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# ECONOMIC MOBILITY, THE RULE OF LAW, AND PROPERTY RIGHTS PROTECTION:

*EVIDENCE FROM THE  
UNITED STATES AND  
AROUND THE WORLD*

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## KEY POINTS

- ✓ The institutional environment, specifically the quality of legal systems and protection of property rights, are often ignored in the economic mobility literature.
- ✓ Most of the research on mobility focuses on education and inequality. While these issues are important, analyses on which they are based often ignore the institutional framework in which they are developed and observed inequality is bred.
- ✓ I find that legal systems and the protection of property rights are important for explaining intergenerational income mobility in a cross-country analysis.
- ✓ To a lesser but still positive and meaningful extent, the quality of legal systems also matters for absolute and relative mobility across metropolitan statistical areas in the United States.
- ✓ Among subcomponents of state-level legal systems and property rights protection, the control of corruption seems to be the important factor in explaining economic mobility.

## INTRODUCTION

Income and social mobility are important topics for academics, policy analysts, and governments to better understand in the twenty-first century. Growing concern regarding the lack of opportunity for those at the bottom of the income ladder has become one of the hottest topics of discussion today. However, much of this focus has been on the relationship between income inequality and economic mobility (the “Gatsby curve”), as well as the relationship between education, skills formation, and mobility.<sup>1</sup> While these issues are important, analyses on which they are based often ignore the institutional framework in which skillsets are developed and observed inequality is bred. This is particularly problematic to the extent that property rights protection is a key pillar to a modern developing economy. I argue here that a proper legal system that protects property rights and provides the rule of law equally is a necessary (but perhaps insufficient) condition for income and social mobility.

There is a clear relationship between education and mobility on a micro level. However, it is not entirely true that the same is true on an aggregated macro level. For instance, work by Lant Pritchett<sup>2</sup> reveals that increased schooling in many poor countries does not actually translate to more learning. If more schooling does not increase skill development, then it is unlikely to have any impact on incomes. This leads to an interesting puzzle. What is the missing link between the fact that education increases incomes and mobility for individuals and the lack of a robust relationship between education and country-level growth and mobility? I argue that this link is the institutional environment (primarily the rule of law and proper protection of property rights). For example, while skills obtained in a corrupt institutional environment might make the individual better off, this could be achieved in a societally unproductive manner. Gains received from rent-seeking are largely a zero sum (and sometimes negative sum), as this is merely redistribution of resources and not the mutually beneficial exchange that creates wealth.

On the other hand, education that builds skills that can be used in the competitive marketplace (via entrepreneurship, for instance) can then be both beneficial for the entrepreneur, but also society as well. Nordhaus<sup>3</sup> finds that only 2% of the value of innovation goes to the innovator. This means 98% of the innovation's value goes to society. The implications of this suggest that skill set development within a society that rewards market activity and allows for market entrepreneurship can provide gains for the entire country, while skills that are used toward mere redistribution and rent-seeking hinders overall growth and mobility.

This lack of focus on the rule of law and protection of property rights is perhaps unsurprising within the overall discussion of economic mobility in the United States. The United States (compared to the vast majority of countries) protects property rights and has a high quality, largely functional legal system. With respect to American politicians and policymakers, this lack of focus on the rule of law can possibly be explained by the fact that the legal system experienced in the United States (while certainly not perfect, nor homogenous, as I explain later) could be taken for granted when discussing the barriers to upward mobility.

Here, I explore the (currently sparse) literature that examines the role of legal system quality in providing the basic opportunities for people to advance up the income ladder. I also provide more reasons why this institutional environment is the foundational block needed to allow those at the bottom an opportunity to succeed, as well as call for other scholars and policy analysts to examine this relationship more closely. I then provide cross-country evidence in support of this theory. Finally, while it is true that the United States has a relatively high-quality legal system with respect to most of the world, there is cross-state variation *within* the United States that warrants closer examination. I utilize the legal system quality score from Murphy (2020) and provide some basic statistical analysis on this relationship within the United States.

# LITERATURE REVIEW AND CALL FOR RESEARCH

## Legal Systems and Mobility

Vincent Geloso, economist at George Mason University, and I recently published a book chapter for the Fraser Institute’s most recent annual report on Economic Freedom of the World.<sup>4</sup> In it, we connect economic freedom to social mobility. Social mobility, or the ability to improve one’s life (on margins other than just income), is found in our analysis to be improved by economic freedom as a whole, but particularly through the channel of legal system quality and the protection of property rights. We find that this area is positively associated with the World Economic Forum’s *Global Social Mobility Index* (GSMI) and eight of its ten pillars.

Protection of property rights appears crucial to increasing healthcare and education access, as well as education quality and equity. Essentially, places with better legal systems have greater health outcomes and are better able to take advantage of the educational opportunities provided to them. However, legal system quality is not only important for childhood learning but also lifelong learning and access to technology. These pillars are critical to developing skills that can provide the types of opportunities necessary for wealth enhancement and life fulfillment. Furthermore, protecting property rights is correlated with better working conditions, likely due to the larger choice sets of employment opportunities granted to those in free countries. In economically unfree countries that do not provide equal opportunities to their citizens, there are fewer options one has with respect to one’s job. Basic economic theory would suggest that the more available markets one has with respect to supplying one’s own labor, the higher pay the individual will receive. However, more available options also can increase workers’ “pay” on other margins, such as benefits and safer working conditions. Finally, we find that legal system quality and the protection of property rights also associate with better social protection and more inclusive institutions. While the issue of causality is a key question that was not addressed here, there is a clear positive association between the rule of law and better overall conditions.

However, I take seriously the concerns pointed out by Gonzalo Schwarz<sup>5</sup> on the issues of this GSM index. For instance, Schwarz argues that there is no consensus among the ten indicators chosen, and these pillars chosen lack a reasonable, empirical link to social mobility. Specifically, improved health outcomes might be a result of increased development and not anything about pure economic mobility.

While social mobility and intergenerational income mobility are getting at similar questions (the ability for one’s life to be undetermined by one’s parents), both are important to address empirically. Vincent Geloso and I argue in a working paper<sup>6</sup> that there are two channels in which institutional quality plays a role in upward intergenerational income mobility. The *direct* channel is one in which countries with poor institutions (such as insecure property rights) “lock the poor into their socioeconomic conditions” (pg. 3). In places with judicial systems that marginalize those at the bottom, the poor have little to no opportunities to thrive. Economic activity and business opportunities are then only provided according to political connections and ability to work through a convoluted bureaucracy, instead of skills relating to providing consumers with goods and services that they demand. While this could hypothetically increase economic activity, this would be in an “unproductive manner” as termed by Baumol.<sup>7</sup> If property rights are not protected and enforced justly, there is little incentive to produce anything of value (whether that be a home or a small business), because it can be taken by other citizens (or even the government itself) with no recourse.

However, there is also an *indirect* channel in which institutional quality increases mobility: via economic growth. It is already well established that economic freedom and the protection of property rights increases

economic growth.<sup>8</sup> This increase in economic growth, even if not uniformly distributed throughout the society, still opens up a larger choice set of opportunities for the poor.

While in the above-mentioned working paper, we explore the role of economic freedom as a whole, we are mostly speaking to the legal system and property rights protection portion of freedom. In fact, we specifically target legal systems as the main area of economic freedom that would impact mobility. We find this empirically to be true as well. In places with better protection of property rights and higher quality legal systems, one's earnings are *less* determined by the incomes of one's parents.

While I believe these above pieces are important and (hopefully) prod more work to be done connecting the rule of law to mobility, Vincent and I were not the first to assess this relationship. Christopher Boudreaux, economist at Florida Atlantic University, examined the role that the rule of law has on intergenerational mobility and entrepreneurship.<sup>9</sup> Using data from twenty-five OECD countries, Boudreaux finds that mobility is higher in places with higher quality legal systems. He posits that entrepreneurship is one channel through which institutional quality can increase income mobility. The institutional environment that *allows* entrepreneurs to take the risk associated with building a business and competing in the marketplace is an environment that can then allow for those at the bottom to generate wealth.

