Does the OECD Anti-Bribery Convention Affect Bribery?

ONLINE APPENDIX

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Appendix A1: Comparison between OECD-ABC Signatories and Non-Signatories in 2010.

This table presents a balance test at the country-level. It demonstrates that signatories of the OECD-ABC convention were structurally different on a number of important characteristics from non-signatory countries represented in the PCI dataset in the first year of Phase 3 of the Convention. As a result, any analysis which strictly looks at the cross-sectional relationship between OECD-ABC status and outcomes would be potentially biased. Consequently, we use a diff-in-diff design to illustrate the change in firm behavior over time.

Potential Confounders	Mean		Standard Deviation		Differences	
	OECD	Non-OECD	Treatment	Control	p-value	t-test
All Countries in Dataset 2005-2015 (n=296)						
Log. Settler Mortality Est.	2.56	3.72	0.51	1.13	0.00	5.57
Democracy Dichotomous	0.99	0.45	0.07	0.50	0.00	-14.53
Freedom of the Press, Score (2001-2012)	19.20	56.41	8.39	22.71	0.00	19.03
Civil Liberties	1.22	3.76	0.48	1.63	0.00	18.71
Political Rights	1.04	3.98	0.30	2.10	0.00	17.51
Political Constraints Index III	0.45	0.22	0.13	0.19	0.00	-12.00
Revised Combined Polity Score	9.67	3.09	0.75	6.92	0.00	-11.96
Corruption Perceptions Index	7.56	4.55	1.50	2.02	0.00	-14.46
Human Development Index	0.89	0.73	0.03	0.10	0.00	-14.81
Population (Millions)	49.88	247.89	70.97	455.60	0.00	5.42
Control of Corruption - Estimate	1.56	0.05	0.68	0.99	0.00	-14.87
Exports of goods and services (% of GDP)	42.43	66.84	23.39	53.91	0.00	5.02
Agricultural raw materials exports (% of merchandise exports	1.98	2.30	2.22	2.12	0.29	1.07
Foreign direct investment, net inflows (% of GDP)	4.34	4.69	7.70	5.29	0.69	0.40
Foreign direct investment, net outflows (% of GDP)	8.52	9.85	40.68	61.51	0.85	0.19
GDP (constant 2005 Billions US$)	1843.85	535.12	3081.22	946.62	0.00	-4.09
GDP growth (annual %)	1.81	4.89	2.52	4.19	0.00	7.40
GDP per capita (constant 2005 US$)	36807.76	9665.66	12011.77	11362.36	0.00	-19.31
GDP per capita, PPP (constant 2011 international $)	39047.84	23692.04	9970.70	23781.48	0.00	-7.21
Big 4 Asian Countries 2005-2015 (Japan, South Korea, Taiwan, Singapore, n=44)						
Democracy Dichotomous	1.00	0.50	0.00	0.51	0.00	-4.58
Freedom of the Press, Score (2001-2012)	25.83	45.11	4.87	23.17	0.00	3.45
Civil Liberties	2.00	2.72	0.00	1.36	0.03	2.25
Political Rights	1.00	3.11	0.00	1.78	0.00	5.04
Political Constraints Index III	0.47	0.14	0.06	0.11	0.00	-11.09
Revised Combined Polity Score	9.00	4.00	1.03	6.17	0.00	-3.39
Corruption Perceptions Index	6.38	7.51	1.19	1.71	0.02	2.42
Human Development Index	0.88	0.88	0.01	0.02	0.86	0.17
Population	87.54	4.84	40.81	0.32	0.00	-6.02
Control of Corruption - Estimate	0.91	1.45	0.50	0.81	0.02	2.42
Exports of goods and services (% of GDP)	31.45	215.53	17.48	14.36	0.00	27.26
Agricultural raw materials exports (% of merchandise exports	0.76	0.30	0.20	0.04	0.00	-6.98
Foreign direct investment, net inflows (% of GDP)	0.32	18.78	0.33	6.42	0.00	12.41
Foreign direct investment, net outflows (% of GDP)	1.73	11.03	0.55	4.89	0.00	7.68
GDP (constant 2005 US$)	2786.66	151.62	1892.40	23.55	0.00	-4.14
GDP growth (annual %)	2.25	6.27	2.81	4.89	0.01	2.73
GDP per capita (constant 2005 US$)	28012.18	32256.30	8545.24	2461.24	0.12	1.60
GDP per capita, PPP (constant 2011 international $)	30416.00	65661.03	4308.39	4949.82	0.00	19.09

