Does Commercial Diplomacy Overcome Impediments to International Economic Flows? The Case of Australia

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The Supplementary Material Appendices SA-SF for this article can be found here.
Appendix SA: Data Sources

Appendix SA documents the data sources for the models of exports and investment. Data for the models were collected for the period from 2010-2015, or for T=6 years. There are 181 countries in the sample.

### Table SAI: Data Sources for the Models of Commercial Diplomacy for Exports and Investment, 2010-2015

| Variable                              | Source                                                                 | Notes                                                                                                                                                                                                 |
|---------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Annual real merchandise exports       | Department for Foreign Affairs and Trade (DFAT), http://dfat.gov.au/about-us/publications/Pages/trade-statistical-pivot-tables.aspx (accessed 21 June 2016) | Trade data for each country are retrieved from the pivot table available on DFAT’s website. The data are classified according to the UN Standard International Trade Classification, Revision 4 (SITC4). The data are originally from ABS catalogue 5368.0, with some adjustments subsequently made by DFAT. The data are deflated by the GDP deflator and expressed in 2010 prices. |
| Annual inbound real total foreign investment | Australian Bureau of Statistics, International Investment Position, Australia Table 53520, 2015 (accessed 15 March 2017) | Total foreign investment in Australia is the sum for each country of: i) direct investment in Australia, equity capital and reinvested earnings; ii) direct investment in Australia, other capital; iii) portfolio investment liabilities, equity securities; iv) portfolio investment liabilities, debt securities; v) financial derivative liabilities; and vi) other investment liabilities. The data are deflated by the GDP deflator and expressed in 2010 prices. |
| Annual inbound real foreign direct investment | As above                                                               | Foreign direct investment in Australia is the sum of i) and ii) above.                                                                                                                                 |
| Annual inbound real portfolio investment | As above                                                               | Foreign portfolio liabilities in Australia are the sum of iii) and iv) above.                                                                                                                            |
### Table SAI  Data sources for the models of commercial diplomacy (cont.)

| Variable               | Source                                                                 | Notes                                                                                                                                 |
|------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Diplomatic variables   | DFAT, Schedule of Australian Overseas Missions and their Responsibilities | See Appendix SE: Summary of Australia’s Diplomatic Representation.                                                                      |
| Distance               | CEPII, http://www.cepii.fr/cepii/en/bdd_mmodele/bdd.asp (accessed 21 May 2016) | Distances measured                                                                                                                                 |
| Population             | World Bank Indicators, http://data.worldbank.org/indicator (accessed 23 March 2017) | Thousands of people                                                                                                                                 |
| Landlocked             | CEPII, http://www.cepii.fr/cepii/en/bdd_mmodele/bdd.asp                 | Landlocked=1                                                                                                                                 |
| Island                 | CEPII, http://www.cepii.fr/cepii/en/bdd_mmodele/bdd.asp                 | Island=1                                                                                                                                 |
| Commonwealth member    | CEPII, http://www.cepii.fr/cepii/en/bdd_mmodele/bdd.asp                 | Commonwealth=1                                                                                                                                 |
| No English             | CEPII http://www.cepii.fr/cepii/en/bdd_mmodele/bdd.asp                  | English=0                                                                                                                                 |
| Economic freedom       | The Heritage Foundation, http://www.heritage.org/index/download (accessed 2 May 2017) | The economic freedom index is not available for all countries. Missing values for Afghanistan are set to the 2017 value. The data for other missing countries are the average of the countries of their region. Antigua & Barbuda, Grenada, Marshall, Palau, Puerto Rico, St Kitts & Nevis and Tuvalu are the average of Colombia, St Lucia, the Bahamas, St Vincent, Barbados, Jamaica, Dominica and Trinidad & Tobago for each year. Iraq is the average of the United Arab Emirates, Qatar, Israel, Bahrain, Jordan, Kuwait, Saudi Arabia, Oman, Morocco, Tunisia, Lebanon, Iran, Egypt and Algeria. Missing data for Libya, Syria and Brunei are extrapolated using the average change of the data that is available. |
| Variable                      | Source                                                                 | Notes                                                |
|-------------------------------|------------------------------------------------------------------------|-------------------------------------------------------|
| Regional or free-trade agreements | [DFAT, https://dfat.gov.au/trade/agreements/Pages/trade-agreements.aspx](https://dfat.gov.au/trade/agreements/Pages/trade-agreements.aspx) (accessed 15 June 2017) | Free-trade agreement=1 Otherwise=0                    |
| Annual real GDP               | [World Bank Indicators, http://data.worldbank.org/indicator](http://data.worldbank.org/indicator) (accessed 23 March 2017) | USD thousands. The data are deflated by the GDP deflator and expressed in 2010 prices. |
| Real effective exchange rate  | [Bruegel, https://bruegel.org](https://bruegel.org) (accessed 15 May 2017) | Annual real effective exchange rates                  |
Appendix SB: Characteristics of the Dataset

Appendix SB contains a range of indicators of the characteristics of the dataset. Table SB1 contains descriptive statistics, while Table SB2 presents the correlations of the real exports' variable, the foreign investment variables, commercial diplomacy and the trading/investment partner characteristic variables. Table SB3 summarises the number of countries that register positive foreign investment stocks by the number of years that positive numbers are recorded. Note that the model for foreign investments treats zero investment as being economically determined.

