BYU Law Review

Volume 2009 | Issue 6 Article 2

12-18-2009

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ABSTRACT

The legal origins hypothesis is one of the most important and influential ideas to emerge in the social sciences in the past decade. However, the empirical base of the legal origins claim has always been contestable, as it largely consists of cross-sectional datasets, which provide evidence on the state of the law only at limited points in time. There is now a growing body of data derived from techniques for coding cross-national legal variation over time. This time-series evidence is reviewed here and is shown to cast new light on some of the central claims of legal origins theory. Legal origins are shown to be of little help in explaining trends in the law relating to shareholder protection, although the classification of legal systems into English-, French-, and German-origin "families" has greater explanatory force in the context of creditor rights. The widely-held view that increases in shareholder rights foster financial development is not supported by time-series analyses. More generally, the new evidence casts doubt on the suggestion that legal origins operate as an "exogenous" force, independently shaping both the content of laws and economic outcomes. It is more plausible to see legal systems as evolving in parallel with changes in economic conditions and political structures at national level.

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I. INTRODUCTION

Many scholars believe that legal institutions matter for financial development. According to the "legal origins" hypothesis developed by La Porta et al. and their collaborators ("LLSV"),[1] legal systems vary considerably in the way they regulate economic activity. A principal cause of this diversity is the role played by the different legal traditions or "origins" of the common and civil law.[2] Some argue that countries in which legal systems have a common law origin emphasize the protection of private property, whereas those with civil law roots favor an activist role for the state.[3] These legal differences seem to have tangible economic effects. Common law systems have been found to have more dispersed share ownership,[4] more liquid and extensive capital markets,[5] and more highly developed systems of private credit[6] than civilian ones. In part through the *Doing Business* reports of the World Bank,[7] these findings have come to influence policy reform in "dozens of countries" over the past decade.[8] Reforms to corporate and bankruptcy law have seen a strengthening of shareholder and creditor rights, particularly the former.[9]

Influential as it is, the legal origins hypothesis has raised more questions than it has answered. The idea that a country's approach to the regulation of the economy is fixed at the point when it first adopts or has imposed upon it, through colonization or conquest, a certain type of legal order, implies that national systems are locked

1. The acronym "LLSV" refers to the four authors of the first legal origins papers: Rafael La Porta, Francisco Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. *See* the references to their work, *infra*.

2. Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *The Economic Consequences of Legal Origins*, J. ECON. LITERATURE 46, 285 (2008) [hereinafter La Porta et al., 2008].

3. Edward Glaeser & Andrei Shleifer, *Legal Origins*, 117 Q.J. ECON. 1193, 1194 (2002).

4. Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *Corporate Ownership Around the World*, 54 J. FIN. 471, 471 (1999).

5. Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer & Robert Vishny, *Law and Finance*, 106 J. POL. ECON. 1113, 1135–37 (1998) [hereinafter La Porta et al., 1998].

6. *See generally* Simeon Djankov, Carelee McLiesh & Andrei Shleifer, *Private Credit in 129 Countries*, 84 J. FIN. ECON. 299 (2007) [hereinafter Djankov et al., 2007].

7. WORLD BANK, DOING BUSINESS REPORTS (various years), *available at* http://www.doingbusiness.org.

8. La Porta et al., 2008, *supra* note 2, at 325.

9. *See infra*, Part IV.

into particular developmental paths. This neglects the possibility of feedback effects between legal change and economic development. It also points to a potential contradiction in the use of the legal origins hypothesis to generate policy reforms: the common law model, while apparently more conducive to financial development, might not be appropriate for transplantation into civil law regimes. What is at stake here is the degree of fit between substantive rules and the legal structures said to underpin them. Adherents of the legal origins hypothesis suggest that legal changes can be undertaken "without disturbing the fundamentals of the legal tradition" of the countries concerned,[10] a view supportive of the move to align civilian systems with the common law approach.

A further issue is whether the postulated relationship between legal rules and economic outcomes is as tight as has been suggested. A central methodological tenet of the legal origins approach is that legal rules can be coded and the extent of cross-national legal diversity quantified as a preliminary step to testing for the economic effects of certain laws. Scholars first developed the legal origins hypothesis in the context of a legal coding exercise which showed that legal protection of outside investors against the threat of expropriation by corporate insiders was consistently higher in common law countries than in civil law ones. Econometric analysis was then used to show that "legal investor protection is a strong predictor of financial development,"[11] as measured by the level of stock market activity and the degree of dispersion of share ownership.[12] Although the scope of the legal origins claim has since been extended to cover a number of other areas of law and regulation, it is this early work on the relationship between law and finance, as subsequently extended and developed,[13] that has proved most influential on law reform. Yet the empirical basis for this finding is limited; it mostly depends on cross-sectional data on the

10. La Porta et al., 2008, *supra* note 2, at 325.

11. *Id.* at 286.

12. La Porta et al., 1998, *supra* note 5.

13. *See generally* Djankov et al., 2007, *supra* note 6; Simeon Djankov, Oliver Hart, Caralee McLeish & Andrei Shleifer, *Debt Enforcement Around the World* (ECGI Finance, Working Paper No. 147, 2007); Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *The Law and Economics of Self-Dealing*, 88 J. FIN. ECON. 430 (2008) [hereinafter Djankov et al., 2008]; Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *What Works in Securities Laws?*, 61 J. FIN. 1 (2006) [hereinafter La Porta et al., 2006].

laws of countries in the late 1990s, with no systematic coding of legal change over time.

A decade after the publication of the first legal origins studies, we can now subject the legal origins hypothesis to tests that measure its validity as an instrument of policy in the areas of law and finance. In this paper we present time-series evidence of trends in corporate and bankruptcy law in a sample of twenty-five developed, developing, and transition systems over the period 1995 to 2005. We put this information in the context of a more in-depth study of five countries (France, Germany, India, the United Kingdom, and the United States) over a thirty-six year period, 1970 to 2005. The evidence from the longitudinal datasets that we report here reveals the far-reaching nature of the legal changes that have occurred over these periods, and in particular the last decade. There has been a consistent rise in levels of shareholder protection evident most clearly in the civil law systems, which have been catching up with their common law counterparts. In the area of creditor rights, there has been a less dramatic change. Nevertheless, a significant overall increase in protection has occurred, which is particularly marked in transition systems. In short, we see the effects of a process of legal alignment around the idea of legal support for financial development of the kind promoted by the World Bank[14] and given intellectual support by the legal origins hypothesis.[15]

We find, however, that legal convergence has not been translated into financial development of the kind predicted by the legal origins approach, or at least not yet. Econometric analyses that we report here indicate that legal changes of the kind we have tracked have not been reflected in increased levels of stock market activity. We explore why this might be by looking at a number of explanations. One is that laws which might be well suited for the liquid capital markets and dispersed ownership structures of the common law world (in particular Britain and America) are not working as intended in civil law and developing systems where those conditions do not prevail. Another is that the enactment of shareholder rights on the scale that we have seen over the past decade could have been counterproductive, in common law and civil law systems alike.

14. Through the DOING BUSINESS reports, *supra* note 7.

15. La Porta et al., 2008, *supra* note 2, at 323–27.

Our paper aims to make three contributions to the legal origins literature. Our first is theoretical: we show that there are difficulties in viewing the legal system as an entirely "exogenous" influence on the economy and that it may be more useful to see legal systems as both shaping and being shaped by economic and political factors, an approach we label "coevolutionary." Our second aim is methodological: we demonstrate how the coding and measurement of legal rules can be undertaken on a longitudinal basis and how the resulting data can be used in conjunction with time-series and panel-data econometric techniques to throw light on the direction of causation in the relationship between legal and economic change. Our third aim is normative, in the sense of evaluating how far evidence and analysis of this kind could or should be used to inform the process of legal reform.

Part II below provides an overview of legal origins theory, emphasizing the way in which the theory has developed in response to empirical findings and to certain critiques. In Part III we take a closer look at methodological issues and explain the "leximetric" and econometric techniques that we employ to study legal change and its interaction with economic variables. Part IV presents our main findings and Part V offers a theoretical reevaluation of the legal origins hypothesis in the light of this new empirical evidence. Part VI concludes.

II. LEGAL ORIGINS: THE INTERPLAY BETWEEN EVIDENCE AND THEORY

A. Explaining Legal Origins

The legal origins literature began with a series of empirical findings requiring explanation; only gradually did a theory emerge that aimed to provide a systematic account of these results. As noted above, the earliest legal origins studies focused on the relationship between legal protection of investor interests and financial outcomes including ownership structure and capital market development. LLSV's "antidirector rights"[16] index contains six principal indicators of shareholder protection: the extent to which the corporate law of a given system allowed voting by proxy; whether the law prevented the blocking of voting and other rights associated with share ownership

16. La Porta et al., 1998, *supra* note 5, at 1127–28.

prior to a shareholders' meeting; whether it contained a "cumulative voting" rule that allowed for representation of minority shareholder interests on the board; whether it provided legal mechanisms, such as derivative suits, available to minority shareholders to protect against "perceived oppression by directors"; whether it provided for shareholders' preemption rights in respect of new share issues, thereby preventing the dilution of stakes; and the extent of voting rights required to call a shareholders' meeting. Two further indicators, referring respectively to the one-share-one-vote rule and laws on mandatory dividends, were used in some of their analyses. They found, on the basis of legal data collected for forty-nine countries in the mid-1990s, that low scores on the index were associated with a high concentration of ownership and a low level of stock market development as measured by the ratio of stock market capitalization to GDP.[17] These relationships were especially strong in French civil law systems, justifying the conclusion that "legal systems matter to corporate governance and . . . firms have to adapt to the limitations of the systems that they operate in."[18]

This first "law and finance" paper proved to be extraordinarily influential in demonstrating the possibilities of quantitative legal analysis. It produced a clear empirical finding with far-reaching implications for policy debates. In subsequent studies, researchers tried new methods for coding the law, with the focus on the operation of legal rules in a series of hypothetical cases. Evidence was gathered from surveys of practicing lawyers in a range of countries. Researchers adopted this different approach to address some of the criticisms of the early studies. In particular, the new methods, by drawing on survey evidence from legal practitioners, were intended to incorporate evidence concerning the enforcement of legal rules and to avoid undue subjectivity in the coding process. On this basis, a second wave of results essentially confirmed the findings of the early studies: there was a clear divide between the common law and the civil law with respect to rules on self-dealing in corporate transactions,[19] prospectus disclosure,[20] and creditor rights.[21] These legal differences were reflected in financial outcome variables,

17. *Id*. at 1145.

18. *Id*. at 1117.

19. *See generally* Djankov et al., 2008, *supra* note 13.

20. *See generally* La Porta et al., 2006, *supra* note 13.

21. *See generally* Djankov et al., 2007, *supra* note 6.

including, in the context of creditor rights, the size of private debt markets.[22] The common law-civil law divide also operated in related areas of economic life, such as labor regulation[23] and rules on business start-ups.[24] The divide also had consequences for unemployment and employment levels, the size of the informal economy, and the level of corruption. In addition, a set of studies looked at aspects of legal institutions including the flexibility of court procedure[25] and the extent of judicial independence;[26] these institutional variables appeared to correlate with contract enforcement and the protection of property rights.[27]

These findings "raise[d] an enormous challenge of interpretation."[28] What has emerged from the iteration of theory and evidence over the past decade is a claim that it is not so much legal rules themselves that matter, as the *infrastructure* of the legal system. "Legal infrastructure" refers to the meta-level rules, norms, and practices that determine, in a given national context, the mechanisms for law making and dispute resolution, the competencies of legislatures and courts, and the conception of the role of government in the economy and society, among other things. In this broad sense, "legal origin" is not confined to formal legal institutions but may extend to include informal norms and shared assumptions about the prevailing "style of social control of economic life."[29] The civil law "style" is "associated with a heavier hand of government ownership and regulation than the common law" and, as a result, with "greater corruption, larger unofficial economy, and higher unemployment." The common law, by contrast, "is associated with lower formalism of

22. *See generally id*. It should be noted that while there is some evidence that financial development indicators, such as the extent of stock market capitalization and private credit, are correlated with overall levels of economic growth as measured by GDP, it has not proved possible to find a link between legal origins as such and GDP growth. *See* La Porta et al., *supra* note 2, at 301–02.

23. *See generally* Juan Botero, Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *The Regulation of Labor*, 119 Q.J. ECON. 1340 (2004).

24. *See generally* Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *The Regulation of Entry*, 117 Q.J. ECON. 1 (2002).

25. *See generally* Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *Courts*, 118 Q.J. ECON. 453 (2003).

26. *See generally* Rafael La Porta, Florencio Lopez-de-Silanes, Cristian Pop-Eleches & Andrei Shleifer, *Judicial Checks and Balances*, 112 J. POL. ECON. 445 (2004).

27. The evidence is summarized by La Porta et al., 2008, *supra* note 2, at 293–98.

28. *Id*. at 286.

29. *Id*.

judicial procedures and greater judicial independence than civil law," and hence with "better contract enforcement and greater security of property rights."[30]

The persistent influence of legal origin is the result of the tendency of the legal system, in the first instance, to operate as a mechanism for the stabilization of norms and practices. Legal institutions promote particular routines, conventions, and distributional compromises, which can be understood as providing solutions to various collective action problems and related issues of societal coordination. As such, they display the characteristics of lock-in and path-dependence, which are associated with the development of formal institutions:

> [T]he reason for persistence is that . . . beliefs and ideologies become incorporated in legal rules, institutions, and education and, as such, are transmitted from one generation to the next. It is this incorporation of beliefs and ideologies into the legal and political infrastructure that enables legal origins to have such persistent consequences for rules, regulations, and economic outcomes.[31]

Legal systems also allow for the transmission of norms and practices across different regulatory spaces. Apart from a few "parent" systems (such as England, France, and Germany), most countries have had the basic features of their legal systems imposed upon them by colonization or conquest. When this kind of transplantation occurred at various points in the period from the late eighteenth to the early twentieth century, it was not just "specific laws and codes" that were transmitted, but "more general styles or ideologies of the legal system," along with "individuals with mother-country training, human capital, and legal outlook."[32] Over time, the national laws of particular countries might have "changed, evolved, and adapted to local conditions," but "[e]nough of the basic transplanted elements have remained and persisted to allow the classification [of systems] into legal traditions."[33] This is the basis for

30. *Id.*
31. *Id.* at 308.
32. *Id.* at 288.
33. *Id.*

the suggested division of the legal systems of the world into four principal groupings, namely English or common law, and the French, German, and Scandinavian variants of civil law.[34]

A key feature of this theorization of the law-economy relationship is the claim that legal origin operates as an exogenous or independent force influencing the path of economic development (see Figure 1). As just stated, legal origins theory acknowledges that local economic conditions may, to some degree, shape legal rules in a given national context. To that extent, there is mutual feedback between law and economy, and the direction of causation runs both ways. Thus, legal origins theory can accept the possibility that many features of modern corporate law regimes can be explained by the particular types of business enterprise that prevailed in certain countries at important points in their development, or that trends in the regulation of financial markets were driven by the emergence of particular types of financial transactions. It can also accommodate the idea that the emergence of interest groups prepared to lobby for laws of a given type, or to litigate particular disputes, in the corporate field as elsewhere, may have been an important influence on the content of these laws.[35] What is suggested, however, is that these feedback effects do not reach back to the core legal infrastructure of the country concerned. The core legal infrastructure is unchanging, or at least very slow to change by comparison to both the legal rules themselves and to the wider economic and social environment: "The legal system supplies the fundamental tools for addressing social concerns and it is that system . . . with its codes, distinctive institutions, modes of thought and even ideologies, that is very slow to change."[36]

34. *Id*. at 288–90.

35. *See generally* John Coffee, *The Rise of Dispersed Ownership: The Roles of Law in the Separation of Ownership and Control*, 111 YALE L.J. 1 (2001) (arguing that the United States' dispersed ownership system of corporate governance is more susceptible to political interest groups than the concentrated ownership system of countries like Germany); Brian R. Cheffins, *Does Law Matter? The Separation of Ownership and Control in the United Kingdom*, 30 J. LEGAL STUD. 459 (2001) (discussing the impact of political interest groups on the United Kingdom's form of the dispersed ownership system).

