

COUNTING COSTS: THE INSTITUTIONAL EFFECTS OF REGULATORY TAKINGS

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*Justice Oliver Wendell Holmes famously stated that a regulation concerning private property will be considered a taking “if [the] regulation goes **too far**.”¹ Rather than attempting to provide a conclusive definition of “too far,” the authors of this note examine the economic and legal implications of private property regulations more broadly. Specifically, the focus is on how these regulations affect the market context and calcify a constitutional requirement for compensation. Through a brief review of legal precedent and economic scholarship, this work explores the tension between governmental regulatory authority and the constitutional protection of private property rights. It utilizes an institutional transaction cost framework to assess how regulations affect not only industries specifically targeted but also the broader economic environment of local communities. This note provides an empirical analysis of the Chicago Metropolitan Statistical Area, utilizing a small sample statistical regression. This analysis finds that an increase in the regulatory burden of a given locality is positively associated with increased governmental spending in surrounding counties. This reveals a previously unaccounted for cost of zoning and land regulations, indicating the presence of an institutional transaction cost. This note contends that the practical challenges in calculating just compensation for regulatory takings, coupled with the widespread effects of institutional transaction costs, necessitate greater hesitancy in governmental enactment of regulations, inclusive of those that constitute a regulatory taking.*

I. INTRODUCTION

This paper provides a comprehensive overview of legal and economic research on the impact that changes in regulations have on the economic system within the domain of regulatory takings and property rights. It aims to address the pivotal dichotomy between the legitimacy of governmental regulation and the rightful expectations associated with property ownership, posing fundamental questions about the boundaries of regulatory authority. The research offers valuable perspectives that shed light on the multifaceted nature of the regulatory takings discourse, prompting a nuanced examination of property rights and governmental prerogatives. This paper centers on an economic discussion of transaction costs and property rights, including a

¹ *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 415 (1922).

practical application of freedom and power, to instill a broader sense of the real cost of regulation and the practical challenges of calculating just remediation in the case of a taking. Through this multidimensional inquiry, we aspire to contribute to a nuanced understanding of regulatory takings and property law, engaging with broader societal values and economic principles.

The authors conclude that most regulation, though perhaps legitimate governance, constitutes a taking insofar as it imposes additional implicit and explicit costs to the entire market, rather than an isolated industry. This is supported by an institutional transaction cost framework developed herein. It is unavoidable that, in the case of a regulatory taking, the full value of a taken property, inclusive of use and enjoyment, must be justly remediated to the affected party on behalf of the government based on constitutional, moral, and ethical grounds. However, calculating real value constitutes a practical economic challenge if applied *ex ante*. This paper contends that, because of these factors, policymakers must exhibit more hesitancy when regulating and conscripting property, as the potential cost, and therefore the value of remediation, may be incalculably large, even though a legal and moral requirement.

II. RELEVANT LEGAL CONSIDERATIONS

“Nearly everything the Government touches turns to segregation, and the Government touches nearly everything.”² This declaration by Senator Edward W. Brooke III, the first Black senator elected to the U.S. Senate by popular vote and a pioneer of the Fair Housing Act of 1968, commands the attention of those who believe a polity’s efforts must be tempered by ideals of justice and prudence.³ Inspired by the Lincolnian ideals of self-help and free enterprise, Senator Brooke was skeptical of the federal government’s capacity to end racial segregation in America’s housing market.⁴ Almost sixty years after Senator Brooke’s admonition, racism and economic discrimination remain entrenched in communities across the country. The resistance to rectifying the sins of our predecessors is most prominently displayed in the

² Heather R. Abraham, *Segregation Autopilot: How the Government Perpetuates Segregation and How to Stop It*, 107 IOWA L. REV. 1963, 1963 (2022).

³ It seemed noteworthy to mention that Sen. Brooke was a Republican who often worked across the aisle with Democratic congressmen to promote bipartisanship in his endeavor to end racial segregation in the housing market. *Edward Brooke*, ENCYCLOPEDIA BRITANNICA, <https://www.britannica.com/biography/Edward-Brooke> (last visited Jan. 4, 2025).

⁴ GEOFFREY KABASERVICE, *RULE AND RUIN: THE DOWNFALL OF MODERATION AND THE DESTRUCTION OF THE REPUBLICAN PARTY, FROM EISENHOWER TO THE TEA PARTY* 182 (New York: Oxford University Press, 2012).

chambers of those who resolve to uphold NIMBY-esque, anti-growth regulatory restrictions.⁵

There is perhaps no other quandary that exists in the law more convoluted than deciphering the constitutional limitations of the government's authority to "affect private property rights for the greater good of society."⁶ Many economists and legal scholars have endeavored to resolve the maelstrom of controversy created by *Pennsylvania Coal Co. v. Mahon*.⁷ Yet, few have proven successful in their methods. In the century since 1922, jurisprudence on the abridgment of private property rights continues to provide inconsistent results in both courtrooms and legislatures. The most common controversy arises when a government actor promulgates a regulation that impacts the citizenry's rights of use, possession, alienation, and disposition of private property. Such regulatory decisions occur most often at the state and local level, where legislative bodies exercise extensive control over the comprehensive zoning schemes of their territory.

