

Descriptive Representation in International Organizations: The Effect of Governance Reform on IMF Legitimacy

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Abstract: International organizations (IOs) often face questions of legitimacy due to decision-making structures that heavily weight the voices of developed countries. This paper examines whether “descriptive representation”—the degree to which representatives share characteristics of the represented—shapes public opinion toward IOs. We focus on the case of the International Monetary Fund (IMF), which often faces criticism for its weighted voting system. We surmise that information about recent IMF governance reforms that expanded the representation of developing countries will increase support for engagement with the institution. Furthermore, we expect this shift to operate through two mechanisms: improving perceptions of “procedural legitimacy”, the belief that the IMF treats borrowers fairly; and enhancing perceptions of “substantive legitimacy”, the expectation that borrowing countries will receive favorable terms. Analysis of survey experiments fielded in three developing countries—Argentina, China and Turkey—largely support our conjectures. In each case, respondents who were informed that developing countries have gained more influence at the Fund are more likely to support working with the IMF compared to those who were told that wealthy countries have more say. We find that this increase in support works by enhancing perceptions of procedural legitimacy. We find only very limited support that substantive legitimacy plays a role.

I. Introduction

States have delegated substantial authority to international organizations (IOs). But for IOs to effectively wield influence in world politics, they must be viewed as legitimate actors (Buchanan and Keohane 2009; Reus-Smit 2007; Scholte 2011; Tallberg and Zürn 2019). In the current era of mass politics, IOs not only need support from political elites, but also broader publics.

Governments are less likely to fully implement IO policies if their citizens do not view the institution as a legitimate authority (Bodansky 1999; Voeten 2013, 413; Zürn 2004). Given these realities, IOs adopt purposive legitimation strategies designed to promote perceptions of legitimacy among civil societies around the world (Gronau and Schmidtke 2016). They boast public relations departments designed to cultivate public support for their institutional brand (Ecker-Ehrhardt 2018) and employ mass surveys to better customize and target their messaging (Tallberg and Zürn 2019, 588).

Despite these efforts, many IOs struggle to win over the hearts and minds of government officials and citizens in the countries where they operate. The existence of governance and decision-making structures that over-represent powerful Western countries while underrepresenting developing countries is one commonly cited reason why IOs lack legitimacy. Representational disparities are a popular source of criticism of a wide range of international institutions, from security-focused institutions like the United Nations Security Council (UNSC) (Stephen 2015; United Nations 2019), international economic organizations like the World Bank and the International Monetary Fund (IMF) (Abdul Mageed Educational Trust et al. 2020; Birdsall 2009; Stiglitz 2002; Woods 2007), and regional organizations like the European Union (Moberg 2002). The frequent emphasis on the under-representation of developing countries in global governance institutions suggests this may be undermining the legitimacy of many IOs.

However, existing scholarship on IOs does not provide a strong theoretical basis for such a relationship, and we lack evidence linking representation to the perceived legitimacy of IOs.¹

This paper helps fill in these gaps.

We argue that individuals in developing countries are more likely to view an IO as legitimate and support the institution when fellow developing countries have greater voice in the institution. Our argument draws on theories of “descriptive representation,” defined as the extent to which the decision-makers within an institution share politically relevant characteristics with the actors they represent. Existing research on descriptive representation focuses on the representation of minority groups within domestic political institutions. Our argument extends the concept to the international level. We focus on two key channels through which improvements in the formal representation of developing countries should increase public support for IO engagement in the developing world. First, improvements in descriptive representation enhance “substantive legitimacy,” the expectation that IO decisions will favor you and your group. Second, greater descriptive representation improves “procedural legitimacy,” the perception that the institution’s decision-making processes are fair.

To test our argument, we focus on one IO: the IMF. Several factors make the IMF a useful case for examining the links between representation and legitimacy. First, with near-universal state membership and a trillion dollars in lending capacity, the IMF is one of the most important IOs in world politics today. Second, the IMF cares about its public image because the success of its programs depend on mass public approval (Woods 2007, ch. 3). For instance, former IMF Managing Director Michel Camdessus (2001, 366) recognized that the organization’s effectiveness requires “popular support,” and IMF country reports frequently

¹ Other aspects of an IO’s governance structure, such as whether it is democratic or transparent, have been found to influence legitimacy perceptions (Bernauer, Mohrenberg, and Koubi 2020; Dellmuth and Tallberg 2020). Closest to

comment on the existence of “social opposition” to its programs (IMF 2011, 2; 2017, 29; 2019, 22). Third, the IMF has faced repeated criticisms for privileging American and European voices over those of the Global South (Birdsall 2009; Bretton Woods Project 2019; BRICS 2019; Stiglitz 2002). The IMF itself, including each of the last four Managing Directors, has publicly called for a redistribution of voting power within the Fund as a way to enhance the IMF’s legitimacy (de Rato 2006; Georgieva 2019; IMF 2010a, 2014). Fourth, and related to the last point, the Fund recently undertook a round of historic governance reforms that increased the formal voting rights of developing countries relative to developed countries. These governance reforms provide an ideal setting for testing whether increases in developing-country representation improve perceptions of legitimacy. Indeed, this was the explicit goal of the reforms (IMF 2010b, 5, 2014).

We use survey experiments to examine whether and how IMF governance reforms impact public sentiment towards the Fund. Our experiments varied the amount and type of information that respondents received about the representation of developing countries at the IMF. We repeated this experiment in three different developing countries: Argentina, China, and Turkey. As we elaborate later, these countries were selected because each is an important (potential) IMF partner, but they otherwise differ from one another along many pertinent dimensions, from the nature of their relationship with the IMF to their domestic political and economic systems.

The evidence reveals that descriptive representation influences public attitudes about IOs. In all three countries, information about increased representation of developing countries in the Fund’s decision-making structure increased individuals’ support for engagement with the IMF. We also find consistent support for a “procedural legitimacy” channel: descriptive representation

influences support for IMF engagement because it changes beliefs about whether the organization treats borrowers fairly. By contrast, we find only limited evidence that descriptive representation improves support for IMF engagement through a “substantive legitimacy” mechanism—the perception that borrowing countries receive favorable terms on their loans.

These findings advance our understanding of the IMF in several important ways. Previous research on the Fund has focused primarily on the organization’s behavior towards and effects on member-countries.² We complement this work by focusing on another important aspect of the politics of the IMF that has received little scholarly attention thus far: individual-level public opinion.³ In doing so, we also highlight an overlooked channel through which IMF governance matters. It is well established that the IMF’s formal decision-making structure leads the organization to treat certain borrowing countries more favorably than others (Broz and Hawes 2006; Copelovitch 2010; Dreher and Jensen 2007; Lipsky and Lee 2019; McDowell 2017; Oatley and Yackee 2004; Stone 2004). Our findings reveal that the Fund’s formal governance structure impacts more than IMF behavior; it also affects the way the institution is perceived by publics in the developing world.

This study also has broader lessons about the sources of IO legitimacy that apply beyond the IMF. First, it expands an important stream of research linking descriptive representation with warmer feelings toward domestic political institutions (e.g., Clayton, O’Brien, and Piscopo 2019; Hayes and Hibbing 2017; Scherer and Curry 2010) by showing that this also applies at the international level. Our evidence also shows that fairness concerns are an important channel

² Steinwand and Stone (2008), Stubbs et al. (2020) and Vreeland (2019) provide useful reviews of these literatures.

³ There are also a small number of works that include public-opinion data on the IMF in studies that pool together attitudes about multiple IOs (Dellmuth, Scholte, and Tallberg 2019; Edwards 2009; Johnson 2011). However, with very few exceptions (Kaya, Handlin, and Günaydin 2020), there is little research focused specifically on public opinion towards the IMF.

through which an IO's formal rules influence public opinion. Perceptions of procedural fairness may therefore help explain *why* previous studies have found that more democratic and transparent IOs receive stronger public support (Bernauer, Mohrenberg, and Koubi 2020; Dellmuth and Tallberg 2020; Dellmuth, Scholte, and Tallberg 2019).

Finally, our experimental results validate the claims of those who have called for representational reforms at IOs. We demonstrate that the IMF's recent governance reforms can bolster support for the institution by enhancing perceptions of procedural fairness among citizens of the Global South. The ability of representational reforms to improve citizens' attitudes towards the IMF should serve as ammunition for those who continue to advocate for additional changes to the Fund's governance system, including the current Managing Director (Georgieva 2019). Our evidence may also be useful to those seeking to reform other IOs, including those advocating for an expanded membership on the UNSC (e.g. Patrick and McDonald 2010; United Nations 2019).

II. Descriptive Representation and Legitimacy in Political Institutions

An institution is legitimate if society maintains a "reservoir of favorable attitudes or good will" toward it such that it is viewed as "appropriate, proper, and just" (Easton 1965, 273; Tyler 2006, 376). A large body of work on domestic political institutions has consistently found that descriptive representation, the degree to which elected or appointed representatives share characteristics of the represented, enhances citizens' perceptions of institutional legitimacy. This is particularly significant among groups that have historically been under-represented. Studies have found that increased formal representation of one's group leads to increased support for

domestic institutions and their policy decisions among women (Clayton et al. 2019), African Americans (Scherer and Curry 2010), and members of ethnic minority groups (Evans et al. 2017; Madrid and Rhodes-Purdy 2016).

We contend that the relationship between descriptive representation and institutional legitimacy at the domestic level should also operate internationally. In principle, the degree of descriptive representation in IOs could be defined along an array of dimensions, including a country's dominant religion, language, or region. In practice, the most common source of concern about representational inequalities at IOs has turned out to be disparities between rich, developed countries, and poorer developing ones.⁴ Thus, we anticipate that when IOs expand representation of developing countries, they will gain in the court of public opinion in these countries. Building on scholarship on representation within domestic institutions, we expect descriptive representation within IOs to influence two components of institutional legitimacy.