36. La Porta et al., 2008, *supra* note 2, at 307.

Figure 1: Legal origin as an exogenous influence on legal rules and the economy

In Figure 1, substantive legal rules provide the "channel" through which legal origin shapes economic outcomes. Legal rules may not, however, be the only such channel. Legal origins theory raises the possibility that, independent of the content of rules, judicial style and modes of enforcement more generally influence the economy. Empirical research demonstrating a link between the quality of judicial enforcement of creditor rights and the flow of private credit supports this suggestion.[37] Another possible channel is provided by the interpretative rules, which courts follow when construing and enforcing contracts. Common law judicial style is, it is argued, more flexible in responding to new types of financial transactions, a flexibility which "promotes financial development" by legitimizing transactional innovation.[38]

B. The Complexity of Legal Origins

A potential line of criticism of the explanation given by LLSV for their legal origins findings is that the broad-brush descriptions they provide of common law and civilian regulatory "style" are overstylized to the point of being inaccurate. The law and finance literature assumes that a clear distinction can be drawn between systems by reference to their membership in one of the four main legal families. The reason for choosing this classification is not explained in detail. Some general references are made to the mainstream comparative law literature,[39] suggesting that this

37. *Id.* at 299.

38. *Id.* at 300.

39. The following sources constitute this mainstream literature: RENÉ DAVID & JOHN E. C. BRIERLEY, MAJOR LEGAL SYSTEMS IN THE WORLD TODAY (3d ed. 1985); KONRAD ZWEIGERT & HEIN KÖTZ, INTRODUCTION TO COMPARATIVE LAW (3d ed. 1998); THOMAS H. REYNOLDS & ARTURO A. FLORES, FOREIGN LAW: CURRENT SOURCES OF CODES AND

distinction is well established and uncontroversial. However, modern comparative law scholarship barely recognizes the global classifications and generalizations of the law and finance literature.

On a general level, three degrees of criticism can be distinguished. First, some legal scholars doubt whether even the distinction between "common law" and "civil law" can be justified from a historical perspective.[40] Second, others accept the idea of two different legal origins as a historical starting point but emphasize that, since the end of the twentieth century, legal systems are becoming international, transnational, or even global in nature, so that the idea of a strict common law-civil law divide is an anachronism.[41] Third, even those comparative lawyers who still apply the notion of legal families emphasize the limits of this concept, stating that it is really no more than a didactic device.[42]

More specifically, the law and finance literature overlooks the difficulties involved in classifying many countries as either common law or civil law in origin. The idea that the laws and legal institutions of the parent systems have simply spread to other parts of the world disregards the ongoing influence of pretransplant laws, the mixtures and modifications that occur at the moment when copying of foreign law occurs, and the posttransplant period in which the transplanted laws and institutions may be altered (or at least applied differently than in the parent system).[43] Examples of this are plentiful. For example, the law and finance literature assumes that the transition economies of Eastern Europe are either German or French legal origin countries, whereas in practice they have been influenced by a number of different traditions. Similarly, it is assumed that Japan,

LEGISLATION IN JURISDICTIONS OF THE WORLD (1989).

40. Stefan Vogenauer, *An Empire of Light? Learning and Lawmaking in the History of German Law*, 64 CAMBRIDGE L.J. 481, 483 (2005); Reinhard Zimmermann, *Savigny's Legacy Legal History, Comparative Law, and the Emergence of a European Legal Science*, 112 L.Q. REV. 576, 588 (1996).

41. *See, e.g.*, Mathias Reimann, *Beyond National Systems: A Comparative Law for the International Age*, 75 TUL. L. REV. 1103, 1115 (2001); Jaakko Husa, *Classification of Legal Families Today—Is it Time For a Memorial Hymn?*, REV. INT. DR. COMP. 11 (2004).

42. DAVID & BRIERLEY, *supra* note 39, at 21 ("[I]t is no more than a didactic device."); ZWEIGERT & KÖTZ, *supra* note 39, at 72 ("[A]ny division of the legal world into families is a rough and ready device. It can be useful for the novice, by putting the confusing variety of legal systems into some kind of loose order, but the experienced comparatist will have developed a 'nose' for the distinctive style of national legal systems . . . .").

43. Mathias M. Siems, *Legal Origins: Reconciling Law & Finance and Comparative Law*, 52 MCGILL L.J. 55, 70 (2007).

South Korea, and China are German legal origin countries, whereas a more nuanced analysis would have to take into account the indigenous legal cultures of these legal systems as well as more recent Anglo-Saxon influence. Further, classifying countries such as Iran, Saudi Arabia, and Yemen as simply "common law" in origin underplays the role of religious legal traditions.[44]

A counterargument to the one just made could be that the law and finance literature is specifically concerned with the rules that are relevant for "doing business." Here, it is indeed the case that the law of developed countries has had a discernible influence on most African, Asian, and Latin American legal systems. Yet, in these areas of law it is difficult to justify using the suggested distinction between English, French, German, and Scandinavian legal origins. Formally, at least, case law is the primary source of law in common law jurisdictions, whereas in civil law jurisdictions, codes and related legislation constitute the primary source of law. However, the sources of corporate law, securities law, and bankruptcy law are mainly statutory across the world, even in common law countries.[45]

This is not to say that we should not expect to find some similarities among countries regarded as belonging to the same legal family. Countries of the same legal origin often share a common language. For example, if Spain amends its corporate law, it is more likely that this reform will diffuse to the Spanish-speaking countries of Latin America than to the Anglophone world.[46] Certain countries have developed a shared legal heritage due to coordinated efforts to develop common solutions to legal problems and to systematize the exchange of legal information, as in the case of the Scandinavian systems.[47] It is not necessary to invoke legal origin as an explanation for these trends.

Harmonization of laws and the borrowing of legal concepts and rules from foreign systems may also go on across legal families, particularly in the field of law and finance. There is a long tradition

44. *See id.* at 62–70.

45. *See, e.g.*, Priya P. Lele & Mathias M. Siems, *Diversity in Shareholder Protection in Common Law Countries*, 5 J. FOR INSTITUTIONAL COMPARISONS 3, 5 (2007).

46. *See* Holger Spamann, *Contemporary Legal Transplants—Legal Families and the Diffusion of (Corporate) Law*, 2009 BYU L. REV. (forthcoming 2009); Mathias M. Siems, *Shareholder Protection Around the World ("Leximetric II")*, 33 DEL. J. CORP. L. 111, 138, 142 (2008).

47. *See* ZWEIGERT & KÖTZ, *supra* note 39, at 281–83.

in commercial law of legal transplants, often driven by international trade, to the extent that commentators have questioned the relevance of a strict division between legal families.[48] Some studies suggest that by the end of the nineteenth century the most important features of corporate law were already relatively uniform across countries.[49]

Legal origins theorists have responded to points such as these by conceding that most national legal systems contain hybrid elements, in part as a consequence of the borrowing or voluntary acceptance of regulatory solutions on a cross-country basis. Thus it is accepted that most of securities law, for example, is statutory even in common law systems, and that this is an area of law that was introduced relatively recently in "response to perceived social needs."[50] However, the suggestion is then made that laws of this kind "took different forms in countries with different legal traditions, consistent with broad strategies of how the state intervenes." In America and Britain, the response to the crisis of the 1930s was "to rehabilitate and support markets, not to replace them," while in civil law countries it was "to repress . . . or to replace [the market] with state mandates."[51] It is thus claimed that legal origin shapes the way in which different systems respond to common crises and new social needs.

The "exogeneity" of the legal infrastructure with regard to economic development is not simply an incidental feature of legal origins theory. It would be hard to maintain the view that the legal origins effect, apparently identified in the empirical studies, is not a proxy for something else without it. This view, in turn, justifies the use made of legal origins theory to promote institutional reform. Because legal origin locks systems into particular institutional configurations, inefficiencies can result, in particular in the developing world: "[m]any developing countries today find themselves heavily overregulated in crucial spheres of economic life, in part because of their legal origin heritage."[52] While common law

48. Detlev Vagts, *Comparative Company Law—The New Wave*, *in* FESTSCHRIFT FÜR DRUEY, 595, 598–99 (2000).

49. Henry Hansmann & Reinier Kraakman, *The End of History for Corporate Law*, 89 GEO. L.J. 439, 439–40 (2001); *see also* MATHIAS M. SIEMS, CONVERGENCE IN SHAREHOLDER LAW 17–22 (2008).

50. La Porta et al., 2008, *supra* note 2, at 308.

51. *Id.*

52. *Id.* at 287.

rules are not "always"[53] the most efficient, the default position of legal origins theory appears to be that common law solutions are generally to be preferred to civilian ones, not least because the right response to persistent legal inefficiencies "is simply less government intervention."[54] Civilian responses are seen as desirable only in a context of extreme crisis and disorder, in which markets break down completely.[55] The deregulatory reform agenda associated with the *Doing Business* reports of the World Bank[56] is claimed to be a natural offshoot of legal origins theory on this basis.[57]

C. Endogeneity and Coevolution

The emergence of "legal origins theory" as a response to the challenges raised by empirical research on law and development has provided a sounder conceptual foundation for this line of research and has clarified certain aspects of the claims being made. The legal system continues to be at the center of the analysis, but the idea of legal origin has been broadened to include elements of belief systems, ideologies, and social norms, as well as more formal legal institutions. Some limitations of the use of the concept of legal families have been acknowledged, while the underlying value of the division of systems along English, French, German, and Scandinavian lines has been reasserted. The exogenous causal influence of legal infrastructure remains, with a reduced role for substantive legal rules in shaping economic outcomes, as alternative channels (enforcement and interpretation) have been proposed.

The critical issue in addressing the legal origins approach at a theoretical level is, therefore, the question of law's "exogeneity" with regard to the process of economic development. Notwithstanding the mediation of the effects of legal infrastructure through various channels, the direction of causation can run only one way, from legal origin to the economy. The theory is asymmetrical in its treatment of the legal and economic systems. It requires us to believe that there is some factor that renders the core of the legal system immune from

53. *Id*. at 309.
54. *Id*. at 324.
55. *Id*. at 327.
56. WORLD BANK, *supra* note 7.
57. La Porta et al., 2008, *supra* note 2, at 307.

economic influence but which does not prevent the legal system from shaping the economy.

One alternative is to reverse the arrow of causation so that law is shaped by economic or political forces. This is by no means an implausible position; on the contrary, it is one with a long history in certain strands of the sociological and economic analyses of law. Moreover, it appears to be widely accepted, if not always explicitly acknowledged, in the social sciences more generally.[58] A good reason for not taking this view, however, is that it would represent something of a step back in the conceptualization of the law-economy relation. The legal origins literature, at the least, has done enough to demonstrate that the legal system should be treated as a causal variable in its own right, with the capacity to shape economic outcomes. To this extent at least, we share the claim that "legal systems matter" with the founders of the legal origins approach. We disagree, however, with the characterization of the legal system (or, at least, that part of it that can be characterized as "legal infrastructure") as entirely exogenous with regard to the economy.

In proposing that law is better thought of as, at least in part, "endogenous" to the economy, we are not arguing that either legal rules or the "legal infrastructure" are predetermined by economic forces. The claim, rather, is that the dynamic of interaction between law and the economy is one of "coevolution," as opposed to linear, unidirectional change.[59] The legal system is, to a certain degree, autonomous from economic relations, and its development is not simply dictated by technological or organizational requirements, or by changes in the composition of supply and demand; legal concepts, processes, and routines form the immediate material from which new solutions are fashioned.[60] Nevertheless, the economy forms part of

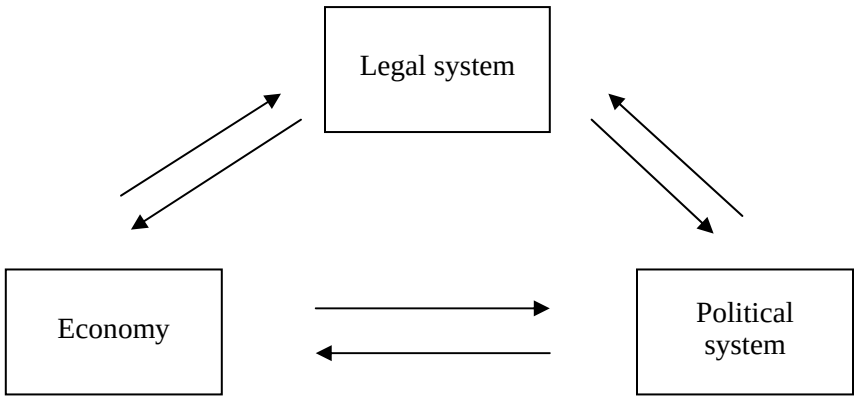
58. For a review of theories that view legal rules as "epiphenomenal," that is, as a secondary form or expression of "material" social and economic relations, see Geoffrey M. Hodgson, *The Enforcement of Contract and Property Rights: Constitutive Versus Epiphenomenal Conceptions of Law*, 13 INT. REV. SOC. 375 (2003).

59. The concept of coevolution has roots in evolutionary biology, game theory, and systems theory, and is increasingly applied to explain the evolution of economic and legal institutions. *See, e.g.,* MASAHIKO M. AOKI, TOWARD A COMPARATIVE INSTITUTIONAL ANALYSIS (2001) (describing evolutionary game theory); GUNTHER TEUBNER, LAW AS AN AUTOPOIETIC SYSTEM (1993) (describing systems theory). A full account of these theories, and an assessment of the possibilities for synthesis between them, is beyond the scope of this paper.

60. On this "self-referential" aspect of legal evolution, see TEUBNER, *supra* note 59.

the context within which legal rules evolve, with pressures for selection being applied by the external environment.[61] These propositions can all be reversed: economic relations evolve, in part, by reference to an institutional context set by the legal system, and the same point applies, *mutatis mutandis*, if the political system is included in the model (see Figure 2).[62]

Figure 2. Coevolutionary model of the legal, economic and political systems



Most scholars of corporate law would accept that there is a link of some kind between the emergence and development of the business enterprise in industrial societies, and the evolution of legal forms, associated with the joint stock company, which have served the needs of entrepreneurs and investors. There is considerable disagreement, however, on the question of whether legal change

61. On the application of the "Darwinian" evolutionary mechanisms of variation, inheritance, and selection to legal change, see TEUBNER, *supra* note 59, at 51. *See generally* Simon Deakin, *Evolution for Our Time: A Theory of Legal Memetics*, 55 CURRENT LEGAL PROBS. 1 (2002).

62. The incorporation of political economy considerations into the study of institutions is a core feature of the "Varieties of Capitalism" approach. *See* Peter A. Hall & David Soskice, *An Introduction to the Varieties of Capitalism*, *in* VARIETIES OF CAPITALISM: THE INSTITUTIONAL FOUNDATIONS OF COMPARATIVE ADVANTAGE (Peter A. Hall & David Soskice eds., 2001). And it is a core feature of Mark Roe's "political" theory of corporate governance. MARK J. ROE, POLITICAL DETERMINANTS OF CORPORATE GOVERNANCE: POLITICAL CONTEXT, CORPORATE IMPACT (2003).

preceded financial development, or the converse. In the context of the legal origins debate, there is a growing literature looking at the evolution of corporate law in Britain, France, Germany, and the United States in the course of the nineteenth and twentieth centuries.[63] One strand of this work argues that financial development in Britain preceded by several decades the passage of laws for shareholder protection, while other studies emphasize that functional equivalents to corporate law,[64] such as stock exchange rules, were already providing a basis for the dispersion of ownership and control in the late nineteenth century.[65] A plausible interpretation of this historical evidence is that "shareholder rights have improved enormously in Britain over the course of the twentieth century, *parallel to the growth of its markets.*"[66] The logic of coevolution, or mutual influence between law and the economy, better describes this process than does one of linear adjustment of the law to economic imperatives, or vice versa.

It is important to stress that a "coevolutionary" conception of legal change does not predict seamless adjustment between the legal and economic systems. It is possible that they will be out of sync with each other for prolonged periods and that, as a result, legal institutions will very often be imperfectly matched for the economic goals they purport to serve. Indeed, insofar as legal concepts are functional, they may well be functional with regard to past environments rather than those in which they currently operate.[67] The efficiency of institutions also needs to be judged in context; particular rules may be more or less efficient depending on the

63. *See* Naomi R. Lamoreaux & Jean-Laurent Rosenthal, *Legal Regime and Contractual Flexibility: A Comparison of Business Organizational Choices in France and the United States During the Era of Industrialization*, 7 AM. L. & ECON. REV. 28 (2005); Leslie Hannah, *The "Divorce" of Ownership from Control from 1900 Onwards: Re-Calibrating Imagined Global Trends*, 49 BUS. HIST. 404 (2007).

