Do International Bureaucrats Matter? Evidence from the International Monetary Fund*

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Abstract

Do policy outcomes in international organizations reflect the distribution of member state preferences? Or is policy making shaped by the abilities and biases of individual bureaucrats? Theoretical accounts of inter-governmental cooperation emphasize the role of delegation to international organizations, both in insulating policy making from the preferences of member states and, unavoidably, in creating potential for bureaucratic drift. Yet few studies have examined the individual impact of senior staff members on policy outcomes. We develop a theory of insulation from political pressure which results in significant delegation to individual bureaucrats within the IMF. We test the credibility of delegation employing an event study of financial market reactions to the announcements of new senior staff appointments. We also test the argument that delegation is consequential by analyzing IMF forecasts of country-level economic indicators for evidence of systematic individual policy impact. Both empirical strategies yield strong support for the argument that there is credible delegation to bureaucratic agents who are able to have an independent impact on policy outcomes as a result.

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1 Introduction

In late 2011 IMF policy towards Eurozone countries took a sharp turn. From the earliest days of its involvement in the crisis the IMF played the role of external financier as well as impartial monitor, uniquely capable to reassuring markets about the sustainability of European countries' debt. Via new exceptional access provisions the IMF lent unprecedented amounts to EU member states. Greece received financial assistance amounting to twenty-two times its quota, the largest IMF package in history relative to the size of its economy.[1] Ireland similarly received sixteen times its quota in loans, suggesting a soft money policy intended to ease financial market anxieties and buy time for policy makers to design long-term solutions (Stevis and Talley, 2013).

Over the following years the IMF reversed course. By the time negotiators met to hash out a bailout for Cyprus in 2013 the IMF took a hard line, agreeing to a loan of just six times quota and forcing unpopular losses on bank depositors. Similarly, the IMF threatened to cut off Greek financing unless it could negotiate a debt write-down with other EU member states, a previously unthinkable position. Rumors circulated that IMF staff had considered debt restructuring, but been overruled by EU member states. In explaining the IMF's course reversal, one journalist noted: "a two syllable reason: Reza" (Jones, 2013).

"Reza" refers to Reza Mogadam, an Iranian-born British national who took over as director of the Fund's European Department in November 2011. With a reputation as a tough negotiator, Mogadam set out to change perceptions that the Fund was showing favoritism to European economies in deference to powerful members of its executive board. Unsurprisingly, Mogadam's replacement in late 2014 by Poul Thomsen, the architect of original Greek bailout, led to widespread speculation about the direction of IMF policy towards Europe as well as the state of the European economy (Talley, 2014).

This type of speculation about bureaucratic appointments, common among journalists and commentators, is not limited to the Eurozone crisis. The Fund encompasses five Area Departments and changes in leadership are regularly reported in the news media, with reports scouring the employment history of new appointees - or in some cases their scholarly work - for clues about their predispositions and likely impact on regional policy

[1] Member quotas are funds payed into the IMF when a country joins and which it may subsequently borrow in times of crisis. While it is increasingly common for the IMF to lent amounts larger than quota, the Greek package was the largest in history relative to the size of its economy.

making. Especially during times of crisis, Area Department heads come to be well-known figures in their own right. Hubert Neiss, who headed the Asia Pacific Department during the Asian Financial Crisis, "became one of the most recognized faces in Jakarta...hordes of reporters trailed his visits to different government buildings and reported every syllable he said" (Webb et al., 2000).

This emphasis on individual personalities and impacts is far-removed from the usual scholarly study of international organizations (IOs). Delegation to IOs is typically viewed through the lens of the principal-agent framework, in which IOs are conceived of as unitary, rational actors with uniform and well-defined preferences. While a growing number of studies theorize about the nature and determinants of these preferences, there has been less attention to the role of individuals within these organizations and how variation in individual characteristics might matter for policy outcomes (Copelovitch, 2010; Chwieroth, 2013).[2]

We argue that individuals matter for policy outcomes in international cooperation and develop our argument in the context of the IMF. The argument - and subsequent empirical analysis - proceeds in two steps. First we argue that delegation to individual members of staff may be optimal for member states and that this delegation results in considerable autonomy for high-level individuals within the IMF. Second, autonomy matters since individuals vary substantially in characteristics which shape their approach to the work as well as their suitability for the position. Drawing on political economy literature on individual bureaucratic characteristics we focus on two qualities in particular: policy bias and competence (or human capital).

To preview our theory, we argue that as the international lender of last resort the IMF faces a classic challenge of encouraging moral hazard in the economic policies of its member states. The IMF cannot commit to tough lending practices - which might ordinarily mitigate the problem of moral hazard - due to the short-term political incentives of member states to intervene on behalf of their allies or domestic constituents (Stone, 2004; Broz and Hawes, 2006). States are unwilling to grant full independence of international organizations, knowing that in exigent circumstances they will prefer to intervene and bear the reputational costs of politicizing the Fund's lending policies.

A solution to this dilemma, which raises the costs of intervention without foreclosing it as

[2]See also Dreher and Vaubel (2004) and Barnett and Finnemore (2004) for classic analyses of the IMF as an autonomous actor.

a possibility, is to encourage delegation, not only to the IMF, but also downwards through the ranks of the IMF bureaucracy. This raises the costs of intervention by member states by rendering it more transparent. Such obvious intervention undermines the legitimacy of the IMF in the eyes of other member states as well as citizens around the world. These costs are not sufficient to prevent intervention when state preferences are sufficiently intense. Yet insulation via bureaucratic delegation mitigates the threat of moral hazard by enabling individual bureaucrats to adopt a hard line by and large free of political intervention.

We divide our empirical analysis into two components reflecting the theoretical argument. First, we provide evidence of the credibility of delegation to individual members of staff employing an event study of sovereign risk premia following the announcement of new appointments of Area Department heads. We find that these announcements have a significant impact on the costs of borrowing for states in the affected region, suggesting that appointments send credible signals about the direction of future policy.[3] The magnitude of effects is significant relative to estimated effects of IMF governance reforms or other high-profile events affecting Fund governance.

Second we explore the consequences of this delegation for policy by analyzing the individual impacts of Area department directors on the biannual economic forecasts which form the basis of the IMF's World Economic Outlook. While lending typically receives greater media and scholarly attention we argue there are particular theoretical as well as empirical reasons to focus on the Fund's surveillance activities instead, themselves an important component of the organization's mandate. We find significant differences in the expected forecast error for individual directors, consistent with our argument that individuals vary in important characteristics and that these characteristics are consequential for policy outcomes.

We contribute to the existing theoretical and empirical literature on IMF policy making. In terms of theory, we highlight a fundamental commitment problem faced by the Fund, akin to that of domestic central banks. While existing empirical studies have presented a range of evidence for or against the presence of moral hazard, we depart from this literature by arguing that institutional features of the organization may moderate the

[3]While we do not discount the possibilities that these signals are sent strategically by the IMF Managing Director or even by the IMF's Excecutive Board, we argue that they nonetheless provide evidence of credible delegation. In the absence of credible delegation such signals would only be cheap talk and thus unlikely to persuade market actors of a shift in policy.

dangers of moral hazard, albeit while introducing strategic problems of their own.[4]

Our emphasis on institutional design as a solution to commitment problems is consistent with the approach of Stone (2011). Yet we identify an alternative commitment problem with direct implications for delegation and autonomy of Fund decision making. Empirically we also provide evidence that individuals differ within organizations in their impact on policy, suggesting variation in both bias and ability which calls into question the typical approach of analyzing international organizations as unitary actors or at least a set of actors with homogenous preferences.[5]

In the following section we outline our theory of credible delegation and variation in bureaucratic characteristics. In section three we describe our empirical strategy and results relating to the credibility of delegation. In section four we describe our empirical strategy for assessing the impact of individual staff members on forecasting behavior and describe our empirical results. Section five briefly concludes.

