Political Pressures and the Evolution of Disclosure Regulation

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Abstract

This paper examines the process that drives the formation and evolution of disclosure regulations. In equilibrium, changes in the regulation depend on the status-quo, standard-setters' political accountability and underlying objectives, and the cost-benefits of disclosure to reporting entities. Excessive political accountability need not implement the regulation preferred by diversified investors. Political pressures slow the standard-setting process and, if the standard-setter prefers high levels of disclosure, induce regulatory cycles characterized by long phases of increasing disclosure requirements followed by a sudden deregulation.

Keywords: disclosure, political, certification, financial reporting, mandatory, standard, positive economics.

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Should standard-setters be accountable to the general public and its elected representatives? Historically, the question has been divisive. On the one hand, many standard-setters argue against political interference; Dennis Beresford, a former chairman of the Financial Accounting Standard Board (FASB), notes that members of Congress often strongly oppose certain FASB positions during congressional hearings: *"The FASB often is on the defensive because these hearings are generally convened when certain companies, industry associations, or others allege that pending FASB positions will cause serious economic harm if adopted as final accounting standards"* (Beresford (2001)).[1] On the other hand, government regulators have often argued that standard-setting should be subject to high levels of political oversight (see Zeff (2003)). Consistent with this view, the current institutional environment provides the means for lawmakers to immediately override any accounting standard. This environment is different from other policy choices such as judiciary rulings (e.g., the Supreme Court) or monetary policy (e.g., the Central Bank).

Resolving this debate is difficult because, for the most part, the economic consequences of political accountability are unknown. This paper proposes to speak to this debate by examining the costs and benefits of political oversight on the regulation of accounting standards. We examine this question within the general paradigm of accountability in government (Laffont and Tirole (1991), Maskin and Tirole (2004)) and refer to *accountability* as a political process that restrains the actions of a regulator. As in this literature, we ask whether political accountability will effectively discipline a regulator to implement a social objective.

To analyze the consequences of accountability, our theoretical model incorporates the following principal elements.

Reporting motives. Managers have private information about future cash flows and prefer standards that maximize the (short-term) stock price after disclosures have been made. Managers can report information voluntarily, but cannot withhold information in a manner that violates the disclosure regulation. Managers' preference over regulations thus depends on their private information: managers tend to prefer regulations in which (a) they have discretion to withhold their own information (since they can always disclose voluntarily) but (b) other firms

[1] David Tweedie, a former chairman of the International Accounting Standard Board (IASB), casts similar views about the political involvement during the 2008 financial crisis: *"Last October, we suddenly discovered the European Union was going to put through amendments to the law to allow European companies to reclassify out of fair-value categories down to cost categories. We discovered with five days - it was going through parliament - they had the votes."* (Tweedie (2009)).

observing comparably less favorable information *must* report their information.

Political accountability. Managers can collectively prevent a new standard from being implemented by standard-setters and, when this occurs, managers are able to impose a preferred alternative. Standard-setters are more accountable when fewer managers can block a new standard. However, as we show in the model, the standard preferred by most managers is typically not the standard that maximizes welfare. We also make the assumption that standard-setters are not perfectly benevolent (welfare-maximizing) and thus political accountability has a purpose. For example, the concepts statements of the FASB emphasize promoting transparency, but provide little room for deliberation economic consequences or welfare. Hence, by design, the current institution may prefer more transparency than is socially desirable.[2]

Evolution of standards. Accounting regulations are evolved institutions that dynamically change over time.[3] Reporting managers consider their preferred alternative relative to the status-quo, i.e., if the current regulation remains in place. As a result, the status-quo determines whether managers will attempt to block a new regulation and which new standards are politically feasible. With each new round of standard-setting, the status-quo evolves, leading to predictions about the dynamics of regulations. In the model, these dynamics can converge to a long-term stable standard in which the issues are permanently settled, or feature regulatory cycles whose general patterns are analyzed.

We present below a non-technical overview of the model. The economy proceeds through time and features successive generations of managers who, as is usual in this literature, receive private information prior to the realization of final cash flows which they may disclose prior to a sale.

[2]In Concepts Statements No. 8, the FASB notes that *"to provide financial information about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity"* (OB2, p.1). This mandate has led the FASB to generally advocate, by default, reporting all material information to the market since it is useful in making decisions. Cost considerations are given a less prominent place, e.g., are noted in the Appendix, *"Some respondents expressed the view that the specified primary user group was too broad and that it would result in too much information (...). However, too much is a subjective judgment. In developing financial reporting requirements that meet the objective of financial reporting, the Boards will rely on the qualitative characteristics of, and the cost constraint on, useful financial information to provide discipline to avoid providing too much information" (discussions BC1.17, p.9).* These facts support our opinion that, at least currently, the FASB has pushed for as much transparency as politically feasible, but does not refer to surplus (or price) maximization as the objective.

[3]Our model focuses on the period in which an institution can mandate disclosures, i.e., in the U.S., generally in the post-SEC era. Our focus on evolution as a central characteristic borrows heavily from Basu and Waymire (2008) and we refer to their study for a much broader analysis of the evolution of accounting prior to the existence of centralized regulatory institutions.

There are two channels through which managers disclose information. First, a regulation *requires* a disclosure over certain events. Second, for events that are not covered by the standard, managers may disclose on a voluntary basis. Then, managers make a productive decision and choose whether to (a) liquidate early and distribute the proceeds to current shareholders, or (b) continue and sell the firm at the expected cash flow conditional on all disclosures, if any.

The disclosure regulation is selected as the outcome of a political game between managers and the standard-setter. In each period, there is a status-quo representing the standard in the previous period. The standard-setter makes a new regulation proposal, and managers can strategically decide whether to oppose the proposal. The proposal fails whenever there is too much opposition. Then, the standard-setter loses control over the agenda, and the new regulation is chosen by a regulator maximizing approval over the status-quo. The implemented regulation endogenously evolves over time, because the political opposition to a new standard is a function of the status-quo.

The primary result that emerges from the analysis is that political accountability does not necessarily work to direct the standard-setter toward stable welfare-maximizing regulations. Instead, excessive accountability can destabilize the standard-setting process into recurring regulatory cycles. This situation occurs specifically when a standard-setter desiring high levels of disclosure is subject to high levels of accountability. Regulatory cycles proceed along two evolutionary phases. In the first phase, increasingly comprehensive disclosure rules are imposed over time, starting from an unregulated economy and evolving toward increased, more costly disclosure requirements. Evolution is slow, especially when political accountability constrains the standard-setter to increase disclosure requirements in small steps to offset political opposition. In the second phase, the current regulation reaches a turning point where most firms are required to disclose and force the standard-setter to cut back on disclosure. What follows is a quick deregulation. Then, the new standard moves to relatively low levels of disclosure and the next regulatory cycle begins.

The economic intuition for regulatory cycles is as follows. In this model, disclosure requirements are optimally over unfavorable events (e.g., an asset impairment), because these events are not reported voluntarily for individual reporting purposes and result in reduced aggregate economic efficiency.[4] In the first phase of evolution, the standard-setter increases transparency

[4]This is a general characteristic of most models involving costly voluntary disclosures. A voluntary disclosure of a favorable event carries a negative externality because, in equilibrium, it increases the price of the disclosing firm at the expense of non-disclosers. Therefore, such models tend to feature excessive disclosures over favorable

by requiring that relatively unfavorable events be subject to a disclosure requirement. Managers newly subject to mandatory disclosure relative to the prior status-quo oppose the loss of discretion and, therefore, a politically accountable standard-setter cannot increase disclosure requirements too quickly without losing control of the proposal process.

Over time, the status-quo evolves with increasingly more favorable events becoming subject to the disclosure requirement. Eventually most of the firms are subject to disclosure requirements, and the second phase of evolution begins. At this tipping point, the status-quo is no longer the alternative collectively preferred by managers because a disclosing firm is always weakly better-off when retaining the discretion to withhold information. Nor is a small decrease in disclosure requirements possible because such a new regulation would be opposed by all remaining non-disclosers under the status-quo (their market price would decrease). Hence, the solution at this stage is an abrupt reduction in disclosure requirements, which is then supported by the largest fraction of firms that disclosed under the status-quo but do not under the new regulation.

A standard-setter who prefers low levels of transparency might not reach the second phase in which case the regulatory process will attain a long-term stable regulations. Within our model assumptions, the second phase is not attained if the standard-setter maximizes the average market price. Under this scenario, the standard will converge to the price-maximizing disclosure requirement in the long run, but convergence is slower when the standard-setter is more accountable. Lastly, we show that political accountability is entirely ineffective at disciplining a standard-setter preferring *lower* disclosure requirements than those that would maximize the market price.

Related Literature. The benefits of some independence from political pressures by policy-making bodies such as the Federal Reserve or the Supreme Court (to cite two well-known examples) has been the object of a large literature in institutional economics, see Kydland and Prescott (1977) or Gely and Spiller (1990). However, this literature does not examine debates that pertain specifically to accounting regulations. Several recent empirical studies provide evidence that firms pressure regulators strategically, in response to the perceived market consequences of regulation proposals (Chan, Lin, and Mo (2006), Hochberg, Sapienza, and Vissing-Jorgensen (2009), Allen and Ramanna (2012)). While these studies have made researchers aware of the key role of political pressures, they are descriptive and do not test predictions about the

events than socially optimal (see Verrecchia (1983) and Shavell (1994) for examples). As such, a regulation should not worsen this inefficiency by increasing such disclosures even further.

effects of political activism on disclosure standards.

