Do foreign remittances promote democracy? A dynamic panel study of developing countries

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Abstract

The article examines the political aspect of remittances that receives very little attention in the current academic studies. By analyzing panel data from 156 countries with the system GMM, the study finds that remittances promote democracy in developing countries. Time trends analysis shows that remittances support democratic progress more substantially in recent periods since the surge of remittances after the 1990s. The study also finds that remittances accelerate the development of democracy in countries with favorable socioeconomic conditions and higher absorptive capacity. Finally, supporting the modernization hypothesis, the study provides evidence that remittances develop democracy by boosting economic development and human capital.

Key Words: Foreign remittances; democracy; modernization; developing countries.

JEL code classifications: F22, F24, P16

1. Introduction

Migrant remittances have been the most stable and key sources of foreign exchange for developing countries for several decades, particularly after the 1990s[1]. They are now considered the financial lifeline of the contemporary developing world. Despite the global COVID-19 pandemic, remittance inflows registered robust growth of 8.6 percent and reached the milestone of $605 billion in 2021 (World Bank, 2022). This fast-growing massive flow of foreign exchange has significant ramifications for economic development and various socio-political aspects. For example, a large number of studies on remittances find a statistically significant positive contribution to economic growth and income (Ratha, 2003; Catrinescu et al., 2009; Feeny et al., 2014), health and education (Azizi, 2018), investment (Kakhkharov, 2019), macroeconomic stability (Barajas et al., 2009), poverty reduction (Adams & Page, 2005; Acosta et al., 2008), as well as income inequality (Azizi, 2021), among others.

On the other hand, the political implications of remittances have received very little attention in the current literature, with no universal or consistent findings on democracy. For example, some important studies (Abdih et al., 2012; Ahmed, 2013; Berdiev et al., 2013) have recently presented a curse argument that remittances are bad for democracy, following the logic of the natural resources curse, such as the export of oil and gas and foreign aid receipt. However, others (Deonanan & Williams, 2017; Williams, 2017; Bearce & Park, 2019) have questioned this curse proposition. They contend that remittances are a blessing to developing countries and are essential to advancing democratic development. Thus, the literature on the remittances-

[1] During the 1990s, wage-based migration from developing countries grew sharply and consistently due to globalization, economic liberalization, and financial integration. As a result, remittances increased to $102 billion in 2000 and tripled to $321 billion by 2010 from just US$47 billion in 1980 and $49 billion in 1990 (World Bank, 2022).

democracy nexus has mixed results, and empirical studies are still sparse. The political curse argument of remittances raises practical concerns, but we can ask if remittances play a positive role in various socioeconomic progress, why not in democracy? Most of all, the nature of remittances is not similar to export proceeds of natural resources or foreign aid.

Against this backdrop, we empirically examine the curse proposition by analyzing extensive panel data of 156 developing countries from 1972 to 2020. We use the political rights (PR) index and the Polity index, the two direct measures of democracy, and employ the system GMM (Generalized Methods of Moments) estimator to control potential endogeneity between remittances and democracy. Our central hypothesis is that remittances positively affect the development of democracy, and this effect is more substantial in the recent period under favorable socioeconomic conditions.

Our empirical analysis shows that remittances generally promote democracy in developing countries. Our findings refute the curse argument and corroborate previous literature suggesting that remittances are a blessing for democracy. The study also shows that remittances have had a more considerable impact on democratic development in recent periods, especially after the 1990s. Furthermore, remittances play a more prominent role in developing democracy in countries with higher income, better human capital, more developed legal institutions, lower income inequality, and less ethnic fractionalization. Finally, exploring the transmission mechanism, the study reveals that remittances promote democracy by boosting economic development and human capital.

The study offers novel insights into several areas of the current literature. First, using the two direct measures of democracy- the PR and the Polity, the system GMM estimation provides solid evidence that remittances promote democracy. Second, by analyzing time trends, the study sheds light on the increasing influence of remittances on democracy in the recent period. Third, the study identifies a conditional effect of remittances and demonstrates that several factors, when combined with remittances, can provide an impetus for boosting democracy. Finally, in line with the modernization hypothesis, the paper establishes two channels-economic development and human capital through which remittances are transmitted to advance democratic progress.

The remainder of the paper is organized as follows: Section 2 reviews the existing literature, while Section 3 covers the theoretical aspects of remittances and democracy. Section 4 explains the empirical model and data. Section 5 presents the empirical findings and provides a discussion. Finally, Section 6 concludes the paper.

2. Literature Review

The empirical evidence on the effect of remittances on democracy remains inconclusive. Some researchers using the corruption index as a proxy for democracy report the detrimental effect of remittances. Their logic is that remittances deteriorate corruption and thus lead to a decline in institutional quality. For example, Abdih et al. (2012), analyzing cross-sectional data from 111 countries between 1990 and 2000 using OLS and 2SLS models, find that higher remittances lead to a deterioration in institutional quality. They also suggest that in the presence of large remittance inflows, governments may divert funds from public services towards clientelistic purposes. However, while this study highlights the adverse impact of remittances on institutions, it does not directly assess the impact of remittances on democracy.

Ahmed (2012) examines the effect of foreign aid and remittances on government tenure by analyzing annual panel data from 1975 to 2004 of 97 countries using the fixed-effect and two-step probit models. He finds that in more autocratic countries, governments can strategically utilize unearned income from foreign aid and household income from remittances to finance patronage and extend their political tenure[2]. Therefore, in conjunction with foreign aid, remittances act as a political curse by stabilizing incumbent autocrats in power. Later, in a cross-sectional study of 57 non-oil-producing developing countries with weak democratic institutions from 1984 to 2004 using OLS and 2SLS, Ahmed (2013) finds that remittances increasing corruption leads to lower governance quality. Additionally, Berdiev et al. (2013), analyzing a five-year average panel data from 1986 to 2010 using the Least Squares Dummy Variable (LSDV) and the 3SLS method, finds that remittances increase corruption levels in 111 non-OECD countries.

In contrast, using the PR and the Polity index to measure democracy, Deonanan and Williams (2017), analyzing the fifth-yearly panel data of 133 developing countries from 1972 to 2012 by the System GMM method, show that foreign remittances improve democracy. Similarly, Williams (2017), analyzing the fifth-yearly panel data for 1975-2014, finds a significant positive impact on democracy in Sub-Saharan Africa (SSA) using the Polity index. Additionally, Bearce and Park (2019) use the Error Correction Model (ECM) with panel data for 164 countries and sub-groups of not established democracies to analyze the effect of remittances on democracy[3]. They find short- and long-run positive associations between remittances and democracy for the sample of 103 countries with relatively weak democracies and 73 countries with party

[2] Unearned income refers to non-tax revenue generated by a government, mainly comprising foreign aid and remittance transfers that can directly or indirectly change a government's revenue base.

[3] Not established democracies sub-groups include less democratic countries having the Polity score of 7 or lower and autocracies.

dictatorships. Docquier et al. (2016), employing the system GMM, find that the emigration rate is significantly positive to democracy variables in developing countries.

Other studies have reported differential effects of remittances across different political regimes. For instance, Konte (2016), analyzing Afrobarometer survey data, finds that in sub-Saharan African countries, the political consequences of remittances vary depending on the class of individuals and their perception of national priorities. He reports that those who value political freedoms and rights over economic stability tend to favor democracy. In contrast, those prioritizing economic stability are more likely to support other forms of government. Tyburski (2014), using annual panel data for a sample of 127 developing countries from 2000 to 2010, reports that remittances increase political patronage and reduce corruption control in close regimes[4]. Conversely, in an open regime, the mitigating effects of remittances are more substantial, and they improve the control of corruption. Similarly, Easton and Monitola (2017), analyzing a sample of 105 developing countries from 1985 to 2008, find that remittances are more likely to increase government spending on public services in democracies, as opposed to military budgets in autocracies.

Some researchers have analyzed the relationship between political protest and remittances. For instance, Escribá-Folch et al. (2016), analyzing data from 137 autocratic regimes for 1975-2009 using fixed effect and 2-step IV models, find that remittances can facilitate the democratic transition by weakening electoral support for autocrats. In another study, Escribá-Folch et al. (2018) find that remittances are positively associated with participation in protests against

[4] Close regimes indicate an autocratic government that usually relies on a very close and small coalition of elites. In contrast, open regimes refer to a democratic government that usually faces competitive elections and thus depends on popularity and a larger coalition.

autocratic regimes by providing funding for opposition parties. Thus, remittances can positively impact electoral competition by reducing incumbent governments' support and clientelistic power (Pfutze, 2014).

Another branch of study explores the effect of remittances on political engagement and voter turnout. For instance, Ebeke and Yogo (2013) find that remittances significantly reduce the propensity to vote during national elections in 41 Sub-Saharan African countries. Similarly, Goodman and Hiskey (2008) find that remittances decrease political participation in the short term in Mexico. However, Pérez-Armendáriz and Crow (2010) find that returned migrants play a vital role as agents of democratic diffusion in Mexico.

