	Serbia
Bolivia	Kyrgyz Republic	Slovakia
Brazil	Kuwait	Slovenia
Botswana	Latvia	Syria
Chile	Laos	**South Africa**
China	Lebanon	Sri Lanka
Cameroon	Libya	Tajikistan
Cambodia	Lithuania	**Thailand**
Costa Rica	Macedonia	Tunisia
Colombia	Mauritius	**Turkey**
Croatia	**Malaysia**	Turkmenistan
Czech Republic	**Mexico**	Ukraine
Dominican Republic	Moldova	United Arab Emirates
Ecuador	Mongolia	Uruguay
Egypt	Morocco	Uzbekistan
El Salvador	Mozambique	Venezuela
Estonia	Nicaragua	Vietnam
Georgia	Nigeria	Yemen
Guatemala	Oman	Zambia
Guyana	Panama	

Notes. Countries in bold are included only is sovereign spreads analysis

Table 4.4: Summary statistics, FDI inflows

Variable	Mean	Std. Dev.	Min	Max
Net FDI inflows (in billion US dollars)	3.606	8.130	−20.930	76.110
IMF growth forecast	4.768	2.382	−3.000	23.100
IMF inflation forecast	5.686	4.423	−3.500	43.500
Growth forecast optimism	0.167	1.404	−7.800	9.800
Political affinity to the US	−0.552	0.293	−0.938	0.680
Use of IMF credit (log)	16.550	7.164	0.000	24.090
Total GDP (log)	24.260	1.588	20.360	28.540
GDP per capita (log)	7.981	1.153	5.066	11.560
Trade openness	87.42	35.824	20.230	220.400
Democracy Level	3.297	6.596	−10	10
Regime fragility	8.707	5.004	0	24
Natural resource rents (as of GDP)	12.670	16.196	0.002	94.640

Table 4.5: Summary statistics, sovereign spreads

Variable	Mean	Std. Dev.	Min	Max
Sovereign spreads (log)	0.026	0.98	−3.601	2.814
IMF inflation forecast	5.431	3.677	0.100	48.000
IMF growth forecast	4.669	1.824	−0.900	10.000
Inflation forecast optimism	0.209	1.517	−7.000	8.700
Political affinity to the US	−0.572	0.27	−0.893	0.250
Use of IMF credit (log)	18.480	6.743	0.000	24.090
Balance of trade	2.808	6.825	−8.900	23.300
Fiscal balance	−2.646	3.374	−12.100	7.800
Total external debt	37.290	25.811	3.600	156.000
GDP per capita (log)	8.280	0.874	5.937	9.640
GDP growth	3.638	3.637	−11.740	13.610
Default history	0.662	0.473	0.000	1.000
3-Month US Treasury Bill rate	1.621	1.710	0.020	4.890
Oil prices	52.250	20.000	22.700	84.640

Chapter 5

How Useful are the IMF Forecasts for Incumbent Governments?

This chapter examines the effect of international organizations on domestic politics by looking at IMF forecast optimism. I argue that favorable IMF forecasts help governments to pursue expansionary policies especially during elections years. Governments can justify increasing spending on public services by basing their budget plans on overly optimistic forecasts. They may also avoid necessary budget cuts even if they foresee an economic downturn in the future but. In addition to the increase in public spending, these forecasts may help governments to portray the future in a positive light. Thus, governments can use optimistic forecasts to manipulate public perception of the economy and increase their chances for reelection.

The empirical analyses on eighty-one advanced and developing economies show that optimistic forecasts encourage expansionary policies, and thus lead to worsening of budget balance. On the other hand, this effect does not show significant difference between election and non-election years. Thus, although we observe increasing

spending, we do not find evidence for business cycle behavior. In addition to that, the results show that optimistic forecasts before the elections increases incumbent's chances for survival.

The chapter proceeds as follows: The next section discusses the informational effects of IOs on domestic politics. Section 2 presents the theory and hypotheses. Section 3 describes the data and method. Section 4 presents the results and a brief conclusion follows.

5.1   International Organizations and Domestic Politics

The influence of international organizations (IOs) on domestic politics has long been recognized in the literature (Matecki, 1956; Putnam, 1988; Martin and Simmons, 1998). IOs affect domestic politics by creating international norms and standards which legitimizes certain behaviors. They provide information on the current state of the member countries and their intended policy positions, and thus improve government accountability and transparency. This way, they empower certain actors in domestic politics and protect their rights and interests against government infringement. And finally, by providing direct information they appeal to the public opinion and through public pressure they shape and constrain the choice set of governments and other domestic actors.

Recent literature on the informational effects of security institutions finds that IO authorization can increase public support for the use of force in resolving international conflicts. Chapman and Reiter (2004) find that the United Nations Security Council

(UNSC) endorsement of use of force increases support for the US president by as many as 9 points in presidential approval ratings. The intuition is that the public is generally more conservative than the presidents in using force to solve international crisis. They want to be sure that all peaceful means of persuasion have failed before making such decisions. On this point, the UNSC preferences are similar to that of the public. Thus an endorsement from the UNSC signals the public that all options have been exhausted.

International support is especially important among people who value international institutions and who lack confidence in the president (Grieco et al., 2011). Moreover, the public value more highly the approval of IOs that have a conservative political stance. Chapman (2007) shows that the positive effect of UNSC endorsement increases as heterogeneity of interests among the member countries increases.[1]

The political advantages of IO endorsement motivate the coercer states to work through international organizations. Even leaders that have private agendas seek IO approval for reelection concerns (Fang, 2008). Seeking IO approval also allow the coercer state to signal benign intentions to the foreign publics and to the states that are not involved in the conflict (Thompson, 2006).

The studies I have discussed so far show evidence that IOs affect public opinion, but they do not suggest that IO involvement encourages government policy changes. There are other studies that focus on this aspect of IO involvement. In a formal model of compliance, Dai (2005) examines governments' decision to comply with international agreements in the presence of competing interest groups. She shows that electoral

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[1]The effect of approval is positive, but their objection does not have the same effect. See Chapman (2007) for the discussion.

leverage and informational status of pro-compliance groups determine the level of government compliance. Using 1985 Sulphur Protocol as an example, she demonstrates that IO financing of researches on acid rain and the dissemination of these findings strengthened environmental groups vis-a-vis the EU governments and led to serious reductions in sulphur emissions.

Similarly, Mansfield, Milner and Rosendorff (2002) examine domestic determinants of international cooperation. They argue that voters penalize governments for poor economic performance due to extractive policies. However, they lack information to understand whether their government is rent-seeker or not. And thus, they punish all government types equally during economic downturn. Using a formal model, they show that democratic governments use international cooperation to signal voters about their policy choices. They enter into trade agreements to differentiate themselves from rent seeking leaders.[2]

There is also some evidence in the literature that voters are aware of the discrepancies between information from the IOs and national governments. These differences undermine governments' credibility as an information provider. In order to maintain their credibility, governments adopt domestic institutions of transparency. Thus, international organizations' role as an alternative information provider also compels governments to be more transparent (Grigorescu, 2003).

On the other hand, International organizations' comparative advantage in information gathering and expert knowledge is a strategic asset and can be misused by

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[2]Guzman (2006) finds that bilateral investment treaties (BITs) are more likely to be signed by countries with better "rule of law".

its members and the organization itself. Venzke (2008) argues that international economic organizations can selectively publicize information that benefits its major shareholders. Similarly, Vaubel (1986) argues that decisions adopted by IOs can help governments to curb domestic opposition to certain policy stances. He argues that IOs help incumbent governments electorally by helping to hide unpopular policies and by disseminating false information. He argues that this is one of the reasons why governments accept IO constraints on their autonomy.