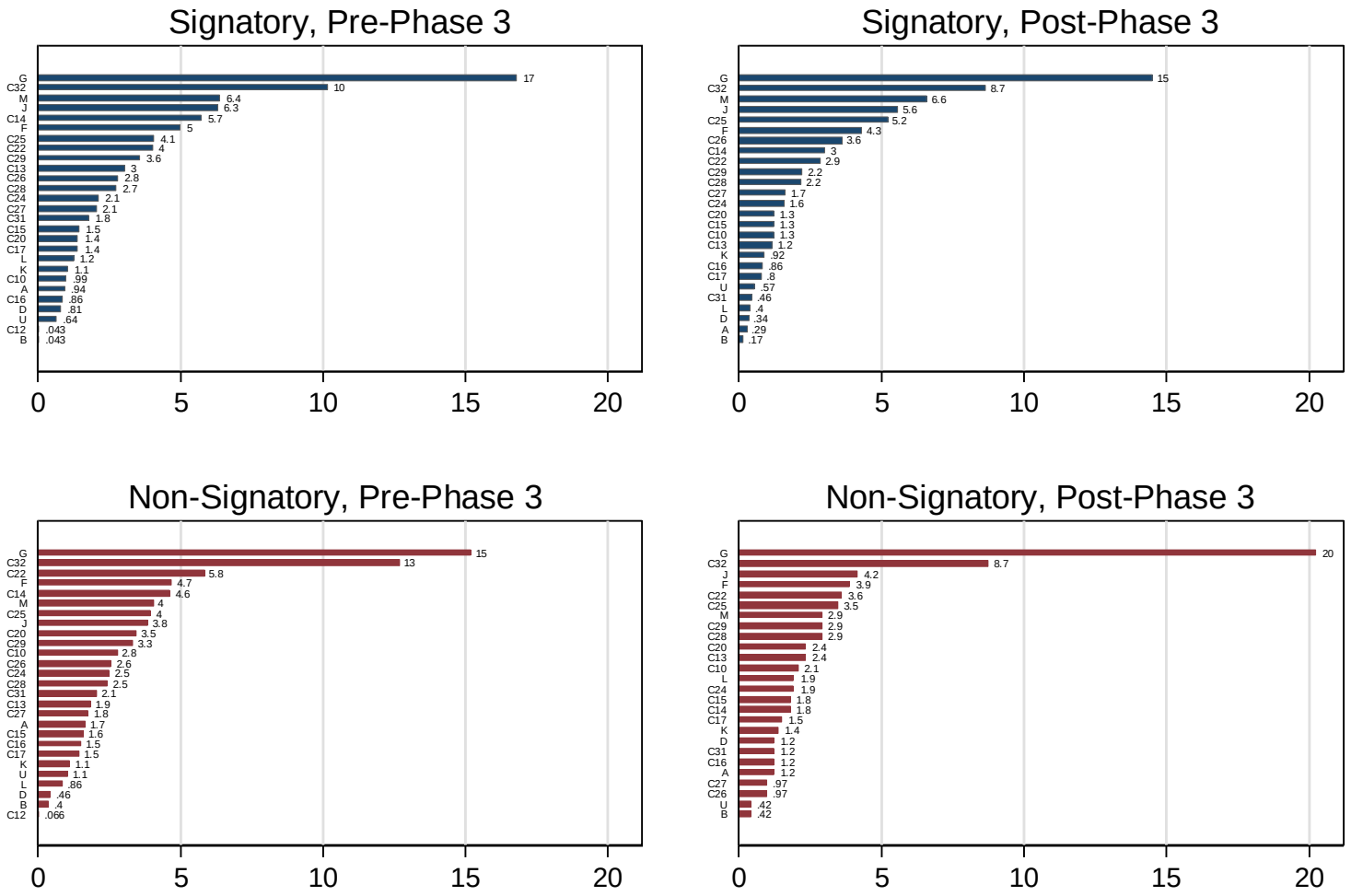
All data in balance test from Teorell, Jan, Stefan Dahlberg, Sören Holmberg, Bo Rothstein, Anna Khomenko & Richard Svensson. 2017. The Quality of Government Standard Dataset, version Jan17. University of Gothenburg: The Quality of Government Institute, http://www.qog.pol.gu.se doi:10.18157/QoGStdJan17

Appendix A2: Dynamic Balance Test

This table extends on the balance test above. Here, we study firm-level characteristics among OECD-ABC signatories and non-signatories. The analysis uses the full PCI dataset in the following equation ($y_{it} = \beta_0 + \beta_1 OECD + \beta_2 Phase3 + \beta_3 OECD * Phase3 + \lambda + e_{it}$). Each row represents the regression of the variable in the first column (y) on the interaction of OECD and Phase 3 including survey year fixed effects. i is an index of firms and t indexes the year they completed registration activities. We also include a set of survey year effects (λ). The third column lists β_3, which is the diff-in-diff coefficient. The trends in sectors at the two-digit ISIC level is depicted in Figure A2.1 below.

