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Public Use or Abuse? The Use of Eminent Domain for Economic Development in the Era of *Kelo*

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Abstract

The Supreme Court decision in *Kelo v. New London* (2005) authorized the use of eminent domain for economic redevelopment projects provided that there are sufficient spillover benefits to the public in the form of enhanced taxes and new jobs. This paper examines the economic basis for this decision, and tests the conclusions using cross-state data on economic development takings. It also examines the factors underlying the political actions by states to limit such takings following the *Kelo* decision. The results are consistent with the economic justification for eminent domain as a means of overcoming holdout problems associated with land assembly.

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Public Use or Abuse?
The Use of Eminent Domain for Economic Development in the Era of *Kelo*

"Urban centers are cut up into little parcels. Where do we acquire large parcels of land to attract large economic engines to enable us to compete with suburbia? We can only get it through eminent domain."

-Tom Londregan, New London City Attorney (quoted in Benedict, 2009, p. 250).

"It's home to us. It's home to my parents and my family for a hundred years. Simply put, there is nowhere else I would rather be. My mother has lived there her entire life. She's eighty-three years old. I know she wants to die in that house."

-Matt Dery, one of the plaintiffs in *Kelo v. City of New London* (quoted in Benedict, 2009, p. 256).

1. Introduction

The government's taking of private property for public goods like highways, airports, or hospitals is generally regarded as an appropriate (though not always popular) use of its power of eminent domain. More questionable is the taking of property as part of a large scale economic redevelopment project. The above quotes epitomize the fundamental trade-off surrounding this use of eminent domain. On one hand are proponents of strong governmental powers to acquire property for purposes of redeveloping blighted inner cities, but on the other are property rights advocates who see this as nothing more than a forced transfer of property from one private party to another. The Supreme Court's 2005 ruling in *Kelo v. City of New London*[1] is only the latest court decision to confront these issues. The facts of the case thus provide a useful context for the analysis in this paper.

In 2000, the City of New London, with the backing of the State of Connecticut, embarked on an ambitious redevelopment plan aimed at revitalizing the depressed city. The centerpiece of the plan was the construction of a multi-million dollar research facility by the Pfizer pharmaceutical company, which, it was hoped, would attract jobs, generate additional tax revenues, and generally rejuvenate the city's economy. In approving the plan, the city authorized the New London Development Corporation (NLDC) to use eminent domain if

[1] 545 U.S. 469 (2005).

necessary to clear the needed land. Although most owners in the targeted areas sold voluntarily, a few held out, necessitating the condemnation of their properties. The owners filed suit on the grounds that the takings violated the public use requirement of the Fifth Amendment, which says that land can only be taken without the owner's consent if it is to be put to a "public use" and if "just compensation" is paid. The plaintiffs, led by Susette Kelo, contended that the public use requirement was not satisfied because the bulk of the land was being transferred to another private party.

The Connecticut Supreme Court upheld the city's action, and the case then went to the U.S. Supreme Court on appeal. In a 5-4 ruling, the Court ruled that the city was justified in its use of eminent domain based on the following reasoning:

> The city has carefully formulated an economic development plan that it believes will provide appreciable benefits to the community, including—but by no means limited to—new jobs and increased tax revenue.…Because that plan unquestionably serves a public purpose, the takings challenged here satisfy the public use requirement of the Fifth Amendment.[2]

The reaction to the case was largely negative from both sides of the political spectrum. On one hand, conservatives condemned the ruling as an abuse of the government's power to limit private property rights, while on the other, liberals saw it as yet another example of powerful business interests profiting at the expense of poor and middle class homeowners. The result was a widespread call for political action to limit the perceived abuse of the government's eminent domain power. From a strict legal perspective, however, the case was not especially groundbreaking, as it was merely the latest in a long line of cases at both the state and federal

[2] *Kelo v. City of New London*, 545 U.S. 469 (2005). For a compelling history of the case, see Benedict (2009).

levels that had authorized the use of eminent domain primarily for economic development purposes.[3]

As for the economics of the issue, the primary justification for the use of eminent domain is to overcome a market failure associated with the assembly of land for large scale projects like highways. In such cases, landowners in the path of the project acquire a kind of monopoly power that allows them to hold out for prices in excess of their true valuations, thereby resulting in costly delay and possibly preventing completion of the project.[4] The government's power of eminent domain enables it to go ahead with beneficial projects by replacing the costly negotiation process associated with market acquisitions with forced sales. Because such an action is an extreme infringement of private property rights, however, the Fifth Amendment limits its use to projects in which the land will be put to a "public use." The problem, of course, concerns the exact meaning of public use: does it refer exclusively to truly public projects like highways, parks, and hospitals, or can it also encompass private projects with some discernable public benefit? This was the question the *Kelo* Court addressed.

The next section, after briefly reviewing the case law on public use, asks whether the Court's ruling in *Kelo*, irrespective of its political dimensions, had a sound economic basis. Section 3 then undertakes an empirical analysis using cross-state data to determine those factors, both economic and political, that have actually governed the willingness of states to authorize the use of eminent domain for private development projects.[5] The data were actually gathered before the *Kelo* decision was issued, and so reflect the attitude of states prior to that case. The analysis in Section 4 then addresses the political response to *Kelo*. In particular, it examines those factors

[3] For reviews of the case law in the area, see Merrill (1986) and Kelly (2006). Also see Fleck and Hanssen (2010), who review the history of the delegation of eminent domain for economic development in the United States.
[4] See, for example, Cohen (1991) and Posner (2003, p. 55).
[5] For early theoretical and empirical discussions of eminent domain in the context of *Kelo* see Miceli and Segerson (2006) and Lanza (2006).

that dictated the extent to which states enacted laws limiting or prohibiting *Kelo*-type takings. Finally, Section 5 concludes.

2. The Law and Economics of Public Use

The government's power of eminent domain is limited by the Fifth Amendment takings clause, which states, "nor shall private property be taken for public use, without just compensation." Thus, the targeted land must be put to a "public use," and the owner must receive "just compensation." Since the Constitution offers no specific guidance on the meaning of these phrases, however, it has been left to courts and legal scholars to define them. While it is settled law that just compensation equals fair market value, economists have pointed out that this measure likely under-compensates owners compared to what they would have accepted in a consensual sale.[6] (The quote from one of the *Kelo* plaintiffs at the beginning of this article suggests why this is true.)

The meaning of public use, in contrast, is not settled and thus continues to spark controversy, as epitomized by the *Kelo* decision and its aftermath. The debate centers on the question of whether municipalities can use eminent domain to facilitate economic redevelopment. This section briefly surveys the key cases on this issue, and then reviews the economic theory of public use.