2 Argument

As a lender of last resort for the international system, the IMF faces to that of many domestic central banks. Making funds available to countries in difficult times provides relief from crisis in the short-term. But in the long term financial rescues may encourage moral hazard: the availability of emergency financing itself may encourage risky or impractical economic policies in member countries. As Wilson Schmidt, President Reagan's nominee to head the World Bank, famously argued: "absent the IMF, individual countries would presumably be less likely to get into balance-of-payment difficulties because they could not rely on the prospect of Fund resources when those difficulties arose" Schmidt (1979).

Moral hazard affects not only countries currently enjoying IMF financing or who have done so in the past, but rather alters the risk calculations of all member states, potentially encouraging a systemic bias towards irresponsible national economic policies. The risks of moral hazard entailed by IMF lending have been debated for decades. Writing in the early 1980s Vaubel (1983) analyzed the negative impacts of IMF lending, concluding

[4]Among others see Dreher and Vaubel (2004); Lane and Phillips (2000); Lee and Shin (2008) and Haldane and Scheibe (2004).

[5]For the former see Johns (2007); Fang and Stone (2012) and Copelovitch (2010). For the latter see Barnett and Finnemore (2004) and Chwieroth (2013) among others.

that lending practices were "unnecessary and probably even counterproductive" (291). Concerns about moral hazard gained prominence in particular following the financial crises in Mexico and Asia during the 1990s.

This growing scrutiny encouraged the IMF to undertake its own internal study of the potential for moral hazard in 2000 (Lane and Phillips, 2000). While the study concluded that there was little evidence of systematic moral hazard, more recent work finds that monetary expansion and government deficit size are both systematically correlated with a country's remaining credit with the Fund (Dreher and Vaubel, 2004). A number of additional studies reach similar conclusions.[6]

The problem of moral hazard is worsened by the incentives of powerful IMF members to intervene in lending practices during times of crisis. Numerous studies have established the particular influence of the United States, but also more broadly the so-called G-5 countries in IMF decision making (Stone, 2004). As some of the richest countries in the international system, these member states in particular benefit from a stable and open financial system. The growing inter-connectedness of financial markets around the world has contributed to a significant risk that crisis in one country will spread quickly to others. Fear of contagion may encourage member states to demand more lenient lending in the face of balance-of-payments problems (Copelovitch, 2010).

Beyond concerns about global financial stability, powerful states often intervene in IMF decision making either to prop up friendly regimes or to curry influence of one form or another. An extensive body of literature shows that U.S. allies and countries whose UN voting aligns with that of the U.S. receive considerably more generous loans and on more lenient terms (Dreher et al., 2009; Oatley and Yackee, 2004; Dreher and Jensen, 2007). Alternatively powerful states may intervene on behalf of domestic constituencies, such as "money center" banks who often hold considerable exposure to developing country sovereign debt (Copelovitch, 2010; Broz and Hawes, 2006).

The IMF thus faces a time-inconsistency problem similar to that of a central bank. As analyzed in the classic work of Barro and Gordon (1983) national leaders have incentive to "surprise" markets with inflationary policies in order to raise employment levels. Sophisticated citizens will anticipate these incentives, so that increasingly extreme inflation is required in order to achieve employment objectives. The classic solution to this in-

[6]Inter alia see Lee and Shin (2008) and Haldane and Scheibe (2004). For an overview of empirical studies see Dreher (2004) which describes a significant body of evidence attesting to the presence of moral hazard.

centive problem is a commitment device in the form of an independent central banker, with more conservative preferences than national leaders themselves (Alesina, 1989; Grilli et al., 1991).

This solution to the banker's commitment problem is unfortunately unavailable to the IMF where member states are reluctant to fully relinquish oversight authority (Hawkins et al., 2006). Fears of bureaucratic drift or organizational slack make full delegation impractical (Barnett and Finnemore, 2004). Domestic audiences, whose tax dollars fund international organizations, frequently demand accountability via their political leaders for Fund policies of which they disapprove. Finally, while delegation overall may mitigate the risk of moral hazard, member must balance these gains against their own anticipated desire to intervene in policy making in the rare cases when incentives are sufficiently extreme (Stone, 2011).

We argue that the result of these competing incentives is a particular form of partial delegation. Member states embrace forms of institutional insulation which raise the costs of their own intervention without foreclosing its possibility. We focus in particular on delegation not only to the IMF, but also *within* the IMF to senior members of the bureaucratic staff. In other words, member states do not only vest autonomy in the IMF as a whole, they also embrace downward delegation as an organizing principle.

Downward delegation is desirable since it raises the cost of intervention by rendering it more transparent. While high-ranking officials of member states may interact regularly with the Managing Director of the Fund, applying pressure to lower level bureaucrats entails a significantly higher risk of exposure. The exposure of political interference is itself costly since it undermines the legitimacy of the organization both in the eyes of other member states and in the eyes of citizens around the world (Stone, 2011).

Of course this form of insulation cannot fully dampen the influence of member states who are willing to bear the costs of intervention when the stakes are sufficiently high. Nor are senior bureaucrats given sufficient autonomy to make lending decisions in isolation. Nonetheless we argue that senior staff members are sufficiently autonomous that these individuals can play a key role in shaping IMF policy, acting as an important counterweight to politically-motivated decision making.

At the same time vesting this type of autonomy in individual bureaucrats carries significant risks. While scholarship on international organizations has largely analyzed the IMF as a unitary actor, an extensive literature on domestic bureaucracies highlights the impor-

tance of variation in bureaucratic characteristics for policy outcomes.[7] Two characteristics of bureaucrats have received particular attention in the literature.

The first of these - bias - results when bureaucrats hold individual preferences which differ from those of their principals (member states). Delegation to biased agents in the context of the IMF may be desirable to the extent that agents preferring hawkish lending practices may help to mitigate the moral hazard problem by raising the costs of emergency finance. However, IMF bureaucrats are also responsible for significant information gathering and dissemination. Each IMF area department regularly sends representatives to member states in its area of responsibility to gather information on the ground and report back to member states via the Executive Board. Where preferences of senior bureaucrats diverge from those of member states there is a high risk that the information transmitted will itself be biased, limiting principals' access to accurate information (Crawford and Sobel, 1982; Gailmard and Patty, 2012).

The second trait emphasized in the literature on bureaucratic politics is ability or competence. Bureaucrats may vary in their overall competence or suitability for the particular position to which they are appointed. An alternative though substantively equivalent interpretation is that individuals differ in their cost of effort, making shirking more likely among some bureaucrats than others. Finally, competence may reflect the accumulation of particular forms of human capital over the course of an individual's career. Variation in the nature of this accumulated capital will also lead to differences in the way that individuals perform the tasks assigned to them. We argue that in the presence of meaningful delegation, variation in individual ability levels - along with individual biases - will have meaningful consequences for policy.

Thus the argument we advance consists of two distinct, though inter-related, claims. First, significant delegation occurs not only to the IMF as a whole, but also within the IMF to individual members of staff. Second, this delegation is consequential for policy outcomes due to variation in individual bureaucratic traits, in particular bias and competence. We assess these two claims in turn. The following section describes our strategy for assessing the credibility of delegation to senior members of the IMF staff.

[7] For examples of this unitary actor approach see Copelovitch (2010) or Chwieroth (2013).

3 Is Delegation Credible?

If delegation is credible then the identity of new appointments will convey information about the likely direction of future policy, leading market participants to update their assessments of sovereign risk. IMF lending decisions have direct implications for financial stability and the ability of sovereigns to repay their debts. Market efficiency implies that financial actors will incorporate this new information in the form of risk premia. The resulting shifts in sovereign bond spreads provide a useful indication of the anticipated impact of newly-announced staff appointments.