This type of central planning was authorized by the Supreme Court in 1926 by its decision in *Village of Euclid v. Ambler Realty Co.*⁸ Euclidian Zoning, as it is commonly known, "is characterized by arbitrary line drawing that attempts to confine certain uses defined by geographic areas. The lines are usually drafted to accommodate political pressure and can lack any measure of economic, demographic, or market reality."⁹ Furthermore, political actors are influenced by individuals who wish to keep any category of "deplorables" – minorities, immigrants, and the impoverished – out of view from their ivory-white picket fence line.¹⁰ Without expressly employing such language, Justice Sutherland's opinion in *Euclid* codified the "widespread community racism [and classism] prevalent in the early twentieth-century housing market."¹¹

In *Nectow v. Cambridge*, the Supreme Court opined that a government's "power to interfere by zoning regulations with the general rights of the land owner by restricting the character of his use, is not unlimited, and other questions aside, such restriction cannot be imposed if it does not bear a substantial relation to the public health, safety, morals, or general welfare."¹² Given that

⁵ Not In My Back Yard. See NIMBY, ENCYCLOPEDIA BRITANNICA, <https://www.britannica.com/topic/NIMBY> (last visited Jan. 4, 2025).

⁶ JULIAN CONRAD JUERGENSMAYER ET AL., LAND USE PLANNING AND DEVELOPMENT REGULATION LAW 444-45 (5th ed. 2023).

⁷ *Pennsylvania Coal v. Mahon*, 260 U.S. 393, 415 (1922).

⁸ *Village of Euclid v. Ambler Realty Co.*, 272 U.S. 365, 396-97 (1926).

⁹ JAMES S. BURLING, NOWHERE TO LIVE: THE HIDDEN STORY OF AMERICA'S HOUSING CRISIS, 62 (2024).

¹⁰ See generally RICHARD ROTHSTEIN, THE COLOR OF LAW (New York, New York: Liveright, 2017).

¹¹ Richard Chused, *Strategic Thinking About Racism in American Zoning*, 66 N.Y.L. SCH. L. REV. 307, 318 (2022).

¹² *Nectow v. Cambridge*, 277 U.S. 183, 188 (1928) (quoting *Euclid*, 272 U.S. at 395).

the right to compensation is expressly stated within the 5th and 14th Amendments, owning property unencumbered by irrational regulation is a fundamental right,¹³ requiring the same Due Process analysis employed in *Nectow*.¹⁴ Moreover, although *Penn Central* instructs courts to consider several factors, such as the economic impact of the regulation at issue and the regulation's interference with a private property owner's reasonable investment-backed expectations, these should be matters decided after the court's determination that a taking occurred.¹⁵ The Constitution explicitly mandates that when the government appropriates private property for public use, the property owner must be compensated. In the regulatory takings context, the Court's body of relevant case law suggests that the obligation to provide just compensation exists regardless of whether the appropriation is physical or regulatory.¹⁶ Therefore, private property ownership must be regarded as an express right, making the evaluation of the *Penn Central* factors relevant only for assessing appropriate compensation for the injury, not for determining the injury itself.

There are few other contexts where courts will consider whether a remedy is necessary before determining that an injury has occurred. For example, a court does not require an assault victim to prove the degree of pain caused by a punch before a defendant can be held accountable for committing an assault.¹⁷ The law assumes that unwanted contact was harmful or offensive. Therefore, the court's inquiry into criminal liability begins at the point where the defendant formulates the intention to act, not when the victim complains of their injury.¹⁸ Moreover, in the First Amendment context, the court does not ask a same-sex couple to prove the economic value of being denied service by a specific cake maker before evaluating whether the government's regulation violated an individual right,¹⁹ as this would be akin to the court asking plaintiffs to prove how much money they subjectively believe the defendant's actions hurt them or to quantify the objective economic value of their injury as a condition precedent to the court beginning their analysis of

¹³ See *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1017 (1992).

¹⁴ *Supra* note 13 at 188.

¹⁵ See *Penn Central Transportation Co. v. New York City*, 438 U.S. 104, 124 (1978).

¹⁶ See *Penn Central Transportation Co. v. New York City*, 438 U.S. at 123 ("Distinct investment-backed expectations" economic factors test); *Agins v. Tiburon*, 447 U.S. 255, 260-61 (1980) ("any economically viable use test"); *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 425 (1982) (an example where a "permanent physical occupation" regulation was considered a *per se* taking.); *Nollan v. California Coastal Commission*, 483 U.S. 825, 859 (1987) ("unconstitutional conditions" doctrine); *Lucas*, 505 U.S. at 1030-31 (an example where a regulation amounted to a "Total taking" requiring compensation); *Dolan v. City of Tigard*, 512 U.S. 374, 397 (1994) ("Rough proportionality" test).

¹⁷ Even more so, in the criminal world, all criminal indictments are for crimes committed against the government. Therefore, the victim's subjective threshold for pain is irrelevant. See *assault*, **LEGAL INFORMATION INSTITUTE**, <https://www.law.cornell.edu/wex/assault> (last visited Jan. 4, 2025).

¹⁸ This same principle applies to "attempt crimes," like attempted robbery. D.C. CODE § 22-2802.

¹⁹ See generally *Masterpiece Cakeshop, Ltd. v. Colo. Civil Rights Comm'n*, 584 U.S. 617 (2018).

whether a defendant acted in the first place. Wherefore a government is interested in appropriating property for some compelling public use, that government is charged by the Constitution to prevent “some people alone” from bearing “public burdens which, in all fairness and justice, should be borne by the public as a whole.”²⁰