Relating to these issues, a strand of the literature analyzes the influence of various parties in the standard-setting process (Amershi, Demski, and Wolfson (1982), Fields and King (1996)); our research focus here is different in that we take influence as the starting point and study how it may affect regulatory choice.[5] Our study also complements a recent literature on institutional design in accounting, which discusses how certain characteristics of the institution affect policy choices. The broad implications of the consolidating standard-setting into a single body are discussed by Dye and Sunder (2001), Basu and Waymire (2008) and Bertomeu and Cheynel (2012). These studies find various benefits in multipolar standard-setting institutions in which market forces will push for more efficient standards. At the other side of this debate, Ray (2012) examines the potential learning cost of having multiple standards and Friedman and Heinle (2014) show that multiple standards magnify the social costs of corporate lobbying. Our research question is different in this model, in that we assume a single regulatory body but examine the cost and benefits of political accountability.

Section 1 of the paper presents the basic model and some preliminary results. Section 2 provides an analysis of managers' preferences and the disclosure rule that will be instituted if the standard-setter loses control of the agenda. The standard-setter's strategy for keeping control of the agenda appears in section 3, and the evolution of disclosure rules over time is discussed in section 4. Section 5 discusses the effects of relaxing the model's assumptions, and section 6 provides concluding remarks. The appendices provide a table of notation, proofs and further analysis of the design of disclosure regulations.

1. Model and preliminaries

The economy unfolds over an infinite time horizon (with periods indexed by $t \geq 0$) and is populated by successive generations of standard-setters and atomistic firms that deliver their cash flow at the end of the period. Each firm has been initially financed with equity and some of this equity is owned by the manager (possibly as part of a compensation arrangement) while the remaining portion is held by diversified investors.

The timeline of each period contains the following events, as illustrated in Figure 1.

[5] There are many prior studies that have analyzed mandatory disclosure (e.g., Melumad, Weyns, and Ziv (1999), Pae (2000), Marra and Suijs (2004)) or whether particular forms of selective disclosure have desirable effects on economic efficiency (e.g., Liang and Wen (2007), Chen, Lewis, and Zhang (2009)); however, the core focus of these studies is normative in nature in that they focus on the economic desirability of disclosure rules.

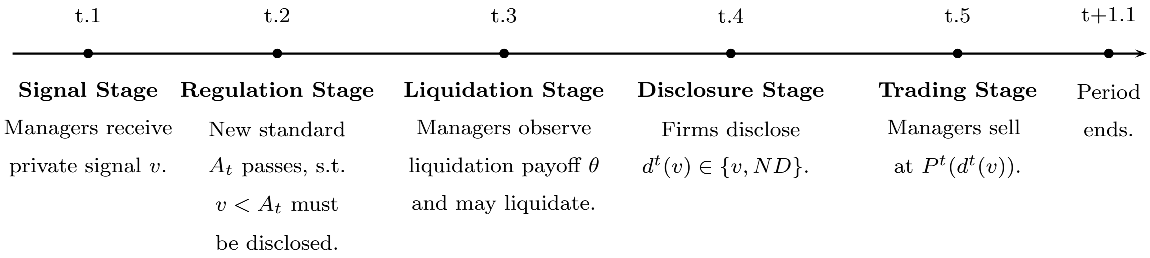

Figure 1. Model Timeline

At date $t.1$, managers receive private information about an end-of-period cash flow. For now, we assume that all managers are informed and further considerations in the case of some uninformed managers are delayed until the main results are presented. Each firm has an i.i.d. cash flow v that is distributed according to a uniform distribution with support on $[0, 1]$.

At date $t.2$, a new regulatory process begins. We focus here on regulations described by a threshold A such that events with $v < A$ must be disclosed. This restriction is with some loss of generality as it takes as a given the use of impairment-based rules (widespread in accounting), such as lower-of-cost-or-market, impairments of long-lived assets or other-than-temporary losses, advance recognitions of loss-making sales, etc.[6] We show in Appendix C that this form of mandatory disclosure maximizes popularity because, in our model, favorable events are already disclosed voluntarily.

Denote A_{t-1} as the status-quo, defined as the regulation implemented in the previous period and beginning with no-disclosure $A_0 = 0$. The regulatory process takes place over two stages, on which we elaborate in Figure 2.

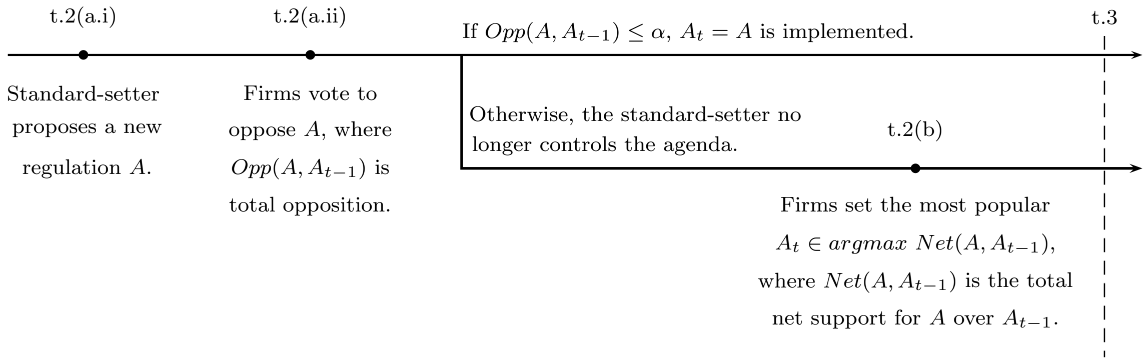

Figure 2. Regulatory process

At stage $t.2(a)$, the standard-setter makes a proposal A (e.g., an exposure draft). We endow

[6]It is an open question as to whether one might call this type rule conservative. Our primary interpretation of such a rule is primarily in terms of accounting for a particular transaction, say "impair an asset if its value falls below a certain level but do not report any information otherwise." Similar types of disclosure rules can be found, among others, in Goex and Wagenhofer (2009), Caskey and Hughes (2012), Beyer (2012), Fischer and Qu (2013) and Bertomeu and Cheynel (2012).

the standard-setter with a single-peaked preference $\mathcal{U}(A)$ with a maximum at $A^* \in (0,1)$.[7] Managers are empowered to vote for their firm and may oppose the proposal. We capture their influence by a function $Opp(A, A_{t-1})$, defined as the fraction of managers who are strictly worse-off under A than they would be if the proposal were to fail. This construct intends to capture several venues through which, in practice, corporate lobbies can oppose a new regulation, e.g., such as comment letters or congressional hearings. Note that this function will be solved for by backward induction, as we assume that managers have rational expectations about what standard will pass at $t.2(b)$ if the standard-setter's proposal fails.

We do not model supporters for a new standard at this stage because, in practice, comment letters and congressional hearings overwhelmingly focus on groups that have grievances against a new proposed regulation (see Beresford (2001) and Zeff (2005)). If $Opp(A, A_{t-1}) \leq \alpha$, the proposal passes and $A_t = A$ is implemented. The parameter $\alpha \in [0,1]$ captures the political accountability of the standard-setter from $\alpha = 1$, i.e., any proposal passes, to $\alpha = 0$, i.e., unanimity is required. We assume that manager's votes are not observable.

If $Opp(A, A_{t-1}) > \alpha$, the proposal is rejected and stage $t.2(b)$ begins in which the standard-setter no longer controls the agenda. In that case, we assume a new proposal is made by an office-driven bureaucrat or politician (such as a Congressional subcommittee) who has a greater chance of staying in office or being elected when the proposal is more popular.[8] Formally, we define the popularity of a regulation $A \neq A_{t-1}$ as $Net(A, A_{t-1})$, indicating the difference between the fraction of firms strictly better-off and the fraction of firms strictly worse-off under A versus the status-quo A_{t-1}. Extending this function by continuity, we set $Net(A_{t-1}, A_{t-1}) = \sup_{A \to A_{t-1}} Net(A, A_{t-1})$, so that $A = A_{t-1}$ also refers to a very small change to the status-quo.

We assume that the most popular regulation $A_t \in argmax_A Net(A, A_{t-1})$ is implemented. For later use, we define the $Pop(A_{t-1})$ as the most popular regulation, i.e., $Pop(A_{t-1}) \in \operatorname{argmax}_A Net(A, A_{t-1})$. This function affects managers' opposition to the standard-setter's proposals and, therefore, the standard-setter's choice of proposed disclosure rules.[9]

At date $t.3$, managers learn a liquidation cash flow θ, drawn from an i.i.d. uniform distribu-

[7] This formulation places minimal restrictions on a preference meant to capture the (many) complex motives of standard-setters such as, for example, a general preference for transparency, the demands of auditors and the accounting profession or a desire to provide stewardship information for various pre-disclosure decisions.

[8] When faced with too much political resistance, a congressional body might threaten to shift the drafting of new standards to a more docile institution (or force the replacement of current standard-setters). For example, in the US, Congress threatened to remove the privileges of the FASB if it did not rescind its standard on oil and gas accounting (during the late seventies) or its original exposure draft on stock option expensing (during the mid-nineties).