H1: Financial markets will react to new appointments

To test this hypothesis about the influence of individual bureaucrats we study financial market reactions to the announcement of new IMF Director of Area Department appointments. We focus on delegation to IMF senior staff because these are the most prominent bureaucratic appointments at the IMF, so changes at this level are always publicly announced. In addition, while there is evidence that bureaucrats at lower ranks in the IMF might also impact policy (Chwieroth, 2013; Nelson, 2014), given IMF's culture of hierarchy, we expect decision-making power to be concentrated at the senior official level. We focus on the senior officials in the IMF's area departments[8] as core departments in charge of country-specific policy advice, assistance, and monitoring, as well as in charge of liaising with the countries under IMF programs via resident representative offices and regional technical assistance centers.

We do not put forth any hypotheses about how individual characteristics of newly appointed senior officials might impact financial market reactions. The effects which we identify represent shifts in the beliefs of investors about the direction of future policy. Both the direction and magnitude of these shifts will depend not only on characteristics of individual staff appointees but also on the prior distribution of investor beliefs about the future direction of policy. In the absence of a model of these prior beliefs we believe caution is warranted in interpreting the estimated effects. Our expectation is simply that

[8]IMF's current area departments are: Western Hemisphere, Africa, Asia Pacific, Europe, Middle East and Central Asia. Note that there have been several episodes of restructuring and reorganization or the area departments since 1990. In 1991, the Asia department was split into the Central Asia Department and the Southeast Asia and Pacific Department. In 1992, the Europe II Department was created, to accommodate countries formerly under the influence of the Soviet Union. In 1997, the Central Asia Department and Southeast Asia and Pacific Department were merged into the Asia and Pacific Department. In 2003, the countries under Europe II Department were transferred to the European Department and the newly created Middle East and Central Asia Department.

senior staff appointments will have a significant impact on the beliefs of market participants, indicating the credibility of delegation as argued above. In the next section we consider the impact of individual characteristics in greater detail.

3.1 Event Study Methodology

We employ an event study framework to estimate the impact of staff appointments. Event studies have been widely employed in the literature on corporate finance and, increasingly, the study of international institutions. In the context of corporate finance, event studies explore changes in firm stock prices in reaction to the disclosure of new information. The core intuition behind these event studies is that the magnitude of unanticipated returns to stock prices provides a useful measure of the impact of events on shareholder wealth (Kothari and Warner, 2007).

More recently, within the study of international institutions, event studies have been employed to assess the credibility of negotiated outcomes. Wilf (2016) studies the impact of Basel III negotiations on regulated banks, finding evidence that international negotiations are viewed as credible and thus impact perceptions of banks' value. In a similar vein Kucik and Pelc (2016) demonstrate that dispute settlement rulings within the World Trade Organization impact the value of firms even in countries not party to specific disputes, evidence that investors anticipate systemic shifts in regulatory policy following novel judicial rulings.

In contrast to these approaches we employ an event study to assess whether the identity of new staff appointments conveys substantial information about the likely directions of future policy and thus the riskiness of sovereign lending. We define an event as any change in the heads of area departments, and consider the date of the event the first announcement identifying the appointment of a new Department Director. The IMF has a total of five area departments, in charge of offering macroeconomic and financial sector advice to the countries under their jurisdiction: African Department; Asia and Pacific Department; European Department; Middle East and Central Asia Department; Western Hemisphere Department.[9] While non-regional departments also operate in the IMF, they cover functional or support activities only, so we do not consider them in our analysis.

[9] https://www.imf.org/external/about/staff.htm#area

3.2 Event Study Estimation

To identify the events in our sample we gather IMF press releases detailing new staff appointments. The press releases constitute the first public announcement of such changes in senior official positions. We then code all announcement dates as the dates of the events. Table 1 lists the set of staff appointments which we identify and employ in the analysis below. A condition for identification of market reactions to new appointments is for these new appointments to be unexpected. If new appointments were entirely predictable, they should not impact investor sentiment in a specific window. We employ three methods to verify the events in our sample were unexpected. First, we conduct systematic reviews of investor news reports such as the Wall Street Journal (WSJ) for the year preceding an appointment announcement. We pay particular attention to those cases where the head of an area department announces her decision to quit far in advance, or similarly, in cases where exogenous shocks led to a change in the head of an area department. Second, we conducted a series of interviews about the appointment process at the IMF. Both methods led us to conclude that the process is very confidential, and that, in practice, both internally within the IMF and externally the information on the appointment is known almost simultaneously, when the communications department issues an official announcement about the appointment. We also tackle this issue empirically, by dropping days -4 to -1 from our estimation window. Doing so ensures that any anticipation effects will not affect the results.

To construct our dependent variable, we collect data on daily sovereign bond interest rates for all available countries for each event using the Global Financial Database (GFD). Data availability is limited in particular for developing countries prior to 2010. For this reason we are forced to drop several events from our sample, as noted in Table 1. To calculate our dependent variable we subtract the U.S. daily interest rate on benchmark ten year bonds from that of each country in the sample. The resulting measure, *Spread*, describes the risk premia associated with a particular country's borrowing.

We follow the standard literature in finance to implement the event study. For each event we define treated countries as those within the region corresponding to the new staff appointment, irrespective of the country's IMF loan status. That is, we include all countries in the relevant region regardless of their prior interactions with the IMF. In doing so we rely on the anticipated systemic consequences of IMF lending decisions for the region as a whole.

Table 1: IMF Senior Staff Appointments, 1990-2016

Department	Director	Announcement Date	In Sample?
European II	John Odling-Smee	9-Jan-92	No
Middle Eastern	Paul Chabrier	20-Nov-92	No
African	Evangelos Calamitsis	5-Oct-94	No
Western Hemisphere	Claudio Loser	5-Oct-94	No
Asia Pacific	Hubert Neiss	6-Dec-96	Yes
European I	Michael Deppler	6-Feb-97	Yes
African	G.E. Gondwe	8-Dec-98	No
Asia Pacific	Yusuke Horiguchi	28-Jan-00	Yes
African	Abdoulaye Bio Tchane	10-Jan-02	No
Middle Eastern	George Abed	10-Apr-02	No
Western Hemisphere	Anoop Singh	10-Jun-02	No
Asia Pacific	David Burton	30-Sep-02	Yes
Middle East and Central Asia	Mohsin Khan	30-Jul-03	Yes
Asia Pacific	Anoop Singh	1-May-08	Yes
Middle East and Central Asia	Masood Ahmed	1-May-08	No
African	Antoinette Sayeh	27-May-08	No
European	Marek Belka	15-Jul-08	Yes
Western Hemisphere	Nicolas Eyzaguirre	27-Aug-08	Yes
European	Antonio Borges	26-Oct-10	Yes
European	Reza Moghadam	16-Nov-11	Yes
Western Hemisphere	Alejandro Werner	6-Nov-12	Yes
Asia Pacific	Changyong Rhee	26-Nov-13	Yes
European	Poul Thomsen	3-Nov-14	Yes
African	Abebe Aemro Selassie	15-Sep-16	Yes
Middle East and Central Asia	Jihad Azour	1-Dec-16	Yes

Announcement of new senior staff appointments 1990 - 2018. *Announcement Date* refers to the date of IMF press release detailing the appointment of a new director. Gray indicates those events dropped from the analysis due to data limitations.

Index events by $k = 1, ..., K$ and treated countries by $i = 1, ..., N_k$. For all events we define an estimation window, $[-L, -l]$, consisting of a continuous period of $L - l + 1$ days prior to the event date. We also define an event window, $[t, T]$, consisting of a $T - t + 1$ length interval of days following each event. Index days by $t = -L, ..., 0, ..., T$, where $t = 0$ corresponds to the announcement date. For each treated country and each event we first estimate the following "market model" of normal returns using data from days within the estimation window only, $t \in [-L, -l]$,

$$Spread_{i,t} = \alpha_i + \beta_i Index_{k,t} + \epsilon_{i,t}$$

$Index_{k,t}$ is calculated as the mean of $Spread_{j,t}$ for all countries outside of the treated region for event k. We use the resulting parameter estimates to predict $Spread_{i,t}$ for each day in the event window, $t \in [t, T]$.

