

Remittances, Regime Type, and Government Spending Priorities

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Abstract Previous work suggests that remittances enable governments to reduce spending on public services and divert resources to serve their own interests. We argue this need not occur. Building on recent work which shows that the impact of remittances is contingent on the domestic environment in remittance-receiving countries, we hypothesize that (1) remittances are more likely to increase government spending on public services in democracies than in autocracies and (2) remittances are more likely to finance activities that deter political competition in autocracies than in democracies. Using a sample of 105 developing countries from 1985 through 2008, we find strong support for our hypotheses when examining the impact of remittances on public education, health, and military spending. We also provide suggestive evidence for the mechanism underpinning our results: micro-level evidence on remittance recipients' preferences and political engagement.

Keywords Remittances · Regime type · Government finance

Introduction

International remittances—funds that migrants send to families in their countries of origin—have increased from \$110 billion in 2000 to an estimated \$583 billion in 2014 (Ratha et al. 2015, p. 3). They represent the second largest source of external financing for many developing countries, exceeding foreign aid as well as foreign investment.

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They are also more stable than private debt and portfolio equity flows (Ratha et al. 2015). It is therefore not surprising that interest in their impact is increasing rapidly as well.

Most research on remittances has focused on their socioeconomic effects on recipient households as well as their macroeconomic impact on receiving countries. Research on remittances' effects on government behavior is growing but still limited. Our work extends this latter body of work in two ways. We focus on remittances' effects on government spending priorities. Extant research provides insight into the relationship between remittances and spending on public services; however, few works examine the issue directly. We build on recent work (Tyburski 2014; Cordova and Hiskey 2014) which shows that remittances' impact is contingent on the domestic environment in recipient countries.

We argue that remittances' effects on government spending priorities are contingent on the nature of the receiving country's political regime. Because remittances enable households to purchase welfare goods privately, governments have an incentive to divert state resources away from public services and toward their own interests (Ahmed 2012). At the same time, however, the additional income from remittances provides recipients with greater ability to pressure governments into providing public services. Following Tyburski (2014), we argue that migrants and their families will be more likely to allocate resources toward influencing policy in democracies where barriers to participating in political activities are lower and the likelihood of influencing policy is higher. This pressure is more likely to be effective in democracies than autocracies because unresponsive incumbent governments in democracies are more vulnerable to being replaced. 4 Remittances are thus more likely to increase government spending on public services preferred by migrants and their families in democracies than autocracies. Moreover, since autocratic governments are more difficult to replace than democratic ones, autocracies will have more opportunity than democracies to reduce spending on public services as remittances increase. Autocracies will thus be more likely to divert state resources toward securing their own interests.

We show that remittances' effects are regime specific by testing our arguments on a sample of 105 developing countries from 1985 to 2008. We first examine remittances' impact on government education and health spending because previous work suggests that remittances increase demand for these services (e.g., Amuedo-Dorantes and Pozo 2011; Yang 2005). To test for the diversion of resources, we examine remittances' impact on military spending. We find that remittances increase government spending on education and health in more democratic countries, and this positive effect decreases as countries become more autocratic. Conversely, remittances increase military spending in

⁴ While they may differ slightly in details, several scholars argue that democracies provide more public services than autocracies because they have to appease a broader range of political supporters (e.g., Bueno de Mesquita et al. 2003; Lake and Baum 2001). Several empirical studies confirm this argument (e.g., Ansell 2008; Kaufman and Segura-Ubiergo 2001; Lake and Baum 2001; Stasavage 2005).



¹ See Ghosh (2006) for a review of remittances' economic effects.

² See Mosley and Singer (2015) for a review of remittances political consequences.

³ Recent exceptions include Ahmed (2012), Doyle (2015), and Bearce and Park (2015).

autocracies, and this positive effect declines as countries become more democratic. We also provide suggestive evidence for the mechanism underpinning our results: micro-level evidence on remittance recipients' preferences and political engagement.

Our work thus falls between that of "remittance skeptics," who argue that remittances promote perverse outcomes such as corruption (Abdih et al. 2012; Ahmed 2013) and the survival of authoritarian regimes (Ahmed 2012), and "remittance optimists" who argue that remittances promote democratization (Bearce and Park 2015; Escribà-Folch et al. 2015) and enable recipients to hold incumbents accountable (Tyburski 2012). Contrary to remittance skeptics, we show that remittances induce governments to increase welfare goods spending, albeit only in more democratic countries. Qualifying the optimist position, we show that remittances enable governments to divert resources toward military spending, although this occurs in autocracies, not in democracies.

Our results also contribute to the broader debate on remittances' efficacy as a source of development finance. Since public education and health expenditures are positively associated with economic growth (Bose et al. 2007; Aisa and Pueyo 2006), our work suggests remittances should promote development in democracies but not in autocracies. Since military spending has been shown to have a negative, or at best null, effect on growth (Dunne and Uye 2009), our work indicates remittances may be a "resource curse" in autocracies but not in democracies.

Remittances and Government Spending

Remittances are generally a boon for households that receive them. They finance basic needs such as food, shelter, and health care, and provide households with the means to invest in education and small enterprises (Ghosh 2006). They are particularly beneficial to households because they tend to increase when economic conditions in migrants' home countries deteriorate (Yang 2005).