| Variable                        | Obs. | Mean  | Std. dev. | Min.  | Max.  |
|---------------------------------|------|-------|-----------|-------|-------|
| Log real exports                | 1,084| 5.55  | 2.98      | -3.76 | 13.68 |
| Real inbound total foreign      | 1,084| 103.93| 603.55    | 0     | 8603.13|
| investment                      |      |       |           |       |       |
| Real inbound direct investment  | 1,086| 23.69 | 126.54    | 0     | 1735.03|
| Real inbound portfolio          | 1,086| 57.73 | 381.72    | 0     | 5508.56|
| diplomacy                      |      |       |           |       |       |
| Log distance                    | 1,086| 9.37  | 0.41      | 7.85  | 9.77  |
| Log importer population         | 1,082| 8.82  | 2.16      | 2.29  | 16.92 |
| Log importer GDP                | 1,066| 17.35 | 2.37      | 10.37 | 23.53 |
| Landlocked                      | 1,086| 0.19  | 0.40      | 0     | 1     |
| Island                          | 1,086| 0.24  | 0.43      | 0     | 1     |
| Commonwealth                    | 1,086| 0.01  | 0.10      | 0     | 1     |
| No English                      | 1,086| 0.69  | 0.46      | 0     | 1     |
| Free-trade agreement            | 1,086| 0.05  | 0.22      | 0     | 1     |
| Log real effective exchange rate| 1,020| 4.67  | 0.16      | 4.08  | 6.27  |
| Log economic freedom            | 1,086| 4.09  | 0.18      | 3.06  | 4.50  |
### Table S2: Correlation between the log of real exports, foreign investment, commercial diplomacy and the trading partner characteristic variables

| Variable                        | Exports | FI   | FDI | PI   | Diplom. | Distance | Imp pop | LandL | Island | Comm. | No English | Imp GDP | FTA | Exch rate | Eco free |
|---------------------------------|---------|------|-----|------|---------|----------|---------|-------|--------|-------|------------|---------|-----|-----------|----------|
| Log real exports                | 1.000   |      |     |      |         |          |         |       |        |       |            |         |     |           |          |
| Real foreign investment         |         |      |     |      |         |          |         |       |        |       |            |         |     |           |          |
| Total                           | 0.304   | 1.000|     |      |         |          |         |       |        |       |            |         |     |           |          |
| Direct                          | 0.354   | 0.931| 1.000|     |         |          |         |       |        |       |            |         |     |           |          |
| Portfolio                       | 0.259   | 0.983| 0.875| 1.000|         |          |         |       |        |       |            |         |     |           |          |
| Diplomacy                       | 0.649   | 0.441| 0.535| 0.400| 1.000   |          |         |       |        |       |            |         |     |           |          |
| Log distance                    | -0.376  | 0.030| 0.000| 0.048| -0.257  | 1.000    |         |       |        |       |            |         |     |           |          |
| Log importer pop.               | 0.572   | 0.191| 0.228| 0.163| 0.508   | -0.012   | 1.000   |       |        |       |            |         |     |           |          |
| Landlocked                      | -0.341  | -0.068| -0.078| -0.055| -0.212  | 0.052    | -0.007  | 1.000 |        |       |            |         |     |           |          |
| Island                          | 0.036   | 0.079| 0.077| 0.057| 0.010   | -0.367   | -0.383  | -0.270| 1.000 |       |            |         |     |           |          |
| Commonwealth                    | -0.009  | 0.013| 0.001| -0.001| 0.010   | -0.313   | -0.303  | -0.117| 0.432 | 1.000 |            |         |     |           |          |
| No English                      | 0.024   | -0.151| -0.131| -0.140| -0.066  | 0.232    | 0.270   | 0.098 | -0.443| -0.792| 1.000     |         |     |           |          |
| Log importer GDP                | 0.746   | 0.341| 0.388| 0.303| 0.585   | 0.089    | 0.744   | -0.159| -0.270| -0.316| 0.284     | 1.000    |     |           |          |
| Free-trade agreement            | 0.341   | 0.239| 0.260| 0.226| 0.287   | -0.450   | 0.142   | -0.091| 0.072 | 0.038| -0.030    | 0.193    | 1.000|           |          |
| Log exchange rate               | 0.021   | -0.114| -0.083| -0.110| 0.022   | -0.197   | 0.060   | 0.032 | -0.027| -0.003| 0.006     | -0.093   | 0.078| 1.000     |          |
| Log eco. freedom                | 0.325   | 0.238| 0.253| 0.213| 0.126   | 0.039    | -0.136  | -0.102| 0.248 | 0.103| -0.121    | 0.287    | 0.164| -0.243    | 1.000    |
### Table SB3  
Summary of the number of countries with positive foreign investment data by the number of years of positive observations, 2010-2015

| Data availability | Total foreign investment |  | Foreign direct investment |  | Portfolio investment |  |
|-------------------|--------------------------|--|---------------------------|--|----------------------|--|
|                   | No. of obs. | No. of countries | No. of obs. | No. of countries | No. of obs. | No. of countries |
| 6 years           | 228         | 38              | 90           | 15              | 78          | 13              |
| 5 years           | 65          | 13              | 15           | 3               | 15          | 3               |
| 4 years           | 28          | 7               | 20           | 5               | 28          | 7               |
| 3 years           | 21          | 7               | 3            | 1               | 21          | 7               |
| 2 years           | 16          | 8               | 12           | 6               | 26          | 13              |
| 1 year            | 8           | 8               | 5            | 5               | 7           | 7               |
| **Total**         | **366**     | **81**          | **145**      | **35**          | **175**     | **50**          |
Appendix SC: Model of Exports

Drawing on the work of Rose (2007),¹ the gravity model for exports used in this article is expressed in equation (1) as follows:

\[
\ln(x_{jt}) = \beta_0 + \gamma d\text{ip}_{jt} + \beta_1 \ln(d\text{ist}_{j}) + \beta_2 \ln(p\text{op}_{jt}) + \beta_3 \ln(g\text{dp}_{jt}) + \beta_4 \text{land}_{j} \\
+ \beta_5 \text{island}_{j} + \beta_6 \text{common}_{j} + \beta_7 \text{noEnglish}_{j} + \beta_8 \text{fta}_{jt} \\
+ \beta_9 \ln(\text{reer}_{jt}) + \beta_{10} \ln(\text{ecfree}_{jt}) + \nu_{jt}.
\]

(1)

The dependent variable \((x_{jt})\) is annual real exports from Australia to country \(j\) expressed in terms of natural logarithms as indicated by the operator \(\ln(.)\).

