## Opening the Black Box on Intl Aid Data Section

Jack Hasler

August 3, 2018

So this is the document for preparing and presenting results. Moving things over from various other files. The goal of this is to be a working document that can eventually become an appendix to the paper. We'll pull our main models from here and keep the others as robustness checks.

Importing the libraries that we'll need for all of the following projects.

Gonna break this into three big sections for now. (1) Analysis by Recipient (target?) country, (2) Analysis by donor-recipient dyad, and (3) Subnational analysis. If there are not some descriptive statistics in every section, there should be!

## Analysis by Recipient-Year

## Analysis by Dyad-Year

Here are some descriptive statistics on the recipient-year data. "`{, message = FALSE, results='asis'} crs\_by\_types $RecipientName < -ifelse(crs_by_typesRecipientCode==247,$ "Cote d Ivoire",crs\_by\_types\$RecipientName)

crs\_by\_types <- crs\_by\_types %>% filter(round(total\_disbursement) != 0) %>% filter(Year>2003)

tmp <- crs\_by\_types %>% select(Year,RecipientName,DonorName,total\_disbursement,gov\_d\_percent,gov\_r\_percent,gov\_3 %>% unique() %>% group\_by(Year) %>% mutate( sum\_total = sum(total\_disbursement, na.rm = TRUE), mean\_gov\_d = mean(gov\_d\_percent, na.rm = TRUE), mean\_gov\_r = mean(gov\_r\_percent, na.rm = TRUE), mean\_gov\_3 = mean(gov\_3\_percent, na.rm = TRUE), mean\_gov\_o = mean(gov\_o\_percent, na.rm = TRUE), mean\_corp = mean(corp\_percent, na.rm = TRUE), mean\_ngo = mean(ngo\_percent, na.rm = TRUE), mean\_igo = mean(igo\_percent, na.rm = TRUE), mean\_other = mean(other\_percent, na.rm = TRUE)) %>% select(Year, sum\_total, mean\_disbursement, mean\_gov\_d, mean\_gov\_r, mean\_gov\_3, mean\_gov\_o, mean\_corp, mean\_igo, mean\_ngo, mean\_other) %>% unique()

stargazer(as.data.frame(tmp), digits = 2, type = 'latex', summary = FALSE, title = "Dyadic Summary Statistics By Year")

tmp <- crs\_by\_types %>% select(Year,RecipientName,DonorName,total\_disbursement,gov\_d\_percent,gov\_r\_percent,gov\_3 %>% unique() %>% group\_by(RecipientName,DonorName) %>% mutate( sum\_total = sum(total\_disbursement, na.rm = TRUE), mean\_gov\_d = mean(gov\_d\_percent, na.rm = TRUE), mean\_gov\_r = mean(gov\_r\_percent, na.rm = TRUE), mean\_gov\_o = mean(gov\_o\_percent, na.rm = TRUE), mean\_gov\_o = mean(gov\_o\_percent, na.rm = TRUE), mean\_gov\_o = mean(ngo\_percent, na.rm = TRUE), mean\_igo = mean(ngo\_percent, na.rm = TRUE), mean\_igo = mean(ngo\_percent, na.rm = TRUE), mean\_igo = mean(igo\_percent, na.rm = TRUE), mean\_other = mean(other\_percent, na.rm = TRUE)) %>% select(RecipientName,DonorName, sum\_total, mean\_disbursement, mean\_gov\_d, mean\_gov\_r, mean\_gov\_3, mean\_gov\_o, mean\_corp, mean\_igo, mean\_ngo, mean\_other) %>% unique() stargazer(as.data.frame(tmp),digits = 2, font.size = 'small', type = 'latex', summary = FALSE, title = 'Summary Statistics by Dyad')

"

<sup>%</sup> Table created by stargazer v.5.2.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu % Date and time: Tue, Aug 14, 2018 - 1:09:33 PM % Requires LaTeX packages: rotating