Remittances' effects on governments in receiving countries, however, are not as well understood. As person-to-person private transfers, remittances do not accrue directly to governments, but they can influence government behavior indirectly through the behavior of remittance recipients. A prominent theme in research on remittances and government behavior is the notion that they substitute for government spending on public services (Abdih et al. 2012; Ahmed 2012, 2013). The logic underpinning this substitution effect is as follows: remittances increase households' ability to pay for welfare goods which governments might otherwise provide. Governments may thus be able to reduce their contribution to public services without fueling discontent. Resources not spent on public services can be used by governments as they please. Consistent with this substitution argument, Adida and Girod (2011) show that in Mexico, remittances increase access to sanitation through private means, implying that remittances substitute for government spending in this area. More directly, Ahmed (2012) shows remittances and foreign aid combined reduce the share of government spending on welfare goods in non-oil producing



Muslim countries, and Doyle (2015) shows remittances reduce social security expenditures in Latin America.⁵

While some empirical support for the substitution argument exists, there are good reasons to question the theory. The substitution argument assumes that migrants and remittance recipients are indifferent to the source of financing for welfare goods. This may not be so. Remittance recipients may prefer that government provide certain welfare goods so they can use their own resources to purchase additional goods. Individuals whose income inclusive of remittances are at, or below, the median should prefer that government provide public services because at least some proportion of these services will be subsidized by taxes on individuals whose incomes are above the median. It is noteworthy that taxes are unlikely to derive directly from remittances because these transfers are difficult to monitor—they are often transferred through informal channels. Thus, as long as the marginal benefit of public goods exceeds the marginal cost associated with the taxes levied on remittances to pay for these goods, remittance recipients should support their provision.

Second, empirical studies imply migrants and their families may not be so sanguine about whether governments provide public services or not (Escribà-Folch et al. 2015; Pfutze 2012; Tyburski 2012). These studies posit that because remittances reduce recipients' dependence on the state, they lower the costs to recipients of supporting opposition candidates. This increases competition among politicians for office, and enables recipients to hold governments accountable. Pfutze (2012) shows, for example, that in Mexico, remittances made elections more competitive in municipalities continuously ruled by the Institutional Revolutionary Party (PRI)—Mexico's long-standing ruling party, while Tyburski (2012) shows remittances reduce corruption across states in Mexico. In their cross-country analyses, Escribà-Folch et al. (2015) show that by reducing electoral support for incumbents, remittances promote transitions to democracy among party-based autocracies, and Bearce and Park (2015) show remittances promote democratization more generally. These studies suggest it is precisely because remittances substitute for government services that recipients can pressure governments to increase rather than reduce public goods spending.

Among studies that argue against the substitution effect of remittances, only Bearce and Park (2015) explicitly examine remittances' impact on government spending. They argue there should be no substitution effect because although remittances provide incentives for governments to reduce public services, remittances also reduce poverty, and richer societies demand more public goods. Thus, the substitution effect is offset by remittances' income effect. This argument assumes that governments automatically respond to demands for increases in public services.

We argue that whether governments divert funds away from—or increase spending on—public services depends on the incentives faced by leaders and citizens. This argument is based on a public choice model of the state presented by Lake and Baum (2001). Because we build on this approach, we outline its main features before discussing its implications for remittances and government spending priorities.

⁶ See Ansell (2008) for a formal model of this argument with respect to public education.



⁵ Doyle provides some evidence for a larger sample of developing countries, but advises caution in interpreting results of this broader analysis because it includes few controls. Because Doyle's work (2015) is closest to ours, we consider it more fully in the "Discussion."

In this "barriers-to-entry" approach, states are conceived of as organizations that compete in political markets, producing public services in exchange for rents. States have monopoly power over the use of force, and a comparative advantage in producing public services. They use these characteristics to promote their longevity while maximizing rents. This implies a state's provision of public services is a function of the contestability of the market in which it operates. In perfectly contestable markets, even a natural monopoly is restrained by the possibility of new entrants. In this context, states will act like regulated monopolies providing relatively large quantities of public services at relatively lower prices, and thereby earn few rents. As markets become less contestable, states will provide fewer, and lower quality, public services and earn more rents.

As Lake and Baum (2001) note, the contestability of political markets depends on (1) the incentives for individuals to enter the political arena and (2) the costs to citizens of deposing one leader and installing another. These conditions vary with political regime. In autocracies, barriers to entry are high because the costs of defeat are extremely high. Failed contenders are often exiled or lose their lives. In democracies, barriers to entry are low because costs of defeat are low. Defeated competitors often survive as members of the opposition and are free to compete in subsequent elections. Costs to citizens of deposing leaders also vary with regime type. In autocracies, deposing the leader often involves participating in mass demonstrations or armed rebellion, which carries the risk of severe punishment. In democracies, leader turnover occurs through elections, and participating in elections entails lower risk and cost to citizens. This implies that in the more contestable markets faced by democratic governments, states should provide more and higher quality public services than autocratic governments.

Remittances affect government spending decisions because they increase the contestability of the political system. Income from remittances reduces the cost of engaging in political activities and heightens recipients' stake in the community (Burgess 2012). While there is some evidence that remittances reduce the likelihood of voting (Goodman and Hiskey 2008; Germano 2013), as mentioned earlier, research suggests that remittance recipients who vote tend to support opposition candidates, thereby increasing competition for political office (Pfutze 2012; Escribà-Folch et al. 2015). The behavior of politicians from countries with large diasporas underlines the importance of migrants and their families back home. Political candidates often campaign among diaspora communities (Lyons and Mandaville 2010; Østergaard-Nielsen 2003), and research shows remittances increase during election years (O'Mahoney 2013).

Moreover, remittances encourage recipients to participate in other ways (Burgess 2012; Goodman and Hiskey 2008), which taken together intensifies political competition and influences incumbent behavior. These forms of participation include non-electoral activities such as meeting with officials, demonstrations and protests, and membership in local civic associations and transnational public-private partnerships. Demonstrations and protests could destabilize the economy, thereby reducing incumbents' probability of re-election. Participation in public-private partnerships can promote the welfare of communities, thereby enhancing incumbents' re-election chances. These activities compel authorities to take the wishes and priorities of migrants and their families into account (Guarnizo et al. 2003, p. 1223).



We argue that incumbents can respond to this increase in political competition in two ways (1) they can provide more public services to maintain power or (2) they can reduce public services and divert rents toward limiting political competition. Which strategy a government adopts depends on the extant level of competition. For incumbents in relatively competitive systems, the marginal cost to increasing public services is likely to be lower than the cost to limiting competition. The existing level of freedom of information and association in democracies facilitates collective action, thus remittance recipients in democracies are more likely than those in autocracies to mobilize against reductions in public services and attempts to limit their freedoms. In autocracies, the pressure on incumbents that remittance recipients can bring to bear is likely to be marginal because engaging in collective action is costly and replacing leaders requires regime change. This leads to our first hypothesis:

H1: Remittances are more likely to increase government spending on public services in democracies than in autocracies.