Country i's abnormal return following event k is equal to the difference between the observed risk premium $Spread_{i,t}$ and the predicted risk premium $\widehat{Spread}_{i,t}$. This abnormal return corresponds to unanticipated shifts in risk premia resulting from the information conveyed by announcement k. We define cumulative abnormal returns for country i following event k as,[10]

$$\widehat{CAR}_{i,k} = \sum_{t \in [t,T]} Spread_{i,t} - \widehat{Spread}_{i,t}$$

and cumulative average abnormal returns following event k as,

$$\widehat{CAAR}_k = \frac{1}{N} \sum_{i=1}^{N} \widehat{CAR}_{i,k}$$

Our estimate of the sampling variance for event k is calculated as the mean variance of abnormal returns observed during the estimation window (Kothari and Warner, 2007). Figure 1 provides intuition for the methodology by plotting the observed (black) versus predicted (grey) risk premia for several countries before and after an event announcement (indicated by the red dotted line).

[10] For discussion of these quantities of interest and their associated variance see Dasgupta et al. (1998).

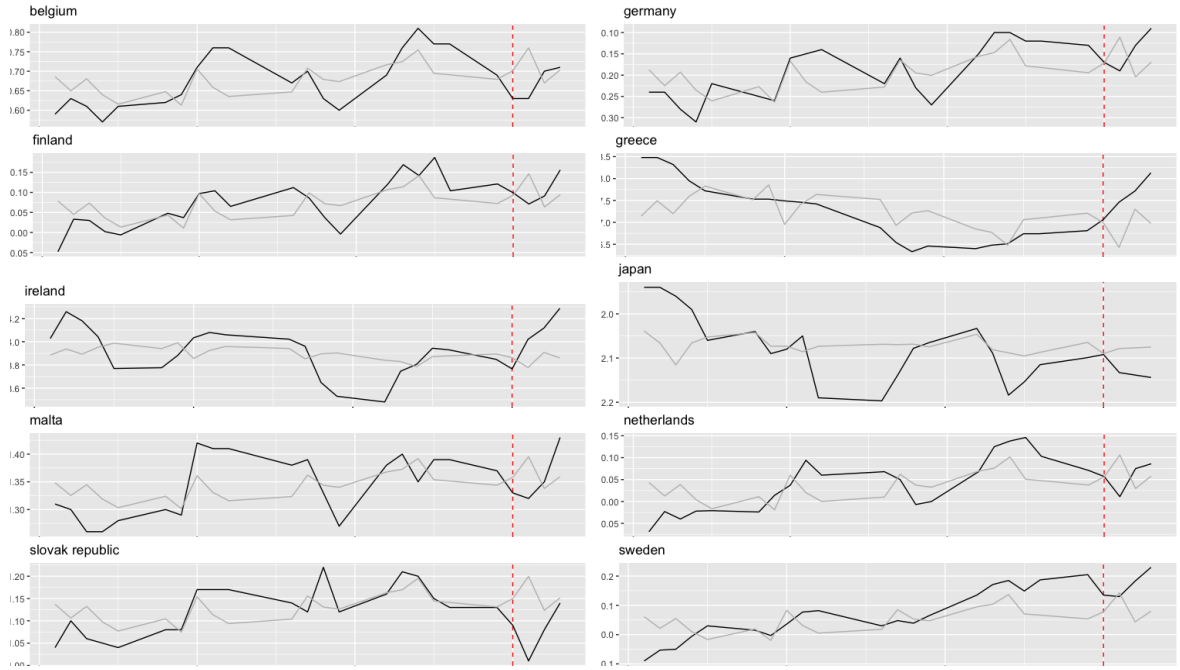

Figure 1: **Country Trends.** Raw risk premia trends following the announcement that Antonio Borges would be appointed director of the European Department. Plots depict estimation window $(-30, -5)$ and event window $(0, 5)$.

3.3 Do financial markets react to new appointments?

Figure 2 presents the main results of our event study analysis, testing the primary hypothesis that financial markets will react to new appointments. We present results for an estimation window of $(-180, -5)$ days and three different event windows, $(0, 1)$, $(0, 3)$, and $(0, 5)$. The figure illustrates substantial heterogeneity in both direction and magnitude of the Cumulative Abnormal Returns Effects. Nevertheless, the analysis establishes that the announcement of new area department directors sends credible signals to the market about the future direction of IMF policy for the region where the change occurred. Effects are consistent across estimations.

To assess the substantive significance of the estimated shifts in risk premia we compare the results above with those corresponding to several high-profile events which we also expect to have an impact on expectations of country risk. First, we consider the announcement of reforms to the IMF's formal governance structure. These reforms reflect a growing consensus that the representation of countries such as Brazil, China, and Mexico have not kept pace with their growing contribution to the global economy. To examine these changes, we consider two milestones in the reform process: first, the entry into force of

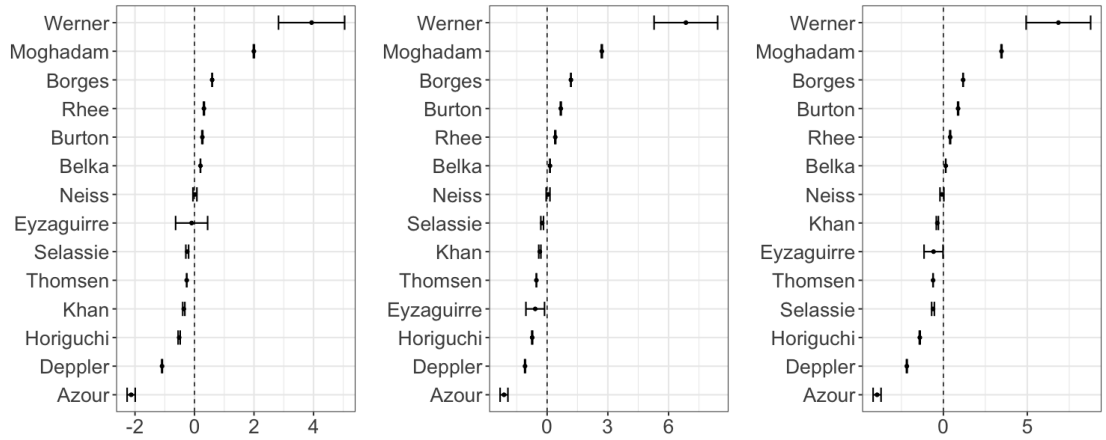

Figure 2: **Cumulative Abnormal Returns Effects by Event.** Cumulative abnormal returns effects by event for estimation window $(-180, -5)$ for different event windows (from left to right): $(0, 1)$, $(0, 3)$, and $(0, 5)$. Standard Errors clustered by region.

the Voice and Participation Amendment and second, passage of legislation by the United States Congress approving reforms to IMF quota allocations.[11],[12]

As a second benchmark we consider financial market reactions to the arrest of then-IMF Managing Director, Dominique Strauss-Kahn for sexual assault of a hotel employee on May 14, 2011. Strauss-Kahn resigned his position at the IMF in the immediate aftermath of his arrest, though given the seriousness of the charges against him we employ the date of arrest as the first significant signal that a change in top-level leadership was immanent.

Our analysis of these three events is similar to that in the main estimation above with one change. Rather than define treatment at the region level (since all regions arguably receive the same treatment for each of these events) we define treated countries only as those most directly impacted by IMF policies, that is countries under IMF lending arrangements during each event. We anticipate that quota reforms, which result in a more equal distribution of political influence, will lead to higher risk assessments, reflecting enhanced credibility of IMF conditionality.[13] We anticipate that the arrest of Strauss-Kahn will also lead to higher risk assessments reflecting market uncertainty about his replacement and implications for future policy. The results are plotted in Figure 3.