Table 1: Dyadic Year: VDEM Polyarchy

|   |  |  | $Dependent\ variable:$                                 |  |   |
|---|--|--|--|--|---|
|   | Base   | Controls   | Gov Together   | Base RE  | Controls RE   |
| Donor Gov   | 0.056*** (0.017)                                       | $0.036^{**}$ (0.018)   |  | 0.059*** (0.018)   | $0.033^*$ $(0.018)$   |
| Recip Gov   | -0.014 (0.020)   | -0.018 (0.020)   |  | -0.011 (0.020)   | -0.018 (0.020)  |
| Third Gov   | 0.038 (0.034)  | 0.037 (0.034)  |  | 0.032 $(0.034)$  | 0.034 (0.034)   |
| Other Gov   | $0.061^{***}$ (0.013)                                  | $0.071^{***}$ (0.014)  |  | 0.063*** (0.013)   | $0.084^{***}$ (0.014)   |
| All Gov   |  |  | 0.056*** (0.012)                                       |  |   |
| NGO   | 0.098*** (0.017)                                       | 0.048*** (0.018)   | $0.041^{**}$ (0.018)                                   | $0.094^{***}$ (0.017)  | 0.047*** (0.018)  |
| ODI   | 0.003 $(0.017)$  | -0.005 (0.017)   | -0.004 (0.017)   | -0.005 (0.017)   | -0.009 (0.017)  |
| Corporation   | 0.066 $(0.165)$  | 0.052 $(0.165)$  | 0.042 $(0.164)$  | 0.058 $(0.165)$  | 0.066 (0.166)   |
| Other   | 0.067*** (0.018)                                       | 0.076*** (0.018)   | 0.073*** (0.018)                                       | 0.064*** (0.018)   | $0.075^{***}$ (0.018)   |
| $\log(\mathrm{GDP})$  |  | $0.320^{***}$ (0.029)  | $0.315^{***}$ (0.029)                                  |  | $0.228^{***}$ (0.022)   |
| $\operatorname{Urban}$  |  | $-0.010^{**}$ (0.005)  | $-0.011^{**}$ (0.005)                                  |  | 0.016*** (0.002)  |
| $\log({ m Population})$   |  | $-0.266^*$ (0.137)   | $-0.326^{**}$ (0.136)                                  |  | $-0.152^{***}$ (0.024)  |
| Constant  |  |  |  | $4.605^{***}$ (0.042)  | 4.595***<br>(0.400)   |
| Observations R <sup>2</sup> Adjusted R <sup>2</sup> F Statistic | 14,098<br>0.008<br>-0.188<br>12.510*** (df = 8; 11768) | $13,874 \\ 0.022 \\ -0.174 \\ 23.513^{***} \text{ (df = 11; 11563)}$ | 13,874<br>0.021<br>-0.174<br>31.347*** (df = 8; 11566) | $   \begin{array}{c}     14,098 \\     0.068 \\     0.067 \\     127.551^{***} \text{ (df = 8; 14089)}   \end{array} $ | $13,874 \\ 0.101 \\ 0.100 \\ 139.137^{***} \text{ (df} = 11; 13862)}$ |
| Note:   |  |  |  |  | $^*$ p<0.1; $^{**}$ p<0.05; $^{***}$ p<0.01                           |

- % Table created by stargazer v.5.2.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
- % Date and time: Tue, Aug 14, 2018 1:09:50 PM % Requires LaTeX packages: rotating
- % Table created by stargazer v.5.2.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
- % Date and time: Tue, Aug 14, 2018 1:10:08 PM % Requires LaTeX packages: rotating
- % Table created by stargazer v.5.2.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
- % Date and time: Tue, Aug 14, 2018 1:10:25 PM % Requires LaTeX packages: rotating
- % Table created by stargazer v.5.2.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
- % Date and time: Tue, Aug 14, 2018 1:10:43 PM % Requires LaTeX packages: rotating
- % Table created by stargazer v.5.2.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
- % Date and time: Tue, Aug 14, 2018 1:11:01 PM % Requires LaTeX packages: rotating

