1. What is “law and economics”? 

ENGAGING STUDENT INTEREST

Often, contemporary economics students have not studied law and economics as an application for understanding institutions but have increasingly attended classes based on limited exercises and calculations. Law students may never have encountered economics previously. From the standpoint of positive economics, the lecturer may well encounter students finding it difficult to see economics as building a comprehensive view of the economy as an interactive system. Pioneering thinkers in law and economics like Coase and Posner extended that view by incorporating the incentives in the common law as an important part of economic motivation. Students will take time in adjusting to focusing economics on legal questions.

Two quite difficult ideas underlie the application of economics to the law. Laws and economics, often described as economics of law, examines the incentive and welfare properties of law. It is a part of the wider economic analysis of institutions, defined as the “rules of the game” in the economy. Anyone with an interest in the institutional framework governing economic activity will find economics useful in understanding how rules affect human behavior. The lecturer needs to engage that interest.

Students no longer study welfare economics in the way that was common in the past. Thus, in discussing normative questions such as whether the expectations measure of damages supports efficient breach of contract, the lecturer needs to encourage a welfare perspective. Many students will not have used measures of welfare improvement like the Kaldor–Hicks assessment of whether a change leaves at least one party better off and all others adequately compensable for loss. Recognition that a welfare perspective may be missing is even more important for law students with limited exposure to elementary economics. It is a matter of encouraging perspicacious thinking about the impact of economic interactions on human flourishing. Try discussing the need for benchmarking the impact of changes; benchmarking is easily understood common sense compared with discussing a welfare perspective. Imparting an understanding of the need for benchmarking is half the battle won.
Presenting intriguing incentive problems helps students realize the need for benchmarked comparisons. Using examples from case law from early in the course helps the comparisons. One such example concerns the consequences of the common law general denial of compensation for consequential losses, or knock-on effects, established in *Hadley v. Baxendale* (1854) where a late-arriving repair part stopped a factory’s operations. Here, the rule puts people on notice to obtain insurance either separately or by obtaining the up-front consent of a supplier to compensate business losses following from a supplier’s breach. Students will need to consider ideas of “fairness” and efficiency. The rule stops insurance obligations being imposed casually on suppliers, who may not be the most efficient insurers. Much common law prevents “ takings.” The rule in *Hadley v. Baxendale* prevents the purchaser from taking insurance, which must either be clearly part of the contract, or be bought separately. Preventing a taking leads the buyer to seek out the best insurer as efficiency requires.

SOME INTRODUCTORY APPLICATIONS

Students will be familiar with discussions of criminal justice. It is therefore a good place to start.

**Crime**

The key element in the economic analysis of crime is the incentive structure created by the benefits versus the punishment of crime. This early in the study, it does well to keep to a very simple comparison between costs and benefits aimed at building a basic understanding of the deterrence hypothesis. Crime is a good starting point because most people have some familiarity with its issues. The deterrence hypothesis states that rational criminals should respond to increases in the expected value of punishment by reducing criminal activity. It is important to convey an understanding that this response will follow even if criminals are often driven by factors such as poverty, if they react rationally at the margin of their activities.

The expected value of punishment equals the probability of conviction multiplied by the value placed on the sentence by the criminal. Numerical rather than algebraic examples are adequate early on. If you were to save $19 throwing trash over your neighbor’s wall, but it would cost the neighbor $20 to clean up, throwing the trash lowers social welfare by $1. But we can deter the harm by fining you any sum greater than your $19 benefit – for example, requiring compensation of $19.01 – assuming we know you did the throwing. You would stop, and there is no apparent reason to make such dumping of
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trash a criminal offense. But what if you are detected throwing trash into your neighbor’s garden only one out of four times? The $19.01 penalty must be increased to establish deterrence. A penalty of $4 \times 19.01$ would deter you.

A good follow-up to the example is to point out that under tort law, neighbors are indeed liable for damage they cause from intentional acts like throwing trash. It’s not obvious why we have criminal law, although having it will seem so obvious that students will not have thought about why we have different areas of law. One reason suggested by lawyer economists like Richard Posner is the criminal tendency to hide damaging acts. Criminal law backed by the coercive power of the state can provide the enhanced penalties needed for deterrence when detection is imperfect, as in the example. There is no need to go further, but some groundwork is laid for a proper consideration of crime later in the course.

