

# Should Antitrust Authorities Disclose Expert Performance?\*

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## Abstract

Antitrust authorities increasingly rely on external economists and technical experts in merger, cartel, and conduct investigations. Yet because performance pay may undermine independence, experts are rarely rewarded based on enforcement outcomes, creating incentive distortions. We ask whether disclosing expert performance to future employers alleviates this problem. In a Gaussian career-concerns model with endogenous information acquisition, disclosure improves labor-market inference about ability, strengthens effort incentives, reduces the marginal cost of evidence, and leads the authority to make better-informed decisions. Disclosure is optimal if and only if its fixed cost is below a threshold that increases with higher average ability, lower talent dispersion, greater task uncertainty, and noisier priors. We further show that a welfare-minded planner is less inclined to disclose than the authority; that even noisy evaluations strengthen incentives; that transparency attracts stronger experts when participation is endogenous; and that in two-expert teams individual attribution is essential—team-level disclosure only partially mitigates moral hazard.

**Keywords:** antitrust investigations; experts; career concerns; disclosure; information acquisition; institutional design.

**JEL codes:** D82, K21, L40.

## 1 Introduction

Modern antitrust cases are increasingly expert-intensive. Merger review, abuse of dominance inquiries, cartel damages exercises, and digital-platform investigations often turn on technical economic analysis rather than on simple legal presumptions alone. Competition authorities rely on external economists, sector specialists and data scientists to interpret evidence, assess efficiencies, simulate counterfactuals, and help build the factual record on which enforcement decisions rest. In many matters, the quality of expert input materially affects both decision accuracy and the likelihood of legal success.

However, the growing reliance on external expertise poses a basic governance question. While authorities would like to incentivize costly effort in evidence production, explicit performance pay

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tied to enforcement outcomes is typically infeasible or undesirable. Paying experts based on whether a merger is blocked, a fine is imposed, or litigation is won would compromise the appearance—and potentially the reality—of independent advice. Limits on outcome-contingent compensation are therefore often appropriate. Yet once direct performance contracts are constrained, the authority loses a standard instrument for motivating effort, and a standard agency problem emerges: the authority values information production, while the expert privately bears the cost of working harder. This paper shows that disclosing expert performance to future employers (e.g., law firms or consulting firms) can substitute for explicit incentive contracts and align objectives. The idea is simple but, in this setting, underexplored. Many experts who advise public authorities are repeat players in a labor market for specialist economic and technical services. Their future opportunities depend on perceived quality. If future employers observe a clearer signal of case-specific performance, then current effort becomes more valuable because it affects future reputation more strongly. In that sense, disclosure can substitute for prohibited incentive pay by sharpening career concerns.

Transparency, however, is not costless. Making expert performance observable may require redactions, delayed publication, internal audit procedures, or a standardized evaluation mechanism. It may reveal elements of litigation strategy, generate confidentiality risks, or impose administrative burdens on authorities already operating under tight budgets and deadlines. The central policy question is, therefore, not whether disclosure is always good, but whether the incentive gains from better labor-market learning exceed the institutional costs of making expert performance visible—and in which environments this is most likely.

Our baseline analysis formalizes that trade-off in a stylized model. An antitrust authority chooses how much precision to acquire about an unknown case state before making a decision. The cost of information acquisition depends on task difficulty and on an expert's talent and effort. Because the expert is rewarded only through future labor-market beliefs, equilibrium effort depends on what outside employers are allowed to observe. Without disclosure, employers infer talent only from the authority's observed information-gathering cost, which is a noisy signal because task difficulty is also embedded in that cost. With disclosure, employers additionally observe a direct measure of expert performance. This informational improvement raises reputational incentives, lowers the authority's expected marginal cost of evidence production, and increases optimal information acquisition.

We show that non-disclosure leaves employers with a contaminated signal of talent, so experts internalize only a fraction of the reputational return to effort. Moreover, disclosure strengthens incentives and induces the authority to gather more evidence, improving decision quality. Finally, the authority discloses if and only if the fixed institutional cost of transparency falls below a threshold; that threshold is larger when expert talent is higher on average, when talent is harder to screen ex ante through coarse proxies, when task uncertainty is greater, and when the authority starts from a less informative prior.

We then extend the baseline model in four natural directions. First, we distinguish the authority's private objective from a broader welfare criterion. The authority values better information because it improves present case decisions, but it does not automatically internalize the expert's effort cost. A social planner who cares about real resource costs may therefore prefer less disclosure than the authority itself. Second, we relax the polar assumption that disclosure is either absent or perfectly informative. In many institutions, performance is measured imperfectly through scorecards, peer reviews, or ex post assessments. We show that even noisy disclosure strengthens incentives relative to pure opacity, and that the gains increase smoothly with the precision of the evaluation technology. Third, we study expert selection. When experts privately know their own talent before accepting

a mandate, more transparent regimes attract stronger experts because those experts benefit more from being correctly recognized by the market. Fourth, we allow the authority to rely on two experts rather than one. This reveals an attribution problem: aggregate disclosure of team performance improves incentives, but only expert-specific disclosure fully eliminates within-team free riding.

Taken together, these results have direct policy relevance. Performance disclosure can act as a regulated substitute for performance pay: it preserves independence while restoring incentives to exert effort and produce evidence. The framework points toward investing in standardized, auditable ex post evaluation mechanisms—technical scorecards, peer review panels, methodological audits, and public reports with appropriate redactions and lags—especially in settings with greater uncertainty, noisier priors, and weaker ex ante screening, where reputational incentives are most valuable. At the same time, because a welfare-minded planner is less willing to disclose than the authority, the model highlights the need for institutional guardrails that explicitly account for real effort costs and confidentiality risks to avoid over-disclosure. Finally, team-level disclosure only partially strengthens incentives; disclosure regimes should therefore, where feasible, track responsibilities and deliverables at the individual-expert level to curb free riding and enhance accountability—without resorting to outcome-contingent contracts.

**Disclosure in practice.** Expert performance disclosure in antitrust enforcement rarely takes the form of an explicit scorecard, but it sometimes appears de facto through public case materials that allow future employers and the broader community to infer expert quality. One channel is the publication of non-confidential reports and supporting analyses commissioned or relied upon by authorities, which makes the rigor of the empirical work, modeling choices, and robustness checks observable (or at least available) to industry actors ex post. A second channel is litigation and appeals, where courts and tribunals publicly scrutinize expert evidence—sometimes explicitly discussing methodological reliability and the weight placed on competing expert submissions—thereby generating a reputational signal tied to performance rather than to the enforcement outcome alone. Third, agencies’ public case-file repositories (e.g., document libraries and case-filings portals) make expert declarations, reports, and underlying submissions accessible across matters, again enabling market learning about expertise and credibility. Finally, in merger control, authorities commonly publish non-confidential versions of decisions (often with a lag), which can indirectly reveal the sophistication and influence of the technical record assembled in the investigation.

