

DOES DISCLOSURE MATTER?

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Regulators often address the potential for abusive standard form contracts by requiring extra disclosure. Important recent examples include the Credit CARD Act of 2009 and the ALI's newly proposed Principles of the Law of Software Contracts, but disclosure is at the heart of various legislation and regulation dating at least to the Securities Act of 1933. Despite the ubiquity of disclosure-based regulation, it is based on fundamental assumptions that have rarely been examined. Specifically, for a disclosure regime to be effective, it must increase readership of contracts beyond a nontrivial rate, and consumers and investors must be willing to change their decisions conditional on what they read. I follow the clickstream of 47,399 households to 81 Internet software retailers to test whether those who shop for software online are more likely to read the license agreement when it is more prominently disclosed. Given that the search and access costs are so low online, if increased contract disclosure were to matter in a consumer setting, we should see it here. Yet I find that the degree of disclosure has almost no impact on the rate at which consumers read license agreements. Moreover, those who do read are equally likely to purchase the software product regardless of the one-sidedness of the contract. The results indicate that mandating disclosure online is unlikely, on its own, to put pressure on sellers. I review alternative and possibly complementary approaches such as introducing contract rating systems to facilitate consumer awareness and eliminating class action waivers to increase the litigation threat to abusive sellers.

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Introduction

The majority of consumer transactions are governed by standard form contracts.^{2 3} For instance, computers are sold with warranties, software is usually bundled with license agreements that restrict use, and credit cards are offered with contracts spelling out late payment charges and dispute resolution clauses. As noted above, consumers may be deemed to have agreed to certain terms of use and privacy policies by visiting the web sites of commercial entities, social networks, and news organizations. Such Internet contracts are often presented as browsewraps, which are hyperlinks at the bottom of the page, and sometimes as clickwraps, which request assent via an “I agree” button.

The use of boilerplate enables the mass marketing of goods and services by allowing sellers to offer one-size-fits-all agreements to consumers without having to negotiate terms individually.⁴ But the use of standardized agreements also has its problems.⁵ Most of these stem

² See Omri Ben-Shar & Carl E. Schneider, *The Failure of Mandated Disclosure*, (John M. Olin Law and Economics Working Paper Series, No. 516, 2010) at 38-40 (noting the prevalence of boilerplate contracts and describing how time-consuming it would be for the average consumer to read all the fine print the consumer came across on any particular day), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1567284.

³ See W. David Slawson, *Standard Form Contracts and Democratic Control of Lawmaking Power*, 84 HARV. L. REV. 529, 529 (1971) (noting the prevalence of such contracts), Jason Scott Johnston, *The Return of Bargain: An Economic Theory of How Standard Form Contracts Enable Cooperative Negotiation Between Businesses and Consumers*, 104 MICH. L. REV. 857, 864 (2006) (noting that most firms offer their goods and services with standard form terms).

⁴ See, e.g., Restatement (Second) of Contracts, § 211, cmt. a (1981); Robert Hillman & Jeffrey Rachlinski, *Standard Form Contracting in the Electronic Age*, 77 N.Y.U. L. REV. 429, 437-40 (2002); see also Clayton Gillette, *Standard Form Contracts* (Law & Econ. Research Paper Series, Working Paper No. 09-18, 2009), at *2-3, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1374990 (reviewing literature on the benefits conferred by standard form contracts).

⁵ See Slawson, *supra* note 2, at 531; Todd D. Rakoff, *Contracts of Adhesion: An Essay in Reconstruction*, 96 HARV. L. REV. 1173, 1175 (1983) (arguing that sellers are prone to include unfair terms in standard form contracts because consumers will not read terms and courts will treat fine print as valid contracts); Hillman & Rachlinski, *supra* note 4, at 440-41 (discussing problems with standard form contracts); Margaret Jane Radin, *Regulation by Contract, Regulation by Machine*, 160 J. INST. & THEORETICAL ECON. 142, 149 (2004) (arguing that standard terms replace the law of the state with the “law” of the firm, to the detriment of consumers); see also Gillette, *supra* note 4, at *3-10 (reviewing literature on problems with standard form contracts).

from the fact that consumers rarely read fine print.⁶ If consumers pay close attention to standard terms and “shop around” for them, holding the product constant, then market forces would lead sellers to offer terms that appeal to consumers. But when consumers do not read and therefore cannot factor contract terms into their purchase decisions, sellers will reduce their costs and risks by offering more one-sided terms such as minimal warranties or severe restrictions on use.⁷ The result is the standard market failure that results from imperfect information.⁸

Regulators have long preferred increased disclosure as the policy instrument in these circumstances. The Securities and Exchange Commission (SEC) administers a number of disclosure regimes to protect investors and facilitate the functioning of securities markets.⁹ The 1968 Truth in Lending Act was created to increase consumer protection in credit transactions by mandating disclosure of key lending terms.¹⁰ The 1975 Magnuson-Moss Warranty Act requires

⁶ See, e.g., Robert A. Hillman, *On-Line Consumer Standard-Form Contracting Practices: A Survey and Discussion of Legal Implications*, in IS CONSUMER PROTECTION AN ANACHRONISM IN THE INFORMATION ECONOMY? (2006) (surveying students on online standard form contract reading practices and finding almost none read). This has been confirmed empirically in the software license context. See Yannis Bakos, Florencia Marotta-Wurgler & David R. Trossen, *Does Anyone Read the Fine Print? Testing a Law and Economics Approach to Standard Form Contracts* (NYU Law and Economics Research Paper No. 09-40 2009), at <http://ideas.repec.org/p/net/wpaper/0904.html> (surveying the actual shopping behavior of over 50,000 internet users and finding that only 0.01 percent read standard terms). For comments on why consumers may not read, see Hillman & Rachlinski, *supra* note 4, at 445–54.

⁷ See Michael Meyerson, *The Efficient Consumer Form Contract: Law and Economics Meets the Real World*, 24 GA. L. REV. 583, 603–08 (1990) (“Because consumers lack the knowledge to evaluate the cost of the risk, a rational seller will draft contract terms that shift risks to the consumer”); Avery Wiener Katz, *Avery Wiener Katz, your Terms or Mine? The Duty to Read Fine Print in Contracts*, 21 RAND J. ECON 518, 525-28 (1990) (demonstrating that there is an equilibrium where consumers don’t read and sellers offer the worst quality terms possible) Howard Beales, Richard Craswell, & Steven C. Salop, *The Efficient Regulation of Consumer Information*, 24 J. LAW & ECON. 491, 492–95, 501–13 (1981) (discussing the importance of consumer access to information); see also Steven C. Salop, *Information and Monopolistic Competition*, 66 AM. ECON. REV. 240 (1976) (modeling imperfect information and pricing).

⁸ See Salop, *id.* See *infra* note 38, 39.

⁹ See, e.g., Securities Act of 1933, 15 U.S.C. § 77a (2006); Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745; Streamlining Disclosure Requirements Relating to Significant Business Acquisitions, Securities Act Release No. 7355, Exchange Act Release No. 37, 802, [1996 Current Binder] Fed. Sec. L. Rep. (CCH) ¶ 85,851 (Oct. 10, 1996).

¹⁰ 15 U.S.C. § 1601 et seq. (2006). In fact, the central element of the current consumer protection in financial services is disclosure. See ADAM LEVITIN, PEW FINANCIAL REFORM PROJECT, THE CONSUMER FINANCIAL PROTECTION AGENCY, BRIEFING PAPER NO. 2 (2009), at 1 (“[t]he current consumer financial protection is based on disclosure regime”), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1447082.

standardized language and disclosures for warranties.¹¹ Many provisions of the 2009 Credit CARD Act rely on plain sight, plain language disclosures to increase transparency and help credit card users make more informed choices.^{12,13} Most recently, the American Law Institute (ALI) approved the *Principles of the Law of Software Contracts* with the goal of encouraging courts and legislatures to adopt rules to harmonize the law of software contracts, in particular the End User License Agreements (EULAs) that typically govern the use of software. The drafters of the *Principles* opt for regulation of disclosure rather than regulation of terms.¹⁴

Remarkably, given the breadth of disclosure regulation, legal academia and practitioners know very little about the efficacy of disclosure regimes. Does disclosure really matter? Or is it just a theoretically satisfying and uncontroversial way of dodging the potential for one-sided contracts? More specifically, do enough consumers actually (1) read standard form contracts when they are more prominently disclosed and (2) modify their purchase behavior based on what they read? For any disclosure regime to be effective, each of these conditions must be satisfied, yet there is not much evidence on either one. Only empirical study can answer these key questions.

This article presents the results of the first large-sample study of whether increased disclosure results in increased readership of contract terms and whether onerous terms lead those that read to shop elsewhere. I use clickstream data on the visits of 47,399 households to a set of online software retailers over a period of one month. I examine whether potential buyers of software are more likely to voluntarily access End User License Agreements (EULAs) when they are made more accessible, as measured by the number of extra mouse clicks required to find

¹¹ 15 U.S.C. § 2301 et seq. (2006).

¹² Credit Card Accountability and Disclosure Act of 2009, Pub. L. No. 111-24 (May 22, 2009).

¹³ See The White House, Fact Sheet Reforms to Protect American Credit Card Holders, *available at* http://www.whitehouse.gov/the_press_office/Fact-Sheet-Reforms-to-Protect-American-Credit-Card-Holders/.

