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THE CASH VALUE OF COURTS

Abstract: There is strong theoretical and historical reason to believe that judicial systems are an important determinant of economic wellbeing. Numerous empirical studies have now found that a measure typically called “rule of law” is associated with economic growth and other variables of interest. I conclude that the best broad “rule of law” scale is that of the World Bank Governance Matters and the best available scale for the judiciary alone is the World Economic Forum’s judicial independence metric. My analysis also shows that both these scales have a remarkably large effect on economic growth, limiting corruption, and constraining the size of a nation’s underground economy, just as predicted by the institutional economic theory.

Recent years have seen an efflorescence of empirical research on the role of legal institutions and legal systems on economic success or other measures of human welfare. The research suggests that nations with a better “rule of law” produce greater welfare for their citizenry. Yet this research has largely ignored the essential characteristics of the judiciary that implements those legal requirements. The existing research is strong and important but substantially limited by its failure to truly capture legal variables.¹ While a great deal of law and economics research focuses on the efficiency of substantive legal rules, this article examines the more procedural aspects of the rule of law, which may be considered a prerequisite for the functioning of those legal rules.

This article reviews and attempts to consolidate the growing empirical research on the law. Much of this research purports to measure the “law” but uses scales that do not truly address the nature of the law or its implementation. Because judiciaries are central to the functioning of law, some measure of judicial quality is

¹ For a good review of these limitations, see Kevin E. Davis, *What Can the Rule of Law Variable Tell Us About Rule of Law Reforms*, 26 MICH. J. INT’L L. 141 (2004).

essential to any test of the effect of the “rule of law.” Different research has relied upon different measures, all of them in some way imperfect.

This article reviews the available scales for measurement of comparative national judiciaries and tests them for facial validity and criterion validity. These legal measures are tested for their effects on economic wellbeing. Two scales stand out as important economic determinants – the World Bank Governance Matters measure captures the rule of law broadly, and the World Economic Forum’s judicial independence index is the best measure limited to courts themselves. The analyses of these measures demonstrates that they are of enormous economic significance. Quality courts have a considerable “cash value.”

I. Empirical Economic Research on Law and Courts

The empirical research on the societal significance of law is far too extensive to review in great detail. In brief, social scientists have measured the effect of legal systems on variables of interest, usually economic growth. The research is theoretically grounded in the “New Institutional Economics” of Oliver Williamson and Douglas North, who theoretically and historically analyzed the role of law in society. They attributed great practical significance to legal systems.

North won a Nobel prize for his findings about the importance of political and legal institutions for economic growth. His historical analysis built centrally upon the importance of property rights to economic growth and the importance of the state, in defining and enforcing those property rights.² The state also can lower the cost of transactions in property “through the development of an impersonal body of law and enforcement.”³ This effect requires an effective adjudicatory system and isolates the importance of judicial systems. North concluded that society’s failure to provide an efficient means of contract enforcement was “the most important source of both historical stagnation and contemporary underdevelopment in the Third World.”⁴ One

² Douglass C. North, STRUCTURE AND CHANGE IN ECONOMIC HISTORY 7 (1981).

³ *Id.* at 37. Law is not strictly necessary to private contracting, as parties can enter and have entered relational contracts and create private enforcement mechanisms when disputes arise. *See, e.g.*, Stewart Macaulay, *Non-Contractual Relations in Business: A Preliminary Study*, 28 AM. SOC. REV. 55 (1963) (discussing importance of such relational contracts). A legal enforcement mechanism makes the system of contracting more efficient, though, by reducing costs, adding assurances, and simply providing another option for transacting parties. *See* Frank B. Cross, *Law and Trust*, 93 GEO. L.J. 1457, 1487-88 (2005).

⁴ Douglass C. North, INSTITUTIONS, INSTITUTIONAL CHANGE, AND ECONOMIC PERFORMANCE 54 (1990).

of North's three keys to improving national economic performance is "the creation of an effective judicial system."⁵ Mancur Olson urged that a "court system, independent judiciary, and respect for law and individual rights" was "required for security of property and contract rights."⁶ Since North, economists "have generally been most optimistic about courts as the institutions securing property and enforcing contracts."⁷

The theory reflects two separate valuable roles for the judicial system. The first is the provision of a third-party to resolve disputes among private parties, such as those involving the enforcement of contracts. The second involves the relationship between private parties and the government and providing protection from arbitrary government action, such as property expropriation or demands for bribes. Both require a reasonably accessible, independent, and effective court system.⁸ One would also prefer a judicial system that is fair, honest, and consistent, though these are even more subjective characteristics and difficult to define or measure. One feature of the system that should be beneficial is a measure of judicial independence both from the government and from private parties that may appear in court.⁹ In theory, such a judicial system would promote greater economic growth. It might do so in various ways, including the restriction of corruption and greater use of the formal legal system (as opposed to the underground or "shadow" economy that operates outside formal structures).

The case for the economic value of courts is not entirely uncontested, however. For example, Robert Kagan has argued that the judiciary is too powerful

⁵ Douglass C. North, UNDERSTANDING THE PROCESS OF ECONOMIC CHANGE 159 (2005).

⁶ Mancur Olson, *Dictatorship, Democracy, and Development* in DEMOCRACY, GOVERNANCE, AND GROWTH 115, 127 (Stephen Knack ed. 2003)

⁷ Simeon Djankov, *et al.*, *Courts*, 118 Q.J. ECON. 453, 454 (2003).

⁸ See Lars P. Feld & Stefan Voigt, *Judicial Independence and Economic Growth: Some Proposals Regarding the Judiciary*, in DEMOCRATIC CONSTITUTIONAL DESIGN AND PUBLIC POLICY 251, 258 (Roger D. Congleton & Gergitta Swedenborg eds. 2006) (discussing these as benefits of an independent judiciary).

⁹ See Rafael La Porta, *et al.*, *Judicial Checks and Balances*, 112 J. POL. ECON. 445, 446-447 (2004) (observing that judicial independence "has obvious value for securing property and political rights when the government is itself a litigant" but also "is socially valuable in purely private disputes when one of the litigants is politically connected").

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and too involved in the governance of countries such as the United States, as reflected by a culture of “adversarial legalism.”¹⁰ He argues that a system that resolves political controversies through “lawyer-dominated litigation” creates counterproductively high transaction costs and inferior outcomes.¹¹ This system, he argues, limits the valuable authority of other branches of government and reduces “socially constructive cooperation, governmental action.”¹² Of course, this latter effect may be a source of the economic benefit of the judicial role in its obstruction of inefficient action by the executive and legislative branches. Kagan’s case is far from conclusive and relies heavily on anecdotal evidence. My limited empirical examination of some of his claims indicates that the evidence is contrary to some of his conclusions.¹³ Much remains to be tested regarding the role of courts and legal systems in national economic development.

Courts, of course, are but one part of the legal infrastructure, which also depends on the bar, law enforcers, and others. The courts themselves are the centerpiece of the system, though, on which other components depend.¹⁴ This article is limited to the examination of courts, though research on comparative national bars could be valuable. In recognition of the importance of courts, various World Bank projects have financed judicial reform projects in order to facilitate economic development.¹⁵ The World Bank and other agencies, including the U.S. Agency for International Development, have spent hundreds of millions of dollars on such projects.¹⁶

¹⁰ See generally Robert A. Kagan, *ADVERSARIAL LEGALISM: THE AMERICAN WAY OF LAW* (2001).

¹¹ *Id.* at 3.

¹² *Id.* at 4.

¹³ See Frank B. Cross, *America the Adversarial*, 89 VA. L. REV. 189, 224-228 (2003).

¹⁴ See Martin Shapiro & Alec Stone Sweet, *ON LAW, POLITICS & JUDICIALIZATION* 174 (2002) (observing that “[i]f courts are in low repute, practitioners obviously suffer both financially and socially”).

¹⁵ See, e.g., Carlos Santiso, *Good Governance and Aid Effectiveness: The World Bank and Conditionality*, 7 GEORGETOWN PUB. POL. REV. 1, 17 (2001) (describing judicial reform as a “core component” of the World Bank’s international governance initiatives).

¹⁶ Richard E. Messick, *Judicial Reform and Economic Development: A Survey of the Issues*, 14 WORLD BANK RES. OBSERVER 117, 117 (1999).

This theory about the economic significance of courts and the rule of law has spawned a great deal of economic research, much of it empirical in nature, attempting to quantify the benefits of legal institutions for economic growth.¹⁷ This research has attended less to the substantive content of legal rules than to the functioning of their application. An optimal substantive law is of little value if it is ineffectively enforced. Hence, this analysis will focus on the functioning of courts generally without respect to the content of the legal rules they apply. A review of the existing research observed that “institutions are more fundamental determinants of economic growth than R&D or capital accumulation, human or physical.”¹⁸ The precise institutions that produce growth or the manner in which they have this effect is not well understood, however.¹⁹ The following section demonstrates that the role of the law and a quality judicial system is central to this effect.

A. Empirical Research on Law and Economic Growth

The theoretical economic propositions about the economic importance of legal institutions have been transformed into major empirical tests, beginning in the 1990s. Robert Barro accumulated extensive evidence as part of a general study of the sources of economic growth.²⁰ Among his measures was an index for the “rule of law” in different countries. Looking at data from 1965 to 1990 for over one hundred countries, he found that effective maintenance of the rule of law could increase the average annual growth rate by as much as 0.5%.²¹

More recent years have seen a burgeoning of research on the effect of law on economic growth. Numerous popular books have addressed the matter. Hernando de Soto’s tribute to the importance of property rights in economic development

¹⁷ Much of this research is summarized in Frank B. Cross, *Law and Economic Growth*, 80 TEX. L. REV. 1737 (2002) and more recent studies are discussed throughout this article.

¹⁸ Elhanan Helpman, *THE MYSTERY OF ECONOMIC GROWTH* 139 (2004).

¹⁹ See, e.g., *Law and Economic Growth*, *supra* note 000, at 1738 (observing that “much of the economic research appears to reflect a fundamental understanding about what is meant by basic terms such as ‘law’ or ‘rights’ or ‘property rights’”).

²⁰ Robert J. Barro, *DETERMINANTS OF ECONOMIC GROWTH: A CROSS-COUNTRY EMPIRICAL STUDY* (1997).

²¹ *Id.* at 26-28.

attributes national failures centrally to the failure of their legal systems.²² Brink Lindsey notes that the “great public good of market competition depends in turn upon the public good of a well-constructed legal infrastructure.”²³ In this path of research, the law is essential for protection of property rights, which in turn are vital for robust economic development.