Descriptive representation in IOs should impact public *perceptions of outcomes*, which is referred to as “substantive legitimacy.” An institution is substantively legitimate if its policies are perceived to advance the interests of one's group.⁵ A longstanding rationale for descriptive representation is its ability to improve outcomes for disadvantaged groups (Mansbridge 1999; Pitkin 1967). Again, work on domestic political institutions provides considerable support for such claims. Evidence suggests that legislators who are African American, female, military

⁴ While previous research on descriptive representation in domestic institutions most frequently focuses on ascriptive features of individuals, such as their gender, race, or ethnicity, it is not limited to these attributes. The concept can extend to any shared experience such as occupation, economic class, veteran status, or experience living in the same geographic territory (Carnes and Lupu 2015; Lowande, Ritchie, and Lauterbach 2019, 648; Mansbridge 1999, 629). Shared experience as a developing country would, thus, fit into this concept.

⁵ We borrow the term “substantive legitimacy” from Clayton, O'Brien, and Piscopo (2019). The degree to which representatives actually advance the interests of those they represent is often defined as “substantive representation” (e.g. Carnes and Lupu 2015; Lowande, Ritchie, and Lauterbach 2019; Mansbridge 1999; Schwindt-Bayer and Mishler 2005). Thus, we conceptualize substantive legitimacy as perceptions about substantive representation.

veterans, openly gay, and working-class are more likely to advance the interests of the groups to which they belong (Baker and Cook 2005; Betz et al. 2020; Bratton and Ray 2002; Carnes and Lupu 2015; Lowande et al. 2019; Reynolds 2013; Schwindt-Bayer and Mishler 2005). Public perceptions are likely to reflect these realities. As policy grows more favorable towards one's group due to enhanced descriptive representation, members of that group are likely to recognize this fact and update their views of the institution. Moreover, even in the absence of actual policy change, the mere presence of one's group in a decision-making body can enhance the perception that the institution is working for the group's interests since it conveys that their interests were considered during the policy process (Clayton et al. 2019). We anticipate that as developing countries gain greater representation within international institutions, publics in the developing world will be more likely to believe those IOs serve their countries' interests. Such increases in substantive legitimacy should, in turn, enhance public support for working with IOs.

Descriptive representation may also increase support for IO engagement by improving *perceptions of decision-making processes* within the institution.⁶ An institution has “procedural legitimacy” when people believe that its decision-making processes are fair. A large body of psychological research on legitimacy finds that “institutions are viewed as more legitimate and, therefore, their decisions and rules are more willingly accepted when they exercise their authority through procedures that people experience as being fair” (Tyler 2006, 379).

Mansbridge (1999, 651) argues that descriptive representation affects perceptions of fairness because it creates a “feeling of inclusion,” and when one's representatives have a voice in a

⁶ Once again, we borrow this label from Clayton, O'Brien, and Piscopo (2019). The concepts of procedural and substantive legitimacy have some overlap with the concepts of input and output legitimacy, respectively (Scharpf 1999). However, Scharpf's (1999) focus on democratic legitimacy differs considerably from ours. There is also some similarity with the concepts of process and outcome legitimacy, but the indicators used for these concepts in previous survey-based research (e.g., Bernauer and Gampfer 2013) are quite different from our measures of procedural and substantive legitimacy.

policy, the policy is more legitimate even if the particular group's views do not prevail. Consistent with these views, experimental studies have found that the presence of African American and female representatives improves perceptions of procedural fairness for domestic institutions (Clayton, O'Brien, and Piscopo 2019; Hayes and Hibbing 2017; Riccucci, Van Ryzin, and Lavena 2014). We expect when IOs enhance formal representation of developing countries, perceptions of fairness—or procedural legitimacy—among developing country publics will improve, leading to more widespread support for the IOs.

III. The Case of the International Monetary Fund

The IMF is one of the largest and most important IOs in the world. Founded in 1944, today it boasts near-universal membership with 189 member-states. Among other roles, the IMF is tasked with providing policy advice and loans to members seeking its assistance, often due to economic crises. As much as any other IO, the IMF regularly faces criticism for its perceived lack of legitimacy. The Fund's so-called "legitimacy crisis" has multiple sources (Belloni and Moschella 2013; Seabrooke 2007, 251). One particularly important source of grievance is the institution's governance structure (Kaya 2015, 121–23). For instance, Joseph Stiglitz (2002, 18), a Nobel-winning economist and prominent detractor of the IMF, has argued that the "underlying" problem for the IMF is a governance structure that is "dominated...by the wealthiest industrial countries." In this section, we describe the IMF's governance arrangements and explain why they are likely to impact public opinion towards the IMF in developing countries.

The Under-Representation of Developing Countries and IMF Legitimacy

Much of the criticism about governance focuses on the IMF's Executive Board—the body responsible for the day-to-day functioning and decision-making at the Fund. There are two major ways in which the Executive Board structure formally under-represents developing countries. First, not all countries have their own representative on the Board. There are just 24 Executive Directors representing the IMF's 189 member countries. While the largest developed countries (US, Japan, Germany, France, UK) each have their own director, most developing countries are represented through multi-country constituencies that share a single director.⁷ Second, member countries' voting power on the Executive Board is not equal. Members' voting shares are largely determined by their “quota”—the amount of funds the country contributes to the institution's lendable resources. The quota, in turn, is determined by a formula that includes several variables, such as GDP and economic openness. This formula, and delays in revising countries' actual quota shares in response to shifts in these variables over time, results in a relatively low vote share for many developing countries. The vote share of the US is several hundred times larger than the vote share of small, poor, countries like Belize or Eritrea. Prior to the recent reforms which we discuss below, the US had more than four times as many votes as China, the developing country with the largest quota. China's vote share was also smaller than several developed countries (France, Germany, and the UK) with smaller economies and populations.⁸

The IMF's imbalanced governance structure is widely criticized on *procedural legitimacy* grounds. The weighted voting structure is often lambasted for being “undemocratic” (Kapur and

⁷ China and Saudi Arabia are the only developing countries with their own Directors. At the other extreme, 23 African countries share just one representative on the board between them.

⁸ The Executive Board does not often take formal votes. However, this does not imply that vote shares are unimportant. The Board seeks a “consensus” on decisions, but attaining consensus requires receiving support from executive directors with sufficient voting power (Kaya 2015, 11).

Naím 2005, 93; Mirakhor and Zaidi 2009). The former resident historian of the IMF, James Boughton (2017, 21) notes that it is “a simple matter of fairness” that “all countries should have an opportunity to participate in decisions that affect them.” Along similar lines, an essay by an IMF Executive Director and one of his advisers evaluates the organization’s governance structure from the lens of Rawls’ *Theory of Justice*. On that basis, they conclude that “the governance structure prevailing at present in the IMF does not even come close to justice as fairness” (Mirakhor and Zaidi 2009, 296).

The overrepresentation of developed countries in IMF governance also contributes to the perception that Fund policies do not advance the interests of developing countries. In other words, the lack of descriptive representation compromises the Fund’s *substantive legitimacy*. Cyrus Rustomjee, who represented sub-Saharan African countries on the IMF Executive Board, argues “the lack of votes” for developing countries “resulted in substantive failure in the IMF’s conditionality policy” (Rustomjee 2004, 23). Developing-country policymakers have also posited that there is a clear connection between their under-representation and the adoption of policies that favor rich countries (Parizek and Stephen 2020). Others have argued that the under-representation of developing countries has made the IMF “weak and ineffective” (Yu 2006, 520).

Developing countries’ diminished role in IMF governance hurts the institution’s standing across the Global South. The under-representation of developing countries provides easy fodder for criticism, commonly expressed by leftist leaders throughout the developing world, that the Fund is a tool of Western dominance (Agence France-Presse 2015; Nicoll 1986; Tran 2007; Weber 1985). Public mobilization against the IMF in developing countries also commonly lambasts Western, and in particular US, dominance in the Fund’s decision-making structure (e.g. Agence France-Presse 2000; Associated Press 2002; Shahid 2019). A number of observers

believe that issues of representation, and the resulting damage to the IMF’s legitimacy, are important reasons why developing countries began “moving away from the IMF” in the mid-2000s (Best 2007; Buira 2005, 26; Helleiner and Momani 2007). In short, the under-representation of developing countries appears to be hindering the IMF’s substantive and procedural legitimacy and might therefore lower developing countries’ willingness to engage with the institution.

The IMF’s Re-Legitimation Strategy: The 2016 Governance Reform

In response to this brewing crisis of legitimacy, a growing number of voices encouraged the IMF to reform its governance structure. One prominent development economist argued that in order to “regain legitimacy,” the Fund “must become [a] truly global [cooperative] in which the developing nations have much greater representation than they have now” (Birdsall 2009). Leaders throughout the developing world—spanning Asia, the Middle East, Latin America, and sub-Saharan Africa—advocate for an expansion of developing country representation at the IMF (BRICS 2019; Erdoğan 2011; Iglesia and Torino 2018). Even top US representatives at the Fund have supported increasing the voting rights of developing countries on the grounds that the current “unfair structure” has “undermined the credibility and legitimacy of the IMF” (Rediker 2012). The IMF’s own leadership has also consistently endorsed the need for governance reform (e.g., Georgieva 2019) due to their recognition that the institution’s “legitimacy suffers if we do not adequately represent...emerging-market economies” (de Rato 2006, 131).⁹

⁹ While recent discussions about IMF governance reform focus almost exclusively on the representation of developing countries, concerns about the under-representation of rapidly growing developed countries were more prominent in earlier periods of IMF history. For example, Japan actively sought to increase its representation at the IMF in the 1980s (see Lipsy 2017, chapter 4).

After years of debate and negotiation, the IMF Executive Board voted in 2010 to approve “the most fundamental governance overhaul in the Fund’s 65-year history and the biggest ever shift of influence in favor of emerging market and developing countries” (IMF 2010b). While the United States maintained its top position within the Fund, its voting share declined somewhat along with more significant cuts to Western European members. On the other hand, developing countries like Brazil, China, India, Russia, and South Korea all saw sizeable increases to their voting power. In total, the reforms increased developing countries’ share of Executive Board votes by six percentage points (IMF 2010b).

