# [Online Appendix] Conforming Against 

## Expectations:

# The Formalism of Non-Lawyers at the World Trade Organization 

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## Online Appendix

## OA1 Combining Multiple Imputation and Propensity Score

## Matching

Our analytical approach combines both multiple imputation and propensityscore matching. The intent to apply both methods of multiple imputation and of propensity-score matching to the data raises a question about how these two methods should be combined. In general, there are three ways in which researchers have used multiple imputation and propensity-score matching together. Table OA1summarizes the three methods. The primary difference between them is the point at which the estimates are combined across multiple imputations. Method I combines the $m$ imputed values into one imputation and then obtains propensity scores for a single data set using those combined imputed values. Method II combines the $m$ estimated propensity scores and implements the matching algorithm on a single data set using the combined propensity scores. Method III implements the entire procedure for each of the $m$ imputed data sets and only combines the estimates at the very end.

An application of Method I can be found in the literature on international institutions (Chilton and Versteeg 2016), though its effectiveness in reducing bias has not been formally studied. However, note that this procedure is equivalent to creating only one data set where missing values are obtained from a single draw from the unobserved data. Thus, many advantages of multiple imputation are effectively lost and the estimates no longer reflect
uncertainty about the unobserved values. Whether Method II or Method III is more suited to minimizing bias in the estimates for the quantity of interest has not yet been formally demonstrated. In simulations, both methods are able to reduce bias significantly when compared to listwise deletion, but there is no consensus on which method is more effective when compared to one another (see Mitra and Reiter 2011, 2016, Hill 2004). Note, however, that Method II is designed for a setting in which the quantity of interest can be directly obtained from the matched data, e.g. by computing differences in means. If it is the intent to complement the matching algorithm with post-regression analysis, Method II is not suitable, as it leaves the researcher with a single data set. For this data set, the unobserved data is again missing, reintroducing the same problem that multiple imputation was employed to solve.$_{1}^{1}$ Method III is the only procedure that is consistent throughout in its treatment of the missing data problem by retaining the $m$ imputed data sets until the analysis is completed. We therefore believe that Method III is the most appropriate procedure for our study.

The effect of the implementation of a matching procedure on the balance can be assessed by comparing the mean improvement in difference of propensity scores between treated and control units (Chilton and Versteeg 2016). We thus collect the difference in the means of the propensity score
${ }^{1}$ One can think of ways in which the researcher uses multiple imputation a second time after obtaining the combined propensity scores. However, we are not aware of any study that has attempted to implement such a procedure; its effectiveness remains untested and unknown.
for treated and control units before and after matching for each of the 100 imputations. Figure OA2 plots this mean difference across all 100 imputations, together with $95 \%$ confidence intervals for Models (2), (3) and (4). The matching algorithm successfully and significantly increases the balance of our propensity scores by over $50 \%$, in turn significantly ameliorating concerns that any results are driven by differences in observed characteristics or by extrapolation to a covariate range that lacks common support.

Figure OA1 depicts the difference in coefficient estimates and confidence intervals obtained by listwise deletion and multiple imputation for our full model. Figure OA2 demonstrates the improvement on propensity score balance after implementing the matching algorithm.

Table OA1: Combining Multiple Imputation and Matching

|  | Method I | Method II | Method III |
| :--- | :--- | :--- | :--- |
| Step 1 | Create Imputed <br> Data Set | Create Imputed <br> Data Set | Create Imputed <br> Data Set |
| Step 2 | Repeat $m$ Times | Compute <br> Propensity <br> Scores | Compute <br> Propensity <br> Scores |
| Step 3 | Combine <br> puted <br> served Values | Im- | Repeat $m$ Times | | Implement |
| :--- |

Figure OA1: Listwise Deletion vs. Multiple-Imputation


This graph depicts differences between listwise deletion and multiple-imputation in the coefficient estimates and confidence intervals of our analysis for Model (3).

Figure OA2: Balance Improvement Through Matching


This graph depicts differences in the means of propensity scores between treated and control units for Models (2), (3) and (4).

## OA2 Bias Reduction Using Different Calipers

Table OA2: Bias Reduction by Caliper

|  |  |  |
| :---: | :---: | :---: |
| Caliper | \# Units | Bias |
| 0.1 | 102 | $-97 \%$ |
| 0.2 | 118 | $-91 \%$ |
| 0.3 | 118 | $-86 \%$ |
| 0.4 | 120 | $-80 \%$ |
| 0.5 | 130 | $-73 \%$ |
| 0.6 | 136 | $-62 \%$ |
| 0.7 | 148 | $-51 \%$ |
| 0.8 | 158 | $-43 \%$ |
| 0.9 | 160 | $-36 \%$ |
| 1.0 | 164 | $-28 \%$ |
| 1.1 | 168 | $-24 \%$ |
| 1.2 | 168 | $-21 \%$ |
| 1.3 | 170 | $-20 \%$ |

The table depicts the number of units and the reduction in mean differences of propensity scores between panels with lawyer chairs and those with non-lawyer chairs for different calipers in the matching algorithm.