[9] In the case of multiple solutions to $\operatorname{argmax}_A Net(A, A_{t-1})$, we select the solution closest to the status-quo. As we show later, this only occurs for the knife edge case of $A_{t-1} = \max(1/2, 4c/(4c+1))$.

tion with support on $[0,1]$. If the firm is liquidated, the end-of-period expected cash flow v is forfeited and θ is distributed with no further need for disclosure. If the firm continues, the payoff θ is forfeited. This step is not critical for the main analysis and the results are unchanged if the information has no productive purpose. The assumption serves to illustrate the economic distortions created by the political process in an environment where the price-maximizing regulation might feature some non-zero level of regulated disclosure.

At date $t.4$, managers make their disclosures, which we denote $d^t(v) \in \{v, ND\}$. If $v < A_t$, a disclosure is mandatory and $d^t(v) = v$. If $v \geq A_t$, the firm can withhold information and choose $d^t(v) = ND$ or disclose $d^t(v) = v$ voluntarily. There is a cost $c > 0$ when making a mandatory or a voluntary disclosure. Hence, we assume that the same underlying "technology" is used in both disclosure channels; for example, the cost may represent a formal audit or leakages of proprietary information. Non-disclosers must also establish that $v > A_t$, which we assume entails a cost $A_t c$ linear in the probability of the event "$v \leq A_t$". To avoid straightforward environments in which the standard-setter can pass any policy, we assume that α is not too large relative to the cost, i.e., $\alpha \leq \overline{\alpha} = \min(c, 2c/(4c+1))$.

At date $t.4$, managers sell their shares in a competitive market. Conditional on a public disclosure $x \in [0,1] \cup \{ND\}$, investors price the firm at the expected cash flow minus the disclosure cost if any, i.e.,

$$P^t(x) = \mathbb{E}(v|d^t(v) = x) - 1_{d^t(v) \neq ND} c - 1_{d^t(v) = ND} A_t c. \tag{1.1}$$

Two key observations about disclosure behavior and market prices are used throughout our analysis.

In what follows, let τ^t represent the threshold above which the event v would be disclosed voluntarily if it were not subject to mandatory disclosure. As is well-known (Jovanovic (1982), Verrecchia (1983)), this voluntary disclosure threshold threshold is determined by the point at which a firm is indifferent between a voluntary disclosure and a non-disclosure, i.e.,

$$\tau^t - c = P^t(ND) = \frac{A_t + \tau^t}{2} - A_t c. \tag{1.2}$$

Solving this equation, the voluntary disclosure threshold is given by:

$$\tau^t = A_t + 2c(1 - A_t) \tag{1.3}$$

As is entirely intuitive, increasing the mandatory disclosure threshold A_t increases market expectations and thus also increases the voluntary disclosure threshold. We also note that the fraction of disclosing firms $1-(\tau^t - A_t)$ increases when the mandatory disclosure threshold A_t is increased.

Substituting (1.3) into (1.2) to derive $P^t(ND)$:

$$P^t(ND) = (1-2c)A_t + c. \tag{1.4}$$

This implies that a firm, as long as it remains a non-discloser, obtains a higher market price when the mandatory disclosure threshold A_t is increased. The next Lemma summarizes these observations.[10]

Lemma 1.1. *The probability of disclosure and the non-disclosure market price are increasing in the disclosure threshold A_t.*

2. Popularity over the status-quo

We solve the model by backward induction in period t and first analyze stage t.2(b) of the regulatory process, i.e., after the proposal made by the standard-setter fails. At this point, managers select the most popular regulation A against the status-quo A_{t-1}, with voluntary disclosure thresholds τ^A and τ^{t-1}, respectively. We consider next several scenarios for the choice of A.

The first scenario involves a new regulation A such that the non-disclosure price increases relative to the status-quo A_{t-1}. For this to hold, the regulation A must feature more mandatory disclosure than the status-quo, implying $A > A_{t-1}$. Below, we analyze the preference of a manager with continuation value v.

(a) disclosers under both regulations, i.e., with $v \notin [A_{t-1}, \tau^A)$ or $v \in [\tau^{t-1}, A)$, are indifferent,

(b) disclosers under A but not A_{t-1}, i.e., with $v \in [A_{t-1}, \min(A, \tau^{t-1}))$, prefer the status-quo because, they retain and exercise the option to withhold information,

(c) non-disclosers under A, with $v \in [A, \tau^A]$ prefer A, because they achieve a higher non-disclosure price.

[10] In a recent study, Einhorn (2005) considers the interaction between mandatory and voluntary disclosure, when each disclosure is about different (correlated) information. By contrast, in this model, mandatory and voluntary disclosures are about the same piece of information.

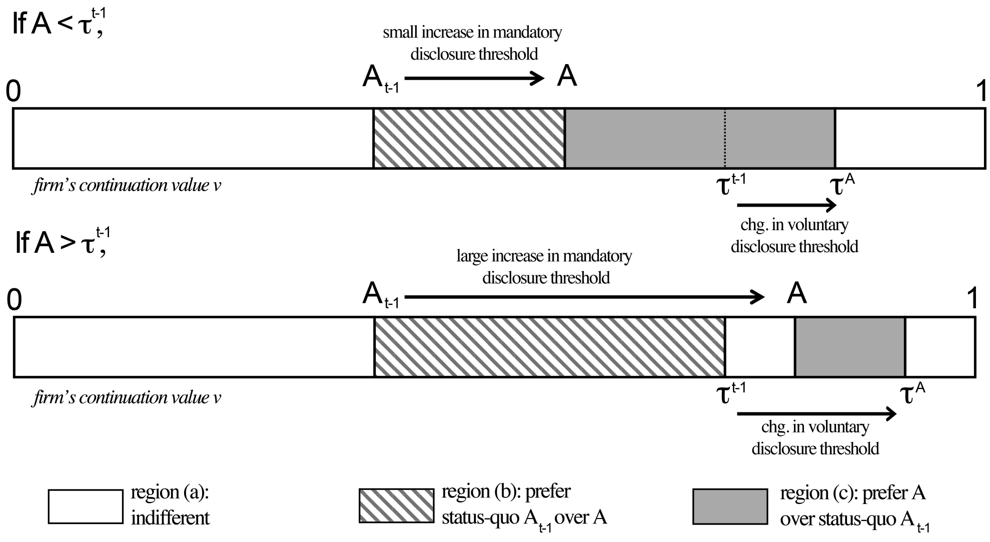

Figure 3. Preference for an alternative threshold disclosure A versus a status-quo disclosure threshold $A_{t-1} < A$.

These three regions are represented in Figure 3. The net popularity of A over A_{t-1} is thus given by the fraction of shaded firms in case (c) minus the fraction of striped firms in case (b). Then, the maximal net popularity is achieved by a regulation with A set arbitrarily close to A_{t-1}, which achieves the objective of increasing the non-disclosure price with a minimal fraction of new disclosers (who oppose). It should further be pointed out that the liquidation option has no effect on a firm's preferences for reporting standards because, at the point of standard-setting, the liquidation outcome has not yet been observed and firms' preferences over the reporting standard are based entirely on their continuation outcome v.

Things are slightly different with a decrease in mandatory disclosure. When a new policy reduces the disclosure threshold strictly below the status-quo, it is opposed by all non-disclosers. However, the policy also tends to be supported by all firms that had to disclose under the status-quo but no longer have to disclose (see Figure 4).

As $A < A^{t-1}$ is decreased, this new policy turns more disclosers into non-disclosers (shaded area in Figure 4) and receives more support, while the opposing firms (striped area in Figure 4) are constant. Indeed, the most preferred decrease in mandatory disclosure is one that features the greatest probability of non-disclosure for previously disclosing firms, which in our case corresponds to a complete removal of any mandatory disclosure, i.e., $A = 0$.

In summary, the most popular reporting alternative will be one of two options – either maintain the status-quo or do away with the mandatory disclosure altogether and return to an unregulated environment. Non-disclosers vote as a block and play a key role in this result.

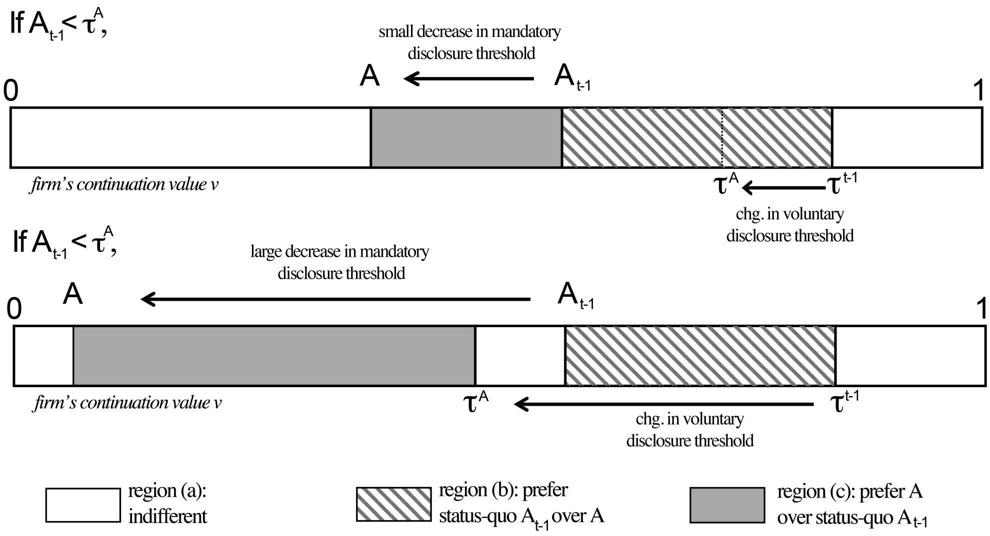

Figure 4. Preference for an alternative threshold disclosure A versus a status-quo disclosure threshold $A_{t-1} > A$.