Potential Confounders	Firm Entered Vietnam before Phase 3		Firm is from OECD Signatory Country		Interaction between Phase3 and OECD		Constant		n	R-squared
	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI		
Employment Size at Establishment	-0.486***	(-0.571 - -0.400)	-0.144	(-0.568 - 0.280)	0.028	(-0.148 - 0.204)	3.390***	(3.056 - 3.724)	5,398	0.081
Equity Size at Establishment	-0.360***	(-0.485 - -0.235)	-0.220	(-0.522 - 0.082)	0.148	(-0.080 - 0.375)	5.013***	(4.717 - 5.309)	4,198	0.076
Entry Type: 100% Foreign Owned Venture =1	-0.079***	(-0.115 - -0.042)	0.003	(-0.051 - 0.057)	0.036*	(-0.006 - 0.077)	0.900***	(0.856 - 0.943)	5,841	0.012
Located in Industrial Zone =1	-0.134***	(-0.182 - -0.086)	-0.043	(-0.170 - 0.084)	0.095***	(0.035 - 0.156)	0.571***	(0.500 - 0.643)	5,559	0.011
Land Use Rights =1	-0.165***	(-0.269 - -0.062)	-0.087	(-0.214 - 0.040)	0.045	(-0.056 - 0.147)	0.456***	(0.310 - 0.602)	5,361	0.044
Main Sector=Manufacturing	-0.113**	(-0.200 - -0.026)	-0.032	(-0.165 - 0.101)	0.065	(-0.029 - 0.159)	0.727***	(0.604 - 0.849)	5,841	0.028
Main Sector=Construction	-0.023*	(-0.048 - 0.003)	0.001	(-0.046 - 0.047)	0.031**	(0.001 - 0.060)	0.044**	(0.010 - 0.077)	5,841	0.006
Main Sector=Services/Commerce	0.129***	(0.077 - 0.181)	0.067	(-0.067 - 0.201)	-0.096***	(-0.167 - -0.026)	0.158***	(0.046 - 0.269)	5,841	0.028
Main Sector=Agriculture/Aquaculture	-0.003	(-0.020 - 0.014)	-0.019***	(-0.026 - -0.012)	-0.001	(-0.020 - 0.017)	0.048***	(0.036 - 0.059)	5,841	0.006
Main Sector=Mining/Natural Resources	-0.005	(-0.013 - 0.003)	-0.005	(-0.015 - 0.005)	0.006	(-0.004 - 0.016)	0.017	(-0.007 - 0.040)	5,841	0.006
Main Sector=Finance	0.001	(-0.004 - 0.006)	-0.005*	(-0.010 - 0.001)	0.001	(-0.007 - 0.008)	0.009**	(0.001 - 0.018)	5,841	0.001
Restricted Sector=1	-0.011	(-0.101 - 0.080)	-0.029	(-0.093 - 0.035)	-0.015	(-0.133 - 0.102)	0.205***	(0.175 - 0.234)	1,609	0.004
Expansion Plans (1 -5)	0.040	(-0.022 - 0.102)	0.108*	(-0.005 - 0.222)	0.026	(-0.057 - 0.109)	5.010***	(4.917 - 5.104)	5,486	0.048
Total Revenue in Entry Year (ln)	-1.638***	(-2.644 - -0.632)	0.067	(-0.312 - 0.445)	0.117	(-0.866 - 1.101)	12.747***	(12.297 - 13.196)	3,003	0.114
Customer: SOE	0.008	(-0.022 - 0.037)	-0.055***	(-0.094 - -0.016)	-0.004	(-0.036 - 0.028)	0.123***	(0.080 - 0.166)	5,841	0.015
Customer: Government	0.015**	(0.001 - 0.030)	-0.012	(-0.033 - 0.010)	0.003	(-0.018 - 0.024)	0.035***	(0.019 - 0.052)	5,841	0.008
Customer: Private Individual or Firm	0.043**	(0.006 - 0.080)	-0.137***	(-0.199 - -0.074)	-0.029	(-0.109 - 0.052)	0.322***	(0.279 - 0.364)	5,841	0.060
Customer: Foreign Individual or Firm	0.002	(-0.035 - 0.040)	0.006	(-0.046 - 0.059)	0.013	(-0.031 - 0.057)	0.257***	(0.216 - 0.299)	5,266	0.073
Customer: Exporting to Home Country	-0.097***	(-0.125 - -0.069)	0.152**	(0.034 - 0.270)	0.058***	(0.018 - 0.097)	0.382***	(0.291 - 0.473)	5,841	0.039
Customer: Exporting to Third Country	-0.078***	(-0.117 - -0.040)	-0.020	(-0.070 - 0.030)	-0.018	(-0.060 - 0.024)	0.116***	(0.065 - 0.167)	5,841	0.075
Total Expenditures in Entry Year (ln)	-1.014**	(-1.857 - -0.170)	-0.163	(-0.614 - 0.288)	-0.309	(-1.133 - 0.515)	13.094***	(12.772 - 13.416)	2,651	0.105
Supplier: SOE	0.008	(-0.010 - 0.025)	0.007	(-0.016 - 0.029)	-0.058***	(-0.079 - -0.037)	0.096***	(0.069 - 0.122)	5,841	0.011
Supplier: Government	-0.022	(-0.058 - 0.015)	0.032	(-0.021 - 0.086)	-0.047	(-0.110 - 0.015)	0.497***	(0.459 - 0.534)	5,841	0.078
Supplier: Private Individual or Firm	-0.007	(-0.021 - 0.007)	0.007	(-0.021 - 0.035)	-0.026**	(-0.050 - -0.002)	0.105***	(0.081 - 0.129)	5,841	0.027
Supplier: Foreign Individual or Firm	-0.006	(-0.016 - 0.004)	0.006	(-0.007 - 0.019)	0.003	(-0.021 - 0.026)	0.049***	(0.026 - 0.073)	5,841	0.004
Supplier: Importing Home Country	-0.086**	(-0.167 - -0.005)	0.014	(-0.079 - 0.107)	0.081*	(-0.013 - 0.176)	0.291***	(0.232 - 0.349)	5,841	0.096
Supplier: Importing from Third Country	-0.036	(-0.079 - 0.008)	0.041	(-0.027 - 0.109)	-0.061**	(-0.110 - -0.012)	0.304***	(0.256 - 0.352)	5,841	0.027
Days to Receive License	-92.803	-299.724 - 114.117	-67.170	[-233.510 - 99.170]	38.121	-106.793 - 183.036	100.945*	[-18.572 - 220.462]	3,572	0.008
License and Registration Issued Concurrently =1	-0.047*	(-0.101 - 0.008)	-0.008	(-0.031 - 0.014)	0.026	(-0.033 - 0.085)	0.888***	(0.853 - 0.922)	5,053	0.038
Firm Paying VAT =1	0.034	(-0.059 - 0.126)	-0.065	(-0.238 - 0.108)	0.024	(-0.087 - 0.134)	0.725***	(0.656 - 0.794)	2,936	0.009
Firm Paying CIT =1	-0.028	(-0.067 - 0.012)	0.081***	(0.051 - 0.110)	-0.072***	(-0.115 - -0.029)	0.733***	(0.708 - 0.759)	2,936	0.012