The reforms also increased the share of seats on the Executive Board that are controlled by developing countries. This was accomplished in two main ways. First, multi-country constituencies of more than seven members are now permitted to appoint a second “alternate” Executive Director to increase the number of developing countries that have Board representation. Second, two Executive Director positions were transferred from developed, European, countries to developing countries (IMF 2010b, 2015).

The reforms were finally approved and enacted in 2016.¹⁰ The IMF wasted little time publicly trumpeting the achievement, proclaiming in a press release that “the entry into force of these reforms will reinforce the credibility, effectiveness, and legitimacy of the IMF. For the first time four emerging market countries (Brazil, China, India, and Russia) will be among the 10 largest members of the IMF” (IMF 2016). Still, some have questioned whether the governance reforms would do enough to muffle critics of the IO given that they fell short of what many developing economies had hoped for. As one study put it, “the power reshuffling...is generally

¹⁰ Implementation was delayed until the reforms were approved by the US Congress, a requirement due to US law and a reflection of America’s privileged position within the Fund.

considered quite meagre...consequently, it is highly questionable whether the reform will be able to restore the IMF's legitimacy" (Lesage et al. 2013, 554). Leaders of Brazil, Russia, India, China, and South Africa apparently agree as they continue to assert that "emerging markets...remain under-represented in the Fund" (BRICS 2019).

Summary and Testable Hypotheses

Many IMF critics and insiders think that developing country representation influences the institution's legitimacy. Theories of descriptive representation also suggest that this should be the case. To assess these expectations, we follow an approach used in many previous studies on descriptive representation in domestic political institutions, which is to randomly assign different types of information about the degree of descriptive representation to survey respondents (Arnesen and Peters 2018; Clayton, O'Brien, and Piscopo 2019; Hayes and Hibbing 2017; Riccucci, Van Ryzin, and Lavena 2014; Scherer and Curry 2010).¹¹ Our argument implies that citizens in developing countries that receive information about improvements in the IMF's representation of developing countries should be more supportive of IMF participation. Conversely, reminding individuals about the under-representation of developing countries in the organization should reduce support for IMF participation. Moreover, we expect information about descriptive representation to influence support for IMF engagement through two key mechanisms: by changing perceptions about the fairness of the IMF's decision-making process, and by changing beliefs about whether the IMF delivers good substantive outcomes for developing countries.

¹¹ A number of studies that examine IO legitimacy also adopt this empirical strategy (e.g. Bernauer and Gampfer 2013; Bernauer, Mohrenberg, and Koubi 2020; Dellmuth and Tallberg 2020; Dellmuth, Scholte, and Tallberg 2019) though they focus on different IO attributes than we do here.

IV. Research Design

We fielded original survey experiments to test our argument that the degree of developing country representation influences public support for engagement with the IMF in the developing world. Our experimental treatments vary the amount and type of information that survey respondents received about descriptive representation in the IMF. The experiment was repeated in three developing countries.

Argentina, China, and Turkey were selected for the survey experiments because they are each strategically important to the IMF, yet they differ along many other important dimensions. For our purposes, the most important way that these countries vary is in terms of the nature of their relationship with the IMF. China is the Fund's most important developing-country credit, Argentina is the recipient of the largest IMF loan, and Turkey is notable for its decision to not participate in an IMF program in 2018-19 despite experiencing an economic crisis. The three countries were also affected in very different ways by the 2016 IMF governance reform: China was, by far, the biggest beneficiary in terms of vote share gained; Turkey saw a modest increase in its vote share; and Argentina's IMF vote share actually declined slightly.¹² In addition to their dissimilar relationships with the Fund, the three countries also differ in many other respects, from their location in distinct world regions, their differing domestic political regimes, the size and structure of their economies, and their national political cultures. Our case-selection strategy therefore approximates a "most-different case design," which has the advantage of "provid[ing]

¹² This was due to the fact that the variables that determine a country's quota, such as GDP and foreign reserves, declined in Argentina relative to other countries. Data on countries' IMF quotas, before and after the 2016 reform, are available at <https://www.imf.org/external/np/fin/quotas/2018/0818.htm>.

the strongest basis for generalization” (Seawright and Gerring 2008, 298). Observing consistent effects across this diverse set of cases would provide strong evidence that our results hold across a wide range of conditions.

All three surveys were fielded between April and October 2019. The survey in China was conducted in April 2019. This survey was fielded online using a Chinese crowd-sourcing firm that operates in a similar fashion to Amazon’s Mechanical Turk but with a narrower focus on survey research.¹³ While our sample is not nationally representative, recent work shows that online convenience samples in China generate attitude estimates that are highly consistent with national probability samples (Li, Shi, and Zhu 2018). The survey in Turkey was fielded to a nationally representative sample between June 24 and August 2, 2019 by a Turkish polling firm (Frekans Research).¹⁴ The Argentina survey data was fielded in October 2019 by a local survey company (Isonomía Consultores) to a sample that is representative of the country’s urban population.¹⁵

Individual support for participation in the IMF is the main outcome of interest. Since we intentionally selected countries that differ in how they engage with the Fund, the nature of the

¹³ In the analyses of Chinese data, we discard observations that completed the survey in less than five minutes. This is done because respondents that completed the survey at that speed could not have paid close attention to the content of the survey. A lack of attentiveness in survey research is a common challenge with online surveys, and this solution both follows previous work using online surveys from China (e.g. Gueorguiev, McDowell, and Steinberg 2020) and best practices in the literature on survey experiments (Harden, Sokhey, and Runge 2019). Nonetheless, we obtain similar, albeit somewhat weaker, treatment effects if we include respondents that completed the survey in less than five minutes.

¹⁴ We asked Turkish Statistical Institute (TUIK) to provide us randomly selected household addresses from its Address Based Population Registration System (ADNKS). TUIK randomly selected blocks of 400 addresses from each of the NUTS-2 sub-regions of the country according to probability-proportionate-to-size (PPS) principle, and twenty addresses were again randomly selected in each block. The survey firm tried to reach all of these twenty addresses in each block, and no substitution was used. Selection of individuals in households is done according to a lottery method. Households were visited up to three times until a successful interview is conducted with the selected individual. All interviews were conducted face-to-face.

¹⁵ Data was collected using a combination of face-to-face interviews and telephone surveys based on random-digit dialing. The sample was stratified by the country’s major economic regions and by city sizes.

relevant participation naturally varied across countries. China has not participated as a borrower in an IMF program since 1978. The country is unlikely to borrow from the Fund in the foreseeable future given its history of relative financial stability and its massive stockpile of foreign reserves. Its most pertinent relationship with the Fund is as a creditor: China is the third largest shareholder in the institution, behind only the United States and Japan. Thus, a key question for Chinese policymakers is whether they want to support the Fund's activities as an international lender of last resort or whether the country should promote alternatives to the IMF. We therefore asked Chinese survey respondents how much they agree that "China should support the IMF's role in the global economy."

Argentina is arguably the IMF's most important borrower. At the time of the survey, the country was under an IMF standby agreement—the largest loan in IMF history at that time. The Argentine survey was fielded during the week before an election in which the opposition candidate (Alberto Fernández) was highly critical of the country's ongoing IMF program, blaming it for the country's economic problems (Mander, Stott, and Smith 2019). After winning the election, Fernández argued that Argentina should not borrow the remainder of money from the IMF (Burin 2019). It was also common to see protesters advocate for an end to the country's IMF program (Al Jazeera 2019). Thus, the key question for Argentina at the time was whether to stick with or terminate its IMF program. Accordingly, our main outcome question in that country asked subjects how much they agree that "Argentina should continue its program with the IMF."

In Turkey, the main policy decision was whether to enter an IMF program. Previously, Turkey was a major IMF client; it signed 19 agreements between 1961 and 2005 (Arpac and Bird 2009, 136). When Turkey experienced financial instability again in 2018-19, many inside and outside of the country encouraged the Turkish government to enter into another IMF agreement

(Kozok and Koc 2019; Reuters 2018). However, President Erdoğan has been very critical of the Fund and has promised to never request IMF help (Pitel 2020). The survey question in Turkey asked about agreement with the following statement: “given the current economic challenges facing the country, Turkey should seek help from the IMF.”

Figure 1: Support for IMF Engagement in Argentina, Turkey, and China

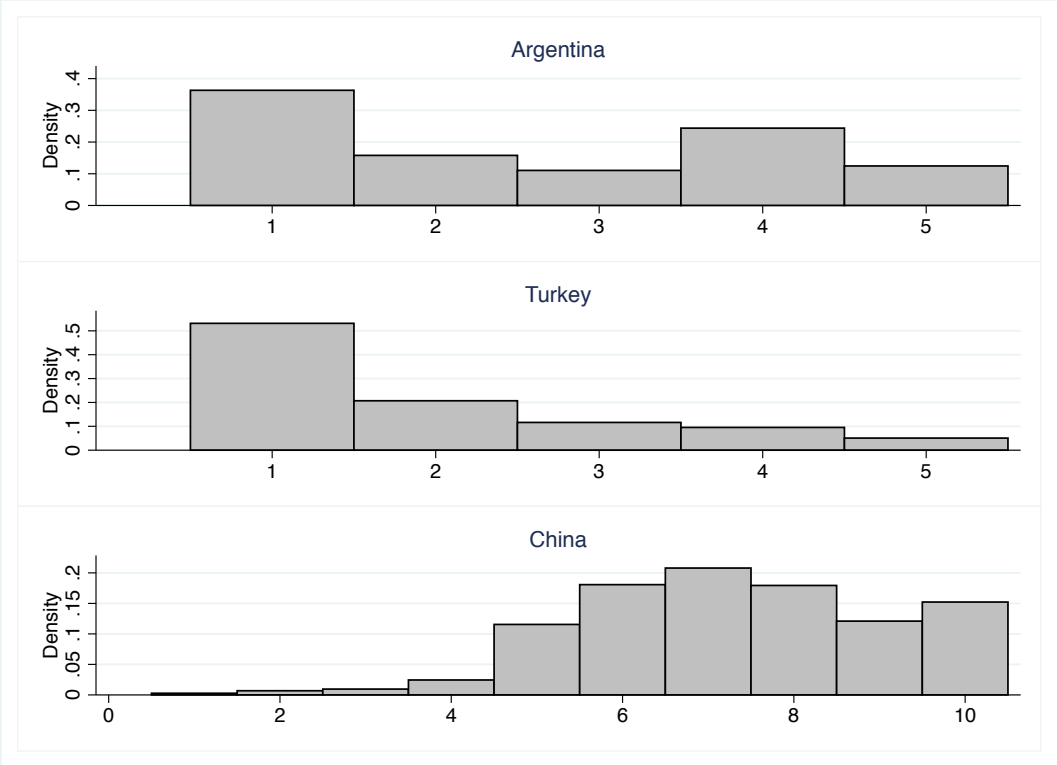


Figure 1 presents summary statistics for support for IMF participation, measured as described above, for each country. The figure shows the data for control-group respondents who did not receive any information about IMF governance structures. For all surveys, we present the data so that higher values indicate stronger support for IMF participation. The surveys in Argentina and Turkey use five-point Likert-like scales, ranging from “strongly disagree” (1) to “strongly agree” (5) with IMF participation. The China survey uses an 11-point scale from 0 to

