CEO Compensation and Hospital Financial Performance in Ontario

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Agenda

• Background and conceptual framework
• Sample and data
• Analytic methods
• Limitations
• Findings
• Conclusions and discussion
The trend in executive compensation
– increasing oversight

• Regulators / investors scrutinizing executive compensation contracts
• Extends to non-profit firms
  – U.S. Government Accountability Office: investigations
  – U.S. Securities & Exchange Commission: expanded disclosure requirements
  – U.S. Internal Revenue Service: challenges to tax-exemption
Justifying compensation

Linking non-profit hospital executive compensation to the achievement of financial and other goals can minimize legal scrutiny of compensation contracts, and can potentially improve organizational performance.

- Flannery and Hofrichter 2007; Newman et al. 2001
The evidence

• Limited findings suggest compensation tied to financial performance in U.S. non-profit hospitals
• Use of performance-based pay does not differ by non-profit ownership
  - Brickley & VanHorn (2002)
The Ontario environment

- Accountability agreements with hospitals
- Agreed upon measures of financial performance
- Annual data collection (salary and hospital financial performance) using common frameworks, definitions across hospitals & over time
Research question

Is compensation of non-profit hospital CEOs in Ontario sensitive to hospital financial performance?
The Principal-Agent problem

PRINCIPAL (BOARD)  \(\rightarrow\)  SELF-INTERESTED OBJECTIVES

AGENT (CEO)  \(\leftrightarrow\)  COMMON OBJECTIVES  \(\rightarrow\)  SELF-INTERESTED OBJECTIVES

ASYMMETRIC INFORMATION
Hypothesis

CEO compensation is positively related to hospital financial performance
- Positive financial ratios required under law; common element of accountability agreements
- Vital to hospital survival
  - “No margin, no mission”
- Easily measured
Empirical model

CEO compensation as a function of:
- CEO characteristics @ time $t$
  (sex, MD status)
- Hospital characteristics @ time $t$
  (type, size, location)
- Financial performance @ time $t$, $t-1$, $t-2$
  (liquidity, profitability, efficiency)
- Time (year)
Empirical model

\[
\text{CEOPay}_{iht} = \beta_0 + \beta_1 P_i + \beta_2 O_{nt} + \beta_3 F_{ht} + \beta_4 \text{Time}_t + \mu_i + \varepsilon_{iht}
\]

Where,

CEOPay_{iht} is total salary plus taxable benefits for CEO \textit{i} at hospital \textit{h} at time \textit{t}. 
Financial performance measures

- Total margin (profitability)
- Current ratio (liquidity)
- Unit cost performance (efficiency)

<table>
<thead>
<tr>
<th>Below Benchmark</th>
<th>Within Benchmark</th>
<th>Above Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM = 0% to 5%</td>
<td>CR = 1 to 2</td>
<td>UC = (5%) to 5%</td>
</tr>
</tbody>
</table>

(Pink, et al. 2006)
Sample

- 92 acute care hospitals & 132 CEOs observed 1999 to 2006
- Unit of analysis: CEO
- Maximum sample size: ~733 observations
- Missing: 112 (<$100K), 76 (mid-year CEOs changes)
- Final # of observations: 545 CEO-hospital-years
Data sources

- Ministry of Finance
- Ministry of Health and Long-term Care, Finance and Information Management Branch
- Joint Policy and Planning Committee
- Hospital Report (CIHI)
CEO characteristics

**SEX**
- Male: 106
- Female: 26

**PHYSICIAN STATUS**
- non-MD: 127
- MD: 5
Hospital characteristics

*Region 2: Central West, Mississauga Halton, Central, and Central East; Region 3: Waterloo Wellington, Hamilton Niagara, Haldimand Brant, South East, and North Simcoe Muskoka; Region 4: Erie St. Clair, South West, and Champlain; North: North-East and North-West.
## Financial performance

