

Private Property Against Public Works:  
How Rights Affect Development in Ecuador and Colombia

Alisha C. Holland  
Assistant Professor  
Princeton University  
achollan@princeton.edu

*Preliminary, please do not cite or circulate*

Political economy models view property rights as the lynchpin to economic development. But many countries with rapid economic growth and large investments in productive infrastructure have weak property protections. This paper argues that weak property rights make it easier for governments to reallocate land for public projects. In contrast, strong property protections undermine public works by encouraging opportunistic behaviors, such as (1) holdout problems among existing property owners, (2) infrastructure trolls who deliberately purchase or invade land needed for public investments, and (3) scope expansions in which communities use their ability to delay projects to secure local public goods. I trace these mechanisms through case studies of transportation projects in countries with divergent national and subnational property protections, Colombia and Ecuador. Administrative data reveal that more than half of Colombia's national highway projects are delayed or cancelled due to challenges acquiring land; a typical delay lasts 72 months. No projects are delayed for land in Ecuador where property protections are weaker. These findings bolster a prominent but neglected view of excessive property rights as a check on economic development.

## Private Property Against Public Works: How Rights Affect Development in Ecuador and Colombia

Why is infrastructure underprovided? Basic infrastructure—roads, bridges, electricity, sanitation, and so on—can improve social welfare and economic productivity. Yet infrastructure spending lags in much of the world. Infrastructure budgets in Latin America, for instance, rarely exceed 1 percent of GDP. The region would need to quadruple its investments to close the infrastructure gap with East Asia (Perrotti and Sánchez 2011). More puzzling still, governments often do not spend their infrastructure budgets. For instance, Peru allocated \$15 billion for infrastructure projects in 2014, but spent only 55 percent of the funds (MEF 2015).

Conventional wisdom is that weak property rights help explain limited infrastructure investment in developing countries. Infrastructure is an immobile asset. Investors stay away when governments can expropriate or renegotiate contractual rights (Gómez-Ibáñez 2009; Levy and Spiller 1994; Post 2014; Vernon 1971). Poorly defined property rights also raise the transaction costs to build infrastructure. It is harder to identify and purchase the land needed to build physical assets in contexts of informal and overlapping property claims (Acemoglu and Robinson 2012; Davidson 2015; Uribe 2017).

This paper reverses this conventional wisdom. I argue that weak property rights encourage the development of public works. Work on property rights has focused on how secure control over the returns encourages investment, or what might be called *investment efficiency*. It ignores the rigidity that property rights introduce, or *allocative efficiency*. Many infrastructure projects require the government to force owners to sell their land using the power of eminent domain (also known as takings, compulsory sales, or expropriation). States struggle to acquire land when strong institutions defend individual, and increasingly informal and collective, property rights. In the short run, difficulties acquiring land can stall projects, which appear as unspent funds on official budgets.

Over time, delays translate into higher economic and political costs. Politicians invest less in public works when faced with slow, expensive, and socially contested projects.

The idea that property rights protections conflict with public works is not new, especially to lawyers, urban planners, and economic historians (*e.g.* Altshuler and Luberoff 2003; Heller 1998, 2010; Hoffman 1988; Lamoreaux 2011; Posner and Weyl 2017, 2018; Rosenthal 1990). But I build on the basic idea to underscore three mechanisms through which property rights reduce infrastructure provision, particularly in weak states. The first are well-known *holdout problems* among existing property owners. Knowing that their land is essential for a public work, private owners can wait for prices above their true valuation. Judicial corruption raises the rewards from an appeal. Second, strong property rights give rise to actors who deliberately buy or occupy land needed for public works. I call these actors *infrastructure trolls* to make an analogy to patent trolls who obstruct intellectual property needed for innovation. Infrastructure trolls flourish where states protect informal property claims and have incomplete land registries. Finally, secure property rights provide leverage for communities to bargain for *scope expansions* to public works. When governments provide consultation or veto rights to affected communities, groups push to address longstanding but unrelated distributive claims through infrastructure projects. The distributive consequences vary across these three actions, but they all jeopardize the completion of public works.

I develop the argument through a paired case comparison of similar cases that differ in their property rights protections: Colombia and Ecuador. At the national level, Colombia has strong individual and collective rights guarantees, while Ecuador has maintained statist procedures from the military period that leave property owners little recourse when faced with public works. At the subnational level, these rules reverse. In each case, I compare a rural highway project and an urban cable car project to illustrate the mechanisms; I then provide statistical evidence to probe the generalizability and costs. Back-of-the-envelope calculations suggest that delays due to land

acquisition have sizable effects. More than half of highway projects in Colombia have stalled due to problems acquiring land. Bargaining with communities alone delays projects by an average of 72 months and costs the country an estimated 0.5 percent of GDP annually (ANIF 2014). Ecuador has never stopped a highway project for these issues. Yet when subnational politicians are forced to abide by more protective property rules in Ecuador, they face challenges similar to Colombia. Within-country variation helps to rule out other national factors driving the outcomes, such as regime type or ideology.

This paper offers a corrective to past work in political economy that sees secure property rights as the lynchpin to economic development (*e.g.* Acemoglu and Robinson 2012; Besley and Ghatak 2009; North 1990; North and Thomas 1973). While there are costs to weak property rights, particularly when it comes to attracting investors, there also are benefits for public works. Weak property rights reduce the cost and opportunities for societal contestation around infrastructure development. Anecdotal evidence from countries like China, Singapore, and Turkey reinforce this connection. Meanwhile, strong property rights, particularly for the informal poor and minorities, help to explain why some liberal democracies struggle to build infrastructure, such as Colombia, Indonesia, India, and South Africa. The rights protections associated with liberalism, perhaps more so than the time horizons induced by regular elections or levels of state capacity, complicate the provision of infrastructure necessary for growth.

### **The Puzzle: Property Rights and Public Works**

New institutional economics elevates property rights as the core institution to promote economic development and check predatory political power (*e.g.* Acemoglu and Robinson 2012; Besley and Ghatak 2009; North and Thomas 1973). Yet the focus on how property rights promote investment has sidelined the challenge of how states acquire property to build necessary public works. In this section, I briefly review the dominant perspective on property rights and provide

suggestive empirical evidence that the relationship between property rights and development may not be as straightforward as suggested.

Work on property rights emphasizes how secure control over an asset encourages *investment efficiency*. Intuitively, individuals and companies invest more when they are sure to own an object. Homeowners, for example, invest more in their homes and waste fewer resources protecting them than do renters or squatters (*e.g.* Field 2007; Galiani and Schargrodsky 2010; Shapiro and Glaeser 2003). Because infrastructure is an immobile asset, expropriation risk may be a powerful deterrent to investment. Private sector investors worry about an “obsolescing bargain” in which governments renege on their contractual commitments once construction is complete (Vernon 1971). Strong property rights and clear regulatory frameworks, as well as more informal political connections and overlapping assets, all can help to protect investors (Frye 2017; Guasch and Spiller 1999; Levy and Spiller 1994; Markus 2015; Post 2014).

Property rights also increase investment efficiency by reducing transaction costs. It is easier to move capital to its most efficient use when owners have clear rights to transact. Undergirding this perspective is the Coase (1960) theorem. If property rights are well-defined and transaction costs are low, then the allocation of property rights is irrelevant from an efficiency standpoint. Property will be transferred from lower to higher valued users through bargaining. Likewise, clear rights reduce the transaction costs to acquire the land needed for public works. Acemoglu and Robinson (2012: 197), for instance, emphasize that improvements in the definition of property rights allowed the British government to purchase the land needed for railways and canals, which “played a central role in the “Transportation Revolution,” paving the way for the Industrial Revolution.” In contrast, infrastructure projects can stall when governments cannot figure out who owns what or owners have incomplete rights to sell (Uribe 2017: ch. 5). From this perspective, if property is worth more

to governments to use for public works, then they should be able to acquire the land that they need through market transactions.

The empirical implication of this perspective is a strong positive relationship between economic growth, infrastructure investment, and property protections. Indeed, numerous studies document a strong positive correlation between country wealth and property protections, operationalized by expropriation risk (for instance, see Besley and Ghatak 2009: 4555). The left panel of Figure 1 replicates this robust relationship between development, measured by log GDP per capita, and expropriation risk, measured using the International Country Risk Guide (ICRG)'s investment profile index, averaged over the 1999-2016 period. Higher investment ratings indicate a lower expropriation risk, greater contract protections, and prompt payment.<sup>1</sup>

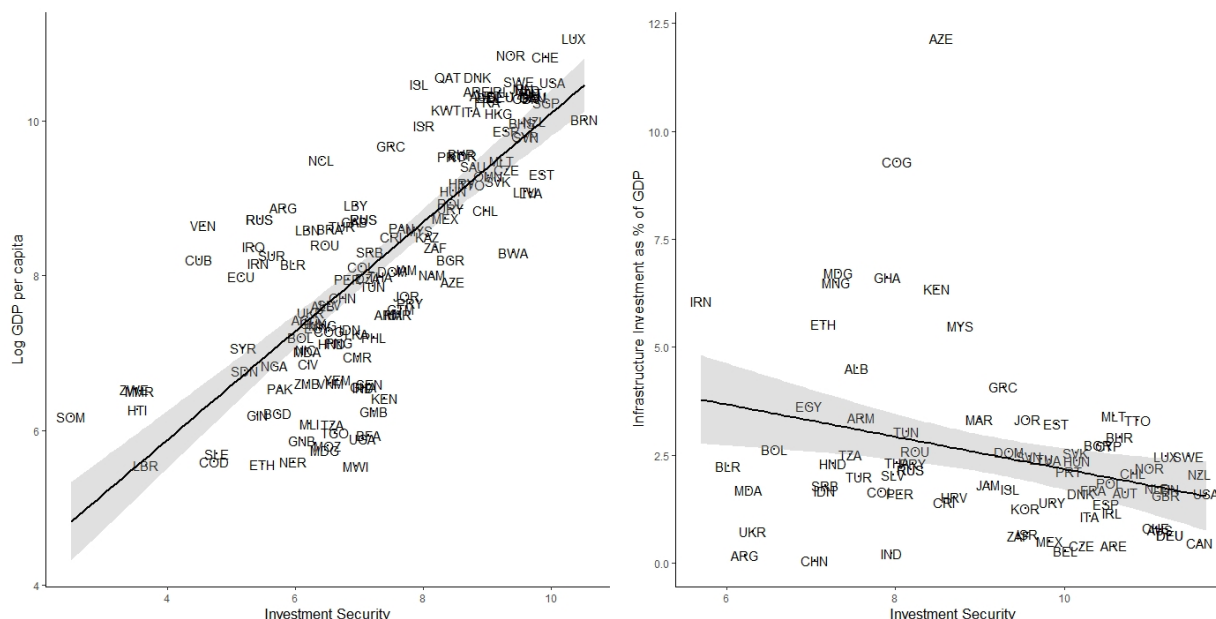
The relationship between property rights and infrastructure provision, however, reverses. I measure infrastructure investment using the IMF Government Finance Statistic's investment in non-financial assets (as a percentage of GDP). The right panel of Figure 1 shows this somewhat negative relationship.<sup>2</sup> While there are many shortcomings of this simple scatterplot,<sup>3</sup> it hints at a broader puzzle: Why would secure property rights be associated with *less* infrastructure investment?

---

<sup>1</sup> The index assigns 4 points for each of three elements (expropriation, profits repatriation, payment delays) for a maximum score of 12, the most secure, and a minimum score of 0, the least secure.

<sup>2</sup> This finding is consistent with Keefer and Knack (2007) who suggest that higher institutional quality, including property protections, is associated with less infrastructure investment. However, they measure institutional quality through a combined index that does not separate out expropriation risk and measure infrastructure through overall government spending, which is unlikely to capture the challenges of building physical assets.

<sup>3</sup> In particular, one concern is that wealthier countries already have built necessary infrastructure so invest less, and particularly as a percent of GDP. No good cross-national measures exist of the infrastructure stock in a country, making it difficult to account for past investments.



**Figure 1.** The Relationship between Property Rights Security and Economic Development (Left) and Infrastructure Investment (Right), 1999-2006.

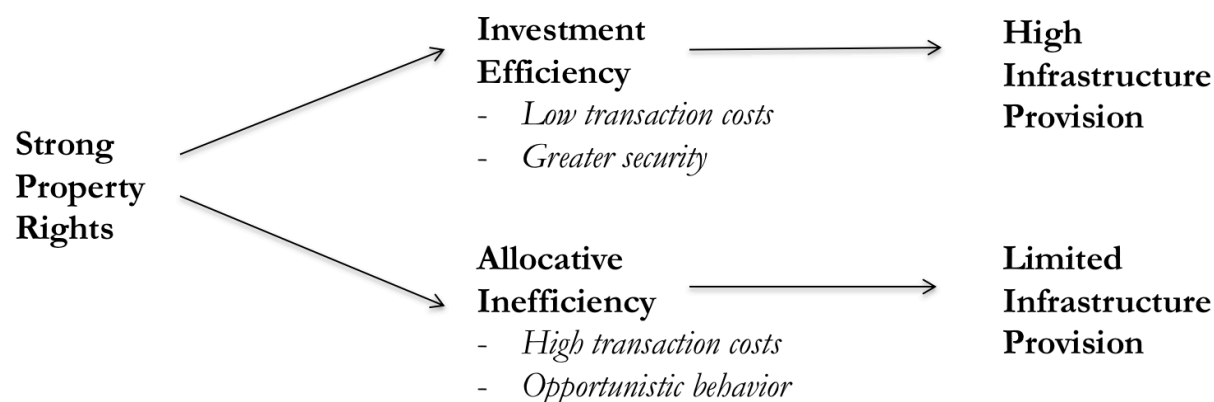
Sources and Notes: ICRG (Investment Security), World Bank (GDP per capita), and IMF GFS (Infrastructure). GDP data are available for 145 countries, while infrastructure expenditures only are available for 95 countries.

## A Theory of Allocative Inefficiency

My argument is that strong property rights make it more difficult for governments to repurpose private property for public uses. One of the oldest coercive powers of the state is the ability to force individuals to sell their private property for public purposes. As Gómez-Ibáñez (2009: 19) emphasizes, “The most fundamental reason for using government to help solve a problem like infrastructure is because coercion is thought to be needed. Without this power, infrastructure projects often fail because no individual is willing to sacrifice his property for the greater good.” Stronger property systems provide greater protections to individual owners when confronted with state takings, and thereby can complicate the acquisition of land needed for public works. This general point has been noted, especially in debates on economic history, urban planning, and intellectual property. But I expand on it to specify how property regimes differ and how more secure property rights deter infrastructure provision by encouraging a trio of

opportunistic behaviors—holdout problems, infrastructure trolls, and scope expansions. Although small groups generate these obstacles, they can delay, cancel, and ultimately undermine political interest in infrastructure.

