

Judicial deference and the efficiency of the common law

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I. Introduction

Economists and legal scholars in the law-and-economics tradition have long been occupied with the question of whether, and the extent to which, the common law is efficient. There have been two main approaches taken in the scholarly literature. One approach has been to focus on judges, who are modeled having various motivations including, but not necessarily confined to, concern for efficient allocation of resources.¹ However, to the extent they are concerned with efficiency, this attitude will be reflected in their opinions.² This argument has been subject to criticism by scholars on various grounds, including questioning the assumption that judges are principally interested in promoting efficient resource use, at the expense of other arguments in their utility function such as ideology, fairness, and professional reputation and status.³

The other main approach has been to model the common law in an evolutionary way, by focusing on the impacts of selective litigation behavior on the content of the law. The basic argument here has two components. One is that inefficient rulings tend to be litigated more frequently and thus, are more likely to be overturned.⁴ The other is that beneficiaries of efficient rulings have more incentive to invest in litigation than beneficiaries of inefficient rulings.⁵ Thus, over time there are tendencies in the common law toward efficiency.⁶ A number of scholars have, however, questioned how strongly this theoretical prediction is borne out empirically, especially when you take into consideration other features of the legal process, such as precedent and asymmetric information. Some have concluded that the effect, if there is any, is weak.⁷ Generally speaking, there are good reasons to question both of these approaches, in terms of explanatory and predictive power.

A serious shortcoming of both of these approaches is that they tend to ignore other institutional influences on judges that may have important efficiency implications. Key among these is statutory law. In the U.S. legal system, statutory law and common law are highly interdependent, with the legislatures and courts comprising both complementary and substitute sources of legal rules. This fact has been, of course, recognized by legal scholars, who have explored this interaction in a variety of areas of the law, including economic regulation, administrative law, and strategic rent-seeking by organized interest groups. Economists have not explored the implications of the relationship between legislatures and courts regarding the efficiency of the common law, despite good reasons to believe that this relationship may be important.

In this paper, I explore the implications of a factor heretofore largely unconsidered in the literature on the efficiency of common law: judicial review of legislative enactments. The basic idea here is a simple one: under modern theories of public choice, there is commonly little reason to believe that legislative actions will result in efficient resource allocation. However, in many areas of the law, there exists a powerful norm that judges should be largely deferential to legislative enactments. If judges tend to defer to legislatures, they will then tend to uphold inefficient statutes. To the extent that this happens, the common law will itself reflect those inefficiencies. I will return to this point below in Section III.

To be clear, a large number of studies examine judicial review of statutes.⁸ Those that follow the public choice approach commonly argue that judicial review may be justified as a means of correcting undesirable political outcomes. However, these studies have generally focused on the implications for improving political outcomes, with the courts behaving as a corrective force. They have generally not focused on the implications for the efficiency of the

common law itself.⁹ But judicial review is a two-way street: the more the courts defer to statutes, the more similar are the outcomes of common law and statutory law in terms of efficiency. Conversely, the less courts defer to statutes (that is, the more they engage in judicial activism), the more they will differ. Whether the common law will be more or less efficient than statutory law is a separate question, which will be addressed further below.

The remainder of this paper develops these ideas at greater length. In the next section, I briefly review the scholarly literature on the efficiency of the common law. Then, in section III, I develop a model of legislative-judicial interaction, in which courts can engage in either judicial deference or judicial review regarding legislatures who are either naïve or sophisticated in their expectations regarding judicial review. The key result here is that judicial deference has important implications for the efficiency of the common law. In section IV, I examine the implications of the model for how to interpret the long-term history of judicial review of legislation in the United States. Section V discusses judicial review within the context of a particular policy example that has been of much interest to economists: occupational licensing. Section VI examines judicial review of occupational licensing in U.S. history, with a special focus on the Progressive Era. This was a crucial formative period during which there was a dramatic expansion of occupational licensing statutes, both across different states and applied to a wide range of occupations. Section VII reports the results of an econometric analysis that assesses the efficiency of the common law regarding occupational licensing during the Progressive Era. Section VIII concludes.

II. What do we know about the efficiency of the common law?

The notion that the common law exhibits a distinct and persistent economic logic has been foundational to the field of law and economics. A stronger version of this notion is the

influential one that the common law tends to economic efficiency, a view that has been vigorously championed by Richard Posner.¹⁰ The idea that the common law is efficient, or at least has strong tendencies in this direction, has prompted many economists to ask the existential question: Why should we expect the common law to be efficient?

This has not been an easy question for economists to answer. Posner's original answer – that judges prefer efficient outcomes – seems unsatisfying to economists accustomed to models of rational, self-interested economic behavior.¹¹ It is unclear what benefits Posnerian judges are obtaining for themselves when they hand down rulings, especially because the legal system provides no mechanism to tie rulings to personal rewards. Indeed, the judicial system has a number of features that are designed to insulate judges from economic incentives to rule in certain ways, like lifetime tenure (in some cases) and conflict of interest rules. These facts seem to leave room for judges to indulge their own preferences for certain other goals that may have little to do with efficiency, like fairness, political ideology, and interest in servicing various other social goals. Subsequent economic attempts to model judges have done so by expanding the arguments in their objective function, adding things like: interest in reputation, prestige, influence within the legal profession, professional advancement, and the costs of producing rulings.¹² However, it remains unclear why efficient common law should result when judges may value efficiency only in part and are provided little incentive to rule efficiently.

Dissatisfied with models that rely on judges to drive the common law to efficiency, other economists have pursued a different approach based upon the idea that selective litigation causes the common law to evolve over time toward efficiency. The basic idea of this approach is that inefficient rules tend to impose greater costs on parties to disputes than do efficient rules. As a result, parties tend to litigate more when rules are inefficient than when they are efficient. Over

time, this can lead to increasingly efficient rules.¹³ Others have added the complementary insight that beneficiaries of efficient rulings have more incentive to invest in litigation than do beneficiaries of inefficient rulings.¹⁴

Subsequent studies have built on these basic insights to explore how the efficiency of the common law is influenced by precedent, various procedural rules, and asymmetric information.¹⁵ Some recent studies have explicitly combined the two approaches, attempting to meld models of judges holding various preferences with evolutionary models of the common law. Thomas Miceli, for example, has shown that when judges may be biased, the tendency of the common law to evolve toward efficiency depends upon the strength of this bias relative to the tendency of selective litigation to improve common law efficiency.¹⁶ Keith Hylton has shown that even without judge bias, common law efficiency may not occur if either plaintiffs or defendants are better-informed.¹⁷ The consensus of the recent studies is that there is no necessary general presumption that the common law will approach efficiency.

Regardless of which approach has been taken, virtually all existing studies of common law efficiency view the evolution of the common law as being governed exclusively by the actions of the key players in the legal process: judges, and litigants. Befitting the economic approach, the factors modeled as driving the process have to do with the incentives, information set, preferences, and attitudes of judges and litigants, and the constraints under which they operate. Conspicuously lacking in the literature on common law efficiency has been consideration of the effect of other law-making institutions, notably, legislatures. This is not to claim that economists have ignored the relationship between courts and legislatures. There is indeed a sizable literature on many aspects of this relationship, including the impact of judicial review on policy-making, both in the legislatures and in administrative agencies¹⁸; the impact of legislative

actions on the content of judicial decision-making¹⁹; and forum-shopping by interest groups.²⁰ However, the relationship between statutory law and court rulings has almost entirely failed to penetrate the literature on the efficiency of the common law.

One key component of the relationship between legislatures and courts is the role of the courts in sometimes being called upon to rule on the constitutionality of legislative enactments in the area of public law. Judicial review of legislation is, of course, one of the central functions of the U.S. system of checks and balances.²¹ In many cases, especially ones that make it to the Supreme Court, there is a sizable interpretive grey area, which affords latitude to judges regarding whether to uphold or overturn a statute.²² When a court decides to uphold a statute – that is, when it takes a stance of *judicial deference* – it is taking the position that the statute is constitutionally legitimate. This means, in essence, that it is upholding the content of the statute and all of its economic ramifications, including its level of economic efficiency. This ruling then becomes part of the common law in the relevant area of public law: it becomes the court position on the issue and becomes precedent for future rulings. So if the legislative outcome is inefficient, or redistributive, this implies that the common law will be also.

On the other hand, when a court overturns a statute, it is again taking a position but now, it is a position different from that of the legislature. I will call this case *judicial activism*. Here, the position of the court is different from that of the legislature, which means that the economic content of the statute is not reflected in the common law. So if the statute is efficient, this implies that the court position will not be. If the statute is inefficient, that does not necessarily mean that the common law will be also. Here, it is possible that the common law will be efficient. Without further assumptions, it is not possible to tell whether it will be more or less

efficient than the reviewed statutory law. All of these implications for the relationship between statutory and common law will be developed shortly.

As will be discussed more in Section IV, one thing that is apparent from even a cursory examination of U.S. legal history is that the courts have varied widely in their propensity to engage in judicial review. At times, the courts have largely deferred to the legislatures while at other times, they have intervened assertively and, some would argue, excessively.²³ The famous 1905 case of *Lochner v. New York* is commonly viewed as a particularly egregious example of an overly interventionist court.²⁴ On the other hand, the 1984 case of *Chevron v. Natural Resources Defense Council* is viewed as setting a standard of judicial deference to decisions made by administrative agencies acting as agents of legislatures.²⁵ It is also the case that the tendency of the courts to defer to legislatures can vary systematically with the general subject matter.²⁶ One question, to be addressed in this paper, is how to interpret this history of judicial review in terms of what it means for the efficiency of the common law.