In addition to allowing incumbents to provide fewer public services, stricter constraints on contestation allow autocratic incumbents to extract more rents than democratic governments. The marginal cost of losing office would thus be greater for incumbents in autocracies. Thus, autocrats will have more incentive than democratic leaders to divert state resources toward limiting political competition as remittances increase. This yields our second hypothesis:

H2: Remittances are more likely to finance activities that deter political competition in autocracies than in democracies.

Analysis

We test our hypotheses on remittances, regime, and government spending priorities on all countries and years for which data are available—up to 105 developing countries from 1985 to 2008. We begin by testing H1, focusing on remittances' effects on public education and health spending. We then test H2, focusing on remittances' effects on military spending. Since remittances may be endogenous to government spending, we evaluate this and other concerns regarding robustness of our results after testing H1 and H2. We then explore the extent to which governments substitute education and health expenditures specifically with military spending. Finally, we provide some evidence for the causal mechanisms linking remittances and government spending: preferences and behavior of remittance recipients in Latin America.

Before turning to the analysis, we point out that education, health and military spending can be viewed as providing both public goods and targeted welfare benefits. Education and health care are often referred to as public goods because the benefits that

⁸ See Electronic Supplementary Material (ESM) Appendix 1 for the countries in our sample.



While our argument is based on Lake and Baum (2001), it is consistent with that of Bueno de Mesquita and Smith (2009) who argue that when threatened with the possibility of regime change, incumbents with large winning coalitions will increase core public goods.

an individual receives from these services accrue not only to the individual but also to other members of society (Kaul et al. 1999, p. xx). However, these services can also be targeted toward particular groups to enhance incumbents' political survival. Ross (2006) argues, for example, there is no empirical relationship between democracy and health outcomes because public health spending is often directed at the politically powerful middle and upper classes, groups that would have been able to purchase health care privately if it were not provided by the government. More directly, Harding and Stasavage (2014) show that in Kenya, incumbents promote free primary education because citizens who prefer the policy support them.

Similarly, insofar as military spending serves national security goals, it can be viewed as providing a public good: national defense. Like education and health spending, however, military expenditures can also be directed at particular groups for political support. In developing countries, a substantial proportion of the military budget is spent on salaries of the armed forces (Collier 2006). Governments also often transfer business interests to the military allowing them to generate revenues for themselves (Gupta et al. 2001).

For the purpose of this study, the critical distinctions between education and health spending on one hand, and military spending on the other, are twofold. First, we expect remittance recipients to prefer the former to the latter. Previous work suggests that remittances increase demand for education and health care (Yang 2005; Amuedo-Dorantes and Pozo 2011). We can think of no reason for remittance recipients systematically to prefer military spending over education and health care.

Second, we expect autocracies to prefer military spending because it helps deter and suppress domestic political dissent. Since competition for office in autocracies is not regularized through elections, incumbents are often replaced by force, or the threat thereof. Challengers are thus likely to come from the military, which has a comparative advantage in the use of force. Coopting the military through expenditures reduces the probability of this type of challenger emerging and succeeding (Powell 2012). Autocratic governments are also more likely than democratic ones to face threats of mass revolution (Bueno de Mesquita et al. 2003). Strengthening the military's repressive capacity deters the masses from mobilizing against the regime (Svolik 2012).

Thus, we focus on public education and health spending when testing H1, and on military expenditures when testing H2. To preview our results, we find that remittances are positively (negatively) associated with education and health spending in more (less) democratic countries. Conversely, remittances are positively associated with military spending in autocracies, and they have no effect in more democratic countries. We also provide evidence of states substituting military expenditures for education and health spending, and vice versa. Finally, we show that remittance recipients in Latin America have preferences and behavior consistent with our theory linking remittances and government spending priorities.

Remittances and Spending on Public Education and Health

We start by examining remittances' effects on *Public Education Spending* and *Public Health Spending*. Our spending measures are adjusted for inflation and expressed in per capita terms for meaningful comparison over time and across countries. We divide our spending measures by population rather than size of the economy (GDP), another



commonly used divisor, because remittance recipients should be more concerned about per capita spending rather than spending as a proportion of GDP. The measures are logged to reduce right skewness. The data were compiled by IMF researchers (Clements et al. 2013). Summary statistics on these and other variables for our spending models are shown in ESM Appendix 2.

Our key independent variables are *Remittances* and *Regime*. The former is a measure of (a) workers' remittances recorded in the current account of the balance of payments, (b) compensation of overseas employees which are recorded under the "income" subcategory of the current account, and (c) migrants' transfers which are reported under "capital transfers" in the capital account of the IMF's Balance of Payments Yearbook. Remittances are expressed in per capita terms to capture the population's dependence on remittances. Like the dependent variables, *Remittances* is deflated for meaningful comparison over time and logged to reduce right skewness.

Because the concepts of autocracy and democracy are central to so much research in international relations and comparative politics, several indices have been developed to measure variation in political regime, each with its strengths and weaknesses. Although it has been criticized elsewhere (Munck and Verkuilen 2002), our preferred measure of *Regime* is the Vanhanen (2014) Index of Democracy (VID). The index is based on two components—party competition and electoral participation, which fit well with Lake and Baum's (2001) notion of political market contestability. Party competition is measured by the percentage of votes won by smaller parties in parliamentary and/or presidential elections, and electoral participation is measured by the percentage of the total population who voted in elections. The former captures barriers to entry facing individuals interested in entering the political arena (contestation) while the latter captures barriers to entry facing voters (participation). ¹¹ The two components are multiplied, and their product divided by 100. In our sample, the variable ranges from 0 to 37.3 with higher values representing more contestable political markets.

For robustness, we also employ an index developed by Pemstein et al. (2010)—the Unified Democracy Score (UDS)—which synthesizes ten commonly used measures of regime type including the VID. While this measure captures dimensions of democracy that are not as pertinent to our study, by averaging across different measures, the UDS provides a more reliable estimate of the broader concept of democracy captured by the different measures. The index is coded such that low values represent autocracies and high values represent democracies. For ease of interpretation, we recode both the VID and UDS to range from 0 to 1, with 1 representing the most contestable political markets.