To summarize, there is no agreement in the current body of literature regarding the impact of remittances on democratic advancement, as some studies report positive effects while others suggest negative consequences. Some studies that attribute bad governance to remittances use indirect measures such as corruption, taxation, and government expenditure on democracy. Additionally, these studies often rely on cross-sectional data with limited sample size and short time span. Consequently, most of them focus only on the long-term effects of remittances, overlooking within-country variations in the short term. Recent studies that find positive effects also have methodological limitations, such as using data from fifth-yearly panels. Moreover, the existing studies do not consider the trend of remittances over time and socioeconomic conditions in their analysis, which this study addresses.

3. Remittances and Democracy

This section discusses the theoretical links between remittances and democracy by examining three competing political economy theories: the redistribution theory, the modernization hypothesis, and the contractarian model. According to the redistribution theory, small privileged groups wield political power in autocratic societies, while the majority, typically poor, are oppressed (Boix & Stokes, 2003; Acemoglu & Robinson, 2006). Therefore, the poor demand a more significant redistribution of economic resources, and they may revolt if the authoritarian government fails to promise to provide them with adequate resources credibly. In this context, the elite monarchs may grant the poor the right to vote and autonomy to avoid a costly revolution and the destruction of all possessions. The redistribution theory is also consistent with Meltzer and Richard's (1981) insight that if inequality increases, median voters, the poor, vote for more redistribution by higher taxes. Now, if remittances reduce inequality and financial constraints, it will lower the pressure for redistribution. The reduced demand for public goods due to remittances appears as a blessing for the autocratic government to supply fewer public services and divert additional resources to boost clientelistic activities. Therefore, remittances act as a curse to democracy, pacifying the poor who would otherwise agitate for redistribution or may revolt.

In support of the redistribution theory, some scholars find evidence and blame remittances for hindering democracy and acting as a curse to its progress. For example, Abdih et al. (2012) and Ahmed (2012), for a large cross-country sample, find evidence of clientelistic funding due to lower redistribution pressure in the presence of remittances. Doyle (2015), for Latin American democracies, finds that remittance recipients prefer less redistribution to avoid tax burdens and, thus, vote against political parties who advocate redistribution. In the case of Mexico, Aparicio and Meseguer (2012) and Ambrosius (2019) find clientelistic diversion and crowding out in public finance in the presence of collective remittances for the 3x1 program[5].

However, redistribution theory suffers from several limitations. They argue that if inequality rises, autocrats grant voting rights due to fear of redistribution and revolt. But it is not rational because instead of granting voting power, elites could prefer more redistribution to block democratic development. Again, the logic of lower pressure for redistribution in the presence of remittances leading to less democracy is also confusing because democracy is not solely a matter of redistribution; instead, the political regime has little impact on welfare spending (Mulligan et al., 2004). Even in the case of taxation, very few systematic distinctions between democracies and dictatorships are observed (Cheibub, 1998). In addition, they ignore the growing evidence of socioeconomic progress and well-being of recipients from remittances, which leads to democratic progress. Moreover, because of its distinct nature, the argument of resources does not apply to remittances. The government administers natural resource rents and foreign aid, while remittances are directly transferred to numerous households. Besides, the non-taxable treatment of remittances in most countries limits the government's scope for clientelistic funding; instead, they associate with lower corruption (Tyburski, 2012) and erosion of clientelistic ties (Pfutze, 2014).

Rather than the redistribution model, the framework of the modernization hypothesis seems more useful in understanding the reality of democratic advancement. The modernization theory posits that democracy is positively associated with economic development, national wealth, and human

[5] The Mexican 3x1 program is a joint finance public development project whereby the municipal, state, and federal governments match the funds of collective remittances that migrants send to their hometown associations by a 3 to 1 ratio (Aparicio & Meseguer, 2012).

capital. Lipset (1959) suggests that democracy is created and consolidated by a broad modernization process. This argument, which dates back to Aristotle, suggests that only wealthy societies, where few people live in poverty, can foster an environment where the vast majority of the population can participate in politics with intellect and self-control. In contrast, societies with largely impoverished inhabitants and a few privileged elites tend to produce oligarchy or tyranny[6]. Therefore, economic development and education will alter the social pyramid and stratification structure, producing a majority of the middle-income class and a well-off population with political attitudes conducive to democracy (Muller, 1995).

A growing body of empirical studies has reported that remittances can increase income, economic activity, and education. Remittances encourage local investment and new entrepreneurship among recipient families by providing primary capital. In addition, the remittance money enhances consumption, boosts local economic activities, and creates employment opportunities. Moreover, remittances that alleviate financial hardship strengthen the capacity to increase expenditure on proper health and sanitation, attaining better schools for better education and skill development. Therefore, remittances play a catalytic role in creating a more educated and affluent middle-income class, which could lead to the development of democracy.

The modernization hypothesis also does not conflict with the contractarian model of Ansell and Samuel (2010), which views democracy as a function of politically disenfranchised rising-

[6] For example, democracies imposed by former colonial powers or international organizations in the newly independent African states in the early 1960s, in the absence of prior economic progress with low per capita income, did not persist, and various forms of autocracies emerged. Conversely, non-democracies like Chile, South Korea, Taiwan, Spain, Portugal, and others that experienced substantial economic development eventually became more democratic (Barro, 1999).

middle-income groups' struggles to obtain credible commitments from the government against the expropriation of private property. They argue that only democracy can provide a credible commitment by establishing secure property rights and other institutions to uphold contracts. Increased remittance income improves social conditions and political importance by shifting to a diamond stratification structure with a growing middle class that leads democratic progress by rewarding moderate and penalizing the elite. From this perspective, the increase in income of the poor due to remittances does not hamper democratization; instead promotes it.

In summary, we argue that remittances can lead to democratization by fostering economic development and accumulation of human capital in recipient countries. However, the speed and extent of this modernization and democratization progress may vary depending on institutional and socioeconomic factors.

4. Empirical Model and Data

In this section, we present econometric model and data that we use to analyze the impact of remittances on democracy in developing countries. Following Acemoglu et al. (2008), we estimate the reduced-form equation below:

$$d_{i,t} = \alpha d_{i,t-1} + \gamma r_{i,t} + x'_{i,t}\,\beta + \delta_t + \eta_i + \mu_{i,t} \qquad (1)$$

where $d_{i,t}$ is the democracy score measured by either the PR or the Polity of country i at time t. To capture possible persistence and mean-reverting dynamics of democracy, we include a one-year lag of democracy ($d_{i,t-1}$) in independent variables. The explanatory variable of interest is $r_{i,t}$; the share of remittances to GDP. The vector $x'_{i,t}$ includes the set of controls that predict democracy as suggested by the literature (Barro, 1999; Acemoglu et al., 2008; Deonanan & Williams, 2017). These controls are the log of GDP per capita, log of trade, FDI, log of population, and log of urban population. We include a full set of country dummies η_i to capture any time-invariant country characteristics that affect the level of democracy. By including country-fixed effects, the parameter estimates reflect changes in the level of democracy within each country over time. To capture common time shocks to both democracy and remittances across all countries, we also include a full set of time dummies δ_t, and the error term μ_{it} to capture the unobserved factors.

The PR index from the Freedom House is our primary measure of democracy. It assigns scores based on a checklist of questions about free and fair elections, political competitiveness, the role of opposition parties, and the positions of minority groups in government and politics[7]. News articles, scholarly assessments, reports, and individual professional contact are used to score these queries. The primary weakness of this index is that these sources may introduce subjectivity and measurement errors and may reflect their perspectives on the country (Minier, 1998). Another critique of the PR index is that the conservative political orientation of Freedom House may influence the scores it assigns to countries (Bollen, 1993). Despite these shortcomings, it remains popular in empirical studies due to its coverage of longer periods, a large number of countries, and extensive observations. The PR index ranges from 1 to 7, with 1 representing the highest level of democracy and 7 representing the least democratic countries[8].

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[7] The primary checklist includes three questions on the electoral process, four about political plurality and involvement, and three about government functioning. The index is formed by adding zero to four points to each checklist question, depending on the relative rights and liberties present, where zero represents the least, and four represents the most.

[8] Although the 1-7 ratings are no longer shown as a separate component of Freedom in the World's findings as of the 2020 edition, they are still in the raw data available for download.

As an alternative measure of democracy, we use the composite Polity index of the Polity5 project. The index ranges from -10 to 10, which is the difference between the democracy and autocracy scores, with a higher score indicating more democracy and vice versa. It is calculated by coding the competitiveness of political engagement, the openness and competitiveness of executive recruitment, and constraints on the power of the chief executive. However, the Polity index is dominated by the executive restrictions component (Gleditsch & Ward, 1997) and reflects subjectivity due to aggregators' perceptions (Cheibub et al., 2010). For simplicity of comparison, we follow Barro (1999) and standardize the PR and the Polity indices on a scale of 0 to 100, where 0 represents the least democratic and 100 represents the most democratic.