Political economy models stress how secure property rights improve investment security and reduce transaction costs. The top row of Figure 2 displays these mechanisms. An alternative perspective on property rights emphasizes the ways in which secure rights can interfere with development projects, or *allocative efficiency*. The bottom row of Figure 2 shows the pathways through which secure property rights may reduce allocative efficiency and limit infrastructure provision. From this perspective, strong property rights increase transaction costs through the difficulties in reallocating assets. The source of misallocation tends to be the same: a private owner and a buyer disagree how to split the profits from a transaction, leading to delayed or failed transactions. Bargaining failures can occur even when a buyer values an object more than a seller.<sup>4</sup>



**Figure 2.** Investment versus Allocative Efficiency

Stronger property rights also open space for opportunistic behavior on the part of property owners. The first well-recognized opportunistic behavior is a *holdout problem*. Property owners can wait for prices above their true valuation and up to the reservation price of the other party. In the

<sup>4</sup> In private markets, this problem is most clearly discussed in the Myerson and Satterthwaite (1983) theorem. For a broader discussion of allocative efficiency, see (Posner and Weyl 2017)



case of infrastructure, the property owner's leverage increases as her land becomes more essential to the completion of a project. In cases where governments lack strong measures to force property owners to sell, governments struggle to acquire the land needed to complete public projects. Heller (1998, 2010) expands on this idea to argue that strong property rights protections can lead to economic "gridlock" in which socially beneficial projects cannot be built due to holdouts who refuse to sell.

While holdout problems occur when property owners refuse to sell their property, a related holdup problem can occur when property owners act in ways that raise the prices that governments must pay. A holdup problem occurs when property owners use external information, such as the discovery of a mining deposit or a beneficial infrastructure project, to raise their selling price or make investment intended to increase their compensation. In a classic paper, for instance, Blume, Rubinfeld, and Shapiro (1984) argue that market compensation for property can be inefficient because of a moral hazard problem in which property owners make capital investments on land that they expect to be taken. Prior to the event that triggers the purchase, property owners may make additional capital investments (e.g. building extra floors on a house or new buildings) in the hopes that they will be compensated at the market rates that their investments will garner once a public work is announced. Anecdotal evidence from China suggests that people try to maximize their compensation by enclosing rooms, fixing broken exteriors, and building additional floors that officials will count in their compensation (Sargeson 2013: 1064).

Economic historians have underscored the importance of holdout problems for public works and economic development. For instance, Hoffman (1988) argues that France fell behind England during the Industrial Revolution due to eminent domain procedures, rather than the checks and balances that North and Thomas (1973) emphasize. England allowed for compulsory land purchases that allowed for land on the urban periphery to be put to use in manufacturing, as well as

the consolidation of scattered fields into plots suitable for modern agricultural techniques. France granted veto power to anyone with public grazing rights, increasing the security of property rights but deterring investment. As Hoffman (1988: 249) writes, “Paying off recalcitrants probably made the project more expensive than it was worth.” Similar rules made it difficult to build valuable public works. Rosenthal (1990) shows that important irrigation projects failed because it was impossible to obtain agreement among affected property owners. Only after the French Revolution did the government acquire eminent domain powers to build needed infrastructure.

A related second challenge concerns *infrastructure trolls*, or actors who buy or occupy land in anticipation of government compensation. This term harkens back to the classical Scandinavian idea of mythical creatures that waited for goats to pass over a bridge to extract payment. I also use it to invoke the idea of patent trolls, or actors who purposely file patents needed for others innovations so that they will be paid off (Golden 2006; Lemley and Shapiro 2006). To many vulnerable groups, the state’s decision to build infrastructure represents a rare influx of resources into neglected areas. Individuals living in an area therefore may try to “make themselves affected” by building precarious houses on land needed for public projects. Wealthy actors do something similar by buying up land that is essential to infrastructure projects. The most famous example is George Plunkitt, a Tammany Hall politician known to learn about future public works and then buy the land needed (Riordon 2014: 8).

Work on intellectual property recognizes the trade-offs posed by secure property rights due to trolling behavior. From an allocative perspective, the socially optimal rule is to allow all parties to use all intellectual property at no cost. Very weak property rights deter patent trolls. However, such a system dampens incentives to invest in new inventions. As Schumpeter (1942) first recognized, some monopoly power is necessary to encourage the development of costly innovations. Yet

strong property rights risk the opposite problem: they can dampen further innovation by giving rise to patent trolls who block access to intellectual property to make new products.

A final form of opportunistic behavior comes from *scope expansions* related to infrastructure projects. The right to delay infrastructure projects can afford groups substantial bargaining power against the state. As in the classic Rubinstein (1982) bargaining model, the more patient party is able to take a larger share of the pie in negotiations. If states are more eager to build infrastructure than those affected, then property owners can withhold their consent to extract resources. Many communities use their leverage to delay projects to push for local public goods, jobs, and cash payments that they value more highly than the announced infrastructure. I call these *scope expansions* to indicate that they involve bargaining over often-justified claims, such as schools, health clinics, and parks, but that have little to do with the government's direct infrastructure aims.

This bargaining resembles what Grossman, Phillips, and Rosenzweig (2017) identify as a process of "opportunistic accountability." They study polio vaccination in northern Nigeria, where entire communities have resisted the vaccine as a strategy to bargain for more desired services. Opportunistic accountability occurs when citizens threaten to sabotage their own interests (in their case, public health) to compel the state to deliver local public goods (Grossman, Phillips, and Rosenzweig 2017: 983). Something similar can happen with infrastructure projects: communities risk their own interests in public works eventually being built to force the state to provide more immediate and localized benefits. As I return to below, communities do not necessarily oppose the infrastructure project at stake. But they use their ability to withhold necessary land to improve their bargaining position and demand needed local public goods.

On the flip side, American economic development has been viewed as resting on weak property rights for communities. Lamoreaux (2011) argues that, although the United States is held up to the world as a country with exemplary protections for property rights, the government

continually reallocated property against the wishes of owners to promote development projects. Limited effective property protections for minority groups allowed for urban renewal and megaprojects in the post-World War II Period. As the civil rights movement made such practices more difficult, the US entered a period of “do no harm planning” in which it avoided large infrastructure investments. Infrastructure investment plummeted, but so did abuses of minority communities (Altshuler and Luberoff 2003).

In short, allocative inefficiencies occur when states face holdout problems, infrastructure trolls, and scope expansions that slow down their ability to build infrastructure. Important literatures recognize the trade-offs between strong rights, which encourage investment, and weaker rights, which make new uses easier and limit opportunistic behavior.

#### *How Property Rules Shape Opportunistic Behavior*

When and how governments protect property owners when they need to develop infrastructure differs substantially across country. The institutional rules change the balance of power between the state and property owners, altering the security of property rights. I argue that formal property rules affect the possibilities for opportunistic behavior. The effects of strong property rules are magnified in developing countries because projects often pass through areas with legitimate distributive claims on the state, where individuals have reasons to leverage projects for personal and community gain. Infrastructure projects represent large and rare financial investments in neglected areas. Informal property rights also make it more difficult for states to distinguish opportunistic behavior from legitimate claims on the state. Opportunistic behavior can lead to delays that prevent states from spending allocated infrastructure funds in the short run; they raise the financial and political costs of infrastructure provision in the medium run.

Although much of the literature focuses on a simple dichotomy between “weak” and “strong” property rights, I introduce a typology of property rules and then map their effects on

opportunistic behavior. I classify property rules based on three dimensions, the *owner*, *value*, and *exclusion* rights recognized. Together, these dimensions produce four ideal types, although more combinations are possible empirically. Table 1 summarizes these ideal types, dimensions, and predictions for opportunistic behavior.

**Table 1. A Typology of Property Rules and Associated Opportunistic Behavior**

<b>Socialist</b>	<b>Statist</b>	<b>Liberal</b>	<b>Communitarian</b>
<i>Ownership</i>			
state	residual	individual	inclusive
<i>Value</i>			
productive	administrative	commercial	redistributive
<i>Exclusion</i>			
no appeal	limited appeal	judicial appeal	veto power
<i>Opportunistic Behavior</i>			
none	minimal	holdouts	holdouts, trolls, scope expansions

The first feature that differentiates property rules concerns who owns property. Socialist systems see the nation as the ultimate grantor and bearer of rights. The state may lease property to individuals to use, but it can “return” property to the state at any moment. Statist systems soften these rules in that individuals own property. Again, however, property is seen to serve a social purpose so that the state can reclaim it at any moment. Liberal systems recognize individuals as the fundamental bearers of property rights. The state only can take property in circumscribed situations. Finally, communitarian systems tend to recognize multiple owners of property. State may recognize communal or traditional property ownership. Or, they may understand that communities contribute to the value of property and therefore also have rights to weigh in on the use of property. Liberal and communitarian systems also are more likely to recognize informal or imperfect property claims. In cases where individuals do not purchase or register their property through legal channels, these systems still recognize that individuals gain partial property rights.

The second dimension, *value*, concerns how states understand the worth of property and compensate property owners. Some states only pay objective value, meaning the productive, administrative, or market value *of the object*. Socialist systems only account for the use value of property, usually measured by past productive outputs from land. For instance, the Chinese government only compensates individuals for the productive output from their land (Sargeson 2013: 1068). In more statist systems, the state is the judge of property value. Some countries therefore only pay compensation for the value that is visible to state authorities, which usually means paying the registered tax value. Tax value tends to be lower than market value, given incentives to underreport property values for tax purposes and infrequent updates to property registries.<sup>5</sup>

In liberal systems, the market is viewed as the objective judge of value. Governments pay commercial appraisals, which tend to be higher than the use or administrative value of property. Nonetheless, a market compensation scheme tends to be perceived as stingy due to the fact that market prices underestimate the subjective value for a property. Property owners often derive higher than market prices from their property because it is customized to their individual needs or involves special locational or social advantages. Owners also value property because of how they integrate into their broader community or a psychological endowment bias. One way to think of this is that owners are the highest value user, not any average market buyer, of a property (Epstein 1985). Liberal systems also may undervalue property because they focus on rights that transact on markets and sometimes excludes informal property owners, or only compensate the improvements that are made to land. Given that the majority of property often is informally held in developing countries, rules that neglect these claims make land acquisition easier and cheaper.

---

<sup>5</sup> For instance, an empirical study in Taiwan found that self-assessed tax valuations were much lower than the commercial value of the property (Chang 2012). A study in Colombia shows that landowners register their property to gain greater judicial security, but then self-assess low values (or pay off assessors) to keep their tax bills low (Sánchez-Talanquer 2018).

A very different compensation scheme accounts for *subjective* value, meaning the value of property *to the individual* (or community) and the costs associated with its replacement.

Communitarian systems take this more encompassing approach to compensation. The challenge is how to get owners to truthfully reveal how much their property is worth. The most common approach is to try to incorporate subjective values into compensation offers, such as assessing the time spent living at a property. Subjective rules also tend to pay consequential damages, meaning factors like lost profits, business goodwill, or lost community, as well as expenses like relocation, litigation fees, and expert appraisals that create costs to the owner. Objective systems rule out consequential damages on the grounds that the government need only pay for what it gets. The United States, for instance, interprets fair compensation to mean the assessed commercial value. The basic principle is that the government pays the value of that which it purchases, not that which it destroys. Courts reason “the government has gone into possession of the land alone but has not *taken* the additional items of loss” (Epstein 1985: 52). But if the value *to the owner* is what concerns the government, then value taken from the owner should be compensated.

In this spirit, subjective rules consider the character of the individual and group in calculating appropriate compensation. Particularly in countries that recognize a right to housing, governments have an obligation to ensure not only compensation for the existing property, but that the person has adequate provisions to purchase a dignified home. If an individual lives in a tiny shack worth \$1,000, and the going price for the most minimal house is \$20,000, then the government has an obligation to compensate the owner to purchase an alternative house. Such a rule is subjective in the sense that it depends on *who* the property owner is, rather than the market value of the property itself. Subjective valuation rules also tend to be more expansive in their recognition of informal property claims, allowing for a broader range of documents to prove ownership and claims of value. As part of a belief in the value of groups, communitarian systems also ask groups to define the

communal value of their property and the affectations caused by infrastructure construction. In so doing, communitarian systems create incentives for those affected by infrastructure to organize into groups and value their community assets.

The final dimension looks at the right to exclude. Given that the state is the underlying property owner in socialist and statist systems, individuals have no rights to keep the state from taking their property. Liberal systems provide greater protections to individual property owners. Individuals generally have the right to appeal the taking of their property, questioning both whether the project involves a legitimate public use and whether a fair compensation standard has been met. Finally, communitarian systems allow communities the right to participate in decisions on, and in some cases even veto, government projects.

In Latin America, the ability to control the use of property has become salient with the extension of the right to prior consultation. Prior consultation grants ethnic communities the right to be consulted on projects that affect their territory and environment. As stated by ILO Convention 169, signatory governments shall consult ethnic peoples “whenever consideration is being given to legislative or administrative measures which may affect them directly.” Prior consultation does not constitute veto power over infrastructure projects but does provide powers of to delay and obstruct the process.

A broader version of exclusion rights allows communities to veto infrastructure projects. Urbanist Jane Jacobs was the strongest advocate of this position. She believed that any eminent domain procedure involves “unjust involuntary subsidies” that are “wasteful” by not “allowing that which is worth more to [city residents to] remain” (Jacobs 1961: 332). To Jacobs, the only way to ensure that governments paid full compensation for the social value of its takings was to rely on voluntary transactions and allow community veto power over development projects. From this



perspective, all communities—and not just those with unique ethnic heritages, as recognized in Latin America—create social value that must be considered in takings procedures.

These property regimes create different incentives for opportunistic behavior. Socialist and statist systems minimize opportunistic behavior. In privileging the interests of the nation, they subordinate individual property claims. They pay only the use or administrative value of property and provide minimal rights to appeal. In so doing, they preclude a single owner from suing to delay construction. Due to low compensation, there is little reason to invade or speculate on land surrounding on infrastructure projects. These systems may face contentious action against infrastructure projects, and particularly those that impose public bads on host communities. The key point is that they are less vulnerable to opportunistic claims. China and Cuba exemplify socialist systems, while Turkey, Ecuador, and Spain use statist taking rules.

