

Establishing an Effective Dialog between Courts and Agencies

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Establishing an Effective Dialog between Courts and Agencies

Mark Humphery-Jenner

Establishing an Effective Dialog between Courts and Agencies

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ter verkrijging van de graad van Doctor aan de Universiteit Leiden, op gezag van Rector Magnificus prof. mr. C.J.J.M.Stolker, volgens besluit van het College voor Promoties te verdedigen op dinsdag 16 april 2013 klokke 16.15 uur

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Introduction

This thesis examines the relationship between courts, administrators, and legislators. The goal is to improve the operation of judicial review in the United States and provide suggestions on how to enhance emerging doctrines of judicial review in the EU. The thesis focuses on how courts, agencies, and legislators interact in order to make and interpret law. Legislators create laws. Administrators apply and interpret laws. Courts review administrators' actions and interpretations. In so doing, they must give some 'weight' to the agency's interpretation of the statute. This system produces principled outcomes only if there is 'principled' communication between legislators, courts, and administrators. This has become increasingly relevant in the United States (due to the proliferation of administrative acts) and in Europe, due to the move towards 'Better Regulation' in the EU.¹ Thus, this thesis examines the nature of this 'principled communication' in order to help guide the appropriate relationship between courts and administrators. The over-arching research question is: How should courts and agencies interact in order to promote strong and effective law?

The relationship between courts, administrators, and legislators has become an increasingly important issue in the EU. Administrative agencies have proliferated across the EU. With this proliferation comes the need to protect citizens from improper uses of administrative power. Subsequently, myriad schemes of protection have emerged in the EU.² However, fragmentation in law can lead to undesirable consequences of regulatory competition and uncertainty.³ Perhaps recognizing the need to reform the judicial review of administrative action, the EU has moved towards pursuing 'Better Regulation' (BR).⁴ The goal of BR is broadly to improve regulation in the EU. However, it has largely focused on the legislative act of creating legislation, rather than on the administrative process of interpreting and applying legislation. This suggests that there is room to enhance the operation of BR. One way to enhance BR is to learn from the experiences in other countries, such as the United States.

¹ W Voermans and Y Schuurmans, "Better Regulation by Appeal" (2011) 17(3) European Public Law 507. ² R J G H Seerden and F A M Stroink, eds, *Administrative Law of the European Union, its Member States and the United States – A Comparative Analysis* (Antwerp/Groningen: Intersentia, 2002).

³ L Bebchuk, A Cohen and A Ferrell, "Does the Evidence Favor State Competition in Corporate Law?" (2002) 90 California Law Review 1775; LA Bebchuk and A Cohen, "Firms' decisions where to incorporate" (2003) 46(2) Journal of Law and Economics 383; LA Bebchuk, "Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law" (1992) 105(7) Harvard Law Review 1435; LA Bebchuk and A Ferrell, "Federalism and Corporate Law: The Race to Protect Managers from Takeovers" (1999) 99 Columbia Law Review 1168; LA Bebchuk and A Ferrell, "A New Approach to Takeover Law and Regulatory Competition" (2001) 87 Virginia Law Review 111; LA Bebchuk and A Ferrell, "Federal Intervention to Enhance Shareholder Choice" (2001) 87(5) Virginia Law Review 993. ⁴ see generally Voermans and Schuurmans (n 1).

The situation in the United States presents an environment from which the EU might learn. The United States has become 'administrative states' ⁵. The legislature promulgates laws. The administrators must interpret and apply the laws. People can challenge administrators' actions (which administrators base on the administrators' interpretations). Courts then decide this challenge. I focus on the relationship between courts and administrators

One of the central concerns in the United States has been how to properly motivate administrators' to make 'principled' decisions while at the same time preserving an adequate separation of powers between legislative, administrative, and judicial branches.⁶ Cooter, for example, argues that a statue should aim "to organize its bureaucracies to pursue explicit goals by efficient means".⁷ And, specifically, the state should strive to encourage administrators to interpret, and apply, their enabling statutes in a way that promotes the public good.

I especially focus on the relationship between administrators and courts in the context of statutes. Here, administrators interpret statues. When people challenge agencies' actions, courts must evaluate whether the agency's actions are valid through a process of 'judicial review'. In particular, the court must interpret the statue. However, agencies have already interpreted the statue. Thus, the issue is whether the court must consider the agency's interpretation when the court makes its own interpretation. This has become a vexed issue in the United States. These administrators are empowered by a democratically elected government. Thus, courts must balance the need to protect citizens from unwarranted uses of administrative power¹⁰ against the desire to respect the will [a branch of] a democratically elected government.¹¹ The doctrines of 'judicial deference' to administrative action are one argued way to help strike this balance.

Deference doctrines guide the weight that courts should give to administrators' interpretations of statutes. These doctrines exist in the United States, the EU, and in Australia. There are multiple types of

⁵ E Rubin, "Law and Legislation in the Administrative state" (1981) 89 Columbia Law Review 369; CS Diver, "Statutory Interpretation in the Administrative State" (1985) 133(3) University of Pennsylvania Law Review 549; E Rubin, "Dynamic Statutory Interpretation in the Administrative State" (2002) 3(2) Issues in Legal Scholarship 1.

⁶ See for example: RD Cooter, *The Strategic Constitution* (Princeton: Princeton University Press, 2000); A Lijphart, *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries* (Yale: Yale University Press, 1999), chapter 7.

⁷ Cooter (n 6 at 149).

⁸ See e.g. *Ibid* at 150.

⁹ *Ibid* at 151.

¹⁰ On the importance of judicial review as a bulwark against excessive uses of power see KJ McMahon, *Reconsidering Roosevelt on Race: How the Presidency Paved the Road to Brown* (Chicago: University of Chicago Press, 2004); GI Lovell, *Legislative Deferrals: Statutory Ambiguity, Judicial Power, and American Democracy* (New York: Cambridge, 2003); OM Fiss, "The law regained" (1989) 74 Cornell Law Review 245 at 255.

¹¹ AM Bickel, *The Least Dangerous Branch* (Indianapolis: Bobbs-Merril, 1962); MA Graber, "Constructing Judicial Review" (2005) 8 Annual Review of Political Science 425; J Waldron, *Law and Disagreement* (New York: Oxford University Press, 1999); J Waldron, *The Dignity of Legislation* (Cambridge, UK: Cambridge University Press, 1999).

judicial deference. Eskridge and Baer ¹² argue that there is a continuum of deference-levels; however, the continuum collapses into three main categories ¹³: low-level, medium-level, and high-level deference. Low-level deference gives limited weight to administrators' interpretations. It holds that courts have primary responsibility for interpreting legislation ¹⁴. Medium level deference holds that courts should follow the agency's interpretation if the interpretation is 'reasonable' ¹⁵. There is no presumption of reasonableness. High level deference presumptively holds that courts must follow the agency's interpretation unless it is clearly wrong (see for example *Bowles v. Seminole Rock & Sand Co.* (325 U.S. 410 [1945])).

The appropriate level of deference is a contentious issue. On the one hand, deference is arguably is arguably beneficial. First, it gives agencies some freedom in interpreting and applying the law. Second, deference forces courts to give some weight to agencies' interpretations. These agencies have especial access to expert information, and apply legislation in its contemporary context. This could give courts additional insight into how laws function when they are applied. Third, by giving some weight to the actions of a branch of the elected government, deference can help to mitigate arguments that constitutional/judicial review could be unconstitutional, specifically that "[W]hen the Supreme Court declares unconstitutional a legislative act or the action of an elected executive ... it thwarts the will of representatives of the actual people of the here and now."¹⁶ On the other hand, agencies are one part of the executive, with the executive branch controlling the freedom and budges of administrative departments. This could infuse agencies' actions with the views of the executive branch. Thus, forcing courts to defer to agencies' interpretations could undermine the separation of powers and harm judicial independence.

This situation raises several questions about the interaction between courts and agencies. The threshold concern is that it is not entirely clear whether it is necessary for courts to have any relationship with administrators. That is, are strong regulators necessary to impose judicial rulings? Further, it is not clear if requiring courts to 'defer' to agencies' interpretations of statutes might undermine judicial freedom and integrity. Additionally, it is necessary to determine what level of deference might best preserve judicial integrity while also enabling courts to utilize agencies' experiences in order to promote optimal interpretations of statues. This induces the following four issues:

¹² WN Eskridge and LE Baer, "The Continuum of Deference: Supreme Court Treatment of Agency Statutory Interpretations from Chevron to Hamdan" (2008) 96 Georgetown Law Journal 1083.

¹³ see WN Eskridge and C Raso, *Chevron as a Canon, not a Precedent: An Empirical Test of what Motivates Judges in Agency Deference Cases* (Center for Empirical Legal Studies, 2009).

¹⁴ PA Dame, "Stare Decisis, Chevron, and Skidmore: Do Administrative Agencies Have the Power to Overrule Courts?" (2002) 44 William & Mary Law Review 405; KE Hickman and MD Krueger, "In Search of the 'Modem' Skidmore Standard" (2007) 107 Columbia Law Review 1235.

¹⁵ MA Fitts, "Retaining the Rule of Law in a Chevron World" (1990) 66 Chicago-Kent Law Review 355; OS Kerr, "Shedding Light on Chevron: An Empirical Study of the Chevron Doctrine in the U.S. Courts of Appeals" (1998) 15 Yale Journal on Regulation 1; Dame (n 14); WR Andersen, "Chevron in the States: An Assessment and a Proposal" (2006) 56 Administrative Law Review 1017.

 $^{^{16}}$ Bickel (n 11 at 160). See also: Waldron (n 11); Waldron (n 11).

- 1. To what extent does the strength of the regulatory environment influence the effectiveness of the law?
- 2. Can an interaction between agencies and courts undermine judicial independence? Specifically, does the requirement that courts 'defer' to agencies' interpretations compromise judicial integrity?
- 3. Can 'deference' nonetheless enable courts to improve their interpretations of statutes? Importantly, what 'level' or 'amount' of deference best promotes optimal statutory interpretations?
- 4. Given that deference can both (a) promote better interpretations of statutes, and (b) undermine judicial independence, what level of deference will enable better statutory interpretations while preserving judicial integrity?

I examine four key issues: First, the threshold issue is whether it is necessary for there to be communication between the court and the regulator. That is, is law less effective if there is a communication breakdown? This is particularly important to an examination of the BR scheme in the EU. Schuurmans and Voermans¹⁷ highlight that the BR approach has largely ignored the role of regulators in the administration of legislation. By examining the importance of regulators, I highlight the need for BR to focus on judicial review of administrative actions. A positive answer then begs the question of how to properly structure the relationship between courts and regulators in order to best facilitate communication.

Second, if courts and regulators must work in tandem, can this have negative side effects? In particular, can communication between administrative agencies and courts undermine judicial independence? I focus on how the need for the court to 'defer' (or follow) agencies' interpretations of statutes might lessen judicial supremacy; and thus, might force courts to adopt judgments that promote vested interests.

Third, if the 'deference' relationship can undermine judicial independence, what is the best way to structure the relationship in order to preserve judicial independence? Here, I focus on how the court could both (a) utilize administrators' experiences and interpretations of statutes, and (b) still maintain its institutional integrity. I show that requiring a court to consider (but not requiring the court to follow) the agency's interpretation of statutes best promotes both goals. This promotes a 'low' or 'Skidmore' level of deference.

Fourth, if courts should interact with agencies, what is the optimal interaction to best promote the principled interpretation of statutes? In particular, I focus on the level of deference that will enable the court to promote the legislature's original purpose for the statute.

¹⁷ (n 1).

I make several broad findings: First, strong laws and judicial statements are ineffective if regulators are weak. Thus, a dialog between courts and regulators is necessary. Second, this dialog can undermine judicial independence. This especially occurs if courts are required to 'defer to' or to follow agencies' interpretations of statues. Third, a way to both (a) preserve a dialog between agencies and, (b) uphold judicial independence and integrity is to require courts to 'consider' agencies' interpretations of statues but to not require them to follow agencies interpretations. This is a 'low' level of deference, otherwise known as 'Skidmore' deference.¹⁸ Fourth, this 'low' or 'Skidmore' level of deference enables courts to make principled interpretations of statues. Specifically, it allows courts to take advantage of the information that administrators provide without having to follow biased or incorrect interpretations. This allows courts to create interpretations of statues that uphold the legislative purpose for the statue.

These findings make a significant contribution to the reform of judicial review of administrative action. The appropriate level of deference to administrative interpretations is a live issue in the United States. Thus, my findings are directly applicable to US courts. The findings are also applicable to the EU. The EU has features a proliferation of regulatory agencies and a fractured system of judicial review. Further, attempts to improve regulation have not directly confronted the appropriate nature of judicial review. Thus, by examining the appropriate relationship between courts and administrators I provide insights into how to structure judicial review within the EU.

The remainder of this introduction describes the motivation, results, and contribution of the four key chapters.

1 Chapter 1: The need for both strong regulators and strong courts

Summary: The threshold issue is whether it is necessary to have strong regulators and strong courts that work in tandem. That is, this chapter addresses the issue of whether 'strong laws' are enough, or whether it is necessary to also have effective regulators. This article analyzes whether strong law is effective in the presence of weak regulatory institutions. This is a live-issue for policy setters as they attempt to reform the financial system to prevent future market misconduct. This has become particularly relevant as the EU has attempted to reform securities laws under MiFID ¹⁹, and the regulation of financial markets in the

¹⁸ This is similar to the notion of requiring ministers to consider enumerated factors when making a declaration.

¹⁹ see D Cumming, S Johan and D Li, "Exchange trading rules and stock market liquidity" (2011) 99(3) Journal of Financial Economics 651.

US has sustained recent criticism ²⁰. The findings in this paper suggest that (a) any reform must be predicated on the existence of a strong and effective regulator, and (b) if there is no effective communication between the regulator and the court then laws are ineffective.

Motivation: Strong laws can create value. La Porta et al ²¹ and Spamann ²² show that rules that protect shareholder rights encourage economic development. Cumming, Johan, and Li ²³ show that strong stock exchange rules (cf legal rules) increase market liquidity. The desire for strong legal rules was one motivation EU's implementation of MiFID and the Takeover Directive ²⁴.

Strong laws are likely to achieve their policy purpose only if there is strong regulation, although the literature has not tested if this is the case. Cumming and Johan ²⁵, Polinsky and Shavell ²⁶ and Glaeser and Shleifer ²⁷ suggest that the regulatory environment influences the efficacy of the legal regime. One reason is that strong regulatory regime can ensure compliance with the law and prevent rent seeking.²⁸ Alternatively, Zamboni ²⁹ suggests that regulators are important because they transform abstract legal rules into community standards. This is particularly important if laws are vague; here, regulatory guidance and the rule of law are necessary to prevent commercial uncertainty ³⁰. Thus, Hoff and Stiglitz ³¹ cite inadequate regulatory institutions as one reason for the failure of legal and financial liberalization in emerging markets. Some collateral supporting evidence is that sovereign regulation and governance, rather than legal rules, drive the returns ³², and location of trade ³³, for non-US companies that issue stock in the US.

²⁰ JC Coffee and HA Sale, "Redesigning the SEC: Does the Treasury Have a Better Idea" (2009) 95(4) Virginia Law Review 707; JE Fisch, "Top Cop or Regulatory Flop - The SEC at 75" (2009) 95(4) Virginia Law Review 785; RS Karmel, "The future of the securities and exchange commission as a market regulator" (2009) 78(2) University of Cncinnati Law Review 501; CM Baker, "Regulating the invisible: The case of over-the-counter derivatives" (2010) 85(4) Notre Dame Law Review 1287.

²¹ "Legal Determinants of External Finance" (1997) 52(3) Journal of Finance 1131; R La Porta et al, "Law and finance" (1998) 106 Journal of Political Economy 1113.

²² "The 'Antidirector Rights Index' Revisited" (2010) 23(2) Review of Financial Studies 467.

²³ (n 19).

²⁴ Committee of Wise Men, *Final Report of The Committee of Wise Men on The Regulation of European Securities Markets* (European Commission, 2001); R Prodi, *Implementation of financial services legislation in the context of the Lamfalussy Report* (Strasbourg, 2002); B Clarke, "The Takeover Directive: Is a Little Regulation Better Than No Regulation?" (2009) 15(2) European Law Journal 174; J McCahery and E Vermeulen, *Does the Takeover Bids Directive Need Revision?* (TILEC, 2010).

²⁵ "Global market surveillance" (2008) 10 American Law and Economics Review 454.

²⁶ "The Economic Theory of Public Enforcement of Law" (2000) 38 Journal of Economic Literature 45.

²⁷ "The Economic Theory of Public Enforcement of Law" (2003) 41 Journal of Economic Literature 401.

²⁸ See generally the literature on rent seeking and the institutional environment Polinsky and Shavell (n 26); M Armstrong and DEM Sappington, "Regulation, Competition, and Liberalization" (2006) 44 Journal of Economic Literature 325; M Faccio, "Politically Connected Firms" (2006) 96(1) American Economic Review 369; A Estache and L Wren-Lewis, "Toward a Theory of Regulation for Developing Countries: Following Jean-Jacques Laffont's Lead" (2009) 47(3) Journal of Economic Literature 729.

²⁹ "'Legislating Politics': An Introduction" (2008) 2(3) Legisprudence 155.

³⁰ H Gribnau, "Soft Law and Taxation: EU and International Aspects" (2008) 2(2) Legisprudence 67.

³¹ "After the Big Bang? Obstacles to the Emergence of the Rule of Law in Post-Communist Societies" (2004) 94(3) American Economic Review 753.

³² (Cumming, Humphery-Jenner, and Wu, 2010b)

³³ Cumming, Johan and Li (n 19).

This induces the issue: what happens when regulators fail to uphold the principled law that a court promulgates? That is, what happens when there is no effective communication of the court's purpose to the regulators?

Data and sample: I use the Chinese reforms to market manipulation as a case study. I do this because it enables me to use a difference-in-difference approach to examine the impact of a legal-strengthening in the presence of a weak regulatory institution. China has strong laws on market manipulation by false statements. China's Supreme People's Court (the 'SPC') issued a guideline-type judgment on 9 January 2003 vis-à-vis private remedies for market manipulation by false statements. Humphery-Jenner ³⁴ argues that China's rules on false statements are legally optimal, containing principled rules on causation, remoteness, and mitigation. However, China has a poor reputation for securities law enforcement ³⁵. China's regulatory regime did not change following the legal change. This creates a difference-in-difference set-up, which enables me to avoid endogeneity concerns that might otherwise arise in contexts such as this.

Market manipulation is a key problem in China's securities markets. In 2001, their prevalence, and subsequent consumption of court time, induced China's Supreme People's Court to refuse to hear market manipulation cases. Subsequently, on 9 January 2003, China's Supreme People's Court (SPC) promulgated a guideline judgment that made principled legal reforms to compensation for market manipulation. The judgment has equivalent status to legislation. There were no reforms to the regulatory institutions. The prevalence of market manipulation coupled with the presence of strong law and weak regulation provides a natural experiment in which to test the impact of good law in the absence of good regulation. To my knowledge this is the first paper to test whether law reforms can improve the financial and economic environment if regulation is weak.

This paper uses the promulgation of strong false statement regulations on 9 January 2003 as a natural experiment with which to answer the question: Is good law a sufficient to improve market behavior in the absence of good regulation?

I examine whether the law-reform improved the financial environment by reducing the presence of informed trade, as proceed by PIN, the adverse selection component of the bid-ask spread, and the absolute order imbalance.³⁶ This is based on two streams of literature. First, the legal environment can

³⁴ "Securities Fraud Compensation: A legislative scheme drawing on China, the US and the UK" (2011) 38(2) Legal Issues of Economic Integration 143.

³⁵ K Pistor and C Xu, "Governing Stock Markets in Transition Economies: Lessons from China" (2005) 7(1) American Law and Economics Review 184.

³⁶ These are established measures of informed trade. An increase in the level of informed trade to uninformed trade suggests a less transparent and 'fair' market environment following N Aktas et al, "The PIN anomaly around M&A announcements" (2007) 10 Journal of Financial Markets 169..

influence market microstructure and trading behavior ³⁷. Second, improved disclosure can influence the firm's information environment, as proxied by microstructure measures of information asymmetry and informed trade ³⁸. This implies that a way to test the efficacy of law reform is to test whether it improved the firm's information environment, as proxied by intraday measures of informed trade and information asymmetry.

I test the impact of the SPC's 9 January interpretation by using a difference in difference approach. The control sample is the set of firms that listed on the Shanghai or Shenzhen stock exchange. The control sample comprises firms listed on the Hong Kong stock exchange, Taiwan stock exchange, or Korean stock exchange (KOSDAQ). I ensure robustness to violations of the parallel trend assumption by using a propensity score radius-matching type approach and by examining various control sample compositions.

Results: The results show that the SPC's interpretation did not reduce informed trade. Instead, the results suggest that informed trade, as proxied by PIN and the absolute order imbalance, increased following the SPC's interpretation. This implies that absent a strong regulatory framework, good law is not sufficient to improve the economic environment.

These results make a key contribution to the literature. First, this is the first paper to my knowledge to directly examine the impact of (a) a strong legal change that is (b) absent a strong regulatory environment. Thus, the paper is the first to directly show the importance of a strong regulatory environment to ensuring the implementation of a strong legal environment. Second, for policy setters, this shows that legal reform is unhelpful absent regulatory reform. Thus, the results show that institutions matter as much as laws matter. Third, for China, this illustrates that part of the reason for the failure of good laws to prevent market misconduct is the absence of a strong regulatory environment.

2 Chapter 2: Can deference undermine judicial independence?

³⁷ JR Macey and M O'Hara, "The Law and Economics of Best Execution" (1997) 6(3) Journal of Financial Intermediation 187; CS Ciccotello and FM Hatheway, "Indicating Ahead: Best Execution and the NASDAQ Preopening" (2000) 9(2) Journal of Financial Intermediation 184; PG Mahoney, "Market Microstructure and Market Efficiency" (2003) 28(4) Journal of Corporation Law 541; H Daouk, CMC Lee and D Ng, "Capital market governance: How do security laws affect market performance?" (2006) 12(3) Journal of Corporate Finance 560.

³⁸ following S Brown and SA Hillegeist, "How disclosure quality affects the level of information asymmetry" (2007) 12(2-3) Review of Accounting Studies 443; KH Chung, J Elder and J-C Kim, "Corporate Governance and Liquidity" (2010) 45 Journal of Financial and Quantitative Analysis 265.

Summary: Courts and agencies must work together to promote well-functioning law. Courts must protect citizens against excess uses of administrative power while respecting the will of (a branch) of the popularly elected government. This might require courts to defer to agencies' interpretations of statues. However, in so doing, courts must ensure that their 'deference' to the administrative branch does not compromise judicial integrity. Thus, the issue is whether this deference might force judges to follow biased, or politically motivated, decisions made by agencies. Subsequently, I empirically examine the political-judicial situation in the US. I analyse whether the process of judicial deference enables political factors (specifically, the president's political affiliation) to influence the court's decision-making process when dealing with administrators' interpretations of statues. The main contributions are to show that (1) the current president's political affiliation influences judicial decision-making, and (2) judicial review is a mechanism through which this can occur. Given that the results are based on the judicial review process and are not specific to the judicial appointment system in the US the results have international implications. These results question the independence of the judiciary and supports calls to de-politicize the judicial system.

Motivation and background: This paper empirically examines whether the current political situation influences judicial decision-making. This has become an especially live issue due to claims that the judicial nomination process is politically motivated. It is important that judges do acknowledge their role in a constitutional system. Specifically, principles of democracy mandate that they should be aware of the authority of a popularly elected government and should respect the government's will.³⁹ However, the separation of powers mandates that judges should remain independent from the government and should avoid politically biased decisions. This requires judges to balance their need for independence versus their need to respect the will of the government. However, it is argued that judges sometimes fail to strike this balance and that the process of judicial review might contribute to this failure.

³⁹ Waldron (n 11); Waldron (n 11); Bickel (n 11); Graber (n 11).

The political environment is sometimes argued to influence the method and outcome of judicial decisions. Possible explanations include (a) that political institutions might place budgetary pressure on courts ⁴⁰, (b) court might wish to avoid comments from political players that may harm its institutional reputation ⁴¹, and (c) the fact that the court must interact with administrative agencies, many of whom face budgetary and political pressures ⁴². I focus on this third avenue. I show use data from United States Supreme Court decisions to show that the current president's political affiliation influences the court's interactions with agencies, as proxied by deference to administrative agencies and the outcome of court cases. The focus is on the affiliation of the current president rather than that of the president who appointed the judge. Thus, these results are not restricted to the situation in the US and have broad implications for other countries.

This article confronts the issue of whether the president's political position influences judicial decision making in the United States; and thus, undermines judicial independence. Judicial independence has become an important issue both in the US and internationally.⁴³ The legal literature suggests that Presidential politics might influence judicial decision-making. The explanations include the `appointment' explanation the `punishment' explanation, and the 'administrative state' explanation – I focus on the administrative state explanation.

The 'appointment' explanation indicates why the appointing president's politics might influence judicial decisions. In full, the argument is: judicial appointments arise through from a complex negotiation between political parties.⁴⁴ Thus, the judge's politics mirror those of the appointing president. Judges,

⁴⁰JAMES W DOUGLAS & ROGER E HARTLEY, 'The Politics of Court Budgeting in the States: Is Judicial Independence Threatened by the Budgetary Process?', (2003) 63 Public Administration Review, 441-454

⁴¹MICHAEL E SOLIMINE & JAMES L WALKER, 'The Next Word: Congressional Response to Supreme Court Statutory Decisions', (1992) 65 Temple Law Review, 425-458

⁴² See: TOM CHRISTENSEN & PER LAEGRIED, 'Regulatory Agencies - The Challenges of Balancing Agency Autonomy and Political Control', (2007) 20 Governance 499-520

⁴³ See for example: H KWASI PREMPEH, 'African judges, in their own cause: Reconstituting independent courts in contemporary Africa ', (2006) 4 International Journal of Constitutional Law, 592-605 ;LUC B TREMBLAY, 'The legitimacy of judicial review: The limits of dialogue between courts and legislatures ', (2005) 3 International Journal of Constitutional Law, 617-648 ;KIETH E WHITTINGTON, 'Legislative sanctions and the strategic environment of judicial review', (2003) 1 International Journal of Constitutional Law, 446-474 ;DIANA WOODHOUSE, 'The Constitutional Reform Act 2005—defending judicial independence the English way', (2007) 5 International Journal of Constitutional Law, 153-165

⁴⁴For a detailed description see: SHELDON GOLDMAN, 'Voting Behavior on the United States Courts of Appeals Revisited', (1975) 69 American Political Science Review, 491-506 ;ELLIOT E SLOTNICK, 'Federal

like all people, cannot fully separate themselves from their political background ⁴⁵. Thus, judicial decisions must reflect the political affiliation of the appointing President. This has induced calls to depoliticize the appointment system.⁴⁶ The key problem with the appointment explanation is that it explains why the appointing President's affiliation influences decisions; it does not indicate whether the current President's affiliation will influence decisions.

The 'punishment' explanation is one explanation for why the current President's affiliation might influence the court's decisions. The logic is that he President can `punish' courts for decisions that he/she dislikes. Punishments include negative comments that reduce the court's institutional reputation ⁴⁷. Kenny ⁴⁸ argues that the court should protect its institutional reputation in order to maintain public confidence in the judiciary. Therefore, courts make decisions in order to avoid negative comments; and thus, courts make decisions to support the current president.

The administrative-state-based explanation is that the process of judicial review can compel judges to accept politically motivated agency-decisions. The idea is that administrators are subject to executive control over their budgets ⁴⁹. This is not unique to the United States ⁵⁰. Courts must interact with administrators when they judicially review administrative actions. Part of this interaction can involve

Judicial Recruitment and Selection Research: A Review Essay', (1988) 71 Judicature, 317-324 ;RAYMAN L SOLOMON, 'The Politics of Appointment and the Federal Court's Role in Regulating America: U.S. Courts of Appeals Judgeships from T.R. to F.D.R.', (1984) 9 Law and Social Inquiry 285-343 ;DAVID R STRAS, 'Understanding the New Politics of Judicial Appointments', (2008) 86 Texas Law Review, 1033-1078 ;DAVID R STRAS & RYAN W SCOTT, 'Navigating the New Politics of Judicial Appointments', (2008) 102 Northwestern University Law Review, 1869-1917

⁴⁵ STANLEY FISH, 'Change', (1987) 86 South Atlantic Quarterly, 423

⁴⁶ For example: MICHAEL J GERHARDT, 'Divided Justice: A Commentary on the Nomination and Confirmation of Justice Thomas', (1992) 60 George Washington law Review, 969-996 ;DAVID A STRAUSS & CASS A SUNSTEIN, 'The Senate, the Constitution, and the Confirmation Process', (1992) 101 Yale Law Journal, 1491-1524

⁴⁷ SOLIMINE & WALKER, 'The Next Word: Congressional Response to Supreme Court Statutory Decisions', (1992) 65 Temple Law Review, 425-458

⁴⁸ SUSAN KENNY, 'Maintaining public confidence in the judiciary: a precarious equilibrium', (1999) 25 Monash University Law Review, 209-224

⁴⁹ CHRISTENSEN & LAEGRIED, 'Regulatory Agencies - The Challenges of Balancing Agency Autonomy and Political Control', (2007) 20 Governance 499-520

⁵⁰ See ANTHONY B L CHEUNG, 'The Politics of Administrative Reforms in Asia: Paradigms and Legacies, Paths and Diversities', (2005) 18 Governance, 257-282 ;BRUCE STONE, 'Administrative Accountability in the 'Westminster' Democracies: Towards a New Conceptual Framework', (1995) 8 Governance, 505-526

'deference' to agency interpretations of statutes ⁵¹. These 'deference' doctrines oblige courts to follow (to varying degrees) the interpretations that judicial agencies make of statutes. Thus, by following a politically motivated agency, courts may impound presidential politics into their decision-making.

It remains unclear whether the political situation influences judicial decision-making. Few studies directly connect presidential politics with judicial decision making ⁵². The studies that do connect politics and judicial decisions yield unclear results. Some studies find a correlation between the appointing president's politics and the judge's decisions ⁵³. However, other studies find no significant correlation.⁵⁴ Further, the reliance on simple correlation analysis omits other key variables that might influence judicial decision-making, such as the involvement of an administrative agency.

Methods: This paper tests whether the president's political views influence the court's decisions. I argue that political factors influence judicial decision making if they influence the process and outcome of court cases. A proxy for the `process' of a court case is the court's decision to accept (rather than dispute) an administrator's interpretation of a statute. I proxy political factors by examining the president's political affiliation. The rationale is that the administration can control agencies' budgets; and thus, could make politically motivated budget decisions. A proxy for the `outcome' of a court case is the court's decision to issue either a dynamic (i.e. liberal) judgment or a black-letter judgment. The expectation being that politics influence the courts if liberal Presidents inspire liberal judgments. This explains how the political nature of the administrative state could induce politically-influenced decisions.

⁵¹ WILLIAM N ESKRIDGE & LAUREN E BAER, 'The Continuum of Deference: Supreme Court Treatment of Agency Statutory Interpretations from Chevron to Hamdan', (2008) 96 Georgetown Law Journal, 1083-1226

⁵² THOMAS M KECK, 'Party Politics or Judicial Independence? The Regime Politics Literature Hits the Law Schools', (2007) 32 Law and Social Inquiry, 511-544

⁵³ JILDA M ALIOTTA, 'Combining Judges' Attributes and Case Characteristics: An Alternative Approach to Explaining Supreme Court Decisionmaking', (1988) 71 Judicature, 277-280 ;LINDA R AND SPITZER COHEN, MATTHEW L, 'Judicial Deference to Agency Action: A Rational Choice Theory and an Empirical Test', (1996) 69 Southern California Law Review, 431-476 ;HERBERT M KRITZER & THOMAS M UHLMAN, 'Sisterhood in the Courtroom: Sex of Judge and Defendant in Criminal Case Disposition', (1977) 14 Social Science Journal, 77 ⁵⁴ See for example: ORLEY ASHENFELTER, et al., 'Politics and the Judiciary: The Influence of Judicial Background on Case Outcomes', (1995) 24 Journal of Legal Studies, 257-281 ;THEODORE EISENBERG & STEWART J SCHWAB, 'The Effects of Intent: Do We Know How Legal Standards Work?', (1995) 76 Cornell Law Review, 1151-1197

Results: The results show that the current president's political affiliation influences judicial decision making. In particular, it influences how judges respond to agencies' interpretations of statues. This suggests that political factors interplay with the process of judicial review in order to influence judicial decision-making.

The main contributions of the article are as follows: (1) I show that the current president's political affiliation (cf that of the appointing president) influence judicial decision making. (2) I highlight a new mechanism through which this can occur: the administrative state. Here, I show that the nature of judicial review (and the doctrines of judicial deference) can lead to judges incorporating politically motivated agency-decisions into their judgments. This highlights the need to reform the judicial system in general, and the nature of judicial review in specific, in order to promote an unbiased and independent judiciary.

3 Chapters 3 and 4: Can deference promote optimal interpretations of statues? Theoretical and Empirical essays

Summary: These two chapters examine whether deference can improve judicial decision making. I focus on whether it enables courts to promote superior interpretations of statues. Specifically, I examine what level of deference makes it more likely that a court will interpret a statue in a way that both upholds the legislature's purpose for the statute and enables the interpretation of the statute to reflect contemporary circumstances. Chapter 3 focuses on game theoretic modeling and Chapter 4 contains empirical tests.

I examine the relationship between deference and statutory interpretations in two ways. First, I develop a game theoretical model that theoretically examines how much deference the court should give to the agency's interpretation of statues. This model shows that a 'low' level of deference is best able to both promote principled interpretations of statues.

Second, I use a sample of 1014 US Supreme Court judgments to show that a low-to-medium level of deference is most likely to promote desirable interpretations that uphold the legislature's purpose for a statute and allow the words of the statute to reflect contemporary society.

Background and motivation: The level of deference can influence the court's interpretation of a statute. It can do this by requiring a court to at least consider the agency's interpretation of statues when it makes its own interpretation. Two important traits of an interpretation are (1) whether it is purposive, and (2) whether it is dynamic. A purposive judgment is one that aims to uphold the legislature's intentions for the statute. A dynamic judgment is one that allows the meaning of the statute to change over time in order to suit the current social context. Eskridge ⁵⁵ contends that dynamic interpretations are desirable. Frankfurter ⁵⁶ argues that an interpretation is justifiable only if it promotes the legislature's purpose for the statute. Joining these strands together, Graham ⁵⁷ and Humphery-Jenner ⁵⁸ indicate that an interpretation is principled if it is both purposive and dynamic. This article considers the issue: does low, medium, or high level deference promote dynamic interpretations that are purposive?

The level of deference could influence the court's interpretation. For example, if the agency adopts a purposive (or dynamic) interpretation, and the court must defer to the agency's interpretation, then the court must adopt a purposive (or dynamic) interpretation. This has lead prior legal literature to suggest that deference doctrines could influence courts' interpretations of statutes.⁵⁹ The empirical literature has not directly tested if deference promotes dynamism. But, it does imply that deference promotes dynamic interpretations. This motivates me to examine the level of deference that upholds superior interpretations of statutes.

Methods: I use three methods. First, I use a game theoretic model to examine the impact that deference has on the quality of agencies' interpretations. I show that a low level of deference will best promote superior interpretations.

⁵⁵ WN Eskridge, "Dynamic Statutory Interpretation" (1987) 135(6) University of Pennsylvania Law Review 1479.

⁵⁶ F Frankfurter, "Some Reflections on the Reading of Statutes" (1947) 47 Columbia Law Review 527.

⁵⁷ R Graham, "A Unified Theory of Statutory Interpretation" (2002) 23(1) Statute Law Review 91.

⁵⁸ ML Humphery-Jenner, "Should Common Law Doctrines Dynamically Guide the Interpretation of Statutes?" (2009) 3(2) Legisprudence 171.

⁵⁹ See for example: Rubin (n 5); Diver (n 5); CR Farina, "Statutory Interpretation and the Balance of Power in the Administrative State" (1989) 89(3) Columbia Law Review 452; A Scalia, "Judicial Deference to Administrative Interpretations of Law" (1989) 1989 Duke Law Journal 511; WN Eskridge, "Overriding Supreme court Statutory Interpretation Decisions" (1991) 101 Yale Law Journal 331; Rubin (n 5).

Second, this chapter tests whether low, medium, or high deference increase the chance that the court will issue (1) a purposive interpretation, and (2) a purposive interpretation that is also dynamic. I test the relation between interpretations and deference using a sample of 1014 Supreme Court judgments from between 1983 and 2005. The results indicate that particularly low level deference promotes interpretations that are both dynamic and that uphold the legislative purpose. There is no evidence that deference encourages dynamic interpretations that are non-purposive. Thus, the results indicate that deference may encourage courts to adopt principled dynamic interpretations.

Findings and contribution: The chapter indicates that particularly low level deference promotes interpretations that are both dynamic and that uphold the legislative purpose. The game theoretical model indicates that a low level of deference will encourages individually superior interpretations of statutes. The contraction mapping model shows that if courts and agencies repeatedly interact, then a low level of deference yields superior interpretations of statutes. The empirical results support this. There is no evidence that deference encourages dynamic interpretations that are non-purposive. Thus, the results indicate that deference may encourage courts to adopt principled dynamic interpretations.

4 Chapter 5: Balancing Deference and Judicial Integrity

Summary: An interaction between courts and administrators is necessary for well-functioning law. It can also undermine judicial independence. The issue is then to determine how much 'deference' is necessary to both preserve the court's independence and to promote the optimal interpretation of statues.

The level of deference can range from low-level deference (i.e. *Skidmore*), to medium-level deference (i.e. *Chevron*), to high-level deference (i.e. *Curtiss-Wright/Seminole Rock*). Deference may help courts to promote the legislative purpose by facilitating dynamic interpretations and by interpreting legislation within a practical context. However, agencies' interpretations might contradict existing common law rulings or be inconsistent with established fundamental legal values. Thus, this article tests which level of deference best enables courts to implement the legislative purpose while (1) integrating interpretations with the existing common law framework of interpretations, and (2) upholding fundamental legal values, such as the right to due process. Results from a sample of 998 Supreme Court decisions suggest that *Skidmore*-like low level of deference best achieves these goals.

Background and motivation: The literature suggests that there are some possible advantages to deference and some possible disadvantages to deference. In favor of deference, administrators' interpretations may illustrate the legislative purpose. Congress delegates powers to agencies in order to implement the legislative purpose ⁶⁰. Thus, absent agency conflicts and asymmetric information, administrators' interpretations should reflect the legislature's purpose for a statute. Therefore, assigning some weight to administrators' interpretations might help courts to issue interpretations that reflect the legislative purpose.

Deference may also harm courts' interpretations. Agencies sometimes act self-interestedly or myopically. ⁶¹ Thus, they may interpret the legislation incorrectly ⁶², or may fail to appreciate the existing body of common law interpretations that surround the legislation ⁶³. These factors suggest that a fundamental problem with deference is that it might harm judicial integrity. This judicial integrity involves several factors, but two relevant factors are the ability of the court to uphold fundamental legal rights and to preserve fundamental legal doctrines.

The issue thus becomes: what level of deference best enables a court to take advantage of agencies' interpretations of statues while preserving its judicial integrity? More specifically, the issue is which level of deference (a) enables courts to make interpretations that uphold the purpose for a statute, (b) allows the court to uphold fundamental legal rights, and (c) preserves common law doctrines.

Methodology: This article empirically examines which deference-type promotes these three limbs. It examines a sample of 988 Supreme Court cases. It then tests which type of deference (a) promotes the legislative purpose, (b) quadrates with the existing common law structure, and (c) is consistent with fundamental legal values. It concludes that a low level of deference best achieves these goals.

Results: A 'low' level of deference best enables a court to promote the legislative purpose while preserving judicial integrity. This low level of deference encourages a court to consider the agency's interpretation of statutes. However, it does not require courts to follow agencies' interpretations of statues. This low level of deference enables courts to use agency-based information to create more relevant interpretations. However, it also enables courts to make decisions that uphold the existing common law structure and promote fundamental legal values.

⁶⁰ JB Cheadle, "The Delegation of Legislative Functions" (1918) 27(7) Yale Law Journal 892; KC Davis, "A New Approach to Delegation" (1969) 36(4) University of Chicago Law Review 713.

⁶¹ Myriad papers examine agencies' incentives from both a legal and an economic perspective, see for example: R Dur and OH Swank, "Producing and Manipulating Information" (2005) 115 Economic Journal 185; J Hage, "Legislation and Expertise on Goals" (2009) 3(3) Legisprudence 351; C Leaver, "Bureaucratic Minimal Squawk Behavior: Theory and Evidence from Regulatory Agencies" (2009) 99(3) American Economic Review 572; PT Spiller, "Agency Discretion Under Judicial Review" (1992) 16(8-9) Mathematical and Computer Modelling 185; P Wrasai and OH Swank, "Policy makers, advisers, and reputation" (2007) 62 Journal of Economic Behavior & Organization 579; N Zeegers, "Distinguishing True from Other Hybrids. A Case Study of the Merits and Pitfalls of Devolved Regulation in the UK" (2009) 3(3) Legisprudence 299..

⁶² Scalia (n 59).

⁶³ R Pierce, "Reconciling Chevron and Stare Decisis" (1997) 85 Georgetown Law Journal 2225; BG Slocum,"Overlooked temporal issues in statutory interpretation" (2008) 81(3) Temple Law Review 635.

5 Chapter 6: How then should the regulator create better interpretation?

Summary: The foregoing chapters show that the courts should form a principled dialog with regulators. However, this presupposes that the regulator is capable of creating principled interpretations of statutes. This chapter uses a theoretical model to examine how the regulator can improve its interpretations by drawing upon the opinions of laypeople and experts.

Background: Committees of laypeople and experts are prevalent in government and in regulatory agencies. Regulators might establish a committee to advise on a scientific or technical matter. Examples in the United States include the committees designed to assess medicare coverage⁶⁴ Here, the committee decides whether medicare should cover a drug. The committee includes scientific experts and laypeople (representing the public). Experts have also featured in the evaluation of the regulation of high tech medical devices, with Altenstetter⁶⁵ highlighting the need to consider both lay (patient) vies and expert opinion. Another paradigm example is Australia's aborted plan form a 'Citizens' Assembly' on climate change. In 2010, the government proposed the Assembly. It would comprise representatives of the public and climate change experts and would provide recommendations to the government how to respond to climate change. A more successful example is Australia's Tax Forum from 2011, which took submissions from a wide range of interest groups, and non-experts. It then provided avenues for tax reform. Regulatory agencies, such as Australia's Takeover Panel, can form committees (that can comprise both experts from the Panel and laypeople), who can then take public submissions from all relevant stakeholders, including the public and experts in takeovers. Similarly, the Australian Law Reform Commission (ALRC) is a quasi-government body that suggests reforms to legislation. It makes these suggestions by soliciting input from community groups (i.e. representatives of laypeople) and from experts in the area of the legislation. The uniting theme is that the top-level decision maker creates a committee, which then makes a recommendation.

⁶⁴ The United States is not alone in using experts to set health policy. For example, they have featured in the United Kingdom's regulatory process K Veitch, "The Government of Health Care and the Politics of Patient Empowerment: New Labour and the NHS Reform Agenda in England" (2010) 32(3) Law and Policy 313; JSF Wright, "Regulatory Capitalism and the UK Labour Government's Reregulation of Commissioning in the English National Health Service" (2011) 33(1) Law and Policy 27.. Public participation also featured in the context of Germany's Genetic Engineering Act of 1990 A Bora, "Legal Procedure and Participation by the Public: Germany's 1990 Genetic Engineering Act" (1998) 20(1) Law and Policy 113.. Similarly, Dorbeck-Jung and Chowdhury "Is the European Medical Products Authorisation Regulation Equipped to Cope with the Challenges of Nanomedicines?" (2011) 33(2) Law and Policy 276. highlight the importance of considering myriad stakeholders in the European medical products process.

⁶⁵ Christa Altenstetter, "Medical Device Regulation and Nanotechnologies: Determining the Role of Patient Safety Concerns in Policymaking" (2011) 33:2 Law and Policy 227.

The issue is whether it is actually worthwhile including both experts and laypeople in committees. There is limited prior literature on this point. Some committees appear to have been successful (such as Australia's Takeover Panel, and ALRC). However, some committees have received criticism, such as the one established in Sweden to reform domestic violence, and the committees developed to assess stem cell research in the UK and the Netherlands. This begs the question of whether these committees are useful.

Methodology: I develop a theoretical model to assess the desirability of including both experts and laypeople on a committee. The model analyzes the proportion of the committee that should be experts. I model a situation where a top-level manager must decide on the size of a project. This could be how much to spend on public schools (for example). It could also involve regulatory matters such as the appropriate level for a tariff. The total project value depends on information from the experts (the expert-value) and information for the laypeople (the lay-value). In the school-expenditure example, the expert-value would be the purely technical amount that the government should spend to promote economic growth whereas the lay-value would be the social amount that the government should spend after considering other expenditures such as amenities and tax cuts. The manager creates a committee of experts and laypeople in order to solicit this information. The manager decides on the proportion of experts and laypeople.

Results and findings: I show that the committee should always comprise experts and laypeople (except under very specific circumstances, such as where the project has zero value to laypeople, so the laypeople would contribute no useful information). The committee should comprise more experts if the expertvalue is higher and fewer experts if the lay-value is higher. Overall, this suggests that a committee should generally comprise experts and laypeople, it should comprise more experts if the project is more technical, and fewer experts if the project is more 'social' and relies less on technical/expert information.

The main contributions of this paper are to highlight the importance of including experts and laypeople in decision-making committees at both a corporate and a regulatory level. That is, committees should generally include experts and laypeople, but the amount of experts should be higher if the project is more technical. Thus, for appropriate policy-changes, corporations should consider the input of employees (laypeople) and experts; and, regulators should consider the input of experts and members of the public (laypeople). This emphasizes the importance of considering all relevant stakeholders in decision-making.

6 Overall Conclusions

This thesis examines the administrative state. Legislators create laws. Agencies interpret the laws and act on their interpretations. People can challenge agencies' actions. Courts must decide this challenge. In so doing, courts must interpret statutes. A key aspect of this is the communication of agencies' interpretations to courts and the communication of courts' interpretations to agencies. A doctrine that governs this interaction is the doctrine of 'deference', which stipulates how much 'weight' or 'consideration' a court should give to agencies' interpretations. I examine the desirability and structure of this communication. The overarching question is: How should courts and agencies interact in order to promote strong and effective law?

This thesis primarily focuses on the 'deference' relationship between courts and administrators. When a court interprets a statute it must give some 'weight' to the agency's interpretation. This weight is called 'deference'. There are three main levels of deference. A 'high' level of deference mandates that courts follow the agency's interpretation of statutes unless it is clearly wrong. This involves a rebuttable presumption that the agency is correct. A 'medium' level of deference indicates that court should accept the agency's interpretation if it is reasonable. This involves a weaker presumption that the agency is correct, and it must be established that the agency's interpretation is actually reasonable. However, this is not a stringent barrier and ordinarily induces the court to follow the agency. A 'low' level of deference does not require the court to follow the agency. Instead, it indicates that the agency's interpretation is merely one factor that the court can consider when reaching its own interpretation of a statute. The main issues then become whether any form of 'dialog' is actually beneficial, and what level of dialog might best balance judicial freedom with optimal statutory interpretation.

This thesis addresses gaps in the literature and has strong policy implications. I focus on whether a 'dialog' between courts and agencies is really necessary, and if so, how to structure the dialog. Currently, the literature has not addressed several issues: (a) whether an interaction between courts and agencies is really necessary to improve legal outcomes, (b) whether such an interaction can undermine judicial independence, (c) whether the 'deference' relationship can still promote better interpretations of statutes, and (d) what level of 'deference' could both best promote optimal statutory interpretations while preserving judicial integrity.

The policy implications are as follows. (1) A dialog between courts and agencies is necessary to promote effective law. (2) This dialog can undermine judicial independence. It can do so by forcing judges to 'defer' to agencies' interpretations that are politically motivated. (3) The dialog can also promote optimal interpretations of statutes. Specifically, a 'low' level of deference best enables a court to uphold the legislature's purpose for a statute. (4) It is possible to structure the dialog in order to both promote superior interpretations of statutes and preserve judicial integrity. A 'low' level of deference best allows courts to avoid agency-decisions that are politically biased, while also enabling courts to promote optimal interpretations of statues. Overall, the results show that a principled dialog between agencies and courts is necessary, and a 'low' level of judicial deference to agencies' interpretations of statutes best enables this.