The problem with estimating equation (1) is that remittances and democracy may have an endogenous relationship influenced by various factors. For instance, political instability or oppressive governments may cause citizens to emigrate, and the funds they send back home could support political reforms. However, this endogeneity could bias the results obtained using the OLS estimator. To address this potential issue, we use several techniques. First, we employ the system GMM of Arellano and Bond (1995) and Blundell and Bond (1998), which remove endogeneity using internal instruments. In our analysis, we treat remittances as endogenous and use their level as an instrument for the difference and differences for the level in system GMM estimation. To avoid instrument proliferation and maintain diagnostic test integrity, we follow Roodman's (2009) approach. We also include a one-period lag of the dependent variable as an independent variable in the dynamic panels. Additionally, following Deonanan and Williams (2017), we use the gap between the GDP per capita (constant US$2015) of the United States and the sample countries as an external instrument for remittances following other studies[9]. This instrument is valid because the income gap between the home and host countries is positively correlated with remittances. Although remittances and the income gap are interrelated, there is no plausible reason for a direct link between the income gap and democracy in the home country except through remittances.

We have constructed an unbalanced annual panel of 156 emerging markets and developing countries from 1972 to 2020[10]. We choose the period because the data of the PR index, our primary measure of democracy, is accessible from 1972 onward. Table 1 reports the summary statistics; Appendix A presents brief definitions with sources of the variables.

Our empirical analysis is similar to Deonanan and Williams (2017), but it covers a much larger sample of countries over a longer period, including the most recent periods. They analyze five-yearly panels, taking fifth-year values, which significantly reduces observations. Instead, we analyze annual panels that provide us with substantially more observations. Their study has a methodological limitation in treating all regressors as endogenous in the GMM estimation. To overcome this issue, we treat only remittances as endogenous and address endogeneity by controlling for internal instruments and an additional external instrument. Finally, our study incorporates time trends and conditional effects and identifies two transmission channels of remittances corresponding to the modernization hypothesis.

<Table 1 around here>

[9] The United States hosts the largest number of migrants and is the highest source of foreign remittances in our sample.

[10] We adopt the emerging markets and developing economies group from IMF's World Economic Outlook, April 2021.

5. Results and Discussions

This section presents the empirical findings and their evaluations. Firstly, we examine the impact of remittances on democracy in developing countries. After that, we look into the time trend to check whether the effect of remittances became stronger after 1990 when remittances increased substantially. Then, we include additional controls to check the robustness of our findings. Furthermore, we investigate the socioeconomic factors that can influence democratic progress. Finally, we analyze the transmission mechanism of remittances to democracy.

5.1 Main Findings

Table 2 presents the main findings on the effects of remittances on democracy. Using a system GMM with time and country dummies, we examine the impact of remittances on democracy measured by the PR index for the annual panel of 1972-2020. Our baseline model, which controls for remittances and the log of GDP per capita, is displayed in column 1. We gradually expanded the number of controls in columns 2 through 5 to ensure our results are robust to different model specifications.

The estimated results demonstrate that the remittance coefficients are positive and statistically significant in all models at the 1% level. Our empirical findings correspond with existing literature. For example, Deonanan and Williams (2017) find that lagged values of foreign remittances are positive for democracy in developing nations. Bearce and Park (2019), analyzing the panel data for less developed democracies and autocracies excluding party dictatorship, find that remittances boost democracy in the short and long run. Furthermore, Williams (2017) finds similar evidence for SSA countries. Our result is also in line with Docquier et al. (2016), which report the significant positive effect of emigration on democracy. However, our study differs from theirs in focusing on remittances rather than emigration. In reality, migrants remit not only money but also the democratic norms and values they acquire from the host countries and thus promote democracy. Even after returning, they play a crucial role in democratic diffusion (Pérez-Armendáriz & Crow, 2010). Analyzing the combined effect of emigration and remittances goes into the scope of future studies.

The other most relevant control, the log of GDP per capita, also displays a statistically significant positive sign. It implies that when a society's income per capita rises, it develops a desire to safeguard its rising affluence and stringent property rights, freedom, and democracy (Bearce & Park, 2019). Similarly, the log of the share of the urban population also demonstrates a positive correlation with democracy that is compatible with our arguments. In contrast, we find a negative correlation between democracy and population size, the share of international trade, and FDI. Our findings on population are consistent with Acemoglu et al. (2008) and Escribá-Folch et al. (2016), who find a negative correlation with democracy but contradict Barro (1999).

<Table 2 and 3 around here>

We replicate the same sequence of models in Table 3 using a different measure of democracy to test the robustness of our baseline estimate. Our primary democracy indicator, the PR index, emphasizes free and fair elections, elected leaders, political competitiveness, and the role and space of the opposition. On the other hand, the Polity index emphasizes executive restraints as a sign of more democratic regimes. The system GMM estimates in Table 3 show a positive association between remittances and democracy, similar to that of the PR index. The sign of the remittance coefficients remains consistently positive, although significance has disappeared in the extended model in column 5. Again, the GDP per capita and population coefficients show a positive association with democracy.

These results refute the political curse argument while showing that the effect of remittances on democracy is positive, similar to their effect on socioeconomic progress. The negative effect of remittances on democracy reported by former studies could be due to limited sample size, indirect measures of democracy, or the use of simplified estimation techniques. Our empirical examination uses much broader data coverage, relevant indicators of democracy, and a sophisticated empirical method.

5.2 Remittances and Democracy: Before and After the 1990s

In the previous section, we find that remittances benefit democracy in developing countries. This section investigates whether there are any differences in the effect of remittances on democracy over time and whether the recent surges of remittances after the 1990s played a more prominent role in promoting democracy.

5.2.1 Background

Migration has been a part of human civilization for centuries, but temporary migration for remittances is a more recent phenomenon. In recent decades, developing countries have experienced a massive surge in remittances, particularly after the 1990s, due to globalization, economic liberalization, financial integration, improved transportation, and advances in information and communication technology.

The triumph of the market economy following the collapse of the Soviet Union and the fall of the Berlin Wall in the 1990s led to an unprecedented speed of globalization. Many countries initiated the opening of their borders to international commodities and services. They also initiated financial integration, lifted exchange restrictions, and liberalized current and capital accounts in the 1990s. These changes led to a significant mobilization of remittances toward developing countries. A World Bank estimate finds that countries were more open in trade or financially developed received substantially higher remittances during the 1990s (Ratha, 2003).

Improved transportation has made moving to distant places easier, significantly reducing migration costs. In addition, advances in information and communication technology have helped to foster migration by disseminating information about overseas job markets, creating awareness among potential migrants, and reducing the risk of migration. Furthermore, modern banking technology has substantially reduced fees and transfer time, especially in rural areas of developing countries. Figure 1 demonstrates that remittances to lower- and middle-income countries (LMICs) have grown significantly since the 1990s. Remittances have increased rapidly in recent decades and reached a milestone of US$605 billion in 2021, up from less than US$50 billion in 1990 (World Bank, 2022). Therefore, in recent periods after the 1990s, remittances have become the financial lifeline of the developing world, surpassing other foreign flows such as foreign direct investment (FDI), official development assistance (ODA), and portfolio investments.

<Figure 1 around here>

5.2.2 Empirical Findings

We replicate the same regressions as in the main findings to examine the differential effect of remittances on democracy before and after 1990. Table 4 presents the impact of remittances on democracy, as measured by the PR index, from 1972 to 1990. The coefficient of remittances is negative but statistically insignificant. Thus, our analysis finds no significant relationship between remittances and democracy during this period. Similarly, using the alternative measure of democracy, the Polity index, we do not find any significant association between remittances and democracy (see Appendix B). Thus, before the 1990s, remittances did not affect democracy, regardless of the measures used, either the PR or the Polity. This result might be driven by the lower volume of remittances and their tiny size compared to other funds or macroeconomic variables. In addition, the limited observations due to the unavailability of remittance data might be another reason, as most developing countries did not have proper records of migration and remittances earlier.

<Table 4 and 5 around here>

Turning to our analysis for the period after the 1990s, Table 5 shows that remittances strongly influenced democracy, as measured by the PR index. The remittance coefficient exhibits a statistically significant positive sign at a 99% confidence level. The sign and significance remain intact and qualitatively the same from the baseline to the extended models, even after controlling for more control variables. We have also run the same regressions for the alternative democracy measure, the Polity, to check whether the remittance findings also applied. As expected, we find similar results for the Polity with positive signs and the highest conventional level of significance (see Appendix C). Remittances, therefore, have a statistically significant positive effect on democracy, as measured by either the PR or the Polity. Thus, the analysis of the time trend suggests that remittances played a more prominent role in promoting democracy after the 1990s and acted as a blessing for the development of democracy.

5.3 Robustness: Additional Controls

In this section, we include several additional covariates in addition to the full set of controls that could potentially affect democracy. We report the findings only for the PR index from 1991-

2020[11]. By accounting for these additional controls, we can further show the reliability of our results.