Our analysis provides a formal rationale for these transparency-oriented practices: by sharpening reputational incentives through labor-market learning, they can mitigate the effort distortion created by opacity and constrained contracting.

**Related literature.** Our paper relates to several strands of literature.

First, it contributes to the literature on information production and institutional design in antitrust enforcement. A number of papers study how competition authorities gather evidence and make enforcement decisions in merger and conduct cases. Besanko and Spulber (1993) analyze equilibrium antitrust policy when mergers are contested. Armstrong and Vickers (2010) examine delegated project choice and the incentives of decision makers in regulatory environments. Nocke and Whinston (2013) study merger policy when firms can strategically choose which merger to propose. More recently, Dertwinkel-Kalt and Wey (2021) analyze the role of evidence production in merger control and the interaction between remedies and the authority’s information acquisition incentives. Our paper differs from this literature by focusing on the incentives of external experts who contribute to the production of economic evidence.

Second, the paper relates to the literature on career concerns and reputational incentives. When explicit performance contracts are limited or undesirable, agents may exert effort to influence future beliefs about their ability in the labor market. This mechanism has been studied in the seminal work of Holmstrom (1999) and further developed in Hansen (2013) and related contributions on reputational incentives and performance feedback. In our context, expert economists who advise antitrust authorities often operate under such reputational incentives: their compensation cannot easily depend on enforcement outcomes, but their future career opportunities depend on the perceived quality of their work.

Third, our analysis relates to the literature on transparency and disclosure. A large body of work studies how disclosure policies affect incentives, information production, and market outcomes. Dye (1985) analyzes equilibrium disclosure incentives when agents have private information about performance, while Dranove and Jin (2010) provide a comprehensive review of information disclosure in markets with quality uncertainty. In these settings, disclosure can improve incentives by making performance more observable to external evaluators. Our paper applies this logic to the institutional context of antitrust enforcement, where disclosure concerns the performance of expert advisors rather than product quality or firm behavior.

Finally, our paper also relates to the literature on expert testimony and expert advisors in legal and regulatory environments. Daughety and Reinganum (2000) study the economics of expert witnesses and analyze how experts produce and communicate information in legal proceedings. Their work highlights the strategic role of expert information in environments where decision makers rely on specialized knowledge provided by external experts. Our setting shares this focus on expert-generated information but differs in an important institutional dimension. Rather than studying adversarial litigation between parties, we consider experts advising a regulatory authority that must decide how much information to acquire before making an enforcement decision. In this context, the incentives of experts are largely reputational.

Bisceglia, Piccolo, and Tarantino (2023), instead, analyze the disclosure of expert fees in merger review and show how transparency regarding compensation affects incentives and market outcomes. While their focus is on fee disclosure, we study transparency about expert performance. Our analysis shows that performance disclosure strengthens reputational incentives, reduces the marginal cost of evidence production, and induces the authority to gather more precise information before making enforcement decisions.

The remainder of the paper is organized as follows. Section 2 presents the baseline model. Section 3 characterizes equilibrium under non-disclosure and under perfect disclosure, compares the two regimes in terms of incentives, the marginal cost of evidence, and the authority's optimal decision, and derives the condition under which disclosure is optimal. Section 4 extends the baseline analysis along four natural directions: *(i)* a total-welfare benchmark, *(ii)* noisy (imperfect) performance disclosure, *(iii)* endogenous participation and talent selection, and *(iv)* moral hazard in teams with two experts and an attribution problem. Section 5 discusses policy implications and institutional design considerations. Section 6 concludes. Proofs and additional technical material are relegated to the Appendix.

## 2 Baseline model

In this section, we introduce a simple model that captures as clearly as possible the trade-off between disclosure and non-disclosure.

**Environment.** An antitrust authority (AA) must choose an action  $x \in \mathbb{R}$  in a case whose correct resolution depends on an unknown state  $\omega$ . The prior is Gaussian:

$$\omega \sim N(\bar{\omega}, \tau_0^{-1}),$$

where  $\tau_0 > 0$  is the AA's prior precision. The AA suffers quadratic loss

$$L(x, \omega) = (x - \omega)^2.$$

Before deciding, the AA can collect an informative signal

$$s = \omega + \varepsilon, \quad \varepsilon \sim N(0, q^{-1}),$$

where  $q \geq 0$  is the precision of evidence production chosen by the AA. Hence, conditional on signal  $s$ , the optimal AA's choice is

$$x^*(s) = \mathbb{E}[\omega | s],$$

and the expected posterior loss equals

$$\mathbb{E}[L(x^*(s), \omega)] = \text{Var}[\omega | s] = \frac{1}{\tau_0 + \tau_q}.$$

The AA does not produce information costlessly. The marginal cost of precision depends on a baseline complexity parameter  $\kappa > 0$ , on task difficulty  $\eta$ , and on an expert's talent  $\theta$  and effort  $e$  — i.e.,

$$c = \kappa + \eta - \theta - e.$$

The reduced-form total acquisition cost is therefore  $cq$ . Higher task difficulty raises the cost of evidence production, while greater talent or effort lowers it. The linear form is stylized but analytically convenient and captures the idea that better experts make a given level of investigative precision cheaper to obtain.

Following the career-concerns literature, we assume that expert talent is uncertain ex ante:

$$\theta \sim N(\bar{\theta}, \sigma_\theta^2),$$

and task difficulty satisfies

$$\eta \sim N(\bar{\eta}, \sigma_\eta^2),$$

with  $\theta$  and  $\eta$  being independent. Effort is chosen after the AA sets  $q$  and entails convex cost  $\psi(e) = e^2/2$ , with  $e \geq 0$ .

**Labor-market and disclosure regimes.** The expert cannot be paid directly on the basis of the AA's final enforcement outcome. Instead, future employers observe publicly available case information and offer a competitive continuation wage equal to posterior expected talent.

The benchmark comparison is between two regimes.

1. **No disclosure.** Future employers observe only the realized information-production cost  $c$ .
2. **Perfect performance disclosure.** Future employers observe  $c$  and, in addition, a direct performance measure

$$y = \theta + e.$$

Implementing this regime costs the AA a fixed amount  $F > 0$ .

The assumption that  $c$  is observable is meant to capture the fact that budgets, staffing intensity, delays, and the resource burden of major cases are often at least partially inferable by sophisticated market participants. By contrast, a case-specific performance measure for the AA's outside expert may require a formal evaluation, publication protocol, or ex post audit. The fixed cost  $F$  summarizes those institutional burdens.

**Timing.** The timing is as follows.

1. The AA chooses a disclosure regime.
2. The state  $\omega$  realizes.
3. Talent  $\theta$  and task difficulty  $\eta$  realize; the expert chooses effort  $e$ . The AA chooses precision  $q$ .
4. The signal  $s$  is produced and the AA chooses  $x$ .
5. Future employers observe the public signals implied by the disclosure regime and pay

$$w = \mathbb{E}[\theta \mid \text{public signals}].$$

The AA's objective in the baseline model is to minimize expected decision loss, acquisition cost, and, when relevant, the fixed disclosure cost. This reflects the narrow objective of a current enforcement body. Section 4.1 shows how the conclusions change when one also internalizes the expert's effort cost.