¹⁴ PRINCIPLES OF THE LAW OF SOFTWARE CONTRACTS 116 (March 16, 2009) [hereinafter PRINCIPLES].

them. It is worth noting that while my specific empirical laboratory involves e-commerce, the questions that I examine are critical to all disclosure regimes.

The first main finding is that increasing contract accessibility does *not* result in a meaningful increase in readership. Increasing contract accessibility by providing it one mouse click closer to the shopper increases contract readership on the order of 0.1 percent. In other words, it adds only one additional reader per thousand shoppers. Even *mandating* assent does not help much. When terms are presented in a clickwrap that requires consumers to click “I agree” next to the terms, readership, conservatively defined as those that access the EULA page for at least one second, remains less than one in two hundred.

The second main finding is that those (few) shoppers who actually read the contract do *not* respond to what they see there. Thus the second necessary condition for market forces to keep sellers in check does not hold, either. Specifically, after measuring the relative one-sidedness of each EULA accessed in my sample, I find that reader-shoppers are equally likely to purchase a product regardless of how pro-seller the contract is.¹⁵ Either people do not spend enough time reading the contract, do not understand the terms well enough to incorporate them in their purchase decision, or both. Given that shopping for terms is so cheap online, the findings suggest what is costly is not the cost of contract access but rather the cost of reading.

An important question now being considered by policy makers, academics, and consumer advocates is whether increased or mandatory disclosure rules would help increase readership of software and other Internet contracts to a degree sufficient to discipline sellers. The immediate policy implication of my results is that the ALI’s recommendation to mandate increased disclosure online will require costly changes for sellers, yet on its own will likely have no

¹⁵ Relative buyer-friendliness is determined using a methodology which measures the bias of a variety of terms from standard form contracts relative to default rules. See Florencia Marotta-Wurgler, *What’s in a Standard Form Contract? An Empirical Analysis of Software License Agreements*, 4 J. EMP. L. STUD. 667 (2008).

detectable effect on consumer behavior. Instead, these regulators should perhaps focus on solutions that increase the role of reputation and litigation as mechanisms to curb seller abuse, such as facilitating contract rating systems and eliminating class action waivers.¹⁶

Online comparison-shopping is easy and nearly costless. Therefore, given the results, it is not unreasonable to imagine that they generalize to other markets with much greater search frictions. Without further studies in other markets, we cannot be sure. But at a minimum, the results suggest that regulators should in the future avoid the tempting assumption that simply disclosing contract terms will unleash powerful market forces that will invariably whip them into economic efficiency.

Part I provides an overview of the literature and disclosure regulations and proposals. Part II describes the methodology. Parts III and IV describe my main results. The conclusion discusses the results and policy implications.

I. Disclosure as a Mechanism to Prevent Market Failure

A. An Overview of Disclosure Regulation

Disclosure regimes have been adopted in a wide range of consumer contexts. The Securities Act of 1933,¹⁷ the Securities Exchange Act of 1934,¹⁸ the Investment Company Act of 1940,¹⁹ and the Sarbanes-Oxley Act²⁰ were enacted to ensure that investors are provided with pertinent financial information regarding the securities being offered.²¹ In consumer credit

¹⁶ See Conclusion, *infra*.

¹⁷ 15 U.S.C. § 77a et seq. (2006).

¹⁸ 15 U.S.C. § 78a et seq. (2006).

¹⁹ 15 U.S.C. § 80a et seq. (2006).

²⁰ Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745.

²¹ The SEC has stated that “[t]he laws and rules that govern the securities industry in the United States derive from a simple and straightforward concept: all investors, whether large institutions or private individuals, should have access to certain basic facts about an investment prior to buying it, and so long as they hold it. To achieve this, the

markets, the Truth in Lending Act requires mandatory and standardized disclosure of terms and cost of the loans.²² The Truth in Savings Act mandates clear and uniform disclosure of interest rates and fees related to deposit accounts to encourage competition and better decision-making.²³ The Magnuson-Moss Warranty Act requires sellers of consumer products to write warranties in a standardized manner using clear language.²⁴ The Nutritional Labeling and Education Act requires food producers to attach detailed nutrient content labels to their products.²⁵

In 2009, Congress enacted the Credit Card Act to increase consumer protection from credit card issuers.²⁶ While the Act includes several substantive limits on issuer behavior, such as limits on applicable penalty fees, many of its provisions focus on disclosure and transparency as a way to prevent advantage taking of consumers. For instance, the Act requires issuers to provide disclosures to consumers whenever a card is renewed and whenever the issuer changes any of its terms of use.²⁷ Issuers must send a notice forty-five days before they are able to increase users' interest rates or change any fees. The Act also requires issuers to provide full and clear disclosure of billing statements, such as statements explaining how long it will take for consumers to pay off their balance if only minimum payments are made.²⁸

A final recent example, and one close to this article's investigation, is the American Law Institute's newly approved *Principles of the Law of Software Contracts*. The *Principles* seek to

SEC requires public companies to disclose meaningful financial and other information to the public. This provides a common pool of knowledge for all investors to use to judge for themselves whether to buy, sell, or hold a particular security. Only through the steady flow of timely, comprehensive, and accurate information can people make sound investment decisions." *The Investor's Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation*, U.S. SEC. & EXCH. COMM'N, <http://www.sec.gov/about/whatwedo.shtml> (last modified Oct. 20, 2010).

²² 15 U.S.C. § 1601 et seq. (2006).

²³ 12 U.S.C. § 4301 et seq. (2006).

²⁴ 15 U.S.C. § 2301 et seq. (2006).

²⁵ Nutrition Labeling and Education Act of 1990, Pub. L. No. 101-535, 104 Stat. 2353.

²⁶ See *supra* note 12.

²⁷ 15 U.S.C. § 1637(d)(1)

²⁸ 15 U.S.C. § 1637(b)(11)

make software contracts more readily accessible to consumers.²⁹ Specifically, § 2.02 provides safeguards for transactions involving mass market retail transactions by directing a series of seller best practices with respect to disclosure that, if followed, ensure enforcement of a seller's terms.³⁰ One provision requires both online and physical software vendors to post the terms of their license agreements in a "reasonably accessible" manner on their website.³¹ This would by definition eliminate the use of "pay now, terms later" (PNTL) contracts in which buyers are able to access the contract only after purchase.³² The *Principles* ask that notice be conspicuous and terms be available via a hyperlink before purchase "so that a transferee cannot help but see the notice."³³ The *Principles* also require sellers who sell their software through their own corporate website to click on "I agree" next to a scroll box with the text of the license.³⁴

If effective, disclosure is an appealing way to combat problems associated with imperfect information. It has many virtues. It tends to be cheaper; it is non-intrusive and thus does not risk ill-informed direct regulation of terms and mandating standards³⁵; it preserves consumer choice³⁶; and, it encourages sellers to compete on the basis of the information disclosed.³⁷ Disclosure attacks the cause of the problem as opposed to its symptoms.³⁸

²⁹ PRINCIPLES, *supra* note 14.

³⁰ *Id.* § 2.02.

³¹ PRINCIPLES, *supra* note 14, at § 2.02(c)(1). The comments state that "[t]ransferors should adopt the best practices of subsection (c) to ensure enforcement of the form..." *Id.* at 125. It should be noted that even terms that comply with § 2.02(c)(1) would be subject to a claim that the terms are unconscionable or against public policy.

³² The drafters write that "[t]o ensure enforcement of their standard form, software transferors should disclose terms on their website prior to a transaction and should give reasonable notice of and access to the terms upon initiation of the transfer, whether initiation is by telephone, Internet, or selection in a store Transferees should be able to return the software only if opening the package is the only way to see the terms accompanying the package." *Id.* at 116–17.

³³ *Id.* § 2.02(c)(2); *see also id.* at 129.

³⁴ *Id.* § 2.02(c)(3).

³⁵ An example of an intrusive intervention is the bill passed by the state of Ohio imposing a 28 percent interest rate cap on payday loans (House Bill 545).

³⁶ *See* Christopher L. Peterson, *Truth, Understanding, and High-Cost Consumer Credit: The Historical Context of the Truth in Lending Act*, 55 FL. L. REV. 807, 882–85 (2003); Howard Beales, Richard Craswell & Steven Salop, *Information Remedies for Consumer Protection*, 71 AM. EC. REV. 410, (1981); Howard Beales, Richard Craswell, & Steven Salop, *The Efficient Regulation of Consumer Information*, 24 J. L. & ECON. 491, 513 (1981).

The theory of disclosure-based regulation is also elegant. By reducing search costs, disclosure facilitates comparison-shopping and increases the number of informed buyers.³⁹ In principle, a disclosure regime can be beneficial even if it does not affect the behavior of most consumers. In other words, it can be effective even if most consumers don't read or comparison shop based on what they read. What is required is that these regimes increase the number of informed consumers to a critical mass—sometimes called an “informed minority”—disclosure will be effective because sellers in sufficiently competitive markets will have an incentive to satisfy the informed buyers. The uninformed non-readers get a free ride to acceptable standard terms.⁴⁰ The argument clearly requires that consumers have homogeneous preferences regarding terms and that sellers are unable to discriminate between informed and uninformed consumers.

