EVIDENCE PAPER

State effectiveness

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1. Introduction[1]

Sustaining high rates of economic growth requires an effective state with strong and inclusive institutions (Besley and Persson, 2009). Effective states set the national policy agenda and deliver the key public services needed for sustainable growth. In many low- and middle-income countries, however, the state fails in this task. The consequences of such failures are only worse under climate change. Climate change increases the severity and frequency of economic shocks, requiring a transition in how societies live and work. This multiplies the policy challenges faced by states. To end poverty rapidly and permanently, states in low- and middle-income countries must be strengthened so that they are both accountable for delivering sustainable growth and have the capacity to design and deliver the programmes necessary to do so.

To end poverty rapidly and permanently, states in low- and middle-income countries must be strengthened so that they are both accountable for delivering sustainable growth and have the capacity to design and deliver the programmes necessary to do so.

Understanding why states are less effective in low-income countries is a critical first step. The second is finding solutions to strengthen state capabilities. We review the existing literature on the role of the state in low- and middle-income countries, including more recent research on the political economy of addressing climate change, and the set of policies that have proven effective in building state capacity. We highlight areas for future research where more evidence is needed on how states can be successful.

How can we build effective states? The first pillar of this research agenda centres on escaping the fragility trap, building a functioning state, strengthening institutions, and making them more inclusive (Callen et al., 2024) The second encompasses what the state should do and the type of policies that are necessary for inclusive and sustainable growth. The third pillar relates to how the effectiveness and capacity of the state can be improved.

Our first focus is on fragile states. The consequences of fragility are large. Fragility is a trap from which it is difficult to escape. It creates uncertainty and eviscerates the public goods that help society flourish and be resilient. Firms are reluctant to invest or create jobs, and economic development stalls. Young people struggle to find meaningful occupations. When shocks strike, be it a storm, drought, or flood, an already febrile situation only deteriorates. Until the underlying fragility is dealt with, sustainable growth remains out of reach.

We start by exploring the instruments that can enable countries to escape extreme fragility. Research is needed on the set of economic factors and policy priorities that, once conflict and political violence end, allow the

1 Special thanks to Marta Morando and Andres Felipe Rodriguez for their excellent research assistance and to Nikita Sharma and Aman Mishra for their meticulous copyediting.

peace process to be sustained and put countries on a path away from extreme fragility.

Fragility is also a continuum and is not limited to conflict. Divided societies, deficient political leaders, weak institutions, and missing systems of checks and balances are all part of this spectrum. Escaping fragility requires designing policies for greater economic integration and building stronger and more inclusive institutions. To that end, because a rich literature links the identity and characteristics of politicians to economic policy performance, we argue that more research is needed on political selection. Creating an effective and inclusive political class is important for equity, stability, and growth. It is also important to keep politicians accountable to the constituents they serve. We review the literature on state accountability and suggest new avenues for research.

Creating an effective and inclusive political class is important for equity, stability, and growth.

Three recent political and economic developments are likely to create additional challenges for low- and middle-income countries on the fringe of fragility. The first is the emergence of populism on a global scale. Fractured societies and the rise of populist leaders are likely to have significant consequences for economic policy and, as a result, impact growth. This review focuses on two areas where we think economists can add value: understanding the economic roots of identity politics and its economic consequences.

The second recent development is the growing flow of refugees to and from low- and middle-income countries. Over 90% of internal and cross-border refugees are concentrated in low- and middle-income countries. The economic integration of refugees and their impact on labour markets thus deserves more attention from researchers.

Third, climate change and the accompanying global green transition are amplifying shocks. To deal with these new complexities, states must be responsive and accountable, and any climate action must be a political winner. This is not a given in areas already facing substantial governance and growth challenges and where the basic science of climate change and the rapidity with which new shocks may be realised are not fully understood by citizens and voters. International actors and domestic politicians, therefore, have a key role to play in both assessing and explaining the new risks broadly.

Moving beyond fragility, we argue why states should be a central pillar for poverty reduction and inclusive and sustainable growth. Successful state intervention helps to re-establish a social contract with society. For many, this means improving the lives of those in poverty. Finding innovative ways to reduce poverty improves the allocation of talent in the economy while also tackling inequality, which is often the root of political dissatisfaction and conflict. Contemporary developments make the rationale for state intervention to generate pro-poor growth even more important. Most of the world's remaining poor populations are either in fragile states or being left behind in rapidly growing economies (Page and Pande, 2018). They are also particularly vulnerable to shocks from climate change (Kala et al., 2023). While the necessary state capabilities needed for effective poverty reduction are likely to be different across countries, we believe there is a need to target poor populations directly through more ambitious poverty reduction programmes.

We first review the literature on what states already do to address poverty and whether these programmes are effective. The performance of a wide range of interventions has now been measured through RCTs. While their outcomes can be informative for policymakers, we argue that the existing stock of knowledge is biased toward the evaluation of consumption support programmes that simply aim to elevate the poor populations above a certain level of subsistence. Most of these programmes do not have a transformative impact on the poor populations, as they fail to contribute to the underlying need for structural change. More research is needed to identify innovative social protection programmes that effectively provide production support for poor populations. Our emphasis on production support reflects the need for policy to focus on social and economic mobility, rather than on inequality per se, if countries are to lift individuals permanently out of extreme poverty. We would like to see further research on the optimal design of social assistance and social insurance programmes, the main barriers that prevent the state from implementing them at scale, and the general equilibrium effects of social protection programmes. Moreover, making growth more inclusive requires structural transformation. This includes removing the barriers that prevent productive people from reaching productive and high-earning jobs and raising the skills of those at the bottom to make them more productive. Finally, comparing the range of possible state interventions and programmes across different groups requires the adoption of a framework. To this end, one of the most promising frameworks is the marginal value of public funds framework developed by Hendren (2016) and Finkelstein (2019). We look to support researchers who would apply this framework to the data.

More research is needed to identify innovative social protection programmes that effectively provide production support for poor populations.

Lastly, we examine how to make state policies effective in delivering services and public goods at scale. Much of this rests on the resources available to the state. Taxation is at the heart of this challenge. Tax-to-GDP ratios are typically stuck at 10-15% of GDP in low- and middle-income countries, compared to 30-40% in high-income countries. Increasing tax revenues requires both improving compliance, to ensure that individuals and firms pay taxes as they are defined in the law, and designing better tax policy, to minimise the impact on efficiency while maximising revenues. Tax policy, however, is not only about the scale of revenues available to the state; it is also important to consider how income is distributed across the population, as this typically determines the political feasibility of tax reforms and potentially creates an equity-efficiency trade-off. The likely need for greater transfers for social protection in light of climate change only raises the importance of taxation. The IGC has helped stimulate a growing literature on taxation in low- and middle-income countries over the past decade. We seek to build on that, highlighting potential new avenues for research. We also want to see more evidence on how states can make better use of their natural resources and put systems in place that allow them to overcome the resource curse.

The likely need for greater transfers for social protection in light of climate change only raises the importance of taxation.

We then discuss the role of bureaucracies in driving state capacity, particularly with respect to the implementation of policy. A wide range of policies—from industrial policy to investment promotion—require setting up complex agencies where governance plays an important role, particularly with respect to the numerous contingencies likely to emerge along the way. Evidence on the power of monetary and non-monetary incentives in driving civil servants' performance is now clear. There is less research, however, on how bureaucrats at different levels interact, whether poor management at the top spills over to civil servants at lower levels and, more generally, how the state can build stronger bureaucratic systems.

There is significant variation across countries as to how effective state spending on public services is, with leakages and waste generally thought to be higher in low- and middle-income countries.

Finally, in providing public services, the state disburses large amounts of resources. There is significant variation across countries as to how effective this spending is, with leakages and waste generally thought to be higher in low- and middle-income countries. We first discuss the role of corruption in distorting the allocation of state resources, focusing particularly on evidence on how it can be reduced rather than quantifying its importance and consequences. We then turn to more passive forms of waste in government, where the intentions of civil servants and politicians are not malevolent but where spending systems are inefficient.

Throughout, we discuss the emerging literature on the role of the state in adapting to and mitigating climate change. We emphasise that the states have a major role to play. First, to the extent there are trade-offs between adaptation and resilience on the one hand and pursuing traditional development objectives on the other, politicians will need to engage and understand constituents whose priority may not be climate adaptation or mitigation. In addition, tax authorities and federal finance ministries will play a central role in accessing climate finance. This requires a few key investments. First, states will need the essential capacity to access climate financing. The complexity of the matter is underscored by the fact that most low-income countries are not fully utilising the UN Green Climate Fund (GCF). Second, governments need to develop the capabilities to track and assess the impact of climate investments. This will be essential to convince donors of the value of continuing to support climate action in low-income countries. To keep donors convinced of the utility of providing climate finance, they will need to document the effective implementation and clear impact of these funds. The last 25 years of development economics research have delivered states with powerful tools to test the efficacy of government programmes, especially RCTs. Governments should pilot, refine, test, and evaluate GCF-funded investments to convince donor countries that climate spending can assist the global goals of climate adaptation and mitigation. Lastly, climate change means the state will need to play an even larger role in social protection and in steering investments to accommodate a green transition. This further underscores the importance of not just policy design but implementation capacity.

Three further points are worth highlighting. First, it is important to keep in mind that political and capacity constraints not only have consequences for the feasibility of certain reforms but can influence policy design. This is relevant when considering politicians' incentives for building stronger and more inclusive institutions, designing social protection programmes, addressing frictions in labour markets, designing tax policies, enforcing tax obligations, or building effective bureaucracies. Second, there remains a clear need to better understand the patterns of social mobility across the board in low- and middle-income countries. While statistics exist for OECD countries, there is much less data to document these patterns in low- and middle-income countries. Social mobility, or lack thereof, potentially has an impact on social norms, and the state could be an important driver of identity politics and populism. It is also fundamental to understanding the nature and magnitude of poverty traps and the potential role of policies to increase production support for poor populations, as noted above.

Lastly, this evidence paper is part of a series. We leave certain policy issues that necessarily involve the state but do not require an exploration of the policies related to state capability per se, such as the provision of infrastructure, to the relevant themes. For example, **the IGC evidence paper on Energy and environment** devotes substantial attention to reviewing evidence on how states can commission green energy and green infrastructure projects. Similarly, **the IGC evidence paper on Cities** reviews evidence regarding the building of roads and other infrastructure that assists with climate adaptation. This paper, by contrast, focuses on the core state capabilities essential to pursue those ends and explores the political economy of making climate investments. Another fundamental environmental issue that we only touch on is sustaining biodiversity. Given the importance of this topic, we leave most of the focus to the IGC white paper, **Innovation, growth, and the environment** (Burgess et al., 2024).

Developments over the past two decades—in the methodological tools and in new institutions, like the IGC, that connect researchers and policymakers—have created exciting new opportunities for path-breaking, impactful research. These methods also provide valuable means of testing whether and how to most effectively deploy climate finance. We believe that finding means of improving policy and rigorously documenting impact will be essential to sustain the support of voters in high-income countries who must ultimately sign on to continuing the global fight against poverty and financing a just energy transition.

2. Fragility and economic development

A large fraction of those in extreme poverty live in fragile states. Growth in these countries can potentially lift a significant number of people out of poverty. However, because of the instability created by conflict, poor political institutions, refugee inflows, and corruption, growth is typically erratic in such economies, and poverty remains stagnant. Most fragile countries are in sub-Saharan Africa, where the population will potentially double by 2050, leading to the likely concentration of poor populations in fragile states. This is why fragility is a central focus of this paper.

Fragility and low economic development often make up two sides of the same coin. When the economy grows and living standards increase, there are many beneficial effects: conflicts are less frequent, people become more involved in their society, the capacity of the state improves, tax revenues grow, political institutions strengthen, and the legitimacy of those in power solidifies. However, igniting economic growth requires encouraging the private sector to develop and invest. Fragility breeds uncertainty for businesses. Attracting firms that create productive jobs or providing workers the opportunity to capture the productivity gains that come from scale and specialisation is challenging in fragile political environments.

Fragility leads to low growth, and low levels of economic development leads to fragility. This constitutes the fragility trap, which is incredibly difficult to escape (Cameron et al., 2018). However, historical examples reveal that solutions can be found. Singapore was extremely fragile as it seceded from the Federation of Malaya 60 years ago, and now it is one of the most economically developed countries in the world. The Rwandan genocide took place 25 years ago, yet Rwanda is now one of the fastest-growing countries in Africa. However, these examples also tell us that transforming fragile countries into prosperous societies is a step-by-step process that generally happens over at least a generation.

Fragility is a continuum. While it is easy to see why countries such as Yemen, Syria, and South Sudan are fragile, given the conflicts that thwart economic growth there, in practice, fragility is not just about civil wars. Fractured societies, illegitimate governments, weak institutions, and stagnant economies are all part of the spectrum that makes countries fragile. All of these factors, not only increase the likelihood of future conflict, but they also risk making the set of state policies that we describe in Sections 3 and 4 less effective or unattainable.

Escaping from fragility requires building stronger political and economic institutions.

We consider fragility in three (overlapping) steps. We first explore how the core economic functions of the state can be kept afloat in extremely fragile political and economic environments. Escaping from fragility requires building stronger political and economic institutions. We then explore the literature on how the legitimacy of the state and the functioning of political institutions can be improved and what consequences this has on economic performance. Third, the current global political environment creates new fragility challenges. Over the past decade, we have observed the rise of populism in several countries with different levels of economic development. There is a need to understand the economic determinants that bring these politicians into power and the consequences that power has for economic growth. The challenges raised by refugee flows also require policy responses and programmes from the state to facilitate their economic integration. Finally, climate change creates new risks and shocks borne disproportionately by low-income countries, which are much harder to cope with in fragile environments.

I. Addressing extreme fragility

Applied research on extreme fragility has accelerated rapidly over the last 20 years following deep theorising of sub-state conflict and violence and a rapid increase in empirical papers on the topic (Rohner, 2024; Rohner and Zuravskaya, 2023). Modern theories of conflict take the idea that political bargaining lies at the roots of conflict. These situations often feature at least two actors, the state and an insurgent group opposing it; they often carefully integrate the role of a third actor, civilians, and the agency they have in shaping conflict (Berman et al., 2011b; 2011a; Kalyvas, 2012). In these important senses, these theories draw from classic ideas in the counterinsurgency literature (Galula, 1964; Popkin, 1979). The characterisation of conflict as a violent contest for legitimate political control is also central to the so-called 'hearts and minds' theory (Berman et al., 2011b). The core idea in these arguments is that the state and anti-state groups are competing for the general population's support and that citizens exercise substantial agency over who prevails. Correspondingly, victory requires serious efforts to represent the interests of citizens.

Empirically, many insurgent organisations in the 20th and 21st centuries also had some form of political arm and service delivery function. Hezbollah, Hamas, the Taliban, the Shining Path in Peru, the Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka, the Maoists in Nepal, the FARC in Colombia, and others invested substantially in providing governance and services (Baczko, 2013; Giustozzi and Baczko, 2014; Flanigan, 2008; Arjona, 2016; Wagstaff and Jung, 2017). This supports the idea that insurgent organisations should be understood as political actors competing for control. Such theories make the natural prediction that effective service delivery should reduce conflict.

Crost et al. (2014) provide causal evidence that insurgent groups attempt to sabotage development aid programmes to prevent the government from winning the people's hearts. Dell and Querubin (2018) provide evidence that efforts to provide services can reduce conflict and that victimisation increases violence. Beath et al. (2017) find that a development programme in Afghanistan reduced insurgent violence on average but increased it in areas bordering Pakistan, where the insurgents were largely foreign and not reliant on communities for support.

Another perspective on conflict is that it is primarily economically opportunistic, with insurgents focused on the predation of lootable resources. Dube and Vargas (2013) find that increases in oil prices increase conflict. Relatedly, De la Sierra (2020) compiles a panel dataset in 650 locations in eastern Democratic Republic of Congo controlled by armed groups since 1995. Positive price shocks to coltan led armed groups to set up customs to tax output and implement protection measures for coltan mines. The coltan price shocks, however, do not induce the armed groups to develop tax and judicial administrations. By contrast, gold price shocks lead armed groups to develop more complicated tax systems to collect taxes and establish fiscal and judicial administrations.

Where climate change disrupts agricultural productivity, it threatens economic growth and conflict.

As climate change increases global temperatures, it risks exacerbating conflict. In a meta-analysis of over 50 studies, Burke et al. (2015) find that increasing temperature by one standard deviation increases interpersonal conflict by 2.4% and inter-group conflict by 11.3%. Where climate change disrupts agricultural productivity, it threatens economic growth and conflict. This is the converse of evidence in Miguel et al. (2004) that uses rainfall as an instrument for economic growth in 41 African countries to show that areas with more economic growth induced by more rainfall also experience significantly less conflict. Dube and Vargas (2013) support this income channel for labour-intensive commodities like agriculture. Bagozzi et al. (2017) further link droughts to increases in rebel attacks on civilians across low- and middle-income countries.

Ending conflict is not the end of extreme fragility. In many countries, after a civil war ends or political violence stops, the likelihood of falling back into conflict remains high (Collier et al., 2009). The question, then, is how the peace process can be sustained. We are particularly interested in the economic factors that make peace lasting and durable, such as resource sharing, tax policy, or public investments. Below, we review the literature on the peace process and then suggest areas for future research on this issue.

A substantial cross-country empirical literature supports the idea that the terms of peace deals affect not only their durability, but also whether societies transition toward being more open and inclusive with healthier institutions. This literature shows that durable peace requires not only that opposing sides resolve the underlying issues driving conflict but also that the terms of peace agreements be guaranteed and enforced (Walter, 2002). This can be done by involving credible third parties, as was the case with the British involvement in Sierra Leone, or bringing combatants into the political process itself, as in Colombia and Nepal (Matanock, 2017).

Durable peace requires not only that opposing sides resolve the underlying issues driving conflict but also that the terms of peace agreements be guaranteed and enforced.

Importantly, this strand of research makes it clear that the durability of peace is fundamentally determined by the nature of the political institutions that emerge from the conflict. It is also clear that interventions can foster citizens' trust in the state (Berman et al., 2019a) and that this trust is vital for the state's ability to respond to crises (Dube et al., 2018). There is also evidence that reconciliation initiatives can restore the loss of social capital created by conflict (Dube et al., 2016) and that these impacts are lasting (Blattman et al., 2019). There is further abundant evidence that the experience of conflict affects political participation (Bauer et al., 2016) and economic preferences (Callen et al., 2014). However, comparatively little is known about the economic costs of law-and-order breakdowns (Besley, 2014) or the institutional consequences of violence (Blattman and Miguel, 2010).

The contemporary role and prevalence of media can also play a role in dampening or magnifying ethnic animosities post-conflict. DellaVigna et al. (2014) find that a decade after the Serbo-Croatian conflict, cross-border nationalistic Serbian radio triggers ethnic hatred toward Serbs in Croatia, as measured by votes for Croat nationalist parties and ethnically offensive graffiti. Yanagizawa-Drott (2014) shows that radio broadcasts encouraging genocide against the Tutsi minority population in Rwanda led to dramatic increases in violence, both directly for listeners and through spillovers to non-listeners. He estimates that nearly 10% of perpetrators in the conflict were motivated by the radio station. Media can also ameliorate tensions. Paluck (2009) shows that a Rwandan radio soap opera promoting the values of inter-ethnic cooperation affected listeners' perceptions of norms related to intermarriage, trust, and other cooperative values. Blouin and Mukand (2018) also find that government messaging promoting interethnic healing in Rwanda decreases ethnic salience and increases interethnic trust and cooperation.

It is also clear that contact between groups with different identities can reduce animosities between them (Rao, 2019; Lowe, 2021; Corno et al., 2022). Economic interactions are one form of contact that makes ethnic divisions less salient. For example, Jha and Shayo (2019) provide experimental evidence that holding both Palestinian and Israeli financial assets makes people more likely to support parties advocating peace.

Building on this evidence, we encourage researchers to investigate how the core economic governance functions of the state make peace more durable. The set of potential policies is extensive and includes the rule of law, tax policy, revenue sharing, social protection, and public investment. In particular, how does the provision of public goods and services change the social contract with the state? Is the impact of public services on welfare important for explaining the sustainability of peace, or are public goods just a way of signalling a change in the policies that led to conflict in the first place? We hope to identify the economic policy priorities for when the conflict ends. In such instances, state resources and capacity may be very limited, and only some of the determinants of fragility can be addressed on day one.

RESEARCH PRIORITIES

- What interventions can effectively promote development objectives in environments experiencing conflict or organised violence?
- How can economic governance strategies be designed to enhance the durability of peace agreements and reduce the likelihood of future conflicts?
- What mechanisms and policies are most effective in attracting private sector investment in fragile states to stimulate and sustain economic growth?
- What are the most effective approaches to strengthening political and economic institutions in fragile states to foster long-term stability and development?
- How does state legitimacy influence economic performance in fragile states, and what strategies can be implemented to enhance it?

II. Building stronger and more inclusive institutions

Escaping conflict and extreme fragility requires a stable political environment and functional state institutions to design and implement effective policies for inclusive growth. Strong and inclusive institutions promote economic prosperity because they allow talent and creative ideas to be rewarded, foster economic cooperation, and remove economic and political uncertainty. This is not to say that this is necessarily a linear process - building stronger institutions is often done at the margin and should be a priority at all levels of economic development.

Strong and inclusive institutions promote economic prosperity because they allow talent and creative ideas to be rewarded, foster economic cooperation, and remove economic and political uncertainty.

In a seminal contribution, Acemoglu and Robinson (2012) argue that economic development depends primarily on the inclusiveness of economic and political institutions. This section focuses on understanding how political leaders are selected, whether and how the identity of politicians affects economic policy, and how to hold them accountable.

Representative and effective political leaders

Political leaders, not just at the top but across government organisations, determine and drive economic policy. Often, their decisions are shaped by their own identity considerations—be it based on ethnicity, caste, party, or place of origin—which directly affects the allocation of public investments under their control.

Let us start with ethnicity and caste. In Kenya, Burgess et al. (2015) find evidence that road-building expenditures show significant ethnic favouritism during periods of autocratic rule, but this favouritism disappears during democratisation. Looking across 140 multi-ethnic countries, De Luca et al. (2018) use time series data to show that nighttime light (a proxy for economic activity) grows 7-10% more intense in a political leader's homeland after they are elected. In Nepal, Bhusal et al. (2019) examine efforts to rebuild after the 2015 earthquake, which destroyed around 30% of the housing stock. Oversight of the reconstruction programme was given to a set of mayors in 2017 under the newly created federal system. While the reconstruction grants were meant to be rule-based, elite castes received a disproportionate share. However, for lower caste citizens who had a relative in office, the gap disappears.[2] Kramon and Posner (2013) review a variety of papers on ethnicity-based favouritism and sound a cautionary note about how the selection of which particular public good one studies can affect the conclusions drawn. Overall, this thread of literature points to how descriptive representation is important for securing access to public investment.

Political inclusion of historically marginalised and excluded groups further extends to their personal economic fortunes by affecting human capital investments. Chattopadhyay and Duflo (2004) show that quota reservations for women change the pattern of public expenditure to be more aligned

2 See also Asher and Novosad (2017) who also leverage nighttime lights to show how the election of a local politician from the nationally ruling party in India leads to higher private sector employment, higher share prices of firms, and increased economic activity.

with the interests of mothers. Pande (2003) shows that political reservations for lower castes in India increase social transfers directed toward these groups. Fujiwara (2015) shows that changes to voting technology in Brazil that enhanced de facto enfranchisement of less educated voters shifted government spending toward health care, resulting in better maternal health provision and, ultimately, fewer low-weight births. Gulzar et al. (2023) show that an increase in representation of Scheduled tribes and castes in India led to an increase in tree cover and a decrease in deforestation, providing evidence that political representation enabled these groups to better manage their productive resources.

A vast literature looks at how political partisanship affects the allocation of public goods and services around the world. Here, we focus on how partisan identity and associated electoral incentives influence politicians' responses to climate change and related environmental challenges. **Mahadevan and Shenoy (2023)** show that Indian state government funds disproportionately favour politically aligned constituencies in water-stressed areas, a strategy which enables the government to gain votes in the following elections. While the benefits from climate interventions are concentrated in politically aligned areas, the costs of environmental regulation are often borne by political opponents. **Mangonnet et al. (2022)** indeed, find that the Brazilian government systematically designates protected areas in municipalities controlled by opposition mayors. The authors suggest that this pattern is likely driven by the economic interests of the local elites rather than the electorate. In line with these results, **Mahadevan (2023)** finds that billed electricity consumption in India is lower for jurisdictions of the winning party, while the actual consumption is higher.

In our view, the next phase of this literature should elaborate on the mechanisms linking the identity and characteristics of politicians to policy outcomes. Under what circumstances do they make investments and policy decisions that create an inclusive and enabling environment for economic activity, and under what circumstances do they distort economic policy for political reasons? How do politicians change the enabling environment for business? We would like to encourage more research linking political selection, representation, and inclusion in the political process to economic policy outcomes and to growth.

The first objective of that research agenda is to understand the variety of factors that influence the decision of individuals to enter politics (Gulzar, 2021). We are particularly interested to know which of these factors encourages the entry of high-quality people, where quality is measured by levels of ability, competence, and integrity. In their recent review of political selection, Dal Bo and Finan (2018) theoretically highlight a few key factors—namely entry costs, the rewards to office, and the electoral advantage of the potential candidate's party—that affect the likelihood of positive selection on quality. They then scan the relevant empirical literature, which they characterise as 'still in its infancy,' to better understand the observed relationships between these factors and the characteristics of those who stand for office. They uncover two main areas of emerging consensus: i) higher returns to office and ii) greater electoral competition facilitates the entrance of more competent individuals into politics.

From the perspective of fragile states, it is worth noting that there is a caveat for each of these two factors. First, there is an important distinction between official and illicit returns. Growing evidence from a variety of contexts—including Brazil, Italy, and India (Ferraz and Finan, 2011b; Gagliarducci and Nannicini, 2013; Fisman et al., 2014)— shows that higher official returns, such as politician salary, facilitate positive selection. Yet, there is countervailing evidence that higher illicit returns do the opposite, attracting less competent candidates (Brollo et al., 2013). As a number of studies have produced evidence for the existence of illicit returns in low- and middle-income countries—including Uganda, Brazil, India, and Peru (Reinikka and Svensson, 2004; Ferraz and Finan, 2011a; Niehaus and Sukhtankar, 2013; McMillan and Zoido, 2004)— understanding the potentially pernicious relationship between illicit returns and selection, and what can be done to mitigate it, warrants further exploration.

Second, in fragile states, there is often a lack of competition in the selection process of political leaders. This comes in two common forms: i) in countries where one party consistently dominates politics, races at all levels may be uncompetitive, and ii) even when the national political scene is competitive, subnational races may not be, especially where ethnicity- or caste-based loyalties predict both partisan preferences and geographic sorting into relatively homogenous local districts. Evaluating strategies to induce positive selection in non-competitive environments could thus be particularly important in new or weak democracies, essentially answering the question of which policy levers are good substitutes for cross-party electoral competition.

Two recent studies in Sierra Leone and Nepal show that party officials are poorly informed about voter preferences, which could explain why even well-intentioned party delegates often fail to choose the candidates most preferred by voters (Casey et al., 2021; Gulzar et al., 2019). Encouragingly, both papers show that party officials respond positively to representative polling information on voter preferences. However, biases in party gatekeeping practices can significantly impact candidate selection and overall political representation. For instance, in Germany, parties may nominate candidates in districts where the party is less popular, thereby reducing their chances of success (Fujiwara et al., 2024). This strategic gatekeeping can lead to the underrepresentation of certain groups and hinder fair competition. Similarly, in Sweden, the introduction of a zipper quota that required alternating women and men on ballots increased the overall competence of politicians. This was largely due to the resignation of less competent leaders, showing how structural changes can mitigate biases and improve representation (Besley et al., 2017). Addressing these strategic biases within party structures is essential for achieving fair and competent political representation, as highlighted in recent studies (Prillaman, 2023).

In addition to financial incentives, finding ways to leverage non-pecuniary incentives for politicians may be particularly important in low- and middle-income countries, where government budgets are often severely constrained. In an example from Pakistan, Gulzar and Khan (2019) show that advertising the pro-social benefits of serving in office encourages the running of new individuals who are both popular (and thus more likely to be elected) and perform better once in office. We can apply a similar rationale to issues of recruiting and motivating civil servants, which relates to our discussion on establishing an effective bureaucracy in Section 4. Here, Besley and Ghatak (2005) argue theoretically that the quality of an individual's match with the organisational mission can compensate for low-powered incentives. Even without pay differentials, experimental evidence in Zambia (Ashraf et al., 2020) and Uganda (Deserranno, 2019) suggests that advertising jobs differently attracts different types of applicants, who then perform differently on the job. Close-to-budget-neutral incentives, like offering staff transfers to more favourable locations, have also been shown to be effective in incentivising performance in Pakistan (Khan et al., 2019).

Finding better ways to leverage the new talent can enhance the capability of political leadership and spill over to increase the efficacy of the bureaucracy politicians generally manage.

Another area we view as particularly promising in fragile states is research around strategies to better leverage human capital. In light of the recent massive enhancements to human capital in many of these countries, finding better ways to leverage the new talent can enhance the capability of political leadership and spill over to increase the efficacy of the bureaucracy politicians generally manage. Casey et al. (2023) show some resistance by traditional political authorities in Sierra Leone to accommodate the skills of better-educated younger community members, which leads to under-utilisation of existing human capital. Optimistically, they show that a low-cost intervention to identify and publicly nudge communities to delegate to skilled individuals can help alleviate this distortion. Another example of effectively bridging the gap between political leadership and the workings of the bureaucracy is Raffler (2019), who finds that providing budgetary information to local elected officials enables them to better monitor the service delivery performance of bureaucrats in Uganda. Conversely, Colonnelli et al. (2019) provide evidence that patronage hiring of bureaucrats by politicians favours low-competence workers in Brazil.

Institutional change does not necessarily lead to meaningful change in economic outcomes if, for example, powerful elites have incentives to invest in de facto power in ways that undermine the changes in de jure power (see Acemoglu and Robinson, 2008 for a theory of 'captured democracy'). In many fragile states, introducing democracy does not entirely supplant pre-existing traditional institutions, which retain control of many essential public goods and services and tend to be more autocratic in nature. In Indonesia, Martinez-Bravo et al. (2017) show that allowing mayors appointed by the autocratic regime to finish out their terms after the transition to democracy led to worse governance and development outcomes a decade later. In Sierra Leone, traditional chiefs are shown to continue to control the provision of public goods and services in rural areas long after the introduction of democracy. Acemoglu et al. (2014) show that chiefs who face the least constraints on their power via the traditional system (for example, no threat of competition by other 'ruling families' eligible to stand for chieftaincy) have worse long-run development outcomes. Finding ways to better bridge these parallel sets of institutions in a way that better promotes the economic goals of institutional reforms is an important area for future research.

State accountability

Open and inclusive economic development requires that states be capable and effective. Acemoglu and Robinson (2012) emphasise both capacity and accountability as essential ingredients for sustained economic and political development. According to their formulation, in the right combination, these ingredients underpin the state's willingness to create policies that support innovation and growth.

The literature is now replete with evidence that interventions can enhance core state capacities. However, the evidence on whether and how accountability might be promoted is much more mixed. Keeping states accountable, especially in fragile environments, is a challenge. It often relies on the provision of information, usually going both ways – from citizens to political leaders and from the government's actions to the population. Information allows politicians to be more aware of the needs of the population and citizens to discipline the behaviour of those in office. A stronger political oversight typically requires implementing an institutional environment that facilitates these exchanges of information and makes leaders more accountable for their policies. We review the literature on how politicians aggregate preferences of citizens and how providing opportunities for greater oversight for citizens changes the actions of political leaders.