Appendix A3: No Difference in Trending in Sector over Time



Appendix A4: Balance between Treatment and Control Groups for UCT

Potential Confounders	Mean		Standard Deviation		Differences	
	Treatment	Control	Treatment	Control	p-value	t-test
DV 1: Number of Activities at Entry	1.60	1.87	0.83	1.03	0.00	-9.58
DV 2: Number of Activities during Procurement	0.86	1.03	1.13	1.18	0.00	-4.17
Employment Size at Establishment	3.07	3.00	1.62	1.60	0.11	1.60
Equity Size at Establishment	4.06	4.09	1.72	1.75	0.69	-0.40
Entry Type: 100% Foreign Owned Venture =1	0.88	0.89	0.33	0.32	0.38	-0.88
Located in Industrial Zone =1	0.50	0.48	0.50	0.50	0.13	1.53
Land Use Rights=1	0.27	0.27	0.44	0.44	0.99	0.02
Main Sector=C32 (Other Manufacturing)	0.55	0.55	0.50	0.50	0.99	-0.01
Main Sector=G (Wholesale and Retail Trade)	0.08	0.07	0.27	0.26	0.14	1.47
Main Sector=G46 (Wholesale Trade, No Vehicles)	0.29	0.32	0.45	0.47	0.02	-2.42
Main Sector=C14 (Manufacturing Garments)	0.02	0.02	0.15	0.14	0.63	0.48
Main Sector=J (Information)	0.00	0.01	0.04	0.07	0.03	-2.14
Main Sector=M (Professional Scientific Activities)	0.01	0.01	0.09	0.08	0.70	0.38
Restricted Sector=1	0.16	0.21	0.36	0.41	0.00	-2.85
Expansion Plans (1 -5)	4.67	4.67	0.96	0.96	1.00	0.00
Total Revenue in Entry Year (ln)	12.56	12.54	4.32	4.21	0.89	0.13
Customer: SOE	0.10	0.11	0.30	0.32	0.10	-1.63
Customer: Government	0.04	0.05	0.20	0.21	0.44	-0.77
Customer: Private Individual or Firm	0.37	0.36	0.48	0.48	0.46	0.74
Customer: Foreign Individual or Firm	0.36	0.37	0.48	0.48	0.36	-0.92
Customer: Exporting to Home Country	0.39	0.39	0.49	0.49	0.74	0.33
Total Expenditures in Entry Year (ln)	13.08	13.02	3.95	3.97	0.69	0.40
Supplier: SOE	0.09	0.09	0.28	0.28	0.86	0.18
Supplier: Government	0.51	0.52	0.50	0.50	0.51	-0.65
Supplier: Private Individual or Firm	0.12	0.12	0.33	0.33	0.83	-0.22
Supplier: Foreign Individual or Firm	0.07	0.09	0.26	0.28	0.03	-2.22
Supplier: Importing from Home Country	0.45	0.43	0.50	0.50	0.07	1.83
Supplier: Importing from Third Country	0.28	0.29	0.45	0.45	0.72	-0.35
Days to Receive License	64.90	95.96	454.65	1187.64	0.32	-1.00
License and Registration Issued Concurrently =1	0.76	0.76	0.43	0.43	0.97	0.03
Firm Paying VAT =1	0.74	0.75	0.44	0.51	0.66	-0.44
Firm Paying CIT =1	0.76	0.75	0.43	0.43	0.40	0.84
Firm is the subsidiary of a multi-national corporation	0.38	0.39	0.48	0.49	0.19	-1.32
Survey Year	2013.18	2012.98	1.81	1.93	0.00	4.03
Year first applied to receive lisence	2008.73	2008.67	2.70	2.65	0.37	0.89
Revised Combined Polity Score	6.92	6.79	5.46	5.54	0.35	0.93
Democracy (Dichotomous)	0.81	0.80	0.39	0.40	0.42	0.81
Constant GDP Per Capita (ln)	9.92	9.94	0.92	0.89	0.45	-0.75
Population (ln)	17.25	17.12	3.02	3.09	0.15	1.46
Corruption Perceptions Index	5.23	5.24	2.01	2.02	0.86	-0.18

