



Audit Quality and Auditor Reputation: Evidence from Japan



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What happened in Japan?

- ChuoAoyama, the PwC affiliate in Japan, was implicated in fraud at Kanebo, a large cosmetics firm.
- Audit personnel were arrested, firm's offices searched by prosecutors, and firm suspended from operations.
- PwC acted quickly, sending senior audit personnel from US and UK, setting up new “high quality” audit affiliate (Aarata), rebranding ChuoAoyama as Misuzu. Reputation has first order effects.
- Subsequent revelation of frauds at other prominent ChuoAoyama clients forced firm to close.

What incentives do auditors have to deliver quality?

- **Litigation/insurance rationale.** Auditors can be sued for audit failures, often for very substantial amounts that exceed their proportionate liability (“deep pockets”).
- **Reputation.** An auditors’ ability to retain/attract clients and charge premium fees depends on its reputation for quality.
- Both effects predict that larger audit firms are likely to deliver higher audit quality.

Should auditor liability be limited?

- CEOs of the large audit networks worldwide argue that reputation is sufficient and that the collapse of another Big Four auditor due to “catastrophic” lawsuit damages would be disastrous.
- They argue that lower tier firms do not have the resources to audit the world’s largest companies (all but one of the FTSE100 are audited by the Big Four).
- Consequently, they want strict limits on liability, a suggestion that is getting serious attention from regulators in the U.S. and Europe.

We use recent events in Japan to address:

- What happens when another of the Big Four is eliminated?
- Does reputation “matter” to auditors and their clients?
 - Similar to the German setting used by Weber et al. (2008), the insurance role is of limited applicability in Japan, where litigation is essentially non-existent.
 - A watershed event in Japanese financial reporting – regulators shut down the auditor for two months; PwC eventually gave up a large part of its Japanese practice.
 - A credible signal from regulators that they are serious about audit reform in Japan.

Previous empirical literature

- Auditor switching: Examine timing of switches as well as variables that explain X-sectional variation in this timing – provide evidence on whether concerns about auditor reputation/quality drive switching:
 - Lennox (1999) examines audit failures in the U.K. over 1987-1994. In spite of adverse publicity for audit firm implicated in these failures, little evidence that clients change auditors.
 - Weber et al. (2008) find some evidence of switching away from KPMG after ComROAD scandal.

Previous empirical literature

- To get at reputation, Barton (2005) looks at timing of switches away from Andersen after the problems at Enron were revealed and finds that 95% of switches occur after the indictment.
- Blouin et al. (2007) look at whether Andersen clients stay with their previous audit team when it moves to a new firm – switching costs vs. agency costs.

Previous empirical literature

- Bankruptcy of Laventhal and Horwath:
 - Two studies look at reaction of client firm stock prices to bankruptcy announcement (Menon and Williams, 1994; Baber et al., 1994).
- Find significantly negative returns.
- But interpretation is unclear:
 - Loss of insurance,
 - Loss of reputation, or
 - Costs of switching to new auditor?

Previous empirical literature

- Revelation of Andersen's role in Enron:
 - Chaney and Philipich (2002) find significantly negative client firm returns at the time Andersen revealed document shredding by audit personnel.
 - Due to reputation?
 - Nelson et al. (2008) question reliability of evidence given other contemporaneous events.
- Weber et al. (2008) look at a similar event in Germany, where litigation is limited, and find significantly negative returns, consistent with reputation effects.

The Japanese Setting

- Since WWII, economic activity in Japan organized around large corporate groups known as *keiretsu*.
- These groups are characterized by strong intra-group relationships, including cross-holdings, board memberships, etc.
- Most financing was debt, especially bank loans. Major Japanese banks sat at the center of many of these groups.
- An alternative (to market) mechanism for solving information asymmetry/agency problems associated with external financing.

The Japanese Setting

- Japan's financial system thus operated very differently to that in the west.
- Managers aim to serve interests of all stakeholders (banks, employees, suppliers, customers) rather than only maximizing shareholder value.
- The “lost decade” caused many to question the viability of this system, and led to major reforms that began in the late 1990s.
- A major objective was to improve the quality of financial reporting and auditing, which was generally acknowledged to be poor by western standards.