[11] While we identified several additional milestones in the course of the reform process we are forced to limit our attention to the two described above due to data constraints.

[12] See Appendix A for additional background on quota reform and the specific events employed in the analysis.

[13] This follows Copelovitch (2010) which argues that heterogeneity of influential state interests can act as a check on overall politicization of lending decisions.

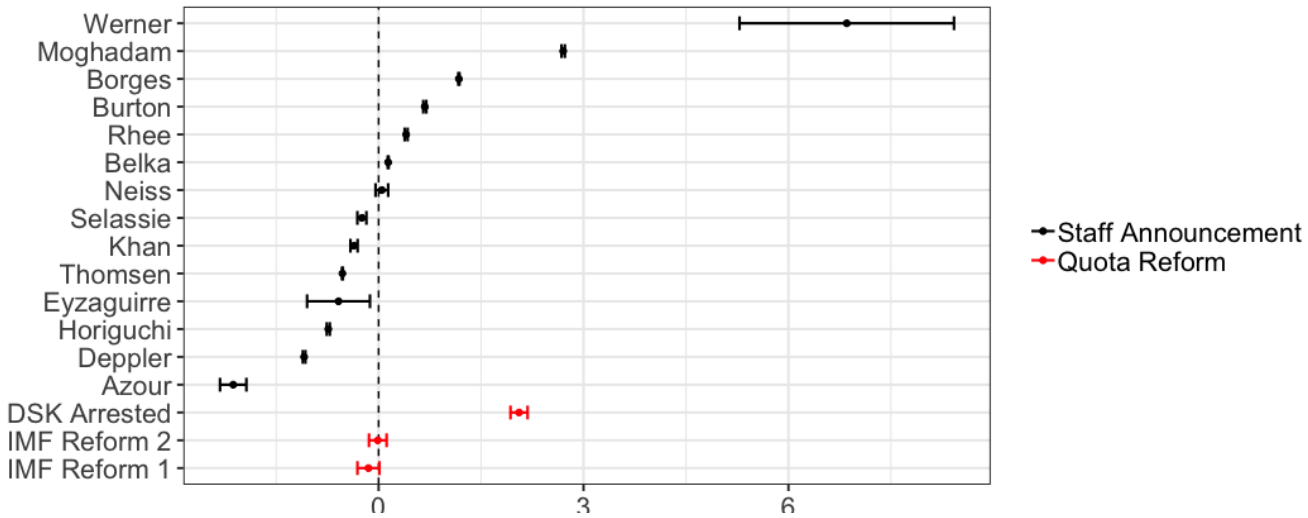

Figure 3: **Substantive Significance: Magnitude Relative to Other Events.** Cumulative abnormal returns with confidence intervals by event for estimation window $(-180, -5)$ and event window $(0, 3)$. Black indicates staff announcement. Red indicate either quota reform announcements or the date former IMF Managing Director Dominique Strauss-Kahn was arrested. Standard Errors clustered by region.

Finally we consider variation in country-level abnormal returns as well as well as the stability of these country level estimates across event and estimation windows. As Figure 4 makes clear the appointments of Poul Thomsen and Reza Moghadam produced dramatically different assessments by financial actors of the direction of future IMF policy and its implications for regional stability. While estimates for Thomsen are consistently negative and statistically significant across countries the reverse is true for Moghadam, suggesting that the former appointment was viewed as reassuring by financial actors while the latter was interpreted pessimistically.

4 Is Delegation Consequential?

Next we consider the impact of individual senior staff members on policy outcomes. The results above establishes the credibility of delegation to individual senior bureaucrats. The next step in our argument is to establish that this delegation also has meaningful consequences for policy. The IMF has two main policy functions: lending and surveillance as outlined in the institution's Articles of Agreement. We choose to focus on surveillance, in particular the creation of bi-annual economic forecasts for each country which are compiled and released as the World Economic Outlook.

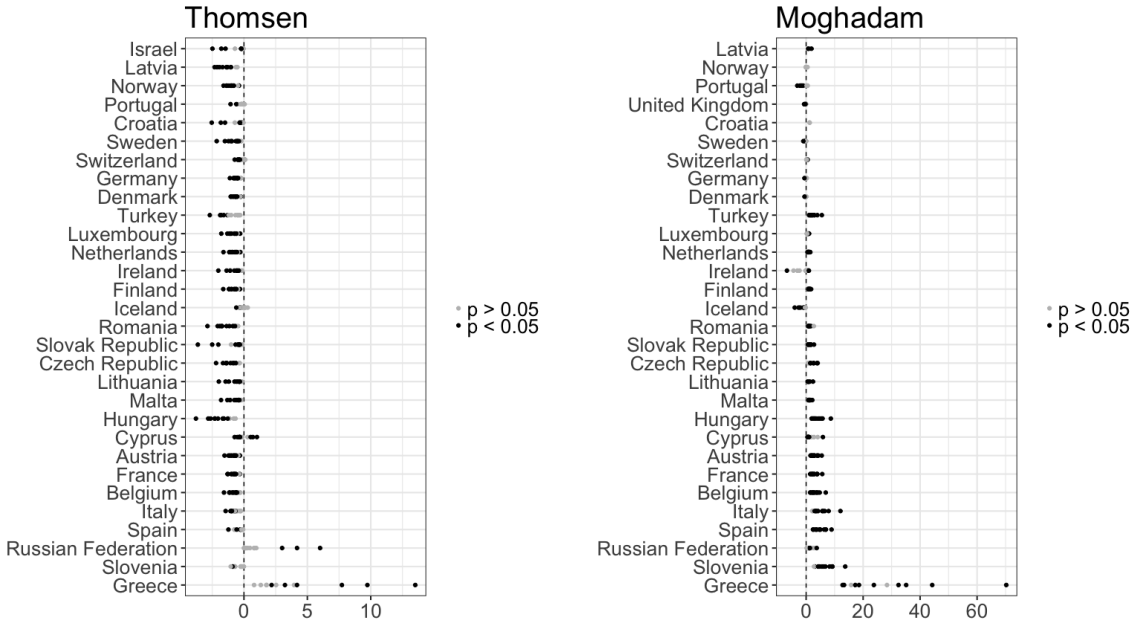

Figure 4: **Homogeneous Cumulative Abnormal Returns.** Cumulative abnormal returns for all event and estimation windows by country for indicated event. Black dots indicate significance at $p < 0.05$.

These forecasts encompass major macroeconomic variables and are a core component of the IMF's surveillance activities. While lending is significantly more high-profile (and has been the subject of the bulk of existing scholarship), surveillance activities in fact account for a larger share of the IMF's internal budget. Forecasts draw primarily on information gathered by staff via consultation in-country with key government representatives. This makes them a valuable source of information which is disseminated not only to IMF member states but also the public at large. While forecasts are generated via econometric models, these methods nonetheless leave significant leeway for members of staff to influence their outcome. As noted by the IMF's Independent Evaluation Office: "...the IMF [continues] to rely mostly on macroeconomic models where the financial risks and vulnerabilities are added on an ad-hoc basis."(Jeanne, 2018)

We choose forecasts as our outcome of interest for both theoretical and practical reasons. As noted above, a key drawback to delegation highlighted in the theoretical literature is the potential for information loss either via biased information transmission or via lack of competence. Analyzing area department forecasts is also empirically appropriate as WEO estimates are released at regular intervals and is thus independent of the appointment or retirement of individual area heads. In contrast, the timing of IMF lending may be

plausibly endogenous to leadership transitions themselves. Moreover the biannual nature of WEO forecasts ensures a large number of observations for each director over time, again in contrast to IMF lending arrangements which are significantly more rare.