III. A model of judicial review and the efficiency of the common law

To understand the argument, consider a simple model of policy outcomes, which can be achieved either by statutes or court rulings. There is a single dimension of such outcomes, so that all policies may be represented as a point along a line. Denote a particular statute as A_L and a particular court ruling as A_C . Assume that there is an efficient policy, which we will call E .

The total surplus available to society is an amount V , which is a function of the policy chosen. V is maximized at point E (Figure 1). Assume that V is a monotonically declining function of the distance between E and any policy A :

$$dV/d(|E - A|) < 0 \tag{1}$$

Here, the amount of surplus is a declining function of the absolute value of the distance between E and any policy A. In any model of judicial-legislative interaction, there is always the question of expectations: whether the actors recognize their relationship and build that interaction into their behavior. In my model, courts are assumed to behave non-strategically. This means that they service their preferences by simply choosing an ideal position; that is, one that maximizes their utility net of costs, based on whatever arguments are contained in their objective functions. This assumption allows for the policy preferences of judges to be given expression, in their choice of ideal position. At the same time, it is consistent with a system where judges are the final arbiter of constitutionality, which largely obviates the need for them to behave strategically.

Legislators, on the other hand, may well have incentive to behave strategically. Here, I will focus on two cases, where legislators are either naïve, or sophisticated, in their interactions with the courts. The main difference between the two cases is whether legislators anticipate, and potentially respond to, the prospect of judicial review *ex ante* in terms of the statutes they consider enacting.

A. Naïve legislators

Let us begin by assuming that legislators do not interact with the courts in any sort of sophisticated way. This dynamic will be captured by the assumption that legislators simply select their preferred policy, a decision that is not conditional upon any anticipated court response. Equivalently, this case corresponds analytically to a situation where either there is no (or completely ineffective) judicial review, so that the legislature's perceived probability of being reviewed or overturned is zero. This assumption will be relaxed later by assuming that the legislative policy is endogenous to the court's position.

Assume first a situation where the courts always defer to the legislatures, what we will call judicial deference, or JD. In our model, this implies immediately that the court's position is the same as that of the legislature, or $A_L = A^{JD}_C$ (see Figure 1). If so, the total level of societal surplus will be the same. This implies immediately that if the legislative outcome is efficient, so too will be the court ruling that defers to it ($A^{Eff}_L = A^{Eff}_C = E$). Conversely, any inefficiency in the legislative outcome will be immediately reflected in the court ruling. ($A_L = A^{JD}_C \neq E$).

Now consider a court stance of judicial review, or JR. This implies immediately that $A_L \neq A_C$. In Figure 1, for example, $A^{JR}_C \neq A_L$. In this case, the efficiency of the legislation will not equal that of the courts. One immediate conclusion is that if the legislative outcome is efficient, the court's position will not be. One would not expect this to happen, however, if one believes, as many scholars do, that courts tend to be more efficient than legislatures.

The more interesting, and perhaps more empirically relevant, case is where the legislative outcome is inefficient, so that social surplus is not maximized ($A_L \neq E$). It follows immediately that strategy JD, in which the courts always accede to the legislature, is always inefficient. However, the strategy JR may be either efficient or inefficient, depending upon the relationship of A_C to both A_L and E . The best case scenario for JR is where $A_C = A^{Eff}_C = E$, in which case JR is efficient (Figure 1). In all other cases, JR will be inefficient, in which case the interesting question is whether surplus will be greater under A_C or A_L : that is, whether JR is more or less efficient than JD. For the purposes of this discussion, assume that $A_L < E$. Here, there are two main cases of interest, both of which involve the courts moving towards the efficient outcome E :

(1) $A_L < E, E > A_C > A_L$: In this case, JR is more efficient than JD. This case is shown in Figure 1, where $A_L < A^{JR}_C < E$. Here, the courts intervene in such a way as to reduce the

distance to the efficient policy E. In this case social surplus will be greater if the courts intervene.

(2) $A_L < E, A_C > E > A_L$: In this case, it is unclear whether JD is more or less efficient than JR. If the distance between A_L and A_C is sufficiently small, then JD should be more efficient than JA because the distance to E should shrink. However, it is possible that the level of judicial review will be intrusive enough that JD will be less efficient. This would happen if the courts overshoot the mark by enough that surplus V actually goes down. It should be clear that any sufficiently aggressive judicial policy – that is, greater than B – will be efficiency-reducing. In Figure 1, such a policy is shown as A^{ineff}_C . How much you worry about this possibility depends upon how you feel about the relative efficiency of the common law vs. statutory law. In particular, if you believe the common law is more efficient, it should be obvious that the courts will never choose outcomes greater than B. In this case, judicial activism should be efficiency-enhancing.²⁷

B. Sophisticated legislators

In this case, legislators are aware of the possibility that the courts may review, and possibly overturn, their preferred legislation. For simplicity, I will assume that their expectation is that the court's decision is binding, without the possibility of appeal. I will also assume that they know with certainty the court's preferred position, but they operate under some uncertainty regarding the likelihood that the court will enforce it.²⁸ This uncertainty is captured by the parameter P, defined as the probability the court will not step in to enforce its preferred position, in which case the chosen policy of the legislature will stand. P is assumed to be an increasing function of the distance between A_L and A_C :

$$dP/d(|A_L - A_C|) > 0 \quad (2)$$

That is, the greater is the difference between the policy of the legislature and the preferred policy of the court, the greater is the likelihood that the court will intervene to overturn the legislative policy.

Under these assumptions, the value function of the legislature may be expressed as:

$$V_L = P(A_L - A_C) V_L(A_C^*) + [1 - P(A_L - A_C)] V_L(A_L^*) \quad (3)$$

In words, equation (3) says that the legislature's expected value from legislation is a probability-weighted function of the value it derives from its ideal legislation and that preferred by the courts. Assuming the standard conditions for differentiability, we may differentiate with respect to A_L and derive the following first-order condition:

$$P [V_L (A_C^*) - V_L (A_L^*)] + (1 - P) dV_L/dA_L^* = 0 \quad (4)$$

Two conclusions follow directly from equation (4). First, under strategy JD (judicial deference), the legislature will choose its preferred legislation. This follows because in this case, $P = 0$ and equation (4) then implies that $dV_L/dA_L^* = 0$. Assuming that the legislature chooses inefficient legislation, this implies that the judge's ruling will also be inefficient. So even with sophisticated legislators, the common law is predicted to be inefficient if the courts defer to the legislature.

Second, under strategy JR (judicial review), the legislature will not choose its preferred position. This follows from (4) because in this case, $0 < P < 1$. Assuming that $[V_L (A_C^*) - V_L (A_L^*)] < 0$ (that is, that the legislature prefers its preferred position to that of the courts), it is easy to show that $dV/dA_L^* > 0$. Assuming differentiability of the value function V , this implies that there is some other A_L that would yield greater value to the legislature. In the extreme case where $P = 1$ (the court always intervenes, an extreme form of judicial review), the legislature simply chooses the court's preferred position, which follows from the fact that $[V_L (A_C^*) - V_L$

$(A_L^*)] = 0$. In this case, the efficiency of the common law depends upon the ability of the courts to choose the efficient position, which may or may not occur under either evolutionary theories of the common law or ones based on judicial preferences.

One important question is whether one would expect judicial review to be more efficient than judicial deference. The answer to this question does not depend upon the courts' ability to choose the efficient outcome, which is informationally quite demanding, even if courts value efficiency highly in their objective function. Rather, given these informational challenges, the question is: Are the courts likely to move in the "right" direction? If legislatures are sophisticated, this discussion suggests that the answer is yes. If courts are more efficient than legislatures, the specter of judicial review may be sufficient to pull legislatures toward more efficient positions, even if the court does not know where those efficient positions are. That is, when legislatures are sophisticated, the courts may have influence over their choice of policy simply by having an interventionist reputation. And the more strongly it can signal that it will intervene, the more influence it will have.

What does all of this imply about the efficiency of the common law? First, if you believe that statutory law is inefficient, a general stance of judicial deference implies that the common law will also be inefficient. This conclusion follows directly from the fact that its outcomes then match those of statutory law. Thus, in principle judicial deference can make the common law inefficient, and the more inefficient is statutory law, the more inefficient common law will be as well. Thus, in this view the efficiency of the common law does not only depend upon the relative stakes of litigants, which drives evolutionary theories of the law.²⁹ Nor does it necessarily depend upon the preferences of judges for various objectives, only one of which may

be efficiency. If, for whatever reason, judges defer to legislatures, their rulings will reflect whatever inefficiencies exist in the statutes enacted by those legislatures.

Why might judges adopt a position of deferring to legislatures? Importantly, in U.S. political thought there is a deep-seated tradition, originating in the revolutionary era, that courts should be reticent about overturning statutes because those statutes were designed by duly-elected representatives of the people. Under this view, judicial deference is about honoring the will of the people, or what is sometimes referred to as *majoritarianism*. Tendencies to majoritarian attitudes vary across judges, but at times, they can appear quite strongly and make themselves clearly felt in court doctrine.³⁰ Reinforcing a majoritarianist attitude is the belief among some judges that overturning statutes may constitute substituting their own personal preferences and values for those of the majority. Though controversial, such attitudes appear to exert strong influence on the thinking of many judges.³¹

A corollary to this argument is that the desirability of judicial deference on efficiency grounds may vary depending upon political conditions and in particular, upon various factors identified by public choice theory that determine political outcomes. A key factor emphasized in the literature is the political dominance of interest groups in the legislative process. If political dominance tends to lead to more inefficient legislative outcomes, this implies that judicial deference will also be more inefficient under those circumstances. This implies that factors that affect whether interest groups dominate might matter as well, including the distribution of costs and benefits from a particular statute; factors such as interest group heterogeneity, which affect political transaction costs; and structural elements of legislatures, such as committee assignments and oversight.³²

IV. *Judicial deference over U.S. history*

It is, of course, well known to legal scholars that the emphasis on judicial deference has evolved over time as a practice of the courts. In the United States, judicial deference emerged from the revolutionary era based on the Jeffersonian notion that the primary responsibility for interpreting the Constitution should be in the hands of the people, and not the courts.³³ Practically speaking, this meant that the courts should defer to the legislature, which was composed of duly-elected representatives of the people, and who therefore were serving their will. The early years of the Republic witnessed strong disagreements between two main factions – the Jeffersonian Republicans and the Federalists – with the latter firmly opposed to placing too much political power in the hands of the people and therefore, leery of excessive legislative power. However, the collapse of the Federalist Party, especially after the War of 1812, confirmed the primacy of the Jeffersonian conception of judicial deference.