Define

$$\lambda \equiv \frac{\sigma_\theta^2}{\sigma_\theta^2 + \sigma_\eta^2} \in (0, 1).$$

The parameter  $\lambda$  measures how informative the no-disclosure cost signal is about talent: it is larger when talent dispersion is high and smaller when task-difficulty noise is high. Let

$$a_0 \equiv \kappa + \bar{\eta} - \bar{\theta} - \lambda, \quad a_1 \equiv \kappa + \bar{\eta} - \bar{\theta} - 1.$$

Throughout, we assume

$$a_1 > 0 \quad \tau_0 < 1/\sqrt{a_0}. \tag{A1}$$

Assumption A1 guarantees that optimal evidence acquisition is strictly positive. Since  $a_1 < a_0$ , positivity under no disclosure is the restrictive case for the precision choice.

### 3 Equilibrium

In this section, we solve for the equilibrium of the game with and without disclosure and compare the AA's expected profits across the two regimes.

**Labor-market inference.** Let  $e_0$  and  $e_1$  denote equilibrium effort under no disclosure and perfect disclosure, respectively. The following holds.

**Lemma 1** (Posterior beliefs). *Fix employers' conjecture that equilibrium effort is  $e_0$  under no disclosure and  $e_1$  under disclosure. Then:*

1. *Under no disclosure, the posterior mean of talent is*

$$\mathbb{E}[\theta \mid c] = \bar{\theta} - \lambda \left( c - (\kappa + \bar{\eta} - \bar{\theta} - e_0) \right).$$

2. *Under perfect disclosure, the posterior mean of talent is*

$$\mathbb{E}[\theta \mid c, y] = y - e_1.$$

Lemma 1 captures the key informational difference between the two regimes. Without disclosure, employers extract information about talent only from a cost realization that mixes effort and talent with unrelated task difficulty. With disclosure, they additionally observe a direct performance signal. Once  $y = \theta + e$  is observable, the cost realization adds no incremental information about talent because  $c + y = \kappa + \eta$  depends only on the task-specific component.

**Effort, information acquisition, and disclosure.** Using the above characterization, the expert solves

$$\max_{e \geq 0} \mathbb{E}[\theta \mid c, dy] - \psi(e).$$

The following then holds.

**Proposition 1** (Equilibrium effort). *The unique equilibrium effort levels are*

$$e_0 = \lambda, \quad e_1 = 1.$$

*Hence, perfect disclosure strictly increases effort.*

The intuition is immediate. Under no disclosure, one unit of extra effort improves the labor market's posterior only through the noisy cost channel, so the expert internalizes only the fraction  $\lambda$  of the reputational return. Under perfect disclosure, the performance measure maps one-to-one into perceived talent, so the expert fully internalizes the reputational gain from higher effort.

Let

$$a_d \equiv \kappa + \bar{\eta} - \bar{\theta} - e_d, \quad d \in \{0, 1\}.$$

Given equilibrium effort, the AA solves

$$\min_{q \geq 0} \frac{1}{\tau_0 + q} + a_d q,$$

whose solution is characterized below.

**Proposition 2** (Evidence production). *For each regime  $d \in \{0, 1\}$ , the AA's unique optimal evidence precision is*

$$q_d^* = \frac{1}{\sqrt{a_d}} - \tau_0 > 0,$$

*and the minimized expected decision-plus-acquisition cost is*

$$C_d = 2\sqrt{a_d} - \tau_0 a_d.$$

*Since  $a_1 < a_0$ , disclosure raises evidence precision and lowers expected decision cost:*

$$q_1^* > q_0^*, \quad C_1 < C_0.$$

Proposition 2 shows that disclosure affects policy not only through wages but also through the AA's investigative behavior. Better reputational incentives reduce expected marginal acquisition costs, which makes evidence production more attractive. The AA, therefore, becomes willing to investigate more intensively before choosing its enforcement action.

The AA discloses when the benefit from improved evidence production exceeds the fixed institutional cost  $F$ .

**Proposition 3** (Disclosure rule). *Define*

$$\bar{F} \equiv C_0 - C_1 = 2(\sqrt{a_0} - \sqrt{a_1}) - \tau_0(a_0 - a_1).$$

*The AA chooses perfect disclosure if and only if  $F \leq \bar{F}$ . Moreover,  $\bar{F}$  is:*

1. *increasing in average expert talent  $\bar{\theta}$ ;*
2. *decreasing in average task difficulty  $\bar{\eta}$ ;*
3. *decreasing in talent dispersion  $\sigma_\theta^2$  and increasing in task-difficulty dispersion  $\sigma_\eta^2$ ;*
4. *decreasing in prior precision  $\tau_0$ .*

These comparative statics have clear interpretations. Disclosure is more valuable when experts are better on average because incentivizing effort then reduces acquisition costs more strongly. It is also more valuable when task difficulty is more uncertain, because cost data become a worse stand-alone screen for talent in the no-disclosure regime. By contrast, disclosure is less valuable when cases are harder on average, since evidence production remains expensive in both regimes, and when the AA already starts from a precise prior, since additional evidence is then less useful.

## 4 Extensions

In this section, we extend the baseline model in several natural directions. First, we adopt a total-welfare standard. Second, we allow performance disclosure to be noisy. Third, we study how the disclosure regime affects talent selection. Finally, we consider moral hazard in teams, where the AA consults two experts.

## 4.1 AA incentives versus social welfare

The AA's disclosure rule in Proposition 3 is privately optimal for the current enforcement body, but it is not necessarily socially optimal. The reason is simple: better disclosure raises expert effort, and effort is itself costly. AAs value the induced reduction in evidence costs and the improvement in decision quality, but they need not internalize the disutility of effort borne by the expert.

To make this point transparent, define social cost under regime  $d$  as

$$SC_d = C_d + \frac{e_d^2}{2} + dF.$$

Competitive wages do not appear because they are transfers between future employers and the expert. The planner cares only about real resource costs: decision loss, evidence-production cost, effort cost, and the administrative cost of disclosure.

**Proposition 4** (Welfare disclosure threshold). *A social planner minimizing social costs chooses disclosure if and only if*

$$F \leq \bar{F}^{SW} \equiv (C_0 - C_1) - \frac{e_1^2 - e_0^2}{2} = \bar{F} - \frac{1 - \lambda^2}{2}.$$

Hence

$$\bar{F}^{SW} < \bar{F}.$$

*The AA is therefore more willing to disclose than a planner who internalizes effort costs.*

Proposition 4 identifies a simple wedge between institutional incentives and total welfare. Disclosure improves case-specific decision-making by strengthening career concerns, but it does so by making the expert work harder. If effort is merely a transfer-free personal cost, a current AA may overuse disclosure. The wedge is especially large when the no-disclosure signal is very noisy, because then the jump from  $e_0 = \lambda$  to  $e_1 = 1$  is greatest.