## OA3 Full Regression Tables

Table OA3: Post-Matching Regression Analysis

|  | Dependent Variable: |  |  | Model (4) |
| :---: | :---: | :---: | :---: | :---: |
|  | Precedent Citation |  |  |  |
|  | Model (1) | Model (2) | Model (3) |  |
| Lawyer Chair | -0.265* | $-0.248^{* *}$ | $-0.622^{* * *}$ | -0.470** |
|  | (0.112) | $(0.100)$ | (0.171) | (0.169) |
| CL Chair | 0.198 | $0.290^{* *}$ | 0.077 | 0.117 |
|  | (0.108) | (0.120) | (0.159) | (0.163) |
| Chair Experience |  | -0.023 | $-0.085^{* * *}$ | $-0.088^{* *}$ |
|  | (0.020) | (0.020) | (0.031) | (0.031) |
| Lawyer-Panelists = 1 | 0.003 | 0.052 | 0.063 | -0.037 |
|  | (0.163) | (0.171) | (0.169) | (0.165) |
| Lawyer-Panelists $=2$ | 0.157 | 0.191 | 0.195 | -0.152 |
|  | (0.184) | (0.197) | (0.193) | (0.193) |

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Table OA3 - continued from previous page

|  | Model (1) | Model (2) | Model (3) | Model (4) |
| :---: | :---: | :---: | :---: | :---: |
| CL Panelists = 1 | -0.262* | -0.071 | -0.139 | $-0.346^{*}$ |
|  | (0.120) | (0.131) | (0.131) | (0.141) |
| CL Panelists $=2$ | -0.296 | -0.048 | -0.007 | -0.064 |
|  | (0.229) | (0.253) | ( 0.248) | (0.233) |
| DG Appointed Panel | -0.094 | -0.037 | 0.030 | -0.041 |
|  | (0.122) | (0.134) | (0.138) | (0.131) |
| GATT I | 0.178 | 0.168 | 0.215 | 0.129 |
|  | (0.175) | (0.188) | (0.184) | (0.182) |
| GATT II | -0.149 | -0.133 | -0.098 | -0.077 |
|  | (0.175) | (0.179) | (0.177) | (0.184) |
| GATT III | $0.532^{* *}$ | $0.456^{* *}$ | $0.464^{* *}$ | 0.319 |
|  | (0.180) | (0.194) | (0.190) | (0.198) |

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Table OA3 - continued from previous page

|  | Model (1) | Model (2) | Model (3) | Model (4) |
| :---: | :---: | :---: | :---: | :---: |
| ADA | 0.026 | 0.138 | 0.104 | 0.002 |
|  | (0.144) | (0.154) | (0.151) | (0.154) |
| Safeguards | 0.386 | 0.253 | 0.418 | 0.292 |
|  | (0.226) | (0.251) | (0.248) | (0.222) |
| SPS | -0.359 | -0.344 | 0.304 | 0.431 |
|  | (0.246) | (0.246) | (0.245) | (0.241) |
| SCM | $-0.413^{* *}$ | $-0.364^{* *}$ | $-0.405^{* *}$ | -0.271 |
|  | (0.146) | (0.161) | (0.158) | (0.161) |
| Volume |  | -0.078** | -0.082** | $-0.062^{*}$ |
|  |  | (0.031) | (0.030) | (0.031) |
| CL Parties | $0.240^{* *}$ | $0.200^{* *}$ | $0.201^{* *}$ | $0.253 * *$ |
|  | (0.082) | (0.087) | (0.086) | (0.087) |
| DC vs. NDC | 0.039 | -0.006 | -0.042 | -0.129 |

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Table OA3 - continued from previous page

|  | Model (1) | Model (2) | Model (3) | Model (4) |
| :---: | :---: | :---: | :---: | :---: |
|  | (0.120) | (0.128) | (0.126) | (0.126) |
| \# Words (Rest) | $\begin{gathered} -0.021^{*} \\ (0.010) \end{gathered}$ | $\begin{gathered} -0.029^{* * *} \\ (0.010) \end{gathered}$ | $\begin{gathered} -0.032^{* * *} \\ (0.010) \end{gathered}$ | $\begin{gathered} -0.031^{* *} \\ (0.010) \end{gathered}$ |
| LC * CLC |  |  | $\begin{gathered} 0.343 \\ (0.241) \end{gathered}$ | $\begin{gathered} 0.182 \\ (0.258) \end{gathered}$ |
| LC * Chair Experience |  |  | $\begin{aligned} & 0.090^{* *} \\ & (0.039) \end{aligned}$ | $\begin{gathered} 0.089^{*} \\ (0.040) \end{gathered}$ |
| Pieter Jan Kuijper (Director) |  |  |  | $\begin{gathered} 0.251 \\ (0.323) \end{gathered}$ |
| Valerie Hughes (Director) |  |  |  | $\begin{gathered} 0.900 \\ (0.494) \end{gathered}$ |
| William Davey (Director) |  |  |  |  |

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Table OA3 - continued from previous page

|  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Model (1) | Model (2) | Model (3) | Model (4) |
|  |  |  |  |  |
| Constant | $-7.562^{* * *}$ | $-7.616^{* * *}$ | $-7.376^{* * *}$ | $-6.326^{* * *}$ |
|  | $(0.374)$ | $(0.375)$ | $(0.376)$ | $(0.356)$ |
| Year Fixed Effects |  |  |  |  |
|  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Observations |  |  |  |  |
| Pseudo-R |  |  |  |  |
|  |  |  |  |  |
| Log Likelihood | 0.368 | 0.408 | 0.433 | 0.466 |
| Akaike Inf. Crit. | -907 | -789 | -785 | -779 |