Specifically, complete deregulation maximizes the fraction of new non-disclosers (relative to the status-quo) while a small increase in the regulation, i.e., $A = A_{t-1}$, maximizes the fraction of non-disclosers with the constraint of increasing the non-disclosure price. In the next Proposition, we compare the relative popularity of each of these alternatives.

Proposition 2.1. *Let* $\hat{A} = \max(1/2, 4c/(4c+1))$.

(i) If $A_{t-1} \leq \hat{A}$ *(low levels of disclosure), the most popular standard is the status-quo* $Pop(A_{t-1}) = A_{t-1}$.

(ii) If $A_{t-1} > \hat{A}$ *(high levels of disclosure), the most popular standard is no-disclosure* $Pop(A_{t-1}) = 0$.

Proposition 2.1 describes the main economic drivers of our study. Status-quo non-disclosers tend to support increases in the disclosure threshold while status-quo disclosers tend to support reducing disclosure requirements. As a result, non-disclosers form a majority when the status-quo features low levels of disclosure. However, if the existing status-quo features sufficiently high levels of disclosure, disclosers become more numerous than non-disclosers and the alternative preferred by managers shifts from maintaining the status-quo to no-disclosure.

Corollary 2.1. *The threshold* $\hat{A}$ *on the status-quo, above which no-disclosure becomes the most popular option, is non-decreasing in* c.

The comparative statics in the cost c may seem counter-intuitive to the extent that, intuitively, one could expect less disclosure to become more appealing in the presence of greater cost; on the contrary, a greater disclosure cost shifts the threshold $\hat{A}$ to the right and, therefore, no-disclosure $A = 0$ is collectively preferred over a *smaller* set of status-quo standards when c increases.

To understand this property, recall that the political process does not directly weight the expected market price as an objective so that the relevant argument is not that it is socially desirable to reduce disclosure in the presence of higher cost. Instead, the key argument is that status-quo non-disclosers - who benefit from higher market prices - are the group that typically supports more disclosure. Hence, an increase in the size of the non-disclosure group tends to increase the demand for more mandatory disclosure. Within this logic, a greater disclosure cost will reduce the amount of voluntary disclosure implying, for any status-quo, an increase in the size of the non-disclosure group.

3. The standard-setter's proposal

We analyze next the standard-setter's proposal stage at $t.2(a)$. This stage is composed of two decision nodes. First, at $t.2(a.i)$, the standard-setter issues a new regulation A. Since, in this model, the standard-setter would never propose a regulation that is certain to fail, the proposal can be restricted to satisfy $Opp(A, A_{t-1}) \leq \alpha$. Second, at $t.2(a.ii)$, managers decide whether to oppose A, expecting that if A fails, the most popular standard $Pop(A_{t-1})$ will be implemented (as shown in Proposition 2.1). We will show that a status-quo could never reach *above* the level preferred by the standard-setter A^*, so we initially save space by focusing here on the case of $A_{t-1} \in [0, A^*]$.

Again, we proceed by backward induction to derive the opposition at $t.2(a.ii)$. Because $A_{t-1} \in [0, A^*]$, the standard-setter wishes to increase the disclosure threshold. There are two cases to consider, illustrated in Figure 5. If $A_{t-1} \leq \hat{A}$, the status-quo will be maintained if the proposal fails. Therefore, all non-disclosers under A_{t-1} oppose any A that would remove their discretion to withhold: opposition increases if the standard-setters' proposal requires more events to be disclosed. If, on the other hand, $A_{t-1} > \hat{A}$, the economy will be unregulated if the standard-setter's proposal fails. Therefore, all managers that would not disclose in the unregulated environment tend to oppose a proposal in which they must disclose.

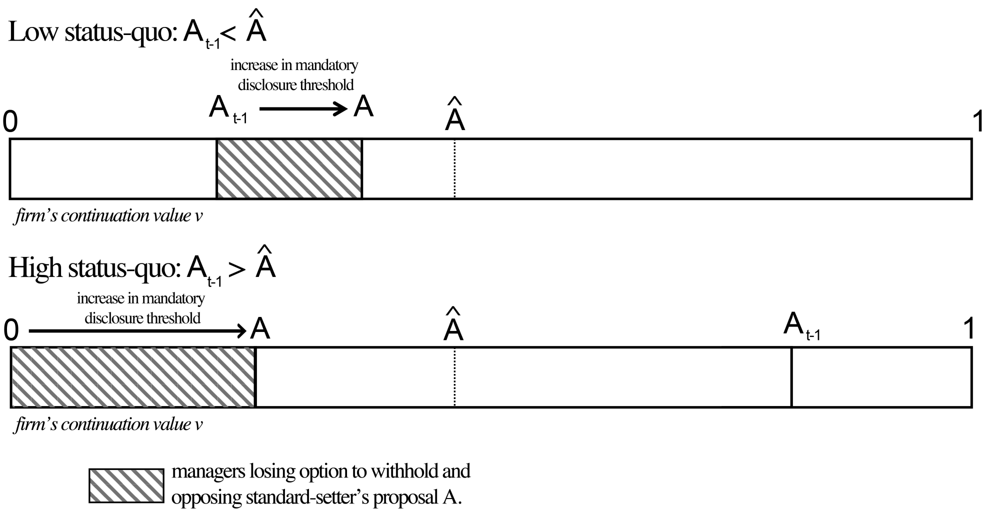

Figure 5. Opposition to standard-setter's proposal A.

The next Proposition formalizes the political tension faced faced by the standard-setter. The more the standard-setter wishes to increase mandatory disclosure, the more managers begin opposing the proposal. Put differently, the analysis demonstrates that high levels of political accountability slow down the standard-setting process.

Proposition 3.1. *For a given status-quo $A_{t-1} \leq A^*$, the standard-setter implements a new regulation $A_t = \min(A^*, Pop(A_{t-1}) + \alpha)$. This disclosure threshold is increasing in the disclosure cost c, decreasing in the political accountability $1 - \alpha$ and, as long as $A_t < \hat{A}$, increasing in the status-quo A_{t-1}. Further, $A_t < A_{t-1}$ (i.e., the disclosure threshold is reduced) if and only if $A_{t-1} > \hat{A}$.*

As long as the status-quo is not too large, i.e., below $\hat{A}$, managers refer to the status-quo as the most preferred regulation. The standard-setter can spend up to α in "political capital" to increase the policy above the status-quo. However, when the turning point $\hat{A}$ is passed, the manager-preferred regulation reverts to the unregulated economy ($A = 0$) and, therefore, the standard-setter can only increase the disclosure threshold relative to this new benchmark. As a result, the standard-setter must concede a reduction in mandatory disclosure to $A = \alpha$ under the threat that, doing otherwise, the proposal would be rejected and lead to an entirely unregulated economy.[11] While, in the model, the economy never attains a state of complete deregulation, the

[11] It is noteworthy that, in our framework, the second "management-controlled" regulatory stage never occurs in equilibrium, because the standard-setter should always make a proposal that passes. In practice, cases in which

regulation $A_t = \alpha$ may feature very low levels of mandatory disclosure in cases where political accountability is very high.

Some simple comparative statics follow. If the standard-setter pushes for more disclosure or has more political independence, a greater level of mandatory disclosure will be required in the exposure draft. In the extreme case in which $\alpha \approx 0$ is very low, the standard-setter increases mandatory disclosure by a very small increment and cannot implement any major piece of legislation (unless $A > \hat{A}$, and the new legislation moves toward deregulation). When the cost of disclosure increases, more non-disclosers support the status-quo, thus helping the standard-setter increase mandatory disclosure further.

We conclude this section by examining a scenario in which, for an exogenous (unmodelled) reason, the current status-quo is greater than the standard-setter's preferred threshold A^*. As an example, A_{t-1} may be greater than A^* if the default standard for a new transaction has branched out from some other standard, or there may be a structural break in the cost of disclosures (e.g., change in legal systems, more information technology) or a change in the preferences of the standard-setter or the constituencies it represents. Since this case is identical to the previous setting if $Pop(A_{t-1}) = 0$, we focus here on $Pop(A_{t-1}) = A_{t-1}$ (or $A < \hat{A}$).

While the standard-setter will now want to decrease the disclosure threshold, doing so can be problematic. As shown earlier, decreases in the threshold are opposed by all non-disclosers and, therefore, any $A < A_{t-1}$ generates an opposition given by:

$$Opp(A, A_{t-1}) = \tau^{t-1} - A_{t-1} \tag{3.1}$$

When A_{t-1} is not too large, this term can be greater than α and, therefore, a standard-setter subject to high levels of accountability is unable to pass *any* decrease in the disclosure threshold, even if she wishes to do so. This observation stands in contrast with increases in the disclosure threshold, in which some small increase relative to $Pop(A_{t-1})$ may generally be passed.