Previous scholarship on the IMF provide some evidence for the misuse of IOs. Vreeland (2003); Smith and Vreeland (2003) argue that reform minded governments sometimes enter into IMF agreements in order to push unpopular economic reforms. Governments use the IMF as a scapegoat for austerity measures and program failures, but take credit for the successes. The studies also show that governments are aware of electoral consequences of IMF involvement and manipulate this situation for their own benefit. IMF programs require restrictive macroeconomic policies which are not popular among the public. Therefore, governments avoid entering into IMF programs during election years. Przeworski and Vreeland (2000) find that governments are more likely to enter IMF agreements at the beginning of their electoral terms. Similarly, Dreher (2004) shows that IMF programs are more likely be interrupted during election times.

5.2   Theory and Hypotheses

In this section, I theorize the effect of IMF forecasts on domestic politics. I argue that IMF forecast optimism encourages government spending and helps incumbent

governments get reelected. My argument centers around the economic voting behavior. The literature shows that economy is the central topic in voters' agenda and it has the strongest impact on citizens' assessment of government performance (Carey and Lebo, 2006; Holbrook, 2009). At the ballot box, voters generally reward the incumbent government if the economy is doing well, and turn away from it if not (Lewis-Beck and Stegmaier, 2000).

This finding is robust across studies. But, to establish a link between IMF forecast optimism and elections, we need to address three issues. First, do citizens consider their individual economic well-being or overall performance of the national economy when they vote for the government? Previous studies provide strong evidence for the argument that voters consider national economic conditions when they evaluate governments' performance (see Lewis-Beck and Stegmaier, 2000; Carey and Lebo, 2006; Sanders, 1996). They show that economic growth, decrease in consumer prices and in unemployment rate increases governments' chances for reelection. Second, do voters vote prospectively or retrospectively? The findings are mixed on this issue. Studies shows that both past experiences and future expectations affect voters' evaluation of the economy. Fiorina (1981) argues that future expectations are important, but past experiences mostly determine citizens' judgments. However, MacKuen, Erikson and Stimson (1992) argue that voters will support the incumbent governments as long as they are optimistic about the country's economic prospects.

Third, if citizens base their voting decisions on past and future national economic conditions, what sources do they use to form their economic perceptions? MacKuen, Erikson and Stimson (1996) argue that the public are influenced by the discussions in

the media. Economists, financial agents, and international institutions use large amount of resources to forecast the near and distant economic future. This information is then conveyed to the mass media and then to the mass public. The IMF is one of the institutions that publishes this kind of information. It is mandated to oversee economic and financial health of global economy. Besides reviewing global trends and developments, they publish forecasts on individual member countries. The Fund's financial and human resources are unmatched by other institutions in terms of gathering this information. Its independence and autonomy as an international organization also increase the neutrality of the information relative to that provided by national governments (Abbott and Snidal, 1998). There is also some evidence that private information providers underinvest in developing economies and they are generally biased towards pessimism (Ferri, 2004) Given these, I assume that IMF forecasts carry more weight on public opinion than those published by national governments and private institutions.

Since no one can definitively predict future economic conditions, there is room for the governments to manipulate public perception. Incumbent governments can increase the supply of the public goods during election years, hoping that voters will attribute this increase to the well management of the economy.[3] Akhmedov and Zhuravskaya (2004) find that Russian governments' spending on health care, social safety nets, education and cultural projects peak one or two months before the elections. But, they show that governments compensate their excessive spending with austerity measures during the months after the elections. Thus, increase in government expenditure does

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[3]For a review of political business cycle literature see Blais and Nadeau (1992)

not reflect on overall budget balance. On the other hand, there is plenty of evidence in the literature that during election years fiscal balances worsen due to increased government spending (Pina and Venes, 2011; Shi and Svensson, 2006). For instance, Shi and Svensson (2006) show that financial balance worsens by 1% during election years in developing countries.

IOs willingly or unwillingly can play in the hand of incumbent governments in manipulating public perception. Previous scholarship on the IMF shows that the Fund provide larger loans and fewer conditions to member countries during election years, enabling them to implement expansionary monetary and fiscal policies (Dreher and Jensen, 2007; Vaubel, 2004; Dreher and Vaubel, 2004). The IMF also publishes optimistic forecasts on macroeconomic and fiscal indicators during election years. Aldenhoff (2007) shows that long-term forecasts for the industrial countries are optimistic and this optimism is correlated with election years in the US.

Governments seeking reelection have powerful incentives to increase public spending and create the illusion that the economy is doing well. A favorable forecast from the IMF may justify increased government expenditure. Governments may also use optimistic forecasts to avoid tax increases and spending cuts even if they foresee an economic downturn in the future (Bohn, 2011). There is evidence in the literature that governments rely on overly optimistic forecasts when they make budget plans for the election years. Boylan (2008) finds that state budget plans in the election years are based on overly optimistic forecasts in the United States. And these budget plans lead to higher budget deficits in the following years (approximately $27 per capita in the election year).

Optimism in IMF forecasts may also encourage budget deficit even governments do not have an incentive to manipulate public opinion. Favorable forecasts may signal the government that the Fund will support these countries in adverse economic conditions. This insurance may lead to excessive public spending, hence may yield to worsening of budget balance. Dreher (2004) shows that a country's budget deficit increases as its borrowing potential in the Fund increases.

Optimistic forecasts can also directly affect elections by helping the governments to shed a positive light on the future. Thus, incumbent governments may find it in their advantage to publicize rosy IMF forecasts during election years. Economic agents can efficiently assess all available information in the market, but the public lack tools to analyze the accuracy of the forecasts and are more prone to buy in the information from the IMF (Fratianni and Pattison, 1982). Therefore, I test the following hypotheses:

Hypothesis 1: *Optimistic IMF forecasts encourage expansionary policies, and thus they lead to worsening of budget balance. This effect is more pronounced during election years.*

Hypothesis 2: *Optimistic forecasts from the IMF before elections increases incumbent government's reelection prospects.*

5.3 Data and Method

5.3.1 Method

The empirical analyses employ time-series cross-sectional (TSCS) data covering up to eighty-one developed and developing countries from 2002 to 2012.[4] I examine the electoral effects of optimistic IMF forecasts, and thus focus on countries that have some type of competitive electoral system. Therefore, the sample is restricted to only Democracies and Mixed regimes as they are defined in Chiozza and Goemans (2004).[5] The first dependent variable, budget balance as of GDP, is a continuous variable. The Hausman test indicate a significant difference between fixed and random effects specifications. Therefore I employ OLS model with fixed effects specification to test Hypothesis 1. I include both country and year fixed effects.

The second dependent variable, election outcomes, is dichotomous. This analysis covers up to 57 Democracies from 2002 and 2012.[6][7] I employ a multilevel probit model and allow for varying intercepts across countries and years to control for heterogeneity (Gelman and Hill, 2007).[8]

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[4]see Table 5.3 in the Appendix

[5]Using the Polity IV (Marshall and Jaggers, 2012) 21-point scale regime scores they coded countries with 7 or higher as Democracies, and countries with scores between -6 and 6 as Mixed regimes.

[6]see Table 5.3 in the Appendix. Countries in bold test are not included in this analysis.

[7]Note that, here I only include democracies; countries that have 7 and higher points in Polity IV Database.

[8]I identify the outliers and influential points using Cook's distance test and I exclude them from the analyses.

5.3.2 The Data

I employ two analysis to test the hypotheses. The first one examines the effect of IMF GDP forecasts on budget balance. The dependent variable is government *Budget balance* as a share of GDP and the data are from Business Monitor International (BMI) Database. In this measurement positive values indicate budget surplus.