The explanatory variables are as follows:

- \(d\text{ip}_{jt}\) is a count variable taking a value equal to the total count of embassies, consulates and trade offices that Australia has in country \(j\). This value is 0 if there are no diplomatic entities in country \(j\);
- \(d\text{ist}_{j}\) is the distance between Australia and country \(j\);
- \(p\text{op}_{jt}\) is the population of country \(j\);
- \(g\text{dp}_{jt}\) is the annual real GDP of country \(j\);
- \(\text{land}_{j}\) is a binary variable taking a value of 1 if country \(j\) is landlocked and 0 otherwise;
- \(\text{island}_{j}\) is a binary variable taking a value of 1 if country \(j\) is an island and 0 otherwise;
- \(\text{common}_{j}\) is a binary variable taking a value of 1 if country \(j\) is or has been a Commonwealth member and 0 otherwise;
- \(\text{noEnglish}_{j}\) is a binary variable taking a value of 1 if the official language of country \(j\) is not English and 0 otherwise;
- \(\text{fta}_{jt}\) is a binary variable taking a value of 1 if a regional or free trade agreement exists between Australia and country \(j\);
- \(\text{reer}_{jt}\) is the world real effective exchange rate of country \(j\);
- \(\text{ecfree}_{jt}\) is an index of the economic freedom of country \(j\).

The \(m\) parameters of the model not pertaining to economic diplomacy are denoted by \(\beta_m\). The key coefficient for the variables capturing the incremental effects of economic diplomacy for Australia’s real exports is \(\gamma\).

¹ Andrew K. Rose, ‘The Foreign Service and Foreign Trade: Embassies as Export Promotion,’ *World Economy*, vol. 30 (2007), pp. 22-38.
**Diagnostic Tests**

The model in equation (1) is specified as a random effects model where the error term of the equation is \( y_{jt} = u_j + e_{jt} \), where the unobserved effect \( u_j \) is uncorrelated with each of the explanatory variables in all time periods. To test formally that validity of this specification, the Hausman test statistic for the benchmark model that is equation (1) without the diplomatic variable \( dip_{jt} \) is 14.54 with a p-value of 0.042, confirming the choice of random effects model over the fixed effects model at the 0.01 level of significance. Similarly, the Hausman test statistic for the model with the diplomatic variable is 17.03 with a p-value of 0.030, again confirming the choice of random effects model over the fixed effects model at 0.01 level of significance. A fixed effects model is not our preferred model, because the commercial diplomacy variables are encompassed in the fixed effects terms, meaning that the effects of the non-time varying variables cannot be separated. The Breusch and Pagan Lagrange multiplier test statistics for a random effects model for the exports model is 1397.56 with a p-value of 0.000, confirming the choice of the random effects model over a pooled, ordinary least squares model.
Appendix SD: Model of Foreign Investment

Estimation of the model of inbound foreign investment is more complicated than the model for merchandise exports because of a large mass of zero observations in the data on foreign investment between Australia and many countries in the sample. The percentage of observations that take zero values is 66 per cent for total foreign investment, 87 per cent for direct investment and 84 per cent for portfolio investment. Further, some countries record foreign investment in some years of the sample but not others. The data on direct investment are available for 35 out of 181 sample countries, with only fifteen countries recording investment stocks every year of the sample period spanning 2010-2015. The situation is similar for portfolio investment where a complete dataset in each year of the sample is only found in thirteen countries. Appendix SB1 contains descriptive statistics on the inbound foreign investment data, and Table SB3 summarises the number of countries with positive foreign investment data.

The mass of zero observations makes the log-based model specification that works for the exports model inaccurate, as we cannot take the log of zero. However, an observation of zero is an economically determined number, so it is not appropriate to deal with the issue by merely removing the zero observations from the sample. To address this issue, we adopt the Silva and Tenreyro Poisson pseudo-maximum-likelihood (PPML) estimator of the gravity model to quantitatively assess the effects of commercial diplomacy and gravity-specific variables on foreign investment flows to and from Australia, as the Poisson estimator is able to account for the zero investment flows in the data.2

The specification of the gravity model for inbound foreign investment is shown in equation (2) as follows:

\[
\ln t_{i,j,t} = \exp \left[ \alpha_0 + \delta dip_{i,t} + \alpha_1 \ln (dist_{i,j}) + \alpha_2 \ln (pop_{i,t}) + \alpha_3 \ln \left( gdp_{j,t} \right) + \alpha_4 land_j + \alpha_5 island_j + \alpha_6 common_j + \alpha_7 noEnglish_j + \alpha_8 \ln \left( x_{i,j,t} \right) + \alpha_9 \ln \left( reer_{i,j,t} \right) + \alpha_{10} \ln \left( ecfree_{i,j} \right) \right] + \omega_{i,j,t}.
\]

(2)

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2 J.M.C. Santos Silva and Silvana Tenreyro, ‘The Log of Gravity’, *The Review of Economics and Statistics*, vol. 88, no. 4 (2006), pp. 641-658.
The dependent variable \((tf_{jt})\) is annual real inbound foreign investment from country \(j\) to Australia, measured in levels and expressed in 2010 dollars by deflating by the GDP price deflator. The pertinent parameter estimating the effects of diplomacy for foreign investment is \(\delta\), with the diplomacy variable \((dip_{jt})\) and other explanatory variables defined in Appendix SC.

**Diagnostic Tests**

The effect of diplomacy on the components of inbound foreign investment, foreign direct investment and portfolio investment liabilities is examined by replacing the \((tf_{jt})\) variable with the foreign direct investment variable \((fdi_{jt})\) and portfolio investment liabilities variable \((pi_{jt})\) respectively.