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Strong financial laws without strong enforcement: Is good law always better than no law?

This paper examines whether strong laws are effective when regulatory institutions are weak. This has become especially relevant due to criticisms of financial market regulation in the US. I test the impact of imposing strong laws on a weak regulatory environment by using China's principled reforms to market manipulation law as a natural experiment. The results from difference in difference tests suggest that China's principled law reforms did not improve the market's information environment, as proxied by the level of informed trade and information asymmetry. This implies that principled law reform is ineffective if the regulatory environment is weak.

Keywords: Regulation, Law Reform, Securities Law, Adverse Selection, Informed Trade, China, Securities Litigation JEL Codes: G14, G18, H11, K22, K42

I. Introduction

This article analyzes whether strong law is effective in the presence of weak regulatory institutions. This is a live-issue for policy setters as they attempt to reform the financial system to prevent future market misconduct. This has become particularly relevant as the EU has attempted to reform securities laws under the Markets in Financial Instruments Directive ('MiFID') (see Cumming et al., 2011), and the regulation of financial markets in the US has sustained recent criticism (Coffee and Sale, 2009; Fisch, 2009; Karmel, 2009; Baker, 2010). I use a difference-in-difference methodology to disentangle the effects of the design of new laws from their actual implementation, and I find that strong law in the presence of weak regulations might actually worsen market conditions. This provides additional empirical support for the prediction in Bhattacharya and Daouk (2009) that 'no law' can sometimes be better than 'good law'. This also suggests that empirical law and finance work should carefully distinguish between the mere presence of laws, and their enforcement.

Market manipulation is a key problem in China's securities markets. One key type of market manipulation is manipulation by issuing 'false statements' that inflate (or deflate) stock prices. A key remedy for such false statements is a 'Shareholder Class Action'.¹ In 2001, their prevalence, and subsequent consumption of court time, induced China's Supreme People's Court (SPC) to refuse to hear market manipulation cases. Subsequently, on 9 January 2003, China's Supreme People's Court promulgated a guideline judgment that made principled legal reforms to compensation for market manipulation. The judgment has equivalent status to legislation. There were no reforms to the regulatory institutions. This problem was amplified because regulatory approval was still necessary in order for shareholders to pursue a class action. Thus, while the law became stronger, it was still difficult for shareholders or regulators to enforce it. The prevalence of market manipulation coupled with the presence of strong law and weak regulation

¹ The impact, and undesirability, of such conduct has received significant attention in the United States (Cox et al., 2005, 2006, 2008; Fox, 2005, 2006; Peng and Röell, 2008; Bai et al., 2011, 2011; Humphery-Jenner, 2011, 2012).

provides a natural experiment in which to test the impact of good law in the absence of good regulation. This enables me to disentangle the effects of regulatory strength and legal strength.²

Strong laws can create value. La Porta et al (1997, 1998) and Spamann (2010) show that rules that protect shareholder rights encourage economic development. Cumming et al (2011) show that strong stock exchange rules (cf legal rules) increase market liquidity. Bruno and Claessens (2010) indicate that stringent investor protection can increase corporate value (depending upon the quality of the firm's own internal corporate governance). Becher and Frye (2011) find that (in the US) strong regulation can complement strong corporate governance. The desire for strong legal rules was one motivation EU's implementation of MiFID and the Takeover Directive (Committee of Wise Men, 2001; Prodi, 2002; Clarke, 2009; McCahery and Vermeulen, 2010).

Strong laws are likely to be ineffective, and might be detrimental, if there is weak regulation. In the context of false disclosures: If there is no law but there is wrongful conduct (i.e. issuing a false statement) then there will be a general state of non-compliance and a general distrust of corporate announcements. In this case, a corporation does not have an especial incentive to release falsely positive statements because it is unlikely that shareholders will place much credibility in them, thereby reducing the advantage gained by trading on private information (because everyone needs to become privately informed). By contrast, if there is a strong law that is not enforced, then some companies will comply with the law, but the non-compliers will deviate even more on the assumption that the compliers raise the general level of credibility of corporate announcements, thereby creating an incentive to issue falsely positive statements. The presence of compliers and (potentially serious) non-compliers raises the incentives for a trader to gather private information. This would increase the presence of informed trade and potentially reduce market-quality.

 $^{^2}$ This contrasts with some prior studies that examine the impact of the 'first enforcement' of insider trading laws. The issue with examining the 'first enforcement' date is that if regulators are strong, then they might deter misconduct; and thus, a strong law in a strong regulatory environment might actually appear to be under-enforced.

China has strong laws on market manipulation by false statements. The SPC issued a guidelinetype judgment on 9 January 2003 vis-à-vis private remedies for market manipulation by false statements. Humphery-Jenner (2011) argues that China's rules on false statements are legally justified, containing principled rules on causation, remoteness, and mitigation. China has a poor reputation for securities law enforcement (Chen et al., 2005; Pistor and Xu, 2005). China's regulatory regime did not change following the legal change.

This paper uses the promulgation of strong false statement regulations on 9 January 2003 as a natural experiment with which to answer the question: Is good law sufficient to improve market behavior in the absence of good regulation?

I examine whether the law-reform improved the financial environment by reducing the presence of informed trade, as proxied by PIN (the 'probability of informed trade'), the adverse selection component of the bid-ask spread, the absolute order imbalance, and (in Appendix 1) the daily bid-ask spread.³ This is based on two streams of literature. First, the legal environment can influence market microstructure and trading behavior (Macey and O'Hara, 1997; Ciccotello and Hatheway, 2000; Mahoney, 2003; Daouk et al., 2006). Second, improved disclosure can influence the firm's information environment, as proxied by microstructure measures of information asymmetry and informed trade (following Brown and Hillegeist, 2007; Chung et al., 2010), and by the firm's cost of capital (Bhattacharya et al., 2003; Daouk et al., 2006). This implies that a way to test the efficacy of law reform is to test whether it improved the firm's information asymmetry.

I test the impact of the SPC's 9 January interpretation by using a difference in difference approach. The treatment sample is the set of firms that listed on the Shanghai stock exchange or the Shenzhen stock exchange. The control sample comprises firms listed on the Hong Kong stock exchange, Taiwan stock exchange, or Korean stock exchange (KOSDAQ). I ensure

³ These are established measures of informed trade. An increase in the level of informed trade to uninformed trade suggests a less transparent and 'fair' market environment (following Aktas et al., 2007).

robustness to violations of the parallel trend assumption by using a propensity score radiusmatching type approach and by examining various control sample compositions.

The results show that the SPC's interpretation did not reduce informed trade. Instead, the results suggest that informed trade, as proxied by PIN and the absolute order imbalance, increased following the SPC's interpretation. This implies that absent a strong regulatory framework, good law is not sufficient to improve the economic environment.

These results support prior modeling by clearly disentangling enforcement and law by using a natural experiment. Cumming and Johan (2008) argue in favor of enhanced global market surveillance. Bhattacharya and Daouk (2002) find that the corporate cost of equity does not change after the introduction of insider trading laws, but does decrease after the first prosecution. Chen and Hao (2011) similarly find that enforcement of insider trading laws lowers underwriter gross spreads. Daske et al (2008) find that legal quality influences the impact of adopting mandatory international financial reporting standards (IFRS), although examine a sample of relatively developed countries. Bhattacharya and Daouk (2009) predict that if there is no law, then everyone is in a 'bad equilibrium'. However, if there is good law that is not enforced, then (a) some people will comply and (b) the people who do not comply will exploit the compliant people and deviate even more. They show a link between liquidity and law enforcement.

This paper has a number of differences from prior work that enable it to make an important contribution. First, some prior studies compare (a) the impact of the introduction of insider trading laws with (b) the impact of the 'first prosecution' of those laws. The key issue is that the mere lack of prosecutions does not render an environment weak. Instead, a strong regulator can deter misconduct, and this strength might be the reason for a lack of prosecutions. Thus, it is necessary to amplify these existing findings by examining the impact of introducing a strong law into a weak regulatory environment. Second, I directly test the impact of a legal change on measures of market quality, such as PIN, the adverse selection component of the spread, or order
imbalance. This provides a direct examination of the impact of legal changes on market quality.⁴ Third, I analyze the law in relation to false statements/ 'fraud on the market' as opposed to insider trading. Thus, this paper uses a difference in difference methodology to directly examine the impact of changes in securities fraud laws on market quality. This enables me to reach the overall conclusion that principled law-reform might be ineffective (or even counter-productive) in the absence of a strong regulator.

II. The Institutional Background

This section discusses the institutional background. First, I discuss the relevant conduct. Second, I discuss the relevant rules. Third, I discuss the relatively weak regulatory environment at the time.

The conduct: The situation involves market manipulation by issuing false statements. The typical situation is that a company issues a falsely positive statement (or omits negative information) and thereby inflates the stock price. Shareholders who purchase the stock at this inflated price may suffer a loss when the market realizes that the company's statement was false and the price falls. Shareholders may then wish to sue the company for loss suffered due that false statement.⁵

The Rules: There are three presently relevant legal rules vis-à-vis false statements. I only describe laws during the relevant period and do not consider current laws. First, Article 63 of the PRC Securities Law provides for compensation following false statements. This provides the legal cause-of-action on which shareholders can lodge litigation. The full text of Article 63 is:

⁴ Some prior literature has analyzed the impact of laws/enforcement on the firm's cost of capital. However, the firm's cost of capital is an indirect proxy for market quality. Note that Bhattacharya and Daouk (2009) do examine liquidity.

⁵ This situation has received significant analysis in the context of the US (Fox, 2005, 2006; Coffee, 2006), the UK (Davies, 2009; Ferran, 2009), and Australia (Humphery, 2009). It has received little legal analysis in China.

Article 63: The information as disclosed by issuers and listed companies according to law shall be authentic, accurate and complete and shall not have any false record, misleading statement or major omission.

Article 63 does not per se give shareholders standing to sue and is vague, requiring interpretation by the courts. Article 69 then renders the company liable to pay compensation for loss that investors 'thus incur'. The standing to sue (at the relevant time) would arguably have come within Article 111 of the PRC Company Law, which states:

Article 111: Where a resolution adopted by the shareholders' general meeting or the board of directors violates the relevant national statutes or administrative regulations, or infringes the rights and interests of shareholders, a shareholder is entitled to bring a suit to the People's Court to enjoin such illegalities or infringements.

Subsequently, during 2002 and 2003, the laws provided for shareholders to be able to sue; however, required interpretation.

Second, the SPC notionally explicitly allowed law suits vis-à-vis false statements on 15 January 2002.⁶ This supersedes a judgment on 2001 that the court would not entertain civil litigation for false statements.⁷ The reasoning behind the 2001 judgment was that false statement cases were so prolific that the court lacked the resources to consider them all. The 2002-judgment did not interpret the law, indicate when conduct would violate Article 63 or when a company would be liable under Article 69 of the Securities Law. Thus, while the judgment notionally provided access to law suits, it did not provide a principled interpretation of the law that shareholders could use to structure a case.

⁶ See: The Notice of the Supreme People's Court on Relevant Issues of Filing of Civil Tort Dispute Cases Arising from False Statement on the Securities Market (15 January 2002)

⁷ See: The Notice of the Supreme People's Court on Temporarily Refusal of Filing of Securities Related Civil Compensation Cases (21 September 2001).

Third, on 9 January 2003, the Supreme People's Court (SPC) promulgated an interpretation of when a company would be liable to pay compensation for false statements.⁸ They were arguably the 'first and important step towards the establishment of a civil litigation and compensation system... for securities fraud cases' (Zhu, 2011, p176). The law and the regulatory scheme are interconnected because the SPC stated that shareholders can sue for 'false statements' only if the regulator (the China Securities Regulatory Commission, 'CSRC') pursues regulatory action (2003-interpretation Article 6).

The 2003-interpretation implements the legal rules that permit civil compensation for false statements that manipulate market prices. It implicitly or explicitly covers all of (a) the date of the plaintiff's loss, (b) when the false statement causes the loss, (c) when loss is too remote, and (d) the requirement (or lack thereof) to mitigate.

The 2003-interpretation makes principled reforms to China's laws on market manipulation by false statements. At a base level, it grants the (heretofore lacking) ability to sue for damages caused by false statements that manipulate market prices. Further, Humphery-Jenner (2011) argues that the laws are analytically more principled than those in the US and the UK. In short, the 2003-interpretation holds that (a) the loss arises on the date the plaintiff purchases the stock, (b) the plaintiff must show that the price is inflated due to the false statement, but need not show that false statement induce the purchase, (c) losses are too remote if they are due to extraneous market movements or are losses on securities that were not the direct subject of the false statement, and (d) there is no duty to mitigate, but if the plaintiff does mitigate the loss, then it reduces the amount of compensation.

It is not clear that the market did anticipate the 2003-interpretation. This is because the SPC made its guideline judgment outside the context of any publicly announced case. However, anticipation of the law is largely moot from an empirical perspective: (1) If the law is not

⁸ See: Several Provisions of the Supreme People's Court on Hearing Civil Compensation Cases Arising from False Statement on the Securities Market (promulgated on 9 January 2003; effective from 1 February 2003).

retroactive, then people would base their behavior on the law that applies at the time of the conduct, not the law that applies after the conduct. In this case, the 2003 interpretation is a clean event in that the anticipation of a law-change at time t + 1 would not have influenced behavior at time t. (2) If the law is retroactive, then people might change their pre-interpretation behavior to reflect the anticipated post-interpretation law.⁹ This would make it more difficult to show that the 2003-interpretation influences behavior, making the testing in this paper more stringent; and thus, more persuasive.

The Regulatory Environment: The regulatory environment is comparatively weak.¹⁰ Prior literature has criticized the regulatory scheme for being ineffective and for providing inadequate access to remedies (Chen, 2003; Chen et al., 2005; Pistor and Xu, 2005; Layton, 2008). Four measures of sovereign regulation illustrate this: the S&P sovereign risk rating, the International Country Risk Guide ('ICRG') composite risk index, a World Bank governance index,¹¹ and the World Bank's percentile governance rank. Table 1 contains the regulation statistics from 1996 – 2008. For all variables, a higher value is better, with the World Bank Governance Index and ICRG composite index being out of one,¹² and the S&P risk rating being out of 20. ICRG states that a country with a rating of 80-100 is very low risk. The statistics show that China's regulation and governance is lower than that of other countries and this is stable over the whole period. China's ICRG value is consistently below 80, implying that it is marginally below the 'very low risk' countries. China's World Bank Percentile rank is consistently low, suggesting potentially ineffective regulation during the sample period. Further, the S&P risk rating implies that China is a relatively high risk country when compared with other countries (i.e. the S&P risk rating is around five points, out of 20, below that of other countries during the relevant period of 1999-

⁹ It is likely that the 2003-interpretation is retroactive because it comes from a court case and the general rule is that judicial rulings (as opposed to legislation) function retroactively because judges merely interpret law and do not create law.

¹⁰ On the weakness of China's regulatory environment see generally (Steidlmeier, 1999; Gong, 2002; Jacoby et al., 2002; Pearson, 2005; Pistor and Xu, 2005).

¹¹ This is an equally weighted average of the World Bank percentile ranks for: regulation, rule of law, government accountability, government effectiveness, corruption, and political stability.

¹² Detailed information on the calculation of the ICRG index is available from: <u>http://www.prsgroup.com/ICRG_methodology.aspx</u> [Accessed: 16 September 2012].

2002). Similarly, China's World Bank governance index is consistently around half that of the rest of the world, implying weak regulation and governance.

[Insert Table 1 about here]

The comparatively weak regulatory environment appears to have contributed to a dearth of shareholder class actions. Huang (2012) find that there have only been 50 shareholder derivative actions between 1 January 2006 and 30 December 2010. By contrast, the Stanford Securities Class Action Clearing House suggests that there are 863 'classic' shareholder litigation instances in the United States over this period. ¹³ This suggests that notwithstanding the potential governance issues in Chinese companies, there has been limited litigation-based discipline.¹⁴ The overall conclusion is that after the 2003-interpretation China has strong law but weak regulation. This implies that the 2003-interpretation provides a natural experiment in which to test whether good law is effective in the absence of good regulation.

III. Methods and Sample

¹³ I obtain this data by searching the Stanford Securities Class Action Clearing House for 'classic' litigation instances. Karpoff et al. (2012) suggest that there might be some over-reporting in the dataset. However, over-reporting is unlikely to diminish the indication that there are many more class action cases in the U.S. than there are in China.

¹⁴ While Cumming et al (2012) find that the CSRC issued 'enforcement actions' in relation to 742 cases of 'fraud' between 2001 and 2010, these fraud cases would not all relate to conduct that is relevant to a securities class action under the relevant provisions (only 210 cases relate to a false statement). It is not clear from their data whether these actions were successful, and they indicate that a significant proportion of enforcement actions occur prior to 2004.

This section contains the methodology, sample and variables. To foreshadow the discussion, the goal is to examine how informed trade measures changed in China following the 2003 interpretation. I run a difference-in-difference model of the following form:

Informed Trade _{*it*} = α + I(China)_{*it*} β_1 + I(Treatment)_{*it*} β_2 + I(China)_{*it*} × I(Treatment)_{*it*} β_3 + $X_{it}\theta$ + ε_{it}

Where, Informed Trade $_{it}$ denotes one of three informed trade measures, I(China)_{it} is an indicator that equals one if the firm trades on a Chinese exchange, I(Treatment)_{it} is an indicator that equals one if the observation post-dates the 2003-interpretation, and X_{it} is a vector of firm-specific controls.

The following sub-sections discuss the details of the model. First, I discuss the sample and variables. Second, I discuss the details of estimating the difference-in-difference approach.

A. Sample

The treatment sample comprises all firms that list on the Shanghai or Shenzhen stock exchange. The control sample comprises all firms that list on (a) the Hong Kong stock exchange, (b) KOSDAQ, or (c) the Taiwan Stock Exchange (TSE). I note that the TSE has a significantly different microstructure from the other markets;¹⁵ and thus, the DD tests also examine a control sample that excludes the TSE.

The sample collection is as follows: First, I obtain intraday trade data from Sirca/Reuters. I filter the data to remove erroneous figures (such as trades for which volume data is missing). I only include trades that occur during ordinary market opening hours.¹⁶ I use this data to compute microstructure-based measures of information asymmetry (discussed below). Both the treatment

¹⁵ For example, the TSE has shorter exchange operating hours (from 0900-1330); has a separate block trading period that is open from 0900 to 1500; has an official off-market trading period from 1400-1430 in which prices trade at the 'official' close price; and limits price movements to within 7% of the previous day's close.

¹⁶ For Shanghai and Shenzhen: 0930-1130 and 1300-1500; for Taiwan: 0900-1330; for Hong Kong: 1000-1600; for Korea: 0800-1500.

sample and the control sample span November 2002 to December 2003. Second, I match this data to firm-level data from Compustat Global; I allow the fundamental firm-level data to vary over time. I retain observations only if they have both Sirca/Reuters data and Compustat Global data.

Overall, this yields a treatment sample of 8408 firm-month observations. The control sample comprises 5689 firm-month observations from Hong Kong, 1008 observations from Korea, and 6313 observations from Taiwan. The number of observations per month is approximately constant. I acknowledge that there might be some sample selection bias; Compustat Global does not contain data for all firms in China and covers mainly larger firms. However, this sample selection bias afflicts both the pre-event period and the post-event period, so should not bias the conclusions about the impact of the event.

The sample period of 14 months does raise two issues. First, I acknowledge that the cyclicality of corporate reporting might be an issue (Rau and Stouraitis, 2011): there are two pre-event months, which are November and December 2002. China's financial year ends on December 31. However, this should concentrate many announcements in December, and should actually reduce the presence of informed trade in the pre-event period. This makes it even more difficult to find that the SPC's judgment reduce informed trade. That is, it makes it harder to find that the judgment improved market quality. Second, the pre-event period is shorter than the post-event period. I address this in robustness tests (in Appendix 2) by using a similar method to that used in Bertrand et al. (2004). Further, in Appendix 1, I analyze a daily measure of informed trade and use a longer time-horizon.

B. Informed Trade Measures

I use three measures of informed trade. I analyze informed trade because it provides insight into the information environment. Brown and Hillegeist (2007) argue that improved disclosure quality reduces the likelihood that investors discover and trade on private information. Subsequently, improved disclosure will reduce measures of informed trade whereas worsened disclosure will increase measures of informed trade. Similarly, I examine the impact of a legal change that is supposed to improve disclosure quality. No measure of informed trade is perfect (see Aktas et al., 2007). However, the use of multiple measures helps to ensure that the results are robust. In the main models I use three microstructure-based measures of informed trade and in Appendix 1, I examine daily bid-ask spreads.

PIN: PIN is the probability of informed trading (PIN). PIN has received prolific use (Easley, Kiefer, and O'Hara, 1996; See Easley, Kiefer, O'Hara, et al., 1996; Easley et al., 1997, 2002, 2010). However, PIN has received some criticism. For example, Aktas et al. (2007) find that order imbalance is a better measure of informed trade around takeovers than is PIN. The intuition behind PIN is that it is a proxy for the amount of trade that is by traders who are 'privately informed'. The idea is that if the information environment is worse, then there will be more traders who will want to become privately informed; and thus, PIN will be higher.

The calculation of PIN is as follows. Consistent with Ellul and Pagano (2006), I estimate PIN using the maximum likelihood estimate of five parameters: the probability of the arrival of any new information (α), or of negative information (δ), the arrival rates of informed traders (μ), of uninformed ('liquidity') buyers (ϵ_b), and of uninformed ('liquidity') sellers (ϵ_s), with the arrival rate of all uninformed ('liquidity') traders being ϵ . The PIN measure is:

$$PIN = \frac{\alpha\mu}{\alpha\mu + 2\epsilon}$$

To get this measure, I follow the approach in Easley et al. (1996), and classify buy orders and sell orders using the Lee and Ready (1991) algorithm (as per Aslan et al., 2011).

Absolute Order Imbalance: For each day I calculate the order imbalance as (Buy Orders – Sell Orders)/(Buy Orders + Sell Orders). This follows prior findings that order imbalance is an indicator of informed trade (Aktas et al., 2007, 2008). The intuition is that if there are significantly more buy orders than there are sell orders, then there is some evidence of increased

informed trade; and thus, worse disclosure. I classify trades as buy orders or sell orders using the Lee and Ready (1991) algorithm.

LSB Adverse Selection Spread Component: I use the Linn, Sanger and Booth (1995) adverse selection component of the bid-ask spread. Linn, Sanger and Booth (1995) break the bid-ask spread into two major components: the adverse selection component, and the order processing component. Prior literature suggests that the adverse selection component of the spread represents asymmetric information and informed trade (Kumar et al., 1998; Clarke et al., 2004; Ellul and Pagano, 2006). The intuition is that if trader A believes that trader B is privately informed and is trading on private information, then trader A will increase the bid-ask spread in order to compensate for being taken advantage of. Therefore, an increase in the adverse selection component of the spread should represent an increase in privately informed trade and a worsening of the information environment.

C. Control Variables

The control variables are firm level characteristics that might influence the level of information asymmetry (see generally Aslan et al., 2011). Note that these variables do not change over time; and thus, do not directly explain changes in information asymmetry. Instead, they capture the possibility of a systematic change in information asymmetry that corresponds to systematic differences in the control variables. These are:

In(**Assets**): This is the natural log of the firm's total assets (Compustat variable name: at). Prior literature suggests that larger firms are less speculative, and generally have better disclosure practices (Spindler, 2010). This appears especially important in China, where disclosure practices are more lax (Bai et al., 2004; Chen et al., 2005, 2006; Liu, 2006).

Debt/Assets: The use of debt could influence informed trade in emerging markets. A key issue is the possibility of informed trade by the creditors (or their associated parties). This might induce a

positive relationship between **Debt/Assets** and informed trade. The variable **Debt/Assets** is the firm's long-term debt (Compustat: dltt) scaled by its total assets.

CAPEX/Assets: Firms that focus on capital expenditures (rather than R&D or intangibles) might be easier to value; and thus, might have less informed trade. This follows the findings in Aboody and Lev (2000) that insiders sometimes use their knowledge about planned R&D announcements to earn trading profits. This should increase informed trade. The variable **CAPEX/Assets** is the firm's capital expenditure (Compustat: capx) scaled by its assets.

FCF/Assets: High free cash flows can connote high profitability. Profitable firms might attract interest especially from lay/retail investors. A large portion of China's trade involves retail investors (Tao, 1999; Bassolino, 2002; Eun and Huang, 2002). Such investors are likely to be uninformed; and thus should reduce measures of information asymmetry. Thus, **FCF/Assets** should be negatively related to the level of informed trade. The variable **FCF/Assets** is the firms free cash flow (Computat: oibdp – xint – txt – capx) scaled by its assets.

High Tech Firm: The high tech firm indicator equals one if the company is in a high tech industry as defined in Lougran and Ritter (2004).¹⁷ The rationale is that unlike CAPEX-intensive firms, high-tech firms typically rely on intangibles and R&D; and thus, might have higher informed trade.

D. Empirical Approach

¹⁷ High-tech firms are firms in the following industries: computer hardware (SIC codes: 3571, 3572, 3575, 3577, 3578); communications equipment (3661, 3663, 3669); electronics (3671, 3672, 3674, 3675, 3677, 3678, 3679); navigation equipment (3812); measuring and controlling devices (3823, 3825, 3826, 3827, 3829); medical instruments (3841, 3845); telephone equipment (4812, 4813); communications services (4899); and software (7371, 7372, 7373, 7374, 7375, 7378, 7379).

I use a difference in difference (DD) approach.¹⁸ The DD approach contains a treatment sample and a control sample. The treatment sample is exposed to the treatment in the second period but not in the first. The control sample is never exposed to the treatment. The DD model uses the control sample to adjust for changes in informed trade that are not related to the SPC's interpretation. The two issues are (1) the form of the model and (2) controlling for (potential) violations of the parallel trend assumption. I address these in turn.

1. The model

In this context, the treatment is the SPC's interpretation (on 9 January 2003). The treatment sample is all companies that list on the Shanghai stock exchange or the Shenzhen stock exchange. The control sample is a set of companies that are exposed to similar macroeconomic and market movements. I choose firms listed in Hong Kong as the 'main' control sample. However, I also examine firms in Taiwan and Korea and use a propensity score radius matching technique. I focus on Hong Kong, Korea, and Taiwan because they are in the same economic region and have similar economic exposures.¹⁹ I exclude firms that are cross-listed on grounds that they could contaminate either sample. The regression model has the following form:

Informed Trade $_{it} = \alpha + I(China)_{it}\beta_1 + I(Treatment)_{it}\beta_2 + I(China)_{it} \times I(Treatment)_{it}\beta_3 + X_{it}\theta + \varepsilon_{it}$

Here, I(China) is a dummy that equals one if the firm lists on an exchange in mainland China, and I(Treatment) is a dummy that equals one if the observation post-dates the treatment (i.e. the interpretation on 9 January 2003). The coefficient of interest is β_3 ; it indicates the impact of the interpretation on informed trade for Chinese companies. I use robust standard errors clustered by company and include month dummies to control for unobserved month effects. I estimate the model by using OLS.

¹⁸ Prior studies have used this approach in a similar context (see Cumming et al., 2011). I also use a propensity score matching method to ensure that firms in all markets have similar characteristics; and thus, that they have similar risk exposures.

¹⁹ I note that they are not exposed to precisely the same economic factors. However, all four countries are in the same MSCI 'region'.

2. The estimation methodology

I estimate the DD model by using OLS. The dependent variable is bounded between zero and one. This raises the concern that OLS will be in appropriate if there are significant violations of the assumption of normality. Nonetheless, the kernel density plots of the dependent variables (in Figure 1) suggest that at least PIN and the LSB component are close-to-normally distributed and the Order Imbalance figure is largely normally distributed. If there were significant departures from normality, the typical approach would be to take the log-transform of the dependent variables; however, in unreported figures, such log transforms are not significantly more non-normal than are the raw variables (in addition to having the disadvantage of eliminating observations for which the dependent variable equals zero). Subsequently, I estimate the models using OLS and without transforming the dependent variable.

[Insert Figure 1 about here]

3. The choice of control countries:

The control firms should ideally be 'similar in nature' to the Chinese companies, but for (a) the strength of the securities regulator, and (b) the change in securities law.²⁰ That is, the control countries should have (1) strong securities laws, (2) strong regulators, and (3) exposure to similar economic forces. I choose Hong Kong, Korea, and Taiwan because they may satisfy these requirements. This is for several reasons. First, the evidence of regional integration and regional trade suggests that the countries are exposed to similar economic forces (Yang et al., 2003;

 $^{^{20}}$ It is impossible to find a 'perfect' match. For example, China has some unique trading practices, such as a 'T+1' trading rule (see Guo et al., 2012). However, using a difference-indifference approach implicitly accounts for these factors by comparing China's situation preevent with its situation post-event.

Huyghebaert and Wang, 2010).²¹ Second, they are in similar time zones; and thus, would have similarly contemporaneous exposure to global events (see generally Moulton and Wei, 2009). Third, the countries are geographically proximate; and thus, thereby enabling better information-transmission between the markets (see Ragozzino and Reuer, 2011; Aggarwal et al., 2012), which should further connect the markets. Fourth, there is evidence of increasing stock market integration between these countries (Forbes and Rigobon, 2002; Frijns et al., 2012), implying some similarity in the financial markets.

Hong Kong has had a stable, and relatively principled, system of securities regulation (for a summary of rules and regulations see: Securities and Futures Commission, 2002). Further, Hong Kong has historically had strong disclosure laws and regulation thereof (see: Wallace and Naser, 1995).

Korean regulations and securities laws are comparatively strong (see: Nam et al., 1999). Laws/regulations were stable throughout the period of the empirical analysis; however, some changes occurred from 1 January 2005 (Financial Supervisory Service, 2005). Prior to 1 January 2005, securities class actions were comparatively difficult to establish. I check that this does not contaminate the results by ensuring that the results are qualitatively the same if I exclude Korea from the set of control countries.

Taiwan appears to have had relatively strong private enforcement for public sanctions for securities misconduct during the period of this study, scoring highly in measures of securities law enforcement (see: La Porta et al., 2006). Further, Taiwan has unofficially allowed civil actions to 'piggy back' on criminal actions for misconduct, and the Securities and Futures Commission has established the 'Securities and Futures Market Development Institute' for the purpose of facilitating civil suits (see: Liu, 2000).

²¹ This regional integration is not unique to the Asia-Pacific region. Instead, prior literature has also documented integration in the Latin American region (Chen et al., 2002).

Overall, this suggests that Hong Kong, Korea, and Taiwan could be appropriate countries from which to obtain control firms. Still, I ensure that the results are robust to violations of this assumption by (a) using propensity score matching, and (b) ensuring the results are qualitatively the same when I omit particular countries from the control sample (see below).

4. The parallel trend assumption and ensuring robustness to violations thereof

A key assumption is the 'parallel trend' assumption. This assumption is that the control sample (China) has the same trend as the treatment sample (Hong Kong, Korea, or Taiwan). That is, but for the court's interpretation, informed trade in China and Hong Kong/Korea/Taiwan would follow the same trend.²² I test this for violations of the parallel trend assumption by graphically examining the pattern of monthly informed trade (see Figure 2).

Figure 2 contains the informed trade measures by month, with each subfigure showing the pattern for one informed trade measure. The subfigures do not indicate a significant relative decrease in China's informed trade measures after December 2003. China's tend prior to the pre-SPC interpretation seems most similar to Taiwan's with no noticeable relative decrease after the interpretation. Although the time trends for all comparison countries are not uniformly parallel by all measures, and the pre-interpretation data is for a less than optimally long time period (only two months), none of the comparison trends supports a relative decrease in informed trading after the SPC interpretation. The fluctuations in China following January 2003 might suggest uncertainty about the precise functioning of the SPC's interpretation and appear consistent with the stock price patterns around US government policy announcements reported in Pastor and Veronesi (2010).

[Insert Figure 2 about here]

²² Note that they need only follow the same trend or pattern of informed trade, they need not have the same 'level' of informed trade.

Even though the parallel trend assumption appears to hold in the sample, I mitigate concerns about violations of it in two ways:

First, I separately examine control samples that comprise firms from (a) all of Hong Kong, Korea, and Taiwan, (b) only Hong Kong and Korea, on grounds that Taiwan has a significantly different microstructure from the other markets, and (c) just Hong Kong, on grounds that Hong Kong is legally part of China, some firms cross list in both Hong Kong and China, and there is overlap in the location of operations for companies from either country.²³

Second, I also use a propensity score radius matching type approach. The idea here is to remove from the sample any control-sample-observations that are 'too different' from treatment-sample-observations. This functions by generating a score that reflects the likelihood of being a 'treatment sample firm', and then removing 'control sample firms' whose score is too different.

The analysis proceeds as follows; (a) I use a probit model to determine the probability that a firm is on a market in China (as opposed to Hong Kong, Taiwan or Korea) as a function of firm-level characteristics.²⁴ The idea is to establish which variables correlate with a firm being Chinese. This creates a 'Chinese-type' of firm against which to compare companies that are not listed in China. For example, a positive coefficient on ln(Assets) would imply that Chinese companies are larger. (b) I compute two-tailed 80% and 90% confidence intervals for the propensity score. (c) I exclude any firms that have a propensity score in the top 5% or bottom 5% of the sample for a 90% confidence interval, or in the top 10% and bottom 10% of the sample for a 80% confidence interval.²⁵ I use this approach rather than a matched-firm approach because there is no ex ante reason to believe that firm-level characteristics are a perfect match for informed-trade-based trends. Thus, a matched firm approach might reduce the amount of information in the sample.

²³ My sample excludes cross-listed firms. However, the presence of cross-listed firms can generally lead to greater market integration due to greater information linkages between countries.

²⁴ These are ln(Assets), Debt/Assets, CAPEX/Assets, the High-Tech firm dummy, FCF/Assets, R&D/Sales, and Intangibles/Assets.

²⁵ A similar approach has also featured in other literature (see Becker and Ichino, 2002; Glick et al., 2006; Volpe Martineus and Carballo, 2008; Hale and Santos, 2009).

IV. Analysis and Results

This section contains the analysis and results. Section A contains the univariate analysis. Section B contains the multivariate regression analysis. The conclusion is that informed trade appears to have increased following the interpretation-date.

A. Univariate Analysis

I break the univariate analysis into the sample description, an analysis of straight informed trade figures, and a difference in difference univariate analysis.

Sample Description:

Table 2 contains basic sample statistics. There are some differences in firm-level characteristics between firms from the four countries. An important point is that there are nearly five times more high-tech firms in Taiwan than in China. This suggests that Taiwan might be distinguishable from China. The level of informed trade appears lower in Korea and Taiwan than it is in China and Hong Kong. However, caution is necessary vis-à-vis the PIN, LSB Component, and Order Imbalance statistics in Table 2 because they are means and medians over the whole period (both before and after the interpretation-date).

[Insert Table 2 about here]

Table 3 contains sample statistics for the sample of Chinese firms and the sample of non-Chinese firms. This table also contains sample-statistics for the sub-sample of non-Chinese firms that have been selected by using propensity score matching techniques. The results indicate that there are significant differences between Chinese and non-Chinese firms. Further, there are significant differences between the full sample of non-Chinese firms and the propensity score matched

sample of non-Chinese firms. These results imply that propensity score matching does help to achieve a better covariate balance.

[Insert Table 3 about here]

Analysis of Informed Trade per se: Table 4 contains a univariate analysis of the informed trade measures. Column 1 contains the values for China. Columns 2-5 contain the values for Hong Kong, Korea, Taiwan, and the combination of all three, respectively. Column 6 contains the difference between China (Column 1) and the full control sample (Column 4). The results suggest that China has significantly higher PIN and order imbalance than the control sample. The results for the LSB component are mixed in sign and significance. However, it is important to not draw conclusions from these results because they are not difference in difference results.

[Insert Table 4 about here]

Figure 3 contains the average PIN, LSB Component, and order imbalance for periods before, during, and after the interpretation month (January 2003). The before-period spans November and December 2002. The during-period is January 2003. The after-period is February 2003 to December 2003. For China, The figure suggests a modest increase in PIN and order imbalance but a slight decrease in the LSB component. For Hong Kong and Taiwan, the PIN and order imbalance appear unchanged and the LSB component appears to decrease. For Korea, the PIN appears to increase. The important implication is that in control samples that include Korea, it will be *more* difficult to conclude that China's PIN increased.

[Insert Figure 3 about here]

Univariate Difference in Difference: The univariate difference in difference results are in Table 5. Columns 1-5 examine the difference between informed trade after the interpretation-date and before the interpretation-date for China, Hong Kong, Korea, and Taiwan. That is, it contains Δ Informed Trade^{After}_{Before} = Informed Trade_{After} - Informed Trade_{Before}. Columns 6 – 9 examine the difference in Δ Informed Trade^{After}_{Before} between (a) China, and (b) each of Hong Kong,

Taiwan, Korea, and the full set of all three countries. That is Columns 6 - 9 contain the univariate difference in difference value: $DD = (\Delta Informed Trade China_{Before}^{After} - \Delta Informed Trade Hong Kong_{Before}^{After})$.

The main results in Columns 1-5 indicate: (a) in China, PIN and Order imbalance increased but the LSB component decreased, (b) for the control samples, PIN increased and LSB decreased in all three other control sets (as with China) but order imbalance decreased. The difference in difference results in Columns 6 - 9 indicate that the LSB component and order imbalance increased significantly more in China than in the control samples. The PIN increased significantly more in China than in Taiwan and insignificantly more in China than in the other control countries.

The overall implication is that there may have been a modest increase in informed trade in China after the interpretation. There is no evidence that the interpretation decreased informed trade.

B. Multivariate Regression Analysis

The multivariate regression analysis suggests that informed trade increased after the interpretation date. I examine the following control samples: (1) a full set of firms from Hong Kong, Korea, and Taiwan, (2) firms from Hong Kong and Korea, (3) only firms from Hong Kong, (4) firms whose propensity score within the 90% confidence interval, and (5) firms whose propensity score is within the 80% confidence interval. The purpose behind models (2) and (3) is to progressively remove firms from the control sample who are less likely to be like firms from China. The purpose behind samples (4) and (5) is to restrict the sample to firms that are like Chinese firms.

The propensity score model functions as follows. First, I obtain the set of firms that list on a stock exchange in China or in Hong Kong. The indicator I(China) equals one if the firm lists in China. Second, I estimate a probit regression where the dependent variable is the indicator I(China) and the independent variables are firm-level characteristics that might concentrate in

Chinese firms. The goal is to identify which characteristics are common for Chinese firms. Third, I obtain the propensity score from the probit regression. Fourth, I construct a 90% confidence interval for the propensity scores. Fifth, I exclude observations that lie outside the 90% confidence interval. The propensity score regression is in Table 6.

[Insert Table 6 about here]

The difference in difference (DD) results show that the interpretation did not reduce informed trade. Table 7 examines PIN. Table 8 examines the LSB component. Table 9 examines the absolute order imbalance. The coefficient of interest is the coefficient on 'I(China)×I(After January)'. For PIN (Table 7) and order imbalance (Table 9) the coefficient is significant and positive at 1% in all control samples. This implies that both PIN and absolute order imbalance increased after the SPC's interpretation. For the LSB component, the sign varies and is only weakly significant (at 10% significance) in two control samples. This implies no significant change in the LSB component following the SPC's interpretation.

These results are economically meaningful. While PIN fell (after January 2003) for both Chinese and non-Chinese companies, the reduction was 0.011 smaller for China (i.e. PIN fell by less in China).²⁶ This is economically meaningful given that the mean PIN is 0.224 (and thus, the difference-in-difference is 4.9% of the mean PIN). Further, order imbalance increased in China by 0.029 more than it did in other countries (this difference is 10.6% of the mean order imbalance of 0.272).²⁷

²⁶ To calculate this, examine the coefficients in Table 7 Column 1. To compare non-Chinese companies before with non-Chinese companies after, examine $\beta(After)$: these companies have a reduction in PIN of 0.039. To compare Chinese companies before with Chinese companies after calculate: China is $[\beta(China) + \beta(After) + \beta(China) \times \beta(After)] - \beta(China) = -0.028$. Thus, Chinese companies have a reduction in PIN of 0.028. Therefore, for Chinese companies, PIN reduced by 0.011 less than it did for non-Chinese companies.

²⁷ The calculation is similar to the calculation for PIN. Here, the increase in order imbalance for Chinese companies is: $[\beta(China) + \beta(After) + \beta(China) \times \beta(After)] - \beta(China) = 0.374$. The increase in order imbalance for non-Chinese companies is $\beta(After) = 0.374$. Thus, Chinese companies experienced an increase of 0.029 compared with non-Chinese companies.

Some of the control variables have interesting signs and significance levels. The most consistent result is that large firms have lower levels information asymmetry (i.e. size is negatively related to the LSB component, and order imbalance, although its relationship to PIN varies). This is consistent with prior evidence and reflects the fact that there is more publicly available information about large companies (Lau et al., 2010; Aslan et al., 2011). One surprising result is that the high tech dummy is often negatively (and sometimes significantly) associated with PIN, order imbalance, and the LSB component.

[Insert Table 7 about here] [Insert Table 8 about here] [Insert Table 9 about here]

The overall implication of these results is that informed trade did not decrease following the SPC's interpretation on 9 January 2003. The results suggest that informed trade actually increased (or at best did not change). This implies that the interpretation did not succeed in its purpose of reducing informed trade and market misconduct.

V. Conclusion

This paper analyzes the question: is strong law effective in the presence of poor regulation? I analyze whether law reform is sufficient to improve the economic environment even if the country does not improve the regulatory environment. I do this by using the SPC's guideline judgment on the 'false statement' doctrine as a natural experiment. Here, the SPC promulgated principled law reforms; however, the regulator (the CSRC) remained unchanged. That is, there was principled law reform absent regulatory reform.

I analyze the impact of law reform absent regulatory form by using a difference in difference (DD) approach. The treatment is the SPC's 9 January interpretation. The treatment sample comprises all firms that list on the Shanghai or Shenzhen stock exchange. The control sample

comprises firms that list on the Hong Kong stock exchange, Taiwan Stock Exchange or KOSDAQ. I test whether the SPC's guideline judgment reduced (possible) financial market misconduct by testing for differences in measures of informed trade. I find that three measures of informed trade actually increase following the SPC's interpretation.²⁸ This implies that the principled law reform absent regulatory reform does not reduce informed trade and improve the market's information environment.

The increase in the measures of informed trade support prior predictions in Bhattacharya and Daouk (2009). They compare a situation where there is no law with a situation where there is a good law that is not enforced. The intuition of their model, as applied to the analysis of false statements, is that if there is no law, then everyone will 'deviate' (i.e. many firms will make false statements), in which case corporate disclosures will lack credibility in general. However, if there is a good law that is not enforced, then law-abiding managers will comply but some non-law-abiding managers will take advantage of this compliance and deviate with even greater intensity, knowing that there is no repercussion for doing so and knowing that the increased level of compliance in the market will lend greater credibility to their false disclosures. This separating equilibrium provides greater opportunities and incentives for some traders to become privately informed, thereby increasing the overall level of informed trade. Indeed, the results in this paper are consistent with the idea that a strong-law that is not enforced is ineffective and can be detrimental.

These results have significant regulatory implications. The key implication is that governments must improve both law and regulation in order to improve the economic environment. This supports calls for significant changes in the regulation of financial markets (see for example Langevoort, 2010). In China's particular case, China may benefit from increasing the efficacy of the regulator (the CSRC). Future research could further examine the precise implications of these legal changes for corporate (cf market) behavior and how to best improve the regulator's powers in order to allow it to implement the law.

²⁸ PIN and Order Imbalance significantly increase in all reported tests. The adverse selection component increases in the main model specifications, but not in all robustness tests.

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VII. Tables

Table 1

This table contains regulation/governance scores for China and the Rest of the World between 1996 and 2008. I define the 'rest of the world' as the set of 47 countries in Table 1 that are not China. Importantly, this excludes some poor governance emerging markets. The governance scores are the World Bank governance index ('WB'), the S&P sovereign risk rating, the ICRG composite risk rating, and the World Bank percentile rank for regulation.

		Rest	of World	China				
Year	World Bank	S&P	ICRG	World	World Bank	S&P	ICRG	World
	Governance	Risk	Composite	Bank	Governance	Risk	Composite	Bank
	Index	Rating	Risk	Regulation	Index	Rating	Risk	Regulation
			Rating	Percentile			Rating	Percentile
				Rank				Rank
1996	0.84	17.50	0.81	0.85	0.44	12.00	0.73	0.51
1997	0.84	17.45	0.82	0.85	0.44	12.57	0.74	0.51
1998	0.84	17.18	0.80	0.88	0.38	13.00	0.75	0.40
1999	0.84	17.14	0.78	0.88	0.38	12.38	0.74	0.40
2000	0.84	17.18	0.80	0.88	0.39	12.00	0.73	0.39
2001	0.84	17.23	0.81	0.88	0.39	12.00	0.73	0.39
2002	0.83	17.25	0.80	0.86	0.37	12.00	0.75	0.33
2003	0.83	17.33	0.81	0.86	0.37	12.00	0.77	0.39
2004	0.83	17.45	0.82	0.86	0.38	13.00	0.77	0.45
2005	0.82	17.45	0.81	0.85	0.37	13.89	0.77	0.46
2006	0.82	17.55	0.81	0.86	0.37	14.88	0.78	0.42
2007	0.81	17.48	0.81	0.85	0.37	15.00	0.79	0.46
2008	0.81	17.47	0.80	0.86	0.39	15.97	0.79	0.46

This table contains sample statistics for the treatment and the control sample. Panel A contains sample Means. Panel B contains sample medians. Note that the figures are for the whole time period. Importantly, the PIN, LSB Component, and Order Imbalance figures reflect observations that occur both before and after the SPC's interpretation. These figures are for the full sample of Chinese and non-Chinese firms.

	China	Hong Kong	Korea	Taiwan
Month-Firm Observations	8408	5696	1008	6313
Number of Firms	608	475	87	458
Panel A: Sample Means				
PIN	0.224	0.226	0.218	0.180
LSB Component	0.336	0.439	0.171	0.283
Order Imbalance	0.272	0.330	0.137	0.148
ln(Assets)	7.339	6.960	11.736	8.938
Leverage	0.055	0.082	0.090	0.098
CAPEX/Assets	0.072	0.051	0.063	0.048
High-Tech Firm	0.055	0.134	0.067	0.213
FCF/Assets	-0.034	-0.079	-0.024	0.022
Panel B: Sample Medians				
PIN	0.224	0.239	0.215	0.169
LSB Component	0.333	0.401	0.165	0.274
Order Imbalance	0.273	0.273	0.130	0.126
ln(Assets)	7.264	6.897	11.589	8.784
Leverage	0.020	0.020	0.050	0.071
CAPEX/Assets	0.053	0.029	0.050	0.025
FCF/Assets	-0.013	0.008	-0.010	0.024

Table 3: Sample statistics comparing Chinese and non-Chinese companies

This table contains summary statistics (sample means) that compare the sample of Chinese companies with the sample of non-Chinese companies. I report both the full sample of non-Chinese companies and the sub-sample of Non-Chinese companies that have been matched based using a propensity score technique with an 80% interval. The figures are sample means and superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Variable	Chinese	Non-Chinese	Non-Chinese	Chinese	Chinese	Difference in
		(Full Sample)	(P-Score	- Non-Chinese	- Non-Chinese	Difference
			Matched)	(Full)	(P-score)	
	[1]	[2]	[3]	[4]=[1]-[2]	[5]=[1]-[3]	[6]=[4]-[5]
PIN	0.224	0.203	0.208	0.021***	0.016***	0.005***
LSB Component	0.336	0.342	0.350	-0.006**	-0.014**	0.008
Order Imbalance	0.272	0.227	0.240	0.045***	0.033***	0.013***
ln(Assets)	7.339	8.293	8.320	-0.954***	-0.982***	0.027***
Leverage	0.055	0.090	0.090	-0.036***	-0.035***	0.000***
CAPEX/Assets	0.072	0.050	0.051	0.022***	0.021***	0.001***
High-Tech Firm	0.055	0.168	0.110	-0.113***	-0.055***	-0.057***
FCF/Assets	-0.034	-0.026	-0.016	-0.008***	-0.018***	0.010***

This table contains univariate statistics for the PIN, LSB Component, and Order Imbalance sorted by (a) the country of listing, and (b) the month of the observation. The statistics are sample means. Superscripts ***, **, and * in Column 6 denote significant difference in means (between China and the three control markets) at 1%, 5%, and 10%, respectively.