This result does not imply that disclosure is undesirable. Rather, it clarifies which additional considerations would justify the AA's more aggressive use of transparency. For example, if the planner values improved labor-market matching among experts and future clients, or if stronger current incentives produce dynamic learning spillovers across many future cases, then some of the extra effort cost may be offset by additional social gains not present in the static baseline. The main point is that case-level decision quality alone does not necessarily reflect total welfare.

## 4.2 Imperfect performance disclosure

The baseline model focuses on the comparison between perfect disclosure of effort performance and complete non-disclosure. Yet, in practice, performance may be assessed through a noisy scorecard, a post mortem review, or a delayed peer evaluation. This section shows that the main mechanism survives such imperfections.

Suppose that under the disclosure regime employers observe  $c$  and

$$y = \theta + e + \nu, \quad \nu \sim N(0, \sigma_\nu^2),$$

where  $\nu$  is independent of  $(\theta, \eta)$ . The variance  $\sigma_\nu^2$  measures the noisiness of the performance

disclosure technology: a smaller  $\sigma_\nu^2$  means a more informative evaluation.

Let  $e_\nu$  denote equilibrium effort under noisy disclosure and define

$$D \equiv \sigma_\theta^2 \sigma_\eta^2 + \sigma_\theta^2 \sigma_\nu^2 + \sigma_\eta^2 \sigma_\nu^2.$$

The following holds.

**Lemma 2** (Posterior beliefs under noisy disclosure). *Fix employers' conjecture that equilibrium effort is  $e_\nu$ . Then*

$$\mathbb{E}[\theta \mid c, y] = \bar{\theta} - \frac{\sigma_\theta^2 \sigma_\nu^2}{D} \left( c - (\kappa + \bar{\eta} - \bar{\theta} - e_\nu) \right) + \frac{\sigma_\theta^2 \sigma_\eta^2}{D} \left( y - (\bar{\theta} + e_\nu) \right).$$

The posterior is a weighted average of the cost signal and the direct performance. When the performance disclosure technology is poor, employers rely more heavily on the cost signal, and vice-versa. Then, the expert solves

$$\max_{e \geq 0} \mathbb{E}[\theta \mid c, y] - \psi(e),$$

and the following holds.

**Proposition 5** (Effort with imperfect disclosure). *Under noisy disclosure, the unique equilibrium effort level is*

$$e_\nu = \frac{\sigma_\theta^2 (\sigma_\eta^2 + \sigma_\nu^2)}{\sigma_\theta^2 \sigma_\eta^2 + \sigma_\theta^2 \sigma_\nu^2 + \sigma_\eta^2 \sigma_\nu^2}.$$

This effort satisfies

$$e_0 < e_\nu < 1 \quad \forall \sigma_\nu^2 > 0,$$

and

$$\lim_{\sigma_\nu^2 \rightarrow \infty} e_\nu = e_0, \quad \lim_{\sigma_\nu^2 \rightarrow 0} e_\nu = 1.$$

Moreover,

$$\frac{\partial e_\nu}{\partial \sigma_\nu^2} < 0.$$

Proposition 5 delivers a continuous bridge between the two benchmark cases. Any finite-quality performance measure helps. Even if employers still observe only a noisy evaluation, they learn more about talent than they do from raw case costs alone, so experts work harder. The effect is strongest precisely when task difficulty makes cost-based inference unreliable.

Let

$$a_\nu \equiv \kappa + \bar{\eta} - \bar{\theta} - e_\nu.$$

The AA's optimal evidence precision under noisy disclosure is

$$q_\nu^* = \frac{1}{\sqrt{a_\nu}} - \tau_0,$$

and the minimized expected decision cost is

$$C_\nu = 2\sqrt{a_\nu} - \tau_0 a_\nu.$$

It then holds that:

**Corollary 1** (Evaluation quality and evidence production). *As the performance-evaluation technology becomes more precise (that is, as  $\sigma_\nu^2$  falls), equilibrium effort rises, expected marginal acquisition costs fall, optimal evidence precision rises, and the AA’s gain from disclosure increases.*

This extension has a practical implication. The policy debate need not be framed as a choice between complete secrecy and a perfectly observable report card. Intermediate institutions—such as delayed evaluations, confidential inter-agency registries, standardized peer reviews, or ex post quality audits—can generate substantial incentive improvements even when they are imperfect and noisy.

### 4.3 Selection of experts

The baseline model treats the expert’s talent as unknown both to the market and to the expert at the time the relationship begins. In practice, experts usually know more about their own skill than prospective clients do. This asymmetry matters because transparency changes not only effort incentives but also the composition of the experts willing to work for the AA.

Suppose, therefore, that each prospective expert privately observes  $\theta$  before deciding whether to accept the engagement. For simplicity, normalize any outside option to zero. The expert chooses effort optimally after accepting the task, exactly as before.

Consider a disclosure regime that induces equilibrium effort  $\tilde{e} > \lambda$  and lets employers infer ability with slope  $\tilde{e}$ ; this includes the noisy-disclosure regime, where  $\tilde{e} = e_\nu$ , and the perfect-disclosure regime, where  $\tilde{e} = 1$ . Conditional on talent, the expert’s expected continuation payoff under this regime is

$$U_D(\theta) = \bar{\theta} + \tilde{e}(\theta - \bar{\theta}) - \frac{\tilde{e}^2}{2},$$

whereas under no disclosure it is

$$U_0(\theta) = \bar{\theta} + \lambda(\theta - \bar{\theta}) - \frac{\lambda^2}{2}.$$

**Proposition 6** (Transparent regimes attract stronger experts). *Fix any disclosure regime with reputational sensitivity  $\tilde{e} > \lambda$ . Then, there exists a unique cutoff*

$$\theta^\dagger \equiv \bar{\theta} + \frac{\tilde{e} + \lambda}{2}$$

such that

$$U_D(\theta) \geq U_0(\theta) \iff \theta \geq \theta^\dagger.$$

Hence, more talented experts strictly prefer the more transparent regime.

Proposition 6 formalizes a selection effect already hinted at in the baseline discussion. Transparency helps good experts separate themselves from mediocre ones. As a result, a regime with stronger performance disclosure can attract a better applicant pool, not merely extract more effort from a fixed pool. This selection channel is important because it amplifies the paper’s central mechanism. In Proposition 3, disclosure becomes more attractive when average talent  $\bar{\theta}$  is higher. If transparency itself raises the average talent of participating experts, then the AA’s disclosure incentive is reinforced by endogenous sorting.

That amplification can also cut the other way institutionally. Authorities that design opaque systems may attract experts who value the ability to hide mediocre performance inside noisy case complexity. In such environments, opacity does not merely weaken incentives on the intensive margin; it may also deteriorate quality on the extensive margin by altering who chooses to participate.