## **Subnational Stuff**

Table 2: Dyadic Year: VDEM LibDem

|   |  |  | Dependent variable:   |   |  |
|---|--|--|---|---|--|
|   | Base   | Controls   | Gov Together  | Base RE   | Controls RE  |
| Donor Gov   | $0.050^{***}$ (0.014)  | $0.039^{***}$ (0.015)  |   | $0.051^{***}$ (0.015)                                 | 0.033**  |
| Recip Gov   | 0.004 (0.016)  | 0.002 $(0.016)$  |   | 0.007   | 0.001 (0.017)  |
| Third Gov   | 0.027  | 0.022 (0.028)  |   | 0.022 (0.028)   | 0.021 (0.029)  |
| Other Gov   | $0.050^{***}$ (0.011)  | $0.054^{***}$ $(0.011)$  |   | $0.051^{***}$ (0.011)                                 | 0.065*** (0.011)                                       |
| All Gov   |  |  | $0.053^{***}$ (0.010)                                       |   |  |
| NGO   | 0.063*** (0.014)   | $0.034^{**}$ $(0.015)$   | $0.030^{**}$ (0.015)  | $0.060^{***}$ (0.014)                                 | $0.025* \\ (0.015)$                                    |
| IGO   | 0.029** (0.014)  | $0.025^*$ $(0.014)$  | $0.025* \\ (0.014)$   | 0.023* $(0.014)$                                      | 0.020 $(0.014)$  |
| Corporation   | 0.097  | 0.084 $(0.137)$  | 0.086 (0.137)   | 0.091 (0.137)   | 0.098 (0.138)  |
| Other   | $0.042^{***}$ (0.015)  | $0.046^{***}$ (0.015)  | 0.045*** (0.015)  | $0.040^{***}$ (0.015)                                 | 0.047*** (0.015)                                       |
| $\log(\mathrm{GDP})$  |  | $0.207^{***}$ (0.024)  | 0.203*** (0.024)  |   | 0.167*** (0.019)                                       |
| Urban   |  | $-0.016^{***}$ (0.004)   | $-0.016^{***}$ (0.004)                                      |   | 0.014*** (0.002)                                       |
| log(Population)   |  | -0.082 (0.114)   | -0.109 (0.113)  |   | $-0.174^{***}$ (0.022)                                 |
| Constant  |  |  |   | 3.206*** (0.040)                                      | 4.117***<br>(0.374)                                    |
| Observations R <sup>2</sup> Adjusted R <sup>2</sup> F Statistic | $   \begin{array}{c}     14,098 \\     0.008 \\     -0.189 \\     11.442^{***} \text{ (df = 8; 11768)}   \end{array} $ | $13,874 \\ 0.015 \\ -0.181 \\ 16.323^{***} \text{ (df = 11; 11563)}$ | $13,874 \\ 0.015 \\ -0.181 \\ 22.699^{***} (df = 8; 11566)$ | 14,098<br>0.040<br>0.039<br>72.608*** (df = 8; 14089) | 13,874<br>0.066<br>0.066<br>88.395*** (df = 11; 13862) |
| Note:   |  |  |   |   | *p<0.1; **p<0.05; ***p<0.01                            |