Be prepared for some pushback, citing other causes of criminal behavior. Recently, US crime rates have fallen over a period in which incarceration has grown. The reductions in property and violent crimes are indeed partly explained by the incapacitation of criminals following incarceration, but a statistically significant relationship between increased imprisonment and criminal deterrence can still be identified by carefully studying the response of particular crime rates to changes in prison entry or exit probabilities. Often, a good opportunity will arise to discuss the general scientific principle of controlling for other influencing variables in carrying out studies of deterrence. Good studies include poverty, urban density, race, sex, and other influences on crime. Also, criminal justice variables may not be the strongest influence on a crime rate, but they are often the ones that can be changed, whereas factors like the proclivity for violence shown by males compared with females are not open to swift manipulation.

Nuisance

Our second example is taken from nuisance, which is a cause of action for interfering significantly and unreasonably with someone else’s enjoyment of land. It is a good idea to use reasonable legal precision in stating a cause of action; economists are not always good at legal precision, but law students especially will expect precision.

Use a simple example where a neighbor hosts noisy rave parties and the other neighbor cannot peacefully enjoy contiguous property. The court will likely hold that there is a nuisance and would most likely issue an injunction to stop (enjoin) the nuisance. With a bit of luck, a student will question the efficiency of the injunction. Surely with the loss of enjoyment to that
many ravers, social welfare increases by allowing the rave? This point provides a cue to the lecturer to introduce the idea of bargaining around the injunction.

The court has defined the property rights and now bargaining can occur, assuming bargaining cost to be sufficiently low that they do not eat up the benefits from bargaining. We should expect the ravers to compensate the neighbors for putting up with the noise, or more likely moving out for the duration of the rave. Later classes will introduce the Coase theorem, but for now it is enough to provoke thinking about bargaining and what courts achieve with their orders.

**Breach of Contract**

Economic efficiency is based on voluntary and informed trading supported by a law of contract that enforces the agreed terms of trade. Contract law enables resources to be transferred to their most valuable uses, as people come to know what promises are enforceable and how enforcement may occur. Ask students what might happen when a company does not wish to discharge its obligation to deliver a promised good or service. Should it be forced to perform?

A good start can be made using a simple example like a contract to supply components for car production. Suppose a car manufacturer has a contract for components at a price of $x. It then suffers a major marketing setback when the authorities discover that vehicles do not meet emissions standards and the manufacturer must recall cars. The demand for another manufacturer’s cars increases and that manufacturer offers more money for the components promised to the failing carmaker. Component suppliers choke off supplies under the existing contract as they move over to supplying the manufacturer with growing demand.

After allowing students to debate the pros and cons of enforcing the original contract under the assumption that the first manufacturer wishes to proceed, the lecturer will find that introducing some economics will clarify the students’ thinking. Both economics and law suggest that it is unnecessary to require specific performance, except in special cases. It is not the business of the law to force people to carry out tasks for which the economic justification may have disappeared, but only to ensure they compensate the victims of breach. What if the breaching party can compensate the victim for non-performance and still be better off by making a higher-valued use of the resources? Is it better to allow the components to be moved to the higher-valued uses? These
questions can be developed later into a theory of efficient breach of contract: when the party breaching is able and willing to compensate the victim for non-performance, it increases social welfare to let compensated breach occur.

ECONOMIC EFFICIENCY

Introducing a benchmark for welfare change will challenge many students’ approach to evaluating change. The key welfare standard is Kaldor–Hicks efficiency.

When appraising policies, rules, or laws, economists need a standard, a benchmark, by which to measure efficient change. Because it has emerged strongly in law and economics, it is advisable to spend some time on considering wealth maximization as a simple criterion of economic efficiency. Examples are needed to ground the discussion. A contract in which risk is borne by the person who can avoid the contingency at lowest cost is efficient, as this maximizes the joint profit (an element of wealth) of the parties. Compensating the victim of a road accident with some money (wealth) aims to move the victim’s well-being (welfare) back to where it was before the accident. Making injurers pay damages (hand over wealth) causes people to be careful and avoid accidents when they can do so at less cost than paying damages; accident costs are thereby minimized, which tends to increase wealth viewed across injurers and victims. Wealth maximization is a useful benchmark and is typically used in economics of law.