Our Research Questions:

- Were ChuoAoyama's clients systematically different from those of other auditors prior to these events? That is, was it a low quality auditor?
- Can we find evidence from client switching that supports the importance of quality/reputation?
- Did clients switch away from ChuoAoyama when quality called into question?
- Can cross-sectional variation in switching decision be explained as a function of quality?

Our Research Questions:

- Can we find evidence from client firms' stock price reactions to these events that supports the importance of quality/reputation?
- Can cross-sectional variation in stock price reactions be explained as a function of quality?

Sample

- We sample all firms on the First and Second Sections of the Tokyo Stock Exchange in February 2008, a total of 2,199 firms.
- To avoid survivor bias, we add to this set any firms delisted from the beginning of 2004 through 2008, about 200 firms.
- Data on Japanese auditors not available in a reliable way from conventional databases, necessitating hand collection from J-language documents.

Table 3, Panel A: Sample Observations

Big 5 refers to Big Five audit firms (with their affiliations to the Big Five audit networks worldwide) are Asahi (Andersen), AZSA (KPMG), ChuoAoyama/Misuzu/Aarata (PwC), ShinNihon (Ernst & Young), and Tohmatsu (Deloitte). Non Big 5 are all other audit firms. Size of clients is measured by market capitalization at the end of the fiscal year.

<i>Fiscal year</i>	<i>Big 5</i>	<i>Big 5 % by Number of clients</i>	<i>Big 5 % by Size of client</i>	<i>Non Big 5</i>	<i>Non Big 5 % by Number of clients</i>	<i>Non Big 5 % by Size of client</i>	<i>Total</i>
2001	1,565	81.2%	93.6%	363	18.8%	6.4%	1,928
2002	1,757	82.0%	93.4%	386	18.0%	6.6%	2,143
2003	1,820	82.1%	93.6%	396	17.9%	6.4%	2,216
2004	1,852	82.9%	94.4%	382	17.1%	5.6%	2,234
2005	1,872	83.8%	95.1%	361	16.2%	4.9%	2,233
2006	1,857	83.3%	95.3%	372	16.7%	4.7%	2,229
2007	1,544	81.3%	92.1%	356	18.7%	7.9%	1,900
Total	12,268	82.4%	94.1%	2616	17.6%	5.9%	14,884

Variables that we analyze

Measures of:

Size	Market cap., sales, assets
Growth	M/B
Leverage	LTD/TA
Financial Performance	ROE, ROA, Loss dummy, annual stock returns
Dividends	DPS, Div. yield
Overseas interactions	Foreign ownership, Overseas sales, U.S. listing
Earnings management propensity	Relative magnitude of accruals, Variability of profitability, strings of positive NI and changes in NI, timeliness of loss recognition (Basu)

Are ChuoAoyama clients different?

- Univariate tests (Table 2) reveal few differences compared to clients of other Big Five firms:
 - Marginally significant evidence of lower profitability and dividends.
 - Significantly higher variability of profitability.
 - Some evidence that these firms have shorter “strings” of favorable earnings outcomes.
- Earnings variability only significant variable in multivariate analysis.

Downfall of ChuoAoyama

Event	Date	Event
F2004:		
1	Apr. 04	Kanebo announces fraud investigation
2	Jul. 04	Kanebo drops ChuoAoyama as auditor
3	Oct. 04	Preliminary investigation reveals fraud
4	Nov. 04	SESC launches Kanebo investigation
F2005:		
5	Apr. 05	Kanebo announces restatement of last five years' FS.
6	Jul. 05	Kanebo execs arrested. CA offices searched.
7	Sept. 05	CA auditors arrested.
8		Top CA execs questioned by prosecutors.
9	Oct. 05	CA partners step down; auditors indicted; FSA penalties.