The informed minority argument has been used broadly to resist non-disclosure intervention.⁴¹ Yet critics have expressed doubts about the ability of disclosure regimes to generate significant increases in the number of informed consumers.⁴² Perhaps consumers ignore fine print, regardless of how accessible it is.⁴³ One study of special relevance here found that

³⁷ See Beales et al., *supra* note 36, 491–94; William Whitford, *The Functions of Disclosure Regulations in Consumer Transactions*, 1973 WISC. L. REV. 400, 404 (1973), at 403–04 (competition and choice), 453 (cost).

³⁸ See Beales et al., *Information Remedies for Consumer Protection*, *supra* note 36 at 413 (“Information remedies are most likely to be the most effective solution to information problems. They deal with the cause of the problem, rather than its symptoms, and leave the market maximum flexibility.”). Mandating disclosure may also address other legal issues. For a review of the potential benefits, see Robert Hillman, *Online Boilerplate: Would Mandatory Website Disclosure of E-Standard Terms Backfire?* 104 MICH. L. REV. 837, 845–49 (2006).

³⁹ See Alan Schwartz & Louis Wilde, *Intervening in Markets on the Basis of Imperfect Information: A Legal and Economic Analysis*, 127 U. PA. L. REV. 630, 660 (1979) (explaining how disclosure regulation can help solve problems of imperfect information in markets); PRINCIPLES, *supra* note 10, at 127–28.

⁴⁰ *Id.* at 649 (introducing the “informed minority” hypothesis).

⁴¹ See, e.g., *id.*; Michael Spence, *Consumer Misperceptions, Product Failure and Producer Liability*, 44 REV. OF ECON. STUD. 561 (1977); Steven Salop & Joseph Stiglitz, *Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion*, 44 REV. ECON. STUD. 493 (1977).

⁴² See, e.g., Victor P. Goldberg, *Institutional Change and the Quasi-Invisible Hand*, 17 J. LAW & ECON. 461 (1974) (arguing that sellers would find it more profitable to offer poor terms to all buyers and lose those few informed ones).

⁴³ See Ben-Shahar, *supra* note 51; see also Omri Ben-Shahar & Carl Schneider, *supra* note 2.

only about one in every thousand online software shoppers voluntarily reads the EULA (under existing disclosure practices).⁴⁴ Or, perhaps they do not understand it when they do read it.⁴⁵

Behavioral economics has also taught us that consumers rely on decisional heuristics to cope with complex everyday decision-making. Indeed, a number of studies suggest that some markets might not be functioning optimally due to various types of bounded rationality.⁴⁶ For instance, consumers tend to rely on a few salient product attributes in their purchase decisions.⁴⁷ Some disclosures that highlight the few most relevant product or service features might improve their decision-making, but it is unclear that simply providing more information will have a positive effect.⁴⁸ For such reasons, it has also been suggested that increased disclosure is unlikely to improve consumer decision-making in the credit card context.⁴⁹

⁴⁴ See Bakos et al., *supra* note 6.

⁴⁵ See William Whitford, *The Functions of Disclosure Regulations in Consumer Transactions*, 1973 WISC. L. REV. 400, 404 (1973) (citing Homer Kripke, *Gesture and Reality in Consumer Credit Reform*, 44 N.Y.U. L. REV. 1, 5 (1969) (consumer misunderstanding of terms) and Note, *Consumer Legislation and the Poor*, 76 YALE L.J. 745, 767 (1967) (consumers not reading terms); Richard Epstein, *The Neoclassical Economics of Consumer Contracts*, 92 MINN. L. REV. 803 (2008). For additional arguments against disclosure regulation, see Alan Schwartz & Louis Wilde, *Imperfect Information in the Market for Contract Terms: The Examples of Warranties and Security Interests*, 69 VA. L. REV. 1387, 1395 (“Disclosure requirements and the banning of contract terms apparently assume that comparison shopping will seldom improve consumer welfare because the former does not aim seriously at increasing the amount of comparison shopping that occurs, and the latter eliminates consumer choice altogether”); Matthew Edwards, *Empirical and Behavioral Critiques of Mandatory Disclosure: Socio-Economics and the Quest for Truth in Lending*, 14 CORNELL J. L. PUB. POL. 199, 227 (2005) (criticizing the timing of TILA disclosure as occurring after consumers have psychologically committed to buying).

⁴⁶ See Oren Bar-Gill, *The Behavioral Economics of Consumer Contracts*, 92 MINN. L. REV. 749 (2008) (explaining several consumer biases). For specific examples, see Oren Bar-Gill, *Bundling and Consumer Misperception*, 73 U. CHI. L. REV. 33 (2006) (discussing use of product bundling by sellers to take advantage of consumer misperception of value); Xavier Gabaix & David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121 Q. J. ECON. 505 (2006); Stefano DellaVigna & Ulrike Malmendier, *Contract Design and Self-Control: Theory and Evidence*, 119 Q. J. ECON. 353 (2004) (noting that profit-maximizing firms exploit consumers’ time-inconsistent preferences and naïve beliefs by designing contract terms that exploit these shortcomings); Oren Bar-Gill, *Seduction by Plastic*, 98 NW U. L. REV. 1373, 1395–1409 (2004) (arguing that credit card issuers offer terms that take advantage of consumers’ biases and inability to factor all the relevant costs of credit card borrowing).

⁴⁷ See Russell Korobkin, *Bounded Rationality, Standard Form Contracts and Unconscionability*, 70 U. CHI. L. REV. 1203, 1206 (2003) (suggesting an inability of consumers to consider all of the terms of the contract).

⁴⁸ See Samuel Issacharoff, *Disclosure, Agents, and Consumer Protection*, 167 J. INST. & THEOR. ECON. 1, 56-71 (2011) (providing various arguments and offering examples in support of this conclusion).

⁴⁹ See, e.g., Ronald Mann, *“Contracting” for Credit*, 104 MICH. L. REV. 899 (2006).

The stakes are high for both consumers and sellers. If the critics are correct and contract readership remains unaffected by increased contract access, mandating increased disclosure would be ineffective and potentially even harmful. First, consumers would continue to make purchasing decisions without fully considering terms.⁵⁰ Second, courts might mistakenly be led to believe that sellers' terms are the product of well-functioning market mechanisms and be more lenient in policing abusive terms.⁵¹ Third, in the software context, required disclosure in the form of clickwraps might be costly to sellers if the additional steps in the checkout process results in loss of revenue, as anxious shoppers lose their patience by having to click through many pages to check out.⁵² These recommendations would generate significant and costly changes to current software seller disclosure practices, because roughly half of the contracts for software sold online currently are PNTLs or browsewraps (hyperlinks to the contracts which are usually located at the bottom of a webpage).⁵³

At the end of the day, however, no amount of theory or debate can settle whether disclosure regimes are capable of informing consumers and shaping their behavior. These are purely empirical questions.

B. Has Disclosure Regulation Been Effective? Prior Evidence

Prior empirical evidence on the effectiveness of disclosure regimes is piecemeal and reaches mixed results. One study found that subjects who were required to choose among four

⁵⁰ See Note, *supra* 45 at 767.

⁵¹ See, e.g., Omri Ben-Shahar, *The Myth of the "Opportunity to Read" in Contract Law*, 5 EUR. REV. OF CONTRACT L. 1 (2009); Hillman, *Online Boilerplate*, *supra* note 38 (noting disclosure may lead to fewer judicial findings of unconscionability).

⁵² See generally Ronald Mann & Travis Siebeneicher, *Just One Click: The Reality of Internet Retail Contracting*, 108 COLUM. L. REV. (2008) (finding retailers may not find it worth the extra clicks during checkout required to obtain legally enforceable assent).

⁵³ This number comes from a previous empirical study on EULAs. See Florencia Marotta-Wurgler, *Are "Pay Now, Terms Later" Contracts Worse for Buyers? Evidence From Software License Agreements*, 38 J. L. STUD. 309, 321 (2009).

S&P 500 index funds often failed to choose the ones with lowest fees even though these would be sure to perform best on a net fee basis.⁵⁴ This behavior persisted even after subjects were given prospectuses that included more transparent fee summary sheets.⁵⁵ In another set of experiments, shortened SEC disclosures were shown to cause only modest improvements in portfolio choice.⁵⁶ Another recent study that found that older and young adult borrowers make poorer financial choices, suggesting certain intrinsic limits to the ability of any disclosure regime to improve decision-making.⁵⁷

In the food retail market, the introduction of standardized hygiene quality grade cards required to be displayed in restaurant windows in Los Angeles was shown to cause restaurant grade inspection scores to increase, the sensitivity of consumer demand to hygiene scores to increase, and hospitalizations due to food borne illnesses to decrease.⁵⁸ On the other hand, the introduction of mandatory calorie postings at chain restaurants in New York City decreased calorie consumption at Starbucks by a modest 6 percent.⁵⁹ A study of the effect of the Nutrition Labeling and Education Act on the salad dressing market found a statistically significant decrease in sales in dressings with the highest fat contents after the passing of the act.⁶⁰

⁵⁴James J. Choi, David Laibson, & Brigitte C. Madrian, *Why Does the Law of One Price Fail? An Experiment on Index Mutual Funds*, NBER Working Paper (2008), at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1400943.

⁵⁵ *Id.* at *10–11.

⁵⁶ John Beshears, James J. Choi, David Laibson & Brigitte C. Madrian, *How Does Simplified Disclosure Affect Individuals' Mutual Fund Choices?* (NBER Working Paper 2008), available at <http://www.nber.org/papers/w14859>. For similar findings, see James J. Choi, David Laibson & Brigitte C. Madrian, *Are Empowerment and Education Enough? Underdiversification in 401(k) Plans*, 36 BROOKINGS PAPERS ON ECON. ACTIVITY 151 (2005); James J. Choi, David Laibson & Brigitte C. Madrian, *Plan Design and 401(k) Savings Outcomes*, 57 NAT. TAX J. 275 (2004).