#### 4.4 Two experts and attribution

Many complex antitrust cases are handled by teams — e.g., the EU chief-economist team — rather than by a single outside advisor. This extension shows that the baseline mechanism survives with multiple experts, but it also reveals an attribution problem. When reputational rewards depend on a team-level signal, each expert captures only part of the return generated by his or her own effort. Suppose the AA hires two experts, indexed by  $i \in \{1, 2\}$ . Their talents are i.i.d.

$$\theta_i \sim N(\bar{\theta}, \sigma_\theta^2),$$

independent of  $\eta$ . If the AA chooses evidence precision  $q$ , the unit cost of producing information becomes

$$c = \kappa + \eta - \sum_{i=1}^2 (\theta_i + e_i),$$

and each expert bears effort cost  $\psi(e_i) = e_i^2/2$ . Future employers for expert  $i$  pay

$$w_i = \mathbb{E}[\theta_i \mid \text{public signals}].$$

Consider three information regimes. Under *no disclosure*, employers observe only  $c$ . Under *team disclosure*, employers observe  $c$  and the aggregate performance indicator

$$Y = \sum_{i=1}^2 (\theta_i + e_i).$$

Under *individual disclosure*, employers observe  $c$  and the two expert-specific indicators

$$y_i = \theta_i + e_i, \quad i = 1, 2.$$

Let  $e^N$ ,  $e^T$ , and  $e^I$  denote the symmetric equilibrium effort choices in the three regimes, and define

$$\lambda_2 \equiv \frac{\sigma_\theta^2}{2\sigma_\theta^2 + \sigma_\eta^2} \in \left(0, \frac{1}{2}\right).$$

Assume

$$a_N^{(2)} \equiv \kappa + \bar{\eta} - 2\bar{\theta} - 2\lambda_2 > 0, \quad a_I^{(2)} \equiv \kappa + \bar{\eta} - 2\bar{\theta} - 2 > 0,$$

and

$$\tau_0 < \frac{1}{\sqrt{a_N^{(2)}}},$$

so that the AA chooses positive precision in every regime. It holds that:

**Lemma 3** (Posterior beliefs with two experts). *Fix symmetric conjectures  $e^N$ ,  $e^T$ , and  $e^I$ . For*

each expert  $i$ :

1. under no disclosure,

$$\mathbb{E}[\theta_i | c] = \bar{\theta} - \lambda_2 \left( c - (\kappa + \bar{\eta} - 2\bar{\theta} - 2e^N) \right);$$

2. under team disclosure,

$$\mathbb{E}[\theta_i | c, Y] = \bar{\theta} + \frac{1}{2} \left( Y - (2\bar{\theta} + 2e^T) \right);$$

3. under individual disclosure,

$$\mathbb{E}[\theta_i | c, y_1, y_2] = y_i - e^I.$$

The following then holds.

**Proposition 7** (Two-expert incentives). *The unique symmetric equilibrium effort levels are*

$$e^N = \lambda_2, \quad e^T = \frac{1}{2}, \quad e^I = 1.$$

Hence

$$e^I > e^T > e^N.$$

*Relative to no disclosure, team disclosure improves incentives but does not eliminate moral hazard. Individual disclosure restores the single-expert benchmark in which each expert fully internalizes the reputational return to effort.*

The ranking in Proposition 7 highlights two distinct forms of informational dilution. Without disclosure, employers cannot disentangle expert  $i$ 's contribution from either case difficulty or expert  $j$ 's talent. Team disclosure removes the case-difficulty contamination, but each expert still captures only half of the reputational gain created by extra effort because the public signal aggregates both contributions. The AA therefore has a strong reason to invest in individual attribution whenever that is administratively feasible.

For each regime  $r \in \{N, T, I\}$ , define

$$a_r^{(2)} \equiv \kappa + \bar{\eta} - 2\bar{\theta} - 2e^r.$$

Then the AA solves

$$\min_{q \geq 0} \frac{1}{\tau_0 + q} + a_r^{(2)} q.$$

The following then holds.

**Proposition 8** (Evidence production with two experts). *For each regime  $r \in \{N, T, I\}$ , the AA's optimal evidence precision is*

$$q_r^{*,(2)} = \frac{1}{\sqrt{a_r^{(2)}}} - \tau_0 > 0,$$

*and the minimized expected decision-plus-acquisition cost is*

$$C_r^{(2)} = 2\sqrt{a_r^{(2)}} - \tau_0 a_r^{(2)}.$$

Moreover,

$$q_I^{*,(2)} > q_T^{*,(2)} > q_N^{*,(2)}, \quad C_I^{(2)} < C_T^{(2)} < C_N^{(2)}.$$

If implementing team disclosure costs  $F_T$  and implementing individual disclosure costs  $F_I$ , then the AA chooses:

1. team disclosure over no disclosure iff

$$F_T \leq C_N^{(2)} - C_T^{(2)};$$

2. individual disclosure over no disclosure iff

$$F_I \leq C_N^{(2)} - C_I^{(2)};$$

3. individual disclosure over team disclosure iff

$$F_I - F_T \leq C_T^{(2)} - C_I^{(2)}.$$

This extension yields a concrete institutional lesson. In expert teams, the question is not only whether performance should be disclosed, but also how finely it can be attributed. Aggregate reporting improves incentives relative to secrecy, yet it leaves a classic free-rider problem inside the team. Individualized evaluation has a first-order value because it converts a pooled reputational signal into a personal one.

**Remark 1** (Connection to larger teams). *The same covariance calculations extend immediately to  $n > 2$  symmetric experts. Under no disclosure, each expert's equilibrium effort is*

$$e_n^N = \frac{\sigma_\theta^2}{n\sigma_\theta^2 + \sigma_\eta^2};$$

*under perfect team disclosure it is  $1/n$ ; and under individual disclosure it is 1. The two-expert case is therefore the first non-trivial instance of a broader attribution problem whose force grows with team size.*

## 5 Institutional implications

The model suggests a concrete agenda for institutional design.

First, the object of disclosure should not be the enforcement outcome, but a performance signal that is tightly linked to the expert's contribution. The distinction is crucial: case outcomes reflect many forces beyond a experts' control, and outcome-based transparency would resurrect the very concerns about biased advice that motivate the analysis. The model instead supports disclosing process-oriented metrics—such as the quality and credibility of empirical work, data integrity, timeliness, robustness checks, responsiveness to internal scrutiny, and the overall usefulness of the expert's input to the AA's information set.

Second, in multi-expert engagements, attribution is nearly as important as disclosure itself. The two-expert extension shows that team-level disclosure generates only muted incentives because

each expert captures only part of the reputational return from additional effort. Authorities that routinely commission teams of economists, accountants, or data scientists therefore have strong reasons to implement evaluation protocols that preserve individual attribution whenever confidentiality constraints allow.

Third, the timing of disclosure matters. Immediate publication may be infeasible when it risks revealing strategy or confidential evidence, but delayed disclosure can retain much of the incentive effect while mitigating these costs. Consistent with the imperfect-disclosure extension, even partially redacted or noisier evaluations can strengthen incentives, provided they are credible and informative enough to affect future hiring decisions.