The main explanatory variables are *IMF GDP growth forecasts*, *Forecast optimism* and their interactions. IMF GDP forecasts are gathered from WEO reports. These reports are published in the Spring (April) and Autumn (September or October) and include forecasts for the current and the following year (IMF, 2002-2013). I include only Autumn next-year forecasts in $t-1$. The reason of this choice is that they are the latest available IMF forecasts in $t-1$ that predict the level of economic growth in year t and they are published just before the beginning of a fiscal year. *Forecast optimism* is measured by taking the difference between IMF and private forecasts. Private forecasts are gathered from Economic Intelligence Unit (EIU) *Country Reports*. Forecast optimism is calculated as follows:

$$\text{Forecast optimism}^t_{i,t-1} = \text{IMF Forecast}^t_{i,t-1} - \textit{EIU Forecast}^t_{i,t-1}$$

Where i indicates the country and t is the time period. $t-1$ in the subscript indicates the year forecast is made; t in the superscript indicates the forecasted year.

I argue that favorable forecasts increases government spending especially during election years. Therefore, I include a three-way interaction term between *IMF GDP growth forecasts*, *Forecast optimism* and *Elections* to capture this effect. *Elections* counts the

number of months to upcoming elections. But, I take its inverse so that higher numbers

now indicate closeness to elections. I include legislative elections when the chief

executive is the prime minister and executive elections when it is the president. The

data on elections are gathered from the Database of Political Institutions (DPI) (Beck

et al., 2001).

I also include several control variables as suggested by previous studies. For

economic determinants of budget balance, I include lag of dependent variable, *GDP*

growth, *GDP per capita*, *Unemployment rate*, and *Change in real debt servicing cost*. Past

economic and social policies have long-term effects on future fiscal discipline. The lag

of dependent variable captures this effect. Poor countries generally have more

inefficient tax systems, therefore, they are more likely to run budget deficits (Roubini,

1991). GDP per capita controls for the effects of economic development level.

Unemployment may effect budget balance by decreasing revenues or increasing social

spending (Alesina, Cohen and Roubini, 1993). The data on *GDP growth* and *GDP per*

capita are from IMF World Economic Outlook (WEO) Database. *Unemployment rate* data

are from BMI Database, but I supplemented the data from WEO Database for some of

the missing values.

Change in real debt servicing cost (DRB) increases the debt burden of the

government, thus worsens the fiscal discipline (Roubini, 1991). This variable is

measured as follows:

$$\text{DRB}_{i,t} = \Delta(\text{r}_{i,t} - \pi_{i,t} - \text{g}_{i,t}) \times \text{Debt}_{i,t-1}$$

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Where $r_{i,t}$ is the interest rate, $\pi_{i,t}$ is the inflation rate and $g_{i,t}$ is the GDP growth. The data on these variables are from IMF WEO Database. Debt$_{i,t-1}$ is the total government debt in the previous year and the data are from BMI Database.

To control for political determinants of budget balance, I include *Government fractionalization*, *Government ideology* and *Regime score*. *Government fractionalization* is the probability that two deputies randomly picked from the government members will be from the different parties. I expect a negative association between government fractionalization and budget balance. *Government ideology* is coded as 1 if the government is a left-wing government and 0 otherwise. Both variables are from DPI Database (Beck et al., 2001). *Regime score* measures a country's democracy level and the data are from Polity Database (Marshall and Jaggers, 2012). I expect governments with more political constraints to have better budget discipline.[9]

In the second analysis, I investigate the affect of IMF GDP growth forecasts on election outcomes. The dependent variable, *Election outcomes*, is a dichotomous variable which equals to 1 when voters reelect the incumbent party/leader and 0 otherwise. In presidential systems, this variable is coded as 1 when the incumbent cannot run for an additional term and the incoming president is from the same party. In parliamentary systems, *Election outcomes* is coded as 0 when the largest government party lost its lead in the following elections, but continues to be in the new coalition government. The information on these variables are gathered from Database of Political Institutions (Beck et al., 2001).

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[9]See Table 5.4 in the Appendix for descriptive statistics.

The main explanatory variables are *IMF GDP growth forecasts*, *Forecast optimism* and their interactions. These variables are calculated in the same way they are calculated in the budget balance analysis. The difference is that I include the forecasts that are closest preceding to the elections.[10]

For economic determinants of election outcomes, I control for *Current account balance*, *Unemployment rate*, *GDP growth*, *Inflation rate* and *Government expenditure*. Voters reward the incumbent government if the economy is doing well. Thus, I expect *Unemployment* and *Inflation rate* to have a negative effect on election outcomes. For the rest of the variables I expect a positive effect. The data on *Current account balance*, *Unemployment rate*, and *GDP growth* are from WEO Database. The data on *Inflation rate* and *Government expenditure* are from World Development Indicators (WDI) and BMI Databases. These variables are lagged one year.

Finally, I include *Incumbent governments' term in the office*, *Vote share of the government parties* and *Presidential system* to control for political determinants of election outcomes. The data on these variables are from the Database of Political Institutions (Beck et al., 2001).[11]

5.4   Results

Table 5.1 presents results on the impact IMF growth forecasts and forecast optimism on government budget balance. Model 1 is the basic model in which I

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[10]For elections from January to April, I use previous years' Autumn next-year forecasts; from May to October, current years' Spring current-year forecasts; and from October to December, current years' Autumn current-year forecasts.

[11]See Table 5.5 in the Appendix for descriptive statistics

Table 5.1: The effect of IMF GDP growth forecasts on government budget balance

	Model 1	Model 2	Model 3	Model 4	Model 5
IMF growth forecast			0.247	0.252	0.254
			$(0.067) ***$	$(0.067) ***$	$(0.074) ***$
Forecast optimism			-0.217	0.003	-0.032
			$(0.095) **$	(0.177)	(0.201)
Elections		-0.130	-0.126	-0.128	-0.126
		$(0.046) ***$	$(0.055) **$	$(0.055) **$	(0.141)
IMF growth forecast $\times$ Forecasts optimism				-0.060	-0.050
				(0.040)	(0.047)
IMF growth forecast $\times$ Forecasts optimism $\times$ Elections					-0.016
					(0.039)
Budget balance $_{t-1}$	0.588	0.576	0.523	0.522	0.522
	$(0.025) ***$	$(0.027) ***$	$(0.034) ***$	$(0.034) ***$	$(0.034) ***$
Unemployment rate	-0.061	-0.067	-0.012	-0.013	-0.010
	$(0.027) **$	$(0.030) **$	(0.046)	(0.046)	(0.047)
Δ real debt-servicing cost	-4.968	-4.567	-5.646	-6.203	-6.129
	$(1.232) ***$	$(1.280) ***$	$(1.591) ***$	$(1.634) ***$	$(1.648) ***$
GDP per capita (log)	-0.875	-0.872	-0.822	-0.804	-0.801
	$(0.152) ***$	$(0.174) ***$	$(0.279) ***$	$(0.279) ***$	$(0.281) ***$
Government fractionalization		-0.422	-0.313	-0.241	-0.222
		(0.436)	(0.588)	(0.590)	(0.593)
Government ideology		0.142	0.083	0.110	0.110
		(0.191)	(0.221)	(0.222)	(0.223)
Regime score		-0.023	-0.017	-0.017	-0.021
		(0.048)	(0.055)	(0.054)	(0.056)
Number of observations	998	857	627	627	627
Number of countries	81	80	72	72	72
R-Squared	0.423	0.422	0.416	0.419	0.419

Notes. Standard errors are in parentheses. *p< .1; **p< .05; ***p< .01.