One way citizens can oversee politicians is through elections. They are one way among many of disciplining the behaviour of those in office (see models like Banks and Sundaram, 1993, Fearon, 1999), reducing the problems associated with both adverse selection and moral hazard that political leaders are subject to. In practice, there are many reasons to be concerned that citizens are not able to use their vote to effectively select and discipline leaders, and a variety of studies investigate different tools to bolster their ability. Information has been at the centre of many of these debates and literature, so while we know quite a bit about the role of information provision, some interesting questions remain to be explored.

Pande (2011) reviews experimental and quasi-experimental work on the links between more informed voters and improved economic governance in low-income democracies. She finds strong accumulated evidence for the idea that voters are responsive to political information, specifically from candidate campaigns (Wantchekon, 2003; Fujiwara and Wantchekon, 2013 on Benin), third-party providers of information about incumbent performance (Ferraz and Finan, 2008 on Brazil; Banerjee et al., 2011; Chong et al., 2015 on Mexico), and exposure to politicians from underrepresented groups (Beaman et al., 2009, Bhavnani 2009 on gender quotas in India). Several studies quantify voter responsiveness as measured by both their turnout decision (for example, Gine and Mansuri, 2011 for women voters in Pakistan) and vote choice (for example, Banerjee et al., 2010 on reducing ethnicity-based voting in India). On balance, this group of studies yields optimistic results regarding the efficacy of information provision in enhancing electoral accountability, and it resonates with quasi-experimental work showing that more informed voters in low- and middle-income countries suffer less leakage (Reinikka and Svensson, 2005 on Uganda) and see their needs better met by government (Besley and Burgess, 2002 on India).

More recent experimental evidence on the efficacy of information provision is mixed. The ambiguity comes from two key sources: first, interventions vary in the type of information they provide and how it is delivered, which likely matters for voter responsiveness; and second, if the information shock to voters is large enough, politicians will respond strategically, and their efforts can either work to reinforce or unravel the basic effect of information on voter behaviour. We take these two questions in turn.

On the question of which types of information and dissemination mechanisms are most effective, at this point we can only speculate by drawing comparisons across studies. On the ineffective end, a recent coordinated multi-site experiment across six countries evaluated standard approaches to delivering objective information about incumbent performance—for example, through flyers or text messages—and detected no appreciable change in voter behaviour (Dunning et al., 2019). Specifically, meta-analysis yielded null results for the effects of information provision on voter perceptions of politicians, their vote choices, and turnout decisions. The common arm evaluated across these sites was information delivered privately to voters, and the authors show that results for three sites that had an alternative, more public treatment arm had more positive effects. The greater efficacy of more public treatments aligns with earlier work finding strong positive effects of public interventions like town hall-style policy deliberations in Benin (Wantchekon, 2003; Fujiwara and Wantchekon, 2013) and public screenings of candidate debates in Sierra Leone (Bidwell et al., 2019). On this specific point, the Sierra Leone study directly compares voter responses to private and public viewing of debates and finds larger responses in the public treatments. The divergence between private and public dissemination suggests that common knowledge generation, coordination, or social mobilisation effects may be important and merit additional investigation to parse these mechanisms.

Effective state accountability relies on informed voter engagement and the strategic response of politicians. Achieving this in fragile environments is very challenging.

We are interested in a second key dimension, where recent work sheds new light but raises many interesting questions: how does economic policy respond to information interventions and greater oversight? Here, it is instructive to begin with the now-classic work on publicising government audits. In Brazil, Ferraz and Finan (2008) show that publicising audit reports of municipal government spending facilitates accountability by enabling voters to reward high performers and punish more corrupt politicians. Follow-up work shows that incumbent politicians in turn respond to this electoral pressure by reducing their level of corrupt activity—and, critically, this effect is only observed among those who are not term-limited and so need to be concerned about re-election (Ferraz and Finan, 2011a). In this situation, the politician's response reinforces the voter's response to information. Over time, however, this link gets muddied. While Avis et al. (2018) find that an early audit lowers subsequent levels of corruption, their evidence attributes this reduction not to the channel of electoral accountability, but rather to the initial legal costs associated with being found to be corrupt. Results from Puerto Rico are starker: Bobonis et al. (2016) find comparable short-run politician responses to audits—for example, incumbents improve their behaviour when they know an audit will be released before an election. However, they find no longer-run effect on subsequent corruption whatsoever. In this case, electoral pressure driven by voter learning about incumbent performance had only a transitory effect on politician behaviour.

Even more pointedly, we seek to understand when the strategic responses of politicians work to reinforce or unravel the impact of information on citizens. The ease with which politicians can get away with ignoring, or actively attempting to undermine, voter-facing interventions links back to the efficacy of different information delivery mechanisms. In explaining why a scorecard intervention that delivered objective information on incumbent performance failed to induce changes in voter or politician behaviour in Uganda, Humphreys and Weinstein (2012) speculate that poorly performing politicians may have attempted to discredit or obfuscate the information conveyed by the scorecards. Similarly, for the Mexican site in the six-country coordinated experiment referenced earlier, Arias et al. (2019) show that candidates responded to the information disseminated through leaflets distributed with their own party handouts and advertisements, particularly where the leaflet revealed high levels of malfeasance in office. It is possible that more public and intensive treatments are less susceptible to undermining by politicians. As an example, where the feedback loop to politician behaviour worked well, the large public debate screenings in Sierra Leone, which covered a quarter of each constituency's polling stations, induced better subsequent performance by elected politicians who had participated in a debate as candidates (Bidwell et al., 2019).

Similarly, public policy deliberation with voters in Benin led to a decrease in clientelist transfers by participating candidates (Fujiwara and Wantchekon, 2013). For other types of intervention, it is harder to tell. While one information intervention decreased vote buying in India (Banerjee et al., 2011), a similar one led to greater vote buying in the Philippines (Cruz et al., 2021). More work is needed to better understand the drivers of politician responses and their impact on the efficacy of interventions—including but not limited to information campaigns—aimed at strengthening electoral accountability.

Another exciting area for future work to enhance accountability is understanding how to effectively harness the rapidly changing nature of technology. The widespread penetration of mobile phones, including smart phones, the arrival of social media in its various forms, and the declining costs of information transmission present a great variety of opportunities. To outline the promise, photographs of the voting returns posted on polling stations proved an effective strategy in reducing electoral fraud in a critical early election in Afghanistan (Callen and Long, 2015). That said, some other early experiments have produced disappointing results. As some examples, Marx et al. (2017) document how a text message campaign implemented with the Kenyan Electoral Commission had a positive short-run effect on voter turnout; however, it backfired after their much-anticipated electronic voting system failed, creating unintended negative consequences for citizen trust in electoral institutions. In Uganda, a new technology platform that allowed citizens to text in concerns to their elected members of Parliament (MP) failed to have any effect, as both citizen and MP engagement with the platform was low (Grossman et al., forthcoming). Thus, while the promise is there, we are far from understanding how best to harness new technologies to enhance political accountability.

The widespread use of social media also presents significant risks that need careful management. Studies show platforms like Facebook and Instagram can influence political beliefs and behaviours, reducing political participation and general news knowledge while potentially decreasing belief in misinformation (Alcott and Gentzkow, 2024). Echo chambers on social media can deepen political polarisation, and efforts to reduce exposure to like-minded content did not significantly change beliefs or attitudes, highlighting the difficulty of addressing issues within social media ecosystems (Nyhan et al., 2023). Furthermore, social media negatively impacts mental health, with Facebook's introduction in the US colleges linked to worsening student mental health and academic performance due to unfavourable social comparisons (Braghieri et al., 2022). These issues are particularly important for low- and middle-income countries, where the rapid growth of social media can amplify existing political and social challenges. Effective state strategies are necessary to manage these risks and harness the benefits. More research is needed to understand these dynamics in low- and middle-income countries' contexts, ensuring that social media supports political engagement and accountability without harming societal wellbeing.

Political incentives for climate policy

The challenge of climate change provides an interesting application of the themes above, specifically in how political incentives shape politicians' responsiveness and accountability in environmental policy.

The first question is how much demand is there on behalf of voters for policies that address climate change, which ultimately depends on voters' perceptions and preferences. Salience is important. Choi et al. (2020) use data from 74 cities worldwide and find that people become more attentive towards climate change–as proxied by the volume of related google searches–when they experience above normal temperatures. Preferences for reducing emissions are strongly correlated with support for progressive parties, education, and age (for example, Colvin and Jotzo, 2021). The level of knowledge about climate-related policies is also strongly associated with political and religious identities (Nordhaus and Rivers, 2023).

Can voter preferences regarding climate be changed? Arias and Blair (2022) show that even though public attitudes toward climate migrants are rather positive in the US and Germany, priming climate migration in a survey experiment does not increase support for climate policies. However, when people have relatively more to lose, they are more willing to contribute more to climate mitigation, as highlighted in the economic game designed by Del Ponte et al. (2017).

A few studies explore how such voter experiences of adverse climate events translate into political preferences. Hazlett and Mildenberger (2020) find that Californians who experience a wildfire within 5 kilometres of their census tract are 5-6% more likely to support costly environmental policies. The effect is concentrated in Democratic-leaning areas, suggesting that the experience of negative climate events can affect voters' choices in areas where voters are already aligned with climate action. Using data from Beijing, Alkon and Wang (2018) show that air pollution increases dissatisfaction with the incumbent political leaders at both the central and local levels. At the same time, they find that a concerted effort by the government to reduce air pollution improves citizen support for the governing regime. In a similar vein, Cole et al. (2012) argue that voters in India react to adverse weather events, which are beyond the government's control, by punishing the ruling party.

The electoral punishment is reduced in areas where the ruling party takes action to provide disaster relief. In Pakistan, Fair et al. (2017) find that voters in areas more affected by flooding increase their political turnout.

As a counterpoint, there is some evidence of a risk of public backlash to costly climate investments. Stokes (2016) finds that Canadian citizens living close to wind energy projects are more likely to punish the incumbent politicians for their environmental policy. This aligns with a view that when energy infrastructure imposes visible costs on local communities, who do not internalise future benefits, they vote against the implementation of these climate policies.

Several studies document how electoral pressures shape politicians' motivation to take action on environmental policy. Returning to Cole et al. (2012)'s investigation of disaster relief in India, they find that voters only respond to rainfall and government relief during years immediately preceding elections. In return, governments are more generous with disaster relief spending during election years. Similarly, in Indonesia, Balboni et al. (2021a) show that illegal forest fires decline during election years, followed by a steep increase the following year. Their results are stronger for productive versus protected land, showing how the stringency of land regulations can help in reducing burning. On the other hand, Sanford (2021) finds that when politicians face more competitive elections, the short-term electoral advantage they achieve by providing forest land to voters is higher than the long-term gain derived from preserving the forest. This implies that competitive elections are associated with more deforestation. Similarly, Baskaran et al. (2015) show that in more contested constituencies in India, there is more manipulation of power supply.

Political incentives shape politicians' responsiveness and accountability in climate policy, with voter preferences, experiences of adverse climate events, and the structure of political systems all playing influential roles.

In light of the abundant evidence above that political incentives influence climate policy, what do we know about the features of political systems that either facilitate or inhibit protective policies? Decentralisation theory suggests that the span of political authority should be located at the level that fully captures externalities. This presents a fundamental challenge for climate control policy given the global nature of the public bads generated by pollution. Testing this at a more local level, three studies demonstrate this downside in decentralised governments. Burgess et al. (2012) show that the increase in the number of jurisdictions in Indonesia, which raised competition in the wood market, led to greater deforestation. Lipscomb and Mobarak (2017) show that river pollution in Brazil increases at an increasing pace as it approaches an administrative border and increases with the number of jurisdictions it crosses. Dipoppa and Gulzar (2023) show that crop-residue burning in South Asia decreases when the smoke it produces pollutes a local administrator's home district but increases when the smoke externality is borne by neighbouring jurisdictions. Underscoring the global nature of this problem, their results are seven times larger for pollution that crosses the India-Pakistan border.

A few studies point to the potential importance of the party system and rules around campaigns and lobbying. Folke (2014) finds that in Swedish municipalities with proportional representation systems, the presence of green parties has an effect on city-level environmental policies. Harding et al. (2023) show that deforestation is higher in Colombian municipalities that elect mayors relying on donor funding than self-funded mayors. This suggests that individuals can manipulate environmental regulation through campaign contributions. Such lobbying pressures can also manifest in the context of bureaucrats. For example, Anderson et al. (2023) find that while public agencies in the US fund a higher number of risk reduction projects in areas that have experienced wildfires, they also allocate more climate-related public goods in areas inhabited by high-socioeconomic status communities.

RESEARCH PRIORITIES

Representative and effective political leaders

- What are the key factors that facilitate the selection of representative and competent leaders, particularly in fragile states?
- What role do 'parallel institutions' such as traditional chiefs play in designing economic policy and the provision of local public services?
- How do political leaders' identities (ethnicity, caste, party affiliation) influence the allocation of public investments and economic policies in fragile states?
- How can political representation of marginalised and excluded groups be enhanced to improve human capital investments and economic outcomes?
- What mechanisms can be employed to hold political leaders accountable in fragile states, ensuring that their policies promote inclusive growth?

State accountability

- What strategies are most effective in enhancing state accountability?
- How do politicians react to interventions aimed at promoting accountability?
- What types of information and dissemination mechanisms are most effective in improving voter behaviour and political accountability in fragile states?
- How can new technologies be harnessed to enhance political accountability without exacerbating social and political challenges?
- What factors influence the efficacy of public versus private information dissemination in holding politicians accountable in low- and middle-income countries?

Political incentives for climate policy

- How do political incentives and electoral pressures influence the implementation and sustainability of climate policies?
- What are the most effective strategies for changing voter preferences and increasing the public support for climate policies?
- How does the structure of political systems, affect the efficacy of environmental policies and climate change mitigation efforts?

III. The new challenges of fragility

Populism and the economy

While it had long been thought that fragility ended once strong political and economic institutions were put into place, recent political developments around the world suggest otherwise. Increased political polarisation, the rise of populism, and identity politics threaten the stability of domestic institutions and generally lead to a profound shift in economic policy (Canen et al., 2020) One such example is the growth in the number of trade wars that will undoubtedly affect growth patterns of a number of countries, including—even if potentially indirectly—those in the low- and middle-income countries.

Increased political polarisation, the rise of populism, and identity politics threaten the stability of domestic institutions and generally lead to a profound shift in economic policy.

This issue is mostly a subject for research in political science. However, we intend to bring added value along two dimensions. The first is the economic determinants that lead to a rise of populist candidates and leaders. The second is the consequences identity politics have on economic choices and economic performance. We review these two branches of the literature in that order below.

Various brands of populist leaders have come into power worldwide over the past decade. Bolsonaro in Brazil, Modi in India, Duterte in the Philippines, Orban in Hungary, and the Swedish Democrat party provide just a few recent examples. This suggests that it is not just a country's current level of economic development or recent economic performance that has led to the rise of populist leaders, but that other issues—common across these countries and many more—are at stake.

Understanding when and how certain dimensions of identity become salient is the focus of much research. For example, Shayo and Zussman (2011) provide evidence of in-group bias in small claims courts in Israel, using the random assignment of judges (of different ethnicities) to different cases. There is also evidence that the effects of conflict on ethnic identification are long-lived. Fouka and Voth (2013) find that during the 2010–2014 debt crisis in Greece, which increased tensions between Greece and Germany, areas that had been occupied by German troops during World War II decreased their purchases of German automobiles even more sharply than the rest of the country. Clots-Figueras and Masella (2013) show that students who experienced more years of bilingual instruction in compulsory education (Catalan and Spanish) feel more Catalan and are more likely to vote for Catalan parties.

Several authors have stressed the importance of economic shocks and job insecurity as a driver of current support for nationalism or populisma.

Several authors have stressed the importance of economic shocks and job insecurity as a driver of current support for nationalism or populism (for example, Guiso et al., 2017; Dal Bo et al., 2018). Grossman and Helpman (2018) show that shifts in social identification (resulting, for example, from racial or ethnic tensions) can explain changes in trade policy. Gennaioli and Tabellini (2019) propose a model where exposure to cultural shocks (such as immigration) or to globalisation may lead to a decrease in the extent to which voters identify along class lines and an increase along other dimensions, ultimately reducing the demand for redistribution.

The economic integration of refugees and migrants

In a number of countries, the challenges raised by refugees and massive migration flows require policy responses and programmes from the state in order to avoid destabilisation or lower rates of growth. Displacement—whether due to conflict, political instability, or climate change—is likely to constrain the growth path of fragile and fragile-neighbouring countries. Over 90% of those forcibly displaced are concentrated in low- and middle-income countries, and 60% of these are in fragile states. The 36 most fragile countries in the world account for 2.6% of global GDP, but host 71% of the world's population of domestic or cross-border refugees. This number is only expected to increase with the current worsening conflict in several countries, particularly in sub-Saharan Africa.

Climate change is increasing migration and internal displacement, which can be further destabilising. For example, research shows that air pollution affects migration flows in China (Chen et al., 2022); and extreme heat, as well as climate-driven changes in crop yields, causes migration from rural to urban areas in Mexico, and from Mexico to the US (Jessoe et al., 2018; Feng et al., 2010). Such migration creates new policy challenges. Castells-Quintana et al. (2022) show that exposure to floods is related to higher intensity of urban disorders, likely due to the displacement of population in large cities.

Lack of structural transformation inhibits the response to climate-induced migration.

How exactly climate-induced migration affects economic development is a complicated issue and in part depends on the structure of the economy. Across sub-Saharan Africa, Henderson et al. (2017) show how the lack of structural transformation inhibits the response to climate-induced migration. While prolonged drying in agricultural regions that host an export-oriented manufacturing centre (25% of the sample) leads to increased urbanisation and urban incomes, drying in regions with market towns that only service local agriculture (75% of the sample) reduces farm incomes and in turn demand for urban services and urban incomes. Similarly, in Brazil, Albert et al. (2021) find that areas with extended exposure to increased drought saw permanent reductions in capital inflows and agricultural employment. Only some of the displaced agricultural workers were absorbed into the manufacturing sector, with the remainder contributing to permanent population reduction in these areas. If individuals, especially the most vulnerable, face strong barriers to migration, climate-induced shocks may not induce people to move at all. For example, Gray and Mueller, 2012 find that flooding in Bangladesh had only modest effects on migration.

Well-crafted public policy can ameliorate the negative effects of climate-induced migration.

Well-crafted public policy can ameliorate the negative effects of climate-induced migration. Regarding migration constraints, Bryan et al. (2014) show that allocating US$ 8.50 to households to temporarily migrate in Bangladesh induces 22% more households to send a seasonal migrant, and the effect persists even after the incentives are removed. Using historical US data, Boustan et al. (2012) find that while tornadoes induced out-migration, flooded areas attracted young men, the latter likely in response to early public investments to prevent future flooding.

More generally, displacement challenges state capacity by creating pressure on public services and labour markets but also, importantly, by threatening already tenuous forms of social cohesion. More research is needed to identify strategies the state can pursue to facilitate the economic integration of refugees and internally displaced persons. These could include the impact of access to work permits, upskilling, and incentives for resettlement for both refugees and locals. Carefully designed studies could then examine how economic integration could affect social cohesion and political stability. Most research on this topic has been confined to the integration of the less than 5% of refugees who are attempting to integrate into high-income countries. Yet, the absorptive capacity of labour markets and the baseline levels of social cohesion are likely to be significantly different in low- and middle-income countries.

RESEARCH PRIORITIES

- How do anti-poverty programmes and the provision of public goods affect ethnic and cultural cleavages?
- What economic factors are responsible for the rise in populism in low- and middle-income countries?
- What is the economic impact of refugees in low-income countries? What policies facilitate their economic integration?
- How do political polarisation and identity politics influence economic stability and policymaking in fragile states?
- What are the long-term economic effects of climate-induced migration on urban and rural economies in low- and middle-income countries?
- How can state policies effectively mitigate the negative impacts of climate change on migration and economic development in fragile regions?

3. The state, labour markets, and inclusive growth

What should be the role of the state in low- and middle-income countries? The span of potential activities is very large, and not all can be covered in this review. In the following sections, we argue that lifting people out of poverty should be at the centre of the state's attention in its attempt to encourage structural change and growth.

Lifting people out of poverty should be at the centre of the state's attention in its attempt to encourage structural change and growth.

As the 2019 and 2021 Nobel Prizes in economics recognise, the challenges of growth and economic development have galvanised a movement in development economics aimed at directly confronting global poverty and using rigorous evidence to understand policy problems. However, our main observation is that the large set of programmes that address poverty in low- and middle-income countries are unlikely to deliver structural change, a just climate transition, and sustainable economic growth. There is a need to shift from policies that cure the symptoms of poverty to policies that address its causes—by changing the employment and production activities of the poor populations, thereby enabling them to permanently exit poverty. To add to the challenge, we need to do so in a way that does not further exacerbate climate change or continue to decimate biodiversity. Further research is urgently needed on the optimal design of pro-poor, yet sustainable, growth programmes.

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I. Poverty reduction, social protection, and inclusive growth

The role of the state in poverty reduction efforts

The proportion of the global population living in extreme poverty—defined as living on less than US$ 1.90 a day (2011 PPP)—has decreased from 42% in 1981 to 10% in 2015. Despite this progress, maintaining the rate of poverty reduction is increasingly complex due to both socioeconomic factors and the impacts of climate change, which consistently undermine poverty elimination efforts (Hallegatte, 2016). Currently, about two-thirds of the world's extreme poor populations reside in middle-income countries such as India and Nigeria (Page and Pande, 2018), with an estimated 80% expected to live in fragile states, including 30% in highly fragile states like Afghanistan, Yemen, and the Democratic Republic of Congo (OECD, 2022). Economic growth, crucial for poverty alleviation, often fails to significantly change the lives of a substantial portion of these populations, indicating the need for targeted policies.

The United Nations Sustainable Development Goals (SDGs) prioritise eradicating poverty and hunger in all forms and ensuring all human beings can thrive in dignity, equality, and a healthy environment. This goal underscores the necessity of sustainable development that does not compromise environmental objectives.

The state plays a crucial role in poverty reduction, supported by the principles of equity and efficiency. The principle of equity mandates that states ensure no individual falls below a basic standard of living, emphasising the importance of fairness in policy implementation. Persistent intra-country inequality, despite reductions between countries, underscores the need for robust governmental intervention (Ravallion, 2014; Barro, 1999). Efficiency concerns market failures that leave poor people engaged in low-earning, unproductive activities (Bowles et al., 2016; Ghatak, 2015). Government intervention is essential in addressing these barriers, exacerbated by climate change-related challenges such as extreme weather and food insecurity.

There are multiple reasons for the state's significant involvement in poverty reduction. The state uniquely represents the electorate's preferences, maintaining oversight over essential institutions such as property rights, laws, and regulations critical for reducing poverty, fostering innovation, managing externalities, and protecting the environment. Although NGOs provide direct services, the government retains the authority to regulate these efforts. Informal supports, dependent on the wealthier segments' willingness to aid the less fortunate, often prove inadequate. State mechanisms, through taxes and transfers, offer a more systematic and equitable solution.

More evidence is needed on how the state should interact with other formal and informal social welfare programmes.

Economic development can also prompt urban migration and shifts in family structures, weakening traditional support networks and necessitating robust state-driven programmes. Economic development has been shown to increase inequality within social and familial networks, prompting the most capable to seek independence, leaving the less able dependent on deteriorating networks (Munshi and Rosenzweig, 2005). States are uniquely equipped to address large-scale shocks affecting entire communities or economies where informal networks might be insufficient. States can also typically secure more foreign aid and design larger, more impactful, and coordinated programmes than individual NGOs. However, more evidence is needed on how the state should interact with other formal and informal social welfare programmes. Crucial questions include how the state can better coordinate and maximise the efforts made by NGOs and other social partners to lift people out of poverty. Additionally, it is essential to explore whether increased state spending for pro-poor growth complements or crowds out the activities of other organisations. How can NGOs involved in providing services to the poor populations work more closely with the state to enhance effectiveness?

The next critical question is what the state should do to lift people out of poverty and help citizens adapt to a changing climate. The central cause of mass poverty in low-income countries is that most people, despite working long hours, are employed in unproductive jobs. Two-thirds of workers in low- and middle-income countries work in low-productivity jobs with small and unstable income flows. The state must facilitate occupational transformation to alleviate poverty and engineer inclusive and sustainable growth.

Importantly, most low-income countries emit relatively low levels of carbon per capita and per dollar of GDP, limiting their contribution to global carbon emission reduction goals. However, these countries, being coincidentally hotter and less capable of responding to shocks and disasters, necessitate significant government interventions to help the population adapt to climate change.

In subsequent sections, we will review the effectiveness of social assistance programmes that increase the permanent income of the poor populations and social insurance programmes that reduce the impact of shocks. Where well-designed, both types of programmes can contribute to increased productivity and occupational transformations. We will also discuss two further strategies that focus directly on increasing the productivity of the poor populations by providing them with the capabilities and opportunities they need to meet their potential.

Social protection and production support

Poor people in low- and middle-income countries face important income shocks that significantly worsen their conditions and often contribute to keeping them in poverty. These can take the form of idiosyncratic shocks such as illness, the death of relatives, or unemployment—risks that poor households are generally insufficiently insured against. Deaton (1997) in Côte d'Ivoire, Munshi and Rosenzweig (2005) in India, Fafchamps and Lund (2003) in the Philippines, and Townsend (1995) in Thailand all document how the consumption of poor households is strongly correlated with variations in income. Moreover, aggregate shocks, such as macroeconomic or weather shocks, that affect the income of entire regions can also impact poor households detrimentally. Climate change is increasing the frequency and intensity of weather shocks, making these aggregate shocks more severe and widespread. The third type of fluctuations that individuals can be exposed to are shifts in labour productivity over their lifecycles. These can be particularly difficult to bear for poor households, given that virtually all of the income gathered through their productive years is dedicated to vital expenses. By the time their productivity decreases later in life, their savings are usually very small. These factors together make the case for social insurance. Climate-related disruptions can exacerbate these productivity fluctuations, necessitating robust social insurance mechanisms.

A number of other interventions, usually referred to as social assistance programmes, aim to ensure that poor populations can meet their basic needs of food and shelter. With the increasing impacts of climate change, these programmes are essential for helping households adapt to changing environmental conditions. The need, then, is to increase their income or (more directly) their consumption levels. We note, however, that the conceptual and practical distinction between social insurance and social assistance may be blurry. The existence of social assistance programmes can (and most of the time does) provide effective insurance against risks, including those heightened by climate change, while social insurance programmes do generally create significant redistribution that may otherwise fall into the scope of social assistance.

A very large literature has conducted social assistance or insurance RCTs in low- and middle-income countries. Banerjee et al. 2024 provide a comprehensive review of this literature. The first pillar of this literature is on cash transfers. Haushofer and Shapiro (2016; 2018) compare the impact of different types of disbursements in an experiment in Kenya with the NGO GiveDirectly. They find a positive effect on monthly consumption both 9 months and 3 years after the transfer begins. Cash transfers can provide a critical buffer for families facing the economic disruptions caused by climate change. Many cash transfer programmes around the world are conditional (known as Conditional Cash Transfers or CCTs). People only receive them if they adopt certain behaviours or actions, usually related to health or education. There is evidence that CCTs increase school enrolments (Schultz, 2004; Barrera-Osorio et al., 2011; 2019) and child health (Gertler, 2004) but their effects on labour force participation are low (Skoufias and Di Maro, 2008). CCTs can also support long-term resilience by ensuring that children remain healthy and educated, better preparing them to cope with future climate-related challenges. A number of recent studies document promising long-term impacts of CCTs on health and human capital (Cahyadi et al., 2020; Millán et al., 2019; Millán et al., 2020), but these positive outcomes do not necessarily translate into transformative change in the economic conditions of recipients (Cahyadi et al., 2020; Baird et al., 2016). By contrast, Parker and Vogl (2023) document substantial effects of the Education, Health, and Nutrition Programme (Programa de Educación, Salud y Alimentación: PROGRESA) in Mexico on early adulthood outcomes, including educational attainment, geographical and sectoral mobility, and labour market outcomes, especially for women. Ensuring educational attainment and mobility can help individuals better adapt to changing job markets influenced by climate change.

Baird et al. (2011) compare the effect of conditional versus unconditional cash transfers on teenage girls in Malawi. The conditional treatment is based on school attendance. They show that CCTs lead to fewer dropouts and a higher English level. However, as some of the girls in the conditional treatment arm had no choice but to drop out of school and lose access to the transfers, teenage pregnancy and marriages were more prevalent in the conditional group than in the unconditional one. Benhassine et al. (2015) argue in their evaluation of an education-based cash transfer programme in Morocco that labelling the transfer as an 'education support programme' had about the same effect as implementing conditionality, a point also discussed in Barrera-Osorio et al. (2019).

Several studies have examined the impact of short-term employment opportunities provided by the state to the poor populations. One of the main programmes evaluated is the National Rural Employment Guarantee Act (NREGA) in India (Azam, 2012; Dasgupta, 2013; Nair et al., 2013), with mixed but relatively small effects on income and consumption. Programmes like NREGA can also contribute to climate adaptation by involving participants in activities such as water conservation and afforestation. A vast literature has also explored the effect of asset transfers on the ultra-poor populations, and has been led globally by the NGO BRAC. Bandiera et al. (2013; 2017) in Bangladesh; Banerjee et al. (2015) in Ethiopia, Ghana, Honduras, India, Pakistan, and Peru; Bedoya et al. (2019) in Afghanistan; and Banerjee et al. (2016) in West Bengal all find positive effects of asset transfers on consumption and food security. These transfers can be vital for building resilience against climate-induced food insecurity.

Most of the programmes reviewed so far are generally a form of consumption support. They aim to improve the livelihoods of poor populations, but their impact is not likely to be long-lasting or transformative because they cure the symptoms rather than the cause of poverty. Cash or asset transfers that increase the permanent component of income of the poor populations can represent both a form of consumption and production support. Similarly, conditional cash transfers—because they incentivise education or increase the opportunity cost of children not attending school—could change the occupational structure of the economy. However, many of the interventions on which the above evidence is based are small in magnitude. Cash transfers worth 20% of a household's annual income are unlikely to have a transformative impact. Even if the full amount were invested in buying productive assets or paying for training programmes, it would likely only translate into marginal changes in the livelihoods of the poor populations.

To reduce poverty permanently, policies should tear down the barriers that keep poor people in bad jobs and give them the capabilities they need to become more productive.

To reduce poverty permanently, policies should tear down the barriers that keep poor people in bad jobs and give them the capabilities they need to become more productive. As such, one-off transfers, which are very large in magnitude, are likely to be more effective for production support than monthly disbursements, which tend to focus more on consumption support. That does not necessarily mean that the set of existing social protection programmes should be radically changed, but rather that the lens through which we evaluate them should be different. To illustrate that point, we see the issue of social insurance going beyond the need for consumption smoothing. Agricultural insurance could allow farmers to plant more or adopt riskier but more productive technologies (Cole and Xiong, 2017; Allen and Atkin, 2016). Expanding agricultural insurance can also help farmers adopt climate-resilient practices and technologies. Health and unemployment insurance could allow poor people to engage in more productive jobs, potentially farther from home, away from where the family-based safety nets are usually located. As such, insurance can also be seen as a form of production support. These insurances should also incorporate climate-related risks to ensure comprehensive coverage.

At the centre of our argument is the need to shift more attention to the efficiency rationale of poverty reduction. Interventions should focus on eliminating the market failures that prevent people from rising out of poverty. In other words, these programmes should break poverty traps. This is how social protection programmes could have an important impact on aggregate productivity and economic growth - allowing individuals to meet their potential. The efficiency rationale and its focus on production support reflect the need for policy to focus on social and economic mobility, rather than on inequality per se, if countries are to shift individuals permanently out of poverty.