In contrast, liberal property rules create holdout problems. Liberal systems pay market value and recognize individuals as exclusive rights holders. In emphasizing individual rights, many liberal systems allow individuals to sue to protect their property rights and contest “fair” market assessments. Countries like the United States and Peru exemplify liberal rules. Opportunistic behavior in liberal systems centers on holdout problems. A common point of contention concerns *when* market compensation is calculated. Property owners prefer to be paid at the market price once a project has been announced and prices rise, while governments try to freeze prices prior to the project announcement. If judges recognize prices after construction is announced, lawsuits can result in substantial increases in compensation. Corruption in the court systems in developing countries exacerbates these problems. Notably, opportunistic behavior in liberal systems tends to be limited to existing property owners, and particularly those with access to lawyers.

Communitarian systems create more extensive opportunities to extract resources from the state. Property rules recognize group and informal property ownership, as well as providing

redistributive compensation and exclusion privileges to property owners. Such rules are most common in countries that recognize social and minority rights, as in Brazil, Colombia, and South Africa. Communitarian systems have holdout problems, as well as infrastructure trolls and scope expansions. Redistributive compensation rules do more to protect vulnerable populations, but in so doing, they raise the specter of opportunistic behavior by those with minimal property. Individuals can deliberately build houses on the land needed for projects. Even if the constructions are minimal, occupants can demand compensation based on their economic needs. Neglected populations see infrastructure projects as a singular opportunity to “get something” from a state that long has ignored or discriminated against them. Finally, scope expansions are likely when communities can delay or veto infrastructure projects to improve their bargaining position.

Another way that communitarian systems open the door to opportunistic behavior comes from their treatment of informal property claims. Informal property rights often can make it easier to build because governments can ignore and pay minimal amounts to claimants with incomplete documents. In statist systems like Turkey, for instance, imperfect property claims were ignored when the government built urban “regeneration” projects. Compensation strategies fragmented communities by paying off owners, while leaving those with incomplete rights with minimal compensation (Karaman 2014; Kuyucu and Unsal 2010). But in countries with subjective valuation rules, the state must resolve a host of small claims to compensation that often are illegible to authorities. As Roy (2009: 81) notes in the case of India, “While informality makes possible the territorialized flexibility of the state it can also paralyze the developmentalism of the state in myriad Lilliputian negotiations.” In other words, more communitarian systems can end up in extensive negotiations around who owns property (raising transaction costs) and how to compensate those claims. The difficulty to distinguish existing and new claimants can lead to extensive compensation for informal property owners with long-standing claims, as well as infrastructure trolls.

The extent of opportunistic behavior changes the likelihood of the completion of infrastructure projects and overall investment rates. Delays are financially costly in infrastructure projects. Machines stand unused; contract prices rise; and penalties can ensue for broken contractual agreements. These problems initially appear on government budgets as unspent funds because construction grinds to a halt. But ultimately, they raise project costs and slow the production of infrastructure. As the ability to complete or even make progress on infrastructure projects becomes less likely, politicians simply may choose to shift away from provision.

In short, strong property protections, and particularly rules that provide more complete compensation to property owners, allow for judicial appeals, and recognize communal rights, encourage actors to engage in opportunistic activities around infrastructure projects. These actions can stall and deter infrastructure provision. Weaker property protections, in the sense that they allow states to take land with more limited compensation and recognize only individual and formal property claims, are less likely to result in opportunistic actions and distributive claims. They permit the rapid completion of infrastructure projects, resulting in fewer unspent funds and higher overall infrastructure investment.

### **Case Selection and Empirical Strategy**

I test my theory through a paired comparison of countries and projects that differ in their land acquisition rules. At the national level, Colombia and Ecuador represent the range of property rules laid out. Colombia uses communitarian property rules, particularly for projects that affect ethnic minorities, which comes out of the country's unique constitutional process. Ecuador has statist takings rules that date to the military regime.

Several similarities make Colombia and Ecuador good cases for comparison. They are middle-income economies dependent on commodity exports. They share difficult Andean geography that presents engineering challenges for infrastructure construction, and also strong

regional elites that have been blamed for limited public works (Eaton 2017; Soifer 2016). Both countries are known for poorly defined rural property rights, as well as informal property relations in urban areas.

During the commodities boom, presidents in both countries ambioned to build transportation infrastructure to improve connectivity and economic competitiveness. The outcomes diverged sharply. While Ecuador more than doubled its road coverage and jumped in international rankings, Colombia struggled to finish the projects that it began. Only two-thirds of funds were used in Colombia (Ministerio de Hacienda 2015). Table 2 highlights some of the relevant similarities and divergent outcomes.

**Table 2. A Controlled Comparison of Colombia and Ecuador**

<i>Variable</i>	<b>Colombia</b>	<b>Ecuador</b>
<i>Independent Variables</i>		
National Takings Rule	Communitarian	Statist
Subnational Takings Rule	Statist	Liberal
<i>Dependent Variables</i>		
Quality of Roads Ranks (2006)	75	94
Quality of Roads Ranks (2016)	120	24
Transportation Expenditures as % of GDP (2008)	0.5%	3.6%
<i>Notable Variables</i>		
GDP per capita	\$6300	\$6200
Commodities as % of GDP	2.8%	4.0%
Indigenous and Black Population Share	13%	14%
Ideological Orientation	Right	Populist-Left
Investment Security (12 max)	7.0	5.1
Development of Civil Service (100 max)	52	21

These outcomes defy the predictions of theories focused on investment security, ideology, and state capacity. Colombia has strong guarantees for investors and among the best credit ratings in the region. It is known for prudent macroeconomic management and never suffered a debt crisis. Colombia also never joined Latin America's left turn. Center-right presidents who generally prioritize business interests have governed the country. On most measures of administrative and

regulatory capacity, Colombia does quite well, and the planning ministry in charge of the design and approval of infrastructure projects is a technocratic stronghold within the state (Dargent 2015).

Ecuador, in contrast, seems like a case where insecure property rights might endanger infrastructure investment. Under the left-wing populist President Rafael Correa (2007-17), the government nationalized oil and port facilities, changed contract terms, and refused to pay back international creditors, resulting in a major debt default and freeze on borrowing. Ecuador became a competitive authoritarian regime. In terms of administrative capacity, Ecuador has a weaker state than Colombia and, although Correa tried to strengthen the planning ministry, state agencies remain weak and politicized.

In each country, I focus on transportation infrastructure projects. Transportation projects generally are thought to spur development and raise property values. They generate fewer societal challenges than projects with greater negative externalities, such as dams or power plants. Roads, in particular, are a classic indicator of state capacity (Herbst 2000; Saylor 2014; Soifer 2015, 2016). In each case, I select one strategically important highway for intensive study. I then more briefly compare urban cable car projects. Many Latin American countries have adopted cable cars as mass transit for the poor, who live in informal settlements on the periphery of mountainous cities. At the subnational level, property rules reverse: Colombia has statist property rules that allow mayors to acquire land quickly, while Ecuador has liberal property rules procedures that permit judicial appeals. The within-country variation helps to rule out national factors driving the outcomes. Similar comparisons can be made across sectors, as transportation projects often use different rules than energy and social infrastructure investments.

Intensive qualitative research was necessary to reconstruct the ways that opportunistic behavior unfolded around these projects and decisions to delay or cancel infrastructure projects. I conducted interviews with actors involved in infrastructure decisions and implementation (ministers,

bureaucrats, private firms, and business chambers). I also visited the sites of infrastructure projects to interview societal actors (community leaders, business owners, and property owners). I draw on more than 200 semi-structured interviews in the two countries.

I rely on both within-case and cross-case analysis. First, I establish that takings rules are exogenous to underlying political desires to build infrastructure. Especially in developing countries, there are questions as to whether the formal rules matter at all. Many institutions are weak, in the sense that they change frequently or go unenforced (Levitsky and Murillo 2009, 2013). A particular concern is that presidents change the takings rules when they want to invest in infrastructure projects, creating a spurious correlation between the rules and infrastructure construction. If this is the case, then I should observe frequent changes to eminent domain rules in periods of rapid infrastructure construction. I instead show that property rules are sticky. They tend to be embedded in constitutions, which are difficult to change even as interest in infrastructure grows; constitutional debates rarely consider the implications of property rules for infrastructure development. Eminent domain rules in Colombia and Ecuador are ideal in that they have been set for reasons unrelated to presidential infrastructure plans.

Second, I use process tracing to link property rules to opportunistic behavior. Inferences within cases come from the timing and sequence of the events. For instance, I pay special attention to when land acquisition stalls. State capacity theories expect that incomplete land cadasters prevent the identification of property owners and thwart transactions. In contrast, I expect that governments identify property owners, but struggle to expropriate their land. Problems with property identification *only* should occur under property rules that compensate informal property claims. Similarly, my theory predicts that communitarian property rules lead communities to organize following the announcement of infrastructure projects. Competing theories based on social capital predict that preexisting organizational structures explain resistance. Most notably, Scott

(1998) sees infrastructure projects as designed by modernist states to increase societal control.

Society, in turn, attempts to resist legibility projects. Traits like social solidarity, ethnic homogeneity, and local social organization shape the capacity to resist government projects, as well as to secure alternative local public goods. For this reason, governments target weak and socially disorganized communities for large-scale infrastructure, knowing that they will face less resistance (Aldrich 2008).

I instead argue that states do not merely *confront* social organizations when they try to build infrastructure; rather, they actively *constitute* them. New organizations should form in contexts where states recognize groups as subjects of compensation and bargaining.

Third, I complement the qualitative case studies with statistical data on land issues across all highway projects. In Colombia, this information comes from national audit reports from the Comptroller (*Contraloría*) that describe project difficulties. I can code both the types of land issues that emerge, as well as their prevalence relative to other types of construction issues. In Ecuador, I compiled hand-written files from the Ministry of Transportation and Public Works (*Ministerio de Transporte y Obras Públicas*) to document the total number of land parcels needed and purchased by year. Unfortunately, these data are not sufficiently fine-grained to run statistical models to test the time to acquire land or the types of resistance faced. My primary expectation is that Colombia should have a larger gap between the land needed and acquired for infrastructure projects and all three types of opportunistic behavior. Ecuador should have minimal issues acquiring land.

### **Infrastructure Delayed in Colombia**

Colombia has communitarian property rules that encourage holdout problems, infrastructure trolls, and scope expansions and put large infrastructure investments in jeopardy. In this section, I review how property rules were tied to Colombia's constitutional reform process, and then made more generous to informal property claimants and ethnic communities through administrative and

court decisions. Colombian infrastructure is built with greater attention to social equity concerns, but at the cost of severe delays and project cancellations.

### *The Origins of Property Rules*

Colombia's civil war, not its infrastructure needs, shaped the design of eminent domain procedures. The civil war involved land demands by peasants, coercive appropriation by landowners, and massive displacement (*e.g.* Legrand 1986; Steele 2017). As part of a peace deal with the guerrilla group AD/M-19, Colombia rewrote its constitution in 1991. Property rules date to this constitutional moment, and then evolved through administrative and court decisions.<sup>6</sup>

The Left proposed a statist takings procedure. Antonio Navarro Wolff, the leader of AD/M-19, drafted an article to permit state takings without compensation.<sup>7</sup> The idea was that the state is the residual claimant on all property, and that all property needed to serve a “social” function. In the context of the civil war, AD/M-19 anticipated that eminent domain would be used to expropriate and redistribute land that had been acquired through force by large landowners and paramilitaries. Compensating coercive landowners thus would make little sense. The Left also argued that this article would ease the construction of public works, such as social interest housing for displaced populations.

Traditional elites worried about the lack of judicial protections for property owners. Conservative legislators proposed to eliminate the “social function” of property that existed in previous constitutions.<sup>8</sup> They rejected the Left's proposal for uncompensated takings on the

---

<sup>6</sup> Congress did modify eminent domain rules in 2013 through a new Infrastructure Law, but these regulations could not change many constitutional provisions like prior consultation. The projects studied here largely began prior to the passage of these new regulations so I focus on the longer-standing rules.

<sup>7</sup> “Proyecto: Derechos, garantías y deberes fundamentales,” Presented by Antonio Navarro Wolff, Asamblea Nacional Constituyente, 7 March 1991, Article 26.

<sup>8</sup> “Proyecto de acto legislativo por el cual se modifica el artículo 30 de la Constitución,” Presented by Raimundo Emiliani Roman and Cornelio Reyes, 13 Feb 1991, p. 2.



grounds that it would sap private property of its meaning, contribute to further conflict, and stymie economic investment.<sup>9</sup> Their alternative proposal involved a liberal takings rule, which would allow for expropriations following a court order and commercial compensation.

The rule that resulted reflected a compromise. On the one hand, the Constituent Assembly respected the concerns of traditional elites and introduced liberal protections. Takings procedures begin with a state offer for a voluntary sale (*enajenación voluntaria*) at the commercial value. The property owner has 30 days to accept the offer. If rejected, the state begins an expropriation process. A judge must authorize each expropriation order, which can take years. The judge normally orders a new commercial appraisal (which tends to increase in value as the project advances) and can include subjective compensation factors, such as lost profits (*lucro cesante*), “emergent damage” (*daño emergente*), and other discretionary values.<sup>10</sup> The commercial appraisal initially offered by the government, in contrast, only reflects the market value of the property. Individuals who can afford lawyers therefore opt for expropriations to increase their compensation (Maldonado 2013).

Swaying to the concerns of the Left, the Constituent Assembly created an alternative administrative expropriation procedure. The administrative procedure is rapid: a state agency can issue a public interest declaration; property owners have thirty days to accept a state offer; the state takes possession of the land once a payment is deposited; and property owners only can appeal their compensation to the agency building the public work. Compensation under these procedures is based on the commercial appraisal of the land’s value. Judges play no role in allowing for more subjective factors. Yet elite opposition led to limitations on its use.<sup>11</sup> National authorities rarely use

---

<sup>9</sup> For a summary of some of these concerns, see “Riesgos en la nueva expropiación,” *El Tiempo*, July 13, 1991.

<sup>10</sup> Article 62(6) of Law 388 of 1997.

<sup>11</sup> Chapter VIII, Law 388 of 1997.

administrative expropriations in practice due to concerns that those affected will sue and create legal problems for bureaucrats who authorize emergency orders.<sup>12</sup> Indeed, not a single national highway project has used these rules.

Other constitutional provisions paved the way for a redistributive approach to compensation. The Constitution recognizes a right to housing and a broader “minimum life” guarantee. The state highway agency (*Instituto Nacional de Vías*, INVIAS) developed compensation rules to address the social impact of public works and guarantee these rights.<sup>13</sup> Payments are based on the commercial property value plus a “socioeconomic compensation factor,” which is more generous for poorer individuals and larger (“overcrowded”) households. Compensation is provided regardless of whether the individual is a property owner, occupant, or squatter because all affected individuals need to access dignified housing.<sup>14</sup> The National Infrastructure Agency (ANI) similarly provides social compensation to minimize the impacts; it also resettles irregular occupants and offers economic compensation for lost wages (for both formal and informal businesses).<sup>15</sup> One interviewee joked that compensation rules are so “protective” (*garantista*) that they require the state to pay for business cards for street vendors.<sup>16</sup>

Finally, Colombia guarantees the right to prior consultation to ethnic communities in ways that allow them to delay, but not necessarily veto, infrastructure projects. This right did not stem

---

<sup>12</sup> Author interview with Jaime García Méndez, Vicepresidente de Planeación, Riesgos y Entorno de la ANI (2015-17), Bogotá, Colombia, June 7, 2018.