2.1. The Law of Public Use

Courts at both the state and federal level have historically adopted a fairly expansive interpretation of public use. For example, in *Berman v. Parker*,[7] decided fifty years before *Kelo*, the Supreme Court allowed the use of eminent domain for a redevelopment project aimed at

[6]See, for example, Knetsch and Borcherding (1979) and Fischel (1995a).
[7] 348 U.S. 26 (1954).

eliminating urban blight in Washington, D.C. The Court allowed all property in the designated area, including non-blighted property, to be taken, based on the argument that redevelopment of the entire area was in the public interest. In *Poletown Neighborhood Council v. City of Detroit* the Michigan Supreme Court similarly allowed the city of Detroit to condemn an entire neighborhood in order to clear the way for a General Motors assembly plant.[8] The court argued that the public use requirement was satisfied by the new jobs and increased tax revenues that the plant would bring. The Supreme Court, of course, employed the same spillover-benefit argument to justify the use of eminent domain in *Kelo*.

Interestingly, however, only a year before the *Kelo* decision, the Michigan Supreme Court reversed its *Poletown* decision in the case of *Wayne v. Hathcock*.[9] In that case, the court argued that the public use requirement was *not* satisfied by the mere existence of a public benefit associated with a redevelopment project. Moreover, it stated that its earlier ruling in *Poletown* was contrary to the fundamental protection of private property afforded by the U.S. Constitution. Although this case showed that the public use limitation was not quite a dead letter at the state court level, the *Kelo* decision apparently put the matter to rest, at least as regards the role of the court in limiting the private use of eminent domain.

Two other notable cases illustrate the limits to which courts have gone in expanding the definition of public use. In *City of Oakland v. Oakland Raiders*,[10] the California Supreme Court allowed the City of Oakland to condemn the contractual rights associated with the Oakland Raiders football franchise in an effort to prevent the team from relocating to Los Angeles. And in *Hawaii Housing Authority v. Midkiff*,[11] the U.S. Supreme Court upheld the Hawaii Land

[8] 304 N.W.2d 455, 410 Mich. 616 (1981).
[9] 684 N.W.2d 765, 471 Mich. 445 (2004).
[10] 32 Cal.3d 60, 646 P.2d 835, 183 Cal.Rptr. 673 (1982)
[11] 467 U.S. 229 (1984).

Reform Act, which authorized the use of eminent domain to transfer land from landlords to tenants as a way of reducing the extent of market power in the Hawaiian land market.

To get a broader historical perspective on the attitude of courts toward public use, Merrill (1986) surveyed all court rulings in which the issue arose from 1954 (the year of *Berman*) through 1985. The sample consisted of 308 cases, 291 decided by state courts and 17 decided by federal appellate courts. Of these cases, 84.7% of the state decisions upheld the government action as meeting the public use requirement, while all of the federal court decisions upheld the action. A more recent survey of public use law by Kelly (2006, p. 9) similarly concluded that "courts…have almost universally deferred to legislative determinations of public use." The next question is whether this stance makes sense from an economic perspective.

2.2. The Economics of Public Use

The seminal economic analysis of public use by Merrill (1986) framed the issue in terms of the distinction between means and ends. To illustrate, consider a government-sponsored project that requires the assembly of land. The "means" concerns the manner by which the land will be acquired, while the "ends" concerns the use to which the land will be put. The question is whether the proper economic justification for eminent domain turns on a consideration of means or ends.

At first glance, the literal interpretation of public use suggests that the relevant factor is the ends; that is, eminent domain should only be available for those projects that involve the provision of a public good like a highway, park, or hospital. In terms of economic theory, the ends approach views eminent domain as a response to the free rider problem associated with the provision of public goods. The fundamental issue here is the non-excludability of benefits, which prevents public goods from being efficiently provided by the market. Thus, the usual

remedy is for the government to take over provision of public goods (or to subsidize their provision), and to finance the cost by taxation. In this way, government provision of public goods essentially arranges a "forced purchase" of those goods by consumers. However, the theory of public goods says nothing about how the land or other resources needed for production of these goods should be acquired.

In contrast, the means approach focuses on possible impediments to the acquisition of the land by ordinary market transactions, and particularly justifies the use of eminent domain to overcome holdouts. The holdout problem arises when individual landowners realize that they can prevent the completion of a large-scale project by refusing to sell. Since this knowledge confers significant monopoly power on these owners, they can demand prices well in excess of their true valuations. Although it is in the interest of owners eventually to sell, the transaction and delay costs can impose a substantial deadweight loss on the project (Cohen, 1991). An obvious solution is to substitute a "forced sale" for market purchase of the holdout's land. The problem, however, is that this solution applies regardless of whether the acquired land will be put to a private or public use.

The means-ends approach just described thus presents the following paradox with regard to the interpretation of public use. Whereas its literal meaning suggests that eminent domain should be limited to the provision of public goods (ends), economic theory reveals that it is more properly justified as a way to overcome the market failure associated with holdouts (means), regardless of whether the project in question is public or private. The case law shows that courts have historically adopted the logic of the means approach by allowing a liberal interpretation of public use, but, as Merrill (1986, p. 67) notes, they have nearly always sought to justify their decisions with the language of the ends approach by emphasizing the public benefits of the

government action (Epstein, 1985, p. 166). The *Kelo* decision epitomizes this strategy—whereas the bulk of the benefits from the proposed redevelopment project were private, the Court, in defending its decision to allow eminent domain, highlighted the spillover benefits to the public in terms of jobs and tax revenues, while making no mention at all of the need to overcome the holdout problem.

2.3. The Possibility of Public Abuse

In spite of the logic of the means approach, some scholars argue that there are good reasons for limiting the use of eminent domain to truly public projects.[12] The first is that private developers have at their disposal several strategies for overcoming holdouts without the need to resort to forced sales. These include secret buying agents, option agreements, and other strategies aimed at maintaining secrecy about the nature of the project. Such strategies are generally unavailable to the government because of its need for openness (Merrill, 1986, p. 82; Fischel, 1995b, p. 70). As a result, projects involving a private-public partnership, like that in *Kelo* and in most urban renewal efforts, would be limited in their ability to maintain secrecy.

A second, and in the eyes of critics perhaps more important, reason for limiting government takings to truly public projects is that the routine practice of granting eminent domain to private parties would lead to a problem of rent seeking and political corruption, as various interest groups seek to acquire the power for their own purposes. Economists, at least since Tullock (1967), have recognized the potential for abuse inherent in the government's monopoly on force. Tullock reasoned that rational economic actors would attempt to influence public policy to advance their own private interests and would invest substantial economic resources to do so, resulting in wasteful rent-seeking.

[12] See, for example, Ulen (1992) and Kelly (2006).