1070, 10spec	uvery.					
	China	Hong Kong	Korea	Taiwan	All Control	China - Control
	(1)	(2)	(3)	(4)	(5)	(6) = (1) - (5)
PIN						
Nov-02	0.221	0.203	0.194	0.182	0.193	0.028***
Dec-02	0.223	0.250	0.188	0.193	0.218	0.006
Jan-03	0.206	0.244	0.196	0.170	0.203	0.003
Feb-03	0.210	0.213	0.206	0.187	0.200	0.010**
Mar-03	0.223	0.235	0.201	0.185	0.208	0.015***
Apr-03	0.248	0.216	0.239	0.204	0.212	0.037***
May-03	0.199	0.223	0.264	0.177	0.203	-0.004
Jun-03	0.222	0.234	0.208	0.168	0.201	0.021***
Jul-03	0.235	0.225	0.223	0.174	0.200	0.035***
Aug-03	0.241	0.222	0.227	0.177	0.201	0.040***
Sep-03	0.249	0.242	0.231	0.173	0.209	0.041***
Oct-03	0.247	0.224	0.215	0.174	0.200	0.047***
Nov-03	0.214	0.209	0.239	0.176	0.195	0.020***
Dec-03	0.202	0.219	0.227	0.184	0.203	0.000***
Overall	0.224	0.225	0.218	0.180	0.203	0.021***
LSB Compo	nent					
Nov-02	0.360	0.530	0.179	0.312	0.406	-0.046***
Dec-02	0.367	0.477	0.186	0.290	0.363	0.005
Jan-03	0.367	0.439	0.201	0.287	0.342	0.024***
Feb-03	0.334	0.467	0.199	0.278	0.350	-0.016
Mar-03	0.314	0.462	0.188	0.285	0.352	-0.038***
Apr-03	0.319	0.477	0.169	0.248	0.334	-0.015
May-03	0.330	0.449	0.150	0.299	0.351	-0.021*
Jun-03	0.330	0.445	0.132	0.289	0.348	-0.018
Jul-03	0.309	0.410	0.134	0.271	0.319	-0.009
Aug-03	0.351	0.404	0.166	0.278	0.324	0.027***
Sep-03	0.365	0.372	0.162	0.289	0.316	0.049***
Oct-03	0.351	0.396	0.192	0.282	0.324	0.026***
Nov-03	0.324	0.419	0.148	0.275	0.330	-0.006
Dec-03	0.277	0.409	0.169	0.280	0.328	-0.050***
Overall	0.336	0.440	0.171	0.283	0.342	-0.007
Order Imba	lance					
Nov-02	0.270	0.352	0.165	0.157	0.250	0.020*
Dec-02	0.273	0.374	0.144	0.165	0.254	0.018*
Jan-03	0.236	0.334	0.144	0.118	0.211	0.026***
Feb-03	0.249	0.358	0.162	0.154	0.241	0.008
Mar-03	0.280	0.363	0.155	0.148	0.241	0.039***
Apr-03	0.266	0.336	0.148	0.165	0.234	0.032***
May-03	0.249	0.300	0.126	0.144	0.209	0.040***

Jun-03	0.294	0.338	0.121	0.127	0.222	0.073***
Jul-03	0.296	0.289	0.107	0.135	0.199	0.097***
Aug-03	0.302	0.320	0.118	0.155	0.225	0.077***
Sep-03	0.309	0.301	0.143	0.154	0.219	0.091***
Oct-03	0.297	0.324	0.123	0.142	0.221	0.077***
Nov-03	0.244	0.323	0.142	0.150	0.226	0.017**
Dec-03	0.248	0.320	0.113	0.164	0.229	0.019**
Overall	0.272	0.331	0.137	0.148	0.227	0.045***

This table analyzes the PIN, LSB Component, and Order Imbalance for China, Hong Kong, Korea, Taiwan, and the full control sample. The variable in Columns 1 -5 is the informed trade measure at the 'after date' (state in Column 1) less the informed trade value in November 2002. That is, it is the value of Informed Trade_{After}- Informed Trade_{Nov02}. The values are sample means. The value in Columns 6- 9 is the difference in the value of Informed Trade_{After}- Informed Trade_{Nov02} in China and in the Control sample (variously, Hong Kong, Korea, Taiwan, or all three control countries). That is, columns 6 – 9 contain univariate difference in difference statistics. Superscripts ***, **, and * denote significance difference in means at 1%, 5%, and 10%, respectively.

Variable		Informed Tra	ade _{After} - Infor	med Trade _{Nov0}	2	Difference in: Informed Trade _{After} - Informed Trade _{Nov02}			
After	China	Hong Kong	Korea	Taiwan	All Control	China –	China –	China –	China –
Date						Hong Kong	Korea	Taiwan	All Control
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PIN									
Feb-03	-0.011	0.003	0.005	0.006	0.005	-0.014	-0.016*	-0.017***	-0.015**
Mar-03	0.003	0.015	0.000	0.004	0.008	-0.012	0.003	-0.002	-0.006
Apr-03	0.027	-0.007	0.039	0.022	0.011	0.034***	-0.012	0.005	0.016**
May-03	-0.021	0.000	0.060	-0.002	0.003	-0.021**	-0.081***	-0.019***	-0.024***
Jun-03	0.001	0.022	0.004	-0.012	0.004	-0.02**	-0.003	0.013**	-0.003
Jul-03	0.014	0.012	0.022	-0.007	0.003	0.002	-0.008	0.022***	0.011
Aug-03	0.021	0.012	0.029	-0.005	0.005	0.008	-0.008	0.025***	0.015**
Sep-03	0.029	0.030	0.030	-0.009	0.012	-0.002	-0.002	0.037***	0.017**
Oct-03	0.026	0.011	0.016	-0.007	0.003	0.015*	0.01	0.033***	0.023***
Nov-03	-0.007	-0.006	0.041	-0.005	-0.002	-0.001	-0.047***	-0.002	-0.004
Dec-03	-0.018	0.011	0.028	0.002	0.008	-0.029***	-0.046***	-0.021***	-0.026***
LSB Compor	nent								
Feb-03	-0.026	-0.022	0.030	-0.029	-0.021	-0.004	-0.056***	0.003	-0.005
Mar-03	-0.047	-0.017	0.019	-0.022	-0.016	-0.03**	-0.065***	-0.024**	-0.03***
Apr-03	-0.041	0.014	-0.002	-0.061	-0.026	-0.056***	-0.039**	0.02*	-0.016
May-03	-0.032	-0.033	-0.015	-0.008	-0.019	0.002	-0.016	-0.023**	-0.012
Jun-03	-0.031	-0.051	-0.028	-0.022	-0.035	0.02	-0.003	-0.01	0.004
Jul-03	-0.052	-0.075	-0.035	-0.041	-0.055	0.023	-0.017	-0.011	0.003
Aug-03	-0.010	-0.088	-0.005	-0.034	-0.055	0.078***	-0.004	0.024**	0.046***
Sep-03	0.004	-0.127	-0.012	-0.021	-0.067	0.132***	0.016	0.025**	0.072***

Oct-03	-0.010	-0.098	0.020	-0.029	-0.055	0.088***	-0.03	0.019*	0.045***
Nov-03	-0.037	-0.075	-0.019	-0.035	-0.052	0.038***	-0.018	-0.001	0.015
Dec-03	-0.083	-0.090	-0.009	-0.032	-0.056	0.007	-0.074***	-0.052***	-0.028***
Order Imba	alance								
Feb-03	-0.020	0.017	0.009	-0.001	0.008	-0.037**	-0.029***	-0.019**	-0.028***
Mar-03	0.011	0.033	0.002	-0.006	0.011	-0.022*	0.009	0.017**	0
Apr-03	-0.004	0.022	-0.003	0.010	0.014	-0.025*	-0.001	-0.014*	-0.017*
May-03	-0.020	-0.018	-0.027	-0.007	-0.013	-0.003	0.007	-0.013*	-0.007
Jun-03	0.025	-0.002	-0.045	-0.026	-0.016	0.027*	0.07***	0.051***	0.041***
Jul-03	0.026	-0.047	-0.045	-0.022	-0.034	0.073***	0.071***	0.048***	0.061***
Aug-03	0.032	-0.021	-0.033	-0.002	-0.013	0.054***	0.066***	0.034***	0.045***
Sep-03	0.040	-0.042	-0.009	-0.002	-0.020	0.082***	0.049***	0.041***	0.06***
Oct-03	0.028	-0.018	-0.026	-0.013	-0.016	0.045***	0.054***	0.04***	0.044***
Nov-03	-0.026	-0.018	-0.008	-0.005	-0.011	-0.008	-0.018	-0.021*	-0.015
Dec-03	-0.022	-0.024	-0.034	0.008	-0.009	0.002	0.012	-0.029***	-0.012

This table contains the results from a probit model where the dependent variable is an indicator that equals one if the firm lists on a Chinese stock exchange and equals 0 otherwise. The sample is only over one time period (so year dummies are unnecessary). The model uses robust standard errors clustered by 4-digit SIC industry. Brackets contain p-values. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Dependent Variable	I(China)
ln(Assets)	-0.054
	[0.123]
Debt/Assets	-2.461***
	[0.000]
CAPEX/Assets	3.461***
	[0.000]
High-Tech Firm	-0.473**
	[0.040]
FCF/Assets	0.353*
	[0.080]
R&D/Sales	-190.071***
	[0.000]
Intangibles/Assets	0.441
	[0.407]
Constant	0.483*
	[0.088]
Observations	1,408
Pseudo R-squared	23.40%
Wald Chi-2	79.871

Table 7: Difference in Difference: PIN

This table contains difference in difference regression results where the dependent variable is the monthly PIN. The column title contains the control sample. The main independent variable of interest is 'China x After January', the interaction of indicators that equal one if (a) the firm lists in mainland China, and (b) the observation post-dates 9 January 2003. The control samples in Columns 1, 2, and 3 are all companies in Hong Kong, Korea and Taiwan; Hong Kong and Korea; and just Hong Kong, respectively. The control samples in Columns 4 and 5 are based on the 90%, and 80%, propensity score intervals, respectively. The models are OLS regressions and include month dummies and use robust standard errors clustered by firm. Brackets contain p-values. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Dependent Variable			PIN		
Control Sample	Hong Kong,	Hong Kong,	Hong Kong	Propensity score:	Propensity score:
	Korea, Taiwan	Korea		90% Interval	80% Interval
	(1)	(2)	(3)	(4)	(5)
I(China)	0.011***	-0.006	-0.015**	0.004	0.004
	[0.007]	[0.270]	[0.013]	[0.343]	[0.345]
I(After January)	-0.039	-0.08	-0.083	-0.043	-0.046
	[0.501]	[0.238]	[0.225]	[0.465]	[0.442]
I(China) x I(After January)	0.011***	0.010**	0.016***	0.012***	0.013***
	[0.002]	[0.030]	[0.003]	[0.002]	[0.001]
ln(Assets)	-0.002	0.003**	0.007***	-0.002*	-0.002*
	[0.113]	[0.031]	[0.000]	[0.065]	[0.072]
Leverage	-0.013	-0.01	-0.021	0.003	0.004
	[0.354]	[0.537]	[0.188]	[0.855]	[0.831]
CAPEX/Assets	0.002	0.048**	0.047**	0.062**	0.063*
	[0.652]	[0.029]	[0.038]	[0.038]	[0.058]
High-Tech Firm	-0.018***	-0.005	-0.002	-0.015***	-0.015***
	[0.000]	[0.438]	[0.745]	[0.003]	[0.004]
FCF/Assets	-0.002	-0.002	-0.005	0.007	0.002
	[0.513]	[0.738]	[0.199]	[0.384]	[0.768]
Constant	0.230***	0.290***	0.265***	0.254***	0.232***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	21,416	15,103	14,096	17,698	16,623
R-squared	0.023	0.014	0.02	0.018	0.018
F-statistic	15.516	11.128	13.296	12.1	10.967

Table 8: Difference in Difference LSB Component Models

This table contains difference in difference regression results where the dependent variable is the monthly LSB Component. The column title contains the control sample. The main independent variable of interest is 'China x After January', the interaction of indicators that equal one if (a) the firm lists in mainland China, and (b) the observation post-dates 9 January 2003. The control samples in Columns 1, 2, and 3 are all companies in Hong Kong, Korea and Taiwan; Hong Kong and Korea; and just Hong Kong, respectively. The control samples in Columns 4 and 5 are based on the 90%, and 80%, propensity score intervals, respectively. The models are OLS regressions and include month dummies and use robust standard errors clustered by firm. Brackets contain p-values. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Dependent Variable		LSB Component					
Control Sample	Hong Kong,	Hong Kong,	Hong	Propensity score:	Propensity score:		
	Korea, Taiwan	Korea	Kong	90% Interval	80% Interval		
	(1)	(2)	(3)	(4)	(5)		
I(China)	-0.057***	-0.082***	-0.082***	-0.061***	-0.058***		
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]		
I(After January)	0.051	0.034	0.029	0.041	0.042		
	[0.618]	[0.793]	[0.823]	[0.693]	[0.681]		
I(China) x I(After January)	-0.004	0.009	0.012*	-0.007	-0.009*		
	[0.463]	[0.158]	[0.095]	[0.202]	[0.097]		
ln(Assets)	-0.058***	-0.056***	-0.059***	-0.058***	-0.058***		
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]		
Leverage	-0.026	-0.018	-0.02	-0.028	-0.027		
	[0.192]	[0.474]	[0.446]	[0.334]	[0.368]		
CAPEX/Assets	0.006	-0.051	-0.05	-0.04	-0.052		
	[0.465]	[0.193]	[0.222]	[0.481]	[0.401]		
High-Tech Firm	-0.012*	0.006	0.008	-0.007	-0.007		
	[0.074]	[0.564]	[0.463]	[0.350]	[0.378]		
FCF/Assets	0.011*	0.017***	0.020***	-0.005	-0.001		
	[0.084]	[0.000]	[0.000]	[0.780]	[0.945]		
Constant	0.761***	0.795***	0.880***	0.849***	0.850***		
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]		
Observations	21,300	14,993	13,986	17,593	16,524		
R-squared	0.294	0.291	0.251	0.295	0.295		
F-statistic	86.771	64.133	52.592	75.471	72.803		
Table 9: Difference in Difference Order Imbalance Models

This table contains difference in difference regression results where the dependent variable is the monthly absolute order imbalance. The column title contains the control sample. The main independent variable of interest is 'China x After January', the interaction of indicators that equal one if (a) the firm lists in mainland China, and (b) the observation post-dates 9 January 2003. The control samples in Columns 1, 2, and 3 are all companies in Hong Kong, Korea and Taiwan; Hong Kong and Korea; and just Hong Kong, respectively. The control samples in Columns 4 and 5 are based on the 90%, and 80%, propensity score intervals, respectively. The models are OLS regressions and include month dummies and use robust standard errors clustered by firm. Brackets contain p-values. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Dependent Variable		Order Imbalance								
Control Sample	Hong Kong,	Hong Kong,	Hong	Propensity score:	Propensity score:					
	Korea, Taiwan	Korea	Kong	90% Interval	80% Interval					
	(1)	(2)	(3)	(4)	(5)					
I(China)	-0.011	-0.071***	-0.081***	-0.021***	-0.022***					
	[0.102]	[0.000]	[0.000]	[0.007]	[0.006]					
I(After January)	0.345***	0.185	0.187	0.328**	0.327**					
	[0.007]	[0.151]	[0.142]	[0.012]	[0.012]					
I(China) x I(After January)	0.029***	0.042***	0.043***	0.024***	0.026***					
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]					
ln(Assets)	-0.035***	-0.031***	-0.024***	-0.036***	-0.036***					
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]					
Leverage	0.02	0.022	-0.001	0.062**	0.066***					
	[0.424]	[0.466]	[0.959]	[0.011]	[0.009]					
CAPEX/Assets	0.003	-0.032	-0.034	-0.003	-0.018					
	[0.728]	[0.350]	[0.345]	[0.953]	[0.755]					
High-Tech Firm	-0.013	0.016	0.013	-0.012	-0.011					
	[0.116]	[0.119]	[0.242]	[0.176]	[0.206]					
FCF/Assets	0.005	0.016***	0.011*	-0.017	-0.015					
	[0.550]	[0.000]	[0.064]	[0.286]	[0.321]					
Constant	0.540***	0.347***	0.303**	0.185	0.554***					
	[0.000]	[0.009]	[0.022]	[0.162]	[0.000]					
Observations	21,416	15,103	14,096	17,698	16,623					
R-squared	0.139	0.111	0.072	0.141	0.142					
F-statistic	46.766	26.295	18.895	39.978	38.127					

VIII. Figures

Figure 1: Kernel density plots

This figure contains the kernel density plots for the dependent variables.



Figure 2

This figure contains plots for the various measures of informed trade over time. The lot starts at November 2002 and ends at October 2003. The dot-points represent the average informed trade component for that month.



Figure 3

This graph contains the sample average PIN, LSB Component, and Order, Imbalance for before, during, and after the SPC's interpretation. The before-period includes November and December 2002. The during-period is January 2003. The after-period is from February 2003 to December 2003.



IX. Appendix 1: Tests using daily measures of informed trade

I also ensure that the results are robust to using a daily measure of informed trade that does not rely on (potentially noisy) microstructure data. The daily-informed-trade-measure is the end-ofday bid-ask spread (as derived from data in the Thomson Reuters Tick History database). I calculate this as (Bid Price – Ask Price)/((Bid Price + Ask Price)/2), where the bid and ask prices are as at the close of trade. Because bid-ask spreads do not rely on microstructure data, I have access to a longer-sample period (spanning January 2001 to December 2003). I include the same control variables as in the main regressions. The regression model is of the following form:

Spread_{*it*} =
$$\alpha + \beta I$$
(China)_{*it*} + I(Treatment)_{*it*} β_2 + I(China)×I(Treatment)_{*it*} β_3 + $X_{it}\theta$ + λ_t + ε_{it}

Where, the dependent variable is firm *i*'s average relative spread in month *t*, $I(\text{China})_{it}$ is an indicator that equals one if the firm is listed in China, $I(\text{Treatment})_{it}\beta_2$ is an indicator that equals one if the observation post-dates the court's decision, X_{it} is a vector of firm-specific controls, and λ_t represents a set of month dummies. The control variables are from Compustat Global and are time-varying, being updated each year. The models are OLS models that include month dummies and cluster standard errors by firm. I run the model for the sample sets of control-sample as in the main models.

The results are in Table 10. The main finding is that the coefficient on the interaction term is positive and significant in all models. Interestingly, large firms have larger spreads in this sample, potentially suggesting that large firms attract more trading activity, so are more likely to see their spread respond to the presence of informed trade. These results overall are consistent with the main models and support the hypothesis that informed trade increased following the court's interpretation.

Table 10: Relative spread regressions

This table contains difference in difference regression results where the dependent variable is the firm's average relative bid-ask spread in a given month. The sample is an unbalanced firm-month panel. The column title contains the control sample. The main independent variable of interest is 'China x After January', the interaction of indicators that equal one if (a) the firm lists in mainland China, and (b) the observation post-dates 9 January 2003. The control samples in Columns 1, 2, and 3 are all companies in Hong Kong, Korea and Taiwan; Hong Kong and Korea; and just Hong Kong, respectively. The control samples in Columns 4 and 5 are based on the 90%, and 80%, propensity score intervals, respectively. The models are OLS regressions and include month dummies and use robust standard errors clustered by firm. Brackets contain p-values. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Control Sample	Hong Kong, Korea, Taiwan	Hong Kong, Korea	Hong Kong	Propensity score:	Propensity score:
				90% Interval	80% Interval
	[1]	[2]	[3]	[4]	[5]
China	0.024***	0.024***	0.025***	0.022***	0.019***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
After January	0.000	-0.005	-0.005	0.004	0.003
	[0.987]	[0.701]	[0.736]	[0.705]	[0.795]
China x After January	0.002***	0.006***	0.004***	0.003***	0.004***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
ln(Assets)	0.007***	0.007***	0.010***	0.007***	0.006***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Leverage	-0.021***	-0.036***	-0.042***	-0.019***	-0.013***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
CAPEX/Assets	0.004	0.011***	0.015***	0.004	0.001
	[0.260]	[0.002]	[0.000]	[0.258]	[0.721]
High-Tech Firm	-0.001	-0.002	-0.001	-0.002	-0.002
	[0.530]	[0.302]	[0.647]	[0.280]	[0.395]
FCF/Assets	0.040***	0.043***	0.041***	0.040***	0.031***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
R&D/Sales	0.042	-0.164	-0.122	0.587*	1.117
	[0.400]	[0.104]	[0.193]	[0.056]	[0.161]
Intangibles/Assets	-0.007	0.009	0.027**	-0.007	-0.024
	[0.442]	[0.351]	[0.015]	[0.580]	[0.127]
Constant	-0.090***	-0.091***	-0.103***	-0.079***	-0.080***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	91,862	79,199	75,689	79,493	70,537
R-squared	20.00%	22.40%	23.70%	16.30%	11.70%
F-statistic	38.506	39.519	38.038	36.096	35.428

X. Appendix 2: Additional Robustness Tests

First, I undertake additional tests to match Chinese companies to non-Chinese companies. These tests match based upon firm size and leverage. First, I create an asset-distribution and leverage-distribution for all Chinese companies. Second, I exclude from the analysis any company whose assets is in the top 10%, or bottom 10% of the distribution (and similarly for leverage). The results from these models are in Table 11. The main finding is that the results for PIN and order imbalance are consistent with those in the main models. That is, PIN and order imbalance increase for Chinese companies after the PRC's ruling (and the LSB component insignificantly decreases after the ruling).

[Insert Table 11 about here]

Second, the results are largely robust to Bertrand et al. (2004) type modeling. Bertrand et al. (2004) suggest that difference in difference measures might be biased in the presence of autocorrelation. They suggest that one way to address this is to divide the sample into pre-event and post-event periods (here, the event is the date of the SPC's interpretation), and for each firm, calculate the average of each variable in the pre-event and post-event periods. This means that there are only two observations for each firm. Table 12 contains these models. The PIN and order imbalance results are largely consistent with those reported in the main models. The adverse selection component results are weaker and do not hold in all models. Overall, this lends some support to the main results.

[Insert Table 12 about here]

Fourth, the results are robust to including time-varying stock characteristics and additional controls. The main models do not include firm-specific stock characteristics because these might be endogenous with the main control variables. Nonetheless, in Table 13 I report OLS regressions that include the following additional controls: the cumulative monthly stock return;

the monthly stock return standard deviation; R&D/Sales, and Intangibles/Assets. The main finding is the relevant interaction term, China x After January, is positive and significant in models that examine the most pertinent dependent variables: PIN and order imbalance (although the interaction term is not significant when examining the LSB component). While these results are largely consistent with the main results, some caution is necessary interpreting them given the potential for endogeneity between the dependent variable and stock-return-specific controls.

[Insert Table 13 about here]

Fifth, in untabulated results, I examine Healey et al. (1992) type regressions. The model is of the following form: Informed Trade_{After} = α + Informed Trade_{Before} β +Controls θ + ϵ . The basic idea is that the intercept term represents the change in informed trade over time; a positive intercept indicates an increase in informed trade. I find a positive intercept when I run such models for all three of the informed-trade measures. This result supports those reported in the main models.

Sixth, the results are robust to various measures of clustering. The reported results include month dummies and cluster standard errors by firm. The results also hold if I omit the dummies and/or cluster by SIC 2-digit, 3-digit, or 4-digit industry instead.

Table 11: Matching based on assets and leverage

This table contains he results of models that match Chinese companies with non-Chinese companies based on size (in Columns 1-3) and leverage (in Columns 4-6). I do this as follows: (1) I create a sample distribution for the assets and leverage of Chinese companies; (2) I exclude all firms whose assets (or leverage) are in the top 10% or bottom 10% of the distribution. The models are OLS regressions and include month dummies and cluster standard errors by firm. Brackets contain p-values and superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Matching Focus		Assets			Leverage	
Dependent Variable	PIN	LSB	Order	PIN	LSB	Order
		Component	Imbalance		Component	Imbalance
Column	[1]	[2]	[3]	[4]	[5]	[6]
China	-0.012**	-0.057***	-0.034***	0.009**	-0.063***	-0.016**
	[0.042]	[0.000]	[0.001]	[0.034]	[0.000]	[0.036]
After January	-0.229***	0.376**	0.405	-0.02	0.033	0.396***
	[0.000]	[0.011]	[0.112]	[0.744]	[0.775]	[0.002]
China x After January	0.019***	-0.009	0.064***	0.012***	-0.002	0.031***
	[0.000]	[0.225]	[0.000]	[0.001]	[0.676]	[0.000]
ln(Assets)	-0.014***	-0.046***	-0.041***	-0.002	-0.060***	-0.038***
	[0.000]	[0.000]	[0.000]	[0.118]	[0.000]	[0.000]
Leverage	-0.031	-0.031	-0.005	-0.037	0.001	-0.049
	[0.142]	[0.463]	[0.905]	[0.210]	[0.985]	[0.376]
CAPEX/Assets	0.041**	-0.171***	-0.111**	0.004	0.006	0.007
	[0.024]	[0.008]	[0.013]	[0.493]	[0.418]	[0.412]
High-Tech Firm	-0.012**	-0.014	-0.031***	-0.015***	-0.011	-0.009
	[0.031]	[0.131]	[0.006]	[0.002]	[0.138]	[0.332]
FCF/Assets	0.038**	-0.169***	-0.109**	-0.001	0.013**	0.008
	[0.033]	[0.010]	[0.014]	[0.779]	[0.045]	[0.315]
Constant	0.339***	0.765***	0.617***	0.235***	0.861***	0.570***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	11,900	11,866	11,900	17,821	17,722	17,821
R-squared	2.50%	7.40%	6.40%	2.30%	28.50%	14.50%
F-statistic	1433.626	18.763	22.103	13.722	67.142	40.577

Table 12: Bertrand et al. (2004) type regressions

This table contains models that use a Bertrand et al. (2004) methodology. Here, for each firm, I calculate the average of each variable in (a) the pre-event period, and (b) the post-event period. Thus, each firm has only two observations in the sample. Column 1 contains all firms in the sample. Column 2 restricts the sample to firms in China, Hong Kong, and Korea. Column 3 examines only China and Hong Kong. Column 4 restricts the sample based upon propensity score matching. The models are OLS regressions and use robust standard errors clustered by firm. Brackets contain p-values and superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Sample	All	CHN, HKG, KOR	CHN, HKG	Propensity Score
Column	[1]	[2]	[3]	[4]
Dependent Variable				
China	0.017***	0.005	-0.006	0.010*
	[0.000]	[0.410]	[0.308]	[0.052]
After January	0.000	0.001	-0.005	-0.001
	[0.995]	[0.795]	[0.351]	[0.802]
China x After January	0.010***	0.008	0.014**	0.012***
	[0.008]	[0.132]	[0.019]	[0.006]
ln(Assets)	0.001	0.005***	0.012***	0
	[0.661]	[0.000]	[0.000]	[0.967]
Leverage	-0.027**	-0.022	-0.032**	-0.012
	[0.045]	[0.160]	[0.015]	[0.571]
CAPEX/Assets	0	0.065**	0.069**	0.081**
	[0.934]	[0.022]	[0.017]	[0.040]
High-Tech Firm	-0.020***	-0.006	-0.005	-0.015**
	[0.000]	[0.468]	[0.593]	[0.024]
FCF/Assets	-0.004	-0.005	-0.011***	0.007
	[0.401]	[0.348]	[0.005]	[0.509]
Constant	0.199***	0.170***	0.134***	0.202***
	[0.000]	[0.000]	[0.000]	[0.000]
Observations	3,226	2,314	2,147	2,592
R-squared	3.30%	2.30%	4.50%	2.10%
F-statistic	19.863	6.811	11.594	11.858
Dependent Variable		LSB Compo	nent	
Sample	All	CHN, HKG, KOR	CHN, HKG	Pscore1
China	-0.075***	-0.102***	-0.102***	-0.078***
	[0.000]	[0.000]	[0.000]	[0.000]
After January	-0.032***	-0.046***	-0.050***	-0.032***
	[0.000]	[0.000]	[0.000]	[0.000]
China x After January	0.000	0.014*	0.018**	-0.002
	[0.987]	[0.064]	[0.039]	[0.732]

ln(Assets)	-0.063***	-0.061***	-0.063***	-0.063***
	[0.000]	[0.000]	[0.000]	[0.000]
Leverage	-0.026	-0.021	-0.026	-0.008
	[0.202]	[0.406]	[0.318]	[0.807]
CAPEX/Assets	0.017**	-0.067	-0.072	-0.042
	[0.022]	[0.147]	[0.137]	[0.522]
High-Tech Firm	-0.006	0.016	0.017	0
	[0.494]	[0.235]	[0.240]	[0.994]
FCF/Assets	0.022***	0.031***	0.033***	0.02
	[0.001]	[0.000]	[0.000]	[0.244]
Constant	0.897***	0.913***	0.932***	0.909***
	[0.000]	[0.000]	[0.000]	[0.000]
Observations	3,225	2,313	2,146	2,591
R-squared	44.70%	44.70%	39.90%	44.50%
F-statistic	169.939	130.586	102.995	139.55
Dependent Variable		Order Imbal	ance	
Sample	All	CHN, HKG, KOR	CHN, HKG	Pscore1
China	-0.025***	-0.081***	-0.095***	-0.037***
	[0.001]	[0.000]	[0.000]	[0.000]
After January	-0.008	-0.020**	-0.021**	-0.007
	[0.132]	[0.027]	[0.039]	[0.307]
China x After January	0.028***	0.039***	0.040***	0.026***
	[0.000]	[0.000]	[0.000]	[0.000]
ln(Assets)	-0.040***	-0.032***	-0.024***	-0.041***
	[0.000]	[0.000]	[0.000]	[0.000]
Leverage	-0.012	-0.008	-0.029	0.051
	[0.732]	[0.839]	[0.345]	[0.151]
CAPEX/Assets	0.006	-0.006	-0.004	0.064
	[0.532]	[0.907]	[0.945]	[0.358]
High-Tech Firm	-0.009	0.022	0.018	-0.008
	[0.383]	[0.126]	[0.239]	[0.494]
FCF/Assets	0.01	0.021***	0.013*	-0.003
	[0.207]	[0.002]	[0.080]	[0.870]
Constant	0.573***	0.577***	0.529***	0.587***
	[0.000]	[0.000]	[0.000]	[0.000]
Observations	3,226	2,314	2,147	2,592
R-squared	20.90%	19.60%	14.50%	21.70%
F-statistic	78.811	34.44	24.982	61.666

Table 13: Models with additional controls

This table contains OLS regressions that add additional controls to the main models. The models include month dummies and cluster standard errors by firm. Brackets contain p-values and superscripts ***, **, * denote significance at 1%, 5%, and 10%, respectively.

Dependent Variable		Р	'IN		
Control Sample	Hong Kong, Korea, Taiwan	Hong Kong, Korea	Hong Kong	Propensity score: 90% Interval	Propensity score: 80% Interval
Column	[1]	[2]	[3]	[4]	[5]
I(China)	0.011**	-0.008	-0.017***	-0.001	-0.002
	[0.011]	[0.156]	[0.005]	[0.776]	[0.752]
I(After January)	-0.041	-0.083	-0.085	-0.047	-0.049
	[0.480]	[0.223]	[0.208]	[0.431]	[0.404]
I(China) x I(After January)	0.010***	0.012**	0.018***	0.012***	0.013***
	[0.004]	[0.018]	[0.001]	[0.003]	[0.002]
ln(Assets)	-0.001	0.003**	0.007***	-0.002	-0.002
	[0.207]	[0.026]	[0.000]	[0.123]	[0.112]
Monthly Return	0.026*	-0.044**	-0.065***	0	0.003
	[0.088]	[0.017]	[0.001]	[0.988]	[0.885]
Return Std Dev	0.005	-0.034	0.036	-0.042	-0.027
	[0.971]	[0.802]	[0.804]	[0.756]	[0.850]
Debt/Assets	-0.014	-0.01	-0.021	-0.006	-0.007
	[0.312]	[0.537]	[0.194]	[0.722]	[0.689]
CAPEX/Assets	0.003	0.050**	0.050**	0.089***	0.095***
	[0.620]	[0.022]	[0.027]	[0.003]	[0.004]
High-Tech Firm	-0.017***	-0.005	-0.002	-0.012**	-0.012**
	[0.000]	[0.479]	[0.773]	[0.020]	[0.019]
FCF/Assets	-0.003	-0.002	-0.005	0.01	0.005
	[0.492]	[0.715]	[0.193]	[0.247]	[0.499]
R&D/Sales	-0.013	-0.003	-0.004	-2.018***	-1.998***
	[0.473]	[0.778]	[0.698]	[0.000]	[0.000]
Intangibles/Assets	0.074**	0.045	0.05	0.064*	0.068**
	[0.017]	[0.151]	[0.114]	[0.060]	[0.033]
Constant	0.270***	0.211***	0.191***	0.257***	0.234***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	21,410	15,097	14,089	17,692	16,617
R-squared	2.50%	1.60%	2.20%	2.40%	2.40%
F-statistic	13.814	9.541	11.664	11.97	11.002
Dependent Variable		LSB Co	omponent		
I(China)	-0.059***	-0.083***	-0.081***	-0.067***	-0.065***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
I(After January)	0.052	0.037	0.032	0.041	0.044
	[0.607]	[0.773]	[0.805]	[0.692]	[0.671]
I(China) x I(After January)	-0.003	0.009	0.012	-0.006	-0.008
	[0.609]	[0.161]	[0.125]	[0.284]	[0.150]
ln(Assets)	-0.057***	-0.056***	-0.060***	-0.057***	-0.058***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Monthly Return	0.146***	0.109***	0.113***	0.144***	0.152***
D	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Return Std Dev	-0.508***	-0.579***	-0.567***	-0.582***	-0.630***
	[0.003]	[0.002]	[0.006]	[0.001]	[0.001]
Debt/Assets	-0.026	-0.018	-0.021	-0.036	-0.034
	[0.177]	[0.460]	[0.424]	[0.219]	[0.254]
CAPEX/Assets	0.006	-0.062	-0.06	-0.03	-0.041
	[0.486]	[0.121]	[0.143]	[0.600]	[0.514]
High-Tech Firm	-0.01	0.007	0.009	-0.003	-0.003
	[0.131]	[0.525]	[0.438]	[0.705]	[0.727]
FCF/Assets	0.01	0.016***	0.019***	-0.004	0
	[0.135]	[0.000]	[0.000]	[0.832]	[0.990]
R&D/Sales	-0.034*	-0.019	-0.02	-2.054***	-2.018***
	[0.090]	[0.327]	[0.259]	[0.001]	[0.002]
Intangibles/Assets	-0.065	-0.110**	-0.113**	-0.083*	-0.120***
~	[0.110]	[0.012]	[0.013]	[0.060]	[0.006]
Constant	0.760***	0.796***	0.893***	0.862***	0.791***

	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	21,294	14,987	13,979	17,587	16,518
R-squared	29.80%	29.50%	25.40%	30.10%	30.20%
F-statistic	75.944	54.961	44.948	68.144	66.485
Dependent Variable		Order	Imbalance		
I(China)	-0.015**	-0.079***	-0.091***	-0.037***	-0.039***
	[0.038]	[0.000]	[0.000]	[0.000]	[0.000]
I(After January)	0.339***	0.18	0.181	0.319**	0.317**
•	[0.008]	[0.163]	[0.156]	[0.014]	[0.015]
I(China) x I(After January)	0.030***	0.049***	0.052***	0.026***	0.029***
-	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
ln(Assets)	-0.034***	-0.031***	-0.024***	-0.035***	-0.036***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Monthly Return	-0.008	-0.182***	-0.228***	-0.041	-0.03
	[0.764]	[0.000]	[0.000]	[0.142]	[0.295]
Return Std Dev	-0.300*	-0.165	0.075	-0.417**	-0.436**
	[0.099]	[0.399]	[0.725]	[0.016]	[0.018]
Debt/Assets	0.018	0.023	0	0.039*	0.039
	[0.453]	[0.452]	[0.988]	[0.096]	[0.102]
CAPEX/Assets	0.003	-0.033	-0.034	0.054	0.053
	[0.754]	[0.347]	[0.344]	[0.277]	[0.346]
High-Tech Firm	-0.012	0.016	0.013	-0.004	-0.004
	[0.138]	[0.115]	[0.236]	[0.651]	[0.653]
FCF/Assets	0.004	0.016***	0.011*	-0.012	-0.01
	[0.632]	[0.000]	[0.059]	[0.427]	[0.507]
R&D/Sales	-0.009	0.016	0.015	-4.776***	-4.762***
	[0.741]	[0.242]	[0.277]	[0.000]	[0.000]
Intangibles/Assets	0.160***	0.043	0.041	0.130**	0.141**
	[0.003]	[0.466]	[0.502]	[0.022]	[0.027]
Constant	0.17	0.577***	0.538***	0.195	0.565***
	[0.193]	[0.000]	[0.000]	[0.142]	[0.000]
Observations	21,410	15,097	14,089	17,692	16,617
R-squared	14.20%	11.70%	8.00%	15.30%	15.50%
F-statistic	40.071	23.221	17.282	38.815	37.118

Politics, Court Decisions, and the Administrative State

Abstract

This paper tests whether the political environment influences judicial decision making. It focuses on the role of judicial review of administrative actions in influencing judicial decision-making. The main contributions are to show that (1) the current president's political affiliation influences judicial decision-making, and (2) judicial review is a mechanism through which this can occur. Given that the results are based on the judicial review process and are not specific to the judicial appointment system in the US, the results have international implications.

Keywords: Administrative Law; Deference; Statutory Interpretation; Politics JEL Codes: D73, K23, L51, L98

1 Introduction

This paper empirically examines whether the current political situation influences judicial decision-making. This has become an especially live issue due to claims that the judicial nomination process is politically motivated. The political environment is sometimes argued to influence the method and outcome of judicial decisions. Possible explanations include (a) that political institutions might place budgetary pressure on courts ¹, (b) court might wish to avoid comments from political players that may harm its institutional reputation ², and (c) the fact that the court must interact with administrative agencies, many of whom face budgetary and political pressures ³. I focus on this third avenue. I show use data from United States Supreme Court decisions to show that the current president's political affiliation influences the court's interactions with agencies, as proxied by deference to administrative agencies and the outcome of court cases. The focus is on the affiliation of the current president rather than that of the president who appointed the judge. Thus, these results are not restricted to the situation in the US and have broad implications for other countries.

The relation between politics and court decisions is important. Arguably, courts must respect the democratic nature of the legislature ⁴. This could arguably extend to respecting the will of the 'arms' of the government, such as administrative agencies. However, the separation of powers doctrine mandates that courts must

¹ JW Douglas and RE Hartley, "The Politics of Court Budgeting in the States: Is Judicial Independence Threatened by the Budgetary Process?" (2003) 63(4) Public Administration Review 441.

² ME Solimine and JL Walker, "The Next Word: Congressional Response to Supreme Court Statutory Decisions" (1992) 65(2) Temple Law Review 425.

³ see T Christensen and P Laegreid, "Regulatory Agencies - The Challenges of Balancing Agency Autonomy and Political Control" (2007) 20(3) Governance 499.

⁴ AM Bickel, *The Least Dangerous Branch* (Indianapolis: Bobbs-Merril, 1962); J Waldron, *Law and Disagreement* (New York: Oxford University Press, 1999); J Waldron, *The Dignity of Legislation* (Cambridge, UK: Cambridge University Press, 1999).

remain independent from the legislatures in order to curb abuses of administrative or legislative power ⁵. This creates a tension over the appropriate role of courts in reviewing administrative actions. This paper starts with the premise that while courts must respect the authority of the legislative and administrative branches, courts have an important role as an independent oversight body to protect citizens from abuses of legislative or administrative power.

The ability of courts to remain independent is important in the context of judicial review of administrative action. Interest groups might influence political decisions and the allocation of funds ⁶. This is important since not all politically-motivated decisions are in the public interest ⁷. This could then influence agencies' decisions as they attempt to please the politicians who control their budgets. In many developed countries, judicial review is a key bulwark against self-interested decision-making ⁸. However, the key premise is that politics does not influence the court's decisions. I aim to assess this premise.

This article confronts the issue of whether the president's political position influences judicial decision making in the United States. There are several ways that politics could influence judicial decision making, not all of which involve direct intervention from the executive. The main explanations are `appointment' explanation, the 'punishment' explanation, and the 'administrative state' explanation. I focus on the 'administrative state' explanation.

⁵ GI Lovell, *Legislative Deferrals: Statutory Ambiguity, Judicial Power, and American Democracy* (New York: Cambridge, 2003); KJ McMahon, *Reconsidering Roosevelt on Race: How the Presidency Paved the Road to Brown* (Chicago: University of Chicago Press, 2004); B Friedman, "The Politics of Judicial Review" (2005) 84 Texas Law Review 257.

⁶ P Howitt and R Wintrobe, "The political economy of inaction" (1995) 56 Journal of Public Economics 329; G Biglaiser and C Mezzetti, "Politicians decision making with re-election concerns" (1997) 66 Journal of Public Economics 425; M Singhal, "Special interest groups and the allocation of public funds" (2008) 92(3-4) Journal of Public Economics 548; D Wittman, "How Pressure Groups Activate Voters and Move Candidates Closer to the Median" (2009) 119 Economic Journal 1324.

⁷ HI Grossman and SJ Noh, "Proprietary public finance and economic welfare" (1994) 53 Journal of Public Economics 187.

⁸ J Woo, "Economic, political, and institutional determinants of public deficits" (2003) 87 Journal of Public Economics 387; J Sieckmann, "Legislative Argumentation and Democratic Legitimation" (2010) 4(1) Legisprudence 69.

The 'appointment' explanation indicates why the appointing president's politics might influence judicial decisions. In full, the argument is: judicial appointments arise through from a complex negotiation between political parties.⁹ Thus, the judge's politics mirror those of the appointing president. Judges, like all people, cannot fully separate themselves from their political background ¹⁰. Thus, judicial decisions must reflect the political affiliation of the appointing President. This has induced calls to de-politicize the appointment system.¹¹ The key problem with the appointment explanation is that it explains why the appointing President's affiliation influences decisions; it does not indicate whether the current President's affiliation will influence decisions.

The 'punishment'/ 'budgetary' explanation explains why the current President's affiliation might influence the court's decisions. This is especially active in the administrative state and functions at two levels. The logic is that the President can 'punish' courts for decisions that he/she dislikes. Punishments include negative comments that reduce the court's institutional reputation ¹². Kenny ¹³ argues that the court should protect its institutional reputation in order to maintain public confidence in the judiciary. Punishments could also include indirect or implicit threats to cut budgets and salaries ¹⁴. Therefore, courts make decisions in order to avoid negative comments; and thus, courts make decisions to support the current president.

The administrative-state-based explanation is that the process of judicial review can compel judges to accept politically motivated agency-decisions. The idea is that administrators are subject to executive control over

⁹ For a detailed description see: S Goldman, "Voting Behavior on the United States Courts of Appeals Revisited" (1975) 69 American Political Science Review 491; RL Solomon, "The Politics of Appointment and the Federal Court's Role in Regulating America: U.S. Courts of Appeals Judgeships from T.R. to F.D.R." (1984) 9(2) Law & Social Inquiry 285; EE Slotnick, "Federal Judicial Recruitment and Selection Research: A Review Essay" (1988) 71 Judicature 317; DR Stras, "Understanding the New Politics of Judicial Appointments" (2008) 86(4) Texas Law Review 1033; DR Stras and RW Scott, "Navigating the New Politics of Judicial Appointments" (2008) 102(4) Northwestern University Law Review 1869..

¹⁰ S Fish, "Change" (1987) 86 South Atlantic Quarterly 423.

¹¹ For example: MJ Gerhardt, "Divided Justice: A Commentary on the Nomination and Confirmation of Justice Thomas" (1992) 60(4) George Washington Law Review 969; DA Strauss and CA Sunstein, "The Senate, the Constitution, and the Confirmation Process" (1992) 101(7) Yale Law Journal 1491.

¹² Solimine and Walker (n 3).

¹³ "Maintaining public confidence in the judiciary: a precarious equilibrium" (1999) 25(2) Monash University Law Review 209.

 $^{^{\}rm 14}$ Douglas and Hartley (n 2).

their budgets ¹⁵ This is not unique to the United States ¹⁶. Courts must interact with administrators when they judicially review administrative actions. Part of this interaction can involve 'deference' to agency interpretations of statutes ¹⁷. These 'deference' doctrines oblige courts to follow (to varying degrees) the interpretations that judicial agencies make of statutes. Thus, by following a politically motivated agency, courts may impound presidential politics into their decision-making.

It remains unclear whether the political situation influences judicial decision-making. Few studies directly connect presidential politics with judicial decision making ¹⁸. The studies that do connect politics and judicial decisions yield unclear results. Some studies find a correlation between the appointing president's politics and the judge's decisions ¹⁹. However, other studies find no significant correlation.²⁰ Further, the reliance on simple correlation analysis omits other key variables that might influence judicial decision-making, such as the involvement of an administrative agency.

This paper tests whether the president's political views influence the court's decisions. I focus on the process of judicial review of administrative actions. Section 2 develops the hypothesis that the president's views influence judicial decision making if they influence the process and outcome of court cases. A proxy for the `process' of a court case is the court's decision to accept (rather than dispute) an administrator's

¹⁵ Christensen and Laegreid (n 4); RD Cooter, *The Strategic Constitution* (Princeton: Princeton University Press, 2000) at 150. Congress also has some control over agencies' budgets; however, the focus of this article is on the role of presidential politics.

¹⁶ see B Stone, "Administrative Accountability in the 'Westminster' Democracies: Towards a New Conceptual Framework" (1995) 8(4) Governance 505; martin Painter, "The Politics of Administrative Reform in East and Southeast Asia: From Gridlock to Continuous Self-Improvement?" (2004) 17(3) Governance 361; ABL Cheung, "The Politics of Administrative Reforms in Asia: Paradigms and Legacies, Paths and Diversities" (2005) 18(2) Governance 257.

¹⁷ WN Eskridge and LE Baer, "The Continuum of Deference: Supreme Court Treatment of Agency Statutory Interpretations from Chevron to Hamdan" (2008) 96 Georgetown Law Journal 1083.

¹⁸ TM Keck, "Party Politics or Judicial Independence? The Regime Politics Literature Hits the Law Schools" (2007) 32(2) Law & Social Inquiry 511.

¹⁹ HM Kritzer and TM Uhlman, "Sisterhood in the Courtroom: Sex of Judge and Defendant in Criminal Case Disposition" (1977) 14 Social Science Journal 77; JM Aliotta, "C ombining Judges' Attributes and Case Characteristics: An Alternative Approach to Explaining Supreme Court Decisionmaking" (1988) 71 Judicature 277; LR Cohen and ML Spitzer, "Judicial Deference to Agency Action: A Rational Choice Theory and an Empirical Test" (1996) 69 Southern California Law Review 431.

²⁰ See for example: T Eisenberg and SL Johonson, "The Effects of Intent: Do We Know How Legal Standards Work?" (1991) 76 Cornell Law Review 1151; O Ashenfelter, T Eisenberg and SJ Schwab, "Politics and the Judiciary: The Influence of Judicial Background on Case Outcomes" (1995) 24(2) Journal of Legal Studies 257.

interpretation of a statute. A proxy for the `outcome' of a court case is the court's decision to issue either a dynamic (i.e. liberal) judgment or a black-letter judgment. The expectation being that politics influence the courts if liberal Presidents inspire liberal judgments. This explains how the political nature of the administrative state could induce politically-influenced decisions.

Section 3 outlines the data and the multivariate testing procedure. The paper uses logit and bivariate probit models to test the relation between presidential politics and judicial outcomes. The results in Section 4 show that the President's political views influence the way that that courts interpret statutes. That is, they influence the court's tendency to issue a text-based decision. Section 5 concludes by suggesting that the political process influences judicial decision-making.

The main contributions of the article are as follows: (1) I show that the current president's political affiliation (cf that of the appointing president) influence judicial decision making. (2) I highlight a new mechanism through which this can occur: the administrative state. Here, I show that the nature of judicial review (and the doctrines of judicial deference) can lead to judges incorporating politically motivated agency-decisions into their judgments. As highlighted in Friedman ²¹, a greater understanding of how courts do behave (here, in relation to administrative agencies), can help to guide normative reforms to depoliticize judicial decision-making.