Appendix A5: Summary Statistics and Source Data of Key Variables Used in Analysis

Variable	n	Mean	SD	Min	Max	Source
Standard Measures of Corruption						
Firm Paid a Bribe of Any Size = 1	4420	0.60	0.49	0.00	1.00	PCI-FDI (Qe6)
Bribe Size/Revenue (8-Point Scale)	4420	6.62	1.21	1.00	8.00	PCI-FDI (Qe7)
List Questions						
Procedures completed during registration	4637	1.74	0.95	0.00	4.00	PCI-FDI (Qc6)
Procedures completed during procurement	3055	0.95	1.16	0.00	6.00	PCI-FDI (Qe9)
Key Independent Variables						
Signed OECD Bribe Convention =1	5841	0.38	0.48	0.00	1.00	TI.a (Table A)
Registered after Phase 3=1	5841	0.64	0.48	0.00	1.00	PCI-FDI (Qa1)
OECD*Phase #	5841	0.26	0.44	0.00	1.00	
Entry Year	5841	2008.70	2.67	2005	2015	PCI-FDI (Qa1)
Enforcement Data						
Domestic Enforcement of Convention (1 to 4)	5841	1.62	1.52	0.00	4.00	TI.a (Table A)
Collapsed Enforcement Scale	5834	1.07	0.89	0.00	2.00	TI.a (Table A)
Firm Level Controls						
Located in Industrial Zone =1	5559	0.49	0.50	0.00	1.00	PCI-FDI (Qd2)
Labor Size of Firm at Establishment (1 to 8)	5398	3.03	1.61	1.00	8.00	PCI-FDI (Qa10)[C]
100% Foreign Owned =1	5841	0.88	0.32	0.00	1.00	PCI-FDI (Qa8)
Country Level Controls						
GDP/Capita (ln, PPP)	5813	9.93	0.90	6.33	11.31	WDI (2014)
Democracy (Polity)	5737	6.85	5.50	-10.00	10.00	PCI-FDI
Population (ln)	5364	17.18	3.05	10.03	21.05	WDI (2014)
Survey Year Dummies						
Survey Year 2010	5841	0.10	0.30	0.00	1.00	PCI-FDI
Survey Year 2011	5841	0.17	0.37	0.00	1.00	PCI-FDI
Survey Year 2012	5841	0.13	0.34	0.00	1.00	PCI-FDI
Survey Year 2013	5841	0.14	0.35	0.00	1.00	PCI-FDI
Survey Year 2014	5841	0.17	0.38	0.00	1.00	PCI-FDI
Survey Year 2015	5841	0.19	0.39	0.00	1.00	PCI-FDI
Survey Year 2016	5841	0.10	0.30	0.00	1.00	PCI-FDI

A: International Standard Industrial Classification (ISIC) Revision 4 codes are applied to the main product or service of every firm. These are then compared to the Group A restrictions listed in the Vietnam National Assembly. 2005. "Law on Investment." 59–2005-QH11. November 29.

B: 1) Under 0.5 BVND (25,000USD); 2) From 0.5 to under 1 BVND (50,000 USD); 3) From 1 to under 5 BVND (250,000 USD); 4) From 5 to under 10 BVND (500,000 USD); 5) From 10 to under 50 BVND (2.5 million USD); 6) From 50 to under 200 BVND (10 million USD); 7) From 200 to under 500 BVND (25 million USD); 8) Above 500 BVND (25 million USD).

C: 1) Less than 5; 2) From 5 to 9; 3) From 10 to 49; 4) From 50 to 299; 5) From 300 to 399;) From 400 to 499; 7) From 500 to 1000; 8) 1000 and over.

PCI-FDI: Vietnam Provincial Competitiveness Index, Foreign Investment Index Survey, 2010-2013) http://eng.pcivietnam.org/pci-questionnaire/questionnaire-2013-a299.html

WDI: World Bank. International Economics Dept. Development Data Group. (2014).*World Development Indicators*. Washington, DC: World Bank.