We use the Ramsey’s regression specification error test (RESET) to test whether our model is right for the investment data. The Poisson regressions all pass the RESET test with a chi-squared statistic of 0.08 and a p-value of 0.782 for the model for inbound foreign investment. The RESET test results confirm that there is no evidence of misspecification of the gravity equations estimated using the PPML estimator, confirming that our model fits the data well.
### Appendix SE: Summary of Australia's Diplomatic Representation

| Country          | Embassy | Number of diplomatic entities | Country        | Embassy | Number of diplomatic entities |
|------------------|---------|-------------------------------|----------------|---------|-------------------------------|
| Afghanistan      | Yes     | 1                             | Chad           | No      | 0                             |
| Albania          | No      | 0                             | Chile          | Yes     | 2                             |
| Algeria          | No      | 0                             | China          | Yes     | 16                            |
| Angola           | No      | 0                             | Colombia       | No      | 1                             |
| Antigua & Barbuda| No      | 0                             | Costa Rica     | No      | 0                             |
| Argentina        | Yes     | 2                             | Côte d’Ivoire  | No      | 0                             |
| Armenia          | No      | 0                             | Croatia        | Yes     | 1                             |
| Austria          | Yes     | 1                             | Cyprus         | Yes     | 1                             |
| Azerbaijan       | No      | 0                             | Czech          | No      | 1                             |
| Bahamas          | No      | 0                             | Democratic Republic of the Congo | No | 0                             |
| Bahrain          | No      | 0                             | Denmark        | Yes     | 2                             |
| Bangladesh       | Yes     | 2                             | Djibouti       | No      | 0                             |
| Barbados         | No      | 0                             | Dominica       | No      | 0                             |
| Belarus          | No      | 0                             | Dominican Republic | No | 0                             |
| Belgium          | Yes     | 1                             | Ecuador        | No      | 0                             |
| Belize           | No      | 0                             | Egypt          | Yes     | 2                             |
| Benin            | No      | 0                             | El Salvador    | No      | 0                             |
| Bhutan           | No      | 0                             | Equatorial Guinea | No | 0                             |
| Bolivia          | No      | 0                             | Eritrea        | No      | 0                             |
| Bosnia & Herzegovina | No  | 0                             | Estonia        | No      | 0                             |
| Botswana         | No      | 0                             | Ethiopia       | Yes     | 1                             |
| Brazil           | Yes     | 2                             | Federated States of Micronesia | Yes | 1                             |
| Country          | Embassy | Number of diplomatic entities | Country | Embassy | Number of diplomatic entities |
|------------------|---------|-------------------------------|---------|---------|-------------------------------|
| Brunei           | Yes     | 2                             | Fiji    | Yes     | 2                             |
| Bulgaria         | No      | 0                             | Finland | No      | 0                             |
| Burkina Faso     | No      | 0                             | France  | Yes     | 2                             |
| Burundi          | No      | 0                             | FYR     | No      | 0                             |
| Cambodia         | Yes     | 1                             | Gabon   | No      | 0                             |
| Cameroon         | No      | 0                             | Gambia  | No      | 0                             |
| Canada           | Yes     | 3                             | Georgia | No      | 0                             |
| Central African Republic | No | 0                             | Germany | Yes     | 2                             |
| Ghana            | Yes     | 2                             | Malawi  | No      | 0                             |
| Greece           | Yes     | 2                             | Malaysia| Yes     | 2                             |
| Grenada          | No      | 0                             | Maldives| No      | 0                             |
| Guatemala        | No      | 0                             | Mali    | No      | 0                             |
| Guinea           | No      | 0                             | Malta   | Yes     | 1                             |
| Guyana           | No      | 0                             | Marshall| No      | 0                             |
| Haiti            | No      | 0                             | Mauritania | No     | 0                             |
| Honduras         | No      | 0                             | Mauritius| Yes    | 2                             |
| Hong Kong (SAR of China) | No | 2                             | Mexico  | Yes     | 2                             |
| Hungary          | No      | 0                             | Moldova | No      | 0                             |
| Iceland          | No      | 0                             | Mongolia| No      | 1                             |
| India            | Yes     | 9                             | Montenegro | No    | 0                             |
| Indonesia        | Yes     | 3                             | Morocco | No      | 0                             |
| Iran             | Yes     | 1                             | Mozambique| No     | 0                             |
| Iraq             | Yes     | 1                             | Myanmar | Yes     | 1                             |
| Ireland          | Yes     | 1                             | Namibia | No      | 0                             |
| Israel           | Yes     | 2                             | Nepal   | Yes     | 1                             |
| Italy            | Yes     | 2                             | Netherlands| Yes   | 2                             |
| Jamaica          | No      | 0                             | New Zealand| Yes   | 2                             |
| Country          | Embassy | Number of diplomatic entities | Country          | Embassy | Number of diplomatic entities |
|------------------|---------|-------------------------------|------------------|---------|-------------------------------|
| Japan            | Yes     | 6                             | Nicaragua        | No      | 0                             |
| Jordan           | Yes     | 2                             | Niger            | No      | 0                             |
| Kazakhstan       | No      | 0                             | Nigeria          | Yes     | 1                             |
| Kenya            | Yes     | 2                             | Norway           | No      | 0                             |
| Kiribati         | Yes     | 1                             | Oman             | No      | 0                             |
| Kuwait           | Yes     | 1                             | Pakistan         | Yes     | 2                             |
| Kyrgyzstan       | No      | 0                             | Palau            | No      | 0                             |
| Laos             | Yes     | 1                             | Panama           | No      | 0                             |
| Latvia           | No      | 0                             | Papua New Guinea | Yes     | 2                             |
| Lebanon          | Yes     | 2                             | Paraguay         | No      | 0                             |
| Liberia          | No      | 0                             | Peru             | Yes     | 2                             |
| Libya            | No      | 1                             | Philippines      | Yes     | 2                             |
| Lithuania        | No      | 0                             | Poland           | Yes     | 2                             |
| Luxembourg       | No      | 0                             | Portugal         | Yes     | 1                             |
| Macau (SAR of China) | No     | 1                             | Puerto Rico      | No      | 0                             |
| Madagascar       | No      | 0                             | Qatar            | No      | 0                             |
| Republic of Congo | No     | 0                             | Taiwan           | No      | 3                             |
| Republic of Korea | Yes   | 2                             | Tajikistan       | No      | 0                             |
| Romania          | No      | 1                             | Tanzania         | No      | 0                             |
| Russian Federation | Yes  | 3                             | Thailand         | Yes     | 2                             |
| Rwanda           | No      | 0                             | Timor-Leste      | Yes     | 1                             |
| Samoa            | Yes     | 1                             | Togo             | No      | 0                             |
| Saudi Arabia     | Yes     | 2                             | Tonga            | Yes     | 1                             |
| Senegal          | No      | 0                             | Trinidad & Tobago| Yes     | 1                             |
| Serbia           | Yes     | 1                             | Tunisia          | No      | 0                             |
| Seychelles       | No      | 0                             | Turkey           | Yes     | 3                             |
| Sierra Leone     | No      | 0                             | Turkmenistan     | No      | 0                             |
| Singapore        | Yes     | 2                             | Tuvalu           | No      | 0                             |
| Country          | Embassy | Number of diplomatic entities | Country       | Embassy | Number of diplomatic entities |
|------------------|---------|--------------------------------|---------------|---------|--------------------------------|
| Slovakia Republic| No      | 0                              | Uganda        | No      | 0                              |
| Slovenia         | No      | 0                              | Ukraine       | Yes     | 1                              |
| Solomon Islands  | Yes     | 1                              | United Arab Emirates | Yes     | 3                              |
| South Africa     | Yes     | 2                              | United Kingdom | Yes     | 2                              |
| Spain            | Yes     | 2                              | United States | Yes     | 11                             |
| Sri Lanka        | Yes     | 2                              | Uruguay       | No      | 0                              |
| St Kitts & Nevis | No      | 0                              | Uzbekistan    | No      | 0                              |
| St Lucia         | No      | 0                              | Vanuatu       | Yes     | 1                              |
| St Vincent & Grenadines | No | 0                           | Venezuela      | No      | 0                              |
| Suriname         | No      | 0                              | Vietnam       | Yes     | 4                              |
| Swaziland        | No      | 0                              | Yemen         | No      | 0                              |
| Sweden           | Yes     | 2                              | Zambia        | No      | 0                              |
| Switzerland      | No      | 1                              | Zimbabwe      | Yes     | 1                              |
| Syria            | No      | 0                              |               |         |                                |
Appendix SF: Complete Set of Results