As discussed above existing literature on domestic bureaucratic performance emphasizes variation in individual policy biases as well as competence. Both of these characteristics will have implications for a staff member's expected forecast error. Thus systematic differences in directors' expected forecast error would suggest that delegation has a meaningful impact on policy outcomes, reflecting individual variation in these core traits.

> *H2: Area department directors will differ systematically in their forecast errors.*

Our outcome of interest is an individual area director's forecast error in period t, calculated as the predicted GDP for year $t+2$ less the observed GDP reported in year $t+4$.[14] We estimate the following model:

$$ForecastError_{i,t} = \alpha + \sum_{k \in \mathcal{K}} \left(\beta_k Director^k_{i,t} + controls + \gamma_i + \delta_t \right) + \epsilon_{i,t},$$

where γ_i represents country fixed effects and δ_t year fixed effects.

Dreher et al. (2008) distinguish among three possible sets of explanations for (optimistically) biased forecasts at the IMF: political strategic; defensive forecasting; and stability or mandate orientation. First, members countries might pressure IMF officials directly, or indirectly determine them to produce favorable forecasts, as the IMF depends on the support of its member states. Second, given the IMF can be seen as responsible for the economic performance of those countries under IMF programs, officials might "opt to roll over the share of debt owed to the Fund" to preserve its reputation. Third, IMF officials might downplay risk to avoid spreading financial crises, since negative forecasts can lead to or intensify crises.

We account for the possibility of politically motivated bias by controlling for a country's propensity to vote with the U.S. at the United Nations General Assembly (`UN Affinity`, Bailey et al. (2017)). We account for the possibility of defensive forecasting by controlling for whether a country was under an IMF program in a particular year (`IMF Program`). In addition to this, predictions rely on the availability and accuracy of past outcomes, as past indicators are necessary to compute forecasts. We can expect officials will have a

[14] The IMF regularly revises its forecasts and historical reporting enabling us to assess the forecast error for each country in each year t.

higher rate of inaccuracy where this data is not available. We account for this potential confounder by controlling for the `HRV Index`, which captures "government dissemination of aggregate economic data" (Hollyer et al.).

To test the two potential mechanisms behind variation in forecast accuracy discussed in Section 2 - bias or ability - we compare the effect previous experience has on forecasts. We focus on two types of previous experience, associated with distinct types of human capital: having previously held office in the public sector/government (`Public`); and having worked primarily at the IMF prior to one's appointment to the level of Director of Area Department (`Internal`).

Internal hires will have extensive macroeconomic expertise, as well as previously developed policy networks, both within the IMF and with policy-makers in member countries. The former is especially important, as IMF decision-making is consensus based, with all departments giving some input into policy before it can be implemented, regardless of the department it originated in. The latter is equally relevant, since consultations with policy-makers in member countries are central to gathering the information used in forecasting. On the other hand, given their institutional ties to the IMF, we can expect directors with extensive previous experience at the Fund to be more concerned about reputational costs or the perceived effects of IMF policy. These directors should therefore be susceptible to defensive forecasting, stability or mandate oriented forecasts, or political-strategic pressures.

Former public sector leaders, who might have previously served as Finance Ministers or other high level government positions, will also benefit from extensive macroeconomic expertise, as well as previously developed policy networks with policy-makers in other countries (perhaps even more so within their own region). In addition to this, they might have more knowledge of the procedures on the other side of the IMF lending process, provided they held office in a country that was under IMF programs. On the other hand, because they lack institutional ties to the IMF, they will be less susceptible to internal or external pressures for optimistic forecasts.

If forecast error reflects ability, then these types of human capital derived from prior experience should increase the probability senior officials will accurately predict:

> *H2a: Absolute forecast error will be lower for Directors of Area Departments with previous experience at the IMF.*

H2b: Absolute forecast error will be lower for Directors of Area Departments with extensive previous public policy experience.

To test our ability hypotheses, we estimate the following model:

$$AbsoluteForecastError_{i,t} = \alpha + \beta_1 \cdot Internal_{i,t} + \beta_2 \cdot Public_{i,t} + controls + \gamma_i + \delta_t + \epsilon_{i,t},$$

where γ_i represents country fixed effects and δ_t year fixed effects. We use the Absolute Forecast Error as our outcome because we are interested in how accurate the forecasts are. Ability should not have an effect on the director of the error, where error occurs.

If forecast error reflects bias, then departments under Directors with previous experience at the IMF should be more susceptible to pressure for optimistic forecasts (over-prediction). We expect departments under Directors with previous public sector experience to be more insulated from such pressures, leading to more conservative forecasts (under-prediction).

H2c: Internal hires should over-predict.

H2d: Area department directors with previous public sector experience under-predict

To test our bias hypotheses, we estimate the following model:

$$ForecastError_{i,t} = \alpha + \beta_1 \cdot Internal_{i,t} + \beta_2 \cdot Public_{i,t} + controls + \gamma_i + \delta_t + \epsilon_{i,t},$$

where γ_i represents country fixed effects and δ_t year fixed effects. We use the Forecast Error as our outcome because we are interested in whether senior officials over- or under-predict.

4.1 Do bureaucrats have idiosyncratic effects on policy?

Figure 5 shows descriptive statistics for our sample of directors of area departments. We aggregate over all country-years under each area department, by director. Negative average forecast errors indicate under-predicting, while positive forecast errors indicate over-predicting. We can see that, on average, 70% of our sample of directors under-predict, while 30% over-predict.

Figure 6 presents results from our main estimation. We observe heterogeneous effects on forecast error by Area Department Director, confirming our hypothesis that area depart-

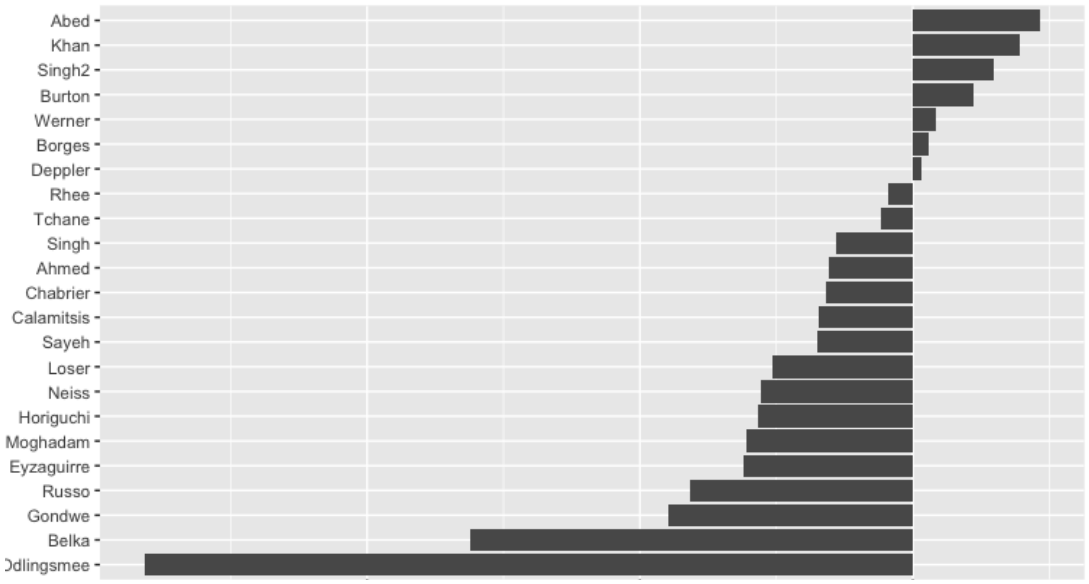

Figure 5: **Average Forecast Error for GDP by Area Departments Directors.** Average forecast errors less than 0 indicate under-predicting, while average forecasts errors greater than 0 indicate over-predicting.