Since this early period, we have observed, over the past roughly two hundred years, a cycling back-and-forth between periods of judicial deference and judicial review. During the early 19th century, the courts appear to have largely deferred to legislatures. However, judicial review ascended in the wake of Reconstruction through the Progressive Era, arguably fell after 1905 with the famous *Lochner* ruling, and then rose again in the 1950's with the increased prominence of social issues such as abortion and civil rights.³⁴ Finally, the increase in judicial activism beginning in the 1950's spurred a sharp conservative response beginning in the Reagan years, and we currently appear to be in a period of strong tension between the two impulses.³⁵

If indeed judicial deference and judicial review have cycled back and forth over the years, our argument has certain implications for the efficiency of the common law. First, consider our result that during periods of judicial deference, the common law in specific areas of

the law is predicted to be efficient only if the relevant statutory law is efficient. The question is then: During the periods of judicial deference, how efficient is statutory law? The answer seems to be that this has changed over time. During the 19th century, there is evidence that statutory law was relatively efficient and certainly more efficient than it is now. In the area of property law, for example, fee simple land titles were generally mandated by legislative statute.³⁶ Paul Rubin has argued that its earlier (relative) efficiency may be due to structural factors such as high organization costs, which militated against repeat litigation involving organized interest groups, especially ones with long-term interests in the outcome of litigated cases.³⁷ However, in the 21st century there are many examples of arguably inefficient statutes, such as laws governing zoning, occupational licensing, rent control, and minimum wages. This shift is consistent with increasing interest group influence over time. And if so, it may be that judicial deference used to support efficient outcomes much more than it does now.

What can we say about the periods where the courts were more active, in terms of judicial review? The model suggests that such a stance is more justified on efficiency grounds when statutes are expected to be inefficient. In this sense, judicial review makes more sense now than it did during the 19th century, if you believe that statutes have become increasingly inefficient over time. This is consistent with the position of the many scholars who have supported judicial review to counter current interest group influence. Notice, however, that the reason is quite different from the standard story. Judicial review is justified not to make statutory law more efficient but potentially, to make common law less inefficient. But the model suggests that whether judicial review is actually preferred on efficiency grounds ultimately comes down to whether courts generally make more efficient decisions than legislatures do. Those less sanguine

about the courts in this way may then view the late-20th century increase in judicial review as reflecting an efficiency-equity tradeoff.

V. *An extended example: Judicial review of occupational licensing*

In this section, I take a closer look at judicial-legislative interactions concerning one particular species of economic legislation: occupational licensing. This is an apt focus of study here for several reasons. First, occupational licensing is a widespread phenomenon, practiced in every state of the Union and covering dozens of occupations responsible for a significant amount of economic activity.³⁸ Second, ever since George Stigler advanced his famous interest theory of economic regulation, economists have been very interested in occupational licensing as a prime example of “regulation on behalf of the regulated.”³⁹ That literature has derived specific testable implications of the theory, which can be used to evaluate the desirability of judicial review.

Third, occupational licensing has historically involved certain constitutional issues, which courts have been called upon to weigh in on. Historically, there have been multiple possible constitutional bases for challenging occupational licensing statutes. One, applied early on by the courts, was the *Contract Clause*. As applied to the occupational licensing issue, the question was whether legislatures had the constitutional power to prevent people from making their own contracts (say, with their own dentist, or barber).⁴⁰ Another was the *Due Process* and *Equal Protection* Clauses, which formed the basis for a challenge to a statute licensing opticians in the leading case of *Williamson v. Lee Optical*.⁴¹ Recently, the question has arisen of whether occupational licensing statutes may be challenged on antitrust grounds.⁴² So far, the answer appears to be no.⁴³ We thus have a rich history of judicial review to provide evidence regarding the issue of common law efficiency.

Finally, occupational licensing has an extremely long history in the United States, dating back to colonial times, when lawyers and inn-keepers were licensed.⁴⁴ This long history enables us to observe changes in the application of judicial review over time. In section VI, I will return to the question of how judicial review of occupational licensing has changed over time, and the interpretive implications for economic efficiency.

The dominant economic theory of occupational licensing is that it facilitates the exercise of market power by practitioners in the regulated profession by restricting entry, impeding occupational mobility, and imposing restrictions on business practices. Under this view, it derives from and supports the interests of members of a profession in reducing competition for their services, and generally leads to reduced entry and increased earnings for those able to obtain a license. In other words, occupational licensing effectively serves to cartelize an occupation, affording practitioners the opportunity to obtain monopoly rents.

This cartel explanation is very different from a view that I will call the *good government* view, which argues that occupational licensing addresses a market failure that arises from a problem of asymmetric information in markets for many specialized services. It is often the case that sellers of these services are better informed than buyers are about the quality of those services. This can lead to a process of adverse selection in which lower quality services drive higher quality services from the market.⁴⁵ In this case, occupational licensing may serve the positive function of maintaining levels of quality in provision of the services, thus benefiting consumers.

Obviously, the cartel story and the good government story have very different efficiency implications. Under the cartel view, occupational licensing reduces societal welfare by reducing supply, reducing service quality, and raising costs to consumers. Under the good government

view, occupational licensing increases societal welfare by correcting a market failure. This implies, according to our model, that in order for the common law to be efficient, courts should defer to the legislature if the good government model correctly characterizes occupational licensing. If, however, the cartel model is the better characterization, then deference to the legislature implies the common law is inefficient.

A great deal of evidence from a large number of economic studies strongly supports the view that the cartel model better characterizes occupational licensing. The evidence suggests that entry is commonly blockaded into professions requiring occupational licensing, resulting in fewer suppliers, decreased occupational mobility, higher prices, and possibly adverse effects on quality. And the negative effects of occupational licensing can be quite large. For example, a recent study by Kleiner and Krueger found licensing to be associated with an average 18% increase in wages across a range of occupations. This wage effect was roughly comparable to the effect of unionization.⁴⁶

Considered from a public choice perspective, these numbers imply that the effective demand for occupational licensing among practitioners in the licensed occupation should be quite high. These sorts of arrangements confer large benefits on a concentrated, homogeneous constituency – practitioners in the licensed profession – who then have every reason to actively engage in rent-seeking. At the same time, the costs of occupational licensing are dispersed and small on a per capita basis to those bearing the costs – mostly consumers and blockaded practitioners. These groups are thus not only given relatively little incentive to provide political resistance, they are likely to experience much greater transaction costs in organizing to resist.

At the same time, the courts have largely been invisible in ruling on legislatively-mandated occupational licensing arrangements. One commentator observes that judicial

challenges to occupational licensing arrangements in the United States virtually disappeared by the late 1930s.⁴⁷ Edlin and Haw have recently described court rulings that overturn occupational licensing statutes as being “rare.”⁴⁸ Paul Spinden has also recently argued that courts have conferred “virtually unfettered discretion” on states when it comes to enacting licensing statutes.⁴⁹

The combination of high demand and absence of legal challenges has contributed to an explosion of occupational licensing activity in the United States. As of the year 2000, roughly 18% of all U.S. workers were directly affected by occupational licensing.⁵⁰ There is no reason to believe that this number has gone down since then. Indeed, when Kleiner and Krueger conducted a survey for their study in 2008, almost 29% of their respondents were licensed. Currently, the percentage might be closer to 33%.⁵¹ All of this implies not only that the common law, by largely deferring to state and local legislatures, is inefficient in how it treats occupational licensing, but that the economic consequences are likely quite large.

VI. Judicial review of occupational licensing over time

Some additional insights are gained by comparing the present situation to periods in the past, and here we can take advantage of the long history of occupational licensing in the United States. Occupational licensing in the U.S. has been around since colonial times, but until late in the 19th century, the practice was largely confined to the medical and legal professions.⁵² However, beginning in around 1890 – roughly the start of the Progressive Era – it began to be applied to a wide range of occupations in a number of different states. By the mid-20th century, the number of state occupational licensing statutes totaled over 1,200, governing more than seventy-five different occupations.⁵³

Here, I will focus on the Progressive Era, which was a key formative period in the development of occupational licensing in the United States.⁵⁴ There are two key questions.

First, how did the courts treat the explosion of occupational licensing statutes? And how do we interpret this response in terms of economic efficiency?

Let us begin with the question of economic efficiency. As we have seen, there are two components to answering this question: the efficiency of legislation, and the court response. Recent research suggests that occupational licensing during the Progressive Era may need to be interpreted differently than the consensus view of the economics profession regarding present-day occupational licensing [Law and Kim(2005)]. The Progressive Era was a period not merely of dramatic increases in occupational licensing statutes. It also witnessed the emergence of a number of new professional occupations, including teaching, engineering, dentistry, accounting, and many more. During this dynamic time period with many new and emerging occupations, problems of asymmetric information regarding the quality of practitioners were particularly acute. Occupational licensing may thus have had important welfare-enhancing properties by helping to solve the asymmetric information problem.⁵⁵ If so, on the whole it may have been more efficient during the Progressive Era than it appears to be now.