The first set of results for the gravity model of Australian exports is contained in Table SF1. Table SF1 reports several specifications of the model, including a model containing no diplomacy variable in column 1, and a model containing the count variable representing commercial diplomacy in column 2. The remaining columns report the robustness of the results to three alternative estimation methods: pooled ordinary least squares (OLS); allowance for a first-order autoregressive error structure (AR error); and estimation using instrumental variables (IV), where all covariates are treated as exogenous. The standard errors are in brackets, and the significance of the variables are indicated by the stars.

The coefficients on the commercial diplomacy variable from the alternative estimation methods lie in a narrow range above the estimate of the random effects model. The coefficients of diplomacy for these alternatives are 0.153, 0.142 and 0.123 respectively, and are significant at the 1 per cent level except for the AR error term model, which is significant at the 5 per cent level. Adjusting these coefficients shows that Australian exports are 16.5, 15.0 and 13.0 per cent higher respectively than those in countries without diplomatic representation, placing the contribution of diplomacy using our alternative estimation methods quite in line with our preferred model reported in the above article and in column 2 of Table SF1 below.

Table SF2 contains the parameter estimates for the model of commercial diplomacy for the log of real foreign investment for the three categories of total, direct and portfolio investment, while Tables F3 and F4 contain the parameter estimates for the model of commercial diplomacy for the log of real exports and for real foreign investment for alternative country types. These tables are discussed in the text.