include only the economic determinants of budget balance. The coefficient of the

lagged dependent variable is positive and statistically significant, confirming the

argument that past economic policy choices have long-term effects on future fiscal

discipline. Δ*Real debt servicing cost* is negatively and statistically associated with budget

balance indicating that increase in debt-servicing costs puts extra burden government budget. These results remain similar across all models. The effect of *Unemployment rate* on budget balance is negative but reaches to statistical significance only in the first two models. The coefficient of *GDP per capita* is in the opposite direction than predicted suggesting that economically advanced countries are more likely to have budget deficits. This confirms some earlier findings which argue that demand for public services increases with economic affluence.[12]
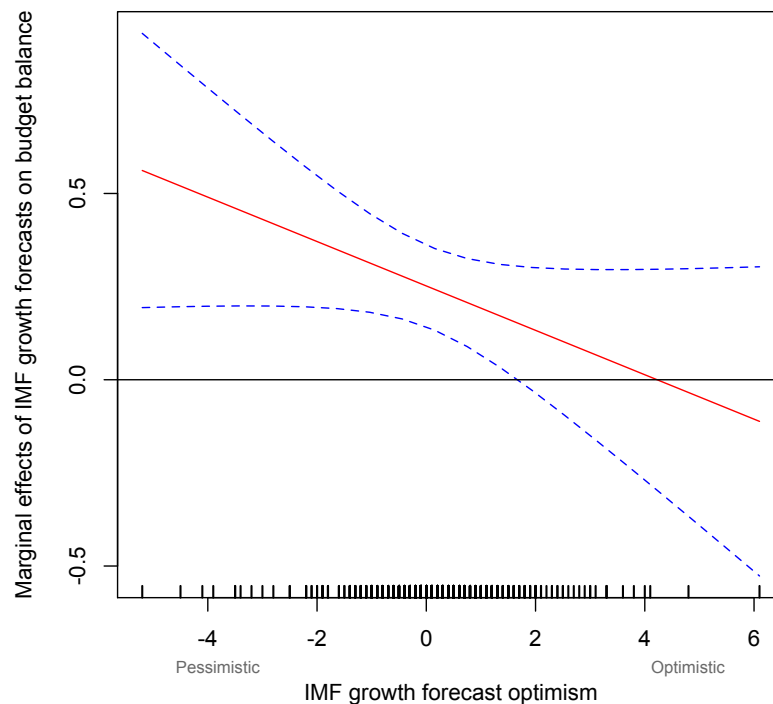

Figure 5.1.: Marginal effects of forecast bias on budget balance conditional on the level of forecast optimism

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[12]See Blais and Nadeau (1992) for the discussion.

Model 2 adds political variables to the analysis. The effect of elections on budget balance is negative and statistically significant, indicating that governments pursue expansionary policies during election years. On the average, budget balance decreases by 0.13 % during election years. The coefficients of *Government fractionalization* and *Regime score* are in the expected direction, but they fail to achieve statistical significance.

Model 3 includes *IMF GDP growth forecasts* and *Forecast optimism*. The coefficient of *Forecast optimism* is negative and statistically significant as expected. This finding supports Hypotheses 1 which argues that IMF forecast optimism encourages government spending and worsens budget balance. 1 unit increase in forecast optimism decreases budget balance by approximately 0.2 %.

Model 4 introduces the interaction between *IMF GDP growth forecasts* and *Forecast optimism* to capture the conditional effect of GDP growth forecasts on budget balance. The coefficient of the interaction term is negative as expected, but fails to achieve statistical significance. To understand the interaction effect properly, I plot the marginal effects of GDP growth forecasts with corresponding confidence intervals.[13] Figure 5.1 shows that the marginal effects of IMF growth forecasts on budget balance decreases with forecast optimism. Thus, the positive effect of growth on budget balance diminishes as IMF forecasts differ from the private forecasts. This finding partially supports Hypothesis 1 that optimism in IMF forecasts leads to reduced fiscal performance. But this effect is not statistically significant for overly optimistic forecasts.

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[13]In all marginal effects plots, confidence intervals indicate statistical significance at 90% level.
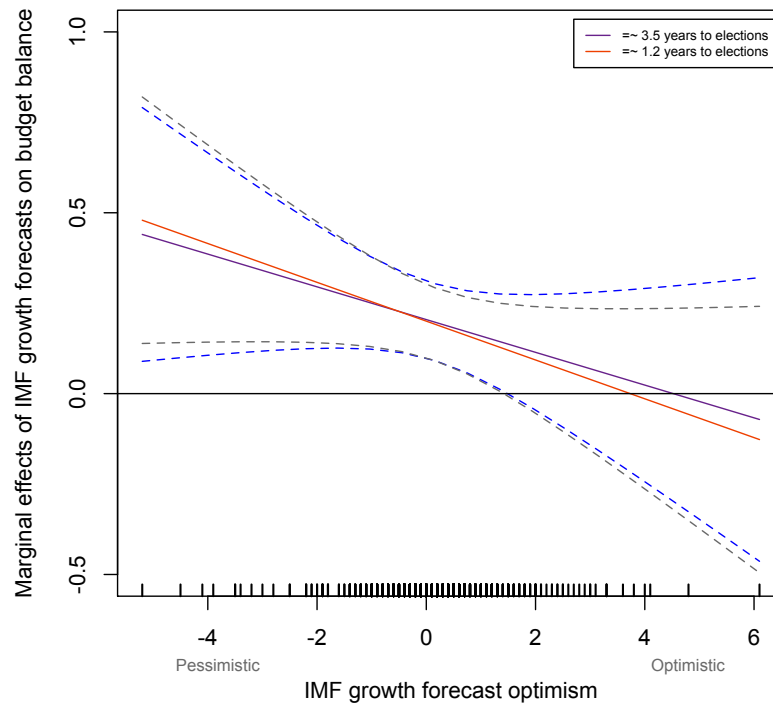
Figure 5.2.: Marginal effects of IMF GDP growth forecast on budget balance conditional on the level of forecast optimism and elections.

Model 5 introduces the triple interaction between *IMF GDP growth forecasts*, *Forecast optimism* and *Elections*.[14] This variable captures the effect of IMF growth forecasts on budget balance conditional on forecast optimism and elections. The coefficient of the triple interactions is negative as predicted, but fails to achieve statistical significance. Figure 5.2 displays the marginal effects of forecasts with confidence interval lines. As in Figure 5.1, this graph shows that the marginal effects of growth forecasts decrease with IMF optimism. On the other hand, this effect does not

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[14]I include all constitutive terms of the interaction as suggested by Brambor, Clark and Golder (2006), but I do not report all of them in Table 5.1.

show difference between election and non-election years. Overall, these findings show

that governments receiving optimistic forecasts are more likely to expand the economy,

but there is no evidence that they would do it more often during election years.

Next, I examine whether optimistic forecasts benefit governments electorally by

helping them to create positive expectations about the future of the economy. Table 5.2

presents the results on election outcomes. Model 1 is the basic model in which I include

all control variables. The coefficient of *Current account balance* is positive and

statistically significant as expected and remains unchanged across all models. Similarly,

GDP growth is positively associated with election outcomes. The coefficients of

Government expenditure and *Inflation rate* are in the expected direction, but fail to achieve

statistical significance. Overall, these findings lend some support for economic voting

behavior. Since these variables are all lagged one year, the results also show some

support to the arguments that retrospective economic perceptions affect election

outcomes. Regarding the political variables, the effect of *Government fractionalization* is

negative and statistically significant, meaning that coalition governments are less likely

to survive in the following elections. *Incumbent's term in office* is also negatively

associated with reelection. This suggests that governments are more likely to get

reelected for a second term, but their reelection chances decreases as they stay longer.

