Disclosure, Depositor Inattention, and Non-Monotone Run Fragility

Autonomous Theory Pipeline

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Abstract

Can greater transparency make a bank more fragile? This paper studies a simple rollover model in which public disclosure has two effects: it improves confidence by reducing uncertainty, but it also raises the value of monitoring and thereby increases the mass of depositors who are able to run. Under a transparent reduced-form sufficient structure, I derive an exact sign condition for the effect of disclosure on run probability. Disclosure is destabilizing if and only if the induced monitoring elasticity dominates the confidence elasticity. The result implies a threshold disclosure level below which transparency increases fragility and above which it reduces fragility. The policy lesson is conditional rather than ideological: disclosure should depend on how attention-elastic the depositor base is. The paper offers a parsimonious theory of why supervisory or market disclosure can backfire in low-transparency runnable funding environments.

1 Introduction

The fragility of uninsured short-term funding is central to modern banking. At the same time, disclosure is one of the main policy instruments available to supervisors and markets. Standard intuition says that greater transparency should stabilize funding by reducing uncertainty. This paper shows why that intuition can fail. From the outset, the theorem is derived in a reduced-form sufficient structure rather than a fully microfounded global-games environment.

The key observation is that disclosure affects not only beliefs, but also attention. Better public information makes monitoring more valuable. More depositors therefore become attentive, and a larger attentive mass makes coordinated withdrawal easier. Transparency can then destabilize funding before its confidence benefits become large enough to dominate.

The paper develops a deliberately parsimonious theory around this force. The model has a continuum of uninsured depositors with heterogeneous monitoring costs, a disclosure-precision parameter, and a reduced-form rollover cutoff. The main theorem characterizes exactly when disclosure raises run probability and when it lowers it. The answer is sharp: disclosure is destabilizing if and only if the induced monitoring elasticity exceeds the confidence elasticity.

This contribution sits between three literatures. The first studies disclosure and supervisory transparency. The second studies bank-run fragility and coordination. The third studies inattentive deposits and deposit franchise value. Existing work has the ingredients of the problem, but not the exact characterization of when disclosure activates enough attention to offset the stabilizing effect of better information.

The model is intentionally narrow. It does not claim to solve a fully general bank-run game. Instead, it provides a transparent sufficient structure that makes the opposing disclosure forces explicit and auditable. That discipline is valuable because a large share of the policy debate implicitly assumes that disclosure has only one sign.

Two results matter. First, attentive mass is increasing and concave in disclosure precision. Second, run probability is hump-shaped whenever the attention effect is strong enough relative to the confidence effect. A simple calibration shows that the destabilizing region can be quantitatively meaningful.

The paper therefore offers a precise theory of when transparency backfires: not always, but exactly in those environments where disclosure activates monitoring faster than it delivers confidence. The practical implication is straightforward: before increasing disclosure intensity, policymakers should diagnose how attention-elastic the depositor base is.

2 Model

There is a continuum of uninsured depositors of unit mass and a bank that must roll over short-term funding at date 1. The bank's rollover fundamental is $\theta \in \mathbb{R}$, where lower values represent weaker effective liquidity.

Assumption 1. *The fundamental θ has continuous cdf F and density f, with $f(x) > 0$ on the region of interest.*

The policy variable is disclosure precision $\tau \geq 0$. Before withdrawal decisions occur, each depositor decides whether to become attentive. Monitoring requires paying an idiosyncratic cost c.

Assumption 2. *Monitoring costs are uniformly distributed on $[0, 1]$.*

The gross private value of becoming attentive is

$$B(\tau) = \frac{A\tau}{1+\tau},$$

where $A > 0$ captures how strongly disclosure activates monitoring. This specification reflects diminishing marginal gains from further increases in disclosure precision.

Assumption 3. *The measure of attentive depositors is determined by the cutoff rule $c \leq B(\tau)$.*

Conditional on an attentive mass m, the bank fails at rollover when the fundamental is sufficiently weak relative to withdrawals. I summarize the underlying withdrawal game with the following sufficient structure.

Assumption 4. *The bank fails whenever*

$$\theta < m - \ell - b\log(1+\tau),$$

where $\ell > 0$ is the liquidity buffer and $b > 0$ measures the confidence effect of disclosure.

Assumption 4 collects the stabilizing informational effect of disclosure into a single term. The interpretation is that better disclosure lowers precautionary withdrawal pressure among attentive depositors, shifting the effective failure cutoff downward.

The paper's question is now immediate: how does higher τ affect run probability once it both increases the attentive mass and reduces the failure cutoff through confidence? The liquidity buffer ℓ shifts the level of fragility one-for-one, but it does not enter the sign threshold derived below.

3 Results

The first object is the equilibrium attentive mass.