We include education as an additional control because it is a fundamental tenet of the modernization hypothesis (Acemoglu et al., 2008) and a critical factor for socioeconomic development. We use gross enrollment at the secondary school level as a proxy for education, which is the ratio of total enrollment to the corresponding age group population, regardless of their age. The gross enrollment ratio typically ranges from 0 to 100. We also include life expectancy at birth because it is an essential indicator of health status and standard of living (Barro, 1999). The data on school enrollment and life expectancy comes from the World Bank. We also consider economic institutions, such as the degree of corruption and the effectiveness of the law enforcement, because these are crucial to a nation's progress toward democracy. We use rule of law index as a proxy for economic institutions because it is vital for a society's systematic and smooth functioning and may thus impact the progress of democratization. The index ranges from -2.5 to 2.5, referring to the least to the most rule-based country; data comes from the World Bank. We also control the corruption index because it threatens socioeconomic stability, may impede social advancement, and negatively affect democratization. The corruption index ranges from 0 to 1, with low to high corruption; data comes from the Varieties of Democracy (V-Dem) Project. Finally, we include legal systems' dummies for common law from La Porta et al. (2008). We control them because the genesis of a legal system potentially affects government performance and the difference between legal systems matters for economic and social outcomes.

<Table 6 around here>

[11] Although our regressions include a complete set of controls, we only report the relevant controls to save space.

Table 6 shows that despite including several additional controls, the relevance of remittances remains intact and qualitatively unchanged. Most additional control variables exhibit the expected sign and significance. As expected, the coefficient of education is positive and statistically significant at the 5% level. Life expectancy shows a positive sign, although it does not have statistical significance. The rule of law seems to impact democracy substantially. Its coefficient is positive, with a 1% level of statistical significance. In contrast, the coefficient of corruption shows a negative sign with statistical significance, suggesting that corruption is detrimental to social advancement and the progress of democracy. Our estimation result reveals that common law has a significant positive correlation with democracy. Although not reported here, we find a significant negative correlation between democracy and civil law. The legal system results align with historical evidence of economic development and political liberalization. Finally, the remittances coefficient in column 6 remains positive and statistically significant even after controlling for all additional control variables together. Therefore, our analysis provides evidence that remittances are effective for democratic progress, and the findings are robust even after controlling for education, living standards, and several institutional variables.

5.4 Conditional Effects

In this section, we investigate whether specific socioeconomic conditions can influence the impact of remittances on democracy. We hypothesize that the effect of remittances on democracy becomes more prominent under favorable socioeconomic conditions and less effective under adverse environments. To test this, we analyze GDP per capita, level of education, the rule of law, corruption, income inequality, and ethnic fractionalization as potential conditional variables[12].We use the Gini coefficient of disposable income from the Standardized World Income Inequality Database (SWIID) for income inequality[13]. The Gini index ranges from 0 to 100, with larger values indicating higher inequality. We use the ethnic fractionalization data from Alesina et al. (2003) ranging from 0 to 1, with higher values indicating greater ethnic fragmentation.

The estimation result in Column 1 of Table 7 shows a statistically significant positive sign for the interaction of remittances with GDP per capita. The findings suggest that the positive effect of remittances becomes larger with increasing income. The upward curve of the marginal effect in Figure 2 also confirms the positive conditional effect. However, the overall impact depends on the coefficients of remittances, the coefficients of interaction, and the size of the conditional variable. For example, the marginal effect of remittances conditional on GDP per capita can be calculated as $\partial d_{i,t} / \partial r_{i,t} | \mathrm{GDPpc}_{\mathrm{i,t}} = -0.137 + 0.000041 * \mathrm{GDPpc}_{\mathrm{i,t}}$. According to the marginal estimate, the threshold of GDP per capita is US$ 3350. At the average level of GDP per capita in our dataset (US$ 5542), the overall marginal impact of remittances on democracy is 0.09. Thus, our result shows that remittances effectively promote democracy in countries with higher GDP per capita.

<Table 7 around here>

<Figure 2 around here>

Similarly, the positive sign of interaction with education suggests that the effect of remittances becomes more prominent as educational attainment increases. The upward-rising marginal curve

[12] We include the complete control variables in all regressions. To save space, we report only the variables that interact with remittances.

[13] Disposable income is the net income available after deducting direct tax from the gross income. It is also known as the post-tax, post-transfer income (Solt, 2020).

in Figure 2 confirms that the impact of remittances becomes larger with a higher level of school enrollment. The findings suggest that developing countries should make efforts to promote education so that they can benefit from remittances for the development of democracy. At the same time, we find a statistically significant positive sign for the interaction with the rule of law and an upward-rising marginal curve for it. The findings suggest that remittances become more influential in promoting democracy in a society founded on better rules of law.

In contrast, the negative sign of the interaction with corruption suggests that the impact of remittances on democracy decreases as corruption increases. The downward curve of marginal effects in Figure 2 supports the view that corruption weakens the influence of remittances. With our sample's average corruption score (0.62), the overall impact of remittances is 0.29. However, at a high level of corruption (0.83) threshold, the marginal effect becomes zero, and beyond that point, it becomes negative. Widespread and systemic corruption reduces the impact of remittances on democracy. Again, the interaction of remittances with income inequality also shows a negative association. The downward marginal effect curve in Figure 2 demonstrates that remittances are less effective in promoting democracy in societies with higher income inequality. However, the marginal analysis estimates the threshold at the Gini coefficient of 43, while our sample's average Gini coefficient is 41.7, and therefore, the overall impact is 0.045 in our sample on average. We also obtain a similar negative outcome for the interaction of remittances with ethnic fractionalization. Although the overall effect is positive (0.13) for our sample, it becomes negative if ethnic fractionalization becomes very high (0.65). This finding suggests that remittances are effective for the progress of democracy unless ethnic fractionalization is very high.

So, we can say that remittances are more efficient in promoting democratization in developing nations with favorable socioeconomic conditions such as higher income, improved education, and more developed institutions such as a good law and order system. Conversely, the impact of remittances on democratization decreases in countries with unfavorable socioeconomic factors, such as pervasive corruption, higher inequality, or greater ethnic fragmentation. Therefore, remittances could be better utilized for promoting democracy in countries that have better absorptive capacities and institutions, while countries with poor institutional capacity, large social disparity, and high ethnic tension may benefit less from remittances in terms of democracy. These findings suggest that governments in developing countries should make efforts to increase remittances and promote absorptive capacity so that they can develop democracy.

5.5 Transmission Mechanism

In this section, we examine two potential channels through which remittances may impact democratization: economic development and human capital. We select economic development because modernization theories view it as the most important catalyst for democracy. We also choose education as the other critical factor in modernizing society and promoting democracy. For example, education leads to higher knowledge and skills, greater prosperity, and larger middle classes (Lipset, 1959). It also enlightens citizens, strengthens pro-democratic attitudes, and enhances the political tolerance and competence of the broader population. Thus, economic prosperity and political enlightenment generated by education are crucial for democratic transformation and consolidation (Ahmadov & Holstege, 2023). We use the log of GDP per capita as a proxy for economic development and secondary school enrollment (gross) as a proxy for education.

The results are reported in Table 8. The coefficient of remittances shows a statistically significant positive relationship with GDP per capita. The findings indicate that remittances significantly boost a country's economic development, consistent with prevailing theoretical arguments. Remittances can raise income and economic activity in various ways. The most promising contribution is enhancing local investment and entrepreneurship (Yang, 2008; Kakhkharov, 2019) among recipient families by providing primary capital. Additionally, remittance money is often spent on building new houses, improving health and sanitation, obtaining better education and skill development opportunities, and enhancing consumption, all of which boost the local economy and generate employment. Our findings align with empirical evidence (Catrinescu et al., 2009; Bearce & Park, 2019). These results, in conjunction with the modernization hypothesis, suggest that economic development may be a potential channel through which remittances promote democracy.

<Table 8 around here>

We now turn to education, which, according to the modernization hypothesis, is a crucial prerequisite for modernizing a society. The estimated results in Table 10 show a statistically significant positive relationship between education and remittances. Thus, remittances promote school enrollment and educational attainment in the receiving countries. This finding is expected because remittances lessen financial hardship and strengthen the capacity to increase expenditure for education and skill development. Our results are consistent with the migration literature, showing that remittances significantly contribute to human capital accumulation. For instance, Williams (2017) finds that remittances have a significantly positive average effect on all measures of schooling. Azizi (2018) also finds that remittances raise school enrollment, completion rates, and private school enrollment in developing countries. In addition, Yang

(2008) shows that remittances lead to human capital accumulation by increasing child schooling and educational expenditure, while child labor falls in the Philippines. These findings suggest that education is also an essential route for remittances to advance democracy.

Therefore, our research confirms the modernization theory that remittances contribute to democratic advancement by enhancing economic progress and education.

6. Conclusion

This paper examines whether remittances promote or hinder democracy in developing countries. In line with the modernization hypothesis, we find evidence that remittances positively affect democracy. We use unbalanced annual panel data of 156 emerging markets and developing economies from 1972 to 2020 and the system GMM estimator to address possible endogeneity. We analyze two direct measures of democracy, the political rights (PR) and the Polity index, instead of the indirect measures used in previous studies.