<sup>13</sup> Author interview with Angélica Espitia, director of the Social and Land Management Unit at INVIAS, Bogotá, Colombia, January 25, 2018.

Author interview with Luz Marina Vélez, Subdirector of the Social and Land Management Unit at INVIAS, Bogotá, Colombia, January 25, 2018.

<sup>14</sup> INVIAS Resolution 3157 of 2008. Even squatters on state land (*baldíos*) receive compensation for the improvements that they make to the land and social factors.

<sup>15</sup> Resolutions 545; 077; Author interview with anonymous project manager, INVIAS (1996-2012) and ANI (2012-18), Bogotá, Colombia, June 11, 2018.

<sup>16</sup> Interview with Dilver Pintor, Former Director of the Social and Land Management Unit at ANI, Bogotá, Colombia, January 22, 2018.

from ethnic mobilization or strong ethnic ties to political parties, unlike in other cases in the region (Falleti and Riofrancos 2018). Instead, constitutional reformers introduced provisions to recognize the country's diversity in the final hours of constitutional discussions with minimal consideration of the consequences (Paschel 2016: 81, 103-06).

The Constitutional Court—as well as indigenous and black activists who mobilized around the new legal and political opportunities—expanded the collective right in critical ways. First, Colombia interprets the right to apply to all infrastructure projects, rather than just extracting projects that have dominated scholarly attention (*e.g.* Falleti and Riofrancos 2018; Rodríguez-Franco 2017; Rodríguez-Garavito 2011).<sup>17</sup> Between 2003 and 2014, Colombia did 603 prior consultations on infrastructure projects, and just 308 related to mining projects (Ministerio del Interior 2015: 116). Second, the Court extended prior consultation to communities who do not have communal lands, which allowed black communities to claim rights.<sup>18</sup> By decoupling ethnic identity and land ownership, the Court created a minefield surrounding who deserves to be consulted, how to identify black communities, and how to define blackness.<sup>19</sup> Third, there is no law regulating how prior consultation should proceed. Indigenous and black communities have favored this legal ambiguity, which allows the prior consultation process to encompass any form of compensation and no time

---

<sup>17</sup> Decree 1320 of 1998, Ministerio de Ambiente provided this interpretation.

<sup>18</sup> Afro-descendent groups are recognized as “peoples” (*pueblos*) with special protections to preserve their customs, lands, and traditions under ILO Convention 169. The 1991 Constitution ordered the legislature to pass a law recognizing Afro-Colombian communities’ collective property rights, including over frontier lands (*tierras baldías*) in the Pacific (Transitory Article 55). Rights to communal property and prior consultation (*consulta previa*) then were established under Law 70 of 1993. Given that very few black communities have communal land titles, it was unclear if prior consultation applied. The legal case involved a mining project in a town called La Toma in which blacks had worked the land for generations but did not have collective territory. The Court held that, even without collective territory, the community had the right to be consulted and that all mining was illegal in the territory. Order 1045-A of 2010. Also see, Sentence T-576/14.

<sup>19</sup> I follow Paschel (2016: 25) in using the term “black” rather than “Afro-descendent.” While state actors use the terms interchangeably, social movements explicitly promote black, rather than Afro-descendent, identity.

limits (Blanco 2016: 5).<sup>20</sup> The regulations themselves are subject to prior consultation, which makes legislative reform difficult.

Procedurally, the Ministry of Interior certifies whether ethnic communities exist in the zone affected by infrastructure projects. While this determination is a trivial task for indigenous reserves that have stable and defined borders, it is difficult for black communities that are dispersed. The government established communal councils (*concejos comunitarios*) as the political bodies to represent black communities.<sup>21</sup> But councils lack geographic boundaries and can be hard to distinguish from existing non-ethnic organizations called local action boards (*junta de acción comunal*, JAC). This ambiguity allows communities to organize, or at least reorganize themselves, once infrastructure construction begins. After recognition, communities and the executing party (either a state agency or a private company) need to arrive at a settlement (known as *protocolización*) to receive an environmental license that authorizes construction. In some cases, the environmental agency will not issue a license without a completed agreement. Other times, communities bring constitutional rights claims (*tutela* or *acción popular*) to halt projects without agreements.<sup>22</sup> Officials complain that prior consultation involves de facto veto power because courts support community claims to suspend construction until bargaining concludes.<sup>23</sup>

---

<sup>20</sup> Author interview with Pedro Posada, Ombudsman for Indigenous Communities and Ethnic Minorities (2016-), Bogotá, Colombia, June 7, 2018. Presidential decrees have tried to give order to the process, but their legality has been questioned.

<sup>21</sup> Decree 1745 of 1995.

<sup>22</sup> In 2016, the government introduced a “proportionality test” to proceed with infrastructure projects that lack agreements. When communities will not participate in prior consultation meetings, the government can appoint other state entities (usually the *Defensoría*) to represent the communities and arrive at an agreement that is proportional to the affectation. These rules came into place after the period studied.

<sup>23</sup> Author interview with Juan Benavides, Fedesarrollo and Comité de Infraestructura, Bogotá, Colombia, January 30, 2018; Author interview with project manager, INVIAS (1996-2012) and ANI (2012-), Bogotá, Colombia, June 11, 2018.

In short, Colombia has communitarian property rules, particularly when projects affect ethnic minorities. It recognizes communal and informal property owners; offers redistributive compensation; and provides rights to judicial appeal and consultation to contest the government's use of land. These legal features date to the constitutional reform process and then expanded through administrative and judicial interpretation.

*An Emblematic Highway: The Cali to Buenaventura Highway*

I illustrate the mechanisms through a case study of one of Colombia's most important highways: the connection from Buenaventura and Cali. Buenaventura is the most important port in Colombia; it moves half of the country's exports and offers an increasingly important exit point to the Pacific. Cali is the country's third-largest city and an industrial hub. In 1998, the government started a project to modernize the highway from Cali to Buga ("Malla Vial"), which then was extended to connect Buga and Buenaventura in 2006. Some of the highway segments were financed entirely by the state and others through public-private partnerships. The highway passes through areas with substantial Afro-descendent populations. My expectation is that communitarian property rules give rise to the full range of opportunistic behavior—holdouts, infrastructure trolls, and scope expansions—and thereby stall construction.

First, one of the most famous holdout problems emerged in the construction of the highway's first segment in 1998. The owners of a tourist stop ("El Parador de Buga") refused to sell their land to the government. The initial appraisal valued the property at almost \$700,000. Road construction stalled as authorities waited on a judicial ruling. In 2006, a judge assessed the shop at a value of more than \$5 million, claiming that the state failed to consider subjective factors like lost profits, brand value, and customer relations. Accusations emerged that the property owner had paid off the judge and appraisers to elevate the price of the property. The government then appealed the decision to the Supreme Court, which upheld the judge's ruling "independent of suspicions that

exist.”<sup>24</sup> ANI then had to appeal the decision to the Constitutional Court. It fought the ruling due to the enormous cost and concerns about precedent. As ANI’s President put it, the agency had to avoid that, “Each time that the state conducts an expropriation, a property owner can inflate the assessments to take advantage of the state and stop the construction of highways.”<sup>25</sup> It took until 2016—or more than 17 years—to reverse the ruling and restart construction to finish the first segment of the highway.

Second, infrastructure trolls emerged along the highway route. In 2006, the highway agency estimated that it needed 889 land parcels to expand the highway from Buga to Buenaventura. In 2011, the Comptroller audited the highway project and found that the government still needed to acquire 252 (or 21 percent) of the original parcels required. The government only had built one third of the planned route (Contraloría 2012: 118). Problems identifying unregistered and informal landowners were part of the problem. But during the same period, 277 new land invasions occurred in the project route (Contraloría 2012: 148). In sheer numbers, then, infrastructure trolls who purposely invaded the highway route, posed about the same magnitude of difficulty to the state as poorly defined property rights that required compensation under Colombian law.

Subjective compensation for informal property owners created incentives to invade the highway route. Highways have a shoulder (*incertidumbre*) that is public land intended to permit future expansions. Many people settle on the highway edge, where they are less likely to be evicted and able to take advantage of the highway economy. Highway shoulders are filled with houses, gas stations, and informal shops to serve passing traffic. Authorities compensated individuals who had lived along the route for years without property titles. They offered the full price of a social interest

---

<sup>24</sup> “El caso que podría frenar la construcción de carreteras en Colombia,” *El Espectador*, May 1, 2016; also see, “El oscuro pago por 133000 millones que el gobierno intenta frenar,” *Vanguardia Liberal* January 13, 2016; “Juez suspende pago de 34000 millones a la ANI por el predio del Parador de Buga,” *La República* July 30, 2016.

<sup>25</sup> “El caso que podría frenar la construcción de carreteras en Colombia,” *El Espectador*, May 1, 2016.

house if individuals fell below the poverty line. But national authorities struggled to distinguish new invasions from established highway communities.<sup>26</sup> Rumors circulated that vulnerable individuals could receive a “100 million pesos house” (roughly \$34,000) if they “made themselves affected.”<sup>27</sup> Highway officials recognize that “Residents took advantage of the economic opportunity [to get compensation].”<sup>28</sup> The combination of subjective compensation and the recognition of informal claims created strong incentives for invasions.

Infrastructure trolls often are motivated by genuine distributive needs and frustration with the state’s absence. One local government official along the route describes the “normal” process in a vulnerable community: “It’s people who don’t have their basic needs totally covered. Then a large infrastructure project comes so people think, ‘There’s got to be money for me, no? Let’s make ourselves affected, let’s invade to get it!’”<sup>29</sup> A local ombudsman (*personero*) who works with the community echoes this sentiment: “[The highway] is seen as an opportunity, for the first time the state has come and it has to have something for me.”<sup>30</sup> A national highway official similarly stresses the link between state absence and infrastructure trolls: “Highways create exaggerated demands, to address all the deficits that have accumulated and to make sure that individuals “get something” from the project.”<sup>31</sup>

---

<sup>26</sup> The Comptroller repeatedly has criticized INVIAS for its failure to keep records on the land that it purchases, and the failure to make land inventories prior to construction. Indeed, INVIAS has no statistics even on the aggregate amount of land acquired or its location.

<sup>27</sup> “Doble Calzada Buga-Buenaventura,” Boletín de Prensa, Sept 2012, Observatorio de la Infraestructura del Valle del Cauca.

<sup>28</sup> Author interview with José Vicente Torres Novoa, Social Management Unit at INVIAS, Bogotá, Colombia, January 25, 2018.

<sup>29</sup> Author interview with Saul Pérez, Head of the Planning Office, Dagua Municipality, Dagua, Colombia, February 5, 2018.

<sup>30</sup> Author interview with Alejandro Guevara, Personero, Dagua Municipality, Dagua, Colombia, February 5, 2018.

<sup>31</sup> Author interview with Luz Adriana Mondragón, Consultant on Prior Consultation, INVIAS, Bogotá, Colombia, January 4, 2016.

Evictions are tricky both legally and politically. If squatters are not removed within 24 hours, they start to acquire due process rights and claims to compensation. The highway agency depends on the authorization of local mayors to conduct evictions, but mayors prefer forbearance due to the political costs of ousting squatters, and particularly those seen as lacking basic necessities.<sup>32</sup> The need to evict those who invaded the highway “constitutes one of the most critical points for the project,” notes the Comptroller, “given that they depend on other entities to undertake the necessary evictions” (Contraloría 2012: 147-8).

The final challenge to the project comes from communities that organize collectively to demand scope expansions. When the project began in 2007, the Ministry of Interior certified that only three black communities existed in the surrounding area. But when construction companies arrived, nine new communities claimed to live in the affected zone and filed a constitutional rights claim to be consulted. In 2012, the Court ordered the suspension of highway construction until the government consulted indigenous and black communities along the route.

There are conflicting interpretations about how these communities formed. On the one hand, many communities had existing non-ethnic organizations (JACs). Given the demographics of the region, many JAC members were black. Leaders allege that the government strategically ignored these organized black communities because, “It would impose a negotiation scheme with broader and higher compensation for the families and areas along the road’s path.”<sup>33</sup> On the other hand, black leaders in the region promoted the creation of new communal councils where infrastructure projects were announced. In particular, an Afro-Pacific leader, Rosa Emilia Solís, spearheaded processes of ethnic organization to take advantage of infrastructure projects. The creation of new communal councils solidified her own leadership position but drew criticism for fragmenting black

---

<sup>32</sup> Observatorio de la Infraestructura del Valle del Cauca, “Seguimiento a las obras de la doble calzada Buga-Buenaventura,” August 10, 2011.

<sup>33</sup> Constitutional Court of Colombia, Sentence T-693 of 2012.



social movements.<sup>34</sup> The Constitutional Court did not wade into disputes about the councils' origins. It recognized possible dual impulses behind their claims—one linked to nascent black organizing, and the other generated by a “growing social expectation around the highway project.” As the Court put it, the highway catalyzed, “a lagged process of Afro-leadership to offer an alternative that would impose a negotiation scheme to benefit broad sectors...the result is a mass ethnic claim that is to some extent fragile.”<sup>35</sup>

Faced with the need to consult communities, the state attempted to strike rushed bargains to avoid delays. Construction equipment waits on “stand by” while the state gets the land and licenses to proceed. Community leaders generally demand local public goods, such as schools, health clinics, and community centers, as well as jobs, retraining programs, and cash payments linked to the project. Officials tend to pay high sums to restart construction projects, or as one official describes the thought process:

“What will cost me more: to delay the project or agree to everything that [the communities] ask of me even if it doesn't have any rationale?...It was an issue of speed, INVIAS had to resolve the issues so that the company could build. So the population said, ‘I want a Ferris wheel for my communal council, and the state said, ‘Here's your Ferris wheel, I don't care how you operate it’.”<sup>36</sup>

Communities understand this dynamic and threaten to stall projects to receive desired benefits. Solís's nickname among officials is the “spoke in the wheel” (*palo en la rueda*), referencing the old phrase in which a spoke was used as a brake on a carriage descending a hill. She perfected

---

<sup>34</sup> Solís was reelected for ten years as a national delegate for black communities (*Comisión Consultiva de Alto Nivel para las Comunidades Negras*). Each communal council votes as a single unit (regardless of the number of members) so it served Solís' interests to create more councils. Indeed, she won with a majority of councils voting in her favor and a minority of the votes. The main black social movement (*Proceso de Comunidades Negras en Colombia*, PCN) has criticized the resulting fragmentation. See, PCN, “Declaración Pública Frente al Proceso de Consulta y Protocolización de la Consulta Previa del Plan Nacional de Desarrollo 2010 - 2014 ‘Prosperidad para Todos’.”