### Why Education is Not Enough

Education is and will always be an important aspect of upward mobility. However, the impact of education on economic mobility will vary drastically based on the institutional arrangements within a jurisdiction. For instance, in a country with little legal integrity and high level of corruption, investments in human capital: i) might not be distributed evenly throughout the society, leading to subpar outcomes for those at the bottom of the societal ladder, and ii) the skills learned would be more likely to be used in rent-seeking activities that benefit the politically connected. In the case of (i), only those who are already born into wealth receive high quality education, further reducing the opportunities for those born into poor families to succeed. For (ii), though, the results for society might be even more perverse. If the skills learned are utilized in manners that extract resources, rather than create wealth through mutually beneficial exchange, then economic growth slows. If economic growth is tied to mobility, then this might indirectly harm mobility as well. To the extent that rents are typically large sums of money allocated to small groups of individuals, we might expect this to be true. If only a handful of politically savvy individuals received a large portion of the country's resources, by definition, mobility would be harmed.

This type of logic has been assessed before, but largely only with respect to economic growth. For instance, Hall et al. find that increases in physical and human capital increase output growth *only* in countries with high quality institutions.<sup>10</sup> Countries with poor institutions (high risk of expropriation of private property and low levels of economic freedom) that increase in human capital experience *negative* economic growth since the skills learned were used in socially unproductive manners.

This does lead to a bit of another puzzle, though. In micro studies, for instance, there is a clear relationship between education and incomes for individuals. However, this has not found to hold true on a macro level. Barro for instance, shows that initial education levels matter for growth.<sup>11</sup> However, Pritchett claims that findings like this are often misspecified, since they regress a nonstationary variable (education) on a stationary one (growth).<sup>12</sup> While the "conventional" view espoused in Hall et al. would expect the marginal effect of increases in human capital to be the same everywhere, ignoring the institutional arrangements within a polity seems to be clearly misguided.

This point is part of a larger literature that questions the role of education in generating societal benefits on its own. For instance, Pritchett finds three major caveats to the relationship between education and economic outcomes. First, much like Hall et al., the institutional environment matters a great deal and can in certain circumstances decrease growth. Next, the marginal returns to education may not be high if the demand for education labor does not grow as the supply of high-skilled labor increases. Finally, while education may increase, this says nothing about the *quality* of that education. While determining which aspect better explains this conundrum is likely country-specific (and therefore more suitable for a case-study-style piece), the broader point remains: education on its own cannot provide the type of economic growth and mobility necessary to be the sole (or perhaps even main) solution to prosperity for those at the bottom of the income distribution.

## ANALYSIS: CROSS-COUNTRY

### Legal System Integrity and Protection of Property Rights Across the World

To measure legal system integrity and the protection of property rights, I rely on the most recent values of three variables. First, I use the Legal Systems and Property Rights index (LSPR) from the Fraser Institute's *Economic Freedom of the World* database. LSPR is scored from 0 to 10, with higher scores indicating higher quality legal systems and greater protection of property rights.

This index is the average of ten subcomponents: "Judicial independence" measures the manner in which judges are influenced by political agents. While "impartial courts" is somewhat similar but deals more directly with the process in which decisions are made for legal disputes. "Protection of property rights" simply measures how well rights towards assets are defined and enforced. "Military influence in rule of law and politics" tries to measure the level of authority the military (unelected members of government) wields within a society's legal system. "Integrity of the legal system" deals with the strength and impartiality of the legal system and the ways in which the justice system is transparent, predictable, and accessible. "Legal enforcement of contracts" estimates the time and money required to collect a debt. "Regulatory costs of the real sale of property" measures the days and costs needed to transfer ownership of property. "Reliability of police" measures the extent in which police services can be relied on to enforce law and order. Along with these variables, there is a gender rights adjustment score (from 0 to 1) that is multiplied to the average of these ten subcomponents. The adjustment measures the extent to which women have the same level of legal system and property rights freedom as men.

I use five of the subcomponents as well as the gender rights adjustment in this analysis. These subcomponents are judicial independence, impartial courts, protection of property rights, integrity of legal system, and the legal enforcement of contracts. I pick these five specifically since they deal mostly factors that would most closely have a relationship with mobility. For instance, little military interference in the rule of law and politics is likely important, but on its own perhaps less relevant for determining mobility. While the gender rights adjustment is not an "index" within an index per se, it is a 0 to 1 scale that measures the access that women have to the country's legal system, and therefore likely influences mobility.

I also use the Rule of Law index from the World Development Indicators. This index ranks jurisdictions from -2.5 to 2.5, with higher scores indicating better rule of law. Finally, I use the control of corruption from the Political Risk Service's International Risk Country Guide. This corruption measure specifically deals with the risk of foreign investment. This score is ranked from 1 to 6, with higher scores indicating greater *control* of corruption (i.e., less corruption).

## Mobility Across the World

I rely on one way to measure mobility, following the previously cited working paper of mine with Vincent Geloso. I consider the intergenerational income mobility measurement from the World Bank’s Global Database on Intergenerational Mobility (GDIM). This estimates the relationship between a child’s income and that of his or her parents. I use the dataset based on cohorts born in the 1980s for two reasons. First, it aligns better with the dataset from Chetty et al.’s mobility data, which I explain with more detail below.<sup>13</sup> Second (and from a practical perspective), it provides the most datapoints in which I can analyze.

## Summary Statistics

Summary statistics for the legal systems variables, mobility data, and controls are found below in **Table 1**. New Zealand and Switzerland (both with scores of 8.68) record highest on Fraser’s LSPR variable, while the Democratic Republic of Congo (2.69) scores the worst.

**Table 1** | SUMMARY STATISTICS (GROSS COUNTRY)

Variables	N	Mean	Std. Dev.	Min	Max
Intergenerational Income Mobility	74	0.516	0.251	0.113	1.095
Legal Systems and Prop. Rights	74	5.972	1.633	2.690	8.680
Judicial Independence	74	6.011	1.553	2.971	8.656
Impartial Courts	74	5.730	1.714	2.501	8.668
Protection of Property Rights	73	6.014	1.683	3.023	9.337
Integrity of Legal System	74	6.265	1.690	2.593	9.150
Legal Enforcement of Contracts	74	4.806	1.602	0	7.831
Gender Adjustments	74	0.913	0.128	0.412	1
Rule of Law	74	0.332	1.030	-1.786	2.022
Control of Corruption	67	3.175	1.245	1	5.5
Life Expectancy	73	75.068	7.285	54.332	84.211
Urban Population (%)	73	62.634	21.808	16.937	100.000
Population (logged)	73	16.817	1.553	13.318	21.062

Different countries score higher and worse on the specific areas of LSPR that we care about with respect to mobility. For instance, while New Zealand and Switzerland *also* score the highest on judicial independence, Bangladesh and Bolivia have the worst scores in this area. Bolivia and the Democratic Republic of Congo have the least impartial courts; Switzerland (again) and Finland have the most impartiality in the court system. Bolivia and Timor-Leste have the worst protection of property rights; Finland and Switzerland also protect property rights the best. Three Nordic countries (Denmark, Norway, and Finland) have the highest quality legal systems; the Democratic Republic of Congo has the least integrity in its legal system. Timor-Leste, Bangladesh, and the Democratic Republic of Congo all score less than one (out of a possible ten) on how well contracts are enforced. Singapore and Luxembourg enforce contracts the best. Fifty countries are tied with the most equal distribution of the law for women, while Egypt and Jordan favor men to the highest degree.