III. FUNDAMENTAL ECONOMIC LITERATURE AND THEORY

It is prudent to begin this assessment of relevant economic theory with a discussion of Ronald Coase’s application of transaction costs to negotiation frameworks. Within the essay, “The Nature of the Firm,” Coase argues that it is more efficient and less costly for firms to internalize direct and indirect costs associated with the purchase of its product or service.²¹ Transaction costs, then, appear both materially and non-materially through the exchange or negotiation process, and can thus be conceptualized as both a set of costs and a range of opportunity costs interrelated within a closed system.²² Operating under the assumption that individuals will negotiate mutually beneficial outcomes if left to their own devices and within ideal circumstances,²³ the existence of transaction costs presupposes a heightened influence of the distribution of property rights.²⁴ The fundamental assumption of which was proven correct by two studies conducted by Elizabeth Hoffman²⁵ and Matthew L. Spitzer.²⁶ The consideration of negative externalities demonstrates the presupposition. In these cases, the effect is reciprocal in that A is harming B, but removing the harm to B causes harm to A.²⁷ Transaction costs, then, act as an abrasive rather than a lubricant in this context, preventing individual negotiation from reaching what would otherwise be a mutually beneficial outcome in an idealized setting. In the presence of these costs, it is the

²⁰ *Armstrong v. United States*, 364 U.S. 40, 49 (1960).

²¹ Ronald H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386, 390-91 (1937).

²² Ronald H. Coase, *The New Institutional Economics*, 88 AM. ECON. REV. 72, 73 (1998).

²³ Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 4 (1960), <http://www.jstor.org/stable/724810>.

²⁴ That, given an idealized system, individuals will negotiate to a mutually beneficial outcome is a foundational principle of economic theory. First posited by Adam Smith in his “The Wealth of Nations,” and later foundational to James Buchanan’s contract theory in “The Calculus of Consent.” Deirdre McCloskey attributes the Coase Theorem to Adam Smith’s invisible hand in her essay, “The So-Called Coase Theorem,” an analysis these authors both strongly recommend and firmly agree with. See e.g. Deirdre McCloskey, *The So-Called Coase Theorem* 24 EAST. ECON. J. 367 (1998).

²⁵ See generally Elizabeth Hoffman & Matthew L. Spitzer, *Experimental Tests of the Coase Theorem with Large Bargaining Groups*, 15 J. LEGAL STUD. 149 (1986).

²⁶ See generally Elizabeth Hoffman & Matthew L. Spitzer, *The Coase Theorem: Some Experimental Tests*, 25 J.L. & ECON. 73 (1982).

²⁷ COASE 2, *supra* note 25.

distribution of property rights, should they be assigned such that transaction costs are minimized, that allows for parties to negotiate to desired outcomes.²⁸

Economically, property rights delineate how an individual may utilize a given widget -- specifying exactly how a person may benefit themselves or harm others with their property, and, therefore, which party must balance the effect in the case of a dispute.²⁹ Harold Demsetz's assertion that property rights institutionalize a set of incentives that result in greater levels of externality internalization by firms is paramount.³⁰ The right to ownership of one's property forces an individual or firm to consider both the present value and the future value of that property, incentivizing action upon these concerns and forcing economic actors to consider indirect or non-material costs associated with their actions.³¹ Property rights drive Coase's negotiation effect, whereby, assuming minimal transaction costs, parties are expected to minimize the costs of their actions regardless of which party owns the right to act.³² Because transaction costs constrain the process in this way, the firms, government organizations, and individuals that best economize on their individual transaction costs are best positioned within a generalized negotiation process, as the comparative lack of transaction costs crystalize the incentives created by property rights.³³

From this perspective, the transaction itself is the fundamental unit of economic analysis, rather than goods or prices.³⁴ The factors of economic production are not workers, capital, or materials, but rather the actionable right to utilize each of these within the marketplace.³⁵ Goods are not necessarily physical in nature, but rather a "bundle of rights" and the power to utilize them is exchanged between consenting parties.³⁶ The impact of law and regulation is two-fold. First, law and regulation exhibit qualities of a one-sided transaction between the government and the individual or firm whereby bundles of rights are conscripted. Second, law and regulation set the state of play, institutionalizing boundaries encompassing the use of property. Boundaries that impose transaction costs for market participation *ipso jure*. Law and regulation that does not violate a social standard of fairness may indeed be justified in imposing these costs through the conscription of the power to

²⁸ *Id.*, at 15–16.

²⁹ HAROLD DEMSETZ, *Toward a Theory of Property Rights*, 57 AM. ECON. REV 347, 347 (1967).

³⁰ *Id.*, at 348.

³¹ *Id.*, at 356.

³² Donald J. Boudreaux & Roger Meiners, *Externality: Origins and Classifications*, 59 NAT. RES. J. 1, 14 (2019).

³³ See generally, Oliver E. Williamson, *The Economics of Organization: The Transaction Cost Approach*, 87 AM. J. SOCIO. 548 (1981).

³⁴ JOHN R. COMMONS, THE ECONOMICS OF ORGANIZATION, IN SELECTED ESSAYS, 453–58 (1997).

³⁵ Steven G. Medema, *Coase, Costs, and Coordination*, 30 J. ECON. ISSUES 571, 575 (1996).

³⁶ Steven G. Medema, *Ronald Coase's Contributions and Major Themes*, 2 HIST. ECON. IDEAS 15, 47 (1994).

utilize a given bundle of rights. Indeed, most individuals do not feel as though their rights have been confiscated by a law or regulation so long as that law or regulation were underpinned by sound and accepted social or moral reasoning.³⁷ Law and regulation must then be dichotomized in the following sense; law is crafted by the courts, dealing primarily with the distribution of rights while regulation is drafted by political actors, dealing primarily with the power to utilize rights.³⁸ In this sense, the law defines freedoms. Distributing ownership such that the simple ability to possess or act is both defined and not infringed. Regulations, then, distribute power insofar as power refers to the practical ability to utilize what one owns and the limitations of that use therein. Indeed, freedom and power are interrelated in practice with freedom being relative to power.³⁹ Freedom intrinsically refers to the freedom to utilize power in this sense, where power is relative and freedom universal.⁴⁰ Power represents a limitation to freedom, as the freedom to utilize a power is useless, though an ethical prerequisite, without the practical access to the power freedom allows.⁴¹ Americans are hesitant to limit freedoms, the public fears legal action that restricts freedoms like speech and equal justice.⁴² Restrictions on power, however, grow more frequent as additional regulations are written.