The question then becomes: What role did the courts play in reviewing these statutes? In particular, if there is validity to the finding that occupational licensing had welfare-enhancing qualities during the Progressive Era, a general court stance of judicial deference would have promoted efficiency, unlike a similar stance now. However, as we have seen, the consensus of the legal literature is that judicial review increased during the Progressive Era.⁵⁶ Regarding occupational licensing specifically, Lawrence Friedman suggests that the courts were quite active in reviewing, and overturning, occupational licensing statutes during the Progressive Era.⁵⁷ Friedman examined judicial review of occupational licensing statutes in a number of different states and for a wide range of occupations. These occupations included: architects, bakers,

barbers, dentists, embalmers, horseshoers, peddlers, plumbers, pharmacists, physicians, undertakers, veterinarians, and more. Friedman's main finding is that during this period, the courts were on the whole distinctly interventionist in overturning occupational licensing statutes.

Says Friedman:

*"[J]udicial self-restraint ... is so conspicuously lacking in the great constitutional cases and in a fair share of the occupational licensing cases. When all is said and done, the phenomenon which demands explanation is the activism of the courts of 1890 to 1910."*⁵⁸

In terms of our model, of course, all of this evidence does not speak well of the common law, in terms of economic efficiency. To the extent that occupational licensing promoted efficiency by addressing information asymmetries *per* Law and Kim, courts interested in promoting efficiency should have deferred to these statutes. Overall, for those interested in promoting efficiency, the courts seem to be getting things all wrong: overturning statutes when they seem to be promoting efficiency (back then), and deferring to statutes when they seem to be inefficient (now). What is going on here?

VII. *Empirical analysis of Progressive Era judicial review of occupational licensing*

A. *Data*

In order to provide further insight into the efficiency of judicial review, I have undertaken an empirical analysis of legal challenges to occupational licensing statutes brought in state supreme courts during the Progressive Era. This analysis is based on 647 cases brought in state (N = 633) and federal (N = 14) courts between 1885 and 1911 in which state or municipal occupational licensing statutes were challenged on various grounds.⁵⁹ This period essentially corresponds to the timeframe of Friedman's study, but is extended backwards by five years to include a large number of additional cases. The final dataset includes virtually all cases found in

a search of occupational licensing cases in Nexis-Uni. The cases cover seventeen different occupations in forty-three states and the District of Columbia.⁶⁰

The key empirical question is whether or not the propensity of the courts to sustain a challenge to an occupational licensing statute is systematically correlated with the efficiency of that statute. If the Progressive Era courts tended to uphold efficient statutes and to overturn inefficient statutes, then this provides suggestive evidence that the common law regarding occupational licensing during this period tended to efficiency.

The cases in our database are separated into two categories corresponding to whether or not a statute was challenged either on constitutional grounds or on some other basis. A challenge was considered constitutional if it was based on an article contained in either the federal constitution or the jurisdiction's state constitution. The most common federal constitutional grounds for challenging a statute was that it violated either the *Due Process* or *Equal Protection* clauses of the 14th amendment. Also providing grounds for challenge in a significant number of cases was the *Commerce Clause*, particularly for itinerant occupations like peddlers, liquor salesmen, and railroad ticket sellers. In only one case was a challenge brought on 1st amendment *Contract Clause* grounds. All of this is consistent with legal histories that tend to emphasize due process challenges to issues involving state regulation of property rights during this era.⁶¹

Typical grounds for challenging on state constitutional grounds tended to mirror grounds for federal constitutional challenges. This is because most state constitutions contained relevant clauses that were similar to clauses in the federal constitution, such as due process or equal protection. Other state constitutional grounds for challenge were that it constituted special legislation, embraced more than one subject, or involved improper delegation of authority to a licensing board.⁶² Finally, statutes could be, and were, challenged on a wide variety of technical

non-constitutional grounds. These included: improper awarding of costs, challenging a statute's definition of what constituted suitable training, transferability of a license from one county to the next, alleged animosity of licensing board, alleged favoritism of licensing board, appropriate jurisdiction for licensing fee, appropriate mode of payment, appropriate definition of an occupation, corporate status of practitioner, and whether existing practitioners are grandfathered in.⁶³

In the analysis, I distinguish between constitutional and non-constitutional cases because in theory, we might expect the effect of court rulings to differ in the data. Importantly, a ruling on constitutional grounds is generally a ruling on either upholding the statute or overturning it on some fundamental grounds. So, for example, if a court rules on constitutional grounds against a defendant charged with practicing dentistry without a license in defiance of a licensing statute, this is interpreted as deferring to the legislative body that enacted the statute. This implies that it is aligning its position with the statute and the efficiency of that statute. Thus, if the court is behaving efficiently, there should be a negative correlation between the efficiency of the statute and the probability of a court reversal.

A ruling on non-constitutional grounds, however, cannot be so easily interpreted. The non-constitutional grounds for a challenge were many and varied, and they often did not bear a clear relationship to the efficiency of the statute. For example, in one of the above cases, the legal question was whether a license was portable from one county to the next. In another case, the question was whether massage therapists should be treated as physicians. In both of these examples, it was a question of how the statute should be interpreted, not whether the statute itself was valid. Therefore, we have no clear expectation regarding the correlation for cases involving challenges brought on non-constitutional grounds. We will take a closer look at these non-

constitutional challenges below for further evidence on the efficiency of the court treatment of occupational licensing.

In order to implement my strategy, I require a way to distinguish efficient licensing statutes from inefficient ones. Toward this end, I divide up the occupations into two sub-categories, which I call *professional* and *non-professional*. Table 1 lists all occupations, the category they have been assigned to, and the number of cases in the sample involving each occupation. These categories reflect the distinction between traditional and emerging occupations, as well as increased specialization, during this dynamic time period. The categories are also intended to reflect the question of asymmetric information regarding practitioner quality, which was likely a bigger issue with the occupations listed as “professional.”⁶⁴ Table 1 indicates that the occupations most commonly subjected to challenge were physicians and peddlers, but all included occupations, except for optometrists, had at least six cases. Both professional(N = 323) and non-professional(N = 324) occupations are heavily represented.

There is suggestive evidence in the opinions that judges tended to invoke asymmetric information and occupational quality control more commonly when licensing statutes involved professional occupations. For example, in three of the seven cases involving veterinarians, the opinions explicitly invoked practitioner quality as a basis for upholding statutes, using language such as: “exclud(ing) the incompetent person from the practice,” “raising the standard of proficiency [for practicing veterinarians],” and “protection from fakirs(sic) and quacks.”⁶⁵ Similarly, the opinions in rulings involving pharmacists and dentists contain phrases like: “protection of the public from incompetent druggists,” “protect the public against the mistakes and ignorance of incompetent and unskilled persons,” and “protection of the public from impostors and incompetents.”⁶⁶ In some cases, the two possible economic interpretations were

even explicitly recognized by the courts. This occurred, for example, in the 1897 case of *State v. Call*, which involved a challenge to a North Carolina law licensing physicians. In *State*, the court characterized the statute as “an exercise of the police power for the protection of the public against incompetents and impostors, and it is in no sense the creation of a monopoly or special privileges.”⁶⁷

The above quotes, all of which pertain to what we are calling professional occupations, stand in stark contrast to the opinion in a 1908 case challenging a Mississippi statute licensing plumbers, which I classify as a non-professional occupation:

*“It is stealing its way into the statutes for the ostensible purpose of raising revenue for the state, when in truth and in fact the only purpose of the promoters of such legislation is to control the business to which it is directed, to shut out competition, create a monopoly, and force those unable to pay the tax and possessing a knowledge of the business to look to the ones in control of the monopoly for employment.”*⁶⁸

A more systematic look at the data reveals some suggestive patterns relating to the propensity for occupational licensing statutes to be overturned on constitutional grounds. Whereas 70 statutes involving non-professional occupations that were challenged on constitutional grounds were overturned, only eight involving professional occupations were similarly overturned. These numbers constitute 45% and 7% of the total challenges in each category respectively, indicating that in the raw data, the Progressive Era courts were significantly more reticent about overturning statutes involving professional occupations. Figure 2 reports the percentage of statutes overturned on constitutional grounds, by occupation. Again, the overall indication is that the courts were significantly less likely to overturn statutes involving professional occupations. All of this is consistent with courts tending to promote efficiency: to tend to uphold statutes that were more likely to address problems of asymmetric information rather than impose an occupational monopoly.

B. Did Progressive Era judges selectively review occupational licensing statutes?

For further evidence regarding the court treatment of these licensing statutes, we now turn to an econometric analysis of the court rulings. In this analysis, the dependent variable is the variable *Overtured*, which is a categorical variable that assumes a value of 1 when a practitioner successfully challenges a statute, and 0 otherwise.⁶⁹ The variable *Professional* is a categorical variable that assumes a value of 1 if the occupation is professional and 0 if the occupation is non-professional. In the analysis this variable is modeled as the treatment effect in determining the outcome *Overtured*. Our sampling strategy – selecting all cases in Nexis-uni with the key words “[occupation]” and “license” during the time period – is designed to avoid selection error. The resulting sample is not representative of all legal challenges to licensing statutes, as some cases would have been settled and not all litigated cases would have made it to the state Supreme Court. However, it is highly representative of all state Supreme Court rulings, which because of their precedential value would have been central to the issue of the efficiency of the common law.