⁵⁷ See Sumit Agarwal, John C. Driscoll, Xavier Gabaix & David Laibson, *The Age of Reason: Financial Decisions Over the Lifecycle* (NBER Working Paper 2009) and references cited therein.

⁵⁸ Ginger Zhe Jin & Phillip Leslie, *The Effect of Information on Product Quality: Evidence From Restaurant Hygiene Grade*, 118 Q. J. ECON. 402 (2003). *But see* Clifford Winston, *The Efficacy of Information Policy: A Review of Achon Fung, Mary Graham, and David's Full Disclosure: The Perils and Promise of Transparency*, 46 J. ECON. LIT. 704 (2008) (noting that national trends indicated a decrease in foodborne illnesses in the time period analyzed).

⁵⁹ Bryan Bollinger, Phillip Leslie, & Alan Sorensen, *Calorie Postings in Chain Restaurants* (NBER Working Paper 2010).

⁶⁰ Alan D. Mathios, *The Impact of Mandatory Disclosure Laws on Product Choices: An Analysis of the Salad Dressing Markets*, 43 J. L. & ECON. 183 (2000).

Naturally, if consumers do not understand the labels, such regimes will be less effective.⁶¹ In that regard, one study found that improved mortgage disclosures might increase understanding of the features of complex loans.⁶²

Some have suggested disclosure regimes are likely to be effective only when the disclosure becomes “embedded” in everyday decision-making and corrects a consumer misperception. For example, one study found that disclosure regimes for payday borrowing were more effective if they took into consideration borrowers’ cognitive biases. Disclosure could thus be used as a tool to “de-bias” individuals, at least those that responded to the information— which in this case was only ten percent of borrowers.⁶³

C. Other Mechanisms That Help Markets Function

While this article focuses on disclosure regimes, it is important to note that there are other market mechanisms that may induce sellers to behave competitively with respect to contract terms even if few or almost no consumers read them. For instance, sellers who are concerned by reputation might have an incentive to offer better terms or product quality.⁶⁴ Chain restaurants have higher hygiene scores than independent restaurants, perhaps because of the potential reputational consequences of any given violation.⁶⁵

⁶¹ See Archon Fung, Mary Graham & David Weil, *FULL DISCLOSURE: THE PERILS AND PROMISE OF TRANSPARENCY* (2007) (citing references).

⁶² James Lacko & Janis Pappalardo, *IMPROVING MORTGAGE DISCLOSURES: AN EMPIRICAL ASSESSMENT OF CURRENT AND PROTOTYPE DISCLOSURE FORMS*, FEDERAL TRADE COMMISSION BUREAU OF ECONOMICS STAFF REPORT (2007); see also Whitford, *supra* note 45, for a review of empirical literature demonstrating the questionably modest success of TILA.

⁶³ Marianne Bertrand & Adair Morse, *Information Disclosure, Cognitive Biases, and Payday Borrowing* (U. of Chicago Graduate School of Business Working Paper 2010).

⁶⁴ See, e.g., Douglas Baird, *The Boilerplate Puzzle*, 104 MICH. L. REV. 933, 938 (2006).

⁶⁵ See Ginger Zhe Jin & Phillip Leslie, *Reputational Incentives for Restaurant Hygiene*, 1 AM. ECON. J. 237 (2009); see also Abhit V. Banerjee & Esther Duflo, *Reputation Effects and the Limits of Contracting: A Study of the Indian Software Industry*, 115 Q. J. ECON 989 (2000).

Alternatively, sellers may have an incentive to disclose information voluntarily and advertise to gain a competitive advantage.⁶⁶ This works if buyers are sufficiently sophisticated and attentive.⁶⁷ For example, consumer adoption of cars equipped with airbags in the 1990s appears to have been facilitated by media coverage as well as friends' accounts of their experiences with airbags.⁶⁸ Consumers who use Internet referral services when purchasing a car pay \$450 less on average; these savings are due presumably to information provision by the referral service.⁶⁹

When buyers are naïve and product attributes are not as salient as price or are not reported by the media, however, buyers might remain imperfectly informed. This would seem to be a plausible characterization of most standard form contract settings. If so, it would explain why so many disclosure regimes have been proposed.

II. Does Disclosure Matter? An Empirical Approach

Given the various existing and proposed information disclosure regulations and the potential effects on sellers, it is important to investigate whether a policy of increased standard form contract disclosure can inform consumers effectively and create an informed minority of buyers capable of disciplining the market. Indeed, it would seem to be a prerequisite to

⁶⁶ See, e.g., Beales et al., *supra* note 7, at 502.

⁶⁷ Paul Milgrom, *What the Seller Won't Tell You: Persuasion and Disclosure in Markets*, 22 J. ECON. PERS. 115, 118–21 (2008). *But see* Gaibaix & Laibson, *supra* note 46 (modeling situations where firms will “shroud” information, even when sophisticated buyers are involved).

⁶⁸ Fred Mannering & Clifford Winston, *Automobile Air Bags in the 1990s: Market Failure or Market Efficiency?* 38 J. L. & ECON. 265 (1995).

⁶⁹ Fiona Scott Morton, Florian Zettelmeyer & Jorge Silva-Risso, 49(4) J. Ind. Econ. 501 (2001). *See also* Joshua Wright, *Behavioral Law and Economics, Paternalism, and Consumer Contracts: An Empirical Perspective*, 2 NYU J. L. & LIB. 470 (2007) (citing empirical evidence that questions the need to intervene in markets to correct for behavioral biases).

regulation. Yet there has been surprisingly little study of the effectiveness of increased standard form contract disclosure on product markets.

My approach is to study the behavior of those shopping for software products online. I track the shopping behavior of Internet visitors to 81 software retailers who sell their products through their corporate website and who make their End User License Agreements (EULAs) available somewhere on their site. I examine the rate at which shoppers choose to become informed about the EULAs that govern the featured software. In particular, I study whether consumers are more likely to access EULAs when they are more prominently displayed.

The market for online software products is a particularly good setting to examine the potential effectiveness of increased contract disclosure policies. First, the EULA includes important non-price features, such as rights and restrictions about how the software product can and cannot be used. EULA terms continue to be at the center of many legal disputes.⁷⁰ Second, as mentioned earlier, the ALI has recently approved the new *Principles of the Law of Software Contracts*.⁷¹ These were drafted under the assumption that the mass market for software is not functioning well with regards to contractual terms.⁷² There is some support for this, as it has been shown empirically there is no informed minority in the online software market in the present circumstance.⁷³ Knowing whether increased contract disclosure is actually capable of creating an informed minority of software buyers is obviously crucial for evaluating the desirability of this approach. Finally, a number of recent debates on legal reform and the role of

⁷⁰ See, e.g., *Altera Corp. v. Clear Logic, Inc.* 424 F.3d 1079 (9th Cir. 2005); *Davidson & Assocs. v. Jung*, 422 F.3d 630 (8th Cir. 2005); *Davidson & Assoc. v. Internet Gateway*, 344 F. Supp. 2d 1164, 1178 (D. Mo. 2004); *M.A. Mortenson Co. v. Timberline Software Corp.*, 998 P.2d 305 (Wash. 2000).

⁷¹ PRINCIPLES, *supra* note 14.

⁷² See *id.* at 1–5.

⁷³ See Bakos et al., *supra* note 6.

disclosure regulation in standard form contracts focus on electronic contracts in general and software contracts in particular.⁷⁴

To estimate whether increased contract disclosure is associated with increased readership, I begin by classifying visitors to the company websites in my sample into those who have an intent to shop and those who visit for other reasons. For instance, some visitors might visit a particular software retailer to find out how to fix a problem of a copy they already own or to watch commercials. I use the approach of Bakos et al. to distinguish shoppers from non-shoppers.⁷⁵ I also distinguish the fraction of shoppers who purchase a product from those that do not and classify them into buyers and non-buyers. I use initiation of a secure checkout process to identify buyers. Finally, I measure the number of visitors –buyers and shoppers— who read EULAs. That is, I estimate the number of readers and nonreaders among visitors classified as buyers and shoppers. I identify readers as those who access a EULA page for more than one second. This gives an upper bound to the number of people who effectively read contracts, as some might click on the pages accidentally, or some might spend too little time on them to have meaningfully understood their terms.

A. Data and Sample Construction

The data set contains clickstreams of 92,411 U.S. households for January 2007 and was introduced in Bakos et al. These data were collected by a major online research company that tracks the Internet browsing behavior of a representative panel of U.S. households who have agreed to install in their computers a software program that tracks the URL addresses of every page visited during its Internet sessions.

⁷⁴ See, e.g., Shmuel I. Becher & Tal Zarsky, “E-Contract Doctrine 2.0: Standard Form Contracting in the Age of Online User Participation,” 14 MICH. TELECOMM & TECH. L. REV. 303 (2008); Hillman & Rachlinski, *supra* note 4.

⁷⁵ Bakos et al., *supra* note 6. The methodology of the article is described later.