10. The difference in the number of response categories reflects the need to maintain consistency between this question and the other questions in each individual survey. As the figure shows, there is strong support for the IMF in China (at least among those sampled): the median and modal response is a 7 on a 0-10 scale. The IMF appears very unpopular in Turkey, with over half of control-group respondents “strongly disagreeing” that the country should enter into an IMF program. In Argentina, the modal control-group respondent “strongly disagrees” with continuing the IMF program, and the median respondent “somewhat disagrees.”

The experimental treatment used identical language in all three surveys (with the caveat that the process of translating the script into three different languages required minor differences in phrasing). In each country, respondents were randomly assigned into one of three conditions. Those in the control group received a basic description of the IMF, which stated that the “International Monetary Fund (IMF) provides financial assistance and policy advice to countries facing economic problems,” before being asked about their views on engagement with the IMF. A second group of randomly selected subjects was also informed about improvements to descriptive representation at the IMF. Individuals in the “IMF Reform Treatment” were told the following: “*Recently, the IMF implemented reforms that shifted decision-making power away from rich countries toward developing countries.*” The final group was reminded about the general lack of descriptive representation at the Fund. The “Unequal Representation Treatment” states that “*rich countries hold significantly more decision-making power at the IMF compared to developing countries.*”

These treatments aim to describe representation in the IMF in a manner that is comprehensible to laypeople that may not be familiar with the details of how the Fund’s Executive Board operates. The phrasing of our treatments also mirrors the way that publics are

likely to encounter information about IMF representation given how elites frame the issue in public debates. For example, the IMF has emphasized broad changes in voting power over actual voting shares (e.g. IMF 2016) while IMF critics have focused the disparity in voting power between advanced and developing economies (e.g. Woodward 2008).¹⁶ Additionally, while the two treatments emphasize different facets of descriptive representation—one focuses on the *level* of representation while the other focuses on the *change* in representation—both treatments are factually accurate.

V. Main Results

Average Treatment Effects

The first question we examine is whether our experimental treatments influenced average levels of support for engaging with the IMF. Table 1 presents our estimates of these average treatment effects. They are based on ordinary least squares (OLS) regression models. Odd-numbered columns present results without any control variables. The even-numbered models present results from models that control for some key pre-treatment covariates.¹⁷ For covariates, in each country we include a measure of partisan/political affiliation, age, educational attainment, gender identity, income or class, and regional fixed effects. While these covariates are not measured

¹⁶ In this sense, our treatments constitute an “emphasis frame,” which is a frame that “gives special prominence to one aspect or feature of an issue” (Nelson 2019).

¹⁷ Since our treatments are randomly assigned, control variables are not required for unbiased estimation of average treatment effects. However, the inclusion of pre-treatment covariates can potentially improve the precision of our treatment-effect estimates. Presenting multivariate models here is also useful to maintain consistency between our estimates of average treatment effects and subsequent estimates of causal mediation effects, which require us to control for pre-treatment covariates

identically across the three surveys, the specifications we follow are as similar across countries as is feasible given the different contexts.¹⁸

Table 1: Average Treatment Effects

	Argentina		Turkey		China	
	(1)	(2)	(3)	(4)	(5)	(6)
Reform T - Unequal T	0.100 [0.088]	0.156** [0.080]	0.195*** [0.074]	0.170** [0.073]	0.378*** [0.094]	0.362*** [0.112]
Reform T - Control	0.022 [0.087]	0.061 [0.079]	0.142** [0.066]	0.111* [0.066]	0.297*** [0.093]	0.284** [0.111]
Unequal T - Control	-0.078 [0.088]	-0.095 [0.080]	-0.053 [0.074]	-0.058 [0.074]	-0.081 [0.094]	-0.078 [0.111]
Controls	N	Y	N	Y	N	Y
N	1,693	1,693	1,840	1,626	2,191	1,568

Note: Cell entries are OLS estimates of average treatment effects, with standard errors in brackets. Row 1 displays the difference between the reform and unequal-representation treatment groups, row 2 displays the difference between the reform treatment and control group, and row 3 displays the difference between the unequal-representation treatment and control group. Estimates in row 1 (rows 2 and 3) are based on models where the unequal-representation (control) group is the baseline. The controls are a measure of party identity, age, educational attainment, gender, income/class, and regional fixed effects. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The first row in the table presents estimates of the effect of the reform treatment vis-à-vis the unequal-representation treatment. In all cases, average support for IMF participation is higher in the “IMF Reform” treatment than in the “Unequal Representation” treatment. That effect is statistically significant in five of the six models. In China, average support for IMF participation is nearly 0.4 higher, on an eleven-point scale, in the reform treatment than in the unequal-representation treatment. In Turkey, the average difference is close to 0.2 on a five-point scale. The average difference in the multivariate model in Argentina is around 0.16. The estimated effect is smallest, and falls short of statistical significance, in the model without controls for Argentina. The lack of control variables in model (1) increases the standard errors

¹⁸ Appendix A provides more details on how these variables are measured as well as complete regression output for the multivariate models.

of the estimates, which is to be expected. Second, although randomization was largely successful, there are minor imbalances in pre-treatment covariates across experimental conditions in the Argentine data, and failure to correct for those differences in model (1) weakened the estimated treatment effect.¹⁹ Overall, we find considerable support for our expectation that the representation of developing countries influences support for IMF participation.

The second and third rows examine the effects of the reform and unequal-representation treatments, respectively, compared to the control group. As expected, average support for the IMF is lower in the “Unequal Representation” treatment than in the control group in all three countries. However, this difference is not statistically significant in any case. The “Reform Treatment” also has the correct positive sign in all cases, indicating that this treatment increases average support for IMF participation vis-a-vis the control condition. The difference in attitudes between the reform treatment and control group is statistically significant in the Turkish and Chinese datasets, but not for Argentina. The evidence suggests citizens of the developing world are more likely to favor engagement with the IMF when they are aware that the organization has adopted representation-enhancing reforms, and they may be particularly opposed to engaging with the institution when reminded about the under-representation of developing countries.

¹⁹ Appendix B provides more details on covariate imbalance. Age is the only variable where there are any statistically significant differences between experimental conditions ($p < 0.05$). In Argentina, the average age is about 2.5 years lower in the reform treatment than in the control group, equivalent to just 0.16 of a standard deviation. Since younger voters tend to be more opposed to the IMF, controlling for age increases the estimated effect of the reform treatment (relative to the control group).

Placebo Test

Our experimental manipulations have consistent effects on support for the IMF, which we interpret as evidence that information about descriptive representation shapes attitudes towards the IMF. However, it is possible that the positive tone of the reform treatment is what affected respondent attitudes rather than the specific content about IMF governance. We conducted a follow-up experiment in China in October 2020 to help test this competing explanation.²⁰ This experiment included control and reform-treatment conditions identical to the previous China survey. We added the following placebo treatment which maintains the tone and structure of the original reform treatment, but the content of which is inconsequential for developing countries: “Recently, the IMF implemented reforms that harmonized administrative processes across different departments.”

Table C1 in the Appendix presents the main results from this follow-up survey. Compared to the control condition, the reform treatment increased average support for IMF participation by 0.18, which is statistically significant ($p < 0.05$) and of a similar magnitude to the previous experiment. By contrast, the effect of the placebo treatment is nearly zero (-0.01) and nowhere near statistically significant. This implies that merely mentioning terms with positive connotations, such as “reform,” does not account for our main results, and supports our interpretation that individuals care about the specific information about descriptive representation contained in the reform treatment.

²⁰ This survey followed the same methodology as the earlier China survey. We selected China for the follow-up experiment because it is more cost-effective than the other two countries and because of concerns about conducting face-to-face surveys in Argentina and Turkey in the midst of a pandemic.

Heterogeneous Treatment Effects

We examined the possibility that our treatments had stronger effects on public opinion among some population subgroups. To do so, we estimated a series of interaction models. For each model, we augment the multivariate models from Table 1 by adding interaction terms between one of our pre-treatment covariates and dummy variables for our experimental treatments. As shown in Appendix D, the evidence suggests that the treatments have largely homogeneous effects across different demographic subgroups. Of the thirty interaction terms (consisting of interactions between two treatments and five pre-treatment covariates in three countries), just two were statistically significant at the 95% level (6.6%), roughly the proportion that one would expect to arise by random chance. The effect of the reform treatment weakens for older respondents in Argentina, perhaps because their pre-existing attitudes about the IMF are held with greater conviction. The under-representation treatment had a stronger effect reducing support for the IMF among Macri supporters in Argentina, which might reflect the fact that they have higher baseline levels of support for the Fund. The most striking finding, however, is the overall consistency of treatment effects across people with different age, gender, income, education, and political identities.