The findings of this study suggest that remittances generally promote democracy in developing countries. They also demonstrate that remittances have had a more substantial impact on democratization since the surge of remittances after the 1990s, while remittances had no significant effect on democracy before the 1990s. While remittances positively affect democratic progress, their marginal effect is more substantial in countries with favorable socioeconomic conditions and higher absorptive capacity. Remittances encourage political liberalization and democratic progress more significantly in countries with higher income, better human capital, and more effective institutions. In contrast, remittances are relatively less effective in democratization in societies with widespread corruption, higher income inequality, and more severe ethnic fragmentation. Finally, our empirical examination supports the modernization hypothesis by finding that remittances foster economic development and human capital accumulation, thus modernizing society and leading to greater democratization.

In conclusion, our study provides evidence that remittances are a blessing for democracy in developing countries, which refutes the curse proposition argued by several important studies. The political benefit of remittances to democracy has become more prominent in recent decades when developing countries started to receive more remittances along with globalization and economic opening. However, this positive effect of remittances on democracy is conditional on several desirable socioeconomic environments and institutional capacity. Our study suggests that the ongoing increase in remittances could result in more progress in the democratization of the political system in developing countries by modernizing those economies, especially when they have supportive preconditions.

References

Abdih, Y., R. Chami, J. Dagher, and P. Montiel (2012). "Remittances and institutions: Are remittances a curse?" *World Development 40*(4), pp. 657-666.

Acemoglu, D., and J. Robinson (2006). "*Economic origins of dictatorship and democracy",* New York, Cambridge University Press.

Acemoglu, D., S. Johnson, J. Robinson, and P. Yared (2008). "Income and democracy." *American Economic Review 98*(3), pp. 808-842.

Acosta, P., C. Caldero'n, P. Fajnzylber, and H. J. López (2008). "What is the impact of international remittances on poverty and inequality in Latin America?" *World Development 36*, pp. 89-114.

Adams, R. H., and J. Page (2005). "Do international migration and remittances reduce poverty in developing countries?" *World Development 33*(10), pp. 1645-1669.

Ahmadov, A., and F. Holstege (2023). “Does schooling promote democracy? A meta-analysis”, *Democratization, 30,* pp. 57-77.

Ahmed, F. Z. (2012). “The perils of unearned foreign income: aid, remittances, and government survival”, American *Political Science Review 106*, pp. 146-165.

Ahmed, F. Z. (2013). “Remittances deteriorate governance”, *The Review of Economics and Statistics 95*(4), pp.1166-1182.

Alesina, A., A. Devleeschauwer, W. Easterly, S. Kurlat, and R. Wacziarg (2003). “Fractionalization”, *Journal of Economic Growth 8,* pp. 155-194.

Ambrosius, C. (2019). “Government reactions to private substitutes for public goods: Remittances and the crowding-out of public finance.” *Journal of Comparative Economics, 47*(2), pp. 396-415.

Ansell, B. W., and D. J. Samuels (2010). “Inequality and democratization: a contraction approach.” *Comparative Political Studies 43*(12), pp. 1543-1574.

Aparicio, F. J. and C. Meseguer (2012). “Collective remittances and the state: The 3x1 program in Mexican municipalities.” *World Development, 40* (1), pp. 206-222.

Arellano, M., and O. Bover (1995). “Another look at the instrumental variable estimation of error-components models.” *Journal of Econometrics 68,* pp. 29-51.

Azizi, S. S. (2018). “The impacts of workers’ remittances on human capital and labor supply in developing countries.” *Economic Modelling 75,* pp. 377-396.

Azizi, S. S. (2021). “The impacts of workers’ remittances on poverty and inequality in developing countries.” Empirical *Economics 60*(2), pp. 969-991.

Barajas, A., R. Chami, C. Fullenkamp, M. Gapen, and P. Montiel (2009). “Do workers’ remittances promote economic growth?” *IMF Working Paper 153*.

Barro, R. (1999). “Determinants of democracy”, *Journal of Political Economy 107*(6), pp.158-183.

Bearce, D. H., and S. Park (2019). “Why remittances are a political blessing and not a curse?” *Studies in Comparative International Development 54,* pp. 164-184.

Berdiev, A. N., Y. Kim, and C. Chang (2013). “Remittances and corruption”, *Economics Letters, 118,* pp. 182-185.

Blundell, R., and S. Bond (1998). “Initial conditions and moment restrictions in dynamic panel data models.” *Journal of Econometrics 87,* pp. 115-143.

Boix, C., and S. C. Stokes (2003). “Endogenous democratization”, *World Politics 55*(4), pp. 517-549.

Bollen, K. (1993). “Liberal democracy: Validity and method factors in cross-national measures.” *American Journal of Political Science 37(4),* pp. 1207-1230.

Catrinescu, N., M. Leon-Ledesma, M. Piracha, and B. Quillin (2009). “Remittances, institutions, and economic growth.” *World Development 37,* pp. 81–92.

Chami, R., C. Fullenkamp, and S. Jahjah (2005). “Are immigrant remittances flows a source of capital for development?” *IMF Staff Papers 52,* pp. 55-81.

Cheibub, J. A. (1998). “Political regimes and the extractive capacity of governments: taxation in democracies and dictatorships.” *World Politics, 50*(3), 349-376.

Cheibub, J. A., J. Gandhi, and J. R. Vreeland (2010). “Democracy and dictatorship revisited”, *Public Choice 143*, pp. 67-101.

Deonanan, R., and K. Williams (2017). “The effect of remittances on democratic institutions”, *Applied Economics 49*(5), pp. 403-416.

Docquier, F., E. Lodigiani, H. Rapoport, and M. Schiff (2016). "Emigration and democracy." *Journal of Development Economics, 120,* pp. 209-223.

Doyle, D. (2015). "Remittances and social spending." *American Political Science Review, 109*(4), pp. 785-802.

Easton, M. R., and G. R. Montinola (2017). "Remittances, regime type, and government spending priorities", *Studies in Comparative International Development 52*(3), pp. 349-371.

Ebeke, C., and T. Yogo (2013). "Remittances and the voter turnout in Sub-Saharan Africa: Evidence from macro and micro level data", *African Development Bank, Working Paper, 185.*

Escriba`-Folch, A., C. Meseguer, and J. Wright (2016). "Remittances and democratization", *International Studies Quarterly 59*(3), pp. 571-586.

Escriba`-Folch, A., C. Meseguer, and J. Wright (2018). "Remittances and protest in dictatorships", *American Journal of Political Science 62*(4), pp. 889-904.

Feeny, S., S. Iamsiraroj, and M. McGillivray (2014). "Remittances and economic growth: Larger impacts in smaller countries?" *The Journal of Development Studies 50(8),* pp. 1055-1066.

Freedom House. (2022). *Freedom in the World* [Dataset]. https://freedomhouse.org/report/freedom-world

Gleditsch, K. S., and M. D. Ward (1997). "Double take: A reexamination of democracy and autocracy in modern polities", *The Journal of Conflict Resolution 41*(3), pp. 361-83.

Goodman, G. L., and J. T. Hiskey (2008). "Exit without leaving: Political disengagement in high migration municipalities in Mexico", *Comparative Politics 40*(2), pp. 169-188.

Kakhkharov, J. (2019). "Migrant remittances as a source of financing for entrepreneurship", *International Migration 57*(5), pp. 37-55.

Konte, M. (2016). “The effects of remittances on support for democracy in Africa: Are remittances a curse or a blessing?” *Journal of Comparative Economics, 44* (4), pp. 1002-22.

La Porta, R., F. Lopez-de-Silanes, and A. Shleifer (2008). “The economic consequences of legal origins”, *Journal of Economic Literature 46*(2), pp. 285-332.

Lipset, S. M. (1959). “Some social requisites of democracy: economic development and political legitimacy”, *The American Political Science Review 53*(1), pp. 69-105.

Meltzer A. H., and S. F. Richard (1981). “A rational theory of the size of government”, *Journal of Political Economy 89*(5), pp. 914-927.

Minier, J. A. (1998). “Democracy and growth: Alternative approaches”, Journal of Economic Growth *3*, pp. 241-266.

Muller, E. N. (1995). “Economic determinants of democracy”, *American Sociological Review 60*(6), pp. 966-982.

Mulligan C. B., R. Gil, and X. Sala-i-Martin (2004). “Do democracies have different public policies than nondemocracies?” *Journal of Economic Perspective*, *18*(1), 51-74.

Pérez-Armendáriz, C., and D. Crow (2010). “Do migrants remit democracy? International migration, political beliefs, and behavior in Mexico”, *Comparative Political Studies, 43*, pp. 119-148.

Pfutze, T. (2014). “Clientelism vs. social learning: The electoral effects of international migration”, *International Studies Quarterly 58*(2), pp. 295-307.