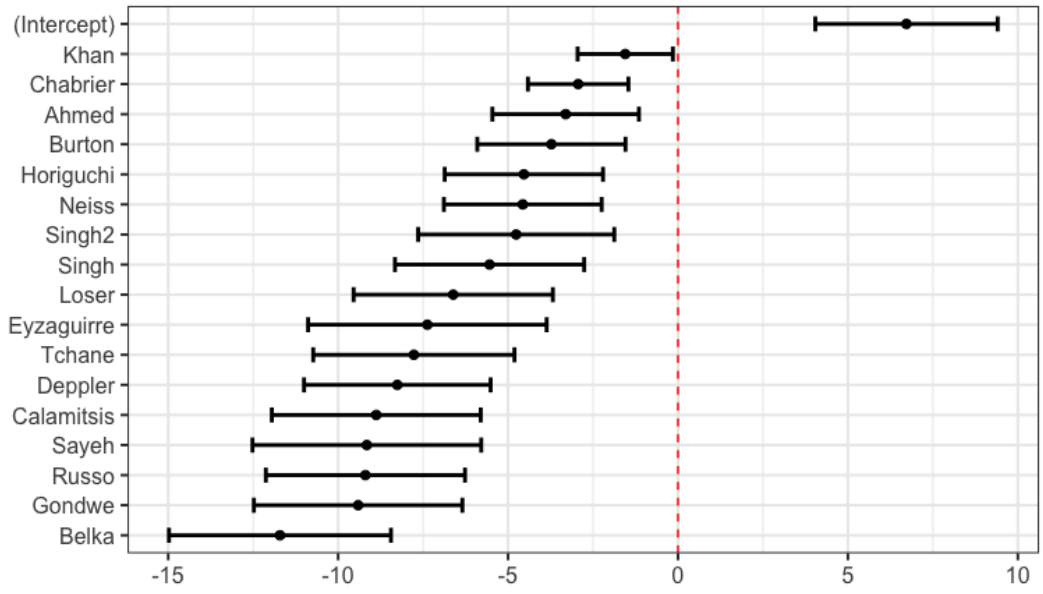

Figure 6: **Heterogeneous Effects on Forecast Error.**

ment directors will differ systematically in their forecast error. Given our specification, effect magnitudes can be interpreted only with respect to the reference category.[15]

Next, we tested our hypotheses about bias and ability. We used three specifications to test our hypotheses. The `No Covariates Model` presents results from the baseline model with no control variables. The `With Covariates Model` presents results from the model with all control variables included. The `Imputed Covariates Model` presents results for the model in which we imputed missing values on the control variables.[16]

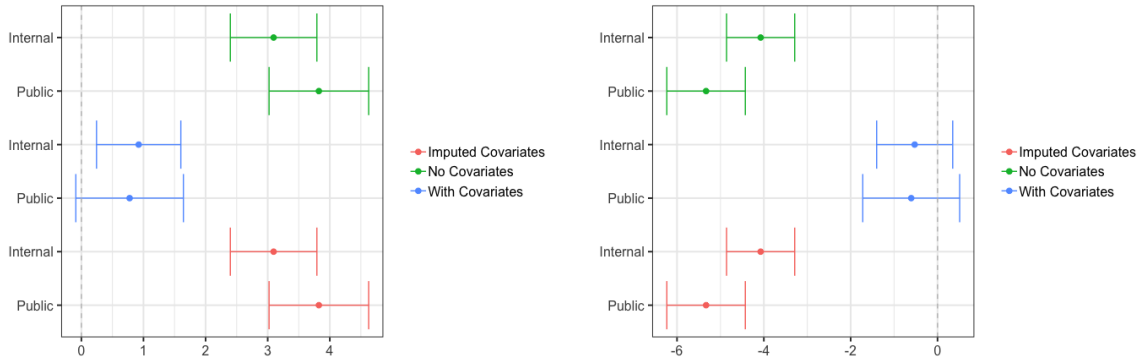

Figure 7: **Previous Experience Effects.** The left-hand side panel shows results for the outcome Absolute Forecast Error. The right-hand side panel shows results for the outcome Forecast Error. The `No Covariates Model` presents results from the baseline model with no control variables. The `With Covariates Model` presents results from the model with all control variables included. The `Imputed Covariates Model` presents results for the model in which we imputed missing values on the control variables. All models include country and year fixed-effects, as well as clustered standard errors.

We did not find evidence in support of our ability hypotheses 2*a* and 2*b*. As the left-hand side panel of Figure 7 shows, we observe a positive effect of both `Internal` and `Public` on the outcome `Absolute Forecast Error`, suggesting that the types of human capital derived from prior experience do not increase the probability senior officials will predict accurately.

We find mixed evidence in support of our bias hypotheses 2*c* and 2*d*. As the right-hand side panel of Figure 7 shows, we observe a negative effect of both `Internal` and `Public` on the outcome `Forecast Error`. Across specifications, `Internal` and `Public` prior experience lead to under-prediction, suggesting the forecast errors do not reflect systematic bias.

[15] Our reference category is George Abed, the area department director with the largest positive average forecast error for the economic indicator GDP.

[16] We mean imputed the control variable `Transparency` using the average of `Transparency` for all countries in the same region.

5 Conclusion

Do individuals matter in international organizations? Existing accounts of international cooperation emphasize delegation to international organizations. Yet international organizations are often analyzed as rational, unitary actors or otherwise as having homogenous or uniform preferences. We explore how delegation within the IMF, combined with variation in individuals' abilities and biases, implies that individuals can also have significant impact on policy.

We motivate our analysis by developing a theory of insulation in response to a credible commitment problem. The availability of IMF financing leads to potential for moral hazard. Yet member states cannot commit not to intervene in times of crisis either out of concern for friendly regimes or for domestic interest groups. While full commitment is infeasible in international organizations, member states can raise the costs of their own intervention by encouraging delegation within the IMF to senior members of staff.

We provide evidence that delegation to senior staff members is credible. Announcements of new staff appointments to area departments result in statistically significant shifts in risk premia for countries in the affected region. We also provide evidence that delegation is consequential, analyzing IMF country-level forecasts of economic indicators and finding significant evidence of systematic forecast errors.

This work contributes to the study of delegation in international organizations by moving beyond the traditional assumption of IOs as unitary actors with well-defined preferences. Future work could explore the role of bureaucrats in other organizations, with particular attention to the institutional features which facilitate or inhibit the individual impact of bureaucrats on policy outcomes.

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Appendix A: Background on Quota Reforms

Above we provided evidence of the substantive significance of the estimated shifts in risk premia by comparing the results above with those corresponding to changes in the IMF's formal governance structure. Here we provide additional background on the Quota and Voice and Quota and Government Reforms, two packages of IMF reform intended to increase the representation of emerging economies in Fund decision making. These reforms reflect a growing consensus that the representation of countries such as Brazil, China, and Mexico have not kept pace with their growing contribution to the global economy. As noted above, we consider two milestones in the reform process: first, the entry into force of the Voice and Participation Amendment and second, passage of legislation by the United States Congress approving reforms to IMF quota allocations.

First, the Voice and Participation Amendment modified Article XII, Section 5(a), changing how basic votes are allocated among IMF member states. This shifted vote allocation from a fixed number of 250 basic votes to 5.502% of total voting power. The amendment was meant to ensure that "the ratio of total basic votes in total voting power [was] not eroded by quota increases."[17]

Second, in order for the Quota and Government reforms to take effect, the IMF requires official approval from at least three fifths of IMF member countries, accounting for at least 85% of the total vote share. Since the U.S. along holds over 15% of total votes, its authorization of the reforms was a key prerequisite for enactment. While the Obama administration included requests for authorization for the reforms in its budget requests for several years running, up until 2015 there was little sign of progress (Nelson and Weiss, 2015). At least as late as October 2015 U.S. Treasury officials indicated that the rule would remain in place. Officials relented and agreed to remove the rule only at the 11th hour in time for last-minute inclusion of the necessary language in the 2016 appropriations legislation. Congressional leaders announced that authorization would be included on December 16, just two days before the bill was passed in Congress (Talley, 2016).