<sup>35</sup> Constitutional Court of Colombia, Sentence T-693 of 2012.

<sup>36</sup> Author interview with Socio-Environmental Coordinator, Anonymous Consortium, Cali, Colombia, June 12, 2018.

the technique of threatening to stop projects if community demands were not met. In 2014, for instance, one communal council (*Pacífico Cimarrón del Corregimiento de Cisneros*) refused to sign an agreement for the fourth stage of the highway to Buenaventura. Construction stopped.<sup>37</sup> The mayor and governor finally intervened. The agreement that resulted gave priority for all unskilled jobs to be allocated through the communal council and provided a range of local public goods.<sup>38</sup> As a project manager at INVIAS put it, “Communities assume that prior consultation is the mechanism to pressure the government, to generate state presence, and to overcome the shortcomings that these sectors [of the state] had generated.”<sup>39</sup>

The government tries to call communities’ bluff by threatening to cancel highway projects when met with social demands. From the perspective of state actors and infrastructure providers, the need for local public goods are genuine but beyond the scope of the infrastructure project. Infrastructure itself is touted as a sufficient benefit to the community.<sup>40</sup> For instance, the former head of ANI Luis Fernando Andrade told community members: “We did our part, if it is not possible to reach a consensus, the road will not be built. We will not send the army, we will build roads that people want.”<sup>41</sup> Such threats, however, are not seen as credible. Cancelling projects once contracts are signed is a rare and tricky process, given the legal implications.<sup>42</sup> A more common outcome is that the government delays projects and renegotiates associated contracts. In one segment, for instance, prior consultation led a public-private partnership to collapse. One of

---

<sup>37</sup> “Comunidad de Cisneros no firmó consulta previa para tramo IV de la vía a Buenaventura,” INVIAS Press Release, 1 Aug 2014.

<sup>38</sup> “Gobernador acompañó protocolización de acuerdos Construcción de la Doble Calzada Buenaventura-Loboguerrero,” Gobernación Valle del Cauca Press Release, 4 Sept 2014.

<sup>39</sup> Author interview with project manager, INVIAS (1996-2012) and ANI (2012-), Bogotá, Colombia, June 11, 2018.

<sup>40</sup> Author interview with Socio-Environmental Director, Anonymous Consortium, Cali, Colombia, June 12, 2018.

<sup>41</sup> “Primer desafío de las 4G: los proyectos enredados,” *Dinero* Nov 5 2017.

<sup>42</sup> Author interview with Mario Peláez Rojas, Director de Infraestructura, Ministerio de Transporte, Bogotá, Colombia, June 12, 2018.

Colombia's largest builders, Carlos Solarte, pulled out of his stretch of the project and made similar threats for other projects if the government did not fix the land issues.<sup>43</sup> The government did not cancel the project. Rather, it hired a new construction company to finish the highway and shifted the contract, which was initially structured as a concession, to the public sector to be debt-financed.<sup>44</sup>

The consequences of delays in acquiring land due to holdouts, trolls, scope expansions were substantial in the case of the Cali to Buenaventura highway. The costs of the project ballooned: while initially budgeted to cost \$282 million (Contraloría 2012: 117), the project is projected to cost more than \$1 billion.<sup>45</sup> The government has been forced to launch an entirely new PPP worth \$464 million to finish the works initially contracted.<sup>46</sup> Although the project was supposed to open in 2010, the projected completion date is 2021.<sup>47</sup>

In short, the attempt to build a highway to connect Cali and Buenaventura illustrates the challenges that stronger property rights create for infrastructure development. Reliance on judicial appeals allowed for holdout problems among wealthy property owners. Expansive definitions of ownership protected the rights of informal property holders and redistributed resources to vulnerable groups, who were incentivized to build along the highway route. Finally, protections for communal property expanded the scope of the highway project. Black communities formed or reoriented themselves as ethnic organizations to negotiate with the state and private firms. This process may have salutary effects in addressing long-standing needs for local public goods in specific areas, but it put the project into limbo.

---

<sup>43</sup> "Carlos Solarte habla de los retos para construir la Malla Vial del Valle," *El País* (Colombia), July 31, 2011.

<sup>44</sup> "La interminable doble calzada entre Buga y Buenaventura," *El Tiempo*, April 26, 2017.

<sup>45</sup> "La larga doble calzada que lleva al Pacífico se construye a tres manos," *El Tiempo* February 2, 2016.

<sup>46</sup> "Gobernadora reclama recursos para terminar doble calzada Buga- Buenaventura," *El País* (Colombia), April 13, 2018.

<sup>47</sup> "Doble calzada estará listo en 2021," *El País*, January 18, 2017.

How generalizable are the problems seen in the Cali-Buenaventura highway? The Buenaventura highway is an extreme case in that it combines a range of problems. President Juan Manuel Santos once said that the highway was “the perfect story of something poorly done.”<sup>48</sup> I therefore use government audit reports and local news sources to examine the frequency of opportunistic behavior across highway projects and probe alternative explanations.

The cases included in my dataset come from annual audits (*Auditorías de Vigencia Fiscal*) of the national highway agency and the concessions agency from 2006 to 2016.<sup>49</sup> The Comptroller (*Contraloría*) selects a subset of highway projects to audit each year. Projects largely are selected at random and audited close to their announced completion date. However, the Comptroller is more likely to audit projects that have generated complaints or that are of national importance.<sup>50</sup> On observable characteristics, the projects analyzed have somewhat smaller initial budgets (\$584 million average contract starting price compared to \$404 million). They are equally likely to be public-private partnership (53 percent) as public works. There is little reason to suspect that auditors differentially select projects with opportunistic behavior relative to other possible issues (like contract disputes, security problems, corruption, and so on). The dataset includes 58 out of 101 national highway projects, all with initial budgets above \$10 million. I code each case for the causes of delays noted, as well as the type of land issues that arose, if any.

Given that this is a small data set, I focus on descriptive statistics about the frequency of different opportunistic behaviors. I also look for evidence in favor of alternative explanations

---

<sup>48</sup> “Los siete males de una vía en Colombia,” *Semana* 23 March 2013.

<sup>49</sup> Agency audit reports are not available earlier in the period. The INVIAS report is missing for 2008. The national concessions agency was originally called the National Concessions Institute (*Instituto Nacional de Concesiones*, INCO). In 2011, mired in corruption scandals, it was dissolved and replaced with the National Infrastructure Agency (*Agencia Nacional de Infraestructura*, ANI).

<sup>50</sup> Author interview with Juan Polania, Delegated Comptroller for Infrastructure, Bogotá, Colombia, January 26, 2018.

rooted in weak property rights, preexisting social organization, and particular to the Colombian case, security threats. In addition, I coded other possible construction problems, such as difficulties obtaining an environmental license (for reasons other than prior consultation) and technical deficiencies (usually poor engineering or financial studies).

Table 3 summarizes the frequency of each of these challenges. As the first row suggests, 64 percent of projects involve opportunistic behaviors of some kind. The most common issues are land invasions in project routes (46 percent) and holdout problems (46 percent). Although the emergence of communities is less common (21 percent), a minority of cases involves ethnic groups that can claim the right of prior consultation. Opportunism thus is a common, but not uniform, occurrence. These problems also are not limited to highways. The government found that a full 59 percent of “strategic” infrastructure projects have land acquisition problems and 41 percent have stalled prior consultations (Conpes 2013: 5).

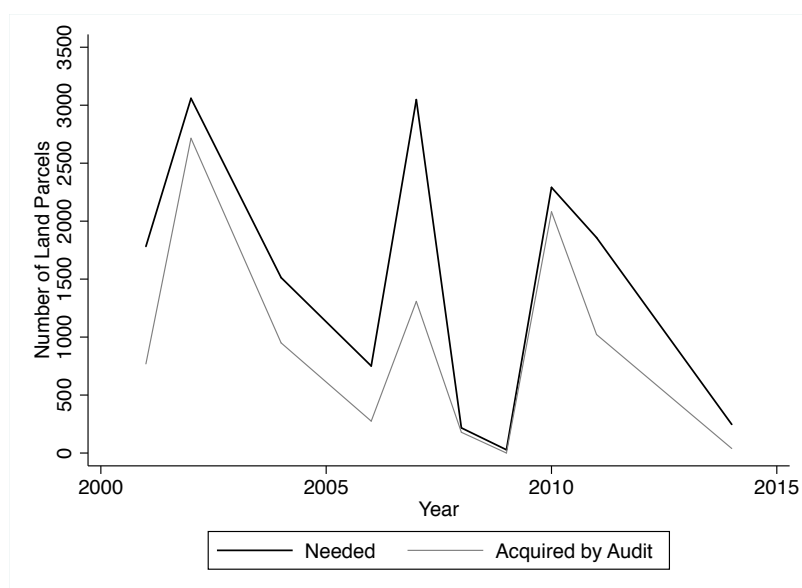
**Table 3.** Frequency of Opportunistic Behavior and Alternative Explanations in Highway Projects

<i>Opportunistic Behavior</i>	<b>Percentage</b> Public and PPP Highway Projects
All Types	64 percent Holdouts, trolls, or bargaining.
Holdouts	46 percent A lawsuit or sale refusal by a formal property owner.
Infrastructure Trolls	46 percent Informal occupations in the project route.
Scope Expansions	21 percent Bargaining during consultations with ethnic communities.
<i>Alternative Explanations</i>	
Weak Property Rights	14 percent Problems identifying property owners and occupants.
Social Organization	30 percent Communities formed prior to infrastructure project.
Rushed Planning	56 percent Contract awarded with preliminary or incomplete plans.
Security Issues	7 percent A violent incident registered on the project.

Turning to alternative explanations, I find limited support for argument based on weak property rights. Only 14 percent of highways had problems with the identification of property owners and occupants. This is strikingly low given that land identification issues generally are compounded by inclusive property rules. If the government only recognized formally registered claims, as in many statist systems, then it would not need to chase after claimants who do not appear on state registries. Colombia's communitarian rules make identification issues more likely, yet they are not prevalent. Preexisting societal organization is a less important explanation than how communities react once infrastructure projects are announced. Of cases that held a prior consultation process, two-thirds have communities that appeared *after* the project began. Likewise, security issues do not seem to account for the delays observed in Colombia. A security problem

only emerged in a minority of cases (7 percent) of cases, and generally was solved through additional security support. Finally, opportunism does not preclude other common construction problems. A quarter of projects experienced delays in obtaining environmental licenses. Most audits (56 percent) criticized the quality of engineering plans, including the planning for land acquisition.

Figure 3 further emphasizes the frequency of land issues by plotting the land needed when a project was announced, and the land acquired when the project was audited. Almost all audits occur within one year of the project's announced end date. All but one project audited still needed to purchase land *after* the planned construction date had passed. Admittedly, not all projects include land information in the final audit report. It is possible that this figure overstates the problem if the subsample that registers land information is more likely to have difficulties. The audit reports do not include information on when the government eventually acquired the needed land. However, one study focused on prior consultation found that community bargaining delays Colombian infrastructure projects by an average of 72 months (ANIF 2014: 24).



**Figure 3.** Land Needed and Acquired by Time of Project Audit, 2001-14.

Underspending can occur because construction cannot move forward when projects are delayed for land issues. Roughly three-quarters of projects with land delays initially have unspent funds. But ultimately, the government ends up paying much more for the land. In 64 percent of cases audited, the Comptroller reported that the government ran out of funds to pay for the land needed. Every single project with opportunistic behavior resulted in a delay in increases in associated costs. On average, land acquisition and social budgets rose from 8 percent of contract costs to 36 percent. According to one think tank, Colombia loses about 0.5 percent of GDP annually due to the additional costs resulting from project delays in bargaining with communities (Fedesarrollo 2017: 18). Given that the government often invests less than 1 percent of GDP on infrastructure, these are substantial sums.

In extreme cases, the Colombian government has cancelled infrastructure projects. At least four highways have been cancelled due to land issues.<sup>51</sup> Although not a large number, it is impressive given the complexity of cancelling projects once construction has begun. Perhaps the most notable example of a project cancellation comes from the Pacific region's main energy company (*Empresa de Energía del Pacífico*, EPSA). EPSA planned to build a second electricity line to serve 400,000 people in Buenaventura. The company completed twelve prior consultations. During this time, houses started to appear precisely in the construction path. There were 1200 new houses, each of which required compensation worth the cost of a social interest house, or roughly \$10,000 (30 million Colombian pesos).<sup>52</sup> The compensation would have cost \$12 million for a project that only had a budget of \$8 million. The director of the project was forced to tell his creditors, "I'm getting off this bus... it's unviable."<sup>53</sup> The remaining funds went unused.

---

<sup>51</sup> These projects include the Cesar-Guajira toll highway; the San Francisco-Mocoa highway; and a highway in Bucaramanga.

<sup>52</sup> "Epsa desiste de construir la segunda línea de energía a Buenaventura," *El País (Colombia)*, June 30, 2016.

<sup>53</sup> Author interview with social management expert, Cali, Colombia, June 12, 2018.



Colombia is an extreme case in the extent of individual and collective rights protections. It highlights the ways in which strong property rights—in the sense of judicial protections for property owners, redistributive compensation, protection for informal and defective claims, and recognition of collective property value—pose difficulties to infrastructure construction. I now turn to Ecuador to probe whether statist property rules affect the frequency of opportunistic behavior.

### **Accelerated Infrastructure in Ecuador**

Ecuador has statist property rules with weak property protections involving minimal compensation for owners, no judicial recourse, and limited recognition of defective property claims. These rules have suppressed opportunistic behavior and allowed for rapid construction. Problems identifying property owners have not delayed infrastructure because the government only recognizes claims properly registered in state records.