While the operation of the law can be difficult to capture in quantitative analysis, the theory about law’s importance has also spawned considerable empirical research over the last decade. Much analysis was triggered by research showing that an English legal origin, or common law system, was associated with economic wellbeing.²⁴ This readily definable variable has become commonly used in assessing the law, especially with respect to property rights protections.²⁵ The strength and consistency of the associations with English legal origin is persuasive, but there is reason to question whether the common law system is truly the crucial variable, as discussed below. The associations with English legal origin may be capturing a difference in judicial systems or other aspects of society, rather than common law practice.

A great deal of research has focused on transition economies, especially those emerging from communism. These analyses have the merit of identifying the effect of a recent change and avoiding confounding historic factors and they can demonstrate that legal origin is not destiny. The absence of good judicial systems to enforce contracts “could explain the collapse in output in the reforming countries.”²⁶ The rapid development of China’s economy has been linked to the nation’s legal reforms and increased use of its judicial system.²⁷ A review article concluded that

²² See Hernando de Soto, *THE MYSTERY OF CAPITAL* 153-156 (2000).

²³ Brink Lindsey, *AGAINST THE DEAD HAND* 169 (2002).

²⁴ Key early studies included Rafael La Porta, *et al.*, *Legal Determinants of External Finance*, 52 *J. FIN.* 1131 (1997) and Rafael La Porta, *et al.*, *Law and Finance*, 106 *J. POL. ECON.* 1113 (1998).

²⁵ See, e.g., Ross Levine, *Law, Endowments and Property Rights*, 19 *J. ECON. PERSP.* 61, 67-73 (2005) (reviewing research using this variable).

²⁶ Cynthia Clement & Peter Murrell, *Assessing the Value of Law in Transition Economies: An Introduction*, in *ASSESSING THE VALUE OF LAW IN TRANSITION ECONOMIES* 6 (Peter Murrell, ed. 2001).

²⁷ See Minxin Pei, *Does Legal Reform Protect Economic Transactions? Commercial Disputes in China*, in *ASSESSING THE VALUE OF LAW IN TRANSITION ECONOMIES*, *supra* note 000, at 180.

the “ability to enforce the law and protect property rights” was a “key reason” for the economic growth of economies emerging from socialism.²⁸

Because most of the existing research has been performed by economists, it has focused on economic variables. Studies have analyzed the effect of the law on economic outputs, such as economic growth or the strength of capital markets. The law may also be important for noneconomic ends, such as human rights, democracy or public health, and some research has also been conducted on these variables.²⁹ While such research is quite important, this article will focus on economic measures.

B. Measures Used for Capturing the Rule of Law

Theories identifying a value for the rule of law are only the first stage of an important analysis. Even the meaning of “rule of law” is itself not jurisprudentially determinate, as commentators have emphasized different features.³⁰ Of greater practical economic importance is the means of achieving a desirable national rule of law. This section of the article examines the available measures associated with the rule of law.

Quantitatively capturing the law is notoriously difficult. Legal rules tend to be nuanced and difficult to reduce to any sort of scale. Sometimes binary measures are available, *e.g.*, “Does *X* nation have a legal prohibition on practice *Y*.” Such measures of substantive law have some promise but contain substantial limitations. Some formal laws may be unenforced, so some prohibitions may not be meaningful.³¹ Because laws are passed in response to perceived societal problems, the coding might simply capture the presence of underlying problems, rather than an effect of the law. Moreover, this tool generally captures the substantive content of

²⁸ Gerard Roland, *The Political Economy of Transition*, 16 J. ECON. PERSP. 29, 41-42 (2002).

²⁹ See, *e.g.*, Michael Smith, *Deterrence and Origin of Legal System: Evidence from 1950-1999*, 7 AM. LAW ECON. REV. 350 (2005) (finding that common law systems appear to better deter injury-causing harm); *Judicial Checks and Balances*, 112 J. POL. ECON. 445 (2004) (reporting that nations with more judicial independence have stronger protection of human rights).

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³¹ Studies of the effect of insider trading prohibitions have grappled with this problem. See, *e.g.*, Utpal Bhattacharya & Hazem Daouk, *The World Price of Insider Trading*, 57 J. FIN. 75 (2002) (empirically demonstrating the need to differentiate between the presence of a formal prohibition and its enforcement).

the law and fails to account for its procedural implementation, which should be more significant.³² An empirical study of former communist nations found that “legal effectiveness has overall much higher explanatory power for the level of equity and credit market development than the quality of law on the books.”³³

It is legal *procedures* that the existing research has found to be apparently important. The effectiveness of legal governance rules “is critically linked to their formality and judicial enforceability.”³⁴ The economists have been less concerned about the content of the law than with how reliably its requirements are effected. This is where the role of the judiciary is transcendent. While judicial decisions indisputably influence the substantive content of the law,³⁵ their central role is to implement and enforce the predefined law. Hence, study of the judiciary is crucial to the study of the effect of the rule of law in society. While the judiciary alone does not entirely control the functioning of legal systems, which also depend on professionalized attorneys and enforcement, it is surely a central component of such systems.

Measurement of procedural aspects of judicial systems for purposes of empirical analysis is also difficult.³⁶ Ideally, one would want ecological data, which is a direct measure of a relevant variable. For example, a population census provides ecological data. However, concepts such as judicial accuracy and reliability are

³² See Asli Demirguc-Kunt & Vojislav Maksimovic, *Law, Finance, and Firm Growth*, 53 J. FIN. 2107, 2114 (1998) (noting that private parties may contract around inefficient substantive rules, while it is “much harder to compensate for the systemic failures of the legal system”); Hernando de Soto, *THE MYSTERY OF CAPITAL* 170 (2000) (stressing the “enormous distance between what mandatory law commands and what has to be done for the law to work”); Kenneth W. Dam, *The Judiciary and Economic Development*, Chicago John M. Olin Law & Economics Working Paper No. 287 (March 2006) at 3 (observing that “[w]here the legal institutions such as the judiciary are not effective, an improvement in substantive law may make very little difference”).

³³ Katnerine Pistor, *et al.*, *Law and Finance in Transition Economie*, 8 ECON. TRANSITION 325, 356 (2000).

³⁴ Rachel A. Cichowski, *Introduction: Courts, Democracy, and Governance*, 39 COMP. POL. STUD. 3, 9 (2006).

³⁵ Most prominently, it was the U.S. Supreme Court that guaranteed some right to have an abortion in *Roe v. Wade*, and common law court systems create and define the scope of laws governing topics such as contracts and torts.

³⁶ See, *e.g.*, Bryant G. Garth, *Rethinking the Processes and Criteria for Success*, in *COMPREHENSIVE LEGAL AND JUDICIAL DEVELOPMENT* (Rudolf V. Van Puymboreck ed. 2001) at 11, 11.

inevitably subjective and cannot be counted like population numbers. While some rough ecological data is available for some metrics (such as whether the system is basically common or civil law or whether judges have lengthy tenures), many of the most significant measures are beyond its reach. These may be captured by survey data that measure the perceptions of informed third parties about the working of the judicial system. Thus, international experts or businesspersons may be asked whether judicial decisions are predictable or independent. While such perceptual survey data has some limitations, it is the best available in many cases and has commonly been used in existing cross-country research.³⁷ The remainder of this section addresses some of the scales that have been used in the research to date.

1. Common law

As discussed above, one of the most frequently used measures of legal systems is whether they use common law or civil law (and sometimes the origin of a civil law system, distinguishing between French, German, and Scandinavian systems). This is an variable that may incorporate various differing aspects of the judicial system, beyond mere governing system. While common law is “judge made” and civil law entirely a legislative creation, the systems have other differences as well. One review noted that “civil law relies on professional judges, legal codes, and written records, while common law relies on lay judges, broader legal principles and oral arguments.”³⁸ The systems have further important differences. For example, common law nations, but not civil law nations, emphasize decisionmaking based on preexisting judicial precedents.³⁹ The common law has a substantive component, as the “bottom up” process of law development associated with common law may produce more efficient rules.⁴⁰ This substantive benefit, though, is derivative of the legal procedures employed by the system.

³⁷ For a review of these limitations and the use of survey data, see Robert L. Perry & John D. Robertson, *COMPARATIVE ANALYSIS OF NATIONS* 247-249 (2002).

³⁸ Edward L. Glaeser & Andrei Shleifer, *Legal Origins*, 117 *Q. J. ECON.* 1193, 1193 (2002).

³⁹ See *INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE*, *supra* note 000, at 96 (stressing that common law “is precedent based – it provides continuity and essential predictability that are critical to reducing uncertainty among contracting parties”).

⁴⁰ For a discussion of this theory, called the “micro-efficiency” of the legal system, see Paul H. Rubin, *Micro and Macro Legal Efficiency: Supply and Demand*, 13 *SUP. CT. ECON. REV.* 19 (2005).

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Many of the leading studies on the role of law have used common law as a variable.⁴¹ These studies have fairly consistently found that common law systems tend to produce better economic results than do civil law systems, at least those systems deriving from the largest civil law family of France.⁴² Some more recent research has questioned whether it is truly the common law status of a judicial system that has produced the favorable results, however.⁴³

Although widely and successfully used by researchers, relying on the distinction between common law and civil law may not do well at capturing the role of law or of comparative national judiciaries. First, the use of common law is essentially congruent with English colonial heritage and any other features associated with that historical background. Consequently, the empirical studies may not measure the law at all.⁴⁴ Second, the differences between common law and civil law legal systems are not great in today's world,⁴⁵ which calls into question the

⁴¹ In addition to the studies cited above, *see, e.g.*, Rafael La Porta, *et al.*, *The Quality of Government*, 15 J. LAW ECON. ORG. 222 (1999); Rafael La Porta, *et al.*, *Law and Finance*, 106 J. POL. ECON. 1113 (1998); Rafael La Porta *et al.*, *Legal Determinants of External Finance*, 52 J. FIN. 1131 (1997); Ross Levine, *Law, Finance, and Economic Growth*, 8 J. FIN. INTERMEDIATION 8 (1999); Thorsten Beck, Asli Demirguc-Kunt, & Ross Levine, *Law and Finance: Why Does Legal Origin Matter*, 31 J. COMP. ECON. 653 (2003); Ross Levine, *The Legal Environment, Banks, and Long-Run Economic Growth*, 30 J. MONEY, CREDIT & BANKING 596 (1998).

⁴² *See, e.g.*, Paul G. Mahoney, *The Common Law and Economic Growth: Hayek Might Be Right*, 30 J. LEGAL STUD. 503 (2001).

⁴³ *See, e.g.*, *Judicial Checks and Balances*, *supra* note 000 (finding that greater judicial independence explains much of the apparent benefit of the common law system); Sandra F. Joireman, *Colonization and the Rule of Law: Comparing the Effectiveness of Common Law and Civil Law Countries*, 15 CONST. POL. ECON. 315, 331 (2004) (concluding that association with common law may well be due to other variables related to colonization).