Guinea and the Democratic Republic of Congo have the worst rule of law score, with Finland and Norway

having the highest scores. Four countries—Denmark, New Zealand, Finland, and Sweden—are the least corrupt (with the highest scores in this index), while the Democratic Republic of Congo is the only country with the lowest possible score: 1.

With respect to income mobility, Denmark and Finland have the greatest income mobility (lowest relationship between child and parental income). Colombia, Ecuador, Uganda, and Guatemala are the most income persistent, with elasticities for child-parent incomes over 1.

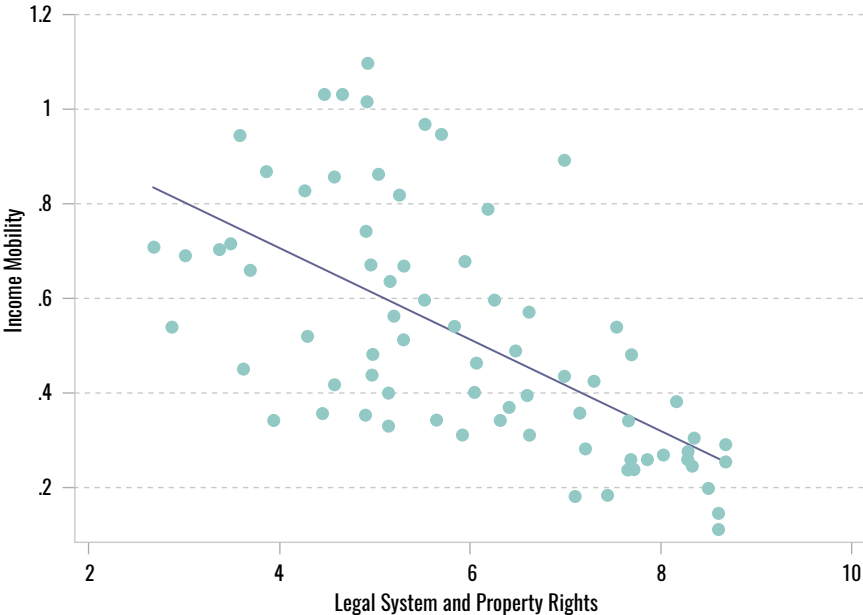
At first glance, there seems to be a clear visual relationship between those with the lowest income persistence. I investigate this further below, along with some preliminary regression analysis.

### Findings

I start with the Fraser Institute’s LSPR measure (and its subcomponents). There is a clear and quite strong negative relationship between income *immobility* and the overall measure of legal systems and property rights (**Figure 1**). A simple bivariate regression that is shown in this figure has an r-squared of 0.40, meaning that 40% of the variation in mobility can be explained by legal system and property rights protection. When I standardize these results, I find a standard deviation increase in LSPR is associated with close to 60% of a standard deviation increase in income mobility. Taken at face value, this relationship suggests large returns to countries reforming their legal systems in an attempt to increase mobility. Of course, I have not established causality here (nor is that the goal of this piece). I am simply showing a preliminary investigation on the relationship between legal systems and mobility in the hope of prodding future research to bring attention to this potentially important relationship.

In **Table 2**, I perform a simple least squares regression to find if the relationship between LSPR and mobility holds once I control for life expectancy, urban population percentage, and population. LSPR is significant at the 1% level and the magnitude is quite high. Places with higher LSPR have *less* income persistence.

**Figure 1 | LEGAL SYSTEM & PROPERTY RIGHTS AND INCOME MOBILITY**





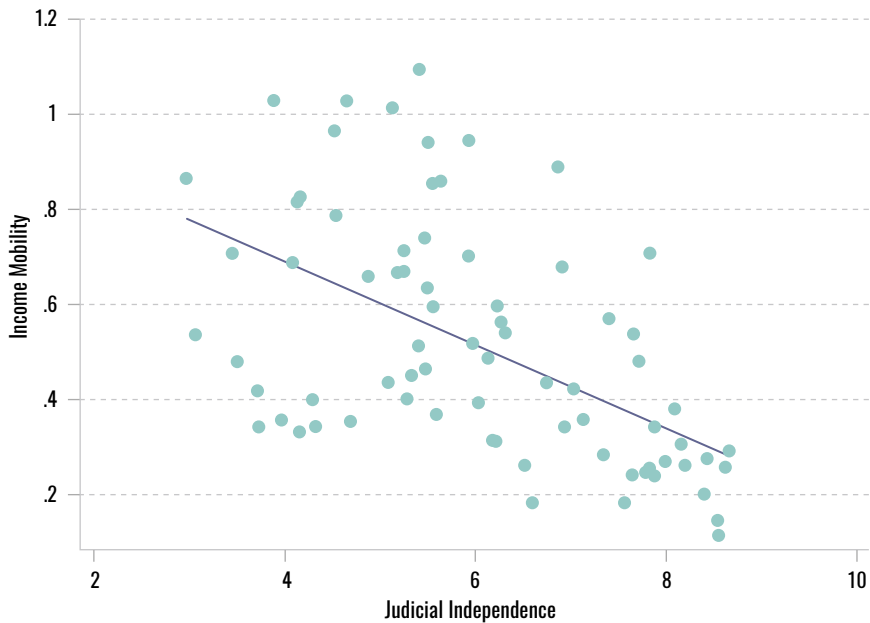
**Table 2 | RELATIONSHIP BETWEEN LEGAL SYSTEM AND PROPERTY RIGHTS (LSPR) AND INTERGENERATIONAL INCOME MOBILITY**

Variables	1	
LSPR	-0.1031***	(0.0243)
Life Expectancy	0.0001	(0.0050)
Urban Population (%)	0.0060	(0.0016)
Population (Logged)	-0.0109	(0.0148)
Constant	1.2749***	(0.4229)
Observations	73	
R-squared	0.40	

Notes: Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at .01, .05, and .10 level, respectively.

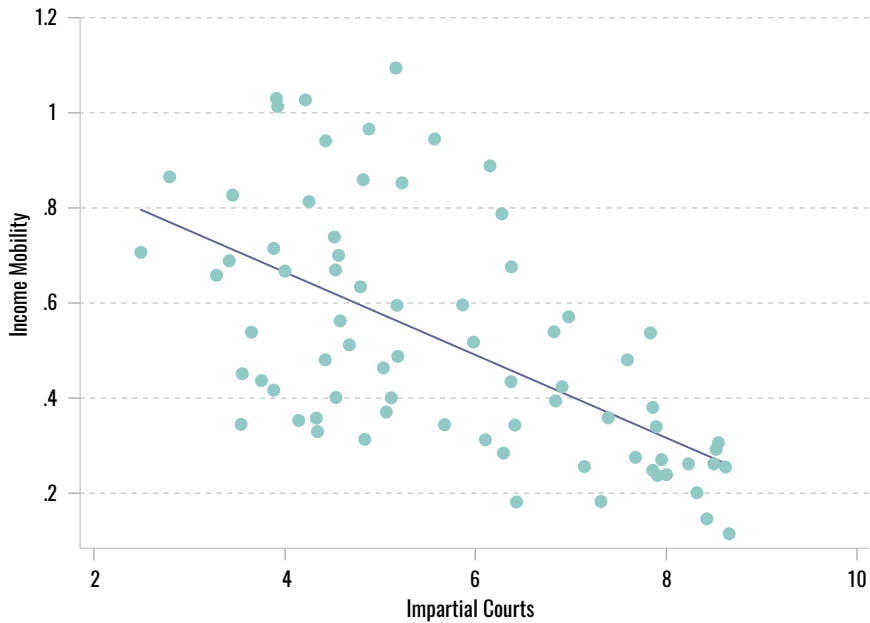
I now turn focus to the five “relevant” subcomponents of LSPR, as well as the gender rights adjustment. With respect to judicial independence, I show in **Figure 2** a large negative relationship between this subcomponent and intergenerational income persistence. Some 30% of the variation in mobility is explained by the independence of the judicial branch. Increasing judicial independence by a standard deviation corresponds to over 50% of a standard deviation increase in mobility.