The main alternative to wealth maximization as a benchmark is utility maximization, as used in much economic theorizing. Utility refers to the direct psychic benefits experienced by people as they consume money income and raises the issue of making meaningful interpersonal comparisons. Most students will not have thought of problems in making interpersonal comparisons. Although utility may often be measured well by an individual’s willingness to pay for a benefit (or to avoid a cost) this is not always so. The principal difficulty arises when two individuals have very different levels of wealth. If the value placed on additional units of money falls in a similar manner for different people, their preferences reflect the principle of diminishing marginal utility of money income. In this case, a unit of money is likely to be worth less to a rich person than to a poor one in terms of psychic impact, however this might be measured.

Should we use utility measures to compare directly the costs and benefits of a nuisance across individuals? There is simply no straightforward method to do this, and the criterion of utility maximization lacks practical definition.
The lecturer can present wealth maximization as a simplification, ignoring the detail of income redistribution, often without conundrums. If Josh is injured by a billionaire who gains $1000 from driving fast but imposes a $500 loss on Josh, and the court awards $500 compensation, it is immaterial that Josh’s intensity of preference (utility) for the $500 is higher than the billionaire’s lost utility from paying the money damages. Josh will be at the previous level of utility because of the payment, and, because of awareness of the compensation requirement, the injurer only carried out the act in the expectation of gaining a benefit greater than the $500 compensation. At least one party is better off, and the other is as well off, as before. The rule over compensation has resulted in a “Pareto improvement,” named after Vilfredo Pareto, where somebody gains and nobody loses from an event.

**Kaldor–Hicks Test and Wealth Maximization**

It is important to spend some time emphasizing the relevance of the Kaldor–Hicks test. If an injuring party gained $1000 while the victim lost $500, but the courts did not insist upon payment of compensation, the joint wealth of the victim and injurer still would be increased. Wealth maximization would not give a Pareto improvement absent compensation because the victim would be harmed, but if we remained confident that the injurer gained more than the victim lost, we can still identify a “potential Pareto improvement” as an increase in the joint (social) welfare of the parties. As long as the gainer’s gain exceeds the victim’s loss, we satisfy the Kaldor–Hicks test, named after economists Nicholas Kaldor and John Hicks.

Students will need a practical example to show the relevance of Kaldor–Hicks. A good example can be taken from cases where the court refuses to award compensation in tort law, recognizing that the misfeasor took “reasonable” precautions to avoid the harm. Reasonable care typically arises where the costs of preventing an accident are high relative to the victim’s losses; the person causing the injury is held not to have been negligent and is not required to pay damages. Putting up with the accident is wealth maximizing, because the cost of the combined activities was reduced, and satisfies the Kaldor–Hicks test because the gainer gained more (saved higher avoidance cost) than the loser lost (lower cost of injury). Conversely, if the victim’s foreseeable losses exceed the injurer’s avoidance costs, the injurer must pay because courts will hold that “reasonable” care was possible. The negligence rule encourages cost-effective precautions and supports wealth maximization.
SCHOOLS OF THOUGHT

Examining schools of thought in law and economics helps students to understand the motivation of economists in expanding their studies into legal doctrines, procedures, and reform questions. From the 1950s onward, economists analyzed regulatory issues in considerable depth. Their work was an early kind of law and economics mainly concerned with antitrust and the regulation of natural monopoly. Regulatory economics led the way for the more recent extension of economics to the analysis of core areas of the law.

Modern economic analysis of law focuses on core areas of law like property rights, contracts, and tort (e.g., nuisance and negligence). Other areas of interest that can be highlighted include crime, antitrust law, corporate law, and family law. A milestone was the publication in 1973 of the first edition of Richard Posner’s *Economic Analysis of Law*, which consolidated much of the old and new work in the economics of law. Since then, a great deal of insightful research work has appeared in specialist journals.

A useful exercise is to ask the students to identify several schools of thought within economics of law. This exercise may be carried out in class since students carry formidable computer equipment that can be directed to the task. They should at least identify the influential University of Chicago Law School, broadly associated with the claim that the rules of common law evolve efficiently. It has housed many major law and economics thinkers, including Nobel Prize winner Ronald Coase and law and economics pioneer Richard Posner, and is the home of two major economics of law publications, *The Journal of Legal Studies* and the *Journal of Law & Economics*.

Students may need some guidance to discover the “Western” property rights school, which provided much of the material typically used as examples in law and economics texts. The school has been associated with University of California, Los Angeles, University of Washington, and Montana State University. Students can become quite fascinated by studies of the efficiency aspects of rules surrounding the use of property, including rules developed by cowboys and gold miners during the nineteenth-century westward expansion of the US. Recent work from a property rights perspective has addressed issues like the preservation of wildlife and wilderness areas, the efficient use of resource stocks such as water and oil, and even conflict over surfing access at beaches in California.