Coase theorized that, under the assumption of a natural tendency toward mutually beneficial negotiations, the distribution of ownership, or property rights, will either amplify or negate the presence of disproportionate transaction costs during the negotiation process.⁴³ The base assumption, since proven by Hofman⁴⁴ and Spitzer⁴⁵, must be taken as given, such that, under ideal conditions, individuals and groups will tend toward mutually beneficial agreements where net gains are maximized. Assigning ownership to the party subject to the greatest level of transaction costs increases the negotiator burden of the more cost-advantaged party, thereby leveling the playing field as the parties progress toward a mutually beneficial outcome. In this way, property rights, and the lack thereof, represent a material transaction cost within individual or group negotiations. The ownership of these rights provides the holder with negotiator power and advantage while disadvantaging the other

³⁷ F.H. KNIGHT, *FREEDOM AS FACT AND CRITERION, IN FREEDOM AND REFORM: ESSAYS ON ECONOMICS AND SOCIAL PHILOSOPHY*, 14–15 (Liberty Fund 1982) (1947).

³⁸ SCOTT HEMPLING, *REGULATING PUBLIC UTILITY PERFORMANCE: THE LAW OF MARKET STRUCTURE, PRICING AND JURISDICTION* (2nd ed. 2021).

³⁹ KNIGHT, 15, *supra* note 39.

⁴⁰ *Id.* at 19.

⁴¹ *Id.* at 19.

⁴² Joshua Bote, *Most Americans Think Their Basic Rights Are Threatened, New Poll Shows*, USA TODAY, Dec. 16, 2019, <https://www.usatoday.com/story/news/nation/2019/12/16/most-americans-think-their-basic-rights-threatened-new-poll-shows/4385967002/> (last visited Jan. 4, 2025).

⁴³ COASE 15–16 *supra* note 25.

⁴⁴ See generally, HOFFMAN & SPITZER, *supra* note 28.

⁴⁵ See generally, HOFFMAN & SPITZER, *supra* note 27.

party in the inverse. This paper expands upon this framework by attributing the impact of property rights to the context of regulation where the power to utilize a right is restricted. It is concluded that by restricting the utilization of held property rights,⁴⁶ regulatory bodies impose material adjustments to the existing scope of transaction costs faced by those parties impacted by the regulation. Changing the environment in which consumers and firms negotiate and initiating downstream adjustments to existing transaction costs in sectors tangential to the originally affected industry. Therefore, substantially expanding the relevant cost calculations policymakers must consider before enacting regulation to both the direct and indirect increase of transaction costs present within the market.

In the following section, this paper will craft a regression that explores the link between state regulatory burden and local administrative burden in surrounding areas to illustrate the way in which adjustments to institutional-level transaction costs impact the broader economic environment rather than exhibiting an isolated effect to a target industry.

IV. HYPOTHESIS

Regulations which restrict the power to use owned land at the federal, state, or local level constitute institutional-level transaction costs for all modes of exchange involving, or related to, land maintenance, sale, and cultivation, among others. Increasing institutional-level transaction costs abrades exchange, thereby muting individual wealth benefits to land market participation. This analysis utilizes a Land Use Freedom Index⁴⁷ (LUFI) that is an accumulation of land use regulations across the state of Illinois. Because of this, the exact value of the LUFI metric within a given county is unknown. Of all those who moved from a locality within the state of Illinois, 31% moved to another county within the state.⁴⁸ Though individuals may choose to move for various reasons, it is plausible that some may choose to move from localities with high levels of land use restrictions to localities with low levels of land use restriction, increasing population and levels of public spending in surrounding counties. Suggesting that a currently unaccounted-for cost of a given land use regulation is some portion of the requisite increase to local budgets, and therefore local taxes, in surrounding counties.

⁴⁶ KNIGHT 14–15, *supra* note 39.

⁴⁷ William Ruger & Jason Sorens, *Land Use Freedom*, FREEDOM IN THE 50 STATES (2022), <https://www.freedominthe50states.org/land-use>.

⁴⁸ *American Community Survey 2016–2020*, U.S. CENSUS BUREAU <https://www.census.gov/data/tables/2020/demo/geographic-mobility/county-to-county-migration-2016-2020.html> (last visited Jan. 4, 2025).

V. METHODOLOGY

The city of Chicago was chosen as the locality for this analysis due to its large population, geographically vast metropolitan statistical area (MSA), and its relatively consistent population levels since 2010.⁴⁹ The Chicago area is known to lean to the political left.⁵⁰ This analysis regresses Housing Price Index (HPI) for Cook County,⁵¹ total population within the Chicago-Naperville-Elgin metropolitan statistical area reporting a fifteen-minute or longer commute to work (ComPop),⁵² total population of Chicago's collar counties⁵³ as defined by the Chicago-Naperville-Elgin metropolitan statistical area⁵⁴ (CountyPop), and a Land Use Freedom Index (LIFI) curated by the Cato Institute in conjunction with the Mercatus Center⁵⁵ on total public spending by collar counties.