64. Cheffins, *supra* note 35.

65. *See generally* Hannah, *supra* note 63.

66. La Porta et al., 2008, *supra* note 2, at 321 (emphasis added).

67. *See* Deakin, *supra* note 61, at 12–13.

presence of complementary institutions alongside which they have evolved.[68] Thus,

> it may not be accidental that codetermination in the corporate governance domain and social democratic corporatism in the polity domain coevolved in Germany, while the main bank system, the lifetime employment system, and the close alliance between industrial associations and relevant administrative bureaux coevolved in Japan, both in contrast to the so-called Anglo-American model.[69]

It has been suggested that institutional theories should be evaluated by how well they address two core problems:

> the synchronic problem, whereby the goal is to understand the complexity and diversity of overall institutional arrangements across . . . economies as an instance of multiple equilibria of some kind, and the diachronic problem, whereby the goal is to understand the mechanism of institutional evolution/change in a framework consistent with an equilibrium view of institutions, but allowing for the possibility of the emergence of novelty.[70]

Legal origins theory provides answers to these questions, which are in various ways incomplete or unsatisfactory. Its answer to the "synchronic problem" is that cross-national diversity results from the inherited effect of the transplantation of legal orders. This is potentially a good answer if seen as a partial explanation for diversity, but not if seen as excluding other possible causes, which are derived from cross-national differences in modes of business organization and political organization. Its answer to the "diachronic problem" is that systems, for the most part, are locked into particular

68. *See* Reinhard H. Schmidt & Gerald Spindler, *Path Dependence, Corporate Governance and Complementarity*, 5 INT'L FIN. 311 (2002); Beth Ahlering & Simon Deakin, *Labor Regulation, Corporate Governance and Legal Origin: A Case of Institutional Complementarity?*, 41 L. & SOC. REV. 866 (2007).

69. AOKI, *supra* note 59, at 17.

70. *Id.* at 2–3 (emphasis omitted).

developmental paths, which are the consequence of their legal origin. This lock-in effect is largely detrimental to economic development in the civil law context and largely positive in the common law one. Some movement towards more efficient rules, which legal origins theory tends to identify with convergence on common law practice, may be achieved through the benchmarking of national regulatory regimes by international institutions, including the World Bank. From a coevolutionary perspective, this view is deficient in not allowing for the possibility that legal institutions in civilian systems may be well matched to local economic conditions—or at least as well matched as in common law systems—thanks to mutual feedback with local economic conditions, and to the institutional complementarities to which this gives rise.[71] If that is the case, attempts at convergence that take the common law systems as a model of best practice are likely to be either ineffective or counterproductive.

We now turn to a consideration of how empirical analysis, in particular using quantitative methods, can throw light on these questions.

III. METHODOLOGICAL ISSUES IN THE QUANTITATIVE ANALYSIS OF LAW

The initial legal coding exercises carried out by LLSV have been criticized on a number of grounds, including errors in the values attributed to certain specific legal rules and bias in the selection of variables.[72] We do not want to go over this ground again, as it is well known and has to some degree been taken on board by LLSV in their more recent empirical analyses.[73] Instead, our aim is to set out

71. *See* ZWEIGERT & KÖTZ, *supra* note 39, at 39–40 (suggesting that "different legal systems give the same or very similar solutions, even as to detail, to the same problems of life, despite the great differences in their historical development, conceptual structure, and style of operation," an argument applied specifically to the manner in which "developed nations meet the needs of legal business").

72. *See* Sofie Cools, *The Real Difference in Corporate Law Between the United States and Continental Europe: Distribution of Powers*, 30 DEL. J. CORP. L. 697 (2005); Holger Spamann, *On the Insignificance and/or Endogeneity of La Porta et al.'s 'Anti-director Rights Index' under Consistent Coding* (ECGI Law, Working Paper No. 67, 2006); Holger Spamann, *'Law and Finance' Revisited* (Harvard Law School John M. Olin Center, Discussion Paper No. 12, 2008); Udo Braendle, *Shareholder Protection in the USA and Germany—On the Fallacy of LLSV* (German Working Papers in Law and Economics, Paper No. 18, 2006), *available at* http://www.bepress.com/gwp/default/vol2006/iss1/art18.

73. *See* La Porta et al., 2008, *supra* note 2.

the basis for our own approach to coding, which principally differs from that of LLSV in providing a longitudinal measure of legal variation across systems. We set out below some of the methodological issues encountered in coding the law ("leximetrics") and in using time-series and panel-data econometric techniques to analyze the resulting legal data.

A. Index Construction: Selection of Variables, Countries, and Time Periods

All legal indices involve the reduction of a complex institutional reality to a summary form, which allows for statistical analysis. The choice of variables, the method of defining indicators, and the algorithms or protocols used for the coding of the legal rules should each reflect the purpose for which the dataset is constructed. In the case of the datasets we are considering here, the aim of the analysis is to clarify the nature of the relationship between legal and economic change and, more specifically, to examine the impact of law on financial development and vice versa. Accordingly, we have constructed datasets that aim to provide an account of how well different legal systems protect certain shareholder and creditor rights. Our guiding assumption in each case is that legal rules are capable of facilitating commercial transactions by reducing agency costs and other frictions in relations between corporate actors. Our shareholder protection indices therefore measure how far legal rules protect external shareholders against the risk of expropriation by managers and boards, on the one hand, and dominant blockholders or majority shareholders, on the other, principally in the context of listed companies. The creditor protection indices measure the extent to which aspects of corporate and bankruptcy law rank claims and allocate liabilities between different groups of shareholders and creditors, both while the company is a going concern and in the event of insolvency. The selection of the variables of interest in each case was guided by the comparative law principle of "functional equivalents," according to which different legal systems may achieve the same end or goal through different means, depending on local contexts and conditions.[74] By including, as far as possible, variables that reflect different legal approaches and traditions, we hope to minimize the risk of "home-country bias" or the tendency to take

74. *See* ZWEIGERT & KÖTZ, *supra* note 39, at 39.

the law of one particular country or set of countries as a model or benchmark, thereby distorting the results.[75]

LLSV's antidirector rights index covered forty-nine countries and some of their later datasets extended to almost one hundred.[76] Covering as many countries as possible is desirable from the point of view of ensuring a comprehensive or representative sample. However, the more countries that are coded, the greater the risk that the choice of variables or the definition of the indicators will be inappropriate for some of them. There is also a potential trade-off between the breadth and depth of coverage. For these reasons, we proceeded to construct our indices in two stages.

In the first stage, we created datasets based on extensive indices for a small number of countries over a lengthy time period. This allowed us to examine certain countries in depth. We chose countries not because they were representative, but because of their intrinsic interest as "parent" systems (France, Germany, and the United Kingdom), its status as the world's largest and arguably most influential economy (the United States), or its status as the largest democracy by population (India). The period studied was over three decades long (1970-2005), enabling us to chart trends in legal change across a number of economic cycles and major political watersheds, including the fall of the Berlin wall in 1989. Our five-country shareholder protection index contains sixty indicators, and the corresponding creditor protection index has forty-four. As the laws are coded once for each year, we have (60 + 44) * 36 * 5 = 18,720 observations in these two datasets.[77]

75. For critiques along these lines, see *supra* note 72; *see also* Erik Berglöf & Ernst-Ludwig von Thadden, *The Changing Corporate Governance Paradigm: Implications for Transition and Developing Countries* (Stockholm School of Economics, Working Paper No. 263, 1999); John Armour, Brian R. Cheffins & David A. Skeel, Jr., *Corporate Ownership Structure and the Evolution of Bankruptcy Law: Lessons from the United Kingdom*, 55 VAND. L. REV. 1699 (2002); Mathias M. Siems, *What Does Not Work in Comparing Securities Laws: A Critique on La Porta et al.'s Methodology*, INT'L COMPANY & COM. L. REV. 300 (2005); Mathias M. Siems, *Numerical Comparative Law: Do We Need Statistical Evidence in Order to Reduce Complexity?*, 13 CARDOZO J. INT'L & COMP. L. 521 (2005); Priya P. Lele & Mathias M. Siems, *Shareholder Protection: A Leximetric Approach*, 7 J. CORP. L. STUD. 17 (2007).

76. *See, e.g.*, the labor regulation dataset described by Botero et al., *supra* note 23.

77. In addition, we have constructed a labor regulation dataset for the same five countries and thirty-six-year period. For accounts of this dataset, analysis of which is beyond the scope of the current paper, see Simon Deakin, Priya Lele & Mathias Siems, *The Evolution of Labour Law: Calibrating and Comparing Regulatory Regimes*, 146 INT'L LAB. REV. 133 (2007); John Armour, Simon Deakin, Priya Lele & Mathias Siems, *How Do Legal Rules Evolve? Evidence from a Cross-Country Comparison of Shareholder, Creditor and Worker*

In the second stage, we constructed datasets for a wider range of developing, developed, and transition systems—twenty-five in all—in each case using a reduced-form index and covering a more limited time period, 1995 to 2005. This was a period during which most countries were liberalizing their economies and adjusting their regulatory frameworks with a view to promoting private-sector activity and the globalization of markets. It was also a time of sustained economic growth for most systems, although with some interruptions and shocks, including the Asian financial crisis in 1997 to 1998 and the bursting of the dotcom bubble in 2000 to 2001. Our reduced-form indices for shareholder and creditor protection contain ten variables each, so that we have (10 + 10) * 11 * 25 = 5,500 observations. Because they contain fewer variables, they do not capture the same range of information as the extended indices for the five-country studies. While covering broadly the same areas of law as the five-country datasets, they also address what we consider to have particularly salient legal issues relating to shareholder and creditor protection in the decade after 1995. For example, the twenty-five country shareholder protection dataset focuses on change in certain corporate governance standards, such as the presence of independent directors on boards and the mandatory bid rule in takeover bids, which were widely associated with global "best practice" in this period, and which were incorporated in relevant international standards such as the OECD's corporate governance *Principles*.[78]

B. Coding the Law

Our approach to coding has been informed by some of the same methodological considerations that influenced our selection of variables. We have thus taken into account the variety of different legal techniques available to legislators, ranging from mandatory norms to default rules of different kinds. In order to capture the differing degrees of bindingness implied by these techniques, we use graduated variables with scores between 0 and 1 in appropriate cases, rather than simple binary codings. We also code not just for "positive" legal rules, but for standards found in "soft-law" sources such as corporate governance codes, stock exchange rules, and

Protection, 57 AM. J. COMP. L. 579, 579–630 (2009).

78. OECD PRINCIPLES OF CORPORATE GOVERNANCE (2004).

takeover codes.[79] Market participants often regard standards of this type as having the same binding effects as laws, and legislators often defer to industry-level self-regulation on the understanding that resort to statutory solutions may be possible if self-regulatory norms prove to be ineffective.[80]

C. Illustrations: The Twenty-Five Country Indices for Shareholder and Creditor Protection

The definitions of the variables, the coding protocols, the values arrived at through the process of coding, and the detailed legal explanations for these values are available online for each of our datasets.[81] A previous paper[82] has set out in detail the basis for the coding of the laws in the five-country datasets. To illustrate our methodology we will focus here on the content of the twenty-five-country indices for shareholder protection[83] and creditor protection, and on the way in which the codings were determined in two particular cases, those of the United Kingdom (for shareholder protection) and France (for creditor protection).

1. The twenty-five country shareholder protection index

The first variable, *powers of the general meeting for de facto changes*, relates to the ability of the shareholders as a collective body to control actions by the board that may substantially alter the company's business profile. The corporate laws of many countries require transactions that exceed a threshold based on a proportion of the company's net assets to be approved by the shareholders. If there is no such threshold, a score of 0 is given. If there is a restriction triggered at a threshold of 50% or lower, then a score of 1 is given. If there is a restriction, but it is triggered at a net asset threshold that is

79. *See* ZWEIGERT & KÖTZ, *supra* note 39, at 39.

80. *See* Lele & Siems, *supra* note 75, for discussion of this point in the context of the coding of the shareholder protection index.

81. *See* http://www.cbr.cam.ac.uk/research/programme2/project2-20.html (home-page of the "Law, Finance and Development" project on the Cambridge Centre for Business Research website).

82. Armour et al., *supra* note 77.

83. The index used to construct the twenty-five-country dataset is also described (more briefly) in John Armour, Simon Deakin, Prabirjit Sarkar, Mathias Siems & Ajit Singh, *Shareholder Protection and Stock Market Development: An Empirical Test of the Legal Origins Hypothesis*, 6 J. EMPIRICAL LEGAL STUD. 343, 343–81 (2009).

higher than 50% (e.g. 80%), then a score of 0.5 is given. In the UK, the Listing Rules, which apply to publicly traded firms, specify that any transaction involving more than 25% of the company's net assets must be approved by the shareholders; this rule was present for the entire period 1995–2005.[84] Hence, a score of 1 is given for each year.

The second variable, *agenda setting power*, relates to the ability of a minority shareholder to have an item put on the agenda for a shareholders' meeting. The higher the minimum percentage required to have an item put on the agenda, the lower the coded score. For the entire period, the United Kingdom's Companies Act of 1985 stipulated that a shareholder with 5% or more of the voting rights could have an item put on the agenda for a shareholder meeting.[85] This yields a coding of 0.5 for each year in the period under study.

Our third variable, *anticipation of shareholder decision*, seeks to capture the extent to which the legal regime facilitates participation in shareholder decision making by those who are unable physically to be present at the meeting. This can be done either by permitting postal voting, or by allowing shareholders to appoint a proxy to represent them in voting at the meeting. Proxy mechanisms can, however, be biased in favor of the board of directors unless the proxies are "two-way"—that is, they provide for voting both for and against the resolution in question. Moreover, we assume that proxy facilities are more useful to shareholders when accompanied by a "proxy solicitation"—namely, a circular explaining the background to the particular resolutions in relation to which proxy appointments are sought. In the UK, the Listing Rules required that a two-way proxy form be circulated to shareholders for the entire period under consideration, but there was no requirement that it be accompanied by a proxy solicitation.[86] Hence, we code the UK as 0.5 for the entire period.

Fourth, we consider whether, and if so, how readily, *multiple voting rights* are permitted—or, put the other way around, whether a one-share-one-vote rule is applied. Multiple voting rights facilitate the aggregation of control in the hands of shareholders with less than equivalent cash-flow rights, and correspondingly disenfranchise

84. UK Listing Rules § 6.3.4 (1984); UK Listing Rules § 10.37 (1993).

85. Companies Act, 1948, § 140; Companies Act, 1985, §§ 376, 377.

86. UK Listing Rules § 5.36 (1984); UK Listing Rules § 13.28(a), (b) (1984).

shareholders who do not share the enhanced voting capability. In the UK, there has been no legal or other regulatory prohibition of multiple voting rights for the period under consideration, meriting a score of 0.[87]

Our fifth variable relates to the proportion of *independent board members*—that is, those who must be free of employment or ownership links to the firm. Independent directors are widely thought to be able to assist shareholders in controlling the actions of managers. We give a score of 1 for jurisdictions in which more than 50% of the board must be independent; a score of 0.5 for jurisdictions in which more than 25% but less than 50% must be independent; and 0 for no requirement relating to independence. For intermediate positions, the score is derived as the percentage of independent board members divided by two. In the UK, the Cadbury Code of Corporate Governance, introduced in 1992, required listed companies to ensure that at least a majority of their nonexecutive directors be independent. As, at that point, typically half the board would be nonexecutive directors, we code this as 0.25. The Combined Code of Corporate Governance 2003 raised the threshold, requiring that at least half of all the board members be independent. We therefore code the UK as 1 from the following year (2004) onward.[88]

The sixth variable relates to the *feasibility of directors' dismissal*—that is, how readily shareholders may remove board members from their positions. The highest score of 1 is given where directors may be dismissed by shareholders at will, and 0 is given where dismissal may only be effected for cause or an important reason (specified in the law). Intermediate scores are given where although directors may be dismissed at will, this may be accompanied by a financial penalty for the company. Such penalties would be higher where there is no limit to the duration of service contracts, for which a score of 0.5 is given, and lower where there is a fixed duration, for which a score of

87. On the admissibility (in principle) of multiple voting rights, see Bushell v. Faith, [1970] A.C. 1099. Multiple voting rights are rarely observed in UK listed companies, but this appears to be the result of a widely observed social norm, which reflects institutional investor opinion on the issue, rather than any legal rule.