Note:
${ }^{*} \mathrm{p}<0.05 ;{ }^{* *} \mathrm{p}<0.01 ;{ }^{* * *} \mathrm{p}<0.001$

The output of a negative binomial regression. (1) omits Volume, which contains missing values. For (2), missing values for Volume were imputed through multiple-imputation. Then, the data was matched using nearest-neighbor propensity score matching, where treatment is defined as having a lawyer chair on the panel. (3) adds interaction terms. (4) includes fixed effects for the Director-General of the WTO Secretariat. Standard errors in parentheses. AIC and Log-Likelihood estimates are averages across iterations. Volume in bio\$, words in units of 10,000.

Table OA4: Regression Analysis Using Alternative Outcome Measures

|  | Dependent Variable: |  |
| :--- | :---: | :---: |
|  | Unique Citations | Panel Citations |
| Lawyer Chair | $-0.470^{* *}$ | -0.199 |
| CL Chair | $(0.131)$ | $(0.230)$ |
| Chair Experience | 0.222 | 0.245 |
|  | $(0.123)$ | $(0.215)$ |
| Lawyer-Panelists $=1$ | $-0.076^{* *}$ | -0.075 |
|  | $(0.024)$ | $(0.042)$ |
| CL Panelists $=1$ | 0.215 | 0.014 |
| Lawyer-Panelists $=2$ | $(0.136)$ | $(0.227)$ |
|  |  |  |

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Table OA4 - continued from previous page

|  | Unique Citations | Panel Citations |
| :---: | :---: | :---: |
| CL Panelists $=2$ | 0.196 | -0.252 |
|  | $(0.186)$ | $(0.345)$ |
| DG Appointed Panel | -0.119 | 0.019 |
|  | (0.106) | (0.187) |
| GATT I | 0.078 | -0.034 |
|  | (0.140) | (0.245) |
| GATT II | -0.197 | -0.158 |
|  | (0.140) | (0.242) |
| GATT III | 0.191 | 0.502* |
|  | (0.145) | (0.252) |
| ADA | 0.079 | 0.144 |
|  | (0.121) | (0.206) |

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Table OA4 - continued from previous page

|  | Unique Citations | Panel Citations |
| :---: | :---: | :---: |
| Safeguards | 0.202 | -0.334 |
|  | $(0.193)$ | $(0.251)$ |
| SPS | 0.112 | -0.324 |
|  | (0.200) | (0.331) |
| SCM | -0.159 | 0.300 |
|  | (0.122) | (0.212) |
| Volume | -0.034 | 0.023 |
|  | (0.025) | (0.040) |
| CL Parties | 0.146* | 0.148 |
|  | (0.067) | (0.118) |
| DC vs. NDC | -0.010 | -0.098 |
|  | (0.099) | (0.178) |
| \# Words (Rest) | $-0.036^{* * *}$ | -0.027* |

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Table OA4 - continued from previous page

|  |  |  |
| :--- | :---: | :---: |
|  | Unique Citations | Panel Citations |
|  | $(0.008)$ | $(0.014)$ |
| LC ${ }^{*}$ CLC |  |  |
|  | 0.151 | 0.296 |
|  | $(0.190)$ | $(0.325)$ |
| LC * Chair Experience | $0.071^{*}$ | 0.038 |
|  | $(0.031)$ | $(0.053)$ |
| Constant |  |  |
|  | $-8.874^{* * *}$ | $-7.261^{* * *}$ |
|  | $(0.370)$ | $(0.475)$ |
| Year Fixed Effects |  |  |
| Observations | $\checkmark$ |  |
| Pseudo-R ${ }^{2}$ | 170 | 170 |
| Log Likelihood | 0.405 | 0.297 |
| Akaike Inf. Crit. | -505 | -645 |
|  | 1,091 | 1,370 |
|  |  |  |
|  |  |  |

The output of a negative binomial regression of our preferred Model (3) with alternative
outcome measures. "Unique Citations" regresses the count of unique Appellate Body reports cited in a decision on the specified covariates. "Panel Citations" regresses the count of citations to regular panel decisions on the specified covariates. Standard errors in parentheses. AIC and Log-Likelihood estimates are averages across iterations. Volume in bio\$, words in units of 10,000.