The Housing Price Index is utilized as a county-specific descriptor of the effects of land use regulations within Cook County as increased land use regulations are associated with higher home prices.⁵⁶ Population within the MSA commuting more than fifteen minutes to work tracks population movement within the MSA as individuals are known to weigh local factors such as housing cost, wage rate, and commute time in their choice of residential location.⁵⁷ The total population in collar counties is utilized as another check for intra-county population movement.⁵⁸ Collar county public spending was chosen as the dependent variable for this analysis because of its relation to

⁴⁹ *Resident Population in Chicago-Naperville-Elgin, IL-IN-WI (MSA) [CHIPOP]*, U.S. CENSUS BUREAU, <https://fred.stlouisfed.org/series/CHIPOP> (last visited Jul 31, 2024) (note: MSA population ranged from 9,470,661 in 2010 to 9,441,957 in 2022).

⁵⁰ *Election Results - Illinois, America's Choice 2024*, CNN, <https://www.cnn.com/election/2024/results/illinois> (last visited Nov. 29, 2024).

⁵¹ *All-Transactions House Price Index for Cook County, IL*, U.S. FEDERAL HOUSING FINANCE AGENCY, <https://fred.stlouisfed.org/series/ATNHPUS17031A> (last visited Jan. 4, 2025).

⁵² *Mean Commuting Time for Workers (1-Year Estimate)*, U.S. CENSUS BUREAU, <https://data.census.gov/ta-ble/ACSST5Y2022.S0801?q=S0801%20COMMUTING%20CHARACTERISTICS%20BY%20SEX&g=310XX00US16980> (last visited Jan. 4, 2025).

⁵³ Rich Reinhold, *New Standards and Geographic Definitions for Metropolitan Statistical Areas*, ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY, <https://ides.illinois.gov/resources/labor-market-information/geographic-definitions> (last visited Jan. 4, 2025).

⁵⁴ *Core Based Statistical Areas, Metropolitan Divisions, and Combined Statistical Areas*, U.S. CENSUS BUREAU, (2023), <https://www.census.gov/geographies/reference-files/time-series/demo/metro-micro/delineation-files.html>.

⁵⁵ See William Ruger & Jason Sorens, *supra* note 50.

⁵⁶ Lawrence Katz & Kenneth Rosen, *The Interjurisdictional Effects of Growth Controls on Housing Prices*, 30 J. OF LAW & ECON. 149, 149-50 (1987).

⁵⁷ Kim So, Peter Orazem, & Daniel Otto, *The Effects of Housing Prices, Wages, and Commuting Time on Joint Residential and Job Location Choices*, 83 AM. J. AGRIC. ECON. 1036, 1036 (2001).

⁵⁸ *Population Division, Annual Estimates of the Resident Population for Counties in Illinois: 2000 to 2023* US CENSUS BUREAU.

local taxes. Higher local budgets beget higher local taxes through which those budgets can be funded. The dataset for collar county budgets was manually curated by assessing the publicly available yearly budget proposals for all of DeKalb,⁵⁹ Du Page,⁶⁰ Grundy,⁶¹ Kane,⁶² Kendall,⁶³ McHenry,⁶⁴ and Will⁶⁵ Counties. Pure public expenditure was chosen rather than a net budgetary position in an effort to isolate the expenditure burden of the counties over time. This analysis considered the years 2010 to 2020 due to data gathering constraints.

The Land Use Freedom Index represents the primary research variable. Our regression shows that, holding housing price and intra-county population movement constant, higher levels of land use freedom, that is, low levels of regulatory restrictions on the use of owned land, are associated with lower levels of public spending in Chicago's collar counties.

Variable	Obs	Mean	Std. dev.	Min	Max
Year	11	2015	3.316625	2010	2020
PSpend	11	1.26633	.0829038	1.134411	1.39428
HPI	11	124.2155	10.40707	109.87	138.92
ComPop	11	3.504628	.1356065	3.27473	3.681941
CountyPop	11	2.726381	.0167412	2.692659	2.742406
LUFI	11	.0224245	.0069454	.011047	.032205

VI. SUMMARY STATISTICS

⁵⁹ *Annual Appropriation and Budget Ordinance*, COUNTY BOARD OF DEKALB, <https://dekalbcounty.org/departments/finance-office/budget/budget-archives/> (last visited Jan. 4, 2025).

⁶⁰ *FY Financial Plan*, COUNTY BOARD OF DU PAGE, https://www.dupagecounty.gov/government/departments/finance/financial_and_budget_plans.php#outer-1738 (last visited Jan. 4, 2025).

⁶¹ *Statement of Budgets and Appropriations Ordinance for the County of Grundy, State of Illinois*, COMMITTEE ON FINANCE, https://www.grundycountyil.gov/services/finance/budgets_audits.php#outer-197 (last visited Jan. 4, 2025).

⁶² *Kane County Budget*, KANE COUNTY FINANCE DEPARTMENT, <https://www.kanecountyil.gov/pages/finance.aspx> (last visited Jan. 4, 2025).

⁶³ *Annual Budget and Appropriation Ordinance*, COUNTY BOARD OF KENDALL, <https://www.kendallcountyil.gov/transparency/financial-reports/fiscal-budgets> (Jan. 4, 2025).

⁶⁴ *Annual Appropriations Ordinance*, DEPARTMENT OF FINANCE, <https://www.mchenrycountyil.gov/departments/finance/budgets> (last visited Jan. 4, 2025).

⁶⁵ *Budget*, FINANCE DEPARTMENT, <https://willcounty.gov/county-offices/finance-and-revenue/finance> (last visited Jan. 4, 2025).