88. REPORT OF THE COMMITTEE ON THE FINANCIAL ASPECTS OF CORPORATE GOVERNANCE, THE CODE OF BEST PRACTICE § 2.2 (1992) (majority of nonexecutive directors must be independent); FINANCIAL REPORTING COUNCIL, COMBINED CODE ON CORPORATE GOVERNANCE § A.3.2 (2003) (at least half the board members must be independent).

0.75 is given. Turning to the UK application, no restrictions were imposed on shareholders' ability to remove directors from office during the study period, but it was possible for directors to enter into service contracts with the firm that contained termination payments, thereby subjecting the company to financial liability. From 1992 to 1995, these were subject to a restriction under the Cadbury Code on Corporate Governance to the effect that the general meeting had to approve any service contract for more than a three-year term. In 1995, this was reduced to an outright restriction on notice periods of more than one year.[89] The position is thus one in which dismissal is fundamentally straightforward, with the possibility of a financial penalty that is capped by the length of the notice period. We code this variable as 0.75 for 1995, and then, to reflect the reduction in the maximum notice period, 0.875 for the remainder of the study period.

Seventh, we consider the ability of minority shareholders to bring an action to enforce breaches of directors' duties—that is, the extent to which *private enforcement* is facilitated. Here we code as 0 those laws which exclude the possibility of a shareholder suit, 0.5 where there are some restrictions—such as a requirement that the shareholder holds some minimum proportion of the voting rights—and 1 where such an action may be brought readily. In the UK, a minority shareholder action does not depend on having a minimum share qualification but nevertheless is subject to a significant restriction that the wrong must be sufficiently serious as to constitute a "fraud on the minority." Consequently, a minority shareholder may enforce only particularly egregious breaches of duty—misappropriation of assets and the like.[90] We therefore code this as 0.5 for the entire period.

Eighth, we consider the ability of shareholders to file a *personal action* against a resolution of the general meeting—for example, on the basis that it has not been lawfully constituted. Under UK law, every shareholder has the power to bring a personal action,[91] and so

89. This provision originated in the 1995 version of the Code drawn up by the Greenbury Committee and became part of the Combined Code drawn up by the Hampel Committee in 1998. COMMITTEE ON CORPORATE GOVERNANCE: FINAL REPORT, § 4.9 (1998).

90. For an overview of this complex area, see A.J. BOYLE, MINORITY SHAREHOLDERS' REMEDIES (2002).

91. *See, e.g.*, Edwards v. Halliwell, [1950] 2 All E.R. 1064, 1067.

a coding of 1 is accorded for the entire period. In other jurisdictions, codings of less than 1 are given where specific percentage thresholds are imposed to bring such actions.

The penultimate variable relates to *mandatory bid* requirements. These compel the purchaser of more than a stipulated proportion of the voting rights of a listed company's share capital to make a tender offer for the remaining shares at a price no lower than that paid for the initial acquisitions. Such rules are intended to protect minority shareholders by providing them with the option to exit the company—at a price no lower than that which has been paid for the acquisition of a controlling block—rather than be required to continue to participate in the firm under the control of the acquirer. We reason that a lower threshold acquisition level accords greater protection. In the UK, a mandatory bid requirement was triggered under the City Code on Takeovers and Mergers for the entire period following the acquisition of 30% of the voting rights,[92] which we code as 1.

Finally, we consider rules requiring disclosure of *share ownership blocks*. These allow investors to know who has amassed significant stakes in a firm. We reason that greater transparency in this dimension benefits investors. We give the highest score of 1 for a 3% threshold, 0.75 for 5%, 0.5 for 10%, 0.25 for 25% and 0 for anything less. In the UK, disclosure of blocks amounting to 3% or more of the voting rights has been mandatory since 1989, meaning that we code this variable as 1 for the entire period.[93]

2. The twenty-five country creditor protection index

The first variable codifies rules on *minimum share capital*. These tend to be regulated by law and fixed at different levels, depending on the type of the company concerned. In continental European countries, and civil law systems in general, this instrument has been widely relied upon for the protection of creditors' interests. Our approach to coding concentrates on the minimum capital required for establishing a private company, interpreted to mean any business vehicle having separate legal personality and providing all its equity investors with limited liability. A score of 1 has been assigned to the

92. City Code on Takeovers and Mergers, rule 9.1.

93. Companies Act, 1985, § 199(2)(a) (as amended by the Companies Act, 1989).

law of countries where the minimum capital is fixed at €25,000 or more, a score of 0 in case of no minimum capital requirements, and a proportional intermediate score in case of a minimum capital set between €25,000 and 0. In France, the coding for this variable was done with regard to the private limited liability corporate form of the SARL (*Société à responsabilité limitée*). Up to the end of 2003, the law[94] required a minimum capital of 50,000FF (equivalent to approximately €7,500) in order to form such company, while from January 1, 2004 onwards, a SARL could be set up with no minimum capital whatsoever.[95] Therefore, the score for the years 1995 to 2003 is 0.3, while for the remaining period (2004-2005) it decreases to 0.

The second variable, *dividend restriction*, measures creditor protection by reference to the degree the company has power to distribute dividends to shareholders. The variable assigns a score of 0.33 for each of the following provisions: rules on basic dividend payments with limitations on the maximum amount of accumulated net profit that can be distributed as dividends and/or mandatory dividends; restrictions against share repurchase; and rules against disguised dividend distribution. In France, Article L 225-210 of the Commercial Code[96] deals with basic dividend restrictions, defining non-distributable reserves and stating that a company must have reserves, other than the statutory reserve fund, amounting to at least the value of all its shares. Article L 225-209 of the Commercial Code[97] regulates the acquisition by the company of its own shares, by providing that the general meeting of a company whose shares are admitted to trading on a regulated market may authorize the board of directors or the executive board, as applicable, to purchase a number of shares representing up to 10% of the company's capital. In doing so, the general meeting must define the purposes and terms of the transaction, as well as its upper limit, and cannot give such authorization for a period longer than eighteen months. Finally, Articles L 232-11 and L 232-12 regulate disguised dividend distributions. Given the presence of these three forms of dividend restriction, and after assigning a score of 0.33 for Article L 225-210 and Article L 225-209 and a score of 0.17 for Article L 232-11, 12, the overall coding is 0.83.

94. Loi n° 66-537 du 24 juillet 1966 sur les sociétés commerciales, art. 35.

95. Art. L 223-2, derived from Loi n° 2003-721 du 1 août 2003, art. 1.

96. Ex art. 217-3, Loi n° 66-537 du 24 juillet 1966.

97. Loi n° 2003-7 du 3 janvier 2003, art. 50 (II).

The third variable addresses the issue of *directors' duties towards creditors*. This variable is geared towards the situation of bankruptcy, and gives a score of 1 when a director has a duty to act in creditors' interests when the company is balance-sheet insolvent. A score of 0.5 is given where the duty is owed in the case of a commercially insolvent company, and, finally, a coding of 0 is given where there is no duty to account for creditors' interests in these situations. In France, the Commercial Code at Article L 624-3 rules that, where managerial negligence contributed to a depletion of corporate assets, the court may order that all or some of the debts of the company be borne by its directors. In addition, Article L 624-5 enumerates the circumstances in which the court may institute an administrative order or winding-up proceedings against any (paid or unpaid, de jure or de facto) directors. These situations include those in which the directors have disposed of the assets of the legal person as their own property, used the assets or credit of the legal person to the detriment of its interests either for personal gain or to benefit another legal person or undertaking in which they had a direct or indirect interest, abusively pursued a loss-making operation which was bound to result in the insolvency of the legal person, kept fictitious accounts or removed accounting documents from the legal person, or failed to keep accounts required by law. Because of these stringent laws, the coding is 1 for the entire period.

The fourth variable relates to the possibility offered in various countries of granting *nonpossessory security interests* to secure present and/or future debts, thereby providing a security interest in present and future, tangible and intangible collateral. It is well established that most, if not all, jurisdictions allow a nonpossessory security to be taken over land. Our coding assigns a score of 0.33 in the case where the law allows the creation of such security interests regarding personalty (tangible movables), receivables (intangibles), and "all assets." In France, with regard to personalty, nonpossessory security interests are not generally possible over inventory: the most common form is, instead, the pledge, which requires dispossession of the debtor. Yet, charges are possible over certain assets, including a purchase money security interest over material and equipment.[98] With regard to receivables, the "Loi Dailly" of 1981 establishes a

98. *See* Martin Gdanski, *Taking Security in France*, *in* CROSS-BORDER SECURITY AND INSOLVENCY 59, 64–68 (Michael Bridge & Robert Stevens eds., 2001).

statutory framework specifically for the grant of security over book debts. With regard to "all assets," it is believed that the notion of a "floating charge" is foreign to French law,[99] although it is possible to create a comprehensive pledge, which includes the commercial name, goodwill, and intellectual property, but excludes real estate, book debts, inventory, and contractual rights, over the so called "*fond de commerce*."[100] For these reasons, the score attributed to this variable is 0.66.

The fifth variable expands on the fourth and relates to the registration of the type of nonpossessory security interests just referenced. In France, registration is required for security over corporeal moveables,[101] but not for incorporeal assets,[102] therefore the coding is 0.33.

The sixth variable is concerned with how far the law allows creditors to carry out *out-of-court enforcement of security interests*. Where they have this power, the score is 1; where they can only act through a court order, a score of 0 is given. As for most creditors, out-of-court enforcement or settlement saves time, cost, and human resources. This possibility is viewed as enhancing creditor protection. In France, out-of-court enforcement is not possible[103] and the coding is 0.

The seventh variable relates to the degree of *power to commence bankruptcy proceedings*. The variable assigns different scores to the cases of a debtor being able to initiate a bankruptcy proceeding unilaterally without any insolvency requirement (when the score will be 0), a debtor being required to initiate bankruptcy proceedings when the company is balance-sheet insolvent (when the score will be 1), and a bankruptcy proceeding being initiated by any creditor able to show that the debtor is insolvent by reference to a relevant criterion (when the score will be 0.5). This variable, therefore, captures the power of the debtor to use bankruptcy as a threat against creditors and, conversely, the power of the creditors to use bankruptcy as a way to compel payment. In France, for the period considered, the Commercial Code envisages that any single creditor may commence an insolvency proceeding, while in the case where

99. *Id*. at 59.

100. *Id*. at 65–66.

101. Art. 2338 C. CIV.

102. Art. 2361 C. CIV.

103. Gdanski, *supra* note 98, at 79.

the proceeding is started by the debtor, a cash-flow test is deemed to be sufficient, with the criterion being whether the debtor is unable to meet its liabilities out of its disposable assets.[104] Hence, the score is 0.5.

The eighth variable relates to the issue of the *stay of secured creditors* in insolvency proceedings. It distinguishes between situations according to how far there is a compulsory stay where there is a feasible prospect of a corporate rescue or rehabilitation. In France, Commercial Code, Article L 621-40 provides for secured creditors to be stayed: the decision to commence insolvency proceedings prevents any legal action or any application for execution against either the real or personal property of the debtor by any of the creditors whose debts arose before the date of said decision. This provision must, however, be read together with Article L 622-23, which rules that secured creditors may nevertheless exercise individual enforcement in liquidation, if the liquidator has not sold the assets within three months from the judgment instituting or ordering a court-ordered winding-up. The coding is therefore 0.5.

The ninth variable, *outcome of bankruptcy proceedings*, relates to how and by whom decisions are made regarding whether a bankrupt firm continues in operation or has to close down. Where the law grants that role to the court or to the debtor, the score assigned is 0. In situations where the power to decide the outcome of the bankruptcy proceeding is granted primarily to the creditors, the score will be 1 if the decision rights are allocated to the residual claimants and 0.5 if the law makes no such specification. In France, the Commercial Code provides for the court to be the primary decision maker regarding the outcome of the proceeding,[105] and so the coding is 0.

The final variable is concerned with the *rank order of secured creditors* during an insolvency proceeding. The division of security interests set out here refers back to the fourth variable, and a coding of 0.25 is assigned for each type of secured creditors who are not

104. Arts. L 620-2, 621-1.

105. Art. L 621-62; *see also* Arts. L 621-60, 621-61 (explaining that the judicial administrator, in preparing the report, must consult with creditors and employees; the report is influential with respect to the court's decision in the case. This provision was introduced by Loi n° 94-475 du 10 juin 1994 relative à la prévention et au traitement des difficultés des entreprises, Official Journal 134 du 11 juin 1994, p. 8440, in force 21 Oct. 1994).

subordinated by law to preferred claims. In France, the Commercial Code, at Article L 621-32 II, provides that debts secured by specific charges over real or personal property are not subordinated in liquidation.[106] The score for this variable is, therefore, 0.75.

D. Issues Arising in the Econometric Analysis of Longitudinal Data

As we shall see in more detail in the next section, the presentation of longitudinal data collated in the ways just described can be highly revealing at a purely descriptive level. In addition, once data exist in this form, it becomes possible to undertake econometric analysis aimed at identifying the presence of correlations between legal and economic variables. Time-series and panel-data techniques can be deployed to identify causal relationships in ways that are not possible if cross-sectional data (referring to the state of the law only at a particular point in time) are used. However, these techniques are not straightforward and their use can give rise to difficult issues of interpretation.

In cross-sectional analyses, a statistically significant correlation between an explanatory or "independent" variable, which codes for legal rules, on the one hand, and an outcome or "dependent" economic variable, on the other, will not necessarily provide good evidence of the direction of causal influence. The explanatory variable may be "endogenous" to the outcome variable in the technical sense of correlation with the error term in the regression equation. Where this is the case, a false result may occur; for example, it could be the case that a given financial indicator is driving a change in the law rather than the other way round.[107]

There are a number of techniques available for getting around this problem of "reverse" or "simultaneous" causation. One is to identify a so-called "instrumental variable" that is correlated with the explanatory variable, but is not correlated with the error term. For example, in the early legal origins literature, scholars used the

106. Introduced by Loi n° 94-475 du 10 juin 1994 relative à la prévention et au traitement des difficultés des entreprises, Official Journal 134 du 11 juin 1994, p. 8440, in force 21 Oct. 1994.

107. For a general review of problems of endogeneity in growth regressions of the kind which are commonly used in the development literature, see Dani Rodrik, *Why We Learn Nothing from Regressing Economic Growth on Policies* (Mar. 25, 2005) (Harvard Univ., Working Paper), *available at* http://ksghome.harvard.edu/~drodrik/polocy%20regressions.pdf.

common law or civil law origins of different countries' legal systems as instruments for the substance of legal rules on shareholder rights. The assumption was that legal origin likely correlated with the content of legal rules in these countries; but, conversely, that legal origin could not plausibly have been influenced by the economic outcome variables, which were the focus of interest (and so could not be correlated with the error term). As we have seen,[108] this was because LLSV took the view that most countries' legal origins were the result of external events such as colonization or conquest that had occurred several decades or even centuries before, rather than being generated by contemporaneous, country-specific economic forces. By demonstrating a statistical relationship between legal origin and the different outcome variables, they were able to claim that the direction of causation ran from law to the economy rather than vice versa.[109]

However, there are problems with the instrumental variable approach. Not only is a degree of subjective judgment involved in the choice of instrumental variables; a variable will not be a good instrument if it could have influenced outcomes through channels other than that of the proposed explanatory variable. As we have seen, LLSV have more recently come to the view that legal origin might be influencing the economy through a number of routes, including interpretive practices and approaches to enforcement, in addition to that of the content of legal rules. This is the basis on which they have proposed that legal origin should be seen as a causal or exogenous variable in its own right, rather than as an instrument for the content of legal rules.[110] As noted above,[111] this approach creates new difficulties since it rests on the questionable assumption that legal origin, understood as regulatory style, is not susceptible to feedback effects from the economic environment.