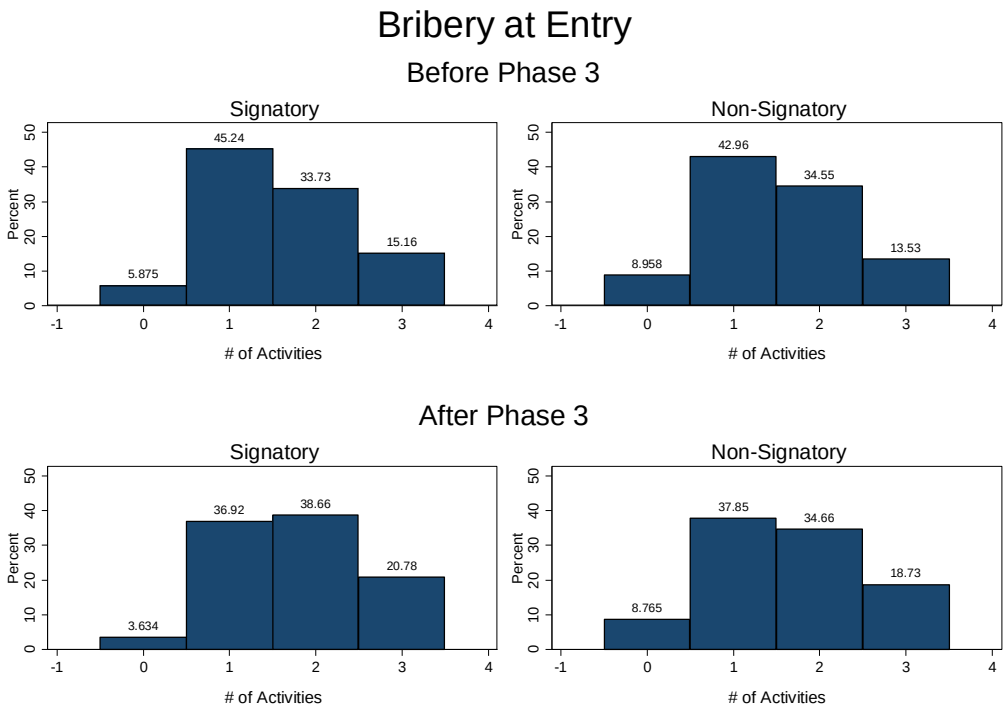
TI.a: Heimann, F. F., & Dell, G. 2012. Exporting Corruption? Country Enforcement of the OECD Anti-bribery Convention Progress Report 2012. Berlin, Germany: Transparency International, p9

TI.b: Transparency International 2013. Corruption Perceptions Index http://cpi.transparency.org/cpi2013/

GW: Gleditsch, K. S., & Ward, M. D. 2001. "Measuring space: A minimum-distance database and applications to international studies," *Journal of Peace Research*, 38.6, 739-758.

A6. Test of Floor and Ceiling Effects

(Change in Non-Sensitive Activities among Firms from OECD Signatories)



Appendix 7: Robustness Tests for Diff-and Diff Estimator

At first blush, the findings appear compelling, but the timing of Phase 3, the type of corruption measured, and the implementation of the PCI survey pose a number of threats to inference. In this Appendix, we tackle these threats one by one: 1) the parallel trends assumption; 2) bandwidth size; and 3) earlier entry years.

A7.1. Parallel Trends Assumption

The diff-in-diff estimator identifies the impact of the treatment under the parallel trends assumption that the unobserved difference between the treatment and control groups is time-constant before the intervention. In non-statistical jargon, our findings could be biased if corruption among signatory firms was already in decline prior to Phase 3 because of lagged responses to earlier OECD-ABC phases, regulatory responses to the sub-prime financial crisis, or Vietnam's entry into more restrictive international economic agreements, such as the U.S. Bilateral Trade Agreement in 2000 or the WTO in 2007.

To address these concerns, we run a series of placebo tests that re-run our preferred specification (Table 2, Model 5) but vary the cut-off year for the before and after analysis. If prior declines in OECD-ABC corruption are really responsible for our finding, the interaction term should be significant for those other years as well. The top panel of Figure A7.1 plots the results of 16 regressions for each year (y) between 1997 and 2016, where "after" is defined by entry years greater than the y (after =1 if entry year >y; 0 otherwise). For each year, we depict the coefficient on the OECD*Year interaction term surrounded by a 95% confidence interval.

Notice that the key interaction term for every year between 1997 and 2008 is not robustly significant across specifications, and more importantly, has the wrong sign in most models. With the exception of 2001, we do not observe a significantly negative coefficient until entry years greater than 2009, the actual Phase 3 cut-off year. That is, the predominant trend prior to Phase 3 was that changes in corruption among OECD-ABC signatory firms was roughly equivalent to their non-signatory peers.[1] In sum: 1) there is no evidence that

OECD-ABC countries were generally less corrupt prior to Phase 3, and 2) violations of the parallel trends assumption cannot be responsible for the change in behavior we observe. Thus, there is no evidence that alternative factors, occurring prior to 2010, are responsible for the effects we observe in Table 2.

This trend can also be observed in Figure A7.2, where we calculate the average bribe propensity every five years going back to 1989. Notice that firms from signatories and non-signatories bribe at very similar levels until they hit the red line denoting the Phase 3 onset after 2009.

