Discussion of:

**Do Joint Audits Improve or Impair Audit Quality?**

By Mingcherng Deng, Tong Lu, Dan Simunic, and Minlei Ye, 2012.

**Joint Audit (Shared):**

- An audit performed by two or more auditors to produce a *single* audit report.
- Shared responsibility,
- Typically, audit planning is jointly performed and fieldwork allocated to the auditors.

**Joint Audit (Co-Audit):**

- An audit performed by two independent auditors issuing their *own separate* reports.

**Source:** Le Vourc’h and Morand (2011)
Audit Quality: De Angelo (1981) defines audit quality as a function of the auditor’s

- (Technical) competence
- Independence
Commonly-Held Views of Joint Audits:

**PRO**: European Commission’s (2010) Green Paper argues that joint audits increase audit quality and mitigate concentration in the audit market.

**CON**: The joint audit also faces strong resistance, *mainly a concern for additional cost*. (See appendix to these slides).

A ‘BALANCED’ VIEW (Illustrated):

*I think added quality, value and independence for say a maximum of 5 % additional cost is a way good deal compared to other initiatives.*

--Patrick de Cambourg, Chairman and CEO of Mazars (French accounting firm), 2011.¹

WHAT FINDINGS MAKE THIS PAPER INTERESTING?

- Joint audits may *cost less* the single auditor audits
- Joint audits may suffer from *lack of independence more* than single auditor audits
- Large/small auditor pairings may not be effective for joint audits.
How were these results achieved? (THE MODEL)

The auditor’s evidence, \( y \), has the following properties:

\[
r_I = E[\tilde{x}] + \left( \frac{e}{e + h} \right) (y - E[\tilde{x}])
\]

- Updated expectation of true firm value, \( x \)
- Expected value of the audit signal
- Weight applied to the difference between raw signal and its expectation
- Raw audit signal
SINGLE AUDITOR

Time line:

Client hires auditor with fee, $F$

Auditor expends resources, $e_0$

Auditor obtains a ‘raw’ result, $y_0$, and updates expected firm value to $r_I$

Client may offer a bribe, $Q$, in return for reporting, $r > r_I$

Auditor suffers an expected loss $E[(r - \tilde{x})^2 \mid y_0]$
Other Special Features of the Model

Recall: firm value is $x$, auditor’s evidence is $y$.

1. The **single auditor audit** produces one signal, $y_0$. The client bribes the auditor whenever $y_0 > E[	ilde{x} | y_0]$ and the auditor acquiesces. Bribes occur $\frac{1}{2}$ of the time (?).

2. The **joint audit** produces two conditionally iid signals $y_1$ and $y_2$ with individual cost functions identical to the single auditor case. The client bribes the auditors whenever $\text{Maximum}[y_1, y_2] > E[	ilde{x} | y_1, y_2]$. That is the client will cherry pick the best signal and the auditors jointly acquiesce. Bribes will occur $\frac{3}{4}$ of the time (?).

3. Auditor(s) acquiesce because the bribe perfectly compensates her (them) for misreporting.

4. The individual cost function for each auditor working jointly is assumed to be identical to the cost function of a single auditor working alone (see next slide):
Cost of audit effort, $e$

1) Auditor’s cost in a joint audit; or
2) Auditor cost in a single auditor audit

Key assumption: Two different auditors can cooperatively do a full audit (by splitting tasks) more cheaply than a single auditor working alone.
RESULT 1: (Two equal auditors put in the same total effort as found in a single audit)

\[ e_1 + e_2 = e_0 \]

Joint Audit combined effort

Audit effort under single auditor

Intuition

1. The \textit{free-riding problem} (auditors select effort unilaterally rather cooperatively) is \textit{offset} by
2. The cost benefit (the auditor’s \textit{marginal cost is lower} at \(e/2\) than it is at \(e\)).

OVERALL RESULT: The joint audit with equal auditors \textit{cost less} than the single auditor audit, but has \textit{more misrepresentation} (i.e., cherry picking).
TWO UNEQUAL AUDITORS IN A JOINT AUDIT (Big/Small instead of Big/Big)

- The first auditor is identical to one of the previous auditors examined
- The second auditor is inferior (its costs are higher)
- The first auditor’s share of the liability > \( \frac{1}{2} \), in part, caused by the weaker auditor.