To estimate remittances' impact across different regimes, we include an interaction term, *Remittances x regime*—the product of the two variables. The coefficient on this interaction term together with the coefficient on *Remittances* provides the marginal effect of remittances at different levels of regime. If H1 is correct, we expect the

¹¹ In contrast, the commonly used Polity IV measure does not take into account the nature of elections and participation, and seems mainly to represent institutional constraints on the executive (Gleditsch and Ward 1997).



The data are available at http://www.imf.org/external/pubs/ft/sdn/2011/data/sdn1115.xls.

 $^{^{10}}$ The data are available at http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0 ,contentMDK:22759429~pagePK:64165401~piPK:64165026~theSitePK:47688300.html.

interaction term to be positive and the marginal effect of remittances to be positive and significant at higher levels of regime.

We also include a number of controls that previous research suggests influences government spending on education and health. These variables include demographic characteristics, economic conditions, and official development assistance. We include the last because donors have recently been advocating greater investment in education and health. While not all development assistance is tied to these sectors, "reliance on donor financing may prompt a government to pursue expenditure objectives advocated by donors" (Stasavage 2005, p. 350). Because aid's effect, like that of remittances, may depend on regime (Kono and Montinola 2013), we also include an interaction term for *ODA* and *Regime* to capture the marginal effects of aid at different levels of regime (see ESM Appendix 3 for a description of controls employed.)

To estimate remittances' effect on public education and health spending, we perform pooled time-series cross-section analysis. We include country-fixed effects to control for heterogeneity across countries, and year-fixed effects to control for global trends that may affect all countries in a given year. Because spending data are persistent, we include a lagged dependent variable and use robust clustered standard errors to deal with serial correlation. ¹² All independent variables are lagged 1 year to mitigate the possibility of endogeneity. ¹³

Table 1 presents our main results on remittances and welfare goods spending. For reference, models 1 and 2 present estimates for remittances' unconditional effects on education and health spending, respectively. Models 3 and 4 present tests for remittances' effects conditional on regime. As shown in models 1 and 2, on average, remittances have no effect on education or health spending: the coefficients on *Remittances* are negative but not statistically different from zero. The coefficients on *Regime* are positive as expected, although they are also statistically insignificant. Turning to the conditional effects of remittances, as shown in models 3 and 4, remittances' effects on government spending are contingent on regime. Remittances have a statistically significant negative effect on both education and health spending in the most autocratic countries, and the interaction terms are positive and significant, indicating that this negative effect diminishes as countries become more democratic.

For a more complete test of H1, we calculate the marginal effects of remittances on both types of spending as countries' regime score increases. Figure 1 presents graphs of our results for education spending on the left, and health spending on the right. In each graph, the solid line represents the impact of remittances, the shaded area depicts the 90% confidence interval, and the *x*-axis ranges from 0 to 0.6 on the rescaled VID which represents the 95th percentile of observations in the data. ¹⁴

As shown in Fig. 1 (a), remittances have a statistically significant negative effect on public education spending when regime ranges from 0 to 0.13. While this covers a relatively small range of values, it includes 30% of observations in the data. Figure 1 (a) also shows that once past a threshold of approximately 0.42, remittances have a statistically significant positive impact on education spending. This represents 22%

¹⁴ ESM Appendix 4 presents graphs that show results for the full range of sample regime values.



¹² Although combining unit fixed effects and lagged dependent variables may result in "Nickell bias," we expect this bias to be low given our relatively long time-series (1985–2008). Models without lagged dependent variables (not shown) generate similar results.

¹³ Design of all government spending models is similar throughout the paper.

0.728*** (0.048)

1377 (100)

150.9 (.000)

0.604*** (0.048)

1434 (105)

147.5 (.000)

-4.383* (2.491) -7.102*** (2.579)

Constant

Observations (countries)

F test (prob > F)

	(1) Education	(2) Health	(3) Education	(4) Health
Remittances	-0.002 (0.011)	-0.006 (0.008)	-0.038** (0.018)	-0.034** (0.016)
Remittances × regime			0.124*** (0.034)	0.094*** (0.036)
Regime	0.006 (0.063)	0.035 (0.090)	1.857*** (0.691)	0.887 (0.935)
Official development assistance	0.032 (0.044)	0.048** (0.024)	0.188*** (0.057)	0.131* (0.077)
ODA × regime			-0.421*** (0.142)	-0.214 (0.185)
Population under 15	0.006 (0.004)	0.000 (0.006)	0.004 (0.003)	-0.001 (0.005)
Urban population	0.646** (0.295)	0.295 (0.397)	0.527* (0.291)	0.209 (0.362)
Debt service	-0.015 (0.009)	-0.024** (0.010)	-0.022** (0.009)	-0.030*** (0.009)
Inflation	0.014 (0.032)	0.044 (0.027)	0.010 (0.034)	0.041 (0.029)
GDP	0.251*** (0.067)	0.336*** (0.090)	0.253*** (0.073)	0.327*** (0.089)
Population	-0.214* (0.111)	-0.042 (0.139)	-0.085 (0.117)	0.048 (0.132)

Table 1 Remittances, regime type, and spending on education and health

Lagged dependent variable 0.747*** (0.050) 0.610*** (0.049)

All models include country- and year-fixed effects. Robust clustered standard errors in parentheses p < 0.1; p < 0.05; p < 0.05; p < 0.01

-1.782 (2.298) -5.631** (2.732)

1434 (105)

139.5 (.000)

1377 (100)

194.9 (.000)

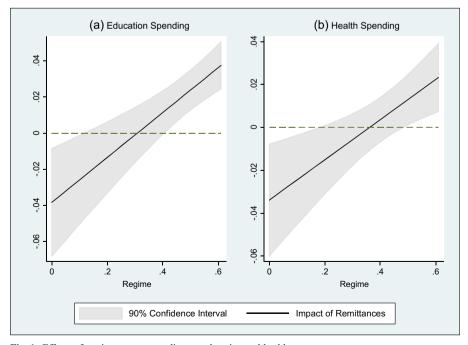


Fig. 1 Effects of remittances on spending on education and health



of observations. Substantively, the results show that in the most autocratic countries, a 10% increase in remittances per capita *decreases* education spending by 0.4%, while in the most democratic countries in the sample, a similar increase in remittances per capita *increases* per capita education spending by 0.6%.