One complicating factor concerns the legislative use of the police power, particularly with regard to public health issues. In general, during this period the courts were highly sympathetic to legislatures exercising the police power in order to promote the public good. A number of cases in our sample involved issues of public health, which the courts considered an important component of broad-based benefits to the public. Furthermore, evidence from the opinions suggests that even in cases decided on constitutional grounds, the presence of a compelling public health concern may have made the courts less likely to rule that a case was unconstitutional. For example, in the 1905 case of *State v. Brown*, an occupational licensing statute for dentists was challenged on constitutional grounds. In this case, the Washington state

Supreme Court spoke clearly to a tradeoff between public health considerations and constitutionality:

“Ordinarily, a natural and constitutional personal right or privilege may be limited only when its free exercise threatens or endangers the moral or physical well-being of others or their property...”⁷⁰

In order to control for the possible effect of public health considerations on court rulings, I define a categorical variable *PublicHealth* that assumes a value of 1 when concern for public health was cited as a relevant factor in a ruling to uphold a statute, and 0 otherwise.

Another factor relates to discrimination. A significant subset of the cases involved challenges to licensing statutes on the basis that they discriminated, on the basis of geography, demographic factors, or disability. Challenges where discrimination was involved may have been treated differently by the courts, for two reasons. First, these cases were more likely to run afoul of the equal protection clauses of either the federal or state constitution. Second, the courts may have treated these cases differently if judges viewed them as involving issues of fairness or justice.⁷¹ In order to control for the effect of these considerations on court rulings, I define a categorical variable *Discrimination* that assumes a value of 1 when a statute subject to a constitutional challenge allegedly involved discrimination against some group, and 0 otherwise.

A final factor is urbanization, a factor mentioned as potentially relevant in existing studies. The advances in scientific knowledge that were selectively occurring at the time tended to be concentrated in cities, potentially resulting in greater information asymmetries in urban areas. This may have resulted in greater incidence of licensing statutes in states with larger urban populations [Law and Kim, p. 726]. It may also have affected judicial review, to the extent that judges were concerned with addressing information asymmetries. To control for the possible effect on judicial review, we capture urbanization in two ways. $Urban^{2500}$ and $Urban^{20000}$ are

defined as the percentage of total population in a state contained in cities with populations greater than 2,500 and 20,000, respectively.⁷²

The models to be estimated are of the basic form:

$$\text{Overturned}_i = f(\text{Professional}_i, \text{Constitutional}_i, \text{PublicHealth}_i, \text{Discrimination}_i, \text{Urban}^X, \text{Time}_i) + u_i \quad (5)$$

where *Overturned* is the outcome and *Professional* is the treatment effect. The variable *Constitutional* is a categorical variable that assumes a value of 1 when the statute was challenged on constitutional grounds and 0 otherwise. This model controls for legal challenges involving issues of public health or discrimination.⁷³ *Urban*^X is one of our two variables measuring urbanization, where X is the threshold population level defining urbanization. A time trend *Time*, defined as the year in which a court case is decided, is included to investigate possible secular changes in judicial activism within the period, and non-linear trends are considered.

Our estimation strategy involves performing standard parametric estimation for models with binary dependent variables, and then testing for the robustness of these results in three separate ways. The basic estimations will use the standard conditional logit and probit estimators, which assume that the disturbance terms u_i take on the logistic and normal distributions. However, these estimators are known to be inconsistent under incorrect assumptions regarding the underlying distribution of u . Therefore, we also estimate the model using a semi-parametric estimator proposed by Klein and Spady. The Klein-Spady semi-parametric estimator assumes an unknown distribution of u and yields consistent, asymptotically normal estimates of β parameters under fairly weak assumptions about the disturbance terms [Klein and Spady (1989); Horowitz (1992)]. The Klein-Spady estimates provide a check on the model specification and the pattern of significance of the β estimates.

Table 2 reports the results of parametric (logit, probit) and semi-parametric (Klein-Spady) estimations of model (5) on the entire sample. For comparison purposes, the estimates of a linear probability model (LPM) are also reported.⁷⁴ The main result of interest is the consistently negative and highly-significant coefficient on *Professional*. This result controls for whether a case involved constitutional issues, discrimination, public health, and the degree of urbanization in a state. These results indicate that Progressive Era courts were significantly less likely to overturn occupational licensing statutes for the emerging professional occupations. Since these occupations would have been subject to greater asymmetric information, upholding occupational licensing would have promoted efficiency in these occupational markets.⁷⁵

The results also indicate that, all else equal, the courts were less likely to overturn in cases involving constitutional challenges, as opposed to non-constitutional challenges. They were also more likely to overturn in cases involving discrimination. They may also have been more likely to overturn in cases involving public health, though the estimated coefficients tend not to be significant at conventional levels. Finally, there is mixed evidence on the effect of urbanization on the courts' propensity to overturn. While urbanization is not significant in the parametric estimations, the Klein-Spady estimates are positive and significant. This latter result would be consistent with an efficiency interpretation of the courts to the extent that licensing tends to support cartelization more in urbanized settings, where presumably the economic stakes are higher.

The second robustness check will be to split up the entire sample into professional and non-professional subsamples and perform separate estimations on each sub-sample. These estimations permit the effect of other regressors to vary across the sub-samples. In addition, I add occupation-level fixed effects in order to address the possibility of omitted-variables bias,

which may arise if occupation-level unobserved factors are correlated with the included regressors. The resulting model specification becomes:

$$\begin{aligned} \text{Overturned}_i = & \beta_0 + \beta_1 \text{Constitutional}_i + \beta_2 \text{PublicHealth}_i + \beta_3 \text{Discrimination}_i \\ & + \beta_4 \text{Urbanization}_i + \sum \beta_{ij} D^{\text{Occ}}_{ij} + u_i \end{aligned} \quad (6)$$

where D^{Occ}_i assumes a value of 1 for the i th occupation and 0 otherwise.

Table 3 reports the results of a second set of estimations based on equation (6), using logit, probit, and Klein-Spady estimations. This specification yields a pattern of results that is extremely similar to those of the previous models. The key findings are the consistently negative and highly significant coefficients on *Constitutional* in the regressions for both professional and non-professional occupations. This signifies that controlling for occupation grouping, licensing statutes are significantly less likely to be overturned on constitutional grounds, all else equal.

The third robustness check is to apply a non-parametric estimator to provide further information on the reliability of the β estimates. This non-parametric estimator – *local likelihood logit regression (local logit)* – has been shown to yield significantly more precise estimates than certain parametric and semi-parametric estimators, including Klein-Spady, for small models with binary dependent variables and relatively small sample sizes [Frölich(2006)]. It can also reveal heterogeneous response outcomes not possible using standard single-index parametric and semi-parametric estimators.⁷⁶ Specifically, using local logit we can investigate interaction effects among covariates that generate a range of effects of variations in one covariate on the marginal probability of outcomes of another covariate. We will use this capability in order to characterize the difference between professional and non-professional occupations on the probability of a statute being overturned.

In binary choice models, the local logit estimator assumes the following logistic distribution:

$$E(Y/X = x) = 1/(1 + e^{-x'\theta(x)}) \quad (7)$$

where the vector θ is allowed to vary arbitrarily with x . This property implies that θ is drawn from a space V of not-necessarily finite dimension, which distinguishes it from the parametric and semi-parametric models.⁷⁷ The local logit estimator yields marginal probability estimates with two properties: they may vary across different values of x variables, and they permit investigation of interaction effects among the variables.[Frölich(2006)]

Using the local logit procedure, we perform a maximum likelihood estimation of the following likelihood function:

<Insert Equation 8 here>

This function differs in two ways from the standard likelihood function for a logit model. It permits θ to vary with x , and it employs the kernel function K . The estimated θ are used to generate marginal probability effects across different variables in the model.⁷⁸

Figure 3 compares, for example, the effect of professional occupation on the marginal probability of being overturned, across constitutional and non-constitutional cases. For example, the density plot marked “Constitutional” shows the marginal effect on the probability of being overturned if the value of *Professional* equals 1 instead of 0. The density is generated from the frequency of instances that fall into different intervals of predicted marginal probabilities. A marginal probability of -0.4, for example, is interpreted as cases where the probability of being overturned is 0.4 less for a professional occupation than for a comparable non-professional occupation.

We may draw three conclusions from Figure 3. First, the density for constitutional cases is entirely in the region of negative values, meaning that even allowing for heterogeneous impacts, the probability effect of professional is consistently negative for constitutional cases. Second, for non-constitutional cases, the effect of professional is not as negative and is qualitatively more mixed, with the upper tail of the density even falling into the range of positive values. Again, the overall picture is that even accounting for heterogeneous impacts, statutes involving professional occupations were less likely to be overturned.

Third, the tall peak in the non-constitutional density function indicates that for such cases, there is much less heterogeneity in the effect of professional on the probability of being overturned. This suggests a considerably smaller interaction effect between professional status and other variables in the model, such as public health concerns or discrimination. This seems sensible if non-constitutional cases were largely about occupation definitions, procedural violations and the like.

The takeaway message of these results is two-fold. First, licensing statutes were more likely to be upheld on constitutional grounds than on non-constitutional grounds. Second, holding other factors constant, licensing statutes governing professional occupations were much more likely to be upheld than comparable ones governing non-professional occupations. As I have argued, the constitutionality issue is key to the question of the efficiency of the common law. The evidence presented here suggests that the Progressive Era courts were significantly more supportive of legislative attempts to license professional occupations than non-professional occupations. This is consistent with an efficiency-supporting view of the courts, since asymmetric information regarding practitioner quality was more likely to be an issue for consumers of professional occupations.