VI. Causal Mechanisms

Having established that descriptive representation affects attitudes about IMF participation, we now examine the underlying mechanisms through which this occurs. Our primary claim is that information about descriptive representation in IMF governance should influence support for participation in IMF programs because it enhances (or harms) the perceived legitimacy of the

institution. As discussed earlier, descriptive representation is typically thought to increase support for an organization because it either leads people to perceive the organization's processes as fair (procedural legitimacy) or because it leads people to expect better outcomes (substantive legitimacy).

To measure procedural legitimacy, we asked respondents how much they agree or disagree that they “trust that the IMF’s decision-making processes are fair.” Substantive legitimacy is measured using a question that asked subjects whether they expect the IMF to provide “favorable terms.”²¹ We focus on the “terms” of an IMF loan because this outcome is most proximate, and thus the one with the greatest likelihood of being affected by representation in the Executive Board. The response categories for these two questions are the same as for the main outcome of interest, with a five-point scale in Argentina and Turkey and an eleven-point scale in China.

We use causal mediation methods to test whether perceptions of fairness and expectations of favorable outcomes are important mechanisms that connect descriptive representation and support for participation. This approach decomposes the “total effect” of the treatments into two components. The total effect is equivalent to the average treatment effects presented in the first row of Table 1.²² The “causal mediation effect” refers to the effect that is accounted for by the mediator variable, in this case beliefs about fairness and favorable outcomes. The mediation effect is calculated as the product of two coefficients: (1) the estimated effect of the treatment on the mediator; and (2) the estimated effect of the mediator on the outcome. The “direct effect” is

²¹ The specific wording for this question was tailored based on each country’s specific situation. In Argentina, we asked whether “Argentina would receive favorable terms in future negotiations with the IMF.” Turkish survey respondents were asked if “Turkey would receive favorable terms in an agreement with the IMF.” Since China is not a prospective borrower, the Chinese survey asked whether “countries that borrow from the IMF receive favorable terms these days.”

²² In some cases, estimates of the total effect differ slightly between Tables 1 and 2 because the models in Table 2 drop observations where values on the mediator are missing.

the remaining effect that consists of all other potential channels through which the treatment influences support for IMF participation. The direct effect is measured as the effect of the treatment on the outcome, after controlling for the mediator.

The causal mediation estimates are based on models that include the same set of pre-treatment covariates as in the earlier models. The inclusion of pre-treatment covariates is necessary because, even with a randomly assigned treatment, the mediator is likely to be correlated with confounding variables. Failure to control for these confounders could bias our estimates of the effect of the mediator on the outcome variable, and in turn bias the estimated mediation and direct effects (Imai et al. 2011, 770–72).

Procedural Legitimacy

First, we test the procedural legitimacy mechanism. Table 2 presents the main quantities of interest from these analyses. (Full regression output, which includes the coefficients on the control variables, is provided in Appendix E). The upper portion of the table displays the main coefficients from the two regression models that were used to estimate the mediation and direct effects. The first, third, and fifth columns show results where the mediator variable (procedural fairness) is on the left-hand side; support for IMF participation is the left-hand side variable in the even-numbered columns. The bottom portion of the table displays the total, direct, and mediation effects along with 95% confidence intervals of those effects.

The first key finding is that descriptive representation influences procedural legitimacy. In all three countries, the reform treatment increased the perception that the IMF process is fair. Table 2 also shows that individuals that have more positive evaluations of the IMF's procedures

are more likely to favor IMF participation. The average causal mediation effect is also statistically significant in all three cases (at the 95% level for Argentina and China, and at the 90% level for Turkey). Thus, the evidence strongly suggests that perceptions of fairness are one important channel through which improvements in descriptive representation lead to stronger support for IMF participation.

Table 2: Testing the Procedural Legitimacy Mechanism

	Argentina		Turkey		China	
	Mediator	Outcome	Mediator	Outcome	Mediator	Outcome
Reform Treatment	0.16** [0.078]	0.07 [0.068]	0.14* [0.071]	0.06 [0.048]	0.75*** [0.125]	-0.02 [0.093]
Control Group	0.11 [0.079]	0.04 [0.069]	0.05 [0.071]	0.02 [0.048]	0.09 [0.124]	0.03 [0.091]
Fair Process		0.56*** [0.022]		0.79*** [0.017]		0.51*** [0.019]
Controls	Y	Y	Y	Y	Y	Y
N	1,625		1,612		1,568	
Average Causal Mediation Effect	0.09 [0.002, 0.17]		0.10 [-0.004, 0.21]		0.38 [0.26, 0.51]	
Direct Effect	0.07 [-0.07, 0.20]		0.05 [-0.04, 0.15]		-0.03 [-0.20, 0.15]	
Total Effect	0.16 [-0.003, 0.32]		0.16 [0.02, 0.30]		0.35 [0.14, 0.56]	

Note: Top panel displays OLS regression coefficients and standard errors in parentheses. Bottom panel displays the total, direct, and average causal mediation effect of “Fair Process,” with 95% confidence intervals in brackets. Estimation is based on Hicks and Tingley (2011). *** p<0.01, ** p<0.05, * p<0.1

Substantive Legitimacy

By contrast, we find only limited evidence that the effects of improved representation work through a “substantive legitimacy” channel. Table 3 presents the main results for this mediator.

The belief that the IMF provides favorable terms is strongly correlated with support for IMF

participation in all three surveys. The reform treatment also increases individuals' perception that the IMF offers favorable terms to borrowers in each country, but this effect is statistically significant in just one of the three countries (China). Additionally, in all three surveys, the magnitude of the effect of the reform treatment on "Favorable Terms" is smaller than its effect on "Fair Process." Due to the relatively weak effect of the treatment on this mediator, it is unsurprising that the causal mediation effects are on the small side, and fall short of statistical significance in two of the three surveys (Argentina and Turkey). It is also notable that the only country where governance reform appears to have any effect on the IMF's perceived treatment of borrowing countries is the only country here that is not itself a recent or prospective future recipient of an IMF loan.

Table 3: Testing the Substantive Legitimacy Mechanism

	Argentina		Turkey		China	
	Mediator	Outcome	Mediator	Outcome	Mediator	Outcome
Reform Treatment	0.10 [0.076]	0.08 [0.062]	0.10 [0.071]	0.08* [0.044]	0.29** [0.112]	0.18** [0.088]
Control Group	0.06 [0.077]	0.05 [0.063]	0.04 [0.072]	0.02 [0.044]	0.01 [0.112]	0.07 [0.088]
Favorable Terms		0.68*** [0.021]		0.83*** [0.016]		0.62*** [0.020]
Controls	Y	Y	Y	Y	Y	Y
N	1,616		1,608		1,568	
Average Causal Mediation Effect	0.07 [-0.03, 0.17]		0.08 [-0.03, 0.19]		0.17 [0.04, 0.31]	
Direct Effect	0.08 [-0.05, 0.20]		0.08 [-0.003, 0.17]		0.18 [0.02, 0.35]	
Total Effect	0.15 [-0.01, 0.31]		0.16 [0.02, 0.31]		0.35 [0.13, 0.56]	

Note: Top panel displays OLS regression coefficients and standard errors in parentheses. Bottom panel displays the total, direct, and average causal mediation effect of "Favorable Terms," with 95% confidence intervals in brackets. Estimation is based on Hicks and Tingley (2011). *** p<0.01, ** p<0.05, * p<0.1

Potential Threats to the Validity of Mediation Results

The results provide strong support for a procedural legitimacy mechanism, but only limited evidence that concerns about substantive legitimacy explain why descriptive representation increases support for IMF participation. However, the identification of the causal mediation effect relies on the assumption that there are no pre-treatment variables that confound the relationship between the mediator and outcome. We included a standard set of demographic control variables in our models to make this assumption plausible, but we cannot be sure that we have included all relevant pre-treatment confounders. Following an approach developed by Imai et al. (2011), we use sensitivity analysis to determine whether violations of this assumption are likely to impact our results. Table E4 in the appendix shows that our statistically significant causal mediation estimates are quite insensitive to potential violations of this assumption. In order for the true mediation effects to be zero, there would need to be an unobserved pre-treatment variable that is very strongly positively correlated with both the outcome and mediator variables. The results therefore provide robust support for the procedural legitimacy channel.

The identification of causal mediation effects also assumes that there are post-treatment confounders—that there are no post-treatment variables that affect both the mediator and outcome. In this context, this assumption would be violated if perceptions of procedural fairness influenced perceptions of favorable terms. To address this potential concern, we use a newly developed technique that decomposes treatment effects into a direct effect as well as mutually exclusive mediation effects for each mediator variable (Zhou and Yamamoto 2020). The results, presented in Table E5 in the appendix, are broadly consistent with the single-mediator models. Procedural legitimacy has a sizable and statistically significant mediation effect in all three

countries whereas the mediation effects of the substantive legitimacy variable are small and statistically insignificant.

Finally, it is important to consider the external validity of our finding that beliefs about procedural fairness matter more than perceptions about substantive outcomes. One possibility is that the weak effects for substantive legitimacy are driven by our focus on relatively large and strategically important countries since these countries already receive relatively favorable treatment from the IMF. However, citizens in these countries do not think the IMF provides favorable terms. Among those in the control group, just 12% of Argentines and 5% of Turks strongly agreed that their country would receive favorable terms from the IMF; even in China, just 16% of respondents answered in the top two categories (out of eleven). It is possible that substantive legitimacy would be a more important causal mechanism in smaller and less systemically important countries. But citizens of Argentina, Turkey, and China hardly think that the IMF is very generous, so it seems unlikely that their countries' ability to receive better treatment is responsible for these findings. It seems more plausible that the treatments have a weaker effect on substantive legitimacy because the connection with descriptive representation is less straightforward. Representational improvements have obvious implications for procedural fairness, which most citizens can recognize. By contrast, the causal links with substantive outcomes is much longer and more complicated, making it less likely that citizens will make these connections.