2 Empirical Hypotheses

The goal is to test whether the president's politics influence the mode or the outcome of court cases. The analysis focuses on the relation between the political environment and statutory interpretation in an

²¹ Friedman (n 6).

administrative state. Consider a legal environment in which there is a statute. For practical purposes, the legal process is as follows. First, the president approves a statute. Second, an agency administers the statute. Administering the statute involves both interpreting and applying the law ²². Third, a litigant challenges the agency's actions. Fourth, a court determines the challenge. In determining this challenge, the court must also interpret the statute. However, doctrines of 'deference' (described below) indicate how much weight the court must give to the administrator's interpretation of the statute. This means, that if (a) presidential politics influence the administrator's interpretation, and (b) the court must assign great weight to the interpretation when deciding the case, then politics can infuse into the court's decision.

The hypotheses in brief are that presidential politics influence the judicial process if (a) they influence the likelihood that a court defers to the agency's interpretation, and (b) they influence the type of interpretation that a court renders. The following sections detail the hypotheses.

2.1 Approach to the agency interpretation

Consider first the Court's approach to the agency's interpretation. A key part of the methodology is how the court approaches the agency's interpretation of the statute. The situation is as follows: (1) The agency interprets the statue. (2) The plaintiff challenges the agency's decisions. (3) The court must interpret the statute. Now, if the statue is vague and the agency's interpretation (at Step 1) is 'reasonable' then the court must 'defer' to the agency's interpretation (at Step 3). This means that the court must accept the agency's interpretation. From a practical standpoint, this means that the court's job is to simply asses "does the agency's action comply with its interpretation of the statute". If the court did not defer to the agency's interpretation, the court would assess "What is the appropriate interpretation of the statute, and did the agency comply with this interpretation?"

²² WN Eskridge, *Dynamic Statutory Interpretation* (Cambridge: Harvard University Press, 1994); Eskridge and Baer (n 19).

An example helps to illustrate the impact of this. Say the legislature creates some legislation saying. "The lighthouse authority can administer the appropriate color of any lighthouse". The term 'lighthouse' is vague. The administrator could interpret 'lighthouse' to mean any house that has a light and is near a river, and impose a rule that they all be painted purple. Now if there were no deference, the court would assess: "is it correct that a 'lighthouse' is any house with a light?". If there is deference, then the court would assess: (a) is the statute vague, and (b) is it reasonable to state that any house with a light is a lighthouse.

This administrative process can be a political issue. This is a political issue since the president can influence an agency's decisions by controlling its budget ²³, or by issuing statements about how the administrator should construe the statute ²⁴. Therefore, the court's approach to the agency's interpretation is one way in which politics could influence the Court's decision-making methodology.

This background means that Presidential politics influence the Court's methodology if they influence the likelihood that a court 'defers' to an agency's interpretation of a statute. Specifically, if the president is 'liberal', then it should increase the likelihood that the court defers to a 'liberal' agency interpretation. Proposition 1 summarizes this.

Proposition 1: Presidential politics influence the methodology of resolving cases if the political affiliation of the president influences the probability that a court `defers' to an agency's interpretation of a statute. Thus, a court is more likely to defer to a liberal agency interpretation if the president is liberal.

2.2 Method of interpretation

²³ TO McGarity, "Presidential Control of Regulatory Agency Decisionmaking" (1987) 36(2) American University Law Review 443; RL Calvert, MD McCubbins and BR Weingast, "A Theory of Political Control and Agency Discretion" (1989) 33(3) American Journal of Political Science 588; MA Eisner and KJ Meir, "Presidential Control versus Bureaucratic Power: Explaining the Reagan Revolution in Antitrust" (1990) 34(1) American Journal of Political Science 269.

²⁴ JP Pfiffner, "Presidential Signing Statements and Their Implications for Public Administration" (2009) 69(2) Public Administration Review 249.

Consider next the method of interpretation. One outcome of any statute-based-case is the interpretation of the statute. Thus, presidential-politics influence the outcome if they influence the nature of the interpretation. A key part of the outcome is whether the court issues either (a) a purely 'text-based' interpretation or (b) one that is 'dynamic' and considers non-text-based factors ²⁵. These non-text factors include the current social situation and the political process that gave rise to the legislation ²⁶. Text-based decisions tend to adhere to the 'canons' of interpretation. Dynamic interpretations tend to consider wider social matters when interpreting the statute. Thus, if politics influence the courts, then they should make it less likely that the court issues a `text-based' interpretation. That is, politics should persuade the court to deviate from the legislation.

The proxy for issuing a 'text-based' interpretation is the use of established canons, rules and presumptions. The rationale is that text-based decisions purport to consider only the legislation and to ignore all extraneous political factors. Thse include presumptions based upon the structure of the legislation's text ²⁷' They also include the presumption that (1) legislation should avoid constitutional conflicts ²⁸, (2) should not fracture the federal structure of the United States ²⁹, (3) should not undermine due process or fundamental legal

²⁵ WN Eskridge, "Dynamic Statutory Interpretation" (1987) 135(6) University of Pennsylvania Law Review 1479; WN Eskridge, "Public Values in Statutory Interpretation" (1989) 137(4) University of Pennsylvania Law Review 1007; Eskridge (n 24).

²⁶ F Bennion, "Hansard-Help or Hindrance? A Draftsman's View of Pepper v. Hart" (1993) 14(3) Statute Law Review 149; MP Healy, "Legislative Intent and Statutory Interpretation in England and the United States: An Assessment of the Impact of Pepper V. Hart" (1999) 35 Stanford Journal of International Law 231; J Steyn, "Pepper v Hart; A Re-examination" (2001) 21(1) Oxford Journal of Legal Studies 59.

²⁷ KA Bamberger, "Normative Canons in the Review of Administrative Policymaking" (2008) 118 Yale Law Journal 64.

²⁸ PP Frickey, "Getting from Joe to Gene (Mccarthy): The Avoidance Canon, Legal Process Theory, and Narrowing Statutory Interpretation in the Early Warren Court" (2005) 93 California Law Review 397.

²⁹ Bamberger (n 29); L Obhof, "Federalism, I Presume - A Look at the Enforcement of Federalism Principles through Presumptions and Clear Statement Rules" (2004) 2004 Michigan State Law Review 123.

principles ³⁰, (4) congressional inaction signals tacit approval of a law ³¹, and (5) that laws should not violate the separation of powers ³².

Thus, the president's politics influence the court if they influence the likelihood that the court issues a textbased interpretation. Proposition 2 summarizes this.

Proposition 2: Presidential politics influence the outcome of cases if the political affiliation of the President influences the likelihood of issuing a judgment based upon interpretative canons.

3 Data and Methodology

The aim is to determine if Presidential politics influence judicial decisions. Section 2 indicates that politics could influence either the approach to the agency's interpretation (i.e. the decision to defer) or to the nature of the interpretation (the decision to rely on canons).

3.1 Method of Analysis

I undertake both univariate and multivariate analyses. The univariate analysis tests whether there is a significant difference in deference/canon-use between when the president is liberal and when the president is conservative. I use both difference-in-means tests and correlation tests.³³

³⁰ S Newland, "Mercy of Scalia: Statutory Construction and the Rule of Lenity" (1994) 29 Harvard Civil Rights-Civil Liberties Law Review 197; ML Humphery-Jenner, "Should Common Law Doctrines Dynamically Guide the Interpretation of Statutes?" (2009) 3(2) Legisprudence 171; Z Price, "The Rule of Lenity as a Rule of Structure" (2004) 72 Fordham Law Review 885.

³¹ SR Johnson, "The Reenactment and Inaction Doctrines in State Tax Litigation" (2008) 50 State Tax Notes 661.

³² CA Bradley, "The Charming Betsy Canon and Separation of Powers: Rethinking the Interpretive Role of International Law" (1998) 86(2) Georgetown Law Journal 479.

The multivariate regression analysis controls for other factors that might influence the relationship between (a) presidential liberalness, and (b) deference/text-usage. The regression equations have the general form:

Deference to Liberal Interpretation = $\alpha_1 + I$ (Liberal President) $\beta_1 + Controls_1\theta + \varepsilon_1$ Canon Use = $\alpha_2 + I$ (Liberal President) $\beta_2 + Controls_2\gamma + \varepsilon_2$

Here, the variables 'Deference', 'Canon Use' and 'Liberal President' are indicators that the court deferred to the agency's interpretation, relied on text-based canons, and that the president is liberal, respectively. The terms $Controls_1$ and $Controls_2$ are sets of controls (discussed below). Each set contains variables that are likely to influence deference or canon use (as appropriate). I also estimate regressions that include both sets of control variables.

I estimate the model in two ways. First, I estimate the deference equation and the canon use equation using separate logit models. This assumes that the error terms in the two equations (ε_1 and ε_2) are uncorrelated. Subsequently, I also estimate the equations using a bivariate probit model ³⁴. This model does not run into issues of partial observability as I observe the outcome in all cases.³⁵ I use multiple methods in order to ensure that the results are robust. The results are qualitatively the same in using both methods. However, using both methods provides some confidence that the results are not merely due to model specification

³³ Note that I use tetrachoric correlations rather than pairwise correlations because the variables are indicator variables. This is consistent with R Raskin and H Terry, "A Principal-Components Analysis of the Narcissistic Personality Inventory and Further Evidence of Its Construct Validity" (1988) 54(5) Journal of Personality and Social Psychology 890.

³⁴ following the approach in T Amemiya, "Bivariate Probit Analysis: Minimum Chi-Square Methods" (1974) 69(348) Journal of the American Statistical Association 940; DJ Poirier, "Partial observability in bivariate probit models" (1980) 12(2) Journal of Econometrics 209; DM Brasington, "Joint provision of public goods: the consolidation of school districts" (1999) 73 Journal of Public Economics 373; MS Mohanty, "A bivariate probit approach to the determination of employment: a study of teen employment diVerentials in Los Angeles County" (2002) 34 Applied Economics 143.

³⁵ The partial observability issues arises where there are two outcomes, y_i^1 , and y_i^2 , but we do not observe both outcomes in all cases. An example is a voting committee: a motion passes if both people vote for it (i.e. $y_1 = 1$, and $y_2 = 1$), but the motion fails if one of the people votes against it, in this case it could be that $(y_1 = 1, y_2 = 0)$, $(y_1 = 0, y_2 = 1)$, or $(y_1 = 0, y_2 =)$. In this case, instead of observing y_1 , and y_2 individually, we only observe $z = y_1 \times y_2$. This problem does not arise in the present models as I always 'observe' whether the court defers, offers a liberal interpretation and/or uses canons.

issues. All models use standard errors clustered by year and by agency and include dummies for the subjectmatter of the judgment ³⁶. The following sub-sections describe the data source and the variables.

3.2 Data Source

I use a data-set of Supreme Court decisions. This is the same data-set as in Eskridge and Baer (2008) and Eskridge and Raso (2009).³⁷ This dataset runs from 1983 to 2005 and covers Supreme Court decisions that interpreted statutes. The total sample comprises 1014 cases.³⁸ The cases cover situations where there is a judicial review of a decision of a federal agency. In a significant number of cases, the U.S. is not a party to the case and the agency's interpretation is supplied by amicus curiae brief filed by the Solicitor General ³⁹. Thus, while the administrative agency is unlikely to be a party to all 1014 cases, agencies' interpretations are still relevant. The data set provides information that allows me to examine judicial deference, canon usage. It also contains data with which I compute control variables. The following sections discuss the variables. Another issue with the dataset is that the Supreme Court self-selects its cases. However, there is no per se reason to believe that this self-selection would drive the relationship between presidential politics, administrative interpretations, and judicial deference. That is, the deference decision is made independently of the selection decision.

3.3 Key variables: Deference, Canon Use, and Presidential Liberalness

³⁶ following MA Petersen, "Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches" (2009) 22(1) Review of Financial Studies 435.

³⁷ The data is available from <u>http://www.georgetownlawjournal.com/extras/96.4/</u>. For prior uses, See Eskridge and Baer (n 19); WN Eskridge and C Raso, *Chevron as a Canon, not a Precedent: An Empirical Test of what Motivates Judges in Agency Deference Cases* (Center for Empirical Legal Studies, 2009); M Humphery-Jenner, "Does Deference Promote Principled Interpretations of Statutes?" (2012) 6(1) Legisprudence 98. ³⁸ Note that I use lagged control variables that date from the prior judicial term, and this reduces the sample

size to 998 observations.

³⁹ Eskridge and Baer (n 19) p. 1112 and n. 108.

The dependent variables represent (a) the decision to defer to an agency's liberal interpretation, and (b) the decision to rely on interpretative canons. For deference, I create an indicator variable if the court cites with approval, relies on, one of the main types of deference: Chevron-type, Skidmore-type or Curtis-Wright/Seminole-Rock type ^{40,41} and the interpretation is liberal.⁴² For the court's interpretation, I create an indicator variable that equals one if the court cites with approval, and relies on, the legislative canons described in Section 2.⁴³

The key independent variable represents whether the president is 'liberal' or 'conservative'. I code each president as either 'liberal' or 'conservative' ⁴⁴. For the sample period of this paper, Clinton is `liberal', whereas Reagan and the two Bush presidents are `conservative'. This induces the indicator variable 'Liberal President' that equals 1 if the current President is `liberal' and 0 otherwise. While this dichotomous coding is arguably crude ⁴⁵, it has the advantage of avoiding value-judgments about the potential 'liberalness' of a president, which would naturally be affected by the context of the coder. For example, Reagan is variously referred to as conservative (by Republications during Mitt Romney's presidential campaign) and relatively liberal (by people who compare Reagan to republican politicians such as Rick Santorum).

⁴⁰ as in *Ibid*; Eskridge and Raso (n 39).

⁴¹ Of course, these types of deference differ in their application. However, the precise form of deference used is of tangential relevance; the focus is on whether the court defers, not the way in which it defers. Further, while some types of deference have changed over time (i.e. Chevron was narrowed in *U.S. v. Mead*), this is not directly on point as I am mainly concerned with whether the court defers.

⁴² A liberal interpretation is one that favors the interests of "debtors, antitrust and securities plaintiffs, civil rights plaintiffs and other victims of discrimination, criminal defendants, energy consumers, claimants seeking information or entitlement benefits from the government, citizens demanding environmental protection, plaintiffs seeking access to federal courts, governmental and private employees, persons benefiting from health/safety protections, immigrants, Native Americans, claimants opposing intellectual property interests, pension beneficiaries and state regulators of pension funds, taxpayers, telecomm and transportation consumers, students and their parents seeking education benefits, and tenants": Eskridge and Raso (n 39); Eskridge and Baer (n 19).

⁴³ This relies on the coding in Eskridge and Baer (n 19). Here, they code the court's usage of the individual canons, I use this coding to create an indicator that equals one if the court relies on any of the interpretative canons.

⁴⁴ following the scheme in *Ibid*.

⁴⁵ JL Smith, "Presidents, Justices, and Deference to Administrative Action" (2007) 23(2) Journal of Law, Economics, and Organization 346; BW Curry, RL Pacelle and BW Marshall, "An Informal and Limited Alliance': The President and the Supreme Court" (2008) 38(2) Presidential Studies Quarterly 223.

3.4 Control Variables

There are two types of control variables, deference-controls (which factor into the court's decision to defer to the agency's interpretation) and interpretation-controls (which might influence the court's decision to use legislative canons).

3.4.1 Deference-based controls

The first set of controls comprises factors that might influence the court's decision to defer to the agency's interpretation of the statute. These are in the term $Controls_1$. All variables are pre-determined; and thus, are exogenous. I use four variables.

Expertise: the court is more likely to defer if the agency has expertise in the subject area ⁴⁶. This is especially important if Congress explicitly relies on administrative expertise when enacting the legislation ⁴⁷. While it is true that all administrative agencies must have some form of expertise, there are degrees of expertise and not all agencies are experts on all subject-areas. Thus, if an agency who spends most of its time focusing on A makes an interpretation vis-à-vis B, then it is relatively less expert vis-à-vis B. Thus, the variable 'expert' is a dummy that equals 1 if the majority refers to agency expertise in its decision.

⁴⁶ JT O'Reilly, "Losing Deference in the FDA's Second Century: Judicial Review, Politics, and a Diminished Legacy of Expertise" (2008) 93 Cornell Law Review 939.

⁴⁷ G Granström, "The Use of Experts in the Legislative Process - Using Swedish Law Reform in the Area of Domestic Violence As an Investigatory Example" (2009) 3(3) Legisprudence 323; J Hage, "Legislation and Expertise on Goals" (2009) 3(3) Legisprudence 351; M Kirejczyk, "Experts and Publics in the Regulation of Embryonic (stem Cell) Research (1998 - 2002). The British and The Netherlands Approaches and Experiences Compared" (2009) 3(3) Legisprudence 277.

Legislative Instrument: the court is more likely to defer if the interpretation is in a legislative instrument that must undergo legislative review ⁴⁸. Thus, the models include an indicator ('Rule') if the agency's interpretation is in such a rule.

Old Interpretation: the court is more likely to defer if the agency's interpretation is long-standing since people are more likely to have arranged their affairs around the interpretation ⁴⁹. Thus, I include the dummy 'Old Interpretation' that equals one if the court refers to the interpretation as being long standing.

Congressional Delegation: the court is more likely to defer if the congress delegated rule-making authority to the administrator since this indicates that the administrator has quasi-legislative power ⁵⁰. The dummy 'Congressional Delegation' equals 1 if the court referred to congressional delegation in its decision.

3.4.2 Canon-based controls

The second set of controls (in *Controls*₂) are factors that might influence the court's decision to rely on textbased canons. I focus on various interpretative factors that might influence text-usage. In order to avoid endogeneity I focus on the prior tendency to rely on a particular interpretative technique by examining the proportion of judgments in the prior judicial term that relied on a particular technique ⁵¹. I use five interpretation based variables.

⁴⁸ R Pierce, "Reconciling Chevron and Stare Decisis" (1997) 85 Georgetown Law Journal 2225.

⁴⁹ JE Shuren, "Modern Regulatory Administrative State: A Response to Changing Circumstances" (2001) 38 Harvard Journal on Legislation 291; L Schulz Bresman, "How Mead Has Muddled Judicial Review of Agency Action" (2005) 58 Vanderbilt Law Review 1443.

⁵⁰ M Herz, "Textualism and Taboo: Interpretation and Deference for Justice Scalia" (1991) 12 Cardozo Law Journal 1663; TW Merrill, "Textualism and the Future of the Chevron Doctrine" (1994) 72 Washington University Law Quarterly 351.

⁵¹ consistent with S Jimenez-Martin, "Controlling for Endogeneity of Strike Variables in the Estimation of Wage Settlement Equations" (1999) 17(3) Journal of Labor Economics 583.

Reliance on legislative purpose: a reliance on `legislative purpose' correlates with issuing a 'dynamic' judgment and is likely to reduce the use of legislative text ⁵². Courts may issue a purposive judgment directly by relying on notions of legislative purpose, or indirectly by examining the passage of the legislation through the senate ⁵³. Thus, I control for the proportion of judgments in the prior judicial term that explicitly referred to judicial purpose in their reasoning.

Reliance on the 'legislative scheme': references to the `legislative scheme', the `act as a whole' or the `whole code' connote a textual approach in which the court relies on the text of the statute, and the use of a legislative `code' may indicate an attempt to limit the role of the courts ⁵⁴. Thus, I control for the proportion of judgments that used the legislative scheme as a key reason for its decision in the prior term.

Reliance on principles of stare decisis: References to statutory stare decisis show a reticence to change prior judicial decisions; and thus, shows an unwillingness to depart from the legislative text ⁵⁵. Thus, the models include the proportion of judgments in the prior judicial term that used statutory stare decisis as a key factor in their decision.

Reliance on canons: the historical reliance on textual canons may explain the current use of textual cannons; that is, canon usage may be auto-regressive ⁵⁶. Thus, the models control for the proportion of judgments in the prior judicial term that relied on the canons described in Section 2.

⁵² Eskridge (n 27).

⁵³ see the discussion in GA Costello, "Average Voting Members and Other 'Benign fictions': The Relative Reliability of Committee Reports, Floor Debates, and Other Sources of Legislative History" (1990) 1990(1) Duke Law Journal 39; FH Easterbrook, "What Does Legislative History Tell Us?" (1990) 66(2) Chicago-Kent Law Review 441; C Tiefer, "The Reconceptualization of Legislative History in the Supreme Court" (2000) 2000 Wisconsin Law Review 205.

⁵⁴ M McGowan, "Do as I Do, Not as I Say: An Empirical Investigation of Justice Scalia's Ordinary Meaning Method of Statutory Interpretation" (2008) 78 Mississippi Law Journal 129.

⁵⁵ LC Marshall, "'Let Congress Do It': The Case for An Absolute Rule of Statutory Stare Decisis" (1989) 88 Michigan Law Review 177; TW Merrill, "Originalism, Stare Decisis and the Promotion of Judicial Restraint" (2005) 22(2) Constitutional Commentary 271.

⁵⁶ Following A Vermeule, "The Cycles of Statutory Interpretation" (2001) 68(1) University of Chicago Law Review 149.

Common Law Doctrines: references to common law doctrines should reduce the likelihood of reliance on text. This is because common law doctrines tend to change over time; and thus, relying on them should induce dynamic interpretations and a deviation from the text ⁵⁷. Therefore, the models control for the proportion of judgments in the prior judicial term where the court relied on common law doctrines to shape its interpretation of the statute.

4 Results

This section contains the results. Recall that Presidential politics influence the Court's decision only if the univariate condition and the multivariate condition hold.

Univariate statistics: The univariate statistics indicate that presidential politics is likely to influence the decision to rely on interpretative canons, but does not influence the decision to defer to the agency's interpretation. Table 1 contains the sample description by year. It shows no clear trend in the use of deference or the reliance on text. The rate of deference and text-usage is relatively stable over time.

Table 2 contains the univariate statistics. Column 4 is the main column of interest (it compares the liberalpresident terms with the conservative-president terms). Importantly, if the president is liberal, then the court is significantly less likely to rely on text-based canons. While presidential liberalness/conservatism does not appear to influence the deference decision, these figures do not control for all factors that influence the court's interpretation.

Correlation statistics: Table 3 contains the correlation statistics. The main findings are (1) there is a significant and negative correlation between canon-use and presidential liberalness, and (2) there is a significant correlation between the deference decision and agency-based factors (such as agency expertise,

⁵⁷ Humphery-Jenner (n 32).

congressional delegation, the issuance of an interpretative rule, and the interpretation being old). This implies that collinearity may partially explain low correlation between deference and presidential-liberalness. Subsequently, multivariate analysis is necessary.

Logit regressions: The first set of multivariate results are the logit results. Table 4 contains the logit multivariate results. Columns 1-3 examine the impact of Presidential liberalness on the decision to defer to a 'liberal' agency interpretation. Columns 4-6 examine the impact of Presidential liberalness on the decision to issue a text-based judgment.

Presidential liberalness influences the decision to defer to the agency or to issue a canon-based judgment. For deference, the coefficient on the 'Liberal President' dummy is significant and positive (in Columns 1-3). This implies that the court is more likely to defer to a liberal agency interpretation if the president is liberal. Other interesting results are that the court is more likely to defer if the agency issues a rule that has legislative force, the agency's interpretation is old, or the congress has delegated authority to the agency. The control variables are consistent with expectations. For canon-based interpretations, the coefficient on the 'Liberal President' dummy is significant and negative at 1% in all models (in Columns 4-6). The other interesting result is a significant negative correlation between canon-use and the use of legislative purpose in the prior term. This supports the proposition that purposive judgments tend not to use text-based canons ⁵⁸.

Bivariate probit regressions: The bivariate probit results support the logit results. The results are in Table 5. Column 1 and Column 2 use agency-controls and interpretation-controls for the deference equation and the canon-use equation, respectively. Columns 3 and 4 use the full set of controls in both equations. The results confirm that (a) Presidential liberalness influence the deference decision (the court is more likely to defer to a liberal agency interpretation if the president is liberal, and (b) does significantly reduce the likelihood that the court will issue a text-based judgment (significant at 1% significance). This supports the idea that Presidential liberalness can influence judicial decision-making.

⁵⁸ see Eskridge (n 27).

Overall: The results overall support the hypothesis that presidential politics influence judicial decision making. If the president is liberal, then the court is significantly more likely to defer to a liberal agency-interpretation and is significantly less likely to rely on legislative canons..

5 Conclusion

This paper tests whether the political environment influences judicial decision making. The analysis focuses on the United States. However, the findings do not rely on the judicial-appointment-mechanism in the US. Thus, the findings have implications for other legal systems.

This paper fills the gap in the literature by testing whether the President's political affiliation influences the court's decisions. It does this by testing whether the President's political views influence either (a) the likelihood of supporting an liberal interpretation from an agency, or (b) the likelihood of issuing a text-based interpretation, and thereby avoiding issuing a political decision. The results indicate that if the president is liberal, then the court is more likely to defer to a liberal agency interpretation and is less likely to issue a strictly text-based decision. This implies that the president's political views influence the court's decision making. While there has been some analysis of ways in which politics can influence judicial decisions, a key contribution of this article is to highlight the role of judicial review in the politicization of judicial decision-making.

These results have key implications for the study of the legal and political process. The results indicate some weakness in the separation of powers and imply that the political process can influence the courts. This suggests that further work to de-politicize the judiciary is necessary. Further legal and economic work can focus on the optimal way in which to reformulate the interaction between the courts and the political environment.

6 Tables

Table 1: Sample Distribution by Yea

Year	All Judgments	l Liberal A	Deferring to gency Interpretation	Canon-Base	Canon-Based Interpretation	
	Number	Number	% of All Judgments	Number	% of All Judgment	
	[1]	[2]	[3]=[2]/[1]	[4]	[5]=[4]/[1]	
1984	66	23	35%	28	42%	
1985	56	13	23%	20	36%	
1986	57	13	23%	23	40%	
1987	57	11	19%	16	28%	
1988	49	11	22%	22	45%	
1989	47	12	26%	15	32%	
1990	51	20	39%	19	37%	
1991	46	10	22%	27	59%	
1992	61	14	23%	20	33%	
1993	41	9	22%	13	32%	
1994	35	8	23%	13	37%	
1995	36	13	36%	14	39%	
1996	41	14	34%	6	15%	
1997	49	15	31%	22	45%	
1998	43	16	37%	13	30%	
1999	31	6	19%	14	45%	
2000	36	7	19%	18	50%	
2001	42	11	26%	22	52%	
2002	38	14	37%	22	58%	
2003	42	7	17%	15	36%	
2004	35	6	17%	20	57%	
2005	39	5	13%	17	44%	
Overall	998	258	26%	399	40%	

Table 2: Univariate Statistics

This table contains he univariate statistics. The figures are proportions. Column 1 contains statistics for all judgments. Columns 2 and 3 contain statistics for judgments where the current president is liberal or conservative, respectively. For example, the figure in Row 1, Column 1 is the proportion of all judgments that are defer to an agency interpretation of statutes. The figure in Row 2 column 2 is the proportion of all judgments that both (a) occur under the rule of a Liberal president, and are canon based. Column 4 contains the difference between Column 2 and Column 3. Superscripts ***, **, and * denote significance at 1%, 5%, and 10% respectively in ttests for Column 2 and Column 3, and in a difference in mean test for Column 4.

Row		[1]	[2]	[3]	[4] = [2] – [3]
		All Judgments	Liberal	Conservative	Difference
			President	President	
[1]	Deferring Judgment	0.259***	0.281***	0.247***	0.034
[2]	Canon-based judgment	0.400***	0.345***	0.428***	-0.083***
	Agency Based Controls				
[3]	Expertise	0.019***	0.009*	0.024***	-0.016**
[4]	Rule	0.213***	0.228***	0.206***	0.022
[5]	Old Interpretation	0.351***	0.392***	0.329***	0.063*
[6]	Congressional Delegation	0.263***	0.266***	0.261***	0.005
	Interpretation Based Contr	rols			
[7]	P(Purposive)	0.601***	0.497***	0.655***	-0.158***
[8]	P(Legislative Scheme)	0.377***	0.395***	0.367***	0.027
[9]	P(Stare Decisis)	0.459***	0.465***	0.456***	0.009
[10]	P(Common Law)	0.092***	0.117***	0.079***	0.038*

Table 3: Correlation Statistics

		А	В	С	D	F	G	G	Ι	J	K
A	Liberal President										
В	Defers to Liberal Agency	0.04									
		[0.25]									
С	Canon-based judgment	-0.08**	-0.02								
		[0.01]	[0.45]								
D	Expertise	-0.05*	0.10***	-0.04							
		[0.09]	[0.00]	[0.22]							
F	Rule	0.03	0.02	-0.08***	0.14***						
		[0.42]	[0.60]	[0.01]	[0.00]						
G	Old Interpretation	0.06*	0.07**	0.05	0.10***	0.20***					
		[0.05]	[0.03]	[0.13]	[0.00]	[0.00]					
Н	Congressional Delegation	0.01	0.06**	-0.08***	0.20***	0.71***	0.18***				
		[0.85]	[0.04]	[0.01]	[0.00]	[0.00]	[0.00]				
Ι	Purposive	-0.15***	0.09***	-0.02	0.02	0.03	0.04	0.00			
		[0.00]	[0.00]	[0.52]	[0.46]	[0.35]	[0.19]	[0.94]			
J	Whole Scheme	0.03	-0.02	-0.02	-0.03	0.04	0.01	0.02	0.03		
		[0.40]	[0.53]	[0.48]	[0.30]	[0.16]	[0.77]	[0.43]	[0.43]		
К	Stare Decisis	0.01	0.04	-0.03	-0.10***	-0.13***	-0.01	-0.11***	-0.12***	-0.12***	
		[0.78]	[0.16]	[0.36]	[0.00]	[0.00]	[0.83]	[0.00]	[0.00]	[0.00]	
L	Fundamental Doctrines	0.06*	-0.01	0.01	-0.04	-0.08***	0.03	-0.10***	0.00	-0.08**	0.02
		[0.05]	[0.84]	[0.79]	[0.16]	[0.01]	[0.39]	[0.00]	[0.94]	[0.01]	[0.54]

This table contains the correlation statistics. Brackets contain p-values. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 4: Logit Regressions

This table contains logit regressions that examine the court's decision to defer to the agency's interpretation or to rely on interpretative canons. The dependent variable in Columns 1, 2, and 3 is an indicator that equals one if the court defers to the agency's interpretation and that interpretation is liberal. The dependent variable in Columns 4, 5, and 6 is an indicator that equals one if the court relies on text-based canons as described in Section 2. All models use standard errors clustered by year and by agency and include dummies for the subject-matter of the decision (suppressed). Brackets contain p-values. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Dependent Variable		Defers to Liberal Agency	/		Canon-based judgment	
Control Set	Agency	Interpretation	Full	Agency	Interpretation	Full
	(1)	(2)	(3)	(4)	(4)	(6)
Liberal President	0.308*	0.492*	0.559**	-0.437***	-0.747***	-0.759***
	[0.070]	[0.068]	[0.042]	[0.004]	[0.001]	[0.001]
Proportion purposive		1.433	1.588		-2.043**	-2.100**
		[0.218]	[0.175]		[0.043]	[0.040]
Proportion whole scheme		2.401**	2.308*		-0.763	-0.753
		[0.044]	[0.061]		[0.428]	[0.430]
Proportion stare decisis		1.087	0.858		0.385	0.331
		[0.303]	[0.429]		[0.671]	[0.705]
Proportion canon based		-0.246	-0.181		-1.093	-1.103
		[0.764]	[0.828]		[0.169]	[0.159]
Proportion fundamental doctrines		-2.22	-2.239		-0.485	-0.739
		[0.366]	[0.372]		[0.832]	[0.744]
Expertise	1.305**		1.289**	-0.599		-0.686
	[0.011]		[0.015]	[0.263]		[0.206]
Rule	-0.482*		-0.446*	-0.453*		-0.440*
	[0.069]		[0.096]	[0.070]		[0.078]
Old interpretation	0.245		0.257	0.349**		0.353**
	[0.153]		[0.125]	[0.022]		[0.022]
Congressional delegation	0.314		0.315	0.02		-0.002
	[0.220]		[0.227]	[0.935]		[0.994]
--------------	---------	---------	---------	---------	---------	---------
Constant	0.046	-1.935	-1.939	0.434	1.966	2.436*
	[0.976]	[0.278]	[0.292]	[0.578]	[0.132]	[0.071]
Observations	991	992	991	995	996	995
Pseudo R2	12.00%	12.00%	13.00%	6.00%	6.00%	7.00%

Table 5: Bivariate Probit Models

This table contains the bivariate probit results. The dependent variable in Columns 1 and 3 is an indicator that equals one if the court defers to the agency's interpretation and that interpretation is liberal. The dependent variable in Columns 2 and 4 is an indicator that equals one if the court relies on text-based canons as defined in Section 2. There are two sets of models. The first set (Columns 1 and 2) uses separate agency and interpretation variables for the deference and the canon equations, respectively. The second set (Columns 3 and 4) includes the full set of variables in both equations. All models use robust standard errors and include dummies for the subject matter of the decision (suppressed) Brackets contain p-values. Superscripts ***, ** and * denote significance at 1%, 5%, and 10%, respectively.

Dependent variable	Defers to	Canon-based	Defers to	Canon-based
-	Liberal	judgment	Liberal	judgment
	Agency		Agency	
	(1)	(2)	(3)	(4)
Liberal President	0.158*	-0.464***	0.313*	-0.466***
	[0.099]	[0.001]	[0.050]	[0.001]
Proportion purposive		-1.300**	0.988	-1.315**
		[0.037]	[0.151]	[0.036]
Proportion whole scheme		-0.535	1.403**	-0.525
		[0.362]	[0.030]	[0.373]
Proportion stare decisis		0.222	0.512	0.197
		[0.680]	[0.400]	[0.715]
Proportion canon based		-0.659	-0.055	-0.674
		[0.131]	[0.910]	[0.125]
Proportion fundamental		-0.275	-1.254	-0.393
doctrines				
		[0.825]	[0.371]	[0.752]
Expertise	0.798**		0.778**	-0.38
	[0.011]		[0.016]	[0.261]
Rule	-0.252		-0.24	-0.273*
	[0.118]		[0.140]	[0.079]
Old interpretation	0.117		0.132	0.213**
	[0.247]		[0.190]	[0.021]
Congressional delegation	0.171		0.167	0.002
	[0.267]		[0.283]	[0.990]
Constant	0.023	6.255***	-1.215	6.488***
	[0.980]	[0.000]	[0.292]	[0.000]
Rho	0.065		0.064	
	[0.274]		[0.279]	
Observations	998	998	998	998
Wald Chi-squared	1.2	1.2	1.17	1.17

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Judicial Deference to Agency Interpretations of Statutes: In Support of *Skidmore* Deference

Abstract

This paper models the optimal level of judicial deference to agency-interpretations of statutes. The court wants to elicit high quality interpretations from agencies but prefers not to defer to the agency's interpretation. The agency wants the court to defer to its interpretation but prefers not to exert the effort required to produce quality interpretations. I show that the optimal amount of deference depends on the quality of the agency's interpretation and its relation to agency-effort. This supports the *Skidmore* doctrine, under which the agency's interpretation is neither irrelevant to, nor determinative of, the court's interpretation of the statute.

Keywords: Deference; Skidmore; Chevron; Judicial Review; Administrative Law JEL Codes: H83; K23

1 Introduction

This paper analyzes the optimal amount of `deference' that judges should give to agencies' interpretations of statutes. Statutes grant and define agencies' powers. Agencies interpret these statutes and act under their interpretations. People can challenge agencies' actions. Courts must then interpret the statute. When interpreting the statute, courts can assign a degree of `weight' or `deference' to the agency's interpretation. This paper models the court's optimal actions. It shows that courts should not blindly accept or reject all agency interpretations; instead the amount of deference should depend on the quality of the agency's actions, the risk aversion of the agency and the court, and the utility the agency gains from merely producing a good interpretation.

The administrative situation is as follows. Some statutes grant powers to administrative agencies. The nature of these powers is an issue of statutory interpretation. Thus, agencies interpret these statutes and act based on these interpretations. People can challenge agencies' interpretations. Thereafter, courts must interpret the statute to determine if the agency's actions were outside the appropriate exercise of power.

Several doctrines guide how courts must interpret the statute. The presently relevant doctrines pertain to how the court treats the agency's interpretation. The *Chevron* doctrine mandates that the court must follow the agency's interpretation if (a) the statute is not vague or unclear, and (b) the agency's interpretation is reasonable.¹ The *Skidmore* doctrine indicates that the court need not follow the agency's interpretation, but merely gives it some weight in reaching its final interpretation of the statute.² The *Einfeld* doctrine suggests that courts could completely ignore agencies' interpretations of statutes.³ Overall, these doctrines tell the court how much `weight' or `deference' the court how much weight it should assign to the agency's interpretation. Eskridge and Baer ⁴ highlight that there are so many deference doctrines that there is actually a `continuum' of deference-levels that define the `level' of deference that courts give to agencies.

Some prior literature has examined the deference decision. This has received some legal-theoretic analysis,⁵ and some empirical attention,⁶ but has seen little game theoretic modeling. The existing modeling generally models the deference decision as an either/or decision, rather than the continuum noted in Eskridge and Baer⁷, and/or has given the deference-decision to the legislature. Importantly, Givati and Stephenson⁸ model the deference decision under inconsistent agency interpretations. A key point of difference in this paper is that I focus on eliciting an interpretation that facilitates the optimal interpretation of statutes as opposed to the ideological content of agencies' interpretations.

This paper fills a gap in the literature by modeling the optimal amount of deference. It considers a situation where the court decides how much deference to grant to the agency. The court's utility from deference depends on quality of the agency's interpretation, which depends on the amount of effort that the agency

¹ This follows: *Chevron USA Inc v Natural Resources Defense Council, Inc* 467 US 837 (1984).

² This follows: *Skidmore v Swift & Co* 323 US 134 (1944).

³ This follows: Corporation of the City of Enfield v Development Assessment Commission (2000) 169 ALR 400.

⁴ William N Eskridge & Lauren E Baer, "The Continuum of Deference: Supreme Court Treatment of Agency Statutory Interpretations from Chevron to Hamdan" (2008) 96 Georgetown Law Journal 1083.

⁵ Myriad legal papers examine deference: Examples include: Wendy B Davis & Rebecca Clarke, "Hot Air: Undue Judicial Deference to Federal Aviation Administration Expertise in Assessing the Environmental Impacts of Aviation" (2004) 69 Journal of Air Law & Commerce 709; David M Gossett, "Chevron, Take Two: Deference to Revised Agency Interpretations of Statutes" (1997) 64 Chicago Law Review 681; John F Manning, "Constitutional Structure and Judicial Deference to Agency Interpretation of Agency Rules" (1996) 96 Columbia Law Review 612; Cass R Sunstein, "Interpreting Statutes in the Regulatory State" (1989) 103:2 Harvard Law Review 405; Peter Strauss, "When the Judge is Not the Primary Official With Responsibility to Read: Agency Interpretation and the Problem of Legislative History" (1990) 66 Chicago-Ken 321; Thomas W Merrill, "Judicial Deference to Executive Precedent" (1992) 101 Yale Law Journal 969.

⁶ See for example: See for example Eskridge & Baer, *supra* note 4; J L Smith, "Presidents, Justices, and Deference to Administrative Action" (2007) 23 Journal of Law Economics and Organization 346; H M Kritzer, M J Richards & J L Smith, "Does Chevron Matter?" (2006) 28 Law and Policy 444; K Caruson & J M Bitzer, "At the Crossroads of Policymaking: Executive Politics, Administrative Action, and Judicial Deference by the DC Circuit Court of Appeals (1985-1996)" (2004) 26 Law and Policy 347.

⁷ Eskridge & Baer, *supra* note 4.

⁸ Yehonatan Givati & Matthew C Stephenson, "Judicial Deference to Inconsistent Agency Statutory Interpretations" (2011) 40 Journal of Legal Studies 85.

exerts. The agency's utility increases with the amount of deference it receives but decreases with the amount of effort exerted. The model shows that the level of deference depends on the utility functions of the court and the agency, the quality and probability distribution of the agency-interpretation. This implies that the agency's interpretation should be merely one factor that helps to guide the judge's interpretation of the statute. This supports *Skidmore* type deference.

The paper proceeds as follows: Section 2 discusses relevant prior literature, and the need for further modeling. Section 3 sets up the theoretical model. Section 4 provides the general analysis. Section 5 concludes.

2 Prior relevant literature

This paper connects with some prior literature; however, the literature has not examined a situation where there is a continuum of deference levels,⁹ and where the court has discretion over the level of deference. Some papers model the amount of discretion that the legislature should give to agencies and/or courts.¹⁰

Tiller and Spiller¹¹ model the interaction between agencies and courts, but they focus on an either/or decision to accept or reject the agency's interpretation, rather than on the degree of weight or deference that the court should assign. Shipman¹² allows the legislature to modify the amount of deference. However, this assumes that the legislature sets the deference regime. In reality, courts determine the amount of deference that they give to agencies.

⁹ Highlighted in: Eskridge & Baer, *supra* note 4.

¹⁰ See for example: C Volden, "A Formal Model of the Politics of Delegation in a Separation of Powers System" (2002) 46 American Journal of Political Science 111; J R Rogers, "Information and Judicial Review: A Signaling Game of Legislative-Judicial Interaction" (2001) 45 American Journal of Political Science 84; Matthew C Stephenson, "Legislative Allocation of Delegated Power: Uncertainty, Risk, and the Choice Between Agencies and Courts" (2006) 119 Harvard Law Review 1035; K Bawn, "Choosing Strategies to Control the Bureaucracy: Statutory Constraints, Oversight, and the Committee System" (1997) 13 Journal of Law, Economics, and Organization 101; D Epstein & S O'Halloran, "Administrative Procedures, Information, and Agency Discretion" (1994) 38 American Journal of Political Science 697; S Gailmard, "Expertise, Subversion, and Bureaucratic Discretion" (2002) 18 Journal of Law, Economics, and Organization 536; John D Huber & Charles R Shipman, *Deliberate Discretion? The Institutional Foundations of Bureaucratic Autonomy* (Cambridge University Press, 2002).

¹¹ Emerson H Tiller & Pablo T Spiller, "Strategic Instruments: Legal Structure and Political Games in Administrative Laws" (1999) 15:2 Journal of Law, Economics & Organization 349.

¹² Charles R Shipan, "The Legislative Design of Judicial Review: A Formal Analysis" (2000) 12 Journal of Theoretical Politics 269.

Wright¹³ focus on legislative-policy making, where the legislature can influence the level of deference by choosing whether the *Chevron* doctrine applies to the statute (i.e. whether the court must defer to the agency). However, judicial decision making remains binary and this assumes that the legislature can control the level of deference. By contrast, *Skidmore* indicates that courts can treat the agency's decision as merely one factor in reaching its own interpretation.

Cohen and Spitzer¹⁴ model a situation involving a supreme court, appellate court, and an agency. The supreme court sets the amount of deference and the appellate court must follow this due to the rules of precedent. They argue that the a conservative supreme court should set a high level of deference if agencies are conservative, and a low level of agencies are liberal. However, this assumes that the supreme court can perfectly foresee the agency's political preferences, which appears unrealistic given the myriad agencies that exist.

Givati¹⁵ shows that the level of deference can influence agency behavior. Givati shows that if it is easier to convince a court to defer to an interpretation, then the agency will take a relatively more aggressive and risky strategy. That is, the agency adjusts its behavior based upon the anticipated level of deference. This is important because it implies that deference can encourage agencies to create different types of interpretations. However, does not per se indicate the level of deference that is desirable to create optimal interpretations of statutes.

Givati and Stephenson¹⁶ model a situation where an agency might revise its interpretation based upon changes in its ideology. The model is a two-period model. The agency can create interpretations in both periods. In each period the agency is subject to different political pressures. Thus, in each period, it might be optimal to create different statutory interpretations to reflect these ideological pressures. Givati and Stephenson find that if the court is less deferential to revised agency interpretations, then the agency should avoid extreme interpretations because it might be difficult to reverse them; and thus, might be difficult to adjust to changing ideological pressures. This is an important contribution to the study of how agencies and courts interact; however, is relatively silent on the type of deference that will promote the best interpretation of statutes.

¹³ John R Wright, "Ambiguous Statutes and Judicial Deference to Federal Agencies" (2010) 22:2 Journal of Theoretical Politics 217.

¹⁴ Linda R Cohen & Matthew L Spitzer, "Law and Contemporary Problems" (1994) 57 Law and Contemporary Problems 65.

¹⁵ Yehonatan Givati, "Strategic Statutory Interpretation by Administrative Agencies" (2010) 12 American Law and Economics Review 95.

¹⁶ Givati & Stephenson, *supra* note 8.

3 Set Up

The model involves an agency and a court.¹⁷ The court interprets the legislation and implements its interpretation. The court reviews the agency's actions. In doing so, the court must interpret the statute. This interpretation must assign some level of weight to the *agency's* interpretation. There is a continuum of possible weights;¹⁸ it can range from zero weight (as under Enfield) through to blind obedience (as under *Seminole Rock* and *Curtiss-Wright*).¹⁹ I assume that this is a one period model (i.e. the court does not consider the quality of the agency's prior interpretations); altering this assumption does not significantly change the results.²⁰

The agent interprets the statue. The agent's interpretation is of a quality level $q \in [\underline{q}, \overline{q}]$. The level of quality is a function of a stochastic variable $\theta \in \Theta$ and the level of effort that the agent exerts is a. That is, $q = Q(e, \theta)$... The agent provides this interpretation in return for a level of deference, d, from the court.

Assume that the quality of the interpretation is a random variable whose cumulative distribution function depends on the amount of effort *e*. That is, the cumulative distribution function is F(q|e), and the density function is f(q|e). The intuition is that the quality of the interpretation is random. However, higher levels of effort stochastically dominate lower levels of effort.

The agent likes deference. However, effort is costly. Assume that the utility is separable in the amount of deference and the amount of effort, such that the utility function is $\gamma(e)u(w) - \phi(e)$, where *w* is the level of deference, and *a* is the amount of effort. Assume that $u'(\cdot) > 0$, $u''^{(\cdot)} < 0$, $\phi'^{(\cdot)} > 0$, and $\phi''^{(\cdot)} < 0$. Assume that the agent provides a meaningful interpretation only if the utility from deference exceeds a certain baseline `reserve' utility \overline{u} that represents the utility the agent gains from shirking.

The court gains utility from the agent's interpretation. The utility increases with the quality of the interpretation, but decreases with the amount of deference that the court must give. The utility function is V(q - d(q)), where q is the quality of the agent's interpretation and w is the level of deference. The utility

¹⁷ This model builds on, and expands on, similar model reported in Patrick Bolton & Mathias Dewatripont, *Contract Theory* (Cambridge: MIT Press, 2005) at 142–146; B Holstrom, "Moral Hazard and Observability" (1979) 10 Bell Journal of Economics 74; J A Mirrlees, "The Optimal Structure of Incentives and Authority Within and Organization" (1976) 7 Bell Journal of Economics 105; J A Mirrlees, "Notes on Welfare Economics, Information and Uncertainty" in M Balch, D McFadden & S Wu, eds, *Essays in Equilibrium Behavior under Uncertainty* (Amsterdam: North-Holland, 1974).

¹⁸ As argued in Eskridge & Baer, *supra* note 4.

 ¹⁹ See: Corporation of the City of Enfield v Development Assessment Commission (2000) 169 ALR 400; *Bowles v Seminole Rock & Sand Co* 325 US 410 (1945); *United States v Curtiss-Wright Export Corp* 299 US 304 (1936).
 ²⁰ See the appendix for details

increases with the quality of the interpretation because a high quality interpretation makes it easier for the court to make its own judgment. The utility decreases with the level of deference because deferring involves ceding judicial power and creating the risk of accepting a poor interpretation. The utility function is such that $V'(\cdot) > 0$, and $V''(\cdot) < 0$.

The optimization program then involves the court maximizing its utility subject to the constraints that (a) the agent choses a level of effort to maximize its utility and (b) the level of deference is sufficient for the agent to participate (i.e. the agent's utility exceeds the threshold utility \overline{u}). This must hold across the distribution of q. This induces the following optimization program:

$$\max_{\{d(q),e\}} \int_{\underline{q}}^{\overline{q}} V[q-d(q)]f(q|e)dq$$
⁽¹⁾

Subject to:

$$e \in \arg\max_{e} \left\{ \int_{\underline{q}}^{\overline{q}} \gamma(e) u[d(q)] f(q|e) dq - \phi(e) \right\}$$
⁽²⁾

$$\overline{u} \le \int_{\underline{q}}^{\overline{q}} \gamma(e) u[d(q)] f(q|e) dq - \phi(e)$$
⁽³⁾

4 Analysis

The analysis proceeds by first obtaining the optimal level of deference and then by analyzing how it depends upon model-inputs.