VI. RESULTS⁶⁶

Pspend	1	2	3	4
LUF1	-10.470 (1.524)	-14.306 (1.225)	-9.002 (6.486)	-5.824 (6.620)
HPI		-0.003 (0.001)	-0.002 (0.002)	-0.003 (0.002)
CountyPop			1.688 (1.999)	4.171 (2.993)
ComPop				-0.244 (0.229)
_cons	1.501 (0.039)	1.948 (0.145)	-2.931 (5.797)	-9.082 (7.934)
obs	11	11	11	11
R-Squared	0.769	0.799	0.818	0.829

An increase in LUF1 for the state of Illinois is associated with a decrease in Public Spending in Chicago's collar counties. This association is most strong when LUF1 and HPI are regressed on Public Spending, but the negative association exists with a relatively high level of explanatory variance through each test. This regression was statistically significant at the 0.05 level, though each coefficient individually was not. Because of this, it is the contention of the authors that the direction of each coefficient is reliably calculated but the magnitude requires further research with access to a larger sample size.

This assessment concludes that increased levels of land use regulation within a given county are plausibly associated with higher public spending,

⁶⁶ This statistical test is not intended to suggest land use regulatory decisions in the City of Chicago explain all or a majority of the change to public spending in the collar counties of the Chicago-Naperville-Elgin metropolitan statistical area. Nor is the intention to create a predictive model for additional land use decisions. Rather, the purpose of this regression is to suggest a significant association between land use regulatory decisions and collar county public spending.

and therefore higher local taxes, in surrounding counties – indicating an additional cost to additional land use regulatory decisions through the institutional transaction cost framework. This finding suggests the following equation illustrating the relationship: $P_{spend} = CountyPop - ComPop - HPI - LUFI$ -- those variables being public spending, county population, population commuting 15 minutes or more to work, housing price index, and land use freedom index respectively.

IX. CONCLUSION

A transaction cost is an amalgamation of property, power, and exchange. Distributions of property rights, allocations of the power to access and utilize held property, and factors of exchange specific to a given transaction combine to influence the total level of transaction costs felt by negotiating parties. The proximate effects of transaction costs are essentially negotiatory insofar as a transaction cost tilts the scales in favor of the less affected party, shifting negotiatory power, and therefore incentives and outcomes,⁶⁷ in that party's direction. A given transaction cost is both derivative of property rights and a cost of a lower order.⁶⁸ Changes in property distributions and power of use become the impetus of further transaction costs that are isolated to specific modes of exchange. These act as a de facto limitation of a right proper, imposing barriers to mutually beneficial transactions and, therefore, becoming a transaction cost itself. Likewise, transaction costs can be dichotomized into two overarching categories: isolated and institutional, where isolated refers to transaction costs that affect one industry or mode of exchange, and institutional refers to transaction costs concerning the distribution of property rights. The most identifiable transaction cost is the process whereby firms discover relevant prices.⁶⁹ The regulatory environment chiefly affects this process specifically and generally. Because the nature of these decisions is to affect the terms of market activity, the regulatory environment of a given market is itself an institutional transaction cost. This relationship can be seen clearly in the regression results of Section VI. As the Land Use Freedom Index for the state of Illinois becomes less burdensome, the levels of county spending for Chicago's collar counties⁷⁰ decrease. A commonly considered effect of zoning and ordinance regulations is the impact these have on home

⁶⁷ Douglas W. Allen, *What Are Transaction Costs*, RESEARCH IN LAW AND ECONOMICS 1, 4 (1991).

⁶⁸ LUDWIG VON MISES, HUMAN ACTION, 93-94 (1949) (lower order in the vein of the classification of goods whereby a first order good is sold directly to the consumer and is therefore a product of the lower order goods which created it).

⁶⁹ Coase, *supra* note 24 at 73.

⁷⁰ See *Collar Counties*, ENCYCLOPEDIA OF CHICAGO, <http://www.encyclopedia.chicagohistory.org/pages/3.html> (last visited Jan. 4, 2025). ("Collar counties" refers to the counties surrounding the city of Chicago. Those counties being DeKalb, Du Page, Grundy, Kane, Kendall, McHenry, and Will.)

prices.⁷¹ Not commonly considered is the impact raised home prices have on local migration⁷² and the impact local migration has on the administrative burden of neighboring counties. The Land Use Freedom Index, though directly impacting the housing market, is a general market condition. That adjustments to this market condition impact the surrounding area more broadly ought to be an expectation due to the nature of institutional transaction costs as described in this analysis.

This finding supports a general skepticism concerning the court's historic support of governmental appropriation. Though there is no legal reasoning to support the notion that federal, state, and local governments lack constitutional authority to enact regulations affecting the rights of their citizenry, what can be disputed is the degree of impact these regulations may impose before they cross the threshold from rightful acts of governance to oppressive violations of constitutionally protected freedoms. While states and local governments maintain the right to regulate both public and private property through an exercise of their Police Powers, bureaucratic bodies are also obligated to prevent the passage of regulations which deprive private citizens of their property rights. Our forefathers made obvious their intent to protect laymen from suffering governmental intrusion of private lands⁷³ with the compulsory provision of "just compensation."⁷⁴ In circumstances where the government completes a "physical intrusion,"⁷⁵ compensation is much easier to facilitate because physical takings are the "clearest sort of taking."⁷⁶ However, governments and courts alike continually struggle to determine the moment at which private property is appropriated by regulation. Different standards apply when a government's regulation curtails private property owners from enjoying the benefits of their proprietorship.⁷⁷ In these instances, the Supreme Court provided that a "use" regulation invokes the Takings Clause of the 5th Amendment when it "goes too far[.]"⁷⁸ This guidance does nothing to provide practitioners with an actionable analytical framework to prevent the degradation of liberty. Unfortunately, the Court's instruction to

⁷¹ Katz & Rosen, *supra* note 60 at 149.