Remittances' effects on health spending are similar to those on education. As shown in Fig. 1 (b), remittances' impact on public health spending is negative when regime ranges from 0 to 0.19, which includes 40% of observations in the sample, and once past 0.51 (12% of observations), remittances' effect becomes positive. Substantively, the results show that a 10% increase in remittances per capita *decreases* per capita public health spending by 0.4% in autocracies, and *increases* it by 0.4% in the most democratic countries. These results support H1.

Remittances and Military Spending

We now turn to whether autocracies divert spending to limit political competition. Recall that H2 states remittances are more likely to finance activities that deter political competition in autocracies than in democracies. Our test of H2 parallels that of H1. Our dependent variable—*Military Spending*—is government spending on the military per capita. ¹⁵ Like the welfare goods spending measures, this measure is adjusted for inflation and logged to reduce right skewness. To estimate remittances' conditional effects on military spending, we include the measures for *Remittances*, *Regime*, and *Remittances* × *regime* that we used in the previous analysis. If H2 is correct, we expect the coefficient on *Remittances* to be positive and the interaction term to be negative, indicating remittances increase military spending in the most autocratic countries, and this positive effect diminishes as countries become more democratic.

As mentioned above, military spending may serve national security goals. Diverting resources to finance the military could thus be viewed as the government simply prioritizing one public good over the other. To account for this, we include in our analysis controls for security-related determinants of military spending. ¹⁶ The unexplained remainder should thus capture that part of military spending likely to be used to limit political competition. Besides security concerns, economic variables that affect education and health spending may also affect military spending. We thus include the same economic controls in the welfare goods models in our analysis of military spending.

Table 2 presents results for our military spending models. We first report results for the unconditional effects of remittances and regime (model 5), followed by results for remittances' effects conditional on regime (model 6). Focusing on model 5 in Table 2, one would conclude that on average, remittances increase military spending: *Remittances* is positive and statistically significant. However, as shown in model 6, the positive impact of remittances is strongest in the most autocratic countries, and this positive effect decreases as countries become more democratic. These effects are presented in Fig. 2.¹⁷

¹⁷ As we did in Fig. 1, we plot marginal effects that encompass cases up to the 95th percentile. A graph with the full range of observations is presented in ESM Appendix 5.



¹⁵ Data on military expenditures are from the Correlates of War (COW) National Material Capabilities

¹⁶ See ESM Appendix 3 for a description of these variables.

Table 2	Remittances,	regime	type,	and	military	spending

	(5)	(6)
Remittances	0.048*** (0.014)	0.095*** (0.025)
Remittances × regime		-0.183** (0.085)
Regime	-0.199 (0.178)	-2.061 (1.544)
Official development assistance	0.096 (0.067)	-0.026 (0.104)
ODA× regime		0.464 (0.311)
Domestic conflict	0.088** (0.034)	0.105*** (0.036)
Interstate conflict	0.014 (0.088)	0.029 (0.081)
Debt service	0.131*** (0.025)	0.130*** (0.022)
Inflation	-0.163*** (0.061)	-0.130*** (0.035)
GDP	0.038 (0.102)	0.105 (0.092)
Population	0.254 (0.222)	0.042 (0.252)
Lagged dependent variable	0.706*** (0.028)	0.692*** (0.029)
Constant	-4.472 (4.234)	-2.135 (4.950)
Observations (countries)	1511 (96)	1511 (96)
F test (prob > F)	1084 (0.000)	626.3 (0.000)

All models include country- and year-fixed effects. Robust clustered standard errors in parentheses p < 0.1; p < 0.05; p < 0.05; p < 0.01

As shown in Fig. 2, remittances' impact in the most autocratic countries is positive and significant: a 10% increase in remittances per capita increases per capita military spending by 1% when regime equals zero. This positive effect diminishes and becomes statistically indistinguishable from zero when regime equals 0.37, the point at which the lower bound of the confidence interval crosses zero. This occurs at the 73rd percentile

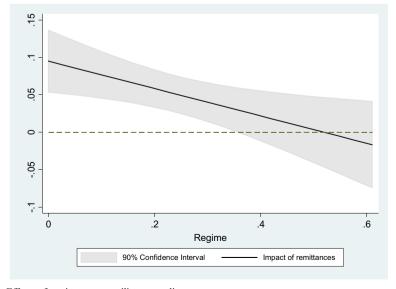


Fig. 2 Effects of remittances on military spending



of the sample. Beyond the threshold of 0.37 (i.e., for 27% of observations in the sample) remittances have no statistically significant effect. These results support H2: remittances are positively associated with activities that deter political competition (i.e., military spending) in autocracies but not in democracies.

Robustness Checks

While we believe the VID is the most appropriate regime measure given our conditional theory of remittances, for robustness, we re-estimate our models using the Unified Democracy Score (UDS) as the regime measure. Results reported in ESM Appendix 6 are all qualitatively similar to our main results. Remittances are negatively associated with education spending in 8% of observations, positively associated with education spending in 36% of observations, and the threshold at which remittances have a positive effect is 0.32. The corresponding values for health spending are 17%, 2% and 0.41. With respect to military spending, remittances are associated with increases in military spending in the most autocratic countries. This positive effect on military spending becomes indistinguishable from zero for the top 5% of observations.

Readers may also be concerned that remittances are endogenous to government spending. To address this concern, we perform two-stage least squares (2SLS) regressions. A description of the instruments we employ, instrument diagnostic tests, and results for these robustness checks are provided in ESM Appendices 7, 8 and 9. Results from these models are similar to those of the OLS models in direction and magnitude. The 2SLS results thus also support our hypotheses.