VIII. Conclusions

This paper has argued that the efficiency of the common law cannot be viewed in institutional isolation. Previous studies of the common law, in either focusing on judge preferences or the evolutionary unfolding of the common law, have not considered interactions with other institutional players like legislatures. Yet the institutional structure of the United States government is not set up this way, nor is it clear that the courts view themselves as being isolated players. Rather, they see much of their job as being either to pass on the constitutionality of statutes or to interpret them when constitutionality is not an issue. And the efficiency of the statutes which they are called to rule upon has direct implications for the efficiency of the decisions they make. Overturning efficient statutes, or deferring to inefficient ones, both mean that inefficiencies are then built into the common law. These inefficiencies are then propagated to the extent that they are built into the expectations of future legislatures regarding what will pass constitutional muster, and/or future courts respect them as precedent in the cases before them.

This means that in order to assess the efficiency of the common law, we first need to assess the efficiency of statutes, and then observe the court response when such statutes are challenged. On this score, there is no general conclusion we can draw, because of the tremendous diversity of statutes on all sorts of issues and of the court response to these statutes. However, by limiting the scope of the question by focusing on a particular genre of statutes, it may be possible to say more. Here, I have adopted this strategy by examining a particular type of statute for which there is strong consensus among economists regarding their economic efficiency or rather, lack thereof: occupational licensing statutes. The current penchant of courts

to largely defer to these statutes implies that the courts have adopted a posture regarding occupational licensing that cannot be viewed as efficient.

It was not always so. During the Progressive Era, courts took a more activist stance toward occupational licensing statutes, as they apparently did toward a great many other economic issues. Whether or not this was efficient depends, of course, on the efficiency of those statutes. Law and Kim found that those statutes may have actually had important efficiency-enhancing properties. And this finding is consistent with other studies that have argued that statutory law tended to be more efficient in the 19th century than it is at present.⁷⁹ Selective judicial activism may be efficiency-enhancing to the extent that it appropriately targets statutes and overturns the ones that do not serve efficiency objectives. This includes ones that tend to cartelize an occupation without providing any signaling benefits to overcome informational asymmetries. We have seen some evidence that state courts during the Progressive Era may have engaged in appropriate targeting of occupational licensing statutes. If so, this suggests that the common law may have become less efficient over time, at least regarding this one important economic issue.

In order to more comprehensively assess the efficiency of the common law, more studies are required of how courts have employed judicial review, both historically and in various areas of the law. Such studies will need to take into account both the likely economic efficiency of the statutes governing particular areas of economic activity, and the judicial response. Occupational licensing provides a relatively clean test of our theory, because the efficiency implications are clear and the judicial response has been relatively clear-cut. Furthermore, clear legal and constitutional issues were involved.

Other candidates for study might include local rent control ordinances which, like occupational licensing, have been around for a long time, have relatively clear-cut efficiency implications, and have been subject to legal challenge.⁸⁰ In 1986, for example, landlords in Berkeley, California challenged a recently-enacted rent control ordinance, in a case that involved both antitrust and *Contract Clause* issues. In *Fisher v. City of Berkeley*, the Supreme Court upheld the rent control ordinance.⁸¹ In the 1999 case of *Santa Monica Beach v. Superior Court of Los Angeles*, the California Supreme Court ruled that the rent control ordinance of the city of Santa Monica did not violate the *Takings Clause*.⁸² It should easily be possible to investigate the efficiency of court rulings regarding rent control using the framework provided here, not to mention other types of statutes. More interesting questions can potentially then be answered. Not only: Is the common law efficient, but under what political and economic conditions can we expect it to be more or less efficient, which is the thrust of the more recent literature on the efficiency of the common law.

Figure 1: Model of judicial review, naïve legislators

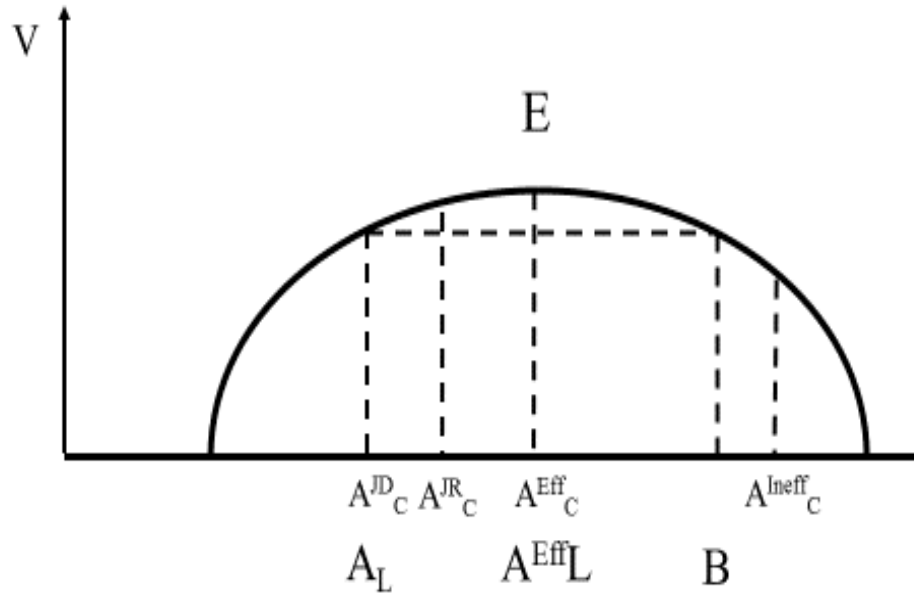


Figure 2: Percentage of cases overturned on constitutional grounds, by occupation

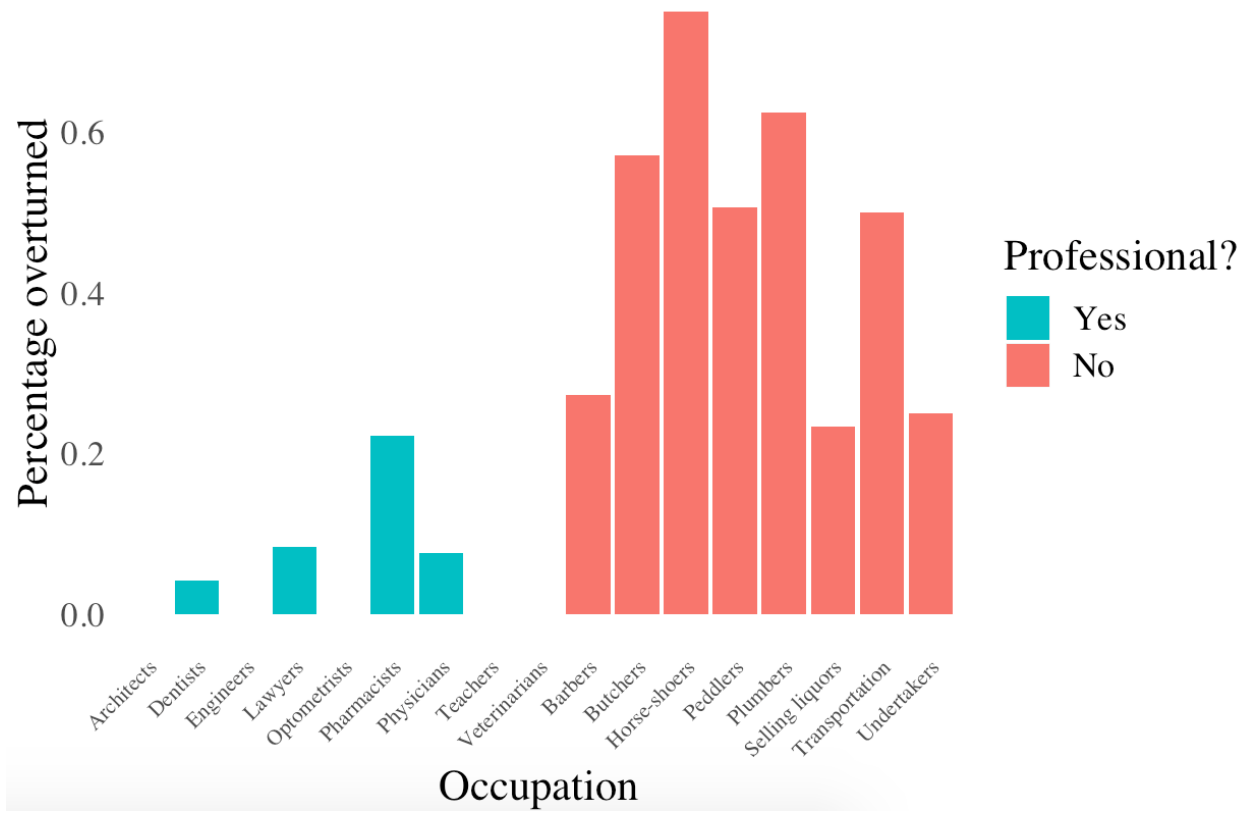


Figure 3: Effect of professional on marginal predicted probabilities of being overturned, constitutional, non-constitutional cases