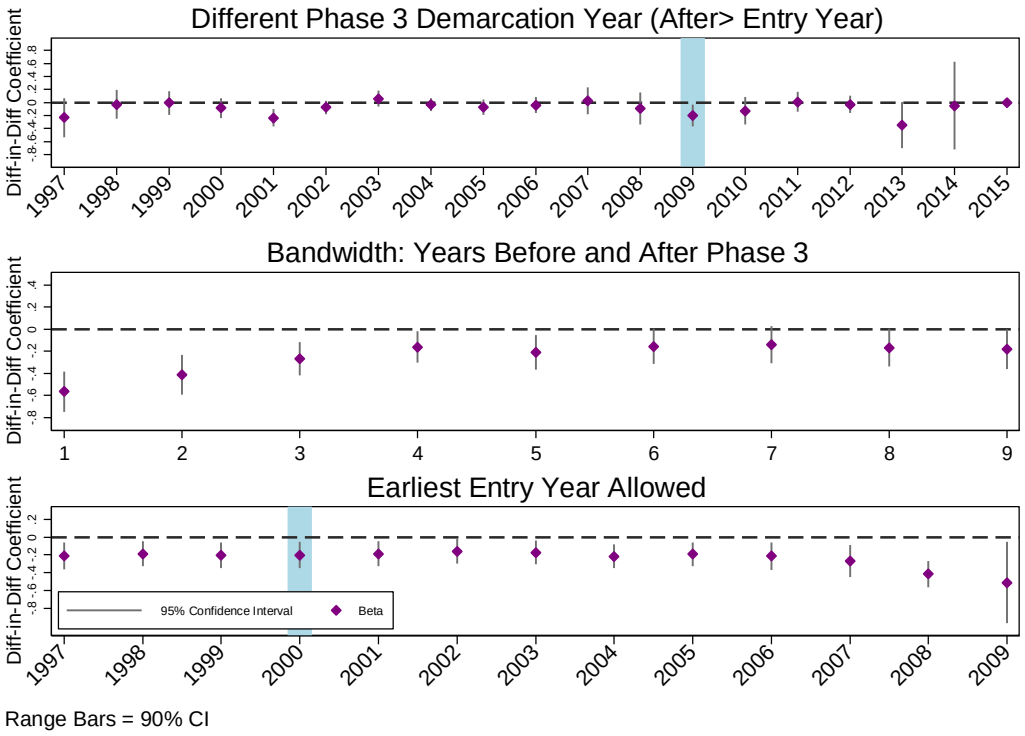
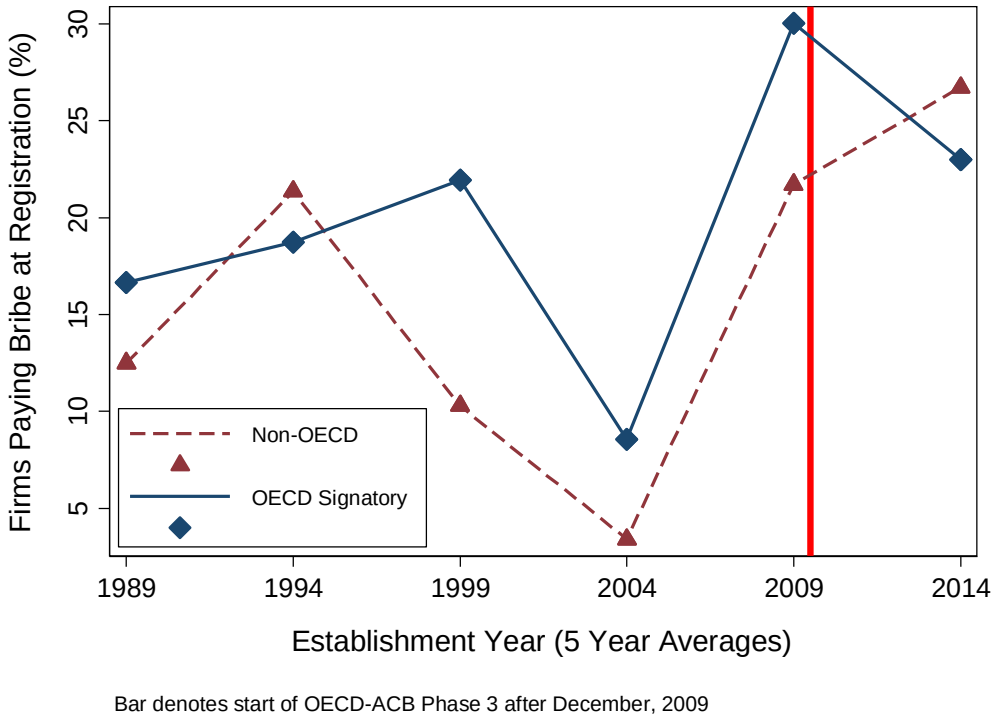


Figure A7.1: Robustness Tests. The top panel demonstrates a test of the parallel trends assumption by re-running the same analysis as Table 2 (Model 6), but replacing the year defined as the onset of Phase 3 with a range of different years. The light blue shade shows the cut-off year actually used in the main analysis. The bottom panel tests different bandwidths around the 2009 cut-off, ranging from 1 to 9 years. Range bars represent 90% Confidence Intervals.