4.1 Optimal Level of Deference

The analysis proceeds in several steps. First, obtain the first and second order conditions for the agent. The first order condition mandates that the derivative of Equation (2) equals zero. The second order condition mandates that the double derivative of Equation (3) is less than zero. This induces the following:

(4)

$$0 = \int_{\underline{q}}^{\overline{q}} \{\gamma(e)u[d(q)]f_{e}(q|e) + \gamma_{e}u[d(q)]f(q|e)\}dq - \phi'(e)$$

$$0 > \int_{\underline{q}}^{\overline{q}} \{u[d(q)]\gamma_{e}(e)f_{e}(q|e) + u[d(q)]\gamma(e)f_{ee}(q|e) + u[d(q)]\gamma_{ee}(e)f(q|e) + u[d(q)]\gamma_{e}(e)f_{e}(q|e)\}dq - \phi''(e)$$
(5)

Second, leaving aside the second order condition, replace Equation (2) with Equation (4). The optimization program is then:

$$\max_{\{d(q),e\}} \int_{\underline{q}}^{\overline{q}} V[q-d(q)]f(q|e)dq$$
(6)

Subject to:

$$0 = \int_{q}^{\overline{q}} \{\gamma(e)u[d(q)]f_{e}(q|e) + \gamma_{e}u[d(q)]f(q|e)\}dq - \phi_{e}(e)$$
⁽⁷⁾

$$\overline{u} \le \int_{\underline{q}}^{\overline{\overline{q}}} \gamma(e) u[d(q)] f(q|e) dq - \phi(e)$$
⁽⁸⁾

(9)

Third, define the lagrangian as:

$$\begin{aligned} \mathcal{L} &= \int_{\underline{q}}^{\overline{q}} \{ V[q - d(q)] f(q|e) + \lambda[\gamma(e)u[d(q)] f(q|e) - \phi(e) - \overline{u}] \\ &+ \mu[\gamma(e)u[d(q)] f_e(q|e) + \gamma_e u[d(q)] f(q|e) - \phi_e] \} dq \end{aligned}$$

Fourth, differentiate Equation (9) with respect to d(q) to obtain the optimal level of deference as:

$$\frac{V'[q-d(q)]}{u'[d(q)]} = \lambda \gamma(e) + \mu \left\{ \gamma(e) \frac{f_e(q|e)}{f(q|e)} + \gamma_e(e) \right\}$$
(10)

This implies the following proposition:

Proposition: The optimal level of deference, d(q) is the level of deference that solves:

$$\frac{V'[q-d(q)]}{u'[d(q)]} = \lambda \gamma(e) + \mu \left\{ \gamma(e) \frac{f_e(q|e)}{f(q|e)} + \gamma_e(e) \right\}$$

(11)

4.2 Comparative Statics

I make some comments about the optimal level of deference. The level of deference solves Equation (11)

The first corollary is that the level of deference decreases with $\gamma(e)$. That is, if the agency gains some utility from exerting effort, such as a `personal' utility for doing a good job, then there is less need to defer to the agency's interpretation. To see this, suppose that the court is risk-neutral such that V'[q - d(q)] = 1. Then, the level of deference must satisfy the following relation:

$$\frac{1}{u'[d(q)]} = \lambda \gamma(e) + \mu \left\{ \gamma(e) \frac{f_e(q|e)}{f(q|e)} + \gamma_e(e) \right\}$$

If $\gamma(e)$ increases, then the right hand side increases. The left hand side (which is 1/u'[d(q)]) increases if d(q) decreases. Thus, if $\gamma(e)$ increases, then the optimal level of deference decreases. Thus, if the agency gains some utility from issuing a quality interpretation, then the court can defer less to the agency. The following proposition summarizes this prediction.

Proposition: The level of deference decreases with $\gamma(e)$. That is, the level of deference decreases if the agency gains utility from issuing a quality interpretation.

The second corollary is that the court should defer more to an interpretation that is more likely under a higher level of effort. The intuition is that the court wants to encourage the agency to issue high quality interpretations more frequently. However, for a given level of effort, there is a random distribution of qualities. Knowing this, and knowing that quality is a random variable, the court will base its decision on the probability that the particular interpretation-quality arises under a level of effort.

To see this, consider Equation (12). Assume that there are two levels of quality, high and low. Then Equation (11) becomes:

$$\frac{V'[q-d(q)]}{u'[d(q)]} = \lambda \gamma(e) + \mu \left\{ \gamma(e) \frac{f(q|e_H) - f(q|e_L)}{f(q|e_H)} + \gamma_e(e) \right\}$$
$$= \lambda \gamma(e) + \mu \left\{ \gamma(e) \left[1 - \frac{f(q|e_L)}{f(q|e_H)} \right] + \gamma_e(e) \right\}$$

(11)

This implies that if a level of quality *q* is more likely under a low level of effort than under a high level of effort, then $f(q|e_L) > f(q|e_H)$ such that $\frac{f(q|e_L)}{f(q|e_H)} > 1$, and the optimal level of deference decreases. Conversely, if the level of quality *q* is more likely under a high level of effort then $f(q|e_L) < f(q|e_H)$ such that $\frac{f(q|e_L)}{f(q|e_H)} < 1$, and the court should assign a higher level of deference.

Proposition: The level of deference is higher if the quality level is more likely under a higher level of effort.

4.3 Special Cases

I consider the following special cases: A non-multiplicative agency utility, a purely multiplicative agency utility, a risk neutral court, and a risk-neutral agency.

4.3.1 Non-multiplicative agency utility

The main special case that I consider is where there is a constant of multiplication equal to one. That is, $\gamma(e) =$

$$\max_{\{d(q),e\}} \int_{\underline{q}}^{\overline{\overline{q}}} V[q-d(q)]f(q|e)dq$$
⁽¹⁴⁾

Subject to:

$$e \in \arg\max_{e} \left\{ \int_{\underline{q}}^{\overline{q}} \gamma(e) u[d(q)] f(q|e) dq - \phi(e) \right\}$$
(15)

$$\overline{u} \le \int_{\underline{q}}^{\overline{q}} \gamma(e) u[d(q)] f(q|e) dq - \phi(e)$$
⁽¹⁶⁾

The analysis proceeds in several steps.

First, obtain the first and second order conditions for the agent. The first order condition mandates that the derivative of Equation (15) equals zero. The second order condition mandates that the double derivative of Equation (15) is less than zero. This induces the following:

(17)
$$\int_{\underline{q}}^{\overline{q}} u[d(q)]f_{e}(q|e)dq - \phi'(e) = 0$$
$$\int_{\underline{q}}^{\overline{q}} u[d(q)]f_{ee}(q|e)dq - {\phi'}'^{(e)} < 0$$
(18)

Second, leaving aside the second order condition, replace Equation (15) with Equation (17). The optimization program is then:

$$\max_{\{d(q),e\}} \int_{\underline{q}}^{\overline{q}} V[q-d(q)]f(q|e)dq$$
⁽¹⁹⁾

Subject to:

$$0 = \int_{\underline{q}}^{\overline{q}} \gamma(e) u[d(q)] f_e(q|e) dq - \phi'(e)$$
⁽²⁰⁾

$$\overline{u} \le \int_{\underline{q}}^{\overline{q}} \gamma(e) u[d(q)] f(q|e) dq - \phi(e)$$
⁽²¹⁾

(22)

Third, define the Lagrangian as:

$$\mathcal{L} = \int_{\underline{q}}^{\overline{q}} \{ V[q - d(q)]f(q|e) + \lambda[u[d(q)]f(q|e) - \phi(e) - \overline{u}] + \mu[u[d(q)]f_e(q|e) - \phi_e] \} dq$$

Fourth, differentiate Equation (22) with respect to d(q) to obtain the optimal level of deference, as follows:

$$\frac{V'[q-d(q)]}{u'[d(q)]} = \lambda + \mu \frac{f_e(q|e)}{f(q|e)}$$
(23)

4.3.2 Purely multiplicative agency utility

This section considers the situation where the agency's utility is purely multiplicative. That is, takes the form $u[d(q)]\gamma(e)$. The, the optimization program takes the form:

$$\max_{\{d(q),e\}} \int_{\underline{q}}^{\overline{q}} V[q-d(q)]f(q|e)dq$$
⁽²⁴⁾

Subject to:

$$e \in \arg\max_{e} \left\{ \int_{\underline{q}}^{\overline{q}} \gamma(e) u[d(q)] f(q|e) dq \right\}$$
(25)

$$\overline{u} \le \int_{\underline{q}}^{\overline{q}} \gamma(e) u[d(q)] f(q|e) dq$$
⁽²⁶⁾

This implies that the Lagrangian is of the form:

(27)

$$\begin{aligned} \mathcal{L} &= \int_{\underline{q}}^{\overline{q}} \{ V[q - d(q)] f(q|e) + \lambda[\gamma(e)u[d(q)] f(q|e) - \overline{u}] \\ &+ \mu[\gamma(e)u[d(q)] f_e(q|e) + \gamma_e(e)u[d(q)] f(q|e)] \} dq \end{aligned}$$

Thus, the optimal level of deference is:

$$\frac{V'[q-d(q)]}{u'[d(q)]} = \lambda \gamma(e) + \mu \left\{ \gamma(e) \frac{f_e(q|e)}{f(q|e)} + \gamma_e(e) \right\}$$
(23)

This implies that the non-multiplicative cost term does not directly influence the optimal level of deference. Instead, the multiplicative term $\gamma(e)$ has a more direct influence over the deference level.

4.3.3 Risk neutral court

This section lets the court be risk neutral. That is, the court's utility function is V = q - d(q). This implies that $V_{d(q)} = -1$. Therefore, the optimal level of deference is the level d(q) that satisfies:

$$\frac{1}{u'[d(q)]} = \lambda \gamma(e) + \mu \left\{ \gamma(e) \frac{f_e(q|e)}{f(q|e)} + \gamma_e(e) \right\}$$
(29)

The main difference between Equation (29) and Equation (11) is the rate at which the level of deference increases with both (1) $\gamma(e)$, and (2) the hazard rate $f_e(q|e)/f(q|e)$. Specifically, if the court is risk-neutral, then the agency obtains a higher level of deference. To see this, the left hand side in Equation (11) is $\frac{v'[q-d(q)]}{u'[d(q)]}$ whereas the left hand side in Equation (29) is1/u'[d(q)]. Here, if d(q) increases, then 1/u'[d(q)] decreases at a faster rate than does V'[q - d(q)]/u'[d(q)]. Therefore, if the court is risk neutral then the court is less sensitive to the level of effort implied by a given interpretation-quality, and the level of deference and decreases less with $\gamma(e)$.

4.3.4 Risk neutral agency

This section lets the agency be risk neutral. Thus, u'[d(q)] = 1. This implies that the optimal level of deference satisfies the following relation:

$$V'[q-d(q)] = \lambda \gamma(e) + \mu \left\{ \gamma(e) \frac{f_e(q|e)}{f(q|e)} + \gamma_e(e) \right\}$$
(30)

If *V*' is invertible with inverse denoted $(V')^{-1}$, then:

$$d(q) = q - (\nu')^{-1} \left[\lambda \gamma(e) + \mu \left\{ \gamma(e) \frac{f_e(q|e)}{f(q|e)} + \gamma_e(e) \right\} \right]$$
(31)

This relationship suggests that the level of deference d(q) increases linearly with the quality of the interpretation q. Further, comparing Equation (30) with Equation (29); $V'[q - d(q)] > \frac{V'[q-d(q)]}{u'[d(q)]}$ because u'[d(q)] increases with d(q). Subsequently, if the agency is risk-neutral, then the level of deference decreases faster with $\gamma(e)$ and is more sensitive to the effort-level implied by the quality of the interpretation.

5 Conclusion

This paper models the optimal level of deference. Prior literature has conducted some empirical and theoretical analysis; however, has not analyzed a situation where there is a continuum of deference levels or where the court has ultimate discretion over the level of discretion. This paper fills the gap in the literature. I model a situation where the court must decide how much to defer to the agency's interpretation of the statute. The court wants to encourage the agency to exert a high amount of effort. However, the court cannot observe the agency's level of effort and only observes the final `quality' of the interpretation. The court gains utility from high quality agency interpretations but loses utility from deferring. The agency gains utility from deference but loses utility from effort.

The model shows that the optimal level of deference depends on the utility function of the courts and the agencies, and the probability distribution of the agency's interpretations. The model indicates that the court should give a higher level of deference to agency-interpretations that are more likely if the agency exerts high levels of effort (and are less likely if the agency exerts low levels of deference). These findings help to guide judicial decision-making and the interaction between agencies and courts.

6 Appendix

This section details a situation where the court learns from the quality of the agency's prior interpretations. I assume that the current case is the n^{th} interaction with the agency (i.e. there were n - 1 prior interactions). In this case, the court aims to maximize the utility from the n^{th} interpretation. I let q_n denote the quality of the n^{th} interpretation and $Q_{n-1} = \{q_1, \dots, q_{n-1}\}$ represent the set of the prior n - 1 qualities. Similarly e_n is the effort exerted on the n^{th} interpretation. I assume that all interpretation-qualities follow the same conditional density function $f(q|e_n)$. The optimization program is:

(32)

$$\max_{\{d(q_n,Q_{n-1}),e_n\}} \int_{\underline{q}}^{\overline{q}} V[q_n - d(q_n,Q_{n-1})] f(q|e_n) dq$$

Subject to

$$e \in \arg\max_{e_n} \left\{ \int_{\underline{q}}^{\overline{q}} \gamma(e_n) u[d(q_n, Q_{n-1})] f(q|e_n) dq - \phi(e_n) \right\}$$
(33)

$$\overline{u} \le \int_{\underline{q}}^{\overline{q}} \gamma(e_n) u[d(q_n, Q_{n-1})] f(q|e_n) dq - \phi(e_n)$$
(34)

(35)

The Lagrangian is then:

$$\begin{aligned} \mathcal{L} &= \int_{\underline{q}}^{\overline{q}} \{ V[q_n - d(q_n, Q_{n-1})] f(q|e_n) + \lambda[\gamma(e_n)u[d(q_n, Q_{n-1}]f(q|e_n) - \phi(e_n) - \overline{u}] \\ &+ \mu[\gamma(e_n)u[d(q_n, Q_{n-1})]f_{e_n}(q|e_n) + \gamma_{e_n}(e_n)u[d(q_n, Q_{n-1})]f(q|e_n) - \phi_{e_n}(e_n)] \} dq \end{aligned}$$

Now, differentiate with respect to $d(q_n, Q_{n-1})$ to obtain:

$$\frac{V'[q - d(q_n, Q_{n-1})]}{u'[d(q_n, Q_{n-1})]} = \lambda \gamma(e_n) + \mu \left\{ \gamma(e_n) \frac{f_{e_n}(q|e_n)}{f(q|e_n)} + \gamma_{e_n}(e_n) \right\}$$
(36)

This means that while the availability of prior interpretations does influence the level of deference, it does not qualitatively change the nature of the optimization program or of the solution.

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Does Deference Promote Principled Interpretations of Statutes?

Abstract

Statutes permeate society. Administrators administer and interpret statutes. Litigants can challenge administrators' actions. In deciding the challenge, courts must interpret the statute. In doing so, courts must decide how much weight to give the administrator's interpretation. Doctrines of deference govern the amount of weight that courts should assign to agencies' interpretations. I use a sample of 1014 US Supreme Court judgments to show that a low-to-medium level of deference is most likely to promote desirable interpretations that uphold the legislature's purpose for a statute and allow the words of the statute to reflect contemporary society.

Keywords: Deference, Statutory Interpretation, Agencies, Administrators, Administrative Law JEL Classifications: D73, D78, K23

A. INTRODUCTION

Legislation permeates society and governs persons' actions. Administrators apply this legislation. Applying the legislation involves interpreting the legislation. People can challenge administrators' actions. Judicial review of administrative action plays an important role in improving public service quality Platt, Sunkin and Calvo¹. Any challenge requires courts to interpret the legislation. In doing so, courts must assign some weight to the administrator's interpretation. This can range from zero weight to complete acceptance. Doctrines of judicial deference indicate the weight that courts should give administrators' interpretations. Some literature argues that

¹ L. Platt, M. Sunkin and K. Calvo, "Judicial Review Litigation as an Incentive to Change in Local Authority Public Services in England and Wales" (2010) 20 Journal of Public Administration Research and Theory i243.

deference induces courts to make unprincipled 'dynamic' interpretations that change the meaning of statutes over time and that depart from the legislative purpose.² However, the literature has not empirically assessed this claim. Thus, this paper addresses the gap in the literature by empirically testing the relation between deference and statutory interpretation. It finds that deference in general, and more specifically, deference that assigns administrators' interpretations a low-weight, actually encourages courts to consider legislative intent, and to make dynamic interpretations based on the legislative purpose.

Deference doctrines guide the weight that courts should give to administrators' interpretations of statutes. These doctrines exist in the United States, the EU, and in Australia. There are multiple types of judicial deference. Eskridge and Baer ³ argue that there is a continuum of deference-levels; however, the continuum collapses into three main categories ⁴: low-level, medium-level, and high-level deference. Low-level deference gives limited weight to administrators' interpretations. It holds that courts have primary responsibility for interpreting legislation ⁵. Medium level deference holds that courts should follow the agency's interpretation if the interpretation is 'reasonable' ⁶. There is no presumption of reasonableness. High level deference presumptively holds that courts must follow the agency's interpretation unless it is clearly wrong (see for example *Bowles v. Seminole Rock & Sand Co.* (325 U.S. 410 [1945])).

The level of deference can influence the court's interpretation of a statute. Two important traits of an interpretation are (1) whether it is purposive, and (2) whether it is dynamic. A purposive judgment is one that aims to uphold the legislature's intentions for the statute. A dynamic judgment is one that allows the meaning of the statute to change over time in order to suit the current social context. Eskridge ⁷ contends that dynamic

² See generally: C. R. Sunstein, "Interpreting Statutes in the Regulatory State" (1989) 103(2) Harvard Law Review 405.. See also for a discussion on the interaction between deference and stare decisis R. Pierce, "Reconciling Chevron and Stare Decisis" (1997) 85 Georgetown Law Journal 2225; P. A. Dame, "Stare Decisis, Chevron, and Skidmore: Do Administrative Agencies Have the Power to Overrule Courts?" (2002) 44 William & Mary Law Review 405..

³ W. N. Eskridge and L. .E Baer, "The Continuum of Deference: Supreme Court Treatment of Agency Statutory Interpretations from Chevron to Hamdan" (2008) 96 Georgetown Law Journal 1083.

⁴ see W. N. Eskridge and C. Raso, *Chevron as a Canon, not a Precedent: An Empirical Test of what Motivates Judges in Agency Deference Cases* (Center for Empirical Legal Studies, 2009).

⁵ Dame (n 4); K E Hickman and M D Krueger, "In Search of the 'Modem' Skidmore Standard" (2007) 107 Columbia Law Review 1235.

⁶ M. A. Fitts, "Retaining the Rule of Law in a Chevron World" (1990) 66 Chicago-Kent Law Review 355; O. S. Kerr, "Shedding Light on Chevron: An Empirical Study of the Chevron Doctrine in the U.S. Courts of Appeals" (1998) 15 Yale Journal on Regulation 1; Dame (n 4); W. R. Andersen, "Chevron in the States: An Assessment and a Proposal" (2006) 56 Administrative Law Review 1017.

⁷ W. N. Eskridge, "Dynamic Statutory Interpretation" (1987) 135(6) University of Pennsylvania Law Review 1479.

interpretations are desirable. Frankfurter ⁸ argues that an interpretation is justifiable only if it promotes the legislature's purpose for the statute. Joining these strands together, Graham ⁹ and Humphery-Jenner ¹⁰ indicate that an interpretation is principled if it is both purposive and dynamic. It is not the aim of this article to debate the desirability of 'dynamic' or 'purposive' judgments. Instead, this article considers the issue: does low, medium, or high level deference promote dynamic interpretations that are purposive?

The level of deference could influence the court's interpretation. For example, if the agency adopts a purposive (or dynamic) interpretation, and the court must defer to the agency's interpretation, then the court must adopt a purposive (or dynamic) interpretation. This has lead prior legal literature to suggest that deference doctrines could influence courts' interpretations of statutes.¹¹ The empirical literature has not directly tested if deference promotes dynamism. But, it does imply that deference promotes dynamic interpretations. Prior studies indicate three presently relevant results.

First, courts are likely to defer to administrators' interpretations. Eskridge and Baer¹² find that 68.8% of Supreme Court decisions are in favour of the administrator's interpretation. Schuck and Elliot¹³ find that after *Chevron*, the appellate court remanded 40% fewer cases. Hickman and Krueger¹⁴ indicate that of the courts that apply *Skidmore*, 74.5% are likely to apply the more deferential interpretation of *Skidmore*, and, 59.5% of courts applying the more deferential interpretation accepted the administrator's interpretation.

⁸ F Frankfurter, "Some Reflections on the Reading of Statutes" (1947) 47 Columbia Law Review 527.

⁹ R. Graham, "A Unified Theory of Statutory Interpretation" (2002) 23(1) Statute Law Review 91.

¹⁰ M. L. Humphery-Jenner, "Should Common Law Doctrines Dynamically Guide the Interpretation of Statutes?" (2009) 3(2) Legisprudence 171.

¹¹ See for example: E. Rubin, "Law and Legislation in the Administrative state" (1981) 89 Columbia Law Review 369; C. S. Diver, "Statutory Interpretation in the Administrative State" (1985) 133(3) University of Pennsylvania Law Review 549; C. R. Farina, "Statutory Interpretation and the Balance of Power in the Administrative State" (1989) 89(3) Columbia Law Review 452; A. Scalia, "Judicial Deference to Administrative Interpretations of Law" (1989) 1989 Duke Law Journal 511; W. N. Eskridge, "Overriding Supreme court Statutory Interpretation Decisions" (1991) 101 Yale Law Journal 331; E. Rubin, "Dynamic Statutory Interpretation in the Administrative State" (2002) 3(2) Issues in Legal Scholarship 1..

¹² Eskridge and Baer (n 5).

¹³ P. H. Schuck and E. D. Elliott, "To the Chevron Station: An Empirical Study of Federal Administrative Law" (1990) 1990 Duke Law Journal 984.

¹⁴ Hickman and Krueger (n 7).

Second, even if the court rejects the agency's interpretation it is unlikely to be for substantive legal reasons. Thus, of those administrative interpretations remanded, the percentage of those remanded for substantive legal reasons fell by 15% ¹⁵.

Third, the interpretations that courts accept are more likely to be 'liberal' or dynamic. Thus, Eskrdige and Baer ¹⁶ indicate that both 'liberal' and 'conservative' judges are more likely to accept liberal agency interpretations than they are to accept conservative agency interpretations.

This paper tests whether low, medium, or high deference increase the chance that the court will issue (1) a purposive interpretation, and (2) a purposive interpretation that is also dynamic. I test the relation between interpretations and deference using a sample of 1014 Supreme Court judgments from between 1983 and 2005. The results indicate that particularly low level deference promotes interpretations that are both dynamic and that uphold the legislative purpose. There is no evidence that deference encourages dynamic interpretations that are non-purposive. Thus, the results indicate that deference may encourage courts to adopt principled dynamic interpretations.

B. DATA AND SET UP

The goal is to examine whether low, medium, or high level deference influences the court's interpretation after controlling for other factors that might influence the interpretation. This suggests a function of the form:

InterpType = f(**DefType**, **Controls**)

Where, *InterpType* is the court's use of a purposive, non-purposive, dynamic, or non-dynamic interpretation, or a combination thereof, *DefType* is the use of low, medium, or high level deference, and *Controls* are other factors that might influence the court's interpretation.

¹⁵ Schuck and Elliott (n 15).

¹⁶ Eskridge and Baer (n 5).

The study examines Supreme Court decisions from between 1983 and 2005. The paper uses the sample of Supreme Court decisions that featured in Eskridge and Baer (2008).¹⁷ Eskridge and Baer (2008) hand-collected a sample of 1,014 Supreme Court decisions that analyze administrators' interpretations of statutes. This sample yields three categories of variables: interpretation variables, deference variables, and control variables. The variable definitions table in the appendix summarizes the variables.

1. Interpretation Variables

A judgment can be either purposive non-purposive, and a judgment can be dynamic or non-dynamic.¹⁸ This means that if the judgment is dynamic, then it can be either purposive or non-purposive. Therefore, the paper defines the following variables: **Purp** equals 1 if the judgment is purposive and equals 0 otherwise; **PurpDyn** equals 1 if the judgment is both purposive and dynamic and equals 0 otherwise; **NonPurpDyn** equals 1 if the judgment is dynamic but is non-purposive and equals 0 otherwise.

2. Deference Variables

Judgments can adopt several approaches to deference. Judgments may adopt no deference. Alternatively, they may adopt some form of deference. If the court adopts some form of deference, then, they may adopt one of three types: low, medium, or high. Subsequently, the paper defines the following deference variables: **DefAny** equals 1 if the court adopted any deference approach and equals 0 otherwise; **DefLow** equals 1 if the court followed medium-level deference and equals 0 otherwise; **DefMed** equals 1 if the court followed medium-level deference and equals 0 otherwise; **DefHigh** equals 1 if the court adopted high-level deference and equals 0 otherwise.¹⁹

3. Control Variables

¹⁷ This data is available from <u>http://www.georgetownlawjournal.com/extras/96.4/</u>. For papers using this data see: Eskridge and Raso (n 6); Eskridge and Baer (n 5).

¹⁸ Eskridge and Baer term these as 'liberal'. They code a judgment as 'liberal' if it supports a socially progressive outcome. Such socially progressive outcomes implicitly allow the words of the statute to change over time to address a current social issue.

¹⁹ In all cases, the coding is based upon whether the court approved one of the paradigm cases in support of low, medium, or high level deference.

The control variables are exogenous variables that should theoretically influence the court's decision to make a dynamic or dynamic decision. All control variables are lagged proportions in order to ensure that the variables are exogenous. Thus, the model controls for the proportion of judgments in the last judicial term that deferred to agency interpretations (**p.def** $_{t-1}$); invoked legislative purpose (**p.Purp** $_{t-1}$); relied on textualism (**p.text** $_{t-1}$); utilized common law doctrines (**p.comlaw** $_{t-1}$); used a canon based on federalism(**p.fedcan** $_{t-1}$), avoidance (**p.avoidcan** $_{t-1}$), or due process (**p.dpcan** $_{t-1}$), or used another miscellaneous cannon (**p.othercan** $_{t-1}$); relied on the legislative acquiescence doctrine (**p.legaqui** $_{t-1}$); specifically referred to legislative intent (**p.legintent** $_{t-1}$); examined the whole act (**p.wact** $_{t-1}$) or the whole legislative code (**p.wcode** $_{t-1}$) or relied on separation of powers (**p.seppow** $_{t-1}$). Correlation statistics (unreported) indicate potential collinearity between these variables. Thus, I ensure that the results are robust to collinearity by using principal components analysis (see the robustness ection). The justification for the variables is as follows.

The average level of deference should influence the liberalness of the court's decisions. The literature indicates that agencies' decisions are dynamic or dynamic in nature ²⁰. And, if the court defers to more agency interpretations on average, then it indicates a willingness to adopt dynamic interpretations. And thus, it is more likely to adopt a dynamic interpretation in this case. Therefore, the models include the variable **p.def**_{*t*-*I*}, the proportion of cases that deferred to the agency's interpretation in the prior term.

Reliance on notions of 'legislative purpose' may induce judges to make interpretations that are more dynamic. Notions of a 'purposive' interpretation can encourage dynamic interpretations. This follows the notion that congress may use vague language since it cannot foresee all future circumstances ²¹. And, this indicates that congress wanted the interpreter to adapt the word's meaning to changing social situations ²². Thus, if the court adopts a purposive interpretation, then it may incline towards a dynamic or dynamic interpretation. Therefore, the models control for the court's tendency to adopt or cite legislative purpose in their reasoning. Thus, the models include the variable **p.Purp** $_{t-1}$ the proportion of judgements that cite legislative purpose in the prior term.

²⁰ J. E. Shuren, "Modern Regulatory Administrative State: A Response to Changing Circumstances" (2001) 38 Harvard Journal on Legislation 291.

²¹ F. H. Easterbrook, "The Role of Original Intent in Statutory Construction" (1988) 11 Harvard Journal of Law & Public Policy 59.

²² Graham (n 11).

Judgments that rely on the 'plain meaning' of statutes are less likely to adopt a dynamic or dynamic interpretation. The rationale is that plain-meaning-based judgments rely on the strict text of the statute; and thus, preclude dynamic interpretation ²³. Thus, the models include **p.text** $_{t-1}$ the proportion of judgments that cite 'textual' or 'plain meaning' reasons in the prior term.

Judgments that use common law doctrines to help interpret legislation are more likely to be dynamic. Common law doctrines ordinarily change over time as society changes ²⁴. Thus, if the court relies more on common law doctrines, then it will be more likely to impose a dynamic of dynamic interpretation. Thus, the models include **p.comlaw** $_{t-1}$ the proportion of judgments in the prior term that cite common law doctrines in their reasoning.

Judgments that rely on interpretative canons are less likely to be dynamic or purposive. Canon-based judgments typically rely on strict 'rules' of interpretation. These rules in general motivate against dynamic interpretations.²⁵

Three key canons are as follows. First, the 'avoidance' canon supports interpretations that avoid constitutional conflicts ²⁶. Second, 'federalism' include such doctrines as the presumption that congress did not intend to usurp the states ²⁷. Third, the due process canons presume that congress intended to support due process ²⁸. Thus, the models include variables representing the proportion of judgments that rely on canons in the prior judicial term; these are **p.fedcan** *t-1*, **p.avoidcan** *t-1*, **p.dpcan** *t-1*, and **p.othercan** *t-1* for the federalism, avoidance, due process, and other miscellaneous canons, respectively. While including all canons may induce some multicollinearity, the literature suggests that these canons are often selectively and inconsistently invoked ²⁹; and thus, represent

 ²³ C. R. Sunstein and A. Vermeule, "Interpretation and Institutions" (2003) 101(4) Michigan Law Review 885.
 ²⁴ Humphery-Jenner (n 12).

²⁵ See generally on the function of canons: C. R. Sunstein, "Nondelegation Canons" (2000) 67(2) University of Chicago Law Review 315..
²⁶ J. Copeland Nagle, "Delaware & Hudson Revisited" (1997) 72 Notre Dame Law Review 1495; P. P. Frickey,

²⁶ J. Copeland Nagle, "Delaware & Hudson Revisited" (1997) 72 Notre Dame Law Review 1495; P. P. Frickey, "Getting from Joe to Gene (Mccarthy): The Avoidance Canon, Legal Process Theory, and Narrowing Statutory Interpretation in the Early Warren Court" (2005) 93 California Law Review 397.

²⁷ L Obhof, "Federalism, I Presume - A Look at the Enforcement of Federalism Principles through Presumptions and Clear Statement Rules" (2004) 2004 Michigan State Law Review 123; K. A. Bamberger, "Normative Canons in the Review of Administrative Policymaking" (2008) 118 Yale Law Journal 64.

²⁸ S. Newland, "Mercy of Scalia: Statutory Construction and the Rule of Lenity" (1994) 29 Harvard Civil Rights-Civil Liberties Law Review 197; Z. Price, "The Rule of Lenity as a Rule of Structure" (2004) 72 Fordham Law Review 885.

²⁹ K. N. Llewellyn, "Remarks on the Theory of Appellate Decision and the Rules or Canons about How Statutes Are to Be Construed" (1950) 3 Vanderbilt Law Review 395; N. S. Zeppos, "Legislative History and the Interpretation of Statutes: Toward a Fact-Finding Model of Statutory Interpretation" (1990) 76 Vanderbilt Law Review 1295.

different aspects of judicial decision-making. Further, in robustness tests (below) I use principal component analysis to ensure that multicollinearity does not bias the results.

Reliance on the legislative acquiescence doctrine should increase the liberalness of interpretations. The legislative acquiescence doctrine asserts that if the legislature does not legislate against an interpretation or administrative decision, then the legislature implicitly approves of it ³⁰. This would militate toward deference in general, and deference to dynamic interpretations in specific. Thus, the models include **p.legaqui**_{*t*-1}, the portion of judgments in the last term that cited legislative acquiescence in their reasoning.

The use of legislative history should increase the likelihood of a dynamic or dynamic interpretation ³¹. The rationale is that use of legislative histories correlates with reliance on legislative intent. And, reliance on legislative intent correlates with rendering a dynamic or dynamic interpretation ³². Thus, the paper includes **p.legintent** *t-1*, the proportion of judgments in the last judicial term that relied on legislative intent.

References to the 'act as a whole' should reduce the liberalness of the court's decision. Courts may refer to the 'act as a whole' when interpreting a statute (*Palgo Holdings v. Gowans* (221 C.L.R. 249, [37] (Kirby J) [2005]). The notion is that (a) words 'harmoniously' within each section, and (b) the sections of the act should work 'harmoniously' with each other. This should motivate toward a dynamic interpretation since it quadrates with a search for legislative intent. Thus, the models include **p.wact** *t-1*, the proportion of interpretations that rely on the 'act as a whole' in interpreting the legislation.

References to a legislative-code or the 'whole code' should reduce the liberalness of the interpretation. When a court interprets a statute, it may interpret the legislation in the context of other acts within a 'legislative scheme'. Codification should reduce the liberalness of interpretations since codification evinces a clear intention to limit

³⁰ J. .C Grabow, Congressional Silence and the Search for Legislative Intent: A Venture into Speculative Unrealities (1984).

³¹ W. N. Eskridge and P. P. Frickey, "Statutory Interpretation as Practical Reasoning" (1990) 42(2) Stanford Law Review 321.

³² C. Tiefer, "The Reconceptualization of Legislative History in the Supreme Court" (2000) 2000 Wisconsin Law Review 205.

the role of courts 33 . Thus, the models include the variable **p.wcode** $_{t-1}$, the proportion of interpretations that rely on the 'whole code' when interpreting the legislation.

Reliance on 'separation of powers' notions should limit the court's liberalness. This is because courts often invoke 'separation of powers' notions in order to limit agencies' abilities to dynamically or broadly interpret law ³⁴. Alternatively, courts may use 'separation of powers' doctrines of canons, and presume that legislation should not violate separation of powers notions ³⁵. This should restrict the liberalness of the court's interpretation. Thus, the models include **p.seppow** $_{t-1}$, the proportion of judgments that relied on separation of powers notions in the past judicial term.

C. ANALYSIS AND RESULTS

The goal is to examine if any element of the deference approaches (**DefAny**, **DefLow**, **DefMed**, or **DefHigh**) increase the probability that a judgment is purposive (i.e. increase $p(\mathbf{PurpDyn})$) and is purposive-dynamic (i.e. increase $p(\mathbf{PurpDyn})$), but decrease the probability that a judgment is non-purposive dynamic (i.e. decrease $p(\mathbf{NonPurpDyn})$). The analysis has four key sections. First I present the univariate results. Second, I run multivariate tests to ensure that any results are not due to spurious correlation. Third I examine whether whether there is a causal relationship between deference and chance of a purposive-dynamic judgment, and fourth, I ensure the results are robust to other econometric issues. Overall, the analysis shows that low-level deference promotes purposive interpretations and purposive interpretations that are dynamic.

1. Univariate analysis

The first issue is whether any deference type correlates with the decision to issue a judgment that is (a) purposive and (b) the purposive and dynamic.

³³ M. McGowan, "Do as I Do, Not as I Say: An Empirical Investigation of Justice Scalia's Ordinary Meaning Method of Statutory Interpretation" (2008) 78 Mississippi Law Journal 129.

 ³⁴ J. F. Manning, "Constitutional Structure and Judicial Deference to Agency Interpretation of Agency Rules" (1996) 96 Columbia Law Review 612; Eskridge and Baer (n 5).

³⁵ W. N. Eskridge, "Public Values in Statutory Interpretation" (1989) 137(4) University of Pennsylvania Law Review 1007.

Summary statistics by year are in **Table 1**. The break-down shows that high-level deference is uncommon, especially at the beginning of the sample. Low-level deference is the most common form of deference. This may reflect judges' desire to avoid ceding interpretive control to agencies. Interestingly, only around 1/3 of judgments explicitly refer to legislative purpose in their reasoning. Of the dynamic judgments, more are non-purposive (233) than are purposive (197). The summary statistics also show some clustering by year, which justifies the use of clustered standard errors.

[Insert Table 1 About Here]

The univariate results are in **Table 2**. The key finding is that low-level deference and medium-level deference increase the chance of a purposive or a purposive-dynamic judgment. The univariate correlations are in **Table 3**. There is a significant positive correlation between (a) low-level deference and medium defference, and (b) purposive and purposive-dynamic judgments.

[Insert Table 2 About Here] [Insert Table 3 About Here]

2. Multivariate regression analysis

Deferential judgments are more likely to be purposive and purposive-dynamic. However, it is necessary to ensure that this does not reflect spurious correlation with other characteristics of the judgment. A natural way to test this is a probit model. The probit model assess the probably of a judgment-type conditional on (a) deference, and (b) other control variables that might affect the judgment-type.³⁶ The model controls for heteroscedasticity and clustering by year since the judges on the court change from year-to-year and the composition of the court can influence the propensity to issue purposive, dynamic, or deference-based judgments (following Eskridge and Baer, 2008).

³⁶ The results are robust to the use of a logit model.

The results indicate that deference promotes purposive and purposive-dynamic judgments and does not promote non-purposive-dynamic judgments.

Table 4 examines the relation between deference and purposive judgments. The results indicate that if the court adopts any deference then it is significantly more likely to issue a purposive judgment (at 1% significance). Further, both low-level, and medium-level deference promote purposive judgments (at 10%, and 5% significance, respectively). High-level deference does not promote purposive judgments. Interestingly, the systematic level of deference (**p.DefAny**_{t-1}) and the systematic level of low-level deference (**p.DefLow**_{t-1}) also encourage purposive interpretations. The results support the hypothesis that deference encourages courts to issue purposive interpretations.

[Insert Table 4 About Here]

The control variables are consistent with expectations. Specifically, purposive interpretations are significantly more likely if the court previously relied on legislative purpose (**p.Purp**_{t-1}), legislative histories (**p.hist**_{t-1}) or common law doctrines (**p.comlaw**_{t-1}). And unsurprisingly, a purposive interpretation is less likely if the court has relied on plain meaning or textualist approaches (**p.text**_{t-1}) or relied on the notion of legislative acquiescence (**p.legacq**_{t-1}). Surprisingly, purposive interpretations are more likely if the court has relied on the federalism cannon in the past (viz. **p.fedcan**_{t-1}). However, use of avoidance canons (**p.avcan**₋₁) significantly reduces the chance of a purposive interpretation.

Table 5 examines the relation between deference and purposive-dynamic judgments. The results indicate that adopting some deference regime (**DefAny**) significantly promotes a purposive-dynamic judgment (at 1% significance). And, adopting a low-level regime (**DefLow**) promotes purposive-dynamic judgments (at 10% significance). Medium-level deference (**DefMed**) promotes purposive-dynamic judgments, but this result is not significant. This weakly supports the purposive-dynamic hypothesis.

[Insert Table 5 About Here]

Table 6 examines the relation between deference and non-purposive-dynamic judgments. No deference regime promotes non-purposive-dynamic judgments. All deference regimes reduce the probability of a non-purposive-dynamic judgment; however, the result is not statistically significant. This is consistent with the hypothesis that deference does not promote unprincipled dynamic interpretations.

[Insert Table 6 About Here]

Table 7 contains the marginal effects for the probit regression. The marginal effect of deference is the incremental impact that deference has on the probability of a purposive, purposive-dynamic, or non-purposive-dynamic judgment. The results indicate that adopting some form of deference (**DefAny**) or low-level deference (**DefLow**) significantly increases the likelihood of a purposive judgment and of a purposive-dynamic judgment. Adopting medium-level deference (**DefMed**) only significantly increases the probability of a purposive judgment. No deference variable significantly increases the chance of a non-purposive-dynamic interpretation. Thus, the marginal effects support the theory that deference increases the likelihood of purposive, and purposive-dynamic judgments.

[Insert Table 7 About Here]

The probit results strongly indicate that deference promotes purposive interpretations and promotes dynamic interpretations that are purposive. This quadrates with the purposive-dynamic hypothesis. However, these results merely establish a correlation between deference and purposive/purposive-dynamic interpretations. They do not establish that deference causes purposive or purposive-dynamic interpretations. Thus, I next examine the issue of causation.

3. Causality analysis

Deferential judgments are more likely to be purposive and purposive-dynamic. However, the above results reflect correlation between (a) deferring, and (b) issuing a purposive/ purposive-dynamic judgment. They do not show that deferring causes the judge to issue a purposive/purposive-dynamic judgment. This section ensures that deference causes purposive and purposive-dynamic judgments.

(a) Methodology

The prior models examine if deference correlates with purposive-dynamic interpretations. But, the models do not prove that deference causes purposive-dynamic judgments. Instead, for two reasons, it is possible that a court's tendency towards purposive/purposive-dynamic interpretations may cause it to defer for. First, the literature indicates dynamic courts defer at a higher rate than conservative courts do ³⁷. Thus, the tendency to be dynamic may cause the tendency to defer. Second, agencies gain efficiency, cost, and reputational benefits if courts defer to their decisions ³⁸. Thus, if the agency believes that the court will tend to purposive/purposive-dynamic interpretations, then the agency may structure its interpretation accordingly.

The paper ensures consistent estimators by using an instrumental variable probit (ivprobit) regression. The ivprobit model uses simultaneous equations. The ivprobit model yields unbiased and consistent estimators ³⁹. The instrumented variable is the deference type (variously, **DefAny**, **DefLow**, **DefMed**, or **DefHigh**). The instruments are nine exogenous variables that might influence the type of deference.

The nine instruments are the proportion of agency interpretations in the last judicial term that were 'dynamic' (**p.aglib** $_{t-1}$); the expertness of the agency (**expert**); the accountability of the agency (**accountability**); whether the interpretation is in a strict rule (**rule**) or an adjudication (**adjudication**); whether the President (**president**), House of Representatives (**house**) or Senate (**senate**) are dynamic; and if the agency's interpretation is longstanding (**old**) or evolving (**evolve**). The rationale is as follows:

 $^{^{37}}$ L. R. Cohen and M. L. Spitzer, "Judicial Deference to Agency Action: A Rational Choice Theory and an Empirical Test" (1996) 69 Southern California Law Review 431; Eskridge and Baer (n 5); Eskridge and Raso (n 6).

³⁸ J. T. O'Reilly, "Losing Deference in the FDA's Second Century: Judicial Review, Politics, and a Diminished Legacy of Expertise" (2008) 93 Cornell Law Review 939.

³⁹ T. Amemiya, "Bivariate Probit Analysis: Minimum Chi-Square Methods" (1974) 69(348) Journal of the American Statistical Association 940; J. M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data* (Cambridge: MIT Press, 2002).
The liberalness of the agency's interpretation may influence the court's decision to defer. The literature indicates that if the court is primarily dynamic/ conservative then it may support more agency interpretations that are dynamic/conservative (Eskridge and Baer, 2008). The paper examines the lagged proportion of dynamic agency-interpretations (**p.aglib** $_{t-1}$) rather than the liberalness of an interpretation in the given case. This is for two reasons. First, the factor of interest is the systematic level of liberalness rather than the liberalness in the subject-case per se. And second, the liberalness in the subject-case is likely endogenous with the deference decision. This is because agencies may structure their decisions in order to promote deference (O'Reilly, 2008). And, prior literature indicates that if the agency's interpretation is dynamic, then the court is more likely to accept it (Eskridge and Baer, 2008). Thus, the agency may impose a dynamic interpretation in order to increase the chances of deference.

The expertise of the agency may influence its liberalness and decision to defer to it. If the agency has a reputation for expertise in the subject-area, then the court is more likely to defer to its expert judgment.⁴⁰ This quadrates with the notion that legislators enact vague legislation precisely to avail of the administrator's expertise in the subject-area.⁴¹ Thus, the paper uses an indicator variable **expert** that equals 1 if the judge cites agency expertise in his/her decisions and equals 0 otherwise.

The supposed democratic accountability of the agency may influence the deference decision. However, there are two conflicting predictions. The first prediction is that accountability should encourage deference. The argument runs that a judicial decision has more legitimacy if it is more accountable to the public. Agencies are often accountable to the parliament, congress, or an elected member of the executive. Thus, agencies are more accountable than courts are. Thus, deference to agencies' decisions increases judicial legitimacies ⁴². However, the second and converse argument is that judicial independence enables courts to effectively review government actions; and thus, administrative-accountability militates against deference.⁴³ Since accountability may influence

⁴⁰ On the relevance of the FDA's expertise to deference to its opinions: O'Reilly (n 40). On the expertise of the FAA and deference see: W. B. Davis and R. Clarke, "Hot Air: Undue Judicial Deference to Federal Aviation Administration Expertise in Assessing the Environmental Impacts of Aviation" (2004) 69 Journal of Air Law & Commerce 709.

Commerce 709. .⁴¹ See on the Australian Corporate regulator: S. Bottomley, "A Framework for Understanding the Interpretation of Corporate Law in Australia" in S. Corcoran and S. Bottomley, eds, *Interpreting Statutes* (Sydney: Federation Press, 2005) 147.

⁴² D. W. Kmiec, "Judicial Deference to Executive Agencies and the Decline of the Nondelegation Doctrine" (1988) 2 Administrative Law Journal 269.

⁴³ See for the argument that deference may grand the government excess power: T. W. Merrill, "Judicial Deference to Executive Precedent" (1992) 101 Yale Law Journal 969.

deference, the models include the indicator variable **accountability** that equals 1 if the judge cites administrative accountability in his/her decisions and equals 0 otherwise.

The format in which the administrator presents the interpretation should influence the deference decision and the liberalness of the interpretation. Administrators may place their interpretations in (a) formal rules that have binding force, (b) administrative adjudications, or (c) informal policy documents that lack legislative force (Eskridge and Baer, 2008). The format is important because under the *Chevron/Skidmore* dichotomy, if the interpretation is in a formal rule, then courts should strictly defer to; but, if the interpretation is in an informal policy document, then courts need only assign it some weight in interpreting the act themselves it (*Skidmore v. Swift & Co.* (323 U.S. 134 (Stevens J) [1944]; *United States v. Mead Corp.* (533 U.S. 218, 226-7) [2001]; ⁴⁴. Thus, the models include two indicator variables; **rule** which equals 1 if the interpretation is a strict rule and equals 0 otherwise; and, **adjudication**adjudication, which equals 1 if the interpretation is an adjudication and equals 0 otherwise. The papers omit an indicator for policy documents in order to avoid multicollinearity.

The politics of the President, the House of Representatives, and the Senate may influence the agency's decision. Arguably, if the agency is accountable to one or more of these bodies, then these bodies can influence the agency's decisions by (inter alia) controlling administrators' budgets ⁴⁵. Therefore, administrators' interpretations may reflect the politics or policy of the executive body (or bodies) to which it is accountable ⁴⁶. This should influence the liberalness of the agency's interpretation. And, if it clashes with the politics of the court, then it may influence the deference decision. Thus, the models include three indicator variables **president**, **house**, and **senate**, which equal 1 if the respective body has 'dynamic' politics and equal 0 otherwise.⁴⁷

The continuity of the agency's interpretation should influence both the agency's liberalness and the deference decision. The agency's interpretation can be 'longstanding', 'recent' or 'evolving'.⁴⁸ If the interpretation is evolving (or less continuous), then it indicates that the agency's interpretation is more dynamic or time-changing; and thus, more dynamic. However, this has conflicting implications for deference. Arguably, agencies

⁴⁴ Pierce (n 4).

⁴⁵ J. Mashaw, "Agency Statutory Interpretation" (2002)(3) Issues in Legal Scholarship art 9.

⁴⁶ Rubin (n 13).

⁴⁷ The results are the same in models (unreported) that replace the three variables **president**, **house**, and **senate**, with one variable **pres_house_senate** that equals 1 if all three are dynamic and equals 0 otherwise.

⁴⁸ Following the data-description in Eskridge and Baer (2008)

are best suited to melding interpretations to changing social circumstances; and thus, courts should defer to administrators' evolving interpretations ⁴⁹. Alternatively, administrators may evolve statutory interpretations in ways that the legislature did not intend, which should militate against deferring to evolving interpretations ⁵⁰. Thus, the paper uses two indicator variables: **old** and **evolve**, which equal 1 if the agency's interpretation is 'longstanding', or is 'evolving', respectively, and equal 0 otherwise.