The panel of households was selected to be representative of the population of U.S. households with Internet access.⁷⁶ Each household is assigned a unique anonymous identifier, which is used to track its web browsing activity and to classify it into “sessions.” The information captured by the software includes the URL of each page visited, the time spent on that page, whether that page was within a secure (i.e., encrypted) connection, the web server delivering the web page, and a unique identifier for the company or division owning that web server. The company also collects additional information, including detailed demographic information about the households.

I construct the sample by selecting those user visits to retailers that sell software products on their corporate website and that make their contracts available somewhere on their site either prior to or during the checkout process. I use the data provider’s classification of markets to identify visits only to software companies. I then exclude those vendors who offer their products for free (i.e., freeware providers), vendors who do not sell their product via their corporate website, peer-to-peer software providers, and web hosting companies. I include only companies with at least fifty unique visitors who viewed at least two pages during their visit. My interest is in users with intent or potential intent to purchase, or “shoppers,” and users that view only a single page are less likely to have such intent. I identified 81 companies that satisfied the above conditions.⁷⁷

For each of these companies I obtained the URLs of all EULAs available on the company’s website regardless of where they are located. Some companies make their EULAs available to visitors prior to purchase by posting them somewhere in their website. Others

⁷⁶ See *id.* for a detailed description of the data collection process.

⁷⁷ Bakos et al., *supra* note 6, uses a sample of 56 retail and 10 freeware companies. The companies in this sample include all 56 retailers in that article as well as 25 additional companies. The latter were not part of the original sample because shoppers are presented with the EULAs during checkout process, thus preventing me from measuring shoppers’ intent to become informed about terms voluntarily.

present their EULAs during the checkout process and require buyers to click on “I agree” either next to a hyperlink that directs a user to the terms of the contract or underneath a text box with the EULA terms in it. All these companies are part of the sample, although, as explained below, the subset that presents terms in a text box is best analyzed separately.

B. Company and Product Characteristics

Following Bakos et al., I collect company and product information that might affect a shopper’s propensity to become informed about EULA terms. I obtain data on each company’s annual revenue, year of incorporation, and public or private status. These data are from public sources or direct communications with the companies.

The company-level data are described in Table 1. The average revenue of the eighty-one sample companies is \$1.52 billion, a figure driven by a few large firms; median revenue is only six million dollars. The mean age of these companies, measured as 2010 minus the year of incorporation, is 16.7 years. About a quarter of the companies are publicly traded.

Table 1. Sample Software Companies and Their Products

	Number	Mean (s.d)	Minimum	Median	Maximum
Panel A. Company Characteristics					
Revenue (\$ Millions)	81	1,520 (6,850)	0.1	6	51,100
Age (Years)	81	16.7 (9.98)	2	14	57
Public Company	81	0.27 (0.45)	0	0	1
Panel B. Product Characteristics					
Consumer Product	81	0.68 (0.47)	0	1	1
Price (\$)	81	394 (1,025)	10	58	5,290
Median Price (\$)	81	352 (1,015)	1	49	5,000

Trial (Featured Product)	81	0.84 (0.37)	0	1	1
Trial (Most Products)	81	0.78 (0.42)	0	1	1

For each company, I gathered data on the flagship product. For companies with many products, I select that which the most popular or that accounts for the largest fraction of sales. If such information is not available, I record the product most prominently featured by the vendor. I record the price of the featured product and collect information about the median price of all other products offered by each seller, to get a sense of how representative is the featured product. I note whether the featured product is a single- or multi-license agreement or whether it is targeted for software developers, as that affects price. I also note whether the sellers offer trial versions of the product, and whether the product is targeted to business users or the general public. Finally, I classify each product into one of 150 software product categories, e.g. graphics or spreadsheets, based on the classifications by Amazon.com.

Table 1 also provides summary statistics on the flagship products of each company. Sixty-eight percent are targeted to members of the general public. The average price of the featured products is \$394 and the median is \$58. The featured products are representative of the firm's products, at least with respect to price, given that the average prices of all software products are close to these. Finally, eighty-four percent of the sample sites offer a trial version of their featured product or of the product in the sample, and seventy-eight percent offer trial versions for most of their products.

C. Contract Disclosure

One of the two main goals of the article is to measure whether more accessible contracts are more likely to be read (the other is, given reading, whether what is in the contract affects purchase decisions). I therefore collect *all* the EULA URLs that are available on a company's website. As noted above, many firms sell only one product and thus make available online only the EULA that governs the use of that product. Other firms sell many products which are all governed by a single EULA posted on their website, and still others post different EULAs for different products. I record every EULA posted. I found 240 unique URLs corresponding to EULAs for my sample companies.

I measure contract accessibility as the number of mouse clicks it takes to access the EULA from the most natural path to purchase.⁷⁸ Defining the “natural path to purchase” probably sounds complicated and subjective. However, it is a surprisingly straightforward process, as most companies naturally attempt to make it as easy as possible for consumers to navigate through their sites and purchase their products.

For example, consider a buyer who wishes to purchase an antivirus software product from a certain vendor. The buyer will select the product and proceed to check out. Imagine that before he is allowed to enter his credit card information, the buyer must agree to the product's EULA by clicking on “I agree” below a scroll box that contains the standard terms—this is a clickwrap contract. Because the EULA is directly on the most natural click path for purchasers and requires no extra clicks to find, it has an access score of zero. Zero extra clicks are required to see it. If the seller had required the buyer to click on “I agree” but invited her to access the EULA by clicking once more on an adjacent hyperlink, the access score is recorded as 0.5. This

⁷⁸ See Marotta-Wurgler, *supra* note 53.

is because although the buyer must actively acknowledge the existence of a contract, and so in that sense it is very easy to find, he must also click once to see its terms. These two types of contract presentations alert buyers of the EULA by forcing them to acknowledge it.

The distribution of contract accessibility by company is reported in Table 2. As of the time of the data collection process, or 3.70 percent of sellers place text boxes with the terms over the “I agree” button—the maximum possible disclosure—and 27.16 percent of sellers present them in nearby hyperlinks that must be clicked to see the terms.

Table 2. How Well Are Software Licenses Disclosed?

Disclosure of EULA (Number of Clicks From Purchase Path)	Number of EULAs	Percentage
0 (clickwrap)	3	3.70
0.5 (clickwrap)	22	27.16
1	34	41.98
2	12	14.81
3	7	8.64
4	2	2.47
5	0	0
6	1	1.23
Total	81	100.0

The rest of the companies in the sample make their contracts available on their websites but require buyers to do some extra hunting to find them. For instance, Symantec presents all of its product licenses at a minimum of two clicks away from the most obvious path of purchase. At the time of this writing, a link at the bottom of the homepage, entitled “license agreements,”

provides links to the EULAs of Symantec products.⁷⁹ Thus it takes a buyer one click from the main page to access the list of EULAs, and a second click to actually see the EULA of the desired product, for a total distance of two clicks. About forty-two percent of sellers place their license only one click away; across all companies that are not of the mandatory “I agree” or clickwrap character, the average number of clicks required to see the EULA is 1.66. One must be determined indeed to find some of these contracts, as the links are not always labeled clearly, and the text can be very small (perhaps intentionally). At face value, the table suggests that regulator concern about current disclosure practices is not unwarranted.

D. Shoppers and Shopping

I am interested in observing the behavior of visitors who intend to shop. The data provider reports the entire Internet browsing activity of my visitors, so I cannot know for sure which fraction of the visitors to the sample retailers are true shoppers as opposed to other motives. I begin by restricting my analysis to visitors with potential intent to purchase by excluding visits that do not access servers dedicated to shopping or purchasing activities. I then follow the approach in Bakos et al. to identify shopping-oriented visits more precisely. I discuss it in a bit more detail below.

I define a “user visit” as all page views (URL hits) from a company’s website within a single user “session.” A widely used approach in the clickstream literature is to identify shoppers by focusing on the intensity of a company visit. Users with intent to consider a purchase—I’ll

⁷⁹ See SYMANTEC, <http://www.symantec.com/index.jsp> (last visited Jan. 5, 2011); Product License Agreements, SYMANTEC, <http://www.symantec.com/about/profile/policies/eulas/index.jsp> (last visited Jan. 5, 2011).

call them shoppers—are more likely to view several pages in the retail side of the company’s website.⁸⁰ This observation helps me to separate casual browsers from shoppers.

Specifically, I use two definitions of “shopping visits” to estimate whether the user was indeed shopping. The broader definition of a shopping visit is one in which at least five pages were accessed in a given company’s website.⁸¹ This definition should exclude most of the casual browsers. A much more restrictive definition of a shopping visit is one in which the user has selected a product and initiated a checkout or payment in a given session. I identify these visitors by using the initiation of the checkout process. This definition is overly restrictive, as it excludes those many shoppers that do not ultimately buy. The general idea is that with one too-permissive definition of shopping visit and one too-restrictive definition, I am able to provide upper and lower bounds on the quantities of interest. As the bounded intervals turn out to be very tight, the precise definition of shopper is immaterial.

Once I identify shoppers, I define a “company visit” as a period of web browsing activity separated by at least thirty minutes of inactivity. A user can thus have multiple visits to a given company in a day, a week, or a month. The data provider uses this definition, as do several articles in the literature.⁸² I refer to all page views from a unique company’s website within a single user session as a “company visit” by that user.⁸³ The number of unique visitors in the

⁸⁰ See Wendy W. Moe & Peter S. Fader, *Dynamic Conversion Behavior at e-Commerce Sites*, 50 MGMT. SCI. 326 (2004); Lara D. Catledge & James E. Pitkow, *Characterizing Browsing Behaviors on the World Wide Web*, 27 COMPUTER NETWORKS AND ISDN SYSTEMS, 1065–73 (1995).