Downfall of ChuoAoyama

Event	Date	Event
10	Nov. 05	Kanebo execs plead guilty
11	Feb. 06	PwC international sends in team of top audit personnel
F2006:		
12	May 06	FSA announces two month suspension
	July 06	Aarata commences operations; FSA suspension begins.
	Sep. 06	ChuoAoyama resumes business as Misuzu
	Dec. 06	Revelation of frauds at Sanyo and Nikko Cordial
13	Feb. 07	Misuzu announces that it will transfer clients and staff to other (mostly Big Four) audit firms.

Rates of audit turnover in Japan by year and auditor type

Fiscal year	Big Auditors Excluding Chuo Aoyama and Misuzu	Non Big Auditors	Chuo Aoyama and Misuzu
2002	0.9%	8.0%	0.5%
2003	2.5%	3.1%	1.3%
2004	0.6%	8.1%	1.5%
2005	1.2%	7.6%	1.7%
2006	1.1%	10.5%	23.6%
2007	1.8%	10.2%	91.9%

Do clients switch away from ChuoAoyama?

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Fiscal year	<i>Arata</i>	<i>Asahi</i>	<i>Azsa</i>	<i>Chuo Aoyama</i>	<i>Misuzu</i>	<i>Shin Nihon</i>	<i>Tohmatsu</i>	<i>Non Big</i>
2001	0	324	0	396	0	465	380	363
2002	0	348	4	452	0	515	438	386
2003	0	12	373	464	0	518	453	396
2004	0	0	395	471	0	525	461	382
2005	0	0	410	469	0	532	460	361
2006	52	0	443	7	303	573	479	372
2007	51	0	426	0	12	600	455	356

Key comparison: In F2005, CA has 469 clients; in F2006, Aarata-CA-Misuzu have 362 clients; in F2007 Aarata-CA-Misuzu have 63 clients.

Auditor Change Logit regressions – Changes away from Chuo Aoyama

$$\left. \begin{array}{l} \text{1if AuditorChange}_{i,t} \\ \text{0Otherwise} \end{array} \right\} = \alpha_0 + \alpha_1 \ln(\text{TotalAssets})_{i,t} + \alpha_2 \% \Delta \text{TotalAssets}_{i,t} + \alpha_3 \text{Leverage}_{i,t} + \alpha_4 \Delta \text{Leverage}_{i,t} + \alpha_5 \text{ROA}_{i,t} + \alpha_6 \text{Loss}_{i,t} + \alpha_7 \text{CA}_{i,t-1} + \beta_8 \text{CA}_{i,t-1} * \text{FY2006} + \varepsilon$$

Variable	Coeff	Marginal effects	t-statistic	Coeff	Marginal effects	t-statistic
Constant	-2.27		(-2.14)**	-2.45		(-2.31)**
Ln (Assets)	-0.13	-0.00	(-3.76)***	-0.09	-0.00	(-2.59)**
%Change in Assets	0.03	0.00	(2.17)**	0.02	0.00	(2.21)**
Leverage	0.09	0.00	(0.35)	-0.03	-0.00	(-0.12)
Change in leverage	0.49	0.02	(0.6)	1.19	0.04	(1.45)
ROA	-0.03	-0.00	(-5.00)***	-0.03	-0.00	(-4.81)***
Loss	0.12	0.00	(0.85)	0.05	0.00	(0.37)
CA	0.70	0.03	(6.23)***	1.08	0.05	(10.69)***
CA*Fiscal Year 2006	4.15	0.63	(34.61)***	4.22	0.66	(34.91)***
Industry Fixed Effects	Included			Included		
Observations	13070			13070		
Pseudo r sq	0.2414			0.2422		

TABLE 6
Auditor Change Probit Regressions: Changes Away from KPMG Germany

$$\begin{aligned}
 & \left. \begin{array}{l} 1 \text{ if } AuditorChange_{i,t} \\ 0 \text{ Otherwise} \end{array} \right\} = \beta_0 + \beta_1 \ln(\text{Assets})_{i,t} + \beta_2 \% \Delta \text{Assets}_{i,t} \\
 & \quad + \beta_3 \text{Leverage}_{i,t} + \beta_4 \Delta \text{Leverage}_{i,t} + \beta_5 \text{ROA}_{i,t} \\
 & \quad + \beta_6 \text{Loss}_{i,t} + \beta_7 \text{KPMG}_{i,t-1} + \beta_8 \text{KPMG}_{i,t-1} \\
 & \quad * \text{Year2002} + \varepsilon_{it}
 \end{aligned} \tag{3}$$