Table OA5: Alternative Model Specifications

Dependent Variable:

Precedent Citation

|  | Poisson | Beta | $\neg$ Offset | $\neg$ Outliers |
| :--- | :--- | :--- | :--- | :--- |
| Lawyer Chair | $-0.762^{* * *}$ | $-0.468^{* * *}$ | $-0.604^{* * *}$ | $-0.548^{* *}$ |
|  | $(0.150)$ | $(0.182)$ | $(0.170)$ | $(0.168)$ |
| CL Chair |  |  |  |  |
|  | 0.079 | 0.157 | 0.088 | 0.103 |
|  | $(0.162)$ | $(0.142)$ | $(0.159)$ | $(0.152)$ |
| Chair Experience | $-0.094^{* * *}$ | $-0.054^{*}$ | $-0.080^{* *}$ | $-0.076^{*}$ |
|  | $(0.032)$ | $(0.026)$ | $(0.023)$ | $(0.030)$ |
| Lawyer-Panelists $=1$ | -0.128 | -0.112 | 0.088 | 0.083 |
|  | $(0.180)$ | $(0.152)$ | $(0.171)$ | $(0.165)$ |
|  |  |  |  |  |
| Lawyer-Panelists $=2$ | -0.034 | 0.072 | 0.214 | 0.160 |
|  | $(0.206)$ | $(0.172)$ | $(0.195)$ | $(0.188)$ |
| CL Panelists $=1$ | -0.015 | -0.077 | -0.124 | -0.084 |
|  | $(0.119)$ | $(0.117)$ | $(0.195)$ | $(0.131)$ |

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Table OA5 - continued from previous page

|  | Poisson | Beta | $\neg$ Offset | $\neg$ Outliers |
| :---: | :---: | :---: | :---: | :---: |
| CL Panelists $=2$ | $\begin{aligned} & 0.253 \\ & (0.185) \end{aligned}$ | $\begin{aligned} & 0.066 \\ & (0.228) \end{aligned}$ | $\begin{aligned} & 0.009 \\ & (0.251) \end{aligned}$ | $\begin{aligned} & 0.010 \\ & (0.247) \end{aligned}$ |
| DG Appointed Panel | $\begin{aligned} & -0.004 \\ & (0.147) \end{aligned}$ |  | $\begin{aligned} & 0.026 \\ & (0.138) \end{aligned}$ | 0.113 <br> (0.137) |
| GATT I | $\begin{aligned} & 0.367 \\ & (0.184) \end{aligned}$ | $-0.028$ <br> (0.171) | $\begin{aligned} & 0.242 \\ & (0.181) \end{aligned}$ | $\begin{aligned} & 0.269 \\ & (0.176) \end{aligned}$ |
| GATT II | $\begin{aligned} & -0.308 \\ & (0.201) \end{aligned}$ | $\begin{aligned} & -0.177 \\ & (0.162) \end{aligned}$ | $\begin{aligned} & -0.115 \\ & (0.175) \end{aligned}$ | $\begin{aligned} & -0.089 \\ & (0.176) \end{aligned}$ |
| GATT III | $\begin{aligned} & 0.376^{* * *} \\ & (0.170) \end{aligned}$ | $\begin{aligned} & 0.395^{*} \\ & (0.173) \end{aligned}$ | $\begin{aligned} & 0.471^{*} \\ & (0.187) \end{aligned}$ | $\begin{aligned} & 0.387^{*} \\ & (0.181) \end{aligned}$ |
| ADA | $\begin{aligned} & -0.005 \\ & (0.173) \end{aligned}$ | $\begin{aligned} & 0.101 \\ & (0.132) \end{aligned}$ | $\begin{aligned} & 0.115 \\ & (0.154) \end{aligned}$ | $\begin{aligned} & -0.027 \\ & (0.149) \end{aligned}$ |

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Table OA5 - continued from previous page

|  | Poisson | Beta | $\neg$ Offset | $\neg$ Outliers |
| :---: | :---: | :---: | :---: | :---: |
| Safeguards | $\begin{aligned} & 0.054 \\ & (0.245) \end{aligned}$ | $\begin{aligned} & 0.378 \\ & (0.224) \end{aligned}$ | $\begin{aligned} & 0.406 \\ & (0.248) \end{aligned}$ | $\begin{aligned} & 0.365 \\ & (0.245) \end{aligned}$ |
| SPS | $\begin{aligned} & 0.148 \\ & (0.238) \end{aligned}$ | $\begin{aligned} & 0.458^{*} \\ & (0.221) \end{aligned}$ | $\begin{aligned} & 0.309 \\ & (0.248) \end{aligned}$ | $\begin{aligned} & 0.260 \\ & (0.243) \end{aligned}$ |
| SCM | $-0.449$ <br> (0.140) | $-0.276$ <br> (0.141) | $\begin{aligned} & -0.410^{* *} \\ & (0.157) \end{aligned}$ | $\begin{aligned} & -0.434^{* *} \\ & (0.153) \end{aligned}$ |
| Volume | $\begin{aligned} & -0.101^{* *} \\ & (0.036) \end{aligned}$ | $\begin{aligned} & -0.072^{*} \\ & (0.021) \end{aligned}$ | $\begin{aligned} & -0.089^{* *} \\ & (0.030) \end{aligned}$ | $\begin{aligned} & -0.089^{* *} \\ & (0.031) \end{aligned}$ |
| CL Parties | $\begin{aligned} & 0.090 \\ & (0.086) \end{aligned}$ | $\begin{aligned} & 0.156^{*} \\ & (0.073) \end{aligned}$ | $\begin{aligned} & 0.189^{*} \\ & (0.087) \end{aligned}$ | $\begin{aligned} & 0.170^{*} \\ & (0.083) \end{aligned}$ |
| DC vs. NDC | $\begin{aligned} & 0.021 \\ & (0.110) \end{aligned}$ | $\begin{aligned} & -0.034 \\ & (0.112) \end{aligned}$ | $\begin{aligned} & -0.011 \\ & (0.127) \end{aligned}$ | $\begin{aligned} & -0.044 \\ & (0.124) \end{aligned}$ |
| Log(\# Words Findings) |  |  | $0.972^{* * *}$ |  |