Once longitudinal data become available, a wider range of econometric techniques can be used to address the issue of causal inference. Time series datasets may possess a characteristic known as "nonstationarity." These are series that do not follow a regular path, but are prone to irregular deviations, without returning to the previous trend. Where one or both of two time series is

108. *See id.*

109. La Porta et al., 1998, *supra* note 5.

110. La Porta et al., 2008, *supra* note 2, at 298.

111. *See* Rodrik, *supra* note 107.

nonstationary in this sense, their error terms are liable to autocorrelate, again producing spurious regressions. Techniques for addressing the issue of stationarity through the identification of "cointegrated" time series—that is to say, times series which are individually nonstationary, but are linked by a common, stationary trend—were developed in the 1980s.[112] These techniques were later combined with methods designed to make it possible to draw causal inferences from correlations in time-series analysis. These mostly involve variants of so-called "Granger causality" techniques,[113] which, in their basic form, involve regressing current values of the outcome variable against past values of itself and of the explanatory variable. If the addition of the past values of the explanatory variable makes a difference to the result, causation is generally assumed, although it may be more accurate to think of the effect in terms of precedence. Cointegration-based techniques are thought to be appropriate where there is a very long time series; conventionally, at least twenty-five years of annualized data are required. For shorter time periods, panel-data techniques can be used to identify the existence of correlations between legal and economic variables in pooled samples of countries, and Granger causality tests can be deployed to throw light on the direction of causation.

Our five-country datasets, with their very long time series, are nonstationary in the sense just described, and cointegration techniques have been used, as we shall see in more detail below, to deal with the possibility of autocorrelation and to identify causal relationships. For the twenty-five-country dataset, with its shorter time period, we have used panel data techniques in conjunction with Granger causality tests.[114]

112. Robert Engle & Clive Granger, *Cointegration and Error Correction: Representation, Estimation, and Testing*, 55 ECONOMETRICA 251 (1987).

113. *See* Clive Granger, *Investigating Causal Relations by Econometric Models and Cross-Spectral Methods*, 37 ECONOMETRICA 424 (1969).

114. For further details of the panel-data techniques used (in this case involving a random-effects model that is intended to take into account the likelihood that there are unobserved effects that vary both across countries and across time), see Armour et al., *supra* note 75.

IV. EMPIRICAL RESULTS

A. Leximetric Analysis

We are now in a position to present our empirical findings. We begin with a "leximetric" account, which provides a description of the main trends in legal change that we can identify from our data.

1. Analysis of five countries, 1970-2005

The five-country datasets track the evolution of shareholder and creditor protection between 1970 and 2005 in the UK, the United States, France, Germany, and India. Aggregating all the variables shows how well these legal systems have protected shareholder and creditor rights over time (see Figures 3 and 4).

Figure 3: Aggregate Shareholder Protection
(60 variables)

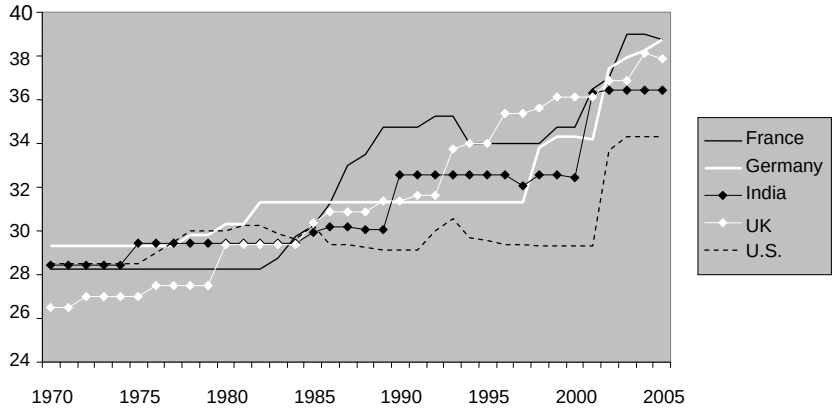
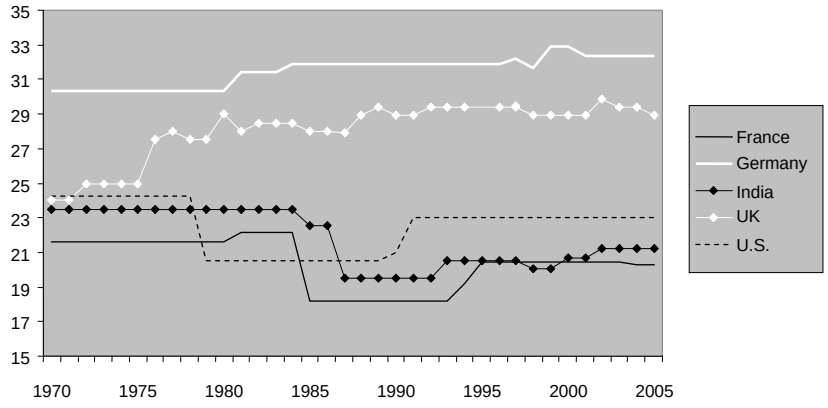


Figure 4: Aggregate Creditor Protection
(44 variables)



A number of differences between shareholder and creditor protection can be identified. First, shareholder protection has increased in all countries, whereas the development of creditor protection does not show a clear trend. Second, the UK and Germany have strengthened protection for both shareholders and creditors over this period, whereas France, India, and the United States have a lower level of protection for creditors at the end of the period than at the beginning. Third, shareholder protection has tended to go up incremental steps, whereas the curves on creditor protection have clearer "plateaus" and "steps," indicating that change is more episodic and, when it occurs, far-reaching.

These observations are not compatible with a legal origin effect, which is time-invariant and constant across closely related areas of law. The rank order of the countries changes over time, and there are very different pictures with respect to shareholder protection and creditor protection. The substance of our findings also differs from those of LLSV. We do not find that shareholders and creditors are

better protected in common law countries than in civil law ones. Nor does the pace of change seem to differ with regard to these two broad categories of legal system.

The overall aggregates only provide a highly generalized picture. It is possible to break our results down by reference to particular subcategories within each of the main indices. In the case of the shareholder protection index, we can consider two subcategories, concerning protection of shareholders against boards and management and protection against other shareholders respectively.[115] Table 1 presents summary data for these two sub-categories on a country-by-country basis (the deeper shading indicates higher scores). For creditor protection we can distinguish between rules that take effect by limiting the freedom of the debtor firm to engage in activities that may harm creditors, rules that take effect by facilitating creditor contracting for greater protection, and rules that take effect by facilitating creditor power in bankruptcy proceedings.[116] The results of the scores for these subcategories are summarized in Table 2 on a country-by-country basis.

115. Lele & Siems, *supra* note 75.

116. Armour et al., *supra* note 77.

Table 1: Shareholder Protection in Five Countries 1970-2005: Mean (and Standard Deviation)

	Protection against boards and management (42 variables)	*Protection against other shareholders (18 variables)*
France	22.55 (3.12)	9.63 (0.71)
Germany	21.56 (2.03)	10.26 (0.65)
India	23.06 (2.18)	8.27 (0.70)
UK	23.27 (3.44)	8.20 (0.38)
U.S.	21.24 (1.90)	8.69 (0.86)

Table 2: Creditor Protection in Five Countries 1970-2005: Mean (and Standard Deviation)

	Debtor control (15 variables)	*Credit contracts (10 variables)*	*Insolvency (19 variables)*
France	7.03 (0.17)	4.08 (0.64)	9.26 (1.51)
Germany	11.61 (0.71)	7.06 (0.11)	12.82 (0.66)
India	4.02 (0.14)	7.41 (0.57)	10.33 (1.95)
UK	7.33 (1.90)	7.97 (0.71)	12.78 (0.71)
U.S.	6.06 (1.22)	7.88 (0.65)	8.56 (0.97)

Related papers have discussed the trends in the subindices in some detail,[117] so we will only summarize the main findings here. Once the main indices are broken down into their component parts, we can see that countries can arrive at similar levels of protection overall, through different methods. For example, in the United States and the UK, creditors have a comparative advantage in mechanisms that facilitate contracting for greater protection, whereas in Germany creditors are better protected than in other countries mainly through controls over debtor activities (see Table 2).

In shareholder protection, we would expect to find that rules protecting minority shareholders against expropriation by majorities would be stronger in jurisdictions in which share ownership was concentrated in the hands of blockholders (Germany, France, and

117. *See* Armour et al., *supra* note 77; Lele & Siems, *supra* note 75.

India), and that rules protecting shareholders against boards would receive more emphasis in jurisdictions in which dispersed ownership is the norm (the UK and the United States). Table 1 suggests that France and Germany provide higher than average "minority-majority" protection, but that India does not. This suggests that legal origin may be a force for inertia; India's common law heritage may not have been equipped as well to adopt laws that tend to be found in civilian regimes for governing minority-majority conflicts. On the other hand, we find that the average level of protection for external shareholders against boards and management is strongest in the UK but weakest in the United States. A supposedly core feature of "Anglo-Saxon" corporate law seems to be only weakly present in the American case, by comparison with the practice in civilian countries. Another way of interpreting this result is that two of the parent civil law regimes, France and Germany, were strengthening the position of minority shareholders with regard to boards and managers over the period of the study, as was the UK, while this aspect of U.S. law changed hardly at all prior to the Sarbanes-Oxley Act of 2002.

2. Analysis of twenty-five countries, 1995–2005

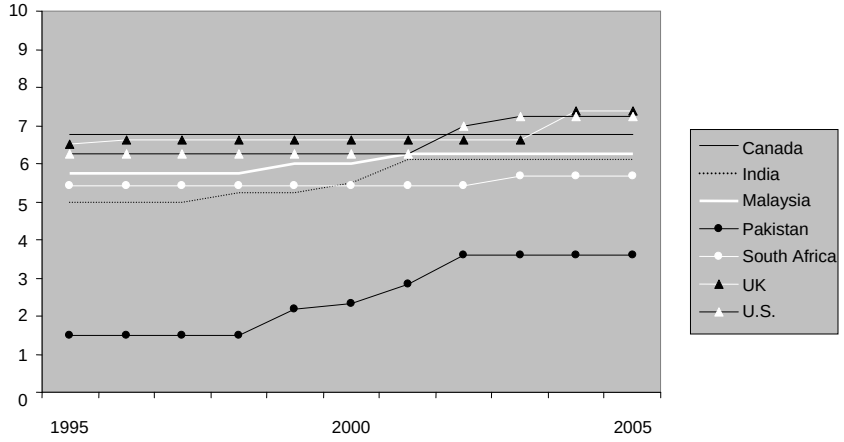
In Figures 5 through 12 we present our twenty-five-country data by reference to the principal legal origin "families" of English, French, and German law, and a fourth category consisting of transition systems, all of which, in this sample, are of German origin.[118] For this purpose, we mostly adopt the classifications of systems used by LLSV. Some of these classifications are problematic, for reasons explored earlier,[119] but this mode of presentation may be useful for comparing our results with LLSV's.

118. While most transition systems (and all of those in the current sample) can be categorized as having a German-law origin, there is a case for treating them separately from the other categories since their recent evolution has been considerably influenced by American, English, and French law, as well as German law. There is also some residual "socialist law" influence. On the category of "socialist law," see La Porta et al., 2008, *supra* note 2, at 288.

119. ZWEIGERT & KÖTZ, *supra* note 39, at 279, 281. Zweigert and Kötz treat the Scandinavian systems as a separate category because they are not based on a single civil code model as can be said of the French and German systems. In practice, the Scandinavian systems have been heavily influenced by German law. In fact, we categorize them as German-origin systems for present purposes, while recognizing that this classification (like all those involving legal "families") is open to question. *See* discussion *supra* Part II.

The results for shareholder protection indicate a generally rising trend over the period covered. All systems have improved their general level of shareholder protection, with certain variables, particularly those relating to independent board membership and the mandatory bid rule in hostile takeover bids, showing rapid increases. In that sense there has been convergence around standards which originated in the common law systems, particularly the UK, and which in the course of the 1990s and 2000s have come to be associated with global "best practice."[120] There are, however, some divergences by reference to legal origin and to the state of transition and development of the different countries.

Figure 5: Shareholder protection in
English legal origin countries (10 variables)



120. While the notion of global "best practice" in corporate governance is necessarily a rather vague one, it may be relevant to note that the OECD's PRINCIPLES OF CORPORATE GOVERNANCE, *supra* note 78, gives prominence to standards on independent boards and the role of the mandatory bid rule in takeover bids (which, by requiring the bidder to make an offer for the entire share capital of the company once his holding reaches a certain level, is intended to protect minority shareholders against expropriation). For further discussion, see Armour et al., *supra* note 77.

Figure 6: Shareholder protection in
French legal origin countries (10 variables)

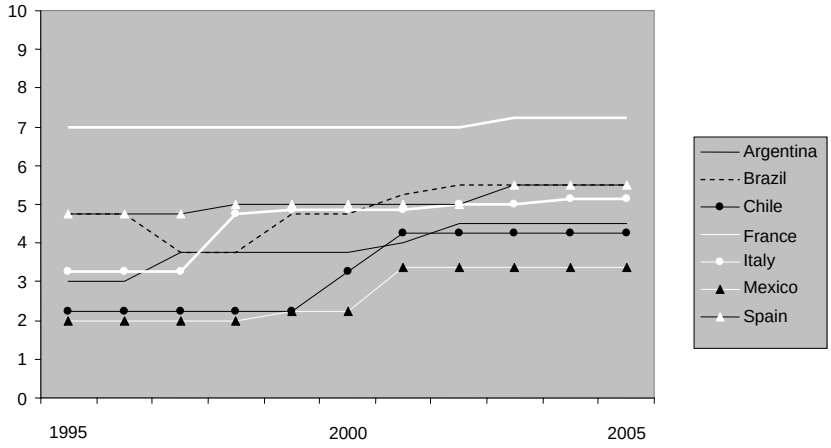


Figure 7: Shareholder protection in
German legal origin countries (10 variables)

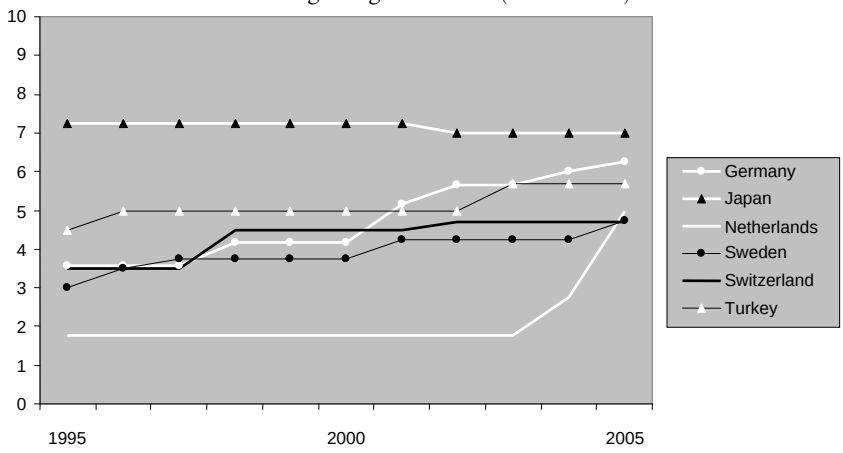
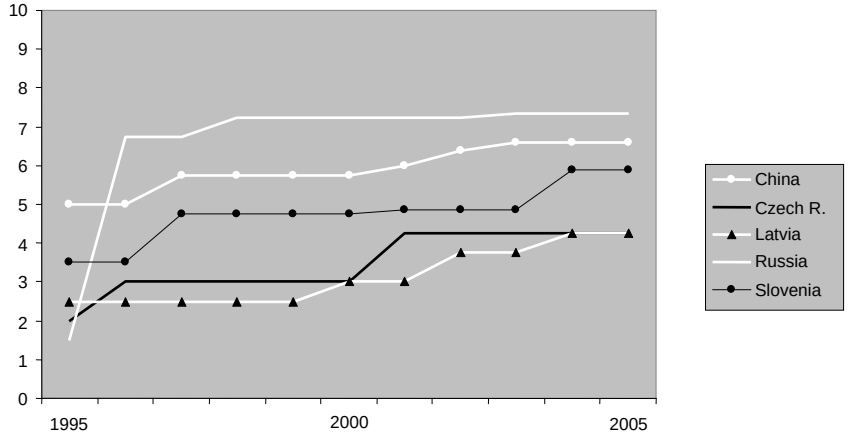


Figure 8: Shareholder protection in transition countries (10 variables)



The general rise in protection suggests that legal origin has not been a barrier to convergence and, indeed, it is the case that, on average, both developed and developing civil law countries had a faster rate of increase than common law ones. When we break down the sample into individual legal "families," however, certain differences emerge. The English-origin systems have above average scores for variables 1, 3, 5, and 7, which refer respectively to the powers of the general meeting to control transactions entered into by the board, the power of shareholders to take part in decision making without being physically present at meetings, requirements for independent directors on the board, and the availability of derivative suits to enforce directors' duties. These are all indicators of corporate law regimes in which the main problem is the possibility of expropriation of shareholder interests by powerful boards or managers.

