The Inside Scoop:
Acceptance and Rejection at
the Journal of International Economics

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Presented by Ivan Cherkashin

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Motivation

- Publications important inside and outside academia
- Little work on the inner workings of journals
- Idiosyncratic existing research
Objectives

- What factors are correlated with the ability to publish in a journal

- Study streamlining of the publication process
  - Associated costs?

- Investigate efficiency of existing reviewing system by the example of JIE
  - Type I and Type II errors?
  - Editorial differences
Unique linked data set:
- Detailed author, timing, co-editor data, final publication and citation data

Original questions asked
- Two tier process & associated costs
- Type I and Type II errors
- Discrepancies in Standards?
The data

- Journal Data - obtained from JIE
- Authors Data - Vita based data, collected over internet
- Publication and Citation Data - CVs and Google Scholar Citation data
Journal Data

- Submission data
  - ALL submissions from 1995 to 2004. Total of 3032 submissions, 600 accepted
  - Decisions data: all final and intermediate decisions
  - Timing data: dates of all intermediate and final decisions

- Co-editor information
  - For each paper: name of co-editor in charge
  - 21 "main" co-editors

- Backlog: Number of accepted articles awaiting publication
  - Recursively calculated for each month
Vita based data

- Ph.D. completion year - "Ph.D. vintage"
  - Human capital indicator and Incentives proxy

- University Rank of attended graduate school
  - Kalaitzidakis (2003) world-wide ranking of the top 200 econ. schools

- Native language dummy

- Total number of papers and number of papers by groups (prior to submission):
  - Top general interest journals
  - Second tier general interest journals
  - Field journals (two groups)
  - "Network" journals
  - Journal of International Economics
The Fate of the Article

- Name of the Journal if article was finally published
- Journal rank (Kalaitzidakis, 2003)

Citation data

- Google Scholar citation data
- Available for both published and working papers!

If number of citations is:

- A perfect predictor for quality $\implies$ other variables should be insignificant
- NOT a perfect predictor for quality $\implies$ coefficient estimates should be lower and less significant
The simple model: probit

\[ q_i = g(a_i, e_i) + \varepsilon_i \]

Article is published if \( q_i > Q \)

\( q_i \) - quality of the paper \( i \)
\( a_i \) - author’s abilities
\( e_i \) - efforts
\( \varepsilon_i \) - unobserved error ("an element of luck")

**Proxies for abilities:**
Author’s education, experience, employer type, performance (number of publications)

**Proxies for incentives:**
Professional age or "Ph.D. vintage"
Article is published if its quality is above threshold level:

\[ Y_i = \begin{cases} 
1, & \text{if } q_i = X_i \beta + \varepsilon_{1i} > 0, \\
0, & \text{if } q_i = X_i \beta + \varepsilon_{1i} < 0, 
\end{cases} \]

CV is observed if:

\[
(Y_i, X_i, Z_i) = \begin{cases} 
(Y_i, X_i, Z_i), & \text{if } Z_i \gamma + \varepsilon_{2i} > 0 \\
(Y_i, \text{Not observed}), & \text{if } Z_i \gamma + \varepsilon_{2i} < 0
\end{cases}
\]

Assumption on errors:

\[
\left( \varepsilon_{1i}, \varepsilon_{2i} \right) \sim N \left( \left( \begin{array}{c} 0 \\ 0 \end{array} \right), \left( \begin{array}{cc} \sigma_1^2 & \rho \sigma_1 \sigma_2 \\ \rho \sigma_1 \sigma_2 & \sigma_2^2 \end{array} \right) \right)
\]
The model

- Standard Heckman sample selection bias correction procedure can not be used

- The model is estimated using MLE instead

- Estimated coefficients change in the predicted direction

- Significant coefficients in the "truncation" equation
## The Determinants of Acceptance