Of course, since such public interventions are subject to open debate and deliberation, it is doubtful that development initiatives would be cast in such crass terms. More likely, petitioners would emphasize the efficiency-enhancing consequences of the change, using the language of public goods (ends) to the extent possible. And government's very willingness to entertain the possibility of compelling the transfer of resources from the alleged higher to lower-valued economic uses only aggravates the moral hazard problem—potential recipients of government favors will routinely couch their demands in false efficiency terms to conceal the larger private benefits that actually motivate their efforts to sway policymakers' opinions. Compounding the problem, government officials may not assume the role of innocent bystanders in the process, and could act instead to further their own political interests rather than those of the public at large. Critics of the widespread use of eminent domain for redevelopment argue that such abuse would be greatly curtailed if the power were limited to provision of public goods because the benefits are, by definition, widely dispersed and hence not appropriable by a concentrated interest (Kelly, 2006, Epstein (1985: pp. 173-174).

3. Empirical Analysis of the Determinants of the Use of Private Takings

3.1. Testable Hypotheses

The preceding analysis reveals that there is a legitimate economic basis for granting eminent domain power to private parties facing a holdout problem, especially when there is some government involvement in the project. Further, courts seem to have followed this logic (based on the means approach) in routinely allowing eminent domain in these cases. In regard to testing this prediction, we would expect holdouts to be more likely, all else equal, the larger are the number and scale of redevelopment projects in a state, and the more fragmented (or dense) is

ownership of land. Accordingly, we would expect to see greater use of eminent domain in states with higher population and income (reflecting greater demand for redevelopment), and also in states with more urban land and denser population (reflecting more dispersed land ownership). In contrast, if government officials are sensitive to economic factors, they should be less willing to authorize takings when current land uses are more valuable, as measured, for example, by land prices. The rate of economic growth in a state may have cross-cutting effects. On one hand, positive growth should increase the demand for redevelopment, suggesting a positive correlation with the number of authorized takings, but on the other, government officials may view redevelopment as a spur to economic growth (as exemplified by the *Kelo* case), suggesting a negative correlation.

Political considerations are also relevant, as they will influence the willingness of a state or municipality to use eminent domain. Again, the factors cut in opposite directions. Whereas one would expect democratically-controlled states to favor policies that facilitate the renovation of cities (which are predominantly populated by the poor), and to favor strong governmental powers aimed at regulating private property in the public interest, one would also expect such jurisdictions to be reluctant to force the transfer of land from lower and middle class homeowners to wealthy business interests. As for republican-controlled states, one would expect them to favor business-friendly policies, but also to be concerned about the perceived abuse of eminent domain to acquire private property primarily for economic development. Which of these factors dominates is therefore an empirical question.

More broadly, a state's philosophical attitude toward government may have a bearing on its willingness to exercise eminent domain. States with a light tax burden, and consequently a smaller government footprint, and with stiff limits on spending and taxation, may have

considerable aversion to employing eminent domain for development purposes. Alternatively, such resource-strapped states may view takings as a substitute for government initiatives that they cannot otherwise afford to pursue. Thus taxes, and limitations thereof, may have possible explanatory value.

We also attempt to capture the effect of a possible culture of government abuse or corruption in the use of eminent domain by including variables on the property crime rate by state, and convictions of state and local public officials. Two final control variables are a Herfindahl index of racial concentration (to test whether there is a racial bias in the use of eminent domain), and a Gini index of income distribution (to test whether there is an income bias in the use of eminent domain).

3.2. Data and Methodology

The dependent variable for the analysis was obtained from a survey undertaken by the Castle Coalition,[13] which catalogs the use of eminent domain for private development projects by state for five-year the period between January 1, 1998 and December 31, 2002 (Berliner, 2003). The report's findings, summarized in Table 1, are broken down into "filed condemnations," representing the number of times a government filed actions in court to acquire property for a private development project; "threatened condemnations," representing the number of properties that the government has indicated it would like to acquire;[14] and "development projects," representing the number of private development projects that are represented in the filed and threatened condemnations. Finally, the report lists total condemnations for all purposes (public

[13] The Castle Coalition (www.castlecoalition.org) was formed by the Institute for Justice (www.ij.org), a non-profit public interest law firm located in Washington, D.C.

[14] In five states (Alabama, Iowa, Louisiana, Mississippi, and Washington), the number of threatened condemnations was listed as "not specified." In some states the report listed "none known" for a given category. We interpreted this as zero.

and private) for twenty-two states.[15] In these states, filed private takings account for only 1.3% of all takings cases, while the total of filed plus threatened private takings accounts for 13.1% of the total.

The focus of our analysis will be on the determinants of state-by-state variation in the number of filed private takings. We chose not to use the number of threatened takings both because data from five states were absent, and because the credibility of the threat could not be ascertained. The discrepancy between the mean and median numbers of filed private takings reflects the skewed distribution across states. Fifteen states had no filed private takings over the five year period,[16] while eight states accounted for 87% of all filed takings.[17]

In an effort to explain this dramatic variation, we regress the number of filed private takings against a set of explanatory variables as described in the previous section. The equation is:

$$\text{TAKINGS} = \beta_0 + \beta_1 \text{POPULATION} + \beta_2 \text{URBAN LAND} + \beta_3 \text{URBAN DENSITY} + \beta_4 \text{PRICE} + \beta_5 \text{INCOME} + \beta_6 \text{GSP} + \beta_7 \text{TAXATION} + \beta_8 \text{TEL} + \beta_9 \text{PRESIDENT} + \beta_{10} \text{GOVERNOR} + \beta_{11} \text{LEGISLATURE} + \beta_{12} \text{CRIME} + \beta_{13} \text{CORRUPTION} + \beta_{14} \text{RACE} + \beta_{15} \text{GINI}, + \varepsilon$$

where for each state:

TAKINGS = the number of private takings filed between 1998 and 2002;

POPULATION = resident statewide population in 2000;

[15] These states are Alaska, Arizona, Arkansas, California, Connecticut, Delaware, Florida, Hawaii, Illinois, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, North Dakota, Oregon, Texas, Utah, and Wisconsin.

[16] Alaska, Delaware, Georgia, Hawaii, Idaho, Montana, New Hampshire, New Mexico, Oregon, South Carolina, South Dakota, Utah, Vermont, Wisconsin, and Wyoming.

[17] California, Florida, Maryland, Michigan, Missouri, New Jersey, Ohio, and Pennsylvania.