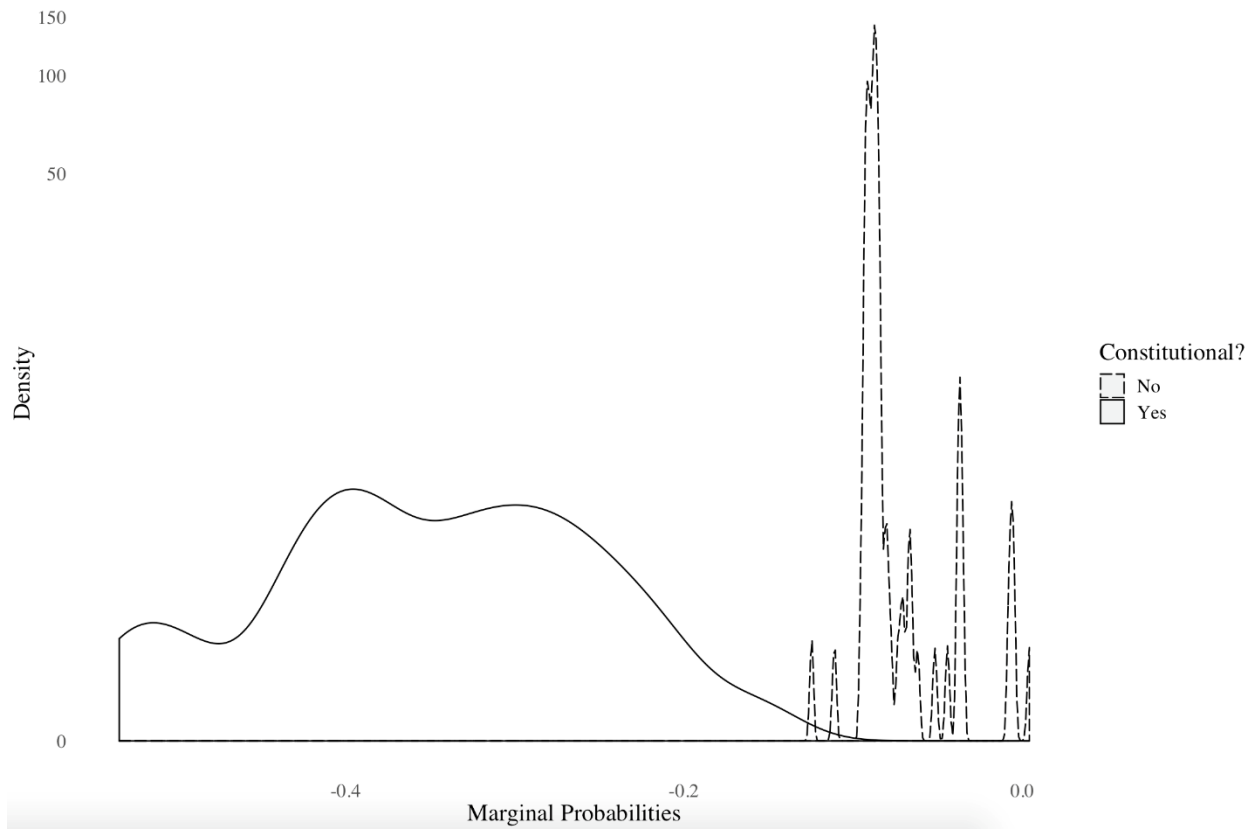


Table 1: Categorization of occupations

Professional		Non-professional	
Occupation	Number of cases	Occupation	Number of cases
Architects	6	Barbers	14
Dentists	52	Butchers	18
Engineers	12	Horseshoers	6
Lawyers	25	Liquor salesmen	98
Optometrists	3	Peddlers	139
Pharmacists	29	Plumbers	33
Physicians	165	RR ticket salesmen	10
Teachers	24	Undertakers	6
Veterinarians	7		
TOTAL	323		324

Table 2: Propensity to overturn, Entire Sample

Variable	LPM	Logit	Probit	Klein-Spady
	(1)	(2)	(3)	(4)
<i>Professional</i>	-0.190**** (0.038)	-0.857**** (0.175)	-0.538**** (0.106)	-0.200**** (0.034)
<i>Constitutional</i>	-0.277**** (0.043)	-1.311**** (0.217)	-0.809**** (0.128)	-0.362**** (0.030)
<i>Discrimination</i>	0.172**** (0.052)	0.830**** (0.244)	0.502**** (0.147)	0.118**** (0.042)
<i>Public Health</i>	0.061 (0.055)	0.284 (0.258)	0.174 (0.156)	1 -
<i>Urbanization</i>	-0.001 (0.01)	-0.004 (0.004)	-0.003 (0.003)	0.002**** (0.0004)
<i>CONSTANT</i>	0.603**** (0.047)	0.469** (0.210)	0.291** (0.129)	- -
(Pseudo) R ²	0.087	0.074	0.075	0.570 ^a
N	647	647	647	647

Figures in parentheses are estimated standard errors.

Significant at 5%; **Significant at 0.1%.

^a McFadden R².

Table 3: Regression results, Professional, Non-professional sub-samples

Variable	Professional			Non-professional		
	Logit	Probit	Klein-Spady	Logit	Probit	Klein-Spady
	(1)	(2)	(3)	(4)	(5)	(6)
Constitutional	-2.746***** (0.503)	-1.539***** (0.254)	-0.329***** (0.020)	-0.755*** (0.283)	-0.469*** (0.173)	-0.128***** (0.008)
Discrimination	1.224** (0.560)	0.672** (0.302)	0.061*** (0.020)	0.591* (0.317)	0.365* (0.195)	0.182***** (0.010)
Public Health	0.319 (0.515)	0.191 (0.288)	1 -	0.416 (0.387)	0.258 (0.237)	1 -
Urbanization	-0.008 (0.006)	-0.004 (0.004)	0.002***** (0.0003)	-0.009 (0.007)	-0.005 (0.004)	-0.005***** (0.0002)
CONSTANT	-1.161 (1.132)	-0.700 (0.635)	- -	-0.399 (0.693)	-0.238 (0.418)	- -
(pseudo) R ²	0.161	0.161	0.685 ^a	0.050	0.050	0.663 ^a
N	323	323	323	324	324	324

Figures in parentheses are estimated standard errors.

Occupation-level coefficients not reported. Omitted occupations: physicians and peddlers.

*Significant at 10%; **Significant at 5%; ***Significant at 1%; ****Significant at 0.1%.

^a McFadden R².

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¹ Richard Posner has been a very prominent figure in this scholarly literature[see, for example, Posner(1986), Posner(1993), Posner(2008)]. For a few other studies that focus heavily

on the behavior of judges, see Schwartz(1992); Zywicki(2003b); Cooter and Ulen(2008), pp. 472-73.

² See, for example, Cooter, Kornhauser, and Lane(1979); Posner(1979); Zywicki(2003a).

³ Cooter and Kornhauser(1980).

⁴ Rubin(1977); Priest(1977); Cooter and Rubinfeld(1995), p. 1092.

⁵ Goodman(1978); Cooter and Kornhauser(1980).

⁶ See, for example, Rubin(1977); Priest(1977); Hylton(2006); Miceli(2009).

⁷ Cooter and Rubinfeld(1995), pp. 1092-93.

⁸ The alternative to judicial deference – courts acting to overturn legislative acts – has been called many things in the legal literature, including judicial activism and judicial supremacy. In this paper, I will adopt the more neutral term: judicial review.

⁹ This point has been made by a number of legal scholars. See, for example, Sunstein (1985); Epstein(1985); Chemerinsky(1989); Chemerinsky(2004b); Siegan(2005); Rogers and Vanberg(2007); Zywicki and Stringham(?). Elhauge(1991) accepts that interest group politics results in inefficient legislative outcomes, but does not believe that judicial review will make things better.

¹⁰ Posner(1979a); Posner(1979b); Posner(1980); Posner(1986).

¹¹ See, for example, Rubin(1977); Priest(1977). See Gely and Spiller(1990) for an early attempt to model Supreme Court justices as rational actors.

¹² Cooter(1983); Posner(1993); Gennaioli and Shleifer(2007); Stephenson(2009).

¹³ Rubin(1977); Priest (1977).

¹⁴ Goodman(1978); Cooter and Kornhauser(1980).

¹⁵ Hylton(1993); Whitman(2000); Hylton(2006); Gennaioli and Shleifer(2007); Miceli(2009); Baker and Mezzetti(2012); Luppi and Parisi(2012);

¹⁶ Miceli(2009). See also Gennaioli and Shleifer(2007).

¹⁷ Hylton(1993); Hylton(2006).

¹⁸ Landis and Posner (1975); Marks(1984); McNollgast(1990); Tiller(1998); Hanssen (2000); Hanssen(2004).

¹⁹ Spiller and Gely(1992).

²⁰ Rubin, Curran, and Curran(2001).

²¹ See Sunstein(1985) for a useful discussion of the issues addressed by the founders in the creation of the system of checks and balances. The political question of why legislatures and the executive would tolerate judicial review by courts has been addressed by Stephenson(2003).

²² Buchanan(1988).

²³ Chemerinsky(1989); Chemerinsky(2004a).

²⁴ *Lochner v. New York*, 198 U.S. 45(1905).

²⁵ *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837(1984).

On this interpretation, see, for example, Miles and Sunstein(2006).

²⁶ Riker and Weingast(1988).

²⁷ Mirror image analyses and results obtain when $A_L > E$.

²⁸ For intuition, you can think that there is heterogeneity among the judges on the court in terms of policy preferences, which is publicly known.

²⁹ Rubin(1977); Priest(1977); Goodman(1978); Cooter and Kornhauser(1980).

³⁰ See, for example, Chemerinsky(1989), assessing the jurisprudence of the Rehnquist Court.

³¹ See, for example, Chemerinsky(1989); Chemerinsky(2004b); Miles and Sunstein(2006). The notion of judicial deference is also conveyed in the notion of *popular constitutionalism*. See Tushnet(2000), Kramer(2004) for an elaboration of this position, and Chemerinsky(2004b) for a critique.

³² A general survey of the law-and-economics and public choice literatures conveys a general consensus that the common law has stronger tendencies to efficiency than does statutory law. For some dissenting voices, see Elhauge(1991), Tullock(1997) and Luppi and Parisi(2012), all of which stress inefficiencies in the common law; and Wittman(1989), who downplays inefficiencies in electoral processes.

³³ Sunstein(1985); Kramer(2003).

³⁴ Friedman(1965); Sunstein(1987); Chemerinsky(2004); Kramer(2003); Kramer(2012); Rogers and Vanberg(2007).