Fourth, the analysis helps identify when disclosure is most valuable: when expert talent is pivotal for evidence production, direct incentive pay is constrained, task difficulty is hard for outsiders to disentangle from expert quality, and the AA's prior information is relatively weak. These conditions plausibly characterize the cases where technical input is most consequential—complex digital investigations, innovation-intensive mergers, and inquiries requiring substantial empirical reconstruction.

Fifth, the welfare extension counsels against an unqualified embrace of transparency. An AA may adopt disclosure to improve decision quality while shifting unpriced effort costs onto experts. This is not a knockdown argument, but it motivates complementing disclosure with sound personnel practices—realistic timelines, clear scoping, and evaluation criteria that reward rigor and relevance rather than sheer volume—to avoid inducing inefficient overexertion.

Finally, the selection extension highlights a dynamic benefit: disclosure shapes the long-run market for public-interest expertise. More transparent regimes tend to attract stronger experts who expect to be accurately assessed, whereas opaque regimes can protect weaker providers. For authorities that repeatedly rely on external specialists, this compositional effect may be as important as the static gains in any single case.

## 6 Conclusion

This paper studies disclosure of expert performance as a governance tool for antitrust enforcement. In the model, performance disclosure strengthens career concerns, raises expert effort, lowers the expected marginal cost of evidence production, and induces the AA to gather more precise information before making an enforcement decision. The value of transparency is higher when expertise matters more for information production and when labor markets would otherwise struggle to distinguish talent from case complexity.

The extensions sharpen that message in four ways. First, a welfare-minded planner is less eager to disclose than the AA itself because disclosure raises costly effort. Second, imperfect performance measures remain useful: better evaluation technologies generate a smooth, monotone improvement in incentives and evidence production. Third, transparent regimes attract stronger experts when participation is endogenous. Fourth, when the AA relies on two experts, team-level disclosure generates only partial incentives whereas individual attribution restores full reputational discipline. Disclosure is therefore an incentive instrument, a sorting device, and, in team settings, an attribution technology.

The broader implication is not that antitrust authorities should always publish expert scorecards.

It is that transparency about expert contribution can be a meaningful substitute for direct incentive pay in institutions where independence concerns limit explicit contracts. In those settings, disclosure policy belongs inside the economics of enforcement design rather than being treated solely as an issue of administrative openness.

## Appendix: Proofs

**Proof of Lemma 1.** Under no disclosure, employers observe

$$c = \kappa + \eta - \theta - e.$$

Given the conjecture that equilibrium effort is  $e_0$ , they treat

$$c = \kappa + \eta - \theta - e_0$$

as a linear signal of talent. Since  $(\theta, \eta)$  is jointly normal and independent,  $(\theta, c)$  is jointly normal. Therefore,

$$\mathbb{E}[\theta | c] = \bar{\theta} + \frac{\text{Cov}(\theta, c)}{\text{Var}(c)} (c - \mathbb{E}[c]).$$

Now

$$\text{Cov}(\theta, c) = \text{Cov}(\theta, \kappa + \eta - \theta - e_0) = -\sigma_\theta^2,$$

$$\text{Var}(c) = \text{Var}(\eta) + \text{Var}(\theta) = \sigma_\eta^2 + \sigma_\theta^2,$$

and

$$\mathbb{E}[c] = \kappa + \bar{\eta} - \bar{\theta} - e_0.$$

Substituting yields

$$\mathbb{E}[\theta | c] = \bar{\theta} - \frac{\sigma_\theta^2}{\sigma_\theta^2 + \sigma_\eta^2} (c - (\kappa + \bar{\eta} - \bar{\theta} - e_0)),$$

which is the stated expression.

Under perfect disclosure, employers observe both  $c$  and

$$y = \theta + e.$$

Given the conjecture that equilibrium effort is  $e_1$ , the direct signal implies

$$\theta = y - e_1$$

on the equilibrium path. Conditional on  $y$ , the cost realization adds no information about  $\theta$  because

$$c + y = \kappa + \eta,$$

which depends only on task difficulty. Hence

$$\mathbb{E}[\theta | c, y] = y - e_1.$$

□

**Proof of Proposition 1.** Under no disclosure, employers use the wage schedule from Lemma 1,

$$w_0(c) = \bar{\theta} - \lambda (c - (\kappa + \bar{\eta} - \bar{\theta} - e_0)).$$

If the expert deviates to effort  $e$ , then

$$c = \kappa + \eta - \theta - e.$$

Taking expectations with respect to  $(\theta, \eta)$ ,

$$\mathbb{E}[w_0(c) \mid e] = \bar{\theta} + \lambda(e - e_0).$$

The expert solves

$$\max_{e \geq 0} \bar{\theta} + \lambda(e - e_0) - \frac{e^2}{2},$$

whose unique first-order condition is  $e = \lambda$ . Therefore  $e_0 = \lambda$ .

Under perfect disclosure, employers pay

$$w_1(c, y) = y - e_1.$$

If the expert deviates to effort  $e$ , then  $y = \theta + e$ , so

$$\mathbb{E}[w_1(c, y) \mid e] = \mathbb{E}[\theta + e - e_1] = \bar{\theta} + e - e_1.$$

The expert solves

$$\max_{e \geq 0} \bar{\theta} + e - e_1 - \frac{e^2}{2},$$

whose unique first-order condition is  $e = 1$ . Hence  $e_1 = 1$ . □

**Proof of Proposition 2.** Fix regime  $d \in \{0, 1\}$ . Given equilibrium effort  $e_d$ , the AA solves

$$\min_{q \geq 0} \frac{1}{\tau_0 + q} + a_d q, \quad a_d = \kappa + \bar{\eta} - \bar{\theta} - e_d.$$

The objective is strictly convex because

$$\frac{\partial^2}{\partial q^2} \left( \frac{1}{\tau_0 + q} + a_d q \right) = \frac{2}{(\tau_0 + q)^3} > 0.$$

The first-order condition is

$$-\frac{1}{(\tau_0 + q)^2} + a_d = 0,$$

which yields

$$q_d^* = \frac{1}{\sqrt{a_d}} - \tau_0.$$

Assumption [A1](#) guarantees  $q_d^* > 0$  in both regimes. Substituting back,

$$C_d = \frac{1}{\tau_0 + q_d^*} + a_d q_d^* = \sqrt{a_d} + a_d \left( \frac{1}{\sqrt{a_d}} - \tau_0 \right) = 2\sqrt{a_d} - \tau_0 a_d.$$

Since  $e_1 > e_0$ , we have  $a_1 < a_0$ , which implies  $q_1^* > q_0^*$  and  $C_1 < C_0$  because the minimized objective is increasing in  $a_d$  on the interior region. □

**Proof of Proposition 3.** The AA discloses if and only if

$$C_1 + F \leq C_0,$$

which is equivalent to

$$F \leq C_0 - C_1 = \bar{F}.$$

This proves the threshold rule.