Variable	Coefficient (t-statistic)
<i>Constant</i>	-0.35 (-1.06)
<i>Ln(Assets)_t</i>	-0.08 (-2.96)***
<i>%ΔAssets</i>	0.01 (0.31)
<i>Leverage_t</i>	-0.15 (-0.79)
<i>ΔLeverage_t</i>	0.19 (0.54)
<i>ROA_t</i>	0.03 (0.13)
<i>Loss_t</i>	0.26 (2.48)**
<i>KPMG_{t-1}</i>	-0.18 (-1.46)
<i>KPMG_{t-1}*Year2002</i>	0.45 (2.19)**
Industry indicator variables	Included
Observations	1,642
Pseudo- <i>R</i> ² (likelihood ratio index)	3.7%

What explains audit switch decisions made by ChuoAoyama clients?

Three possible outcomes:

- Switch to Aarata (obs. = 52; e.g., Sony and Toyota)
- Switch to another audit firm before F2007 (obs. = 114)
- Remain with ChuoAoyama/Misuzu (obs. = 303; e.g., NTT, Nippon Steel)

We model this as an ordered logit and explain as a function of various firm characteristics.

Univariate evidence (summary of Table 5)

Variable	Comparisons of the three groups
Size	Aarata > Other Change > Misuzu
M/B	Aarata ≈ Other Change > Misuzu
Foreign own.	Aarata > Other Change ≥ Misuzu
Overseas sales	Aarata > Other Change ≈ Misuzu
U.S. Listing (any)	Aarata ≈ Other Change > Misuzu

VARIABLES	(1)			(2)		
	Coeff	z-stat	Odds Change	Coeff	z-stat	Odds Change
Log Total Assets	0.22	(2.56)**	1.44	0.37	(2.68)***	1.73
Market to Book	0.15	(2.51)**	1.26	0.21	(1.65)*	1.24
Leverage (LTD/TA)	-0.80	(-1.25)	0.84	-1.82	(-2.16)**	0.69
Net Income	-0.00	(-0.11)	0.99	-0.00	(-0.24)	0.95
ROA (%)	-0.03	(-0.85)	0.88	-0.05	(-0.95)	0.82
Loss	-0.25	(-0.57)	0.93	-0.76	(-1.15)	0.82
Annual returns (%)	-0.00	(-0.02)	1.00	0.00	(0.68)	1.12
Dividend Yield (%)	20.00	(1.35)	1.18	18.30	(0.98)	1.15
Foreign ownership (%)	0.01	(0.63)	1.09	0.01	(0.96)	1.17
Overseas sales ratio (%)	0.00	(0.58)	1.07	-0.00	(-0.37)	0.95
Number of Segments	0.04	(0.55)	1.06	0.07	(0.71)	1.10
Firm Age	0.00	(0.33)	1.04	0.00	(0.35)	1.05
Any US Listings (incl. OTC)	0.26	(0.69)	1.07	-0.08	(-0.18)	0.98
Accrual quality 2 - Abs(Total Accruals)/Abs(CFO)				0.00	(0.06)	1.00
Std Dev ROA				0.07	(0.73)	1.12
String Positive DNI				-1.38	(-1.05)	0.87
Constant Cut 1	2.29	(3.57)***		2.87	(2.55)***	
Constant Cut 2	3.81	(5.79)***		4.26	(3.70)***	
Observations	440			277		
Pseudo R-squared	0.0375			0.0554		

, **, *** represents significance at the 10%, 5%, and 1% respectively (two-sided tests)

What happened to Big Four share once CA-Misuzu closed? (Table shows market cap.)