Polity5. Version 2018 [Dataset]. http://www.systemicpeace.org/inscrdata.html

Ratha, D. (2003). “Workers' remittances: An important and stable source of external development finance”, *Global Development Finance,* pp. 157-175.

Roodman, D. (2009). “How to do xtabond2: An introduction to difference and system GMM in Stata”, *The Stata Journal 9*(1), pp.86-136.

Solt, F. (2020). “Measuring income inequality across countries and over time: The standardized world income inequality database”, *Social Science Quarterly, 101*(3), pp. 1183-1199.

The Standardized World Income Inequality Database (SWIID). Version 9.3 [Dataset]. https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/LM4OWF

Tyburski, M. D. (2012). “The resource curse reversed? Remittances and corruption in Mexico.” *International Studies Quarterly, 56*(2), pp. 339-350

Tyburski, M. D. (2014). “Curse or cure? Migrant remittances and corruption”, *The Journal of Politics 76*(3), pp. 814-824.

Varieties of Democracy (V-Dem). Core version 12 [Dataset]. https://www.v-dem.net/vdemds.html

Williams, K. (2017). “Do remittances improve political institutions? Evidence from Sub-Saharan Africa”, *Economic Modelling 61*, pp. 65-75

World Bank (2022). “A war in a pandemic: Implications of the Russian invasion of Ukraine and the COVID-19 crisis on global governance of migration and remittance flows”, *Migration and development brief 36*, World Bank, Washington, DC.

World Development Indicator (WDI) [Dataset]. https://databank.worldbank.org/source/world-development-indicators

Worldwide Governance Indicators (WGI) [Dataset]. http://info.worldbank.org/governance/wgi/

Yang, D. (2008). “International migration, remittances and household investment: Evidence from Philippine migrants exchange rate shocks”, *The Economic Journal 118, pp.* 591-630.

Tables

Table 1. Summary statistics

Variables	Mean	Standard deviation	Observations
The PR	53.62	29.68	6727
The Polity	49.47	34.13	5554
Remittances (% of GDP)	4.63	7.99	4964
Log of GDP per capita	7.84	1.17	6338
Log of GDP per capita gap	10.57	0.35	6264
Log of population	1.39	2.21	7614
Log of urban population	3.67	0.58	7586
Life expectancy at birth	63.1	9.94	7156
Education	56.32	31.41	4666
Log of trade (% of GDP)	4.18	0.62	5719
FDI (% of GDP)	3.04	5.51	6148
Investment (% of GDP)	22.36	8.95	5079
Govt. spending (% of GDP)	15.55	7.74	5275
Rate of Inflation	9.64	12.92	5416
Common law	0.34	0.47	7154
Rule of law	-0.41	0.73	3411
Corruption	0.59	0.24	6352
Income Inequality	41.72	7.48	3958
Ethnic fractionalization	0.49	0.25	7105

Table 2. The impact of remittances on democracy: The PR index (period: 1972-2020)

VARIABLES	(1)	(2)	(2)	(4)	(5)
Lag of the PR	0.872***	0.872***	0.879***	0.875***	0.874***
	(0.00569)	(0.00639)	(0.00843)	(0.00935)	(0.00941)
Remittances (% GDP)	**0.0230*** **	**0.0259*** **	**0.0912*** **	**0.0712*** **	**0.0665*** **
	(0.00792)	(0.00876)	(0.0189)	(0.0207)	(0.0205)
Log of GDP per capita	1.288***	1.038***	1.073***	1.195***	0.899***
	(0.155)	(0.154)	(0.205)	(0.200)	(0.263)
Log of population		-0.480***	-0.483***	-0.533***	-0.579***
		(0.0939)	(0.103)	(0.0928)	(0.101)
Log of trade (% GDP)			-0.179	-0.329	-0.452
			(0.359)	(0.320)	(0.307)
FDI (% GDP)				-0.0395***	-0.0297**
				(0.0134)	(0.0131)
Log of urban population					0.688
					(0.427)
Constant	-3.495***	-0.579	0.465	-1.033	-0.668
	(1.148)	(1.287)	(1.818)	(1.823)	(1.968)
Observations	4,608	4,608	4,169	4,058	4,048
Number of countries	148	148	140	139	138
Diagnostic tests:					
Instruments	146	147	148	146	147
AR(1) p-value	0.000	0.000	0.000	0.000	0.000
AR(2) p-value	0.630	0.635	0.653	0.635	0.644
Hansen p-value	0.370	0.416	0.614	0.521	0.597

Numbers in parentheses are p-values. Estimates are conducted using the two-step system GMM. AR (1) and AR (2) are p-values for first-order and second-order autocorrelated disturbances in the differenced equation. Hansen p-value is the test of instrument validity. The notions ***, **, and *denote statistical significance at 1%, 5%, and 10%, respectively.

Table 3. The impact of remittances on democracy: The Polity index (period: 1972-2018)

VARIABLES	(1)	(2)	(3)	(4)	(5)
Lag of the Polity	0.933***	0.935***	0.936***	0.942***	0.936***
	(0.00412)	(0.00452)	(0.00464)	(0.00518)	(0.00536)
Remittances (% GDP)	**0.0677*** **	**0.0701*** **	**0.0371*** **	**0.0412** **	**0.0193**
	(0.00451)	(0.00460)	(0.0130)	(0.0161)	(0.0150)
Log of GDP per capita	0.225*	0.247*	0.0985	0.170	-0.336
	(0.127)	(0.128)	(0.156)	(0.137)	(0.221)
Log of population		0.0244	0.0438	0.0624	0.0175
		(0.0961)	(0.111)	(0.107)	(0.110)
Log of trade (% GDP)			0.212	0.159	0.237
			(0.163)	(0.156)	(0.169)
FDI (% GDP)				-0.0240*	-0.0164
				(0.0135)	(0.0140)
Log of urban population					1.211***
					(0.313)
Constant	2.824***	2.433**	3.058**	1.527	1.309
	(1.045)	(1.146)	(1.375)	(1.368)	(1.372)
Observations	3,856	3,856	3,623	3,620	3,610
Number of countries	126	126	122	122	121
Diagnostic tests:					
Instruments	142	143	144	145	146
AR(1) (p-value)	0.000	0.000	0.000	0.000	0.000
AR(2) (p-value)	0.130	0.134	0.140	0.130	0.140
Hansen (p-value)	0.720	0.711	0.887	0.928	0.934

Numbers in parentheses are p-values. Estimates are computed using the two-step system GMM. The notions ***, **, and *denote statistical significance at 1%, 5%, and 10%, respectively.

Table 4. The impact of remittance on democracy: The PR index (period: 1972-1990)

VARIABLES	(1)	(2)	(2)	(4)	(5)
Lag of the PR	0.853***	0.854***	0.885***	0.883***	0.885***
	(0.0281)	(0.0285)	(0.0332)	(0.0326)	(0.0314)
Remittances (% GDP)	**-0.0754**	**-0.0698**	**-0.0188**	**-0.0315**	**-0.0413**
	(0.0473)	(0.0479)	(0.0362)	(0.0379)	(0.0377)
Log GDP per capita	1.772***	1.646***	1.312**	1.335**	1.093
	(0.467)	(0.466)	(0.512)	(0.506)	(0.715)
Log of population		-0.209	-0.0738	-0.0881	-0.119
		(0.231)	(0.249)	(0.246)	(0.239)
Log of trade (% GDP)			0.0885	0.252	0.343
			(0.602)	(0.647)	(0.633)
FDI (% GDP)				-0.113	-0.106
				(0.0865)	(0.0856)
Log of urban population					0.456
					(0.748)
Constant	5.009	5.162	2.010	1.749	1.781
	(3.165)	(3.156)	(3.596)	(3.570)	(3.624)
Observations	901	901	827	827	827
Number of countries	86	86	79	79	79
Diagnostic tests:					
Instruments	56	57	58	59	60
AR(1) P-value	0.000	0.000	0.000	0.000	0.000
AR(2) P-value	0.279	0.280	0.273	0.271	0.272
Hansen p-value	0.487	0.477	0.640	0.624	0.589

Numbers in parentheses are p-values. Estimates are computed using the two-step system GMM. The notions ***, **, and *denote statistical significance at 1%, 5%, and 10%, respectively.