In French legal-origin systems, the pattern just indicated is reversed: variables 1, 3, 5, and 7 have relatively low scores. Strikingly, France itself is an outlier in this group, indicating that the high level of shareholder protection rights in the parent system has not so far transmitted itself to other members of the group. One

possible interpretation of this result is that legal origin is not a strong force here, and that the very concept of a French-origin "family" makes little sense in this context. An alternative view is that the civil law tradition is proving to be a greater obstacle to convergence outside France than in the system of origin. This seems paradoxical—why should the parent system have been quicker to converge on global corporate governance standards than the rest? One possibility is that a certain regulatory style may be better suited to local conditions in the parent system, alongside which it will have coevolved,[121] than in systems into which it has been transplanted.[122]

German legal-origin systems score strongly on variable 8, which is concerned with the power of minority shareholders to block a resolution of the general meeting. This is not surprising, since such a power would provide an important mechanism for shareholder protection in systems with blockholder forms of ownership. German-origin scores are nevertheless up across the board. In 1995, the scores for German legal-origin systems were below the average for the whole sample; by the end of the period, they were above it.

Scores for developing countries are, on average, below those for developed ones in both the common law and civil law countries, while transition systems also have below average scores in relation to the sample as a whole. However, some transition systems are among those undergoing the most rapid movement towards a more shareholder-protective regime, under the influence of external pressures. The jump in the Russian score indicates the influence of Western (and, specifically, Anglo-American) models for the Joint Stock Company Law of 1995, while the more incremental rises in the Czech Republic, Latvia, and Slovenia are driven in part by the adoption of European Community law standards.[123]

121. For a discussion on coevolution, see Part II above.

122. There is substantial literature on the difficulties involved in the transplantation of legal institutions. *See* Dan Berkowitz, Katharina Pistor & Jean-Francois Richard, *The Transplant Effect*, 51 AM. J. COMP. L. 163 (2003); Katharina Pistor, Yoram Keinan, Jan Kleinheisterkamp & Mark D. West, *The Evolution of Corporate Law: A Cross-Country Comparison*, 23 U. PA. J. INT'L ECON. L. 791 (2003). According to Botero et al., *supra* note 23, at 1346, "path dependence in the legal and regulatory styles emerges as an efficient adaptation to the previously transplanted legal infrastructure."

123. For further analysis of the differences in shareholder protection across countries in this dataset, see Armour et al., *supra* note 77; Siems, *supra* note 46; Michael Schouten & Mathias Siems, *The Evolution of Ownership Disclosure Rules across Countries* (SSRN Working Paper Series, 2009), *available at* http://ssrn.com/abstract=1434144.

The results for the twenty-five-country creditor protection index are different from those obtained from the five-country study. With this larger sample, certain trends by reference to legal origin become clear. There is no overall common law-civil law divide, but there is evidence of divergence of experience by reference to the legal "families." French-origin systems have a significantly lower level of overall creditor protection than either the English-origin or German-origin countries. The French-origin countries are strong on dividend restrictions (variable 2), but relatively weak on minimum capital requirements (variable 1), creditor contract rights (variables 4-6), and creditor protection in insolvency (variables 8-10). The English-origin systems tend to stress creditors' contract rights and are weak on minimum capital requirements and rules governing entry into bankruptcy proceedings. German legal-origin countries have high scores on minimum capital requirements, rules on entry into insolvency, and the priority of secured creditors, and tend not to have low scores on any of the variables.

Figure 9: Creditor protection in
English legal origin countries (10 variables)

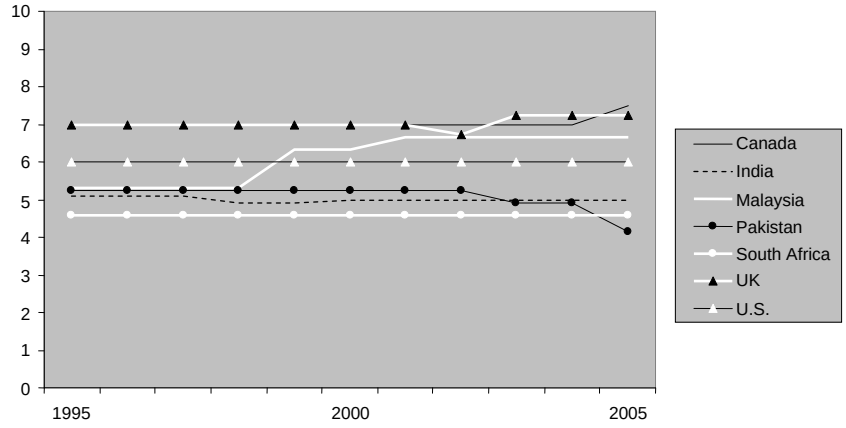


Figure 10: Creditor protection in
French legal origin countries (10 variables)

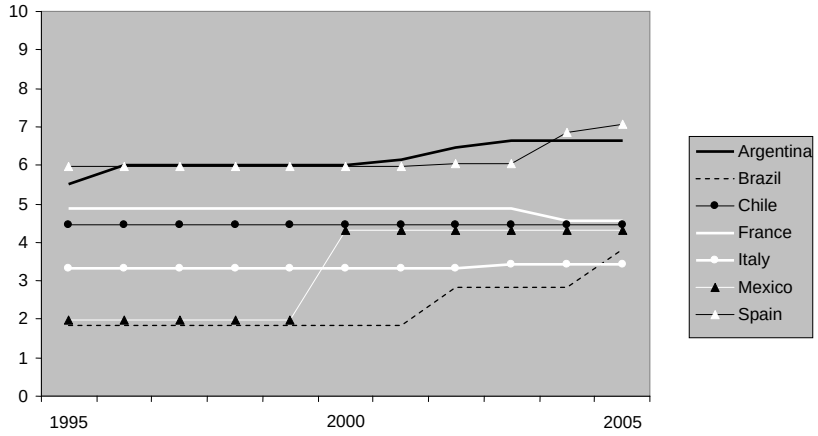


Figure 11: Creditor protection in
German legal origin countries (10 variables)

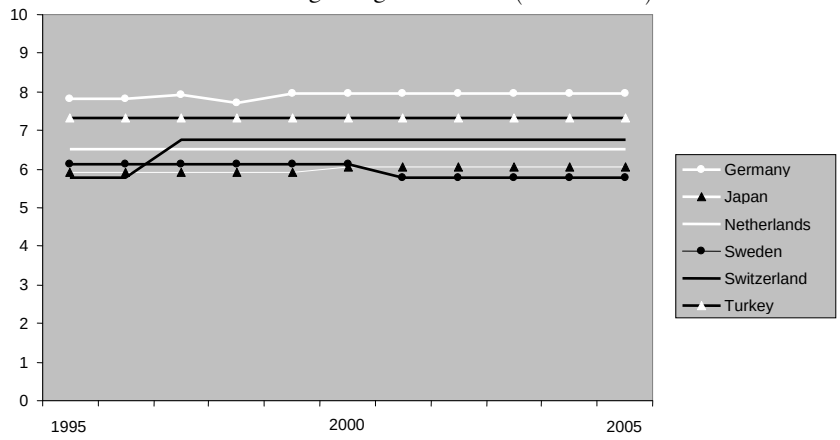
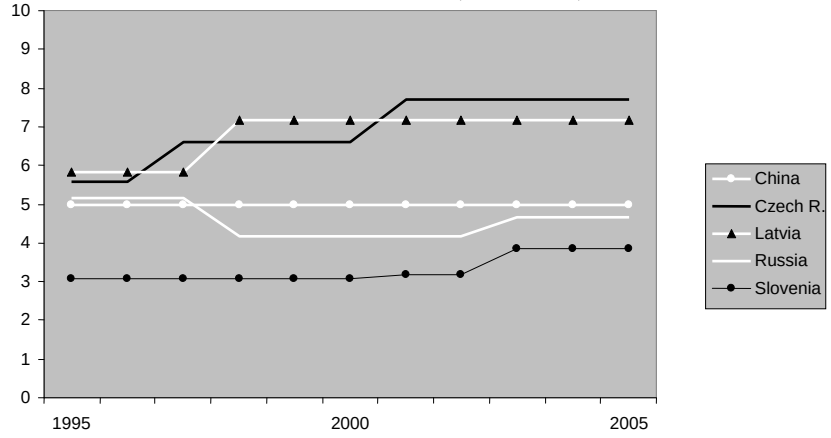


Figure 12: Creditor protection in transition countries (10 variables)



Although the common upwards trend, which is found with respect to shareholder protection, is absent in the case of creditor rights, most of the countries in the sample have undergone bankruptcy law reforms of some kind over the past ten years, with several of them initiating attempts to speed up or better regulate corporate reorganization procedures. There is a mixed picture on minimum capital requirements; France abolished these, effective in 2004, but most other civil law systems have maintained or strengthened this form of protection in the period under review. This kind of protection for creditors is generally absent in the common law systems.

Across the sample as a whole, developing and transition systems have lower scores than developed ones, but the gap between developed and developing/transition systems is less marked than the difference between the three legal origin "families." French legal-origin developing systems have experienced a greater increase in their scores than any group, in both absolute and relative terms. German-origin developing and transition systems have also increased their scores over this period, whereas those for English-origin developing systems have changed the least.

Why do we find evidence of a strong legal origin effect, at least by reference to the three main legal "families," in the case of creditor rights when it is missing in the case of shareholder rights?

Historically, civil law systems had less extensive systems of security interests than common law ones. In the French civil code, only two types of security interests were recognized, namely mortgage (for nonpossessory interests) and pledge (for possessory ones); these were imported directly from Roman law. In French-origin systems, types of nonpossessory security interests over property other than land had to be introduced through ad hoc statutes aimed at facilitating access to credit. While some of these laws included specific provisions for registration, others simply relied upon the registration rules already provided by the various civil codes. The recognition of security interests in the French civil law "family" has tended to remain limited and unsystematic. In the German-origin countries, by comparison, the courts developed the notion of the "quasi-floating charge" by way of transfer of title, and the countries generally took a more flexible approach with respect to the protection of secured creditors' rights.[124] This is an instance where the division of labor between case law and legislation mattered, but interestingly within the wider civil law category.

B. Econometric Analysis

With time-series data available, it becomes possible to estimate the economic impact of legal change and, conversely, to study the possible impact of economic conditions on the law. A number of econometric studies using the datasets described above have been carried out. This is a work in progress, and it is not possible to report a complete set of results here. Nevertheless, some trends are beginning to emerge from the literature.

The most striking result is the absence of the expected relationship between shareholder protection and stock market development. La Porta et al.'s original "law and finance" study found that a high score on the antidirector rights index correlated with a number of measures of financial development including stock market capitalization as a proportion of GDP.[125] Fagernäs et al.[126]

124. *See generally* Hugh S. Pigott, *The Need for Harmonisation of Collateral Law in Europe*, 15 EUR. BUS. L. REV. 871 (2004).

125. La Porta et al., 1998, *supra* note 5.

126. Sonja Fagernäs, Prabirjit Sarkar & Ajit Singh, *Legal Origin, Shareholder Protection and the Stock Market: New Challenges from Time Series Analysis*, *in* THE ECONOMICS OF CORPORATE GOVERNANCE AND MERGERS 20 (Klaus Gugler & B. Burcin Yurtoglu eds., 2008).

carried out an analysis of the relationship between the five-country shareholder protection index for the period 1970-2005 and changes in the stock-market turnover ratio for France, Germany, the UK, and the U.S. stock market turnover ratios measure the relationship between the value of shares traded and stock market capitalization. They have risen in each of the four countries in this study since the 1970s, particularly in France and the United States. In Germany there has been a more oscillating pattern with no clear increase in the turnover ratio since the mid-1980s.

Fägernas et al. used the autoregressive distributive lag (ARDL) approach to cointegration to ascertain the existence of a long run relationship between the stock market turnover ratio and the shareholder protection index, together with its different components. In order to account for the possibility that the overall level of the national economy was affecting the stock market behavior, they included the log-value of GDP in their model. They found that increases in shareholder protection did not appear to have had a positive link with stock market development as reflected in the stock market turnover ratio, irrespective of legal origin. They found a *negative* relationship between both the index as a whole and its two component elements (protection against boards and protection against majority shareholders) for France and the UK For Germany and the United States, no relationship either way could be identified. In a related paper, Sarkar[127] carried out similar tests to see if there was a relationship between shareholder protection and stock market development in India over the same period. No relationship was found.

Armour et al. carried out a panel data analysis to determine whether higher scores in the extended-sample shareholder protection index are correlated with an increased level of stock market development, taking into account a number of other potentially relevant factors including the effectiveness of legal enforcement in the countries concerned (as measured by the World Bank's "rule of law index").[128] The four measures of stock market development

127. Prabirjit Sarkar, *Corporate Governance, Stock Market Development and Private Capital Accumulation: A Case Study of India*, *in* INDIA MACROECONOMICS ANNUAL (S. Marjit ed., 2008).

128. Armour et al., *supra* note 83. This study covers only twenty of the twenty-five countries now contained in the dataset (as only twenty had been coded at that point). The sample of countries analyzed by Armour et al. is similar, in terms of its composition, to that

which are available on a longitudinal basis were used: stock market capitalization as a percentage of GDP; shares traded as a percentage of GDP; the ratio of shares traded to real stock market capitalization; and the number of listed companies per million of the population. Contrary again to the results from LLSV's cross-sectional study, their analysis finds no statistically significant positive correlation between shareholder protection and the level of stock market development, and a negative correlation in relation to the number of listed companies. Granger causality tests showed that the direction of causation ran from the increase in shareholder protection to the decline in the number of listed companies, not the other way round. These are broadly similar results, in terms of their implications for the relationship between shareholder protection and stock market development, to those obtained by Fagernäs et al.[129] and Sarkar[130] in their analyses of the five-country dataset.

These findings are open to a number of interpretations. One is that they may reflect difficulty in getting clear-cut results from time-series data, by comparison to cross-sectional analyses. This is refuted by the existence of results from other studies using the five-country datasets. Analyzing the five-country labor regulation dataset using the ARDL approach, Deakin and Sarkar[131] found evidence that productivity and employment growth are positively correlated with the strengthening of certain labor standards (mostly those relating to working time and dismissal law) in civil law systems. Similarly, Deakin, Demetriades, and James[132] report the findings of a cointegration analysis of creditor protection datasets for India and find evidence that the strengthening of secured creditors' rights was causally related to an increase in banking sector development.

A second possibility is that our longitudinal datasets are in some way defective as an account of legal change. However, by comparison to their only significant rivals, the datasets created by

analyzed by La Porta et al. in their first "law and finance" study. La Porta et al., 1998, *supra* note 5; *see* Armour et al., *supra* note 83, at 360.

129. Fagernäs et al., *supra*, note 126.

130. Sarkar, *supra*, note 127.

131. Simon Deakin & Prabirjit Sarkar, *Assessing the Long-Run Economic Impact of Labour Law Systems: A Theoretical Reappraisal and Analysis of New Time Series Data*, 39 INDUS. REL. J. 453 (2008).

132. Simon Deakin, Panicos Demetriades & Gregory James, *Creditor Rights and Banking System Development in India* (SSRN Working Paper Series, 2008), *available at* http://ssrn.com/abstract=1208866.

LLSV, they have the advantage of incorporating a wider range of legal information and adopting a more flexible approach to coding. The codings of civil law countries in our twenty-five-country shareholder protection index are significantly higher than those provided by LLSV in their "law and finance" paper, and the codings of common law systems are, on average, correspondingly lower.[133] We interpret this as evidence for the value of a "functional" approach to coding, which seeks to use indicators of potential relevance to a range of different country contexts. Put slightly differently, the approach avoids "home-country bias."