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Table OA5 - continued from previous page

|  | Poisson | Beta | $\neg$ Offset | $\neg$ Outliers |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | (0.077) |  |
| \# Words (Rest) | $\begin{aligned} & -0.034^{* *} \\ & (0.011) \end{aligned}$ | $\begin{aligned} & -0.035^{* *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.029^{* *} \\ & (0.010) \end{aligned}$ | $\begin{aligned} & -0.031^{* *} \\ & (0.010) \end{aligned}$ |
| LC * CLC | $\begin{aligned} & 0.471^{*} \\ & (0.224) \end{aligned}$ | $\begin{aligned} & 0.157 \\ & (0.250) \end{aligned}$ | $\begin{aligned} & 0.337 \\ & (0.241) \end{aligned}$ | $\begin{aligned} & 0.306 \\ & (0.237) \end{aligned}$ |
| LC * Chair Experience | $\begin{aligned} & 0.120^{* *} \\ & (0.037) \end{aligned}$ | $\begin{aligned} & 0.073^{*} \\ & (0.034) \end{aligned}$ | $\begin{aligned} & 0.085^{*} \\ & (0.039) \end{aligned}$ | $\begin{aligned} & 0.088^{*} \\ & (0.039) \end{aligned}$ |
| Constant | $\begin{aligned} & -6.759^{* * *} \\ & (0.367) \end{aligned}$ | $\begin{aligned} & -6.930^{* * *} \\ & (0.387) \end{aligned}$ | $\begin{aligned} & -7.088^{* *} \\ & (0.727) \end{aligned}$ | $\begin{aligned} & -7.400^{* * *} \\ & (0.371) \end{aligned}$ |
| Year Fixed Effects | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |

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Table OA5 - continued from previous page

|  | Poisson | Beta | $\neg$ Offset | $\neg$ Outliers |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
| Observations | 170 | 170 | 170 | 170 |
| Pseudo-R |  |  | 0.516 | 0.448 |
| 0.754 | 0.413 |  |  |  |
| Log Likelihood | $-2,215$ | 942 | -783 | -781 |
| Akaike Inf. Crit. | 4,509 | $-1,805$ | $-1,641$ | 1,643 |

Note:
${ }^{*} \mathrm{p}<0.05 ;{ }^{* *} \mathrm{p}<0.01 ;{ }^{* * *} \mathrm{p}<0.001$

Alternative parametric assumptions for the full model. Multiple-imputation with subsequent nearest-neighbor matching and regression analysis. AIC and Log-Likelihood estimates are averages across iterations. Volume in bio\$, words in units of 10,000.

Precedent Citation

|  | Minimal | Panel | Dispute | Party |
| :---: | :---: | :---: | :---: | :---: |
| Lawyer Chair | $\begin{aligned} & -0.275^{*} \\ & (0.113) \end{aligned}$ | $\begin{aligned} & -0.280^{*} \\ & (0.114) \end{aligned}$ | $\begin{aligned} & -0.269^{*} \\ & (0.109) \end{aligned}$ | $-0.291^{*}$ <br> (0.114) |
| CL Chair |  | $\begin{aligned} & 0.201 \\ & (0.123) \end{aligned}$ |  |  |
| Chair Experience |  | $\begin{aligned} & -0.015 \\ & (0.021) \end{aligned}$ |  |  |
| Lawyer-Panelists $=1$ |  | $\begin{aligned} & 0.032 \\ & (0.175) \end{aligned}$ |  |  |
| Lawyer-Panelists $=2$ |  | $\begin{aligned} & -0.064 \\ & (0.192) \end{aligned}$ |  |  |
| CL Panelists $=1$ |  | $\begin{aligned} & -0.035 \\ & (0.129) \end{aligned}$ |  |  |

Continued on next page

Table OA6 - continued from previous page

|  | Minimal | Panel | Dispute | Party |
| :---: | :---: | :---: | :---: | :---: |
| CL Panelists $=2$ |  | -0.094 |  |  |
|  |  | (0.246) |  |  |
| DG Appointed Panel |  | -0.090 |  |  |
|  |  | (0.126) |  |  |
| GATT I |  |  | 0.233 |  |
|  |  |  | (0.178) |  |
| GATT II |  |  | -0.198 |  |
|  |  |  | (0.173) |  |
| GATT III |  |  | 0.315 |  |
|  |  |  | (0.175) |  |
| ADA |  |  | 0.161 |  |
|  |  |  | (0.146) |  |
| Safeguards |  |  | 0.291 |  |
|  | Continu | on next |  |  |