Model 2 replaces *GDP growth* with *IMF growth forecast* and includes *Forecast*

optimism. *IMF growth forecast* has statistically significant effect on elections. This effect is

larger than the effect of *GDP growth* in Model 1, perhaps suggesting that future

economic growth have stronger effect on voter's perception of the government

performance. The effect of *Forecast optimism* is positive as expected but fails to achieve

Table 5.2: The effect of IMF GDP growth forecasts on election outcomes, probit

	Model 1	Model 2	Model 3
IMF growth forecast		0.172	0.159
		$(0.080) * *$	$(0.088) *$
Forecast optimism		0.177	0.137
		(0.207)	(0.238)
IMF growth forecast $\times$ Forecasts optimism			0.021
			(0.062)
Current account balance	0.086	0.093	0.091
	$(0.031) * * *$	$(0.035) * * *$	$(0.035) * * *$
Unemployment rate	0.019	0.026	0.026
	(0.033)	(0.036)	(0.036)
Economic growth	0.103		
	$(0.057) *$		
Inflation rate	-0.038	-0.048	-0.049
	(0.034)	(0.039)	(0.039)
Government expenditure (% GDP)	0.002	0.022	0.023
	(0.013)	(0.014)	$(0.014) *$
Government fractionalization	-1.321	-1.508	-1.518
	$(0.670) * *$	$(0.769) * *$	$(0.770) * *$
Incumbent's term in office	-0.628	-0.621	-0.621
	$(0.231) * * *$	$(0.249) * *$	$(0.248) * *$
Vote share of government's parties	0.008	0.008	0.008
	(0.011)	(0.013)	(0.013)
Presidential system	-0.330	-0.034	-0.013
	(0.435)	(0.481)	(0.486)
Number of observations	172	142	142
Number of countries	57	56	56
Log likelihood	-109.2	-88.2	-88.1
AIC	240.4	200.4	202.3

Notes. Standard errors are in parentheses. *p< .1; **p< .05; ***p< .01.

statistical significance. In this model, the coefficient of *Government expenditure* reaches to

statistical significance and remains so in the following model.

In Model 3, I introduce the interaction between *IMF growth forecast* with *Forecast*

optimism. This interaction term captures the effect of GDP forecasts conditional on

forecast optimism. The coefficient of the interaction term is positive as expected, but
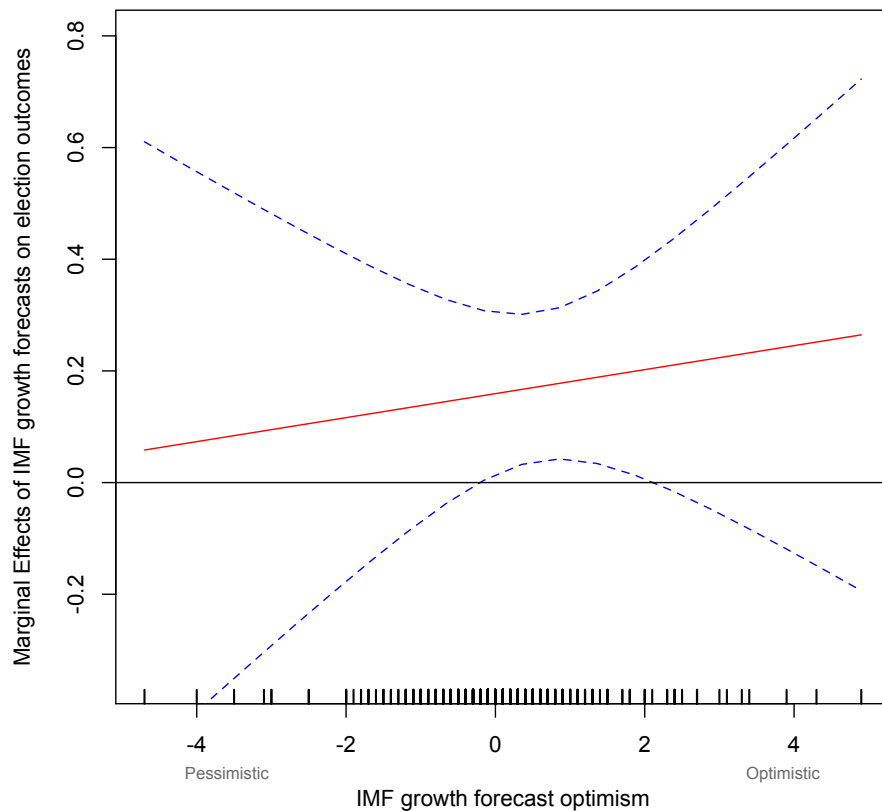
Figure 5.3.: Marginal effects of IMF GDP growth forecast on election outcomes conditional on the level of forecast optimism

fails to achieve statistical significance. To interpret the interaction effect better, I plot the marginal effects with confidence intervals in Figure 5.3. The graph shows that IMF growth forecasts positively affect election outcomes and this effect increases as forecasts become more optimistic, thus lends support to Hypothesis 2. On the other hand, this effect is not very substantial. Keeping the growth rate constant, 1 unit increase in forecast optimism increases governments chances for reelection by 2 %. Moreover, the effect is not significant for high values of IMF optimism.

5.5   Conclusion

International organizations devote large amounts of intellectual and human resources in gathering information on member countries' future economic performances. This information attracts attention in the public media because IOs are believed to have expert knowledge and trusted to be free from national biases. However, previous studies show that IOs, in particular the IMF, sometimes provide overly optimistic forecasts to help member governments. In this chapter, I examine how these optimistic forecasts affect domestic politics and whether incumbent governments benefit from this favorable information.

I argue that optimistic forecasts enable incumbent governments to manipulate public perception of the economy. Governments can rely on optimistic forecasts when they plan the budget. This way, they can increase public spending and avoid budget cuts hoping to convince the public that the economy is well managed. They can also use optimistic forecasts to increase positive expectations about the economy. Therefore, they can increase their chances for reelection.

I test the hypotheses on a sample of eighty-one countries from 2002 to 2012. The results provide strong support for the link between favorable forecasts and budgetary expansion. On the other hand, I couldn't find support for the argument that optimistic forecasts encourage governments to pursue more expansionary policies during election years. The effect does not show difference between election and non-election years. In addition to that, the results lend some support to my argument that optimistic forecast can directly help incumbent governments get reelected by increasing economic

expectations. However, this positive effect is not very substantial and only significant

for low levels of forecast optimism.

5.6   Appendix

Table 5.3: List of countries in the sample

Albania	Greece	**Nigeria**
Argentina	**Guatemala**	Nicaragua
Armenia	Honduras	Netherlands
Australia	Croatia	Norway
Belgium	Hungary	New Zealand
Bulgaria	Indonesia	**Pakistan**
Bolivia	Ireland	Panama
Brazil	**Iran**	Peru
Botswana	Israel	Philippines
Canada	Italy	Poland
Switzerland	Jamaica	Portugal
Chile	**Jordan**	Paraguay
Costa Rica	Japan	Romania
Colombia	**Kazakhstan**	**Russia**
Czech Republic	**Kenya**	**Thailand**
Germany	**Kyrgyz Republic**	**Singapore**
Denmark	**Cambodia**	**El Salvador**
Dominican Republic	South Korea	**Serbia**
Algeria	**Sri Lanka**	Slovakia
Ecuador	Lithuania	Slovenia
Egypt	Latvia	Sweden
Spain	**Morocco**	Turkey
Estonia	**Moldova**	**Ukraine**
Finland	Mexico	Uruguay
France	Macedonia	**Venezuela**
United Kingdom	**Mozambique**	**South Africa**
Georgia	Mauritius	**Zambia**
	Malaysia	