Finally, we test for the possibility that our results are driven by particular regions and/or countries. We re-estimate the models excluding one region at a time and run regressions with jackknife standard errors (see ESM Appendices 12 and 13). Our results generally hold up to this wide range of sample changes.

Exploring the Extent of Substitution Between Expenditures

We thus find that remittances' effects are regime specific in the expected directions. As we argued earlier, these effects are in part due to the ability of governments to substitute spending on welfare goods for expenditures that limit political competition. It is of course possible that increases in military expenditures are financed by reductions of spending on welfare goods other than education and health care, and conversely, increases in education and health expenditures may be financed by reductions in expenditures other than those directed at the military. Nonetheless, we think it worthwhile to explore whether governments are specifically substituting expenditures on education and health care with military expenditures, and if so, whether this substitution behavior is regime specific.

We thus regress the ratio of military spending to education and health spending, respectively, on *Remittances*, *Regime*, the interaction term—*Remittances* × *regime*, and all controls included in both welfare goods and military spending models above. If autocratic governments are more likely than democratic ones to reduce education and health expenditures while increasing military spending, the coefficient on remittances should be positive, indicating that in autocracies, an increase in remittances is associated with higher ratios of military expenditures to spending on education or health care.



Furthermore, if democratic governments are more likely than autocratic ones to reduce military expenditures and increase spending on education or health care, the coefficient on the interaction term should be negative, indicating that as countries become more democratic, the ratio of military expenditures to spending on education or health care decreases with remittances.

Table 3 presents results of the analyses. As expected, remittances' impact on the ratio of military expenditures to education (health) spending is positive, although this effect is statistically significant only with respect to health spending. This suggests that autocracies are diverting education and health spending toward military expenditures, although this substitution behavior is more systematic with respect to health spending. Conversely, the results show that the marginal effects of remittances on the ratio of military expenditures to education and health spending, respectively, become negative and statistically significant as political competition increases, indicating that where political contestation is relatively high, governments are more likely to reduce military spending and increase both education and health spending.¹⁸

Investigating Underlying Causal Mechanisms

Up to this point, we have examined remittances' impact on government behavior. As discussed earlier, remittances are likely to influence government behavior through recipients' behavior. Here, we explore the validity of this causal mechanism linking remittances and government spending. For this, we employ individual-level data from the AmericasBarometer by the Latin American Public Opinion Project (LAPOP).¹⁹ To our knowledge, these data are the most comprehensive in country and time coverage which includes an item that allows us to identify remittance recipients. In our most comprehensive analyses, the sample includes 22 countries and 4 waves of data collected from 2004 to 2010 in 2-year intervals. For a description of variables employed in the succeeding analyses, see ESM Appendix 16.

We start by considering remittance recipients' preferences for public services, since our main results assume remittance recipients care about spending on public education and health care. We next consider remittance recipients' views on different means of effecting change to identify the mode of pressure they are likely to employ to influence policy. Finding that remittance recipients view protest (and not voting) as an influential means of effecting change, we examine the effect of receiving remittances on protest behavior.

While the LAPOP data are relatively comprehensive, they do not allow us to test directly remittances recipients' preferences regarding government spending on education and health care. However, the survey includes two questions that provide insight into their preferences for these services. These questions ask respondents whether they paid bribes for public health and education services within the past year. They provide an indication of the value respondents place on education and health care services, and whether they are willing to expend resources to obtain these goods. A third question asks respondents whether they would be willing to pay higher taxes for better public

¹⁹ Data available at: www.LapopSurveys.org.



 $[\]overline{^{18}}$ For a more complete picture of remittances' effects on the ratio of military to education and health spending, see ESM Appendix 15.

Table 3 Remittances, regime type, and ratio of military/welfare spending

	Military/education	Military/health
Remittances	0.021 (0.015)	0.044** (0.021)
Remittances × regime	-0.074** (0.031)	-0.125** (0.049)
Regime	0.052 (0.973)	0.808 (1.517)
Official development assistance	0.028 (0.066)	0.189* (0.109)
ODA × regime	0.023 (0.190)	-0.118 (0.285)
Population under 15	0.000 (0.005)	0.006 (0.009)
Urban population	-0.098 (0.304)	-0.310 (0.570)
Domestic conflict	0.027* (0.015)	0.017 (0.030)
Interstate conflict	-0.013 (0.049)	-0.004 (0.121)
Debt service	0.017* (0.008)	0.024* (0.014)
Inflation	-0.004 (0.024)	0.038 (0.038)
GDP	-0.157** (0.062)	-0.230** (0.104)
Population	-0.057 (0.158)	-0.486* (0.277)
Lagged dependent variable	0.674*** (0.077)	0.469*** (0.096)
Constant	4.552 (3.356)	12.362** (5.532)
Observations (countries)	1127 (86)	1136 (90)
F test (prob > F)	50.07 (0.000)	31.22 (0.000)

All models include country- and year-fixed effects. Robust clustered standard errors in parentheses

services. While this question does not focus specifically on education and health care, it indicates whether respondents would be willing to contribute resources to the government to secure better services in general.

We analyze responses to these questions on public services with multilevel logistic regressions since responses to these questions are binary, and the data are nested, with individuals surveyed within countries as well as regions within countries. We assume random effects at the country and region level. To estimate remittances' effects across different political regimes, we include the measure of democracy that we employed in our spending analysis: the VID rescaled from 0 to 1, and the product of this regime variable and the variable indicating receipt of remittances. We include individual-level respondent characteristics which have been shown in previous research to influence political preferences and behavior as well as indicator variables for each wave to control for common trends across Latin America over time.

Figure 3 presents results of the analysis on preferences for public services: marginal effects of receiving remittances for each outcome variable. ESM Appendix 17 presents a table of corresponding results. Figure 3 (a, b) presents the differences in predicted probabilities of reporting having paid bribes for education and health care, respectively, for remittance recipients relative to non-recipients as political contestation increases. Figure 3 (c) presents analogous results on willingness to pay higher taxes.