<table>
<thead>
<tr>
<th>Variable (Predictor)</th>
<th>Model w/o citations</th>
<th>Model w citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhD Vintage (dummies):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>— No degree yet or in past 2 years</td>
<td>Pos, Signif</td>
<td>Pos, Signif</td>
</tr>
<tr>
<td>— PhD received 2 to 10 years ago</td>
<td>Pos, Signif</td>
<td>Pos, Signif</td>
</tr>
<tr>
<td>— PhD received &gt; 10 years ago</td>
<td>Insignificant</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Number of publications in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>— General Interest, Field Journals</td>
<td>Pos, Signif / Insign</td>
<td>Pos, Signif / Insign</td>
</tr>
<tr>
<td>— Network Journals</td>
<td>Pos, Signif</td>
<td>Pos, Signif</td>
</tr>
<tr>
<td>— Number of publications in JIE</td>
<td>Pos, Signif</td>
<td>Pos, Signif</td>
</tr>
<tr>
<td>Language Dummy</td>
<td>Pos, Signif</td>
<td>Pos, Signif</td>
</tr>
<tr>
<td>Graduation University rank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>— Top 30</td>
<td>Pos, Signif</td>
<td>Pos, Signif</td>
</tr>
<tr>
<td>— Lower ranked Universities</td>
<td>Pos, Signif / Insign</td>
<td>Pos, Signif / Insign</td>
</tr>
<tr>
<td>Co-editor dummy variables</td>
<td>Signif</td>
<td>Signif</td>
</tr>
<tr>
<td>Number of citations</td>
<td>Omitted</td>
<td>Pos, Signif</td>
</tr>
</tbody>
</table>
Streamlining and its Costs

The graph shows the percentage of submissions taken on the x-axis and the percentage correctly predicted on the y-axis. The lines represent different categories:

- Single-authored papers
- All papers
- Uniform

The graph illustrates how the percentage of submissions taken impacts the prediction accuracy for different categories of papers.
Evaluating Performance: Type I vs II errors

- Final publication data on 564 papers
- About 14% were finally published in better journals
- Kalaitzidakis (2003) classification

- Type I error evidence

<table>
<thead>
<tr>
<th>Rank of journal</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 1-10 journal</td>
<td>1.6</td>
</tr>
<tr>
<td>Top 11-20 journal</td>
<td>8.3</td>
</tr>
<tr>
<td>Top 21-30 journal (Excluding JIE)</td>
<td>4.1</td>
</tr>
<tr>
<td>Top 31-40 journal</td>
<td>6.4</td>
</tr>
<tr>
<td>Top 41-50 journal</td>
<td>9.0</td>
</tr>
<tr>
<td>Top 50-100 journal</td>
<td>9.2</td>
</tr>
<tr>
<td>Other ranked journals</td>
<td>4.4</td>
</tr>
<tr>
<td>Non-ranked journals</td>
<td>56.9</td>
</tr>
</tbody>
</table>
Type I error size evidence:

Average citations per year for different groups of papers

<table>
<thead>
<tr>
<th></th>
<th>Citations per year</th>
<th>Max. citations per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Published in JIE</td>
<td>6.33</td>
<td>6.30</td>
</tr>
<tr>
<td>Rejected by JIE, but published in a higher ranked journal</td>
<td>3.71</td>
<td>3.20</td>
</tr>
<tr>
<td>Articles Published anywhere else</td>
<td>2.17</td>
<td>1.78</td>
</tr>
<tr>
<td>Articles <strong>NOT</strong> published anywhere</td>
<td>1.67</td>
<td>0.96</td>
</tr>
</tbody>
</table>
Type 2 Error

Beta = P(Acc | Citations p.y. <= X)

1995-2004
1995-2000
2001-2004

Number of citations per year
Editors are different in:

- Standards ($S_i$)
- Composition of papers that they receive ($Q_i$)
- Raw acceptance rates $A(S_i, Q_i)$

Decomposition:

\[
A(Q_j, S_j) - A(Q_0, S_0) = [A(Q_j, S_j) - A(Q_j, S_0)] + [A(Q_j, S_0) - A(Q_0, S_0)]
\]

$\Delta$ raw acceptance = $\Delta$ in standards + $\Delta$ in quality

Raw acceptance: up to 0.34 percentage points
Quality differences: up to 0.22 percentage points
Differences in standards: up to 0.30 percentage points
Patterns in heterogeneity in standards

Are co-editors receiving lower quality papers overly generous?