Proposition 3.2. *Suppose that $A_{t-1} \in (A^*, \hat{A})$ (the status-quo implies more disclosure than preferred by the standard-setter).*

(i) If $\alpha \geq \tau^{t-1} - A_{t-1}$, the standard-setter implements $A_t = A^*$.

an exposure draft fails are unusual, and even more rare are cases in which the standard-setter actually issued a standard and then was forced to remove it. This being said, the basic model can be easily extended to a setting in which the standard-setter does not fully know α by the time a proposal is made in which case there would be occurrences in which an exposure draft fails.

(ii) *Otherwise, the standard-setter maintains the status-quo at* $A_t = A_{t-1}$.

In summary, high political accountability joint with a status-quo featuring high disclosure levels creates a situation of political standstill. Because of the pressure by status-quo non-disclosers, the standard-setter cannot reduce the amount of disclosure. Then, the equilibrium level of disclosure may remain at levels that the standard-setter views as excessive but is politically unable to change.

4. Evolution of Mandatory Disclosure

We now use the predictions obtained in each period t to examine the dynamics of disclosure regulations. The sequence of regulatory outcomes is denoted $\{A_t\}$ with initial condition $A_0 = 0$ and the updating rule described in Proposition 3.1.

Several scenarios may occur. One scenario is that the standard-setter does not wish to implement too much disclosure, i.e., $A^* \leq \hat{A}$. Then, the deregulation region "$A_{t-1} \geq \hat{A}$" is never reached and the standard-setter can always attain the preferred policy. If political accountability is high, reaching A^* is a slow process that requires many periods of regulation.

A second scenario is that $A^* > \hat{A}$ if, for example, the standard-setter has a preference for high levels of transparency. Then, the standard-setter will increase the threshold gradually, until $A_{t-1} > \hat{A}$ is reached. Then, the economy reverts to being (nearly) unregulated and a new cycle begins.

Proposition 4.1. *The regulatory process* $\{A_t\}$ *has the following properties:*

(i) *If the standard-setter prefers low levels of disclosure (i.e.,* $A^* \leq \hat{A}$*),* $A_t = min(\alpha t, A^*)$ *is increasing in* t *and converges to* A^**.*

(ii) *If the standard-setter prefers high levels of disclosure (i.e.,* $A^* > \hat{A}$*),* A_t *is non-monotonic and features cycles of length* $k = [\hat{A}/\alpha] + 1$*, decreasing in* α*, whereby for any* $n \geq 0$ *and* $t \in [1, k]$*,* $A_{nk+t} = A_t = min(\alpha t, A^*)$*.*

Figure 6 illustrates a regulatory process for each scenario. The standard-setter pushes toward A^*, increasing the threshold by α in each period. If this is sufficient to attain the standard-setter's preferred regulation A^*, as on the left side of the figure, the regulatory process settles for the long-run. On the right-hand side, an example is given in which $A^* > \hat{A}$. When the process

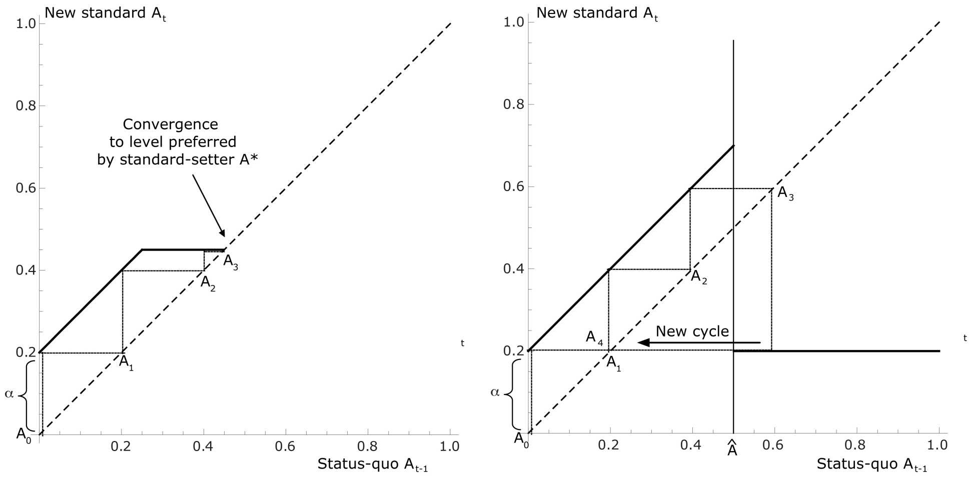

Figure 6. The regulatory process: Convergence vs. Cycles.

reaches above $\hat{A}$, the regulation will revert back to A_1. Another point worth emphasizing is that cycles can be very long if α is low. In particular, deregulation will be more intense when it follows after a longer period of increased regulation and when the standard-setter increased the regulation only slowly (since the deregulation that occurs at the end of each cycle is to $A_1 = \alpha$).

A closer inspection of the threshold $\hat{A}$ will reveal an important fact about cycles in our model. While, in practice, standard-setters do not cite price-maximization as the objective function, a useful benchmark is the case in which the standard-setter maximizes total value to investors, i.e., $A^* = A^{fb}$ where:

$$A^{fb} = \quad argmax_{A_t} \;\; \mathbb{E}(\max(\theta, 1_{v\in[A_t,\tau^t]}P^t(ND) + 1_{v\notin[A_t,\tau^t]}P^t(v)) \tag{4.1}$$

Corollary 4.1. *The first-best disclosure threshold A^{fb} is always lower than $\hat{A}$. Hence, a standard-setter that maximizes value to investors, with $A^* = A^{fb}$, will not induce regulatory cycles.*

Our results thus suggest that a standard-setting body that is primarily controlled by diversified investors provides an additional side benefit to the regulatory process. This standard-setter will not issue standards that will be later rescinded during regulatory cycles.

Proposition 4.1 is derived under the assumption of a myopic standard-setter who considers only period t, but not future periods. However, myopic standard-setting is suboptimal for a patient standard-setter if excessive increases in the regulation trigger cycles. Fortunately, the general analysis can be easily extended to a scenario in which the standard-setter has a multi-period objective function. Assume that the standard-setter has a separable utility function at date t given by U^t where:

$$U^t = \sum_{t'=t}^{+\infty} \beta^{t'-t} \mathcal{U}(A_t)$$

where $\beta \in [0,1)$ is the standard-setter's discount rate and $\beta = 0$ corresponds to the myopic standard-setter discussed in the baseline model.

The case in which $A^* \leq \hat{A}$ is straightforward. As shown in Proposition 4.1 (case (i)), this is a situation in which the sequence of policies $\{A_t\}$ chosen by the myopic standard-setter converges to A^*. Since the myopic standard-setter already increases A_t as much as political pressures allow it each period, these policy choices remain optimal for any discount factor β.

If $A^* > \hat{A}$, a different course of action might be optimal as a forward-looking standard-setter may strategically avoid cycles. To begin with, note that the forward-looking standard-setter will still propose $A_{t+1} = A_t + \alpha$ as long as $A_t + \alpha < \hat{A}$ and the status-quo that would start a cycle is not yet reached. Things are different when the "critical" status-quo A_t is reached such that $A_t \leq \hat{A}$ but $A_t + \alpha > \hat{A}$. At this point, the forward-looking standard-setter must make a choice over two possible options: (a) implement $A_{t+1} = min(A^*, A_t + \alpha)$ and trigger a cycle in the next period, (b) implement $A_{t+1} = \hat{A}$ and stabilize the regulation at $\hat{A} < A^*$ for all future periods.

Proposition 4.2. *Let Λ be defined as:*

$$\Lambda = \mathcal{U}(\min(A^*, \alpha k)) - \mathcal{U}(\hat{A}) + \sum_{n=1}^{k-1} \beta^n (\mathcal{U}(\alpha n) - \mathcal{U}(\hat{A})) \tag{4.2}$$

(i) If $A^* \leq \hat{A}$ or $\Lambda > 0$, the standard-setting dynamics will be identical to the baseline in Proposition 4.1.

(ii) Otherwise, the standard-setter will implement $A_{t+1} = min(A_t + \alpha, \hat{A})$ and the policy will always stabilize at $\hat{A}$ in the long run.

A forward-looking standard-setter will evaluate the current benefit of passing a high policy $A_t > \hat{A}$ against the future losses caused by the regulatory cycle. This may imply that an intermediate policy set at $\hat{A}$ becomes attractive. In this case, the standard-setter does not achieve her preferred policy A^* even in the long run.

Note that, while an impatient standard-setter never stabilizes, a fully patient standard-setter (when β converges to one) may also opt not to stabilize. For example, if $\mathcal{U}(min(A_s, \alpha k), \gamma) -$

$\mathcal{U}(\hat{A}, \gamma)$ is large, $\Lambda > 0$ will be positive for any discount factor. On the other hand, stabilization is optimal if the cost of triggering a new cycle is large enough. This only occurs when α is small, so that once a new cycle begins, it takes a large number of periods to increase the policy toward $\hat{A}$. Hence, a forward-looking standard-setter with high levels of political accountability generally tends to favor stabilization.

5. Further Discussion Points

In the preceding sections, we analyzed the model under several stylized assumptions that make the analysis of the dynamics tractable. We develop here some further discussion points that are relevant in richer economic environments.