Economists often apply game theory to model strategic issues in areas like litigation enforcement. The lecturer can introduce game theory early using problems of coordination like the limited success of neighborhood watch
schemes in reducing crime. Game theory is neutral about schools of thought and is really a technique that can be used in a variety of settings. It is best to stick to simple numerical examples given the diversity of students in law and economics classes.

AVOIDING NIRVANA ECONOMICS

Harold Demsetz’s (1969) humorous characterization of modern welfare economics is a great way to introduce the idea of second-best solutions to economic problems. The second best is highly relevant to institutional analysis. Many writers on economic questions ignore relevant constraints affecting a problem, and according to Demsetz, these practitioners of “nirvana economics” typically commit one or more of three fallacies.

Students can be invited to define “nirvana.” Usually, someone volunteers the knowledge that nirvana is a state of ultimate perfection, whereas a realistic assessment of many problems often suggests we are choosing the best option in the sense of finding the least-worse outcome. See if your students recognize the fallacies below.

- **Fallacy of the free lunch.** The fallacy of the free lunch ignores the costs of corrective economic policy. People often see a dual-cost universe, in which the cost of government intervention, or of action in the court, is ignored. We often encounter the cry that “something must be done” but rarely see an informed examination of the benefits and costs of intervention.

- **Fallacy that the people could be different.** The fallacy that the people could be different arises when commentators ignore the true tastes and preferences of the individuals who make up society. Should we increase taxes on oil products to slow rates of depletion? Some commentators argue that oil companies heavily discount future benefits from holding oil partly because of sensitivity to the risk of political appropriation of oil reserves. This risk is purely distributional and does not affect the quantity of oil. So, it is argued, society would prefer a lower discount rate and a slower rate of depletion. However, intervention to slow depletion ignores people’s preferences as they stand and substitutes the hypothesized preference derived for society as if it were a person.

- **Grass is greener fallacy.** The fallacy of the grass is always greener assumes that economic problems are perfectible. Yet, we can find examples where improvements seem to be unattainable. Going by persistent overfishing notwithstanding 50 years’ fisheries regulation in Europe, there may be no set of policies that can improve on open access in some high-seas fisheries.
The problem of overfishing attached to open access may be no worse than other problems, such as the encouragement of expensive lobbying by fishing groups, set up by attempts to control fishing.

**Comparative Institutionalism**

We can avoid nirvana economics by concentrating on feasible alternatives, recognizing the costs of intervention, and understanding whose preferences are to count in solving a problem. This is the approach of comparative institutionalism, which counsels realistic examination of available alternative policies to see which is superior.

Courts frequently engage in welfare comparisons, albeit often on a modest scale, and appear to be realistic in recognizing the costs and feasibility of the solutions they impose. The courts may quite naturally practice comparative institutionalism, because of procedural rules that limit case costs and a traditional emphasis on the practical demonstration of costs and benefits attached to activities. The comparison between costs and benefits is often seen in law as assessing the reasonableness of a case.

**POSITIVE LAW AND ECONOMICS**

It is important that students understand the distinction between answering normative questions and work in positive economics, where the aim is explanatory and predictive.

Here is an example of a normative question: if we wish to encourage efficient contracting, how should the courts allocate risks? It is also possible to carry out positive (predictive) studies: the researcher can assess whether the common law evolves as though judges consciously try to maximize wealth. Alternative hypotheses might include special interest groups influencing the development of the law for their own benefit, or judges gravitating toward favorite precedents. The student needs to understand the importance of formulating hypotheses in such a manner that they are testable. Economists have often constructed models predicting that increases in conviction rates have a greater impact in reducing crime compared with increases in sentence severity. Data are available to test that clearly articulated hypothesis.

Work on the positive economics of law is often given an explanatory interpretation, rather than a predictive one. Frequently, we are more interested in how legal institutions have come to look as they do, rather than necessarily predicting their future. A good example of the explanatory branch of the
Teaching the essentials of law and economics

Economics of law occurs in relation to water rights. Careful examination of cases shows that differences between the systems of water rights used in East Coast and West Coast US states is explained in terms of the arid conditions in the West, requiring greater ease in trading water simply to support human endeavor. Eastern states continued to follow doctrines in water law originating in the abundantly watered England.