Table 3: Dyadic Year: VDEM PartipDem

|   |  |   | $Dependent\ variable:$  |  |   |
|---|--|---|---|--|---|
|   | Base   | Controls  | Gov Together  | Base RE                                      | Controls RE   |
| Donor Gov   | $0.035^{***}$ (0.010)  | $0.022^{**}$ (0.010)  |   | $0.036^{***}$ (0.010)                        | 0.019*<br>(0.010)                                       |
| Recip Gov   | -0.014 (0.011)   | -0.017 (0.011)  |   | -0.013 (0.011)                               | $-0.019^*$ (0.011)                                      |
| Third Gov   | 0.027 $(0.019)$  | 0.022 $(0.020)$   |   | 0.025 $(0.019)$                              | 0.022 $(0.020)$   |
| Other Gov   | $0.031^{***}$ (0.008)  | 0.038*** (0.008)  |   | $0.032^{***}$ (0.008)                        | 0.045***  |
| All Gov   |  |   | 0.030***  |  |   |
| ODN   | 0.067*** (0.010)   | 0.033*** (0.010)  | $0.029^{***}$ (0.010)   | 0.066***                                     | $0.031^{***}$ (0.010)                                   |
| IGO   | 0.003 (0.010)  | -0.002 (0.010)  | -0.002 (0.010)  | -0.001 (0.010)                               | -0.005 (0.010)  |
| Corporation   | 0.033 $(0.094)$  | 0.023 $(0.094)$   | 0.015 $(0.094)$   | 0.031 (0.095)                                | 0.037 (0.095)   |
| Other   | $0.034^{***}$ (0.010)  | 0.038*** (0.011)  | 0.037*** (0.010)  | $0.032^{***}$ (0.010)                        | 0.038*** (0.011)  |
| $\log(\mathrm{GDP})$  |  | $0.196^{***}$ (0.017)   | $0.193^{***}$ (0.017)   |  | $0.142^{***}$ (0.013)                                   |
| Urban   |  | $-0.010^{***}$ (0.003)  | $-0.011^{***}$ (0.003)  |  | 0.013*** (0.001)  |
| log(Population)   |  | -0.030<br>(0.078)   | -0.064 (0.078)  |  | $-0.076^{**}$ (0.017)                                   |
| Constant  |  |   |   | $2.744^{***}$ $(0.032)$                      | 2.299***<br>(0.284)                                     |
| Observations R <sup>2</sup> Adjusted R <sup>2</sup> F Statistic | $   \begin{array}{c}     14,098 \\     0.010 \\     -0.186 \\     14.414^{***} \text{ (df = 8; 11768)}   \end{array} $ | $   \begin{array}{c}     13,874 \\     0.026 \\     -0.169 \\     27.531^{***} \text{ (df} = 11; 11563)   \end{array} $ | $13,874 \\ 0.025 \\ -0.170 \\ 36.654^{***} \text{ (df = 8; 11566)}$ | 14,098 0.045 0.045 82.802*** (df = 8; 14089) | $13,874 \\ 0.079 \\ 0.078 \\ 0.078 \\ (df = 11; 13862)$ |
| Note:   |  |   |   |  | *p<0.1; **p<0.05; ***p<0.01                             |