Not all countries have data for all six years. For example, data for the real effective exchange rate have 1,020 observations and data for the variable of importer GDP have 1,066 observations. By including these two variables in the model, the number of observations (N) of the model is N=1000, with the number of clusters 169. If we had data on all variables in all years, the number of observations would be N=1086 and the number of clusters would be 181.
| Explanatory variables | No diplomacy | Diplomacy | Pooled OLS | AR error estimation | IV causality |
|-----------------------|-------------|-----------|------------|---------------------|--------------|
| Diplomacy             | 0.122***    | 0.153***  | 0.142**    | 0.123***            | 0.153***     |
|                       | (0.044)     | (0.021)   | (0.066)    | (0.044)             | (0.051)      |
| Log distance          | -3.250***   | -3.110*** | -3.226***  | -3.139***           | -3.116***    |
|                       | (0.247)     | (0.254)   | (0.121)    | (0.289)             | (0.254)      |
| Log importer pop.     | 0.169**     | 0.151*    | 0.197***   | 0.143*              | 0.152*       |
|                       | (0.079)     | (0.078)   | (0.037)    | (0.078)             | (0.078)      |
| Landlocked            | -1.484***   | -1.434*** | -1.471***  | -1.450***           | -1.435***    |
|                       | (0.268)     | (0.265)   | (0.121)    | (0.238)             | (0.265)      |
| Log importer GDP      | 0.905***    | 0.851***  | 0.778***   | 0.835***            | 0.851***     |
|                       | (0.083)     | (0.087)   | (0.041)    | (0.078)             | (0.087)      |
| Island                | -0.040      | -0.058    | -0.199     | -0.077              | -0.059       |
|                       | (0.294)     | (0.295)   | (0.128)    | (0.282)             | (0.295)      |
| Commonwealth          | 0.337       | 0.358     | 0.352**    | 0.344               | 0.358        |
|                       | (0.333)     | (0.344)   | (0.152)    | (0.331)             | (0.344)      |
| No English            | -0.206      | -0.099    | -0.024     | -0.084              | -0.099       |
|                       | (0.316)     | (0.331)   | (0.149)    | (0.322)             | (0.331)      |
| Free-trade agreement  | -0.114      | -0.130    | -0.513***  | -0.225              | -0.130       |
|                       | (0.110)     | (0.115)   | (0.150)    | (0.246)             | (0.116)      |
| Log exchange rate     | 0.466       | 0.469     | 0.854***   | 0.267               | 0.469        |
|                       | (0.348)     | (0.348)   | (0.321)    | (0.304)             | (0.347)      |
| Log eco. freedom      | 1.926***    | 1.975***  | 3.439***   | 1.987***            | 1.979***     |
|                       | (0.719)     | (0.699)   | (0.337)    | (0.578)             | (0.698)      |
| Yr 2011               | -0.034      | -0.032    | -0.035     | -0.032              | -0.032       |
|                       | (0.063)     | (0.064)   | (0.144)    | (0.064)             | (0.068)      |
| Yr 2012               | -0.140**    | -0.137**  | -0.149     | -0.137**            | -0.053       |
|                       | (0.066)     | (0.067)   | (0.140)    | (0.067)             | (0.093)      |
| Yr 2013               | -0.148      | -0.144    | -0.150     | -0.144              | -0.072       |
|                       | (0.091)     | (0.091)   | (0.145)    | (0.091)             | (0.103)      |
| Yr 2014               | -0.234***   | -0.228*** | -0.245*    | -0.228**            | -0.109       |
|                       | (0.086)     | (0.087)   | (0.139)    | (0.087)             | (0.111)      |
| Yr 2015               | -0.198**    | -0.190**  | -0.235*    | -0.190**            | -0.177*      |
|                       | (0.086)     | (0.086)   | (0.142)    | (0.086)             | (0.099)      |
| Constant              | 9.273***    | 8.610**   | 2.730      | 10.005***           | 8.598**      |
|                       | (3.560)     | (3.550)   | (2.516)    | (3.775)             | (3.550)      |
Table SF1  Parameter estimates for the model of commercial diplomacy (cont.)

| Explanatory variables | No diplomacy | Diplomacy OLS | AR error estimation | IV causality |
|-----------------------|--------------|---------------|---------------------|--------------|
| R-sq within           | 0.011        | 0.010         | 0.003               | 0.010        | 0.015        |
| R-sq between          | 0.844        | 0.849         | 0.849               | 0.849        | 0.876        |
| R-sq overall          | 0.814        | 0.818         | 0.818               | 0.818        | 0.853        |
| R-sq                  |              |               | 0.822               |              |              |
| Obs.                  | 1,000        | 1,000         | 1,000               | 1,000        | 476          |
| Clusters              | 169          | 169           | 169                 | 169          | 84           |

Note: Standard errors are in parentheses; the asterisks represent the 1% (** p<0.01), 5% (*** p<0.05) and 10% (* p<0.1) level of significance.
Table SF2: Parameter estimates for the model of commercial diplomacy for real foreign investment (total, direct and portfolio) (with standard errors in parentheses)

| Explanatory variables | Total foreign investment | Foreign direct investment | Portfolio investment |
|-----------------------|--------------------------|---------------------------|----------------------|
| Diploma               | 0.150***                 | 0.204***                  | 0.206***             |
|                       | (0.036)                  | (0.036)                   | (0.053)              |
| Log distance          | 1.648***                 | 1.753***                  | 1.997***             |
|                       | (0.406)                  | (0.351)                   | (0.699)              |
| Log importer pop.     | -1.071***                | -0.733***                 | -2.484***            |
|                       | (0.257)                  | (0.135)                   | (0.308)              |
| Log importer GDP      | 0.972***                 | 0.801***                  | 2.054***             |
|                       | (0.206)                  | (0.156)                   | (0.304)              |
| Landlocked            | 1.297***                 | 0.721***                  | 1.594***             |
|                       | (0.299)                  | (0.279)                   | (0.457)              |
| Island                | 0.667***                 | 0.246                     | 0.824***             |
|                       | (0.207)                  | (0.173)                   | (0.289)              |
| Commonwealth          | 0.198                    | 1.349***                  | -0.120               |
|                       | (0.261)                  | (0.217)                   | (0.426)              |
| No English            | -0.781***                | 0.727***                  | -1.410***            |
|                       | (0.237)                  | (0.256)                   | (0.320)              |
| Log real exports      | 0.642***                 | 0.701***                  | 0.770***             |
|                       | (0.151)                  | (0.101)                   | (0.228)              |
| Log exchange rate     | -1.677***                | -0.551                    | -2.250***            |
|                       | (0.510)                  | (0.377)                   | (0.676)              |
| Log eco. freedom index| 0.816                    | 5.737***                  | -4.275***            |
|                       | (1.317)                  | (1.067)                   | (1.259)              |
| Yr 2011               | -0.143                   | -0.168                    | -0.184               |
|                       | (0.163)                  | (0.120)                   | (0.269)              |
| Yr 2012               | -0.143                   | -0.217                    | -0.172               |
|                       | (0.160)                  | (0.132)                   | (0.252)              |
| Yr 2013               | -0.211                   | -0.271**                  | -0.208               |
|                       | (0.185)                  | (0.137)                   | (0.285)              |
| Yr 2014               | -0.513**                 | -0.362**                  | -0.740***            |
|                       | (0.213)                  | (0.166)                   | (0.286)              |
| Yr 2015               | -0.604***                | -0.495***                 | -0.827***            |
|                       | (0.215)                  | (0.160)                   | (0.303)              |
### Table SF2 Parameter estimates for the model of commercial diplomacy (cont.)