Table OA6 - continued from previous page

|  | Minimal | Panel | Dispute | Party |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | (0.246) |  |
| SPS |  |  | $\begin{aligned} & 0.322 \\ & (0.228) \end{aligned}$ |  |
| SCM |  |  | $\begin{aligned} & -0.441^{* *} \\ & (0.156) \end{aligned}$ |  |
| CL Parties |  |  |  | $\begin{aligned} & 0.056 \\ & (0.087) \end{aligned}$ |
| DC vs. NDC |  |  |  | -0.001 <br> (0.123) |
| \# Words (Rest) | $\begin{aligned} & -0.025^{* *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.023^{*} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.034^{* * *} \\ & (0.009) \end{aligned}$ | $\begin{aligned} & -0.025^{* *} \\ & (0.009) \end{aligned}$ |
| Constant | $\begin{aligned} & -6.973^{* * *} \\ & (0.291) \end{aligned}$ | $\begin{aligned} & -7.160^{* * *} \\ & (0.354) \end{aligned}$ | $\begin{aligned} & -7.186^{* * *} \\ & (0.302) \end{aligned}$ | $\begin{aligned} & -7.004^{* * *} \\ & (0.300) \end{aligned}$ |

Continued on next page

Table OA6 - continued from previous page

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Minimal | Panel | Dispute | Party |
| Year Fixed Effects | $\checkmark$ |  |  |  |

Table OA7: Regression of Reversal Rate on Citation Frequency

Dependent Variable:

|  | Dependent Variable: |  |
| :--- | :---: | :---: |
|  | Reversal Rate |  |
|  | Model (5) | Model (6) |
| Precedent | $-0.210^{*}$ | $-0.437^{* *}$ |
|  | $(0.094)$ | $(0.152)$ |
| Lawyer Chair | 0.114 | -0.686 |
|  | $(0.327)$ | $(0.407)$ |
| CL Chair | $0.114^{*}$ | 0.006 |
|  | $(0.057)$ | $(0.075)$ |
| Chair Experience | 0.544 | 0.449 |
| Lawyer-Panelists $=2$ | $(0.296)$ | $(0.254)$ |
|  | $(0.358)$ | $(0.333)$ |
|  |  |  |

Continued on next page

Table OA7 - continued from previous page

|  | Model (5) | Model (6) |
| :--- | :---: | :---: |
|  |  |  |
| CL Panelists $=1$ | -0.058 | 0.118 |
|  | $(0.238)$ | $(0.216)$ |
| CL Panelists = 2 |  |  |
|  | -1.009 | -0.655 |
| DG Appointed Panel | $(0.567)$ | $(0.508)$ |
| GATT I | -0.283 | -0.080 |
|  | $(0.256)$ | $(0.240)$ |
| GATT III | 0.297 | 0.220 |
|  | $(0.321)$ | $(0.282)$ |
|  |  |  |

Continued on next page

Table OA7 - continued from previous page

|  | Model (5) | Model (6) |
| :--- | :---: | :---: |
| ADA | 0.273 | 0.267 |
|  | $(0.291)$ | $(0.265)$ |
| Safeguards |  |  |
|  | $(0.430)$ | $(0.382)$ |
| SPS |  |  |
|  | -0.006 | 0.001 |
|  | $(0.485)$ | $(0.431)$ |
| SCM |  |  |
|  | $-1.042^{* *}$ | $-1.192^{* * *}$ |
|  | $(0.327)$ | $(0.296)$ |
| Volume |  |  |
| DS varties NDC | -0.030 | -0.035 |
|  | $(0.056)$ | $(0.050)$ |
|  |  |  |

Continued on next page

Table OA7 - continued from previous page

|  | Model (5) | Model (6) |
| :---: | :---: | :---: |
|  | (0.245) | (0.218) |
| \# Words (Rest) | $\begin{gathered} 0.016 \\ (0.018) \end{gathered}$ | $\begin{gathered} 0.013 \\ (0.016) \end{gathered}$ |
| LC ${ }^{*} \mathrm{CLC}$ | $\begin{aligned} & -0.693 \\ & (0.473) \end{aligned}$ | $\begin{aligned} & -0.759 \\ & (0.411) \end{aligned}$ |
| LC*Experience | $\begin{gathered} -0.202^{*} \\ (0.082) \end{gathered}$ | $\begin{gathered} 0.195 \\ (0.111) \end{gathered}$ |
| Precedent ${ }^{*}$ LC |  | $\begin{aligned} & 0.639^{* *} \\ & (0.200) \end{aligned}$ |
| Precedent*Experience |  | $\begin{aligned} & 0.106^{*} \\ & (0.048) \end{aligned}$ |
| Precedent ${ }^{\star}$ LC ${ }^{\star}$ Experience |  | $\begin{gathered} -0.277^{* * *} \\ (0.067) \end{gathered}$ |

Continued on next page

Table OA7 - continued from previous page

|  | Model (5) | Model (6) |
| :--- | :---: | :---: |
|  |  |  |
| Constant | -0.646 | -0.324 |
|  | $(0.746)$ | $(0.695)$ |
| Year Fixed Effects |  |  |
| Observations | $\checkmark$ | $\checkmark$ |
| Pseudo-R ${ }^{2}$ | 108 | 108 |
| Log Likelihood | 0.445 | 0.561 |
| Akaike Inf. Crit. | -187 | -176 |
|  | 450 | 435 |
| Note: | ${ }^{*} \mathrm{p}<0.05 ;{ }^{* *} \mathrm{p}<0.01 ;{ }^{* * *} \mathrm{p}<0.001$ |  |

The output of a negative binomial regression of reversal rates on precedent citation frequencies. Model (5) adds a three-way interaction of citation frequency, the indicator for whether the chair is a lawyer and the chair's experience. Standard errors in parentheses. AIC and Log-Likelihood estimates are averages across iterations. Volume in bio\$, words in units of 10,000.