Fiscal year	Arata	Asahi	Azsa	Chuo Aoyama	Misuzu	Shin Nihon	Tohmatsu	Non Big
2001	0.0%	19.5%	0.0%	26.7%	0.0%	28.1%	19.4%	6.4%
2002	0.0%	19.2%	0.6%	25.2%	0.0%	28.4%	20.0%	6.6%
2003	0.0%	0.1%	20.8%	27.3%	0.0%	26.4%	19.0%	6.4%
2004	0.0%	0.0%	21.1%	26.3%	0.0%	27.0%	20.1%	5.6%
2005	0.0%	0.0%	23.9%	24.2%	0.0%	25.7%	21.2%	4.9%
2006	8.8%	0.0%	25.6%	0.1%	11.7%	26.0%	23.0%	4.7%
2007	8.5%	0.0%	31.0%	0.0%	0.2%	27.9%	24.6%	7.9%

From F2005 to F2007 CA/A/M share falls from 24.2% to 8.5%, most of which is absorbed by remaining Big Three (Big Three + Arata have 92% in F2007 vs. 95% in F2005, implying that smaller firms not much of a factor).

Event study analysis

- We use a conventional (Schipper-Thompson, 1983) methodology to examine the reaction to these events in clients firms' stock prices.
- We also look at whether variables that proxy for demand for audit quality explain variation in these abnormal returns.
- Use two returns benchmarks: (i) Japanese Topix index, and (ii) portfolio of non-ChuoAoyama clients in our sample.

Event study results

Variable	Event	Event	Event	Event	4	Event	Event	6	Event	Event	Event	Event	Event	All
	1	2	3	4	5	6	7	8	9	10	11	12	13	Events 1-13
Constant	0.03*	0.03*	0.03*	0.03*	0.03*	0.03*	0.03*	0.03*	0.03*	0.03**	0.03*	0.03*	0.03*	0.03**
	(1.90)	(1.77)	(1.89)	(1.86)	(1.94)	(1.88)	(1.87)	(1.86)	(1.84)	(1.85)	(2.08)	(1.90)	(1.80)	(2.22)
TSE Index	0.85***	0.85***	0.85***	0.85***	0.85***	0.85***	0.85***	0.85***	0.85***	0.85***	0.85***	0.85***	0.85***	0.85***
returns	(58.19)	(58.14)	(58.18)	(58.15)	(57.57)	(58.16)	(58.11)	(58.12)	(58.15)	(58.15)	(58.49)	(58.16)	(58.17)	(58.30)
Event i	-0.22	0.32	-0.17	-0.05	-0.46	-0.13	-0.11	-0.10	0.02	-0.01	-0.86***	-0.22	0.18	-0.14*
.	(-0.89)	(1.31)	(-0.69)	(-0.20)	(-1.49)	(-0.51)	(-0.46)	(-0.34)	(0.06)	(-0.05)	(-3.51)	(-0.88)	(0.75)	(-1.90)

Figure 1: Cumulative difference in raw returns between portfolio of CA clients and portfolio of non-CA clients, 2004-2006



Possible that negative returns occurred earlier than Kanebo scandal

- ChuoAoyama implicated in two previous accounting frauds, at Yamaichi Securities (1999) and Ashikaga Bank (2000).
- Ashikaga Bank failed in Nov. 2003, and was sued by shareholders in a derivative action filed in August 2004. ChuoAoyama also named in suit. Alleges fraud in 2001 related to overstatement of deferred tax assets.
- Ironically, politicians blamed ChuoAoyama for being too tough and “causing” failure of Ashikaga Bank.

Conclusions:

- There is little doubt that for PwC, the response to the crisis at ChuoAoyama was all about preserving their reputation – the firm took drastic measures to address the problems, including losing a significant part of its Japanese business.
- We find mixed evidence that audit reputation matters for its Japanese clients:
 - We find clear evidence of switching prior to it becoming clear that ChuoAoyama would close.
 - The firms that switched were larger, with higher M/B ratios, more U.S. listings, and foreign ownership.

Conclusions:

- On the other hand, there is little evidence in client firms' stock prices consistent with reputation effects.
- What happened in Japan could have implications for a Big Four failure elsewhere in the world – market share remains with Big Three, or with Big Three + “high quality” portion of fourth firm?
- PwC's reputation has taken another hit with the fraud at Satyam – making its claims that the problems in Japan led it to fix audit quality throughout the world less credible.