URBAN LAND = percentage of urban land in 2000 (urban land area divided by total land area);

URBAN DENSITY = the population density of urban areas in 2000 (urban population divided by urban land area);

PRICE = the dollar price of the median home in 2000;

INCOME = the nominal dollar value of per-capita disposable personal income in 2000;

GSP = the ratio of real 2000 gross state product to real 1990 gross state product;

TAXATION = the average "Takings and Discriminatory Taxation" subcomponent of the Fraser Institute's Economic Freedom Index for 1998 to 2002;

TEL = 1 if the state had enacted a tax and expenditure limit by 1998, 0 otherwise

PRESIDENT = 1 if the state voted Democratic in 2000, 0 otherwise;

GOVERNOR = 1 if Democrats occupied the statehouse in 2005, 0 otherwise;

LEGISLATURE = 1 if Democrats held an average majority of seats in both legislative houses in 2005, 0 otherwise;

CRIME = indexed property crime rates in 2000;

CORRUPTION = annual federal convictions of state and local public officials, 1976-2002;

RACE = a Herfindahl index of racial concentration in 2000;

GINI = the 2000 Gini coefficient for each state

Except for the two binary variables, each variable is expressed in log form to capture any non-linearities in the presumed relationship. Summary statistics for all variables appear in Table 2.

POPULATION came from the U.S. Census Bureau's official 2000 Census, as did the owner-reported data on median home prices. Census also publishes Gini indexes for the fifty states that we used in this analysis. For URBAN DENSITY and URBAN LAND we relied on figures

reported at the website demographia.com. GSP is the ratio of real gross state product in 1999 to its value ten years earlier as reported by the Commerce Department's Bureau of Economic Analysis. We also used BEA data for per-capita disposable income.

TAXATION is a measure of "discriminatory taxation" for 1998 to 2002 as reported by the Fraser Institute. It is an amalgam of state tax rates and revenues, and serves as a sub-national, sub-component of the Fraser Institute's broader index of economic freedom. It thus allows us to control both for states' relative attitudes toward public interventions in private transactions and for available public resources. By construction, larger index values measure a less "discriminatory" tax environment. TEL came from a Rockefeller Institute policy brief, authored by Bae and Gais (2007). We obtained data for PRESIDENT from the Federal Election Commission (fec.gov), for GOVERNOR from the National Governor's Association (nga.org) and for LEGISLATURE from the National Conference of State Legislatures (ncsl.org).

CRIME is an index of state crime rates for the property crimes of burglary, larceny and motor vehicle theft in 2000, detailed in the Federal Bureau of Investigation's Uniform Crime Report. CORRUPTION reflects conviction rates by state during the period 1990-2002, as compiled by Glaeser and Saks (2004) based on Justice Department records of the number of federal, state and local public officials convicted of corruption-related offenses. RACE is a Herfindahl-style concentration index we constructed using Census data on the racial distribution of each state's population. The index, calculated as the sum of the squared percentages of the population in each racial category, varies from zero to one, with larger numbers indicating greater racial homogeneity.

3.3. Results

We estimated multiple specifications of our basic model using OLS, and the most important are reported in Table 3. Each model explained 40 percent or more of the variation in the dependent variable, TAKINGS. The logarithmic form of our empirical model allows for interpreting the regression coefficients as elasticities, thus providing a measure of the relative importance of the regression parameters. Overall, the results support the hypothesis that governmental takings are used to solve the holdout problem, that the use of eminent domain is driven by the demand for economic development, and that takings serve as a spur to economic growth. However, none of the political, "public abuse," or other control variables were significant across the various models.

More specifically, TAKINGS varies positively with URBAN DENSITY and URBAN LAND, lending support to the hypothesis that states with more fragmented ownership structures are more likely to rely on takings to overcome holdout problems. These results are fairly robust to variations in the model specification: URBAN LAND is statistically significant at the 10% level or better in three of the four models, and URBAN DENSITY is significant at 5% in two of the four. In our preferred version, Model 4, a one-percent increase in URBAN DENSITY is associated with a disproportionately greater 1.8 percent increase in TAKINGS, all else equal. With increased density and more fragmented ownership the risk of economic holdouts rises. An increased reliance on eminent domain seems to be the result. Likewise, a one-percent increase in URBAN LAND is associated with an increase in TAKINGS of approximately 0.2 percent. Thus, holding the density of urban areas and other factors constant, the number of takings increases slightly as the share of urban land grows and that of suburban and rural land shrinks. With less vacant land

upon which to build, new development must increasingly rely on reusing already-developed urban parcels and thus becomes more vulnerable to the holdout threats.

Filed takings also vary positively with per-capita disposable income—a result that is significant at the 5% level in our preferred model, and nearly significant at the 10% level in two other versions of the model. In Model 4, a one percent increase in INCOME prompts a 4 percent increase in TAKINGS. This reflects a greater reliance on takings as the demand for development increases. Median home price is negative in all specifications, as predicted, and significant at the 10% level in Model 2 and at the 5% level in Model 4. This suggests that government officials account for the opportunity cost of land in making takings decisions.

The coefficient on GSP is negative and significant across all specifications of our model, suggesting that states view takings as a potent tool to spur economic growth. In Model 4, a one percent decrease in the ratio of 1999 to 1989 gross state product is associated with a nearly 3 percent increase in private development takings. Holdout problems aside, private parties are apt to under-invest in development projects designed to reinvigorate depressed areas, especially if the investment decision is complicated by the presence of spillover or neighborhood externalities. If development produces spillover benefits for adjoining property owners that investors cannot capture, or if the continued presence of urban decay on the periphery lowers the new venture's value, developers will invest less than is socially optimal. Eminent domain provides one among many policy levers that states and municipalities can, and apparently do, use to overcome this inefficiency.

Both the Herfindahl index for racial homogeneity and the Gini coefficient for income inequality prove statistically insignificant, suggesting that states with greater racial diversity or extremes of income are neither more nor less inclined to use eminent domain. Likewise the

crime, corruption, and taxation variables are not significant, thus offering no evidence that such factors influence the use of takings by state. Finally, neither of the political variables was significant in any of the model specifications. As noted, the *Kelo* decision exposed raw nerves on both sides of the political aisle, pitting democratic economic activists against champions of the poor and minorities within the same party, and causing development-friendly republicans to clash with those in their party who promote stronger private property-rights. Given these cross-cutting effects, the insignificance of these variables is not surprising.