Table 5. The impact of remittances on democracy: The PR index (period: 1991-2020)

VARIABLES	(1)	(2)	(2)	(4)	(5)
Lag of the PR	0.904***	0.900***	0.915***	0.923***	0.925***
	(0.0127)	(0.0134)	(0.0137)	(0.0136)	(0.0137)
Remittances (% GDP)	**0.0646*** **	**0.0606*** **	**0.118*** **	**0.0974** **	**0.0927** **
	(0.0140)	(0.0147)	(0.0356)	(0.0393)	(0.0397)
Log GDP per capita	0.933***	0.722***	0.761***	0.570***	0.356*
	(0.205)	(0.201)	(0.202)	(0.202)	(0.211)
Log of population		-0.486***	-0.360***	-0.336***	-0.368***
		(0.113)	(0.115)	(0.108)	(0.113)
Log of trade (% GDP)			-0.100	-0.0331	-0.00867
			(0.342)	(0.334)	(0.338)
FDI (% GDP)				-0.0113	-0.0106
				(0.0142)	(0.0145)
Log of urban population					0.625*
					(0.369)
Constant	-2.247	1.252	-0.642	0.0955	-0.654
	(1.394)	(1.608)	(1.766)	(1.635)	(1.743)
Observations	3,627	3,627	3,270	3,159	3,149
Number of countries	148	148	140	139	138
Diagnostic tests:					
Instruments	91	92	93	91	92
AR(1) P-value	0.000	0.000	0.000	0.000	0.000
AR(2) P-value	0.629	0.633	0.676	0.722	0.710
Hansen p-value	0.120	0.0868	0.120	0.159	0.150

Numbers in parentheses are p-values. Estimates are computed using the two-step system GMM. The notions ***, **, and *denote statistical significance at 1%, 5%, and 10%, respectively.

Table 6. Robustness checks: additional controls (period: 1991-2020)

Variables	Dependent variable: The PR index					
	(1)	(2)	(3)	(4)	(5)	(6)
Lag of the PR	0.933***	0.925***	0.888***	0.893***	0.912***	0.889***
	(0.0158)	(0.0133)	(0.0149)	(0.0155)	(0.0140)	(0.0152)
Remittances (% GDP)	**0.0509***	**0.106****	**0.0976*****	**0.147*****	**0.122*****	**0.112*****
	(0.0275)	(0.0407)	(0.0372)	(0.0376)	(0.0418)	(0.0165)
Education	0.0163**					0.0464**
	(0.00627)					(0.0216)
Life expectancy at birth		0.0394				-0.0477
		(0.0241)				(0.0362)
Rule of law			3.179***			1.870***
			(0.446)			(0.413)
Corruption				-8.313***		-4.460***
				(1.166)		(0.805)
Common law					1.793***	-0.540
					(0.456)	(0.522)
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,033	3,088	2,535	2,918	3,073	1,528
Number of countries	129	136	138	126	132	117
Diagnostic tests:						
Instruments	93	93	86	93	93	69
AR(1) p-value	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) p-value	0.757	0.721	0.432	0.701	0.709	0.463
Hansen p-value	0.648	0.162	0.204	0.237	0.130	0.791

Numbers in parentheses are p-values. Estimates are computed using the two-step system GMM. The notions ***, **, and *denote statistical significance at 1%, 5%, and 10%, respectively. **Note.** All models include basic controls, but we only report the relevant controls to save space.

Table 7. Conditional effects: The PR index (period: 1991-2020)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Lag of the PR	0.916***	0.942***	0.891***	0.877***	0.908***	0.925***
	(0.0131)	(0.0149)	(0.0150)	(0.0154)	(0.0122)	(0.0142)
Remittances as (% GDP)	-0.137***	-0.320***	1.144***	0.303***	1.619***	0.508***
	(0.0396)	(0.0553)	(0.149)	(0.0553)	(0.209)	(0.0860)
Remittances*GDP per capita	0.000041***					
	(1.01e-05)					
GDP per capita	-0.000078***					
	(2.78e-05)					
Remittances*Education		0.00396***				
		(0.000721)				
Education		0.00664				
		(0.00832)				
Remittances*Corruption			-1.377***			
			(0.206)			
Corruption			-3.990**			
			(1.733)			
Remittances*Rule of law				0.139***		
				(0.0494)		
Rule of law				2.873***		
				(0.506)		
Remittances*Income inequality					-0.0378***	
					(0.00470)	
Income inequality					0.158***	
					(0.0328)	
Remittances*Ethnic fractionalization						-0.778***
						(0.152)
Ethnic fractionalization						4.908***
						(1.190)
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,149	2,033	2,918	2,535	2,478	3,090
Number of countries	138	129	126	138	134	133
Diagnostic tests:						
Instruments	93	94	94	87	94	94
AR(1) p-value	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) p-value	0.702	0.759	0.675	0.436	0.697	0.716
Hansen p-value	0.189	0.644	0.196	0.234	0.475	0.154

Numbers in parentheses are p-values. Estimates are computed using the two-step system GMM. The notions ***, **, and *denote statistical significance at 1%, 5%, and 10%, respectively. **Note.** All models include basic controls, but we only report the relevant controls to save space.

Table 8: Transmission channels of remittances (period: 1991-2020)

Variables	Log of GDP per capita (1)	Education (2)
Lagged log of GDP per capita	1.008***	
	(0.00269)	
Remittances (% GDP)	**0.00197*****	**0.850*****
	(0.000250)	(0.0645)
Govt. spending (% GDP)	-0.00115***	0.441***
	(0.000137)	(0.0608)
Trade (% GDP)	7.42e-05**	-0.0126
	(3.26e-05)	(0.0148)
FDI (% GDP)	0.000167	0.0255
	(0.000171)	(0.0251)
Education	-9.16e-05	
	(7.02e-05)	
Investment (% GDP)	0.000979***	-0.0744**
	(0.000163)	(0.0339)
Log of population	0.00308***	0.829***
	(0.000868)	(0.305)
Life expectancy at birth	-0.000565**	0.875***
	(0.000226)	(0.0941)
Log of GDP per capita		16.09***
		(0.874)
Inflation		0.0422**
		(0.0191)
Constant	-0.0171	-143.5***
	(0.0138)	(5.449)
Observations	1,891	1,811
Number of countries	120	117
Diagnostic tests:		
Instruments	95	96
AR(1) p-value	0.000	0.0003
AR(2) p-value	0.432	0.0522
Hansen p-value	0.0347	0.238

Numbers in parentheses are p-values. Estimates are computed using the two-step system GMM. The notions ***, **, and *denote statistical significance at 1%, 5%, and 10%, respectively.

Figures

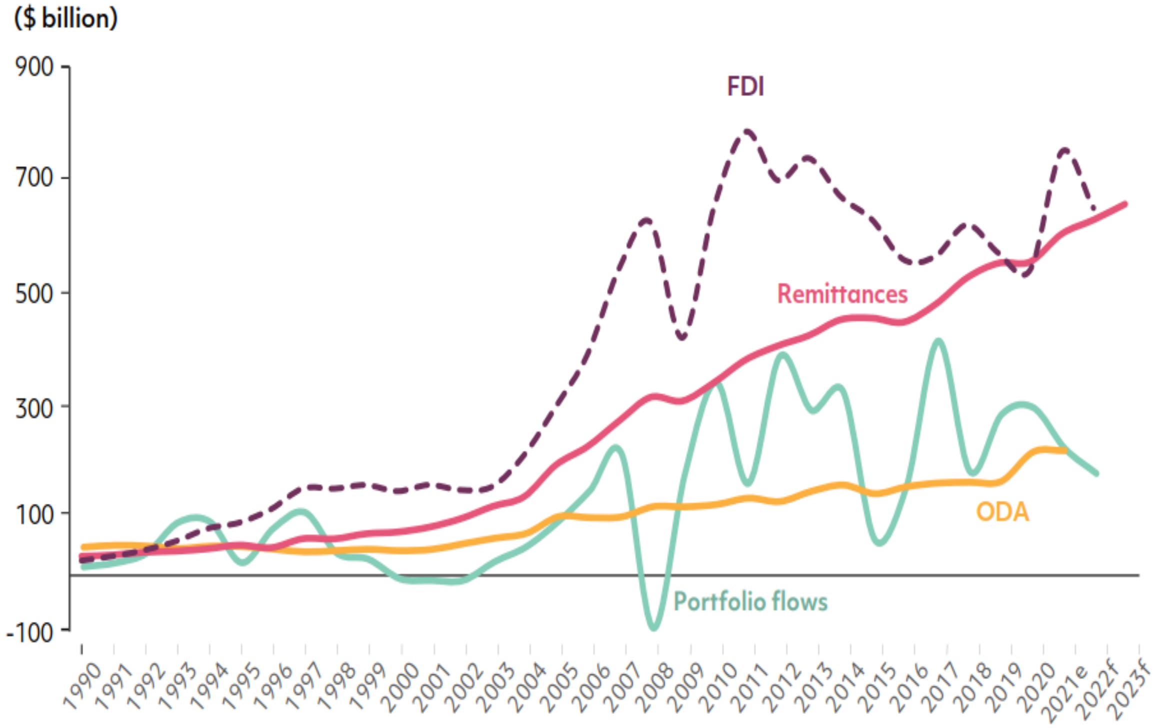

Figure 1. Remittances, FDI, ODA, and Portfolio flow to LMICs. The figure adopted from the World Bank Migration and Development Brief 36. **Note.** FDI = foreign direct investment; ODA = official development assistance; e = estimate; f = forecast.