Uninformed participants. In the baseline model, firms that can participate in the political process must be endowed with information, so that uninformed managers (or diversified investors) may only be represented via the standard-setter's actions and preferences. The model has similar dynamics if we assume that there is a proportion of firms active in the political process that is uninformed. In this case, uninformed managers vote as a group in favor of standards closer to A^{fb}. In turn, this tends to cause an interval of standards located around A^{fb} where the policy can settle, i.e., the standard-setter can no longer increase the threshold because doing so would be opposed by all uninformed managers. Hence, when the probability of not being informed is large enough, the policy may not settle at A^* or cycle, but instead settle at some level between A^{fb} and A^*. By a similar argument, this will also tend to increase the maximum standard $\hat{A}$ where cycles can begin. (A formal derivation is available on request from the authors.)

Distributional assumptions. The main result on cycles is robust to a more general specification of the cash flow distribution. Specifically, even if distributions are not uniformly distributed, the opposition to a standard will increase as the standard-setter elevates the proposal too far above the status-quo (i.e., non-disclosers oppose new requirements in which they have to disclose) and a decrease in the disclosure threshold must be large enough so that enough firms that no longer disclose under the new standard support it. Nevertheless, a few non-central observations in the model are specific to the uniform which we list here. First, the fact that the standard would increase by fixed increments is specific to the flat density of the uniform distribution; under other bell-shaped distributions, for example, the threshold would increase by fixed "probability mass" increments, i.e., *faster in the tails* where the density is thin and few firms oppose and *slower near the mean* where more firms oppose. Second, the disclosure threshold falls toward no mandatory disclosure when a new cycle begins under the uniform distribution; it will fall by a large amount as well with more general distributions but only up to the level that would maximize the total fraction of non-disclosers. In general, this level need not be no mandatory disclosure because no-disclosure might entail a significant amount of voluntary disclosure. Third, in the baseline model, the level that maximizes the market price is always below the cycling threshold. This may or may not be true for more general distributions and, in particular for distributions that are skewed, the cycling region may even be reached before the ex-ante preferred is reached.

Other real effects. We have focused on a simple liquidation decision, but the results would be similar if we assumed a post-disclosure real-effect since the main argument follows from only two forces, both of which would still hold with real effects, that (i) firms forced to disclose are weakly worse-off since they could do so voluntarily, (ii) non-disclosers benefit with a standard that features a higher threshold A. To the extent that a general model would change the distribution of cash flows, many of the incremental forces with production would be similar to those with general distributions, as discussed above.

Time-varying environment. As in any model featuring multi-period dynamics, we have focused the baseline on the main variable of interest, the disclosure threshold as a moving part. Similar predictions can be inferred from the analysis for various shocks to fundamentals, and we discuss a few. If, for example, the quality of projects were to vary, then there would be more demand to reduce the disclosure threshold during periods with fewer high-quality projects (recessions) and, vice-versa, demand to increase the disclosure threshold during periods with fewer low-quality projects (expansions), as in Bertomeu and Magee (2011). As another possibility, the political independence of the standard-setter α might randomly change across periods, possibly in tandem with changes in fundamentals. This would cause the standard-setter to possibly attain the preferred level A^* during periods of high independence only to trigger deregulation during a period of low independence.

Proposal game. In the baseline model, we assume that, once a standard-setter's proposal fails, a new regulator makes the most popular proposal. The conceptual results would be similar if, at this stage, we assume that a new proposal is selected from the set of proposals that obtain a majority $M = \{A : Net(A, A_{t-1}) \geq .5\}$ according to some decision rule provided that, if this set includes a sufficiently small subset of values $A > A_{t-1}$, the decision rule must be below A_{t-1}. As an alternative to the two-step political model, another possibility is that the standard-setter and firms would propose in a one-step Baron and Ferejohn (1989) random proposer game (i.e., a proposer is drawn randomly and can make a proposal in M). This type of model would feature stochastic dynamics, as the identity of the proposer would vary, with possibly random increases and a random date of a fall-back to a lower threshold. Such a one-step random proposer game, by partly taking away agenda-setting power from the standard-setter, would also tend to make regulatory cycles more likely.[12]

6. Concluding Remarks

Financial reporting standard setters strive to achieve a balance between independent assessment of the benefits of reporting changes and the variety of viewpoints presented by interested parties. For instance, the FASB (2009, p. 2) describes the following as one of its precepts:[13]

"To weigh carefully the views of its constituents in developing concepts and standards: However, the ultimate determinant of concepts and standards must be the Board's judgment, based on research, public input, and careful deliberation about the usefulness of the resulting information."

Notwithstanding standard-setters' objective of independence, there are times when standard setting bodies are subject to political pressure and when that pressure affects the standards that are adopted. Zeff (2005) chronicles the political forces that have affected U.S. GAAP, from allowing LIFO inventory accounting to accounting for the investment tax credit to the expensing of employee stock options. Beresford (2001) describes the U.S. Congress activities surrounding the accounting for acquisitions, and he recounts the pressures encountered by the FASB from companies and from members of Congress. He concludes *"Congressional oversight is an essential part of our society and our economic environment. Although we may disagree with the motives*

[12] A version of this model is available from the authors, in which some conditions on the distribution are given such that the model would feature regulatory cycles even when disclosure costs are zero.

[13] Financial Accounting Standards Board. 2009. Facts about FASB. Norwalk, CT.

of some of the parties who avail themselves of this opportunity, few of us favor a system where a group like the FASB is accountable to no one."

How might political pressures affect the evolution of accounting standards? Distinctive to our approach is to place the standard-setting institution as a strategic agent subject to objectives and constraints: regulation emerges endogenously as a result of trade-offs between meeting those objectives and responding to opportunistic political pressures. Reporting firms always have the option to disclose voluntarily, so they oppose any requirements that decrease their discretion. Increases in required disclosure proceed more slowly when the standard-setter is less politically influential or when greater disclosure costs imply greater political resistance by reporting firms. In addition, there is a critical point in the disclosure regulation at which the reporting firms prefer to eliminate all regulation, perhaps forcing a fall-back to low disclosure requirements. Such regulatory cycles, when they occur, would take the form of steady increases in disclosure, punctuated by bursts of deregulation. We hope that examining the economic forces at play provides one first step furthering our understanding of accounting regulation, and that future research in this domain will extend this paradigm to other dimensions of accounting regulation.

Appendix

Appendix A: Table of notations

Notation	Definition	Comments
v	Expected continuation cash flow	
θ	Liquidation payoff	
c	Cost of disclosure	
A	Mandatory disclosure threshold	such that $v < A$ must be disclosed.
A_{t-1}	Status-quo at date t	
A^*	Regulation preferred by standard-setter	
A^{fb}	Regulation maximizing firm surplus	
$1-\alpha$	Standard-setter's political accountability	proposal fails if $Opp(A, A_{t-1}) \leq \alpha$.
τ^t	Voluntary disclosure threshold	$v \geq \tau^t$ is disclosed voluntarily.
$Opp(A, A_{t-1})$	Total opposition to proposal A	
$Net(A, A_{t-1})$	Net support for proposal A	equals "supporters" minus "opposers".
$Pop(A_{t-1})$	Most popular regulation	maximizes Net(A,A$_{t-1}$).
$\hat{A}$	Cycling bound on A_{t-1}	i.e., $Pop(A_{t-1}) = 1_{A\leq\hat{A}}A_{t-1}$.

Appendix B: Omitted proofs

Proof of Lemma 1.1: Let A_t be the implemented regulation at date t. The probability of disclosure p_d is given by:

$$p_d^t = A + 1 - 2c(1 - A_t) - A_t = 2cA_t + 1 - 2c.$$

It follows that p_d^t is increasing in A_t. Solving for the non-disclosure price $P^t(ND)$,

$$P^t(ND) = \frac{1}{2}(A_t + \tau^t) - cA_t = A_t + c(1 - A_t) - cA_t = (1 - 2c)A_t + c.$$

This function is increasing A_t.$\Box$

Proof of Proposition 2.1: We know from the analysis in text that we need to compare $Net(A_{t-1}, A_{t-1}) = \lim_{\epsilon\to 0^+} Net(A_{t-1} + \epsilon, A_{t-1})$ to $Net(0, A_{t-1})$. Note that $Net(A_{t-1}, A_{t-1}) - Net(0, A_{t-1})$ is strictly decreasing in A_{t-1} so that there exists a threshold $\hat{A}$ such that $Pop(A_{t-1}) = 1_{A_{t-1}\leq\hat{A}}A_{t-1}$. We determine this threshold next as $Net(\hat{A}, \hat{A}) = Net(0, \hat{A})$.

Case 1. Suppose that $\hat{A} \leq 2c$.

$$\begin{aligned} Net(\hat{A}, \hat{A}) &= Net(0, \hat{A}), \\ (1-\hat{A})2c &= \hat{A} - (1-\hat{A})2c, \\ 4c &= \hat{A}(4c+1), \\ \frac{4c}{4c+1} &= \hat{A}. \end{aligned}$$

Verifying that $\hat{A} = 4c/(4c+1) \leq 2c$ requires that $c \geq 1/4$.

