MONEYBALL LAW: QUANTITATIVE APPROACHES TO BUSINESS LAW

Chilwin Cheng, Managing Partner, Ascendion Law
I’m Chilwin Cheng
• Litigator
• LLB (JD) 1997
• MBA 2008
• Former Big Firm lawyer, criminal prosecutor, securities commission prosecutor
• Chief Enforcement Counsel for Canada’s stock exchanges
• Complex shareholder disputes, securities litigation, white collar criminal and regulatory defense
I’m Chilwin Cheng
Feeling Pretty Good!
• Specification of variables predictive of victories in the sport of boxing: II. Further characterization of previous success.

• Warnick JE¹, Warnick K.

• Author information

• Abstract

• Previous success, i.e., performance in the preceding bout and total number of wins and losses, was predictive of victory. Clarification of this effect was sought in examining whether the prior performance against a particular opponent or in a common location would be predictive of a victory in a bout against that opponent or in that locale. The career records of 739 male professional boxers who participated in contests held in the USA in November 2007 were collected from the BoxRec online database. Chi-squared tests and logistic regression analyses indicated that performance in the preceding bout, prior performance against the same opponent, and prior performance in a particular location were predictive of the outcome in a current bout.
Learning Outcomes

01 @Risk and PrecisionTree in an unconventional setting

02 An attempt modelling human judgment and behaviour

03 An example of building tools that seeks audience “buy in”
I think you have a strong case. The case is strong...except on causation.
Why use formal decision analysis?

- Avoid cognitive bias
- Case law approach guarantees adverse selection and confirmation bias
Impressions aren’t useful

How does a client justify the cost of litigation?

How does an insurer set aside a proper reserve for exposure?

How does a litigation finance company know how much to pay for plaintiff legal expenses?

How does opposing counsel avoid “position-based” bargaining and engage in “principled” negotiation?
Complexity

The measurement of the number of variables and the extent to which those variables interact.
Complexity
The measurement of the number of variables and the extent to which those variables interact

Uncertainty
The measurement of the degree to which some or all variables cannot be measured to a fixed point or that must be measured as a range of outcomes
What is uncertainty?

If I ran this case in front of the same judge 100 times, the judge will decide in my favour 90 times.

If I ran this case in front of the same judge 100 times, the judge will set damages at:

- $0 - 10 times
- $100 – 75 times
- $1,000,000 – 5 times
What is uncertainty?

If I ran this case in front of the same judge 100 times, the judge will decide in my favour 90 times.

If I ran this case in front the same judge 100 times, the judge will set damages at:

$0 - 10 times
$100 – 75 times
$1,000,000 – 5 times

If I ran this case in front of 100 judges, 90 judges would decide the case in my favour.

If I ran this case in front the 100 judges, the judges will set damages at:

$0 - 10 judges
$100 – 75 judges
$1,000,000 – 5 judges
Common Rights Structure

- Duty of Care
- Standard of Care
- Breach of Standard
- Causation
- Negligence
- Damage
Did inspectors have probable grounds to commence investigation?
Did review proceed like an investigation?
Did inspectors transfer to investigator?
Was the inspection like an investigation?
Did investigators use inspectors as agents to collect evidence?
Was evidence collected relevant only for criminal proof?
Proof of a Term of Contract

- Written contract
- Pre-contract talks
- Negotiation evidence
- Post-contract behaviour
- Terms implied by industry
- Implied terms for fairness
How to map $100,000 in a negligence case
How to map $100,000 in a negligence case

Liable? — No

Caused? — $0

40%
How to map $100,000 in a negligence case

Liable?

Caused?

$0

Damage?

$0

40%

60%
How to map $100,000 in a negligence case

Liable?  
- No 40%

Caused?  
- Yes 40%
- No 60%

Damage?  
- Yes 40%
- No 60%

$0  
.6 x .4 x .4 = .1

$0

$0

$0
How to map $100,000 in a negligence case

Liable?

Caused?

Damage?

$0

$0

$0

.6 x .4 x .4 = .1

There is a 10% chance of success. Or, plaintiff should accept any offer to settle over $10,000.
Standard Decision Model

- Uncertain = 50%
- “Balance of Probabilities” (Civil) = 75%
- “Proof Beyond a Reasonable Doubt” (Criminal) = 95%
Examples

- Partner claims ownership in business after being shut out
- Winery seeks $1M tenant improvement costs after bank forecloses on landlord’s property
- Investor Loss
- Application to grant leniency
- Legal Budget
## RESULTS

### WIN OR LOSE?

<table>
<thead>
<tr>
<th>Result for Plaintiff</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuccessful</td>
<td>51</td>
</tr>
<tr>
<td>Successful</td>
<td>53</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
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</table>

### IF WIN, INJUNCTION?

<table>
<thead>
<tr>
<th>Injunction Granted</th>
<th>%</th>
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<tbody>
<tr>
<td>No</td>
<td>64</td>
</tr>
<tr>
<td>Yes</td>
<td>36</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100</td>
</tr>
</tbody>
</table>
Reluctance to enforce in services

<table>
<thead>
<tr>
<th>Industry</th>
<th>Win</th>
<th>Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Finance, Insurance and Real Estate</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>44%</td>
<td>56%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>62%</td>
<td>38%</td>
</tr>
<tr>
<td>Services</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>Transportation, Communications, Electric, Gas</td>
<td>57%</td>
<td>43%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>80%</td>
<td>20%</td>
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# RESULTS – General Chances of Success

<table>
<thead>
<tr>
<th>Result</th>
<th>Count</th>
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<tbody>
<tr>
<td>Dismissed</td>
<td>94</td>
</tr>
<tr>
<td>Granted</td>
<td>21</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>115</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Result</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Dismissed</td>
<td>81.74%</td>
</tr>
<tr>
<td>Granted</td>
<td>18.26%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>100.00%</strong></td>
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</tbody>
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## Presence of RPGs

<table>
<thead>
<tr>
<th></th>
<th>General</th>
<th>Financial Services</th>
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<tbody>
<tr>
<td></td>
<td>Found</td>
<td>Not Found</td>
</tr>
<tr>
<td>Dismissed</td>
<td>57.14%</td>
<td>87.23%</td>
</tr>
<tr>
<td>Granted</td>
<td>42.86%</td>
<td>12.77%</td>
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<tr>
<td>Grand Total</td>
<td>100.00%</td>
<td>100.00%</td>
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## Nature of Conduct

<table>
<thead>
<tr>
<th>General</th>
<th>Found</th>
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<tbody>
<tr>
<td>Dismissed</td>
<td>28.57%</td>
<td>93.62%</td>
</tr>
<tr>
<td>Granted</td>
<td>71.43%</td>
<td>6.38%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100.00%</td>
<td>100.00%</td>
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</table>

<table>
<thead>
<tr>
<th>Financial Services</th>
<th>Found</th>
<th>Not Found</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dismissed</td>
<td>50.00%</td>
<td>87.50%</td>
</tr>
<tr>
<td>Granted</td>
<td>50.00%</td>
<td>12.50%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
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</table>
Business Law Uses

Selecting the right M&A technique

Valuing Representations and Warranties, Indemnities, Limitations and Waivers

Government license or permit applications

Bankruptcy and Receivership payouts
Next Steps

- Using historical data for budget model
- Methods to achieve “satisfactory” historical models for judgments
- Distribution fitting
- “Decision” and “Event” nodes and ongoing updates to models
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Criminal and Regulatory Defence: tax, securities, FICOM, environmental, WorkSafe

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