⁴⁴ For example, the nations of English heritage may also have different political systems. One recent study on corruption that controlled for variables such as relative democracy and separation of powers found that common law had no independent significant effect of its own. Daniel Lederman, *et al.*, *Accountability and Corruption: Political Institutions Matter*, 17 ECON. POL. 1 (2005).

⁴⁵ *See, e.g.*, Ugo Mattei, *COMPARATIVE LAW AND ECONOMICS* 79 (1997) (arguing that perceived distinctions between systems are "dramatically misleading, being based on a superficial and outdated image of the differences between the civil law and the common law"); Herbert Jacob, *Introduction*, in *COURTS, LAW AND POLITICS IN COMPARATIVE PERSPECTIVE* (Herbert Jacob *et al.* eds. 1996) (noting that the two types of law "no longer are as distinct as they were during the nineteenth and early twentieth centuries" as civil law judges increasingly used precedent while common law nations codified their laws").

plausibility of the significance associated with the variable. Third, it is not at all clear what aspect of the common law is producing the benefits (reliance on precedent, trial by jury, judicial selection or judicial authority, etc.). Fourth, it is also unclear *how* common law is producing these benefits. Some have suggested that it is from the “bottom up” creation of law, or resistance to interest group influence, or promotion of individual liberty, or greater legal stability, or greater legal adaptability.⁴⁶ The empirical research generally shows that common law nations have greater economic success on several dimensions but cannot show what aspects of the law or judiciary produce this success. To isolate the relevant aspects of law, common law will be regarded as a separate control variable in the following research.

2. ICRG and rule of law

Another common measure used in the empirical research is the “rule of law” index of the International Country Risk Guide (ICRG).⁴⁷ The ICRG country scores are based on an estimation by experts about the relative status of rule of law in different nations. The commonly used “rule of law” measure of ICRG is actually its called its “law and order” measure. This measure is a four point scale for both the judicial system and for certain types of crime risks, which are combined. The ICRG’s measure is a blended input/output scale that measures both the perceived quality of the judicial system and its indirect effects on criminality.

The ICRG rule of law index has been extensively used in research. It formed the foundation for Barro’s important early findings.⁴⁸ Financial research has found that the ICRG index of the rule of law was a crucial determinant of the cost of credit in different nations.⁴⁹ The index has a significant correlation with lessening of a

⁴⁶ The arguments for and against these various theories are summarized in some detail in Frank B. Cross, *Identifying the Virtues of the Common Law* (2007) (forthcoming in *Supreme Court Economic Review*). The paper shows some evidence that benefits appear to arise in legal predictability and lessened legal corruption.

⁴⁷ The ICRG is a product of the PRS Group, which sells “risk ratings” of various countries to assist investors in making business decisions. The “rule of law” measure is a component of the “political risk” ranking system. It is the “most popular source of rule of law data” used. *What Can the Rule of Law Variable Tell Us about Rule of Law Reforms*, *supra* note 000, at 151.

⁴⁸ See DETERMINANTS OF ECONOMIC GROWTH, *supra* note 000, at 26.

⁴⁹ See Luc Laeven & Giovanni Majnoni, *Does Judicial Efficiency Lower the Cost of Credit?*, 29 J. BANKING FIN. 1791 (2005).

nation's underground economy.⁵⁰ The rule of law index was associated with greater economic growth in another study.⁵¹ This was also true when integrated with the traditional convergence hypothesis of growth.⁵² With other indices, it was used to demonstrate the importance of the rule of law in enhancing external finance in transition economies⁵³ and has been associated with a greater ability of firms to obtain long-term external financing.⁵⁴ The ICRG rule of law measure has also been used as a component in combination synoptic indices discussed below.

The ICRG necessarily suffers from all the defects of relying on perceptual survey evidence, but this shortcoming is largely unavoidable given the limited available information, and there is ample reason to accept its validity. Not only is it consistently predictive of hypothesized results, but it has survived a market check of accuracy – many international businesses pay to receive the information.⁵⁵ One study has found that the overall ICRG political risk estimates proved the best available predictions for measuring subsequent actual country risk.⁵⁶ However, even

⁵⁰ See Simon Johnson, Daniel Kaufman, and Pablo Zoido-Lobaton, *Regulatory Discretion and the Unofficial Economy*, 88 AM. ECON. REV. 387 (1998).

⁵¹ See David Dollar & Aart Kray, *Institutions, Trade and Growth*, 50 J. MON. ECON. 133 (2003) (also finding a significant effect of international trade).

⁵² See Stephen Knack, *Institutions and the Convergence Hypothesis: The Cross-National Evidence*, 87 PUB. CHOICE 207 (1996).

⁵³ Katharina Pistor, Martin Raiser, & Stanislaw Gelfer, *Law and Finance in Transition Economies*, 8 J. TRANSITION ECON. 325 (2000).

⁵⁴ See Asli Demirguc-Kunt & Vojislav Maksimovic, *Law, Finance, and Firm Growth*, 53 J. FIN. 2107 (1998).

⁵⁵ See DETERMINANTS OF ECONOMIC GROWTH, *supra* note 000, at 27 (noting that “the willingness of customers to pay substantial fees for this information is perhaps some testament to their validity”); Daniel Kaufmann, Art Kraay & Pablo Zoido-Lobaton, GOVERNANCE MATTERS 5 (arguing that “the fact that commercial rating organizations are able to consistently sell their assessments to commercial subscribers for considerable fees is convincing evidence that these sources are in fact producing useful information”).

⁵⁶ See Jennifer M. Oetzel, Richard A. Bettis, Mark Zenner, *Country Risk Measures: How Risky Are They*, 36 J. WORLD BUS. 128 (2001). See also Anja Linder & Carlos Santos, *Assessing the Predictive Power of Country Risk Ratings and Governance Indicators*, SAIS Working Paper Series WP/02/02 (2002) (finding that the ICRG political risk ratings successfully identified structural vulnerabilities that resulted in three major economic and political crises).

if the measure were perfectly accurate, it would still have serious limitations for purposes of studying the effect of the law.

The ICRG “rule of law” or “law and order” variable measures much more than the law. It incorporates a separate measure of “order” in measured crime rates. One might suggest that crime rates are associated with the rule of law but this is not necessarily so.⁵⁷ A totalitarian police state with little real judiciary or rule of law may be most effective at suppressing crime. Such a state would not necessarily rely on the rule of law, however. This is evident from examination of the data. For 2002, the ICRG rule of law/law and order scale gives a high rating (5 out of 6) to North Korea and relatively high ratings (4 out of 6) to Cuba and Iran. The ICRG’s own publisher has stressed that “its data were intended not to measure judicial quality.”⁵⁸

The ICRG produces other measures that may more directly capture the role of the judiciary. For example, it contains a measure labeled “contract viability” that is meant to capture the judicial enforceability of contracts, the first of our important judicial goals described above. This is a survey measure of contract enforceability that captures the effectiveness of the judicial system. A shortcoming of this scale for estimation is its lack of cross-country differentiation, as over twenty nations may receive identical scores on this scale.

ICRG is not the only source of cross-country “rule of law” estimates. Another similar organization, Business and Environmental Risk Intelligence (BERI), has a political risk index that contains a component of contract enforceability that measures the rule of law. The BERI data do not cover as many countries as the ICRG data (sixty vs. one hundred and forty), and it has not been so widely employed in research. The correlation between the two scales is very high, which adds some confidence to their validity, for what they attempt to measure.⁵⁹

Recently, new indices have been developed to combine varied pre-existing scales (including the ICRG measure) into one combined index. The best known of these is the “Governance Matters” index produced by World Bank researchers.⁶⁰ Among the indicators they developed is a synoptic “rule of law” measure that draws

⁵⁷ *What Can the Rule of Law Variable Tell Us about Rule of Law Reforms*, *supra* note 000, at 150 (describing how ICRG variable on crime measures many non-legal societal factors).

⁵⁸ Joseph L. Staats, *et al.*, *Measuring Judicial Performance in Latin America*, 47 *LATIN AM. POL. & SOC’Y* 77, 81 (2005).

⁵⁹ See Apinard Angkinand, *Measures of the Rule of Law and Corruption* (2003).

⁶⁰ See Daniel Kaufmann, *et al.*, *Governance Matters IV: Governance Indicators for 1996-2004* (June 2005).

from the ICRG rule of law index, property rights indices, and twelve other related scales.⁶¹ The World Bank uses a sophisticated measure of combining these indices, which enables them to compare nations that lack measures on one or another of its component scales for their composite index.

The aggregation of various scales in the Governance Matters index may enhance the measure's reliability,⁶² but it is no stronger than its component measurements. Some of these contain substantial extralegal factors. Thus, the Governance Matters rule of law index includes measures of the costs of crime, kidnapping, size of black market, police quality and other factors unrelated to the judicial system. These factors might be related to judicial system quality but are surely influenced by numerous other societal and governmental factors as well. The rule of law measures are thus only rough scales for court quality.

Another aggregate synoptic index provides a weighted average of the legal index variables used in a number of the La Porta *et al.* studies.⁶³ The authors refer to this as the "Legality Index." This index focuses more closely on direct measures of the judicial system and includes the common law measure, but it also incorporates extrajudicial factors such as corruption and substantive legal factors such as the nature of shareholder rights. This index is built from other measures, including that of the ICRG and has an extremely high (0.91) correlation with GNP per capita.⁶⁴

3. Judicial Independence

Research is increasingly beginning to focus more closely on the role of the judiciary itself and use judicial independence as a variable to be tested. Although a well-functioning judiciary has many distinct features, independence would seem to be a central one of concern. An interesting historical and empirical analysis of 18th Century England found that it was the development of judicial independence

⁶¹ See *id.* at 96 for the list of sources and concepts measured in the aggregated index.

⁶² The researchers used a sophisticated aggregation methodology and in the process were able to check individual sources for biases that could undermine the accuracy of the results. See *id.* at 22-23.

⁶³ See David Berkowitz, *et al.*, *Economic Development, Legality, and the Transplant Effect*, 47 EUR. ECON. REV. 165 (2003).

⁶⁴ See Douglas Cumming *et al.*, *Legality and Venture Governance Around the World* 4-5 (March 2006).

appeared to increase the value of equity investments.⁶⁵ Within the United States, evidence suggests a strong association of judicial independence and court quality.⁶⁶ Hence, judicial independence appears to be a judicial variable worthy of study.