Case 2. Suppose $\hat{A} > 2c$.

$$\begin{aligned} Net(\hat{A}, \hat{A}) &= Net(0, \hat{A}) \\ (1-\hat{A})2c &= 2c - (1-\hat{A})2c \\ 1/2 &= \hat{A} \end{aligned} \tag{6.1}$$

For $1/2 > 2c$, one must have that $c < 1/4$.

In summary, we have demonstrated that $\hat{A} = \max(1/2, 4c/(4c+1))$.□

Proof of Proposition 3.1: Recall that we focus here on $A_{t-1} \leq A^*$ so that the standard-setter prefers the maximal feasible regulation, up to A^*. Define A_{max} as the maximum regulation that would pass and let us solve for A_{max}.

Suppose that $A_{t-1} \leq \hat{A}$. Then, the most popular regulation is $Pop(A_{t-1}) = A_{t-1}$. It follows that for any proposed policy $A > A_{t-1}$,

$$Opp(A, A_{t-1}) = min(2c(1 - A_{t-1}), A - A_{t-1})$$

Because $\alpha \leq 2c(1-\hat{A})$, $Opp(A_{max}, A_{t-1}) < 2c(1 - A_{t-1})$. Therefore, $A_{max} = \min(1, A_{t-1} + \alpha)$.

Suppose that $A_{t-1} > \hat{A}$. Then, the most popular regulation is $Pop(A_{t-1}) = 0$. It follows that for any proposed policy $A > 0$,

$$Opp(A, A_{t-1}) = min(2c, A)$$

Therefore, A_{max} is given by $A_{max} = \alpha$.

It then follows that the standard-setter's optimal proposal (which passes) is:

$$A_t = \min(Pop(A_{t-1}) + \alpha, A^*) = 1_{A_{t-1} \leq \hat{A}} min(A^*, A_{t-1} + \alpha) + 1_{A_{t-1} > \hat{A}} min(A^*, \alpha).$$

Note that A_t is increasing in $Pop(A_{t-1})$, α and A^*.□

Proof of Proposition 3.2: There are two cases to consider, depending on whether $A_{t-1} \leq \hat{A}$ (case 1) or $A_{t-1} > \hat{A}$ (case 2).

Case 1. If $A_{t-1} \leq \hat{A}$, the policy that passes if the standard-setter's proposal fails is the status-quo A_{t-1}. It follows that all non-disclosing managers oppose any decrease in A, and therefore (any) $A < A_{t-1}$ can be passed if and only if $\alpha \geq (1 - A_{t-1})2c$. Since $\alpha \leq \overline{\alpha} \leq (1 - \hat{A})2c \leq (1 - A_{t-1})2c$, it follows that no policy $A < A_{t-1}$ can be passed.

Case 2. If $A_{t-1} > \hat{A}$, the policy that passes if the standard-setter's proposal fails is no-disclosure. It follows that the standard-setter can pass up to $A_{max} = \alpha$. This implies that $A_t = \min(A^*, \alpha)$. □

Proof of Corollary 4.1: Let $EP(A_t)$ be defined as the expected surplus conditional on an implemented regulation A_t.

$$EP(A_t) = \underbrace{\int_0^{A_t} \int_0^1 \max(\theta, v - c) d\theta dv}_{K_1} + \underbrace{\int_{A_t}^{\tau^t} \int_0^1 \max(\theta, P^t(ND)) d\theta dv}_{K_2} + \underbrace{\int_{\tau^t}^1 \int_0^1 \max(\theta, v - c) d\theta dv}_{K_3}$$

Examining each term in the above expression,

$$\begin{aligned}
\frac{\partial K_1}{\partial A_t} &= \int_0^1 \max(\theta, A_t - c)d\theta \\
&= 1_{A_t \le c}\int_0^1 \theta d\theta + 1_{A_t > c}\int_0^1 \max(\theta, A_t - c)d\theta \\
&= 1_{A_t \le c}\frac{1}{2} + 1_{A_t > c}\left(\int_0^{A_t - c}(A_t - c)d\theta + \int_{A_t - \theta}^1 \theta d\theta\right) \\
&= 1_{A_t \le c}\frac{1}{2} + 1_{A_t > c}((A_t - c)^2 + \frac{1}{2} - \frac{1}{2}(A_t - c)^2) \\
&= 1_{A_t \le c}\frac{1}{2} + 1_{A_t > c}((A_t - c)^2 + \frac{1}{2} - \frac{1}{2}(A_t - c)^2)\frac{1}{2}(A_t - c)^2 + \frac{1}{2}) \\
&= 1_{A_t \le c}\frac{1}{2} + 1_{A_t > c}(\frac{A_t^2}{2} - cA_t + \frac{1}{2} + \frac{c^2}{2}) \\
&= \frac{1}{2} + 1_{A_t > c}\frac{1}{2}(A_t - c)^2
\end{aligned}$$

Next,

$$\begin{aligned}
K_2 &= \int_{A_t}^{\tau^t}\int_0^1 \max(\theta, c + A_t(1-2c))d\theta dv \\
&= 2c(1 - A_t)\int_0^1 \max(\theta, c + A_t(1-2c))d\theta \\
&= 2c(1 - A_t)\left(\int_0^{c + A_t(1-2c)}(c + A_t(1-2c))d\theta + \int_{c + A_t(1-2c)}^1 \theta d\theta\right) \\
&= 2c(1 - A_t)\left((c + A_t(1-2c))^2 + \frac{1}{2} - \frac{1}{2}(c + A_t(1-2c))^2\right) \\
&= c(1 - A_t)\left(1 + (c + A_t(1-2c))^2\right) \\
\frac{\partial K_2}{\partial A_t} &= -3A_t^2(1-2c)^2 c + 2A_t c(1 - 6c + 8c^2) - c(1 - c(2 - 5c))
\end{aligned}$$

And, similarly,

$$\begin{aligned}
\frac{\partial K_3}{\partial A_t} &= -\frac{\partial \tau^t}{\partial A_t}\int_0^1 \max(\theta, \tau^t - c)d\theta \\
&= -(1-2c)\int_0^1 \max(\theta, A_t(1-2c) + c)d\theta \\
&= -(1-2c)\frac{1}{2}((c + A_t(1-2c))^2 + 1) \\
&= -\frac{1}{2}A_t^2(1-2c)^3 - A_t(1-2c)^2 c - \frac{1}{2}(1-2c)(c^2+1) \\
&= -\frac{1}{2}(1-2c)(1 + (c + A_t(1-2c))^2)
\end{aligned}$$

Then,

$$EP'(A_t) = A_t^2\frac{1}{2}(1_{A_t>c} - (1-2c)^2(1+4c)) + A_t c(1 - 4c(2-3c) - 1_{A_t>c}c) + \frac{1}{2}c^2(3 + 1_{A_t>c} - 8c)$$

Case 1. Assume that $c < 1/4$.

Consider $A_t \in (0, c)$. In this region, $EP'(.)$ is inverse U-shaped with:

$$\begin{aligned} EP'(0) &= \frac{1}{2}c^2(3-8c) > 0 \\ EP'(c) &= 2(1-c)^2c^2(1-4c) > 0 \end{aligned}$$

It follows that $EP'(.) > 0$ on $(0, c)$ and, therefore, $A^{fb} \geq c$.

Consider next $A_t \in [c, 1)$. In this region, $EP'(.)$ is U-shaped with:

$$\begin{aligned} EP'(1) &= 0 \\ EP''(1) &= 4(1-c)c^2 \end{aligned}$$

Note that $A_t = 1$ satisfies the first-order condition for an optimum but is not the desired solution, as $EP''(1) > 0$ implies that it is a local minimum.

As $EP'(.)$ is a quadratic U-shaped function, we know that $EP'(.)$ decreases then increases on $(c, 1)$ and, therefore, there is a unique solution in $(c, 1)$ that satisfies $EP'(A^{fb}) = 0$. Factorizing the polynomial $EP'(.)$ by observing that one of its roots is $A_t = 1$,

$$EP'(A_t) = 2(1-A_t)c^2(1 - 2c - A_t(3-4c))$$

The second root (which is the only root that satisfies the second-order condition) is then given by:

$$A^{fb} = \frac{1-2c}{3-4c}$$

Case 2. Assume that $c \in [1/4, 3/8)$.

Consider $A_t \in (0, c]$. In this region, $EP'(.)$ is inverse U-shaped with:

$$\begin{aligned} EP'(0) &= \frac{1}{2}c^2(3-8c) > 0 \\ EP'(c) &= 2(1-c)^2c^2(1-4c) < 0 \end{aligned}$$

It follows that $EP'(.)$ has a unique root on $(0,c)$ which satisfies the second-order condition (i.e., $EP'' < 0$). Consider next $A_t \in (c,1)$. In this region, $\sigma'(.)$ is U-shaped with (as before) $EP'(1) = 0$. It follows that $EP' < 0$ for any $A_t \in (c,1)$.

Therefore, the policy A^{fb} is in $(0,c)$ and, solving $EP'(A^{fb}) = 0$, is given by the Equation below.

$$A^{fb} = \frac{c(8c-3)}{8c^2 - 2c - 1}$$

Case 3. Assume that $c \geq 3/8$.

$$EP'(0) - EP'(c) = \frac{1}{2}c^2(1-2c)(2c(7-4c)-1) > 0$$

This implies that $EP' < 0$ on $A_t \in (0,c)$. As in case 2, $EP' < 0$ on $(c,1)$ and $A^{fb} = 0.\square$

Proof of Proposition 4.2: The case with $A^* \leq \hat{A}$ is already explained in text so that let us assume here that $A^* > \hat{A}$. The forward-looking standard-setter will implement $A_t = A_{t-1} + \alpha$ as long as $A_{t-1} + \alpha \leq \hat{A}$ and, when k such that $A_{k-1} + \alpha > \hat{A}$ is reached, may either set $A_k = \min(A^*, A_{k-1} + \alpha)$ (in which case the regulatory dynamics will be identical to the baseline) or $A_t = \hat{A}$ for any $t \geq k$.

