Do Joint Audits Improve or Impair Audit Quality?

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**Motivation**

- Joint audits: two audit firms simultaneously and yet separately audit a company to sign a common audit report
- Conventional wisdom suggests
  - Two heads are better than one
  - More expensive to induce nonindependence
- European Commission considering mandating joint audits
Research Question

- Do joint audits improve or impair audit quality?
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- Do joint audits improve or impair audit quality?
- Impair audit quality under BS
  - Free-riding
  - Opinion shopping
Contributions

- Analyze both audit evidence precision (Dye 1993, Schwartz 1997) and auditor independence (DeAgelo 1981a, Magee and Tseng 1990)

- Introduce two new strategic interactions

- Derive a set of empirically testable predictions (Francis et al. 2009, Lesage et al. 2011)

- Provide timely policy implications for regulators
Institutional Background

- Any company that prepares consolidated financial statements is required by law in France to appoint joint auditors.
- Independent collection of audit evidence by the two audit firms with a review of each other’s work.
- Work allocation between two audit firms may not be balanced.
- Audit the financial statements simultaneously.
- Separate and proportionate liability for undetected material misstatements.
Regime $B$: one big firm as a benchmark

- Firm fundamental value:
  $$\tilde{x} \sim \mathcal{N}(x_0, \frac{1}{h}).$$

- Audit evidence:
  $$\tilde{y}_B | x \sim \mathcal{N}(x, \frac{1}{e^B}),$$

- Audit resource cost is $k_B C(e)$ and $C(0) = 0$, $C' > 0$ (but $C'(0) = 0$), $C'' > 0$, and $C''' = 0$.

- $(Q, r)$: auditor nonindependence $r > r_I$, and $r \leq y_B$, where $r_I \equiv E[\tilde{x} | y_B]$.

- Misstatement costs $(r - x)^2$.
**Regime $B$ timeline**

- Audit fees $F$ are offered in a competitive audit market.
- The auditor $B$ chooses the desired precision $e^B$.
- Audit evidence $y_B$ is produced.
- The company-auditor negotiation determines a pair of $(Q, r)$ payment and report.
- $x$ is realized and the auditor bears a misstatement cost of $(r - x)^2$.
Regime $B$ each party’s overall payoffs

- **Client’s**: 
  \[ M(r) - Q - F, \]
  where \( M(r) = \alpha + \beta \cdot r \)

- **The auditor’s**: 
  \[ F + Q - k_B C(e^B) - (r - x)^2 \]
Regime $BB/BS$ model elements

- **Regime BB**: Each of the two big audit firms has an identical cost function of $k_B C(e)$ and each must bear 50% of the misstatement cost

$$\tilde{y}_B | x \sim N(x, \frac{1}{e^B});$$
$$\tilde{y}_{B2} | x \sim N(x, \frac{1}{e^{B2}}).$$

- **Regime BS**: $k_B C(e)$ and $k_S C(e)$, where

$$\frac{k_S}{k_B} \equiv m > 1$$

and misstatement cost sharing

$$\alpha_B > \alpha_S$$

$$\tilde{y}_B | x \sim N(x, \frac{1}{e^B});$$
$$\tilde{y}_S | x \sim N(x, \frac{1}{e^S}).$$
Equilibrium: Auditor Independence

**Regime B** The negotiated pair of $r$ and quasi-rent $Q$ is as follows:

- If $y_B \leq r_I$, then the auditor remains independent and $Q = 0$

- If $r_I < y_B \leq r^*$, then the auditor reports $y_B$ after receiving $Q = (y_B - r_I)^2$

- If $y_B > r^*$, then $r = r^*$ and $Q = \left(\frac{\beta}{2}\right)^2$

The probability of auditor independence is

$$\Pr(AI) = \Pr(r_I \geq y_B).$$
Equilibrium: Auditor Independence

Regime BS

- It has the same form of $r$ and $Q$ as Regime $B$, except that the audit report could be the maximum of two signals $\max\{y_B, y_S\}$ than one $y_B$. This creates an opportunity for opinion shopping.

\[
\Pr(AI) = \Pr(r_I \geq \max\{y_B, y_S\}).
\]
Equilibrium: Audit Evidence Precision

- Auditors choose evidence precision to minimize resource cost and expected misstatement cost.
- Since the client will compensate for auditors for any report differing from the independent report, in equilibrium, auditors chooses effort as though they were independent and

\[
\text{marginal cost} = \text{marginal benefit}.
\]
Equilibrium: Audit Fees

**Regime B**

\[
F_B = k_B C(e_B^B) + \frac{1}{h + e_B^B}
\]

- \(F_B\): Audit Fees
- \(k_B\): Resource cost
- \(C(e_B^B)\): Audit resource cost
- \(h + e_B^B\): Expected misstatement cost

**Regime BS**

\[
F_{BS} = k_B C(e_{BS}^B) + k_S C(e_{BS}^S) + \frac{1}{h + e_{BS}^B + e_{BS}^S}
\]

- \(F_{BS}\): Audit Fees
- \(k_B\): Resource cost
- \(C(e_{BS}^B)\): Audit resource cost
- \(h + e_{BS}^B + e_{BS}^S\): Expected misstatement cost
Proposition 5
The total evidence precision in Regime $BS$ is less than that in Regimes $B$ and $BB$:
\[ e_{BS}^B + e_{BS}^S < e_{B}^B = 2e_{BB}^B. \]

Empirical prediction 1
Adding a firm with lower technology efficiency to form a joint audit will reduce the overall audit quality
Comparison: Auditor Independence

- **Proposition 6 [Opinion Shopping]**
  The likelihood of auditor independence under joint audits is lower than that under single audits.

- **Proposition 7 [Comparison]**
  On average, the magnitude of ex-post earnings management is larger under joint audits than under single audits.

- **Empirical prediction 2 & 3**
Comparison: Audit Fees

**Proposition 8**
The audit fees in Regime $BS$ are lower than those in Regime $B$ if and only if the big firm and small firm have similar technology efficiency and/or the big firm bears a sufficiently large proportion of misstatement cost.

**Empirical prediction 4**
Conclusions

Joint audits may impair audit quality due to free-riding and internal opinion shopping.
Thank You!