(b) Results

The results indicate that deference does cause purposive and purposive-dynamic interpretations. The IVPROBIT results are reported in **Table 8**, **Table 9**, and **Table 10**.

The results in **Table 8** examine the relation between deference and the use of purposive reasoning. They indicate that the use of deference-techniques per se (**DefAny**), and especially the use of low-level deference (**DefLow**), increases the probability of a purposive interpretation (at 5%, and 1% significance, respectively). Further, the court is more likely to adopt a purposive interpretation if it has deferred in general in the past (viz. **p.DefAny**_{t-1}), or has used low-level deference in the past (viz. **p.DefLow**_{t-1}).

[Insert Table 8 About Here]

The results in **Table 9** examine if deference causes dynamic interpretations that are purposive. The results strongly indicate that deference does so. Specifically, **DefAny**, **DefLow**, and **DefMed** significantly increase the probability of a purposive-dynamic interpretation (all at 1% significance). This strongly supports the hypothesis that deference causes principled dynamic interpretations.

[Insert Table 9 About Here]

⁴⁹ (n 22); L. Schulz Bresman, "How Mead Has Muddled Judicial Review of Agency Action" (2005) 58 Vanderbilt Law Review 1443.

⁵⁰ Humphery-Jenner (n 12).

The results in **Table 10** assess if deference causes non-purposive dynamic interpretations; i.e. dynamic interpretations that are non-purposive. The results indicate that deference *reduces* the probability of a non-purposive dynamic interpretation. Thus, the variables **DefAny**, **DefLow**, and **DefMed** are significant and negative (at 10%, 1%, and 10% significance, respectively).

[Insert Table 10 About Here]

The results overall strongly support the hypothesis that deference promotes principled dynamic interpretations. That is, it promotes purposive interpretations in general; and dynamic-purposive interpretations in specific. Further, these results indicate that deference may reduce the chance of unprincipled dynamic interpretations. That is, deference reduces the chance of a dynamic interpretation that deviates from legislative purpose.

4. Robustness

This paper ensures that the results are robust. First, the paper ensures robustness to model-specification. Plots of the standard errors (unreported) indicate some evidence of non-normality. Non-normality may bias probit results. Thus, the model replaces probit models with logit models and finds qualitatively similar results.

Second, the paper ensures that multicollinearity does not bias the results. The models could exhibit multicollinearity since there may be correlation between the interpretative techniques; that is, courts may use some interpretative techniques in groups (Sunstein, 1989). A solution is principal component analysis (PCA). PCA transforms a set of correlated variables into a smaller set of uncorrelated variables.⁵¹ Since the principal components are uncorrelated, they do not exhibit multicollinearity.

The PCA results confirm the previous findings. Here, PCA condenses the interpretative and canon variables into four variables that represent interpretative factors and two variables that represent interpretative canons. Thereafter, the paper computes PROBIT models that replace the interpretation/canon variables with the six

⁵¹ For uses of PCA see: R. Raskin and H. Terry, "A Principal-Components Analysis of the Narcissistic Personality Inventory and Further Evidence of Its Construct Validity" (1988) 54(5) Journal of Personality and Social Psychology 890.

principal components. **Table 11** contains the PCA results. The results indicate that deference in general, and low-level deference specifically, increase the likelihood of a purposive and purposive-dynamic judgments, but decrease the probability of a non-purposive-dynamic judgment.

[Insert Table 11 About Here]

Third, the paper ensures that the results are not due to agency-specific factors. Heretofore, the models have clustered standard errors by year. However, the literature indicates that deference may concentrate in specific agencies that demonstrate especial expertise.⁵² Thus, unobserved agency-effects may bias the results. The paper resolves this by clustering standard errors by year and by agency.⁵³ The probit and ivprobit results are qualitatively the same.

Fourth, the paper ensures that the results do not reflect judge-specific factors. The literature indicates that different judges have different propensities to defer or to issue dynamic judgments (Eskridge and Baer, 2008). These judge-specific factors may influence the results. Thus, the paper re-estimates the models but includes a dummy variable to represent particular judges being on the court.⁵⁴ The probit and ivprobit results are qualitatively the same.

Overall, the robustness tests confirm the prior results that deference encourages purposive, and purposivedynamic judgments.

D. CONCLUSION

This paper examines if the doctrine of judicial deference induces principled dynamic interpretations. The paper defines a principled dynamic interpretation as one that is both dynamic and bases itself on doctrines of

⁵² See on the FDA O'Reilly (n 40).

⁵³ For an extended description of controlling for unobserved effects, see M. A. Petersen, "Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches" (2009) 22(1) Review of Financial Studies 435.

⁵⁴ The particular judges are: Brennan, White, Marshall, Burger, Powell, Blackmun, Rehnquist, Stevens, O'Connor, Scalia, Kennedy, Souter, Thomas, Ginsberg, Breyer, Roberts, Alito, and Lenity.

legislative purpose. This bases itself on the premise that statutory interpretations should quadrate with the legislature's purpose for the statute, and should remain flexible to contemporary circumstances.

The paper examines the relationship between statutory interpretation and the decision to issue rely on low-level deference (viz. Skidmore, or Consultative deference); medium-level deference (Chevron, or Beth-Israel deference) or high-level deference (Seminole, or Curtis-Wright deference).

The results strongly indicate that deference promotes purposive dynamic interpretations. Low-level deference is the most effective at promoting purposive dynamic interpretations. However, medium-level deference weakly promotes them. Strong-level deference does not clearly promote purposive dynamic interpretations, and may induce results that deviate from the legislative purpose.

These results have key implications for the relation between courts and administrators. The literature has developed theoretical hypotheses about the desirability of deference per se, and various types of deference in specific. However, the literature has not systematically tested these hypotheses. The results from this paper strongly support deference in general, but most strongly support low-level Skidmore-type deference. That is, courts should interpret statutes themselves, employing the administrator's interpretation as a useful guide.

E. TABLES

Year	All	DefAny	DefLow	DefMed	DefHigh	Purp	PurpDyn	NonPurpDyn
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1983	16	7	4	3	0	8	5	4
1984	66	24	11	13	0	29	17	13
1985	56	13	6	7	0	31	14	8
1986	57	15	10	5	0	23	14	15
1987	57	17	8	5	0	16	10	17
1988	49	16	12	3	4	17	7	10
1989	47	12	6	5	1	23	16	7
1990	51	17	10	6	1	22	13	14
1991	46	17	12	5	1	9	5	12
1992	61	14	8	3	0	21	9	11
1993	41	7	4	2	3	10	8	10
1994	35	11	6	4	1	15	5	9
1995	36	9	2	6	1	14	7	9
1996	41	14	12	2	1	18	10	8
1997	49	15	10	5	0	18	12	12
1998	43	16	9	6	0	13	7	13
1999	31	10	6	2	1	12	2	8
2000	36	9	7	1	2	12	5	9
2001	42	17	9	8	1	13	4	9
2002	38	13	9	4	0	16	7	13
2003	42	22	17	4	0	22	8	3
2004	35	8	6	1	1	15	5	11
2005	39	11	11	0	1	17	7	8
Total	1014	314	195	100	19	394	197	233

Table 1: Statistics by year

Note. Table 1 contains frequencies by year. All is the number of total judgments; **DefAny**, **DefLow**, **DefMed**, and **DefHigh** represent the number of judgments that apply any form of deference, low-level, medium-level, and high-level deference, respectively. The columns **Purp**, **PurpDyn**, and **NonPurpDyn** represent the number of judgments that are purposive, purposive-dynamic, or non-purposive-dynamic, respectively.

	Purp	PurpDyn	nonpurlib	
All	0.389**	0.194**	0.230**	
DefAny	0.468^{**}	0.255**	0.204**	
not_DefAny	0.353**	0.167^{**}	0.241^{**}	
diff	0.115**	0.088^{**}	-0.038	
DefLow	0.462**	0.256**	0.210**	
not_DefLow	0.371**	0.179^{**}	0.234**	
diff	0.090^{*}	0.077^{*}	-0.024	
DefMed	0.510**	0.290**	0.210**	
not_DefMed	0.375^{**}	0.184^{**}	0.232**	
diff	0.135**	0.106^{*}	-0.022	
DefHigh	0.316**	0.053	0.105	
not DefHigh	0.390***	0.197^{**}	0.232^{**}	
diff	-0.074	-0.144	-0.127	

Table 2: Univariate results

Note. Table 2 contains the means for proportion of interpretations that are (a) purposive, (b) dynamic and purposive, and (c) dynamic and non-purposive. It contains means for judgments that do (not) adopt any deference technique, a low-level technique (i.e. Skidmore), a medium-level technique (i.e. Chevron), or a high-level technique (i.e. Curtis-Wright or Seminole). Superscripts **, *, and ⁺ significance at 1%, 5%, and 10% using a ttest for means and a difference in means test for differences between means.

	def_all	DefLow	DefMed	DefHigh
Purp	0.179^{**}	0.132^{*}	0.175^{*}	-0.080
	[0.001]	[0.022]	[0.010]	[0.637]
PurpDyn	0.185^{**}	0.150^{*}	0.180^{*}	-0.285
	[0.002]	[0.020]	[0.016]	[0.147]
NonPurpDyn	-0.076	-0.046	-0.038	-0.200
	[0.197]	[0.508]	[0.708]	[0.273]

 Table 3: Tetrachoric correlations

Note. Table 3 contains tetrachoric correlations. It displays the correlation between (a) judgments that adopt any deference; low-level deference; medium-level deference; or high-level deference and (b) issuing a judgment that is purposive; purposive-dynamic; or, non-purposive-dynamic. Numbers in brackets are p-values. Superscripts **, *, and ⁺ denote significance at 1%, 5%, and 10%, respectively.

	(1)	(2)	(3)	(4)	(5)
DefAny	0.286**				
	[0.000]				
p.DefAny _{t-1}	0.591*				
	[0.026]				
DefLow		0.250^{+}			0.291*
		[0.053]			[0.018]
p.DefLow t-1		0.630^{*}			0.596
		[0.023]			[0.213]
DefMed			0.280^{*}		0.342^{**}
			[0.046]		[0.007]
p.def.med t-1			0.607		0.621
• • • •			[0.841]		[0.847]
DefHigh				-0.128	-0.059
8				[0.717]	[0.868]
n.DefHigh . 1				-1 495	-0 304
Processing in [-1				[0 533]	[0.920]
n aglih	0.484	0.774*	0 306	0 495	0.34
	[0 165]	[0,026]	[0.832]	0. 4 95	[0.858]
n logDurn	$\begin{bmatrix} 0.105 \end{bmatrix}$	[0.020]	[0.852] 1 502**	[0.273]	[0.050] 1.551 ^{**}
plicgi ui p _{t-1}	1.075	1.005	1.392	1.541	1.551
n tout	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
p.text _{t-1}	-0.009	-0.712	-0.080	-0.752	-0.394
4	[0.004]	[0.001]	[0.070]	[0.002]	[0.092]
p.wact _{t-1}	0.384	0.329	0.353	0.343	0.417
	[0.400]	[0.465]	[0.459]	[0.498]	[0.431]
p.wcode t-1	0.286	0.303	0.284	0.214	0.244
	[0.784]	[0.767]	[0.763]	[0.853]	[0.720]
p.leghis _{t-1}	1.314	1.475	1.197	1.359	1.276
	[0.000]	[0.000]	[0.055]	[0.000]	[0.080]
$\mathbf{p.sd}_{t-1}$	-0.449	-0.57	-0.155	-0.222	-0.435
	[0.301]	[0.191]	[0.833]	[0.687]	[0.609]
p.othercan t-1	1.502**	1.532^{**}	1.542^{**}	1.530**	1.422^{**}
	[0.000]	[0.000]	[0.000]	[0.001]	[0.000]
p.acqcan _{t-1}	-2.853**	-2.783**	-2.876	-2.914**	-2.9
	[0.000]	[0.000]	[0.124]	[0.001]	[0.170]
p.comlaw t-1	4.436**	4.667^{**}	4.067^{*}	4.388^{**}	4.408^{*}
	[0.003]	[0.001]	[0.031]	[0.004]	[0.038]
p.fedcan _{t-1}	3.719***	3.600**	3.644*	3.587**	3.535^{+}
-	[0.002]	[0.003]	[0.028]	[0.002]	[0.059]
p.avcan t-1	-2.745**	-2.744**	-2.259^{*}	-2.064*	-2.511 ⁺
• • • •	[0.008]	[0.005]	[0.018]	[0.045]	[0.061]
p.dpcan . 1	2.352	2.647	2.162	2.509	2.295
I I THE	[0.204]	[0.128]	[0.272]	[0.166]	[0.192]
n.sennow.	8 355 [*]	9 502**	8 687	9 915**	7 988
Loophon [-1	[0 023]	[0 009]	[0 234]	[0 006]	[0 234]
constant	_2 216**	-2.242^{**}	_1 992**	_1 971 ^{**}	-2 109**
Constant	[0 000]	[0 000]	[0 000]	[0 000]	[0 002]
Observations	0.000]	0.000	0.000	0.000	0.002]
Discivations Discude D2	770 2 520/	770 2 170/	770 2 000/	770 1 710/	770 2620/
I SCUUO KZ	2.3270	2.1/70	2.00%	1./170	2.03%

Table 4: Legislative Purpose Regressions

Wald Chi2	2560.62	795.22	381.16	665.34	4834.27

Note. Table 4 contains probit regressions that examine the relation between deference and whether the majority cites legislative purpose in its reasoning. The dependent variable is **legPurp**, an indicator that equals 1 if the majority cites legislative purpose in its reasoning and equals 0 otherwise. The models cluster standard errors by year. Numbers in brackets are p-values. Superscripts **, *, and ⁺ denote significance at 1%, 5%, and 10%, respectively.

	(1)	(2)	(3)	(4)	(5)
DefAny	0.289**				
	[0.003]				
p.DefAny _{t-1}	-0.303				
	[0.657]				
DefLow		0.294^{+}			0.340^{*}
		[0.057]			[0.022]
p.DefLow t-1		0.017			-1.609**
		[0.980]			[0.005]
DefMed			0.253		0.329^*
			[0.133]		[0.034]
p.def.med _{t-1}			-0.548		7.138**
			[0.829]		[0.003]
DefHigh				-0.712	-0.624
				[0.169]	[0.246]
p.DefHigh _{t-1}				-4.840^{*}	-12.782**
				[0.017]	[0.000]
p.aglib _{t-1}	-0.09	-0.017	0.12	-0.583	-5.028^{**}
	[0.855]	[0.967]	[0.923]	[0.207]	[0.001]
p.legPurp _{t-1}	2.033^{**}	2.013^{**}	2.021^{**}	1.625^{**}	0.810^{+}
	[0.000]	[0.000]	[0.000]	[0.000]	[0.083]
p.text t-1	-1.478**	-1.369**	-1.366**	-1.157**	-0.698*
	[0.000]	[0.000]	[0.002]	[0.001]	[0.038]
p.wact _{t-1}	1.236^{+}	1.222^{+}	1.311^{+}	1.530^{**}	2.286^{**}
	[0.086]	[0.058]	[0.060]	[0.002]	[0.001]
p.wcode t-1	-0.989	-1.018	-0.912	-1.466+	-3.436**
	[0.292]	[0.277]	[0.374]	[0.094]	[0.000]
p.leghis _{t-1}	1.301^{**}	1.358^{**}	1.396^{*}	1.340**	-0.258
	[0.002]	[0.001]	[0.016]	[0.000]	[0.614]
p.sd _{t-1}	0.696	0.6	0.746	1.103^{**}	3.319**
	[0.248]	[0.358]	[0.375]	[0.004]	[0.000]
p.othercan t-1	0.881	0.886^{+}	0.928^{+}	0.703^{*}	0.248
	[0.135]	[0.095]	[0.090]	[0.022]	[0.570]
p.legacqu _{t-1}	-2.397^{+}	-2.662^{*}	-2.163	-3.111**	-7.600**
	[0.073]	[0.027]	[0.153]	[0.003]	[0.000]
p.comlaw t-1	4.077^{**}	4.125**	4.112**	4.317**	2.150^{+}
	[0.001]	[0.002]	[0.001]	[0.000]	[0.096]
p.fedcan t-1	4.590^{*}	4.633**	4.063*	4.088^{**}	6.731**
	[0.013]	[0.005]	[0.016]	[0.001]	[0.000]
p.avcan t-1	-3.447**	-3.750**	-3.570**	-2.670**	-0.247
	[0.001]	[0.000]	[0.000]	[0.003]	[0.778]
p.dpcan t-1	2.870^{*}	3.072*	2.726*	3.196**	3.188**

Table 5:	Purposive-dynamic	regressions

	[0.026]	[0.014]	[0.031]	[0.001]	[0.004]
p.seppow _{t-1}	5.176	3.922	4.625	2.76	-10.921
	[0.377]	[0.462]	[0.593]	[0.549]	[0.152]
constant	-2.348**	-2.437**	-2.557**	-2.229**	-0.54
	[0.000]	[0.000]	[0.000]	[0.000]	[0.321]
Observations	998	998	998	998	998
Pseudo R2	2.66%	2.44%	2.07%	2.20%	3.56%
Wald Chi2	135.96	82.35	82.62	137.34	98655.48

Note. Table 5 contains regressions that examine the relation between deference and the issuance of a purposive interpretation that is also dynamic or dynamic. The dependent variable is **PurpDyn**, an indicator that equals 1 if both (a) the majority cites legislative purpose in its reasoning and (b) the interpretation is 'dynamic', but equals 0 otherwise. The models cluster standard errors by year. Numbers in brackets are p-values. Superscripts ***, **, and ⁺ denote significance at 1%, 5%, and 10%, respectively.

		<i>(</i> ^)			/ - \
	(1)	(2)	(3)	(4)	(5)
DefAny	-0.079				
	[0.364]				
p.DefAny _{t-1}	0.296				
	[0.473]				
DefLow		-0.042			-0.056
		[0.759]			[0.669]
p.DefLow t-1		0.463			0.881**
		[0.201]			[0.010]
DefMed			-0.023		-0.043
			[0.875]		[0.766]
p.def.med t-1			-3.192		-4.822*
			[0.121]		[0.018]
DefHigh				-0.564	-0.573
				[0.177]	[0.159]
p.DefHigh t-1				-1.822	2.715
				[0.354]	[0.279]
p.aglib _{t-1}	0.212	0.306	1.638^{+}	0.019	2.780^{*}
	[0.586]	[0.363]	[0.093]	[0.968]	[0.021]
p.legPurp _{t-1}	-0.522^{*}	-0.539^{*}	-0.413	-0.720^{*}	-0.233
	[0.049]	[0.037]	[0.145]	[0.028]	[0.505]
p.text t-1	0.843**	0.856^{**}	0.469^{*}	0.841^{**}	0.473^{*}
	[0.000]	[0.000]	[0.049]	[0.000]	[0.032]
p.wact _{t-1}	0.321	0.363	-0.076	0.311	-0.209
	[0.536]	[0.475]	[0.861]	[0.517]	[0.716]
p.wcode t-1	0.021	0.076	0.741	-0.004	1.293^{*}
	[0.982]	[0.930]	[0.306]	[0.997]	[0.012]
p.leghis t-1	-1.008**	-0.947**	-0.532	-1.086**	-0.095
	[0.001]	[0.003]	[0.238]	[0.000]	[0.839]
p.sd _{t-1}	-0.57	-0.668^{+}	-1.461**	-0.621	-2.146**
	[0.150]	[0.087]	[0.004]	[0.129]	[0.001]
p.othercan t-1	-2.276***	-2.317**	-2.358**	-2.444**	-2.250**
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
p.legacqu _{t-1}	3.829**	3.999***	5.703**	3.852**	6.888^{**}
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
p.comlaw t-1	-1.67	-1.503	-0.834	-1.704	-0.296
	[0.143]	[0.178]	[0.496]	[0.134]	[0.796]
p.fedcan _{t-1}	-3.831**	-3.984**	-4.716**	-3.990**	-5.599**
	[0.009]	[0.007]	[0.000]	[0.003]	[0.000]
p.avcan _{t-1}	1.08	1.111	1.364^{+}	1.743*	0.362
	[0.212]	[0.166]	[0.052]	[0.023]	[0.600]
p.dpcan _{t-1}	0.298	0.234	0.281	0.291	0.229

Table 6: Non-Purposive-dynamic regressions

	[0.820]	[0.858]	[0.828]	[0.823]	[0.855]
p.seppow t-1	-8.047^{+}	-7.726*	0.904	-6.771^{+}	2.974
	[0.074]	[0.039]	[0.879]	[0.069]	[0.630]
constant	0.011	-0.051	0.002	0.353	-0.565
	[0.976]	[0.888]	[0.994]	[0.321]	[0.194]
Observations	998	998	998	998	998
Pseudo R2	1.55%	1.53%	1.54%	1.72%	1.84%
Wald Chi2	491.61	629.08	423.6	369.36	2490.53

Note. Table 6 contains regressions that examine the relation between deference and the issuance of a nonpurposive interpretation that is dynamic or dynamic. The dependent variable is **NonPurpDyn**, an indicator that equals 1 if both (a) the majority does not cite legislative purpose in its reasoning but (b) the interpretation is 'dynamic', and equals 0 otherwise. The models cluster standard errors by year. Numbers in brackets are pvalues. Superscripts **, *, and ⁺ denote significance at 1%, 5%, and 10%, respectively.

	Purp	Purp	Purp	Purp	PurpDyn	PurpDyn	PurpDyn	PurpDyn	NonPurpDyn	NonPurpDyn	NonPurpDyn	NonPurpDyn
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DefAny	0.110**				0.081**				-0.023			
	[0.000]				[0.003]				[0.364]			
p.DefAny _{t-1}	0.226^{*}				-0.081				0.089			
	[0.026]				[0.657]				[0.473]			
DefLow		0.097^+				0.085^{+}				-0.012		
		[0.053]				[0.057]				[0.759]		
p.DefLow _{t-1}		0.241^*				0.004				0.139		
		[0.023]				[0.980]				[0.201]		
DefMed			0.110^{*}				0.074				-0.007	
			[0.046]				[0.133]				[0.875]	
p.DefMed _{t-1}			0.232				-0.147				-0.958	
			[0.841]				[0.829]				[0.121]	
DefHigh				-0.048				-0.134				-0.133
				[0.717]				[0.169]				[0.177]
p.DefHigh _{t-1}				-0.571				-1.297^{*}				-0.546
				[0.533]				[0.017]				[0.354]
p.aglib _{t-1}	0.185	0.296^{*}	0.117	0.189	-0.024	-0.005	0.032	-0.156	0.064	0.092	0.492^{+}	0.006
	[0.165]	[0.026]	[0.832]	[0.275]	[0.855]	[0.967]	[0.923]	[0.207]	[0.586]	[0.363]	[0.093]	[0.968]
p.legPurp _{t-1}	0.639**	0.635***	0.608^{**}	0.589^{**}	0.544^{**}	0.540^{**}	0.543^{**}	0.435^{**}	-0.157*	-0.162*	-0.124	-0.216^{*}
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.049]	[0.037]	[0.145]	[0.028]
p.text t-1	-0.255***	-0.272**	-0.262^{+}	-0.280**	-0.395**	-0.367**	-0.367**	-0.310**	0.253^{**}	0.257^{**}	0.141^{*}	0.252^{**}
	[0.004]	[0.001]	[0.070]	[0.002]	[0.000]	[0.000]	[0.002]	[0.001]	[0.000]	[0.000]	[0.049]	[0.000]
p.wact t-1	0.147	0.126	0.135	0.131	0.331+	0.328^{+}	0.352^{+}	0.410^{**}	0.096	0.109	-0.023	0.093
	[0.400]	[0.465]	[0.459]	[0.498]	[0.086]	[0.058]	[0.060]	[0.002]	[0.536]	[0.475]	[0.861]	[0.517]
p.wcode t-1	0.109	0.116	0.108	0.082	-0.265	-0.273	-0.245	-0.393+	0.006	0.023	0.222	-0.001

 Table 7: Marginal effects regressions

	[0.784]	[0.767]	[0.763]	[0.853]	[0.292]	[0.277]	[0.374]	[0.094]	[0.982]	[0.930]	[0.306]	[0.997]
p.leghis t_{t-1}	0.502^{**}	0.563**	0.457^{+}	0.519^{**}	0.348^{**}	0.364**	0.375^*	0.359^{**}	-0.303**	-0.284**	-0.16	-0.326**
	[0.000]	[0.000]	[0.055]	[0.000]	[0.002]	[0.001]	[0.016]	[0.000]	[0.001]	[0.003]	[0.238]	[0.000]
$\mathbf{p.sd}_{t-1}$	-0.172	-0.218	-0.059	-0.085	0.186	0.161	0.201	0.296^{**}	-0.171	-0.201+	-0.438**	-0.186
	[0.301]	[0.191]	[0.833]	[0.687]	[0.248]	[0.358]	[0.375]	[0.004]	[0.150]	[0.087]	[0.004]	[0.129]
p.othercan t-1	0.574^{**}	0.585^{**}	0.589^{**}	0.585^{**}	0.236	0.238^{+}	0.249^{+}	0.188^*	-0.683**	-0.696**	-0.707**	-0.733**
	[0.000]	[0.000]	[0.000]	[0.001]	[0.135]	[0.095]	[0.090]	[0.022]	[0.000]	[0.000]	[0.000]	[0.000]
p.legacqu _{t-1}	-1.090***	-1.063**	-1.099	-1.113**	-0.641+	-0.714*	-0.581	-0.834**	1.149**	1.201**	1.711^{**}	1.154**
	[0.000]	[0.000]	[0.124]	[0.001]	[0.073]	[0.027]	[0.153]	[0.003]	[0.000]	[0.000]	[0.000]	[0.000]
$p.comlaw_{t-1}$	1.694**	1.783**	1.554^{*}	1.677**	1.091**	1.106^{**}	1.105^{**}	1.157^{**}	-0.501	-0.451	-0.25	-0.511
	[0.003]	[0.001]	[0.031]	[0.004]	[0.001]	[0.002]	[0.001]	[0.000]	[0.143]	[0.178]	[0.496]	[0.134]
p.fedcan t-1	1.420^{**}	1.375**	1.392^{*}	1.371**	1.228^*	1.242^{**}	1.092^{*}	1.096^{**}	-1.150**	-1.196**	-1.415**	-1.196**
	[0.002]	[0.003]	[0.028]	[0.002]	[0.013]	[0.005]	[0.016]	[0.001]	[0.009]	[0.007]	[0.000]	[0.003]
p.avcan t-1	-1.048**	-1.048**	-0.863*	-0.789^{*}	-0.922**	-1.005**	-0.959**	-0.715**	0.324	0.334	0.409^{+}	0.522^*
	[0.008]	[0.005]	[0.018]	[0.045]	[0.001]	[0.000]	[0.000]	[0.003]	[0.212]	[0.166]	[0.052]	[0.023]
p.dpcan _{t-1}	0.898	1.011	0.826	0.959	0.768^{*}	0.824^*	0.733^{*}	0.856^{**}	0.09	0.07	0.084	0.087
	[0.204]	[0.128]	[0.272]	[0.166]	[0.026]	[0.014]	[0.031]	[0.001]	[0.820]	[0.858]	[0.828]	[0.823]
p.seppow _{t-1}	3.191*	3.630**	3.319	3.789**	1.385	1.052	1.243	0.74	-2.416+	-2.320*	0.271	-2.029^{+}
	[0.023]	[0.009]	[0.234]	[0.006]	[0.377]	[0.462]	[0.593]	[0.549]	[0.074]	[0.039]	[0.879]	[0.069]
Observations	998	998	998	998	998	998	998	998	998	998	998	998
Wald Chi2	2560.62	795.22	381.16	665.35	135.96	82.35	82.62	137.34	491.61	629.08	423.60	369.36
Pseudo R2	2.50%	2.20%	2.00%	1.70%	2.70%	2.40%	2.10%	2.20%	1.60%	1.50%	1.50%	1.70%

Note. Table 7 contains the marginal effects for the PROBIT regressions in Equation 1. The first row contains the dependent variable. Numbers in ordinary font are marginal effects; numbers in brackets are p-values. The models control for clustering by year. Table 12 contains the variable definitions. Superscripts **, *, and ⁺ denote significance at 1%, 5%, and 10%, respectively.

	(1)	(2)	(3)	(4)
DefAny	0.462^{*}			
	[0.049]			
p.DefAny _{t-1}	0.681^{*}			
	[0.014]			
DefLow		2.077^{**}		
		[0.000]		
p.DefLow t-1		0.450^{+}		
•		[0.096]		
DefMed			0.400	
			[0.135]	
p.def.med . 1			1.141	
F			[0.121]	
DefHigh			[]	0.511
8				[0.698]
n.DefHigh.				-2.643
Pro 011191 [-1				[0.166]
n.legPurn.	1 629**	1 229**	0.117^{+}	-0.130**
hundr and tel	[0,00]	[0 000]	[0.085]	[0 000]
n.text	-0 705**	-1 015**	-0.014	-0.785*
Proof [-]	[0 007]	[0 008]	[0 020]	[0.620]
n wact	0.488	0 228**	0.421	-0.101*
product [-1	[0 288]	[0 564]	[0 375]	[0 279]
n weode	0.534	0 533	-0.093	0 297
	[0.567]	[0.337]	[0 727]	[0.795]
n leghis .	1 194**	[0.337] -0.222*	1.072^{**}	1 316**
hue2up [-]	[0,000]	[0.014]	[0 000]	[0.967]
n sd.	-0.462	-1 758 ^{**}	0.238^*	0.015
h .2 a ^[-]	[0 224]	[0 000]	[0.019]	[0.978]
n othercan	1 377**	0.651	1 500**	1.455^{**}
protifici can t-1	[0,000]	[0 146]	[0.000]	[0 001]
n legacau	-2 877 ^{**}	0.272^+	-0.620 [*]	-3 142 ^{**}
pheguequ _{[-1}	[0,000]	[0.001]	[0.020	[0 500]
n comlaw	[0:000] 4 219 ^{**}	$3 444^{**}$	3 858**	[0.300] 4 329 ^{**}
p.coma w t-1	[0 002]	[0 000]	[0.827]	[0 715]
n fadean	[0.002] 3.866 ^{**}	4.082**	[0.027] 3 700 ^{**}	0.382^{**}
p.icucan _{t-1}	5.800 [0.001]	10002	[0 003]	[0.000]
n avean	[0.001] -2 692 ^{**}	[0.000] _0.17	-0 /137**	[0.007]
p.avcan _{t-1}	-2.092	[0.00]	-0.437	-1.721
n dnean	[0.005]	1.045^{**}	0.708^*	0.054
p.upcan _{t-1}	[0 360]	-1.045	0.708	-0.054
n sannaw	[0.307] 7 226*	[U.U40] 1 405	[0.030] 7 282*	[0.303] 8.020*
hochhow ^{t-1}	7.200 [0.020]	-1.403	1.202	0.737
constant	[U.U3U] 1 000**	[U.UUU] 0.122	[U.U46]	[0.011] 2 040**
constant	-1.770 10.0001	-0.123	-0.041	-2.040
observations	[0.000]	[10.0]	[0.300]	[0.00]
observations	998	778	778	778

Note. Table 8 contains IVPROBIT regressions that examine the relation between deference and whether the majority cites legislative purpose in its reasoning. The dependent variable is **legPurp**, an indicator that equals 1

if the majority cites legislative purpose in its reasoning and equals 0 otherwise. The models cluster standard errors by year. Numbers in brackets are p-values. Superscripts **, *, and $^+$ denote significance at 1%, 5%, and 10%, respectively.

	(1)	(2)	(3)	(4)
DefAny	0.656**			
	[0.001]			
p.DefAny _{t-1}	-0.356			
	[0.592]			
DefLow		2.382^{**}		
		[0.001]		
p.DefLow _{t-1}		0.163		
-		[0.773]		
DefMed			0.787^{**}	
			[0.002]	
p.def.med _{t-1}			-0.643	
• • • •			[0.512]	
DefHigh				0.673
<u> </u>				[0.620]
p.DefHigh t-1				-3.215*
-				[0.044]
p.legPurp _{t-1}	2.016^{**}	1.158	0.123^{+}	1.932**
	[0.000]	[0.337]	[0.062]	[0.000]
p.text _{t-1}	-1.486**	0.398**	-1.205**	-1.252**
• • • •	[0.000]	[0.122]	[0.006]	[0.528]
p.wact _{t-1}	1.109	0.012	1.303*	1.436**
	[0.145]	[0.992]	[0.789]	[0.004]
p.wcode t-1	-0.988	-0.054	-0.114	-1.487
	[0.311]	[0.769]	[0.658]	[0.110]
p.leghis _{t-1}	1.204^*	0.534	0.133	0
	[0.010]	[0.568]	[0.146]	[0.998]
$\mathbf{p.sd}_{t-1}$	0.379	0.847^{**}	0.264^{**}	1.018^{*}
	[0.524]	[0.000]	[0.203]	[0.000]
p.othercan t-1	0.738	0.037	0.729	-0.058
	[0.263]	[0.847]	[0.430]	[0.225]
p.legaqui _{t-1}	-2.148	-1.853	-1.628	0.076
	[0.135]	[0.348]	[0.042]	[0.457]
p.comlaw t-1	4.153**	-0.244	3.858**	4.505^{**}
	[0.003]	[0.275]	[0.004]	[0.000]
p.fedcan _{t-1}	4.553^{*}	3.916	3.441^{+}	4.504^{**}
	[0.024]	[0.155]	[0.061]	[0.005]
p.avcan t-1	-3.362**	0.323	-0.407**	0.02
	[0.006]	[0.183]	[0.003]	[0.774]
p.dpcan t-1	2.959^*	2.6	0.749^{*}	3.586**
	[0.015]	[0.273]	[0.113]	[0.003]
p.seppow _{t-1}	6.578	-2.545	4.367	-0.199
	[0.273]	[0.105]	[0.456]	[0.390]
constant	-2.231**	-0.374	-2.445**	-2.628**
	[0.001]	[0.359]	[0.011]	[0.000]
observations	998	998	998	998

Note. Table 9 contains IVPROBIT regressions that examine the relation between deference and the issuance of a purposive interpretation that is also dynamic or dynamic. The dependent variable is **PurpDyn**, an indicator that equals 1 if both (a) the majority cites legislative purpose in its reasoning and (b) the interpretation is

'dynamic', but equals 0 otherwise. The models cluster standard errors by year. Numbers in brackets are p-values. Superscripts **, *, and $^+$ denote significance at 1%, 5%, and 10%, respectively.

	(1)	(2)	(3)	(4)
DefAny	-0.395 ⁺			
	[0.092]			
p.DefAny _{t-1}	0.355			
	[0.370]			
DefLow		-1.767**		
		[0.002]		
p.DefLow t-1		0.185		
		[0.644]		
DefMed			-0.430^{+}	
			[0.097]	
p.def.med _{t-1}			0.295	
-			[0.697]	
DefHigh				0.608
-				[0.604]
p.DefHigh t-1				-1.748
				[0.264]
p.legPurp _{t-1}	-0.549^{*}	-0.567^{*}	0.116^{+}	-0.120**
	[0.036]	[0.027]	[0.057]	[0.098]
p.text _{t-1}	0.872^{**}	0.321**	0.668^{**}	0.006
	[0.000]	[0.001]	[0.001]	[0.890]
p.wact t-1	0.45	0.759	0.274	0.408
	[0.394]	[0.133]	[0.806]	[0.011]
p.wcode t-1	0.165	0.208	-0.103	0.015
	[0.847]	[0.732]	[0.699]	[0.991]
p.leghis _{t-1}	-0.966**	-0.204**	0.126	-1.031**
	[0.002]	[0.000]	[0.000]	[0.692]
p.sd t-1	-0.31	0.875	0.251^{*}	-0.449
	[0.524]	[0.000]	[0.285]	[0.000]
p.othercan t-1	-2.178**	-1.475*	0.074	-2.335**
	[0.000]	[0.047]	[0.000]	[0.000]
p.legaqui _{t-1}	3.590**	3.374**	-0.617^{*}	0.062
	[0.000]	[0.199]	[0.000]	[0.000]
p.comlaw t-1	-1.890^{+}	-0.300*	0.078	-1.529
	[0.089]	[0.046]	[0.118]	[0.161]
p.fedcan _{t-1}	-3.834*	-4.160**	0.587^{+}	-0.369**
	[0.024]	[0.000]	[0.035]	[0.008]
p.avcan _{t-1}	1.066	1.680^{*}	-0.436**	1.730^{*}
	[0.260]	[0.689]	[0.172]	[0.810]
p.dpcan _{t-1}	-0.047	-1.066	0.722^{*}	0.172
	[0.961]	[0.105]	[0.828]	[0.861]
p.seppow t-1	-9.528^{*}	-9.969**	-7.365^{+}	-0.119
	[0.044]	[0.004]	[0.203]	[0.097]
constant	0.012	-0.173	-1.395**	-2.048**
	[0.978]	[0.000]	[0.000]	[0.000]
observations	998	998	998	998

Table 10: Non-Purposive-dynamic IV Regressions

Note. Table 10 contains IVPROBIT regressions that examine the relation between deference and the issuance of a non-purposive interpretation that is dynamic or dynamic. The dependent variable is NonPurpDyn, an indicator that equals 1 if both (a) the majority does not cite legislative purpose in its reasoning but (b) the

interpretation is 'dynamic', and equals 0 otherwise. The models cluster standard errors by year. Numbers in brackets are p-values. Superscripts **, *, and $^+$ denote significance at 1%, 5%, and 10%, respectively.

	Purp	Purp	Purp	Purp	PurpDyn	PurpDyn	PurpDyn	PurpDyn	NonPurpDyn	NonPurpDyn	NonPurpDyn	NonPurpDyn
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DefAny	0.280**				0.279**				-0.09			
	[0.000]				[0.004]				[0.285]			
p.DefAny _{t-1}	0.425				-0.476				-0.063			
	[0.233]				[0.266]				[0.892]			
DefLow		0.224^{+}				0.274^{+}				-0.049		
		[0.073]				[0.073]				[0.708]		
p.DefLow _{t-1}		-0.032				-0.468				0.16		
		[0.946]				[0.349]				[0.755]		
DefMed			0.295^{*}				0.264				-0.037	
			[0.032]				[0.107]				[0.801]	
p.DefMed _{t-1}			1.617^{+}				0.269				-0.284	
			[0.053]				[0.752]				[0.771]	
DefHigh				-0.137				-0.712				-0.535
				[0.701]				[0.162]				[0.184]
p.DefHigh _{t-1}				-1.602				-3.319 ⁺				-2.325
				[0.328]				[0.060]				[0.226]
canon_comp_1	0.043	0.043	0.061	0.041	0.071	0.083^{+}	0.071	0.077	-0.003	-0.004	-0.007	0
	[0.262]	[0.278]	[0.161]	[0.284]	[0.177]	[0.092]	[0.149]	[0.117]	[0.948]	[0.918]	[0.894]	[1.000]
canon_comp_2	-0.02	-0.018	-0.033	-0.009	0.008	-0.005	-0.007	0.008	0.055	0.056	0.058	0.066
	[0.541]	[0.601]	[0.382]	[0.814]	[0.800]	[0.880]	[0.835]	[0.809]	[0.276]	[0.275]	[0.255]	[0.246]
interp_comp1	0.073**	0.077^{**}	0.073^{*}	0.076^{**}	0.052^*	0.050^{+}	0.049^{*}	0.04	-0.045	-0.047	-0.045	-0.058^{+}
	[0.007]	[0.006]	[0.010]	[0.009]	[0.042]	[0.060]	[0.038]	[0.103]	[0.112]	[0.107]	[0.123]	[0.085]
interp_comp2	0.060^{+}	0.068^{+}	0.046	0.058	0.120^{**}	0.120**	0.111^{**}	0.098^{**}	-0.018	-0.021	-0.016	-0.034
	[0.086]	[0.065]	[0.135]	[0.125]	[0.000]	[0.000]	[0.002]	[0.003]	[0.587]	[0.541]	[0.635]	[0.377]

Table 11: PCA Regressions

interp_comp3	0.022	0.016	0.026	0.029	0.026	0.019	0.033	0.045	0.02	0.022	0.02	0.033
	[0.446]	[0.596]	[0.221]	[0.323]	[0.285]	[0.472]	[0.203]	[0.128]	[0.532]	[0.481]	[0.520]	[0.371]
interp_comp4	0.03	0.027	-0.003	0.022	0.012	-0.004	-0.001	-0.01	0.034	0.037	0.041	0.029
	[0.543]	[0.593]	[0.940]	[0.668]	[0.708]	[0.907]	[0.984]	[0.762]	[0.419]	[0.392]	[0.266]	[0.464]
constant	-0.513**	-0.328**	-0.491**	-0.259**	-0.819**	-0.844**	-0.934**	-0.810**	-0.697**	-0.765**	-0.710**	-0.695**
	[0.000]	[0.004]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	998	998	998	998	998	998	998	998	998	998	998	998
Wald Chi2	40.733	16.09	29.145	14.429	40.333	32.734	46.628	22.281	4.05	3.836	4.452	5.732
Pseudo R2	1.50%	1.10%	1.30%	0.70%	1.70%	1.50%	1.10%	1.20%	0.40%	0.04%	0.04%	0.06%

Note. Table 11 contains principal component regressions. The models are PROBIT models that use principal components as control variables. The first row is the dependent variable. **Table 12** contains the variable definitions, and defines the principal components in more detail. Numbers in brackets are p-values. Superscripts **, *, and ⁺ denote significance at 1%, 5%, and 10%, respectively.

F. APPENDIX: VARIABLE DEFINITIONS

Variable	Definition
Donondont Variables	
Purp	A dummy variable that equals 1 if the majority cites legislative purpose as a basis
ıup	for its reasoning
PurnDyn	A dummy variable that equals 1 if both (a) the interpretation is 'dynamic' or
TupDyn	'dynamic' in nature and (b) the majority cites legislative purpose as a basis for its
	reasoning
NonPurnDyn	A dummy variable that equals 1 if (a) the interpretation is 'dynamic' or 'dynamic' in
Nom upbyn	nature but (b) the majority does not cite legislative nurnose in its reasoning
	nature out (b) the majority does not one registrative purpose in its reasoning
Deference Variables	
DefAny	A dummy variable that equals 1 if the court adopts any deference technique and
,	equals 0 otherwise
p.DefAny _{t-1}	The proportion of judgments in the prior judicial term that adopt any deference
1 000	technique
DefLow	A dummy variable that equals 1 if the court adopts a low-level deference technique
	(Skidmore or Consultative deference) and equals 0 otherwise
p.DefLow t-1	The proportion of judgments in the prior judicial term that adopt a low-level
	deference technique
DefMed	A dummy variable that equals 1 if the court adopts a medium-level deference
	technique (Chevron or Beth-Israel) and equals 0 otherwise
p.def.med _{t-1}	The proportion of judgments in the prior judicial term that adopt a medium-level
	deference technique
DefHigh	A dummy variable that equals 1 if the court adopts any high-level deference
	technique (Curtis-Wright or Seminole) and equals 0 otherwise
p.DefHigh _{t-1}	The proportion of judgments in the prior judicial term that adopt a high-level
	deference technique
Control Variables	The manuaction of indemonts in the main individual terms that sited hericleting any second
p. legpurp $_{t-1}$	in the mesoning
n toyt	In the reasoning The properties of judgments in the prior judicial term that sited textualism or plain
$p.text_{t-1}$	meaning in the reasoning
n wact	The proportion of judgments in the prior judicial term that referred to the 'whole
p.waci _{t-1}	act' or the 'act as a whole' in the reasoning
n woode	The proportion of judgments in the prior judicial term that cited the 'whole code' or
p.weode _{t-1}	the 'code as a whole' purpose in the reasoning
n leghist	The proportion of judgments in the prior judicial term that referred to legislative
p.ieginst _{[-1}	history in the reasoning
p.sd.	The proportion of judgments in the prior judicial term that deferred to stare decisis
Prodel	or used it as a major contributing factor in the reasoning
p.othercan .	The proportion of judgments in the prior judicial term that relied on miscellaneous
F · · · · · · · · · · · · · · · · · · ·	other canons in the reasoning
p.legaqui _{t-1}	The proportion of judgments in the prior judicial term that cited the legislative
	acquiescence in the reasoning
p.comlaw _{t-1}	The proportion of judgments in the prior judicial term that utilized common law
	doctrines in the reasoning
p.fedcan _{t-1}	The proportion of judgments in the prior judicial term that cited the federalism
	canon in the reasoning
p.avcan _{t-1}	The proportion of judgments in the prior judicial term that cited avoidance canon in
	the reasoning
p.dpcan _{t-1}	The proportion of judgments in the prior judicial term that referred to the due

Table 12: Variable definitions

	process canon in the reasoning
p.seppow _{t-1}	The proportion of judgments in the prior judicial term that cited separation of
	powers in the reasoning

Instrumental Variables

expert	A dummy variable that equals 1 if the court cites the agency's 'expertise' in its reasoning
accountability	A dummy variable that equals 1 if the court cites the accountability of the agency to the executive or the legislature in its reasoning
rule	A dummy variable that equals 1 if the agency's interpretation was in a 'rule' that has legislative force
adj	A dummy variable that equals 1 if the agency's interpretation was in the form of an adjudication
inf	A dummy variable that equals 1 if the agency's interpretation was in an informal policy document
president	A dummy variable that equals 1 if the President is 'conservative' and equals 0 if the president is 'dynamic'
house	A dummy variable that equals 1 if the House of Representatives is predominantly 'conservative' and equals 0 if the president is 'dynamic'
senate	A dummy variable that equals 1 if the Senate is predominantly 'conservative' and equals 0 if the president is 'dynamic'
old	A dummy variable that equals 1 if the agency's interpretation is old or longstanding
evo	A dummy variable that equals 1 if the agency's interpretation is evolving or time- changing
new	A dummy variable that equals 1 if the agency's interpretation is new
Principal Components	
interp_comp1	A principal component that mainly reflects the interpretative factors p.wcode $_{t-1}$ and p.sd $_{t-1}$
interp_comp2	A principal component that mainly reflects the interpretative factors $p.legpurp_{t-1}$ and $p.leghist_{t-1}$
interp_comp3	A principal component that mainly reflects the interpretative factors $p.text_{t-1}$, $p.wact_{t-1}$ and $p.seppow_{t-1}$
interp_comp4	A principal component that mainly reflects the interpretative factor p.legaqui _{t-1}
canon_comp1	A principal component that mainly reflects the canon variables $p.fedcan_{t-1}$ and $p.dpcan_{t-1}$
canon_comp2	A principal component that mainly reflects the canon variable p.avcan _{t-1}

Better Regulation through Better Judicial Review: Judicial Deference, Legislative Purpose, and the Common Law

Abstract

The EU has is pursuing 'Better Regulation'. However, despite the importance of judicial review in the regulatory process, it has received comparatively little attention. Thus, I use the law in the United States to empirically examine an aspect of judicial review; and thus, to help guide developments of Better Regulation in the EU. I focus on 'judicial deference to administrative interpretations of legislation', whereby courts assign some weight to administrators' interpretations of statues when the court makes its own interpretation. Deference may help courts by placing legislation within a practical context, but also risks inducing interpretations that contradict the existing common law or are inconsistent with established legal values. Thus, I use a sample of 998 Supreme Court decisions to show that a low-level of deference (as in *Skidmore*) best enables courts to produce purposive judgments that also sit within the existing common law framework and are consistent with fundamental legal values.

Keywords: Agencies; Deference; Judicial Decision Making; Statutory Interpretation; Common Law; Doctrine of Legality

1 Introduction

The legislature creates legislation. Agencies interpret this legislation and implement their interpretation. People can challenge agencies' actions. Thereupon courts must interpret the legislation. To the extent that it is consistent with the words of the statute, this interpretation should (a) implement the legislative purpose, (b) integrate the existing common law framework of interpretations, and (c) uphold fundamental legal values, such as the right to due process.

The relationship between courts, administrators, and legislators has become an increasingly important issue in the EU. Administrative agencies have proliferated across the EU. With this proliferation comes the need to protect citizens from improper uses of administrative power. Subsequently, myriad schemes of protection have emerged in the EU.¹ However, fragmentation in law can lead to undesirable consequences of regulatory competition and uncertainty.² Perhaps recognizing the need to reform the judicial review of administrative action, the EU has moved

¹ Administrative Law of the European Union, Its Member States and the United States – A Comparative Analysis (R J G H Seerden & F A M Stroink, 2002).