We believe more research on these issues is critically needed to inform policymakers about how to design poverty reduction programmes to actually have an effect on structural change and economic growth. Both social insurance and social assistance should be part of that agenda. We have already discussed above how social assistance programmes can provide a form of production support. Incomplete markets or a lack of insurance can also prevent poor people from making optimal occupational decisions (Karlan et al., 2014). Barriers to intergenerational mobility (Asher et al., 2020) or spatial mobility (Kraay and McKenzie, 2014) also generate poverty traps. Health insurance deserves more attention (Gertler and Gruber, 2002). Case and Deaton (2005) argue that stress—and in particular, health-related anxiety—is higher among poor populations. Health insurance may be necessary, and not just to smooth consumption. If health generates sizable positive externalities by limiting the spread of disease, state-provided free medical services could lead individuals to make better health decisions than they would make privately, which can impact aggregate productivity. Moreover, climate change is likely to increase health-related risks, making comprehensive health insurance even more critical.

The future of work will also likely create a stronger need for insurance against labour market risks (Packard et al., 2019). The vast majority of the extreme poor populations are informally employed, and thus, their likelihood of unemployment is high. Unemployment insurance could allow poor people to engage in activities that are riskier but more productive and high-earning. Gerard and Naritomi (2019) argue that severance pay, despite being prevalent in low- and middle-income countries, is not enough to ensure consumption smoothing for laid-off workers in Brazil who are present-biased and so over-consume at the time they receive their payment. Policy around the disbursement of job displacement insurance seems particularly important for welfare and could in turn impact job-search incentives. Since the government has a limited capacity to track who is employed or who is not, innovative solutions must be put in place to provide a form of unemployment insurance to the poor populations. Such innovative solutions should also consider the increased job displacement risks due to climate change. We return to the issue of targeting more broadly in Section 4. Pension systems have also shown promising effects on the outcomes of the next generation (Aizer et al., 2016).

A comprehensive social insurance policy that pools and addresses the main risks faced by the poor is necessary to adapt to climate challenge.

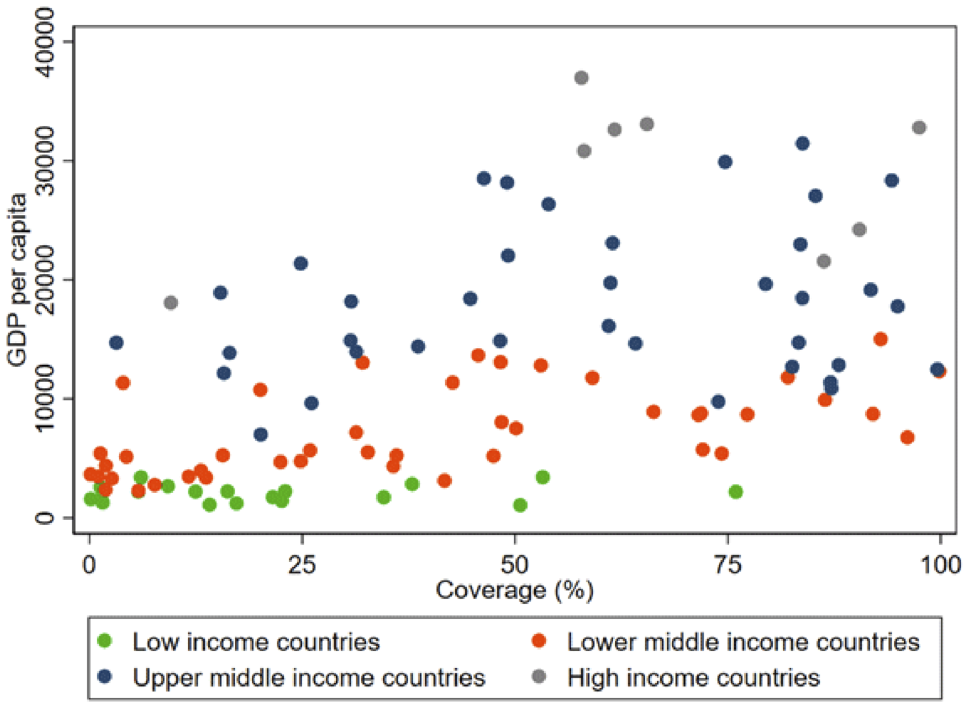
More broadly, there is a need to build a comprehensive policy package of social insurance that pools and addresses the main risks faced by the poor populations. This policy package must also include climate adaptation strategies to address the increasing risks posed by climate change. A cross-cutting theme that emerges is that when designing effective systems to promote preventive health, increase savings, and insurance adoption, one cannot ignore the issues raised by psychology and behavioural economics (see Kremer et al., 2019, for a review of behavioural development economics). We encourage further research in that area as well.

One of the consequences of embracing a production-support approach for research on social protection is the importance of moving away from consumption in the short run as the outcome of interest. Some interventions may induce households to alter their savings, leading to a non-significant temporary change in consumption but a meaningful transition in the long run. This raises a challenge for researchers, as measuring the steady-state level of consumption from a given intervention requires a long window of time. Yet, the set of variables of interest should, at the very least, be broader than consumption and should include outcomes such as savings, investments, or other capabilities that could have a more permanent impact on the livelihoods of the poor populations. Moreover, as climate change continues to pose significant challenges, it is essential that social protection programmes incorporate climate resilience and adaptation strategies. These could include support for sustainable agricultural practices, infrastructure improvements to withstand extreme weather, and health initiatives tailored to mitigate climate-related health risks. By integrating climate considerations into social protection, we can better equip vulnerable populations to adapt to and thrive amid the changing environmental landscape.

A big push?

Resources dedicated to poverty reduction need to be increased.[3] However, government spending and coverage provided on social protection is very low in low- and middle-income countries, as shown in **Figure 1** below. As a percentage of GDP, middle-income countries spend about half of that of high-income countries in these areas. It is also worth noting that for low-income countries (right above US$ 1,000 PPP), there is either no data or spending is close to zero.

Figure 1: Social assistance coverage (% of population) versus GDP per capita



Notes: Government spending and coverage provided on social protection is very low in low- and middle-income countries. Source: Parekh and Bandiera, 2020.

The World Bank gathers household survey data from a wide range of countries to explore the coverage of social protection. **Figure 2** below presents the share of the population who receives social insurance and/or social assistance by country income classification. In low-income countries, which consist mostly of sub-Saharan African countries, 83% of the population does not receive any social insurance or assistance, and virtually no one collects both. This contrasts with high-income countries, where only

3 Clemens and Kremer (2016) even argue that reducing extreme poverty should be the World Bank's only goal.

28% of the population does not receive any programme (and may not need support in many instances) and where 28% of the population is getting both assistance and insurance. Social protection is either missing or very small in low-income countries, precisely where it is needed the most. The lower incidence of social protection programmes in low- and middle-income countries, therefore, stands in direct contrast to the greater need for such programmes.

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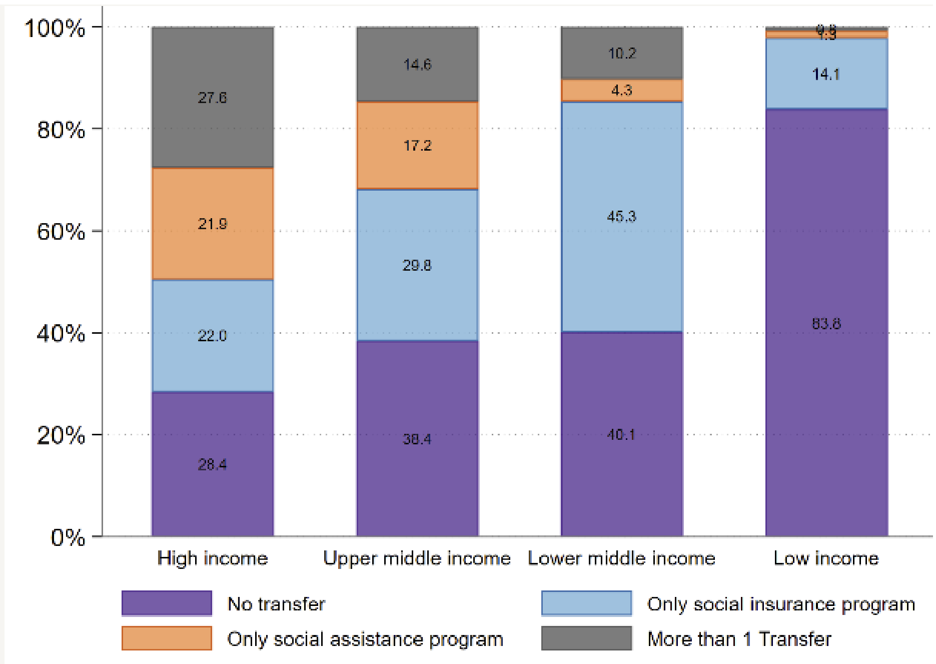
Countries that spend the least on social protection are also the most vulnerable to climate change. On average, the world's most vulnerable countries (defined as the bottom quintile in the GermanWatch Vulnerability Index) spend US$ 100 per capita on social protection, compared to US$ 723 for the rest of the world (Vaziralli, 2021). The lack of social protection in these regions exacerbates the impact of climate-related shocks, such as floods, droughts, and extreme weather events, which disproportionately affect the poor populations and can push them further into poverty.

Figure 2: Social protection coverage—share of population receiving social protection programmes



Notes: Coverage of Social Protection and Labor (SPL) over total population (%). Countries' most recent value between 2010 and 2019. In low-income countries, 83% of the population does not receive any social insurance or assistance, and virtually no one collects both. This contrasts with high-income countries, where only 28% of the population does not receive any programme (and may not need support in many instances) and where 28% of the population is getting both assistance and insurance. Source: World Bank.

Social protection programmes must expand on both the intensive and extensive margins to increase aggregate productivity and generate higher rates of growth. At the intensive margin, theories of poverty traps stress that to deliver permanent change; interventions need to overcome the inflexion point in the S-shaped dynamic capital accumulation equation. At the extensive margin, governments need to think about what mixture of conventional and big-push programmes are needed to eliminate extreme poverty. The development path typically involves a series of discontinuous jumps in various economic factors, one of which could be the distribution of occupational abilities. The big-push model traditionally relates more to investment in physical capital, but the intuition that applies there should also cover human capital. One could think, for example, of big push programmes involving vocational training to get people out of unproductive occupations and into more productive ones.

This need to make social protection in low- and middle-income countries universal and larger in magnitude translates into two very challenging implementation questions that research can provide support on. The first comes from the observation that since so few low-income countries have state-run social protection programmes and middle-income countries spend little money on social protection, there must be important constraints that policymakers face in setting up these programmes. The lack of resources to fund these programmes is probably the first-order barrier. We discuss how the state can raise more funds in **Section 4**. Capacity and informational constraints may also reduce the efficiency of these programmes. Additionally, political motives may play a role, particularly when it comes to 'selecting' recipients. We review the issue of targeting in **Section 4**. Are these constraints the same that now-high-income countries faced on their path to economic development? If so, what can be learnt from this experience for low-income countries? How do these constraints evolve with development? Do new developments in technology alleviate some of these constraints? All these questions are important as we seek to understand the main challenges policymakers face in setting up social protection programmes and how they can be addressed through innovative policies.

The second big challenge relates to the need to increase the number of social protection recipients in low- and middle-income countries. While RCTs can be informative in assessing which intervention is likely to be effective or have the highest impact, they provide limited insight into the general equilibrium consequences of implementing these interventions at scale. For example, the increase in demand from cash transfers to the poor populations could significantly increase the prices of basic crops, thus reducing the impact of the programme. Research on the general equilibrium effect of social protection is scarce. A few exceptions include Imbert and Papp (2015), who study the effect of NREGA on employment and wages in private firms, and Imbert and Papp (2019), who report important rural-urban migration flows caused by NREGA and use a gravity model to quantify their impact on wages in urban markets. Egger et al. (2022) is another notable exception that looks at the general equilibrium effects of cash transfers, finding large fiscal multipliers (2.5) and minimal evidence of negative spillovers. This area of research is critical to making progress on assessing the full impact of social protection programmes in low- and middle-income countries.

Revisiting poverty reduction strategies in the face of a rapidly warming climate

The relationship among state-led poverty reduction policies, economic growth, and the complex challenges of climate change is crucial for the development of nations. Poverty reduction strategies are critical for economic development but can have diverse environmental impacts. Ferraro and Simorangkir (2020) observed that Indonesia's cash transfer-based anti-poverty programme inadvertently reduced deforestation. Conversely, Alix-Garcia et al. (2013) reported that Mexico's poverty alleviation efforts increased deforestation due to heightened consumption of land-intensive goods. These findings indicate the necessity of integrating climate considerations into economic policies to avoid unintended environmental damage, as further evidenced by Heo et al. (2021).

The complexity of poverty reduction is further compounded by the broader scope of social protection. Hallegatte (2016) suggests that climate change could significantly hinder poverty elimination efforts. This underscores the increasing importance of social protection schemes in light of escalating climate-related threats such as impacts on agriculture, health, and employment (Lane, 2023; Narayan et al., 2023). For example, research in Nicaragua by Macours et al. (2012) demonstrated that enhancing conditional cash transfers with business loans or vocational training can help households withstand climate shocks. However, this area requires further investigation to determine how different programmes can mitigate vulnerabilities to environmental challenges.

The concept of Payment for Ecosystem Services (PES) explores a potential alignment between poverty alleviation and environmental conservation within the climate change framework. Jayachandran (2022) points out that the goals of PES can sometimes conflict. The effectiveness of PES is limited by market failures and liquidity issues typical in impoverished populations (Jayachandran, 2013). Nevertheless, innovative payment designs, such as those proposed by Jack et al. (2022), could improve PES outcomes by reconciling economic and environmental objectives.

Given the exigencies of climate change, it is crucial to rethink social protection frameworks. The growing climate-induced risks highlight the need to expand social protection, particularly in low-income countries where coverage is often inadequate (Statistics Division, 2020; Parekh and Bandiera, 2020). Innovations in programme design that enhance benefit portability to address localised climate shocks are essential (Gazeaud et al., 2023; Narayan et al., 2023). Furthermore, the choice of support modality—cash versus in-kind—merits reconsideration in light of climate-driven price volatility (Gadenne et al., 2022).

RESEARCH PRIORITIES

- How can we design social insurance and social assistance transfer programmes to have a transformative impact on the lives of poor people?
- How can insight from behavioural economics be used to design more effective social protection programmes?
- How should employment insurance be designed in low- and middle-income countries?
- What are the main constraints of implementing state-run social protection programmes at scale?
- What are the general equilibrium effects of social protection programmes?
- How can the state effectively coordinate and maximise the efforts of NGOs and other social partners in poverty reduction initiatives?
- How can the state facilitate occupational transformation to increase productivity among poor populations in low- and middle-income countries?
- What strategies should the state adopt to help citizens adapt to the impacts of climate change, particularly in fragile states?
- How can social protection programmes be designed to incorporate climate adaptation strategies and enhance resilience?
- How can agricultural insurance be expanded to help farmers to adopt climate-resilient practices and technologies?
- How can big-push programmes, such as vocational training, effectively transform occupational abilities and reduce poverty?
- What innovative policies can be developed to raise more funds for state-run social protection programmes in resource-constrained settings?
- What are the best practices for integrating climate considerations into economic policies to avoid unintended environmental damage?
- How do the constraints to implementing social protection programmes evolve with development, and do new technologies alleviate these constraints?

II. Labour market policies and occupational transformation

While social assistance and social insurance are important elements of the policy toolkit for alleviating poverty and making growth more inclusive, facilitating occupational transformation on the scale needed to eliminate extreme poverty by 2030 requires urgent action to remove the market failures that limit poor people's productive opportunities and capabilities. The first involves removing the external barriers and market failures that prevent productive people from reaching high-earning and productive jobs. The second involves raising the skills of the poor populations to make them more productive.

Getting productive people into productive activities

Removing the external market failures that prevent poor people from reaching productive jobs is a first-order priority for economic development, as it reduces poverty and increases productivity. One such barrier is credit constraints, which restrains the poor populations from acquiring the assets that would increase their flow of income (De Mel et al., 2008). Bandiera et al. (2017) show that women earn significantly more while working in livestock than in crop-based agriculture, yet they cannot afford the productive assets necessary to move into this sector. Similarly, a vast literature has found that cash or in-kind grants offered to small-scale entrepreneurs can engender high returns, at least in the short run (De Mel et al., 2008; Fafchamps et al., 2014; McKenzie and Woodruff, 2008). By contrast, microfinance typically does not have a transformative impact on recipients (JPAL, 2015). The type of capital and the people targeted are likely to be important determinants of the potential for efficiently removing credit constraints. These issues are also explored in the **IGC evidence paper on Firms, trade, and productivity**.

Credit constraints can also create sizable distortions in labour markets. In a field experiment in Ethiopia, Abebe et al. (2021a) show that high-quality job candidates face higher application costs on average. Applying to formal jobs typically requires paying for public transportation and investing time in a long in-person application process. In this context, a US$ 4.5 subsidy for making a job application increases the quality of the pool of applicants in a way that is comparable to doubling the wage for the same role. Reducing migration costs can also lead to significant welfare improvements (Bryan and Morten, 2015; Lagakos et al., 2023). Finally, providing training to increase capabilities in showcasing and signalling skills can also generate significant labour market returns for participants (Abebe et al., 2021b).

Marginalised groups, despite being trained and skilled, typically face fewer employment opportunities. Early marriage and social norms prevent women from meeting their full economic potential (Ali et al., 2016). As referrals for jobs are common in low- and middle-income countries, discrimination also prevents women from accessing jobs that match their talent. In a recruitment drive in Malawi, Beaman et al. (2018) show that men, despite often knowing a large pool of qualified female applicants, typically do not refer many women to jobs. Ethnic divisions can significantly reduce firm productivity (Hjort, 2014). Reducing discrimination in labour markets could have a significant effect at the aggregate level. Hsieh et al. (2013) argue that

20-40% of growth in the US between 1960 and 2010 can be attributed to the entry of talented women and Black people into the labour market.

Raising people's productivity

Removing market failures can lower the external barriers that prevent poor people from accessing productive jobs. However, the timing is also important. By adulthood, a number of traits and attributes—including negative ones that can make poor people unfit for productive jobs—are anchored in one's personality.

Unemployment and underemployment are significant issues, especially among urban youth in Africa, where about 70% of adults do not have regular salaried jobs (Bandiera et al., 2022). Interestingly, economic growth does not always correlate with reductions in unemployment. As nations develop, unemployment rates can rise among less educated workers due to higher returns on skills, which highlights a growing mismatch between the demand for and supply of skilled labour (Rossi, 2022; Feng et al., 2018).

A large body of research from high-income countries shows that initial labour market conditions have a persistent impact on future employment opportunities. Young people need to be equipped with the right skills to enter the labour market. This is even more important in low- and middle-income countries, where young populations are high relative to the total population and where large cohorts of individuals transition from school to work every year. Promoting vocational training or apprenticeships is thought to be the natural policy to implement in response. In a randomised experiment, Alfonsi et al. (2020) show that vocational training, which certifies general competencies, generates higher labour market returns than apprenticeships.

Traditionally, for most of these programmes, the state does not deliver these services directly. However, it can critically impact this sector through subsidies, facilitation policies, or quality certifications from private providers. The potential lack of incentives for young people who are considering signing up for such programmes is also relevant. Information frictions can reduce the perceived rate of returns of vocational training programmes (Jensen, 2010). Cultural norms for other curricula can also reduce preferences for such programmes.

Occupational transformation is critical in bringing about rapid structural change.

Given the current rates of youth unemployment in low- and middle-income countries, particularly in sub-Saharan Africa, we believe this arm for occupational transformation is the most critical in bringing about rapid structural change. While the general education and knowledge provided by primary and secondary schools are decisive in developing literacy and autonomy, complementary skills are essential for young people to contribute to productivity growth in low-income countries. Only about 40% of the extreme poor populations have completed primary school (Castaneda et al., 2018), suggesting that educational attainment alone may not be enough for people to rise out of poverty. Traditional margins of educational attainment, such as access to schools, retention across grades, and completion of key stages in early life, remain essential components of human capital formation—but this last stage, school-to-work transitions, may have been overlooked until now.

Climate change and occupational transformation

Climate change poses a direct risk to economies that are dependent on agriculture, necessitating changes in agricultural practices to maintain productivity and output (Costinot et al., 2016). These changes directly influence labour markets, requiring especially the impoverished workforce to move towards more productive sectors. The state is an important player in ensuring occupational transformation is managed and encouraged.

A key factor in occupational transformation is the relevance and adoption of technology. Unfortunately, agricultural technologies from high-income countries may not suit the specific needs of lower-income regions (Moscona and Sastry, 2022). In environments with incomplete markets, subsistence farmers may opt for short-term adjustments such as altering land use or labour patterns rather than investing in technology (Aragón et al., 2021). Insurance schemes that stabilise farmer incomes might inadvertently diminish the motivation to adopt advanced technologies (Annan and Schlenker, 2015).

When technological updates in agriculture are insufficient, governments can play a crucial role in reallocating labour. Encouraging migration and implementing transformative labour policies are essential, as shown by Blakeslee et al. (2020), who found that moving labour to manufacturing helps individuals manage income fluctuations in agriculture. However, the effects of climate change are complex. Short-term climate variances, as observed in India by Colmer (2021), may temporarily move labour from agriculture to manufacturing, offering only temporary relief. In contrast, long-term climate changes can negatively affect non-agricultural sectors by reducing agricultural productivity (Liu et al., 2023; Jessoe et al., 2018).

Climate change drives the need for occupational shifts in agriculture, necessitating technology adoption, government-led labour reallocation, and training for green jobs to transition to more productive sectors.

Addressing these challenges requires vocational training, particularly in green skills for the renewable energy sector. However, the financial sustainability of such programmes is a concern. For example, BRAC's fee-based vocational training in Bangladesh and the Addis Ababa School of Commerce's management training programmes have explored cost recovery models with mixed success (Abebe et al., 2021a; Bandiera et al., 2023). There is a growing need for evidence-based evaluations to determine if a lack of such skills hinders the development of environmentally friendly economic sectors.

Furthermore, improving labour market efficiencies through better job search and matching processes is crucial. Worker turnover is high in low- and middle-income countries, indicating significant market frictions ranging from financial constraints and unclear skill definitions to biases in worker motivation and expectations (Donovan et al., 2023; Abel et al., 2020). Understanding these dynamics is vital for successfully managing large-scale labour reallocations anticipated with climate change.

RESEARCH PRIORITIES

- How can we design 'big-push' transfer programmes that transform the labour market and production activities of the poor populations? How can these programmes be scaled up by governments?
- What are the main barriers that prevent productive people from getting productive jobs? What public services and policies can remove these frictions?
- How can discrimination in labour markets be decreased?
- What are the most effective professional training programmes for young people? What is the appropriate role of 'hard' and 'soft' skills in such programmes? How can these programmes be made more attractive?
- How can credit constraints be effectively alleviated to enable poor people to acquire productive assets and improve their income flow?
- What policies and interventions can reduce migration costs and improve welfare for the poor populations seeking employment in urban areas?
- How can vocational training programmes be financially sustained, and what models are most effective in ensuring their long-term success?
- What are the best practices for integrating green skills into vocational training programmes to support the transition to environmentally friendly economic sectors?

III. State interventions in climate adaptation

The range of services the state provides is much wider than the pro-poor growth policies we have described so far, extending significantly into areas impacted by climate change—a central theme of this section. These services fit into other IGC evidence papers on **Firms, trade, and productivity**; **Cities**; and **Energy and environment**, which necessitates creating frameworks to compare the marginal value of public funds across these diverse areas.

There has been considerable progress in developing reliable empirical techniques to measure the impact of various interventions, including those addressing climate-related market failures and the promotion of sustainable practices. These developments are crucial as they offer guidance to public finance decisions about where to allocate public funds across a broad spectrum of programmes, including those designed to mitigate or adapt to climate change.

In public finance, transparent frameworks have long been developed to assess the welfare impact of public policies from empirical causal estimates. Recent frameworks by Hendren (2016) and Finkelstein (2019), applied by Hendren (2019) in the US, are now being considered for their application in low- and middle-income countries. This includes comparing the marginal value of public funds (MVPF) across policies that address issues from land

In low-income countries, where all public services are typically lacking and appear as first-order priorities, providing evidence-based guidance on the relative cost and benefits of these climate-related interventions could substantially enhance the efficiency of state spending.

conservation and property rights to infrastructure and climate resilience.

We strongly support researchers aiming to apply these frameworks to measure the MVPF in contexts that include addressing climate change. We explore various interventions such as market failure corrections related to agriculture and environmental degradation, property rights enforcement for conservation, information dissemination strategies for climate resilience, and the alignment of infrastructure development with climate adaptation needs. In low-income countries, where all public services are typically lacking and appear as first-order priorities, providing evidence-based guidance on the relative cost and benefits of these climate-related interventions could substantially enhance the efficiency of state spending.

Addressing market failures related to climate change

Market failures, particularly in agriculture—including issues related to credit, information, and land—are exacerbated by climate change, making smallholder farmers highly vulnerable (Jack, 2017). Despite these challenges, some evidence suggests that smallholder farmers demonstrate resilience in overcoming obstacles related to scale (Bassi et al., 2022). Over time, it seems that larger agricultural enterprises are better positioned to foster resilient growth, which indicates the importance of enhanced collaboration between smallholders and larger firms.

The state plays a crucial role in addressing these market failures and coordinating strategies that align with climate change adaptation and mitigation. For example, tackling credit constraints and informational frictions can facilitate the adoption of clean technologies, as shown by studies like those of Berkouwer and Dean (2022) and Levine et al. (2018). Furthermore, innovation, vital for bridging these gaps, is often hindered by both market and governmental failures, exacerbated by the discrepancies between private and societal benefits.

Taxation strategies can significantly impact environmental outcomes by internalising negative externalities and encouraging firms to adopt sustainable practices. This approach has proven effective, as evidenced by the reduction in pollution emissions from US manufacturing, largely due to pollution taxes (Shapiro and Walker, 2018).

In conclusion, the state's interventions in correcting market failures within the context of climate change are complex and crucial. While existing evidence provides a strong basis for these interventions, further research is needed to identify the most effective governmental actions, particularly in sectors other than agriculture. This research should also explore the relationship between market failures, state policies, and climate resilience more thoroughly.

Property rights, land conservation, and climate change

The necessity to conserve natural capital is becoming increasingly crucial for economic development, particularly given the alarming rates of deforestation and other forms of environmental degradation. For instance, the rate of subtropical forest loss has doubled in the 21st century, illustrating a broader trend of increased global forest cover loss, with Brazil being an exception (Feng et al., 2022; Hansen et al., 2013). Remote sensing technologies have significantly enhanced our understanding of these trends, providing detailed data that help assess the efficacy of conservation policies (Hansen et al., 2013; Balboni et al., 2023).

However, significant research gaps remain in integrating natural capital into economic policy frameworks, particularly in quantifying the benefits and costs of conservation and ensuring their equitable distribution. Additionally, there is a need for developing effective and politically viable natural capital management policies that consider the intricate interactions among stakeholders and geographic areas (BenYishay et al., 2017; Holland et al., 2022; Jayachandran, 2022; Tseng et al., 2021; Wren-Lewis et al., 2020).

The state's role in upholding property rights is fundamental to conserving natural capital. State-managed land has profound implications for environmental adaptation and conservation. Well-defined property rights can enable individuals and communities to actively engage in conservation. However, if these rights lead to the overuse of resources, they could counteract conservation efforts (Anderson et al., 2018; Balboni et al., 2021b).

Empirical studies reveal a complex and sometimes contradictory relationship between property rights and conservation. In Peru and Brazil, secure property rights for indigenous communities are associated with reduced deforestation (Blackman et al., 2017; Baragwanath and Bayi, 2020). Similarly, research in Benin has shown that formalising customary land rights reduced forest loss (Wren-Lewis et al., 2020). Conversely, Probst et al. (2020) found that a large-scale land-titling programme in Brazil led to increased deforestation due to market pressures.

States can leverage property rights to make land markets more responsive to environmental changes, helping landowners adapt to climate challenges and adopt sustainable practices (Anderson et al., 2018). For instance, secure land ownership in Rwanda has been shown to increase investment and soil conservation measures, particularly among women (Ali et al., 2014). Research in Indonesia also indicates that strong property rights, when combined with active government regulation, can reduce environmentally harmful practices such as using forest fires for land clearing (Balboni et al., 2021b).

Future research should focus on accurately measuring the benefits and costs of conserving natural capital, paying particular attention to how these are distributed among different stakeholders and regions. Additionally, more studies are needed to create and evaluate policies that effectively manage natural capital, considering the economic and political incentives at the local level.

In summary, the relationship between natural capital conservation and property rights highlights the intricate role of the state in promoting both economic growth and sustainability. While the current evidence offers a diverse perspective, it unequivocally supports the need for more nuanced and adaptable policy mechanisms. As climate change exacerbates the challenges of sustainable development and conservation, a multidisciplinary approach is essential for achieving both economic and environmental objectives.

Information provision to address climate change

The government's role in disseminating information as a public good is essential, particularly in the context of climate change and sustainable growth. Governments can uniquely address informational asymmetries, thus fostering environments where economic growth and sustainable practices can converge. A key governmental function is in the realm of environmental awareness. Research on air pollution, such as that by Ito and Zhang (2020), emphasises the significance of accurate information dissemination. These studies show that lacking accurate environmental information can lead households to underestimate the benefits of adopting new sustainability technologies. Similarly, Barwick et al. (2019) found that effective pollution monitoring systems enable households to adjust their behaviours in ways that reduce the mortality impacts of pollution.

However, the state's role extends beyond just providing information. As Afridi et al. (2021) note in their study on clean fuel adoption in India, communicating both health benefits and government subsidies can significantly enhance adoption rates. This suggests that information about health benefits alone might not be enough to change behaviour, indicating that subsidies may be a necessary complement to information campaigns. Thus, the government can play a crucial role in alleviating the initial costs associated with adopting cleaner technologies.

In the broader context of climate change, the state's responsibilities could include providing early warning systems for extreme weather events. Hallegatte (2012) highlights the economic benefits of such systems, particularly if low- and middle-income countries could attain standards comparable to those in Europe. These systems are a vital part of the state's provision of public goods that mitigate the costs associated with climate-induced extreme events.

Climate adaptation strategies should also focus on communities most vulnerable due to informational deficits, as outlined in various sustainability and climate change discussions. Dar et al. (2013) and Emerick et al. (2016) emphasise the importance of information on new technologies and practices, such as drought-resistant seeds, in enhancing climate resilience among exposed populations. Thus, information dissemination is crucial not only domestically but also for building broader climate resilience.

Informational asymmetry can also create migration barriers, as people are often unaware of job opportunities in other locations, compounded by monetary and psychological barriers (Bryan et al., 2014; Diop, 2023). Addressing these barriers can significantly enhance labour productivity, as evidenced by studies suggesting a potential 22% increase in labour productivity in Indonesia. This underscores the importance of the state in providing information that can reduce such barriers, thus catalysing both individual and collective economic growth in a sustainable manner.

Future research should measure the effectiveness of combined policy instruments like information campaigns and subsidies, especially in terms of climate resilience and sustainable growth.

These observations indicate a gap in understanding the nuanced role of the state in behaviour influence through information provision and its role in facilitating climate change mitigation and adaptation. Future research should measure the effectiveness of combined policy instruments like information campaigns and subsidies, especially in terms of climate resilience and sustainable growth. Additionally, exploring the economic benefits and costs of various types and qualities of information, as well as community responses to these public goods, is crucial. Therefore, the state's role in mediating the effects of climate change through targeted information dissemination remains a critical area for academic research and policy development.