Table OA8: Robustness Test for Reversal Analysis

Dependent Variable:
$\qquad$

Reversal Rate

|  | Poisson | $\neg$ Offset |
| :--- | :---: | :---: |
| Precedent | $-0.447^{*}$ | $-0.399^{* *}$ |
|  | $(0.208)$ | $(0.147)$ |
| Lawyer Chair |  |  |
|  | -0.731 | $-0.770^{+}$ |
| Chair Experience | $(0.494)$ | $(0.394)$ |
| Chair System | 0.008 | 0.006 |
|  | $(0.088)$ | $(0.073)$ |
| Lawyer-Panelists $=1$ | $0.449^{+}$ | $0.480^{*}$ |
|  | $(0.258)$ | $(0.242)$ |
| Lawyer-Panelists = 2 | -0.246 | $(0.313)$ |
|  | 0.096 | $(0.404)$ |

Continued on next page

Table OA8 - continued from previous page

|  | Poisson | $\neg$ Offset |
| :---: | :---: | :---: |
| CL Panelists = 1 | 0.125 | 0.093 |
|  | (0.258) | (0.210) |
| CL Panelists $=2$ | -0.665 | -0.649 |
|  | (0.438) | (0.484) |
| DG Appointed Panel | -0.049 | -0.037 |
|  | (0.256) | (0.229) |
| GATT I | 0.236 | 0.344 |
|  | (0.278) | (0.276) |
| GATT II | -0.279 | -0.324 |
|  | (0.316) | (0.296) |
| GATT III | -0.618 | -0.555 ${ }^{+}$ |
|  | (0.379) | (0.325) |

Continued on next page

Table OA8 - continued from previous page

|  | Poisson | $\neg$ Offset |
| :---: | :---: | :---: |
| ADA | 0.264 | 0.386 |
|  | (0.264) | (0.265) |
| Safeguards | 0.070 | 0.167 |
|  | (0.399) | (0.373) |
| SPS | 0.0004 | 0.130 |
|  | (0.423) | (0.419) |
| SCM | $-1.206^{* * *}$ | $-1.118^{* * *}$ |
|  | (0.340) | (0.286) |
| Volume | -0.039 | -0.020 |
|  | (0.064) | (0.048) |
| CL Parties | $0.622^{* * *}$ | $0.533^{* * *}$ |
|  | (0.175) | (0.155) |
| DS vs. NDC | -0.362 | -0.271 |

Continued on next page

Table OA8 - continued from previous page

|  | Poisson | $\neg$ Offset |
| :---: | :---: | :---: |
|  | (0.198) | (0.213) |
| \# Words (Rest) | $\begin{gathered} 0.015 \\ (0.016) \end{gathered}$ | $\begin{gathered} 0.018 \\ (0.016) \end{gathered}$ |
| Log(\# Claims) |  | $\begin{aligned} & 0.730^{* * *} \\ & (0.154) \end{aligned}$ |
| LC*Experience | $\begin{aligned} & 0.216^{*} \\ & (0.105) \end{aligned}$ | $\begin{aligned} & 0.198^{+} \\ & (0.108) \end{aligned}$ |
| LC ${ }^{*} \mathrm{CLC}$ | $\begin{gathered} -0.896^{+} \\ (0.493) \end{gathered}$ | $\begin{aligned} & -0.800^{*} \\ & (0.394) \end{aligned}$ |
| Precedent ${ }^{*}$ LC | $\begin{aligned} & 0.681^{* *} \\ & (0.249) \end{aligned}$ | $\begin{aligned} & 0.629^{* * *} \\ & (0.191) \end{aligned}$ |
| Precedent*Experience | $\begin{aligned} & 0.110^{+} \\ & (0.057) \end{aligned}$ | $\begin{aligned} & 0.090^{+} \\ & (0.047) \end{aligned}$ |

Continued on next page

Table OA8 - continued from previous page

|  |  |  |
| :--- | :---: | :---: |
|  | Poisson | $\neg$ Offset |
|  |  |  |
| Precedent ${ }^{*}$ C $^{*}$ Experience | $-0.285^{* * *}$ | $-0.245^{* * *}$ |
|  | $(0.061)$ | $(0.067)$ |
| Constant |  |  |
|  | -0.386 | -0.195 |
|  | $(0.836)$ | $(0.676)$ |
| Year Fixed Effects | $\checkmark$ |  |
| Observations | 108 | 108 |
| Pseudo-R ${ }^{2}$ | 0.589 | 0.637 |
| Log Likelihood | -178 | -176 |
| Akaike Inf. Crit. | 437 | 437 |
| Note: |  |  |

Alternative parametric assumptions for the full model estimating the association between precedent usage and reversal rates. Missing values are imputed 100 times and results. AIC and Log-Likelihood estimates are averages across iterations. Volume in bio\$, words in units of 10,000.