#### *The Origins of Property Rules*

In Ecuador, property laws regulating how the state can take land for public purposes date to the military regime. In 1964, the military passed a highway law (*Ley de Caminos*) to expedite land acquisition for its development projects. The law remained in place through the democratic transition, several new constitutions, and Correa’s competitive-authoritarian government.<sup>54</sup>

Several features tilt property rules in the state’s favor in Ecuador. First, the state is the residual owner of all land. Land is seen to have a “social purpose” that allows the state to reclaim it for any higher public need. For this reason, the transportation ministry does not engage in voluntary land negotiations. The Ministry only declares the public utility of a construction project, notifies affected property owners, and gives them eight days to provide the paperwork to be eligible for compensation (*i.e.* tax bills, property title, etc.). Second, the government only recognizes the

---

<sup>54</sup> It was replaced by the Ley de Infraestructura in 2016 to create a uniform property regime across government entities. The main change is that the government now must reach an agreement with the property owner prior to occupying the land.

ownership of those with appropriate state documents. It is incumbent on the property owner or occupant to demonstrate their basis for compensation. Informal property owners only receive compensation for improvements that they can document. Authorities also use a below-market compensation rule, paying owners the registered tax value (*valor catastral*) for land. Given that land cadasters are infrequently updated, especially in rural areas, the state pays minimal compensation.<sup>55</sup> Resettlement or social compensation is not required.<sup>56</sup> Third, prior to 2009, property owners could only appeal their compensation to a panel within the Ministry of Transportation. Officials at the Ministry cannot remember a case when a property owner has won on appeal.<sup>57</sup> Moreover, these appeals do not delay construction because the government can take possession of the land and continue building while an appeal is heard.

Informal practices make the law even less protective of property owners' investments. The government has been criticized for not paying compensation at all, paying paltry amounts, or delaying payment until many years after projects are finished.<sup>58</sup> Indeed, a 2017 Ministry of Finance report suggests that the government still owed property owners for eleven highways launched in the 2008 to 2014 period.<sup>59</sup>

Ecuador has weak provisions for group rights and prior consultation. Indigenous movements pushed for the inclusion of prior consultation in the 1998 Constitution and the right

---

<sup>55</sup> Sometimes increases are negotiated with the district office head, but it depends on the goodwill of authorities to adjust for an outdated land cadaster. The government also deducts any future gains from the public work (the "plus-value," *plusvalía*) from the price paid to property owners in the case of a partial taking.

<sup>56</sup> The government has provided resettlement in a discretionary fashion in cases of extreme poverty or natural disaster.

<sup>57</sup> Author interview with Fernando Lara, head of the Unidad Nacional de Caminos y Expropiaciones, Ministry of Transportation and Public Works. Quito, Ecuador. November 20, 2017.

<sup>58</sup> Author interview with anonymous private construction manager. Quito, Ecuador. August 2, 2018. Author interview with Fernando Lara, head of the Unidad Nacional de Caminos y Expropiaciones, Ministry of Transportation and Public Works. Quito, Ecuador. November 20, 2017.

<sup>59</sup> PROYECTO: K027 MTOP - Expropiaciones e indemnizaciones varias carreteras (ESIGEF2015).

survived in the 2008 Constitution. But in 2002, a presidential decree limited the right to prior consultation to hydrocarbon projects.<sup>60</sup> Even in these cases, Ecuador limits community participation to “feasible” technical criteria (Falleti and Riofrancos 2018; Pinto and Rivero 2012). Correa sidelined indigenous communities in his decisions about extractive projects; communities looked to the Inter-American Court of Human Rights to protect their rights.<sup>61</sup> Ethnic communities therefore have no formal rights to address the impacts of transportation projects and expand the project scope.

The combination of below-market compensation and national claims on property favor the state over property owners. Even government officials consider the highway law a “harsh” regulation that favors the state.<sup>62</sup> Importantly, these rules predate the commodities boom, the erosion of democratic norms under Correa, and government plans to expand highway infrastructure.

#### *An Emblematic Highway: The Pan-American Expansion*

To examine how statist property rules affect opportunistic behavior, I look at one of the most important corridors in Ecuador: the Pan-American highway. The Pan-American is a rare concession project. The private firm Panavial has operated the road since 1996. However, it is a public work “disguised” as a concession because Panavial receives a fixed return from the government in exchange for keeping tolls at just \$1.<sup>63</sup> Without sufficient revenue generation, the

---

<sup>60</sup> Reglamento de Consulta de Actividades Hidrocarburíferas, Decreto Ejecutivo 3401, *Registro Oficial* 728, 19 December 2002.

<sup>61</sup> Ecuador was found guilty in the Inter-American Court of Human Rights for allowing an Argentine oil company to explore and exploit minerals in Kichwa territory without previously consulting the community.

<sup>62</sup> Author interview with Fernando Lara, head of the Unidad Nacional de Caminos y Expropiaciones, Ministry of Transportation and Public Works. Quito, Ecuador. November 20, 2017.

Author interview with Alejandro Cassola, coordinator of expropriations at Empresa Municipal de Obras Públicas. Quito, Ecuador. November 12, 2017.

<sup>63</sup> Author interview with Juan Idrovo Neira, Director de Administraciones de Delegaciones y Concesiones, MTOP, Quito, Ecuador, November 21, 2017.

government has been forced to finance maintenance and construction projects, and repeatedly has extended and sweetened Panavial's contract. In 2009, the government decided to widen the highway to six lanes in a 56-mile segment running from Jambelí to Ambato. The project cost \$358 million with \$18 million allocated for land expropriation (Ministerio de Transporte y Obras Públicas 2015).

Expropriations were necessary in towns that had developed along the highway route. A government official explained in 2010: "There's no more space to widen the road."<sup>64</sup> The Ministry of Transportation took charge of the expropriations; Panavial urged the Ministry to clear the land so that it could begin construction.<sup>65</sup> According to residents along the route, the government tried to avoid paying even the registered tax value of affected properties. President Correa himself came to towns along the route and urged them to "donate" their land as "good patriots."<sup>66</sup> Trolling activity around the route made little sense given that it was unclear that the government would even pay for the land that it seized.

One town along the route illustrates what happens when property owners try to extract resources from the state in Ecuador. Lasso was one of the towns that had developed right up to the edge of the old Pan-American highway. Town residents refused the compensation that the government offered. They emphasized that their property prices had gone up in value since the project announcement and that the government needed their specific parcels for construction (a river meant that the government had limited options for where to expand the road).<sup>67</sup> But the government created an example of the town for its attempt to leverage the project for gain.

---

<sup>64</sup> "Ampliación de la Panamericana suspendida," *La Hora*, June 11, 2010.

<sup>65</sup> "Panavial adquirió más maquinaria," *La Hora*, June 29, 2010.

<sup>66</sup> Author interviews with mini-market owner and pharmacy owner, Lasso, Ecuador, July 29, 2008.

<sup>67</sup> Author interview with mini-market owner, Lasso, Ecuador, July 29, 2008. Many rumors circulate about what happened in the town. Others in the town report that the property owners were offered generous sums for their properties, and either they were greedy and wanted more or they were willing to sell but Correa changed his mind about the project.

Rather than raise the compensation offers, the government built a 3-mile lateral bypass around the town (*Paso Lateral de Lasso*). According to townspeople, Panavial told them that it would cost more to move the highway than to purchase the land at the prices demanded.<sup>68</sup> The government wanted to show that it would not cave to popular pressure. The former Planning Secretary describes: “If we allowed them to extract from the government, then it would happen with everyone...we had to be very firm because of the incentive effects. As a signal to the country, it was a very important case.”<sup>69</sup> Lasso suffered due to the decision to move the highway. Storeowners along the old route complain that sales decreased meaningfully and they could not afford to relocate (Mera 2017; Quintana 2017).<sup>70</sup> Residents also complain that the government moved the route without any further consultation.<sup>71</sup>

In short, opportunistic behavior is uncommon in Ecuador. Property rules favor the state. Property owners cannot use the courts to contest expropriations or delay projects. When communities do try to increase their compensation, they risk government reprisals. The government might retract the project entirely, arguably leaving residents even worse off.

#### *Administrative Data on Land Acquisition*

To examine the prevalence of land issues in Ecuador, I gathered statistics on land expropriations for all highway projects. Unlike in Colombia, the Ministry of Transportation and Public Works keeps records on its land purchases from 1988 to 2011.<sup>72</sup> I compiled these handwritten files to document the total number of land purchases by year. I match these files with reports from the Ministry on the land that it stated that it needed for public projects (available for

---

<sup>68</sup> Author interview with restaurant owner, Lasso, Ecuador, July 29, 2018.

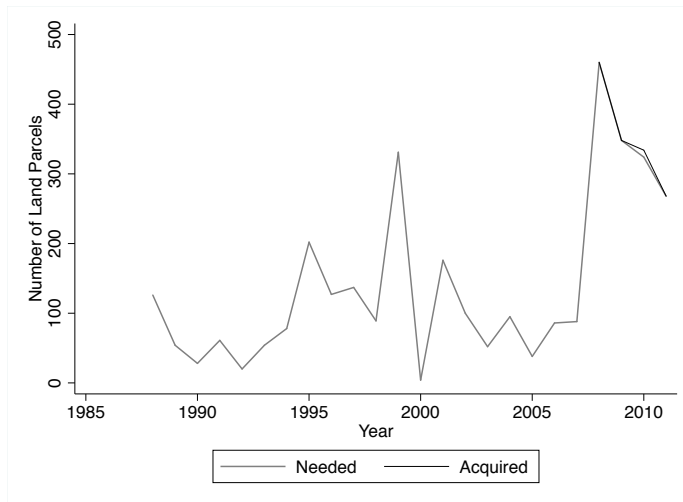
<sup>69</sup> Author interview with Sandy Naranjo, Secretary of SENPLADES, August 16, 2017.

<sup>70</sup> Also see, “Suben los precios de los terrenos y bajan las ventas en Lasso,” *El Telégrafo*, 3 April 2013.

<sup>71</sup> “Lasso se deprimió sin su carretera,” *El Comercio*, March 11, 2015.

<sup>72</sup> In 2011, land responsibilities were decentralized, and subnational authorities have more erratic statistics.

select years). Figure 4 shows that these statistics almost perfectly coincide. The government purchased the land that it set out to acquire each year, with the exception of ten parcels in 2010.



**Figure 4.** Land Needed and Acquired, 1988-2011.

Notes: Only includes land purchased by the Ministry of Transportation and Public Works (not uncompensated takings).

What is striking is that the amount of land that the Ministry planned to acquire and actually purchased is very small. It does shoot up in 2008 when Correa launched his major highway expansion program, known as the Lightning Plan (*Plan Relámpago*). Nevertheless, the amount of land recorded by the state is far less than what individual project reports suggest. The most plausible explanation for this trend is that the government engages in uncompensated takings. As in the case of Lasso, it is possible that the government asks affected property owners to donate their land voluntarily. If no payment is made, then the land does not end up on the government's ledgers.

Unlike the audit reports in Colombia, administrative statistics provide no indication of whether opportunistic behavior occurred. It could be the case that citizens use more contentious tactics and delay projects through other means in Ecuador. I reviewed press articles from Ecuador's major newspapers and court documents to look for opportunistic or contentious behavior around highway projects. Newspapers and judicial documents confirm the statist nature of expropriation rules and suppressed contestation. For instance, the Pifo-Papallacta highway, a \$55 million-project

launched in 2012, required 69 land parcels.<sup>73</sup> One property owner disputed the government's payment and appealed to the Court due to the low payment for his land. His request for higher compensation was denied and construction continued.<sup>74</sup> In another case, a property owner asserted that his land was occupied without a declaration of public need or compensation. The court denied his compensation claim noting the collective nature of land ownership: "Property rights rest only on the social value of the good, and they cannot exist without their social value; that is, to expropriate according to social needs is to satisfy and benefit the collectivity...as such, in this case, there is no confiscation of goods as the claimant asserts, since it does not try to punish the property owner, rather it is an expropriation to fulfill a social function."<sup>75</sup>

Qualitative interviews with top officials confirm that opportunistic behavior is rare around highway projects. As the head of the land acquisition office explains, "The public work continues [even if a landowner disagrees]; it never would be the case that one would stop doing a public work for these things. The common good prevails over the individual good according to the Constitution."<sup>76</sup> Numerous high-ranking officials voiced surprise at the idea that there would be societal resistance to highways, given that they bring positive externalities and development. As the head of the national planning ministry put it, "The first thing that people ask for are highways. If someone opposes them, people would lynch them."<sup>77</sup>

An important alternative explanation for the limited societal opposition is regime type. Ecuador is a competitive authoritarian regime in which Correa worried much less about his electoral popularity, controlled the court system, and intimidated the media. It is possible that his control of

---

<sup>73</sup> *El Comercio*, "36 km de la vía a Papallacta se amplían a cuatro carriles", November 27, 2012.

<sup>74</sup> Corte Constitucional del Ecuador, Expediente 0430-13-JP.

<sup>75</sup> Corte Constitucional de Ecuador, Expediente 0038-17-JP.

<sup>76</sup> Author interview with Fernando Lara, Unidad Nacional de Caminos y Expropiaciones, MTOP, Quito, Ecuador, November 20, 2017.

<sup>77</sup> Author interview with René Ramírez, Head of the National Planning Secretary (SENPLADES) (2008-2011). Quito, Ecuador. August 16, 2018.

courts meant that opportunistic behavior was impossible or that the media refused to report on it. If this is the case, then the formal property rules matter little. To examine this possibility, I now turn to subnational transportation projects in which officials acquired land through different procedures. My expectation is that opportunistic behavior should occur, even in a competitive authoritarian context, when the property rules encourage it.

### **A Subnational Reversal: Cable Car Projects in Bogotá and Quito**

Property rules reverse from the national to subnational level in Colombia and Ecuador. In Colombia, mayors can use statist procedures. They can issue emergency decrees (*decretos de urgencia*) to use expedited procedures that offer below-market compensation and foreclose judicial appeals.<sup>78</sup> Property owners only can appeal the taking to the administrative agency in charge; that agency has 10 days to respond to the appeal. As in Ecuador, the suppression of court appeals reduces holdout problems in which property owners sue the government and stall an entire project. In Ecuador, conversely, mayors use liberal property rules. Subnational authorities negotiate voluntary compensation at commercial prices or wait for courts to authorize an expropriation order. While the Bogotá cable car project proceeded with minor delays, greater protections for property owners in Quito resulted in the cancellation of its cable car project.

In 2015, Bogotá announced plans to build a cable car to serve one of the poorest districts in the city, Ciudad Bolívar. The project, known as TransMiCable, mimics similar attempts to provide rapid mass transit to crowded hillside neighborhoods in Medellín and Rio de Janeiro. Mayor Samuel Moreno (2008-11) first invested in the studies to justify the transportation demand for a cable car. After Moreno left office in a scandal, his successor Gustavo Petro (2012-2015) continued the project

---

<sup>78</sup> These decrees are intended for projects in which a delay would (i) cause potential excessive increases in land prices, (ii) result in negative consequences, and/or (iii) the project is a government priority. Law 388 of 1997, Article 65.



and awarded the \$59 million construction contract to a Colombian consortium. Construction began under Petro's successor, Enrique Peñalosa, in September 2016. The project opened in 2018.