Infrastructure and climate change

States coordinate the construction of big infrastructure projects, and climate change has important implications for how this is done. Balboni (2021) provides evidence of how governments need to be forward-looking when doing infrastructure projects. Infrastructure projects in places less affected by climate change might be costly in the short run but improve the return on these investments. Similarly, Hsiao (2023) shows that when governments cannot commit to policies promoting in-land development, adaptation to sea level rise becomes more costly, and this has important welfare costs.

Thus, governments need to balance the construction of infrastructure to protect areas highly affected by climate change, with policies that incentivise reallocation to other locations both of households and firms. Danelon et al. (2021) also provides evidence on how climate change can alter the costs for governments of sanitation services. Some services become more expensive per se, plus migration also affects costs of rural versus urban areas. Overall, the government needs to adapt its services.

RESEARCH PRIORITIES

- How can the marginal value of public funds (MVPF) be effectively measured in the context of climate change adaptation interventions in low-income countries?
- What are the most effective state interventions for correcting market failure related to agriculture and environmental degradation exacerbated by climate change?
- How can property rights be leveraged to enhance land conservation and climate change adaptation efforts while ensuring equitable distribution of benefits and costs?
- What are the best practices for integrating natural capital conservation into economic policy frameworks in low- and middle-income countries?

- How can state-led information dissemination strategies be designed to effectively promote the adoption of climate-resilient technologies and practices?
- What role can Payment for Ecosystem Services (PES) play in reconciling economic and environmental objectives in poverty alleviation efforts?
- How can governments balance infrastructure development with the need for climate adaptation, particularly in areas vulnerable to sea level rise and other climate impacts?
- What are the economic benefits and costs of various state-provided information campaigns and subsidies to enhance climate resilience and sustainable growth?

4. Improving the effectiveness of state policies

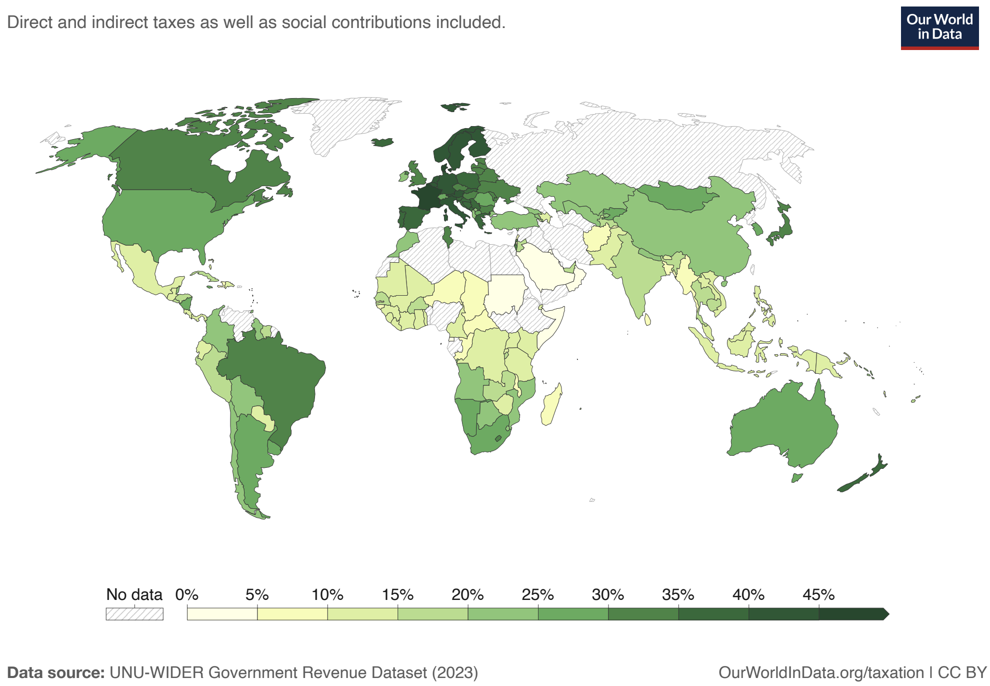
In **Section 3**, we described priority areas in which the role of the state is critical to hasten structural change and economic growth and to reduce poverty. We now turn to the question of how the state can reach these objectives. This includes mobilising resources through taxes to finance ambitious state-run programmes, but also making sure that these policies are correctly implemented.

Even relative to the size of their economies, low-income countries raise less income through taxes than high-income countries.

I. Revenue mobilisation

Revenue collection in low- and middle-income countries is low (Gordon and Li, 2009; Gillitzer et al., 2014). Even relative to the size of their economies, low-income countries raise less income through taxes than high-income countries. Tax revenues are 10-15% of GDP across most of sub-Saharan Africa and South Asia, while they are above 35% of GDP in virtually all European countries (see **Figure 3** below).

Figure 3: Tax revenue as a share of GDP



Notes: Tax revenues are 10-15% of GDP across most of sub-Saharan Africa and South Asia, while they are above 35% of GDP in virtually all European countries. Source: Our **World in Data**.

Why is increasing tax capacity in low- and middle-income countries so important? After all, official development assistance (ODA) generally matches tax revenues in magnitude in low-income countries (Pomeranz and Vila-Belda, 2019). Several arguments can be put forward. First, the incentives to use ODA appropriately may be lower than they are for taxes, given the stronger political accountability governments face when spending tax revenues (Weigel, 2020). Second, the need for state-run social protection programmes or state-financed infrastructure is presumably higher in low- and middle-income countries. This requires more resources than these countries currently have access to, even with the additional support of ODA. Third, ODA is typically volatile and prevents governments from planning spending over a long period. Fourth, although ODA flows match tax revenues in low-income countries on average, there is significant variation across countries. Aid typically flows into countries with stronger public finance institutions, which usually already have higher taxes (Gstoettner and Jensen, 2010). As such, low capacity in budget administrations is a double curse. This constraint compels states to increase public finance management first, and so increase tax capacity, to leverage more ODA.

This section considers the potential causes of low tax revenues in low- and middle-income countries. Two broad categories of issues can be distinguished. First, while tax rates can be large in low-income countries, there is often a big difference between tax in the law and tax in the treasury (Slemrod, 2007; 2019). The explanation is simple. Many firms or individuals do not comply with tax requirements. The second range of issues concerns tax policy. Are low- and middle-income countries taxing appropriately? The performance of tax policy can be measured in terms of production efficiency (making sure taxes minimise distortions), revenue efficiency (making sure the government can finance its activities) and 'equity efficiency' (making sure that the post-tax and transfers income distribution is fair).

We use tax compliance and tax policy as a framework for our discussion, but we focus more on potential ways to improve tax collection than on understanding the fundamental causes of low tax capacity in low- and middle-income countries. While the latter is necessary for the former, policymakers critically need implementable solutions to increase tax enforcement and design better tax schemes. Fortunately, the recent availability of tax data in low- and middle-income countries and the recent collaborations between researchers and tax authorities have allowed research to make considerable progress on these issues over the past decade (Bachas et al., 2023; Pomeranz and Vila-Belda, 2019; Okunogbe and Tourek, 2022).

Tax compliance

1. Audit, deterrence, and behavioural responses

Increasing compliance is a challenging task. The classical starting point on this issue is to consider that individuals and firms comply with their fiscal obligations if the expected cost of not complying outweighs the costs of paying taxes (Allingham and Sandmo, 1972). To raise the expected cost of not complying, governments can increase both the probability of detecting fraud and the penalty paid if found non-compliant. The literature on increasing penalties is scarce. One exception is Carrillo et al. (2011), who evaluate the impact of a reform in Ecuador that introduced the threat of prison time for CEOs of firms that were evading tax regulations. The new law led to a 10% increase in corporate tax payments. On the probability of detection, one direct way of making the threat real is to conduct audits. In high-income countries, several studies have documented a positive and long-lasting effect on the income reported by audited individuals. In low- and middle-income countries, evidence of the impact of audits is rare, perhaps because they are costly to implement and have potentially little return due to a lack of enforcement.

An alternative, less demanding mechanism could be the use of deterrence or reminder messages. In a collaborative experiment with the tax administration in Uruguay, Bérgolo et al. (2019) document the positive impact of sending letters reminding firms about the probability of audit or the cost of evasion. Taxes paid increased by 6-7%. This confirms the findings of other studies in other contexts that deterrence messages tend to have a significant impact on evasion (see Pomeranz and Vila-Belda, 2019 and Slemrod, 2019 for recent reviews). The design of the experiment and the survey data collected, however, suggest that the letters do not serve as an informational update on the probability of being audited, which in turn alters the cost-benefit analysis of complying. Instead, the results are consistent with a risk-as-feelings model, where individuals respond more quickly and automatically than a rational expectation-based approach would predict.

A number of studies have looked at how the delivery methods of deterrence messages impact compliance. Perhaps unsurprisingly, Ortega and Scartascini (2015) show that messages delivered in person increase tax payments more than any other channel. Emails or text messages may also be cost-efficient alternatives to letters (Mascagni et al., 2017; Ortega and Scartascini, 2015).

Finally, to increase compliance along the extensive margin, positive incentives such as lotteries could be put into place. These raise the potential benefits of complying, though most of the effect is likely to come from taxpayers' behavioural response. Carrillo et al. (2017) show that being selected in the lottery has a positive impact, but only in the short run. Winning the lottery prize, however, has strong and persistent effects which spill over to neighbours. By contrast, Dunning et al. (2017) show that randomly awarding tax holidays to compliant taxpayers has the opposite effect as the intended one - recipients reduce their payments after the holiday ends.

Better understanding the behavioural responses of individuals and firms to deterrence messages or lotteries remains an important area of research, as it may be the most inexpensive way of increasing compliance in low-income countries.

Overall, the evidence suggests that emotions such as fear or lurking on compliant neighbours may be a more promising theoretical framework for increasing compliance than the traditional rational cost-benefit analysis of compliance that taxpayers are expected to make (Manwaring and Regan, 2023). Better understanding the behavioural responses of individuals and firms to deterrence messages or lotteries remains an important area of research, as it may be the most inexpensive way of increasing compliance in low-income countries.

2. Tax morale and social norms

Building on the principles of behavioural economics to increase compliance, another important factor is tax morale. In high-income countries, despite low audit probabilities and small penalty rates, compliance is high. Thus, it must be that other factors lead individuals and firms to voluntarily abide by tax laws.

Luttmer and Singhal (2014) review the literature on tax morale. The range of possible mechanisms that increase morale is wide. First, pride, positive self-image, honesty, and a desire to comply with the law when paying taxes (or guilt and shame when not doing so) are all elements of intrinsic motivation (see Rincke et al., 2015, who show evidence for intrinsic motivation for church taxes in Germany). Simple nudges about the average level of compliance in a taxpayer's neighbourhood can significantly increase their willingness to pay (Del Carpio, 2013). Slemrod et al. (2019) estimate the impact of two compliance programmes in Pakistan—one where the government published the liability of all taxpayers and another where the government publicly rewarded the top 100 taxpayers in various categories. Both programmes significantly increased tax revenues.

Second, perceptions of how fair taxes are, how wisely tax revenue is spent, and the legitimacy of the party in power impact the relationship between the state and individuals and affect compliance rates. In particular, the type of services the state provides to its citizens (see Section 3) and whether these are implemented in practice (see Section 4) are likely to be important determinants of tax morale. In the same vein, perceptions about corruption or leakages in state programmes (see Section 4) could also increase tax morale, creating a double dividend of fighting corruption.

While non-pecuniary motivations to comply with tax rules are well understood by policymakers, there is little evidence on the quantitative importance of tax morale in explaining compliance, particularly relative to extrinsic factors. There is even less research on how tax morale can be increased, especially since many of its factors are, by nature, difficult to influence. Finally, more research is needed to understand the relationship between tax enforcement and intrinsic motivation since tax officials often worry that publicly increasing audit or penalty rates may reduce voluntary compliance.

3. Third-party information and VAT

Third-party information is probably the most important pillar on which modern tax systems are built.

One of the main reasons that individuals in low- and middle-income countries perceive the probability of fraud detection to be so low is the absence of third-party information. In high-income countries, governments can easily cross-check the information provided by taxpayers against other sources of information. Taxpayers thus internalise that the probability of being audited conditional on evading is much higher than when being compliant. Third-party information is probably the most important pillar on which modern tax systems are built. Reflecting on this, Jensen (2019) documents why the transition out of self- and informal employment over the course of economic development is partly responsible for the parallel increase in tax capacity. Formal employment leaves information trails that states can rely on to increase tax compliance. Abstracting from personal income tax, information from the financial sector or directly from firms' submissions to other stakeholders also provides third-party data for monitoring corporate compliance. In low-income countries, third-party information is typically either lacking or unreliable, which significantly reduces the potential for 'self-enforcing' tax compliance mechanisms.

One exception is value-added tax (VAT). On top of its production efficiency properties, which we return to in the tax policy section, the VAT instrument typically requires parties on both sides of a transaction—the supplier and the buyer—to provide information about its value to tax authorities. As the tax is imposed on the value-added portion of total sales, downstream firms face strong incentives to ask for transaction receipts from selling firms, which they can then deduct from their total sales in their own VAT declaration. The incentives of the supplier to under-report sales are confronted by the incentives of the buyer firm to over-report its input purchases. These indirect compliance benefits may even spill over into the value chain (Waseem, 2019). If buyers ask for accurate receipts, firms have incentives to ask for accurate receipts from their suppliers too, in order to reduce their tax burden. Pomeranz 2015, through two indirect randomised experiments in Chile, provides evidence at the micro-level for this self-enforcing property of the VAT.

For a long time, whether to adopt VAT as a tax policy was the most important issue for low- and middle-income countries (Keen and Lockwood, 2010). VAT has now been adopted in more than 160 countries and across 80% of sub-Saharan Africa (Gerard and Naritomi, 2018; Keen, 2016). Thus, attention has shifted toward understanding whether adopting VAT translates into sizeable tax revenue growth. Keen and Lockwood (2010) show significant heterogeneity across countries in how VAT impacts the GDP share of tax revenue, particularly in sub-Saharan Africa (Brockmeyer et al., 2024).

Several factors may be responsible for why VAT adoption does not necessarily translate into a higher tax capacity. First, third-party information can only be collected if transaction receipts are actually being generated. While paper is a potential solution, advances in technology offer a cheaper way of producing and gathering transaction records and ensuring the right amount of VAT is paid. Ali et al. (2015) find that the introduction of electronic sales registry machines increased tax payments by 20% in Ethiopia. Eissa et al. (2014) find slightly smaller revenue gains from electronic billing machines in Rwanda—5.4% on average. Even beyond VAT, e-filing can generate significant gains, from reducing compliance costs to curtailing corruption (Okunogbe and Pouliquen, 2022). Yet, there is still limited evidence of the cost efficiency of e-filing reforms in low-income countries. Devices could be too expensive to be covered by the additional tax revenue generated from their use. Moreover, in low-income countries, the state or even taxpayers may not have the capacity to fill in tax returns properly. We encourage further research in this area.

The second flaw relates to the last node in the value chain: the transactions between retailers and consumers. Final consumers, as opposed to firms inserted in the value chains, face no particular incentive to ask for VAT receipts. In some instances, they may even collude with retailers so that part of the VAT is discounted from the final price. Similarly, they may be worried that retailers will increase the price of the good they are buying if they ask for a receipt (Campbell et al., 2017). Randomly sending mystery shoppers around stores in Rwanda, Eissa et al. (2014) show that the use of electronic billing machines increases substantially if consumers formally request a receipt. Mittal and Mahajan (2017) show that the introduction of VAT transaction-level reports significantly increased tax collection for wholesalers but not for retailers. Naritomi (2019) evaluates a policy that aims at solving this issue. In Sao Paulo, Brazil, consumers had the option of providing their taxpayer identification number to be added to VAT receipts. Receipts were then used as lottery tickets for consumers. In parallel, a website also allowed whistleblowers to identify fraudulent retailers. This led retailers to increase reported revenue by 20% over four years.

The final glitch in VAT is the capacity of governments to cross-check supplier and buyer tax returns. Almunia et al. (2022) report that buyers and sellers declare different values in 79% of transactions in Uganda. Assuming that the fraudulent nature of firms is fixed and does not vary significantly across the business partners they deal with, they estimate that about 70% of these misreports are strategic, with firms reporting transaction values that reduce their tax liability. Mittal et al. (2018) develop a machine learning algorithm to identify 'bogus' firms—companies that sell false paper trails to reduce their clients' tax burden. Finally, as audit probability is often proportional to firm size, firms face incentives to appear smaller and reduce the number of reported transactions on both the purchasing and selling side (Carillo et al., 2017), which further challenges non-compliance detection. Additionally, most low- and middle-income countries have a threshold under which firms do not have to comply with VAT laws. The costs associated with universal tax registration are most likely higher than the benefits. In turn, firms may artificially reduce their sales to be exempted from the tax (Gerard et al., 2018). Exempted firms, like consumers, also face lower incentives to ask for transaction receipts.

While VAT offers the potential to raise tax capacity in low- and middle-income countries through the opportunity of gathering third-party information, several complementary policies are typically needed to materialise these gains.

In sum, while VAT offers the potential to raise tax capacity in low- and middle-income countries through the opportunity of gathering third-party information, several complementary policies are typically needed to materialise these gains. We encourage further research on this issue, particularly in low-income countries and fragile states, where the challenges of implementation and fraud detection are likely to be more acute (Gadenne et al., 2022).

Third-party information can also be provided for personal income tax by employers. As we note above, formal employment is not commonplace in low-income countries, but tax compliance could be another motive for promoting it. Yet, firms may collude with workers to underreport wages, particularly small businesses (Best, 2014; Kumler et al., 2020). However, when pension schemes are proportional to wages, these temptations may be reduced (Kumler et al., 2020). Brockmeyer et al. (2019) show that for personal income tax in Costa Rica, tax withholding can act as an effective compliance mechanism. Finally, third-party information can be gathered through financial records. Thus, the transition to more 'modern' and trail-based means of payment could indirectly benefit tax authorities in low- and middle-income countries.

One important limitation of third-party information is that it does not cover all taxable activities in low- and middle-income countries. For example, there exist many settings where third-party institutions (such as large firms and banks) have limited engagement with individuals. In these settings, tax officials may have limited reliable 'hard' information trails at their disposition. In such settings, where third-party reporting is effectively non-existent, what do tax officials do? Studying local taxation in Ghana, Dzansi et al. (2022) find that when tax collectors are provided with extra time on hand, they use it to learn more about households' propensity to pay, which is related both to a household's level of income and liquidity (both of which may be partly transitory) but also to the level of willingness to comply (which in turn is related to households' awareness of their obligation to pay taxes and their satisfaction with public services). The collectors gather this 'soft information' through repeated interactions (and possibly interactions that last longer). In turn, the authors find that the tax collectors use this information to target property owners with higher propensity to pay during their collection visits - resulting in much higher taxes paid. In the Democratic Republic of Congo, Balan et al. (2022) also find experimental evidence consistent with the value of 'local information' in the field. When tax collection is outsourced to local chiefs, they rely more on 'soft information' compared to the state collectors (hired from the regional government). The chiefs likely gathered this local information from their embeddedness in the community over many years; they put this information to use and manage to achieve higher tax collection. Both these studies show how, in settings where tax collectors have little 'hard information' that is relevant for compliance (such as third-party reports), the local government can instead rely on soft information for the purposes of collecting taxes. More work is needed on the relevance of soft information across diverse settings in low- and middle-income countries.

4. Tax evasion at the border

Despite the highest potential for tax enforcement on imports and exports, evasion of tariff duties is still commonplace in low- and middle-income countries. Fraud can take the form of misclassifying product codes in invoices (Fisman and Wei, 2004), finding alternate duty-exempt shipping routes (Yang, 2008), or paying bribes to customs agents to reduce the tax bill (Sequeira and Djankov, 2014). Illustrating the importance of the second channel, Sequeira (2016) shows how trade quantities respond weakly to a fall in de facto tariffs, suggesting a large gap between de jure and de facto rates. In this environment, trade facilitation services and streamlining procedures at the border could increase trade flows and, indirectly, customs tax revenues. Given the quality of the data collected at the border and the importance of tariff duties in total government revenue, we believe studying tax compliance through customs is a promising area for future research (Chalendard et al., 2023).

5. The role of collectors and tax administrations

For most tax instruments, civil servants play an important role in assessing tax liabilities and enforcing tax laws. Given their low earnings, they are typically not incentivised to perform; rather, they may be tempted to collude with taxpayers to reduce their tax burden. Khan et al. (2016) conduct a random experiment where property tax collectors in Pakistan are given an average of 30% of all tax revenues they collected above past records—which on average, for treated individuals, corresponded to doubling their salaries. While the intervention had promising effects for tax revenue, for many properties, owners reported increased bribes with no significant changes in taxes paid in parallel. In the Kyrgyz Republic, Amodio et al. (2022) evaluate the effect of a feedback mechanism whereby company tax collectors are rewarded based on the evaluations submitted by audited firms. This intervention significantly reduced bribes, which in turn increased tax revenues and reduced firms' prices. Other non-pecuniary incentives may also improve efficiency. These include performance-based mobility schemes, for which Khan et al. (2019) document a positive impact on property tax collectors in Pakistan. Social incentives may also be important in tax administrations (see Ashraf and Bandiera, 2018 for a literature review of how social interactions affect organisations).

There is potentially a lot more to gain from tax administration reforms than from tax policy reforms.

We believe that understanding how more efficient state organisations impact tax compliance is a promising new research agenda (see Pomeranz and Vila-Belda, 2019 for additional support). In particular, while many development finance institutions and aid institutions recommend the implementation of tax administration best practices from OECD countries, such as using high-end IT systems, there is no rigorous evidence on the impact of such reforms on tax revenues collected or even on the efficiency of tax administrations. To guide this agenda, Keen and Slemrod (2017) develop a theoretical framework for designing optimal tax administration interventions, allowing comparability between policy and administrative reforms. In a recent study, Basri et al. (2021) show that a tax administration reform was equivalent to a 23 percentage point increase in the corporate tax rate. The important take-away from this study is that there is potentially a lot more to gain from tax administration reforms than from tax policy reforms.

Two studies from the Democratic Republic of Congo shed light on the tax collection returns that come from improving the underlying administration. In the context of property taxation, Bergeron et al. (2023) find that improved enforcement allows the local government to implement a higher Laffer rate (for example, the rate at which revenue collection is maximised). In the same local taxation setting, Bergeron et al. (2023) study how the government can optimise the structure of its tax collectors, who work in the field to collect taxes. They find that pairing high-performing collectors is a meaningful strategy and significantly improves the amount of taxes collected. Importantly, the collectors are already at the local government's disposition; beyond the cost required to calculate and implement the optimal allocation, this is otherwise an administrative reform which incurs little resource costs to the government. Comparing the relative cost and benefit of administrative and tax policy reforms is an area that would greatly benefit from more research.

6. Compliance and distortions

The issue of tax compliance does not solely relate to increasing tax capacity. Unequal tax enforcement across firms or sectors creates sizable distortions in the economy. Firms may avoid activities that generate higher economic returns to escape taxation. Governments tend to strengthen enforcement where it is least expensive to do so, and this may be at the cost of economic efficiency. Increasing deterrence in some places but not others typically creates substitution effects from formal to informal sectors or from formal employment to self-employment. Significant progress in this area is likely to arise from efforts to link survey data on both the formal and informal sectors to administrative data on taxes and social security. This would enable researchers not only to measure the effects of tax policy on the informal sector, but also to disentangle actual and reporting responses (Chetty, 2009).

Firm size-dependent compliance is particularly relevant to this issue. As they are unable to clearly observe or assess a firm's tax-payment capacity, states often rely on other indicators to design tax policies or guide their auditing strategy. Using data from 140 countries, Bachas et al. (2019) show that tax enforcement increases with size and that size-dependence reduces along the development path (Bachas et al., 2023). When it comes to VAT, many countries impose thresholds under which firms may not be liable or may need to report transactions at a lower frequency. The compliance costs of VAT may be too high for small firms or for the state itself. In turn, this leads to bunching right below the line, a signal for tax evasion (Luksic and Mittal, 2018). Additionally, Gadenne et al. (2022) show that these VAT thresholds distort firms' supplying decisions and create segmented value chains. At the extreme end of the size distribution spectrum, making multinational corporations comply with local tax laws may also be particularly challenging for low- and middle-income countries (Bustos et al., 2019).

Tax policy

State strategies to increase tax revenues should not only focus on ensuring that the current tax laws are enforced. Governments also decide on the set of tax instruments to use, and these may vary substantially across countries. There is no universal optimal tax policy. The level of economic development and the structure of the economy are important inputs that should drive the building of tax policy.

There is no universal optimal tax policy. The level of economic development and the structure of the economy are important inputs that should drive the building of tax policy.

1. Tax policy with low enforcement capability

The issue of tax policy is not necessarily distinct from tax compliance. In an environment with low tax enforcement, it may be more efficient to use specific tax instruments rather than others (Gordon and Li, 2009). This is typically why low-income countries collect a higher share of their income through tariffs, which are easier to enforce given that goods typically only transit through a few entry points (Cagé and Gadenne, 2018). This may also be why tax policies are biased toward firms rather than individuals, as ensuring that a handful of firms comply is less difficult than collecting information on a large number of individuals (Kopczuk and Slemrod, 2006; Slemrod, 2008). However, these tax schedules may not be production efficient. In other words, assuming no evasion and no administrative costs, differing tax policies may generate fewer or less-sizable distortions to collect the same levels of revenue.

Best et al. (2015) provide a rationale for why many low- and middle-income countries may prefer more distortive policies, such as taxes based on turnover rather than profits. The intuition is simple. As turnover is a much broader base than profits, the turnover tax rate is typically below 1%. As such, it does not introduce a very large distortion on production choices. By contrast, the shift to a profit tax significantly increases evasion opportunities, reducing revenue efficiency. This is because it is typically easier to artificially increase costs than it is to conceal revenues. In Pakistan, the authors estimate that turnover taxes reduce evasion by up to 70% of corporate income. In a bunching analysis of the corporate income tax regime in Costa Rica, Bachas and Soto (2018) also provide evidence that self-reported costs provide important evasion opportunities.

This does not mean that revenue efficiency should be the sole focus of policymakers or that any concern around production efficiency should not be abandoned. For example, in their study, Agrawal and Zimmermann (2019) document the output benefits of switching from a sales tax to VAT in India, which restrained double-taxation-induced distortions.

A large fraction of firms in low-income countries are informal and so can easily evade taxes. In turn, this can impact consumers and welfare. Bachas et al. (2024) show that poor people tend to shop more in informal places, so consumption taxes are actually progressive. As such, compliance interventions may have equity implications, and they may not necessarily be progressive. By contrast, Olken and Singhal (2011) argue against the view that the poor populations are free-riding the provision of public goods, suggesting that, in many instances, they are 'informally taxed'. This could occur, for example, when the poor populations supply labour for building or maintaining local public infrastructure.

2. Marginal tax rates and evasion

Marginal tax rates are another element of tax policy that impacts compliance. Finding the optimal tax rate depends on the elasticity of evasion to the tax rate. This literature is very developed in high-income countries (see, Kleven et al., 2011; Fack and Landais, 2013) but thinner for low-income countries. Boonzaaier et al. (2019) document how small businesses respond quickly to changes in marginal corporate income tax rates and bunch right below corresponding thresholds. Londoño-Vélez and Ávila (2021) document similar patterns for wealth taxes in Colombia. Waseem (2018) evaluates how tax reforms targeted to specific legal forms leads to increases in informality and business status changes. Kleven and Waseem (2013) show that even if the underlying elasticity is low, the introduction of notches—discontinuities in tax amounts generated by tax schemes—generates strong incentives to evade.

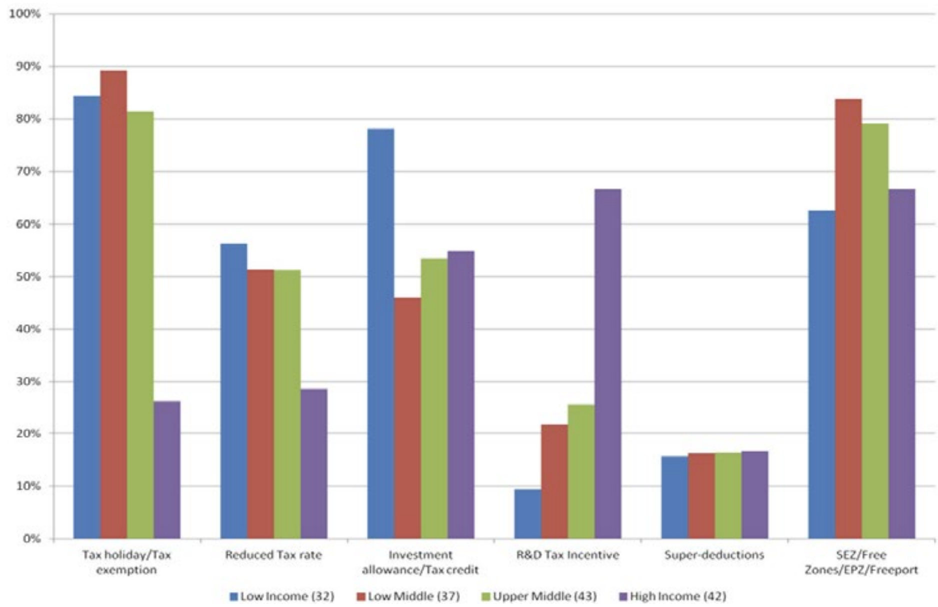
3. Cost-benefit analysis of tax policy

We encourage further research to measure the administrative costs of various tax instruments and provide a framework that incorporates them in designing optimal tax policy.

Each tax instrument implies indirect costs for states. These can take the form of implementation costs (for example, informing the tax administration of policy changes) or collection costs (for example, processing tax receipts from a wide range of taxpayers). Unfortunately, while the revenue gains from tax policy are at the centre of policymakers' concerns, the additional costs that come along with a new tax instrument are often only a side consideration. We encourage further research to measure the administrative costs of various tax instruments and provide a framework that incorporates them in designing optimal tax policy.

Tax incentives have also become a major tool that policymakers use to promote economic development (OECD, 2015). These can be targeted toward specific investors (for example, Foreign Direct Investment), specific regions (for example, place-based policies), or specific activities (for example, R&D tax credits). **Figure 4** below, from OECD (2015), shows how prevalent tax holidays are in low- and middle-income countries.

Figure 4: Prevalence of income tax incentives



Notes: Figure shows the percent of countries in each of four income groups that have the indicated incentive. The sample size per income group is denoted between brackets. Source: OECD, 2015.

Yet, there is very little research on the impact of tax incentives on investment. If anything, the existing research points to an absence of correlation. In a cross-country study, Klemm and Van Parys (2012) find evidence that tax holidays and lower corporate income tax rates are effective in Latin America but not in Africa. Farole (2011) and World Bank Group (2017) find that tax exemptions do not lead to better-performing special economic zones. Investor surveys document that tax incentive packages rank 11 out of 12 location factors for foreign investors—well below economic and political stability, the cost of raw materials, or the transparency of the legal framework (UNIDO, 2011). Nonetheless, the concern is that in a world with global value chains and fierce competition across countries to attract investment, a race to the bottom occurs (Abbas and Klemm, 2013). Forgone revenues from tax incentives are rarely estimated before the policy is implemented.

Additionally, the discretion with which tax incentives are generally given in low-income countries (OECD, 2015) is worrying, given the impact it has on competition. This topic also relates to the issue of the MVPF already presented above; there is a need to measure the behavioural response of domestic and foreign firms to tax incentives and so the fiscal externality that comes along with the policy. Progress on this agenda will likely come from identifying who the marginal investor is when it comes to tax incentives.