Table OA9: Sensitivity Analysis for Reversal Rates

|  | Dependent Variable: |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Reversal Rate |  |  |  |
|  | Minimal | Panel | Dispute | Party |
| Precedent | -0.223 | -0.220 | -0.378* | -0.293 ${ }^{+}$ |
|  | (0.160) | (0.166) | (0.163) | (0.156) |
| Lawyer Chair | -0.375 |  | $-0.762^{+}$ | -0.481 |
|  | (0.399) | (0.453) | (0.428) | $(0.390)$ |
| Chair Experience | -0.010 | -0.0003 | -0.018 | -0.011 |
|  | (0.085) | (0.089) | (0.083) | (0.081) |
| CL Chair |  | 0.359 |  |  |
|  |  | (0.281) |  |  |
| Lawyer-Panelists = 1 |  | -0.473 |  |  |
|  |  | (0.294) |  |  |
| Lawyer-Panelists $=2$ |  | -0.238 |  |  |
|  |  | (0.320) |  |  |

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Table OA9 - continued from previous page


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Table OA9 - continued from previous page

|  | Minimal | Panel | Dispute | Party |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | (0.254) |  |
| Safeguards |  |  | $\begin{aligned} & -0.167 \\ & (0.370) \end{aligned}$ |  |
| SPS |  |  | $\begin{aligned} & -0.097 \\ & (0.457) \end{aligned}$ |  |
| SCM |  |  | $\begin{aligned} & -0.841^{* *} \\ & (0.299) \end{aligned}$ |  |
| CL Parties |  |  |  | $\begin{aligned} & 0.444^{* *} \\ & (0.156) \end{aligned}$ |
| DC vs. NDC |  |  |  | $\begin{aligned} & -0.345^{+} \\ & (0.200) \end{aligned}$ |
| \# Words (Rest) |  | $\begin{aligned} & 0.004 \\ & (0.016) \end{aligned}$ | $\begin{aligned} & 0.016 \\ & (0.016) \end{aligned}$ | $\begin{aligned} & -0.0001 \\ & (0.014) \end{aligned}$ |

Table OA9 - continued from previous page

|  | Minimal | Panel | Dispute | Party |
| :---: | :---: | :---: | :---: | :---: |
| LC*Experience | $\begin{aligned} & 0.103 \\ & (0.121) \end{aligned}$ | $\begin{aligned} & 0.077 \\ & (0.132) \end{aligned}$ | $\begin{aligned} & 0.155 \\ & (0.117) \end{aligned}$ | $\begin{aligned} & 0.081 \\ & (0.114) \end{aligned}$ |
| LC* ${ }^{*} \mathrm{CLC}$ |  | $\begin{aligned} & -0.165 \\ & (0.477) \end{aligned}$ |  |  |
| Precedent ${ }^{*}$ LC | $\begin{aligned} & 0.413^{+} \\ & (0.227) \end{aligned}$ | $\begin{aligned} & 0.458^{*} \\ & (0.234) \end{aligned}$ | $\begin{aligned} & 0.598^{*} \\ & (0.233) \end{aligned}$ | $\begin{aligned} & 0.473^{*} \\ & (0.219) \end{aligned}$ |
| Precedent ${ }^{*}$ Experience | $\begin{aligned} & 0.079 \\ & (0.053) \end{aligned}$ | $\begin{aligned} & 0.060 \\ & (0.057) \end{aligned}$ |  | $\begin{aligned} & 0.095^{+} \\ & (0.051) \end{aligned}$ |
| Precedent ${ }^{\star}$ LC*Experience | $\begin{aligned} & -0.212^{* *} \\ & (0.076) \end{aligned}$ | $\begin{aligned} & -0.203^{* *} \\ & (0.079) \end{aligned}$ | $\begin{aligned} & -0.264^{* * *} \\ & (0.075) \end{aligned}$ | $\begin{aligned} & -0.217^{* *} \\ & (0.071) \end{aligned}$ |
| Constant | $\begin{aligned} & -0.468 \\ & (0.514) \end{aligned}$ | -0.199 <br> (0.655) | $-0.121$ <br> (0.570) | $-0.510$ <br> (0.524) |
| Year Fixed Effects | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |

Continued on next page

Table OA9 - continued from previous page

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Minimal | Panel | Dispute | Party |
| Observations | 108 | 108 | 108 | 108 |
| Pseudo-R ${ }^{2}$ | 0.295 | 0.350 | 0.382 | 0.370 |
| Log Likelihood | -200 | -196 | -194 | -195 |
| Akaike Inf. Crit. | 445 | 452 | 448 | 439 |

Note:
${ }^{+} \mathrm{p}<0.1 ;{ }^{*} \mathrm{p}<0.05 ;{ }^{* *} \mathrm{p}<0.01 ;{ }^{* * *} \mathrm{p}<0.001$

The output of a negative binomial regression. Each model adds a different set of controls (minimum, panel characteristics, dispute characteristics, party characteristics) in order to investigate how the coefficient on Precedent changes with inclusion. Standard errors in parentheses. Volume in bio\$, words in units of 10,000.

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