Table 4: Dyadic Year: Polity

|   |   |   | Dependent variable:   |  |   |
|---|---|---|---|--|---|
|   | Base  | Controls  | Gov Together  | Base RE  | Controls RE   |
| Donor Gov   | $0.090^{**}$ (0.045)  | 0.031 $(0.045)$   |   | $0.092^{**}$ $(0.045)$                                     | 0.038 (0.045)   |
| Recip Gov   | 0.075 $(0.051)$   | 0.035 $(0.050)$   |   | 0.083 (0.051)  | 0.058 (0.050)   |
| Third Gov   | 0.139 (0.087)   | 0.068 (0.087)   |   | 0.127<br>(0.087)   | 0.084 (0.088)   |
| Other Gov   | 0.052 $(0.035)$   | $0.105^{***}$ (0.036)   |   | 0.058 (0.035)  | $0.104^{***}$ (0.035)                                       |
| All Gov   |   |   | 0.095***  |  |   |
| NGO   | $0.355^{***}$ $(0.045)$   | $0.224^{***}$ (0.046)   | 0.212*** (0.046)  | 0.352*** (0.045)   | $0.255^{***}$ (0.046)                                       |
| ODI   | $0.173^{***}$ $(0.047)$   | $0.146^{***}$ (0.047)   | 0.148*** (0.047)  | $0.159^{***}$ (0.047)                                      | $0.150^{***}$ (0.047)                                       |
| Corporation   | 0.031 $(0.416)$   | 0.028 (0.411)   | 0.018 $(0.410)$   | -0.008 (0.416)   | 0.020 (0.412)   |
| Other   | $0.180^{***}$ (0.049)   | $0.195^{***}$ (0.049)   | $0.192^{***}$ (0.049)                                       | 0.177*** (0.049)   | $0.191^{***}$ (0.049)                                       |
| $\log(\mathrm{GDP})$  |   | $0.529^{***}$ $(0.076)$   | 0.519*** (0.076)  |  | 0.547*** (0.060)  |
| Urban   |   | $-0.036^{***}$ (0.013)  | $-0.037^{***}$ (0.013)                                      |  | 0.023*** (0.006)  |
| $\log({ m Population})$   |   | $1.641^{***}$ $(0.347)$   | $1.585^{***}$ (0.344)                                       |  | $-0.331^{***}$ (0.071)                                      |
| Constant  |   |   |   | $2.765^{***}$ $(0.117)$                                    | 3.055***<br>(1.180)   |
| Observations R <sup>2</sup> Adjusted R <sup>2</sup> F Statistic | $13,186 \\ 0.013 \\ -0.188 \\ 18.527^{***} \text{ (df = 8; 10952)}$ | $   \begin{array}{c}     12,980 \\     0.026 \\     -0.174 \\     26.525^{***} \text{ (df} = 11; 10764)   \end{array} $ | $12,980 \\ 0.026 \\ -0.174 \\ 36.491^{***} (df = 8; 10767)$ | $13,186 \\ 0.011 \\ 0.011 \\ 18.394^{***} (df = 8; 13177)$ | 12,980<br>0.027<br>0.026<br>$31.772^{***}$ (df = 11; 12968) |
| Note:   |   |   |   |  | *p<0.1; **p<0.05; ***p<0.01                                 |

Table 5: Dyadic Year: FH Rule of Law

|   |  |   | Dependent variable:   |   |   |
|---|--|---|---|---|---|
|   | Base   | Controls  | Gov Together  | Base RE   | Controls RE   |
| Donor Gov   | -0.032 (0.022)   | 0.027 $(0.022)$   |   | -0.031 (0.022)  | -0.003 $(0.022)$  |
| Recip Gov   | -0.039 $(0.025)$                                       | -0.005 (0.024)  |   | -0.033 (0.025)  | -0.021 (0.025)  |
| Third Gov   | -0.060 $(0.043)$                                       | -0.037 (0.042)  |   | -0.064 (0.043)  | -0.050 $(0.043)$  |
| Other Gov   | $0.117^{***}$ $(0.017)$                                | $0.053^{***}$ $(0.017)$   |   | $0.120^{***}$ $(0.017)$   | $0.096^{***}$ (0.017)                                   |
| All Gov   |  |   | $0.035^{**}$ $(0.015)$  |   |   |
| NGO   | $-0.143^{***}$ (0.022)                                 | -0.036 (0.023)  | $-0.040^*$ (0.023)  | $-0.149^{***}$ (0.022)  | $-0.072^{***}$ (0.023)                                  |
| 160   | $-0.092^{***}$ (0.022)                                 | $-0.064^{***}$ (0.021)  | $-0.065^{***}$ (0.021)  | -0.105*** (0.022)   | $-0.089^{***}$ (0.022)                                  |
| Corporation   | 0.141 $(0.207)$  | 0.101 $(0.202)$   | 0.087   | 0.132 $(0.208)$   | 0.144 (0.208)   |
| Other   | $0.064^{***}$ (0.024)                                  | 0.043* (0.024)  | 0.038 (0.023)   | $0.061^{**}$ (0.024)  | $0.050^{**}$ $(0.024)$                                  |
| $\log(\mathrm{GDP})$  |  | -0.022 (0.038)  | -0.028 (0.038)  |   | $-0.260^{***}$ (0.031)                                  |
| Urban   |  | -0.035*** (0.006)   | -0.036***<br>(0.006)  |   | 0.018*** (0.003)  |
| $\log(\text{Population})$                                       |  | $-2.379^{***}$ (0.175)  | $-2.433^{***}$ (0.173)  |   | -0.768***<br>(0.039)                                    |
| Constant  |  |   |   | 5.998*** (0.070)  | $19.688^{***}$ (0.639)                                  |
| Observations R <sup>2</sup> Adjusted R <sup>2</sup> F Statistic | 13,743<br>0.016<br>-0.184<br>22.637*** (df = 8; 11423) | $   \begin{array}{c}     13,522 \\     0.068 \\     -0.124 \\     73.983^{***} \text{ (df} = 11; 11220)   \end{array} $ | $   \begin{array}{c}     13,522 \\     0.067 \\     -0.124 \\     100.974^{***} \text{ (df = 8; 11223)}   \end{array} $ | $13,743 \\ 0.055 \\ 0.055 \\ 100.424^{***} \text{ (df = 8; 13734)}$ | 13,522<br>0.092<br>0.091<br>122.935*** (df = 11; 13510) |