**Figure 2 | JUDICIAL INDEPENDENCE AND INCOME MOBILITY**



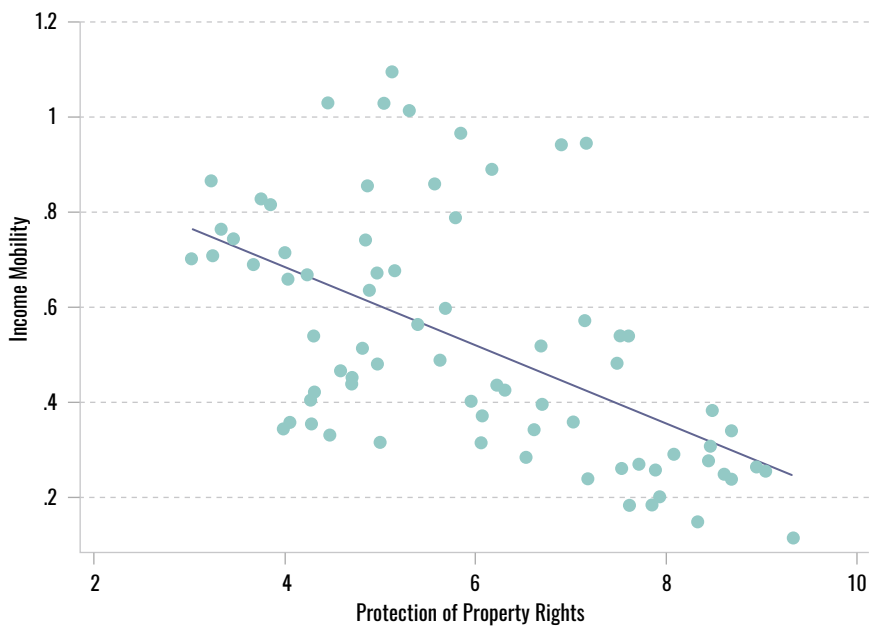
Impartial courts have an even greater relationship with mobility (**Figure 3**), with 36% of the variation in mobility explained by court impartiality. Standardizing both variables reveals a 56% of a standard deviation increase in mobility from a standard deviation increase in the impartial court measure.

**Figure 3 | IMPARTIAL COURTS AND INCOME MOBILITY**



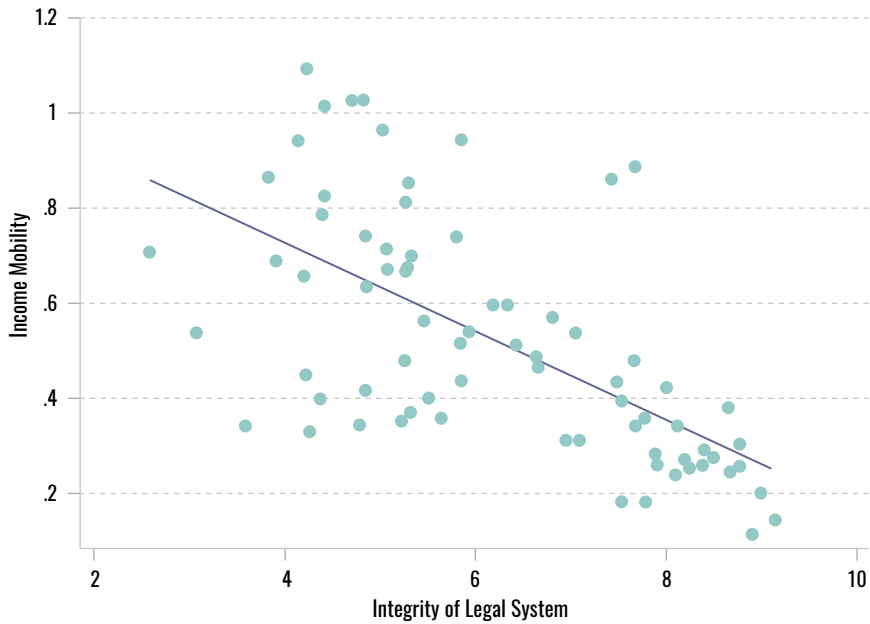
Protecting property rights (**Figure 4**) has an almost identical relationship to mobility that judicial independence has, with both the same r-squared (.30) and the same standardized relationship (51%).

**Figure 4 | PROTECTION OF PROPERTY RIGHTS AND INCOME MOBILITY**



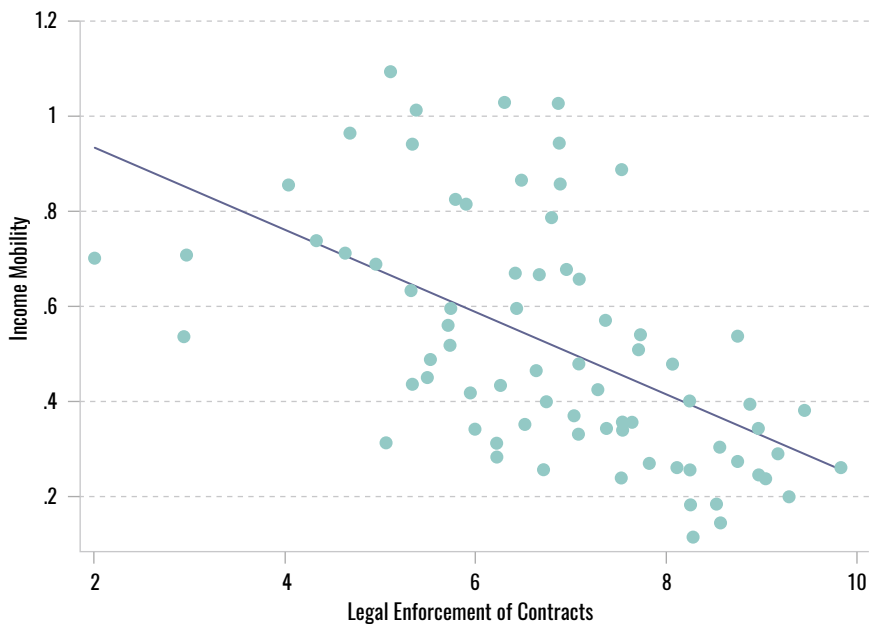
Within the subcomponents, legal system integrity appears to have the strongest relationship with mobility (**Figure 5**). Some 37% of the variation in mobility is explained by legal system integrity. A standard deviation increase in this subcomponent is associated with 60% of a standard deviation increase in mobility.

**Figure 5 | LEGAL SYSTEM INTEGRITY AND INCOME MOBILITY**



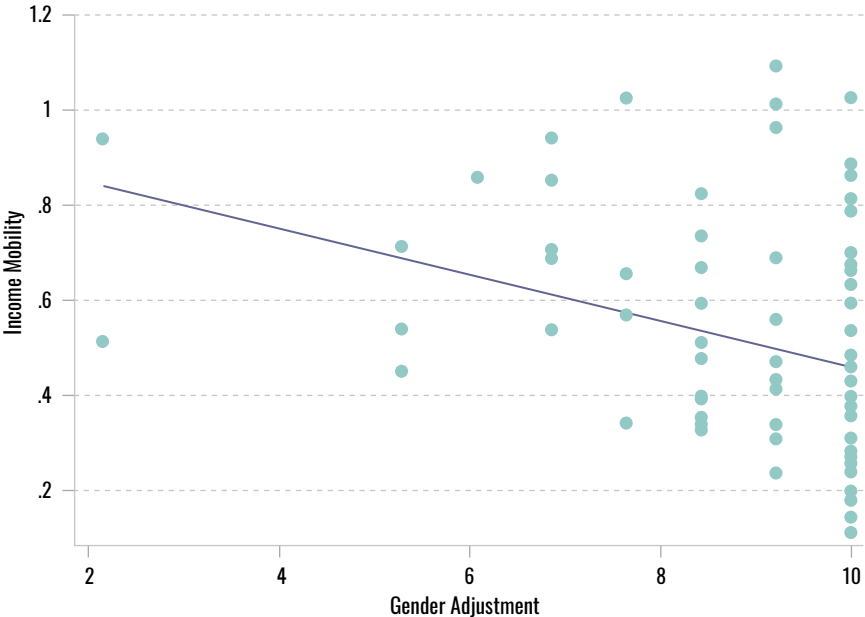
Proper enforcement of contracts has a decently strong relationship to mobility (**Figure 6**), and 30% of the variation in mobility is explained by this. Mobility increases by half of a standard deviation when contract enforcement quality increases by one standard deviation, if one takes these results at face value.