Land acquisition was supposed to occur prior to construction. In 2013, Petro authorized administrative expropriations of 178 parcels needed through an emergency decree.<sup>79</sup> Roughly a third of parcels (59) required expropriation because property owners refused to voluntarily sell their land (Camargo 2016: 61). The Urban Development Institute (*Instituto de Desarrollo Urbano*, IDU) acquired the land. IDU had not completed the land acquisition process by the date that construction was to begin. According to the Comptroller (2016: 81), IDU needed 44 additional parcels, or roughly a quarter of the land.

The delays largely resulted from the informal characteristic of the neighborhoods where the city tried to build. Although the subnational property rules have a statist bend, Colombia does provide compensation for informal owners, even under administrative proceedings. Ciudad Bolívar developed through land invasions and irregular sales. Many residents purchased land from “traffickers,” who provide sale certificates to land that they do not own or that was not authorized for urban development. Compensating these irregular claims proved a major legal headache, especially around the final station (Estación Illimani) in an untitled neighborhood (Veeduría Distrital de Bogotá 2017: 24). The government also advised occupants to file for occupancy claims (*procesos de pertenencia*), but this required occupants to invest their own resources. Long-standing residents lacked documents to show their possession.<sup>80</sup> The city also struggled to relocate residents, including 113 property owners, 48 occupants, and 174 renters (Veeduría Distrital de Bogotá 2017: 26). Residents did not want to be relocated to housing projects far from the city center.

---

<sup>79</sup> The amount of land later increased to 183 to build complementary public works.

<sup>80</sup> Author interview with Santiago Ramírez Almanza, Lawyer on TransMiCable, Secretaria Distrital de Movilidad, 2013-15, Bogotá, Colombia, January 7, 2016.

Despite these issues, the delay in land acquisition proved minor (Contraloría de Bogotá 2017: 43). Holdout problems did not delay the construction under a system of administrative takings. Unlike most highway projects, it took just one additional year to get the land. The construction company began to build in the large areas that the government had acquired allowing the project to open close to its announced date.

The cable car in Quito marks a sharp departure from the experience of highway takings in Ecuador. It makes clear how liberal taking rules allow for holdout problems, even in a competitive authoritarian regime. Unlike with highway projects, cities first must attempt voluntary sales. Compensation still has an objective basis: officials offer property owners the land cadaster value plus 10% of the value as an incentive to sell voluntarily. If a property owner rejects the state offer, she can contest the value in court, unlike in the case of highways.<sup>81</sup> If the city needs to expropriate land, then mayors must declare the project to be in the public interest. A judge then authorizes the city to take possession of the land prior to a court ruling on compensation itself.<sup>82</sup> Dependence on a judicial ruling creates space for subjective compensation factors and holdout problems, as landowners try to stall and receive compensation at higher prices.

As in Bogotá, the Quito city government launched a cable car project to improve transportation to several hillside neighborhoods. Mayor Mauricio Rodas (2014-18) announced the project while campaigning. Critics saw it as attempt to come up with a “branded project” at the same time that he criticized his predecessor’s metro project.<sup>83</sup> No studies had been done to justify the project. Once in office, Rodas commissioned studies from a local university (Universidad

---

<sup>81</sup> Código Orgánico de Organización Territorial, Autonomía y Descentralización (COOTAD), section 7th.

<sup>82</sup> Código de Procedimiento Civil, Article 797. The city pays the property owner its initial offer, pending a final judicial determination.

<sup>83</sup> Author interview with Jorge Albán, Vice-mayor under Augusto Barrera administration (2009-2014). Quito, Ecuador. November 22, 2017.

Politécnica Nacional). The studies showed the need to shorten the initial route, which raised criticism from neighborhoods excluded from the modified project.<sup>84</sup> Opposition city council members (aligned with Correa) complained that the studies were poorly done.<sup>85</sup>

Despite criticism, the city moved ahead with the \$44 million contract tender in 2016. It awarded the contract to Ecuador's army corps of engineers (*Cuerpo de Ingenieros del Ejercito*, CIE) to be completed in 2018. Yet the rushed contract had many problems related to the low quality of project studies. The final engineering studies necessary to build would take two more years to complete.<sup>86</sup>

In the interim, serious problems arose related to land acquisition. The project only required 34 parcels, meaning that the land needs were substantially less than in Bogotá's cable car. While 28 property owners accepted the state's offer for a voluntary sale, 16 rejected it. The state therefore needed judicial authorization to occupy the land and expropriate it.<sup>87</sup> The holdouts allowed societal opposition to the project to mount. The project traversed one middle-class neighborhood, San José del Condado, as well as a number of low-income neighborhoods. Opposition formed around eight parcels in San José del Condado where 200 people lived.<sup>88</sup> The social organization, No Quito Cables, questioned the necessity of the project. It commissioned studies to suggest that expansions to local roads would solve transportation needs more effectively without expropriation.<sup>89</sup> Residents

---

<sup>84</sup> "Incertidumbre en Pisulí y la Roldós por Quito Cables," *La Hora*, July 1, 2018.

<sup>85</sup> Author interview with Carlos Paez, City Council member (2014-2019). Quito, Ecuador, November 6, 2017; Author interview with Soledad Benitez, City Councilor (2014-2019), Quito, Ecuador, July 31, 2018; Author interview with Jorge Albán, Vice-mayor under Augusto Barrera (2009-2014) and City Councilor (2014-2019), Quito, Ecuador, November 22, 2017.

<sup>86</sup> "El Cuerpo de Ingenieros del Ejército demandó a la Epmmp por proyecto Quito Cables," *El Comercio*, June 22, 2018.

<sup>87</sup> "16 de las 34 expropiaciones del proyecto Quito Cables siguieron la vía judicial," *El Comercio*, June 28, 2017.

<sup>88</sup> Author interview with Soledad Benitez, City Councilor, Municipality of Quito (2014-2019). Quito, Ecuador, July 31, 2018.

<sup>89</sup> "Los vecinos del Condado plantean 4 alternativas a los Quitocables," *El Telégrafo*, October 1, 2016.

then held demonstrations, lobbied city councilors and assembly members, and sued the city in four constitutional actions (all of which were rejected) to oppose the project.<sup>90</sup>

The mayor initially ignored the land issues. As one city official in charge of the expropriations put it, “He told me, “I don’t care how you do it, but get it done.”<sup>91</sup> When questioned why he didn’t use public land to build the project, the mayor deflected blame: “I am a lawyer, not an engineer.”<sup>92</sup> Rodas continued to defend the project, saying that the city had spent more than \$26 million on the project and that “the works would continue.”<sup>93</sup> The city issued eviction orders in the neighborhood but failed to receive police support to execute them; the court delayed issuing expropriation orders.<sup>94</sup> The fact that the courts defended property owners and the media covered the case suggests that Ecuador’s competitive authoritarian environment cannot fully explain the outcomes.

Ultimately, the army corps of engineers withdrew from the project on the grounds that the government failed to acquire the needed land in time. General Pedro Mosquera wrote to the mayor voicing his objections to projects that “represent attacks on citizens’ rights and peace.”<sup>95</sup> As the government pushed ahead with eviction orders, the army engineers therefore cancelled the contract citing the delays. In May 2018, the city suspended the Quito cables project.<sup>96</sup>

---

<sup>90</sup> “Protesta 'en cadena' por Quito Cables,” *Ultimas Noticias*, July 5, 2017; “Opositores a los Quitocables marchan a la Contraloría y la Asamblea,” *El Telégrafo* 13 Sept 2017.

<sup>91</sup> Author interview with Alejandro Cassola, Empresa Municipal de Obras Públicas, Coordinador de Expropiaciones, Quito Cables, Quito, Ecuador, November 12, 2017.

<sup>92</sup> Roberto Aguilar, “Rodas y los Quitocables: una mentira tras otra,” *4pelagatos*, 8 Dec 2016.

<sup>93</sup> “Concejales de Quito pidieron una fiscalización al proyecto Quito Cables,” *El Comercio* (Ecuador), 21 May 2018.

<sup>94</sup> The Ministry of Interior controls the police and therefore can withhold its police support. According to those close to the project, the national government saw the case as a way to block an opposition mayor so denied police support. Author interview with Alejandro Cassola, Empresa Municipal de Obras Públicas, Coordinador de Expropiaciones, Quito Cables, Quito, Ecuador, November 12, 2017.

<sup>95</sup> Roberto Aguilar, “Rodas y los Quitocables: una mentira tras otra,” *4pelagatos*, 8 Dec 2016.

<sup>96</sup> “Cuerpo de ingenieros anunció la terminación del contrato para la construcción de los Quito Cables,” *El Comercio* (Ecuador) 31 May 2018.

The subnational comparison provides suggestive evidence that the rules that govern eminent domain changes the prevalence of opportunistic behavior and project completion. If national features like the court system, media environment, or fear of coercive reprisals drove the outcomes in Ecuador, it would have been unlikely to observe vibrant opposition to the cable car project. When the Ecuadorian government was constrained by liberal takings rules, it too struggled to prevent holdouts and ended up canceling an infrastructure project.

## **Conclusion**

This paper challenges the conventional wisdom that stronger property rights accelerate infrastructure construction. I instead revive an older perspective that emphasizes how property rights protections create obstacles when the government wants to repurpose land for public works. Qualitative evidence from Colombia showed how stronger property protections opened the door to holdouts, infrastructure trolls, and scope expansions. Projects stalled, or in rare cases, were cancelled. In contrast, Ecuador provided weaker property protections at the national level, which reduced opportunistic behavior and eased infrastructure completion. Administrative data highlighted the stark contrasts in time to acquire land across a range of projects. A comparison of subnational projects provided additional evidence that the structure of property rules, rather than broader aspects of the national environment like regime type, drive the results.

This paper cuts against a simplistic notion that liberal rights and economic development go hand in hand. The history of many countries, including the United States, makes this point clear. Most American public works were built during periods of uneven rights protections, especially for minority communities. The civil rights movement, combined with environmental activism, served to limit property violations but also coincided with a drop in infrastructure investment (Altshuler and Luberoff 2003). In Latin America, similar concerns that stronger rights conflict with infrastructure development permeate political debates. Such tensions have dogged a range of

developing countries. In India, for instance, land acquisition has stalled \$9 billion in infrastructure investment (Chowdury 2016: 1), and accounts for most time and budget increases (Statistics Ministry 2016: 3). In Indonesia, investors surveyed by the Islamic Development Bank named land acquisition as the primary impediment to infrastructure development (OBG 2014; also see Davidson 2015). Groups linked to the government in Kenya speculate on land needed for projects and delay infrastructure (World Bank 2016: 44-49).<sup>97</sup> Future work may try to code property rules, project delays, and overall investment in a larger set of cases to extend the argument.

From a normative perspective, societal organizing around infrastructure is neither “good” or “bad.” Plenty of infrastructure projects in developing countries are white elephants that do little to advance social welfare or economic growth. If we accept that the use of eminent domain should be limited to projects that increase social welfare, communities should object to its use for projects that do not meet that objective. If opposition centers on preventing wasteful or corrupt projects, then active societal opposition could improve development outcomes. Yet if societal opposition is indiscriminate or opportunistic—in the sense of pushing for greater local resource appropriations regardless of project quality—then it may undermine beneficial projects and reduce social welfare. How institutional rules can balance the interests of affected communities and broader development objectives is an important open question.

Opportunistic behavior may be a particularly salient issue in contexts of high inequality and weak states. State choices to increase public goods and territorial presence may unleash much broader distributive demands. When the state finally “appears” in a given sector, it is forced to confront a history of abandonment. Under-served populations use their interactions with one agency to “bring in” the state more broadly. Hardly a case of resisting infrastructure, as many

---

<sup>97</sup> “Kenya’s ambitious infrastructure projects will improve links with neighbours,” *Financial Times*, December 2, 2014.

scholars looking at mega-projects argue, the demands of communities often revolve around infrastructure *plus* health care, schools, and better housing. These demands are opportunistic in the sense that they leverage the project at hand to level broader claims. But they are fully justified within contexts of limited public goods provision. The implication is that states with histories of neglect may face additional challenges when they finally decide to build public works. States that ignore these broader distributive claims risk achieving development without justice. But states that bow to them risk paralysis.

## References

- Acemoglu, Daron, and James Robinson. 2012. *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. Crown Publishing Group.
- Aldrich, Daniel P. 2008. *Site Fights: Divisive Facilities and Civil Society in Japan and the West*. Ithaca, New York: Cornell University Press.
- Altshuler, Alan A., and David E. Luberoff. 2003. *Mega-Projects: The Changing Politics of Urban Public Investment*. Washington D.C.: Brookings Institution Press and the Lincoln Institute of Land Policy.
- ANIF. 2014. *Gestión En Infraestructura: Efectos de La Consulta Previa*. Bogotá, Colombia.
- Besley, Timothy, and Maitreesh Ghatak. 2009. "Property Rights and Economic Development." In *Handbook of Development Economics*, eds. Dani Rodrik and Mark Rosenzweig. Amsterdam: North Holland, 4525–95.
- Blanco, Cristina. 2016. "Balance Del Perú En El Contexto Regional: Una Mirada Comparativa Del Derecho a La Consulta Previa Cn Relación a Colombia, Chile y Bolivia." In *La Implementación Del Derecho a La Consulta Previa En Perú*, Lima: GIZ.
- Blume, Lawrence, Daniel L. Rubinfeld, and Perry Shapiro. 1984. "The Taking of Land: When Should Compensation Be Paid?" *Quarterly Journal of Economics* 99(1): 71–92.
- Camargo, William. 2016. *Acta de Informe de Gestión*. Bogotá, Colombia.
- Chang, Yun Chien. 2012. "Self-Assessment of Takings Compensation: An Empirical Study." *Journal of Law, Economics, and Organization* 28(2): 265–85.
- Coase, R. H. 1960. "The Problem of Social Cost." In *Classic Papers in Natural Resource Economics*, London: Palgrave Macmillan, 87–137.
- <https://www.journals.uchicago.edu/doi/10.1086/674872> (September 29, 2018).
- Conpes. 2013. *Lineamientos de Política Pública Para El Desarrollo de Proyectos de Interés Nacional y*



*Estrategicos (PINES).*

Contraloría. 2012. *Auditoría de Vigencia Fiscal 2011*, INVILAS. Bogotá.

Contraloría de Bogotá. 2016. *Informe de Auditoría de Desempeño IDU*. Bogotá.

<https://www.idu.gov.co/web/content/451/Informe+Final+IDU+PAD+2016+periodo+II.pdf> (September 26, 2018).

———. 2017. *Informe de Auditoría de Regularidad 2016-Instituto de Desarrollo Urbano*. Bogotá.

Dargent, Eduardo. 2015. *Technocracy and Democracy in Latin America: Experts Running the Government*. New York: Cambridge University Press.