4. Political Reaction to the *Kelo* Decision

The second part of our analysis examines the political reaction in the aftermath of the *Kelo* case. This is based on a second study by the Castle Coalition (2008), that examined legislative reforms passed by states in response to the *Kelo* decision. The report assigned a letter grade of A through F to each state based on the degree of legal protection against private takings that it had enacted, where A indicates a high degree of protection and F equals no protection. It is important to note that the Castle Coalition graded states not for their history of restraint with respect to private takings, but for the vigor of their response to the *Kelo* decision. For example, Arkansas, a state with no private takings between 1998 and 2002, earned an F because it failed to pass any type of legislative reform.[18] Kansas meanwhile, which had nearly seven times the average number of per-capita private takings over the same period, earned a B for subsequently limiting the potential for private takings to a very narrow range of circumstances. As of 2008, 42

[18] Ironically, and to the point, Arkansas was one of only eight states that, prior to Kelo, expressly prohibited the use of eminent domain for economic development except to eliminate blight. Four of the other eight states—Illinois, Kentucky, Maine and Montana—earned D's from the Castle Coalition. Among the remaining, Washington scored a C, South Carolina a B and Florida an A.

states had enacted at least some new protections, while eight states had failed to enact any reforms.[19]

Two previous studies have examined the factors that influenced the political responses of the various states. Morriss (2009), also using the Castle Coalition grading system, focused only on those states that responded by some form of legislation as opposed to a citizen-initiated response. (He thus excluded Arizona, Nevada, North Dakota, and Oregon from his analysis.) His results showed that states with higher population growth rates and with a larger fraction of Republicans in the state legislature were more likely to enact reforms limiting the use of eminent domain for private development. Conversely, states with statutory limits on taxes and spending, and with Republican governors, were less likely to enact such reforms. In a similar study, Lopez et al. (2009) undertook their own classification of state responses by analyzing 18 separate dimensions of restrictions, definitions, prohibitions and exemptions codified in post-*Kelo* reforms. They found that states with a higher value of new home construction, with greater economic freedom, and with less income inequality were more likely to enact substantive reforms. They also found that a state's history of using eminent domain for private development did not affect the strength of its reform efforts and, in contrast to the Morriss study, neither did political factors.

4.1. Data and Methodology

A grading system of the sort used by the Castle Coalition is an example of an ordinal scale of measurement. With such a scale, a grade of A is judged better than a grade of C, but there is no presumption that A is twice as good as C or that the two-grade move from F to C

[19] The eight were, in addition to Arkansas, Hawaii, Massachusetts, Mississippi, New Jersey, New York, Oklahoma, and Rhode Island.

represents a degree of improvement equivalent to a two-grade move from C to A. Thus in our effort to explain the variation in Castle Coalition grades (the organization assigned 5 As, 17 Bs, 6 Cs, 15 Ds and 7 Fs) we modeled them as a limited dependent variable that ranged in value from F = 0 to A =4 and used an ordered logit approach for our analysis. This variable is listed in Table 2 as GRADE.[20]

Our approach contrasts with both Morriss (2009) and Lopez, et al. (2009). The Morriss study used Castle grades but arbitrarily collapsed the scale into a dichotomous variable: zero for grades of F through C and one for grades of B and better, and modeled state responses as a probit. The approach followed by Lopez, et al. resulted in a trichotomous measure: zero for no change in law, one for a weak, largely symbolic response, and two for a strong update, modeled as an ordered probit. Our method allows for a broader range of response to the Kelo decision than either of the two previous studies, and it also preserves more of the original variability in the source data.

The explanatory variables in our model included those measures identified by the previous researchers as significant. Most, such as the political control of the legislative and executive branches of government, economic growth (which we measured using GSP rather than population growth), income inequality, economic freedom (our TAXATION variable), and tax and expenditure limits, were used in part one of this paper and are resurrected for consideration in the current context. Others, however, are new to the analysis. In particular, we add the per-capita dollar value of new residential construction by state, CONSTRUCTION, to capture the opportunity

[20] The Castle Coalition actually graded states using an A-F, plus-minus system. But to have included all possible categories would have resulted in too unwieldy a number of dependent variables for an ordered logit analysis. Supplementary regressions (not shown) which converted Castle scores to grade-point equivalents enabled us to retain the grade distinctions but implicitly treated the dependent variable as occupying a ratio scale—whereby a movement from C- to C+ marked the same relative improvement as a movement from B- to B+. Nevertheless, the results of these regressions were not substantively different from those presented here.

cost of commercial development, given that the competition for a limited supply of land often pits homebuilders against commercial developers.[21] Also, following Lopez, et al. (2009), we included the number of private takings per capita during the 1998 to 2002 period to measure a state's history of using eminent domain for economic development. Though their study found no evidence that a backlash against a history of private takings led to substantive legal changes, we viewed the variable as potentially important enough to warrant re-examination. Casual empiricism suggests that states that made more liberal use of development takings prior to *Kelo* may have stirred public resentment against the practice, thus fueling demands for legislative reform. If so, we would expect to find a positive connection between such takings and the Castle Coalition grades.

Finally, on the basis of our findings in the previous section, we anticipated that many of the same factors key to determining the number of private development takings in the period immediately preceding *Kelo* would also play a role in the legislative responses to the decision. Specifically, we hypothesized that whatever economic, political, demographic, or cultural variables might make a state more willing to *allow* takings for private development purposes would make it less likely adopt reforms post-*Kelo*. In other words, if takings served an important socioeconomic function, that instrumental value would make a state reluctant to impose restrictions on the practice. That should, in turn, result in the assignment of a lower grade to such states. These additional variables include URBAN LAND, URBAN DENSITY, PRICE, and INCOME—each a reflection of a state's underlying stage of urbanization. As argued in part one, urbanization raises the prospects for economic holdouts during bargaining and increases both the

[21] The National Association of Homebuilders joined the National Association of Realtors in filing an amicus brief in support of the petitioners in *Kelo*. The brief argued, in part, that "housing will almost never afford a community with the economic development benefits that a commercial application will. If economic development as a sole justification for public use is decided using a rational basis test with deference to local legislative bodies, then the door is left open for local governments to abuse their eminent domain powers."

value and likelihood of the use of eminent domain. The issue at hand is whether urbanization also conditions a state's response to the *Kelo* decision.

A word on methodology: Adding a second model to our study in which takings appears as a potential explanatory variable raises no particular specification difficulties. Strictly speaking takings are not endogenous to this now multi-equation system because state grades, our current focus, are not simultaneously a cause and consequence of takings. Instead the two models form a recursive structure. Many of the same factors may influence both takings and grades, and takings may affect grades, but grades issued in 2008 cannot play a role in the determination of takings that occurred between 1998 and 2002. Thus, we can estimate each model separately, and our estimates will be both unbiased and consistent.[22]

Our ordered logit model takes the following form:

$$\text{GRADE} = \beta_1 + \beta_2 \text{TEL} + \beta_3 \text{GOVERNOR} + \beta_4 \text{LEGISLATURE} + \beta_5 \text{GDP} + \beta_6 \text{URBAN LAND} +$$
$$\beta_7 \text{URBAN DENSITY} + \beta_8 \text{PRICE} + \beta_9 \text{INCOME} + + \beta_{10} \text{TAXATION} + \beta_{11} \text{GINI} +$$
$$\beta_{12} \text{CONSTRUCTION} + \beta_{13} \text{PER-CAPITA TAKINGS} + \varepsilon$$

Variables are as defined previously, with the following new or updated measures:

GRADE = 0 for F, 1 for D, 2 for C, 3 for B and 4 for A

TEL = 1 if the state had enacted a tax and expenditure limit by 2005, 0 otherwise

GOVERNOR = 1 if Democrats occupied the statehouse in 2006, 0 otherwise

LEGISLATURE = 1 if Democrats held an average majority of seats in both legislative houses in 2006, 0 otherwise

GDP = The ratio of 2005 to 1995 state GDP

PRICE = Median home prices in 2005

[22] See Gujarati (2003, pp. 764-766) for a discussion of the distinction between simultaneous and recursive models in economics.