While judicial independence carries various meanings, its core is the ability of the judiciary to prevent illegal actions by the other branches of government.⁶⁷ Judicial independence is often discussed in connection with the protection of individual rights, such as free speech. Such individual rights may carry economic benefits, an effect that is especially pronounced for the protection of property rights. Thus, the hypothesis that “well-functioning courts support economic development broadly by checking government abuses and upholding the rule of law.”⁶⁸ From a property rights perspective, judicial independence may help prevent government expropriation of private property.⁶⁹

One recent empirical analysis included judicial independence as a variable and found that institutions (such as judicial independence) did not *cause* economic growth; rather, growth caused countries to improve their institutions.⁷⁰ The authors’ measure of judicial independence, though, relied only on the tenure of the judges of the nation’s highest court and the degree to which the judiciary had the power of constitutional review.⁷¹ The evaluation of the directionality of growth and judicial

⁶⁵ Daniel Klerman & Paul Mahoney, *The Value of Judicial Independence*, 7 AM. LAW & ECON REV. 1 (2005).

⁶⁶ See Daniel Berkowitz & Karen Clay, *The Effect of Judicial Independence on Courts: Evidence from the American States*, 35 J. LEGAL. STUD. 399 (2006).

⁶⁷ See, e.g., Paul M. Bator, *The Constitution as Architecture: Legislative and Administrative Courts Under Article III*, 65 IND. L.J. 223, 268 (1990) (suggesting that judicial independence is that “judges free of congressional and executive control will be in a position to determine whether the assertion of power against the citizen is consistent with law”); Irving Kaufman, *The Essence of Judicial Independence*, 80 COLUM. L. REV. 671, 691 (1980) (arguing that independence means that judges are “free from undue interference by the President or Congress”).

⁶⁸ Juan Carlos Botero, *et al.*, *Judicial Reform*, 18 WORLD BANK RES. OBSERVER 61, 61-62 (2003).

⁶⁹ One recent study has found that judicial independence appears to be associated with a relatively smaller government economic role. George Tridimas, *Judges and Taxes: Judicial Review, Judicial Independence and the Size of Government*, 16 CONST. POL. ECON. 5 (2005).

⁷⁰ Edward L. Glaeser, Rafael La Porta, Florencio Lopez-De Silanes & Andrei Shleifer, *Do Institutions Cause Growth?*, 9 J. ECON. GROWTH. 271 (2004).

⁷¹ *Id.* at 300.

independence was also complicated by the lack of historical information on judicial independence.

A relatively new scale has sought to capture judicial independence in a more useful way. Lars Feld and Stefan Voigt have created new indicators that they termed *de jure* judicial independence and *de facto* judicial independence for a sample of sixty-six countries.⁷² The *de jure* measure was based on twelve variables drawn from structural legal documents governing the judiciary, such as salary protection and lifetime tenure. The *de facto* measure was based on eight variables measuring the actual functioning of the judiciary, such as actual judicial income and the average actual term length of judges on the highest court of the nation. One analysis found no correlation between the two measures,⁷³ though a subsequent study found that *de jure* independence was a statistically significant determinant of *de facto* independence.⁷⁴ Voigt and Feld also found that *de facto* judicial independence had a significant positive association with GDP per capita growth from 1980 to 1998, but *de jure* independence had no such association.⁷⁵ While it is possible to take issue with the tools Voigt used to measure the *de jure* and *de facto* scales, they are a valuable addition to the research and, importantly, suggest that the *de jure* legal structure does not dictate the *de facto* legal functioning. Thus, structural inputs may not correlate directly with functioning outputs.

Judicial independence is not an absolute good, and an excess of such independence may be counterproductive, both economically and otherwise.⁷⁶ In recognition of this, Voigt has also produced a scale of “judicial accountability” that measures the extent to which the judiciary is checked by other government institutions.⁷⁷ Some have suggested that introducing a measure of accountability is

⁷² Lars P. Feld & Stefan Voigt, *Economic Growth and Judicial Independence: Cross-Country Evidence Using a New Set of Indicators*,

⁷³ *Id.* at 13-15.

⁷⁴ Bernd Hayo & Stefan Voigt, *Explaining De Facto Judicial Independence*, Marburg Papers on Economics No. 07-2005.

⁷⁵ *Id.* at 20-21. *See also* *Judicial Independence and Economic Growth*, *supra* note 000, at 267 (reporting similar finding).

⁷⁶ *See* note 000 *supra*.

⁷⁷ *See* Stefan Voigt, *The Economic Effects of Judicial Accountability – Some Preliminary Insights*, ICER Working Paper No. 19 (2005).

an important aspect of judicial reform.⁷⁸ Voigt employed two scales, including a measure based on judicial corruption and a mixed input/output measure based on the rights of criminal defendants.⁷⁹ Both were significantly correlated with national per capita GDP.

One alternative judicial independence measure was produced by the World Economic Forum (WEF), an international organization associated with the famous conference in Davos, Switzerland, which produces an annual competitiveness report.⁸⁰ This is a survey of 10,000 business leaders in more than one hundred countries. Among the many topics surveyed are the independence of the judicial system.⁸¹ This provides a perceptual measure of nations' judicial systems in practice. These findings have the limitations of any reliance on a survey as opposed to ecological data, but such survey results also have some counteracting strengths.⁸² Although the WEF data has been used in research, their judicial independence score has not been much employed.

A related measure is produced by the International Institute for Management Development (IMD).⁸³ This analysis ranks forty-seven nations on numerous criteria, based in part on existing statistical measures and in part on a survey sent to executives in the nations analyzed. Among the indicators for government quality in this index is the effect of the legal framework on competitiveness, the fairness with which justice is administered, and the protection of private property.⁸⁴ This scale did not directly measure independence but instead asked about the quality of justice in the nation.

These competitiveness indices typically contain a measure of some sort of judicial quality (including independence from the government or perhaps the parties

⁷⁸ See *Judicial Reform*, *supra* note 000, at 65.

⁷⁹ *Id.* at 15-16.

⁸⁰ Michael E. Porter, *et al.*, THE GLOBAL COMPETITIVENESS REPORT 2004-2005 (2004).

⁸¹ *Id.* at 524-526.

⁸² See Joseph L. Staats, *et al.*, *Measuring Judicial Performance in Latin America*, 47 LATIN AM. POL. & SOC. 77, 85 (2005) (noting that surveys measure the actual operation of judicial systems in practice).

⁸³ IMD, THE WORLD COMPETITIVENESS YEARBOOK (2000).

⁸⁴ *Id.* at 411, 418-419.

to litigation). The frequency with which the international competitiveness reports ask about the judiciary by itself speaks to its significance as an economic variable. These indices also often contain some scale for judicial efficiency and other metrics for evaluating court systems.

4. Other

Other tools have also been used to capture the effect of legal variables on economic growth. One widely used measure has sought to capture property rights protection. These property rights measures are dominated by indices compiled by the Heritage Foundation and the Fraser Institute.⁸⁵ Considerable research has found that these property rights measures are significantly associated with economic growth.⁸⁶ These scales are not focused on the judiciary, however. They rely significantly upon variables for factors such as monetary policy, tax rates, trade policy, and other non-judicial factors.⁸⁷ Hence, they provide questionable proxies for the role of the judiciary.

An important early study of corruption used variables from Business International, a part of the Economist Intelligence Unit.⁸⁸ Among the variables used was “efficiency and integrity of the legal environment as it affects business, particularly foreign firms.”⁸⁹ This measure was used as part of a “bureaucratic efficiency” index that had a significant association with corruption levels. While this measure seems more like a metric for the judiciary itself and has been so regarded, the phrase “legal environment” is broad enough that respondents might have included

⁸⁵ See, e.g., Kim R. Holmes, *et al.*, 1995 INDEX OF ECONOMIC FREEDOM (providing historic measures from Heritage Foundation) and James Gwartney, *et al.*, ECONOMIC FREEDOM OF THE WORLD 1975-1995 (1996) (providing measures from the Fraser Institute).

⁸⁶ For a review of some of this research, see N. Berggren, *The Benefits of Economic Freedom: A Survey*, 8 INDEP. REV. 193 (2003).

⁸⁷ Components of The Fraser Institute Index, include size of government expenditures, taxes, and enterprises; legal structure and security of property rights; access to sound money; freedom to exchange with foreigners; and regulation of credit, labor and business. The index thus contains a procedural legal measure, some substantive legal measures, and entirely non-legal measures.

⁸⁸ Paolo Mauro, *Corruption and Growth*, 110 Q.J. ECON. 681 (1995).

⁸⁹ *Id.* at 684.

legislative and executive actions in their assessment. This variable has also been shown to be significantly associated with firm size.⁹⁰

A recently developed and more direct measure of judicial systems is found in the “World Business Environment Survey” of the World Bank.⁹¹ This measure surveyed enterprises in eighty countries around the world, with over one hundred firms surveyed for the vast majority of these countries.⁹² The judicial system was one of the topics surveyed, and the questions included issues such as whether the system was fair, affordable, consistent, enforced, and other matters.⁹³ This data was purely perceptual and carries the shortcomings and strengths of survey data. To the extent that sources expectations about judicial performance are colored by their experiences with judicial performance (or that of other institutions), survey responses will have a built in bias.⁹⁴

Clearly, researchers have developed numerous differing scales to assess national judicial systems (these various scales are summarized below in Table 1). The following section reviews more of the research that has been conducted on the effect of the judicial systems, relying on these different measures. While many of these measures have been found associated with various economic endpoints of interest, there is a lack of integrative research, comparing the measures for their relative importance or accuracy.

II. Study of Judiciaries

Because the judiciary is generally responsible for application of the law, the nature of judicial institutions warrant scrutiny. Indeed, there is a growing recognition of the societal value of judiciaries that function well. The recognized importance of “law” cannot occur without its reliable application, so “attention must be paid to the

⁹⁰ See Krishna B. Kumar, *et al.*, *What Determines Firm Size*, NBER Working Paper 7208 (July 1999).-

⁹¹ Geeta Batra, *et al.*, *INVESTMENT CLIMATE AROUND THE WORLD* (2003). The data is available online at <http://info.worldbank.org/governance/wbes/>.

⁹² See *id.* at 11-21 (describing sample of firms surveyed).

⁹³ See *id.* at 98.

⁹⁴ See *Judicial Independence and Economic Growth*, *supra* note 000, at 264 (observing that “the norm of what is an ideally independent judiciary will most likely be different in different parts of the world and yield data that are not easily comparable”).

institutions responsible for enforcing and administering laws as opposed to the substantive laws themselves.”⁹⁵ The President of the World Bank has stressed that “[w]ithout strong judicial institutions that enforce contracts, entrepreneurs find many business activities too risky.”⁹⁶ Robert Summers refers to the economic “need for a well-designed court system.”⁹⁷ A survey in Brazil found that domestic investment would increase by ten percent if that nation had a judiciary comparable to that of more economically advanced nations.⁹⁸ While “few now question the importance of judicial reform for development, little is known about the impact of the judicial system on economic performance.”⁹⁹ The value of a quality judicial system is not uncontested, though, as Richard Posner has suggested that the cost of creating such a system might exceed the economic benefits that it offers.¹⁰⁰

Unfortunately, this research studying judiciaries in detail has generally not been reduced to quantitative measures that can be used in broader empirical analyses. Without this reduction, studies of the relative effect of judiciaries and judicial characteristics are too often limited to rhetorical analyses that lack the rigor of quantitative empirical methods. To employ the latter methods, one requires some scaling of various attributes of different judicial systems. The measures discussed in the preceding section, such as national rule of law, have been used as proxies for quality of judicial systems but they are indirect measures.