⁸¹ This approach is generally followed in the literature that uses clickstream data. See Bakos et al., *supra* note 6 for a detailed account and list of references.

⁸² See, e.g., Moe & Fader, *supra* note 80; Randolph E. Bucklin & Catarina Sismeiro, *A Model of Web Site Browsing Behavior Estimated on Clickstream Data*, 11 J. OF MARKETING RES. 249 (2003).

⁸³ While useful, this definition might be too narrow, as online visitors consider their purchase decisions over time and visit a company on multiple occasions, over the span of several days, before completing a purchase. Johnson *et al.* show that repeated visits to a company within a month typically correspond to the same shopping cycle. I thus tried an alternative definition of company visit by aggregating of the number visits to a unique company in a given month. Results for this approach were qualitatively and quantitatively similar and available upon request. See Eric J. Johnson, Wendy W. Moe, Peter S. Fader, Steven Bellman, & Gerald L. Lohse, *On the Depth and Dynamics of*

sample under the broader definition of shopping visits, which is at least five page views at that company's website, is 35,000.

The data provider also gathers demographic data about shoppers and shopping households that may affect their likelihood of becoming informed about license terms. I use data on the age and gender of the head of the household, household income, household size, and the presence of children. Because the sample is constructed to be representative of Internet users, and these are simply control variables in the analysis, I do not report their numerical effects in order to save space.⁸⁴

III. Are More Accessible Contracts More Likely to be Read?

Here we test whether contracts that require fewer extra clicks are more likely to be read, or at least seen. I focus on the frequency with which shoppers access the URL of a EULA and whether this frequency increases as contracts are easier to find.⁸⁵ I compute descriptive statistics of company visits and EULA accesses by contract accessibility under the two definitions of a shopping visit, and follow with a simple regression to more formally estimate the effect of contract accessibility on contract access while taking into account control variables.

A. The Relationship Between Contract Reading and Disclosure

For this portion of the analysis, I focus on visits to companies where EULA access is possible but optional. In other words, I exclude the companies with a EULA access score of 0

Online Search Behavior, 50 MGMT. SCI. 299–308 (2004) (finding that less than 1 percent of all month-long sessions in their sample contained more than one purchasing transaction in a given company).

⁸⁴ These results are available on request.

⁸⁵ Most firms have the same accessibility score for all their products' EULAs. Very few firms make their EULAs available multiple times. In those cases, I record the lowest (i.e., most accessible) score.

because all shoppers who begin the purchase process are presented with the text of the EULA. The fraction that voluntarily “reads” cannot be determined.

The essential results of this investigation are in Table 3. The top panel looks at uninterrupted visits by those who clicked on at least five pages during a company visit. Let us start from the bottom of this panel, and look at the extent to which shoppers accessed the EULA of the company that made it hardest to find, at six clicks away. (From Table 2, we know there is only one such company.) Of 235 shopping visits to this company, including repeat visits, the EULA was not accessed even once. The 1,160 shopping visits to websites where the EULA was four clicks away from the purchase path also witnessed not a single click on a EULA. At least a few shoppers may have been interested in perusing these contracts but simply could not find them on the website.

The picture does not change much as disclosure increases. Of the 49,079 shopping visits to companies locating their EULAs three clicks from the purchase path, only thirteen saw the EULA accessed—a rate of about three EULA accesses per ten thousand shopping visits (i.e. potential EULA accesses). When disclosure is improved to be one click closer to the purchase path, for a total of two extra clicks required, the readership rate actually falls slightly, to around one in nine thousand. When it is one click closer still, now requiring only a single click on a hyperlink that is actually on a purchase-path page, the readership rate increases but is still miniscule: only about one in every three hundred shoppers.

Table 3. Does More Disclosure Induce More License Reading?

Disclosure of EULA (Number of Clicks From Purchase Path)	Number of Company Website Visits	Number of Visits With EULA Clicked	Percent of Visits With EULA Clicked	Median Length of EULA View (Seconds)
Panel A. At Least Five Pages Accessed During Visit				
0.5 (clickwrap)	4,513	7	0.16	58
1	8,110	23	0.28	27
2	9,185	1	0.01	44
3	49,079	13	0.03	35
4	1,160	0	0	-
5	0	-	-	-
6	235	0	0	-
Panel B. At Least One Secure Checkout Page Accessed During Visit				
0.5	381	2	0.52	372
1	3,157	4	0.13	77
2	1,111	0	0	-
3	105	0	0	-
4	112	0	0	-
5	0	-	-	-
6	0	0	0	-

There were 4,513 shopping visits to companies that make their contract available via a clickwrap, including repeat visits. For these companies, shoppers voluntarily accessed the EULA only seven times. In other words, only a small fraction of one percent of visits by shoppers saw a EULA click. Put differently, only one in every six hundred shoppers clicks the EULA. Note that with these clickwraps, the EULA is as well disclosed as it can possibly be short of being printed

on the screen along the path of purchase, which as we saw above is a method of disclosure chosen by only three out of 81 firms.

Many of those who clicked on the EULA are not likely to have actually read and comprehended. We can see this in the time spent on the EULA URL. The median time for a “reader” to spend on that URL is between thirty and sixty seconds. As noted in Bakos et al., the average EULA is about 2,300 words long, and the average human reading speed is less than three hundred words per minute.⁸⁶ The reading speed is doubtless lower for legalese. Therefore, the low rates of EULA clicking that we observe are still substantial overstatements the fraction of shoppers that is actually informed about license terms.

The second panel of Table 3 shows results for shoppers who went all the way to placing a product in a shopping cart and accessing a secure checkout page. Many of these are therefore actual buyers, although some do not complete the checkout process. The number of visits in this group is much smaller than those in the previous two, consistent with prior evidence of online conversion rates around two percent. The pattern of visits to EULAs by accessibility also is slightly different under this definition of a shopping visit. Presumably, this group of shoppers would be especially interested in seeing the terms that are about to govern the use of their potential purchase. Yet this does not appear to be the case; almost none of them voluntarily accesses the EULA.

Once again, *all* shoppers who visit companies with a 0.5 EULA access score are made aware of the EULA because the checkout process requires them to explicitly agree to it. Yet even for this group of particularly interested shoppers, only about one in two hundred clicks the EULA. It would appear that increased disclosure is essentially *unable* to induce shoppers to

⁸⁶ Bakos et al., *supra* note 6, at *36. See R.W. Bailey & L. M. Bailey, *Reading Speeds Using RSVP*, USER INTERFACE UPDATE (1999) (average reading speed); Ronald Mann, “Contracting” For Credit, 104 MICH. L. REV. 899, 903–04 (2006) (discussing readability issues in form contracts).

study the terms, even when such shoppers are given very clear notice by being required to click “I agree” to such terms.

How to summarize these results? It is statistically true that increasing disclosure does increase readership. In unreported linear probability regressions (available upon request), these results hold after controlling for product, company, and shopper controls. The rates of EULA access do tend to increase when it is located closer to the path of purchase. This is clearly not the proper takeaway, however, because the increase is from a rate of zero to a rate of epsilon, even at the *most* prominently disclosed EULAs for the *most* affected group of shoppers. In the present setting, increasing disclosure does not and perhaps cannot increase contract readership to any meaningful rate.

I now return to the best-disclosed contracts by analyzing the time spent on those where the sellers present them in a text box next to a box that shoppers must agree to, most commonly during the checkout process.⁸⁷ Earlier I referred to these contracts as having an access score of zero. I can only measure the time spent on these pages, as all shoppers who decide to purchase a product are presented with the text of the EULA, whether they want to see it or not. Companies that choose this mode of presentation also may require the shopper to write their name, billing address, and credit card information in the same page where the EULA text appears, so the method of assessing readership based on time spent on that page is somewhat less reliable.⁸⁸ Please note that the numbers to follow are not reported in any table to save space.

In my data there are 3,269 visits to firms with EULAs with an access score of 0, where visit is defined as access of at least five pages. Out of these, 14.4 percent visit the EULA page,

⁸⁷ One company in this group, McAfee, also presents the EULA when shoppers want to register with the firm and create user profile.

⁸⁸ This varies by firm. Some firms require shoppers to enter their names and address in the EULA page, while others require that shoppers enter their credit card information.

where they spend a median time of 68 seconds. The best way to interpret this result is that 14.4 percent of visitors started, but not necessarily completed, a checkout process. Given that these companies often require shoppers to enter personal information *and* agree to the EULA on the same page, the information-providing steps probably account for the majority of the time spent on this page. But again, even if we discount the requirement of entering personal information, it is unlikely any significant reading or comprehension of terms occurs given the short time spent on the page.

Finally, limiting consideration to visits with shoppers that began a checkout process, the number of company visits drops to 643. Given that the EULA is presented either during registration or at some point during the checkout process, it is not surprising that 302 out of the 643 company visits (or 47 percent) also had a EULA visit. The 53 percent of visits that do not have a EULA view are situations where shoppers began a checkout or registration process but did not get far enough to access the license's URL. The average time spent on these pages, when accessed, was 146 seconds. The general conclusion still holds: No matter how prominently EULAs are disclosed, the vast majority of shoppers do not take the time to read them.