**Figure 6 | ENFORCEMENT OF CONTRACTS AND INCOME MOBILITY**



Finally, I look at the Gender Adjustment Index (**Figure 7**). Taking a quick look, there is *some* (but only mild) evidence of a strong relationship. However, the values of the gender adjustment measure are heavily skewed towards one.

**Figure 7 | GENDER RIGHTS ADJUSTMENT AND INCOME MOBILITY**



The regression results from the five subcomponents of LSPR, as well as the gender adjustment index, can be found in **Table 3**. All five subcomponents are, again, significant at the 1% level. Given that the same three controls are included in each regression, we can compare the magnitude of each component using the r-squared. Just as found in the above figures, legal system integrity still has the biggest impact on mobility. However, all components have a large and strong correlation with income mobility.

**Table 3** | RELATIONSHIP BETWEEN SUBCOMPONENTS LEGAL SYSTEM AND PROPERTY RIGHTS (LSPR) AND INTER-GENERATIONAL INCOME MOBILITY

Variables	1	2	3	4	5	6
Judicial Independence	-0.0704*** (0.0219)					
Impartial Courts		-0.0819*** (0.0209)				
Protection of Property Rights			-0.0654*** (0.0213)			
Integrity of Legal System				-0.0940*** (0.0229)		
Legal Enforcement of Contracts					-0.0707*** (0.0194)	
Gender Adjustments						-0.3180 (0.2053)
Life Expectancy	-0.0084 (0.0042)	-0.0043 (0.0048)	-0.0063 (0.0043)	-0.0009 (0.0043)	-0.0102 (0.0037)	-0.0105** (0.0044)
Urban Population (%)	0.0060 (0.0017)	0.0009 (0.0017)	0.0004 (0.0017)	-0.0001 (0.0013)	0.0009 (0.0015)	-0.0014 (0.0015)
Population (Logged)	-0.0071 (0.0156)	-0.0033 (0.0147)	-0.0005 (0.0142)	-0.0177 (0.0157)	-0.0003 (0.0139)	-0.0079 (0.0141)
Constant	1.6570*** (0.4228)	1.3111*** (0.4279)	1.3687*** (0.3970)	1.4738*** (0.4478)	1.5692*** (0.3495)	1.8161*** (0.3719)
Observations	73	73	72	73	73	73
R-squared	0.33	0.36	0.31	0.40	0.35	0.23

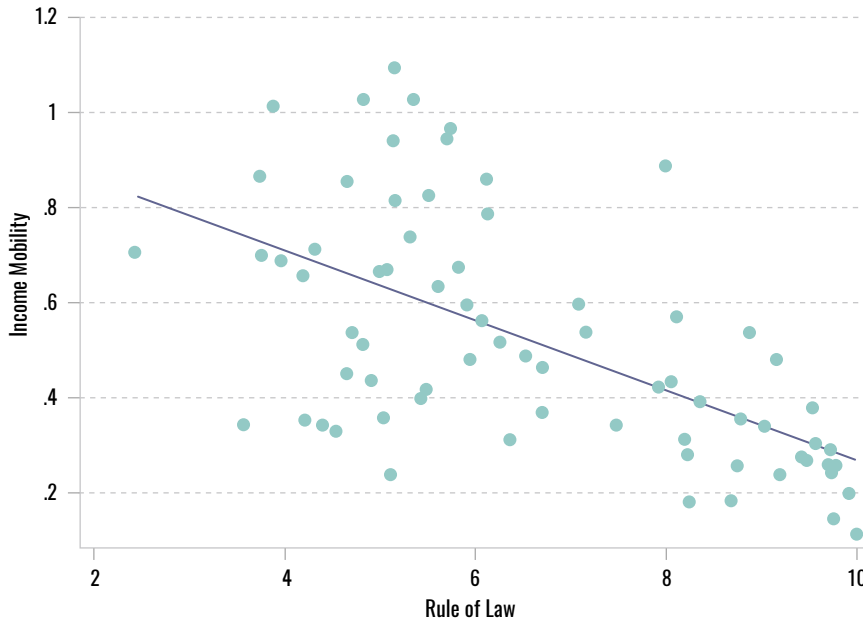
Notes: Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at .01, .05, and .10 level, respectively.

However, the gender adjustment index is not significant once controls are included. The coefficient is still negative, though. Life expectancy is now negative *and* significant.

I overall find large potential gains in mobility from legal system reform and better protection of property rights for countries. One important aspect to note is that no single subcomponent of LSPR had a stronger relationship than the overall component. This suggests that the *bundle* associated with LSPR is crucial, and reforms in just one component may not reveal as large of gains versus reforms in all areas.

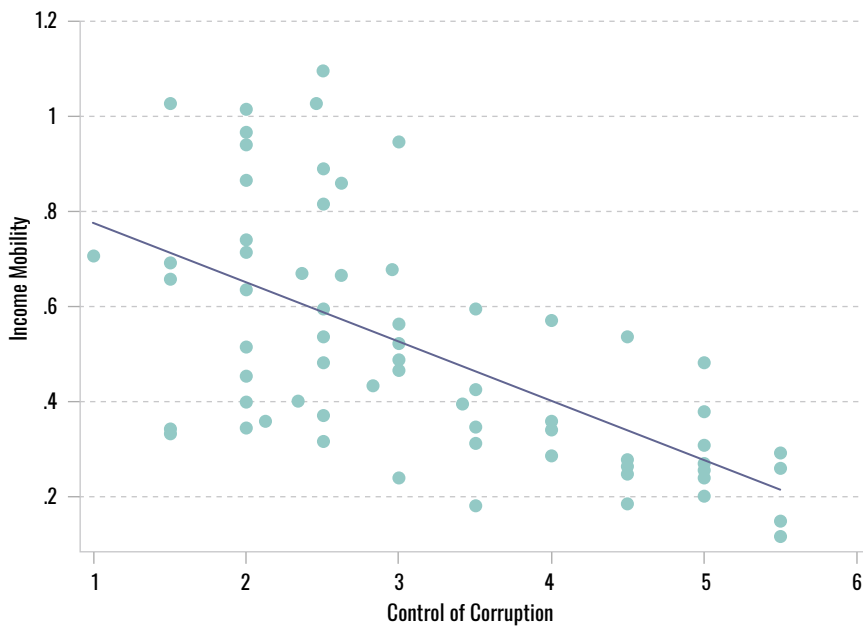
Now, I focus on the Rule of Law index from the World Development Indicators (**Figure 8**). The relationship is quite strong; however, slightly less so than LSPR. Some 36% of the variation in mobility is explained by the Rule of Law index, while a standard deviation in the Rule of Law index corresponds to 56% of a standard deviation increase in mobility.