These judicial measures are beginning to find use in research, and one major study by Acemoglu and Johnson used the index of legal formalism and the Doing Business survey measure (which were characterized as “contracting institutions”), in

⁹⁵ Kevin E. Davis & Michael J. Trebilcock, *Legal Reforms and Development*, 22 *THIRD WORLD Q.* 21, 32 (2001).

⁹⁶ World Bank, *WORLD DEVELOPMENT REPORT 2002: BUILDING INSTITUTIONS FOR MARKETS* iii (2002).

⁹⁷ Robert S. Summers, *Some Basic Ways Good Law, Good Legal Institutions, Good Legal Traditions, and Principles of the Rule of Law Can Augment Markets*, in *MARKET AUGMENTING GOVERNMENT* 25, 33 (Omar Azfar & Charles A. Caldwell eds. 2003).

⁹⁸ Richard E. Messick, *Judicial Reform and Economic Development: A Survey of the Issues*, 14 *WORLD BANK RES. OBSERVER* 117, 121 (1999).

⁹⁹ *Id.* at 117.

¹⁰⁰ Richard A. Posner, *Creating a Legal Framework for Economic Development* 13 *WORLD BANK RES. OBSERVER*. 1, 7 (1988). See also *Legal Reforms and Development*, *supra* note 000 (discussing limitations of reforming judiciary).

tandem with the ICRG and Heritage Foundation measures, as well as legal origin.¹⁰¹ The research found that “contracting institutions and legal rules have some effect on stock market capitalization . . . [but] “have limited or no effects on major economic outcomes, including long-run growth . . .”¹⁰² By contrast, the measures for property rights were significant determinants of economic outcomes. A separate study of judicial independence found that measures of judicial independence were significantly associated with protection of the property rights that are demonstrably economically valuable.¹⁰³

The Acemoglu and Johnson results called into question the significance of the rule of law. It found no effect for the “contracting institutions” used sophisticated methodologies, a series of control variables, and different samples of countries and is a very reliable measure that questions the value of “contracting institutions” (judicial procedures). The authors theorized that the result was explained by the ability of private parties to structure their contracts so that they could avoid the weakness of contracting institutions.¹⁰⁴ While this is certainly plausible, the authors did not address the fact that the same judicial institutions were relevant to the protection of property rights, which the study found to be very important in economic growth. The protection against expropriation which was highly significant depends on institutions such as the judiciary preventing such expropriation.¹⁰⁵ An alternative explanation of the results is that the empirical measures that the study used for “contracting institutions” or judicial functioning were not accurate and reliable measures of judicial functioning. In short, the input measures for the judiciary did not accurately capture its output. There remains a problem finding accurate measures of judicial functioning.

¹⁰¹ See Daron Acemoglu & Simon Johnson, *Unbundling Institutions*, 113 J. POL. ECON. 949 (2005).

¹⁰² *Id.* at 983-984.

¹⁰³ See *Judicial Checks and Balances*, *supra* note 000, at 458. The study also found a significant positive association with political rights and human rights indices. *Id.*

¹⁰⁴ *Id.* at 949.

¹⁰⁵ See *Creating a Legal Framework for Economic Development*, *supra* note 000, at 8 (noting that the efficacy of property rights “depends on the willingness of the judges to stand up to government officials”); Hernando de Soto, *THE MYSTERY OF CAPITAL* 8 (2000) (referring to the importance of the “legal infrastructure hidden deep within . . . property systems”).

Perhaps the best study of the economic significance of a judiciary was conducted on the states and territories of India over a twenty-five year period.¹⁰⁶ For each state, the author was able to measure the speed of judicial processing and “predictability” based upon the reversal ratio before the national supreme court. These measures were tested against a wide range of economic outcomes, with controls for a variety of factors, such as population density, literacy, and localized economic factors. The author used a dynamic model that incorporated the effect of the judiciary on other societal variables. The author found a significant effect of the judicial system. A judiciary of low quality caused per capita income to “decline[] drastically” and the poverty rate to increase.¹⁰⁷ Research in other nations has confirmed this finding.¹⁰⁸

These studies show that judicial quality could have a dramatic difference on economic results within a single nation. They indicate that “providing better courts – more accessible, faster, fairer and predictable courts can support the development of economic activity.”¹⁰⁹ The studies within a nation cannot be replicated among different nations, because no comparable data is available. However, we can seek to find other judicial measures that might be fruitfully used for such research.

III. Analyzing Comparative International Judiciary Metrics and Effects

This section analyzes the above discussed tools available to measure the judicial systems of different nations to the end of creating a tentative ranking. The judiciary is central to the functioning of the law, which, in turn, appears to be central to economic success. In striving to measure the judiciaries of various nations, I

¹⁰⁶ Wolfgang K.C Kohling, *The Economic Consequences of a Weak Judiciary*, Center for Development Research, November 2000.

¹⁰⁷ *Id.* at 39.

¹⁰⁸ See World Bank, WORLD DEVELOPMENT REPORT 2005: A BETTER INVESTMENT CLIMATE FOR EVERYONE 86 (2004) (reporting that “[s]tudies from Argentina and Brazil show that firms doing business in provinces with better-performing courts enjoy greater access to credit,” while research in “Mexico shows that larger, more efficient firms are found in states with better court systems”); Robert Sherwood, *Judicial Systems and National Economic Performance* in JUSTICE DELAYED: JUDICIAL REFORM IN LATIN AMERICA 31, 32 (Edmundo Jarquin & Fernando Carrillo eds., 1998) (noting that a study in Latin America suggested that a “poorly functioning judiciary may reduce growth by up to 15 percent”).

¹⁰⁹ Roumeen Islam, *Institutional Reform and the Judiciary: Which Way Forward?*, World Bank Policy Research Working Paper 3134 (September 2003).

employ the sources described in the preceding section, including some that have not been used to date in major economic analyses.

The goal of the project is to evaluate the existing measures of judicial quality and to create an index or indices of national judicial systems, rating their relative quality on one or more variables and test those measures for their economic effect. Given the limited data and the very nature of comparing different nations, any such measure is necessarily imprecise.¹¹⁰ However, consistent findings would suggest that the measures reasonably capture the quality of the judiciary.

To begin the analysis, I survey the above tools that are available to assess the quality of judicial systems. Table 1 summarizes various judicial evaluation measures that have been used. For a recent edition of each index (within the last five years), I list the category of judicial functioning assessed, the number of countries included in the measure, and the source of the information. All are measured on nominal scales, though the relative differentiation on those scales varies considerably.

Table 1
Judiciary Evaluation Measures

Index	Category	Countries	Type
Common Law	System	all	Ecological
ICRG	Rule of Law	140	Survey
	Contract	140	Survey
Voigt	Independence	66	Ecological
World Bank	Rule of Law	209	Combination
Legality	Synoptic	49	Combination
WBES	Various	80	Survey
WEF	Independence	69	Survey
IMD	Justice	47	Survey

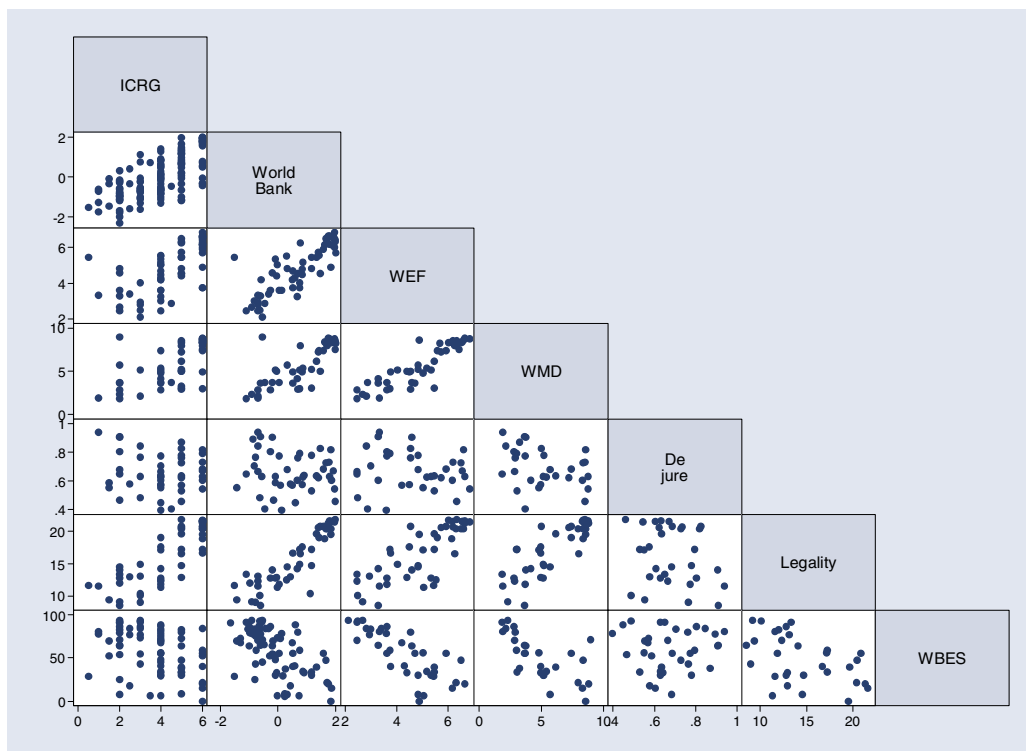
Greater coverage (more countries) is desirable to provide a broader test of judicial systems and avoid artifactual associations in particular subsets of the countries measured. An ecological measure is theoretically preferable, though survey measures have their own strengths.

The first analysis of the measures simply involves a comparison of these judicial evaluation measures against one another. Figure 1 presents a scatterplot

¹¹⁰ See COMPARATIVE ANALYSIS OF NATIONS, *supra* note 000, at 8 (observing that in cross-national analysis, one must “often settle for measures that fall short of the highest standards of validity”).

matrix of the ICRG rule of law scale, the World Bank rule of law scale, The WEF judicial independence scale, the WMD justice scale, Voigt's *de jure* independence scale, the Legality index, and the WBES judicial dishonesty measure.

Figure 1
Matrix of Judicial Scales



Plainly the scales are not highly consistent in their relative ratings of countries. While there is an obvious high correlation among some scales (*e.g.*, World Bank, WEF, WMD), the *de jure* independence index shows no apparent association with the other scales, and the WBES measure appears to have a negative correlation with some of the other scales. Some of the measures are thus not accurately capturing similar measures of judicial quality. To differentiate among the scales to determine which are the more reliable measures of judicial systems, I consider their facial and criterion validity.