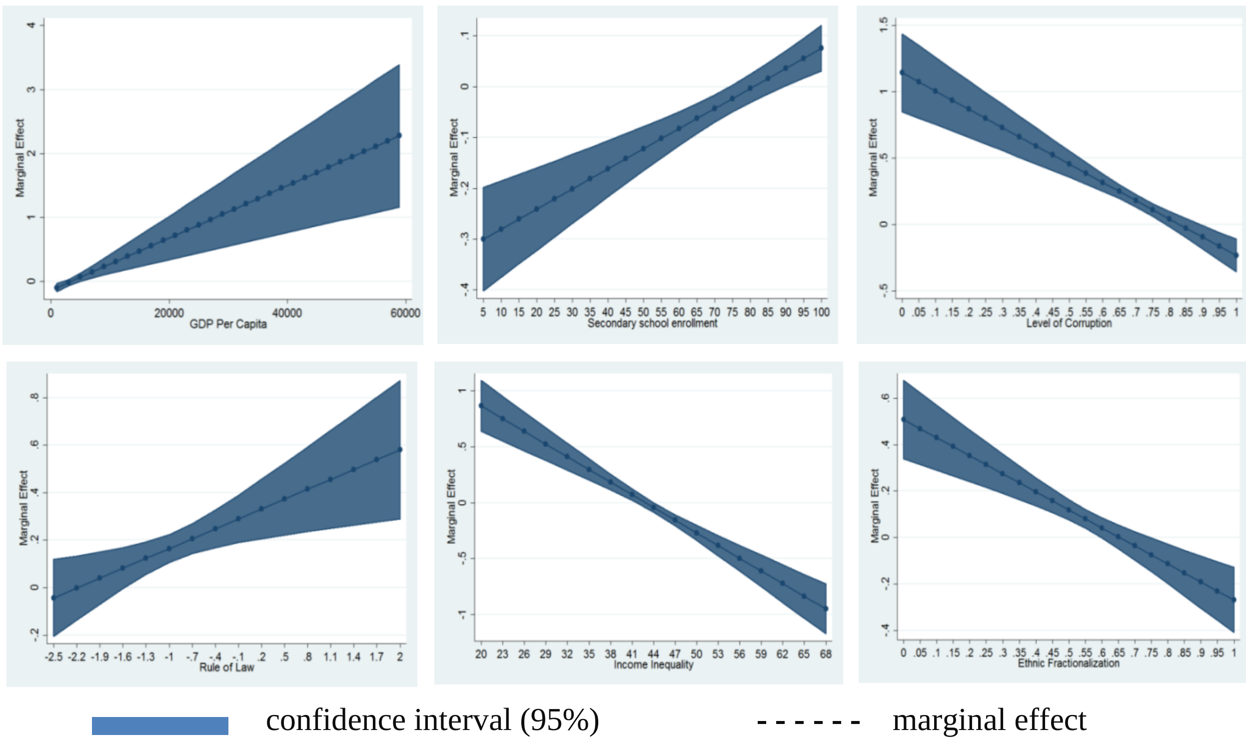

Figure 2. The marginal effect of remittances on democracy conditional on the level of different controls. These marginal effects are computed based on estimated parameters presented in Table 7.

Appendix A

Data description and sources

Variables	Description	Sources
The political rights	The political rights index ranges from 1 to 7, normalized to 0 to 100, referring to low to high democracy.	Freedom House
The Polity	The Polity index ranges from -10 to 10, normalized to 0 to 100, referring to low to high democracy.	Polity5
Remittances	The personal remittances received as a ratio of GDP. It comprises personal transfers and compensation of employees in both cash and in-kind form.	WDI
GDP per capita	Gross domestic product (constant US$2015) divided by midyear population.	WDI
GDP per capita gap	The real GDP per capita (constant US$2015) difference between the United States and sample countries.	WDI
Population	The number of all residents, regardless of legal status or citizenship, within a country's national territory.	WDI
Urban population	People living in urban areas as a ratio of the total population defined by national statistical offices.	WDI
Life expectancy at birth	The number of years a newborn infant will live if prevailing patterns of mortality at birth remain the same.	WDI
Education	The gross enrollment ratio at the secondary school level. It calculates the total enrollment (regardless of age) divided by the population of the age group that officially corresponds to that level of education. This ratio typically falls between 0 and 100.	WDI
Trade	The sum of the import and export of goods and services as a percentage of GDP.	WDI
FDI	The net inflows of foreign direct investment as a share of GDP.	WDI

Data description and sources (continue)

Variables	Description	Sources
Investment	The gross fixed capital formation as a percentage of GDP	WDI
Govt. spending	General government final consumption as a percentage of GDP. It includes all current expenditures for purchases of goods and services, including compensation of its employees.	WDI
Inflation	The annual percentage change in the cost to the average consumer of acquiring a specified basket of goods and services.	WDI
Common law	Common laws=1 if a country uses common laws, otherwise 0	La Porta et al. (2008)
Rule of law	The perception of the extent to which agents have confidence in and abide by the rules of society, particularly the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. It ranges from -2.5 to 2.5, referring the least to the most developed legal system.	WGI
Corruption	The corruption index calculates the average of four indexes: (a) the public sector corruption index, (b) the executive corruption index, (c) the legislative corruption indicator, and (d) the judicial corruption indicator. It ranges from 0 to 1, with low to high levels of corruption.	V-Dem dataset v12
Income inequality	The Gini coefficient of disposable income. It ranges from 0 to 100, with low to higher levels of inequality.	SWIID, Version 9.3
Ethnic fractionalization	The degree of heterogeneity within a country in terms of the distribution of ethnic groups. It ranges from 0 to 1, with low to high ethnic fractions.	Alesina et al., (2003)

Appendix B

The impact of remittances on democracy: The Polity index (period: 1972-1990)

Variables	(1)	(2)	(3)	(4)	(5)
Lag of the Polity	0.934***	0.926***	0.925***	0.926***	0.926***
	(0.0420)	(0.0450)	(0.0467)	(0.0464)	(0.0410)
Remittances (% GDP)	**0.190**	**0.190**	**0.0855**	**0.0822**	**0.0838**
	(0.191)	(0.198)	(0.104)	(0.0976)	(0.0990)
Log GDP per capita	1.795**	1.983**	1.796*	1.773*	1.754
	(0.835)	(0.854)	(0.967)	(0.949)	(1.395)
Log of population		0.331	0.155	0.142	0.145
		(0.339)	(0.421)	(0.425)	(0.432)
Log of trade (% GDP)			-0.241	-0.306	-0.291
			(1.184)	(1.268)	(1.295)
FDI (% GDP)				0.0456	0.0454
				(0.111)	(0.106)
Log of urban population					0.0589
					(1.397)
Constant	-8.821*	-11.25**	-8.530	-8.133	-8.251
	(5.201)	(4.854)	(5.728)	(6.089)	(6.368)
Observations	930	930	873	873	873
Number of countries	72	72	69	69	69
Diagnostic tests:					
Instruments	58	59	60	61	62
AR(1) p-value	0.000	0.000	0.000	0.000	0.000
AR(2) p-value	0.998	0.995	0.889	0.895	0.895
Hansen p-value	0.371	0.374	0.283	0.281	0.270

Numbers in parentheses are p-values. Estimates are computed using the two-step system GMM.

The notions ***, **, and *denote statistical significance at 1%, 5%, and 10%, respectively.

Appendix C

The impact of remittances on democracy: The Polity index (period: 1991-2018)

Variables	(1)	(2)	(3)	(4)	(5)
Lag of the Polity	0.925***	0.924***	0.940***	0.944***	0.942***
	(0.0109)	(0.0110)	(0.00856)	(0.00881)	(0.00888)
Remittances (% GDP)	**0.0723*****	**0.0729*****	**0.0595*****	**0.0511*****	**0.0519*****
	(0.00944)	(0.00950)	(0.0179)	(0.0181)	(0.0178)
Log GDP per capita	0.132	0.110	0.213	0.210	-0.0613
	(0.149)	(0.150)	(0.155)	(0.155)	(0.183)
Log of population		-0.119	-0.0225	-0.0413	-0.0497
		(0.106)	(0.114)	(0.114)	(0.114)
Log of trade (% GDP)			-0.158	-0.0851	-0.0525
			(0.219)	(0.215)	(0.215)
FDI (% GDP)				-0.0264*	-0.0296*
				(0.0153)	(0.0153)
Log of urban population					0.791**
					(0.394)
Constant	4.027***	4.547***	3.282**	2.559*	1.668
	(1.210)	(1.294)	(1.352)	(1.312)	(1.395)
Observations	2,859	2,859	2,687	2,684	2,674
Number of countries	126	126	122	122	121
Diagnostic tests:					
Instruments	85	86	87	88	89
AR(1) p-value	0.000	0.000	0.000	0.000	0.000
AR(2) p-value	0.118	0.118	0.137	0.139	0.138
Hansen p-value	0.0180	0.0175	0.192	0.177	0.152

Numbers in parentheses are p-values. Estimates are computed using the two-step system GMM. The notions ***, **, and *denote statistical significance at 1%, 5%, and 10%, respectively.