Define U_{cycle} as the surplus when the standard-setter chooses to cycle (first option) and U_{stab} as the surplus when the standard-setter chooses to stabilize at $\hat{A}$ (second option). Let us define k as the duration of a cycle if the first option is chosen, where [.] indicates the integer part.

A cycling policy visits states $\alpha, 2\alpha, ..., \min(A^*, A_{k-1} + \alpha)$ and repeats, which implies that:

$$U_{cycle} = \frac{1}{1-\beta^k}(\mathcal{U}(min(A^*, \alpha k)) + \sum_{n=1}^{k-1} \beta^n \mathcal{U}(\alpha n))$$

In the equation above, the payoff obtained along one cycle $\mathcal{U}(min(A^*, \alpha k)) + \sum_{n=1}^{k-1} \beta^n \mathcal{U}(\alpha n)$ is repeated as a perpetuity with a discount rate β^k given that each cycle lasts for k periods.

On the other hand, stabilizing the policy at $\hat{A}$ implies a constant surplus:

$$U_{stab} = \frac{\mathcal{U}(\hat{A})}{1-\beta}$$

It then follows that $U_{cycle} < U_{stab}$ if and only if:

$$\Lambda = \underbrace{\mathcal{U}(\min(A^*, \alpha k)) - \mathcal{U}(\hat{A})}_{>0} + \sum_{n=1}^{k-1} \beta^n \underbrace{(\mathcal{U}(\alpha n) - \mathcal{U}(\hat{A}))}_{<0} < 0$$

The function Λ is decreasing in β and in α.□

Appendix C: Other disclosure regulations

This appendix proves two claims. First, all managers weakly prefer regulations in which favorable events are not subject to mandatory disclosure (lemma C.1). Second, threshold regulations in which events $v < A$ are subject to a mandatory disclosure maximize popularity (lemma C.4).

We generalize the notations and assumptions used in the baseline model to describe non-interval type of disclosure rules. Define a standard as an indicator function $h : [0, 1] \to \{0, 1\}$ such that $h(v) = 1$ (resp., $h(v) = 0$) indicates that the event v is *not* subject to mandatory disclosure (resp., must be disclosed). The voluntary disclosure threshold is denoted τ^h and the non-disclosure price is denoted $P^h(ND)$.

Disclosing firms bear a cost $c > 0$. Non-disclosers bear a cost $c\phi(P^h(ND)) \geq 0$ where $P^h(ND) = \int_0^{\tau^h} h(v)vdv / \int_0^{\tau^h} h(v)dv$ is the gross non-disclosure price (excluding costs), $\phi(1) = 1$ and $0 \leq \phi' < 1/c$.[14] As is well-known, the voluntary disclosure threshold satisfies the following equation:

$$P^h(ND) - c\phi(P^h(ND)) = \tau^h - c. \tag{6.2}$$

If there is more than one solution, we choose the highest solution because it is Pareto-dominant from the perspective of managers. Note that we parameterize the cost in terms of the non-disclosure price which nests the baseline model (see footnote 13) and provides tractability to the model if the mandatory disclosure region features multiple disjoint sets.

We restrict the attention to regulations in which $ND^h = \{v : h(v) = 1, v \leq \tau^h\}$ is empty or can be written as a finite union of closed intervals. The probability of non-disclosure is denoted $q^h = \int_0^{\tau^h} h(s)ds$. In short-hand, denote h_A for the function $h_A(v) = 1 - 1_{v<A}$ (this is the baseline

[14] This functional form nests the baseline specification, setting $\phi(x) = 1_{x \geq c} \frac{x-c}{1-c}$. The fact that $\phi(1) = 1$ guarantees that $\tau^h < 1$ is always interior for any h that does not prescribe full-disclosure. The upper bound $\phi' < 1/c$ guarantees that $x - \phi(x)$ is increasing x and, thus, more favorable expectations imply a higher non-disclosure price, even net of costs. In reduced-form, the specification captures the idea that standards with higher non-disclosure price require greater "degrees" of mandatory disclosure to enforce (and might require more verification as the payoff from misreporting is greater).

threshold regulation). With a slight abuse of notation, we use $P^A(ND)$ instead of $P^{h_A}(ND)$ and use this short-hand notation in other places where h_A would appear as a superscript. All statements are made up to events with probability zero.

Non-disclosure of favorable events

This section demonstrates several observations that are useful in proving the main results.

Lemma C. 1. *Let h_1 be such that ND^h has a maximal non-empty interval $[x, y]$. Then, a standard h_2 such that $ND^{h_2} = ND^h \cup [x, \tau^h]$ is weakly preferred by all managers, strictly so by managers with $v \in (y, \tau^h]$.*

Proof: This follows from the following comparison between h_1 and h_2: (a) managers with $v \notin ND^{h_2}$ are indifferent, (b) managers with $v \in (y, \tau^h]$ (strictly) prefer h_2 since they could have disclosed voluntarily, (c) managers with $v \in ND^{h_1}$ prefer h_2 because they obtain a higher non-disclosure price under h_2.□

Lemma C.1 implies that we can restrict the attention to regulations in which $\max ND^h = \tau^h$. In particular, if ND^h is an interval, it must have the threshold form h_A for some A.

Popularity of threshold regulations

As we solve the model by backward induction, we initially examine the second phase of the regulatory game and derive the standard h that is the most popular against an existing status-quo h_A.

We first establish two preliminary lemmas.

Lemma C. 2. *Let there be two standards h and h_A. If $P^h(ND) \geq P^A(ND)$, then: $q^h \leq \tau^A - A$ (strictly if $h \neq h_A$).*

Proof: We solve for the standard that maximizes the probability of non-disclosure subject to $P^h(ND) \geq P^A(ND)$.

$$\max_{q^h, \tau^h, h(.)} q^h$$

s.t.

$$P^h(ND) - c\phi(P^h(ND)) = \tau^h - c \qquad (l_\tau)$$

$$\tau^h - c \geq P^A(ND) \qquad (l_A)$$

$$q^h = \int_0^{\tau^h} h(v)dv \qquad (l_q)$$

$$P^h(ND) = \frac{\int_0^{\tau^h} vh(v)dv}{q^h} \qquad (l_P)$$

Differentiating the Lagrangian L:

$$\frac{\partial L}{\partial q^h} = 1 + l_q + l_P \frac{P^h(ND)}{q^h} = 0 \tag{6.3}$$

And, for $v < \tau^h$,

$$\frac{\partial L}{\partial h(v)} = -l_q - l_P \frac{v}{q^h} = -l_P \frac{v}{q^h} - 1 - l_P \frac{P^h(ND)}{q^h} \tag{6.4}$$

A standard $h(v) = 0$ for all v cannot be a solution (it achieves $q^h = 0 < q^A$), therefore $l_P < 0$. This function intersects zero at most once, from below, implying that the solution has the form $h_{A'}$ where, as $q^{A'}$ is decreasing in A', implies that the solution is h_A.$\square$

Lemma C. 3. *For any standard $h \neq h_0$, $q^h < q^0$.*

Proof: If $P^h(ND) > P^0(ND)$, this statement follows from lemma C.2. If $P^h(ND) = P^0(ND)$, $\tau^h = \tau^0$ which implies that $q^h \geq q^0 = \tau^0$ with equality if and only if $h = h_0$. If $P^h(ND) < P^0(ND)$, $\tau^h < \tau^0$ which also clearly implies $q^h < q^0$.$\square$

As in the baseline model, denote the (net) popularity of a standard h over h_A by $Net(h, h_A)$.

Lemma C. 4. *For any A, h_0 or h_A maximizes popularity.*

Proof: Consider a regulation h in which ND^h is composed of at least two disjoint intervals. We need to show that $Net(h, h_A) \leq \max(q^0, q^A)$.

Case 1. Suppose that $P^h(ND) \geq P^A(ND)$. Lemma C.2 implies that $q^h < q^A$ and given that $Net(h, h_A)$ is bounded from above by q^h (i.e., only non-disclosers under h might prefer h), we know that $Net(h, h_A) \leq q^A$.

Case 2. Suppose that $P^h(ND) < P^A(ND)$. Then:

$$\begin{aligned} Net(h, h_A) &= \int_0^{\min(A,\tau^h)} h(v)dv - (\tau^A - A) \\ &\leq \min(A, \tau^0) - (\tau^A - A) = Net(h_0, h_A) \qquad \text{(by lemma C.3).} \end{aligned}$$

It then follows that the regulations h_0 or h_A maximize the function $Net(h, h_A)$.[15]

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[15] In fact, this argument is slightly more general than stated here and extends to comparisons against non-threshold regulations, i.e., for any "status-quo" regulation $\hat{h}$, there exists A such that either h_0 or h_A maximize $Net(h, \hat{h})$.

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