A. Facial Validity

Facial validity is a subjective measure that must be cautiously used, but it is still valuable in evaluating the usefulness of a data source. If a given measure suggests that a nation such as Cuba or China have a very high rating for democracy (or judicial independence), that result does not comport with the understanding of those who have closely studied the particular nations and calls into question the validity of the measure.

I first examine the various scales of the World Bank’s WBES project, because they provide the most particularized, and potentially most useful, measures of national judicial functioning. The WBES project was able to survey several features of direct interest to the assessment of judicial systems. Table 2 reports the top five judicial systems on the major WBES scales for judicial quality.

Table 2
Top Judiciaries on WBES Scales

	Fair	Honest	Affordability	Consistent	Enforceable
1	Singapore	Singapore	Egypt	Singapore	Singapore
2	Namibia	Namibia	Tunisia	Tunisia	Tunisia
3	South Africa	Egypt	Singapore	Botswana	Botswana
4	Botswana	Botswana	Botswana	Egypt	Egypt
5	Egypt	South Africa	Uzbekistan	Namibia	Namibia

The United States was rated 42nd in fairness, 34th in honesty, 76th in affordability, 43rd in consistency, and 41st in enforceability.

The WBES rankings look curious from a facial validity standpoint. They are dominated by African nations (and Singapore) on all measures ranging from honesty to enforceability. These results seem to lack facial validity. Reporting and other evidence suggests that these nations have weak judiciaries, dominated by the dictates of the national executive. In Egypt, the government has stripped several judges of their immunity and subjected them to interrogation after they criticized the government¹¹¹ and a court order governing a recent election was simply ignored by the government.¹¹² In Namibia, judges are transferred and otherwise punished at the

¹¹¹ See *Judges Critical of Mubarak Lose Immunity*, N.Y. TIMES, February 17, 2006, at A7.

¹¹² See Abeer Allam, *Egypt’s Election Panel to Ignore Court Order on Poll Monitors*, N.Y. TIMES, September 5, 2005, at A4.

whim of the executive and legislative branches.¹¹³ According to Human Rights Watch, Tunisian judges “lack independence” and “frequently turn a blind eye to torture allegations and procedural irregularities.”¹¹⁴ A former solicitor general of Singapore has ridiculed international surveys that showed his nation’s judiciary to be of high quality.¹¹⁵ Thus, the facial validity of this measure appears questionable.

Next I consider the facial validity of the judicial independence scores of different nations. Table 3 lists the top nations on these scores.

Table 3
Top Judiciaries on Independence Scales

	Voigt- de facto	Voigt – de jure	WEF
1	Armenia	Colombia	Finland
2	Switzerland	Philippines	Netherlands
3	Turkey	Brazil	Canada
4	Costa Rica	Georgia	New Zealand
5	Japan/Austria	Slovenia	Denmark

The United States was rated 30th on the Voigt *de jure* scale, 22nd on the Voigt *de facto* measure, and 16th on the WEF index. These measures (at least the *de jure* scale and WEF index) appear to have somewhat more facial validity. Voigt himself has questioned the validity of the *de jure* score as an accurate measure of actual judicial independence, so the focus should be placed on his *de facto* score. The high score for Armenia on the former index is somewhat curious, as investigations have questioned that judiciary’s independence.¹¹⁶ Some of the other high scoring nations are

¹¹³ See *Africa News*, March 28, 2006, available at <http://www.afrol.com/articles/12105>; Werner Menges, *Legal Face-Off Looms Over Role of Magistrates*, July 24, 2001, available at <http://www.namibian.com.na/2001/july/news/012DD4F40.html>.

¹¹⁴ See <http://hrw.org/english/docs/2005/01/13/tunisi9801.htm>.

¹¹⁵ See Francis T. Seow, *The Politics of Judicial Institutions in Singapore*, available at <http://www.sfdonline.org/Link%20pages/Link%20Folders/The%20Law/judicialinstitns.html>.

¹¹⁶ See, e.g., <http://www.eurasianet.org/departments/rights/articles/eav031204.shtml>, a report by EurAsianet, which reports that the nations’ judiciary received numerous negative independence reports including one attorney who “stated that an appellate judge told him directly that he could not resist the opposing pressure to decide [the case in question] a certain way for fear of jeopardizing his professional future” and reports that challengers to an election’s honesty were denied counsel and faced closed trials. The U.S. State Department report on Armenian human rights referred to a “general lack of judicial independence.” See <http://www.state.gov/g/drl/rls/hrrpt/2005/61635.htm>.

respected for judicial independence, though the independence of Japanese courts has also been questioned by researchers.¹¹⁷

In addition, the disparity in the lists is material. For the best *de jure* scores, Switzerland is 9th on the WEF index, Austria is 12th, Japan is 17th, Costa Rica is 38th, and Turkey is 45th (Armenia was not measured). The survey scores do not correspond closely to the Voigt measures, a fact that suggests that one, or both, do not accurately capture judicial independence. The WEF scores for leading nations appear to have facial validity.

The next set of scores is for rule of law, broadly defined. The commonly used ICRG rule of law score has only a rough scale, with 23 nations, including the U.S., tying for the top rating. Table 4 reports the top five judiciaries on the other legal scales, of the World Bank, the Legality Index, and the IMD.

Table 4
Top Judiciaries on Rule of Law Scales

	World Bank	Legality	IMD Justice
1	Iceland	Switzerland	Denmark
2	Luxembourg	Norway	Canada
3	Switzerland	Netherlands	Netherlands
4	Finland	Sweden	Finland
5	Norway	New Zealand	Australia

The United States is 17th on the World Bank rule of law measure, 9th on the Legality Index, and 18th on the IMD Justice scale. These measures have apparent facial validity and appear relatively consistent among the tools, with some overlap in their outcomes for best countries.

The purpose of rigorous statistical research is in part to test the commonplace understanding of reality, so apparent facial invalidity should not be used to reject or embrace measures too dismissively. In our present effort, though, we are comparing different metrics. If one metric has much better facial validity, it would seem preferable (absent some other reason to question its validity). Thus, the WBES ratings seem of dubious reliability, absent other evidence supporting them. Because facial validity is a very imperfect check, the next section considers more the objective measures of criterion validity.

¹¹⁷ See J. Mark Ramseyer & Eric B. Rasmussen, MEASURING JUDICIAL INDEPENDENCE: THE POLITICAL ECONOMY OF JUDGING IN JAPAN (2003).

B. Judicial Quality and Economic Effect

There is a strong theoretical and case study grounding for the conclusion that effective judicial systems contribute to economic development, discussed at the beginning of this article. Hence, the validity of a measure of a judicial system can be checked against economic variables. If a measure has no relationship, or a negative relationship, with economic development, that finding suggests that the measure may not be a valid one.

If our measures fail this test and lacks criterion validity, that finding could mean one of two different things: (a) the metric is inaccurate and does not capture the feature it purports to be measuring or (b) the feature it purports to be measuring is unrelated to economic development. While we have reason to think that judicial systems are contributors to such development, it does not follow that every feature of such systems must contribute. To try to distinguish between these explanations, we compare different measures of similar judicial features. If one has criterion validity and the other does not, that result suggests that the other may not accurately measure the concept. If all lack this criterion validity, that result suggests that the judicial quality feature may be unrelated to economic development.

I use three variables on which to test the different measures of judicial quality. Economic growth is the primary variable of concern, for which economists hypothesize a positive effect for judicial quality. An economies' growth is influenced by a myriad of confounding factors, though, and I also use measures of corruption and the size of the nation's underground or "shadow" economy operating outside the bounds of the law. Considerable research has associated corruption with lessened economic growth,¹¹⁸ and this is a pathway through which judicial quality might be expected to occur. Judicial quality is hypothesized to have its effect through enforcing the rule of law. Hence it would be expected to have an association with these variables for a nation's lawfulness.

Our dependent variables to test for criterion validity begin with economic growth, which is measured for the years 1975-2003, using data from the United Nations.¹¹⁹ In addition, relative corruption is a measure that might more precisely

¹¹⁸ See, e.g., Pak Hung Mo, *Corruption and Economic Growth*, 29 J. COMP. ECON. 66 (2001) (finding that a one percent increase in corruption decreased economic growth by 0.72%); Paolo Mauro, *Corruption and Growth*, 110 Q. J. ECON. 681 (1995) (reporting that corruption is significantly associated with less private investment and lower economic growth)

¹¹⁹ See 2005 United Nations Human Development Report, available at <http://hdr.undp.org/reports/global/2005/>.

Cash Value of Courts

capture the role of a judiciary in society, and the research uses the 2005 results of the widely used data of Transparency International.¹²⁰ For the size of the underground economy, I use a 2002 measurement that covers 110 countries.¹²¹ There is a significant though imperfect correlation between corruption and the size of the underground economy.¹²²

To test the comparative effect of the different judicial measures, I employ four independent control variables expected to be determinants of the dependent variables, unrelated to judicial quality. As did the LaPorta group, I use variables for ethnolinguistic fractionalization, latitude, and legal origin (to capture the common law effect).¹²³ I also use control variables for human capital (secondary school enrollment)¹²⁴ and an East Asian dummy,¹²⁵ which are often used in studies of economic outcomes. While log of GDP is commonly used as a control variable, it is omitted because it is expected to be endogenous to judicial system quality. The effect of these control variables on the economic growth data is measured through an OLS regression taking the following form:

$$Y_i = \beta_0 + \beta_1(\text{ethnolinguistic}) + \beta_2(\text{latitude}) + \beta_3(\text{legal origin}) + \beta_4(\text{secondary}) + \beta_5(\text{EastAsia}) + u_i$$

¹²⁰ See 2005 Transparency International Corruption Perceptions Index, available at http://www1.transparency.org/cpi/2005/cpi2005_infocus.html

¹²¹ Friedrich Schneider, *Size and Measurement of the Informal Economy in 110 Countries around the World* (July 2002) (presented at the Workshop of the Australian National Tax Centre).

¹²² See Dani Rodrik, IN SEARCH OF PROSPERITY 363 (2003) (graphically displaying association between the two measures).

¹²³ See, e.g., *Judicial Checks and Balances*, *supra* note 000.

¹²⁴ The measure for human capital is the secondary school enrollment rate, taken from GLOBAL COMPETITIVENESS REPORT, *supra* note 000, at 312.