For the comparative statics, write

$$\bar{F} = g(a_0) - g(a_1), \quad g(a) = 2\sqrt{a} - \tau_0 a.$$

On the parameter region in Assumption A1,

$$g'(a) = \frac{1}{\sqrt{a}} - \tau_0 > 0, \quad g''(a) = -\frac{1}{2}a^{-3/2} < 0.$$

Thus  $g$  is increasing and concave.

A rise in  $\bar{\theta}$  lowers both  $a_0$  and  $a_1$  by one unit. Because  $g$  is concave, the difference  $g(a_0) - g(a_1)$  rises when both arguments shift down together. Hence  $\bar{F}$  increases in  $\bar{\theta}$ . The same logic implies that  $\bar{F}$  decreases in  $\bar{\eta}$ .

Next,

$$a_0 = \kappa + \bar{\eta} - \bar{\theta} - \lambda, \quad \lambda = \frac{\sigma_\theta^2}{\sigma_\theta^2 + \sigma_\eta^2},$$

while  $a_1$  does not depend on  $(\sigma_\theta^2, \sigma_\eta^2)$ . Since  $g'(a_0) > 0$ ,

$$\frac{\partial \bar{F}}{\partial \lambda} = -g'(a_0) < 0.$$

Because  $\lambda$  increases in  $\sigma_\theta^2$  and decreases in  $\sigma_\eta^2$ , it follows that  $\bar{F}$  decreases in  $\sigma_\theta^2$  and increases in  $\sigma_\eta^2$ .

Finally,

$$\frac{\partial \bar{F}}{\partial \tau_0} = -(a_0 - a_1) < 0.$$

Hence  $\bar{F}$  decreases in prior precision  $\tau_0$ . □

**Proof of Proposition 4.** Social cost under regime  $d$  is

$$SC_d = C_d + \frac{e_d^2}{2} + dF.$$

The planner chooses disclosure if and only if

$$SC_1 \leq SC_0,$$

that is,

$$C_1 + \frac{e_1^2}{2} + F \leq C_0 + \frac{e_0^2}{2}.$$

Rearranging,

$$F \leq (C_0 - C_1) - \frac{e_1^2 - e_0^2}{2}.$$

Using  $e_0 = \lambda$  and  $e_1 = 1$  gives

$$\bar{F}^{SW} = \bar{F} - \frac{1 - \lambda^2}{2}.$$

Since  $\lambda \in (0, 1)$ , we have  $\bar{F}^{SW} < \bar{F}$ . □

**Proof of Lemma 2.** Define centered signals

$$u_1 \equiv -\left(c - (\kappa + \bar{\eta} - \bar{\theta} - e_\nu)\right) = \theta - \bar{\theta} - (\eta - \bar{\eta}),$$

$$u_2 \equiv y - (\bar{\theta} + e_\nu) = \theta - \bar{\theta} + \nu.$$

Then  $(\theta, u_1, u_2)$  is jointly normal, with

$$\text{Cov}(\theta, u_1) = \sigma_\theta^2, \quad \text{Cov}(\theta, u_2) = \sigma_\theta^2,$$

and

$$\text{Var}(u_1) = \sigma_\theta^2 + \sigma_\eta^2, \quad \text{Var}(u_2) = \sigma_\theta^2 + \sigma_\nu^2, \quad \text{Cov}(u_1, u_2) = \sigma_\theta^2.$$

Hence

$$\mathbb{E}[\theta \mid u_1, u_2] = \bar{\theta} + \begin{bmatrix} \sigma_\theta^2 & \sigma_\theta^2 \end{bmatrix} \text{Var}(u_1, u_2)^{-1} \begin{bmatrix} u_1 \\ u_2 \end{bmatrix}.$$

The covariance matrix has determinant

$$D = \sigma_\theta^2 \sigma_\eta^2 + \sigma_\theta^2 \sigma_\nu^2 + \sigma_\eta^2 \sigma_\nu^2,$$

and direct inversion gives coefficients

$$\frac{\sigma_\theta^2 \sigma_\nu^2}{D} \quad \text{on } u_1, \quad \frac{\sigma_\theta^2 \sigma_\eta^2}{D} \quad \text{on } u_2.$$

Replacing  $u_1$  and  $u_2$  with their definitions yields the stated formula. □

**Proof of Proposition 5.** From Lemma 2, the expert's expected wage when deviating to effort  $e$  is

$$\mathbb{E}[w(c, y) \mid e] = \bar{\theta} + \left( \frac{\sigma_\theta^2 \sigma_\nu^2}{D} + \frac{\sigma_\theta^2 \sigma_\eta^2}{D} \right) (e - e_\nu),$$

because an increase in effort lowers  $c$  by one unit and raises  $y$  by one unit. The coefficient on  $(e - e_\nu)$  is therefore

$$\gamma(\sigma_\nu^2) = \frac{\sigma_\theta^2 (\sigma_\eta^2 + \sigma_\nu^2)}{D}.$$

The expert solves

$$\max_{e \geq 0} \bar{\theta} + \gamma(\sigma_\nu^2) (e - e_\nu) - \frac{e^2}{2},$$

whose unique first-order condition is

$$e = \gamma(\sigma_\nu^2).$$

Hence the equilibrium effort level is

$$e_\nu = \gamma(\sigma_\nu^2).$$

To compare with no disclosure,

$$e_\nu - e_0 = \frac{\sigma_\theta^2(\sigma_\eta^2 + \sigma_\nu^2)}{D} - \frac{\sigma_\theta^2}{\sigma_\theta^2 + \sigma_\eta^2} = \frac{\sigma_\theta^2 \sigma_\eta^4}{D(\sigma_\theta^2 + \sigma_\eta^2)} > 0.$$

To compare with perfect disclosure,

$$1 - e_\nu = \frac{\sigma_\eta^2 \sigma_\nu^2}{D} > 0$$

for every finite  $\sigma_\nu^2 > 0$ .