**Figure 8 | RULE OF LAW AND INCOME MOBILITY**



Similar results are found when looking at the ICRG's Control of Corruption index (**Figure 9**). There is a strong negative relationship between controlling corruption and income persistence. (Again, higher values of this index correspond to *less* corruption). The relationship appears to be quite similar as the Rule of Law index, where 38% of the variation in mobility can be associated with the Control of Corruption index. Likewise, a standard deviation improvement in controlling corruption increases mobility by 58% of a standard deviation.

**Figure 9 | CONTROL OF CORRUPTION AND INCOME MOBILITY**



I now regress Rule of Law and Control of Corruption on mobility (with controls) in **Table 4**. Both indices are significant and suggest a substantial relationship between these variables and income mobility. Overall, I find quite robust evidence between legal systems, property rights protection, controlling corruption, and mobility. While this does not imply causality, it does provide some evidence that this topic warrants further investigation.

**Table 4 | RELATIONSHIP BETWEEN RULE OF LAW AND CONTROL OF CORRUPTION ON INTERGENERATIONAL INCOME MOBILITY**

Variables	1		2	
Rule of Law	-0.1510***	(0.0454)		
Control of Corruption			-0.1357***	(0.0334)
Life Expectancy	0.0002	(0.0054)	0.0001	(0.0046)
Urban Population (%)	0.0003	(0.0016)	0.0005	(0.0017)
Population (Logged)	-0.0064	(0.0149)	-0.0109	(0.0166)
Constant	0.6474	(0.5206)	1.0819**	(0.4375)
Observations	73		66	
R-squared	0.36		0.39	

Notes: Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at .01, .05, and .10 level, respectively.

## ANALYSIS: UNITED STATES

### Legal System Integrity and Protection of Property Rights in the United States

The relationship between rule of law and protection of property rights and mobility within the United States is an unexplored avenue. To some extent, this could be because it is assumed that differences between legal arrangements within a country are either not varied enough to warrant investigation or the broader point that the role of legal arrangements themselves are often not considered in the mobility literature.

Furthermore, issues arise with lack of data regarding legal integrity and property right protection within the United States. While measures of economic freedom at the international level (such as the Fraser Institute’s index) include such a measurement, the U.S.-level index (Fraser Institute’s Economic Freedom of North America index) does not.

Thanks to recent work from Ryan Murphy,<sup>14</sup> we have at least cross-sectional data for all fifty states on their legal system quality. To address this missing measurement, Murphy suggests five variables (separated into three groups) that can sufficiently (given data constraints) attempt to measure legal systems within the United States. The first group, *property crime*, proxies the business cost of crime variable used in the international economic freedom index. While technically an “output” of institutions rather than an “input” (as usually considered for such measurements), Murphy argues this is better than the alternative of not including it, since it still gives us an idea as to the security of property rights within a state. This variable is collected from the FBI Uniform Crime Statistics. *Corruption*, the second group, comes from the Institute for Corruption Studies and measures corruption at the legislative, executive, and judicial levels.

Three of the five variables are averaged to get the final group called *legal reform*: liability system, civil asset forfeiture, and eminent domain reform. Liability system proxies the way in which the reasonableness of tort laws and their enforcement are perceived. The U.S. Chamber of Commerce Institute for Legal Reform surveys attorneys and business executives with ten questions that pertain to the state's liability system. Questions like "trial judges' impartiality" and "enforcing meaningful venue requirements" are then graded for each state and averaged across all questions. Civil asset forfeiture is a parallel measurement to the international's measurement of risk of appropriation of property. This is a clear abuse of state power, and the rule regarding its use varies across states. Data from both civil asset forfeiture and eminent domain come from the Institute for Justice.

Each of the data points in the Murphy data is converted from its raw values to a 0-10 scale. Higher scores indicate better legal systems and greater protection of property rights.

## Mobility in the United States

I combine this data, which I'll broadly call Legal System and Property Rights (LSPR), with the mobility data available from Chetty et al. The Chetty et al. study includes measurements of absolute upward mobility and relative mobility. Absolute mobility is the expected rank of children whose parents are at the 25th percentile of the national income distribution. Higher scores correspond to *greater* absolute mobility. The relative mobility measure, though, is the slope from an OLS regression of child rank on parent rank. Here, higher scores would signify *less* mobility, suggesting a larger relationship between child rank and parent rank. Both data points are collected at the metropolitan statistical area (MSA) level and were estimated for those born from 1980 to 1982. Given their birth years, the people here are now at prime working age.

However, LSPR is only available at the state-level, while data retrieved from Chetty's 2014 paper is measured at the MSA-level. Each MSA with the same state is then given the same LSPR. In the case of MSAs that cross state borders, I take the "main" state, defined as the state in which the majority of the population within the MSA resides.

Much like the section before, I perform two types of statistical analysis here. The first is a simple scatter plot, which gives some idea of the general direction and importance of the raw relationship. Second, I perform some basic OLS regressions to indicate the robustness of these findings with the inclusion of various controls. Specifically, I include controls for percentage of population living in urban areas and a state government ideology, where higher scores correspond to more liberal beliefs among members of the state government.

## Summary Statistics

Summary statistics for the LSPR variables, mobility data, and controls are found below in **Table 5**. With respect to LSPR, Arkansas and Louisiana score the worst; New Hampshire, Maine, and South Dakota appear to have the best LSPR in the country. With respect to property crime, New Mexico has the worst, while New Hampshire experiences the lowest. Louisiana (unsurprisingly) receives the worst scores for corruption; North Dakota is the least corrupt. Legal reform is best in New Mexico, but the worst in Massachusetts.



**Table 5 | SUMMARY STATISTICS (UNITED STATES)**

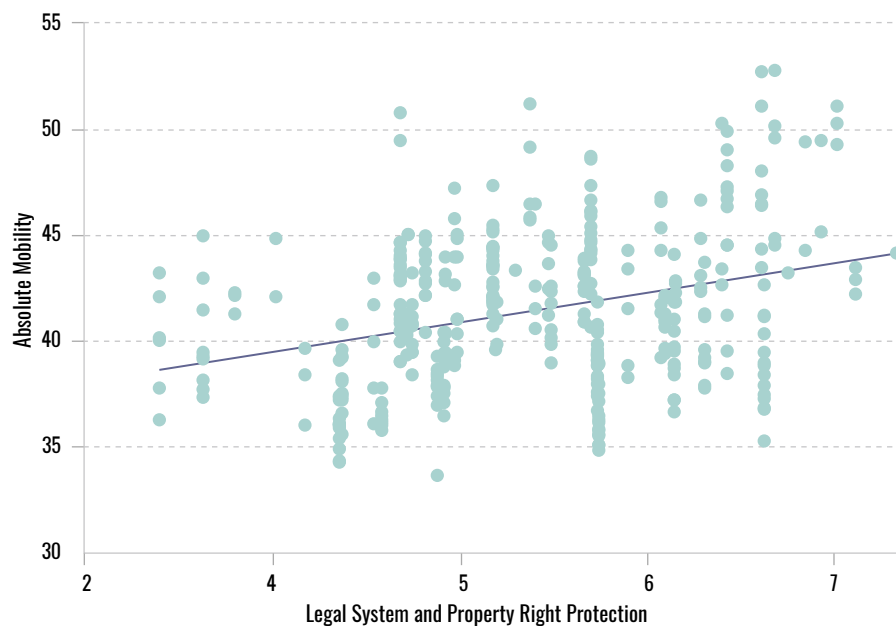
Variables	N	Mean	Std. Dev.	Min	Max
Absolute Income Mobility	380	41.469	3.619	33.728	52.775
Relative Income Mobility	380	0.334	0.056	0.170	0.434
Legal Systems and Prop. Rights	380	5.366	0.829	3.400	7.320
Property Crime	380	5.607	1.573	1.450	8.510
Corruption	380	5.833	1.314	2.710	9.170
Legal Reform	380	4.657	1.307	2.230	7.900
Urban Population (%)	380	76.965	12.431	38.70	95.00
State Government Ideology	380	38.396	17.446	17.784	70.384

Absolute mobility is lowest in Memphis, Tennessee, and highest in St. Cloud, Minnesota. Logan, Utah, and Provo-Orem, Utah, have the best relative mobility (lowest relationship between parent-child rank). Shreveport, Louisiana, and Milwaukee, Wisconsin, tend to have the highest relationship between parent- and child-income rank, or the worst relative mobility.