JURISDICTIONAL CONSIDERATIONS

Note the growing interest in law and economics worldwide but recognize the dominance of thinking about common law doctrines, which reflects the origins of economics applications to legal questions.

The major textbooks in law and economics are written with generally applicable principles of common law in mind and, although somewhat US based, often take a comparative legal approach in addition to following comparative-institutional principles in economics. Note that there are many interesting cases in non-US jurisdictions, and that many classic cases cited in law schools are from England.

Students will not generally understand this, but they need to know that the term common in common law reflects the emergence after the twelfth century of a standardized approach to law in English courts that was eventually carried to America by English colonists in the seventeenth century. Common law should be contrasted with the approach of civil law (“civilian”) jurisdictions of continental Europe, which restrict judges, with varying strictness across jurisdictions, to the interpretation of statutory codes. The civilian jurisdictions fashion an all-encompassing legal code book and expect strict adherence. The key factor distinguishing common law is that judges in senior courts may make new law, creating precedent, as they encounter cases not fully dealt with by holdings in earlier cases. Such pragmatic legal innovation must be consistent with existing law and may be challenged several times in courts of appeal before settling down to become new law. Judges in the United States are regarded as proactive in developing common law. This innovative history may partly explain why the economic analysis of law has been successful in US law schools as a tool in understanding and developing the law. The appellate process of examining holdings relative to legal doctrine quite naturally gives rise to considering the economic rationality of the law and opens the courts to practical arguments drawn from economics.

In recent decades, scholars within civil law jurisdictions have contributed new work in law and economics motivated by a desire to increase understand-
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ing of civilian systems, by international antitrust cases, and by the availability of shared techniques of analysis among economists. The lines can anyway be blurred in distinguishing civilian jurisdictions. First, some codification has occurred in common law jurisdictions, albeit often as simple codification of common law principles as with US federal law and homicide law in England. Second, common law coexists with legislated statute law and we can apply economic analysis to both. Finally, some jurisdictions like Israel, South Africa, and Scotland are mixed common law and civil law systems. There is nothing preventing application of economic analysis to a wide range of jurisdictional types; it is just that early work was stimulated by observations on incentive properties of laws in the common law world in which researchers were located.

QUESTIONS FOR STUDENT REVIEW

1. A factory emits smoke that damages the paint on nearby houses. The court estimates that each of 20 households suffers damage over the foreseeable future worth $4000 (in present value terms). Because it would cost the owners of the plant $120,000 to avoid the damage (by fitting smoke filters), the court rules in favor of the plant continuing operations as before. Is this:
   a. wealth maximizing;
   b. utility maximizing, assuming each household is paid $4000;
   c. utility maximizing, assuming no compensation is paid?

2. The CEO of a company asks for your advice when a customer seeks to reduce the prices paid for components under the terms of a sales contract. The customer claims that there have been unforeseen changes in the demand for its final output. What economic function of contracts would you highlight in giving your advice?

3. Consider whether the following studies belong to normative law and economics, positive law and economics (explanatory branch), or positive law and economics (predictive branch):
   a. an analysis of the desirability of dividing marital property equally following divorce;
   b. a statistical test of whether weakening academic tenure would lead to less research in universities;
   c. a statistical test of whether improved weaponry contributed to increases in battles between settlers and Indians over land tenure in the American West.
FURTHER NOTES

- Adam Smith (1776 [1976]) explored the links between economic institutions extensively in the *Wealth of Nations*, his tour de force on the economic underpinnings of society.


- *Principles* (Dnes, 2018): Chapter 1 expands on this chapter to include applications to areas like family law.


- George Priest (1993) gives a masterly summary of the early law and economics work on regulated industries, focusing on natural monopoly.

- The seminal work on nuisance is Nobel Prize winner Ronald Coase’s (1960) “The problem of social cost.” Coase analyzed the *Sturges v. Bridgman* (1879) case and several others to show that courts adopted an approach emphasizing the maximization of total net benefits by either permitting or restraining a nuisance. A fascinating application of Coasean analysis to the sewage problems of a growing city is in Rosenthal (2007).

- Applications of game theory to economics of law occur across the board: for example, in areas as diverse as optimal law enforcement (Garoupa, 1997, 1999), bankruptcy (Adler, 2012), and behavioral contracting (Köszegi, 2014).


- See Allen (2012) for intriguing applications of economic analysis to historical organizational governance, including the emergence of criminal law and changes in the severity of punishments.