Table 5.4: Summary statistics, Government budget deficit

Variable	Mean	Std. Dev.	Min	Max
Budget balance $_{t-1}$	−1.681	5.420	−30.900	35.200
IMF growth forecast	3.641	2.133	−3.000	21.000
Forecast bias	0.178	1.036	−4.300	8.400
Elections	0.099	0.299	0.000	1.000
Unemployment rate	8.798	4.812	0.400	28.150
Interest rate	4.563	8.617	−40.074	66.343
Change in total government debt	1.01	7.704	−75.399	94.000
Inflation rate	5.36	8.055	−9.798	95.005
GDP per capita (log)	4.229	4.238	2.143	4.998
Margin of majority	0.608	0.176	0.174	1.000
Government fractionalization	0.292	0.287	0.000	0.828
Government ideology	0.456	0.464	0.000	1.000
Regime score	6.296	5.643	−10.000	10.000
EIU GDP growth forecasts error$_{t-1}$	0.087	3.714	−13.881	21.929

Table 5.5: Summary statistics, Election outcomes

Variable	Mean	Std. Dev.	Min	Max
IMF growth forecast (for the following year)	3.012	1.817	−3.000	9.000
Forecast bias (for the following year)	0.162	0.810	−2.400	3.100
IMF growth forecast (for the current year)	2.49	2.931	−10.000	11.000
Forecast bias (for the current year)	0.068	0.721	−2.000	3.400
Current account balance (% of GDP)	−0.899	6.572	−23.100	17.600
Unemployment rate	8.682	4.677	1.500	28.000
Inflation rate	4.119	5.809	1.146	54.400
Government consumption (log)	11.045	11.236	9.127	11.928
Expansion of overall budget deficit	0.0371	3.614	−36.200	24.090
Government fractionalization	0.336	0.278	0.000	0.828
Incumbent's years in office	4.651	2.221	1.000	37.800

Chapter 6

Conclusions

This dissertation examines the informational effects of International Organizations by studying the effect of IMF WEO economic growth and inflation forecasts on investors and governments. Two strands of research motivate this work: one argues that IOs provide quality information because they are centralized and independent. The other argues that IOs, as any bureaucratic institution, may not function as they are intended to. They can selectively provide information that benefits the institution itself or their main principles. IMF forecasts provide a unique opportunity to examine these two approaches. Since there are alternative information providers such as the private forecasters, governments and investors may choose to ignore these forecasts and look at other resources or they can utilize them if they believe that the forecasts contain valuable information.

The dissertation starts by comparing the performance of IMF forecasts to those of private forecasters. I show that overall private forecasts perform better than the IMF forecasts in predicting the magnitude and direction of economic growth and inflation.

Then, I examine the conditions in which IMF forecasts differ from the private forecasts. Similar to the earlier studies, the results show that countries that share similar interests with the United States and that have prolonged relationship with the Fund receive optimistic forecasts, meaning that the Fund's bureaucratic incentives and the influence of major principals of the Fund leads to optimism in IMF forecasts.

In Chapter 4, I theorize how investors respond to the optimistic forecasts. I argue that bias in IMF forecasts provide valuable noneconomic information to the investors. Bias towards optimism in IMF forecasts signals investors about the Fund and US commitment to help these countries during economic downturn. Thus, they respond to this information positively by increasing their investment. The empirical analyses support this argument and show that FDI inflows into a country increases with forecast optimism. Also sovereign credit markets respond positively to both politically and bureaucratically motivated bias.

Chapter 5 theorizes the effect of optimistic forecasts on domestic politics. The theory here builds on economic voting behavior which argues that voters reward the incumbent governments for economic competence. I argue that optimistic forecast help incumbent governments to manipulate public perception of the economy, either by increasing spending during election years or by publicizing IMF optimism. The analyses show that government budget deficit increases with forecast optimism. However, this effect is not different between election and non-election years. The results also show that forecast optimism helps governments get reelected.

Overall, the results show that the informational effects of IOs are more nuanced than the two strands of research suggests. It seems that both governments and

investors are aware of the imperfection of the international organizations as information providers. On the other hand, both actors, in different ways, acknowledge their power and influence.

Bibliography

Abbott, K.W. and D. Snidal. 1998. "Why states act through formal international organizations." *Journal of Conflict Resolution* 42(1):3–32.

Abreu, Ildeberta. 2011. "International organisations' vs. private analysts' forecasts: an Evaluation." Working Papers, Banco de Portugal.

Akhmedov, A. and E. Zhuravskaya. 2004. "Opportunistic political cycles: test in a young democracy setting." *The Quarterly Journal of Economics* 119(4):1301.

Aldenhoff, F.O. 2007. "Are economic forecasts of the International Monetary Fund politically biased? A public choice analysis." *The Review of International Organizations* 2(3):239–260.

Alesina, Alberto and David Dollar. 2000. "Who Gives Foreign Aid to Whom and Why?" *Journal of Economic Growth* 5(1):33–63.

Alesina, Alberto, Gerald D Cohen and Nouriel Roubini. 1993. "Electoral business cycle in industrial democracies." *European Journal of Political Economy* 9(1):1–23.

Arora, Harjit K and David J Smyth. 1990. "Forecasting the developing world: An accuracy analysis of the IMF's forecasts." *International Journal of Forecasting* 6(3):393–400.

Artis, Michael J. 1996. How accurate are the IMF's short-term forecasts?: another examination of the world economic outlook. Technical report International Monetary Fund.

Artis, Michael and Massimiliano Marcellino. 2001. "Fiscal forecasting: The track record of the IMF, OECD and EC." *Econometrics Journal* 4(1):S20–S36.

Ashiya, Masahiro. 2006. "Testing the rationality of Japanese GDP forecasts: the sign of forecast revision matters." *Journal of economic behavior & organization* 50(2):263–269.

Asiedu, E., Y. Jin and B. Nandwa. 2009. "Does foreign aid mitigate the adverse effect of expropriation risk on foreign direct investment?" *Journal of International Economics* 78(2):268–275.

Babb, S. 2003. "The IMF in sociological perspective: A tale of organizational slippage." *Studies in Comparative International Development (SCID)* 38(2):3–27.

Babb, S. 2007. "Embeddedness, Inflation, and International Regimes: The IMF in the Early Postwar Period." *American Journal of Sociology* 113(1):128–164.

Barro, R.J. and J.W. Lee. 2005. "IMF programs: Who is chosen and what are the effects?" *Journal of Monetary Economics* 52(7):1245–1269.

Batchelor, Roy. 2001. "How Useful Are the Forecasts of Intergovernmental Agencies? The IMF and OECD versus the Consensus." *Applied Economics* 33(2):225–35.

Batchelor, Roy. 2007. "Bias in macroeconomic forecasts." *International Journal of Forecasting* 23(2):189–203.

Batchelor, Roy and Pami Dua. 1992. "Conservatism and consensus-seeking among economic forecasters." *Journal of Forecasting* 11(2):169–181.

Beach, William, Aaron Schavey and Isabel Isidro. 1999. "How reliable are IMF economic forecasts?" Working Paper CDA99-05. Washington, DC: The Heritage Foundation.

Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer and Patrick Walsh. 2001. "New tools in comparative political economy: The Database of Political Institutions." *World Bank Economic Review* 15(1):165–176.

Blais, André and Richard Nadeau. 1992. "The electoral budget cycle." *public choice* 74(4):389–403.

Bohn, F. 2011. "Getting Around Constitutional Limits To Fiscal Policy: A Model of Political Forecast and Budget Cycles." Working paper, Nijmegen Center for Economics (NiCE).

Boylan, R.T. 2008. "Political distortions in state forecasts." *Public Choice* 136(3):411–427.

Brambor, T., W.R. Clark and M. Golder. 2006. "Understanding interaction models: Improving empirical analyses." *Political analysis* 14(1):63–82.

Broz, J. Lawrence and Michael Brewster Hawes. 2006. "Congressional Politics of Financing the International Monetary Fund." *International Organization* 60(02):367–399.

Büthe, T. and H.V. Milner. 2008. "The Politics of Foreign Direct Investment into Developing Countries: Increasing FDI through International Trade Agreements?" *American Journal of Political Science* 52(4):741–762.