⁷² Local migration is defined as residential movement between counties but within the same state. See *What is Migration*, UN MIGRATION, <https://wmr-educatorstoolkit.iom.int/module-1-what-is-migration-resources> (last visited Jan. 4, 2025).

⁷³ See *Cedar Point Nursery v. Hassid*, 594 U.S. 139, 147 (2021). ("As John Adams tersely put it, '[p]roperty must be secured, or liberty cannot exist.'")

⁷⁴ U.S. CONST. amend. V.

⁷⁵ *Cedar Point*, 594 at 147 ("The government commits a physical taking when it uses its power of eminent domain to formally condemn property. . . takes possession of property without acquiring title to it").

⁷⁶ *Palazzolo v. Rhode Island*, 533 U. S. 606, 617 (2001). See also *Cedar Point*, 594 U.S. at 148.

⁷⁷ *Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Agency*, 535 U. S. 302, 321-22 (2002).

⁷⁸ *Pennsylvania Coal Co. v. Mahon*, 260 U. S. 393, 415 (1922).

consider the extent to which a property owner's interests are harmed before compensation is remitted has only emboldened governments across the country to further issue restrictive land use laws. The Court in *Euclid v. Ambler Realty Co.* held that zoning regulations which do not substantially "[relate] to the public health, safety, morals, or general welfare" of a community must be considered "arbitrary and unreasonable" and therefore, unconstitutional.⁷⁹ Where the government employs unconstitutional regulations to effectuate a taking, especially without physical intrusion onto property, a regulatory taking occurs. To determine whether a use restriction amounts to a regulatory taking, courts have applied the "test developed in *Penn Central*, balancing factors such as the economic impact of the regulation, its interference with reasonable investment-backed expectations, and the character of the government action."⁸⁰ Though *Penn Central* is considered the standard for evaluating regulatory takings, jurisprudence in this arena remains ambiguous and inconsistent. Therefore, courts tend to circumvent traditional notions of fairness by upholding use regulations which do not relate, even rationally, to safety, health, or wellness interests.⁸¹ This practice of allowing certain property regulations, which when applied in other contexts would undoubtedly be struck as unconstitutional, effectively deprives the citizenry of fundamental property rights, often to the exclusive and self-serving benefit of the government.

Insofar as a regulatory decision or outright conscription of property is to be considered a taking, the means through which just compensation is to be calculated are strictly subject to an *ex ante* limitation of market information. Where such regulations interfere with private property ownership, whether physically or through the deprivation of usage and enjoyment rights, the full value of the compensation owed can only be discovered through a market process. The two most common methods for assessing the compensation pursuant to a taking are economic and market value, where economic value includes a subjective element of valuation to account for emotional attachment or other personal values of a property, and market value limits the compensation to the value the property would have returned if sold.⁸² Nearly

⁷⁹ *Village of Euclid, Ohio v. Ambler Realty Co.*, 272 U.S. 365, 395 (1926).

⁸⁰ *Cedar Point*, 594 U.S. at 148.

⁸¹ See *Knick v. Twp. of Scott*, 588 U.S. 180, 180, 186 (2019) ("The Township of Scott, Pennsylvania, passed an ordinance requiring that "[a]ll cemeteries . . . be kept open and accessible to the general public during daylight hours. . . . The ordinance defined a 'cemetery' as '[a] place or area of ground, whether contained on private or public property, which has been set apart for or otherwise utilized as a burial place for deceased human beings.'") Petitioner owned a 90-acre rural property which contained a small family graveyard. Petitioner was issued a citation for violating the ordinance by not being open to the public during the times required).

⁸² Yun-chien Chang, *Economic Value or Fair Market Value: What Form of Takings Compensation Is Efficient?*, 20 SUP. CT. ECON. REV. 35, 36 (2012).

any method of calculating compensation is prone to mis-compensation,⁸³ however, the specific limitations of each of these methods amplify this tendency. The limitations herein emerge from a misconception of the primary function. Full compensation for the value of a taking ought to, in principle, generate the full economic profit the owner would have otherwise earned through ownership, and the eventual sale, of the property. That is to say, for the owner to be fully and justly compensated, he or she must be paid a sum equal to the sale of the property, inclusive of future use and future price, such that the profit earned from this transaction is equal to this revenue less all costs, inclusive of opportunity costs. The conception of economic value, then, excludes the value of the property forewent at the time of the taking, as does the conception of market value, resulting in a negative economic profit that may have otherwise been avoided.⁸⁴ Though wholly full and fair compensation of value for a taking ought to leave the deprived owner in an identical net position to if the taking had not occurred, the challenge of appraisement for any of these methods remains a practical impossibility *ex ante*.⁸⁵ In the case of market value compensation, it is not accurate to appraise similar units of property to price the property in question. Not only is the property taken a specific property with specific features that may raise or lower the price it will fetch through ordinary sale, but the price or value of other units of property with similar features is only a portion of its ultimate sale price. It is reasonable to consider that the time of year may impact a final sale price for a house or portion of land; a family willing to pay more in order to move in prior to the school year, for example, or a farmer paying more to purchase the land prior to seeding. It may also be the case that this land has features that are more visually appealing in the fall or spring, potentially influencing buyer decisions. The broader market context plays a role as well, as any of neighborhood features, business or property restrictions, tax rates, the state of the national economy, and other factors may impact a final sale price. None of these are captured in property appraisals. Calculating the market value for the property taken ignores relative uniqueness and specificity, as it is not the average value of similar properties that the owner is entitled to, it is the value that this specific property would have returned -- that value only discoverable by engaging in the process to sell the property. The calculation of economic value⁸⁶ faces these same practical limitations. A property owner listing their property for sale is likely to include some portion of subjective

⁸³ Additionally, the government's position as both negotiator and arbiter of compensation negotiations in the case of a regulatory taking leaves open the likelihood of intentional under-compensation on the margins in the pursuit of governmental end goals, the nobility, morality, or ethics of these goals notwithstanding. See Coase, *supra* note 25, at 17 (regarding Coase's detailing of "super firms" and the negotiatory powers implied).