- Gary Becker (1968) is responsible for the conjectured trade-off between severe punishment and the probability of enforcement.

- Posner (1981, p. 88) has gone further than just claiming that wealth maximization is a convenient simplification and has argued that it is a morally
superior standard of justice compared with either utility maximization or other ethical standards. Posner recognizes that one of the problems of utility maximization, in addition to difficulties of measurement, is the implication that monstrous activities with net gains should be imposed on society. We might, for example, encourage theft whenever the thief obtained a higher utility value from a stolen watch compared with the owner. However, wealth maximization respects individual autonomy and encourages economic progress. Wealth maximization supports activities whenever free trade indicates that individuals are happy to see a change. No one is imposed upon but rather the watch changes hands if the seller receives a higher price than the reservation valuation for keeping the watch and the buyer values the watch at least equal to the money spent. We know from the evidence of gains from trade that there is no imposition: it is probably the imposition of change that can cause monstrous outcomes in the utility-maximizing approach.

- Some philosophers are quite hostile to economics of law, regarded as positivism or pragmatism in the wider literature on jurisprudence. Dworkin (1980, 1986, p. 302) is the major opponent and attempts to fashion a criterion of adjudication from a rights-based egalitarian perspective: his “integrity.” Dworkin’s 1986 book *Law’s Empire* clearly is an attempt at regaining ground from economists, among others. Dworkin’s integrity requires recognition of liberal democratic values (see also Dworkin, 2000) and the avoidance of checkerboard laws affecting similarly placed individuals differently. Raz (2002) has argued that Dworkin’s approach is at best a possible fit for America, the UK, and similar societies, but is not general and should be labeled “law’s province.” Friedman (2000) has suggested that outside of economics of law most attempts to guide institutional change or social policy are not general in approach but rather are efforts by individuals to convert others to their preferences.

- Fischel (1995b) has argued that compensation for government takings of property typically ignores consumer surplus.

- The Kaldor–Hicks test for a welfare improvement is named after two economists, Sir John Hicks of Oxford University and Lord Nicholas Kaldor of Cambridge University. Kaldor was Hungarian by origin but settled in England, becoming a member of the House of Lords. Both proposed that a welfare improvement occurred if those gaining from the change could in principle compensate the losers and still be better off. Payment of compensation was not required, and, hence, a Kaldor–Hicks test is often referred to as a hypothetical welfare test.

- Demsetz (1969) is responsible for the colorful arguments about nirvana economics.
• Posner (2014) argues that the common law evolves as though judges consciously try to maximize wealth. Rubin (1977) has generated a similar hypothesis by noting that there is more to be gained from litigating an inefficient legal rule. Rubin and Bailey (1994) are responsible for the alternative hypothesis that special interest groups influence the development of the law for their own benefit, which Posner accepts in the case of statute law but not for the judge-made common law. See also Zywicki and Stringham (2012).

• Garoupa and Ligüerre (2012) explore the puzzle that mixed systems persist: common law does not always become fully displaced as code is constructed, suggesting different models may be efficient in different settings.

• Niblett (2013) examines the impact on case-by-case adjudication of politically appointed judges and shows that case law can evolve under extreme biases that will not be offset by appointees showing an opposite bias, and suggests that the method of appointing judges may have an impact on legal doctrine. Niblett and Yoon (2015) examine published opinions in federal appellate court cases from the United States between 2001 and 2005 that include a dissenting opinion, finding that judges who disagree on the outcome of a case disagree over the binding precedents that apply. They conclude that judicial differences over case outcomes reflect judges’ gravitation toward different precedents.

• Niblett, Posner, and Shleifer (2010) examine the evolution of the rule limiting claims in tort law for economic loss to those where it is possible to attach the loss to personal injury or property damage. Using data on construction claims, they conclude that the law did not converge in recent years, although it may once have been doing so, and is now evolving with significant differences in different states.

• Cooter and Schäfer (2012) apply economics to constitutional questions bearing on economic development.

• Johnson and Raphael (2012) used panel-data estimation methods on state-level data to estimate the effect of changes in incarceration rates on changes in crime. Panel estimation uses the statistical properties of cross-sectional data as it evolves over time. Causality is addressed in the study because incarceration rates were modeled as adjusting to changes in behavior with a lag. The authors found statistically significant deterrence effects running from imprisonment to all major crime categories. Interestingly, the deterrence effect appears to be getting weaker over time.