Cantor, R. and F. Packer. 1997. "Determinants and impact of sovereign credit ratings." *Global Risk Assessments* (4):65–100.

Cantor, Richard and Frank Packer. 1995. "Sovereign credit ratings." *Current issues in economics and finance* 1(3):1–6.

Carey, S. and M.J. Lebo. 2006. "Election Cycles and the Economic Voter." *Political Research Quarterly* 59(4):543–556.

Chapman, T.L. 2007. "International security institutions, domestic politics, and institutional legitimacy." *Journal of Conflict Resolution* 51(1):134–166.

Chapman, T.L. and D. Reiter. 2004. "The United Nations Security Council and the rallyround the flag effect." *Journal of Conflict Resolution* 48(6):886–909.

Chiozza, G. and H.E. Goemans. 2004. "International conflict and the tenure of leaders: Is war still ex post inefficient?" *American Journal of Political Science* 48(3):604–619.

Copelovitch, M.S. 2010. "Master or servant? Common agency and the political economy of IMF lending." *International Studies Quarterly* 54(1):49–77.

Dai, Xinyuan. 2005. "Why comply? The domestic constituency mechanism." *International Organization* 59(2):363–398.

Damill, Mario, Roberto Frenkel and Martín Rapetti. 2006. "The Argentinian Debt: History, Default, and Restructuring." Initiative for Policy Dialogue, Columbia University.

Dixon, W.J. and B.E. Moon. 1993. "Political similarity and American foreign trade patterns." *Political Research Quarterly* 46(1):5–25.

Dovern, Jonas and Johannes Weisser. 2011. "Accuracy, unbiasedness and efficiency of professional macroeconomic forecasts: An empirical comparison for the G7." *International Journal of Forecasting* 27(2):452–465.

Drechsel, Katja, Sebastian Giesen and Axel Lindner. 2014. "Outperforming IMF Forecasts by the Use of Leading Indicators." Halle Institute for Economic Research. Discussion paper.

Dreher, A. 2004. "The influence of IMF programs on the re-election of debtor governments." *Economics & Politics* 16(1):53–76.

Dreher, A. and N.M. Jensen. 2007. "Independent actor or agent? An empirical analysis of the impact of US interests on International Monetary Fund conditions." *J. Law & Econ.* 50:105–781.

Dreher, A. and R. Vaubel. 2004. "Do IMF and IBRD cause moral hazard and political business cycles? Evidence from panel data." *Open Economies Review* 15(1):5–22.

Dreher, A., S. Marchesi and J.R. Vreeland. 2008. "The political economy of IMF forecasts." *Public Choice* 137(1):145–171.

Dreher, Axel. 2006. "IMF and Economic Growth: The Effects of Programs, Loans, and Compliance with Conditionality." *World Development* 34(5):769–788.

Eichengreen, Barry, Kenneth Kletzer and Ashoka Mody. 2006. "The IMF in a world of private capital markets." *Journal of Banking & Finance* 30(5):1335–1357.

Estrin, Saul and Peter Holmes. 1990. "Indicative planning in developed economies." *Journal of Comparative Economics* 14(4):531–554.

Fang, S. 2008. "The informational role of international institutions and domestic politics." *American Journal of Political Science* 52(2):304–321.

Fang, Songying and Erica Owen. 2011. "International institutions and credible commitment of non-democracies." *The Review of International Organizations* 6(2):141–162.

Fearon, James D. 1998. "Bargaining, enforcement, and international cooperation." *International Organization* 52(2):269–305.

Feinberg, R.E. 2003. "The political economy of United States free trade arrangements." *The World Economy* 26(7):1019–1040.

Ferri, G. 2004. "More analysts, better ratings: Do rating agencies invest enough in less developed countries?" *Journal of Applied Economics* 7(1):77–98.

Fiorina, Morris P. 1981. *Retrospective Voting in American National Elections*. New Haven: Yale University Press.

Fratianni, M. and J. Pattison. 1982. "The economics of international organizations."
Kyklos 35(2):244–262.

Fratzscher, M. and J. Reynaud. 2011. "IMF Surveillance and Financial Markets-A
Political Economy Analysis." *European Journal of Political Economy* 27(3):405–422.

Frenkel, Michael, Jan-Christoph Rülke and Lilli Zimmermann. 2013. "Do private sector
forecasters chase after IMF or OECD forecasts?" *Journal of Macroeconomics* 37:217–229.

Gartzke, E. 1998. "Kant we all just get along? Opportunity, willingness, and the origins
of the democratic peace." *American Journal of Political Science* pp. 1–27.

Gelman, Andrew and Jenniffer Hill. 2007. *Data Analysis Using Regression and
Multilevel/Hierarchical Models*. Cambridge University Press.

Glück, Heinz and Stefan P. Schleicher. 2005. "Common Biases in OECD and IMF
Forecasts: Who Dares to be Different?" paper presented at the "A Real Time
Database for the Euro-Area" workshop in Brussels.

Gould, E.R. 2003. "Money talks: Supplementary financiers and international monetary
fund conditionality." *International Organization* pp. 551–586.

Grieco, Joseph M, Christopher Gelpi, Jason Reifler and Peter D Feaver. 2011. "Lets Get a
Second Opinion: International Institutions and American Public Support for War."
International Studies Quarterly 55(2):563–583.

Grigorescu, A. 2003. "International organizations and government transparency: Linking the international and domestic realms." *International Studies Quarterly* 47(4):643–667.

Guzman, Andrew T. 2006. "Competing for capital: the diffusion of bilateral investment treaties, 1960-2000." *International Organization* 60:811–846.

Haldane, A.G. and J. Scheibe. 2004. *IMF lending and creditor moral hazard*. Working Paper No. 216. Bank of England.

Hansen, H. and F. Tarp. 2001. "Aid and growth regressions." *Journal of development Economics* 64(2):547–570.

Heinemann, Friedrich. 2006. "Planning or propaganda? An evaluation of Germany's medium-term budgetary planning." *FinanzArchiv: Public Finance Analysis* 62(4):551–578.

Hexner, E.P. 1964. "The Executive Board of the International Monetary Fund: a decision-making instrument." *International organization* 18(1):74–96.

Holbrook, T.M. 2009. "Economic considerations and the 2008 presidential election." *PS: Political Science and Politics* 42(3):473–478.

Holden, K and D A Peel. 1990. "On Testing for Unbiasedness and Efficiency of Forecasts." *The Manchester School of Economic & Social Studies* 58(2):120–27.

Ilzetzki, Ethan, Carmen Reinhart and Kenneth Rogoff. 2011. "The Country
Chronologies and Background Material to Exchange Rate Arrangements into the 21st
Century: Will the Anchor Currency Hold?" Working Paper.

IMF. 2002-2013. World economic outlook: Financial systems and economic cycles.
Technical report Washington DC: International Monetary Fund.

Jensen, N. 2008. "Political risk, democratic institutions, and foreign direct investment."
The Journal of Politics 70(04):1040–1052.

Jensen, Nathan M. 2003. "Democratic Governance and Multinational Corporations:
Political Regimes and Inflows of Foreign Direct Investment." *International
Organization* 57(3):587–616.

Jensen, N.M. 2004. "Crisis, Conditions, and Capital: The Effect of International
Monetary Fund Agreements on Foreign Direct Investment Inflows." *Journal of Conflict
Resolution* 48(2):194–210.

Juhn, Grace and Prakash Loungani. 2002. "Further cross-country evidence on the
accuracy of the private sector's output forecasts." *IMF Staff Papers* pp. 49–64.

Kamin, S.B. 2004. "Identifying the role of moral hazard in international financial
markets." *International Finance* 7(1):25–59.