VII. Conclusions

Many policymakers and scholars have expressed concern that IOs lack legitimacy because they privilege the voices of rich, developed countries over those of poorer, developing states. Our study is a first effort to examine whether and how the representation of developing countries in IOs influences public support for these bodies. To do so, we focus on the IMF, a prominent IO that has faced a steady stream of criticism for its un-representative governance structure. We conducted survey experiments in three developing countries that are important strategic partners for the IMF: Argentina, China, and Turkey. We find that citizens of these countries who are informed that developing countries have recently gained more representation in IMF decision-making are more likely to support their government working with the Fund compared to those who were told that wealthy countries maintain more voice at the IO. This increase in support operates through a procedural legitimacy mechanism: people are more likely to believe that IMF decision-making processes are fair when developing countries have more say. We find only limited evidence that support for IMF involvement operates through the substantive legitimacy mechanism.

The consistency of our results across three diverse cases—varying by world region, relationship with the fund, form of government, among other characteristics—suggests that our findings are likely to generalize beyond these countries. Moreover, the longstanding, and at times fraught, relations between the IMF and Argentina and Turkey have presumably hardened citizens' attitudes about the IMF in these countries, thus making public opinion in these countries less sensitive to new information (Chong and Druckman 2007). For these reasons, our findings are likely to apply to countries with less contentious histories with the IMF. Whether this is the case, however, will require further study.

Our results also raise the question whether representational reforms at other IOs would improve perceptions of those bodies as well. We know that developing countries have also called for greater voice within the UNSC (Stephen 2015, 778–80; United Nations 2019) and the World Bank (Abdul Mageed Educational Trust 2020; Shirin 2005). Existing descriptive survey data shows that there is widespread public support in many countries for expanding the number of developing countries that are permanent members of the UNSC (Council on Foreign Relations 2009, 5). While far from definitive, such evidence indicates that it is plausible that enhanced descriptive representation could also improve public perception of other major IOs.

Our research contributes to several different scholarly literatures. First, our evidence provides new insights about the political economy of the IMF. We show that the IMF's unbalanced decision-making structure not only biases IMF lending behavior (Broz and Hawes 2006; Copelovitch 2010; Dreher and Jensen 2007; McDowell 2017; Oatley and Yackee 2004), it also impacts public perceptions of the institution in the developing world. Second, our study also contributes to a growing literature which has shown that an IO's institutional procedures impact public perceptions of those institutions' legitimacy (Bernauer and Gampfer 2013; Bernauer, Mohrenberg, and Koubi 2019; Dellmuth, Scholte, and Tallberg 2019; Dellmuth and Tallberg 2015). We highlight one overlooked attribute of IOs that has an important impact on perceptions of legitimacy: the degree of descriptive representation. Our analyses also show that procedural fairness concerns are an important mechanism through which IOs' institutional structures influence public support for these institutions. Finally, this study adds to an established literature on descriptive representation by showing that this concept, which has previously been applied to domestic institutions, can be extended to the study of international institutions. While our work has focused on the developing-developed country divide within IOs, there are other important

identities along which international representational disparities also coalesce—including those of race and gender—that remain unexplored. Future research should explore the salience of these various dimensions of representation in IOs.

Finally, our study has important policy implications. As the IMF has significantly increased its lending to help member states cope with the economic fallout of the Covid-19 pandemic, questions about the adequacy of its lendable resources and developing country representation are again coming to the fore. Developing countries have resumed calls for enhanced voice at the IO as part of the 16th General Review of Quotas, scheduled to be completed by December 2023 (IMF 2020; Ofori-Atta 2020). By documenting the political benefits of governance reform, our evidence provides backing to those pressing for a further increase in the vote share of developing countries at the IMF—a group that includes the IMF’s Managing Director, Kristalina Georgieva (2019). For potential borrower countries like Argentina and Turkey, higher levels of initial social support should reduce political risks that could threaten program uptake and success. For potential creditor countries like China, greater domestic support of the institution should increase governments’ willingness to contribute resources to the institution and invest in its global mission. In sum, our evidence suggests that the developed countries that continue to control the majority of votes in the IMF face a difficult trade-off: they can either reduce their influence at the Fund or risk a reduction in the influence of the Fund itself.

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Appendix A: Variable Definitions and Summary Statistics

Table A1 presents summary statistics for Argentine survey. These variables are defined as follows:

- *Age*: respondent's age in years.
- *Female*: Defined as 1 if respondent self-identifies as female, and 0 if respondent self-identifies as male.
- *Education*: Measures the respondent's educational attainment using the following ordinal scale: 1 = no schooling; 2 = attended but did not complete primary school; 3 = completed primary school; 4 = attended but did not complete secondary school; 5 = completed secondary school; 6 = attended but did not complete technical or college education; 7 = completed technical education; 8 = completed college education; 9 = post-graduate education.
- *Class*: Provides an ordinal measure of socio-economic status, where 1 = lower class; 2 = lower-middle class; 3 = middle class; 4 = upper or upper-middle class. The classification, which is widely used in Argentina, is based on the share of family members that have any source of income, head-of-household's level of educational attainment, head-of-household's current and previous employment status, and the type of health insurance that the head-of-household has.
- *Macri Supporter*: Measures whether the respondent has a favorable opinion of current President Mauricio Macri. Respondents that reported having a "very good" or "good" opinion of Macri are coded as 1. All others (those who reported "very poor", "poor", "unknown" or "don't know") are coded as 0.
- *Regional Fixed Effects*: The multivariate regression models include fixed effects at the city level.

Table A1: Summary Statistics for Argentina

Variable	Obs	Mean	Std. Dev.	Min	Max
IMF Participation	1,693	2.59	1.47	1	5
Fair Process	1,664	2.49	1.43	1	5
Favorable Outcomes	1,645	2.59	1.41	1	5
Reform Treatment	1,851	0.34	0.47	0	1
Unequal Representation Treatment	1,851	0.33	0.47	0	1
Age	1,851	42.45	16.54	16	92
Female	1,851	0.53	0.50	0	1
Education	1,851	5.07	1.88	1	9
Class	1,851	1.91	0.99	1	4
Macri Supporter	1,851	0.35	0.48	0	1

Table A2 presents summary statistics for Turkish survey. These variables are defined as follows:

- *Age*: respondent's age in years.
- *Female*: Defined as 1 if respondent self-identifies as female, and 0 if respondent self-identifies as male.
- *Education*: Measures the respondent's educational attainment using the following ordinal scale: 1 = no formal education; 2 = primary school graduate; 3 = secondary school graduate; 4 = high school graduate; 5 = high school graduate with some college education; 6 = college graduate.
- *Income*: Measures household income over the previous six months. It is defined as $\ln(1+\text{income})$.
- *AKP Identifier*: Measures party identity, specifically whether the individual identifies with the incumbent AK Party. Respondents were first asked if they think of themselves as closer to any political party. Those that responded "yes" were then asked which party they fell closest to. Those that responded that they feel closest to other parties are coded as 0.
- *Regional Fixed Effects*: The multivariate regression models include fixed effects at the NUTS-1 regional level.

Table A2: Summary Statistics for Turkey

Variable	Obs	Mean	Std. Dev.	Min	Max
IMF Participation	1,840	1.97	1.23	1	5
Fair Process	1,831	1.96	1.17	1	5
Favorable Outcomes	1,829	1.98	1.19	1	5
Reform Treatment	2,027	0.38	0.49	0	1
Unequal Representation Treatment	2,027	0.25	0.43	0	1
Age	2,003	42.24	15.83	18	92
Female	2,027	0.52	0.50	0	1
Education	2,019	3.26	1.53	1	6
Income	1,804	7.66	1.23	0	10.82
AKP Identifier	2,027	0.34	0.47	0	1

Table A3 presents summary statistics for Chinese survey. These variables are defined as follows:

- *Age*: respondent's age in years. Respondents were asked their year of birth. We approximate their age by subtracting the year of birth from 2019 (the survey year).
- *Female*: Defined as 1 if respondent self-identifies as female, and 0 if respondent self-identifies as male.
- *Education*: Measures the respondent's educational attainment using the following ordinal scale: 1 = junior high school or below; 2 = high school education; 3 = college education; 4 = graduate education.
- *Income*: Measures annual income on an ordinal scale, where 1 = income less than 20,000 yuan; 2 = 20,000 to 30,000 yuan; 3 = 30,000 to 60,000 yuan; 4 = 60,000 to 150,000 yuan; 5 = greater than 150,000 yuan.
- *CCP Member*: Measures whether the respondent is a member of China's Communist Party. Those that report being party members are coded as 1; those that report that they are not members of the Party are coded as 0.
- *Regional Fixed Effects*: The multivariate regression models include province fixed effects.

Table A3: Summary Statistics for China

Variable	Obs	Mean	Std. Dev.	Min	Max
IMF Participation	2,191	7.38	1.80	1	10
Fair Process	2,191	6.82	2.06	0	10
Favorable Outcomes	2,191	6.83	1.82	0	10
Reform Treatment	2,196	0.34	0.47	0	1
Unequal Representation Treatment	2,196	0.33	0.47	0	1
Age	2,194	27.14	6.09	18	70
Female	2,216	0.51	0.50	0	1
Education	2,144	2.90	0.55	1	4
Income	2,144	2.85	1.32	1	5
CCP Member	1,749	0.20	0.40	0	1

Table A4 presents the complete regression output for the main multivariate regression models. The base category is the unequal-representation treatment.

Table A4: Multivariate Regression Results

	(1) Argentina	(2) Turkey	(3) China
Control Group	0.09 [0.080]	0.06 [0.074]	0.08 [0.111]
Reform Treatment	0.16** [0.079]	0.17** [0.073]	0.36*** [0.112]
Partisanship	1.32*** [0.071]	-0.05 [0.062]	0.32*** [0.118]
Age	0.003 [0.002]	-0.005** [0.002]	0.004 [0.009]
Education	0.001 [0.021]	0.03 [0.023]	-0.02 [0.088]
Female	0.01 [0.064]	0.07 [0.058]	-0.18* [0.093]
Income/Class	0.02 [0.039]	0.002 [0.027]	-0.004 [0.039]
Constant	1.95*** [0.232]	1.58*** [0.253]	7.48*** [0.439]
Observations	1,693	1,626	1,568
R-squared	0.256	0.123	0.047

Standard errors in brackets. Regional fixed effects not shown in Table.