⁸⁴ Conceptions of economic and market value as seen in Yun-chien Chang, *supra* note 89 at 36.

⁸⁵ This sort of calculation is a practical impossibility *ex post* as well, in the case of a taking. As there will be no market process through which relevant prices could be gathered and accounted.

⁸⁶ Yun-chien Chang, *supra* note 89, at 36-37.

value into their listed price.⁸⁷ However, accounting the true extent of this subjective value is impossible even through the market process, as there exist other incentives for the owner to deviate their listed price from the aggregate value of similar properties beyond this sense of subjective value. Asking the individual to directly account this incentivizes dishonesty in the negative to a buyer and in the positive to the government.⁸⁸ Yet again, a calculation of compensation such that the economic profit foregone is remediated cannot be discovered but through the passage of time and market activity. Without perfect knowledge of the future, inclusive of future institutional transaction costs and the total accounting of their broader effects, it is impossible to discover the value of all revenue-generating activities up and to the point of future sale, the future market conditions, the relative uniqueness of the property, and when that point of future sale would have otherwise been.⁸⁹ Regardless of method, the ability to discover relevant values, such that the conditions for full compensation are met, remains impossible prior to the practical sale of the property in question. Indeed, any compensation remediated to the property owner is an inaccurate account of present and future prices in the best case -- leading to the equal possibility of over or under-compensation for the deprivation of property rights.⁹⁰

Furthermore, and as discussed in this paper, market conditions fundamentally adjust in the event of a regulatory taking due to these regulatory decisions amounting to institutional transaction costs imposed on the market more broadly. The existence of these institutional transaction costs serve only to further the practical impossibility of the calculation of just value in the case of a regulatory taking. Notably, all the challenges listed in the preceding paragraph indeed apply more strongly in the regulatory takings context⁹¹

⁸⁷ *Id.*, (defining subjective value as the value of emotional or other personal attachment to the property).

⁸⁸ That is to say, if a buyer asks a seller the value of their emotional attachment to the property, the seller is incentivized to report an artificially low amount, suggesting the property itself is worth more, less the subjective element, than it truly is. If the government asks a property owner the value of their emotional attachment to the property about to be conscripted, the property owner is incentivized to report an artificially high amount in the pursuit of additional compensation. *Id.*

⁸⁹ As, again, the property owner faces an incentive toward dishonesty, a report that the future sale of the property is or would have been planned when market conditions were most favorable results in higher compensation, regardless of whether or not this is accurate to the owners' future plans. *Id.* at 39.

⁹⁰ It should be noted that over-compensation presents a risk to the government in the case of a taking, where compensating too great a value in remediation of the taking may significantly devalue the project that required the taking, especially if this error is made en masse, as it may be in the case of larger projects such as highways or public parks. Under-consumption presents a risk to property owners, as it increases the value of the risk of a future taking. *Id.* at 42.

⁹¹ The examples in this paper assessed challenges of calculation when the property conscripted is clear and obvious in an effort to streamline the explanation of these economic concepts. Applied to regulatory takings, where these delineations are less clear and the property conscripted amounts to a reduction of usage and enjoyment rights, all relevant calculations become even more complex, and therefore, the assessment of this paper applies even more strongly in these instances. *See supra* Section VIII.

because the adjusted state of transaction costs present within the market introduces a previously unaccounted for element of unpredictability. As the scope of the regulatory environment each owner is subject to expands, along with being subject to those transaction cost increases implied therein, the market-based rates at which individuals and firms will value their held bundle of rights to property necessarily change in ways that are wholly unpredictable, absent perfect knowledge of future causal responses to the regulation at issue. Therefore, the calculation of just compensation in the case of a regulatory taking, whereby an element of an individual or firm's use and enjoyment of held property are conscripted, faces practical challenges two-fold; the inability to ascertain subjective value⁹² *ex ante* the market process, and the imperfection of knowledge pertaining to the fallout of the regulatory decision in question. Because it's impossible to provide an objective measure of or to remit a genuinely full value of the compensation owed, leaving open the relatively equal risk of either government or citizenry bearing the full cost of this inaccuracy, Justice Holmes's suggestion that a regulation converts to an actionable taking the moment it goes "too far" is not only a practical impossibility to ascertain, but a legal fallacy as well. The compulsive nature of the compensation contemplated by the 5th Amendment imposes a responsibility on the government to provide a mechanism for obtaining relief within the structure of the proposed regulation without any consideration of a property owner's subjective assessment of their injury.

Indeed, though there may be instances where a regulation which constitutes a taking is the prudent course of action, both citizens and governments would benefit from procedural restraint. For the costs associated with an unjust regulatory taking, one in which the regulation is not prudent, may be incalculably large⁹³ and the process of compensating the citizenry fraught with error, meaning that, through constitutional notions of justice and fairness, both the courts and lawmakers alike must exercise strict hesitancy before engaging in such behavior.

⁹² The term "subjective value" is used in the traditional sense rather than the one previously expressed in this paper within the context of economic value as defined by Yun-chien Chang. *Supra* note 89, at 36-37.

⁹³ As evidenced by the results of the regression in Section VI. *See supra* Section VI.