¹²⁵ During the relevant period, East Asian economies had certain unique features that enabled them to outperform the rest of the world. See, e.g., Susan M. Collins and Barry P. Bosworth, *Economic Growth in East Asia: Accumulation Versus Assimilation*, 2: 1996 BROOKINGS PAPERS ON ECONOMIC ACTIVITY 135; David E. Bloom & Jeffrey G. Williamson, *Democratic Transitions and Economic Miracles in Emerging Asia*, 12 WORLD BANK ECON. REV. 419 (1998). Consequently, studies use a dummy variable to segregate this geographic effect. See, e.g., Michael Bleaney & Akira Nishiyama, *Explaining Growth: A Contest Between Models*, 7 J. ECON. GROWTH 43 (2004).

This base model without any judicial quality variables is a statistically significant predictor of economic growth ($p = 0.002$) with an adjusted R-squared of 0.1427. This confirms the hypothesis that the independent control variables are determinants of economic growth. With this baseline, the next step is measuring the effects of the measures of judicial systems.

In order to do a comparative measurement of coefficients and thus effect sizes, Z-scores were created for the judicial quality measures.¹²⁶ Then each of these was added separately to the basic set of control variables in separate regressions. This enables us to compare the relative effect of the different judicial variables for criterion validity.¹²⁷ There are various scales that might be used to draw this comparison, and Table 3 reports the results for each judicial quality measure of coefficient size, statistical significance in the multiple regression, and improvement of the adjusted R-squared (sometimes called “goodness of fit”) over the baseline model with just the control variables. The comparison is imperfect, because the judicial measures do not all include the same nations, but the overlap is large enough to enable a rough comparison.¹²⁸ The multiple regression analyses follow the above model add an additional independent variable for the judicial measure, enabling comparisons of the relative effect of the differing measures.

1. Economic growth

The first analysis analyzes the association between measures of judicial quality and national economic growth. I begin with regressions for the various measures of judicial quality on the economic growth rate variable discussed above. Each measure is added to the base independent control variables. Table 5 reports the comparative

¹²⁶ Z-scores are a technique that can reduce different scales, with different numerical measures to a common metric, so that the size of changes in the scales can be compared.

¹²⁷ There is some dispute over the proper statistical method to compare the effects of such independent variables. See, e.g., Michael S. Lewis-Beck, *When to Use R-Squared*, 3 POL. METHODOLOGIST 9 (1990) (arguing for value of R-squared measure for comparing models generally) and Gary King, *When Not To Use R-Squared*, 3 POL. METHODOLOGIST 11 (1990) (arguing generally against using R-squared to compare models, in favor of coefficient sizes and standard errors, but acknowledging that it may have some value when comparing models within a given sample).

¹²⁸ See Table 1, *supra*. The different sample sizes suggest some caution in the reliance on p-terms, as the much larger samples are likely to produce lower p-terms simply by virtue of their size.

results for the different measures of judicial quality discussed above. The coefficient represents the size of the effect, probability measures statistical significance, and adjusted R-squared increase provides the goodness of fit for the model, with each judicial variable added.

Table 5
Judicial Quality and Economic Growth

	Coefficient	Probability	R-Squared Increase
WEF Independence	1.07	.004	.1350
ICRG Rule of Law	0.45	.125	.0192
ICRG Contract	.81	.007	.0708
WB Rule of Law	1.64	.000	.2325
WBES Unfair	-.08	.014	.1531
WBES Dishonest	-1.01	.003	.2050
<i>De facto</i>	.40	.355	.0288
IMD Justice	.11	.744	.0990
Legality	.09	.807	.1665

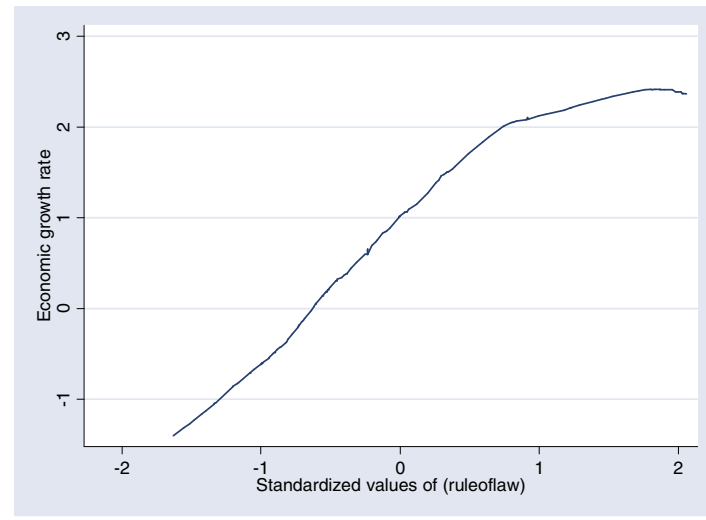
The divergence in results of the scales is remarkable. The WBES measures have a statistically significant *negative* association with economic growth during the period.¹²⁹ Voigt’s *de facto* measure is positive but insignificant. The commonly used ICRG rule of law scale is only modestly successful as a determinant, but the ICRG’s measure of contract enforcement does distinctly better. Only two scales, the WEF judicial independence measure and the World Bank rule of law measure, work very well, with the World Bank numbers the best on each of our three measures. Both variables substantially improve the R-squared measurement, which reveals their significance for growth.

To visually demonstrate the magnitude of the economic effect, Figure 2 graphically depicts the association of the Z-scores for the World Bank rule of law measure and economic growth rates, with lowess smoothing of the curve.

Figure 2
Rule of Law and Economic Growth

¹²⁹ It seems unlikely that unfair and dishonest courts produce more economic growth (or result from such economic growth), so the accuracy of these WBES measurements is called into question.

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The graph illustrates both the magnitude and nature of the relationship between the rule of law and economic growth. There is a steady and substantial increase between negative growth at the lowest levels of rule of law to moderate (one percent) growth at median levels to significant (two percent) growth at high levels.¹³⁰ The slope of the curve decreases at the highest levels, suggesting that the economic growth payoff of rule of law is more limited once one reaches a relatively high level of rule of law.¹³¹ While some have suggested that there may be a minimum threshold for institutions to provide a benefit,¹³² these results suggest the contrary – improvement in rule of law even at low levels has a substantial benefit.

2. Corruption

¹³⁰ The similar graph for the WEF judicial independence score, undisplayed for space reasons, shows a very similar relationship.

¹³¹ The small decline in growth at the very highest levels of the World Bank measure might suggest that rule of law may be counterproductive at these levels, but any such conclusion would be premature, because they are the product of only a few data points at these high levels and probably influenced by the effect of East Asian countries.

¹³² See Randall G. Holcombe, *et al.*, *Constitutions and Prosperity: The Impact of Legal and Economic Institutions on the Wealth of Nations*, in *DEMOCRATIC CONSTITUTIONAL DESIGN AND PUBLIC POLICY*, *supra* note 000, at 289, 298 (suggesting this effect for the property rights measures).

Having found an association between rule of law or judicial independence and economic growth that is both statistically and substantively significant, I turn to analysis of intermediate determinants with which courts are theoretically associated. A significant association here would help provide confidence that the identified relationship for economic growth is not a spurious one. The same regression model is used to test for the effect on cross-national corruption, which is one of the pathways through which greater economic growth might result from an improved judiciary. Our base model of independent non-legal control variables work better for this dependent variable, as the underlying baseline regression has a p of .000 and an adjusted R-squared of .3958. Table 6 reports the additive effect of each of the judicial quality measures.

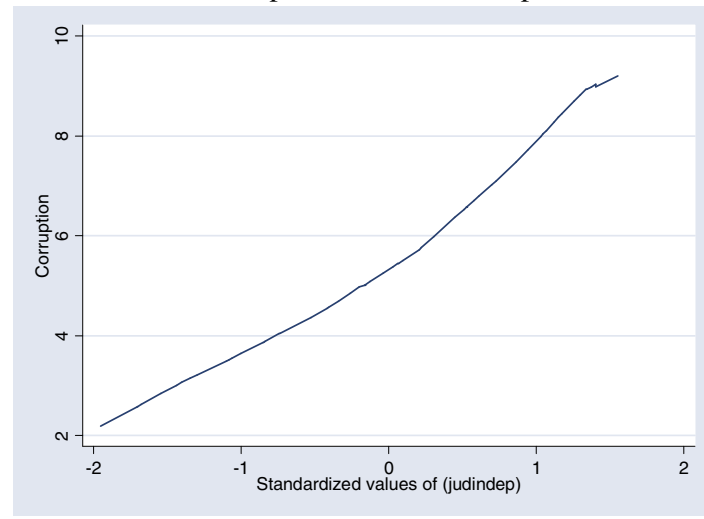
Table 6
Judicial Quality and Corruption

	Coefficient	Probability	R-Squared Increase
WEF Independence	1.80	.000	.3446
ICRG Rule of Law	1.00	.000	.1124
ICR-G Contract	1.29	.000	.2180
WB Rule of Law	2.02	.000	.4401
WBES Unfair	-.45	.072	-.0045
WBES Dishonest	-.71	.003	.5370
<i>De facto</i>	.67	.055	.0508
IMD Justice	1.32	.000	.2869
Legality	1.88	.000	.4634

Some of the quality measures do much better on this score. The ICRG measures and IMD Justice scale both significantly determine corruption and considerably improve the adjusted R-squared of our base model. The legality index does well but this may be artificial, because corruption rankings are one of the inputs into its scores. The relative ranking of the different judicial quality measures is roughly the same, however, with the World Bank's rule of law scale the best and the WEF Independence scale the second best. The WBES measures lack the expected association.

The nature and magnitude of this effect can be seen graphically, this time using the WEB Judicial Independence measure for the graph. Figure 3 plots the Z-scores for the WEF judicial independence scale against the relative measures of national lack of corruption with lowess smoothing.

Figure 3
WEF Independence and Corruption



This figure demonstrates the strong and nearly linear association of the WEF Judicial Independence scale and control of corruption at all levels of judicial independence. Again the relationship is a substantive one that shows steadily decreasing levels of corruption (higher scores mean less corruption) as judicial independence increases.

C. Underground Economy

Turning to measures of the underground economy, the base model of independent control variables also works well for this dependent variable, with a p of .0000 and an adjusted R-squared of .2766. Table 7 reports the effect of the judicial quality measures when added to the base model. Negative signs represent an association of the variable with a smaller underground economy.