- More lenient receive lower quality papers (rank corr -0.44)
- Higher quality corresponds to higher citations (rank corr 0.42)
- More lenient accept (reject) lower cited papers
Concluding Remarks

- Brings better understanding of inner working of journals
- Provides valuable information on a journal performance for editors, co-editors, referees and authors
- Highlights importance of introduction of internal evaluation system in journals
- Proposes way of streamlining of the evaluation process and evaluates its "costs"
General and network journals

"Top" General:
- Econometrica
- American Economic Review (excluding Papers & Proceedings)
- Quarterly Journal of Economics
- Journal of Political Economy
- Review of Economic Studies

"Good" General:
- Review of Economics and Statistics
- Journal of Monetary Economics
- Journal of Economic Theory
- International Economic Review
- European Economic Review
- Economic Journal

"Network" Journals:
- AER Papers and Proceedings
- Journal of Economics Perspectives
- Journal of Economic Literature
- Rochester Series
- Brooking Papers on Economic Activity
Field journals

Top Field I:
- Journal of Public Economics
- RAND Journal of Economics
- Scandinavian Journal of Economics
- Economic Letters
- Journal of Applied Economics
- Journal of Development Economics
- International Journal of Industrial Organization

Top Field II:
- Journal of Environmental Economics
- Economic Theory
- Econometric Theory
- Journal of Games and Economic Behavior
- Journal of Econometrics
- Journal of Human Resources
- Journal of Labor Economics
- Journal of Economic Dynamics and Control
## Heterogeneity in standards

<table>
<thead>
<tr>
<th>co-editor</th>
<th>% Accepted (Sample)</th>
<th>Probit marginal effect</th>
<th>Quality difference</th>
<th>Citations per year Acc/Rej</th>
<th>Time to first decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.31</td>
<td>0.06</td>
<td>-0.13</td>
<td>4.6 / 2.0</td>
<td>187</td>
</tr>
<tr>
<td>2</td>
<td>0.28</td>
<td>-0.01</td>
<td>-0.08</td>
<td>5.8 / 2.0</td>
<td>115</td>
</tr>
<tr>
<td>3</td>
<td>0.49</td>
<td>0.18**</td>
<td>-0.07</td>
<td>6.8 / 1.7</td>
<td>124</td>
</tr>
<tr>
<td>4</td>
<td>0.26</td>
<td>-0.07</td>
<td>-0.04</td>
<td>4.7 / 2.0</td>
<td>127</td>
</tr>
<tr>
<td>5</td>
<td>0.38</td>
<td>0.23***</td>
<td>-0.22</td>
<td>5.3 / 1.4</td>
<td>156</td>
</tr>
<tr>
<td>6</td>
<td>0.37</td>
<td>—</td>
<td>—</td>
<td>11.4 / 3.2</td>
<td>80</td>
</tr>
<tr>
<td>7</td>
<td>0.32</td>
<td>0.05</td>
<td>-0.10</td>
<td>2.4 / 1.9</td>
<td>166</td>
</tr>
<tr>
<td>8</td>
<td>0.51</td>
<td>0.30***</td>
<td>-0.16</td>
<td>6.5 / 0.2</td>
<td>218</td>
</tr>
<tr>
<td>9</td>
<td>0.22</td>
<td>-0.01</td>
<td>-0.15</td>
<td>8.7 / 2.6</td>
<td>103</td>
</tr>
<tr>
<td>10</td>
<td>0.26</td>
<td>0.05</td>
<td>-0.16</td>
<td>3.4 / 1.0</td>
<td>191</td>
</tr>
<tr>
<td>11</td>
<td>0.32</td>
<td>-0.00</td>
<td>-0.05</td>
<td>6.6 / 0.8</td>
<td>101</td>
</tr>
<tr>
<td>12</td>
<td>0.30</td>
<td>0.00</td>
<td>-0.08</td>
<td>12.4 / 1.4</td>
<td>192</td>
</tr>
<tr>
<td>13</td>
<td>0.23</td>
<td>0.06</td>
<td>-0.20</td>
<td>2.7 / 2.4</td>
<td>128</td>
</tr>
<tr>
<td>14</td>
<td>0.20</td>
<td>0.07</td>
<td>-0.24</td>
<td>2.6 / 1.5</td>
<td>123</td>
</tr>
<tr>
<td>15</td>
<td>0.35</td>
<td>0.09</td>
<td>-0.11</td>
<td>9.4 / 1.8</td>
<td>117</td>
</tr>
<tr>
<td>16</td>
<td>0.23</td>
<td>0.07</td>
<td>-0.14</td>
<td>5.7 / 3.2</td>
<td>136</td>
</tr>
<tr>
<td>17</td>
<td>0.17</td>
<td>0.06</td>
<td>-0.20</td>
<td>3.7 / 0.7</td>
<td>107</td>
</tr>
<tr>
<td>18</td>
<td>0.17</td>
<td>-0.04</td>
<td>-0.16</td>
<td>9.0 / 3.6</td>
<td>187</td>
</tr>
<tr>
<td>19</td>
<td>0.18</td>
<td>-0.07</td>
<td>-0.13</td>
<td>14.9 / 2.6</td>
<td>180</td>
</tr>
<tr>
<td>20</td>
<td>0.40</td>
<td>0.19*</td>
<td>-0.17</td>
<td>5.7 / 0.7</td>
<td>122</td>
</tr>
<tr>
<td>21</td>
<td>0.41</td>
<td>0.03</td>
<td>0.01</td>
<td>7.8 / 2.1</td>
<td>128</td>
</tr>
</tbody>
</table>
The Determinants of Acceptance: Ph.D. school quality