<table>
<thead>
<tr>
<th></th>
<th>Mean / (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global operating revenues†,^ (n=545)</td>
<td>$142 ($154)</td>
</tr>
<tr>
<td>Total margin (n=542)</td>
<td>0.92% (3.70%)</td>
</tr>
<tr>
<td>Current ratio (n=541)</td>
<td>1.50 (1.56)</td>
</tr>
<tr>
<td>Unit cost performance (n=442)</td>
<td>0.08% (9.83%)</td>
</tr>
</tbody>
</table>

†Inflation adjusted to 2006; ^In Canadian millions.
# CEO total compensation (in thousands)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean Salary</th>
<th>N</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>$238.6</td>
<td>58</td>
<td>$118.2</td>
<td>$120.7</td>
<td>$639.1</td>
<td>-</td>
</tr>
<tr>
<td>2000</td>
<td>$237.4</td>
<td>58</td>
<td>$113.2</td>
<td>$117.1</td>
<td>$702.8</td>
<td>0.53%</td>
</tr>
<tr>
<td>2001</td>
<td>$258.6</td>
<td>58</td>
<td>$124.3</td>
<td>$115.3</td>
<td>$665.6</td>
<td>8.93%</td>
</tr>
<tr>
<td>2002</td>
<td>$247.1</td>
<td>61</td>
<td>$120.8</td>
<td>$109.6</td>
<td>$678.2</td>
<td>4.44%</td>
</tr>
<tr>
<td>2003</td>
<td>$271.6</td>
<td>76</td>
<td>$146.6</td>
<td>$106.7</td>
<td>$755.6</td>
<td>9.91%</td>
</tr>
<tr>
<td>2004</td>
<td>$278.1</td>
<td>70</td>
<td>$142.3</td>
<td>$104.4</td>
<td>$705.0</td>
<td>2.40%</td>
</tr>
<tr>
<td>2005</td>
<td>$273.2</td>
<td>79</td>
<td>$138.4</td>
<td>$111.3</td>
<td>$622.6</td>
<td>1.74%</td>
</tr>
<tr>
<td>2006</td>
<td>$277.7</td>
<td>85</td>
<td>$144.4</td>
<td>$103.3</td>
<td>$699.6</td>
<td>1.62%</td>
</tr>
<tr>
<td>Total</td>
<td>$262.3</td>
<td>545</td>
<td>$133.3</td>
<td>$103.3</td>
<td>$755.6</td>
<td>-</td>
</tr>
</tbody>
</table>

* Inflation-adjusted to December 2006

Average annual growth: 4.2%
CEO salaries* over time

* In thousands. All salaries stated in 2006 CAN$. 

Mean Salary

[Graph showing CEO salaries over time with percentage changes indicated for each year.]
Compensation changes by hospital type

*Mean salary inflation-adjusted to December 2006; ^ Nominal increase
Total Margin over time

- Small
- Community
- Teaching

Benchmark
Current Ratio over time

Benchmark
Unit Cost Performance over time

[Graph showing Mean Unit Cost Performance over salary years for Small, Community, and Teaching categories, with benchmark levels indicated.]
CEO compensation & global operating revenues

* Inflation-adjusted to December 2006
CEO compensation and total margin (no lag)

* Inflation-adjusted to December 2006
CEO compensation and current ratio (no lag)

* Inflation-adjusted to December 2006
CEO compensation and unit cost performance
(no lag)

* Inflation-adjusted to December 2006
Statistical analysis

• Fixed effects model
  – CEO fixed effects approximate hospital fixed effects (all but 6 CEOs nested within hospitals)

• 3 specifications of financial performance
  – Concurrent, lagged 1-year, lagged 2-years
Statistical analysis

• Specification tests
  – Hausman (random effects biased)
  – OLS (fixed effect explains ~10% of variation)
  – Fixed effects model w/ and w/o time invariant hospital characteristics (financial performance coefficients robust)
Multivariate results: financial performance