### Findings: Absolute Mobility

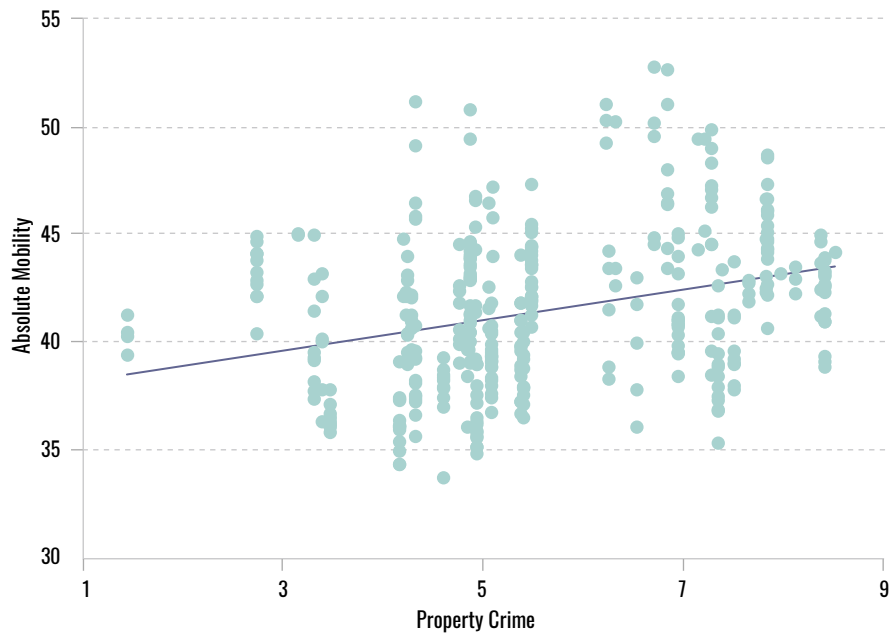
I begin with the absolute mobility measure, where higher scores mean *greater* mobility. With respect to the overall state-level LSPR index, there is a positive correlation between the two (**Figure 10**). The relationship is only weakly strong, though, as a standard deviation increase in LSPR corresponds to 32% of a standard deviation in absolute mobility. Granted, some of this weak relationship could be due to the fact that mobility is measured on an MSA-level, while LSPR is a state-level measure, so there is comparably less variation.

**Figure 10 | ABSOLUTE MOBILITY AND US-LEVEL LSPR**

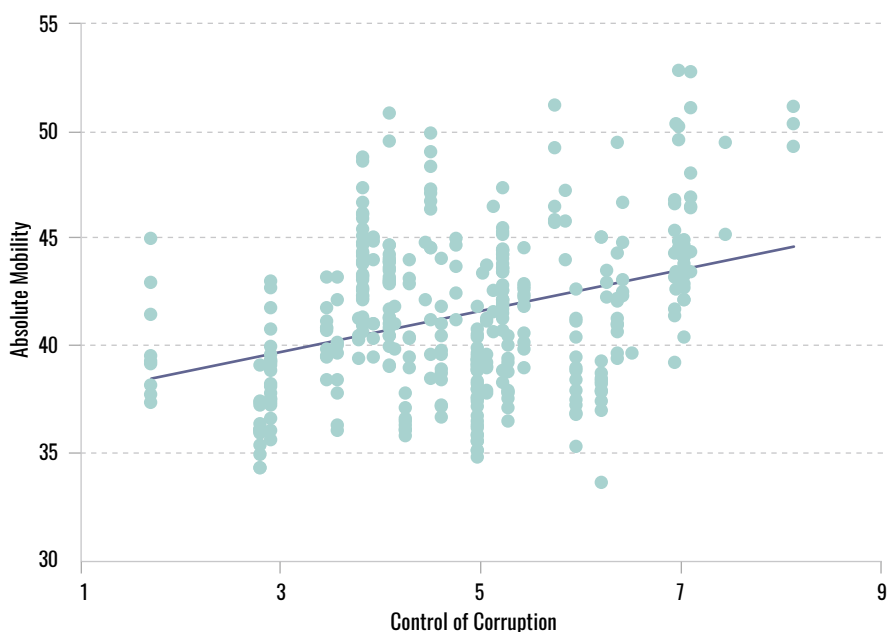


I find similar results when examining Property Crime (**Figure 11**) and Corruption (**Figure 12**). Both reveal similarly strong relationships with absolute mobility. However, the third area of state-level LSPR, legal reform, has close to no meaningful relationship to mobility (**Figure 13**). This suggests little gains in mobility when reforming the liability system, civil asset forfeiture, and eminent domain. While not to say these are not important, they do not seem to have a correlative relationship with absolute mobility.

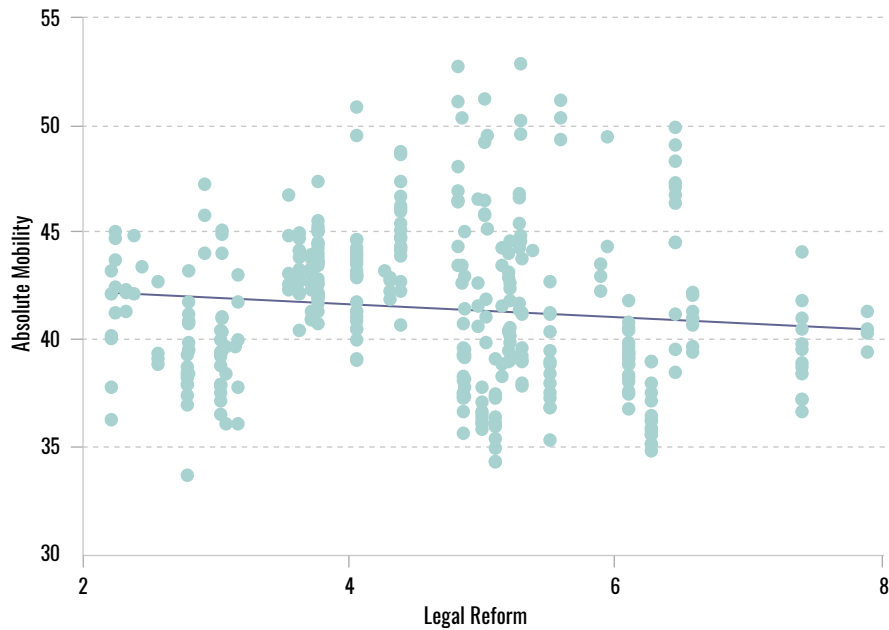
**Figure 11 | ABSOLUTE MOBILITY AND US-LEVEL PROPERTY CRIME**



**Figure 12 | ABSOLUTE MOBILITY AND US-LEVEL CORRUPTION**



**Figure 13 | ABSOLUTE MOBILITY AND US-LEVEL LEGAL REFORM**



In **Table 6**, I include the two controls and each LSPR component separately in a regression analysis. LSPR (column 1) has a somewhat strong relationship with mobility, as a standard deviation increase in LSPR corresponds to 32% of a standard deviation in mobility. Controlling property crime (column 2) and controlling corruption (column 3) also have a significant positive relationship with higher absolute mobility. However, legal reform does not appear to matter in any meaningful way. When comparing magnitudes, it seems that controlling corruption and having a high overall LSPR seems to matter the most with respect to absolute mobility within the United States.