INCOME = Per-capita disposable income in 2005

GINI = the 2004 Gini coefficient for each state

CONSTRUCTION = per-capita construction spending in 2004

PER-CAPITA TAKINGS = private redevelopment takings during the 1998-2002 period, divided by state population in 2000

4.2. Empirical Results

Table 4 presents descriptive statistics for the new and updated variables, and Table 5 shows the results of our ordered logit model for GRADE. The coefficients estimate the change in the ordered log-odds of receiving a higher Castle Coalition grade, given changes in the independent variables. The results confirm earlier findings that tax and expenditure limits, and the strength of the construction lobby, affected states' responses to the *Kelo* decision in the predicted way. Other things equal, having a tax and expenditure limit raises the ordered log-odds of receiving a lower Castle Coalition grade. This result is robust to changes in specification, and is consistent with the hypothesis that fiscally constrained states find eminent domain an attractive alternative and hence were reluctant to impose tough limits on its use. The relationship between CONSTRUCTION and GRADE is also significant and robust across specifications. The positive coefficient on CONSTRUCTION suggests that state legislatures are sensitive to the interests of residential land users in their competition with commercial interests for control over the limited supply of land. Boosting the size of the residential construction industry by one-tenth, from an average of $977 per-capita in annual construction put in place to $1,075, boosts a state's logged-odds of a higher Castle Coalition score by at least 0.30.

Other factors found to be important in previous research do not quite measure up in our model. Variables quantifying the partisan makeup of state government, economic growth, and

income inequality all fail to pass the threshold of statistical significance. The TAXATION variable appears weakly significant (at the 10% level) but only after other insignificant variables were dropped from the specification (model 3), suggesting that ideology may have played more of a role than partisan politics in the states' reaction to the *Kelo* decision. Specifically, a 10% increase in TAXATION (indicating that taxes and revenues represent a *smaller* share of state GDP) is associated with increased log-odds of a higher GRADE of 0.4. Thus, as one might expect, and consistent with the findings for TEL, states that are averse to large government are similarly intolerant of sweeping powers of eminent domain, and have therefore sought to constrain them in the post-*Kelo* period.[23]

Contrary to Lopez, et al. (2009), our model finds that past takings help to discriminate among Castle Coalition grades. Other things equal, states with higher incidences of private takings during the 1998 to 2002 period enacted tighter restrictions on the use of such takings. Specifically, a doubling of pre-*Kelo* takings, from a mean of 8.2 per million residents to 16.4, raised the logged-odds of the next highest letter grade by 0.38 in Model 3. This result, though modest compared with other variables, and significant at the 5% level, nevertheless hints at a backlash against pre-*Kelo* private takings.

Except for PRICE, the other variables from our TAKINGS regression showed little sign of having influenced legislatures' reaction to the *Kelo* decision. Closer inspection, however, suggests that multicollinearity among the PRICE, URBAN LAND, URBAN DENSITY and INCOME variables may be clouding the results. There are, of course, convincing theoretical reasons to expect these variables to be collinear as they are all separate manifestations of the underlying process of urbanization.[24] Thus, it could be that the GRADE regression is simply incapable of

[23] This result is consistent with the findings of Turnbull and Salvina (2009).
[24] See O'Sullivan (2007, Chapter 2) for an accessible discussion of the dynamics of urbanization.

isolating the separate influences of each of these variables, especially given the small sample size involved.

Multicollinearity can be addressed in a variety of ways, but forming a principal component of the suspected collinear variables allows us to retain them in the analysis and explore the extent of their possible influence over GRADE.[25] Principal component analysis is a way of reducing the redundancy of variables by creating a composite index that is a weighted sum of its constituent elements. Any set of variables will have as many principal components as it has variables, but typically only the first principal component is used, as it captures the greatest share of the variability in the data. In our case, the first principal component of PRICE, URBAN LAND, URBAN DENSITY and INCOME accounts for 58% of the variation among the four variables (more than twice the share of the next principal component) and varies positively with each constituent variable, as we would expect if it were reflecting an underlying influence such as urbanization. We thus label this composite variable URBANIZATION, and drop the separate urban variables from the regression analysis.

Despite the fact that URBANIZATION is a weighted sum of four separate variables, it is statistically significant at the 5% level in Model 2. And in Model 3, which drops insignificant variables, URBANIZATION's significance rises to the 1% level. The appendix shows how the separate influence of each component variable of the composite measure can be recovered.

Urban characteristics thus seem to play a discernable role in states' exercise of and willingness to restrict eminent domain powers. Since land ownership is relatively dispersed in urban areas, developers face substantial transaction costs as they attempt to assemble suitably-sized tracts of land. In urban states, where the holdout threat is greater, the opportunity cost of

[25] See Kennedy (2003) Chapter 11 for a discussion of multicollinearity and the use of principal components as a possible remedy.

placing restrictions on the use of eminent domain for private development takings is much higher than it is for rural states. That makes eminent domain a potential tool of development that urban states will be reluctant to surrender, which accounts for their higher reliance on redevelopment takings before *Kelo*, and what appears to be a more muted response to the Supreme Court's landmark decision, as reflected by lower Castle Coalition grades.

5. Conclusion

Few dispute the legitimacy of government's power to take private property for classic public goods, but passions flare when the taking is part of a large- scale, private economic redevelopment project. Proponents of strong governmental powers view development takings as essential for reinvigorating blighted inner cities. Property rights advocates, on the other hand, see such takings as nothing more than a forced transfer of property from one private party to another. The Supreme Court's 2005 ruling in *Kelo v. City of New London* provides a useful context for examining this debate.

Economic theory suggests that key to understanding the economic purpose served by the exercise of eminent domain powers lies in the distinction between ends and means. An "ends" focus concerns the use to which the land will be put, while a "means" perspective concerns the manner by which the land will be acquired. Whereas a literal reading of the Fifth Amendment Takings Clause suggests that eminent domain should be limited to the provision of public goods (according to the ends approach), economic theory reveals that it might better be justified as a way to overcome the market failure associated with holdouts (according to the means approach), regardless of whether the project in question is public or private.