Methodological criticisms aside, it is plausible that our results are pointing to findings with real economic significance. The absence of a correlation between corporate law reform and stock market development suggests that the strengthening of shareholder rights, which took place in the 1990s and 2000s, has not been having its principal intended effect. This could be because national conditions may be setting limits to the effectiveness of legal transplants. Hence, while we report substantial *formal* convergence of laws, our econometric results suggest that functional discontinuities persist. This result is not incompatible with the legal origins hypothesis, particularly in the modified form presented most recently by La Porta et al.[134] It could be that changes in the substantive content of laws, in the form of convergence along the lines of a common law or Anglo-American model, have had little impact in the face of a relatively unchanging "legal infrastructure" in civil law, developing, and transition systems. Legal origin may be working, through channels other than those of the formal content of the law, to frustrate the intentions of law reformers.

However, we also need to take into account evidence that is weak (at best) for a positive relationship between stock market development and the strengthening of shareholder rights in common law countries, and not just in civil law and transition ones. In our panel data analysis we found that English legal origin was positively and significantly associated with one of the four measures of stock market development that we were concerned with, namely the number of listed companies.[135] In the case of the other three

133. Armour et al., *supra* note 83, at 356–57.

134. La Porta et al., 2008, *supra* note 2.

135. Armour et al., *supra* note 83, at 366–68.

variables, there was no significant relationship. In the case of the time-series analysis, we found no statistically significant relationship in either direction between changes in shareholder rights and the stock market turnover ratio for the United States; in the case of Britain, we found a statistically significant relationship, but the sign was negative. Thus, it would seem that greater shareholder protection has not enhanced financial development even in the common law systems. It could be that increases in shareholder protection on the scale witnessed since the mid-1990s have been "too much of a good thing,"[136] imposing undue costs and limiting the attractiveness of the listed company option.

With these possible explanations in mind, we are now in a position to reassess legal origins theory in the light of our empirical results.

V. THEORETICAL REEVALUATION

As we have seen, the relationship between investor protection rules and the economy has been theorized in a number of ways. The legal origins hypothesis posits a causal role for *legal institutions* in the creation of legal rules. Early versions of the theory suggested a unidirectional relationship: legal origins, established (in some cases, centuries ago) and transplanted through conquest and colonization, affected the ways in which countries developed their investor protection rules in the course of the nineteenth and twentieth centuries. In this view, legal origins were seen as an exogenous constraint on the extent to which economic forces and interest group politics could shape outcomes.[137] This constraint, it was argued, could lead to differences in investor protection, which, in turn, would lead to differential financial market development.

By contrast, political economy theories view the content of legal rules primarily as a phenomenon engendered by the alignment of *interest groups*.[138] In this view, the state of the economy is the

136. Valentina Bruno & Stijn Claessens, *Corporate Governance and Regulation: Can There Be Too Much of a Good Thing?*, (ECGI-Finance, Working Paper No. 142, 2007) *available at* http://ssrn.com/abstract=956329.

137. La Porta et al., 1998, *supra* note 5.

138. *See, e.g.*, PETER ALEXIS GOUREVTICH & JAMES J. SHINN, POLITICAL POWER AND CORPORATE CONTROL: THE NEW GLOBAL POLITICS OF CORPORATE GOVERNANCE (2005); Raghuram G. Rajan & Luigi Zingales, *The Great Reversals: The Politics of Financial Development in the Twentieth Century*, 69 J. FIN. ECON. 5 (2003).

ultimate cause of legal change, with economic forces operating through the channel of the political system. Thus, financial market development stimulates demand for legal protection of investors, not the other way around.[139]

The existence of a link between particular legal institutions and the content or style of legal rules does not, of course, rule out a role for political economy. Rather, legal institutions can be understood as interacting with interest group politics in the production of legal rules.[140] The outcome of previous rounds of political settlements will affect the current allocation of resources, and consequently the relationship between legal rules and the economy can be thought of as bi- rather than unidirectional—that is, a "rolling relation."[141] Legal origins theorists argue that the nature of a country's legal institutions is nevertheless a *more* significant determinant of investor protection (and thence financial market) outcomes than its political makeup. The link between origins and rules is thereby viewed as being one about the *style of regulation*[142]—that is, the processes employed to execute outputs from a policy process.

For economists and development agencies, the most important question concerns the extent to which legal institutions affect financial market development, whether directly or indirectly. In other words, the question is whether differences in regulatory styles are associated with differences in the *function* of resulting legal rules—that is, differences in the way in which they actually perform in, say, protecting investors and stimulating investment. For comparative lawyers, by contrast, understanding simply the existence and determinants of differences in the *form* of legal rules may be of interest, even if they are inconsequential for the real economy.[143] Both groups, however, have an interest in clarifying the nature of the

139. Cheffins, *supra* note 35; Coffee, *supra* note 35.

140. La Porta et al., 2008, *supra* note 2.

141. *See* CURTIS J. MILHAUPT & KATHARINA PISTOR, LAW AND CAPITALISM: WHAT CORPORATE CRISES REVEAL ABOUT LEGAL SYSTEMS AND ECONOMIC DEVELOPMENT AROUND THE WORLD (2008). The notion that channels of causation run in both directions between legal institutions and the economy may be traced back to Weber. *See* MAX WEBER, ECONOMY AND SOCIETY (Guenther Roth & Claus Wittich eds., 1978) (1922).

142. Botero, *supra* note 23.

143. On the significance of the difference between the form and the function of legal rules, see, for example, Ronald J. Gilson, *Globalizing Corporate Governance: Convergence of Form or Function*, 49 AM. J. COMP. L. 329 (2001).

law-economy relationship at a conceptual level. Does the empirical evidence emerging from time-series datasets assist this process?

A. The Extent of Path Dependencies by Legal Origin

1. Legal origins

Our indexing efforts reveal a number of stylized facts about the evolution of investor protection rules. First, within our time period there are differences between the *content* of investor protection rules by legal origin. However, the scope of these differences varies considerably depending on the type of rule in question. Differences in shareholder protection by reference to legal origin are relatively modest; moreover, the cross-country differences are much smaller than the intertemporal changes in shareholder protection that have occurred universally in our sample countries during the study period. In creditor protection, however, there are cross-country differences, which are persistent over time.[144] Moreover, these differences appear to be related to legal origins, a result emerging from our more extensive twenty-five country sample. German legal origin countries persistently have the strongest overall protection of creditor rights, closely followed by English legal origin countries; French legal origin countries persistently have the weakest.

Moreover, there is evidence of particular emphases in legal protection styles. Thus within creditor rights, English legal origins have generally stronger protection of creditor contract rights, and generally weaker minimum capital restrictions; German legal origins have generally stronger minimum capital requirements and duties on directors to file for insolvency when companies are financially distressed; and French legal origin countries have generally weaker insolvency (or bankruptcy) law protection for creditors.[145]

2. State of development

In both our twenty-five country shareholder and creditor rights indices, developing and transition economies have lower average scores throughout the study period than do developed countries. This is consistent with the claim that greater investor protection is

144. We observed similar patterns in the evolution of shareholder and creditor protection in our five-country, thirty-six-year dataset. *See* Armour et al., *supra* note 77, at 609–15.

145. *See id.* at 613–14.

associated with greater financial sector development. However, our econometric tests fail to reject the null hypothesis of no link between these variables.[146] Moreover, variable-by-variable analyses of creditor rights reveal that there is less variance in average scores by variable for developing, as opposed to developed countries, than there is when the analysis is conducted by reference to the legal origin of countries. The fact that differences between the formal structure of legal rules is greater by legal origin than by state of development, and that we find no statistically significant link between development and rule content, is consistent with the ideas that regulatory style (a) exhibits path dependencies (the association with legal origin) but (b) is largely a formal, rather than a functional, matter. In other words, different rule-types (to which we may add, different types of private contracts made in the shadow of the legal rules) are capable of achieving similar outcomes in the real economy, with no corresponding differences in financial development.

3. Rule types

A novel finding from our data is the way in which indices for different types of rules exhibit different properties both in relation to legal origins and to changes over time. For example, in our twenty-five country datasets, shareholder rights show relatively little variance by legal origin, and exhibit a relatively high degree of convergence over time. In contrast, creditor rights display a more significant degree of variation by legal origin, and do not converge in any obvious way—differences by origin remain persistent over time. Corresponding differences are also present in our five-country dataset: here, shareholder rights again show more convergence than do creditor rights.[147] No strong relationships with legal origins emerge in either of the two five-country datasets, although this may well simply be an artifact of the small sample size.

Why should different rule-types change at different paces? If legal origins exert a form of path dependency on the content of legal rules, why is this greater in relation to creditor rights than for shareholder rights? Three plausible, and complementary, explanations present themselves. The first relates to *switching costs.*

146. Fagernäs et al., *supra* note 126; Sarkar, *supra* note 127; Armour et al., *supra* note 83.

147. Armour et al., *supra* note 77, at 620–25.

Creditor rights are, in a sense, more fundamental (in the sense of being less susceptible to alteration) than shareholder rights.[148] The latter affect only parties who choose to become shareholders: the relation is essentially voluntary. Thus, the role of law in relation to shareholder rights is essentially one of providing standard terms that reduce parties' contracting costs. Parties who do not like these terms may usually contract around them.[149] This means that it is quite straightforward to enhance shareholder rights on a *prospective* basis. A new form of business organization, a new stock exchange, or a new body of listing rules, may be introduced only for those firms that choose to utilize the new framework—for example, the creation of the Stock Exchange Board of India (SEBI),[150] or the Novo Mercado in Brazil.[151] This involves far lower switching costs.

Secondly, and because of this difference, an improvement in shareholder rights for publicly-traded companies does not entail significant *distributional effects* for any parties enjoying privileged positions under the existing framework.[152] In contrast, changes to creditor rights affect not only the parties to particular (credit) contracts, but also affect all other actual or potential creditors either by altering their potential payoffs in insolvency if the debtor defaults, or the probability that the debtor will in fact default at all.[153] This change in creditor rights implies more extensive distributional effects and consequently greater resistance.[154] For example, foreign banks, lacking local knowledge, benefit disproportionately from

148. *See, e.g.*, John Armour & Michael J. Whincop, *The Proprietary Foundations of Corporate Law*, 27 OXFORD J. LEGAL STUD. 429 (2007); Kenneth Ayotte & Patrick Bolton, *Optimal Property Rights in Financial Contracting* (American Law and Economics Association, Working Paper No. 4, 2007), *available at* http://repositories.cdlib.org/berkeley_law_econ/Spring2007a/4/; Henry Hansmann & Reinier Kraakman, *The Essential Role of Organizational Law*, 110 YALE L.J. 387 (2000).

149. *See* Armour & Whincop, *supra* note 148.

150. *See generally* John Armour & Priya Lele, *Law, Finance, and Politics: The Case of India*, 43 L. & SOC'Y REV. 491 (2009); *see also* Afra Afsharipour, *Corporate Governance Convergence: Lessons from the Indian Experiment*, 29 NW. J. INT'L L. & BUS. 335, 355–56 (2009).

151. Ronald J. Gilson, Henry Hansmann & Mariana Pargendler, *Dual Capital Markets as a Financial Development Strategy: Brazil, the U.S., and the EU* (Yale Law School, Working Paper, 2009); *see also* Erica Gorga, *Changing the Paradigm of Stock Ownership from Concentrated Towards Dispersed Ownership? Evidence from Brazil and Consequences for Emerging Countries*, 29 NW. J. INT'L L. & BUS. 439 (2009).

152. *Id.*

153. *See* sources cited *supra* note 148.

154. Armour & Lele, *supra* note 150, at 504, 520.

enhancements of creditor rights in transition economies.[155] Domestic banks may therefore have incentives to oppose improvements in creditor rights for competitive reasons. In contrast, improvements to the rights of shareholders in public firms affect only those firms that choose to go public; in most countries only a minority of large firms are publicly-traded.[156] Hence, blockholders who wish to avoid losing out from the new rules need not oppose the rules; they need only avoid an IPO.[157]

B. The Mechanisms of Path Dependencies by Legal Origin

A recurring weakness in the legal origins literature has been the limitation of the theoretical mechanisms responsible for the path dependencies associated with legal origins. One way forward, we suggest, is through a more detailed account of the institutional mechanisms by which path dependencies may persist. It may be more helpful to proceed by developing categorizations based around measurable indicia of the relevant mechanisms, rather than using the often problematic "legal families" classification, particularly when the latter lacks a firm theoretical base. Here we sketch the contours of such an account, based on the quantitative and qualitative evidence we have gathered on the processes of legal change. We organize the discussion around three key ideas: mode of lawmaking, mechanisms of enforcement, and sharing of property rights.

1. Mode of lawmaking

A leading early account articulates two channels by which legal origin may affect the real economy: the "adaptability" channel, whereby common law (judicial) lawmaking is associated with greater responsiveness to economic change, and the "political" or "judicial independence" channel, whereby common law judges are associated with greater freedom from executive influence and consequently lower propensity to engage in rent-seeking.[158] Both channels focus

155. Rainer Haselmann, Katharina Pistor & Vikrant Vig, *How Law Affects Lending*, 25–26, 35 (Munich Personal RePEc Archive, Working Paper No. 157, 2006), *available at* http://mpra.ub.uni-muenchen.de/157/.

156. *See, e.g.*, Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer & Robert W. Vishny, *Legal Determinants of External Finance*, 52 J. FIN. 1131, 1137 (1997).

157. Gilson et al., *supra* note 151.

158. Thorsten Beck, Asli Demirgüc-Kunt & Ross Levine, *Law and Finance: Why Does Legal Origin Matter?*, 31 J. COMP. ECON. 653 (2003).

on the role of judicial, as opposed to statutory, lawmaking. The judicial mode of lawmaking is said to be more responsive to efficiency-enhancing changes (adaptability channel) and less susceptible to capture by interest group politics than statutory law making (judicial independence channel). What matters from a comparative, systemic perspective, then, is the *extent* of judicial, versus statutory, lawmaking.

A basic problem with this characterization is that, in relation to investor protection law at least, most—if not all—countries have codified the relevant rules. In other words, the simple *extent* of judicial, as opposed to statutory, law making varies little across systems. This variation reveals itself in the lack of obvious differences in the nature of legal change in our study countries. If there were important differences in the extent of judicial lawmaking, we would expect to see a pattern of change that differed depending on a country's legal origin. Common law countries would be expected to have more rapid accretions of changes in response to development, whereas civilian countries would be expected to have less frequent but more emphatic changes, corresponding to systemic updates of their codes. The results from our five-country and twenty-five-country datasets show, however, no discernible difference in the nature of change by legal origin. Shareholder rights have advanced across the board, in a manner that looks roughly similar in all our studied jurisdictions, and to the extent that there is change in creditor rights, its nature and extent does not vary by legal origin.

Acknowledging the near-universal codification of investor protection laws requires a refinement of the function courts perform in relation to these channels. A revised version of the "adaptability" channel, for example, would view courts not as providing the bulk of precedents, but rather as providing interstitial decisions on the interpretation or operation of the law.[159] On this view, we should not expect to see differences in the pattern of law production over time, as measured in our indices. This is not, therefore, a mechanism for legal path dependence, but rather an alternate channel (other than via legal rules) through which the structure of legal institutions may affect the real economy. Thus, we might expect differences in the functionality of systems of investor protection depending on the degree of efficacy of their courts. To some degree, measures of the

159. *See* La Porta et al., 2008, *supra* note 2.

"formalism" of court procedure may capture these differences.[160] However, it seems plausible that there may be other factors at work, which make a difference to the operation of courts.

In particular, we consider that there may be important functional consequences flowing from differences in the *structure* of the courts or tribunals. Variables that may have an impact on court performance include (a) *judicial human capital* (selection, training, and professional background),[161] which will affect the quality of decisions produced; (b) court *procedural rules*, including standing, costs, litigation funding, and the availability of class actions, each of which will affect the likelihood that an action will in fact be brought;[162] and (c) the *function* performed—whether solely for *ex post* challenge through litigation, or whether the court or tribunal performs an *ex ante* gatekeeper function.[163]

It is less than clear that these factors match up with the allocation of "legal origin." In fact, our case studies cast some doubt on the idea. For example, India, a common law country, suffers from problematic rules of civil procedure that engender delays of ten years or more in a typical civil trial.[164] Nevertheless, successful development of its stock markets may be explicable in part through the establishment of a dedicated tribunal (the Securities Appellate Tribunal, or SAT, associated with SEBI) with sector-specific expertise and streamlined procedural rules.[165] There is no reason to suppose that such specialist securities tribunals could only be established in common law countries; nor should we rely, in relation to investor protection, on any measure of the quality of courts that does not code specifically for tribunals that make decisions *in relation to this area of law*.[166] This may help to explain why, if this is a

160. *See* Djankov et al., *supra* note 24.