Result: The total effort for an unequal joint audit may be DIFFERENT than total effort for EQUAL joint audit. This may result in less overall effort, potentially making this option inferior.
GENERAL OBSERVATIONS

1. **Model consistency**: While the reports are made independently (no coordination) to the client, the bribe is based jointly on \( y_1 \) and \( y_2 \) (suggesting coordination).

2. **Aggregation**: If, instead, the average of \( y_1 \) and \( y_2 \) used, then the superiority of the single audit (versus equal joint auditors) would seem to disappear. Now, the average will exceed \( r_i \) only \( \frac{1}{2} \) of the time.

3. **Negotiation**: To the extent that both auditors in a joint audit must sign off on a single report, and are ambiguity averse, two auditors (in a modified setting) may jointly agree to a bribe only if \( \min(y_1, y_2) > E[\bar{x} | y_1, y_2] \). In this case the probability of bribery falls to \( \frac{1}{4} \).

4. **Quasi-rents**: The bribe is referred to as a ‘quasi-rent.’ Quasi-rent is an analytical term in economics, for the income earned, in excess of post-investment opportunity cost, by a sunk cost investment. [Because the auditor here ‘breaks even’ the quasi-rent is really zero.]
The joint audit requirement serves to make the French audit market less concentrated (France has one of the least concentrated audit markets in Europe).

France (Mandatory)

Francis et al (2009) found that despite the dominance by Big 4 firms in terms of overall revenues, only 11.5 percent of companies are audited by two Big 4 auditors, which means most listed companies in France have either one or two French accounting firms as their auditors (Francis et al.)
The joint audit requirement seems to have enabled mid-tier and small audit firms to corner a relatively significant share of the market (Le Vourc’h and Morand, 2011):

<table>
<thead>
<tr>
<th>Type of auditor pair</th>
<th>Number of companies</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Big 4, 1 small audit firm</td>
<td>171</td>
<td>35%</td>
</tr>
<tr>
<td>2 Big 4</td>
<td>90</td>
<td>19%</td>
</tr>
<tr>
<td>1 Big 4, 1 mid-tier audit firm</td>
<td>87</td>
<td>18%</td>
</tr>
<tr>
<td>1 mid-tier audit firm 1 small audit firm</td>
<td>57</td>
<td>12%</td>
</tr>
<tr>
<td>2 small audit firms</td>
<td>51</td>
<td>11%</td>
</tr>
<tr>
<td>2 mid-tier audit firms</td>
<td>13</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Number of companies with 2 auditors</strong></td>
<td>469</td>
<td>97%</td>
</tr>
</tbody>
</table>

Source: Le Vourc’h and Morand (2011)

The Green Paper suggested the use of joint audits with at least one smaller audit firm (e.g., not a Big 4 audit firm) for the audits of large companies to mitigate the concentration and enhance the market structure.
Consider, an alternative cost function (not in paper):

E.g., The President of Ernst & Young France and Southern Europe, stated that joint audits cost more (in the order of 20%) since it doubles the number of people at meetings (referenced André et al., 2012)
CORRUPTION INDEXES AND MANDATORY JOINT AUDITS

Countries with a joint audit requirement include France, Kuwait, Saudi Arabia, South Africa (financial services), Tunisia, Morocco, Algeria, the Ivory Coast, and Congo.

<table>
<thead>
<tr>
<th>Country</th>
<th>Transparency International Corruption Perceptions Index 2011*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>9.6</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>7.8</td>
</tr>
<tr>
<td>United States</td>
<td>7.1</td>
</tr>
<tr>
<td>France</td>
<td>7</td>
</tr>
<tr>
<td>Kuwait</td>
<td>4.6</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>4.4</td>
</tr>
<tr>
<td>South Africa</td>
<td>4.1</td>
</tr>
<tr>
<td>Tunisia</td>
<td>3.8</td>
</tr>
<tr>
<td>Morocco</td>
<td>3.4</td>
</tr>
<tr>
<td>Algeria</td>
<td>2.9</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>2.2</td>
</tr>
<tr>
<td>Congo Republic</td>
<td>2.2</td>
</tr>
</tbody>
</table>
Summary