 $^*$ p<0.1;  $^*$ p<0.05;  $^{***}$ p<0.01

Note:

Table 6: Dyadic Year: FH Status

|   |  |  | $Dependent\ variable:$  |   |   |
|---|--|--|---|---|---|
|   | Base   | Controls   | Gov Together  | Base RE   | Controls RE   |
| Donor Gov   | 0.018**  | 0.009  |   | $0.017^{**}$ $(0.007)$                                      | 0.017**<br>(0.007)  |
| Recip Gov   | -0.008<br>(0.008)  | $-0.016^{**}$ (0.008)  |   | -0.010 (0.008)  | -0.011 (0.008)  |
| Third Gov   | $0.037^{***}$ (0.014)  | $0.032^{**}$ (0.014)   |   | 0.039*** (0.014)  | 0.038*** (0.014)  |
| Other Gov   | $-0.026^{***}$ (0.005)   | $-0.016^{***}$ (0.006)   |   | $-0.028^{***}$ (0.005)                                      | $-0.029^{***}$ (0.006)  |
| All Gov   |  |  | -0.007 (0.005)  |   |   |
| NGO   | 0.011 (0.007)  | -0.003<br>(0.007)  | -0.001 (0.007)  | $0.012^*$ (0.007)   | 0.008 (0.007)   |
| IGO   | 0.019*** (0.007)   | $0.014^{**}$ (0.007)   | $0.014^{**}$ (0.007)  | $0.024^{***}$ (0.007)                                       | 0.023*** (0.007)  |
| Corporation   | 0.029 $(0.067)$  | 0.034 $(0.067)$  | 0.036 (0.067)   | 0.031 (0.067)   | 0.025 (0.068)   |
| Other   | 0.001 (0.007)  | 0.004 (0.007)  | 0.007   | 0.001 (0.007)   | 0.001 (0.007)   |
| $\log(\mathrm{GDP})$  |  | $-0.070^{***}$ (0.012)   | -0.068*** (0.012)   |   | 0.014 (0.009)   |
| Urban   |  | 0.003  | 0.003 (0.002)   |   | $-0.006^{***}$ (0.001)  |
| log(Population)   |  | 0.766*** (0.056)   | 0.789***  |   | 0.082*** (0.008)  |
| Constant  |  |  |   | 2.098*** (0.014)  | $0.916^{***}$ (0.144)   |
| Observations R <sup>2</sup> Adjusted R <sup>2</sup> F Statistic | $14,051 \\ 0.006 \\ -0.191 \\ 9.470^{***} \text{ (df = 8; 11722)}$ | $13,827 \\ 0.029 \\ -0.165 \\ 31.673^{***} \text{ (df = 11; 11517)}$ | $13,827 \\ 0.028 \\ -0.167 \\ 41.345^{***} \text{ (df = 8; 11520)}$ | $14,051 \\ 0.131 \\ 0.130 \\ 263.399^{***} (df = 8; 14042)$ | $13,827$ $0.154$ $0.154$ $0.154$ $227.199^{***} (df = 11; 13815)$ |
| Note:   |  |  |   |   | *p<0.1; **p<0.05; ***p<0.01                                       |