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

Appendix B: Covariate Balance

Appendix Table B1 examines covariate balance in all three surveys. The first three columns present the means on each pre-treatment covariate for each experimental condition. The final three columns present p-values for difference-in-means tests. Overall, randomization was largely successful. However, there are minor imbalances in the average age of respondents across experimental conditions in both the Argentina and China surveys. There is also a marginally significant difference in social class in Argentina between the unequal-representation and control conditions. Although a few differences are statistically significant, the magnitude of differences is quite small in all cases. For example, the largest difference—the age gap between the reform treatment and control group in Argentina—is 2.6 years, which is just 16% of a standard deviation (16.54 years).

These minor violations in covariate balance are almost certainly due to random chance, and not due to problems arising with the fieldwork. For instance, in China, randomization was done using computer-assisted technology that ensured an equal probability that any given respondent received each treatment. In Argentina, interviews were conducted with a mixture of printed questionnaires for face-to-face interviews and using computer-assisted techniques. A closer look at the Argentine data reveals that the imbalances in age across treatment groups was confined to the subset of respondents that took the survey on a computer, suggesting that it was not due to the survey company's inability to administer questionnaires in a randomized fashion.

Table B1: Covariate Balance

Argentina	Mean Control	Mean Reform	Mean Unequal	Reform - Control	Bias - Control	Reform - Unequal
Macri Supporter	0.370	0.339	0.351	0.261	0.505	0.652
Age	44.238	41.551	41.563	0.004	0.005	0.990
Education	5.098	5.014	5.107	0.424	0.935	0.384
Gender	0.524	0.530	0.527	0.837	0.926	0.911
Class	1.866	1.896	1.967	0.590	0.077	0.217

Turkey	Mean Control	Mean Reform	Mean Unequal	Reform - Control	Bias - Control	Reform - Unequal
AKP Identifier	0.332	0.352	0.345	0.413	0.628	0.804
Age	42.359	42.278	42.010	0.922	0.706	0.766
Education	3.213	3.249	3.327	0.637	0.203	0.379
Gender	0.525	0.526	0.497	0.980	0.325	0.312
Income	7.596	7.689	7.690	0.172	0.234	0.989

China	Mean Control	Mean Reform	Mean Unequal	Reform - Control	Bias - Control	Reform - Unequal
CCP Member	0.185	0.196	0.206	0.658	0.378	0.660
Age	27.216	26.553	27.479	0.028	0.429	0.003
Education	2.894	2.906	2.895	0.684	0.994	0.695
Gender	0.496	0.528	0.496	0.212	0.997	0.213
Income	2.894	2.868	2.799	0.714	0.171	0.319

Nevertheless, these differences in the Argentine survey presumably help explain why the size of the treatment effects of the Argentine survey are sensitive to the inclusion of covariates in the model. To further explore this question, Table B2 presents a measure of multivariate imbalance proposed by Iacus, King, and Porro (2012). The first row shows the degree of imbalance between the reform treatment and control treatment in the full sample. For this analysis, we focus only on these two groups, and have left the control group aside. For this exercise, we use the same five pre-treatment covariates as in the main models. However, we do not include the regional fixed effects because we are not always able to obtain matched observations when doing so.

The absolute values of the multivariate imbalance statistic cannot be meaningfully compared across surveys. (In other words, a 0.6 in Turkey compared to 0.55 in Argentina does not indicate greater imbalance in the Turkish data). The relevant comparison is with the degree of multivariate imbalance in a sample where observations are weighted based on Iacus et al.'s (2012) coarsened exact matching (CEM) routine. As can be seen, this weighting procedure improves a very substantial (50%) improvement in covariate balance in the Argentine sample. There is some improvement in the Chinese data too, likely reflecting the fact that we observe some imbalances across pre-treatment covariates, though those imbalances were more minor than in the Argentina data. There is effectively no difference in the Turkish data. The relative lack of covariate balance in the Argentine data compared to the matched data reinforces the notion that covariate control is likely appropriate in this case to remove the differences in pre-treatment covariates across experimental conditions.

Table B2: Multivariate Imbalance

	Argentina	Turkey	China
Without Matching	0.55	0.60	0.38
With Matching	0.27	0.62	0.28
Percent Difference	-0.50	0.03	-0.26

Table B3 shows estimated treatment effects from models that weight observations based on the coarsened exact matching routine. As in Table B2, we restrict the sample to the two treatment groups, and discard control-group observations. The odd-numbered columns show the results of bivariate regressions. The even-numbered columns weight observations in the same way but also include controls for the five covariates that were used to generate the weights in the outcome model. The key finding is that the estimates from Argentina in these models are much closer to the estimate from the multivariate regression in Table 1 than from the bivariate model.

More generally, the table shows consistent evidence in all three countries that the reform treatment increases support for IMF participation relative to the unequal-representation treatment.

Table B3: Coarsened Exact Matching

	Argentina		Turkey		China	
	(1)	(2)	(3)	(4)	(5)	(6)
Reform T - Unequal T	0.18*	0.20**	0.27***	0.25***	0.44***	0.47***
Controls	N	Y	N	Y	N	Y

Appendix C: Placebo Test

Table C1 presents the main results of our follow-up experiment in China. Following the main analyses, we present one model with no covariates and one with covariates. Column 2 uses the same set of covariates as in the main analyses, including province fixed-effects (which are not included in the table for reasons of space). The control condition is the baseline group in both models. The dependent variable asks about engagement with the IMF, using identical language and the same 11-point scale as the main experiment in China. The reform treatment has a positive and statistically significant effect. The placebo treatment is not statistically significant, and the point estimate is very close to zero.

Table C1: Follow-Up Experiment in China

	(1)	(2)
Placebo Treatment	-0.010 [0.085]	-0.006 [0.085]
Reform Treatment	0.183** [0.087]	0.191** [0.087]
CCP Member		0.314*** [0.113]
Gender		0.108 [0.072]
Age		0.016** [0.007]
Income		0.002 [0.030]
Education		0.142** [0.065]
Constant	6.205*** [0.060]	5.077*** [0.353]
Observations	2,995	2,995
R-squared	0.002	0.020

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1.

Regional fixed effects in model 2 not shown in Table.

Appendix D: Heterogeneous Treatment Effects

Table D1 examines whether there is heterogeneity in responses to the experimental treatments using the Argentine dataset. Each model adds interaction terms between the reform treatment and the control group with one potential moderating variable. The unequal-representation group is the baseline group. The first row of each column lists the moderator variable used in that model.

Model 1 shows that the effects of the reform treatment are weaker for older respondents. Model 2 shows that the difference between the control group and unequal-representation group is larger among Macri supporters – that is, the unequal-representation group reduces support for IMF participation, relative to the control group, more strongly among those that have favorable views of President Macri. Column 3 and 5 show that gender and class, respectively, are not statistically significant moderators of the treatment effects. In column 4, we see that the interaction between education and the control group is statistically significant at the 90% confidence level, suggesting that more educated respondents might be more responsive to the unequal-representation treatment.

Table D2 presents equivalent interaction models for Turkey. Table D3 does so for China. None of the 20 interaction terms in the two tables are statistically significant. While there are some statistically significant interaction effects in the Argentine dataset, overall we find limited evidence of treatment-effect heterogeneity and no evidence of heterogeneity in Turkey or China.

Table D1: Heterogeneous Treatment Effects in Argentina

	(1) Age	(2) Macri Supporter	(3) Female	(4) Education	(5) Class
Reform Treatment	0.565*** [0.219]	0.082 [0.099]	0.122 [0.115]	0.128 [0.231]	-0.003 [0.173]
Control Group	0.081 [0.220]	-0.067 [0.101]	0.055 [0.115]	-0.257 [0.227]	-0.017 [0.174]
Macri Supporter	1.318*** [0.071]	1.102*** [0.120]	1.316*** [0.071]	1.313*** [0.071]	1.315*** [0.071]
Age	0.006* [0.003]	0.003* [0.002]	0.003 [0.002]	0.003 [0.002]	0.003 [0.002]
Education	0.000 [0.020]	-0.001 [0.020]	0.001 [0.021]	-0.025 [0.031]	0.001 [0.021]
Female	0.008 [0.064]	0.009 [0.064]	-0.038 [0.112]	0.010 [0.064]	0.012 [0.064]
Class	0.017 [0.039]	0.017 [0.039]	0.017 [0.039]	0.021 [0.039]	-0.029 [0.060]
Reform TreatmentXModerator	-0.010** [0.005]	0.196 [0.164]	0.066 [0.158]	0.005 [0.043]	0.082 [0.079]
Control GroupXModerator	0.081 [0.220]	0.431*** [0.164]	0.077 [0.159]	0.068* [0.041]	0.056 [0.079]
Constant	1.823*** [0.241]	2.027*** [0.217]	1.979*** [0.219]	2.072*** [0.242]	2.045*** [0.231]
Observations	1,693	1,693	1,693	1,693	1,693
R-squared	0.259	0.260	0.257	0.258	0.257

Standard errors in brackets.
Regional fixed effects not shown
in Table.
*** p<0.01, ** p<0.05, * p<0.1

Table D2: Heterogeneous Treatment Effects in Turkey

	(1) Age	(2) AKP Identifier	(3) Female	(4) Education	(5) Income
Reform Treatment	0.377*	0.202**	0.236**	-0.000	0.291
	[0.209]	[0.090]	[0.102]	[0.173]	[0.555]
Control Group	-0.005	0.083	0.141	0.022	0.475
	[0.209]	[0.090]	[0.102]	[0.175]	[0.494]
AKP Identifier	-0.048	0.015	-0.047	-0.049	-0.050
	[0.062]	[0.122]	[0.062]	[0.062]	[0.062]
Age	-0.003	-0.005**	-0.005**	-0.005**	-0.005**
	[0.004]	[0.002]	[0.002]	[0.002]	[0.002]
Education	0.030	0.029	0.031	0.006	0.029
	[0.023]	[0.023]	[0.023]	[0.039]	[0.023]
Female	0.076	0.075	0.194*	0.075	0.075
	[0.058]	[0.059]	[0.116]	[0.059]	[0.059]
Income	0.003	0.002	0.002	0.003	0.033
	[0.027]	[0.027]	[0.027]	[0.027]	[0.053]
Reform TreatmentXModerator	-0.005	-0.094	-0.140	0.052	-0.016
	[0.005]	[0.154]	[0.147]	[0.047]	[0.071]
Control GroupXModerator	0.001	-0.074	-0.177	0.011	-0.054
	[0.005]	[0.158]	[0.148]	[0.048]	[0.063]
Constant	1.517***	1.558***	1.520***	1.653***	1.338***
	[0.286]	[0.255]	[0.258]	[0.277]	[0.434]
Observations	1,626	1,626	1,626	1,626	1,626
R-squared	0.125	0.124	0.124	0.124	0.124

Standard errors in brackets.