161. Gillian K. Hadfield, *The Levers of Legal Design: Institutional Determinants of the Quality of Law*, 36 J. COMP. ECON. 43 (2008).

162. *Id.*; *see also* John Armour, Bernard S. Black, Brian R. Cheffins & Richard Nolan, *Private Enforcement of Corporate Law: An Empirical Comparison of the UK and US*, 7 J. EMPIRICAL LEGAL STUD. (forthcoming 2010).

163. John Armour & David A. Skeel, Jr., *Who Makes the Rules for Hostile Takeovers, and Why? The Peculiar Divergence of U.S. and U.K. Takeover Regulation*, 95 GEO. L.J. 1727, 1767–84 (2007).

164. Armour & Lele, *supra* note 150.

165. *Id.*

166. For example, in relation to the United Kingdom, failure to take into account the Takeover Code, promulgated by the Takeover Panel, which for most of its history has been entirely self-regulatory, would result in a wholly misleading picture of takeover regulation. *See*

channel through which legal institutions affect the real economy, we find no empirical association between legal origin and stock market development.[167] A more focused empirical test would code the foregoing differences in the structure of courts directly.[168]

For a more nuanced version of the "judicial independence" channel, an additional set of factors is likely to be significant: namely (d) the status of courts in the *constitutional hierarchy*. That is, courts with extensive powers of judicial review of primary legislation are able to act as a restraint on the operation of interest group politics, even if the formal (observed) extent of judicial law making is quite small. This review may have an effect both on the real economy and on the formal content of legal rules. Again, however, this pattern need not vary along the lines of legal origin. For example, in England, despite its status as "mother country" of the common law legal origin, courts have no constitutional power to strike down primary legislation.[169]

2. Enforcement

Theory suggests that the efficacy of legal rules at imparting incentives to actors in the corporate sector will be a function not only of their substantive content, but also of their enforcement.[170] In the literature on legal origins, contributions to date have sought to bifurcate enforcement mechanisms into "public" (initiated by state agencies) and "private" (initiated by citizens or corporations). Public enforcement agencies typically do not keep the rewards of their efforts, and so have lower incentives to engage in enforcement—and hence a lower deterrent effect—than do private actors.[171]

Armour & Skeel, *supra* note 163, at 1735–38, 1782–84.

167. *See generally* Fagernäs et al., *supra* note 126; Sarkar, *supra* note 127; Armour et al., *supra* note 75.

168. *See* Mathias M. Siems, *Legal Adaptability in Elbonia*, 2 INT'L. J.L. CONTEXT 393, 393–408 (2006).

169. *See* Human Rights Act, 1998, c. 42, § 4(6) (U.K.).

170. *See, e.g.*, Roscoe Pound, *Law in Books and Law in Action*, 44 AM. L. REV. 12 (1910); Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968).

171. La Porta et al., 2006, *supra* note 13; *see also* Jonathan R. Hay & Andrei Shleifer, *Private Enforcement of Public Laws: A Theory of Legal Reform*, 88 AM. ECON. REV. 398 (1998) (discussing the emergence of private enforcement to address gaps in the system of public enforcement in Russia in the 1990s).

The measurement of the efficacy of enforcement mechanisms has proved just as difficult as of the quality of law. Early indices based on the extent of enforcement powers[172] asserted the superiority of private enforcement, a preference that also appeared to correlate with English legal origin. However, other studies using data based on resources directed toward enforcement[173] or penalties imposed,[174] assert the importance of public enforcement of securities laws. More recent indices distinguish between *ex ante* and *ex post* interventions by public and private actors.[175]

However, the full range of mechanisms employed to secure compliance may be larger still.[176] On the one hand, "public enforcement" may encompass a range of sanctions beyond formal penalties, including reputational sanctions imposed through public censure.[177] On the other hand, "gatekeeper control"[178] is also a widely used enforcement mechanism, but is not coded in the existing law and finance literature. In particular, a specific type of gatekeeper, the notary, is widely used in civilian, but not in common law, legal systems. The notary charges a fee for verifying the propriety of documentation associated with a range of transactions.[179] In some respects, this function is similar to that which might be performed by legal advisers in a common law system. The difference is that referral to a notary is mandatory, and the level of service is centrally prescribed, whereas consultation with a lawyer is voluntary, and can be metered by the client according to the amount at stake. It is plausible that reliance on notaries and other gatekeeper mechanisms

172. La Porta et al., 2006, *supra* note 13.

173. Howell E. Jackson & Mark J. Roe, *Public and Private Enforcement of Securities Laws: Resource-Based Evidence* (Harvard Law & Econ. Discussion Paper No. 638, 2008).

174. John C. Coffee, Jr., *Law and the Market: The Impact of Enforcement*, 156 U. PA. L. REV. 229 (2007).

175. *See generally* La Porta et al., 2008, *supra* note 2.

176. *See* John Armour, *Enforcement Strategies in UK Corporate Governance: A Road Map and Empirical Assessment*, *in* RATIONALITY IN COMPANY LAW: ESSAYS IN HONOUR OF D.D. PRENTICE 71 (John Armour & Jennifer Payne eds., 2009).

177. *See, e.g.*, Benjamin L. Liebman & Curtis J. Milhaupt, *Reputational Sanctions in China's Securities Market*, 108 COLUM. L. REV. 929 (2008).

178. Reinier H. Kraakman, *Gatekeepers: The Anatomy of a Third-Party Enforcement Strategy*, 2 J.L. ECON. & ORG. 53 (1986); JOHN C. COFFEE, JR., GATEKEEPERS: THE PROFESSIONS AND CORPORATE GOVERNANCE (2006).

179. Benito Arruñada, *The Economics of Notaries*, 3 EUR. J.L. & ECON. 5 (1996).

associated with formalities might have a significant impact on the efficacy of legal institutions.[180]

An additional factor that should be considered when seeking to quantify enforcement intensity is that there is probably some substitution between aspects of investor protection law and enforcement mechanisms. In particular, shareholder governance rights—decision-making rights and powers to appoint and remove the board—are potentially effective substitutes for enforcement of directors' duties under corporate law, depending on the coordination costs experienced by the shareholders.[181] Consequently, measuring enforcement intensity in isolation from substantive legal rules may generate results just as potentially misleading as studies based solely on the formal rules.

Not only do enforcement strategies present an additional channel through which legal institutions may affect the real economy, they might also be the source of some path dependencies in the content of legal rules. Consider first the potential substitutability of certain types of substantive rules and enforcement mechanisms. Where such substitution is possible, this creates a barrier to change in the formal rules. To implement such a change may require not only a change in the formal rules, but also the development of an alternative enforcement mechanism.

Secondly, consider the role accorded to gatekeepers such as notaries in many legal systems. They constitute an interest group, internal to the legal system, which is likely to have a bias against change. Changes to the rules devalue the human capital of all professionals specific to a particular set of transactional rules and require a further investment in rule-specific human capital. For those whose services are metered (such as business lawyers), these costs can be offset by increased demand for legal services following a change in the law, as clients also need to learn what is involved. For those whose services are not metered, but who operate based on fixed transaction fees (as is the case for notary services in many countries), the change is simply uncompensated. This evolution may create an additional source of path dependence for legal systems heavily reliant on notaries as gatekeepers.

180. One might also expect the organization and training of these professions to be relevant variables. *See* Hadfield, *supra* note 161.

181. Armour, *supra* note 176, at 102–09.

3. Shared property rights

All systems of corporate law involve some partitioning of the rights of ownership to assets between different classes of investors.[182] The property rights in these assets (be they physical or financial) are therefore *shared* between the participants.[183] Such sharing presupposes some mechanism for dealing with the problem of "ostensible ownership" where one of the shared owners deals with a third party on the basis that they are sole owner. In this case, either the other shared owners, or the third party, loses out. Legal systems have three basic mechanisms for dealing with this problem: (a) the *numerus clausus* principle; (b) selective enforcement or negotiability; and (c) registration.

The *numerus clausus* approach posits a fixed set of arrangements for sharing property rights. By limiting the set, third parties may be confident that they can limit their due diligence endeavors to inquiries focused on this particular list.[184] Alternatively, selective enforcement involves *ex post* adjudication by a court as to which of the "passive" owners or the third party could have avoided the problem at least cost, e.g., by the passive owners doing more to publicize their interest, or the third party making greater inquiries.[185] Lastly, registration mechanisms provide an authoritative repository of information about the nature of passive ownership interests.[186]

The three mechanisms are functional substitutes in the resolution of the problem of ostensible ownership: any one of the three is capable of reducing the costs thereby incurred to a manageable level. However, they have quite different dynamic properties. The *numerus clausus* approach, in particular, makes it very costly to introduce new ways of sharing property rights, other than those on the existing list. All transacting parties need to add to their list of potential questions if a new entrant is added. In contrast, selective enforcement imposes few additional costs for third parties if a new property-sharing

182. Hansmann & Kraakman, *supra* note 148.

183. Armour & Whincop, *supra* note 148.

184. Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The* Numerus Clausus *Principle*, 110 YALE L.J. 1 (2000).

185. John Armour & Michael J. Whincop, *An Economic Analysis of Shared Property in Partnership and Close Corporations Law*, 26 J. CORP. L. 983 (2001).

186. Henry Hansmann & Reinier Kraakman, *Property, Contract, and Verification: The* Numerus Clausus *Problem and the Divisibility of Rights*, 31 J. LEGAL STUD. 373, 393–95 (2001).

arrangement is introduced: the more unusual the arrangement, the more effort the passive owners must undertake to bring it to others' attention. Registration lies somewhere between these poles, depending on how the mechanism is implemented.[187]

Numerus clausus approaches have traditionally been associated with civil law systems; selective enforcement mechanisms (through the doctrines of "bona fide purchaser" and "constructive notice") have been linked with the equitable jurisdiction present in common law systems. This duality, therefore, constitutes a plausible channel through which path dependencies in the content of legal rules might operate. In particular, this could help to explain the relative lack of contractual protections for creditors in French civil law jurisdictions, which rely on the *numerus clausus* approach.

C. Are Legal Origins "Endogenous"?

Summing up this part of our discussion, we have seen that a focus on "infrastructural" aspects of legal systems can help in explaining some of the mechanisms of legal dependency. A first point to note is that these mechanisms do not always map very well onto the civil law-common law divide. This mode of lawmaking (judicial versus statutory), although often referred to in the legal origins literature, is not a convincing explanation for divergences in corporate law, given the predominant role played by statute, and the correspondingly interstitial role of the courts, in all jurisdictions. There is more scope for viewing difference in enforcement strategies and modes of interpretation along legal origin lines. However, we need more information to be sure that the classification of systems by reference to legal "families" is the right approach to take. We also need to carry out a mapping exercise so we have an objective basis for differentiating between the "infrastructural" aspects of different systems. Once that is done, we may have a firmer basis for determining whether the legal families classification is a useful one.

Second, a closer identification of the factors that might be driving legal path dependencies will assist us in assessing how far legal systems can be said to be "exogenous" or "endogenous" with regard to economic development. A possible working hypothesis would be that differences in enforcement strategies (public versus

187. *See* John Armour, *The Law and Economics Debate About Secured Lending: Lessons for European Lawmaking?*, 5 EUR. COMPANY & FIN. L. REV. 3, 25–28 (2008).

private) and modes of interpretation (open-ended legal categories versus the *numerus clausus* approach) could have an impact on the extent to which the legal system supports transactional flexibility and hence financial innovation. Possible tradeoffs between granting transactional flexibility and protecting third party interests have also been noted. If institutional factors such as these have implications for the nature and extent of financial development independent of the operation of formal legal rules, we may have part of the explanation for the limited impact of formal convergence in shareholder protection over the past decade. But if legal infrastructure is linked to economic outcomes in this way, it is also likely that there will have been some matching of legal institutions to economic and political structures over time in the systems concerned. It would, for example, be in the interests of particular interest groups to lobby to defend certain enforcement strategies against changes that would leave them worse off. Causal relations may therefore run in both directions.

VI. CONCLUSIONS

For the past decade or so, legal reforms worldwide have followed a consistent pattern. Shareholder rights and corporate governance standards have been strengthened in the belief that this would lead to more dispersed share ownership and more liquid capital markets, and creditor rights have been enhanced with a view to fostering flows of private credit. The legal origins hypothesis provided at least one theoretical underpinning for these developments by claiming that legal systems affect long-run patterns of economic development. Systems with a common law origin were thought to favor market-facilitating laws, whereas those with roots in the French or German civil law were seen as tending towards an activist role for the state. These underlying differences of regulatory style were, it was argued, reflected in the contents of the laws governing the business enterprise and in economic outcomes. As applied by the World Bank through its *Doing Business* reports, this approach directly influenced policy initiatives in dozens of countries.

Despite its influence, unanswered questions remain relating to the legal origins hypothesis. At a theoretical level, the theory lacks clarity concerning the channels through which legal origins might impact the substance of legal rules and economic outcomes. From an empirical viewpoint, the claim suffers from a serious shortcoming in that the evidence for the legal origins effect rests on quantitative

indicators that offer a cross-sectional view of the law (mostly of the content of laws as they were in the late 1990s). The findings from these studies can only be valid if it is assumed that laws change relatively little and that the ranking order of countries, in terms of the impact of regulation on business, does not change much over time. These issues can be tested empirically. We set out to develop longitudinal datasets that could be used to throw light on the nature and extent of changes to the substantive law and to assess their relationship to legal origins, on the one hand, and to financial development on the other.

We have now produced a number of new datasets tracking legal change over time in the areas of shareholder protection and creditor protection. Our indices include sixty indicators that code for the law of five significant countries (France, Germany, India, the UK ,and the U.S.) for the thirty-six year period between 1970 and 2005, and reduced-form indices of ten indicators, which code for the laws in a wider sample, twenty-five countries, for the period between 1995 and 2005. The coding methods we have used incorporate a wider range of legal and regulatory variables than earlier studies and take into account the different ways in which regulatory rules can be expressed (as mandatory rules or as "defaults" applying in the absence of contrary agreement). We have used time-series and panel data econometric analysis to test for correlations between the changing state of the law over time and economic outcome variables.

Our datasets provide a different picture of the state of the law than that provided by the early legal origins papers. We see considerable change in the area of shareholder protection, with civil law systems catching up with their common law counterparts, in particular over the decade leading up to 2005. This suggests that lock-in through legal origin has not been much of an obstacle to the formal convergence of systems. In the case of creditor protection, we do not see a clear common law-civil law divide, but we do find evidence to support a classification of systems by legal "families"; German-origin systems have consistently higher scores, with English-origin ones in the middle and French-origins systems showing generally low levels of support for creditor rights.

What about the impact of legal change? The econometric findings we have reviewed here call into question the widespread assumption that enhancing shareholders' rights has positive economic effects. We find that increases in shareholder protection

have not led to greater stock market development, as might have been expected. For some key variables, the relationship between legal change and financial development is negative. One possible interpretation of our results is that a "one size fits all" approach to corporate governance reforms, stressing elements of British and American practice—the role of independent boards and the market for corporate control—may not be working as intended in civilian and developing systems. Another interpretation is that even in the common law world, shareholder protection can have counterproductive effects, by unnecessarily raising the costs associated with a stock exchange listing.

A theoretical implication of our work is that legal systems are not the independent, "exogenous" force that legal origins theory takes them to be. Legal systems are, to some degree, "endogenous" in the sense of being shaped by their economic and political environment. We should expect to see feedback effects not simply between economic and political variables and the content of legal rules, but also between these contextual factors and the "infrastructural" core of legal systems.

The empirical analysis of legal origins is still, in significant respects, a work in progress. The research project initiated just over a decade ago by LLSV shows no sign of running out of steam. On the contrary, with new techniques being deployed and an active theoretical debate going on, it is continuing to progress. Time-series evidence has enhanced our understanding of the legal origins hypothesis, clarifying some claims with which it is associated while undermining others, but we are still some way from fully understanding the forces at work in the law-economy relation.