**Table 6 | RELATIONSHIP BETWEEN LSPR AND ABSOLUTE UPWARD MOBILITY**

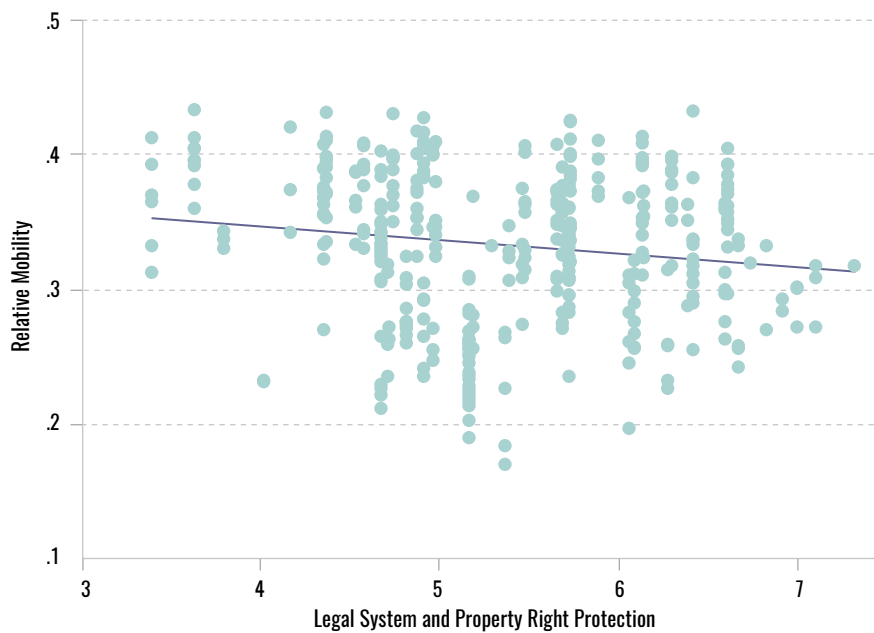
Variables	1	2	3	4
LSPR	1.3371*** (0.2299)			
Property Crime		0.6357*** (0.1054)		
Control of Corruption			0.8908*** (0.1403)	
Legal Reform				-0.1727 (0.1263)
State Govt Ideology	0.0366*** (0.0104)	0.0301*** (0.0105)	0.0325*** (0.0103)	0.0402*** (0.0107)
Urban Population (%)	0.0144 (0.0149)	0.0148 (0.0149)	0.0143 (0.0138)	0.0097 (0.0154)
Constant	31.7773*** (1.3867)	35.6059*** (1.1214)	33.9261*** (1.1043)	39.9860*** (1.1703)
Observations	380	380	380	380
R-squared	0.14	0.12	0.15	0.05

Notes: Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at .01, .05, and .10 level, respectively.

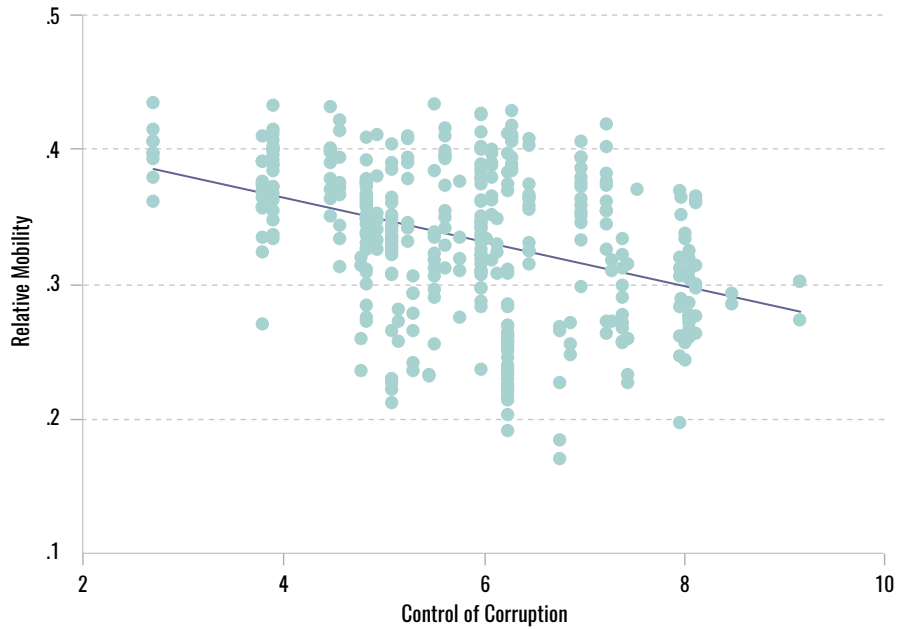
## Findings: Relative Mobility

Now, I move to relative mobility. Here, higher scores correspond to *more* income persistence amongst generations (and therefore less income mobility). The overall LSPR index has a weak negative relationship with relative immobility (**Figure 14**). Only 15% of a standard deviation increase in mobility comes from a standard deviation increase in LSPR. There is a similarly weak relationship between relative mobility and two areas of LSPR: property crime and legal reform. However, controlling corruption has a much stronger relationship with relative mobility (**Figure 15**). A standard deviation increase in controlling corruption relates to a 40% increase in relative mobility. Again, though, corruption appears to be the only measure of legal systems and property rights that matter for *relative* mobility.

**Figure 14** | RELATIVE MOBILITY AND US-LEVEL LSPR



**Figure 15 | RELATIVE MOBILITY AND US-LEVEL CORRUPTION**



**Table 7 | RELATIONSHIP BETWEEN LSPR AND RELATIVE UPWARD MOBILITY**

Variables	1	2	3	4
LSPR	-0.0096*** (0.0030)			
Property Crime		0.0047*** (0.0017)		
Control of Corruption			-0.0156*** (0.0016)	
Legal Reform				-0.0027 (0.0020)
State Govt Ideology	-0.0005*** (0.0002)	-0.0006*** (0.0002)	-0.0003** (0.0002)	-0.0006*** (0.0002)
Urban Population (%)	-0.0012*** (0.0002)	-0.0011*** (0.0003)	-0.0013*** (0.0002)	-0.0012*** (0.0003)
Constant	0.4973*** (0.0210)	0.4187*** (0.0193)	0.5354*** (0.0167)	0.4583*** (0.0184)
Observations	380	380	380	380
R-squared	0.15	0.15	0.26	0.13

Notes: Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at .01, .05, and .10 level, respectively.

In **Table 7**, I perform the same analysis as in Table 6, but with relative mobility instead. However, the results do not change. LSPR and controlling property crime and corruption are all strongly and significantly correlated with less income persistence (i.e., greater relative mobility). In terms of magnitude, controlling corruption is the strongest predictor of relative mobility. This makes sense to the extent that in highly corrupt states, favors are given to those who are politically elite and well connected. These tend to be those who are already well off, only furthering the income gap (inequality) and placing more barriers in place for climbing the income ladder (mobility).

While we find some evidence that property rights protection and legal system quality matters for mobility in the United States, the relationship is not robust as the cross-country evidence. This should not be surprising as country-wide differences in legal system quality is wider than within a country (particularly one with relatively strong institutional quality like the United States). Similarly, differences amongst mobility *within* the United States is much narrower than the cross-country differences in mobility. However, the above findings still show that legal system quality within the United States *is important* and not to be neglected in understanding the barriers to mobility.

## CONCLUSION

Finding the causes of income and social mobility is one of the highest priorities for policymakers and scholars. If we can better understand how people are able to substantially improve their lives, we can provide better opportunities for many to get ahead. In this paper, I argue that the institutional framework is important for mobility and examine this within the United States and at a cross-country level. I find strong correlative evidence that the rule of law and protection of property rights is associated with greater income mobility. More work is certainly needed in addressing causality, and I hope that this piece prods future researchers and policy analysts in that direction.



## ENDNOTES

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## ABOUT THE AUTHOR



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