[17] See IMF Report SM/11/44, March 3, 2011 for more details.

Appendix B: Robustness to Alternative Estimation Strategies

The validity of our results above rely on the accuracy of our predicted bond spreads for treated countries in the absence of a new staff appointment. Where the mean bond spread of untreated countries follows a different trend from our treated observations our predictions will be noisy and potentially biased. To address this possibility we re-estimate the results above employing the synthetic control method (Abadie et al., 2010). We employ the *generalized synthetic control (GSC)* approach proposed by Xu (2017) which allows for estimation of the average treatment effect on the treated (ATT) for time-series cross-sectional data in which it is likely the parallel trends assumption referenced above is violated.

The demands in terms of data for treated units during the pre-treatment period are greater when using the synthetic control method than the market model above. Of the events listed in Table 1 we are forced to drop an additional nine from the synthetic control analysis due to data limitations. Using the `gsynth` package we estimate the ATT for all remaining events.[18] As in the main analysis, we define treatment as the appointment of a new department head and treated units as all countries in the affected region. In the main GSC estimation, we subset the analysis to an estimation window of $(-30, -1)$ and event windows ranging from $(0, 5)$ to $(0, 20)$. We drop any treated units that have observations missing for more than 50% of the pre-treatment period. GSC estimates the following model,

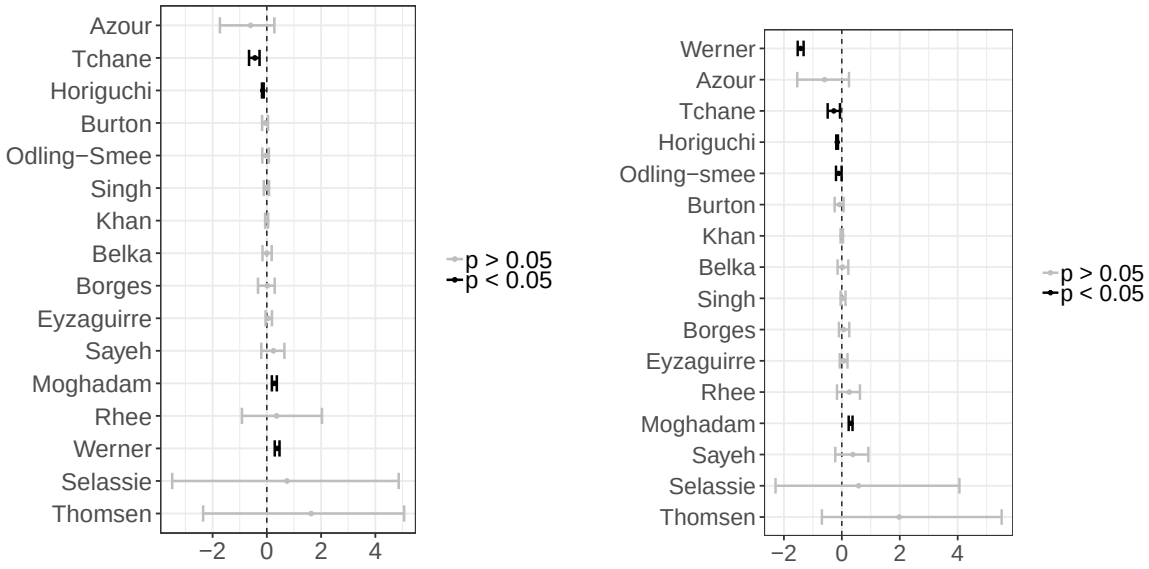
$$Spread_{i,t} = \delta_{i,t} \cdot Treatment_{i,t} + \lambda_i^{'} f_t + \epsilon_{i,t},$$

where $Treatment_{i,t}$ is an indicator variable that takes the value 1 following staff announcements for treated countries, $\delta_{i,t}$ represents the treatment effect on country i at time t, $\lambda_i^{'}$ is a vector of unobserved common factors, f_t is a vector of unknown factor loadings, and $\epsilon_{i,t}$ is an error term.[19] We do not include any additional controls in the baseline estima-

[18] Available at: https://cran.r-project.org/web/packages/gsynth/index.html. `gsynth` accommodates unbalanced panel data, which is advantageous for us given the irregular availability of $Spread_{i,t}$ for many countries.

[19] $\lambda_i^{'} f_t$, which represents the factor component of this model, is linearly additive by assumption. See

Figure 8: Estimated ATT by Event



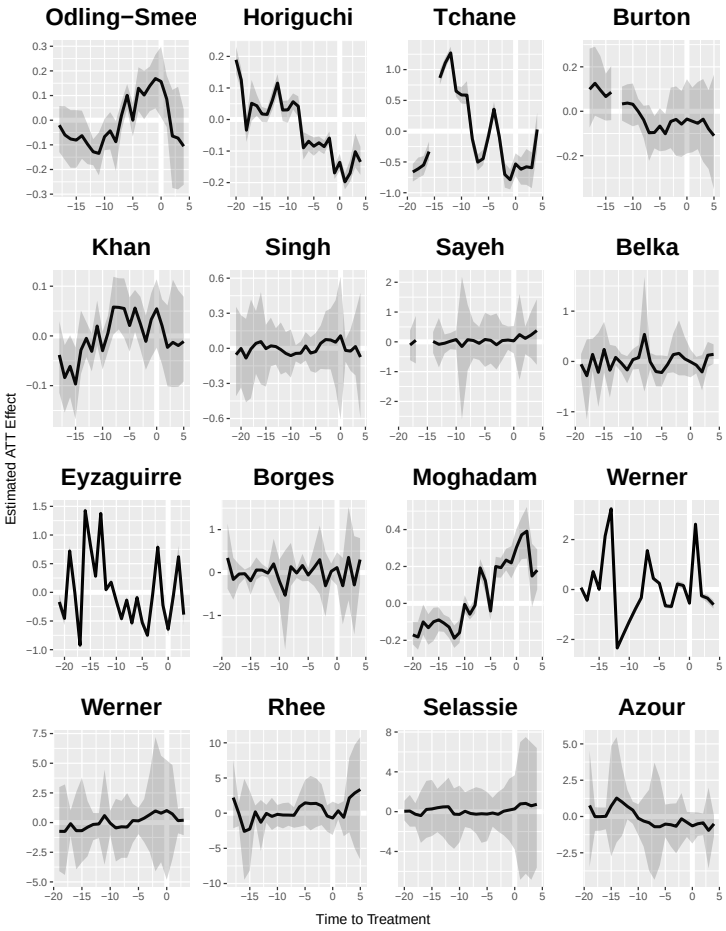
Estimated Average Treatment on the Treated by event for estimation windows $(-30, 5)$ (left-side panel) and $(-30, 10)$ (right-side panel). Black dots and confidence intervals indicate significance at $p < 0.05$.

tion. In light of the small number of treated countries for several events in the sample, we employ a parametric bootstrap to derive uncertainty estimates. We use bootstraps of size 100 and $1,000$ to construct the 95% confidence intervals for the ATT.

We present results of the GSC estimation in Figure 8 and Figure 9. Both specifications include country and day fixed effects. For nearly all events attaining statistical significance, the direction of the estimated ATT is consistent with the effects estimated in the main analysis above.

Xu (2017) for a full discussion of the GSC framework.

Figure 9: Estimated ATT by Event



Estimated Average Treatment on the Treated by event for estimation window $(-30, 5)$. The x-axis indicates the Time to Treatment. The y-axis indicates the estimated ATT for the event. Confidence intervals are indicated in gray.