| Explanatory variables | Total foreign investment | Foreign direct investment | Portfolio investment |
|-----------------------|--------------------------|----------------------------|----------------------|
| Constant              | -10.530                  | -40.737***                 | 6.961                |
|                       | (7.009)                  | (6.752)                    | (9.413)              |
| R-sq                  | 0.912                    | 0.939                      | 0.843                |
| Obs.                  | 998                      | 1,000                      | 1,000                |

Note: Standard errors are in parentheses; the asterisks represent the 1% (*** p<0.01), 5% (** p<0.05) and 10% (*) p<0.1) level of significance.
| Explanatory variables | Countries outside region | Countries in region | Emerging/Developing countries | Developed countries | Freedom lower quartile | Freedom upper quartile |
|-----------------------|--------------------------|---------------------|-------------------------------|---------------------|-----------------------|-----------------------|
| Diplomacy             | 0.268**                  | -0.006              | 0.073                         | -0.152*             | 0.304***              | -0.046                |
|                       | (0.120)                  | (0.069)             | (0.051)                       | (0.081)             | (0.084)               | (0.116)               |
| Log distance          | -3.131***                | -1.207*             | -5.566***                     | -2.740***           | -3.423***             | -3.013***             |
|                       | (0.282)                  | (0.622)             | (0.651)                       | (0.497)             | (0.794)               | (0.465)               |
| Log importer pop.     | 0.168                    | 0.043               | 0.357*                        | 0.110               | 0.265                 | 0.056                 |
|                       | (0.106)                  | (0.105)             | (0.187)                       | (0.069)             | (0.230)               | (0.110)               |
| Log importer GDP      | 0.808***                 | 1.136***            | 0.531*                        | 1.306***            | 0.343*                | 1.169***              |
|                       | (0.107)                  | (0.182)             | (0.241)                       | (0.158)             | (0.185)               | (0.152)               |
| Landlocked            | -1.503***                | -0.837              | -0.762**                      | -0.947*             | -2.621***             | -1.330***             |
|                       | (0.284)                  | (0.812)             | (0.362)                       | (0.537)             | (0.440)               | (0.507)               |
| Island                | -0.155                   | 0.065               | -3.067***                     | 0.420               | -0.655                | 0.269                 |
|                       | (0.381)                  | (0.546)             | (0.536)                       | (0.341)             | (1.211)               | (0.533)               |
| Commonwealth          | 0.630                    | -0.116              | -0.902***                     | 0.013               | 0.282                 | -0.012                |
|                       | (0.575)                  | (0.328)             | (0.333)                       | (0.399)             | (0.619)               | (0.459)               |
| No English            | 0.106                    | 0.079               | -0.932***                     | -0.281              | 0.014                 | -0.361                |
|                       | (0.541)                  | (0.296)             | (0.256)                       | (0.348)             | (0.444)               | (0.459)               |
| Free-trade agreement  | -1.329                   | 0.216               | -0.298                        | -0.056              | 0.533*                | -0.071                |
|                       | (0.892)                  | (0.176)             | (0.242)                       | (0.081)             | (0.290)               | (0.113)               |
| Log exchange rate     | 0.454                    | 1.294               | -0.104                        | 0.243               | 0.109                 | 0.636                 |
|                       | (0.393)                  | (0.847)             | (0.339)                       | (0.598)             | (0.664)               | (0.506)               |
| Log eco. freedom      | 2.185***                 | 2.272*              | 2.813***                      | 2.021               | 0.312                 | -1.683                |
|                       | (0.772)                  | (1.262)             | (0.931)                       | (1.737)             | (2.220)               | (2.707)               |
| Yr 2011               | 0.006                    | -0.318              | -0.039                        | -0.063              | 0.133                 | -0.004                |
|                       | (0.062)                  | (0.273)             | (0.057)                       | (0.112)             | (0.138)               | (0.057)               |
| Yr 2012               | -0.116                   | -0.344**            | 0.064                         | -0.187*             | -0.034                | -0.198**              |
|                       | (0.074)                  | (0.170)             | (0.162)                       | (0.103)             | (0.140)               | (0.083)               |
| Yr 2013               | -0.096                   | -0.516**            | -0.059                        | -0.330**            | -0.004                | -0.239**              |
|                       | (0.074)                  | (0.232)             | (0.198)                       | (0.138)             | (0.222)               | (0.103)               |
| Yr 2014               | -0.189**                 | -0.590**            | -0.046                        | -0.424**            | 0.183                 | -0.386***             |
|                       | (0.093)                  | (0.285)             | (0.224)                       | (0.123)             | (0.213)               | (0.107)               |
| Yr 2015               | -0.135                   | -0.709**            | 0.035                         | -0.367**            | 0.157                 | -0.274**              |
|                       | (0.090)                  | (0.338)             | (0.204)                       | (0.160)             | (0.232)               | (0.137)               |
## Table SF3 Parameter estimates for the model of commercial diplomacy (cont.)

| Explanatory variables | Countries outside region | Countries in region | Emerging/Developing countries | Developed countries | Freedom lower quartile | Freedom upper quartile |
|-----------------------|--------------------------|---------------------|-------------------------------|----------------------|-----------------------|------------------------|
| Constant              | 8.320**                  | -17.129             | 35.792***                    | -1.933               | 27.034**              | 18.119                 |
|                       | (3.695)                  | (10.783)            | (8.260)                      | (10.168)             | (11.175)              | (13.264)               |
| R-sq within           | 0.011                    | 0.061               | 0.060                        | 0.139                | 0.022                 | 0.124                  |
| R-sq between          | 0.801                    | 0.942               | 0.948                        | 0.911                | 0.810                 | 0.885                  |
| R-sq overall          | 0.763                    | 0.925               | 0.914                        | 0.896                | 0.789                 | 0.865                  |
| Obs.                  | 856                      | 144                 | 137                          | 210                  | 227                   | 256                    |
| Clusters              | 145                      | 24                  | 23                           | 35                   | 47                    | 54                     |