Regional fixed effects not shown in Table.

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

Table D3: Heterogeneous Treatment Effects in China

	(1) Age	(2) Party Member	(3) Female	(4) Education	(5) Income
Reform Treatment	0.633 [0.538]	0.404*** [0.125]	0.048 [0.605]	0.284* [0.161]	0.311 [0.264]
Control Group	0.254 [0.501]	0.079 [0.124]	-0.264 [0.600]	0.146 [0.158]	0.143 [0.265]
Party Member	0.320*** [0.118]	0.391* [0.200]	0.322*** [0.118]	0.317*** [0.118]	0.316*** [0.118]
Age	0.009 [0.013]	0.004 [0.009]	0.004 [0.009]	0.004 [0.009]	0.004 [0.009]
Education	-0.023 [0.088]	-0.026 [0.088]	-0.098 [0.143]	-0.024 [0.088]	-0.025 [0.088]
Female	-0.177* [0.093]	-0.176* [0.093]	-0.175* [0.093]	-0.179 [0.160]	-0.175* [0.093]
Income	-0.003 [0.039]	-0.002 [0.039]	-0.004 [0.039]	-0.002 [0.039]	-0.002 [0.064]
Reform TreatmentXModerator	-0.010 [0.020]	-0.212 [0.280]	0.108 [0.205]	0.146 [0.224]	0.018 [0.086]
Control GroupXModerator	-0.007 [0.018]	-0.004 [0.281]	0.119 [0.204]	-0.140 [0.223]	-0.023 [0.086]
Constant	7.337*** [0.524]	7.466*** [0.439]	7.696*** [0.552]	7.469*** [0.443]	7.472*** [0.464]
Observations	1,568	1,568	1,568	1,568	1,568
R-squared	0.047	0.047	0.047	0.048	0.047

Standard errors in brackets.

Regional fixed effects not shown in Table.

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

Appendix E: Causal Mediation Models

Tables E1, E2, and E3 display the complete results of the regression models upon which the causal mediation estimates in Tables 2 and 3 are based. The first two models in each table are used to generate the estimates of the indirect and direct effect of “Fair Process”: the first model shows the effect of the treatments on the “Fair Process” mediator; the second model shows the effect of “Fair Process” on support for IMF participation. The third and fourth columns present analogous information for the other mediator, perceptions of favorable outcomes.

Table E1: Mediation Models for Argentina

	(1) Fair Process	(2) IMF Participation	(3) Favorable Outcomes	(4) IMF Participation
Control Group	0.11 [0.079]	0.04 [0.069]	0.06 [0.077]	0.05 [0.063]
Reform Treatment	0.16** [0.078]	0.07 [0.068]	0.10 [0.076]	0.08 [0.062]
Fair Process		0.56*** [0.022]		
Favorable Outcomes				0.68*** [0.021]
Macri Supporter	1.28*** [0.070]	0.61*** [0.067]	1.35*** [0.068]	0.40*** [0.063]
Age	0.00 [0.002]	0.00** [0.002]	0.00 [0.002]	0.00** [0.002]
Education	-0.05** [0.020]	0.03 [0.018]	-0.06*** [0.020]	0.04*** [0.016]
Female	0.06 [0.063]	-0.00 [0.055]	0.00 [0.061]	0.02 [0.050]
Class	-0.02 [0.039]	0.03 [0.034]	0.01 [0.037]	0.01 [0.031]
Constant	2.26*** [0.230]	0.63*** [0.207]	2.48*** [0.221]	0.15 [0.189]
Observations	1,625	1,625	1,616	1,616
R-squared	0.274	0.476	0.301	0.565

Standard errors in brackets. Regional fixed effects not shown in Table.

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

Table E2: Mediation Models for Turkey

	(1) Fair Process	(2) IMF Participation	(3) Favorable Outcomes	(4) IMF Participation
Control Group	0.05 [0.071]	0.02 [0.048]	0.04 [0.072]	0.02 [0.044]
Reform Treatment	0.14* [0.071]	0.06 [0.048]	0.10 [0.071]	0.08* [0.044]
Fair Process		0.79*** [0.017]		
Favorable Outcomes				0.83*** [0.016]
AKP Identifier	0.02 [0.060]	-0.05 [0.041]	-0.00 [0.061]	-0.04 [0.038]
Age	-0.00** [0.002]	-0.00 [0.001]	-0.01*** [0.002]	0.00 [0.001]
Education	0.03 [0.022]	0.01 [0.015]	0.02 [0.022]	0.02 [0.014]
Female	0.10* [0.057]	-0.01 [0.038]	0.05 [0.057]	0.03 [0.035]
Income (Log)	0.02 [0.026]	-0.02 [0.018]	0.02 [0.026]	-0.02 [0.016]
Constant	1.44*** [0.244]	0.45*** [0.166]	1.64*** [0.245]	0.22 [0.154]
Observations	1,612	1,612	1,608	1,608
R-squared	0.104	0.628	0.127	0.686

Standard errors in brackets.

Regional fixed effects not shown in Table.

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

Table E3: Mediation Models for China

	(1) Fair Process	(2) IMF Participation	(3) Favorable Outcomes	(4) IMF Participation
Control Group	0.09 [0.124]	0.03 [0.091]	0.01 [0.112]	0.07 [0.088]
Reform Treatment	0.75*** [0.125]	-0.02 [0.093]	0.29** [0.112]	0.18** [0.088]
Fair Process		0.51*** [0.019]		
Favorable Outcomes				0.62*** [0.020]
Party Member	0.52*** [0.132]	0.05 [0.097]	0.31*** [0.118]	0.13 [0.093]
Age	0.02** [0.010]	-0.01 [0.007]	0.02* [0.009]	-0.01 [0.007]
Education	-0.16 [0.098]	0.06 [0.072]	-0.00 [0.088]	-0.02 [0.069]
Female	0.01 [0.103]	-0.18** [0.076]	-0.13 [0.093]	-0.09 [0.073]
Income Category	-0.04 [0.044]	0.02 [0.032]	0.06 [0.039]	-0.04 [0.031]
Constant	6.64*** [0.489]	4.08*** [0.381]	6.26*** [0.439]	3.61*** [0.367]
Observations	1,568	1,568	1,568	1,568
R-squared	0.059	0.359	0.036	0.411

Standard errors in brackets.

Regional fixed effects not shown in Table.

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

Table E4 provides sensitivity analysis for the mediation models presented in Tables 2 and 3 of the main paper. The identification of causal mediation effects relies on the assumption that there are no pre-treatment covariates that confound the relationship between the mediator and outcome. Since this assumption is not directly testable, sensitivity analysis is useful for determining how large a violation of this assumption would be required to alter one's conclusions. Here, we present the results from a sensitivity analysis developed by Imai et al. (2011). The intuition behind the sensitivity analysis is that pre-treatment confounding would produce a correlation between the error term of the mediator model and the error term for the outcome model. If the mediation effects would continue to be statistically significant even when the error terms are strongly correlated, this would indicate that the results are insensitive to violations of this assumption.

Table E4 reports the rho value for which the mediation effect (ACME) of each mediator reaches zero. The rho value refers to the correlation between the error term of the mediator model and the error term of the outcome model. The table presents estimates of rho for each case in which we obtain statistically significant mediation effects. We find that "Fair Process" would continue to have a positive mediation effect so long as rho is less than 0.53 in Argentina, 0.76 in Turkey, and 0.57 in China. Similarly, the mediation effect of "Favorable Terms" remains positive in the Chinese case so long as rho is less than 0.62. Put differently, it would require very strong error correlation and thus very strong violations of this assumption to overturn our findings.

Table E4: Sensitivity Analysis

Survey	Favorable Outcomes	Fair Process
Argentina	N/A	0.54
Turkey	N/A	0.76
China	0.62	0.57

Next, we address the possibility of post-treatment confounding by running models that trace causal paths with multiple mediators. We follow Zhou and Yang’s (2020) imputation approach, which decomposes the total effect into separate mediation effects for each potential mediator. Since both mediators are theoretically relevant, this is an important advantage of other approaches to multiple mediators (e.g. Imai and Yamamoto 2013), which estimate mediation effects for one mediator at a time and treat the alternative mediator simply as a nuisance. We specify the order of the mediators such that perceptions of procedural fairness are causally prior to perceptions of favorable terms. Table E5 presents the results using this approach, which are broadly consistent with the single-mediator results in Tables 2 and 3. We find robust support for the procedural legitimacy channel but little support for the substantive legitimacy channel.

Table E5: Multiple-Mediator Analysis

	Argentina	Turkey	China
Mediation Effect: Fair Process	0.08*	0.06*	0.39**
	[0.05]	[0.04]	[0.07]
Mediation Effect: Favorable Terms	0.001	0.002	-0.05
	[0.03]	[0.02]	[0.04]
Direct Effect	0.08	0.06	0.03
	[0.06]	[0.04]	[0.09]
Total Effect	0.16**	0.17**	0.36**
	[0.08]	[0.07]	[0.11]

Note: Standard errors in brackets. ** p<0.05, * p<0.1