Our empirical results suggest that means play a role in states' use of the power of eminent domain that has gone all but unnoticed in the literature. That is not to say that private redevelopment projects cannot serve a public-good function of jumpstarting economic development. Indeed, our results suggest that states with a history of sub-par growth have been more inclined to invoke the power of eminent domain for private development. But as our analysis also makes clear, states with larger urban footprints that are consequently more vulnerable to the threat of economic holdouts are significantly more likely, relative to their more rural neighbors, to employ eminent domain as a means of land assembly.

These same influences may also have conditioned states' legislative responses to the *Kelo* decision. Despite a shrill post-*Kelo* public outcry against private takings, which according to our analysis resonated more loudly in states that relied the most on such takings, more heavily urbanized states were less inclined to enact restrictions on the use of eminent domain for economic development purposes than were more rural jurisdictions.

Empirical evidence from states' experience with private development takings in the years preceding the *Kelo* decision and their legislative responses to that ruling thus point in the same direction. In areas of the country where urbanization can make the assembly of land for purposes of economic development prohibitively costly, eminent domain appears to serve the important instrumental function of helping mitigate one of these costs, namely, the problem of economic holdouts.

Appendix

A little arithmetic allows us to recover the influence on GRADE of each component variable in the URBANIZATION composite measure. Since

$$\text{URBANIZATION} = \gamma_1((x_1 - \mu_{x1})/\sigma_{x1}) + \ldots + \gamma_4((x_4 - \mu_{x4})/\sigma_{x4})$$

where the expressions inside the brackets are simply the standardized PRICE (x_1), URBAN LAND (x_2), URBAN DENSITY (x_3) and INCOME (x_4) variables, and the γ 's are the so called principal component "loadings" or weights, then the "quasi-coefficient" for each component variable is simply

$$b_{\text{URBANIZATION}}(\gamma_n)/\ \sigma_{xn}$$

or the coefficient estimate on URBANIZATION times the ratio of each variable's principal component loading to its standard deviation. These results appear in Model 4 of Table 5.

The quasi-coefficients are not true coefficients in the regression sense. Regression coefficients carry a ceteris paribus interpretation: they show the response of the dependent variable to a change in a single independent variable holding other regressors constant. But a change in URBANIZATION can arise from a simultaneous change in any of the component variables so this ceteris paribus condition is violated. Nevertheless, the quasi coefficients can help give us a sense of the relative contribution of each URBANIZATION component to a change in GRADE.

Each component variable loads positively on the URBANIZATION composite measure, as one might expect, with PRICE and INCOME receiving weights of roughly 30%, and URBAN AREA and URBAN DENISTY about 20% apiece. And each quasi-coefficient is negative—a product of a positive loading and a negative regression coefficient on URBANIZATION. Urban states, with their larger prices, incomes, population densities and developed land areas, have more to lose by restricting the use of eminent domain, and that appears to be translating into lower Castle Coalition grades. INCOME has the greatest indirect impact on GRADE, a 10% increase in INCOME boosts the logged-odds of the next-lower letter grade by 0.3—three times the magnitude of the next-highest quasi-coefficient. The influences of PRICE and URBAN DENSITY are similar: 10% increases in either raises the logged-odds of the next-lower grade by 0.1. The link between URBAN AREA and GRADE is the smallest of the four.

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Table 1: Eminent Domain cases from January 1, 1998 to December 31, 2002

Type of Use	# obs.	Total	Range	Mean	Median
Filed private takings	50	3,720	0 – 2,517	74	5
Threatened private takings	45	6,560	0 – 2,055	146	12
Development projects	50	222	0 - 23	4	3
All takings	22	46,046	7 – 14,319	2,093	954

Source: Berliner (2003).

Table 2: Descriptive statistics for OLS estimation

Variable Name	# obs.	Mean	Median	Std. Dev.	Min	Max
TAKINGS	50	74	5	356	0	2517
POPULATION	50	5,632,004	4,036,114	6,205,953	493,963	33,998,767
URBAN LAND *(percent)*	50	6.62	3.03	9.77	0.05	37.59
URBAN DENSITY *(per sq.mi.)*	50	2,198	2,189	642	1,306	4,215
PRICE	50	118,488	109,750	39,819	70,700	272,700
INCOME	50	24,963	24,800	3,188	19,491	33,837
GSP	50	142.48	138.40	22.06	84.74	195.37
TAXATION	50	6.99	7.09	0.79	5.10	8.80
TEL	50	0.54	1	-	0	1
PRESIDENT	50	0.40	0	-	0	1
GOVERNOR	50	0.36	0	-	0	1
LEGISLATURE	50	0.46	0	-	0	1
CRIME	50	3.56	3.65	0.82	2.15	5.30
CORRUPTION	50	3.98	3.72	2.10	0.79	9.19
RACE	50	0.63	0.64	0.16	0.27	0.93
GINI	50	0.45	0.45	0.02	0.40	0.51

These descriptive statistics are for the normal variable values. The variable TAKINGS represents the number of private takings prior to the Kelo case (i.e., from January 1, 1998 to December 31, 2002. The variable POPULATION represents the 2000 population estimates from the Census Bureau. URBAN DENSITY (i.e., urban population divided by urban land) and URBAN LAND (i.e., urban land divided by total land area) variables are estimates from demographia.com based on 2000 data from the Census Bureau. GSP and INCOME refer to, respectively, the ratio of 2000 to 1990 state GSP and per-capita, disposal personal income in 2000 from the Bureau of Economic Analysis. Median house prices (PRICE) in 2000 are from the Census Bureau. Taxation is the average "Takings and Discriminatory Taxation" subcomponent of the Fraser Institute's Economic Freedom Index for 1998 to 2002 and in the , and TEL, from the Rockefeller Institute, is 1 if the state had enacted a tax and expenditure limit by 1998, 0 otherwise. The explanatory political variables (PRESIDENT, GOVERNOR, LEGISLATURE) relate to the 2000 presidential election, and the governor's political affiliation and party control of the state legislature that same year. The data come from the Federal Election Commission, National Governor's Association, and National Conference of State Legislatures, respectively. These variables take the value of 1 if affiliated to the Democratic Party and 0 if Republican. CRIME, from the FBI, measures indexed property crime rates in 2000, CORRUPTION, from Glaeser and Saks, isthe annual federal convictions of state and local public officials between 1976 and 2002. RACE is a Herfindahl index, calculated from Census data, of racial concentration in 2000 and GINI, from Census, is the 2000 Gini coefficient for each state.