The limits are immediate:

$$\lim_{\sigma_\nu^2 \rightarrow \infty} e_\nu = \frac{\sigma_\theta^2}{\sigma_\theta^2 + \sigma_\eta^2} = e_0, \quad \lim_{\sigma_\nu^2 \rightarrow 0} e_\nu = 1.$$

Finally,

$$\frac{\partial e_\nu}{\partial \sigma_\nu^2} = -\frac{\sigma_\theta^2 \sigma_\eta^4}{D^2} < 0.$$

□

**Proof of Corollary 1.** From Proposition 5, lower  $\sigma_\nu^2$  raises  $e_\nu$ . Since

$$a_\nu = \kappa + \bar{\eta} - \bar{\theta} - e_\nu,$$

it follows that lower  $\sigma_\nu^2$  lowers  $a_\nu$ . The AA's optimal precision under noisy disclosure is

$$q_\nu^* = \frac{1}{\sqrt{a_\nu}} - \tau_0,$$

which is decreasing in  $a_\nu$ . Therefore lower  $\sigma_\nu^2$  raises  $q_\nu^*$ . Likewise,

$$C_\nu = 2\sqrt{a_\nu} - \tau_0 a_\nu$$

is increasing in  $a_\nu$  on the admissible parameter region, so lower  $\sigma_\nu^2$  lowers  $C_\nu$  and raises the gain from disclosure relative to non-disclosure. □

**Proof of Proposition 6.** The expert prefers the more transparent regime whenever

$$U_D(\theta) \geq U_0(\theta),$$

that is,

$$\bar{\theta} + \tilde{e}(\theta - \bar{\theta}) - \frac{\tilde{e}^2}{2} \geq \bar{\theta} + \lambda(\theta - \bar{\theta}) - \frac{\lambda^2}{2}.$$

Rearranging,

$$(\tilde{e} - \lambda)(\theta - \bar{\theta}) \geq \frac{\tilde{e}^2 - \lambda^2}{2} = \frac{(\tilde{e} - \lambda)(\tilde{e} + \lambda)}{2}.$$

Since  $\tilde{e} > \lambda$ , divide through by  $\tilde{e} - \lambda$  to obtain

$$\theta - \bar{\theta} \geq \frac{\tilde{e} + \lambda}{2},$$

or equivalently

$$\theta \geq \bar{\theta} + \frac{\tilde{e} + \lambda}{2} \equiv \theta^\dagger.$$

This cutoff is unique because  $U_D(\theta) - U_0(\theta)$  is linear and strictly increasing in  $\theta$ .  $\square$

**Proof of Lemma 3.** Under no disclosure and symmetric effort conjecture  $e^N$ , the public cost signal is

$$c = \kappa + \eta - \theta_1 - \theta_2 - 2e^N.$$

For expert  $i$ ,

$$\text{Cov}(\theta_i, c) = -\sigma_\theta^2, \quad \text{Var}(c) = 2\sigma_\theta^2 + \sigma_\eta^2,$$

and

$$\mathbb{E}[c] = \kappa + \bar{\eta} - 2\bar{\theta} - 2e^N.$$

Since  $(\theta_i, c)$  is jointly normal,

$$\mathbb{E}[\theta_i | c] = \bar{\theta} + \frac{\text{Cov}(\theta_i, c)}{\text{Var}(c)} (c - \mathbb{E}[c]),$$

which yields part (i).

Under team disclosure,

$$Y = \theta_1 + \theta_2 + 2e^T.$$

Moreover,

$$c + Y = \kappa + \eta,$$

which depends only on  $\eta$  and is therefore independent of each  $\theta_i$ . Hence conditioning on  $c$  and  $Y$  is equivalent, for the purpose of inferring  $\theta_i$ , to conditioning on  $Y$  alone. Since

$$\text{Cov}(\theta_i, Y) = \sigma_\theta^2, \quad \text{Var}(Y) = 2\sigma_\theta^2, \quad \mathbb{E}[Y] = 2\bar{\theta} + 2e^T,$$

joint normality gives

$$\mathbb{E}[\theta_i | c, Y] = \mathbb{E}[\theta_i | Y] = \bar{\theta} + \frac{1}{2} (Y - (2\bar{\theta} + 2e^T)).$$

Under individual disclosure,  $y_i = \theta_i + e^I$ , so that  $\theta_i = y_i - e^I$ . Therefore the posterior mean is

$$\mathbb{E}[\theta_i | c, y_1, y_2] = y_i - e^I.$$

$\square$

**Proof of Proposition 7.** Take expert  $i$  as the deviator and hold the other expert at the conjectured symmetric effort.

Under no disclosure, a one-unit increase in  $e_i$  lowers  $c$  by one unit, so by Lemma 3 the expert's

expected wage rises by  $\lambda_2$ . The deviating expert therefore solves

$$\max_{e_i \geq 0} \bar{\theta} + \lambda_2(e_i - e^N) - \frac{e_i^2}{2},$$

whose unique first-order condition yields  $e_i = \lambda_2$ . Symmetry then implies  $e^N = \lambda_2$ .

Under team disclosure, a one-unit increase in  $e_i$  raises  $Y$  by one unit, and the posterior mean of expert  $i$ 's talent rises by  $1/2$ . The expert solves

$$\max_{e_i \geq 0} \bar{\theta} + \frac{1}{2}(e_i - e^T) - \frac{e_i^2}{2},$$

so the unique best response is  $e_i = \frac{1}{2}$ . Hence,  $e^T = \frac{1}{2}$ .

Under individual disclosure, a one-unit increase in  $e_i$  raises  $y_i$  by one unit, and the posterior mean of expert  $i$ 's talent rises one-for-one. The expert solves

$$\max_{e_i \geq 0} \bar{\theta} + (e_i - e^I) - \frac{e_i^2}{2},$$

which has unique solution  $e_i = 1$ . Hence  $e^I = 1$ .

The ordering  $e^I > e^T > e^N$  follows because  $\lambda_2 \in (0, 1/2)$ . □

**Proof of Proposition 8.** In regime  $r \in \{N, T, I\}$ , the AA's expected unit acquisition cost is

$$a_r^{(2)} = \kappa + \bar{\eta} - 2\bar{\theta} - 2e^r.$$

Therefore it solves

$$\min_{q \geq 0} \frac{1}{\tau_0 + q} + a_r^{(2)}q.$$

The first-order condition is

$$-\frac{1}{(\tau_0 + q)^2} + a_r^{(2)} = 0,$$

which yields

$$q_r^{*,(2)} = \frac{1}{\sqrt{a_r^{(2)}}} - \tau_0.$$

By the maintained parameter restriction, this solution is strictly positive. Substituting back gives

$$C_r^{(2)} = 2\sqrt{a_r^{(2)}} - \tau_0 a_r^{(2)}.$$

From Proposition 7,

$$e^I > e^T > e^N,$$

so

$$a_I^{(2)} < a_T^{(2)} < a_N^{(2)}.$$

Because

$$q_r^{*,(2)} = \frac{1}{\sqrt{a_r^{(2)}}} - \tau_0$$

is decreasing in  $a_r^{(2)}$ , it follows that

$$q_I^{*,(2)} > q_T^{*,(2)} > q_N^{*,(2)}.$$

Likewise, define

$$C(a) = 2\sqrt{a} - \tau_0 a.$$

Then

$$C'(a) = \frac{1}{\sqrt{a}} - \tau_0.$$

On the admissible region this derivative is strictly positive because the corresponding optimal precision is positive. Hence  $C(a)$  is increasing in  $a$ , so

$$C_I^{(2)} < C_T^{(2)} < C_N^{(2)}.$$

The threshold conditions compare the AA's net expected costs across regimes:

$$\text{no disclosure: } C_N^{(2)}, \quad \text{team disclosure: } C_T^{(2)} + F_T, \quad \text{individual disclosure: } C_I^{(2)} + F_I.$$

The stated inequalities follow immediately from pairwise comparison of these expressions. □

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