4. Taxes, equity, and the political economy

In addition to raising revenues, tax policy can also play a potentially crucial role in curbing inequalities (Bachas et al., 2024). Indeed, income inequality is high in low- and middle-income countries and has either stagnated or increased over the past 30 years. Recent estimates from African countries show that at the regional level, the share of pre-tax income of the top 10% is close to 55% (Chancel et al., 2023). Similarly, high levels of inequality are found in large low- and middle-income countries for which data are available, including Brazil (58%), China (43%), India (57%), and Indonesia (47%) (World Inequality Database). These levels are comparable to or higher than those observed in the United States, a high-income country commonly described as highly unequal, where the share of pre-tax income of the top 10% was 46% in 2021.

A small but growing number of studies investigate how tax design impacts equity. Conventional wisdom, based mainly on work in high-income countries, suggests that consumption taxes have null or negative redistributive properties since they tax households in proportion to their consumption (as a share of their income). Bachas et al. (2023) revisit this notion in low- and middle-income countries where, intuitively, the fact that large shares of household consumption take place in traditional and informal stores will affect the redistributive properties of consumption taxes. Indeed, this will occur as soon as the budget share that households spend in the informal sector varies systematically with income. The authors draw on household expenditure surveys for 32 low- and middle-income countries and characterise expenditures from modern retailers as formal and expenditures from traditional retailers, as well as consumption from home production as informal. Their main descriptive result is the existence of a downward-sloping Informality Engel Curve (IEC). They find that, in all countries, the informal budget share declines steeply with household income. This result implies that, under some assumptions on economic incidence, setting a uniform rate on all formal products is strongly progressive: the effective tax rate of the richest 10% is more than twice that of the poorest 10%. Setting lower rates on food products - a policy commonly implemented to try to improve consumption taxes equity effects - however, adds little to no progressivity because a large share of poor households' food consumption occurs in informal stores and from home production.

There is a need for more work on the economic incidence of tax reforms in low- and middle-income countries - and not just in retail, but in all markets where formal and informal agents interact, including labour markets.

This baseline result assumes full pass-through of taxes to formal prices and no pass-through to informal prices. Bachas et al. (2023) use a VAT reform in Mexico to provide evidence on the actual pass-through of tax rates to prices; they find a large pass-through to formal prices and a much smaller - but non-null- pass-through in traditional stores. These results emphasise the need for more work on the economic incidence of tax reforms in low- and middle-income countries - and not just in retail, but in all markets where formal and informal agents interact, including labour markets. The incidence patterns may be complex and subtle, and further evidence will likely change our understanding of equity effects of taxation in low- and middle-income countries. Uncovering these patterns is an important and fruitful avenue for future research.

One of the most important considerations for policymakers thinking about who to tax and how much to tax these different groups is the political fallout. For example, while it may be more efficient from a revenue standpoint to tax mid-range taxpayers more heavily than fighting tax evasion at the top, governments are often reluctant to do so for equity purposes. Given the strength of these political constraints, implementing 'optimal' but inequality-increasing policy interventions may be difficult in practice. This revenue-equity trade-off is particularly relevant in many low- and middle-income countries and is worth exploring further.

One potential avenue for moving forward on this agenda would be to measure the welfare impact of various tax instruments on different groups in the population, how progressive or regressive certain tax schemes are, and how this impacts the use of these instruments by governments. In that framework, the incidence of tax policy cannot be studied in isolation. Spending, transfers, and public goods and services also need to be considered to compute the overall net-income impact of public finance policies.

Additionally, different business interests can coalesce to lobby the government and get tax exemptions. This most commonly happens in tax policy, where specific industries press the government for temporary or long-term production. More broadly, fiscal rules that benefit specific voter categories, sectors, or types of firms are common in low- and middle-income countries. This point relates to the issue of tax incentives, which are more likely to be granted arbitrarily in low-income countries (OECD, 2015). The differential ability of certain groups to form lobbies can create additional aggregate distortions in the economy (Shapiro, 2019), and preferential financial treatment for connected firms has a negative impact on efficiency (Khwaja and Mian, 2005).

Social or cultural norms are likely to influence citizens' likelihood of accepting changes in tax policy—or in the opposite direction, tax reforms could impact the public's willingness to supervise more directly how the state uses its resources. Weigel (2020) shows that citizens in the Democratic Republic of Congo that were randomly targeted for property tax collection were more likely to attend town hall meetings or submit performance evaluations of the local government. Similarly, Flores-Macias (2018) shows that allowing for a form of public oversight or implementing earmark mechanisms in Mexico affected political support for reforms. This interaction between tax policy, social norms, public oversight, and corruption is an area that needs more research (see Prichard et al., 2019) to create a framework.

Taxation and climate change

In principle, carbon taxes are administratively feasible once we take into account low- and middle-income countries' constrained capacity to tax. Indeed, applying carbon pricing as a tax on fossil fuels will most likely rely on the pre-existing administrative infrastructure, since these goods are often already taxed (or subsidised). In settings with limited resources, administrative reforms with limited operational costs are favourable. Moreover, the vast majority of carbon dioxide is often generated by a limited number of (often very) large, formal firms. For reasons described in detail in the sections above, it is well known that tax enforcement is (comparatively) more successful on these larger firms in low- and middle-income countries. This is supported by findings that a large amount of carbon dioxide emissions are generated by a few formal energy producers, making it difficult for them to evade the tax (Timilsina, 2022). While these ideas support the notion of a realistically feasible carbon tax in low- and middle-income countries, there remains little rigorous evidence to shed light on its implementation in the field. This is an important area for future work - including the need for evidence on substitution into informal sources of energy and non-payment, in response to the rise in cost induced by a carbon tax (Burgess et al., 2020).

Of course, the distributional consequences of a carbon tax must be addressed to obtain societal support for such reforms. In high-income countries, studies often find that tax-induced increases in the cost of carbon are regressive in the sense that the change in payment, as a proportion of household income, is larger for households with lower income. However, it is unclear whether similar results will be found in low- and middle-income countries. This is because poorer households are likely to differ in terms of their energy sourcing. Indeed, if higher-income households are disproportionately likely to use fossil fuels and electricity, for example, then they are also more likely to be impacted by the rise in cost induced by a carbon tax. Evidence based on household surveys in Ghana and Ethiopia suggests this to be the case (Abebe et al., 2021). These studies, however, have to make important assumptions on the economic incidence of carbon taxes, which may not be true in practice. Ultimately, empirical evidence is urgently needed to shed light on the entire energy supply chain, mapping out both formal and informal sources for households along the income distribution. This, in turn, should be combined with direct estimates of the economic incidence of carbon tax reforms. This will inform us about the ultimate 'bottom line' changes in energy costs for households at different income levels - a crucial input into policy design. Recent simulations suggest that regressive impacts can be offset by cash transfers to poorer households, enhancing the political feasibility of carbon taxes (Timilsina, 2022).

> **Implementing carbon taxes in low- and middle-income countries is practical with current tax systems and concentrated emissions in large firms, but it demands careful management of distributional effects and improved tax administration for fairness.**

Moreover, while poorer households' limited access to modern energy sources may be beneficial from an 'economic tax incidence' point of view, a comprehensive welfare analysis must balance this benefit against the downsides of such limited access. As is the case for most new tax instruments, careful consideration of how the extra revenue raised will be spent can go a long way to shore up societal support for reform. In this area, more empirical work is needed to understand citizens' preferences over climate-related taxes and their views on how additional revenues should be redistributed. In some ways, this insight is not conceptually distinct from the broader need for evidence on citizens' tax preferences in low- and middle-income countries. Recent studies indicate that reinvesting carbon tax revenues in ways that address citizens' key concerns, such as cash transfers to poor households, can significantly increase public support for such taxes (Dechezleprêtre et al., 2022).

In terms of redistribution, an exciting area for research and innovative policy design is the use of additional digital data sources. These data sources can offer detailed data insights into households' consumption patterns (see, for example, the electronic billing machines discussed in this section), including for energy. Such data can, in principle, be used to create individually tailored compensation schemes, which could serve as a basis for transfer programmes that ensure (with great precision) that the least well-off are not unduly burdened by carbon tax reforms. At the same time, the quality of digital data sources may be limited by administrative challenges. Moreover, more research is required to understand if the coverage provided by digital data is uneven in ways that could exacerbate, rather than attenuate, equity for poorer households. Evidence from Rwanda and Ethiopia suggests that electronic billing machines can significantly raise VAT revenues, demonstrating the potential of better technology in tax collection (Eissa et al., 2014; Ali et al., 2016).

Some areas of improvement in tax administrations and policy design for climate-related purposes have a strong overlap with the more general path for improving tax capacity, for example, in relation to enforcement of taxes on initially larger firms. This also applies to the need for monitoring of climate investment impacts. Some of these investments may take the form of deductions, incentives, or other subsidies to firms in specific areas and industries and over specific periods. In this sense, the importance of strengthening tax authorities' capacity to carefully and continuously track the status of tax expenditures (which are already widespread - see above) is magnified when we consider that tax authorities may play a significant role in the near future for monitoring climate-related expenditure policies. This will be essential to convince donors of the value of continuing to support climate action in low-income countries (Birdsall et al., 2000; Caselli and Tesei, 2014; Collier and Hoeffler, 2005)

Management of natural resource revenues

Taxes are not the only revenue stream for the state. In many low- and middle-income countries, non-renewable natural resources represent an important source of potential revenues. About 30% of all global mineral reserves and 8% of global oil reserves are in Africa, and minerals account for about 28% of the continent's gross domestic product (AfDB, 2016). More than 25 low- and middle-income countries derive more than 20% of their government revenues from hydrocarbon resources (Jensen, 2011).

How the stock of natural resources affects government revenues – and economic development more broadly – has been the subject of a vast literature often referred to as the 'resource curse' (Ross, 2015; Venables, 2016). Historically, despite having 'easy' flows of income to tap into, countries with an abundance of natural resources experienced slower growth than countries with fewer natural resources.

The mechanisms through which this paradox arises have also been explored. The most important is likely that the discovery of natural resources often leads to conflict between political factions fighting for a share of the revenue (Klare, 2002; Besley and Persson, 2010), which in turn reduces growth. Jensen (2011) studies the interaction between natural resources and tax revenues and shows that an increase in resource intensity correlates with lower fiscal capacity. This, in turn, can have important consequences for efficiency. Martinez (2023) illustrates that point at the micro-level. Using exogenous variation in the world price of oil, he documents that higher tax revenues translate to more spending on health and education, while higher resource royalties increase the probability of disciplinary prosecution against the municipal mayor. Similarly, Gadenne (2022) shows that local governments in Brazil spend more wisely when using tax revenues than external grants. Although natural resource revenues are different from aid flows, the lack of oversight and public pressure into how the government allocates these income flows may reduce the quality of public services in a similar way.

Understanding the key political and capacity constraints responsible for the resource curse is a necessary first step to designing better institutions for the management of natural resource revenues in low- and middle-income countries.

How can states put systems in place to maximise the revenue potential from natural resources? Standard toolkits are not yet available to help low- and middle-income countries set up useful frameworks for managing natural resource revenues. The Norwegian model and its Government Pension Fund are now perceived as international best practice. Still, the political economy environment and low state capacity make translating this model directly to low-income countries difficult. Understanding the key political and capacity constraints responsible for the resource curse is a necessary first step to designing better institutions for the management of natural resource revenues in low- and middle-income countries (Bebbington et al., 2018).

The size of resource extractors is also likely to matter for policy. How should the state monitor and regulate informal small-scale mining? In many low- and middle-income countries where the state does not have the capacity to extract natural resources itself and so relies on multinationals to do so, how can governments tax these companies efficiently?

RESEARCH PRIORITIES

Tax compliance

- What are the behavioural responses of individuals and firms to messages aimed at deterring evasion or to lotteries?
- What is the link between social norms and tax compliance? How do corruption or anti-corruption efforts impact tax compliance?
- How can the 'last-mile' problem in VAT be solved? How can consumers be incentivised to ask for receipts?
- Identify non-compliant behaviour by leveraging large administrative data and tools from data-science and machine learning.
- What is the magnitude of tax evasion at the border, and how can it be reduced? What are the effects of tariff reforms on domestic tax bases? How can low- and middle-income countries curb cross-border profit-shifting?
- Which tax administration reforms have the highest return on tax collection?
- In countries with a large informal sector, what is the impact of improving tax compliance in the formal sector in terms of distortions and spillovers from the formal to the informal sector?

- What aspects of states' administrative and enforcement capacities interact with and shape the effectiveness of climate-motivated policy design?

Tax policy

- What are the optimal tax instruments in an environment with low compliance?
- Where along the income distribution scale are the returns to increasing rates the highest?
- Under what conditions are tax incentives efficient? Do discretionary tax incentives create sizable distortions?
- What is the tax incidence of various tax instruments? How do equity considerations influence the use of specific tax instruments?
- How does lobbying affect tax policy?
- How can the political constraints of tax policy reforms be overcome? What interventions can increase public support for tax reforms?
- What are the equity and efficiency impacts of climate-motivated tax policies such as carbon taxes? What portion of these policies' usefulness depends on the ways in which the raised revenue is spent by the government?

Taxation, climate change, and management of natural resources

- What strategies are effective for implementing carbon taxes in low- and middle-income countries, and how can their distributional impacts be mitigated to ensure social equity?
- How can the economic incidence of carbon taxes be measured across income levels, and what approaches can offset regressive impacts through targeted transfers?
- How can digital data and technology enhance tax collection and design compensation schemes to prevent climate-related tax reforms from burdening poorer households?
- What best practices integrate natural capital conservation into economic policy, and how can property rights enhance land conservation and climate adaptation?
- How can the state disseminate information to promote climate-resilient technologies, and what role do subsidies and incentives play?
- What institutional frameworks can maximise natural resource revenue while mitigating the adverse effects of the resource curse?
- How can states effectively monitor and regulate informal small-scale mining to ensure sustainable and equitable extraction practices?
- What policies can improve the efficiency and transparency of tax collection from multinational companies involved in natural resource extraction in low- and middle-income countries?

II. Public sector effectiveness

Bureaucracies deliver economic policies that are essential for inclusive growth. Making state policies more effective requires building more efficient, capable, and impactful organisations. The state guides the implementation of a wide range of policies, particularly for private-sector development (see the **IGC evidence paper on Firms, trade, and productivity**). Macroeconomic stabilisation, attracting foreign investment, facilitating trade, increasing competition, and building and managing industrial parks are typically the main responsibilities of complex agencies within the government. The optimal design of government organisations that deliver structural change is thus a central question for economic development.

There is a need to focus more on the barriers to policy implementation and how policy design interacts with policy implementation.

We discuss public-sector effectiveness in two steps. We first present existing evidence on how to build more effective bureaucracies and highlight areas for future research on this issue. We then turn to the challenges of policy implementation. While designing policies for economic development will continue to be the central focus of future research, we argue there is a need to focus more on the barriers to policy implementation and how policy design interacts with policy implementation.

Building effective bureaucracies

In this section, we discuss the literature that studies the micro-determinants of inefficient public policies. Bureaucratic performance typically depends in large part on human capital (i.e. the quality of civil servants, which is determined by who applies for government jobs and how they are selected) and management capital (i.e. the mechanisms in place to monitor and incentivise their performance). Below, we discuss the growing body of evidence on how both human and management capital can be increased in bureaucracies. The relative importance of the two for state capacity are two strands in the literature that have yet to properly intersect. Besley et al., 2022 and Guo et al., 2023 provide a comprehensive review of the current stock of knowledge on bureaucracies and development.

In an analysis of survey data from a variety of countries, Finan et al. (2017) find evidence for a positive wage premium in public-sector jobs versus private ones in low- and middle-income countries. Such a premium, in part, explains why government jobs tend to be oversubscribed, with many more applicants than available positions. This, in turn, opens up the scope for governments to improve the quality of civil servants by focusing on screening applicants more effectively. From the perspective of fragile states, where the potential for raising government wages across the board is more limited, implementing more efficient screening devices for candidates offers a promising opportunity for a low-cost approach. What are the characteristics that states should be looking for in applicants? While higher ability is an important attribute for performance on the job (see Ashraf et al., 2020), the wide range of functions that the state provides is likely to make certain competencies stand out for specific roles. Another likely important attribute that impacts performance on the job is intrinsic motivation. Conditional on ability, some agents could value a career in public service more, which can translate to either a lower unit cost of effort on the job or a higher utility from performance on the job, both of which increase outcomes. While ability and intrinsic motivation are both sensible characteristics that screening mechanisms for bureaucrats should be looking for, there is still limited evidence on the relative importance of each in explaining bureaucratic performance, particularly across government functions. Progress in this literature could come from working with civil servant colleges that select and train civil servants.

Once civil servants have been hired, there is now some evidence on how to monitor and incentivise their work effectively (Khan et al., 2015; 2019; Ashraf et al., 2014; Bertrand et al., 2019; Muralidharan and Sundararaman, 2011; Duflo et al., 2015). One salient set of design considerations concerns which job components to tie incentives to i) inputs, such as worker attendance ii) outputs, like the quantity of services delivered or iii) ultimate outcomes of interest. Optimal choices depend on numerous factors, including i) how feasible it is to measure a given component accurately ii) what the return to additional effort is in moving the needle on the component and iii) which location of incentives is more likely to generate unintended negative effects originating from concerns about multi-tasking or worker manipulation. When performance can only be measured imperfectly, career incentives can play a significant role in motivating bureaucrats. The analysis by Bertrand et al. (2019) underscores the importance of career incentives tied to job promotions as a critical determinant of performance in the India Administrative Service, which employs quite sophisticated performance measures such as '360 evaluations'. Raffler (2022) provides field experimental evidence from Uganda indicating that increased political oversight, through measures like training and dissemination of financial information, can enhance bureaucratic accountability and service quality, particularly in regions with some degree of political competition

There is very little evidence about how to effectively select, monitor, and incentivise managers at higher bureaucratic levels. These workers wield considerable power and influence, and their effort is a key determinant of an agency's overall performance. Their work is more difficult to measure, and many public pay schemes are more rigid regarding how their compensation can vary. The firms' literature has shown that CEO characteristics and their use of management practices play an important role in explaining firm performance. Similar work for state bureaucracies is needed.

Many organisational challenges within the state prevent desirable policies from delivering a significant impact.

Many organisational challenges within the state prevent desirable policies from delivering a significant impact. In particular, given the numerous decisions and contingencies that typically arise after setting up the policy agenda at a higher level in government, the governance structure of these organisations is likely to play a significant role in whether these objectives are met.

We conclude this section with an important note. The bulk of the literature on the performance of bureaucracies concentrates on health, education, and taxation. We believe there is a need to shift attention to other functions in government, including ministries or agencies whose mission more directly relates to growth. For example, optimal selection and incentive schemes for bureaucrats in the ministry of commerce, central bank, industrial zone management committees, investment, and export promotion agencies could be very different from those for teachers and nurses. Moving forward with this research agenda presents two important challenges. The first is measuring performance on the job. For example, how pivotal an investment promotion agency is in bringing foreign investment into a country is difficult to assess, and even if this could be overcome, attributing this to the individual performance of agents in the organisation would present an even greater challenge. The second relates to the small number of agents in these organisations, which makes statistical inference difficult. As such, pushing the research frontier on this issue will likely still need to rely on the health, education, and tax sectors, but we believe it should be done in such a way that the results may be applicable to other agencies in government. In particular, teachers and nurses are typically public sector workers, so career incentives or the set of screening devices needed to select the best workers can arguably be very different from those for civil servants

The literature on bureaucratic performance needs to expand beyond health, education, and taxation to include government agencies related to economic growth.

The challenges of policy implementation

The standard objective of research in development economics is to identify effective policies that governments in low- and middle-income countries should implement to boost growth or improve the livelihoods of the poor populations. This is why a growing body of researchers now directly engages with policymakers on the design of new policies and regulations.

However, experience has shown that there can be a significant gap between a policy recommendation and its final impact on the economy. For example, one of the most important frameworks guiding economic policy in low- and middle-income countries are national development plans. These lengthy documents generally result from strong collaboration with donors, development consultancies, distinguished economists from international organisations, or academics. As such, good ideas are not necessarily scarce when it comes to the design of policies in low-income countries; the problem is that development plans do not always deliver the expected outcomes. Finding new ideas for policies, which in many cases must be tailored to the context of each country, and measuring the effectiveness of various policies should remain the central function of research in development economics. However, research should also consider how the challenges of policy implementation can be addressed.

There are two main reasons we support this view. The first relates to the importance of policy implementation in measuring the effectiveness of policies. In many cases, research focuses on assessing the impact of a policy in the law on a series of performance metrics. Thus, researchers would conclude that a good but poorly implemented policy is ineffective. For example, suppose a study measures the impact of cash transfers randomly allocated across districts on household-level outcomes but ignores the challenges raised by targeting and leakages. In that case, we will conclude that the policy delivers poor results.

The second rationale for economists to consider the challenges of implementation comes from Duflo (2017) in her lecture "The Economist as Plumber": (…) As [policy] designs actually get implemented in the world, this gives [economists] the responsibility to focus on many details about which their models and theories do not give much guidance. (...) It turns out that policymakers rarely have the time or inclination to focus on [these details] and will tend to decide on how to address them based on hunches, without much regard for evidence. Figuring all of this out is, therefore, not something that economists can just leave to policymakers after delivering their report: if they are taking on the challenge to influence the real world, not only do they need to give general prescriptions, but they must also engage with the details.

The interaction between policy design and implementation capability is also an area of research that deserves more attention. Public capacity, political factors and social norms are fundamental constraints that should be considered when recommending specific policies. For example, Atkin et al. (2019) argue that industrial policy requires strong institutional capacity to be put into action. While some government interventions may be theoretically legitimate, if the challenges surfaced by their implementation risk creating bigger distortions elsewhere, they should not be considered. Furthermore, the feasibility of tax reforms, changes in subsidy schemes, or simply budget arbitrages should be considered first and foremost political. Using data on public purchases in Russia, Best et al. (2022) study how the implementation of a common procurement policy - bid preferences for domestic suppliers - can significantly improve procurement performance but only when implemented by ineffective bureaucrats. While improving the effectiveness of bureaucrats is naturally a desirable objective, more research is needed to probe as relevant a question - namely, how states can implement policies when the limited effectiveness of bureaucrats is taken as a given.

Identifying externalities and market failures—or more broadly, the most stringent constraints to growth, designing policies in response, and implementing them are arguably not three distinct functions. In fact, most ministries in low- and middle-income countries handle these three functions together. The Center for International Development at Harvard University has been at the forefront of developing a new methodology for solving the complex problems of economic development—Problem Driven Iterative Adaptation (Andrews et al., 2017). They support a bottom-up approach where, through iteration and adaptation, local solutions are found and implemented for context-specific problems. While the performance of this approach still needs to be assessed with quantitative studies, we support a research agenda that would shed light on how authority is allocated within government and the structures needed to identify problems, find solutions, and put them into action. While a very challenging question for research, recommendations on the organisational structure of the state and giving bureaucracies higher capabilities to design and implement policies with limited support could be one of the interventions with the most significant impact on economic development.

The interaction between policy design and implementation capability is an area of research that deserves more attention.

In summary, one of the biggest challenges for policymakers in low-income countries is not necessarily just what to do but how to do it. We support taking a systems approach to bureaucracies to understand the constraints that complex policy implementation faces within the state (Pritchett, 2015; Hawe, 2015; Mansoor and Williams, 2018).

RESEARCH PRIORITIES

- How can the design of screening mechanisms for bureaucrats be improved to effectively select high-performing civil servants?
- What are the most critical skills and attributes that should be prioritised in the selection of bureaucrats to enhance public sector performance?
- What incentive structures are most effective in motivating bureaucrats to achieve higher performance and accountability?
- How can senior bureaucrats be better selected, incentivised, and monitored to improve organisational outcomes?
- What management practices are most efficient in enhancing performance within the public sector?
- How can the state design and build complex agencies that effectively deliver its policy objectives on structural change and economic development?
- What are the primary challenges to policy implementation in low- and middle-income countries, and how can they be addressed to improve outcomes?
- How do the challenges of policy implementation influence the design and effectiveness of public policies in low-income countries?
- How does intrinsic motivation among bureaucrats influence their performance, and what strategies can enhance this motivation?
- What role do career incentives and promotions play in the performance of public sector employees, and how can these be optimised?

III. Spending effectiveness

The state provides key services for growth. In most instances, the execution of these services requires the government to disburse large amounts of funds. Building infrastructure, transfers for social welfare programmes, and paying teachers and government employees all involve public spending.

While determining where public funds should be spent is critical, making sure the money actually ends up going where planned is also a first-order issue. Spending waste is particularly prevalent in low- and middle-income countries. The Inter-American Development Bank estimates that about 4.4%of GDP is lost from government spending misuse. Leakages are also common. Niehaus and Sukhtankar (2013), comparing official micro-records with original household surveys, estimate that the implementation of NREGS in Odisha led to a 75% leakage rate (see also Imbert and Papp, 2018 for a similar estimate). In Indonesia, Olken (2006) documents that at least 18% of rice assistance never reached the targeted beneficiaries. On infrastructure, still in Indonesia, Olken (2007) estimates that 24% of resources dedicated to road building are lost due to corruption. In Brazil, Finan and Mazzocco (2017) argue that about 25% of public expenditure is misallocated due to politically motivated distortions.

The list of sources for public spending waste is long, but the framework of Bandiera et al. (2009) allows us to distinguish two main types of spending ineffectiveness. The first is active waste, which increases the utility of the civil servant or politician, and the second passive waste, which does not. Active waste generally refers to forms of corruption where the benefits for public decision-makers are pecuniary. However, recent research finds that spending for political gain is also important in low- and middle-income countries. Passive waste, on the other hand, refers to inefficient or ineffective spending systems.

Our central focus of research for this theme is passive waste. We believe this area of research is currently overlooked and strongly encourage research that produces solutions to build more efficient procurement and payment structures.

However, passive waste cannot be studied in isolation, as it often affects or is impacted by active waste. For example, in response to fears of corruption, governments generally implement rules that guide the spending delegation of state bodies. In some instances, these can be particularly inefficient and generate passive waste.

Below, we explore the different elements likely to affect the effectiveness of government spending and review the existing evidence on each. The first is targeting—i.e. making sure that the actual recipients of public services are the intended ones. We then discuss procurement and payment systems and the use of public-private partnerships. Finally, we touch upon the political economy of spending.

Targeting

In this section, we study the issues that arise when states deliver public goods that are targeted to a specific group in the population. While the set of policies focused on a subset of the citizens (such as taxation) is large, we focus here primarily on the issues of targeting the poor populations. This is to reflect on the arguments made in Section 3 that the state needs to be at the centre of inclusive growth policies. However, many of the lessons from the literature on the targeting of social protection programmes apply to other policies. This literature has made considerable progress over the last two decades. We review the main studies on this issue and highlight potential areas for further research.

Passive waste in public spending, in-efficient procurement and payment systems, and their interaction with active waste such as corruption, needs further exploration.

One of the common problems low-income countries face when delivering services targeted to the poor populations is the lack of information on each individual's income. In most high-income countries, this information comes from tax codes. However, in low- and middle-income countries, the prevalence of self-employment, informal employment, or tax codes that are assigned only above a certain income threshold implies that most of the time, the income of the poor populations is not reported.

One potential solution for improving targeting is the proxy means test (PMT), whereby some information on household or individual characteristics is used in an algorithm to generate a measure of household income. However, even this targeting method can be difficult to implement in the context of low- and middle-income countries. Hanna and Olken (2018) argue that PMTs make imperfect predictions and are, therefore, likely to generate significant inclusion and exclusion errors. Camacho and Conover (2011) estimate that 16% of households cheated when reporting dwelling characteristics, demographics, and income in the census determining eligibility for a social programme in Colombia. By contrast, Banerjee et al. (2019) show that adding questions on durables owned by households in the census of households does not generate consumption distortions or misreports by households.

Another potential solution is to rely on the community to identify the poor populations. Alderman (2002) shows that local communities have more information than could be collected through survey data. Alatas et al. (2012) provide evidence on the pros and cons of using PMT versus community-based targeting in Indonesia. The proxy-based approach identifies more of the poor populations, while community-based methods identify more of the extreme poor populations and result in a higher rate of satisfaction with the programme in villages. Basurto et al. (2020) test the benefits of decentralising targeting to local chiefs for an agricultural subsidy in Malawi. These traditional leaders target households with higher returns to farm inputs. As such, the allocation of the subsidy is more efficient than through PMT targeting. Overall, these two studies suggest that communities use a different definition of poverty that may be more appropriate than traditional income-based targeting. By contrast, Bardhan and Mookherjee (2000; 2010) argue that community-based targeting introduces potential for elite capture. Comparing community-based approaches to standard top-down monitoring systems in Indonesia, Olken (2007) argues that audits are more efficient in reducing missing expenditures.

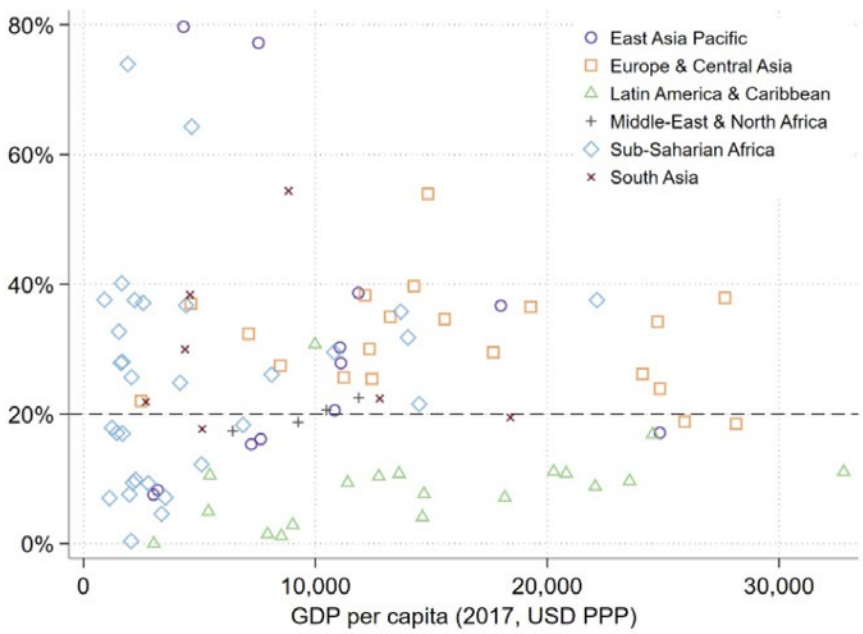
Ordeal or self-selection mechanisms, in which potential recipients pay a cost that screens out the rich, could also improve targeting. In a randomised experiment in Indonesia, Alatas et al. (2016) compare the efficiency of a traditional automatic-enrolment asset-based targeting methodology with a model using the same method but where households had to actively apply to be recipients of the programme. Results show that non-eligible individuals self-select and do not apply, assuming that they are unlikely to pass the asset test.

Targeting remains particularly inefficient in low-income countries.

Finally, simply providing more information to recipients about eligibility criteria could improve the self-selection of households into specific programmes or otherwise help ensure that benefits are not distributed to ineligible households. Banerjee et al. (2018) evaluate the effect of sending cards to inform households about their eligibility and entitlement in the country-wide 'Rice for the Poor' programme. While the intervention increased the quantity of rice received and reduced the co-pay price through an improved bargaining position, it did not lead to significant changes for ineligible households. As such, information provision mostly reduced programme leakages rather than improved targeting.

In light of this growing body of evidence on the effectiveness of different targeting mechanisms, the question remains - is there a need to do more research on these issues? **Figure 5** below illustrates that targeting remains particularly inefficient in low-income countries. It plots the percentage of total benefits going to the first quintile of the income distribution relative to the total benefits going to the population. In sub-Saharan Africa, in particular, some countries distribute less than 20% of all benefits to the bottom 20% of the population. If these benefits from social protection were distributed randomly across the whole population, the state would do a better job at targeting the poor populations than in the current setting. Bandiera and Parekh (2020) further explore the challenges of targeting social protection programmes in low- and middle-income countries.