² Lucian Bebchuk et al., *Does the Evidence Favor State Competition in Corporate Law?*, 90 CALIFORNIA LAW REVIEW 1775 (2002); Lucian A Bebchuk & A Cohen, *Firms' Decisions Where to Incorporate*, 46 JOURNAL OF LAW AND ECONOMICS 383 (2003); Lucian Arye Bebchuk, *Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law*, 105 HARVARD LAW REVIEW 1435 (1992); Lucian Arye Bebchuk & Allen Ferrell, *Federalism and Corporate Law: The Race to Protect Managers from Takeovers*, 99 COLUMBIA LAW REVIEW 1168 (1999); Lucian Arye Bebchuk & Allen Ferrell, *A New Approach to Takeover Law and Regulatory Competition*, 87 VIRGINIA LAW REVIEW 111 (2001); Lucian Arye Bebchuk & Allen Ferrell, *Federal Intervention to Enhance Shareholder Choice*, 87 VIRGINIA LAW REVIEW 993 (2001).

towards pursuing 'Better Regulation' (BR).³ The goal of BR is broadly to improve regulation in the EU. However, it has largely focused on the legislative act of creating legislation, rather than on the administrative process of interpreting and applying legislation. This suggests that there is room to enhance the operation of BR. One way to enhance BR is to learn from the experiences in other countries, such as the United States.

The situation in the United States presents an environment from which the EU might learn. The United States has become 'administrative states' ⁴. The legislature promulgates laws. The administrators must interpret and apply the laws. People can challenge administrators' actions (which administrators base on the administrators' interpretations). Courts then decide this challenge. I focus on the relationship between courts and administrators

When people challenge agencies' actions, courts must evaluate whether the agency's actions are valid. In particular, the court must interpret the statue. However, agencies have already interpreted the statue. Thus, the issue is whether the court must consider the agency's interpretation when the court makes its own interpretation. I focus on the relationship between administrators and courts in the context of statutes. Here, administrators interpret statues. I draw upon experiences in the United States to help guide the appropriate approach both in the US and in Europe.

³ Ciara Brown & Colin Scott, *Regulation, Public Law, and Better Regulation,* 17 EUROPEAN PUBLIC LAW 467 (2011); Patricia Popelier, *Governance and Better Regulation: Dealing with the Legitimacy Paradox,* 17 EUROPEAN PUBLIC LAW 555 (2011); Wim Voermans & Ymre Schuurmans, *Better Regulation by Appeal,* 17 EUROPEAN PUBLIC LAW 507 (2011); Gijs van Dijck & Rob van Gestel, *Better Regulation Through Experimental Legislation,* 17 EUROPEAN PUBLIC LAW 539 (2011).

⁴ Edward Rubin, *Law and Legislation in the Administrative State*, 89 COLUMBIA LAW REVIEW 369 (1981); Colin S Diver, *Statutory Interpretation in the Administrative State*, 133 UNIVERSITY OF PENNSYLVANIA LAW REVIEW 549 (1985); Edward Rubin, *Dynamic Statutory Interpretation in the Administrative State*, 3 ISSUES IN LEGAL SCHOLARSHIP 1 (2002).

In the United States, the doctrines of deference determine how much weight the court must give the administrator's interpretation when it interprets an 'ambiguous' statute.⁵ There are three main flavors. Low-level Skidmore-like deference merely gives agency-interpretations some weight in determining their own interpretation ⁶. Medium-level (Chevron-like) deference mandates that courts follow the agency's interpretation if the interpretation is reasonable ⁷. High-level deference, requires courts to follow the agency's interpretation unless it is `clearly wrong' and requires courts to presume that the interpretation is not 'clearly wrong' ⁸.⁹

In favor of deference, administrators' interpretations may illustrate the legislative purpose. Congress delegates powers to agencies in order to implement the legislative purpose ¹⁰. Thus, absent agency conflicts and asymmetric information, administrators' interpretations should reflect the legislature's purpose for a statute. Therefore, assigning some weight to administrators' interpretations might help courts to issue interpretations that reflect the legislative purpose.

⁵ An ambiguous one is one that has multiple possible interpretations. However, as Graham A Unified Theory of Statutory Interpretation, 23 STATUTE LAW REVIEW 91 (2002). almost all statutes are capable of multiple interpretations, so would be relevantly vague.

⁶ Dame, Stare Decisis, Chevron, and Skidmore: Do Administrative Agencies Have the Power to Overrule Courts?, 44 WILLIAM & MARY LAW REVIEW 405 (2002); Kristin E Hickman & Matthew D Krueger, In Search of the "Modem" Skidmore Standard, 107 COLUMBIA LAW REVIEW 1235 (2007).

⁷ William R Andersen, *Chevron in the States: An Assessment and a Proposal*, 56 ADMINISTRATIVE LAW REVIEW 1017 (2006); Dame, *supra* note 6; Michael A Fitts, *Retaining the Rule of Law in a Chevron World*, 66 CHICAGO-KENT LAW REVIEW 355 (1990); Orin S Kerr, *Shedding Light on Chevron: An Empirical Study of the Chevron Doctrine in the U.S. Courts of Appeals*, 15 YALE JOURNAL ON REGULATION 1 (1998).

⁸ John F Manning, *Constitutional Structure and Judicial Deference to Agency Interpretation of Agency Rules*, 96 COLUMBIA LAW REVIEW 612 (1996).

⁹ It is important to note that the deference doctrines apply in different circumstances. For example, Chevron and Skidmore deference can apply to ordinary statutes, whereas 'high-level' deference generally only applies to specific legislative instruments (regulations). I describe this in more detail in Section 2.

¹⁰ John B Cheadle, *The Delegation of Legislative Functions*, 27 YALE LAW JOURNAL 892 (1918); Kenneth Culp Davis, *A New Approach to Delegation*, 36 UNIVERSITY OF CHICAGO LAW REVIEW 713 (1969).

Deference may also harm courts' interpretations. Agencies sometimes act self-interestedly or myopically. ¹¹ Thus, they may interpret the legislation incorrectly ¹², or may fail to appreciate the existing body of common law interpretations that surround the legislation ¹³.

The literature has not empirically tested the appropriate level of deference. The literature has examined the rate of use of particular deference types.¹⁴ The empirical literature has not examined which deference-level promotes the legislative purpose, while preserving fundamental rights and the common law structure.

This article empirically examines which deference-type promotes these three limbs. It examines a sample of 988 Supreme Court cases. It then tests which type of deference (a) promotes the legislative purpose, (b) quadrates with the existing common law structure,¹⁵ and (c) is consistent with fundamental legal values. It concludes that a low level of deference best achieves these goals.

¹¹ Myriad papers examine agencies' incentives from both a legal and an economic perspective, see for example: Robert Dur & Otto H Swank, *Producing and Manipulating Information*, 115 ECONOMIC JOURNAL 185 (2005); Jaap Hage, *Legislation and Expertise on Goals*, 3 LEGISPRUDENCE 351 (2009); Clare Leaver, *Bureaucratic Minimal Squawk Behavior: Theory and Evidence from Regulatory Agencies*, 99 AMERICAN ECONOMIC REVIEW 572 (2009); Pablo T Spiller, *Agency Discretion Under Judicial Review*, 16 MATHEMATICAL AND COMPUTER MODELLING 185 (1992); Phongthorn Wrasai & Otto H Swank, *Policy Makers, Advisers, and Reputation*, 62 JOURNAL OF ECONOMIC BEHAVIOR & ORGANIZATION 579 (2007); Nicolle Zeegers, *Distinguishing True from Other Hybrids. A Case Study of the Merits and Pitfalls of Devolved Regulation in the UK*, 3 LEGISPRUDENCE 299 (2009)..

¹² Antonin Scalia, Judicial Deference to Administrative Interpretations of Law, 1989 DUKE LAW JOURNAL 511.

¹³ Richard Pierce, *Reconciling Chevron and Stare Decisis*, 85 GEORGETOWN LAW JOURNAL 2225 (1997); B G Slocum, *Overlooked Temporal Issues in Statutory Interpretation*, 81 TEMPLE LAW REVIEW 635 (2008).

¹⁴ See for example: William N Eskridge & Lauren E Baer, *The Continuum of Deference: Supreme Court Treatment* of Agency Statutory Interpretations from Chevron to Hamdan, 96 GEORGETOWN LAW JOURNAL 1083 (2008); WILLIAM N ESKRIDGE & CONNOR RASO, CHEVRON AS A CANON, NOT A PRECEDENT: AN EMPIRICAL TEST OF WHAT MOTIVATES JUDGES IN AGENCY DEFERENCE CASES (Center for Empirical Legal Studies, CELS 2009 4th Annual Conference on Empirical Legal Studies Paper, 2009); Hickman & Krueger, *supra* note 6; Kerr, *supra* note 7; Peter H Schuck & E Donald Elliott, *To the Chevron Station: An Empirical Study of Federal Administrative Law*, 1990 DUKE LAW JOURNAL 984; Matthew C Stephenson, *Mixed Signals: Reconsidering the Political Economy of Judicial Deference to Administrative Agencies*, 56 ADMINISTRATIVE LAW REVIEW 657 (2004)..

¹⁵ I note that the *National Cable & Telecommunications Association v. Brand X Internet Services*, 545 U.S. 967 (2005) suggests that *Chevron* type deference trumps stare decisis doctrines. This suggests that at least some times of deference will not uphold stare decisis.

2 How does the deference-doctrine work?

This section establishes the key types of deference. The amount of `deference' is the amount of weight that a court gives to an agency's interpretation when the court interprets a statute. Eskridge and Baer¹⁶ indicate that there is a continuum of deference levels. However, Eskridge and Baer¹⁷ and Eskridge and Raso¹⁸ collapse this into three key types.

The first type is low-deference (Skidmore-deference). Low-deference arose following Skidmore v. Swift & Co., 323 U.S. 134, (1944). It holds that courts have the primary responsibility for interpreting legislation. However, the agency's interpretation is one factor that the court should consider when determining the optimal interpretation. As in Skidmore, this typically applies if the agency's interpretation is an 'policy document' that lacks legislative force. Low-level deference also applies in Australia, where, if the agency's interpretation is in a mere policy document, then the court merely considers the agency's interpretation as one factor that can influence the court's interpretation (Corporation of the City of Enfield v. Development Assessment Commission, 169 A.L.R. 400, [48]-[51] (Gleeson CJ, Gummow, Kirby and Hayne JJ) (2000)).

¹⁶ supra note 14. ¹⁷ *Id*.

¹⁸ supra note 14.

The second type is medium-deference (Chevron-deference). This holds that if (a) the legislation is vague, and (b) the agency's interpretation is reasonable, then the court should follow the agency's interpretation (Chevron USA Inc v Natural Resources Defence Counsel Inc, 467 U.S. 837, 864 (Stevens J) (1984)). This ordinarily applies if the legislation is in a `legislative instrument', a special document that has legislative force (United States v. Mead Corp., 533 U.S. 218, 226-7 (2001)). This type of deference also exists in Australia. Here, courts obey the administrator's interpretation if it is `reasonably proportionate' to purpose of the enabling-legislation (South Australia v. Tanner, 166 C.L.R. 161, 167 (Wilson, Dawson, Toohey and Gaudron JJ) (1989)).

The third type is high-deference (Seminole Rock/ Curtiss-Wright deference). This derives from Seminole Rock and Bowles v. Seminole Rock & Sand Co. 25 U.S. 410 (1945) and from United States v. Curtiss-Wright Export Corp., 299 U.S. 304 (1936). This type of deference holds that courts should presume that the agency's interpretation is correct and should follow it unless the interpretation is `clearly wrong' ¹⁹. This type of deference applies to agencies' interpretations of regulations (rather than to statutes).²⁰

This background establishes that there are three key levels of deference. The remainder of the article establishes which of these types is optimal.

¹⁹ Eskridge & Baer, *supra* note 14; Eskridge & Raso, *supra* note 14.

²⁰ Regulations are also forms of statutes D PEARCE & S ARGUMENT, DELEGATED LEGISLATION IN AUSTRALIA (2005); D C PEARCE & R S GEDDES, STATUTORY INTERPRETATION IN AUSTRALIA (6th ed. 2006).. I note that regulations are a slightly different type of statute; and thus, 'high-deference' might not apply in situations where 'low-deference' or 'medium-deference' apply. Nonetheless, it is still useful and important to test whether high-deference promotes principled interpretations of statutes.

3 Hypotheses

This section establishes the hypotheses. The analysis rests on three key premises. First, courts should favor interpretations that promote the legislative purpose ²¹. Second, statutes develop an encrustation of common law interpretations. Courts should respect these and apply rules of stare decisis ²². Third, courts should avoid abrogating fundamental rights such as the right to due process ²³. These traits have limits: courts cannot promote any one of these traits if it contradicts the words of the statute. The following sections examine which type of deference promotes these goals.

3.1 Deference and legislative purpose

Deference can promote the legislative intent. A presumption is that legislatures make statutes in order to promote a public purpose ²⁴. Courts are more able to promote the legislature's purpose if they can place the statute in the current social context.

²¹ William N Eskridge, *Dynamic Statutory Interpretation*, 135 UNIVERSITY OF PENNSYLVANIA LAW REVIEW 1479 (1987); Graham, *supra* note 5.

²² Lawrence C Marshall, "Let Congress Do It": The Case for An Absolute Rule of Statutory Stare Decisis, 88 MICHIGAN LAW REVIEW 177 (1989); Pierce, supra note 13.

²³ William N Eskridge, *Public Values in Statutory Interpretation*, 137 UNIVERSITY OF PENNSYLVANIA LAW REVIEW 1007 (1989).

²⁴ Henry Hart & Albert Sacks, *The Legal Process: Basic Problems in the Making and Application of Law*, 1253 (William N Eskridge & Philip P Frickey, 1994).

Agencies, and deference thereto, can promote the legislative purpose for at least three reasons. First, agencies can develop expertise in their field either through experience or by hiring experts²⁵. Key examples include the expertise of the FAA and FDA ²⁶. Courts cannot develop a similar level of expertise due to a lack of time and resources ²⁷.

Second, for areas outside their field of expertise, agencies can take public consultations ²⁸. Courts cannot ordinarily do so due to the rules of evidence ²⁹. These public consultations give agencies greater insight in to the social implications of the statute.

Third, agencies interpret legislation to apply to a broad range of fact-situations. Courts interpret legislation when they apply it to the facts of a particular case. This enables agencies to make clear ex ante rules that apply to many fact-situations. This should arguably enable the agency's interpretation to promote the legislative purpose in a wider number of cases. This also allows agencies to make 'dynamic' interpretations that evolve the meaning of statutes over time, and arguably promote the legislative purpose ³⁰. These factors suggest that agencies' interpretations are informative and that some degree of deference is desirable.

²⁵ Peter Strauss, On Resegregating the Worlds of Statute and Common Law, 429 SUPREME COURT REVIEW 429 (1994); Pierce, supra note 13.

²⁶ James T O'Reilly, Losing Deference in the FDA's Second Century: Judicial Review, Politics, and a Diminished Legacy of Expertise, 93 CORNELL LAW REVIEW 939 (2008).

²⁷ Pierce, *supra* note 13; Spigelman, *Just, Quick and Cheap: A New Standard for Civil Procedure*, 38 LAW SOCIETY JOURNAL 24 (2000).

²⁸ Richard Pierce, *Seven Ways to Deossify Agency Rulemaking*, 47 ADMINISTRATIVE LAW REVIEW 59 (1995); Pierce, *Reconciling Chevron and Stare Decisis, supra* note 13.

²⁹ Joseph Dainow, Constitutional and Judicial Organization of France and Germany and Some Comparisons of the Civil Law and Common Law Systems, 37 INDIANA LAW JOURNAL 1 (1961); Joseph Dainow, Civil Law and the Common Law: Some Points of Comparison, 15 AMERICAN JOURNAL OF COMPARATIVE LAW 419 (1967).

³⁰ WILLIAM N ESKRIDGE, DYNAMIC STATUTORY INTERPRETATION (1994); Mark L Humphery-Jenner, *Should Common Law Doctrines Dynamically Guide the Interpretation of Statutes*?, 3 LEGISPRUDENCE 171 (2009).
Complete or high-level deference may undermine the legislative purpose. This is for two reasons. First, it is arguable that the current executive could exert budgetary pressure on administrators in order to coerce them into interpreting legislation in a politically favorable way ³¹. This is inconsistent with the (presumed) public-regarding purpose for the statute. Thus, presumptive (high-level) deference to such an interpretation would undermine the legislative intent. Second, agencies might interpret legislation in order to promote their own goals, and these might differ from the original legislative intent ³². This might not be sufficient grounds in itself to hold that the agency's interpretation is `clearly wrong'. Thus, while low-level and medium-level deference would enable courts to ignore such interpretations, high-level deference might not. Therefore, high-level deference might require courts to depart from the legislative intent.

Overall, the prediction is then that low-level deference and medium-level deference should enable courts to support the legislative purpose. High-level deference might not do so. This induces the following prediction.

Prediction 1 (Legislative Purpose Prediction): Courts that adopt low-level or medium-level deference are more likely to explicitly uphold the legislative intent.

3.2 Deference and stare decisis

³¹ Steven Calabresi & Kevin Rhodes, *The Structural Constitution: Unitary Executive, Plural Judiciary*, 105 HARVARD LAW REVIEW 1155 (1992); Neal Devins, *Political Will and the Unitary Executive: What Makes an Independent Agency Independent?*, 15 CARDOZO LAW JOURNAL 273 (1993).

³² Pierce, *Reconciling Chevron and Stare Decisis*, supra note 13.

I argue that promoting stare decises is a desirable trait. A key aspect of judicial integrity is the integrity of the common law. Integrity of the common law implies support for stare decisis. Thus, a deference-type should arguably doctrines of stare decisis. In the context of a statute, this holds that courts should uphold a prior interpretation unless it is clearly wrong ³³.

Only low-level deference is likely to support statutory stare decisis. Medium-level (i.e. *Chevron*) deference is unlikely to support stare decisis in the light of *National Cable & Telecommunications Association v. Brand X Internet Services*, 545 U.S. 967 (2005). Here, the court held that if (a) a statute is ambiguous (so is capable of multiple interpretations), and (b) the court adopts one interpretation, then (c) an agency can adopt another inconsistent interpretation and the reviewing court must afford that interpretation *Chevron* deference (thereby overruling the court's prior interpretation). This means that under *Chevron* deference, stare decisis is less relevant and effective. By contrast, it would seem that if low-level deference applies, then it allows courts to ignore agencies' interpretations if they are inconsistent with stare decisis. Thus, only low-level deference quadrates with the the stare decisis threshold for over-ruling prior interpretations.

Prediction 2 (Stare Decisis Prediction): Courts that adopt low-level deference are more able to promote stare decisis; and thus, are more likely to base their decisions on it.

3.3 Deference and fundamental values

³³ P. Baker, *The Future of Equity*, 93 LAW QUARTERLY REVIEW 529 (1977); William N Eskridge, *Overriding Supreme Court Statutory Interpretation Decisions*, 101 YALE LAW JOURNAL 331 (1991).

The optimal level of deference should uphold fundamental legal rights and values.³⁴ These principles ordinarily reflect civil or political such as a right to a hearing according with natural justice and the presumption against indefinite detention ³⁵. Here, courts may interpret legislation based on the presumption that the legislature does not intend to undermine fundamental rights. Of course, legislatures can pass legislation that undermines fundamental rights; however, the court typically requires clear words in order to give legislation such a construction.³⁶

There are two presently relevant facts. (1) Because the court presumes the legislature intends to uphold fundamental rights, the court interprets legislation in a way that upholds fundamental rights unless the legislation explicitly contradicts them (see B v. DPP, [2000] 2 A.C. 423, 470 (H.L. 2000)), and (2) for each `right', the strength of this presumption varies over time as society changes and the importance of the `right' changes ³⁷. This implies that the threshold test to rebut the presumption varies over time.

³⁴ For decisions in favour of this see: Al-Kateb v. Godwin, 219 C.L.R. 562, 577 (H.C.A. 2004); Coco v. R, 179 C.L.R. 427, 437-438 (Mason CJ, Brennan, Gaudron and McHugh JJ) (H.C.A. 1994); B v. DPP, [2000] 2 A.C. 423, 470 (H.L. 2000).

³⁵ Stanley Fish, *Change*, 86 SOUTH ATLANTIC QUARTERLY 423 (1987).

³⁶ An example is Al-Kateb v. Godwin, 219 C.L.R. 562, 577 (H.C.A. 2004). Here, the court decided that the legislature intended to undermine fundamental rights (in this case, by imposing a period of indefinite detention). However, the decision was based upon the clear words of the statute, and the court looked for ways to avoid undermining rights.

³⁷ Michael Wait, *The Slumbering Sovereign: Sir Owen Dixon's Common Law Constitution Revisited*, 29 FEDERAL LAW REVIEW 57 (2001); Matthew Zagor, *Uncertainty and Exclusion: Detention of Aliens and the High Court*, 34 FEDERAL LAW REVIEW 127 (2006).

Low-level deference should support these fundamental rights. Low-level deference permits courts to ignore agency-interpretations that undermine fundamental rights because it merely uses agencies' interpretations as one guiding factor.

Medium-level deference allows courts to ignore agency-interpretations that are `unreasonable'. Courts may deem an interpretation to be `unreasonable' if it undermines fundamental rights. However, it is unclear that this is always the case and it is arguable that an interpretation is `textually' reasonable even if it is `socially' unreasonable.

High-level deference requires judges to accept interpretations that are not `clearly wrong'. Manning ³⁸ suggests that high-level deference under Seminole Rock allows agencies to implement broad standards that give the agency broad discretion. This discretion can apply to fields such as incarceration lengths (see Stinson v. United States, 113 S. Ct. 1913 (1993)). This potentially allows policies that induce indefinite incarceration in the absence of an offense.³⁹ Therefore, high-level deference has the potential to undermine fundamental-principles.

The analysis indicates that low-deference and medium-deference are consistent with societal integrity. However, high-level deference may undermine it.

Prediction 3 (Fundamental Doctrines Prediction): Courts that adopt low-level deference are more likely to promote fundamental values. Thus, they should be more likely to base their judgments on these values.

³⁸ supra note 8.

³⁹ See for example Al-Kateb v. Godwin, 219 C.L.R. 562, (H.C.A. 2004). Here, the court allowed indefinite detention of an illegal immigrant. The detainee received no criminal charge.

4 Data and Methodology

This section details the empirical methodology and data sources. First, I outline the modeling technique. This motivates the choice of sample and the selection of variables. Second, I outline the data and variables. For convenience, Table 1 summarizes the variables. I note upfront that not all types of deference would be applicable to all types of case.

4.1 Modeling Technique

I first outline the general testing procedure. The idea is to test whether deference causes a particular 'outcome' (i.e. adherence to stare decisis, fundamental values, or the legislative purpose. I do this by examine the relationship between (a) whether the court bases its decision on a particular deference technique, and (b) whether the court also bases its decision on principles of stare decisis, fundamental common law values, or the legislative purpose. The idea is to test whether the need to rely on a deference technique induces a particular outcome.

I do this by creating indicator variables that equal one if the court relied on low-level, mediumlevel, or high-level deference. I also create indicator variables that equal one if the judgment explicitly referred to principles of stare decisis, fundamental doctrines, or the legislative purpose (I define these below). I also collect data on control variables (that might influence case outcomes). However, it is important to control for endogeneity between the case outcome and the deference decision. Thus, I also collect instrumental variables that might predict the court's decision to defer to an agency's interpretation.

The resulting models are IVPROBIT models. These are two-stage models that control for endogeneity. The first stage predicts whether a judgment follows a particular type of deference (low, medium, high). The second stage uses the predicted values from the first stage regression to predict whether the case supports a particular outcome type (fundamental values, stare decisis, or legislative purpose). For example, to examine whether low-level deference increases the likelihood that a case upholds fundamental values: First, I predict whether a court would adopt low level deference in this case (using Equation 2). Second, I take the predicted values from this model to assess whether the court would be likely to uphold fundamental values (in Equation 1). These models are:

$$I(Fundamental Values) = f(I(Low Level Deference), Controls)$$
(1)

$$I(Low Level Deference) = g(Instruments)$$
(2)

More generally, the models are of the form:

$$I(Outcome) = f(I(Deference Type), Controls)$$
(1)

$$I(Deference Type) = g(Instruments)$$
(2)

Here, 'I(Outcome)' is an indicator that a judgment is purposive, supports stare decisis, or upholds fundamental values, 'I(Deference Type)' is an indicator that the court adopts no, low, medium, or, high deference, 'Controls' is a set of other variables that might influence the outcome, and `Instruments' is a set of control variables thought to influence the deference decision and to be exogenous to the outcome of the case, 'Instruments' is a set of instruments that might influence the decision to defer to the agency's interpretation, and 'Predicted Deference' is the predicted value from the second stage regression.

The model functions in two steps: First, Equation (2) predicts whether the court will adopt a deference type as a function of the instrumental variables. Second, Equation (1) assesses the outcome of the case as a function of the predicted deference level, and the control variables.

The models control for econometric specification issues. Specifically, they control for heteroscedasticity and clustering by year and by subject-matter of the decision due to findings that the subject-matter and composition of the court can influence the nature of the court's decision 40 . The use of instrumental variables controls for endogeneity 41 .

4.2 Sample

I use a sample of Supreme Court decisions in order to analyze deference, stare decisis, and fundamental doctrines. The sample is a set of 1014 Supreme Court decisions between 1983 and 2005. Some of the control variables are lagged (by one period), and the use of lagged data

⁴⁰ Stephenson, *supra* note 14; Eskridge & Baer, *supra* note 14.

⁴¹ J. Bound et al., *Problems with Instrumental Variables Estimation When the Correlation Between the Instruments and the Endogenous Explanatory Variables Is Weak*, 90 JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION 443 (1995); D. Staiger & J H Stock, *Instrumental Variables Regression with Weak Instruments*, 65 ECONOMETRICA 557 (1997); JEFFREY M WOOLDRIDGE, ECONOMETRIC ANALYSIS OF CROSS SECTION AND PANEL DATA (2002).

reduces the regression sample size to 998 observations. The sample features in ⁴².⁴³ I note that the court must decide its case-load; and thus, there is some selection bias in the data. Nonetheless, it is unclear that this selection bias would work either for or against the level (and impact) of deference. The data yields four presently relevant categories of variable.

4.3 Deference Variables

The sample yields three deference variables. I(Low Level Deference) equals one if the court relies on a case, such as Skidmore, that supports low-level deference. I(Medium Level Deference) equals one if the court relies on a case that supports medium level deference. These cases include Chevron and Mead. I(High Level deference) equals one if the court relies on a case that supports a high-level of deference. These include Curtiss-Wright and Seminole Rock. In all cases, the indicator equals one if the court reaches its decision by relying on a particular deference doctrine.

4.4 Independent 'Case Outcome' Variables

⁴² Eskridge & Baer, *supra* note 14.

⁴³ This data is available from http://www.georgetownlawjournal.com/extras/96.4/. For papers using the data see *Id*.; Eskridge & Raso, *supra* note 14..

There are three case outcome variables. All variables are indicator variables. First, `Purposive' is an indicator that equals one if the court explicitly relies on legislative purpose in its judgment. This proxies for the court issuing a judgment that explicitly supports the legislative purpose.⁴⁴

Second, `StareDecisis' equals one if the court's judgment explicitly relies on doctrines of statutory stare decisis. This tests Prediction 2 (the stare decisis prediction), which holds that low level deference should increase the likelihood that the court can rely on stare decisis. If there is a positive coefficient on a deference-type, then it suggests that that deference-type allows the court to use stare decisis doctrines. This implies that that deference-type supports the common law structure surrounding the statute.

Third, `Doctrine' equals one if the court's judgment explicitly uses presumptions based upon due process and avoiding constitutional conflicts. These are two fundamental societal doctrines or values. Thus, a positive relation between low level deference and the `Doctrines' variables implies that the deference-type is consistent with the use of fundamental legal doctrines.

Importantly, all variables refer to a situation where the court cites stare decisis, common law doctrines, or legislative purpose in its decisions. A positive value indicates that the court considered upholding the value (and thus, that it influenced the court's reasoning). A positive value does not per se mean that the decision upheld stare decisis (by upholding a prior

⁴⁴ This variable is over-inclusive because courts often refer to legislative purpose. However, this actually makes it more difficult to test Prediction 1 (the legislative purpose prediction) because it makes it more difficult to distinguish between purposive and non-purposive judgments; and thus, makes it more difficult to find a significant coefficient on the deference variable.

interpretation), merely that the court gave some consideration to stare decisis values when making a decision.

4.5 Control Variables

The control variables are factors that might affect the nature of the court's decision. The come in five key categories. The first set has intention-based variables. The court's tendency to adopt purposive interpretation and to utilize legislative histories to discern legislative intent may especially influence the likelihood of a purposive interpretation in the present case. This flows from prior empirical studies, which show that judges who historically are more (less) intention-based tend to make judgments that are more (less) intention based ⁴⁵. Thus, the models include $p(Purposive)_{t-1}$ and $p(Histories)_{t-1}$, the proportion of judgments in the prior judicial term in which the majority cited legislative purpose of legislative histories.

The second category is text based. The tendency to rely on textual doctrines could influence the likelihood that a court expressly cites the legislative purpose or expressly rely on fundamental doctrines ⁴⁶. Further, textualism may influence the likelihood that a court will defer to agency-interpretations ⁴⁷. Arguably, it should reduce the likelihood due to the risk that agencies will depart from the words of the statute. However, it may increase the likelihood of deference if the statute uses clear words to delegate interpretative power to agencies; and thus, limit courts'

⁴⁵ Stephenson, *supra* note 14; Eskridge & Raso, *supra* note 14.

⁴⁶ John F Manning, *Textualism and the Equity of the Statute*, 101 COLUMBIA LAW REVIEW 1 (2001).

⁴⁷ John F Manning, *Textualism as a Nondelegation Doctrine*, 97 COLUMBIA LAW REVIEW 673 (1997).

interpretative powers ⁴⁸. Thus, the paper includes three key measures of textualsm: the tendency to explicitly cite textual factors in the judgment, $p(Text)_{t-1}$, the tendency to refer to the act as a whole, $p(Whole Act)_{t-1}$, and the tendency to refer to the whole legislative code, $p(Whole Code)_{t-1}$.

The third category is cannon and presumption based. Canons ordinarily motivate against purposive-based interpretations, or interpretations that rely on prior common law reasoning ⁴⁹. The key canons are federalism canons, which presume the legislature did not intend to undermine the federal structure by abrogating state authority; and other miscellaneous canons that relate to the grammatical structure and syntax of the text ⁵⁰. Thus, the models include $p(Federalism)_{t-1}$ and $p(Other Canons)_{t-1}$, which reflect the proportion of judgments in the prior term that utilized federalism of 'other' canons. The models also include the proportion of judgments that acquiesce to legislative inaction vis-à-vis an interpretation, denoted $p(Legislative Acquiescence)_{t-1}$. If the court relies on legislative acquiescence then it is less likely to actively pursue key doctrines, or to promote the legislative purpose.

The fourth category contains the court's use of common law doctrines and stare decisis in the prior judicial term. These are denoted $p(Common Law)_{t-1}$ and $p(Stare Decisis)_{t-1}$. The goal is to control for the possibility that the relation between deference and stare decisis in this decision merely reflects auto-correlation with the court's historical tendency to rely on the common law or

⁴⁸ Michael Herz, *Textualism and Taboo: Interpretation and Deference for Justice Scalia*, 12 CARDOZO LAW JOURNAL 1663 (1991); Thomas W Merrill, *Textualism and the Future of the Chevron Doctrine*, 72 WASHINGTON UNIVERSITY LAW QUARTERLY 351 (1994).

⁴⁹ Cass R Sunstein, Nondelegation Canons, 67 UNIVERSITY OF CHICAGO LAW REVIEW 315 (2000).

⁵⁰ Larry Obhof, Federalism, I Presume - A Look at the Enforcement of Federalism Principles Through Presumptions and Clear Statement Rules, 2004 MICHIGAN STATE LAW REVIEW 123; Kenneth A Bamberger, Normative Canons in the Review of Administrative Policymaking, 118 YALE LAW JOURNAL 64 (2008).

stare decisis. Similarly, the fifth category contains the court's historical use of fundamental principles. Specifically, these are the court's use of due process and conflict-avoidance principles, denoted $p(\text{Due Process})_{t-1}$, and $p(\text{Avoidance})_{t-1}$, respectively.

4.6 Instrumental Variables

The instrumental variables contain factors that might affect the decision to defer to agencies' interpretations. First, if the agency is more `expert', then the court is more likely to defer to its decisions ⁵¹. Thus, the models include the indicator variable I(Expert) that equals 1 if the court mentions the agency's expertise.

Second, if the agency is more accountable to the executive, then their interpretations have more constitutional legitimacy, and the court should be more likely to defer to their interpretations ⁵². Thus, the models include I(Accountable), a dummy that indicates if the agency is accountable to the executive. Similarly, direct delegation from the congress should increase the likelihood of deference. Thus, the models use I(Congressional Delegation), an indicator of congressional delegation.

Third, if the interpretation is in a more formal document, such as a legislative instrument, then the court is more likely to adopt it ⁵³. This is particularly relevant after in *Christensen v. Harris*

⁵¹ Wendy B Davis & Rebecca Clarke, Hot Air: Undue Judicial Deference to Federal Aviation Administration Expertise in Assessing the Environmental Impacts of Aviation, 69 JOURNAL OF AIR LAW & COMMERCE 709 (2004); O'Reilly, supra note 26.

⁵² Douglas W Kmiec, Judicial Deference to Executive Agencies and the Decline of the Nondelegation Doctrine, 2 ADMINISTRATIVE LAW JOURNAL 269 (1988). ⁵³ Dame, *supra* note 6.

County, 529 U.S. 576 (2000), where the court indicated that the type of legislative instrument might influence the level of deference. Therefore, the models use I(Rule) and I(Adjudication), dummies that indicate if the interpretation is a `Rule' document or an `Adjudication'. The models omit the third format, `Policy', in order to avoid perfect multicollinearity.

Fourth, the political environment may influence the interpretation ⁵⁴. Therefore, the models include indicators for whether the President, the House of Representatives, or the Senate are liberal or conservative (denoted I(Liberal President), I(Liberal House), and I(Liberal Senate), respectively).

Fifth, the stability of the agency's interpretation should promote deference since supporting a long-standing interpretation could promote the goal of allowing people to organize their affairs around the law. Therefore, the models include I(Old) and I(Evolving), indicators of old or evolving interpretations. The models omit the third variable I(New), which represents a new interpretation, in order to avoid perfect multicolinearity.

5 Empirical Results

The results indicate that only low-level deference upholds the legislative purpose, promotes stare decisis, and upholds fundamental values. First, I present the univariate analysis and summary statistics. Second, I present the multivariate IVPROBIT results.

⁵⁴ Devins, *supra* note 31.

5.1 Univariate Analysis

Table 2 contains the sample composition by year, and Table 3 contains sample statistics by deference-type. It indicates that high-level deference is uncommon, featuring in only 19 judgments over the sample period, and clustering toward the end of the sample period. This is unsurprising as 'Curstiss-Wright' type deference does not apply to all statutes. Low-level deference is the most common form. Neither low-level deference nor medium-level deference show year-clustering.

The correlation and univariate statistics do not clearly support any form of deference. Table 4 contains the correlation statistics. It reports both tetrachoric correlations and pairwise correlations. Table 5 contains the univariate statistics. The correlations indicate a significant positive correlation between low-deference and medium-deference, and the use of legislative purpose. However, low-deference has a significant negative correlation with the use of fundamental doctrines. Medium-deference has a significant negative correlation with the use of stare decisis and with the use of fundamental principles. These results do not strongly confirm or deny that deference promotes principled interpretations. The univariate results indicate that low-deference and medium-deference decisions are significantly more likely to promote the legislative purpose (at 1% significance). However, medium-deference and high-deference decisions are significantly less likely to uphold stare decisis. While the results do not clearly support any deference-type, it is problematic to rely on them since (a) they do not control for other contaminating factors that might explain the case-outcome; and (b) they do not address

endogeneity and sample-selection issues. Subsequently, it is necessary to examine the IVPROBIT results.

5.2 Multivariate Analysis

The IVPROBIT results indicate that only low-level deference promotes all three goals. Preliminarily, it is notable that no model rejects the null that the instrumental variables are exogenous, and all models reject the null that the instruments are weak. This implies that the instruments are valid and are adequate to identify deferential judgments.

Table 6 analyzes the relation between deference and the use of legislative purpose in judgments. The dependent variable is 'Purposive', an indicator that equals one if the majority bases its reasoning on the promotion of the legislative purpose. The results indicate that low-level deference causes courts to refer more to the legislative purpose at 1% significance, and medium-level deference does so at 5% significance. High level deference does not significantly increase the likelihood that the court will refer to legislative purpose. Consistent with expectations, the historical tendency to refer to legislative purpose significantly increases the likelihood of a purposive judgment (at 5% significance). Similarly the use of common law doctrines increases the likelihood of a purposive interpretation.

Table 7 examines the likelihood that a court will issue a judgment that explicitly supports stare decisis. The dependent equals one if the majority explicitly supports stare decisis and equals zero

otherwise. A positive coefficient on a deference-type indicates that it makes the court more free to rely on stare decisis doctrines in its reasoning. Here, low-level deference significantly increases the likelihood of stare decisis references (at 1% significance). However, medium-level and high-level deference significantly decrease the likelihood (both at 1% significance). Thus, only low-level deference supports stare decisis doctrines.

Table 8 assesses the relationship between deference and the use of fundamental doctrines such as due-process, or avoidance of constitutional conflict. The results indicate that low-level deference significantly increases the likelihood of such references (at 1% significance). However, medium-level and high-level deference reduce the likelihood (both at 1% significance). This suggests that low-level deference allows courts to consider fundamental principles, whereas medium and high level deference discourage courts from doing so.

Overall, the results indicate that low-level deference significantly increases the likelihood of a judgment that supports the legislative purpose, upholds stare decisis, and promotes fundamental doctrines. By contrast, medium-level deference and high-level deference both significantly reduce the probability that a court will consider stare decisis or fundamental-doctrines. This indicates that low-level deference best promotes a principled approach to statutory interpretation.

6 Conclusion

Administrators interpret legislation. Deference doctrines indicate how much weight, if any, courts should give to administrators' interpretations. The optimal weight is the one that enables

courts to implement the legislative purpose while supporting exiting common law rules and upholding established fundamental legal values.

The results show that only low-level deference is optimal. This implies that courts should assign agencies' interpretations some weight in reaching their own interpretations of statutes and should not simply follow any interpretation that is `reasonable' or not `clearly wrong'.

These results make a significant contribution to the literature. This is the first study to empirically test the optimal level of deference. Thus, the results indicate how the court should approach administrators' interpretations of statutes in order to produce principled interpretations of statutes. These results have implications for the United States and for Europe. For the United States, they illustrate that reforms to the nature of deference might be desirable in order to promote better statutory interpretations. For Europe, the results illustrate how to develop European administrative law in order to promote better regulation.

7 Tables

Variable	Definition
Panel A: Dependent Variables	
I(Purposive)	An indicator variable that equals 1 if the majority or concurring
	judgments explicitly cite legislative purpose in their judgments
I(Stare Decisis)	An indicator variable that equals 1 if the majority or concurring
	judgments explicitly cite common law doctrines and/or stare decisis
	in their judgments
I(Doctrines)	An indicator variable that equals 1 if the majority of concurring
	doctrines or (b) doctrines that promote interpretations that avoid
	constitutional conflicts
Panel B: Deference Variables	constitutional connets
I(Low Level Deference)	An indicator that equals 1 if the court relies on low-level deference.
1(2011 20101 201010100)	The court does this if it follows the judgments in Skidmore or Beth-
	Israel
I(Medium Level Deference)	An indicator that equals 1 if the court relies on medium-level
	deference. The court does this if it follows the judgments in Chevron
I(High Level Deference)	An indicator that equals 1 if the court relies on high-level deference.
	The court does this if it follows the judgments in Curtiss-Wright or
	Seminole Rock
Panel C: Control Variables	
$p(Purposive)_{t-1}$	The average proportion of judgments in the prior judicial term in
n(Tout)	which the majority relied on legislative purpose.
$p(1ext)_{t-1}$	which the majority utilized textualist doctrines
p(Whole Act)	The average proportion of judgments in the prior judicial term in
	which the majority examined the act as a whole
p(Whole Code) _{t-1}	The average proportion of judgments in the prior judicial term in
r(····································	which the majority relied on notions of the whole code
p(Histories) t-1	The average proportion of judgments in the prior judicial term in
-	which the majority relied on legislative histories
p(Stare Decisis) t-1	The average proportion of judgments in the prior judicial term in
	which the majority cited stare decisis.
p(Other Canons) t-1	The average proportion of judgments in the prior judicial term in
	which the majority utilized miscellaneous canons of interpretation.
p(Legislative Acquiescence) _{t-1}	The average proportion of judgments in the prior judicial term in
	which the majority relied on the doctrine of legislative acquiesce.
p(Common Law) t-1	The average proportion of judgments in the prior judicial term in
n(Fodoralism)	The average properties of judgments in the prior judicial term in
p(rederansin) t-1	which the majority based its judgment on notions of federalism
n(Avoidance)	The average proportion of judgments in the prior judgial term in
P(110)dunee) [-]	which the majority used the principle that it should avoid
	interpretations that could induce constitutional conflicts

Table 1: Variable Definitions

p(Due Process) _{t-1}	The average proportion of judgments in the prior judicial term in which the majority cited due process doctrines.		
p(Separation of Powers) _{t-1}	The average proportion of judgments in the prior judicial term in		
	which the majority relied on separation of powers notions.		
Panel D: Instrumental Variables			
I(Expert)	An indicator that equals 1 if the court refers to agency expertise.		
I(Accountability)	n indicator that equals 1 if the court refers to the accountability of		
	the agency to congress.		
I(Delegation)	An indicator that equals 1 if the court refers to a delegation of		
	authority from the congress to the agency to interpret statutes.		
I(Rule)	An indicator that equals 1 if the agency places its interpretation in a		
	rule or instrument that has legislative force.		
I(Adjudication)	An indicator that equals 1 if the agency places its interpretation in an		
	adjudication.		
I(Liberal President)	An indicator that equals 1 if the president is a `liberal' president.		
I(Liberal House)	An indicator that equals 1 if the House of Representatives is		
	predominantly `liberal'		
I(Liberal Senate)	An indicator that equals 1 if the Senate is predominantly `liberal'		
I(Old)	An indicator that equals 1 if the agency's interpretation is long-		
	standing.		
I(Evolving)	An indicator that equals 1 if the court refers to agency's		
	interpretation as evolving		

Year	All	Percentage	Low Level	Medium Level	High Level
		-	Deference	Deference	Deference
1983	16	1.58%	4	3	0
1984	66	6.51%	11	13	0
1985	56	5.52%	6	7	0
1986	57	5.62%	10	5	0
1987	57	5.62%	8	5	4
1988	49	4.83%	12	3	1
1989	47	4.64%	6	5	1
1990	51	5.03%	10	6	1
1991	46	4.54%	12	5	0
1992	61	6.02%	8	3	3
1993	41	4.04%	4	2	1
1994	35	3.45%	6	4	1
1995	36	3.55%	2	6	1
1996	41	4.04%	12	2	0
1997	49	4.83%	10	5	0
1998	43	4.24%	9	6	1
1999	31	3.06%	6	2	2
2000	36	3.55%	7	1	1
2001	42	4.14%	9	8	0
2002	38	3.75%	9	4	0
2003	42	4.14%	17	4	1
2004	35	3.45%	6	1	1
2005	39	3.85%	11	0	0
Total	1014	100.00%	195	100	19

Table 2: Sample description and deference type by year

Sample	All	Low Level	Medium Level	High Level
		Deference	Deference	Deference
Variable	(1)	(2)	(3)	(4)
p(Purposive)	0.393***	0.395***	0.403***	0.349***
p(Text)	0.577***	0.589***	0.550***	0.611***
p(Whole Act)	0.260***	0.264***	0.246***	0.263***
p(Whole Code)	0.154***	0.158***	0.156***	0.140***
p(Histories)	0.425***	0.418***	0.447***	0.409***
p(Stare Decisis)	0.463***	0.484***	0.465***	0.423***
p(Other Canons)	0.279***	0.291***	0.265***	0.309***
p(Legislative Acquiescence)	0.076***	0.074***	0.068***	0.077***
p(Common Law)	0.089***	0.090***	0.083***	0.088***
p(Federalism)	0.033***	0.030***	0.034***	0.021***
p(Avoidance)	0.052***	0.053***	0.055***	0.034***
p(Due Process)	0.028***	0.025***	0.027***	0.034***
p(Separation of Powers)	0.005***	0.006***	0.003***	0.007**

Table 3: Sample Description

Table 4: Tetrachoric correlations

	Low Level Deference	Medium Level Deference	High Level Deference
Panel A: Tetrachoric co	orrelations		
I(Purposive)	0.128**	0.143**	-0.113
	[0.024]	[0.042]	[0.483]
I(Stare Decisis)	0.027	-0.433***	-0.346***
	[0.690]	[0.000]	[0.005]
I(Doctrines)	-0.231***	-0.354***	0.027
	[0.009]	[0.006]	[0.696]
Panel B: Pairwise corre	elations		
I(Purposive)	0.071**	0.067**	-0.029
	[0.023]	[0.033]	[0.353]
I(Stare Decisis)	0.015	-0.201***	-0.090***
	[0.637]	[0.000]	[0.004]
I(Doctrines)	-0.080**	-0.084***	0.006
	[0.011]	[0.008]	[0.861]

Table 5: Univarite statistics

This table contains the univariate statistics for the proportion of purposive-based, decisis-based, or doctrine-based decisions. It contains the average number of judgments that cite legislative purpose, stare decisis, or fundamental doctrines. It analyses the full sample, and sub-samples of low level deference, medium level deference, and high level deference cases. Superscripts ***, ***, and * denote significance at 1%, 5%, and 10%, respectively.

Sample	I(Purposive) (1)	I(Stare Decisis) (2)	I(Doctrines) (3)
All	0.420***	0.534***	0.094***
No Deference	0.357***	0.576***	0.057***
Low Level Deference	0.492***	0.549***	0.046***
Medium Level Deference	0.520***	0.230***	0.02
High Level Deference	0.316***	0.211*	0.105
Low Level Deference – No Deference	0.136***	-0.027	-0.011
Medium Level Deference – No deference	0.163***	-0.346***	-0.037
High Level Deference – No deference	-0.041	-0.365***	0.048

Table 6: Legislative purpose regressions

This table contains IVPROBIT regressions where the dependent variable is an indicator variable that equals 1 if the majority or concurring judgments explicitly relied legislative purpose their decisions. The key control variable is the deference variable that equals 1 if the court adopts low-level deference, medium-level deference or high-level deference. The models control for endogeneity in the deference variables. Brackets contain p-values calculated using robust standard errors clustered by year and subject-matter of the interpretation. Supers cript***, **, and *represent significance at 1%, 5%, and 10% respectively.