Note: Standard errors are in parentheses; the asterisks represent the 1% (** p<0.01), 5% (* p<0.05) and 10% (p<0.1) level of significance.
| Explanatory variables | Countries outside region | Countries in region | Emerging/Developing countries | Developed countries | Freedom lower quartile | Freedom upper quartile |
|-----------------------|--------------------------|---------------------|-------------------------------|---------------------|----------------------|----------------------|
| Diplomacy             | 0.398***                 | 0.205***            | -0.382***                    | 0.187***            | -0.095               | 0.123***             |
|                       | (0.061)                  | (0.029)             | (0.099)                      | (0.042)             | (0.150)              | (0.042)              |
| Log distance          | 6.611***                 | -0.154              | -17.673***                   | 2.000***            | -1.722               | 1.607***             |
|                       | (2.287)                  | (2.855)             | (2.855)                      | (0.514)             | (2.167)              | (0.388)              |
| Log importer pop.     | -2.891***                | -0.141***           | -1.760***                    | -0.943              | -0.033               | -1.088***            |
|                       | (0.374)                  | (0.025)             | (0.255)                      | (0.673)             | (0.853)              | (0.387)              |
| Log importer GDP      | 2.494***                 | 0.801***            | 5.490***                     | 0.681               | 1.237***             | 0.940***             |
|                       | (0.400)                  | (0.151)             | (0.902)                      | (0.602)             | (0.355)              | (0.315)              |
| Landlocked            | 1.004***                 | -6.522***           | 4.187***                     | 1.183***            | -5.214**             | 1.330***             |
|                       | (0.332)                  | (1.085)             | (1.163)                      | (0.308)             | (2.542)              | (0.260)              |
| Island                | 1.260**                  | -0.087              | -10.859***                   | 0.771***            | 1.902                | 0.667***             |
|                       | (0.598)                  | (0.207)             | (1.420)                      | (0.230)             | (2.082)              | (0.212)              |
| Commonwealth          | 1.121**                  | 0.539***            | -2.269***                    | 0.117               | -3.479**             | -0.065               |
|                       | (0.487)                  | (0.131)             | (0.554)                      | (0.259)             | (1.446)              | (0.271)              |
| No English            | 0.306                    | 0.260               | -6.443***                    | -0.791**            | -3.595***            | -1.334***            |
|                       | (0.650)                  | (0.183)             | (1.012)                      | (0.309)             | (0.749)              | (0.316)              |
| Log real exports      | 0.733***                 | -0.040              | -0.794                       | 0.664***            | 0.444                | 0.630***             |
|                       | (0.202)                  | (0.134)             | (0.489)                      | (0.185)             | (0.532)              | (0.163)              |
| Log exchange rate     | -1.074                   | -0.857***           | -2.243***                    | -1.284**            | 0.213                | -0.837               |
|                       | (0.965)                  | (0.289)             | (0.611)                      | (0.627)             | (1.134)              | (0.601)              |
| Log eco. free         | -5.227***                | 9.119***            | -4.515*                      | 0.023               | 2.006                | -3.345               |
|                       | (1.934)                  | (0.853)             | (2.562)                      | (2.202)             | (4.112)              | (2.163)              |
| Yr2011                | -0.187                   | -0.181**            | -0.180                       | -0.138              | -0.312**             | -0.196               |
|                       | (0.218)                  | (0.087)             | (0.169)                      | (0.169)             | (0.143)              | (0.175)              |
| Yr2012                | -0.249                   | -0.287***           | -0.724***                    | -0.158              | -0.627***            | -0.254               |
|                       | (0.202)                  | (0.094)             | (0.173)                      | (0.171)             | (0.161)              | (0.170)              |
| Yr2013                | -0.222                   | -0.553***           | -1.148***                    | -0.177              | -1.542***            | -0.271               |
|                       | (0.230)                  | (0.113)             | (0.180)                      | (0.197)             | (0.274)              | (0.186)              |
| Yr2014                | -0.565**                 | -0.890***           | -1.511***                    | -0.477***           | -1.891***            | -0.587***            |
|                       | (0.252)                  | (0.110)             | (0.248)                      | (0.225)             | (0.298)              | (0.216)              |
| Yr2015                | -0.705***                | -1.062***           | -1.882***                    | -0.573***           | -1.968***            | -0.696***            |
|                       | (0.249)                  | (0.123)             | (0.230)                      | (0.222)             | (0.396)              | (0.221)              |
### Table SF4
Parameter estimates for the model of commercial diplomacy (cont.)

| Explanatory variables | Countries outside region | Countries in region | Emerging/Developing countries | Developed countries | Freedom lower quartile | Freedom upper quartile |
|-----------------------|--------------------------|---------------------|-------------------------------|---------------------|-----------------------|-----------------------|
| Constant              | -41.952**                | -33.312***          | 176.221***                    | -10.708             | 4.838                 | 4.901                 |
|                       | (17.239)                 | (2.943)             | (21.997)                      | (10.729)            | (22.120)              | (8.454)               |
| R-sq                  | 0.913                    | 0.974               | 0.968                         | 0.907               | 0.996                 | 0.912                 |
| Obs.                  | 855                      | 143                 | 136                           | 210                 | 226                   | 256                   |

Note: Standard errors are in parentheses; the asterisks represent the 1% (** p<0.01), 5% (*** p<0.05) and 10% (*) p<0.1) level of significance.