Davidson, Jamie Seth. 2015. *Indonesia's Changing Political Economy: Governing the Roads*. New York: Cambridge University Press.

Eaton, Kent. 2017. *Territory and Ideology in Latin America: Policy Conflicts between National and Subnational Governments*. Oxford University Press.

Epstein, Richard Allen. 1985. *Takings: Private Property and the Power of Eminent Domain*. Cambridge: Harvard University Press.

Falleti, Tulia G., and Thea N. Riofrancos. 2018. "Endogenous Participation: Strengthening Prior Consultation in Extractive Economies." *World Politics*.

Fedesarrollo. 2017. *Costo Económico de La Inestabilidad y Debilidad Normativa En La Gestión Socio-Ambiental*.

Field, Erica. 2007. "Entitled to Work: Urban Property Rights and Labor Supply in Peru." *Quarterly Journal of Economics* 122(4): 1451–1602.

Frye, Timothy. 2017. *Property Rights and Property Wrongs: How Power, Institutions, and Norms Shape Economic Conflict in Russia*. New York: Cambridge University Press.

Galiani, Sebastian, and Ernesto Schargrodsky. 2010. "Property Rights for the Poor: Effects of Land Titling." *Journal of Public Economics* 94(9–10): 700–729.

- <http://linkinghub.elsevier.com/retrieve/pii/S0047272710000654> (January 21, 2015).
- Golden, John M. 2006. "Patent Trolls and Patent Remedies." *Texas Law Review* 85.
- <https://heinonline.org/HOL/Page?handle=hein.journals/tlr85&id=2127&div=&collection=>  
(September 29, 2018).
- Gómez-Ibáñez, José A. 2009. *Regulating Infrastructure: Monopoly, Contracts, and Discretion*. Cambridge: Harvard University Press. <https://books.google.com/books?id=rT5OtCDn69EC&pgis=1>  
(December 17, 2015).
- Grossman, Shelby, Jonathan Phillips, and Leah R Rosenzweig. 2017. "Opportunistic Accountability: State-Society Bargaining Over Shared Interests." : 1–31.
- Guasch, J. Luis., and Pablo T. ( Spiller. 1999. *Managing the Regulatory Process: Design, Concepts, Issues, and the Latin America and Caribbean*. Washington D.C.: World Bank.
- <http://documents.worldbank.org/curated/en/201741468753025890/Managing-the-regulatory-process-design-concepts-issues-and-the-Latin-America-and-Caribbean-story> (May 16, 2018).
- Heller, Michael A. 1998. "The Tragedy of the Anticommons: Property in the Transition from Marx to Markets." *Harvard Law Review* 112(3): 621–88.
- . 2010. *The Gridlock Economy: How Too Much Ownership Wrecks Markets, Stops Innovation, and Costs Lives*. New York: Basic Books. <http://www.amazon.com/The-Gridlock-Economy-Ownership-Innovation/dp/046501898X> (February 1, 2016).
- Herbst, Jeffrey. 2000. *States and Power in Africa*. Princeton University Press.
- <http://www.amazon.com/States-Power-Africa-Jeffrey-Herbst/dp/0691010285> (January 31, 2013).
- Hoffman, Philip T. 1988. "Institutions and Agriculture in Old Regime France." *Politics & Society* 16(2–3): 241–61.
- Jacobs, Jane. 1961. *The Death and Life of Great American Cities*. New York: Vintage Books.

- Karaman, Ozan. 2014. "Resisting Urban Renewal in Istanbul." *Urban Geography* 35(2): 290–310.  
<http://dx.doi.org/10.1080/02723638.2013.865444>.
- Keefer, Philip, and Stephen Knack. 2007. "Boondoggles, Rent-Seeking, and Political Checks and Balances: Public Investment Under Unaccountable Governments." *Review of Economics and Statistics* 89(3): 566–72.
- Kuyucu, Tuna, and Özlem Unsal. 2010. "'Urban Transformation' as State-Led Property Transfer: An Analysis of Two Cases of Urban Renewal in Istanbul." *Urban Studies* 47(7): 1479–99.  
<http://usj.sagepub.com/cgi/doi/10.1177/0042098009353629> (March 23, 2014).
- Lamoreaux, Naomi R. 2011. "The Mystery of Property Rights: A U.S. Perspective." *The Journal of Economic History* 71(02): 275–306.  
[http://www.journals.cambridge.org/abstract\\_S0022050711001537](http://www.journals.cambridge.org/abstract_S0022050711001537).
- Legrand, Catherine. 1986. *Frontier Expansion and Peasant Protest in Colombia, 1850-1936*. Albuquerque: University of New Mexico Press. <https://www.amazon.com/Frontier-Expansion-Peasant-Colombia-1850-1936/dp/0826308511> (January 12, 2017).
- Lemley, Mark A., and Carl Shapiro. 2006. "Patent Holdup and Royalty Stacking." *Texas Law Review* 85.  
<https://heinonline.org/HOL/Page?handle=hein.journals/tlr85&id=2007&div=&collection=>  
(September 29, 2018).
- Levitsky, Steven, and Maria Victoria Murillo. 2013. "Building Institutions on Weak Foundations." *Journal of Democracy* 24(2): 93–107.
- Levitsky, Steven, and María Victoria Murillo. 2009. "Variation in Institutional Strength." *Annual Review of Political Science* 12(1): 115–33.  
<http://www.annualreviews.org/doi/abs/10.1146/annurev.polisci.11.091106.121756> (March 27, 2014).

- Levy, Brian, and Pablo T Spiller. 1994. "The Institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunications Regulation." *Journal of Law Economics Organization* 10(2): 201–46. [http://heinonlinebackup.com/hol-cgi-bin/get\\_pdf.cgi?handle=hein.journals/jleo10&section=17](http://heinonlinebackup.com/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/jleo10&section=17).
- Markus, Stanislav. 2015. *Property, Predation, and Protection: Piranha Capitalism in Russia and Ukraine*. New York: Cambridge University Press. [http://www.amazon.com/Property-Predation-Protection-Piranha-Capitalism/dp/1107088348/ref=sr\\_1\\_1?ie=UTF8&qid=1409081191&sr=8-1&keywords=stanislav+markus](http://www.amazon.com/Property-Predation-Protection-Piranha-Capitalism/dp/1107088348/ref=sr_1_1?ie=UTF8&qid=1409081191&sr=8-1&keywords=stanislav+markus) (April 11, 2015).
- Mera, Sandy. 2017. "Red Vial de Integración Nacional: Desterritorialización En Los Centros Urbanos Regionales Del Ecuador. Caso de Estudio: Paso Lateral Latacunga-Lasso-Provincia de Cotopaxi 2015." Facultad Latinoamericana de Ciencias Sociales Ecuador. [www.flacsoandes.edu.ec](http://www.flacsoandes.edu.ec) (October 4, 2018).
- Ministerio de Transporte y Obras Públicas. 2015. *Ampliación a 6 Carriles Deñ Tramo Jambeli-Latacunga-Ambato En Una Longitud Aproximada de 90 KM, Incluye Intercambiadores y Obras Conexas*. Quito. [https://www.obraspublicas.gob.ec/wp-content/uploads/downloads/2015/09/Literal-K-175200000.641.3140\\_PROY.pdf](https://www.obraspublicas.gob.ec/wp-content/uploads/downloads/2015/09/Literal-K-175200000.641.3140_PROY.pdf) (October 4, 2018).
- Ministerio del Interior. 2015. *Informe de Gestión Al Congreso de La República 2014-2015*. Bogota: Ministerio del Interior.
- Ministry of Statistics and Programme Implementation. 2016. *Project Implementation Status Report*. New Delhi. [http://www.cspm.gov.in/english/qmp/Quater\\_mega\\_april\\_jun\\_2016.pdf](http://www.cspm.gov.in/english/qmp/Quater_mega_april_jun_2016.pdf) (October 16, 2018).
- Myerson, Roger B., and Mark A. Satterthwaite. 1983. "Efficient Mechanisms for Bilateral Trading." *Journal of Economic Theory* 29: 265–81.
- North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge

- University Press.
- North, Douglass C., and Robert Paul Thomas. 1973. *The Rise of the Western World: A New Economic History*. New York: Cambridge University Press.
- O'Donnell, Guillermo A. 1998. "Horizontal Accountability in New Democracies." *Journal of Democracy* 9(3): 112–26.
- OBG. 2014. *The Promised Land: Difficulties around Land Acquisition Remain a Significant Challenge*. Oxford Business Group. <https://oxfordbusinessgroup.com/analysis/promised-land-difficulties-around-land-acquisition-remain-significant-challenge> (October 21, 2018).
- Paschel, Tianna S. 2016. *Becoming Black Political Subjects: Movements and Ethno-Racial Rights in Colombia and Brazil*. Princeton University Press. <https://www.amazon.com/Becoming-Black-Political-Subjects-Ethno-Racial/dp/0691169381>.
- Perrotti, Daniel E., and Ricardo J. Sánchez. 2011. *La Brecha de Infraestructura En América Latina y El Caribe*. Santiago.
- Pinto, Vladimir, and Ramón Rivero. 2012. *La Consulta Previa: Desarrollo Normativo Internacional y Comparado y Su Aplicación En El Perú*. Lima: IDEA.
- Posner, Eric A., and E. Glen Weyl. 2017. "Property Is Only Another Name for Monopoly." *Journal of Legal Analysis* 9(1): 51–123. <https://academic.oup.com/jla/article-lookup/doi/10.1093/jla/lax001> (September 29, 2018).
- . 2018. *Radical Markets: Uprooting Capitalism and Democracy for a Just Society*. Princeton: Princeton University.
- Post, Alison E. 2014. *Foreign and Domestic Investment in Argentina: The Politics of Privatized Infrastructure*. New York: Cambridge University Press.
- <http://books.google.com/books?id=96pkAwAAQBAJ&pgis=1> (October 22, 2014).
- Quintana, Gonzalo. 2017. "Impacto Social de La Carretera Quito-Riobamba En La Población de

- Lasso Provincia de Cotopaxi.” Universidad Politécnica Salesiana.
- Riordon, William L. 2014. *Plunkitt of Tammany Hall: A Series of Very Plain Talks on Very Practical Politics*. Bedford/St Martins. [https://www.amazon.com/dp/B002DQDOB6/ref=dp-kindle-redirect?\\_encoding=UTF8&btkr=1](https://www.amazon.com/dp/B002DQDOB6/ref=dp-kindle-redirect?_encoding=UTF8&btkr=1) (April 15, 2017).
- Rodriguez-Franco, Diana. 2017. “Participatory Institutions and Environmental Protection: Popular and Prior Consultations in Latin America.” Northwestern University.
- Rodríguez-Garavito, César. 2011. “Ethnicity.Gov: Global Governance, Indigenous Peoples, and the Right to Prior Consultation in Social Minefields.” *Indiana Journal of Global Legal Studies* 18(1): 263–305. <https://muse-jhu-edu.ezp-prod1.hul.harvard.edu/article/445818/summary> (April 15, 2017).
- Rosenthal, Jean-Laurent. 1990. “The Development of Irrigation in Provence, 1700-1860: The French Revolution and Economic Growth.” *The Journal of Economic History* 50(3): 615–38. [http://www.journals.cambridge.org/abstract\\_S0022050700037189](http://www.journals.cambridge.org/abstract_S0022050700037189) (October 5, 2018).
- Roy, Ananya. 2009. “Why India Cannot Plan Its Cities: Informality, Insurgence and the Idiom of Urbanization.” *Planning Theory* 8(1): 76–87.
- Roy Chowdhury, Indrāni, and Prabal Roy Chowdhury. 2016. “Holdout and Eminent Domain in Land Acquisition Author(s): INDRANI ROY CHOWDHURY and PRABAL ROY CHOWDHURY Source: Indian Economic Review Holdout and Eminent Domain in Land Acquisition.” *UTC Indian Economic Review* 51(1–2): 1–19.
- Rubinstein, Ariel. 1982. “Perfect Equilibrium in a Bargaining Model.” *Econometrica* 50(1): 97–109.
- Sánchez-Talanquer, Mariano. 2018. *One-Eyed State: The Politics of Legibility and Property Taxation*. Cambridge, MA.
- Sargeson, Sally. 2013. “Violence as Development: Land Expropriation and China’s Urbanization.” *Journal of Peasant Studies* 40(6): 1063–85. <http://dx.doi.org/10.1080/03066150.2013.865603>.

- Saylor, Ryan. 2014. *State Building in Boom Times: Commodities and Coalitions in Latin America and Africa*. New York: Oxford University Press.
- Schumpeter, Joseph A. 1942. *Capitalism, Socialism, and Democracy*. Third Edit. Harper Perennial Modern Thought.
- Scott, James C. 1998. *Seeing like a State : How Certain Schemes to Improve the Human Condition Have Failed*. Yale University Press.
- Shapiro, Jesse M., and Edward L. Glaeser. 2003. "The Benefits of the Home Mortgage Interest Deduction." *Tax Policy and the Economy* 17(1): 37–82.
- Soifer, Hillel David. 2015. *State Building in Latin America*. New York: Cambridge University Press.
- . 2016. "Regionalism, Ethnic Diversity, and Variation in Public Good Provision by National States." *Comparative Political Studies* 49(10): 1341–71.
- Steele, Abbey. 2017. *Democracy and Displacement in Colombia's Civil War*. Ithaca, New York: Cornell University Press.
- Uribe, Simón. 2017. *Frontier Road: Power, History, and the Everyday State in the Colombian Amazon*. Oxford: Wiley-Blackwell.
- Veeduría Distrital de Bogotá. 2017. *Auto de Cierre de Investigación Sumaria Sobre El Avance e Impacto Del Proyecto Cable Aéreo de Ciudad Bolívar 201750033309900015E de 2017*. Bogotá.
- [http://veeduriadistrital.gov.co/sites/default/files/files/Publicaciones 2017/Auto de cierre de investigacion sumaria sobre el avance e impacto del proyecto Cable Aereo de Ciudad Bolivar 2017-15E de 2017 \(11 sep 17\).pdf](http://veeduriadistrital.gov.co/sites/default/files/files/Publicaciones%202017/Auto%20de%20cierre%20de%20investigacion%20sumaria%20sobre%20el%20avance%20e%20impacto%20del%20proyecto%20Cable%20Aereo%20de%20Ciudad%20Bolivar%202017-15E%20de%202017%20(11%20sep%2017).pdf).
- Vernon, Raymond. 1971. *Sovereignty at Bay: The Multinational Spread of U.S. Enterprises*. New York: Basic Books.
- World Bank. 2016. *Kenya Economic Update: Increasing Productivity of Public Investments Beyond Resilience*