³⁵ See, for example, Chemerinsky(1989, 2004), Kramer(2003). Miles and Sunstein(2006) have recently argued that the famous 1984 ruling *Chevron v. Natural Resources Defense Council* did not in fact usher in a new era of general judicial deference, despite expectations that it would. They attribute this to judges' preferences.

³⁶ Friedman (1973); Rubin(1982).

³⁷ Rubin(1982). See also Zywicki(2003b), pp. 1559-60.

³⁸ Gellhorn(1976); Carroll and Gaston(1981); Kleiner(2000).

³⁹ Stigler(1971). The scholarly literature is vast. For a few representative studies, see Pashigian(1979); Carroll and Gaston(1981); Kleiner and Kudrle(2000); Kugler and Sauer(2005); Edlin and Haw(2014).

⁴⁰ Friedman(1965).

⁴¹ *Williamson v. Lee Optical*, 348 U.S. 483(1955)

⁴² Donnem(1970); Edlin and Haw (2014).

⁴³ Edlin and Haw(2014), p. 1094.

⁴⁴ Friedman (1965), p. 494.

⁴⁵ Carroll and Gaston(1981); Law and Kim(2005).

⁴⁶ Kleiner and Krueger(2013).

⁴⁷ *Virginia Law Review*(1973).

⁴⁸ Edlin and Haw(2014), p. 1129.

⁴⁹ Spinden(2015), p. 640.

⁵⁰ Kleiner(2000), p. 190.

⁵¹ Edlin and Haw(2014).

⁵² Friedman(1965), p. 494; *Virginia Law Review*(1973); Law and Kim(2005), p. 731; Spinden(2015), p. 642.

⁵³ Law and Kim(2005), pp. 725-26.

⁵⁴ Friedman(1965); Law and Kim (2005); Law and Marks (2009).

⁵⁵ Law and Kim(2005). See also Ville(2007), p. 302. Other social and legal histories have also stressed the asymmetric information issue during this time period. See, for example, Spinden(2015) regarding the engineering profession; Gabriel(2010) regarding the pharmacist profession.

⁵⁶ See, for example, Clinton(1994); Kramer(2012).

⁵⁷ Friedman(1965).

⁵⁸ *Ibid.*, p. 531.

⁵⁹ The vast majority of the state cases in our dataset were decided in the state supreme court, with a handful decided in lower appellate courts. The dataset does not include any appellate cases that were later ruled on by a supreme court.

⁶⁰ The occupations are: architects, barbers, butchers, dentists, engineers, horseshoers, lawyers, liquor sellers, optometrists, peddlers, pharmacists, physicians, plumbers, railroad ticket sellers, teachers, undertakers, and veterinarians. A preliminary analysis based on a state-by-state Nexis search revealed that virtually all of the cases involved these seventeen occupations. The final dataset consists of cases in this time period relating specifically to occupational licensing that were uncovered by doing a joint search for “(occupation)” and “license” in Nexis-Uni. A handful of cases involving minor occupations (cotton buyers, insurance brokers, and public laundries) were excluded from the analysis. The states with the most cases were: New York(N = 45), Missouri(N = 39), Illinois(N = 27), Minnesota(N = 26), and Pennsylvania(N = 26). The states with the fewest cases were: Wyoming (N = 0), and Nevada(N = 1).

⁶¹ See, for example, Gold(1983), p. 255; Kens(1991), p. 72.

⁶² (a)Special legislation: *Ex parte Lucas*, 160 MO 218(1901); (b)More than one subject: *People v. Phippen*, 70 MI 6(1888); *State v. Sharpless*, 31 WA 191(1903); *State v. Doerring*, 194 MO 398(1906); (c)Improper delegation: *State ex rel. Williams v. Purl*, 228 MO 1(1910).

⁶³ Some example rulings in each of these categories are cited here (a)Improper awarding of costs: *People ex rel. State Board of Health v. Hettiger*, 150 IL(A) 448(1909); (b)What constitutes suitable training: *Smith v. State Board of Dental Examiners*, 113 KY 212(1902); *State vs. Oredson*, 96 MN 509(1905); *Wise v. State Veterinary Board*, 138 MI 428(1904); (c)Transferability: *Orr v. Meek*, 111 IN 40(1887); (d)Animosity: *Elmore v. Overton*, 104 IN 548(1886); (e)Favoritism: *Illinois State Board of Examiners of Architects v. People*, 93 IL(App) 436(1900); (f)Mode of payment: *Royall v. Virginia*, 116 US 572(1886); (g)Jurisdiction: *Puckett v. State*, 33 FL 385(1894); *Ex parte Bains*, 39 TX 62; (h)Definition of an occupation: *The Druggist Cases*, 85 TN 449(1886); *State v. Taylor*, 106 MN 218(1908); *People v. Ringe*, 197 NY 143(1910); *Cherokee v. Perkins*, 118 Iowa 405(1902); *Smith v. People*, 92 IL(App) 22(1900); (i)Corporate status: *In re Indian Brewing Co. 's License*, 226 PA 56(1909); *State v. McKnight*, 131 NC 717(1902); (j)Grandfathered: *Kerbs v. State Veterinary Board*, 154 MI 500(1908); *State v. Tag*, 100 MD 588(1905). In addition, we observe many other miscellaneous grounds for non-constitutional challenge among the cases.

⁶⁴ Law and Kim(2005), p. 729. See also Gabriel(2010) for an extended study of the asymmetric information problems associated with one of our professional occupations: pharmacists.

⁶⁵ *Ex parte Barnes*, 83 NB 443(1909), at 444; *Folsom v. State Veterinary Board*, 158 MI 277(1909), at 278; *Territory v. Pottie*, 19 HI 99(1908), at 104.

⁶⁶ *State Board of Pharmacy v. White*, 84 KY 626(1886), at 631; *State v. Donaldson*, 41 MN 74(1889), at 80; *Ewbank v. Turner*, 134 NC 77(1903), at 82.

⁶⁷ *State v. Call*, 121 NC 643(1897), at 646.

⁶⁸ *Wilby v. State*, 93 MS 767(1908), at 773.

⁶⁹ The practitioner appeared in the cases in one of two ways: either as plaintiff, or as defendant. In the former case, the practitioner filed suit as a direct challenge to the statute. In the latter case, a suit would be brought by the state attorney general for violating the statute; say, for practicing without a license. In either case, the statute was considered upheld if the court ruled against the practitioner.

⁷⁰ *State v. Brown*, 37 WA 97(1905), at 100. For other examples, see *State v. Zeno*, 79 MN 80(1900); *State ex rel. Galle v. New Orleans*, 113 LA 371(1904). In general, legal scholars have recognized an evident tension between the constitutionality of statutes and the legitimate exercise of police powers. See, for example, Friedman(1965), p. 491; Kens(1991), p. 72. Indeed, the majority opinion in the famous *Lochner* case speaks directly to a tradeoff between due process protection of contracts and the police power responsibility to safeguard public health. *Lochner v. New York*, 198 U.S. 45(1905), at 53.

⁷¹ *Bessette v. People*, 193 IL 334(1901).

⁷² These are standard measures of urbanization used in historical studies of 19th century United States in the scholarly literature [Schnore(1961); Williamson(1965); Law and Kim (2006)]. Other urbanization measures include SMSA populations[Riefler(1979)]; Hirschman-Herfindahl indices of urban concentration[Henderson(1988)]; and measures of urban primacy in national settings[Ades and Glaeser(1995); Henderson(2003)]. Data limitations make these inapplicable, or infeasible to implement, during the time period of our study.

⁷³ The variable *PublicHealth* provides only one way to capture police power issues. As a robustness check, I created other variables intended to capture police power issues based on broader definitions. These variables did not perform as well in terms of statistical significance, and when they were included along with *PublicHealth*, lost all significance and were highly unstable. All of this suggests perhaps that public health was the main police power concern during this era.

⁷⁴ The Klein-Spady estimates are identified up to a scaling factor. Identification of the coefficients may be obtained by setting one of the coefficients to 1, here the coefficient on the Public Health variable. The reported results omit *Time*, which is never significant and the remaining coefficients are highly robust to its exclusion.

⁷⁵ These results are also highly robust to the selective omission of individual occupations. Reestimating the models omitting in turn the most numerous occupations in the sample – physicians, dentists, peddlers, liquor salesmen, and plumbers – does not substantively affect either coefficient signs or significance. Perhaps not surprisingly, omitting any of the less common occupations in turn does not affect this conclusion. Similarly, these results are also robust to the omission of cases from various individual states, including the states with the largest number of cases, including New York, Illinois, and Missouri; the omission of the federal cases; and the omission of the territorial cases.

⁷⁶ In single-index models, a variable Y is affected by covariates X through a single linear combination $X\beta$. This includes most parametric models such as logit and probit as well as a class of semi-parametric models including Klein-Spady.

⁷⁷ In the limiting case where $\theta(x)$ does not vary with x , the local logit reduces to the global logit model.

⁷⁸ In our estimations, we use the Epanechnikov kernel for ease of computation, and generate bin sizes using the leave-one-out cross validation method. The bin sizes are 0.3 for the discrete variables and 80 for the urbanization variable. The results are robust to local perturbations of the bin sizes.

⁷⁹ Rubin(1982).

⁸⁰ See, for example, Willis(1958); Wiley (1986); and Garner (2000).

⁸¹ *Fisher v. City of Berkeley*, 105 S. Ct. 1045(1986).

⁸² *Santa Monica Beach, Ltd. v. Superior Court of Los Angeles County*, 968 P. 2nd 993(Cal, 1999). See also *Hall v. City of Santa Barbara*, 833 P. 2nd 1270 (9th Circuit, 1986), cert. denied, 485 U.S. 940(1988).