A possible explanation is that even though this type of EULA is conspicuously placed on a page, it often appears only at the end of the transaction during the checkout process, which is initiated after a shopper has already decided to purchase. Shoppers that could in theory be part of the informed minority, accessing the EULA terms as part of their consideration of a product for purchase, might find it too costly to select a product and begin a checkout process just to access the license. In that sense, a license that is 1 or even 2 clicks away from the home page of the company might be more "accessible" even if not deliberately presented to all shoppers. Similarly, once a shopper has decided to purchase a product and has started a checkout session

without taking into consideration the EULA terms, she might no longer care about the EULA.⁸⁹ This might also explain the short time spent on EULAs presented during the checkout process.

In any event, the small fraction of consumers accessing EULAs indicates that shoppers perceive a high cost of finding and reading the license relative to the expected benefits. Given that contract readership does not increase significantly with increased disclosure, the primary cost lies not in locating and accessing EULAs but rather in reading and assessing contract terms. Contracts might be too long or hard to understand, or consumers may not care enough about the terms to incur the cost of reading them.⁹⁰ The bottom line for policy is that mandating disclosure is unlikely to meaningfully affect fraction of consumers becoming informed.

To put the same conclusion in more theoretical terms and explore its implication for the *efficiency* of terms sellers present, note that Bakos et al. estimated the minimum of fraction of readers necessary to support an informed minority equilibrium. In the absence of mandated assent and with conservative assumptions about the cost of providing favorable contract terms, they found that the fraction of shoppers that access EULAs is one to two orders of magnitude less than what would be required to support an informed minority equilibrium.⁹¹ My analysis offers no evidence that increased accessibility or mandated assent *per se* could increase readership enough to change this conclusion. Any increase in the rate of EULA readership

⁸⁹ Cf. Matthew Edwards, *Empirical and Behavioral Critiques of Mandatory Disclosure: Socio-Economics and the Quest for Truth in Lending*, 14 CORNELL J. L. PUB. POL. 199, 227 (2005) (criticizing timing of Truth in Lending Act disclosure as occurring after consumers have psychologically committed to buying).

⁹⁰ This might be particularly true for low-price products. However, even when I restrict the sample to products that cost \$500 or more, EULA readership remains low. The most expensive products in the sample cost several thousand dollars, so it's hard to attribute low EULA readership to the value of the good for products in this range. Note also that EULA terms have been heavily litigated in the past. See Marotta-Wurgler, *supra* note 53, and references cited therein. I also check whether shoppers are less likely to read the EULAs of products that are more likely to be purchased repeatedly. Users that become familiar with a product that is continuously updated may feel less need to concern themselves with the EULA. Other products, such as test preparation software, are less likely to be purchased repeatedly. I create a dummy variable that equals one if the company markets products that are in our judgment likely to be repeat purchases. I find no relationship between the nature of the use of the software and users' propensity to access EULAs.

⁹¹ Bakos et al., *supra* note 6, at *39–40.

resulting from increased disclosure or mandated assent is simply too small to generate competitive pressure on sellers.

B. Can Consumers Become Informed Without Reading the Contract?

Perhaps consumers become informed about terms by consulting relevant websites, such as Consumer Reports, blogs dedicated to exposing sellers with bad terms, or specialized news outlets that might discuss the content of standard form contract terms.⁹² Bakos *et al.* explore this issue and I summarize their results. They obtain a list of the twenty-five most trafficked sites likely to have information about EULA terms. Next, they review the particular pages accessed by shoppers in each of these sites to determine whether they sought information about EULA terms or product quality. They find that shoppers accessed EULA information in consumer review sites in only three out of 148,552 sessions with at least two pages accessed (a more inclusive definition of shopping visit than mine). Also, less than a hundred shoppers accessed news pages with even general information about particular software products, not necessarily the products that they were shopping for. It is thus unlikely that shoppers are becoming informed by other Internet sources.⁹³ But even if some shoppers did consult such websites to become informed, this would not affect the conclusion about the efficacy of disclosure by sellers.

Another method of becoming “informed” without reading is to rely on sellers’ reputations when deciding whether to purchase. Indeed, Bakos *et al.* find moderate support for this possibility; buyers are slightly more likely to access the EULAs of smaller companies who might not be as well known to consumers.⁹⁴ But even if sellers are constrained by reputation, it remains

⁹² See Becher & Zarsky, *supra* note 74.

⁹³ See, e.g., Nishanth Chari, Note, *Disciplining Standard Form Contract Terms Through Online Information Flows*, 85 N.Y.U. L. REV. 1618 (2010).

⁹⁴ Bakos *et al.*, *supra* note 6, at *5.

the case that mandating contract disclosure will not change consumer behavior. Sellers might or might not be disciplined by reputational concerns, but they are not being disciplined by the informed minority mechanism that increased disclosure hopes to create.

IV. Do Consumers Care About What They Read?

This section of the article explores the second condition necessary for effective disclosure regulation: that people who read contracts act on what they read. This investigation also has implications for the design of any proposed regulation, for if consumers do not understand terms or act in a way that maximizes their own interests, the manner in which information is conveyed may need to be changed. For example, the contracts may need to be simplified, or written in plainer language, or have their key provisions highlighted. I examine whether consumers who read more buyer-friendly contracts are more likely to purchase a product.

A. A Closer Look at Contract Content

Following prior work, I measure the bias of a given contract based on how it treats twenty-three common terms that allocate rights and risks between buyers and sellers.⁹⁵ As indicated in Table 4, these include terms that relate to acceptance of the license, scope, restrictions on transfer, warranties and disclaimers of warranties, limitations of liability, maintenance and support, and conflict resolution. I measure the relative buyer-friendliness of these terms against the relevant default rules, namely Article 2 of the Uniform Commercial Code. These default rules govern contracting parties' relationships should the license fail to specify a term that is relevant to the dispute.

⁹⁵ The methodology is from Marotta-Wurgler, *supra* note 15.

Table 4. Measuring the One-Sidedness of EULAs

Each EULA that is clicked (12 unique EULAs) is scored per below. The sum of the scores is the bias of the license. Lower scores indicate more pro-seller bias. The most pro-seller (pro-buyer) score possible is -17 (+6).

Acceptance of License

- Does license alert consumer that product can be returned if she declines terms? 1 = yes, 0 = no

Scope of License

- Does definition of “licensed software” include updates or access to new versions, etc.? 1 = yes, 0 = no
- Are there license grant restrictions? 0 = no, -1 = yes
- Can licensee alter/modify the program? 0 = yes, -1 = no
- Can licensee create derivative works? 0 = yes, -1 = no

Transfer of License

- Are there limitations on transfer? 0 = yes, -1 = no
- Can licensee transfer the software to an end user who accepts the license terms without licensor’s prior permission? 0 = yes, -1 = no

Warranties and Disclaimers of Warranties

- Are there express warranties? 1 = yes, 0 = no
- Is there a limited warranty stating that software is free from defects in materials and workmanship or that the software will work according manual specifications in force for a limited period? 1 = yes, 0 = no
- Is there a limited warranty stating that the media of software distribution and documentation are free from defects in force for a limited period? 1 = yes, 0 = no
- Is the disclaimer in caps, bold, or otherwise conspicuously presented? 0 = yes, -1 = no
- Disclaims IWM and IWFPP or contains “AS IS” language? 0 = no, -1 = yes
- Disclaims warranty that software will not infringe on third parties’ intellectual property? 0 = no, -1 = yes

Limitations on Liability

- Who bears the risk of loss? 0 = licensor, -1 = licensee
- Who bears the performance risk? 0 = licensor, -1 = licensee
- Disclaims consequential, incidental, special, or foreseeable damages? 0 = no, -1 = yes
- Are damages disclaimed under all theories of liability (contract, tort, strict liability)? 0 = no, -1 = yes
- What is the limitation on damages? 0 = none or greater than product price, -1 = less than or equal to price
- Is there an indemnification clause? 0 = no, -1 = yes

Maintenance and Support

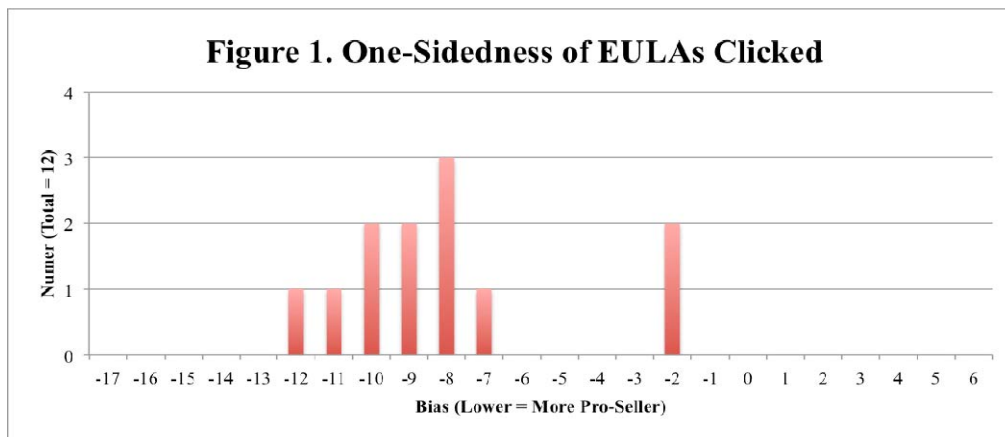
- Does base price include M&S for 31 days or more? 0 = no, 1 = yes

Conflict Resolution

- Forum specified? 0 = no, -1 = yes
 - Law specified? 0 = no, -1 = yes, and different from forum state
 - Who pays licensor’s attorney fees? 0 = paid by losing party or no mention, -1 = paid by licensee
-

Specifically, Table 4 lists each term tracked in the EULA and how it is scored for purposes of measuring buyer vs. seller bias. For each term that is more (less) pro-buyer than the default rule, I add (subtract) one point. For each term that is missing, or is specified but substantively matches the default rule, I add nothing. After all terms have been considered, the sum represents a simple bias index. Highly negative sums indicate contracts that are one-sided toward the seller. The most pro-seller contract score possible is -17. Less negative or positive sums indicate relatively pro-buyer contracts. The most pro-buyer contract score possible is +6. While crude, this methodology is objective and does not require me to obtain information about buyers' preferences.