Appendix A7.1: Graphical Display of Parallel Trends Assumption: Looks at average bribery over five-year periods among signatories and non-signatories of OECD countries. The red line at 2009 indicates the onset of Phase 3.

Appendix 7.2: Varying Bandwidth

A second concern with our analysis is that our relatively open window on both sides of Phase 3 is allowing for the capture of behavior that takes place significantly after the beginning of 2010. For instance, if firms from OECD-ABC signatory countries coincidentally enter less corruption-prone sectors or use less corruption-prone entry procedures after 2014, then by averaging together all bribery after the beginning of 2010, we might be conflating these structural changes in the Vietnamese and global economy with responses to the Convention.[2]

On the other side of the coin, our decision to include the responses of all firms that registered after 2005 in the analysis may introduce recall bias; specifically, this recall bias could occur because we are comparing firms that registered long ago and that may have developed negative memories of the registration period with those that registered more recently and have not had time to let their experiences in Vietnam potentially cloud their memories. To make sure our results survive this form of bias, we re-run the analysis allowing windows

[2] Online Appendix 2 shows that there is little evidence for such structural change within our sample of firms on observable indicators, especially sector (See Figure A2.1), but bias on unobservables is also possible.

around the cut-off to vary from the narrow one year since registration (only firms in 2009 and 2010) to the less narrow nine years. [3] These results can be seen in the bottom panel of Figure A7.1.[4]

Importantly, the choice of bandwidth has very little impact on the estimated reduction in corruption. Although the model's efficiency decreases with very limited windows because of the smaller number of respondents, the overall diff-in-diff coefficient is consistently around 40 percentage points. In fact, the one-year bandwidth actually indicates the sharpest decline among OECD-ABC signatories—roughly 60 percentage points.

Appendix 7.3: Earlier Entry Years

In the main estimation, we dropped all FIEs which entered after 2005, because we worried about recall bias. In the third panel of Figure A7.1, we run Model 5 (Table 2), but vary the initial year below which we drop firms. As can be seen, the choice of entry year makes no difference in the analysis.

[3] The last observed registration year is 2014, not 2015 in that analysis.
[4] A separate robustness test in Online Appendix 12 also experiments with including the earliest entry year allowed to check the impact of recall bias on results. Again, results are all significant and similarly signed.

Appendix A8: Home Country Enforcement and Procurement

Table 5: Heterogeneous Impact of Home Country Enforcement on Corruption During Procurement

Dependent variable: difference between the activities reported by treatment group and predicted number of nonsensitive activities of control group.	All Firms Registered after 2005					
	No Controls	**Survey Year FE**	**Sector FE**	**Firm Controls**	**Country Controls**	**Entry Year FE**
	(1)	(2)	(3)	(4)	(5)	(6)
No Enforcement	0.003	-0.107	-0.122	-0.144*	-0.227	-0.232
	(0.073)	(0.081)	(0.082)	(0.074)	(0.206)	(0.184)
Some Enforcement	-0.213***	-0.190**	-0.201**	-0.223**	-0.309	-0.302
	(0.071)	(0.085)	(0.085)	(0.093)	(0.217)	(0.187)
100% Foreign Owned =1				-0.088	-0.054	-0.030
				(0.124)	(0.133)	(0.138)
Labor Size at Establishment (1 to 8)				-0.006	-0.014	-0.018
				(0.026)	(0.028)	(0.031)
Industrial Zone==1				0.036	0.026	0.021
				(0.081)	(0.067)	(0.070)
GDP Per Capita (ln)					0.019	0.019
					(0.065)	(0.059)
Population (ln)					0.003	0.006
					(0.028)	(0.025)
Democracy (Polity IV)					0.009	0.010
					(0.015)	(0.014)
Constant	0.265***	0.228	0.161	0.953**	0.734	0.699
	(0.067)	(0.372)	(0.387)	(0.380)	(0.983)	(0.896)
Survey Year FE	No	Yes	Yes	Yes	Yes	Yes
Sector FE	No	No	Yes	Yes	Yes	Yes
Firm Countrols	No	No	No	Yes	Yes	Yes
Country Controls	No	No	No	No	Yes	No
Country FE	No	No	No	No	No	Yes
Entry Year FE	No	No	No	No	No	Yes
Asia Big 4	No	No	No	No	No	No
Observations	1269	1269	1269	1169	1048	1048
Provincial Clusters	45	45	45	41	41	41
RMSE	1.103	1.100	1.095	1.094	1.086	1.091
Log-Likelihood	-1924	-1917	-1909	-1756	-1564	-1564
LR Chi2 Test	NA	12.76***	29.07***	335.5***	718.8***	719.1***
BIC	3868	3891	3911	3265	3261	3261

Note: These results are derived from a two-stage model described in Table 1. (*** p<0.01, ** p<0.05, * p<0.1)