Number of submissions by the rank of grad. school attended:

<table>
<thead>
<tr>
<th>Graduation Year</th>
<th>Submissions #</th>
<th>Submissions %</th>
<th>Accepted</th>
<th>Acc. / Submis.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 20</td>
<td>1186</td>
<td>57%</td>
<td>374</td>
<td>31.5%</td>
</tr>
<tr>
<td>Top 50</td>
<td>1436</td>
<td>70%</td>
<td>444</td>
<td>30.9%</td>
</tr>
<tr>
<td>Top 200</td>
<td>1851</td>
<td>90%</td>
<td>513</td>
<td>27.7%</td>
</tr>
<tr>
<td>Sample</td>
<td>2051</td>
<td>100%</td>
<td>519</td>
<td>25.3%</td>
</tr>
<tr>
<td>&quot;Population&quot;</td>
<td>3032</td>
<td>—</td>
<td>600</td>
<td>19.8%</td>
</tr>
</tbody>
</table>

Probit / Truncated probit model estimates:

- Graduates of Top 10 - Top 30 - significantly higher probability of acceptance
- Graduates of non-ranked universities - lower probability
- Results hold even with citation variable included
The model: Maximum Likelihood function

Log-likelihood function

$log(L) = \sum_{i=1}^{N} Y_i \log(1 - g(\beta, \gamma, \rho)) + \sum_{i=1}^{N} (1 - Y_i) \log(g(\beta, \gamma, \rho)).$

where

$g(\beta, \gamma, \rho) = \frac{\Phi(-X\beta) - G(-X\beta, -Z\gamma)}{\Phi(Z\gamma)}.$

$\Phi(\cdot)$ - CDF of standard normal distribution
$G(\cdot)$ - CDF of bivariate standard normal distribution
$\rho$ — correlation between error terms
The Bias:

![Graph showing biased estimates and complete sample estimates with missing data points (truncation).]
Possible explanations for observed relative acceptance rate stability:

- **Self Selection of authors:**
  - Higher utility from acceptance
  - Overestimated probability of acceptance

- Hope for quality feedback from JIE referees
### Composition of submissions:

<table>
<thead>
<tr>
<th>Year</th>
<th>US Univ</th>
<th>CAN Univ</th>
<th>UK Univ</th>
<th>EU Univ Excl.UK</th>
<th>Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>55</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>1996</td>
<td>52</td>
<td>9</td>
<td>8</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>1997</td>
<td>46</td>
<td>7</td>
<td>10</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td>1998</td>
<td>44</td>
<td>9</td>
<td>8</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>1999</td>
<td>47</td>
<td>6</td>
<td>6</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>2000</td>
<td>45</td>
<td>7</td>
<td>9</td>
<td>25</td>
<td>11</td>
</tr>
<tr>
<td>2001</td>
<td>51</td>
<td>4</td>
<td>7</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>2002</td>
<td>44</td>
<td>5</td>
<td>11</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>2003</td>
<td>39</td>
<td>4</td>
<td>7</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>2004</td>
<td>39</td>
<td>5</td>
<td>7</td>
<td>28</td>
<td>8</td>
</tr>
</tbody>
</table>

- Decrease of the US economics departments share of submissions
- Corresponding increase in the share of European economic schools
Figure: Number of citations per year (CDF)