Proposition 1. *Under Assumptions 2 and 3, the unique attentive mass is*

$$m(\tau) = \frac{A\tau}{1+\tau}.$$

Moreover,

$$m'(\tau) = \frac{A}{(1+\tau)^2} > 0 \quad \textit{and} \quad m''(\tau) = -\frac{2A}{(1+\tau)^3} < 0.$$

Proof. A depositor becomes attentive if and only if $c \le B(\tau)$. Since costs are uniform on $[0,1]$, the attentive mass equals the measure of costs below that cutoff:

$$m(\tau) = \Pr(c \le B(\tau)) = B(\tau) = \frac{A\tau}{1+\tau}.$$

Differentiation yields the remaining claims. □

Define the failure cutoff

$$\theta^*(\tau) = m(\tau) - \ell - b\log(1+\tau),$$

and the run probability

$$R(\tau) = F(\theta^*(\tau)).$$

Proposition 2. *Under Assumptions 1–4, the derivative $R'(\tau)$ has the same sign as $A - b(1+\tau)$. The term A is the attention-activation force and the term $b(1+\tau)$ is the confidence force after putting the derivative on a common scale. Equivalently, disclosure is destabilizing if and only if*

$$A > b(1+\tau),$$

and stabilizing if and only if

$$A < b(1+\tau).$$

Proof. Substituting Proposition 1 into the failure cutoff gives

$$\theta^*(\tau) = \frac{A\tau}{1+\tau} - \ell - b\log(1+\tau).$$

Differentiating,

$$\theta^{*\prime}(\tau) = \frac{A}{(1+\tau)^2} - \frac{b}{1+\tau} = \frac{A - b(1+\tau)}{(1+\tau)^2}.$$

By the chain rule,

$$R'(\tau) = f(\theta^*(\tau))\theta^{*\prime}(\tau).$$

Since $f(\theta^*(\tau)) > 0$ by Assumption 1 and $(1+\tau)^2 > 0$, the sign of $R'(\tau)$ equals the sign of $A - b(1+\tau)$. □

Corollary 1. *If $A \leq b$, run probability is weakly decreasing in disclosure for every $\tau \geq 0$. If $A > b$, there exists a unique threshold*

$$\tau^\dagger = \frac{A}{b} - 1 > 0$$

such that run probability is increasing for $\tau < \tau^\dagger$ and decreasing for $\tau > \tau^\dagger$.

Proof. Set the numerator in Proposition 2 equal to zero and solve for τ. □

Corollary 2. *On the region $A > b$,*

$$\frac{\partial \tau^\dagger}{\partial A} = \frac{1}{b} > 0 \quad \textit{and} \quad \frac{\partial \tau^\dagger}{\partial b} = -\frac{A}{b^2} < 0.$$

Corollary 2 gives the paper's main cross-sectional prediction. Banks with more attention-elastic depositor bases remain in the destabilizing disclosure region for longer, while banks with a stronger confidence channel transition more quickly into the stabilizing region.

4 Discussion

4.1 Economic Interpretation

The model decomposes disclosure into two elasticities. The first is the attention elasticity,

$$m'(\tau) = \frac{A}{(1+\tau)^2},$$

which measures how quickly transparency activates monitoring. The second is the confidence elasticity,

$$\frac{b}{1+\tau},$$

which measures how quickly transparency lowers precautionary withdrawal pressure. Disclosure backfires precisely when the first elasticity exceeds the second.

This perspective clarifies why transparency is neither unambiguously stabilizing nor unambiguously destabilizing. Inattention is privately passive but financially stabilizing in the narrow sense that inattentive creditors cannot coordinate a run. Transparency destroys that passive stability before it fully delivers confidence. This is different from the generic claim that public signals affect coordination. The distinctive mechanism here is that disclosure changes the size of the strategically active creditor set itself.

4.2 Empirical Predictions

The model yields three direct predictions. First, disclosure shocks should produce stronger fragility responses among banks with more uninsured and attention-elastic depositor bases. Second, the response to disclosure should be hump-shaped in ex ante opacity: modest disclosure improvements can worsen fragility in opaque environments, while further improvements reduce it. Third, higher liquidity buffers should shift fragility downward at every disclosure level without changing the sign threshold.

4.3 Relation to the Literature

Disclosure papers typically emphasize information revelation and market discipline. Run models typically take the active creditor set as given. Inattention papers explain why sticky deposits create franchise value. This paper's contribution is to combine those ideas into a single characterization problem: when does disclosure activate enough monitoring to overwhelm the stabilizing confidence channel?

4.4 Limitations

The model is reduced-form in two places: the monitoring technology and the failure cutoff. That is deliberate. The goal is not to claim a universal theorem for all run environments, but to deliver a transparent sufficient structure that makes the sign condition explicit. A richer model could embed these objects in a global-games withdrawal game or add endogenous disclosure choice.

5 Conclusion

This paper studies a simple but neglected possibility: transparency can increase fragility by activating depositor attention. Under a transparent sufficient structure, the answer is exact. Disclosure raises run probability if and only if the induced monitoring elasticity exceeds the confidence elasticity.

The result implies a threshold view of transparency. In low-transparency runnable funding environments, better disclosure can initially worsen fragility. Beyond a critical level, however, further transparency becomes stabilizing. The policy lesson is therefore not “more opacity” or “more disclosure,” but careful attention to where the funding environment sits relative to the disclosure threshold.

A Appendix

A.1 Proof of Corollary 2

From Corollary 1,

$$\tau^{\dagger} = \frac{A}{b} - 1.$$

Differentiate directly:

$$\frac{\partial \tau^{\dagger}}{\partial A} = \frac{1}{b} > 0, \qquad \frac{\partial \tau^{\dagger}}{\partial b} = -\frac{A}{b^2} < 0.$$

A.2 Calibration Note

Using the illustrative calibration $A = 0.8$, $b = 0.5$, and $\ell = 0.4$ with a standard normal fundamental, the threshold is interior because $A > b$, and specifically $\tau^{\dagger} = 0.6$. The corresponding run probability rises from roughly 0.345 at $\tau = 0$ to roughly 0.369 at $\tau^{\dagger}$, then declines to roughly 0.286 by $\tau = 4$. These magnitudes show that the theorem can matter quantitatively, not only symbolically.