<table>
<thead>
<tr>
<th></th>
<th>Concurrent (n=453; $R^2=74%$)</th>
<th>1-yr Lag (n=476; $R^2=77%$)</th>
<th>2-yr Lag (n=420; $R^2=79%$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total margin (TM) (benchmark)</td>
<td>-2.4 (0.397)</td>
<td>1.1 (0.687)</td>
<td>4.3 (0.173)</td>
</tr>
<tr>
<td>TM (above)</td>
<td>3.0 (0.568)</td>
<td>9.5 (0.077)</td>
<td>9.9 (0.045)</td>
</tr>
<tr>
<td>Current ratio (CR) (benchmark)</td>
<td>2.2 (0.547)</td>
<td>7.9 (0.015)</td>
<td>2.6 (0.453)</td>
</tr>
<tr>
<td>CR above</td>
<td>-1.1 (0.841)</td>
<td>3.8 (0.515)</td>
<td>1.0 (0.856)</td>
</tr>
<tr>
<td>Unit cost (benchmark)</td>
<td>-0.6 (0.873)</td>
<td>3.3 (0.269)</td>
<td>0.4 (0.901)</td>
</tr>
<tr>
<td>Unit cost (above)</td>
<td>4.3 (0.388)</td>
<td>3.0 (0.457)</td>
<td>-0.5 (0.912)</td>
</tr>
</tbody>
</table>

P-values in ( ).
Multivariate results: hospital size

Salary increase (in 000s) per $100 million in operating revenues

Concurrent: $51
1-yr lag: $56
2-yr lag: $59

SE = $8K, $10K, $14K, respectively. All p<0.001.
## Multivariate results: time

<table>
<thead>
<tr>
<th>Year</th>
<th>Concurrent</th>
<th>1-yr Lag</th>
<th>2-yr Lag</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>N/A</td>
<td>59.5 (7.4)**</td>
<td>51.4 (7.1)**</td>
</tr>
<tr>
<td>2005</td>
<td>60.5 (7.6)**</td>
<td>46.7 (6.3)**</td>
<td>38.9 (6.1)**</td>
</tr>
<tr>
<td>2004</td>
<td>56.5 (7.4)**</td>
<td>43.4 (6.2)**</td>
<td>36.0 (5.7)**</td>
</tr>
<tr>
<td>2003</td>
<td>47.7 (6.9)**</td>
<td>34.9 (5.7)**</td>
<td>28.2 (5.1)**</td>
</tr>
<tr>
<td>2002</td>
<td>36.0 (6.1)**</td>
<td>24.1 (4.9)**</td>
<td>15.0 (4.7)**</td>
</tr>
<tr>
<td>2001</td>
<td>20.7 (6.1)**</td>
<td>7.7 (5.4)</td>
<td>Reference</td>
</tr>
<tr>
<td>2000</td>
<td>13.2 (5.3)*</td>
<td>Reference</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Standard errors in ( ). *p<0.05, **p<0.01
Limitations

• No breakdown of contingent vs. base pay
• Systematic exclusion of CEOs paid <$100K
• CEO-specific effort not measurable
• Performance measurement limited to financial indicators
  – community benefit, patient satisfaction, achievement of strategic plan also important (Ackerman et al. 2005; Pink et al. 2001)
Conclusions

• Is compensation of non-profit hospital CEOs in Ontario, Canada sensitive to hospital financial performance?
  – Findings suggest relationship is limited
  – Effect sizes small; few are significant
    • $7,900 for current ratio within benchmark (vs. below)
    • $9,900 for total margin above benchmark (vs. below)
Conclusions

• Hospital size and time more predictive than financial performance
  – $51 - $59 thousand increase for every $100 million in operating revenues
  – Steady upward trend in salaries after controlling for CEO / hospital characteristics & financial performance
Discussion

• Despite accountability agreements, financial performance doesn’t seem to be a major component of hospital performance-based compensation systems
  – Confirmed by OHA

• Financial performance may run counter to other important performance measures (e.g., patient satisfaction)
Discussion

• Competition for hospital CEOs, job complexity may warrant increases found in study

• Hospital CEO salaries still trail those of CEOs of similarly-sized investor-owned firms in other industries
  – E.g., bank CEO salaries
THANK YOU