Table 3: OLS estimation of filed eminent-domain cases for economic development (TAKINGS) from January 1, 1998 to December 31, 2002

Dependent variable: TAKINGS	Model 1	Model 2	Model 3	Model 4
POPULATION	1.0907***	1.0608***	1.0450***	0.9668***
	(3.23)	*(4.08)*	*(3.87)*	*(4.46)*
URBAN LAND	0.1747	0.2180*	0.1906*	0.2327**
	(1.48)	*(1.73)*	*(1.73)*	*(2.18)*
URBAN DENSITY	1.2701	1.0385	1.9746**	1.8014**
	(1.23)	*(1.13)*	*(2.29)*	*(3.41)*
PRICE	-1.3153	-1.4523*	-1.4762	-2.1279**
	(1.09)	*(1.98)*	*(1.34)*	*(2.27)*
INCOME	4.0325	4.0172	3.5668	3.9314**
	(1.23)	*(1.67)*	*(1.65)*	*(2.28)*
GSP	-2.8897*	-2.8866**	-2.7939*	-2.8284***
	(1.77)	*(2.41)*	*(2.01)*	*(2.73)*
TAXATION	-1.3009	-1.3945		
	(0.47)	*(0.59)*		
TEL[(a)]	0.0715	0.1365		
	(0.14)	*(0.32)*		
PRESIDENT[(a)]	-0.0101	0.0101		
	(0.01)	*(0.01)*		
GOVERNOR[(a)]	-0.5742	-0.6121		
	(1.14)	*(1.27)*		
LEGISLATURE[(a)]	-0.1923	-0.3232		
	(0.40)	*(0.70)*		
CRIME	0.6146		0.5099	
	(0.42)		*(0.46)*	
CORRUPTION	0.2356		0.3336	
	(0.46)		*(0.78)*	
RACE	1.0965		1.3513	
	(1.13)		*(1.49)*	
GINI	1.6145		1.6984	
	(0.38)		*(0.47)*	
constant	-41.7356*	-37.5294*	-42.9142**	-39.6898***
	(2.02)	*(2.02)*	*(2.69)*	*(2.95)*
# observations	*50*	*50*	*50*	*50*
Adj R-squared	*0.4489*	*0.4982*	*0.5054*	*0.5339*

The dependent variable (TAKINGS) is the log of the number of filed private takings in each state for the 5-year period from January 1, 1998 to December 31, 2002. The independent variables are also in their log forms, except for the political variables, identified by the superscript [(a)]. These variables take the value of 1 if Democratic and 0 if Republican, except for TEL where 1 indicates the adoption of taxation and expenditure limits. The absolute values of the coefficient estimates' t-statistics are in parentheses. Regression coefficients with the superscripts ***, **, and * are statistically significant (using White standard errors) at 1%, 5%, and 10%, respectively.

Table 4: Additional descriptive statistics for logit estimation

Variable Name	# obs.	Mean	Median	Std. Dev.	Min	Max
GRADE	50	1.9	2.0	1.30	0.0	4.0
TEL	50	0.6	1.0	0.49	0.0	1.0
GOVERNOR	50	0.44	0.0	0.50	0.0	1.0
LEGISLATURE	50	0.48	0.0	0.50	0.0	1.0
GSP	50	169.88	164.50	17.46	145.57	229.54
CONSTRUCTION	50	977.24	820.17	478.64	337.67	2,355.48
GINI	50	0.45	0.45	0.02	0.40	0.51
PRICE	50	177,234	148,400	90,579	82,700	477,700
INCOME	50	30,503	29,789	3,714	24,249	40,689
PER-CAPITA TAKINGS	50	8.18E-06	1.55E-06	2.95E-05	1.12E-07	2.04E-04
URBANIZATION	50	0	-0.38	1.53	-2.54	3.21

These descriptive statistics are for the normal variable values. Grade is the Castle Coalition grade score, where F = 0, D = 1, C = 2, B = 3, and A = 4. Construction, the per-capita dollar value of residential construction put in place in 2004, is from Census. Per-capita Takings, are 1998 – 2002 Castle Coalition private takings totals divided by state population in 2000. Urbanization is the first principal component of four separate variables (see appendix). The remaining variables come from the same sources identified in Table 2, but are updated to new values. TEL, GSP, Price, and Income are updated to 2005 values, Governor and Legislature to 2006.

Table 5: Logit estimation of Castle Coalition grades (GRADE)

Dependent variable: GRADE	Model 1	Model 2	Model 3	Model 4
TEL[(a)]	-2.2025**	-1.9150***	-1.6946**	-1.6946
	(2.29)	*(2.61)*	*(2.40)*	
GOVERNOR[(a)]	0.8202	0.7095		
	(1.29)	*(1.21)*		
LEGISLATURE[(a)]	0.2118	-0.5191		
	(0.21)	*(0.72)*		
GSP	-4.6041	-0.0299		
	(0.67)	*(0.01)*		
CONSTRUCTION	4.5601***	3.2872**	3.3703***	3.3703
	(3.03)	*(2.35)*	*(3.90)*	
TAXATION	4.4291	3.5342	4.3761*	4.3761
	(1.06)	*(1.03)*	*(1.83)*	
GINI	-6.4056	-1.9523		
	(1.06)	*(-0.40)*		
PRICE	-3.7089**			-1.0344
	(-2.25)			
INCOME	1.6753			-3.1673
	(1.21)			
URBAN DENSITY	2.3472			-0.9578
	(0.41)			
URBAN AREA	-0.0279			-0.1545
	(0.13)			
PER-CAPITA TAKINGS	0.2318	0.2940	0.3833**	0.3833
	(1.01)	*(1.60)*	*(2.03)*	
URBANIZATION		-0.5526**	-0.6656***	
		(2.27)	*(3.14)*	
LIMIT D	-5.1988	0.3913	-0.4487	-0.4487
LIMIT C	-2.3816	2.9074	1.9212	1.9212
LIMIT B	-1.5302	3.6808	2.6509	2.6509
LIMIT A	1.1245	6.2371	5.0703	5.0703
# observations	*50*	*50*	*50*	*50*
Pseudo R-squared	*0.2663*	*0.2276*	*0.2040*	*0.2040*

The dependent variable (GRADE) is the Castle Coalition grade issued to each state. The independent variables are also in their log forms, except for URBANIZATION, which is the first principal component of the logged values of PRICE, INCOME, URBAN DENSITY, and URBAN AREA, and for the political variables, identified by the superscript [(a)]. These variables take the value of 1 if Democratic and 0 if Republican, except for TEL where 1 indicates the adoption of taxation and expenditure limits. The absolute values of the coefficient estimates' z-statistics are in parentheses. Regression coefficients with the superscripts ***, **, and * are statistically significant (using Huber/White robust covariances) at 1%, 5%, and 10%, respectively. Model 4 is identical to Model 3, but lists the quasi-coefficient values for the component variables in URBANIZATION (see appendix).