As shown in Fig. 3 (a, b), in less democratic countries, remittance recipients are more likely than non-recipients to have paid bribes for public education and health services. The odds that remittance recipients paid bribes for education in the least



p < 0.1; p < 0.05; p < 0.01; p < 0.01

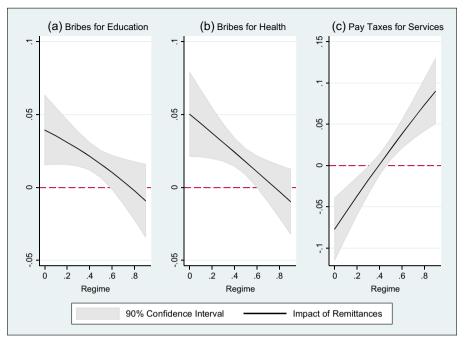


Fig. 3 Effects of receiving remittances on willingness to pay for public services

competitive regimes were 75% higher than those of non-recipients. For health care, remittance recipients show a corresponding increase in odds of 86%. However, in countries with more competitive regimes, the odds of having paid bribes for education (health care) are actually 9% (11%) lower for remittance recipients than non-recipients—although this difference is not statistically significant. ²⁰ Conversely, Fig. 3 (c) shows that remittance recipients are less willing than non-recipients to pay higher taxes for better public services in less democratic countries, and more willing to pay higher taxes in more democratic countries. In the least competitive systems, the odds of remittance recipients being willing to pay higher taxes for services is 35% lower than those for non-recipients. In more competitive systems, the odds of being willing to pay higher taxes for services are 75% higher for remittance recipients compared with non-recipients.

Taken together, these results suggest that remittance recipients care about the provision of public services, and that regime type shapes the way recipients use remittances to secure welfare benefits. Where political competition is low, remittance recipients are less willing to provide taxes for better services, arguably because they have little confidence in their ability to hold government accountable. They gain access to necessary health care and education services through bribes. In democracies, they are willing to pay higher taxes, indicating more confidence in their ability to hold government accountable.

 $[\]overline{^{20}}$ When calculating odds for responses in democracies, we set regime = 0.9 for these and subsequent models. In the sample, regime ranges from 0 to 0.94.



We next consider remittance recipients' views on the efficacy of different means of putting pressure on government. We analyze responses to the question: "What is the way that you think you can have the most influence to change things?" Responses include "Vote to elect those who support my position," "Participate in protest movements and demand changes directly," "Influence in other ways," and "It is not possible to have influence in order to change things, it does not matter." Since the dependent variable in this case has four nominal categories, we employ two-level multinomial logistic regression. We set the last response (not possible to have influence) as the reference category. To facilitate interpretation of the effect of receiving remittances on the nominal outcomes across different regimes, we split the sample based on the sample mean VID score.²¹

As shown in Table 4, receiving remittances has no significant effect on the probability of selecting voting rather than stating that "it is not possible to change things," in both more- and less-competitive systems. In contrast, remittance recipients are more likely to select protest rather than the base response in both regime types. In autocracies, receiving remittances increases the odds of selecting protest relative to believing change is not possible by 34%. In democracies, the corresponding increase in odds is 22%. In more competitive regimes, remittance recipients also have 22% higher odds of believing they can be influential in other ways relative to believing change is not possible.

Our results provide insight into findings from previous studies (Germano 2013; Goodman and Hiskey 2008) which show that remittances reduce turnout. Remittance recipients in Latin America tend to consider voting an ineffective means of promoting change. They consider other strategies, in particular protest, more effective. If remittance recipients allocate their time and resources according to the constraints imposed by their political system, we would expect them to be more likely to use protest to enact change rather than vote. 22

We thus examine the effect of receiving remittances on protest behavior with a multilevel logistic regression. Parallel to the analyses on preferences for public services, we investigate remittance recipients' protest participation, conditional on regime type. We present remittances' marginal effects on protest activity in Fig. 4 (see ESM Appendix 18 for a table of corresponding results). As shown in Fig. 4, remittance recipients are less likely than non-recipients to protest in the least competitive regimes, but more likely than non-recipients to protest in more competitive regimes. In comparison with non-recipients, remittance recipients' odds of protesting are 27% lower in autocracies and 85% higher in democracies.

Overall, these results suggest that remittance recipients in Latin America behave in regime-specific ways. Where political competition is low, although remittance recipients believe that protest is an effective means for change, they are less likely than non-recipients to engage in protest, arguably because they can use their resources to secure benefits in less costly ways, i.e., through bribes. In democracies, they are more likely than non-recipients to engage in protest and demand changes directly.

²² The variable protest has three categories: sometimes, almost never, and never. Given the fairly weak language differentiating between protesting sometimes and almost never, we collapsed responses for these two categories. Protest is thus coded 1 if the respondent chose either of the first two categories (20% of cases), and 0 otherwise (80% of cases).



 $[\]overline{^{21}}$ Sample mean for the rescaled VID is 0.52.

	Autocracies			Democracies			
	Vote	Protest	Other	Vote	Protest	Other	
Remittances	0.096 (0.107)	0.294** (0.130)	0.099 (0.130)	0.132 (0.091)	0.197* (0.110)	0.196* (0.105)	
Female	-0.158** (0.065)	-0.255*** (0.084)	-0.165** (0.081)	-0.218*** (0.049)	-0.386*** (0.061)	-0.217*** (0.058)	
Age	0.032*** (0.011)	-0.007 (0.015)	-0.010 (0.014)	0.027*** (0.008)	0.027*** (0.010)	0.006 (0.009)	
Age ²	-0.000* (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000** (0.000)	-0.000*** (0.000)	-0.000 (0.000)	
Income	0.068*** (0.020)	0.072*** (0.024)	0.044* (0.022)	0.064*** (0.013)	-0.002 (0.016)	0.050*** (0.015)	
Urban	0.056 (0.079)	-0.311*** (0.097)	-0.193** (0.095)	-0.283*** (0.068)	-0.104 (0.081)	-0.139* (0.079)	
Education	0.025*** (0.009)	0.031*** (0.011)	0.057*** (0.011)	0.032*** (0.007)	0.065*** (0.009)	0.086*** (0.008)	
Observations (countries)	8130 (7)			14,421 (11)			
Log likelihood	-9368			-17,471			