- Because the auditing environments are complex, it is challenging to provide a comprehensive economic model of an audit market.
- Political factors may also be at work (e.g., long-term concerns with market concentration, or poor national business infrastructure).
- Careful modeling is useful however in isolating critical forces that may have an impact on auditing practice.
- This is a thought-provoking paper that identifies issues that need to be considered by the accounting community.
Additional notes (appendix):

**Team problem:** The assumed 50% liability sharing represents *proportionate* liability (e.g., France). But if two auditors are jointly responsible, then could one firm be held liable for the actions of the other? If instead, the liability were *joint and several*, the auditors would have more incentive to cooperate. [Holmstrom (1982) suggests penalizing the whole team when *free-riding* is a problem.] Many countries have *joint and several liability*, however. In Sweden, firms are *jointly liable* for opinions issued (Haapamäki et al., 2012).

Assuming that $e_1$ and $e_2$ are ‘hidden actions’ seems equivalent to assuming that there is no documentation of ‘work’ in the working papers.
**Negotiation:** The authors view the pair of \((Q, r)\) as representing the ‘give-and-take’ between the company and its auditor. However, there doesn’t seem to be any give-and-take in the model, in that the client has all of the bargaining power.
Loss Function: The authors assume the an audit firm’s loss to be $\alpha(r-x)^2$, where $\alpha$ represents the firm’s share of the overall loss, $\alpha(r-x)^2$. If we consider De Angelo’s (1981) notion of collateral, however, the loss would be better represented by $\beta\alpha(r-x)^2$, where $\beta$ is increasing in the size of the audit firms portfolio of clients. This embellishment alone mitigates against the hiring smaller audit firms.
Audit Evidence: The authors justify disclosing $y > E[x | y]$ by arguing that the assumption is justified by the observation that the audit evidence documented in the audit firms’ working papers is the only admissible evidence in court. Normally we must ‘deflate’ the absolute value of $y$ appropriately when interpreting them. It is therefore not clear why the “raw” $y$ would be so privileged. In contrast, the authors assume that when the case is brought to trial, the courts are not influenced by the raw data, because if they were, they might (ex post) accept a report of $r = y$ as non-negligent, and (in the limit) $(y - x)^2 = 0$ for all $y$, as long as $y$ is documented in the audit. This is confusing.
**Benefit Function**: The market (pricing) function \( M(r) = \alpha + \beta r \) appears to be *exogenously* imposed. For example, if \( e = 0 \), then the report would be uninformative, and the function would be flat. Also, it would appear \( r^* \), should be endogenous. An exogenous function requires more explanation, because the capital markets do not appear to play a role.
Rationale For Cost Function: The authors note that they make ‘standard’ assumptions about the auditor’s cost function. To the extent that (as the authors argue) none of the previous papers have dealt with joint audits, are the standard assumptions appropriate here (e.g., extra coordination costs)?
The **Current Status of Joint Audits:**

- In Denmark in 2009 (four years after joint audit was dropped), only 19 companies out of 182 had more than one auditor (Le Vourec’h and Morand, 2011).


- Numerous respondents to the Green Paper (“Audit Policy: Lessons from the Crisis”) issued in October 2010, suggested there is little evidence that joint audits add to audit quality but they would necessarily increase audit fees (André et al., 2012).

- In a recent survey (PwC) that polled 120 large businesses (excluding France) across Europe (“European Audit Committee Chair and CFO Poll”, YouGovStone, June 2011), 99% of interviewees declared being against mandatory joint audit (page 6).²

- Haapamäki et al. (2012) note that prior studies tend to provide evidence that joint audits are associated with higher fees. André et al. (2012) provide evidence that audit fees paid by listed French companies (where a joint audit is mandatory) are significantly and economically higher than those paid in the UK and Italy.

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References

André, Paul, Géraldine Broye, Christopher Pong and Alain Schatt, Do joint audits lead to greater audit fees?, working paper, 2012, ESSEC Business School Paris. SSRN