Table 7
Judicial Quality and Underground Economy

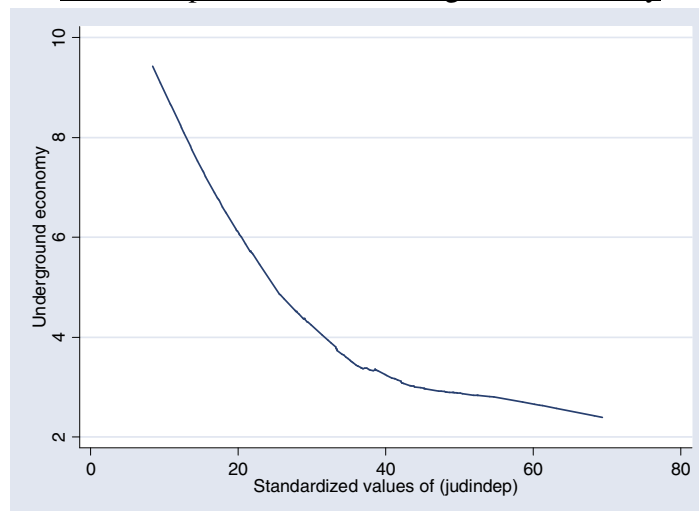
	Coefficient	Probability	R-Squared Increase
WEF Independence	-8.27	.001	.2553
ICRG Rule of Law	-5.43	.001	.1442
ICRG Contract	-6.74	.000	.1466
WB Rule of Law	-10.58	.000	.2829
WBES Unfair	.01	.997	.0122

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WBES Dishonest	.79	.692	.0144
<i>De facto</i>	-3.66	.080	.0637
IMD Justice	-3.25	.018	.3525
Legality	-8.33	.000	.2970

The ICRG, World Bank, WEF, Legality, and IMD variables all work well as determinants of the size of the underground economy, with high levels of statistical significance and great improvements in the magnitude of the adjusted R-squared term for the model. As with prior measures, the WBES scales work very poorly and the *de facto* measure contributes relatively little.

Figure 4
WEF Independence and Underground Economy



Again, we see a steady improvement in reducing the underground economy as national levels of judicial independence increase. In the case of the underground economy, it appears that improving judicial independence has its greatest effect at lower levels, as the slope of the curve of improvements declines once one reaches moderate levels. Nevertheless, there is some continuing benefit even at high levels.

4. Conclusions

The results for the three distinct dependent variable tests of criterion validity allow some decisions about the validity of the available judicial quality measures.

The WBES scales seem of questionable reliability, in their lack of association with the expected positive consequences of a better judiciary. While the *de jure* judicial independence measure is not incorrectly signed, it too seems unable to capture judicial quality.¹³³ The remaining measures all work reasonably well. The most commonly used tool for capturing the effect of the judiciary, the ICRG's rule of law metric, appears to be the weakest of these alternatives however. Its failure to produce significant results for economic growth during the period of this test suggest that its use may have underestimated the significance of judicial systems in the prior research. The ICRG's contract validity scale, which lacks the crime component, consistently works better for our dependent variables of interest. The best of all the existing measures appears to be that of the World Bank, for rule of law. This measure not only appears to be slightly more valid, but it also includes a very large number of countries available for testing and is updated with regularity.

These results provide substantial empirical evidence for the importance of judicial systems, as measured by particular scales. There is a strong statistically significant association of both the World Bank rule of law score and the WEF judicial independence score on economic growth and our causal measures of corruption and the underground economy. The figures display the powerful substantive significance of these measures as well.

The World Bank scores are not precise tests for the judiciary, however. The Bank's synoptic scale includes sundry measures that include non-judicial factors. It uses an ICRG scale that includes consideration of crime rates and other scales that are focused on crime rates or policing.¹³⁴ It also includes the Heritage Foundation property rights measure that is not focused on the judiciary.¹³⁵ For a purer test of judiciaries, researchers might use the WEF judicial independence scale, which does not include these extraneous considerations, though at a cost of a smaller sample size, or perhaps the ICRG's contract validity scale, though this fails to draw distinctions among comparable nations.

The tests of different measures for their criterion validity provide an empirical test of the importance of the judiciary to the economy. Several variables, most

¹³³ This scale uses an ecological model which has distinct advantages, because it gives information about how to achieve judicial quality, but such an effort is a very challenging one, and it appears that the *de jure* measure for judicial independence fails to capture judicial independence in practice, as reflected in the survey measures.

¹³⁴ *Governance Matters IV, supra* note 000, at 108.

¹³⁵ *Id.*

notably the World Bank Governance Matters scale and the WEF Judicial Independence survey measure show a statistically significant relationship and a remarkably high improvement in the R-squared term, even when compared with such fundamental determinants as national human capital and ethnolinguistic fractionalization. The substantive significance of the relationship is also great. For the World Bank score, a one unit change in the independent variable is about the difference between the 50th percentile score and the 75th percentile score, and this corresponded to a huge increase in annual economic growth rate of 1.64%. Thus, the research appears to indicate that judicial systems, captured in measures of the rule of law or independence, have great economic significance.

The findings support the presumed relationship between judiciaries and the dependent variables of economic growth, corruption, and underground economy. Because of the strong theoretical basis for this relationship and strong associations with criterion validity, though, there is sound reason for believing the tests are useful ones. Ideally, one would want measures of construct validity, showing that the measures of judicial systems conform to what they purport to measure. These would, in a perfect world, enable us to discern whether survey measures of judicial independence conform to actual judicial independence.¹³⁶ With ecological data to measure construct validity, we could have more confidence in comparing judicial quality, but this data is unavailable for most nations. With the available data, we can provide at least tentative scales for judicial quality, to be used in future research, and draw preliminary conclusions about the economic importance of a good judicial system. Indeed, the theoretical linkage is strong enough that tests on corruption have been considered construct validity tests for judicial quality measures.¹³⁷

These findings cannot resolve a key issue, which is the direction of the relationship. It is conceivable that nations with higher economic growth invest in better judiciaries, so the judicial scales are endogenous and not a determinant. The one-time cross-sectional analysis above cannot rule out this possibility. However, there is a strong theoretical basis for believing that better judiciaries are in fact a determinant of growth, operating through means such as the reduction in corruption and lessening of the underground economy. Some research also suggests that the

¹³⁶ There is some evidence for construct invalidity for some of the scores, such as the high ranking for Armenia on the *de jure* judicial independence measure and the high scorers on the WBES scale, addressed in the facial validity section above. However, this discussion can capture only gross errors in construct validity and not provide the refined quantitative scales that I seek.

¹³⁷ See *Measuring Judicial Performance in Latin America*, *supra* note 000, at 91.

association runs from judicial equality to economic wellbeing and does not reflect a reverse causality.¹³⁸

Conclusion

The results of this analysis enable us to draw preliminary conclusions about the relative quality of nations' judicial systems. The above findings suggest that the World Bank's Governance Matters scale provides the best measure of "rule of law," at least based on the criterion validity tool. Only one competing metric, the WEF judicial independence scale is approximately equal, and it provides data for many fewer nations but offers a more direct measure of judicial systems in themselves, without consideration of other legal factors such as law enforcement. The tests suggest that these tools are a very effective determinant of the endpoints of interest to economic research and suggests that judicial quality, as measured by the World Bank and WEF, makes a very important contribution to economic growth, reduced corruption, and a smaller underground economy.

For practical purposes, it is important to determine how to create and maintain judicial systems that possess the desired attributes, such as judicial independence. The evidence here is incomplete and sometimes contradictory. A study of emerging socialist nations found no association between constitutional assurances and judicial independence.¹³⁹ There is some empirical research indicating that lengthier court tenure is significantly associated with judicial independence, though, and this could be associated with constitutional protections.¹⁴⁰ Reliance on case law precedent, as characteristic of a common law system, also appears to be

¹³⁸ See *Judicial Checks and Balances*, *supra* note 000, at 465-468.

¹³⁹ See Kirk A. Randazzo & Erik S. Herron, *Judicial Independence in Eastern Europe and the Former Soviet Union*, presented at the November 2000 meeting of the Southern Political Science Association. This is further confirmed by the relatively limited value of Voigt's *de jure* judicial independence score in my analyses.

¹⁴⁰ See *Judicial Checks and Balances*, *supra* note 000, at 456 (reporting such an association). See also Nadia Fiorino, *et al.*, *The Determinants of Judicial Independence: Evidence from the Italian Constitutional Court (1956-2002)* (March 2004) (linking judicial tenure with greater judicial independence in Italian constitutional courts); *Judicial Independence in Eastern Europe and the Former Soviet Union*, *supra* note 000 (reporting this association for former socialist nations). Constitutional guarantees of judicial tenure, though, may not guarantee this effect in practice. See *Measuring Judicial Performance in Latin America*, *supra* note 000, at 85 (noting that Argentina provided such assurances and they did not prevent executives "from getting rid of justices they did not like and influencing those they allowed to remain").

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associated with greater judicial independence.¹⁴¹ In general, the data strongly suggest that independent court systems have a very significant positive economic effect, so that this attribute should be strengthened and preserved by whatever means are found to be effective.

Additional research is also needed on other attributes of judicial systems that may contribute to the desirable economic outcomes. For example, the relative role of the judiciaries in different nations, as reflected in judicial power and the judicialization of various controversies may play a role. The relative efficiency and timeliness of judicial resolution may also be significant.¹⁴² In addition, a fruitful field of future study would involve analysis of other aspects of legal systems, such as the role of lawyers¹⁴³ or perhaps even law schools.¹⁴⁴

¹⁴¹ See *Judicial Checks and Balances*, *supra* note 000, at 456 (reporting such an association).

¹⁴² See, e.g., Juan Carlos Botero, *et al.*, *Judicial Reform*, 18 WORLD BANK RES. OBS. 61 (2003) (arguing that enhancing judicial efficiency would promote economic prosperity and other objectives); Simeon Djankov, *et al.*, *Legal Structure and Judicial Efficiency: the Lex Mundi Project* (October 2001) at Table 8 (showing an association between judicial efficiency, access to courts, and related variables on GDP). These measures tend to be closely associated with legal origin, however. *Id.* at 34.

¹⁴³ There is some empirical research on the effect of absolute numbers of lawyers on economic wellbeing. See, e.g., Stephen Magee, *et al.*, BLACK HOLE TARIFFS AND ENDOGENOUS LEGAL POLICY 119 (1989) (suggesting that too many lawyers harm the economy); Frank B. Cross, *The First Thing We Do, Let's Kill All of the Economists: An Empirical Evaluation of the Effect of Lawyers on the United States Economy and Political System*, 70 TEX. L. REV. 645 (1992) (reporting no such association); Frank B. Cross, *Lawyers, the Economy, and Society*, 35 AM. BUS. L.J. 477 (1998) (demonstrating that Magee's findings are not robust but appear to be an artifact of particular nations and a particular time period).

¹⁴⁴ See, e.g., Julio Faundez, *Legal Reform in Developing and Transition Countries*, in COMPREHENSIVE LEGAL AND JUDICIAL DEVELOPMENT, *supra* note 000, at 369, 394 (discussing how development agencies have worked with national law schools); Hon. Sandra E. Oxner, *The Many Facets of Training*, in COMPREHENSIVE LEGAL AND JUDICIAL DEVELOPMENT, *supra* note 000, at 273, 283 (discussing role of legal education in law reform).