Keohane, R.O. 1982. "The demand for international regimes." *International Organization*
36(02):325–355.

Kosack, S. and J. Tobin. 2006. "Funding self-sustaining development: The role of aid, FDI and government in economic success." *International Organization* 60(1):205.

Krkoska, Libor and Utku Teksoz. 2009. "Accuracy of GDP growth forecasts for transition countries: Ten years of forecasting assessed." *International Journal of Forecasting* 23(1):29–45.

Kwitney, J. 1983. "The yes men atop the IMF". Wall street journal.

Lane, T.D. and S. Phillips. 2000. "Does IMF financing result in moral hazard?" *IMF working paper* (2000-2168).

Larraín, Guillermo, Helmut Reisen and Julia Von Maltzan. 1997. "Emerging market risk and sovereign credit ratings." OECD Development Centre. Working Paper No. 124.

Lee, J.W. and K. Shin. 2008. "IMF bailouts and moral hazard." *Journal of International Money and Finance* 27(5):816–830.

Lewis-Beck, M.S. and M. Stegmaier. 2000. "Economic determinants of electoral outcomes." *Political Science* 3(1):183.

Li, Q. and A. Resnick. 2003. "Reversal of fortunes: Democratic institutions and foreign direct investment inflows to developing countries." *International organization* 57(01):175–211.

MacKuen, M.B., R.S. Erikson and J.A. Stimson. 1992. "Peasants or bankers? The American electorate and the US economy." *The American Political Science Review* pp. 597–611.

MacKuen, Michael B, Robert S Erikson and James A Stimson. 1996. "Presidents and the Prospective Year: Comment." *The Journal of Politics* 58(03):793–801.

Mansfield, E., H. Milner and P. Rosendorff. 2002. "Why democracies cooperate more: Electoral control and international trade agreements." *International Organization* 56(3):477–513.

Marchesi, Silvia and Laura Sabani. 2007. "IMF concern for reputation and conditional lending failure: Theory and empirics." *Journal of Development Economics* 84(2):640–666.

Marshall, M.G. and K. Jaggers. 2012. "Polity IV project: Political regime characteristics and transitions, 1800-2012." University of Maryland.

Martin, L.L. and B.A. Simmons. 1998. "Theories and empirical studies of international institutions." *International Organization* 52(4):729–757.

Matecki, BE. 1956. "Establishment of the International Finance Corporation: A case study." *International Organization* 10(2):261–275.

McKeown, T.J. 2009. "How US decision-makers assessed their control of multilateral organizations, 1957–1982." *The Review of International Organizations* 4(3):269–291.

Min, H.G., D.H. Lee, C. Nam, M.C. Park and S.H. Nam. 2003. "Determinants of emerging-market bond spreads: Cross-country evidence." *Global Finance Journal* 14(3):271–286.

Mosley, Layna. 2003. *Global Capital and National Governments*. Cambridge University Press.

Mussa, Michael and Miguel Savastano. 2000. The IMF approach to economic stabilization. In *NBER Macroeconomics Annual 1999, Volume 14*. MIT pp. 79–128.

Ozler, Sule. 1991. "Evolution of credit terms: An empirical examination of commercial bank lending to developing countries." *Journal of Development Economics* 38:79–87.

Pina, Álvaro M and Nuno M Venes. 2011. "The political economy of EDP fiscal forecasts: An empirical assessment." *European Journal of Political Economy* 27(3):534–546.

Pollins, B.M. 1989. "Conflict, cooperation, and commerce: The effect of international political interactions on bilateral trade flows." *American Journal of Political Science* pp. 737–761.

Pons, Jordi. 1999. "The accuracy of IMF and OECD forecasts for G7 countries." *Journal of Forecasting* 19(1):53–63.

Pop-Eleches, Grigore. 2008. "Crisis in the Eye of the Beholder Economic Crisis and Partisan Politics in Latin American and East European International Monetary Fund Programs." *Comparative Political Studies* 41(9):1179–1211.

Przeworski, A. and J.R. Vreeland. 2000. "The effect of IMF programs on economic growth." *Journal of development Economics* 62(2):385–422.

Putnam, R.D. 1988. "Diplomacy and domestic politics: the logic of two-level games." *International organization* 42(03):427–460.

Ramcharan, R. 2003. *Reputation, debt, and policy conditionality*. IMF working paper No. 192.

Rosen, Howard. 2004. Free trade agreements as foreign policy tools: The US-Israel andUS-Jordan FTAs. In *Free trade agreements: US strategies and priorities*, ed. Jeffrey Joseph Schott. Peterson Institute for International Economics.

Roubini, Nouriel. 1991. "Economic and political determinants of budget deficits in developing countries." *Journal of International Money and Finance* 10:S49–S72.

Sanders, D. 1996. "Economic performance, management competence and the outcome of the next general election." *Political Studies* 44(2):203–231.

Shi, M. and J. Svensson. 2006. "Political budget cycles: Do they differ across countries and why?" *Journal of Public Economics* 90(8-9):1367–1389.

Simmons, Beth A. 2000. "International law and state behavior: commitment and compliance in international monetary affairs." *American Political Science Review* 94(4):8119–835.

Smith, A. and J.R. Vreeland. 2003. The survival of political leaders and IMF programs. In *Globalization and the nation state: The impact of the IMF and the World Bank*. Routledge pp. 263–289.

Stone, Randall W. 2002. *Lending credibility: The International Monetary Fund and the post-communist transition*. Princeton University Press.

Stone, R.W. 2004. "The political economy of IMF lending in Africa." *American Political Science Review* 98(4):577–592.

Stone, R.W. 2011. *Controlling institutions: International organizations and the global economy*. Cambridge University Press.

Strezhnev, Anton ; Voeten, Erik. 2013. "United Nations General Assembly Voting Data. V5." `http://hdl.handle.net/1902.1/12379`.

Thacker, S.C. 1999. "The high politics of IMF lending." *World Politics* pp. 38–75.

Thompson, A. 2006. "Coercion through IOs: The Security Council and the logic of information transmission." *International Organization* 60(1):1.

Timmermann, Allan. 2007. "An evaluation of the World Economic Outlook forecasts." *IMF Staff Papers* pp. 1–33.

Tomz, Michael and Mark Wright. 2010. Sovereign Theft: Theory and Evidence about Sovereign Default and Expropriation. In *n The Natural Resources Trap: Private Investment without Public Commitment*, ed. William Hogan and Federico Sturzenegger. Cambridge, MA: MIT Press.

Vaubel, R. 1986. "A public choice approach to international organization." *Public Choice* 51(1):39–57.

Vaubel, R. 2004. "Federation with Majority Decisions: Economic Lessons from the History of the United States, Germany and the European Union." *Economic Affairs* 24(4):53–59.

Vaubel, R. 2006. "Principal-agent problems in international organizations." *The Review of International Organizations* 1(2):125–138.

Vaubel, Roland. 1991. The Political Economy of the International Monetary Fund: A Public Choice Analysis. In *The Political Economy of International Organizations: A Public Choice Approach*, ed. Roland Vaubel and Thomas D. Willett. Boulder, Co.: Westview Press.

Vaubel, Roland. 1996. "Bureaucracy at the IMF and theWorld Bank: A comparison of the evidence." *The World Economy* 19:195–210.

Vaubel, Roland. 2009. "Lessons From The Financial Crisis: The International Dimension." *Economic Affairs* 29(3):22–26.

Venzke, Ingo. 2008. "International bureaucracies from a political science perspective–agency, authority and international institutional law." *German Law Journal* 9(11):14011428.

Vreeland, J.R. 2003. "Why do governments and the IMF enter into agreements? Statistically selected cases." *International Political Science Review* 24(3):321.

WB. 2013. *World development indicators*. Washington D.C.: The World Bank Group.