Figure 5: Benefit incidence on the first quintile of income distribution



Notes: Targeting remains particularly inefficient in low-income countries. The figure plots the percentage of total benefits going to the first quintile of the income distribution relative to the total benefits going to the population. In sub-Saharan Africa, in particular, some countries distribute less than 20% of all benefits to the bottom 20% of the population. Source: World Bank.

The vast majority of the evidence described above comes from randomised controlled trials, where interventions are not implemented at scale. One of the challenges that could limit the use of better targeting methods in low-income countries, then, could be the lack of state capacity to implement them at scale. This may particularly apply in the case of community-driven targeting, and we encourage further research in this area. More broadly, understanding how to design efficient targeting in an environment with low state capacity deserves particular attention.

The effectiveness of other widely used targeting methods needs to be studied. Price-based subsidies, where the change in price depends on whether the goods are relatively more consumed by the poor, could be an alternative option to standard targeting. However, there is limited evidence comparing these types of programmes to cash transfers with traditional targeting methods.

Given the challenges raised by targeting in low- and middle-income countries, removing it completely and implementing Universal Basic Income (UBI) could be another option. Hanna and Olken (2018) develop a conceptual framework for comparing UBI with targeted programmes. In a recent paper, Banerjee et al. (2019) explores the existing evidence on the potential impact of UBI on households and economic growth. By definition, the general equilibrium effect of UBI is likely to be very important and should be a central question in the development of new research on the issue.

Finally, recent developments in technology and their diffusion across low-income countries are changing the constraints that states face and the opportunities available when targeting the poor. These include national ID systems or biometric card systems (Muralidharan et al., 2016). This type of solution could, in addition to reducing leakages, significantly reduce the costs of inclusion errors—by, for example, cross-checking eligibility information from multiple data sources.

Measuring the efficacy of various targeting methods creates an additional challenge for researchers. They have to come up with a way of measuring poverty or determining eligibility for a programme that performs better than the targeting method used by the programme itself. In most instances, this is done through surveys where enumerators make it clear to the respondents that the information reported will have no influence on their eligibility for programmes. This raises the issue of how much participants trust the survey team, which in turn could create biases in the assessment made by researchers. As such, developing revealing or incentivising mechanisms in surveys would allow progress in this area of research.

Procurement and PPPs

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1. Procurement, rules, and organisations

While a significant portion of state-provided services require direct disbursement to beneficiaries, many public goods are provided through procurement systems. To reduce opportunities for corruption, states generally implement rules that civil servants and politicians have to comply with to procure goods or services. However, incentives to improve spending along one easy-to-track metric may generate inefficiencies elsewhere. For example, if procurement agents always have to contract with the cheapest provider, they may compromise infrastructure quality.

Various forms of organisational arrangements or rules can deliver different levels of performance. Using data from independent assessments of project completion and quality in Nigeria and surveys on management practices from the institutions that implemented these projects, Rasul and Rogger (2018) show that the implementation of practices related to incentives and monitoring reduces project performance. They interpret these findings as evidence for bureaucrats having to multi-task and organisational incentives being typically poorly targeted. Reflecting on this, Rasul et al. (2020) find that discretion significantly increases project delivery in Ghana. Bandiera et al. (2019) show that increasing the autonomy of procurement officers with respect to auditors reduces the prices of the goods sourced by 9%. Similarly, Kala (2019) finds that granting managers in state-owned enterprises greater autonomy leads to greater value-added, though it also results in less emphasis on government-valued outcomes like worker amenities. By contrast, while financial incentives may induce better sourcing decisions, in practice, procurement agents are often limited in the scope of their actions—even those that may reduce prices—by their supervisors. Taken together, these findings suggest that autonomy in procurement may be an important way to improve spending efficiency. However, striking the right balance between reducing opportunities for corruption while leveraging

Autonomy in procurement may be an important way to improve spending efficiency.

procurement agents' private information is likely to depend on the context and intrinsic motivation of civil servants.

However, government-wide standards alone may not be the only source of explanation for the poor performance of public spending in low- and middle-income countries. There may also be more idiosyncratic factors at play. Looking at expenditure data from the government of Ghana, Williams (2015) shows that there is significant variation in spending performance across ministries.

In procurement procedures, bureaucrats play a significant role in screening potential private suppliers. Thus, the outcome of this selection process and the efficiency of public funds depends on the skills of those individuals working in civil service. In Italy, Bandiera et al. (2008) show that there is a large variation across public bodies in the amount spent for the same goods. Best et al. (2019) document that a large share of the quality-adjusted prices paid in public procurement can be attributed to individual bureaucrats. A natural question arising from these findings is whether additional rules could be implemented to compensate for the low skills of procurement agents or if trainings are the best way to increase capacity in public procurement.

2. PPPs and private sector involvement

A central question in public finance is the desirability of handing over the provision of public services or goods to the private sector. In high-income countries, examples of such delegation can range from health and medical services to prison operations. In low- and middle-income countries, public-private partnerships (PPPs) are usually concerned with building infrastructure. (There are exceptions; see Cristia et al., 2015; Busso and Galiani, 2019). PPPs usually differ from standard public procurement in that the private partner typically bears more risk, as it holds the responsibility of managing and maintaining the built facilities over a defined period of time. During the operation of the project, the private party receives a flow of revenue either from user fees or from the government. Engel et al. (2014) establish a useful conceptual framework for PPPs. These partnerships are often subject to ideological views, qualified either as the perfect solution to deliver high-quality services in an environment with low public finance capacity or as granting rent-seeking opportunities to large corporations. There is a critical need to move beyond these considerations and take a more objective view of PPPs. An ideal research agenda around this issue should not take the form of a succession of case studies seeking to understand what worked or not in each context. Instead, research should inform on the factors that affect the trade-offs in decision-making and how to design efficient incentive structures in PPP contracts.

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Payment systems

One frequent constraint on effective programme implementation is the lack of secure payment infrastructure to bypass opportunities for corruption and directly monitor transfers made to beneficiaries. This issue is at the frontier of passive and active waste. Specifically, funds dedicated to poverty alleviation are often simply seized by government officials along the way. Technology could potentially reduce the need for a large bureaucratic payment flow. Muralidharan et al. (2016) study the introduction of biometric smart cards in Andhra Pradesh, India for the implementation of NREGA. On top of a much lower leakage rate than in other Indian states for the same programme, this payment system also generated significant time savings for beneficiaries; as such, the benefits of the investment were well worth its cost. Banerjee et al. (2019) measure the impact of the introduction of a 'just-in-time' payment system to local authorities using e-invoicing as opposed to advance payments. They document that such a system, which facilitates the auditing process, significantly reduced the number of fake workers who are normally on the NREGA payroll but do not exist. This evidence suggests that technology for payment transfers is a promising idea. However, it still needs to be tested in other forms of social protection programmes or for other government spending contexts, such as humanitarian responses.

Finally, the political economy of public spending could play a significant role in explaining its poor performance. Williams and Dobelman (2017) show that about one-third of local infrastructure projects that are initiated in Ghana are never finished. A large fraction of these are the results of pressure from citizens to start new projects elsewhere. In other words, collective expenditure choices are dynamically inconsistent. This area of research, also at the frontier between active and passive waste, deserves more attention.

RESEARCH PRIORITIES

- What are the most effective methods for accurately targeting social protection programmes in low- and middle-income countries?
- How do community-based targeting approaches compare to algorithmic methods in terms of efficiency and effectiveness?
- How can self-selection mechanisms be optimised to ensure that social protection benefits reach the intended recipients?
- What impact does providing detailed eligibility information have on the efficiency and fairness of social protection programmes?
- How can new technologies, such as biometric ID systems, enhance the targeting and delivery of social protection programmes?
- What factors influence the efficiency of public procurement systems, and how can these systems be improved to reduce corruption and waste?
- What are the key considerations of designing effective public-private partnerships (PPPs) in infrastructure and service delivery?
- How can payment systems be designed to reduce corruption and ensure that public funds reach their intended recipients?
- What are the main political economy challenges that affect public spending efficiency, and how can they be addressed?
- How can technology and innovative payment systems enhance the transparency and effectiveness of public spending in low-income countries?

State effectiveness and climate change

As global temperatures rise due to climate change, we can expect more frequent disruptions in the short term and significant shifts in environmental and economic conditions over time. It is the government's duty to protect citizens from these emerging risks and to drive investments into reducing carbon emissions in the economy. Previous sections in this review have touched upon specific interventions the state can provide to mitigate the effects of climate change, such as social protection and information. Here, we briefly touch upon the importance of state capacity to address climate change. The current literature can be grouped into three categories: (i) managing pollution and other environmental externalities (ii) preserving natural resources and (iii) securing and providing funding to facilitate adaptation. We discuss each of these three literatures in turn.

1. Managing pollution and other externalities

Economics has long identified a role for the state in regulating externalities, with pollution and environmental degradation being key examples (see **IGC evidence paper on Energy and environment** for further detail on the role of the state in mitigating pollution). Indeed, most economists agree this is a basic and essential function of any state (Besley and Persson, 2009).

The same accountability issues that plague a state's ability to deliver services also impede its ability to perform these key functions. A textbook example is when firms bribe regulators to escape regulation. Duflo et al. (2013) document the prevalence of corruption among pollution auditors in India. Nonetheless, they also show that it is possible to provide incentives for better monitoring through better compensation and back-checking. Greenstone et al. (2023) provide evidence that investments in state capacity, in this case, investments in monitoring and enforcing, allowed an emissions market to work in India with important positive effects. For example, when monitoring environmentally harmful behaviour, discretionary inspections seem crucial to target highly polluting firms, in contrast to random audits (Duflo et al., 2018).

Bureaucrats need to be properly incentivised to enforce environmental regulation, particularly as it might be at the expense of economic activity.

More broadly, bureaucrats need to be properly incentivised to enforce environmental regulation, particularly as it might be at the expense of economic activity. Chen et al. (2018) show that explicit incentives to achieve environmental targets in China lead to a decrease in emissions. Kahn et al. (2015) study the role of promoting incentives by the central government, particularly around reducing water pollution, and show this helps to reduce environmental free-riding.

Another challenging, but critical issue, is deciding which level of government should optimally manage externalities. Environmental externalities can operate at the local, subnational, national, and global levels. As such, the traditional trade-offs in assigning policy responsibility between leveraging local information and successfully coordinating across jurisdictions are at play in this domain as well.

For example, Heo et al. (2023) find that air pollution from China significantly increases mortality in South Korea, suggesting a role for regional coordination. Another study in China shows the merits of monitoring by the central government. Zhang et al. (2018) show that the central government was able to reduce emissions, arguing environmental decentralisation is hard to implement due to local economic interests and inter-jurisdictional externalities. However, also in China, Anderson et al. (2019) show that NGOs can also play a role in providing useful information to motivate local governments to comply with environmental regulation. Importantly, NGOs provided incentives for local governments to disclose pollution information, as the central government could use NGO reports to better monitor local officials. Similarly, Tanaka et al. (2022) see that more stringent air quality standards in the US are linked to the relocation of lead-acid battery recycling to Mexico.

2. Sustaining biodiversity and managing natural resources

The state has a key role to play in preserving biodiversity and managing forests (and thereby mitigating carbon emissions). Dasgupta (2021) provides the classical treatment, emphasising that GDP does not account for the depletion of natural capital and biodiversity, and so does not provide a comprehensive view of national wealth. The available evidence suggests that effective policy can stem deforestation. Burgess et al. (2018) show that in Brazil, a policy change that increased the monitoring and enforcement capacity of the government to fight deforestation had positive effects. It shows evidence of a state taking clear action to increase fines for illegal deforestation, coupled with better detection of deforestation through remote sensing and commitment by the police and army to enforce the law. This result is supported by Assunção, et al. (2023), who provide causal evidence of the role remote sensing technology had in curbing deforestation.

Braganca and Dahis (2022) show that in Brazil, a national government policy was also effective in reducing deforestation by changing the incentives of local politicians connected to the agricultural sector. Nonetheless, improving how local governments are run might also benefit the environment. In particular, increasing the voice of marginalised groups who depend on the environment and natural resources may improve environmental management. Gulzar et al. (2023) argue that improving the representation of local government in India, particularly including groups whose interests might be aligned with conservation, reduced deforestation.

3. Securing climate finance and guiding investments

Effecting the energy transition will require substantial finances. Regulatory risks are one of the biggest concerns for actors involved in climate finance (Stroebel and Wurgler, 2021). Policy uncertainty reduces the incentives of firms to invest, as demonstrated by Wang et al. (2023), who found that firms reduced green investments when government subsidies in China became highly uncertain. Effective government policies are crucial for securing the necessary financing for climate adaptation and mitigation. This involves not only mobilising domestic revenue but also attracting substantial international climate finance and investments.

Limiting global warming to under 1.5 degrees Celsius necessitates extraordinarily high investments, estimated at US$ 4–6 trillion per year globally until 2050 (Lenaerts et al., 2021; Naran et al., 2021). These investments span across various sectors, from the electrification of transport vehicles to research and development on sustainable building materials. However, the current levels of climate finance fall significantly short of these needs. For instance, in 2020, sub-Saharan Africa received 70% of the total climate finance, amounting to only US$ 15.7 billion, despite the Paris Agreement's goal of US$ 100 billion per year for climate projects (Belianska et al., 2023).

The international community has recognised the importance of scaling up climate finance, yet the gap between available funds and required investments remains vast, particularly in low- and middle-income countries and for adaptation projects. To bridge this gap, it is imperative for states to enhance their capacity to attract and manage international climate finance. One key strategy is leveraging multilateral funds such as the UN Green Climate Fund, which many low-income countries currently underutilise due to capacity constraints (Timilsina, 2022). Furthermore, governments must develop robust systems for tracking and assessing the impact of climate investments. Demonstrating the effectiveness of these investments is crucial for maintaining and increasing donor support. This involves transparent reporting and accountability mechanisms that can assure international investors and donors of the proper utilisation and impact of their funds (Belianska et al., 2023).

Governments must develop robust systems for tracking and assessing the impact of climate investments.

Attracting international investments also requires creating a favourable regulatory environment that mitigates risks and encourages private sector participation. This includes ensuring policy stability and providing clear, long-term signals to the market about the government's commitment to climate goals. Innovative financial instruments and public-private partnerships can play a vital role in mobilising the necessary funds. By reducing regulatory risks and enhancing institutional capacities, states can better position themselves to secure the financing needed to combat climate change effectively (Naran et al., 2021).

Several policy challenges arise in this context, which can be translated into researchable questions: i) what mechanisms can be employed to enhance the capacity of low- and middle-income countries to fully utilise funds from international sources such as the UN Green Climate Fund? ii) how can governments develop effective systems for tracking and assessing the impact of climate investments to assure donors of their value? iii) what regulatory frameworks can be implemented to reduce policy uncertainty and encourage private sector investment in green projects? iv) what role can innovative financial instruments and public-private partnerships play in bridging the climate finance gap, and how can their effectiveness be maximised in different national contexts? Addressing these questions through rigorous research will be essential for developing strategies that enable states to secure the financing necessary for climate adaptation and mitigation.

RESEARCH PRIORITIES

- How can states effectively incentivise bureaucrats to enforce environmental regulations, particularly in low- and middle-income countries with high levels of corruption?
- What are the most effective strategies for monitoring and enforcing pollution controls at different levels of government (local, subnational, national, regional)?
- How can states balance local economic interests with environmental conservation to reduce deforestation and preserve biodiversity?
- What are the best practices for leveraging community involvement and marginalised groups in managing natural resources and conservation efforts?
- How can states improve their capacity to secure and manage international climate finance, particularly from sources like the UN Green Climate Fund?
- What regulatory frameworks and policy measures can reduce uncertainty and enhance private sector investment in climate adaptation and mitigation projects?
- How can innovative financial instruments and public-private partnerships be designed to effectively bridge the climate finance gap in different national contexts?
- What systems and mechanisms can governments develop to transparently track and assess the impact of climate investments to ensure continued donor support?

5. Conclusion

Two decades ago, the field of research in development economics went through a 'credibility revolution' (see Bandiera et al., 2014), which entailed the adoption of high standards in statistical inference methods. One essential component of that advancement is the use of RCTs to generate exogenous variation that allows the identification of causal relationships. The recent Nobel Prize award to Abhijit Banerjee, Esther Duflo, and Michael Kremer "for their experimental approach to alleviating global poverty" reflects the importance of this breakthrough. In parallel, the use of technology in government administrations of low-income countries and the growing availability of data that comes with it have allowed researchers to use advanced empirical techniques to work on topics that have thus far not been explored or explored only descriptively or in an abstract way.

The past decade witnessed a co-generation innovation. Researchers have increasingly collaborated with ministries and governments in low- and middle-income countries to understand not only the key determinants of poverty, state fragility, and state effectiveness but also to determine the policies or solutions that could lead to significant improvements on these issues. The field of taxation in low- and middle-income countries illustrates that point. The number of collaborations between academics and tax administrations worldwide has boomed over the past several years (Pomeranz and Vila-Belda, 2019). This has enhanced the understanding of the challenges of increasing tax compliance and designing more efficient tax policies for low- and middle-income countries. These cooperation channels not only allow academics to generate more research; they also offer the opportunity for researchers to significantly shape policy outcomes. In a recent study, Hjort et al. (2019) show that local policymakers not only exhibit a significant demand for research-based information but also that they respond to the research findings and use them in future decision-making.

Local policymakers not only exhibit a significant demand for research-based information but also respond to the research findings and use them in future decision-making.

Researchers now have the tools and the relationships to deliver meaningful and relevant evidence to influence policy in low- and middle-income countries. The critical question, then, remains: what are the most burning issues that researchers should focus on? In this review, we have highlighted three topics related to state effectiveness and economic governance that we believe are essential for delivering higher rates of inclusive growth in low- and middle-income countries. The first is the need to address fragility and create a functioning and effective state—one that can deliver on designing and implementing a wide range of economic development policies. The second is the need for the state to be more directly involved in poverty reduction programmes, particularly those that break poverty traps and, as such, increase productivity and economic growth. The third is the need to improve the effectiveness of state policies and state capacity by gathering more resources, spending them more wisely, and implementing the most efficient policies possible. These priorities are closely linked with addressing climate change and promoting sustainable growth, as the state must also protect against environmental risks and invest in decarbonisation. The ongoing data revolution, with the increased availability of high-quality data and advanced analytical techniques, will be instrumental in this research. By leveraging administrative data, machine learning, and other innovative approaches beyond traditional RCTs, researchers can provide the evidence base needed to guide policy decisions, ensuring that interventions are both effective and equitable.

6. References

Abbas, S. A. and Klemm, A. (2013). A Partial Race to the Bottom: Corporate Tax Developments in Emerging and Developing Economies. ***International Tax and Public Finance***, 20(4), 596–617.

Abebe, G., Caria, A. S., and Ortiz-Ospina, E. (2021). The Selection of Talent: Experimental and Structural Evidence from Ethiopia. ***American Economic Review***, 111(6), 1757–1806.

Abebe, G. T., Caria, S., Fafchamps, M., Falco, P., Franklin, S., and Quinn, S. (2021). Anonymity or Distance? Job Search and Labour Market Exclusion in a Growing African City. ***The Review of Economic Studies***, 88(3),279–1310.

Abel, M., Burger, R., and Piraino, P. (2020). The Value of Reference Letters: Experimental Evidence from South Africa. ***American Economic Journal: Applied Economics***, 12(3), 40–71.

Acemoglu, D. and Robinson, J. A. (2008). Persistence of Power, Elites, and Institutions. ***American Economic Revie***w, 98(1), 267–293.

Acemoglu, D. and Robinson, J. A. (2019). The Narrow Corridor: States, Societies, and the Fate of Liberty. New York: Penguin.

Acemoglu, D., Reed, T., and Robinson, J. A. (2014). Chiefs: Economic Development and Elite Control of Civil Society in Sierra Leone. ***Journal of Political Economy***, 122(2), 319–368.

African Development Bank (AfDB). (2016). Catalyzing Growth and Development through Effective Natural Resources Management. African Natural Resources Center.

Afridi, F., Debnath, S., and Somanathan, E. (2021). A Breath of Fresh Air: Raising Awareness for Clean Fuel Adoption. ***Journal of Development Economic***s.

Agrawal, D. R. and Zimmermann, L. (2019). Production and Evasion Responses with Limited State Capacity. ***International Growth Center*** Working Paper S-89411-INC-1.

Aizer, A., Eli, S., Ferrie, J., and Lleras-Muney, A. (2016). The Long-Run Impact of Cash Transfers to Poor Families. ***American Economic Review***, 106(4), 935–971.

Alatas, V., Banerjee, A., Hanna, R., Olken, B. A., and Tobias, J. (2012). Targeting the Poor: Evidence from a Field Experiment in Indonesia. ***American Economic Review***, 102(4), 1206–1240.

Alatas, V., Banerjee, A., Chandrasekhar, A. G., Hanna, R., and Olken, B. A. (2016). Network Structure and the Aggregation of Information: Theory and Evidence from Indonesia. ***American Economic Review***, 106(7), 1663–1704.

Albert, C., Bustos, P., and Ponticelli, J. (2021). The Effects of Climate Change on Labor and Capital Reallocation. ***National Bureau of Economic Research*** Working Paper 28995.

Allcott, H., Gentzkow, M., Mason, W., Wilkins, A., Barberá, P., Brown, T., Cisneros, J. C., Crespo-Tenorio, A., Dimmery, D., Freelon, D., González-Bailón, S., Guess, A. M., Kim, Y. M., Lazer, D., Malhotra, N., Moehler, D., Nair-Desai, S., Barj, H. N. E., Nyhan, B., . . . Tucker, J. A. (2024). The effects of Facebook and Instagram on the 2020 election: A deactivation experiment. ***PNAS***, 121(21). https://doi.org/10.1073/pnas.2321584121

Alderman, H. (2002). Do Local Officials Know Something We Don't? Decentralisation of Targeted Transfers in Albania. ***Journal of Public Economics***, 83(3), 375–404.

Alfonsi, L., Bandiera, O., Bassi, V., Burgess, R., Rasul, I., Sulaiman, M., and Vitali, A. (2020). Tackling Youth Unemployment: Evidence from a Labor Market Experiment in Uganda. ***Econometrica***, 88(6), 2369–2414.

Ali, D. A., Deininger, K., and Goldstein, M. (2014). Environmental and Gender Impacts of Land Tenure Regularization in Africa: Pilot Evidence from Rwanda. ***Journal of Development Economics***,110, 262–275.

Ali, D. A., Bowen, D., and Duponchel, K. D. M. (2016). Investigating the Gender Gap in Agricultural Productivity: Evidence from Uganda. ***World Development***, 87,152–170.

Ali, M., Shifa, A., Shimeles, A., and Woldeyes, F. B. (2015). Information Technology and Fiscal Capacity in a Developing Country: Evidence from Ethiopia. ***ICTD*** Working Paper 31.

Alix-Garcia, J., McIntosh, C., Sims, K. R. E., and Welch, J. R. (2013). The Ecological Footprint of Poverty Alleviation: Evidence from Mexico's Oportunidades Program. ***The Review of Economics and Statistics***, 95(2), 417–435.

Alkon, M. and Wang, E. H. (2018). Pollution Lowers Support for China's Regime: Quasi-Experimental Evidence from Beijing. ***The Journal of Politic***s, 80(1), 327–331.

Allen, T. and Atkin, D. (2016). Volatility and the Gains from Trade. ***National Bureau of Economic Research*** Working Paper 22276.

Allingham, M. G. and Sandmo, A. (1972). Income Tax Evasion: A Theoretical Analysis. ***Journal of Public Economics***, 1(3-4), 323–338.

Almunia, M., Hjort, J., Knebelmann, J., and Tian, L. (2022). Strategic or Confused Firms? Evidence from "Missing" Transactions in Uganda. ***The Review of Economics and Statistics***.

Amodio, F., Choi, J., De Giorgi, G., and Rahman, A. (2022). Bribes vs. Taxes: Market Structure and Incentives. ***Journal of Comparative Economics***, 50(2), 435–453.

Anderson, S. E., Anderson, T. L., Hill, A. C., Kahn, M. E., Kunreuther, H., Libecap, G. D., Mantripragada, H., Mérel, P., Plantinga, A., and Smith, V. K. (2018). The Critical Role of Markets in Climate Change Adaptation. National Bureau of Economic Research Working Paper 24645.

Anderson, S. E., Buntaine, M. T., Liu, M., and Zhang, B. (2019). Non-Governmental Monitoring of Local Governments Increases Compliance with Central Mandates: A National-Scale Field Experiment in China. ***American Journal of Political Science***, 63(3), 626–643.

Anderson, S. E., Plantinga, A. J., and Wibbenmeyer, M. (2023). Inequality in Agency Response: Evidence from Salient Wildfire Events. ***The Journal of Politics***, 85(2), 625–639.

Andrews, M., Pritchett, L., and Woolcock, M. (2017). Building State Capability: Evidence, Analysis, Action. Oxford University Press.

Annan, F. and Schlenker, W. (2015). Federal Crop Insurance and the Disincentive to Adapt to Extreme Heat. ***American Economic Review***, 105(5), 262–266.

Aragón, F. M., Oteiza, F., and Rud, J. P. (2021). Climate Change and Agriculture: Subsistence Farmers' Response to Extreme Heat. ***American Economic Journal: Economic Policy***, 13(1), 1–35.

Arias, E., Larreguy, H., Marshall, J., and Querubín, P. (2019). When Does Information Increase Electoral Accountability? Lessons from a Field Experiment in Mexico. In ***Information, Accountability, and Cumulative Learning***. Cambridge University Press.

Arias, S. B. and Blair, C. W. (2022). Changing Tides: Public Attitudes on Climate Migration. ***The Journal of Politics***, 84(1), 560–567.

Arjona, A. (2016). Rebelocracy. Cambridge University Press.

Asher, S. and Novosad, P. (2017). Politics and Local Economic Growth: Evidence from India. ***American Economic Journal: Applied Economics***, 9(1), 229–273.

Asher, S., Novosad, P., and Rafkin, C. (2020). Intergenerational Mobility in India: Estimates from New Methods and Administrative Data. Working Paper.

Ashraf, N. and Bandiera, O. (2018). Social Incentives in Organisations. ***Annual Review of Economic***s, vol. 10, 439–463.

Ashraf, N., Bandiera, O., and Lee, S. S. (2014). Awards Unbundled: Evidence from a Natural Field Experiment. ***Journal of Economic Behavior and Organization***, vol. 100, 44–63.

Ashraf, N., Bandiera, O., Davenport, E., and Lee, S. S. (2020). Losing Prosociality in the Quest for Talent? Sorting, Selection, and Productivity in the Delivery of Public Services. ***American Economic Review***, 110(5), 1355–1394.

Ashraf, N., Bau, N., Low, C., and McGinn, K. (2020). Negotiating a Better Future: How Interpersonal Skills Facilitate Intergenerational Investment. The Quarterly Journal of Economics, 135(2), 1095–1151.

Assunção, J., Gandour, C., and Rocha, R. (2023). DETER-ing Deforestation in the Amazon: Environmental Monitoring and Law Enforcement. ***American Economic Journal: Applied Economic***s, 15(2), 125–156.

Atkin, D., Chaudhry, A., Chaudry, S., Khandelwal, A. K., and Verhoogen, E. (2017). Organizational Barriers to Technology Adoption: Evidence from Soccer-Ball Producers in Pakistan. ***The Quarterly Journal of Economics***, 132(3), 1101–1164.

Atkin, D., Donaldson, D., Rasul, I., Teachout, M., Verhoogen, E., and Woodruff, C. (2019). Firms, Trade and Productivity. IGC Evidence Paper.

Avis, E., Ferraz, C., and Finan, F. (2018). Do Government Audits Reduce Corruption? Estimating the Impacts of Exposing Corrupt Politicians. ***Journal of Political Economy***, 126(5), 1912–1964.

Azam, M. (2012). The Impact of Indian Job Guarantee Scheme on Labor Market Outcomes: Evidence from a Natural Experiment. ***Institute of Labor Economics (IZA)*** Discussion Papers 6548.

Bachas, P., Brockmeyer, A., Dom, R., Semelet, C. (2023). Effective Tax Rates and Firm Size. ***CEPR*** Discussion Paper 17985.

Bachas, P., Fattal Jaef, R. N., and Jensen, A. (2019). Size-Dependent Tax Enforcement and Compliance: Global Evidence and Aggregate Implications. ***Journal of Development Economics***, vol 140, pp. 203–222.

Bachas, P., Gadenne, L., and Jensen, A. (2024). Tax Equity in Low- and Middle-Income Countries. ***Journal of Economic Perspectives***, 38(1), 55–80.

Bachas, P. J. and Soto, M. (2018). Not(ch) Your Average Tax System: Corporate Taxation Under Weak Enforcement. ***World Bank Policy Research*** Working Paper 8524.

Baczko, A. (2013). Judging in the Midst of Civil War: The Taliban Courts in Afghanistan (2001-2013). ***Politix***, 104(4).

Bagozzi, B. E., Koren, O., and Mukherjee, B. (2017). Droughts, Land Appropriation, and Rebel Violence in the Developing World. ***The Journal of Politics***, 79(3), 1057–1072.

Baird, S., McIntosh, C., and Ozler, B. (2011). Cash or Condition? Evidence from a Cash Transfer Experiment. ***The Quarterly Journal of Economics***, 126(4), 1709–1753.

Baird, S., Hicks, J. H., Kremer, M., and Miguel, E. (2016). Worms at Work: Long-Run Impacts of a Child Health Investment. ***The Quarterly Journal of Economics***, 131(4), 1637–1680.

Balán, P., Bergeron, A., Tourek, G., & Weigel, J. L. (2022). Local elites as state capacity: How city chiefs use local information to increase tax compliance in the Democratic Republic of the Congo. ***The American Economic Review***, 112(3), 762–797.

Balboni, C. (2021). In Harm's Way? Infrastructure Investments and the Persistence of Coastal Cities. Working Paper.

Balboni, C., Burgess, R., Heil, A., Old, J., and Olken, B. A. (2021). Cycles of Fire? Politics and Forest Burning in Indonesia. ***American Economic Review: Papers and Proceeding***s, vol. 111, 415–419.

Balboni, C., Burgess, R., and Olken, B. A. (2021). The Origins and Control of Forest Fires in the Tropics. Working Paper.

Balboni, C., Berman, A., Burgess, R., and Olken, B. A. (2023). The Economics of Tropical Deforestation. ***Annual Review of Economics***.

Bala´n, P., Bergeron, A., Tourek, G., and Weigel, J. L. (2022). Local Elites as State Capacity: How City Chiefs Use Local Information to Increase Tax Compliance in the Democratic Republic of the Congo. ***American Economic Review***, 112(3) , 762–797.

Bandiera, O. and Rasul, I. (2006). Social Networks and Technology Adoption in Northern Mozambique. ***The Economic Journal***, 116(514), 869–902.

Bandiera, O., Barankay, I., and Rasul, I. (2008). Social Capital in the Workplace: Evidence on Its Formation and Consequences. ***Labour Economics***, 15(4), 724–748.

Bandiera, O., Prat, A., and Valletti, T. (2009). Active and Passive Waste in Government Spending: Evidence from a Policy Experiment. American ***Economic Review***, 99(4),1278–1308.

Bandiera, O., Burgess, R., Das, N., Gulesci, S., Rasul, I., and Sulaiman, M. (2013). Can Basic Entrepreneurship Transform the Economic Lives of the Poor? ***Institute of Labor Economics (IZA)*** Discussion Papers 7386.

Bandiera, O., Burgess, R., Das, N., Gulesci, S., Rasul, I., and Sulaiman, M. (2017). Labor Markets and Poverty in Village Economies. ***The Quarterly Journal of Economics***, vol. 132, no. 2, pp. 811–870.