Dependent Variable		I(Purposive)	
Deference Variable	Low Level	Medium Level	High Level
	Deference	Deference	Deference
	(1)	(2)	(3)
I(Low Level Deference)	2.037***		
	[0.001]		
I(Medium Level		0.449*	
Deference)			
		[0.088]	
I(High Level Deference)			0.573
			[0.651]
p(Purposive) _{t-1}	1.298*	1.551**	1.694***
	[0.080]	[0.015]	[0.008]
p(Text) _{t-1}	-0.891*	-0.424	-0.578
	[0.092]	[0.462]	[0.317]
p(Whole Act) _{t-1}	-0.556	0.018	0.059
	[0.365]	[0.979]	[0.931]
p(Whole Code) _{t-1}	0.452	0.604	0.604
	[0.735]	[0.677]	[0.676]
p(Histories) _{t-1}	0.752	1.193***	1.285***
	[0.201]	[0.009]	[0.004]
p(Stare Decisis) _{t-1}	-1.805**	-0.336	-0.253
	[0.036]	[0.665]	[0.752]
p(Other Canons) _{t-1}	0.656	1.336**	1.458**
	[0.423]	[0.038]	[0.025]
p(Legislative	-2.370*	-2.297	-2.678*
Acquiescence) _{t-1}			
	[0.083]	[0.115]	[0.064]
p(Common Law) _{t-1}	2.977*	3.338*	3.428*
	[0.083]	[0.073]	[0.062]
p(Federalism) _{t-1}	3.933**	2.947	3.560*
	[0.034]	[0.129]	[0.073]

p(Avoidance) _{t-1}	-2.333*	-1.901	-2.061
	[0.067]	[0.198]	[0.162]
p(Due Process) _{t-1}	2.447	1.841	1.97
	[0.265]	[0.454]	[0.416]
p(Separation of Powers) _{t-1}	10.099*	7.315	7.408
	[0.081]	[0.223]	[0.225]
Constant	-0.337	-1.650***	-1.700***
	[0.705]	[0.005]	[0.005]
Observations	998	998	998
Wald Chi-squared	88.36***	22.46*	20.51*
	[0.000]	[0.070]	[0.071]
Chi-squared exogeneity test	2.58	1.12	0.45
	[0.108]	[0.294]	[0.502]

Table 7: Stare Decisis Regressions

This table contains IVPROBIT regressions where the dependent variable is an indicator variable that equals 1 if the majority or concurring judgments explicitly relied on common law doctrines or stare decisis in their decisions. The key control variable is the deference variable that equals 1 if the court adopts low-level deference, medium-level deference or high-level deference. The models control for endogeneity in the deference variables. Brackets contain p-values calculated using robust standard errors clustered by year and subject-matter of the interpretation. Superscripts ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Dependent Variable		I(Stare Decisis)	
Deference Variable	Low Level	Medium Level	High Level
	Deference	Deference	Deference
	(1)	(2)	(3)
I(Low Level Deference)	2.581***		
	[0.000]		
I(Medium Level		-1.309***	
Deference)			
		[0.000]	
I(High Level Deference)			-6.232***
			[0.000]
p(Purposive) _{t-1}	0.2	-0.122	-1.117
	[0.753]	[0.866]	[0.106]
p(Text) _{t-1}	-0.669	-0.24	0.581
	[0.175]	[0.729]	[0.373]
p(Whole Act) _{t-1}	-0.682	0.372	-0.307
	[0.182]	[0.621]	[0.635]
p(Whole Code) _{t-1}	-0.005	-1.331	-0.831
	[0.997]	[0.395]	[0.593]
p(Histories) _{t-1}	-0.176	0.273	-0.19
	[0.668]	[0.637]	[0.708]
p(Stare Decisis) _{t-1}	-1.954**	1.507	0.216
	[0.020]	[0.124]	[0.824]
p(Other Canons) _{t-1}	-0.439	-0.393	-0.781
	[0.489]	[0.645]	[0.340]
p(Legislative	-0.595	-0.013	1.185
Acquiescence) _{t-1}			
	[0.620]	[0.993]	[0.374]
p(Common Law) _{t-1}	0.824	1.283	0.109
	[0.596]	[0.506]	[0.948]
p(Federalism) _{t-1}	2.004	1.582	-2.023
	[0.197]	[0.486]	[0.320]

p(Avoidance) _{t-1}	-1.057	0.271	0.64
	[0.351]	[0.863]	[0.624]
p(Due Process) _{t-1}	1.396	4.812*	2.666
	[0.521]	[0.059]	[0.303]
p(Separation of Powers) _{t-1}	6.259	1.49	-1.512
	[0.264]	[0.812]	[0.812]
Constant	0.986*	-0.525	0.543
	[0.074]	[0.447]	[0.450]
Observations	998	998	998
Wald Chi-squared	1404.29***	33.71***	50.29***
	[0.000]	[0.002]	[0.000]
Chi-squared exogeneity	0.46	2.73	9.82***
test			
	[0.499]	[0.100]	[0.002]

Table 8: Due process and conflict avoidance regressions

This table contains IVPROBIT regressions where the dependent variable is an indicator variable that equals 1 if the majority or concurring judgments explicitly relied on due process or constitutional conflict avoidance in their decisions. The key control variable is the deference variable that equals 1 if the court adopts low-level deference, medium-level deference or high-level deference. The models control for endogeneity in the deference variables.. Brackets contain p-values calculated using robust standard errors clustered by year and subject-matter of the interpretation. Superscripts ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Dependent Variable		I(Doctrines)	
Deference Variable	Low Level	Deference	Low Level
	Deference	Variable	Deference
	(1)	(2)	(3)
I(Low Level Deference)	2.565***		
	[0.000]		
I(Medium Level Deference)		-1.825***	
		[0.000]	
I(High Level Deference)			-6.729***
			[0.000]
p(Purposive) _{t-1}	0.193	0.031	-1.191
	[0.761]	[0.973]	[0.119]
p(Text) _{t-1}	-0.64	0.133	0.918
	[0.204]	[0.868]	[0.138]
p(Whole Act) _{t-1}	-0.696	-0.292	-0.771
	[0.162]	[0.768]	[0.226]
p(Whole Code) _{t-1}	0.000	-1.724	-0.699
	[1.000]	[0.360]	[0.663]
p(Histories) _{t-1}	-0.191	-0.05	-0.442
	[0.644]	[0.945]	[0.415]
p(Stare Decisis) _{t-1}	-1.978***	0.386	-0.656
	[0.010]	[0.749]	[0.488]
p(Other Canons) _{t-1}	-0.443	-0.152	-0.77
	[0.477]	[0.888]	[0.368]
p(Legislative	-0.68	-3.903*	-0.393
Acquiescence) _{t-1}			
	[0.573]	[0.092]	[0.778]
p(Common Law) _{t-1}	0.796	1.534	-0.208
	[0.596]	[0.535]	[0.906]
p(Federalism) _{t-1}	1.851	-1.72	-4.303**
	[0.258]	[0.518]	[0.034]
p(Avoidance) _{t-1}	-1.051	-0.082	0.558
	[0.351]	[0.970]	[0.695]
p(Due Process) _{t-1}	1.347	3.972	1.452
	[0.495]	[0.211]	[0.569]
p(Separation of Powers) _{t-1}	6.019	-2.242	-4.09

	[0.285]	[0.787]	[0.579]
Constant	0.970*	-0.877	0.6
	[0.091]	[0.283]	[0.371]
Observations	998	998	998
Wald Chi-squared	775.99***	29.40***	103.23***
-	[0.000]	[0.009]	[0.000]

Experts and Laypeople in Regulation Setting Committees

Abstract

This paper analyzes the appropriate use of experts and laypeople in regulation setting committees. The use of experts and lay people is key to governmental policy-setting. This paper uses a theoretical model to highlight the importance of including both experts and laypeople members in teams, and to emphasize the need to use an appropriate consultation process to set policy. The main contribution of this paper is to show that decision-making committees should include both experts and laypeople. The committee should focus more on experts if the project/policy is more technical and more on laypeople (or members of the public) if the project relies more on soft social information. This reinforces the importance of considering all relevant stakeholders in decision-making.

Keywords: Committees; Public Consultations; Regulation; Administrative Agencies

1 Introduction

Stakeholder participation is a key part of a democratic institution (Somers, 1993; Lipset, 1994). Thus, prior literature emphasizes the need to include interested stakeholders in the decision-making process,¹ and indicates that teams influence corporate evolution (Hull Kristensen and Lotz, 2011). Further, prior literature has identified the importance of teamdiversity and communication to team performance.² Thus, in order to involve stakeholders in decision-making, governments and regulators can set policy by establishing committees of scientific experts and community representatives (Lavertu et al., 2011). However, it remains unclear how decision-makers can balance inputs from laypeople and experts in order to improve outcomes. The need to include consider the views of both 'laypeople' and 'experts' is the subject of this paper. I highlight the importance of including both experts and laypeople in order to ensure that the committee provides better recommendations.

Committees of laypeople and experts are prevalent in government and in regulatory agencies. Regulators might establish a committee to advise on a scientific or technical matter. Examples in the United States include the committees designed to assess medicare coverage (Lavertu et al., 2011).³ Here, the committee decides whether medicare should cover a drug. The committee includes scientific experts and laypeople (representing the public). Experts have also featured in the evaluation of the regulation of high tech medical devices, with Altenstetter (2011) highlighting the need to consider both lay (patient) vies and expert opinion. Another paradigm example is Australia's aborted plan form a 'Citizens'

¹ See for example: (Brown, 1985; Sorensen, 1985; Teulings, 1987; Varman and Chakrabarti, 2004; Jensen and Sandstrom, 2011).

² See for example: (Harrison and Klein, 2007; Kijkuit and van den Ende, 2010; Bar et al., 2011; Huckman and Staats, 2011; Sosa, 2011).

³ The United States is not alone in using experts to set health policy. For example, they have featured in the United Kingdom's regulatory process (Veitch, 2010; Wright, 2011). Public participation also featured in the context of Germany's Genetic Engineering Act of 1990 (Bora, 1998). Similarly, Dorbeck-Jung and Chowdhury (2011) highlight the importance of considering myriad stakeholders in the European medical products process.

Assembly' on climate change. In 2010, the government proposed the Assembly. It would comprise representatives of the public and climate change experts and would provide recommendations to the government how to respond to climate change. A more successful example is Australia's Tax Forum from 2011, which took submissions from a wide range of interest groups, and non-experts. It then provided avenues for tax reform. Regulatory agencies, such as Australia's Takeover Panel, can form committees (that can comprise both experts from the Panel and laypeople), who can then take public submissions from all relevant stakeholders, including the public and experts in takeovers. Similarly, the Australian Law Reform Commission (ALRC) is a quasi-government body that suggests reforms to legislation. It makes these suggestions by soliciting input from community groups (i.e. representatives of laypeople) and from experts in the area of the legislation. The uniting theme is that the top-level decision maker creates a committee, which then makes a recommendation.

The issue is whether it is actually worthwhile including both experts and laypeople in committees. There is limited prior literature on this point, which Section 2 discusses. Some committees appear to have been successful (such as Australia's Takeover Panel, and ALRC). However, some committees have received criticism, such as the one established in Sweden to reform domestic violence law (Granström, 2009), and the committees developed to assess stem cell research in the UK and the Netherlands (Kirejczyk, 2009). This begs the question of whether these committees are useful.

I develop a theoretical model to assess the desirability of including both experts and laypeople on a committee. The model analyzes the proportion of the committee that should be experts. I model a situation where a top-level manager must decide on the size of a project. This could be how much to spend on public schools (for example). It could also involve regulatory matters such as the appropriate level for a tariff. The total project value depends on information from the experts (the expert-value) and information for the laypeople (the lay-value). In the school-expenditure example, the expert-value would be the purely technical amount that the government should spend to promote economic growth whereas the lay-value would be the social amount that the government should spend after considering other expenditures such as amenities and tax cuts. The manager creates a committee of experts and laypeople in order to solicit this information. The manager decides on the proportion of experts and laypeople.

I show that the committee should always comprise experts and laypeople (except under very specific circumstances, such as where the project has zero value to laypeople, so the laypeople would contribute no useful information). The committee should comprise more experts if the expert-value is higher and fewer experts if the lay-value is higher. Overall, this suggests that a committee should generally comprise experts and laypeople, it should comprise more experts if the project is more technical, and fewer experts if the project is more 'social' and relies less on technical/expert information.

The main contributions of this paper are to highlight the importance of including experts and laypeople in decision-making committees at both a corporate and a regulatory level. That is, committees should generally include experts and laypeople, but the amount of experts should be higher if the project is more technical. Thus, for appropriate policychanges, corporations should consider the input of employees (laypeople) and experts; and, regulators should consider the input of experts and members of the public (laypeople). This emphasizes the importance of considering all relevant stakeholders in decisionmaking.

The remainder of the paper proceeds as follows. First, I consider the various situations in which committees might arise. It also discusses some prior literature on committees and the mixed (albeit limited) evidence on their success. Second, I outline why committees should contain experts and laypeople. I emphasize both the use of committees in corporations and the use of committees to set regulation. Third, I provide a general framework to guide the optimal structuring of consultations. I highlight the need to consider the regulator's goal as well as the nature of the influence exerted by the public and by experts.

2 The prevalence of committees and some examples

This section contains some examples of committees. The purpose is to highlight that they are prevalent and to provide some information on how, why, and when they might operate. The unifying theme is that there is a top-level decision maker. The decision maker creates a committee to make a recommendation on an issue. The committee can comprise experts and laypeople. The committee then makes a recommendation to the top-level decision maker. I discuss these types of committees and then discuss prior literature on the success (or lack thereof) of these committees.

National committees: Governments have historically relied on expert consultation and advisory committees (Lavertu and Weimer, 2011). However, there have been calls for increased public consultation (Koontz, 1999; Rowe and Frewer, 2000, 2004, 2005; Topal, 2009). Subsequently, public consultation processes have become more common in the EU,⁴ Australia,⁵ Canada,⁶ United Kingdom,⁷ the United States,⁸, the Netherlands,⁹ and Sweden. ¹⁰ The premise is that optimal regulation considers social standards.¹¹ Members of the public ('public-members') can provide insight into social standards. These committees have been diverse in nature, and not all have had decision-making power.

⁴ The EU has many public consultations, a summary of current and past consultations is available at: <u>http://ec.europa.eu/yourvoice/consultations/links/index_en.htm</u>

⁵ Australia is a federal system and has consultations on commonwealth law and on state law. A list of federal consultations is at: <u>http://australia.gov.au/have-your-say/public-consultations</u>

⁶ Canada facilitates public consultations, with a list of current and past consultations available from: <u>http://www.consultingcanadians.gc.ca/hm.jspx?lang=eng</u>

⁷ A source of UK public consultations is at: <u>http://tellthemwhatyouthink.org/</u>

⁸ The United States has a 'Public Notice and Comment' system, whereby the public can comment on some regulations. For example, the public can comment on regulations here: <u>http://www.regulations.gov/#!home;oldLink=false</u>

⁹ For example, the committees on stem cell research (Kirejczyk, 2009).

¹⁰ Sweden use d a committee of quasi-experts to help it reform the law on domestic violence (Granström, 2009).

¹¹ This could arguably trace back to Durkheim (1893) and the proposition that optimal regulations promote social solidarity and they do this if and only if they reflect contemporary social standards.

Two examples from Australia highlight their use. First, the Australian government proposed a 'Citizens Assembly' to consider action on climate change. This was to comprise (arbitrarily) selected members of the public and experts. It was to have no direct decision-making power.¹² Second, the Australian government held a Tax Forum October 2011. This forum comprised members of the government, tax experts/academics, and notable members of the public who had no tax expertise.¹³ The committee had indirect decision-making power because the government had promised key members of parliament, who held the balance of power, to act on the forum's recommendations.

Regulatory committees: At a regulatory level, the European Union has emphasized the need to consider stakeholders in administrative decisions. The European Commission has held that `actively involving citizens and ``stakeholders'' in decisions that concern all aspects of their lives is a key element of democracy' (European Commission, 2002, p75). However, the Court of Justice also held, *in Technische Universitat Munchen v Hauptzollamt Munchen-Mitte*, that commissions should consider experts when considering complex technical questions.¹⁴

Some examples from Australia help to illustrate the point. In Australia, the Australian Law Reform Commission (ALRC) proposes changes to laws. The government need not act on the ALRC's recommendations, but they have strong persuasive weight and court cases often cite ALRC views. The ALRC often begins the process by 'submissions and consultations'. Here, any interested member of the public can send opinions to the ALRC. These can

¹² Note that the then government took the Citizens' Assembly idea to an election in 2010. The government won the election; however, lost the balance of power in parliament. This forced the government to abort the Citizens' Assembly in favour of a carbon tax and emissions trading scheme.

¹³ An example is the investment banker Mark Carnegie.

¹⁴ See the opinion of Advocate General Jacobs in Case C-269/90, *Technische Universitat Munchen v Hauptzollamt Munchen-Mitte* [1991] ECR I-5469, para 14. Here, the issue was whether German customs Commission had legally refused permission to import an electron microscope. At issue were technical evaluations vis-a-vis the machine. The court held that comprehensive expert reports may be necessary for the Commission to discharge its duties to adequately consider the case.
include private citizens (whose opinions appear to get little weight) and 'experts'. All people self-select into the process. For example, The ALRC took consultations into reforms to the *Privacy Act* to consider the handling of private (i.e. medical) data of minors.¹⁵ The ALRC claimed to make 'extensive public engagement' including public forums, workshops, and submissions from stakeholders.¹⁶ Some medical experts, such as the Australian Medical Association, submitted opinions. Some representatives of the public, who have no especial expertise, also submitted opinions (such as the National Catholic Education Commission).

Second, the Australian Takeovers Panel administers M&A activity, and promulgates guidance notes on how it will enforce the relevant legislation (mainly the *Corporations Act 2011* (Cth)). The (now superseded) Guidance Note 10¹⁷ creates two levels of public involvement whenever the Panel considers a new Guidance Note (i.e. on rules such as 'minimum bid prices'). The panel will first create a 'committee' that can comprise members of the panel (i.e. experts) or laypeople. This committee advises the panel on the proposed Guidance Note. However, in creating this advice, the committee must undertake public consultations from 'widest group of people and stakeholders who it believes will be interested in the issues raised in its Guidance Note. The panel then considers these consultations in making its final Guidance Note. The consultations are not per se binding; however, the panel publishes comments to any submissions it receives.

Overall, this background shows that committees are important to governmental decisionmaking. They can comprise laypeople and experts. The issue is then to consider why

http://www.alrc.gov.au/publications/For%20Your%20Information%3A%20Australian% 20Privacy%20Law%20and%20Practice%20%28ALRC%20Report%20108%29%20/68decisio

16Forfullinformation,see:http://www.alrc.gov.au/publications/Executive%20Summary/extensive-public-
engagement17Thefullfrom:

¹⁵ See the ALRC Report: For Your Information: Australian Privacy Law and Practice (ALRC Report 108) /68. Decision Making by and for Individuals Under the Age of 18. Available from:

¹⁷Thefulltextisavailablefrom:http://www.takeovers.gov.au/content/DisplayDoc.aspx?doc=guidancenotes/superseded/010a.htm&pageID=&Year=

committees should comprise both experts and laypeople. I start with the arguments for/against including both experts and laypeople and then present a theoretical model to analyze committee decision-making.

3 Why should committees contain experts and laypeople?

This section outlines why committees should contain both experts and laypeople. In this article I mainly refer to a committee created by a top-level manager to make a recommendation to that manager. This section presents arguments for why a committee might benefit from having both laypeople and experts.

I analyze a situation where there is a top-level manager. The 'manager' could be the government or a regulatory agency (or some other person with decision-making power). The 'manager' then creates a committee. The committee can comprise members of the public and/or experts. This committee then reports to the decision-maker, who then makes a recommendation to the government. This could have been a model for Australia's aborted Citizens' Assembly on climate change. Here, the government intended to create a body that would comprise climate change experts and members of the public, and this body would make a recommendation to the government. The goal is to analyze whether these committees should comprise experts and members of the public.

3.1.1 Why should committees contain experts?

The traditional regulation-setting process has relied upon expert advice. This may partially reflect at least three benefits of using experts to set regulation.

First, 'experts' can generate specialist knowledge and this can help the government define technical regulation. Accurate regulation is important. Regulation is accurate only if (inter alia) it is technically accurate and receives adequate scrutiny. An expert-background can enable committees to define scientific matters (Hage, 2009), and scrutinize policy suggestions (Cleary and Zimmerman, 2001; Zeegers, 2009). At a national level, examples include the UK's regulation of stem-cells (Kirejczyk, 2009), and human-animal hybrid embryos (Zeegers, 2009). At an international level, an example is the use of experts in setting the EU's international securities regulation (Quaglia, 2008).

Second, 'experts' can indicate how legislation impacts particular interest groups. Governments should govern for the whole of society. Thus, governments should make themselves aware of the groups their legislation affects (Reenock and Gerber, 2008). Technical experts can indicate how legislation might influence particular technical professions (Hage, 2009). National experts, such the national civil servants used in EU committees, can indicate international regulations will affect particular countries (Trondal and Veggeland, 2003).

Third, 'experts' can (arguably) side-step contentious ethical issues. By definition, there is no public consensus on the ethically correct solution to ethically contentious issues. For these issues, committees of non-experts cannot reach a consensus outcome. An example is the use of non-experts in one committee involved in setting the UK's human-animal hybrid embryo regulation. This process involved several different committees that operated independently. One committee only contained members of the public (HFE Authority, 2007a). Here, the issues were ethnically complex (involving the precise definition of a hybrid embryo) and ethically contentious. This induced public-members to conflate hybrid embryos, which contain only 1% animal DNA, with the (technically impossible) chimeraembryos that would produce minotaur-like children (HFE Authority, 2007b; Zeegers, 2009). Experts can help to correct such value-laden misconceptions or avoid them entirely.

3.1.2 Why should committees contain members of the public?

There have been arguments to allow greater public consultation in the policy-setting process. There are several justifications.

First, the regulation-setting process should be democratic (Bellamy, 2006; Topal, 2009). Arguably, it is undemocratic to vest policy-making power solely in a small number of scientific experts (Dawson, 2004). The argument is based on the idea that experts might not consider social policy concerns and might focus on scientific issues. That is, a committee that only comprises experts might miss some stakeholders' concerns; and thus, might be less democratic. Public-consultations can ameliorate this by allowing the demos to involve itself in the regulation-setting process.

Second, the state and experts may have incompatible objectives. The state is publicfocused, aiming to improve quality and quantity of output. Experts can be biased. This bias can be scientifically grounded, rational, and justified (i.e. it could be optimal to spend more money investing in technology). That is, the bias need not be per se 'harmful', and might reflect the expert's opinion of what best promotes the public good. However, the bias arises because the expert's opinion might not reflect other social goals and might not consider practical funding constraints. Thus, expert-only committees may yield biased regulation, and involving public-members in regulation-setting committees can help to ameliorate these biases.

Third, it is arguable that the claimed `expertise' is illusory since it pertains to appropriate policy objectives. Even technical regulations can involve public-policy issues. This can arise in the context of cloning, securities-regulation, and trade-protection. Public-policy issues depend upon the social context rather than on technical rules. Thus, there are no relevant `experts' on policy-setting (Hage, 2009). Thus, an expert-only committee may ignore relevant policy issues.

Fourth, the role of experts in some policy failures, such as with mad cow disease (BSA), has arguably undermined public confidence in expert decision-making (House of Lords Select Committee on Science and Technology, 2000). Arguably, public confidence in legal decision-making is essential (Caldeira and Gibson, 1992). Thus, a purely-expert selection process might lack total public confidence and be undesirable.

Fifth, experts may become narrow-sighted. That is, experts might become too specialized in their field; and thus, might not appreciate the importance of other fields or of non-expert opinions. Experts have a background in their specialized field. They do not have a background in other potentially relevant fields. This narrow-sightedness may cause experts to ignore other relevant perspectives (Winner, 1986; Jasanoff, 2003). This might induce one-sided or incomplete policies. This is particularly problematic since many seemingly technical areas must address a non-technical audience (Nowotny, 2003). A key example is the problematic use of experts to set domestic violence regulations in Sweden, where the resulting law was under-inclusive and discounted some forms of domestic violence, such as violence by women or violence within same-sex partnerships (Granström, 2009).

3.2 Overall

The foregoing analysis highlights the importance of including both public-members and (self-interested) experts in the decision-making process. However, it is important to optimally structure the regulator's relationship with the public/expert (Rowe and Frewer, 2000, 2004, 2005). Thus, the following sections outline how governments should consider inputs from experts and public-members.

4 The model

This section contains the general framework. As indicated above, I analyze the following type of situation. The top-level manager must make a decision (i.e. must decide how much

money to spend on a project, or how much to tax carbon emissions). It creates a committee to make a recommendation. The committee may comprise experts and laypeople, and reports back to the top-level manager with a recommendation. It does not report back the disparate views of all the different committee members (as this would hardly achieve the goal of obtaining a centralized recommendation).

The structure of this section proceeds as follows. First, I outline the set-up including some example of where the types of decisions that a committee might make. Second, I outline the general solution. Third, I discuss the implications of the solution.

4.1 Set up

I discuss the decision about the size of a project. Regulatory situations include how much to fund public schools. All projects (of course) have a bare minimum or base size (i.e. schools require at least x to keep the electricity functioning). However, projects can have 'expert' and 'lay' aspects of value. For example, experts might suggest that the government spend an additional x_e in order to improve the aggregate level of education and encourage economic development. Laypeople might suggest an amount of x_p after considering the social importance of funding and the desire for the government to spend funding in other areas (such as tax cuts). Both aspects are important. As will become clear, the laypeople know the 'lay' value of the project, and the experts know the 'expert' value of the project. The lay people will always truthfully report the value they believe is correct. The experts will then report a value after considering the input of the laypeople.¹⁸

¹⁸ The structure of the game avoids 'double-counting' of values. The public suggests a value x_p . The expert then observes this value. After considering this value the expert suggests an 'additional' value. This represents the additional value (over that of the lay value) that the expert believes to be justified.

The project has a value $v_e + v_p$, where v_e is the value that experts believe the manager should set and v_p is the value that laypeople believe the manager should set. The expected expert-value is $E(v_e)$ and the expected lay-value is $E(v_p)$. Note, that the laypeople and the expert both believe each-others' values are important but the expert simply does not know the value to the laypeople (i.e. it is unknown but not unimportant). The manager wants to obtain v_e and v_p by forming a committee of experts and laypeople in order to make a recommendation. The proportion of experts in the committee is θ and the proportion of laypeople is $1 - \theta$. The experts report a value x_e and the laypeople report a value x_p . Thus, the committee's reported value is simply the weighted average of the expert's value and the layperson's value: $\theta x_e + (1 - \theta)x_p$.

The experts see the true value v_e but with some bias. That is, they see $\hat{v}_e = v_e + e$, where e is a random bias draw from a probability distribution f. The expected bias is E(e). I do not assume that it is independent from the other variables in the model. I assume that the experts are largely homogeneous, so that their aggregate bias is e. The experts suggest a project value of x_e , which need not equal \hat{v}_e .

The laypeople see the true value v_p but with some bias. They see $\hat{v}_p = v_p + p$, where p is a random bias drawn from a probability distribution g. The expected bias is E(p). I do not assume that the bias, p, is independent from the expert-value v_e , the lay-value v_p , or the expert's bias e. I assume that there are many different public members with many different views and that they do not intentionally attempt to mislead the government. That is, I assume that the laypeople would truthfully report \hat{v}_p to both the committee and to the government. That is, the value suggested by the laypeople is $x_p = \hat{v}_p$.

The utility functions for the manager and for the expert have the same general form. The manager's utility is negatively related to the squared distance between (1) the true value of $v_e + v_p$, and (2) the report that it receives from the committee: $\theta x_e + (1 - \theta)x_p$. Thus, the manager's goal is to minimize $(v_e + v_p - \theta x_e + (1 - \theta)x_p)^2$. The expert's utility is similar;

however, the expert sees the value $\hat{v}_e = v_e + e$. Thus, the expert's goal is to minimize $(\hat{v}_e + v_p - \theta x_e + (1 - \theta) x_p)^2$.

The game unfolds as follows. First, The government forms a committee, where the proportions of experts and laypeople are respectively θ and $1 - \theta$. Second, given that the committee exists, the layperson truthfully reveals \hat{v}_p to the committee. Third, after the expert has observed \hat{v}_p the expert decides on the value to suggest, x_e . It sets this value in order to minimize $(\hat{v}_e + v_p - \theta x_e + (1 - \theta)x_p)^2$. This means that the optimization program is:

$$\min_{\theta} E\left[\left(v - \theta x_e - (1 - \theta) x_p\right)^2\right]$$
(1)

$$s.t.x_e \in \arg\min E\left[\left(\hat{v}_e + v_p - \theta x_e + (1 - \theta)x_p\right)^2\right]$$
(2)

The following sections solve the optimization program and then analyze the solution. Proofs are in the appendix.

4.2 Solution to the optimization program

The solution proceeds in two steps. First, I obtain the value that the expert suggests x_e^* as the solution to Equation (2). Second, I obtain the proportion of experts θ^* as the solution to Equation (2). I then analyze the results.

The value that the expert suggests is a linear function of (a) the value that it perceives, \hat{v}_e ; (b) the expected true lay value of the project, $E(v_p)$; and (c) the expected lay value of the project as perceived by the laypeople, $E(\hat{v}_p)$. Proposition 1 contains this value.

Proposition 1: The optimal value that the expert suggests is:

$$x_e^* = \frac{\hat{v}_e}{\theta} + \frac{E(v_p)}{\theta} - \frac{(1-\theta)E(\hat{v}_p)}{\theta}$$
(3)

The second step is to determine the optimal proportion of experts, θ^* . I obtain θ^* by substituting x_e^* from Equation (3) into the optimization program in Equation (1). Proposition 2 contains the optimal θ^* .

Proposition 2: The optimal proportion of experts in the committee is:

$$\theta^{*} = \frac{A}{B}$$
(4)
Where,

$$A = E(v_{p}) + E(p) - E(v_{p}p) - E(p^{2}) + E(v_{e})E(v_{p}) + E(v_{e})E(p) - 2E(v_{p})^{2} - E(p)E(v_{p})$$

$$B = E(v_{p})^{2} + 2E(v_{p})E(p) + E(p)^{2} + E(v_{p}^{2}) + 2E(v_{p}p) + E(p^{2})$$

The next step is to interpret the solution in order to obtain economically meaningful implications.

4.3 Analysis of the solution

The issue is then to analyze the solution θ^* . There are three issues of interest: First, it is important to analyze how θ^* changes with the expected value of the project to the expert and the laypeople. Proposition 3 contains a summary of the factors that influence θ^* .

Proposition 3: The main findings are that the number of experts (1) increases with the expected expert-value of the project, $E(v_e)$; (2) decreases with the expected lay-value of the project $E(v_p)$; and, (3) decreases with the expected bias E(p).

The rationale for this is a straightforward analysis of the θ^* in Equation (4). Specifically, it follows from differentiating Equation (4) with respect to $E(v_e)$, $E(v_p)$, and E(p).

Second, it is interesting to examine whether the manager should create a committee that comprises no experts. The answer is that the manager should not do so because such a committee would gain no information on the expert-value of the project.

Proposition 4: The number of experts should not be zero. That is, $\theta^* \neq 0$.

The rationale for Proposition 4 is as follows. There is a solution to the expert's minimization problem exists only if $\theta \neq 0$. The justification for this is in the proof for Proposition 1. The intuition is that if the manager gives no weight to experts' opinions, then the experts provide no opinion and suggest no project value.

Third, it is important to assess when the manager will avoid using laypeople. The answer is that the manager does so under specific circumstances (in Proposition 5). These circumstances are not intuitive. A special case is more intuitive. This is where the manager knows that the lay value is zero. Here, there is no input from the public-member and there is no benefit from having the public member in the committee.

Proposition 5: The manager should use only experts (and no laypeople) under the specific condition that:

$$0 = E(v_p) + E(p) - 3E(v_pp) - 2E(p^2) + E(v_e)E(v_p) + E(v_e)E(p) - 3E(v_p)^2 - 3E(p)E(v_p) - E(p)^2$$

A special case occurs if the government knows that $v_p = 0$. Here, the laypeople produce only noise and are not beneficial.

4.4 Summary

Overall, these findings suggest that the committee should generally include experts and laypeople. The committee that I propose should always include experts and should exclude laypeople except in specific (and unintuitive) circumstances. The weighting to experts (i.e. the relative number of experts on the committee) should increase with the expert-value v_e but should decrease with the lay-value v_p .

5 Conclusion

This paper analyzes the use of experts and laypeople in committees. These committees can exist in governments and in corporations. Regulators can form bodies (such as Australia's Tax Forum, or aborted Citizens' Assembly on Climate Change) that comprise experts in the field (i.e. tax/law) and representative members of the public. These can provide advice to the government on how to reform the law. The issue is whether it is desirable to include the public in such decision-making.

The paper develops a theoretical model to analyze the role of laypeople and experts on committees. This model is designed to be illustrative and provide insights into the functioning of committees (rather than to per se indicate how many experts/laypeople to have on committees). The main contributions are as follows: (1) I provide a general framework in which to consider the composition of a committee; (2) I show that committees should generally comprise laypeople and experts. (3) I highlight situations can induce market failure in which the central planner (i.e. government/corporation) ignores the expert and the expert withdraws from the regulation-setting process. Future studies could empirically analyze the use of laypeople and experts in order to assess their real world use and verify the implications of this paper.

6 Appendix: Additional Proofs

Proof of Proposition 1:

The expert's optimization program is

$$\min_{x_e} E\left[\left(\hat{v}_e + v_p - \theta x_e - (1 - \theta)x_p\right)^2\right]$$

Note that the laypeople truthfully report $x_p = \hat{v}_p$, and expand the expectation operator to obtain:

$$E\left[\left(\hat{v}_{e} + v_{p} - \theta x_{e} - (1 - \theta)x_{p}\right)^{2}\right]$$

= $E(v_{e}^{2}) + E(v_{p}^{2}) + \theta^{2}x_{e}^{2} + (1 - \theta)^{2}E(\hat{v}_{p}^{2}) + 2\hat{v}_{e}E(v_{p}) - 2\hat{v}_{e}\theta x_{e} - 2\hat{v}_{e}(1 - \theta)E(x_{p})$
 $-2E(v_{p})\theta x_{e} - 2E(\hat{v}_{p}v_{p})(1 - \theta) + 2\theta(1 - \theta)E(\hat{v}_{p})x_{e}$

The first order condition with respect to x_e is therefore:

$$0 = 2\theta^2 x_e - 2\hat{v}_e\theta - 2E(v_p)\theta + 2\theta(1-\theta)E(\hat{v}_p)$$

Therefore, if $\theta \neq 0$, the optimal x_e is:

$$x_e = \frac{\hat{v}_e}{\theta} + \frac{E(v_p)}{\theta} - \frac{(1-\theta)E(\hat{v}_p)}{\theta}$$

Note that if $\theta = 0$, then there is no optimal x_e . That is, the government ignores the expert's opinion, so the expert has no incentive to suggest a value to the manager.

Proof of Proposition 2:

The optimization program is:

$$\min_{\theta} E\left[\left(v_e + v_p - \theta x_e - (1 - \theta) x_p\right)^2\right]$$

Expand the quadratic term and notice that the laypeople always truthfully report $x_p = \hat{v}_p$. Therefore,

$$\begin{split} E\left[\left(v_{e}+v_{p}-\theta x_{e}-(1-\theta)x_{p}\right)^{2}\right]\\ &=E\left[v_{e}^{2}+v_{p}^{2}+\hat{v}_{e}^{2}+E\left(v_{p}\right)^{2}+(1-\theta)^{2}E\left(\hat{v}_{p}\right)^{2}+2\,\hat{v}_{e}E\left(v_{p}\right)-2(1-\theta)E\left(\hat{v}_{p}\right)\right.\\ &\left.-2E\left(v_{p}\right)E\left(\hat{v}_{p}\right)\right.\\ &\left.+(1-\theta)^{2}\hat{v}_{p}^{2}+2v_{e}v_{p}-2v_{e}\hat{v}_{e}-2\,v_{e}E\left(v_{p}\right)+2v_{e}(1-\theta)E\left(\hat{v}_{p}\right)-2v_{e(1-\theta)\hat{v}_{p}}-2v_{p}\,\hat{v}_{e}\right.\\ &\left.-2v_{p}E\left(v_{p}\right)\right.\\ &\left.+2(1-\theta)v_{p}E\left(\hat{v}_{p}\right)-2v_{p}(1-\theta)\hat{v}_{p}+2(1-\theta)\hat{v}_{p}\hat{v}_{e}+2(1-\theta)\hat{v}_{p}E\left(v_{p}\right)\right.\\ &\left.-2(1-\theta)\hat{v}_{p}E\left(\hat{v}_{p}\right)\right] \end{split}$$

Obtain the first order condition by differentiating within the expectation operator to obtain:

$$0 = [-2(1-\theta)E(\hat{v}_{p})^{2} + 2E(\hat{v}_{p}) - 2(1-\theta)\hat{v}_{p}^{2} - 2v_{e}E(\hat{v}_{p}) + 2v_{e}\hat{v}_{p} - 2v_{p}E(\hat{v}_{p}) + 2v_{p}\hat{v}_{p} -2\hat{v}_{p}\hat{v}_{e} - 2\hat{v}_{p}E(v_{p}) + 2\hat{v}_{p}E(\hat{v}_{p}) = \theta \left[E(\hat{v}_{p})^{2} + E(\hat{v}_{p}^{2})\right] + E(\hat{v}_{p}) - E(\hat{v}_{p}^{2}) + E(v_{e})E(\hat{v}_{p}) + E(v_{e}\hat{v}_{p}) - 2E(v_{p})E(\hat{v}_{p}) + E(v_{p}\hat{v}_{p}) -E(\hat{v}_{p}\hat{v}_{e}) - E(\hat{v}_{p})E(v_{p})$$

Rearranging and collecting terms then yields:

$$\theta = \frac{A}{B}$$

$$A = E(v_p) + E(p) - E(v_pp) - E(p^2) + E(v_e)E(v_p) + E(v_e)E(p) - 2E(v_p)^2 - E(p)E(v_p)$$

$$B = E(v_p)^2 + 2E(v_p)E(p) + E(p)^2 + E(v_p^2) + 2(v_pp) + E(p^2)$$

7 References

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Conclusion

This thesis emphasizes the need for a principled dialog between courts, administrators, and legislators. A central issue in administrative law is how to encourage administrative agencies to promulgate public-minded policies while at the same time maintaining an appropriate separation of powers between the legislature, executive, and judicial branches. One way to motivate administrators is through effective judicial review of the decisions that they make.

One way to create an effective administrative structure is through justifiable rules to govern the interaction between legal bodies. This thesis examines the rules that govern the interaction between key legal bodies: legislators, courts, and administrators. The legislature creates the laws. Administrators interpret and apply the laws. Courts evaluate administrators' actions, and in doing so, evaluate administrators' interpretations of statues. This system is effective only if the interactions between courts, administrators, and legislators are principled. This thesis analyzes the rules that promote a principled dialog.

The common thread in this thesis is the interaction between legal bodies. A coherent legal environment exists if and only if (a) principled laws define the actors in that environment; and (b) principled laws govern the interaction between actors. This thesis focuses on the interaction between actors. It examines the interactions between citizens, courts, administrators, and legislators. The main focus is on how these interactions influence the interpretation of statute.

The thesis makes five over-arching policy contributions: (1) The thesis defines the appropriate interaction between legislators and administrators to promote principled interpretations of statues. (2) The thesis defines the appropriate way for courts to use administrators when interpreting statutes in order to uphold the legislator's purpose for the statute without undermining fundamental legal values. (3) The thesis emphasizes the need for judicial independence and highlights that the increasing role of administrators might undermine it. (4) The thesis indicates that regulators and legislators should consider public consultations with both laypeople and experts when setting regulation. (5) The thesis shows the need to develop both strong laws and strong regulator institutions in order to promote principled and effective law reform.

The thesis comprises five essays. The essays examine different aspects of the interaction between courts and administrators. A summary of the essays and their contributions follows.

Principled Statutory Interpretation in the Administrative State: Statutes permeate society. Administrators administer and interpret statutes. Litigants can challenge administrators' actions. In deciding

the challenge, courts must interpret the statute. In doing so, courts must decide how much weight to give the administrator's interpretation. Doctrines of deference govern the amount of weight that courts should assign to agencies' interpretations. This can range from a low level of weight, in which the administrator's interpretation is merely one factor that the court uses in reaching its own interpretation, through to a high level of weight, in which the court presumptively follows the administrator's interpretation unless the administrator is clearly wrong. The goal is to determine what level of deference produces principled interpretations of statutes.

This paper examines which level of deference produces principled interpretations of statues. The paper starts from the bases that (1) the level of deference influences the court's interpretation of statutes, and (2) it is desirable to issue an interpretation that is 'dynamic' and is 'purposive'; that is, that upholds the legislative purpose and adapts legislation to the current environment.

This paper uses two methodologies. First, it uses a contraction mapping theoretical model. The model highlights that if the court is able to merely assign some weight to the administrator's interpretation (i.e. adopt a low level of deference) then it is more likely to issue a principled interpretation. This provides the theoretical basis for the empirical results.

Second, the paper uses sample of 1014 US Supreme Court judgments to analyze the impact of deference on judicial interpretations. The results show that a low level of deference produces optimal interpretations. A low level of deference involves the court merely assigning some weight to the administrator's interpretation when interpreting the statue. The results show that a low level of deference can facilitate dynamic and purposive interpretations. A high level of deference can undermine them.

The paper makes significant public policy contributions. The main contribution is that a principled interaction between administrators and courts should involve a 'low' level of deference. This enables courts to produce optimal interpretations of statutes; and thus, promotes principled case outcomes.

Courts, Regulators, and the Legislative Purpose: Courts can defer to agencies' interpretations of statues. The level of deference can range from low-level deference (i.e. *Skidmore*), to medium-level deference (i.e. *Chevron*), to high-level deference (i.e. *Curtiss-Wright/Seminole Rock*). Administrators' interpretations might be informative; administrators apply legislation in its relevant social context. Thus, administrators might uphold the legislator's interpretation for a statute. Following an administrator's interpretation is one way for courts to incorporate this information. However, administrators might be harmful; they might interpret and apply legislation in a way that is inconsistent with established legal values, such as the rule of law or stare decisis. Thus, the goal is to determine how courts can use administrators' interpretations to both (a) promote the legislative purpose while (b) preserving fundamental values.

This paper uses a sample of 998 Supreme Court decisions to test the appropriate level of deference. The paper hypothesizes that a 'low' level of deference enables the court to (a) consider the administrator's interpretation; and thus, to incorporate useful information into the court's judgment, while (b) allowing the court to ignore harmful agency interpretations. The results highlight that this is the case; with a low level of deference being more likely to facilitate principled purposive judgments and to uphold fundamental legal values.

The policy implication is to support a 'low' level of deference. The goal of a coherent legal system is to ensure that courts uphold the legislator's purpose for a statute without undermining fundamental legal values. A low level of deference best facilitates this. Subsequently, the results imply that courts should adopt a low-level Skidmore-like form of deference.

Judicial Independence in the Administrative State: Cohen and Spitzer (1996) and Vermeule (2001) argue that the political environment influences the method and outcome of judicial decisions. Possible explanations include (a) that political institutions might place budgetary pressure on courts (Douglas and Hartley, 2003), and (b) court might wish to avoid comments from political players that may harm its institutional reputation (Solimine and Walker, 1992). Prior literature has not empirically tested the impact of the political environment on judicial decision-making.

This chapter uses data from 1014 United States Supreme court decisions to test whether the president's political affiliation influences judicial decision-making. The paper focuses on the impact of presidential politics on (a) the court's tendency to agree with administrators' interpretations of statutes; and (b) to adopt a purely text-based interpretation. The results show that if the president is 'liberal' in political affiliation, then the court is significantly more likely to agree with administrators and is significantly less likely to adopt a text-based interpretation. This implies that presidential politics influence judicial decision-making.

The findings have important public policy implications. The key implication is that judicial independence has weakened in the United States. The combination of both (a) an interaction between administrators and courts, and (b) rules of judicial deference to administrators' interpretations of statutes, has enabled presidential political views to influence judicial decision-making. This implies that reforms are necessary to secure an independent judiciary.

Experts and Lay People in Regulation Setting Committees: Regulators and legislators must set regulation. This regulation is often technical. The regulator/government can base the regulation on inputs from either experts or from laypeople. Experts convey specialized knowledge, which might improve the legislation. However, experts can be biased and self-interested. Including lay members of the public is important for promoting democracy and public representation. The issue is then how the regulator/government should use regulators and lay people in setting regulations.

This paper analyzes the appropriate use of experts and public-members in committees. This paper (1) highlights the importance of including both experts and public members, and emphasizes the need to use an appropriate consultation process to set regulation, (2) provides a general framework to guide regulation-setting, and (3) analyzes a framework in which there is `market failure'. This contributes to the debate on whether and how regulators should consider inputs from the public and from (potentially self-interested) experts. The findings have wider implications for any organization that must consider how to `democratically' set regulations based on members' inputs.

Do Weak Regulators Undermine Strong Laws? This paper examines a failed regulatory environment. The paper highlights that it is important to have both strong law and strong regulators. The goal is to empirically test what happens if strong law operates in a weak regulatory regime. The paper uses China's securities regulation as a natural experiment to test what happens if there is strong law but weak regulation.

China's legal background is an ideal natural experiment. China created principled securities law in November 2003. Cumming and Johan (2008) argue that the regulatory environment is weak; China's securities regulator (the CSRC) is under-resourced and non-interventionist. Thus, this paper examines whether the principled securities law reforms improved the quality of the market. The hypothesis is that there was no improvement because the regulatory environment was weak. The results indicate that the market microstructure of the Chinese market did not improve. Specifically, there was no change in the level of 'informed trade' on the Chinese market (as proxied by PIN, and the adverse selection components of the bid ask spread) following the principled law reforms. This implies that market quality did not improve; and thus, that strong laws are ineffective if the regulatory environment is weak.

This essay has significant policy implications. The main implication is that law reform is unhelpful if the regulatory environment is weak. This implies that both strong law and strong regulation is necessary for law reform to be successful.

Conclusion: This thesis makes a significant contribution to the legal and public policy literature. The thesis examines the principled interaction between courts, legislators, regulators, and citizens. It highlights the need for principled rules to govern these interactions. The thesis suggests appropriate rules to govern the interaction between bodies, highlights the importance of judicial independence, public consultations, and the development of both strong regulators and strong laws. This emphasizes the need for a principled dialog between institutes in the administrative state.

Summary

This thesis examines the relationship between courts, administrators, and legislators. The goal is to improve the operation of judicial review in the United States and provide suggestions on how to enhance emerging doctrines of judicial review in the EU. The thesis focuses on how courts, agencies, and legislators interact in order to make and interpret law. Legislators create laws. Administrators apply and interpret laws. Courts review administrators' actions and interpretations. In so doing, they must give some 'weight' to the agency's interpretation of the statute. This system produces principled outcomes only if there is 'principled' communication between legislators, courts, and administrators. This has become increasingly relevant in the United States (due to the proliferation of administrative acts) and in Europe, due to the move towards 'Better Regulation' in the EU. Thus, this thesis examines the nature of this 'principled communication' in order to help guide the appropriate relationship between courts and administrators. The over-arching research question is: How should courts and agencies interact in order to promote strong and effective law?

Naar een Effectieve Dialoog tussen Rechter en Bestuur.

Samenvatting

Dit proefschrift onderzoekt de relatie tussen rechters, bestuurders en wetgevers. Het doel is om de werking van de rechterlijke toetsing in de Verenigde Staten te verbeteren en suggesties over hoe nieuwe doctrines van rechterlijke toetsing in de EU beter te verstrekken. Het proefschrift richt zich op de vraag hoe rechters, bestuur(sorganen) en wetgevers met elkaar in dialoog wettelijke regels maken en toepassen. Regelgevers maken wettelijke regelingen, bestuursorganen interpreteren die wettelijke regels en passen ze toe. Rechters beoordelen op hun beurt weer het beleid, en interpretaties van regels door het bestuur. Bij die beoordeling moeten ze beoordelen welk 'gewicht' ze toekennen aan de door het bestuur gegeven interpretatie van wettelijke regelingen. Dit systeem produceert alleen 'principled outcomes' als er 'principled communication' tussen wetgevers, rechters en bestuur heeft plaatsgevonden. Dit wordt in de Verenigde Staten (als gevolg van de toename van het aantal bestuurshandelingen en- besluiten) en in Europa steeds belangrijker. In de EU met name ook als gevolg van de behoefte naar en beleidsinzet op 'betere regelgeving'. In dit licht onderzoekt dit proefschrift de aard van deze 'principled communication' om zo te komen tot een handleiding voor de juiste verhouding tussen rechters en bestuurders. De overkoepelende onderzoeksvraag is: Hoe kunnen rechters en bestuur het best interacteren en samenwerken met het oog op de bevordering van krachtige en effectieve regelgeving en daardoor effectief recht?

Curriculum Vitae

Mark Humphery-Jenner researches in the fields of law and economics, and in finance. Humphery-Jenner earned his LLB and BCom from the University of New South Wales, earning first class honours in both. He obtained PhDs from Tilburg University and the Australian School of Business at the University of New South Wales. Humphery-Jenner has published and forthcoming papers in highly regarded finance journals, including the Journal of Financial Economics, Strategic Management Journal, Journal of Financial and Quantitative Analysis, Review of Finance, Journal of Financial Intermediation, and Journal of Corporate Finance. Humphery-Jenner also has published and forthcoming papers in the Journal of Corporate Law Studies and Journal of Empirical Legal Studies.