Only twelve contracts need to be scored in this manner, because only twelve unique contracts were accessed by at least one shopper in the month of study. The maximum number of times that a given contract was accessed was 63. The average bias for the read contracts was -8, meaning that the average EULA had a net of eight terms that were more pro-seller than the relevant default rules. The bias scores range from -12 to -2. Figure 1 shows the full distribution for the twelve contracts.



B. Purchase Behavior as a Function of Contract Bias

The next question is whether those few shoppers that read are more likely to purchase a product when the license terms are more favorable. In my data, there are sixty-three voluntary accesses of EULAs (i.e., EULAs with accessibility scores of one or greater). Twelve unique EULAs were accessed, some of them multiple times. In order to control for other influences on the decision to purchase, answering this question requires regression analysis. Table 5 reports a regression with the dependent variable equal to one if the “reader” subsequently began a secure checkout session and zero otherwise.

**Table 5. Are Shoppers Less Likely to Buy
After Reading a One-Sided EULA?**

Independent Variable	Dependent Variable = 1 if EULA Reader Subsequently Begins Secure Checkout; Else = 0
Bias	-0.070***
N of Seconds on EULA	0.001***
N of Pages Visited Control	Yes
Product Controls	Yes
Company Controls	Yes
Demographic Controls	Yes
N of EULA Clickers	63
R ²	0.33

NOTE — Least-Squares Regression; *** denotes statistical significance at 0.01 level

The independent variable of interest here is the overall bias index, with higher values indicating more pro-buyer terms. Product controls include dummies for whether it is for the general public or businesses, whether it is offered on a subscription basis, and the natural log of the median price of all of the company's products. Other controls include the seconds spent on the EULA page and the number of total pages accessed during the company visit. Company controls include the natural log of revenue and company age. Shopper controls include the logs of household income and head of household age and a dummy for head of household gender.

The results indicate that there is no positive relationship between favorability of terms and the probability that a product will be purchased. The coefficient on "Bias" of -0.070 indicates that a contract that is one unit more buyer-friendly is associated with a seven percent *lower* probability of purchase. In unreported results, this falls to three percent when all of the controls are removed. Readers do not appear to react to what they read; they are not deterred in the least by relatively pro-seller terms (raising the question why they would choose to access the license in the first place). I can thus find no evidence that the few shoppers who choose to read license terms respond to them in the fashion expected of an informed minority.⁹⁶

Conclusion

Regulators have long been concerned that most consumers do not read boilerplate and do not know the rights and obligations they are assuming in the transaction.⁹⁷ In light of this reality, regulators typically try to maximize the ability of competitive forces to keep sellers in check by

⁹⁶ I considered the possibility that consumers care about only one of the seven particular categories of terms that I track, and measure contract bias based on the terms in that category alone. None of the seven associated regression models indicated that reading better terms increased the likelihood of purchase.

⁹⁷ See *supra* note 5 regarding the lack of consumer reading. This has been confirmed empirically in the software license context. See Bakos et al., *supra* note 6.

requiring that boilerplate be disclosed prominently. An important example is the new *Principles of the Law of Software Contracts*, which includes provisions increasing contract accessibility in mass-market software transactions.⁹⁸ Different disclosure regimes have been applied in several consumer financial markets and are being considered for some types of Internet contracts, such as privacy policies.⁹⁹

For any disclosure regime to make a difference, two conditions must hold. First, disclosure must increase the number of informed consumers, and thus the number of potential comparison shoppers, to some critical mass. Second, conditional on reading, consumers must react to what they read. They need to vote with their feet (or mouse, as it were), and shop elsewhere when they don't like what they read. This leads to competitive pressure on sellers to present reasonable standard terms. In this article I use data on the market for software sold online to evaluate these conditions. I find no evidence that either of them hold.

Specifically, increasing the disclosure of an End User License Agreement does not increase the number of software shoppers that read it. Bringing the license agreement one mouse click closer to the shopping path of purchase increases readership on the order of one in one thousand. Moreover, those few shoppers who actually read EULAs turn out to be equally likely to purchase a product *regardless* of how buyer-friendly the terms are that they read. Some of them probably clicked on it on accident, and the remainder spends, on average, less than a minute reviewing the license's dense text. Shoppers in my setting simply do not react to what they read. And I should note that while the context of the study is a specific market with features especially convenient for testing the effects of disclosure, and of particular regulatory interest, it is not unreasonable to conjecture that similar results may hold for other markets or in the offline

⁹⁸ PRINCIPLES, *supra* note 10.

⁹⁹ See, e.g., the CARD Act of 2009, *supra* note 12.

context. The reason is that search and access costs are so low online that if increased contract disclosure were to matter in any setting, we should have seen it here.

For purposes of understanding the regulatory implications of these results, it is important to be precise about what I do and do not show. I do not provide any evidence as to whether the market for EULA terms currently suffers from a market failure, i.e. whether the terms currently offered are one-sided to a degree that buyers would be concerned if they were to understand them.¹⁰⁰ That is unknowable. As I discussed, sellers could already be constrained by reputation or the fear of litigation.¹⁰¹ I also do not show *why* consumers choose not to read contracts even when they are easily accessible. That, too, is not easily knowable, but there are reasonable candidate explanations. The precise but important conclusion that my results support is that an oft-cited mechanism that is supposed to limit the scope for seller misbehavior, the “informed minority” or “vote with your feet” approach, is not operational in this setting. Moreover, it cannot be *made* to be operational simply through increased or mandated disclosure.

Disclosure-based regulatory approaches such as those proffered by the *Principles* should be examined critically in light of my results. Even if disclosure per se will result in little increase in readership or economic pressure on sellers, one might be inclined to argue that it can’t hurt, so we may as well mandate it anyway. But there are indeed costs to this approach. Mandating disclosure will increase financial costs to sellers, not just the direct cost of changing a website but the cost of lost business as a result of complicating the checkout process. The mere existence of a formal disclosure regime might lead courts to believe that market mechanisms indeed work,

¹⁰⁰ For further study of the issue, see Bakos et al., *supra* note 6.

¹⁰¹ See, e.g., Baird, *supra* note 64, at 938 (reputation); Shmuel Becher, *Asymmetric Information in Consumer Contracts: The Challenge That Is Yet to Be Met*, 45 AM. BUS. L. J. 723, 764–73 (2008) (litigation).

and thus to give insufficient attention to the potential for abusive terms.¹⁰² Similarly, once ineffective regulation is in place, it might forestall real change. Or, knowing that disclosure would guarantee enforcement yet at the same time suspecting that sellers don't read anyway, sellers may actually be inclined to offer *worse* terms than they do now. These unintended consequences must be taken seriously.

Other solutions to the problem of potentially abusive boilerplate are, unfortunately, more invasive than disclosure. As mentioned earlier, consumers rely on simple heuristics and a limited number of salient product attributes in making purchase decisions. For this reason, mandating brief, standardized labels summarizing key license provisions—more generally, any standard form contract provisions—could help; consumers may at present be scared by typical boilerplate legalese. Contracts could be given standardized letter grades by a credible and independent third party, such as *Consumer Reports*.¹⁰³ Facilitating a market for intermediaries to provide such information could be helpful, given that one has not emerged.¹⁰⁴ In combination, perhaps, these approaches may induce the level of *ex ante* attention to fine print required for the informed minority market mechanism to work.

Another approach would be to reduce consumers' cost of seeking redress *ex post*. Some consumers might find it worthwhile to become informed about terms such as warranties or forum selection clauses only when they experience a problem. The threat of litigation can be a powerful agent in constraining abusive behavior. We may also want to reconsider the desirability of class action waivers and forum selection clauses. Of course, these recommendations move ever closer

¹⁰²See Hillman, 104 MICH. L. REV. at 853–55 (cited in note 38) Ben-Shahar & Schneider, *The Failure of Mandated Disclosure* at *59–60 (cited in note 2).

¹⁰³ See Ben-Shahar, *supra* note 51 (proposing the use of seals by arguing that user-friendly metrics of product quality have been successful elsewhere and could be tried for contract terms, but conceding that there is not an obvious methodology to generate the rating).

¹⁰⁴ See Issacharoff, *supra* note 48 (recommending the creation of independent intermediaries to help discipline markets instead of relying on disclosure regulation).

to direct regulation of terms, which is uncomfortable. It is hard enough for regulators to determine optimal standard terms in any one transaction or market setting but even harder to codify general guidelines.

In summary, we have evaluated one approach to regulating boilerplate and found it wanting. The results suggest that regulators must move beyond disclosure if they wish to take consumer protection seriously.