Table 4 Remittances and perception of influence by regime type

Reference category: "It is not possible to have influence in order to change things, it does not matter." *p < 0.1; **p < 0.05; ***p < 0.01

Our individual-level evidence focuses on Latin America and is admittedly only suggestive: more nuanced survey questions are necessary for a more detailed exposition of remittance recipients' preferences regarding public services and their views on

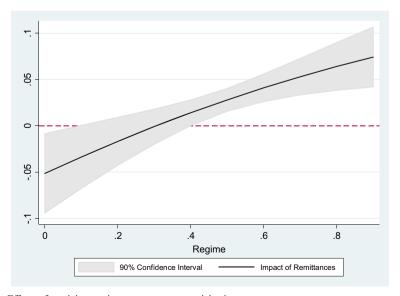


Fig. 4 Effects of receiving remittances on protest participation



influencing policy. However, we suggest that remittance recipients in other regions care similarly about education and health services. Moreover, while remittance recipients may use different means of influencing policy in other regions, we expect democratic governments to be more responsive than autocratic ones.

Discussion

Before concluding, we consider a recent study by Doyle (2015) that seems to contradict our work. Doyle (2015) argues that remittances provide recipients with greater economic security than non-recipients, and this leads them to be less supportive of government welfare transfers. He finds that remittance recipients tend to shift their support away from parties that favor income redistribution, and that remittances are associated with reductions in spending on social security programs.

How might we reconcile this study with ours? We examine spending on health and education rather than social security programs. While all three types of spending are associated with social welfare, social security programs differ from public health and education policies in several ways such that preferences for the former need not be correlated with preferences for the latter. Many studies show that social spending categories are unrelated to one another and differ in their determinants (e.g., Castles 2009; Kaufman and Segura-Ubiergo 2001; Rudra and Haggard 2005).

Social security programs typically include social insurance and social assistance transfers. The former compensates individuals for loss of income due to injury, old age, and disability. The latter provides income support for indigent individuals and families. In most developing countries, the majority of social security expenditures consist of social insurance transfers, and these transfers tend to benefit only a small segment of the population (Gillion 1994). In Latin America, in particular, social security spending is predominantly regressive, providing greater benefits to the middle and upper classes (Lindert et al. 2006).

Low coverage of social security programs in developing countries is due in part to the large proportion of the labor force working outside the formal sector or in small enterprises, where earnings are difficult to monitor and mandatory contributions from workers and employers difficult to collect. While informal sector workers may be eligible to participate in formal social security schemes, they are generally unable or unwilling to provide the relatively high percentage of their incomes required to finance pensions or unemployment insurance. As Gillion (1994, p. 28) notes, workers outside the formal sector are likely to prefer more pressing concerns such as health and education, large components in household budgets. Insofar as remittance recipients work in the informal sector, own small enterprises, or believe they would be excluded from social insurance programs, they too may prefer that government provide better health and education services, especially since these services tend to be more universalistic in coverage (Huber et al. 2008; Lindert et al. 2006).

Preferences for various social policies may also be affected by the lag between payments and receipt of benefits (Mares and Carnes 2009). Where lag time between contributions and benefits is relatively long, as in the case of pensions, remittance recipients may prefer the state provide health and education services which are of more immediate concern. Furthermore, this lag time effect will be strongest where the state's



ability to enforce legislation is low, a condition that characterizes many developing countries. If citizens have little confidence in their government's commitment to pay benefits in the future, they may be less likely to favor, and be hesitant to contribute taxes to, programs that rely on such commitments (North and Weingast 1989). This may also explain why remittance recipients would prefer expansion of health and education spending rather than social security schemes.

In sum, remittance recipients are likely to have diverse preferences over different categories of social spending. Doyle (2015, p. 789) himself holds a similar view. Future research examining the relative value that remittance recipients place on different policies would be necessary to confirm this. Nonetheless, we submit that in examining remittances' impact on education and health spending, our study complements, rather than contradicts, the work of Doyle (2015) who focuses on social security expenditures.

Conclusion

Recent work suggests that remittances may be a "resource curse" because they enable governments to reduce spending on public services and to divert resources away from the public interest. We argue and provide evidence this is not always the case. We show that remittances' effects on government spending are contingent on the receiving countries' political regime. Remittances are associated with decreases in government spending on education and health, but only in autocracies. In more democratic regimes, remittances are associated with *increases* in public education and health spending. Conversely, remittances are associated with increases in military spending in autocracies but not democracies. We also find that in autocracies, remittances are associated with increases in the ratio of military expenditures to education and health spending, respectively. In contrast, remittances are associated with "beneficial substitution" in democracies—decreases in the ratio of military spending to education and health expenditures. If military spending in autocracies serves mainly to deter and repress political competition, then remittances may indeed be a resource curse, but only in autocracies. Conversely, insofar as education and health spending have positive externalities, remittances are a resource boon not only for remittance recipients, but for society as a whole.

To be sure, we only examined remittances' impact on three spending categories. It is possible that as remittances increase, autocratic governments that reduce spending on education and health expenditures increase spending on other public services that we have not examined, and democracies may reduce spending on categories other than education and health. For a fuller idea of the extent to which remittances are a blessing or a curse with respect to government spending, research on the relationship between remittances and other spending categories is required.

Our analyses also highlight the need for future research further disaggregating the concept of regime. For regimes at the midpoint of our measures of political competition (partial autocracies), remittances appear to have no statistically significant effect on education and health spending. We believe this lack of identifiable effect is due in part to institutional variation across autocracies not explicitly accounted for in our models. Differences among autocracies explain a wide variety of outcomes, including regime durability, repression and government quality (e.g., Charron and Lapuente 2011;



Gandhi 2008; Geddes et al. 2014). Escribà-Folch et al. (2015) show that remittances' effect on democratization depends on form of dictatorship. It is thus likely that remittances' effect on government spending priorities is also mediated by differences across autocracies. We believe this is an important issue for future research.

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