Bandiera, O., Elsayed, A., Smurra, A., and Zipfel, C. (2022). Young Adults and Labor Markets in Africa. ***Journal of Economic Perspectives***, 36(1), 81–100.

Bandiera, O., Bassi, V., Burgess, R., Rasul, I., Sulaiman, M., and Vitali, A. (2023). The Search for Good Jobs: Evidence from a Six-Year Field Experiment in Uganda. ***National Bureau of Economic Research*** Working Paper 31570.

Bandiera, O. and Parekh, N. (2020). Do Social Assistance Programmes Reach the Poor? Micro-Evidence from 123 Countries. ***IGC Growth Brief Series*** 023, International Growth Centre, London.

Banerjee, A., Duflo, E., Goldberg, N., Karlan, D., Osei, R., Pariente, W., Shapiro, J., Thuysbaert, B., and Udry, C. (2015). A Multifaceted Program Causes Lasting Progress for the Very Poor: Evidence from Six Countries. ***Science***, 348(6236).

Banerjee, A., Green, D., Green, J., and Pande, R. (2010). Can Voters Be Primed to Choose Better Legislators? Experimental Evidence from Rural India. Working Paper.

Banerjee, A., Kumar, S., Pande, R., and Su, F. (2011). Do Informed Voters Make Better Choices? Experimental Evidence from Urban India. Working Paper.

Banerjee, A., Hanna, R., Kyle, J., Olken, B. A., and Sumarto, S. (2018). Tangible Information and Citizen Empowerment: Identification Cards and Food Subsidy Programmes in Indonesia. J***ournal of Political Economy***, 126(2), 451–491.

Banerjee, A., Hanna, R., Olken, B., and Sverdlin Lisker, D. (2024). Social Protection in the Developing World. ***National Bureau of Economic Research*** Working Paper 32382.

Banerjee, A., Niehaus, P., and Suri, T. (2019). Universal Basic Income in the Developing World. ***Annual Review of Economics***, vol. 11, pp. 959–983.

Banerjee, A. V. and Duflo, E. (2007). The Economic Lives of the Poor. ***Journal of Economic Perspectives***, 21(1), 41–168.

Banerjee, A. V., Duflo, E., and Glennerster, R. (2008). Putting a Band-Aid on a Corpse: Incentives for Nurses in the Indian Public Health Care System. ***Journal of the European Economic Association***, 6(2-3), 487–500.

Banerjee, A. V., Mullainathan, S., and Hanna, R. (2012). Corruption. ***National Bureau of Economic Research*** Working Paper 17968.

Banerjee, O., Cicowiez, M., Horridge, M., and Vargas, R. (2016). A Conceptual Framework for Integrated Economic Environmental Modeling. ***The Journal of Environment and Development***, 25(3), 276–305.

Bank, W. (2011). World Development Report: Conflict, Security, and Development. World Bank.

Banks, J. S. and Sundaram, R. K. (1993). Adverse Selection and Moral Hazard in a Repeated Elections Model. In Political Economy. ***International Symposia in Economic Theory and Econometrics***. New York, NY: Cambridge University Press, 295–311.

Baragwanath, K. and Bayi, E. (2020). Collective Property Rights Reduce Deforestation in the Brazilian Amazon. ***PNAS***, 117(34) 20,495–20,502.

Bardhan, P., Mookherjee, D., and Monica, P. T. (2010). Impact of Political Reservations in West Bengal Local Governments on Anti-Poverty Targeting. ***Journal of Globalization and Development***, 1(1), 1–38.

Bardhan, P. K. and Mookherjee, D. (2000). Capture and Governance at Local and National Levels. ***American Economic Review***, 90(2),135–139.

Barreca, A., Clay, K., Deschenes, O., Greenstone, M., and Shapiro, J. S. (2016). Adapting to Climate Change: The Remarkable Decline in the US Temperature-Mortality Relationship over the Twentieth Century. ***Journal of Political Economy***, 124(1), 105–159.

Barrera-Osorio, F., Bertrand, M., Linden, L. L., and Perez-Calle, F. (2011). Improving the Design of Conditional Transfer Programs: Evidence from a Randomized Education Experiment in Colombia. ***American Economic Journal: Applied Economics***, 3(2), 167–195.

Barrera-Osorio, F., Linden, L. L., and Saavedra, J. E. (2019). Medium- and Long-Term Educational Consequences of Alternative Conditional Cash Transfer Designs: Experimental Evidence from Colombia. ***American Economic Journal: Applied Economics***, 11(3), 54–91.

Barro, R. J. (1999). Inequality, Growth, and Investment. ***National Bureau of Economic Research*** Working Paper 7038.

Barrows, G. and Ollivier, H. (2021). Foreign Demand, Developing Country Exports, and CO2 Emissions: Firm-Level Evidence from India. ***Journal of Development Economics***.

Barwick, P. J., Li, S., Lin, L., and Zou, E. (2019). From Fog to Smog: The Value of Pollution Information. ***National Bureau of Economic Research***, Working Paper 26541.

Baskaran, T., Min, B., and Uppal, Y. (2015). Election Cycles and Electricity Provision: Evidence from a Quasi-Experiment with Indian Special Elections. ***Journal of Public Economics***, vol. 126, pp. 64–73.

Basri, M. C., Felix, M., Hanna, R., and Olken, B. A. (2021). Tax Administration versus Tax Rates: Evidence from Corporate Taxation in Indonesia. ***American Economic Review***, 111(12), 3827–3871.

Bassi, V., Muoio, R., Porzio, T., Sen, R., and Tugume, E. (2022). Achieving Scale Collectively. ***Econometrica***, 90(6), 2937–2978.

Basurto, M. P., Dupas, P., and Robinson, J. (2020). Decentralization and Efficiency of Subsidy Targeting: Evidence from Chiefs in Rural Malawi. ***Journal of Public Economics***.

Bauer, M., Blattman, C., Chitilova, J., Miguel, E., Henrich, J., and Mitts, T. (2016). Can War Foster Cooperation? ***Journal of Economic Perspective***s.

Beaman, L., Chattopadhyay, R., Duflo, E., Pande, R., and Topalova, P. (2009). Powerful Women: Does Exposure Reduce Bias? ***The Quarterly Journal of Economics***, 124(4), 1497–1540.

Beaman, L., Keleher, N., and Magruder, J. (2018). Do Job Networks Disadvantage Women? Evidence from a Recruitment Experiment in Malawi. ***Journal of Labor Economics***, 36(1), 121–157.

Beath, A., Christia, F., and Enikolopov, R. (2017). Can Development Programs Counter Insurgencies?: Evidence from a Field Experiment in Afghanistan. ***MIT Political Science Department*** Research Paper 2011-14.

Bebbington, A., Abdulai, A.-G., Bebbington, D. H., Hinfelaar, M., and Sanborn, C. (2018). ***Governing Extractive Industries: Politics, Histories, Ideas***. Oxford University Press.

Bedoya, G., Coville, A., Haushofer, J., Isaqzadeh, M., and Shapiro, J. P. (2019). No Household Left Behind: Afghanistan Targeting the Ultra Poor Impact Evaluation. ***National Bureau of Economic Research*** Working Paper 25981.

Benhassine, N., Devoto, F., Duflo, E., Dupas, P., and Pouliquen, V. (2015). Turning a Shove into a Nudge? A "Labeled Cash Transfer" for Education. ***American Economic Journal: Economic Policy***, 7(3), 86–125.

Bergeron, A., Tourek, G., and Weigel, J. (2023). The State Capacity Ceiling on Tax Rates: Evidence from Randomized Tax Abatements in the DRC. ***National Bureau of Economic Research*** Working Paper 31685.

Bergolo, M., Ceni, R., Cruces, G., Giaccobasso, M., and Perez-Truglia, R. (2023). Tax Audits as Scarecrows: Evidence from a Large-Scale Field Experiment. ***American Economic Journal: Economic Policy***, 15(1),110–53.

Berkouwer, S. B. and Dean, J. T. (2022). Credit, Attention, and Externalities in the Adoption of Energy Efficient Technologies by Low-Income Households. American Economic Review, 112(10), 3291–3330.

Berman, E., Callen, M., Felter, J., and Shapiro, J. N. (2011). Do Working Men Rebel? Insurgency and Unemployment in Afghanistan, Iraq, and the Philippines. ***Journal of Conflict Resolution***, 55(4), 496–528.

Berman, E., Felter, J., and Shapiro, J. N. (2011). Can Hearts and Minds Be Bought? The Economics of Counter-Insurgency in Iraq. ***Journal of Political Economy***, 119(4), 766–819.

Berman, E., Felter, J., Shapiro, J., and Troland, E. (2013). Modest, Secure, and Informed: Successful Development in Conflict Zones. ***American Economic Review: Papers and Proceedings***, 103(3), 512–517.

Berman, E., Callen, M., Gibson, C., Long, J., and Rezaee, A. (2019). Elections and Government Legitimacy in Afghanistan? ***Journal of Economic Behavior and Organisation***.

Bertrand, M., Burgess, R., Chawla, A., and Xu, G. (2019). The Glittering Prizes: Career Incentives and Bureaucrat Performance. The Review of Economic Studies.

Besley, T. and Burgess, R. (2002). The Political Economy of Government Responsiveness: Theory and Evidence from India. The Quarterly Journal of Economics, 117(4),1415–1451.

Besley, T. and Ghatak, M. (2005). Competition and Incentives with Motivated Agents. ***American Economic Review***, 95(3), 616–636.

Besley, T., Burgess, R., Khan, A., and Xu, G. (2022). Bureaucracy and Development. ***Annual Review of Economics***.

Besley, T., Folke, O., Persson, T., and Rickne, J. (2017). Gender Quotas and the Crisis of the Mediocre Man: Theory and Evidence from Sweden. ***The American Economic Review***, 107(8), 2204–2242.

Besley, T. and Persson, T. (2009). The Origins of State Capacity: Property Rights, Taxation, and Politics. ***American Economic Review***, 99(4), 1218–1244.

Besley, T. and Persson, T. (2010). State Capacity, Conflict, and Development. ***Econometrica***, 78(1), 1–34.

Best, M., Brockmeyer, A., Kleven, H. J., Spinnewijn, J., and Waseem, M. (2015). Production versus Revenue Efficiency with Limited Tax Capacity: Theory and Evidence from Pakistan. ***Journal of Political Economy***, 123(6), 1311–1355.

Best, M. C. (2014). The Role of Firms in Workers' Earnings Responses to Taxes: Evidence from Pakistan. Working Paper.

Bhusal, B., Callen, M., Gulzar, S., Pande, R., Prillaman, S., and Singhania, D. (2022). Does Revolution Work? Evidence from the Birth of Nepal's Federal Democracy. Working Paper.

Biagini, B. and Miller, A. (2013). Engaging the Private Sector in Adaptation to Climate Change in Developing Countries: Importance, Status, and Challenges. Climate and Development, 5(3), 242–252.

Bidwell, K., Casey, K. A., and Glennerster, R. (2019). Debates: Voting and Expenditure Responses to Political Communication. ***Journal of Political Economy***.

Blackman, A., Corral, L., Lima, E. S., and Asner, G. P. (2017). Titling Indigenous Communities Protects Forests in the Peruvian Amazon. PNAS, 114(16), 4123–4128.

Blakeslee, D., Fishman, R., and Srinivasan, V. (2020). Way Down in the Hole: Adaptation to Long-Term Water Loss in Rural India. ***American Economic Review***, 110(1), 200–224.

Blattman, C., Hartman, A., and Blair, R. (2019). Engineering Informal Institutions: Long Run Impacts of Alternative Dispute Resolution on Violence and Property Rights in Liberia. ***Journal of Politics***.

Blouin, A. and Mukand, S. W. (2018). Erasing Ethnicity? Propaganda, Nation Building, and Identity in Rwanda. ***Journal of Political Economy***, 127(3), 1008–1062.

Bobonis, G. J., Cámara Fuertes, L. R., and Schwabe, R. (2016). Monitoring Corruptible Politicians. ***American Economic Review***, 106(8), 2371–2405.

Bonomi, G., Gennaioli, N., and Tabellini, G. (2021). Identity, Beliefs, and Political Conflict. ***The Quarterly Journal of Economics***, 136(4), 2371–2411.

Boonzaaier, W., Harju, J., Matikka, T., and Pirttilä, J. (2019). How Do Small Firms Respond to Tax Schedule Discontinuities? Evidence from South African Tax Registers. ***International Tax and Public Finance***, 26(5), 1104–1136.

Boustan, L. P., Kahn, M. E., and Rhode, P. W. (2012). Moving to Higher Ground: Migration Response to Natural Disasters in the Early Twentieth Century. ***American Economic Review: Papers and Proceedings***, 102(3), 238–244.

Bowles, S., Durlauf, S. N., and Hoff, K., Eds. (2016). Poverty Traps. Princeton University Press.

Bragança, A. and Dahis, R. (2022). Cutting Special Interests by the Roots: Evidence from the Brazilian Amazon. ***Journal of Public Economics***.

Braghieri, L., Ro'ee, L., and Mikhaylov, A. (2022). Social Media and Mental Health. ***American Economic Review***, 112(11), 3660–3693.

Brockmeyer, A., Mascagni, G., Nair, V., Waseem, M., and Almunia, M. (2024). Does the Value-Added Tax Add Value? Lessons Using Administrative Data from a Diverse Set of Countries. ***Journal of Economic Perspectives***, 38(1), 107–132.

Brockmeyer, A., Smith, S., Hernandez, M., and Kettle, S. (2019). Casting a Wider Tax Net: Experimental Evidence from Costa Rica. ***American Economic Journal: Economic Policy***, 11(3), 55–87.

Brollo, F., Nannicini, T., Perotti, R., and Tabellini, G. (2013). The Political Resource Curse. ***American Economic Revie***w, 103(5), 1759–1796.

Bryan, G. and Morten, M. (2019). The Aggregate Productivity Effects of Internal Migration: Evidence from Indonesia. ***Journal of Political Economy***, 127(5).

Bryan, G., Chowdhury, S., and Mobarak, A. M. (2014). Underinvestment in a Profitable Technology: The Case of Seasonal Migration in Bangladesh. ***Econometrica***, 82(5), 1671–1748.

Burgess, R., Hansen, M., Olken, B. A., Potapov, P., and Sieber, S. (2018). Wilderness Conservation and the Reach of the State: Evidence from National Borders in the Amazon. ***National Bureau of Economic Research***, Working Paper 24861.

Burgess, R., Jedwab, R., Miguel, E., Morjaria, A., and Padro i Miquel, G. (2015). The Value of Democracy: Evidence from Road Building in Kenya. ***American Economic Review*** 105(6), 1817–1851.

Burgess, R., Deschenes, O., Donaldson, D., and Greenstone, M. (2017). Weather, Climate Change and Death in India. Working Paper.

Burke, M., Hsiang, S. M., and Miguel, E. (2015). Climate and Conflict. ***Annual Review of Economics***, 7(1), 577–617.

Busso, M. and Galiani, S. (2019). The Causal Effect of Competition on Prices and Quality: Evidence from a Field Experiment. ***American Economic Journal: Applied Economic***s, 11(1), 33–56.

Bénabou, R. and Tirole, J. (2011). Identity, Morals, and Taboos: Beliefs as Assets. ***The Quarterly Journal of Economics***, 126(2), 805–855.

Cagé, J. and Gadenne, L. (2018). Tax Revenues and the Fiscal Cost of Trade Liberalization, 1792–2006. ***Explorations in Economic History***, vol. 70, 1–24.

Cahyadi, N., Hanna, R., Olken, B. A., Prima, R. A., Satriawan, E., and Syamsulhakim, E. (2020). Cumulative Impacts of Conditional Cash Transfer Programs: Experimental Evidence from Indonesia. ***American Economic Journal: Economic Policy***, 12(4), 88–110.

Callen, M., Fajardo-Steinhäuser, M., Findley, M. G., and Ghani, T. (2023). Can Digital Aid Deliver During Humanitarian Crises? ***arXiv preprin***t arXiv:2312.13432.

Callen, M. and Long, J. D. (2015). Institutional Corruption and Election Fraud: Evidence from a Field Experiment in Afghanistan. ***American Economic Review***, 105(1), 354–381.

Callen, M., Weigel, J. L., and Yuchtman, N. (2024). Experiments About Institutions. ***Annual Review of Economics***.

Camacho, A. and Conover, E. (2011). The Impact of Receiving Price and Climate Information in the Agricultural Sector. ***Inter-American Development Bank (IDB) Publications***, Working Papers 3099.

Cameron, D., Kaberuka, D., Khan, A., Collier, P., Besley, T., Burgess, R., Fearon, J., Krasner, S., Mehyar, N., Shafik, M., Soyoye, B., Widner, J., and Woods, N. (2018). Escaping the Fragility Trap. LSE - Oxford Commission on State Fragility, Growth and Development, Technical Report.

Campbell, S., Gerard, F., Jensen, A., Naritomi, J., Zeitlin, A., and Tourek, G. (2017). Strengthening Consumers' Participation in VAT Compliance Strategies in Rwanda. ***International Growth Centre*** Project Report.

Canen, N. J., Kendall, C., and Trebbi, F. (2020). Political Parties as Drivers of U.S. Polarization: 1927-2018. ***National Bureau of Economic Research*** Working Paper 28389.

Carrillo, P., Pomeranz, D., and Singhal, M. (2017). Dodging the Taxman: Firm Misreporting and Limits to Tax Enforcement. ***American Economic Journal: Applied Economics***, 9(2), 144–164.

Carrillo, P. E., Emran, M. S., and Aparicio, G. (2011). Taxes, Prisons, and CFOs: The Effects of Increased Punishment on Corporate Tax Compliance in Ecuador. ***Institute for International Economic Policy (IIEP)*** Working Paper 2011-02.

Case, A. and Deaton, A. (2005). Health and Wealth among the Poor: India and South Africa Compared. ***American Economic Review***, 95(2), 229–233.

Casey, K., Bakarr Kamara, A., and Meriggi, N. (2021). An Experiment in Candidate Selection. ***American Economic Review***, 111(5), 1575–1612.

Casey, K., Glennerster, R., Miguel, E., and Voors, M. (2023). Skill versus Voice in Local Development. ***Review of Economics and Statistics***, 105(2), 311–326.

Castaneda, A., Doan, D., Newhouse, D., Nguyen, M. C., Uematsu, H., and Azevedo, J. P. (2018). A New Profile of the Global Poor. ***World Developmen***t.

Castells-Quintana, D., del Pilar Lopez-Uribe, M., and McDermott, T. K. (2022). Population Displacement and Urban Conflict: Global Evidence from More Than 3300 Flood Events. ***Journal of Development Economics***.

Chalendard, C., Fernandes, A. M., Raballand, R., and Rijkers, B. (2023). Corruption in Customs. ***The Quarterly Journal of Economics***, 138(1), 575–636.

Chattopadhyay, R. and Duflo, E. (2004). Women as Policy Makers: Evidence from a Randomized Policy Experiment in India. ***Econometrica***, 72(5), 1409–1443.

Chen, S., Oliva, P., and Zhang, P. (2022). The Effect of Air Pollution on Migration: Evidence from China. ***Journal of Development Economics***.

Chen, Y. J., Li, P., and Lu, Y. (2018). Career Concerns and Multitasking Local Bureaucrats: Evidence of a Target-Based Performance Evaluation System in China. ***Journal of Development Economics***.

Chetty, R. (2009). Is the Taxable Income Elasticity Sufficient to Calculate Deadweight Loss? The Implications of Evasion and Avoidance. ***American Economic Journal: Economic Policy***, 1(2), 31–52.

Choi, D., Gao, Z., and Jiang, W. (2020). Attention to Global Warming. ***The Review of Financial Studies***, 33(3), 1112–1145.

Chong, A., De La O, A. L., Karlan, D., and Wantchekon, L. (2015). Does Corruption Information Inspire the Fight or Quash the Hope? A Field Experiment in Mexico on Voter Turnout, Choice, and Party Identification. ***The Journal of Politic***s, 77(1), 55–71.

Christensen, D., Dube, O., Haushofer, J., Siddiqi, B., and Voors, M. (2020). Building Resilient Health Systems: Experimental Evidence from Sierra Leone and the 2014 Ebola Outbreak. ***The Quarterly Journal of Economics***, 136(2),1145–1198.

Clemens, M. A. and Kremer, M. (2016). The New Role for the World Bank. ***Journal of Economic Perspectives***, 30(1), 53–76.

Clots-Figueras, I. and Masella, P. (2013). Education, Language and Identity. ***The Economic Journa***l, 123(570), F332–F357.

Cole, S., Healy, A., and Werker, E. (2012). Do Voters Demand Responsive Governments? Evidence from Indian Disaster Relief. ***Journal of Development Economic***s, 97(2),167–181.

Cole, S. A. and Xiong, W. (2017). Agricultural Insurance and Economic Development. ***Annual Review of Economics***.

Collier, P., Hoeffler, A., and Rohner, D. (2009). Beyond Greed and Grievance: Feasibility and Civil War. ***Oxford Economic Papers***, 61(1),1–27.

Colmer, J. (2021). Temperature, Labor Reallocation, and Industrial Production: Evidence from India. ***American Economic Journal: Applied Economic***s, 13(4), 101–124.

Colonnelli, E., Prem, M., and Teso, E. (2020). Patronage and Selection in Public Sector Organizations. ***American Economic Review***, 110(10), 3071–3099.

Colvin, R. M. and Jotzo, F. (2021). Australian Voters' Attitudes to Climate Action and Their Social-Political Determinants. ***PLOS ONE***, 16(3), 1–18.

Corno, L., La Ferrara, E., and Burns, J. (2022). Interaction, Stereotypes, and Performance: Evidence from South Africa. ***American Economic Review***, 112(12), 3848–3875.

Costinot, A., Donaldson, D., and Smith, C. (2016). Evolving Comparative Advantage and the Impact of Climate Change in Agricultural Markets: Evidence from 1.7 Million Fields around the World. ***Journal of Political Economy***, 124(1), 205–248.

Cristia, J., Prado, A. G., and Peluffo, C. (2015). The Impact of Contracting In and Contracting Out Basic Health Services: The Guatemalan Experience. ***World Development***.

Crost, B., Felter, J., and Johnston, P. (2014). Aid Under Fire: Development Projects and Civil Conflict. ***American Economic Review***, 104(6), 1833–1856.

Cruz, C., Keefer, P., and Labonne, J. (2021). Buying Informed Voters: New Effects of Information on Voters and Candidates. ***The Economic Journal*** 131(635), 1105–1134.

Dal Bo´, E. and Finan, F. (2018). Progress and Perspectives in the Study of Political Selection. ***Annual Review of Economic***s, 10(1), 541–575.

Dal Bo´, E., Finan, F., Folke, O., Persson, T., and Rickne, J. (2018). The Rise of the Radical Right in Sweden: Consequences for Political Selection. Working Paper.

Danelon, A. F., Spolador, H. F., and Kumbhakar, S. C. (2021). Weather and Population Size Effects on Water and Sewer Treatment Costs: Evidence from Brazil. ***Journal of Development Economics***.

Dar, M. H., de Janvry, A., Emerick, K., Raitzer, D., and Sadoulet, E. (2013). Flood-Tolerant Rice Reduces Yield Variability and Raises Expected Yield, Differentially Benefitting Socially Disadvantaged Groups. ***Scientific Report***s, 3(1).

Dasgupta, P. (2021). The Economics of Biodiversity: The Dasgupta Review. HM Treasury, Technical Report.

Dasgupta, P. (2013). Employment Generation Schemes and Long-Term Development: A Case Study of the NREGA in India. In ***Employment Guarantee Schemes***, Murray, M. J. and Forstater, M., Eds. Palgrave Macmillan, 103–125, March.

De Luca, G., Hodler, R., Raschky, P. A., and Valsecchi, M. (2018). Ethnic Favoritism: An Axiom of Politics? ***Journal of Development Economics***.

De Mel, S., McKenzie, D., and Woodruff, C. (2008). Returns to Capital in Microenterprises: Evidence from a Field Experiment. ***The Quarterly Journal of Economics***, 123(4), 1329–1372.

Deaton, A. (1997). The Analysis of Household Surveys: A Microeconometric Approach to Development Policy. ***The World Bank***.

Deaton, A. (2010). Instruments, Randomisation, and Learning about Development. ***Journal of Economic Literature***, 48(2), 424–455.

Del Carpio, L. (2013). Are the Neighbors Cheating? Evidence from a Social Norm Experiment on Property Taxes in Peru. Working Paper.

Del Ponte, A., Delton, A. W., Kline, R., and Seltzer, N. A. (2017). Passing It Along: Experiments on Creating the Negative Externalities of Climate Change. ***The Journal of Politics***, 79(4), 1444–1448.

Dell, M. and Querubin, P. (2018). Nation Building through Foreign Intervention: Evidence from Discontinuities in Military Strategies. ***The Quarterly Journal of Economic***s, 133(2), 701–764.

DellaVigna, S., Enikolopov, R., Mironova, V., Petrova, M., and Zhuravskaya, E. (2014). Cross-Border Media and Nationalism: Evidence from Serbian Radio in Croatia. ***American Economic Journal: Applied Economics***, 6(3), 103–132.

Deserranno, E. (2019). Financial Incentives as Signals: Experimental Evidence from the Recruitment of Village Promoters in Uganda. ***American Economic Journal: Applied Economics***, 11(1), 277–317.

Diop, B. (2023). Upgrade or Migrate: The Consequences of Input Subsidies on Household Labor Allocation. PhD dissertation, University of Oxford.

Dipoppa, G. and Gulzar, S. (2023). No Smoke Without a Fire: Bureaucratic Incentives, Crop Burning, and Pollution in South Asia. Working Paper.

Donovan, K., Lu, W. J., and Schoellman, T. (2023). Labor Market Dynamics and Development. ***The Quarterly Journal of Economics***, 138(4), 2287–2325.

Dube, O. and Vargas, J. F. (2013). Commodity Price Shocks and Civil Conflict: Evidence from Colombia. ***The Review of Economic Studies***, 80(4), 1384–1421.

Dube, O., Cilliers, J., and Siddiqi, B. (2016). Reconciling after Civil Conflict Increases Social Capital but Decreases Individual Wellbeing. ***Science***, 352(6287), 787–794.

Duflo, E. (2017). Richard T. Ely Lecture: The Economist as Plumber. ***American Economic Review: Papers and Proceeding***s, 107(5), 1–26.

Duflo, E., Kremer, M., and Robinson, J. (2011). Nudging farmers to use fertilizer: Theory and experimental evidence from Kenya. ***American Economic Review***, 101 (6), 2350–2390.

Duflo, E., Hanna, R., and Ryan, S. P. (2012). Incentives work: Getting teachers to come to school. ***American Economic Review***, 102 (4), 1241–1278.

Duflo, E., Greenstone, M., Pande, R., and Ryan, N. (2013). Truth-telling by third-party auditors and the response of polluting firms: Experimental evidence from India. ***The Quarterly Journal of Economics***, 128 (4), 1499–1545.

Duflo, E., Greenstone, M., Pande, R., and Ryan, N. (2018). The value of regulatory discretion: Estimates from environmental inspections in India. ***Econometrica***, 86 (6), 2123–2160.

Dunning, T., Monestier, F., Piñeiro, R., Rosenblatt, F., and Tunoón, G. (2017). Is paying taxes habit forming? Theory and evidence from Uruguay. Working Paper.

Dunning, T., Grossman, G., Humphreys, M., Hyde, S. D., McIntosh, C., Adida, C., Arias, E., Boas, T. C., Buntaine, M., Bush, S., Chauchard, S., Chowdhury, A., Gottlieb, J., Hidalgo, F. D., Holmlund, M., Jablonski, R., Kramon, E., Larreguy, H. A., Lierl, M., Marshall, J., McClendon, G., Melo, M. A., Nielson, D., Pickering, P., Platas, M., Querubín, P., Reardon, C., and Sircar, N. (2019). Information, accountability, and cumulative learning. Cambridge University Press.

Dwenger, N., Kleven, H., Rasul, I., and Rincke, J. (2016). Extrinsic and intrinsic motivations for tax compliance: Evidence from a field experiment in Germany. ***American Economic Journal: Economic Policy***, 8 (3), 203–232.

Dzansi, J., Jensen, A., Lagakos, D., and Telli, H. (2022). Technology and local state capacity: Evidence from Ghana. ***National Bureau of Economic Research***, Working Paper 29923.

Eissa, N., Zeitlin, A., Karpe, S., and Murray, S. (2014). Incidence and impact of electronic billing machines for VAT in Rwanda. ***International Growth Centre*** Report.

Emerick, K., de Janvry, A., Sadoulet, E., and Dar, M. H. (2016). Technological innovations, downside risk, and the modernization of agriculture. ***American Economic Review***, 106 (6), 1537–1561.

Engel, E., Fischer, R., and Galetovic, A. (2015). Soft budgets and renegotiations in public-private partnerships: Theory and evidence. ***University of Chile, Department of Economics***, Working Papers 408.

Fack, E. G., and Landais, C. (2012). Charitable giving and tax policy: A historical and comparative perspective. In CEPR Conference Volume. Paris School of Economics.

Fafchamps, M., and Lund, S. (2003). Risk-sharing networks in rural Philippines. ***Journal of Development Economic***s, 71 (2), 261–287.

Fafchamps, M., McKenzie, D., Quinn, S., and Woodruff, C. (2014). Microenterprise growth and the flypaper effect: Evidence from a randomized experiment in Ghana. J***ournal of Development Economic***s, 106, 211–226.

Fair, C. C., Kuhn, P. M., Malhotra, N., and Shapiro, J. N. (2017). Natural disasters and political engagement: Evidence from the 2010-11 Pakistani floods. ***Quarterly Journal of Political Science***, 12 (1), 99–141.

Fankhauser, S. (2017). Adaptation to climate change. ***Annual Review of Resource Economic***s, 9 (1), 209–230.

Farole, T. (2011). Special economic zones in Africa: Comparing performance and learning from global experience. World Bank Publications - Books, ***The World Bank Group***.

Fearon, J. D. (1999). Electoral accountability and the control of politicians: Selecting good types versus sanctioning poor performance. In Democracy, Accountability, and Representation. Cambridge: Cambridge University Press.

Feng, S., Krueger, A. B., and Oppenheimer, M. (2010). Linkages among climate change, crop yields, and Mexico–US cross-border migration. ***PNAS*** 107 (32), 14257–14262.

Feng, Y., Lagakos, D., and Rauch, J. E. (2023). Unemployment and development. ***The Economic Journal***.

Ferraro, P. J., and Simorangkir, R. (2020). Conditional cash transfers to alleviate poverty also reduced deforestation in Indonesia. ***Science*** Advances, 6(24).

Ferraz, C., and Finan, F. (2008). Exposing corrupt politicians: The effects of Brazil's publicly released audits on electoral outcomes. ***The Quarterly Journal of Economic***s, 123(2), 703–745.

Ferraz, C., and Finan, F. (2011). Electoral accountability and corruption: Evidence from the audits of local governments. ***American Economic Revie***w, 101(4), 1274–1311.

Ferraz, C., and Finan, F. (2011). Motivating politicians: The impacts of monetary incentives on quality and performance. Working Paper.

Ferreira, F. H. G., and Peragine, V. (2016). Individual responsibility and equality of opportunity. In The Oxford Handbook of Well-Being and Public Policy. Oxford University Press, June.

Finan, F., and Mazzocco, M. (2020). Electoral incentives and the allocation of public funds. ***Journal of the European Economic Associatio***n, 19(5), 2467–2512.

Finan, F., Olken, B. A., and Pande, R. (2017). The personnel economics of the developing state. In ***Handbook of Economic Field Experiment***s, vol. 2, 467–514. Eds. Banerjee, A. V., and Duflo, E. North-Holland.

Finkelstein, A., and Hendren, N. (2020). Welfare analysis meets causal inference. ***The Journal of Economic Perspectives***, 34(4), 146–167.

Fisman, R., and Golden, M. A. (2020). Corruption: What everyone needs to know. New York, NY: Oxford University Press.

Fisman, R., and Svensson, J. (2007). Are corruption and taxation really harmful to growth? Firm level evidence. ***Journal of Development Economics***, 83(1), 63–75.

Fisman, R., and Wei, S.-J. (2004). Tax rates and tax evasion: Evidence from missing imports in China. ***Journal of Political Economy***, 112(2), 471–496.

Fisman, R., Schulz, F., and Vig, V. (2014). The private returns to public office. ***Journal of Political Economy***, 122(4), 806–862.

Fitch-Fleischmann, B., and Kresch, E. P. (2021). Story of the hurricane: Government, NGOs, and the difference in disaster relief targeting. ***Journal of Development Economic***s.

Flanigan, S. T. (2008). Nonprofit service provision by insurgent organisations: The cases of Hizballah and the Tamil Tigers. ***Studies in Conflict and Terrorism***, 31(6), 499–519.

Flores-Macías, G. A. (2018). Building support for taxation in developing countries: Experimental evidence from Mexico. ***World Development***.

Folke, O. (2014). Shades of brown and green: Party effects in proportional election systems. ***Journal of the European Economic Association***, 12(5), 1361–1395.

Fouka, V., and Voth, H.-J. (2023). Collective remembrance and private choice: German–Greek conflict and behavior in times of crisis. ***American Political Science Revie***w, 117(3), 851–870.

Fujiwara, T. (2015). Voting technology, political responsiveness, and infant health: Evidence from Brazil. ***Econometrica***, 83(2), 423–464.

Fujiwara, T., and Wantchekon, L. (2013). Can informed public deliberation overcome clientelism? Experimental evidence from Benin. ***American Economic Journal: Applied Economics***, 5(4), 241–255.

Fujiwara, T., Hilbig, H., and Raffler, P. (2024). Biased party nominations as a source of women's electoral underperformance. ***OSF Preprints***.

International Monetary Fund. Options for low-income countries' effective and efficient use of tax incentives for investment.

Gadenne, L., Nandi, T. K., and Rathelot, R. (2015). Taxation and supplier networks: Evidence from India. ***International Monetary Fund***, Working Paper, 2022.

Gadenne, L., Norris, S., Singhal, M., and Sukhtankar, S. (2022). In-kind transfers as insurance. ***Institute for Fiscal Studies***, Working Paper.

Gagliarducci, S., and Nannicini, T. (2013). Do better paid politicians perform better? Disentangling incentives from selection. ***Journal of the European Economic Associatio***n, 11(2), 369–398.

Galula, D. (1964). Counterinsurgency warfare: Theory and practice. Praeger Security International.

Gazeaud, J., Mvukiyehe, E., and Sterck, O. (2023). Cash transfers and migration: Theory and evidence from a randomized controlled trial. ***The Review of Economics and Statistics***, 105(1), 143–157.

Gerard, F., Naritomi, J., and Seibold, A. (2018). Tax systems and inter-firm trade: Evidence from the VAT in Brazil. ***London School of Economics, Mimeo.***

Gerard, F., and Naritomi, J. (2021). Job displacement insurance and (the lack of) consumption-smoothing. ***American Economic Review***, 111(3), 899–942.

Gertler, P. (2004). Do conditional cash transfers improve child health? Evidence from PROGRESA's control randomized experiment. ***American Economic Review***, 94(2), 336–341.

Gertler, P., and Gruber, J. (2002). Insuring consumption against illness. ***American Economic Review***, 92(1), 51–70.

Ghatak, M. (2015). Theories of poverty traps and anti-poverty policies. The World Bank Economic Review, 29, 77–105.

Gillitzer, C., Kleven, H. J., and Slemrod, J. (2017). A characteristics approach to optimal taxation: Line drawing and tax-driven product innovation. ***The Scandinavian Journal of Economics***, 119(2), 240–267.

Ginés, X., and Mansuri, G. (2018). Together we will: Experimental evidence on female voting behavior in Pakistan. ***American Economic Journal: Applied Economic***s, 10(1), 207–235.

Giustozzi, A., and Baczko, A. (2014). The politics of the Taliban's shadow judiciary, 2003–2013. ***Central Asian Affairs***, 1(2), 199–224.

Gordon, R., and Li, W. (2009). Tax structures in developing countries: Many puzzles and a possible explanation. ***Journal of Public Economics***, 93(7-8), 855–866.

Graff Zivin, J., and Neidell, M. (2012). The impact of pollution on worker productivity. ***American Economic Review***, 102(7), 3652–3673.

Gray, C. L., and Mueller, V. (2012). Natural disasters and population mobility in Bangladesh. ***PNAS***, 109(16), 6000–6005.

Greenstone, M., Pande, R., Sudarshan, A., and Ryan, N. (2023). Can pollution markets work in developing countries? Experimental evidence from India. ***The Warwick Economics Research Paper Series***, 1453.

Grossman, G. M., and Helpman, E. (2020). Identity politics and trade policy. ***The Review of Economic Studies***, 88(3), 1101–1126.

Grossman, G., Humphreys, M., and Sacramone-Lutz, G. (2020). Information technology and political engagement: Mixed evidence from Uganda. ***The Journal of Politics***, 82(4), 1321–1336.

Gstoettner, M., and Jensen, A. (2010). Aid and public finance: A missing link? ***Atlantic Economic Journal***, 38(2), 217–235.

Guiso, L., Herrera, H., Morelli, M., and Sonno, T. (2017). Demand and supply of populism. ***EIEF*** Working Paper 1703.

Gulzar, S. (2021). Who enters politics and why? ***Annual Review of Political Science***, 24(1).

Gulzar, S., and Khan, M. Y. (2023). "Good politicians": Experimental evidence on motivations for political candidacy and government performance. ***IZA*** Discussion Papers 16176.

Gulzar, S., Hai, Z., and Paudel, B. K. (2021). Information, candidate selection, and the quality of representation: Evidence from Nepal. ***The Journal of Politics***, 83(4), 1511–1528.

Gulzar, S., Lal, A., and Pasquale, B. (2023). Representation and forest conservation: Evidence from India's scheduled areas. ***American Political Science Review*** (Forthcoming).

Guo, X., Erika, D., Diana, M., and Edoardo, T. (2023). Bureaucracy. ***VoxDevLit***, 8.1.

Gutierrez, E., and Teshima, K. (2018). Abatement expenditures, technology choice, and environmental performance: Evidence from firm responses to import competition in Mexico. ***Journal of Development Economics***, 133, 264–274.

Hallegatte, S. (2016). Shock waves: Managing the impacts of climate change on poverty. ***World Bank***.

Hallegatte, S. (2012). A cost effective solution to reduce disaster losses in developing countries: Hydro-meteorological services, early warning, and evacuation. ***World Bank***.

Hanna, R., and Olken, B. A. (2018). Universal basic incomes versus targeted transfers: Anti-poverty programs in developing countries. ***Journal of Economic Perspectives***, 32(4), 201–226.

Harding, R., Prem, M., Ruiz, N. A., and Vargas, D. L. (2023). Buying a blind eye: Campaign donations, regulatory enforcement, and deforestation. ***American Political Science Review***, 117(1), 1–19.

Haushofer, J., and Shapiro, J. (2016). The short-term impact of unconditional cash transfers to the poor: Experimental evidence from Kenya. ***The Quarterly Journal of Economics***, 131(4), 1973–2042.

Haushofer, J., and Shapiro, J. (2018). The long-term impact of unconditional cash transfers: Experimental evidence from Kenya. ***Busara Center for Behavioral Economics***, Technical Report.

Hawe, P. (2015). Lessons from complex interventions to improve health. Annual Review of Public Health, 36, 307–322.

Hazlett, C., and Mildenberger, M. (2020). Wildfire exposure increases pro-environment voting within Democratic but not Republican areas. ***American Political Science Review***, 114(4), 1359–1365.

Henderson, J. V., Storeygard, A., and Deichmann, U. (2017). Has climate change driven urbanization in Africa? ***Journal of Development Economics***, 124, 60–82.

Hendren, N. (2016). The policy elasticity. ***Tax Policy and the Econom***y, 30(1), 51–89.

Hendren, N., and Sprung-Keyser, B. (2020). A unified welfare analysis of government policies. ***The Quarterly Journal of Economics***, 135(3), 1209–1318.

Heo, S. W., Ito, K., and Kotamarthi, R. (2023). International spillover effects of air pollution: Evidence from mortality and health data. ***National Bureau of Economic Research*** Working Paper 30830.

Heo, S., Jaimovich, D., and Schindeln, M. (2021). Environmental effects of development programs: Experimental evidence from West African dryland forests. ***Journal of Development Economics***.

Hjort, J. (2014). Ethnic divisions and production in firms. ***The Quarterly Journal of Economics***, 129(4), 1899–1946.

Hsiao, A. (2023). Sea level rise and urban adaptation in Jakarta. Working Paper.

Hsieh, C.-T., Hurst, E., Jones, C. I., and Klenow, P. J. (2019). The allocation of talent and US economic growth. ***Econometrica***, 87(5), 1439–1474.

Humphreys, M., and Weinstein, J. (2012). Policing politicians: Citizen empowerment and political accountability in Uganda preliminary analysis. Working Paper.

Imbert, C., and Papp, J. (2015). Labor market effects of social programmes: Evidence from India's employment guarantee. ***American Economic Journal: Applied Economics***, 7(2), 233–263.

Imbert, C., and Papp, J. (2020). Costs and benefits of rural-urban migration: Evidence from India. ***Journal of Development Economics***, 146,102473.

IPCC (2014). Climate change 2014: Synthesis report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. ***IPCC AR5*** Synthesis Report.

Ito, K., and Zhang, S. (2020). Willingness to pay for clean air: Evidence from air purifier markets in China. ***Journal of Political Economy***, 128(5), 1627–1672.

J-PAL (2015). Where credit is due. Policy bulletin.

Jack, B. K., Jayachandran, S., Kala, N., and Pande, R. (2022). Money (not) to burn: Payments for ecosystem services to reduce crop residue burning. ***National Bureau of Economic Research*** Working Paper 30690.

Jack, K. B. (2017). Environmental economics in developing countries: An introduction to the special issue. ***Journal of Environmental Economics and Management***, 86, 1–7.

Jayachandran, S. (2013). Liquidity constraints and deforestation: The limitations of payments for ecosystem services. ***American Economic Review***, 103(3), 309–313.

Jayachandran, S. (2022). The inherent trade-off between the environmental and anti-poverty goals of payments for ecosystem services. ***National Bureau of Economic Research*** Working Paper 29954.

Jayachandran, S. (2022). How economic development influences the environment. ***Annual Review of Economics***, 14(1), 229–252.

Jayachandran, S., de Laat, J., Lambin, E. F., Stanton, C. Y., Audy, R., and Thomas, N. E. (2017). Cash for carbon: A randomized trial of payments for ecosystem services to reduce deforestation. ***Science***, 357(6348), 267–273.

Jensen, A. (2022). Employment structure and the rise of the modern tax system. ***American Economic Review***, 112(1), 213–234.

Jensen, A. D. (2011). State-building in resource-rich economies. ***Atlantic Economic Journal***, 39(2), 171–193.

Jensen, R. (2010). The (perceived) returns to education and the demand for schooling. ***The Quarterly Journal of Economics***, 125(2), 515–548.

Jessoe, K., Manning, D. T., and Taylor, J. E. (2018). Climate change and labour allocation in rural Mexico: Evidence from annual fluctuations in weather. ***The Economic Journal***, 128(608), 230–261.

Jha, S., and Shayo, M. (2019). Valuing peace: The effects of financial market exposure on votes and political attitudes. ***Econometrica***, 87(5), 1561–1588.

Kahn, M. E., Li, P., and Zhao, D. (2015). Water pollution progress at borders: The role of changes in China's political promotion incentives. ***American Economic Journal: Economic Policy***, 7(4), 223–242.

Kala, N. (2019). The impacts of managerial autonomy on firm outcomes. ***National Bureau of Economic Research*** Working Papers 26304.

Kala, N., Balboni, C., and Bhogale, S. (2023). Climate adaptation. ***VoxDevLit***.

Kalyvas, S. (2012). The Logic of Violence in Civil War. Cambridge University Press.

Karlan, D., Osei, R., Osei-Akoto, I., and Udry, C. (2014). Agricultural decisions after relaxing credit and risk constraints. ***The Quarterly Journal of Economics***, 129(2), 597–652.

Keen, M., and Lockwood, B. (2010). The value added tax: Its causes and consequences. ***Journal of Development Economics***, 92(2), 138–151.

Keen, M., and Slemrod, J. (2017). Optimal tax administration. ***Journal of Public Economics***, 152, 133–142.

Khan, A. Q., Khwaja, A. I., and Olken, B. A. (2015). Tax farming redux: Experimental evidence on performance pay for tax collectors. ***The Quarterly Journal of Economics***, 131(1), 219–271.

Khan, A. Q., Khwaja, A. I., and Olken, B. A. (2019). Making moves matter: Experimental evidence on incentivizing bureaucrats through performance-based postings. ***American Economic Review***, 109(1), 237–70.

Klare, M. T. (2002). The deadly nexus: Oil, terrorism, and America's national security. ***Current History***, 101(659), 414.

Klemm, A., and Van Parys, S. (2012). Empirical evidence on the effects of tax incentives. ***International Tax and Public Finance***, 19(3), 393–423.

Kleven, H. J., and Waseem, M. (2013). Using notches to uncover optimization frictions and structural elasticities: Theory and evidence from Pakistan. ***The Quarterly Journal of Economics***, 128(2), 669–723.

Kleven, H. J., Knudsen, M. B., Kreiner, C. T., Pedersen, S., and Saez, E. (2011). Unwilling or unable to cheat? Evidence from a tax audit experiment in Denmark. ***Econometrica***, 79(3), 651–692.

Kopczuk, W., and Slemrod, J. (2006). Putting firms into optimal tax theory. ***American Economic Review***, 96(2), 130–134.

Kraay, A., and McKenzie, D. (2014). Do poverty traps exist? Assessing the evidence. ***Journal of Economic Perspectives***, 28(3), 127–148.

Kramon, E., and Posner, D. N. (2013). Who benefits from distributive politics? How the outcome one studies affects the answer one gets. ***Perspectives on Politi***cs, 11(2), 461–474.

Kremer, M., Rao, G., and Schilbach, F. (2019). ***Behavioral Development Economics***. Elsevier, vol. 2.

Kumler, T., Verhoogen, E., and Frías, J. (2020). Enlisting employees in improving payroll tax compliance: Evidence from Mexico. ***The Review of Economics and Statistic***s, 102(5), 881–896.

Lagakos, D., Mobarak, A. M., and Waugh, M. E. (2023). The welfare effects of encouraging rural–urban migration. ***Econometrica***, 91(3), 803–837.

Lane, G. (2023). Adapting to floods with guaranteed credit: Evidence from Bangladesh. ***Econometrica***. (Revise and resubmit).

Levine, D. I., Beltramo, T., Blalock, G., Cotterman, C., and Simons, A. M. (2018). What impedes efficient adoption of products? Evidence from randomized sales offers for fuel-efficient cookstoves in Uganda. ***Journal of the European Economic Association***, 16(6), 1850–1880.

Lipscomb, M., and Mobarak, A. M. (2017). Decentralization and pollution spillovers: Evidence from the redrawing of county borders in Brazil. ***The Review of Economic Studies***, 84(1), 464–502.

Liu, M., Shamdasani, Y., and Taraz, V. (2023). Climate change and labor reallocation: Evidence from six decades of the Indian census. ***American Economic Journal: Economic Policy***, 15(2), 395–423.

Londono-Velez, J., and Avila Mahecha, J. (2021). Enforcing wealth taxes in the developing world: Quasi-experimental evidence from Colombia. ***American Economic Review: Insights***, 3(2), 131–48.

Lowe, M. (2021). Types of contact: A field experiment on collaborative and adversarial caste integration. ***American Economic Review***, 111(6), 1807–44.

Luksic, J., and Mittal, S. (2018). Red tape? The revenue impact of the VAT filing thresholds. Working Paper.

Luttmer, E. F. P., and Singhal, M. (2014). Tax morale. ***Journal of Economic Perspectives***, 28(4), 149–168.

Macours, K., Schady, N., and Vakis, R. (2012). Cash transfers, behavioral changes, and cognitive development in early childhood: Evidence from a randomized experiment. American Economic Journal: Applied Economics, 4(2), 247–73.

Mahadevan, M. (2023). The price of power: Costs of political corruption in Indian electricity. Working Paper.

Mahadevan, M., and Shenoy, A. (2023). The political consequences of resource scarcity: Targeted spending in a water-stressed democracy. ***Journal of Public Economics***.

Mangonnet, J., Kopas, J., and Urpelainen, J. (2022). Playing politics with environmental protection: The political economy of designating protected areas. ***The Journal of Politics***, 84(3), 1453–1468.

Mansoor, Z., and Williams, M. J. (2018). Systems approaches to public service delivery: Lessons from health, education, and infrastructure. Working Paper.

Manwaring, P., and Regan, T. (2023). Public disclosure and tax compliance: Evidence from Uganda. The George Washington University, Institute for International Economic Policy Working Paper.

Martinez-Bravo, M. (2017). The local political economy effects of school construction in Indonesia. American Economic Journal: Applied Economics, 9(2), 256–289.

Martinez, L. R. (2023). Natural resource rents, local taxes, and government performance: Evidence from Colombia. ***The Review of Economics and Statistics***, 1–28.

Marx, B., Pons, V., and Suri, T. (2017). The perils of voter mobilization. Working Paper.

Mascagni, G., Nell, C., and Monkam, N. (2017). One size does not fit all: A field experiment on the drivers of tax compliance and delivery methods in Rwanda. Working Paper.

Matanock, A. (2017). Electing Peace: From Civil Conflict to Political Participation. Cambridge University Press.

McKenzie, D., and Woodruff, C. (2008). Experimental evidence on returns to capital and access to finance in Mexico. ***The World Bank Economic Review***, 22(3), 457–482.

McMillan, J., and Zoido, P. (2004). How to subvert democracy: Montesinos in Peru. ***Journal of Economic Perspective***s, 18(4), 69–92.

Miguel, E., Satyanath, S., and Sergenti, E. (2004). Economic shocks and civil conflict: An instrumental variables approach. ***Journal of Political Econom***y, 112(4), 725–753.

Millán, T. M., Barham, T., Macours, K., Maluccio, J. A., and Stampini, M. (2019). Long-term impacts of conditional cash transfers: Review of the evidence. ***The World Bank Research Observer***, 34(1), 119–159.

Millán, T. M., Macours, K., Maluccio, J. A., and Tejerina, L. (2020). Experimental long-term effects of early-childhood and school-age exposure to a conditional cash transfer program. ***Journal of Development Economics***.

Min, B., and Golden, M. (2014). Electoral cycles in electricity losses in India. ***Energy Policy***, 65, 619–625.

Mittal, S., and Mahajan, A. (2017). VAT in emerging economies: Does third party verification matter? Working Paper.

Mittal, S., Reich, O., and Mahajan, A. (2018). Who is bogus?: Using one-sided labels to identify fraudulent firms from tax returns. In Proceedings of the ***1st ACM SIGCAS Conference on Computing and Sustainable Societie***s. ACM, p. 24.

Moscona, J., and Sastry, K. A. (2022). Inappropriate technology: Evidence from global agriculture. Working Paper.

Moscona, J., and Sastry, K. A. (2022). Does directed innovation mitigate climate damage? Evidence from U.S. agriculture. ***The Quarterly Journal of Economics***, 138(2), 637–701.

Mullin, M., and Hansen, K. (2022). Local news and the electoral incentive to invest in infrastructure. ***American Political Science Review***, 1–6.

Munshi, K., and Rosenzweig, M. (2005). Economic development and the decline of rural and urban community-based networks. ***Economics of Transitio***n, 13(3), 427–443.

Muralidharan, K., and Sundararaman, V. (2011). Teacher performance pay: Experimental evidence from India. **Journal of Political Economy**, 119(1), 39–77.

Muralidharan, K., Niehaus, P., and Sukhtankar, S. (2016). Building state capacity: Evidence from biometric smartcards in India. ***American Economic Review***, 106(10), 2895–2929.

Nair, M., Ariana, P., Ohuma, E. O., Gray, R., De Stavola, B., and Webster, P. (2013). Effect of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) on malnutrition of infants in Rajasthan, India: A mixed methods study. ***PLoS One***, 8 (9), e75089.

Narayan, A., Ng, O., Sinha Roy, S., and Baseler, T. (2023). Does food insecurity hinder migration? Experimental evidence from the Indian public distribution system. ***Journal of Development Economics***. (Pre-results review).

OECD. (2015). Options for Low Income Countries' Effective and Efficient Use of Tax Incentives for Investment. ***OECD***.

Olken, B. A., and Barron, P. (2009). The simple economics of extortion: Evidence from trucking in Aceh. ***Journal of Political Economy***, 117(3), 417–452.

Olken, B. A., and Pande, R. (2012). Corruption in developing countries. ***Annual Review of Economics***, 4(1), 479–509.

Olken, B. A., and Singhal, M. (2011). Informal taxation. ***American Economic Journal: Applied Economics***, 3(4), 1–28.

Ortega, D., and Scartascini, C. (2015). Don't blame the messenger: A field experiment on delivery methods for increasing tax compliance. Working Paper.

Packard, T., Gentilini, U., Grosh, M., O'Keefe, P., Palacios, R., Robalino, D., and Santos, I. (2019). Protecting all, risk sharing for a diverse and diversifying world of work. ***World Bank***.

Page, L., and Pande, R. (2018). Ending global poverty: Why money isn't enough. ***Journal of Economic Perspectives***, 32(4), 173–200.

Paluck, E. L. (2009). Reducing intergroup prejudice and conflict using the media: A field experiment in Rwanda. ***Journal of Personality and Social Psychology***, 96, 574–587.

Pande, R. (2003). Can mandated political representation increase policy influence for disadvantaged minorities? Theory and evidence from India. ***American Economic Review***, 93(4), 1132–1151.

Pande, R. (2011). Can informed voters enforce better governance? Experiments in low-income democracies. ***Annual Review of Economics***, 3(1), 215–237.

Parker, S. W., and Vogl, T. (2023). Do conditional cash transfers improve economic outcomes in the next generation? Evidence from Mexico. ***The Economic Journal***, 133(655), 2775–2806.

Pomeranz, D. (2015). No taxation without information: Deterrence and self-enforcement in the value added tax. ***American Economic Review***, 105(8), 2539–2569.

Pomeranz, D., and Vila-Belda, J. (2019). Taking state-capacity research to the field: Insights from collaborations with tax authorities. ***Annual Review of Economics***.

Popkin, S. (1979). The rational peasant: The political economy of rural society in Vietnam. ***University of California Press***.

Pople, A. (2022). Responding to shocks: Cash, transfers, and imagery.Job Market Paper, ***University of Oxford***.

Prichard, W., Custers, A., Dom, R., Davenport, S., and Roscitt, M. (2019). Innovations in tax compliance: Conceptual framework. ***World Bank*** Working Paper.

Prillaman, S. A. (2023). The patriarchal political order. ***Cambridge University Press***.

Pritchett, L. (2015). Creating education systems coherent for learning outcomes: Making the transition from schooling to learning. ***Research on Improving Systems of Education (RISE)*** Working Paper.

Probst, B., BenYishay, A., Kontoleon, A., and Reis, T. N. P. (2020). Impacts of a large-scale titling initiative on deforestation in the Brazilian Amazon. ***Nature Sustainability***, 3(12), 1019–1026.

Raffler, P. (2019). Does political oversight of the bureaucracy increase accountability? Field experimental evidence from an electoral autocracy. Working Paper.

Raffler, P. (2022). Does political oversight of the bureaucracy increase accountability? Field experimental evidence from a dominant party regime. ***American Political Science Review***, 116(4), 1443–1459.

Rao, G. (2019). Familiarity does not breed contempt: Generosity, discrimination, and diversity in Delhi schools. ***American Economic Review***, 109(3), 774–809.

Rasul, I., and Rogger, D. (2018). Management of bureaucrats and public service delivery: Evidence from the Nigerian civil service. ***The Economic Journal***, 128(608), 413–446.

Rasul, I., Rogger, D., and Williams, M. J. (2020). Management, organizational performance, and task clarity: Evidence from Ghana's civil service. ***Journal of Public Administration Research and Theory***, 31(2), 259–277.

Ravallion, M. (2014). Income inequality in the developing world. Science, 344(6186), 851–855.

Reinikka, R., and Svensson, J. (2004). Local capture: Evidence from a central government transfer program in Uganda. ***The Quarterly Journal of Economics***, 119(2), 679–705.

Reinikka, R., and Svensson, J. (2005). Fighting corruption to improve schooling: Evidence from a newspaper campaign in Uganda. ***Journal of the European Economic Association***, 3(2-3), 259–267.

Rincke, J., Boyer, P., and Dwenger, N. (2015). Do taxes crowd out intrinsic motivation? Field-experimental evidence from Germany. German Economic Association, VfS Annual Conference 2015 (Muenster): ***Economic Development - Theory and Policy*** 112951.

Robinson, J. A., and Acemoglu, D. (2012). Why nations fail. ***Crown Publishing Group***.

Rohner, D. (2024). The peace formula: Voice, work and warranties, not violence. ***Cambridge University Press***.

Ross, M. L. (2015). What have we learned about the resource curse? ***Annual Review of Political Science***, 18, 239–259.

Rossi, F. (2022). The relative efficiency of skilled labor across countries: Measurement and interpretation. ***American Economic Review***, 112(1), 235–266.

Sanchez De la Sierra, R. (2020). On the origins of the state: Stationary bandits and taxation in Eastern Congo. ***Journal of Political Economy***, 128(1), 32–74.

Sanford, L. (2021). Democratization, elections, and public goods: The evidence from deforestation. ***American Journal of Political Science***, 67, 748–763.

Schultz, T. P. (2004). School subsidies for the poor: Evaluating the Mexican Progresa poverty program. ***Journal of Development Economics***, 74(1), 199–250.

Sekhri, S. (2011). Public provision and protection of natural resources: Groundwater irrigation in rural India. ***American Economic Journal: Applied Economics***, 3(4), 29–55.

Sequeira, S. (2016). Corruption, trade costs, and gains from tariff liberalization: Evidence from Southern Africa. ***American Economic Review***, 106(10), 3029–3063.

Sequeira, S., and Djankov, S. (2014). Corruption and firm behavior: Evidence from African ports. ***Journal of International Economics***, 94(2), 277–294.

Shapiro, J. S. (2020). The environmental bias of trade policy. ***National Bureau of Economic Research*** Working Paper 26845.

Shapiro, J. S., and Walker, R. (2018). Why is pollution from US manufacturing declining? The roles of environmental regulation, productivity, and trade. ***American Economic Review***, 108(12), 3814–3854.

Shayo, M., and Zussman, A. (2011). Judicial ingroup bias in the shadow of terrorism. ***The Quarterly Journal of Economics***, 126(3), 1447–1484.

Skoufias, E., and Di Maro, V. (2008). Conditional cash transfers, adult work incentives, and poverty. ***The Journal of Development Studies***, 44(7), 935–960.

Slemrod, J. (2007). Cheating ourselves: The economics of tax evasion. ***Journal of Economic Perspectives***, 21(1), 25–48.

Slemrod, J. (2008). Does it matter who writes the check to the government? The economics of tax remittance. ***National Tax Journa***l, 61(2), 251–275.

Slemrod, J. (2019). Tax compliance and enforcement. ***Journal of Economic Literature***, 57(4), 904–954.

Slemrod, J., Rehman, O. U., and Waseem, M. (2019). Pecuniary and non-pecuniary motivations for tax compliance: Evidence from Pakistan. ***Proceedings. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association***, 112, 1–73.

Stokes, L. C. (2016). Electoral backlash against climate policy: A natural experiment on retrospective voting and local resistance to public policy. ***American Journal of Political Science***, 60(4), 958–974.

Stroebel, J., and Wurgler, J. (2021). What do you think about climate finance? ***Journal of Financial Economics***, 142(2), 487–498.

Surminski, S. (2014). The role of insurance in reducing direct risk: The case of flood insurance. **International Review of Environmental and Resource Economics**, 7(3-4), 241–278.

Tanaka, S., Teshima, K., and Verhoogen, E. (2022). North-South displacement effects of environmental regulation: The case of battery recycling. ***American Economic Review: Insights***, 4(3), 271–288.

Townsend, R. M. (1995). Consumption insurance: An evaluation of risk-bearing systems in low-income economies. ***Journal of Economic Perspectives***, 9(3), 83–102.

Tseng, T.-W., Robinson, B., Bellemare, M., Benyishay, A., Blackman, A., Boucher, T., Childress, M., Holland, M., Kroeger, T., Linkow, B., Diop, M., Naughton-Treves, L., Rudel, T., Sanjak, J., Shyamsundar, P., Veit, P., Sunderlin, W., Zhang, W., and Masuda, Y. (2021). Influence of land tenure interventions on human well-being and environmental outcomes. ***Nature Sustainability***, 4(3), 340–353.

Udry, C. (1990). Credit markets in Northern Nigeria: Credit as insurance in a rural economy. ***The World Bank Economic Review***, 4(3), 251–269.

UNIDO. (2011). Africa investor report: Toward evidence-based investment promotion strategies. United Nations Industrial Development Organization.

Vaziralli, S. (2021). Building climate responsive social protection. ***IGC Blog***.

Venables, A. J. (2016). Using natural resources for development: Why has it proven so difficult? ***Journal of Economic Perspectives***, 30(1), 161–184.

Wagstaff, W. A., and Jung, D. F. (2017). Competing for constituents: Trends in terrorist service provision. ***Terrorism and Political Violence***, 0(0), 1–32.

Walter, B. (2002). Committing to peace: The successful settlement of civil wars. ***Princeton University Press***.

Wang, M., Wurgler, J., and Zhang, H. (2023). Policy uncertainty reduces green investment. ***National Bureau of Economic Research*** Working Paper 31423.

Wantchekon, L. (2003). Clientelism and voting behavior: Evidence from a field experiment in Benin. ***World Politics***, 55(3), 399–422.

Waseem, M. (2018). Taxes, informality, and income shifting: Evidence from a recent Pakistani tax reform. ***Journal of Public Economics***, 157, 41–77.

Waseem, M. (2019). Information, asymmetric incentives, or withholding? Understanding the self-enforcement of value-added tax. ***CESifo*** Working Paper, 7736.

Weigel, J. L. (2020). The participation dividend of taxation: How citizens in Congo engage more with the state when it tries to tax them. ***The Quarterly Journal of Economics***, 135(4), 1849–1903.

Williams, E. E., and Dobelman, J. A. (2017). Financial statement analysis. In World Scientific Book Chapters (109–169). ***World Scientific***.

Williams, M. J. (2015). One size does not fit all: Budget institutions and performance in Ghana's spending ministries. Working Paper.

World Bank Group. (2017). Special economic zones: An operational review of their impacts.

Wren-Lewis, L., Becerra-Valbuena, L., and Houngbedji, K. (2020). Formalizing land rights can reduce forest loss: Experimental evidence from Benin. ***Science Advances***, 6(26), eabb6914.

Yanagizawa-Drott, D. (2014). Propaganda and conflict: Evidence from the Rwandan genocide. ***The Quarterly Journal of Economics***, 129(4), 1947–1994.

Yang, D. (2008). Can enforcement backfire? Crime displacement in the context of customs reform in the Philippines. ***The Review of Economics and Statistics***, 90(1), 1–14.

Zhang, B., Chen, X., and Guo, H. (2018). Does central supervision enhance local environmental enforcement? Quasi-experimental evidence from China. ***Journal of Public Economics***, 164, 70–90.

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