Who Benefits from Anti-Corruption Enforcement?

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Abstract

We exploit enforcement actions for violations of the U.S. Foreign Corrupt Practices Act in non-OECD countries to study the effect of anti-bribery enforcement on unpunished firms. Firms in the same country-industry as the violator experience significant increases in revenue (+6.4%) and asset productivity (+4.2%). This result is driven by foreign-owned business group affiliates and amplified when affiliates are active in government-dependent industries, members of groups with limited corruption experience, and owned by productive parents. Overall, anti-bribery enforcement actions, which also reduce local corruption levels, result in reallocation of economic activity and level a playing field disrupted by corruption.

Keywords: business groups, competition, corruption, firm growth, Foreign Corrupt Practices Act

JEL classification: G30, G38, K22

1. Introduction

Corruption is costly to investment and growth, detrimental to economic development, and pervasive in developing countries (Mauro 1995; Wei 2000; D'Souza and Kaufmann 2011). In 1977, the U.S. enacted the Foreign Corrupt Practices Act (FCPA), an effort to reduce foreign corruption of U.S. firms. While the Act saw little enforcement in its first three decades, since 2004 there has been an uptick in cases and regulatory fines. There have been 18 cases against corporations and monetary fines of $133 million over the 1977-2003 period, compared to 173 cases and $24.6 billion in fines over the 2004-2018 period. Cases include large multinational firms such as IBM, GE, Pfizer, and Halliburton, and span every continent and most industries.[1] Recently, enforcement actions have extended to non-U.S. firms, more specifically those with U.S. exposure.

Anti-bribery enforcement can affect unpunished firms in a number of ways. As a starting point, particularly in perceivably corrupt regions and industries, firms may have to use bribes to win contracts. If some of these firms are subject to anti-bribery regulations, they find themselves at a competitive disadvantage vis-à-vis their unregulated competitors (e.g., Beck and Maher 1989). Within this setting, proponents of anti-bribery enforcement argue that strict enforcement against regulation violators may level the playing field for firms that are less likely to use bribes. With violators of anti-bribery regulation removed or substantially weakened by regulatory actions, non-bribing firms can compete more fairly and the deadweight losses associated with bribery are reduced. Under this "leveling the playing field" effect, firms, particularly those that are less likely to use bribes, benefit from anti-bribery enforcement actions against their competitors. Effects of

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[1] Data on enforcement actions are obtained from the SEC (2020, https://www.sec.gov/spotlight/fcpa/fcpa-cases.shtml). Data on fines are obtained from Stanford Law School (2020, http://fcpa.stanford.edu/enforcement-actions.html) and contain fines against corporations and individuals.

this type may arise where enforcement agencies use their resources to stabilize the competitive environment, and even where enforcement is driven by other motives, such as the political ones documented in Cohen and Li (2020).

Yet opponents of anti-bribery enforcement argue that since most firms in perceivably corrupt regions and industries use bribes, enforcement actions against some firms may deter others from operating in such regions and industries, specifically those firms that also face costly enforcement actions. Under this deterrence effect, anti-bribery enforcement translates into an increase in expected detection costs for unpunished firms. Firms that are potentially subject to anti-bribery enforcement may suffer from enforcement actions against their competitors. These actions may then benefit the least regulated firms.

In this paper, we study the effects of anti-bribery enforcement actions on peers of punished firms in corruption-prone environments. We pay particular attention to peer characteristics that may predict the strength and direction of the firm response to enforcement actions. In our analysis, we exploit 88 staggered FCPA enforcement actions that occurred over the 2004-2017 period and use difference-in-differences techniques around enforcement years to study firm outcomes. The idea is that enforcement actions may level the playing field or deter specific firms from competing in the marketplace. Our analysis is based on Orbis' accounting and ownership data for more than 420,000 firms active in 104 non-Organisation for Economic Co-operation and Development (OECD) countries. We identify punished firms and define their peers as other firms in the same industry and same country. We remove directly punished firms from our analysis. For part of our analysis, we enrich the data with characteristics of firms' parent company, such as the parent's headquarter country, corruption experience, and asset productivity.

To illustrate the richness of our data, consider the chemicals industry in Brazil. When Brazil-based chemical manufacturer Braskem S.A. was fined $960 million in 2016 under the FCPA for concealing millions in bribes paid to Brazilian government officials, we focus our analysis on the remaining 372 Brazil-based, largely unlisted, chemical companies that existed in 2016. Our analysis, which extends beyond Brazil and chemicals to all non-OECD country-industries treated by anti-bribery enforcement actions, reveals that, on average, unpunished peers experience a 6.4% increase in revenue and a 4.2% increase in asset productivity.

We also assess the effect on standalone firms and business group affiliates. The distinction between standalone firms and business group affiliates is useful because non-OECD standalone firms tend to lack U.S. exposure. They are therefore unlikely to become subject to anti-bribery enforcement and deterred by regulatory actions against other firms. In addition, standalone firms are smaller than business group affiliates and likely compete within a different segment of the industry of punished firms.[2] Accordingly, we find that standalone firms are little affected by the regulatory enforcement actions. The average increases in revenue and asset productivity that we find are entirely driven by business group affiliates and amount to an 8.9% increase in revenue and a 5.3% increase in asset productivity.

Next, we zoom in on business group affiliates and examine whether the characteristics of business group affiliates determine their competitive responses. We find that foreign-owned affiliates particularly benefit from anti-bribery enforcement. Foreign-owned affiliates active in industries that sell a greater fraction of output to the government, as well those owned by productive parents and by parents overall less exposed to corruption through their affiliate network

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[2] In the case of aforementioned Braskem S.A., 241 (65%) of its 372 Brazilian chemical competitors are standalone firms; 78 (60%) of the remaining 131 business group affiliates are foreign owned.

are even more positively affected. These are the affiliates that can be expected to perform better when competition depends less on bribery. Together with the additional finding that U.S. anti-bribery enforcement in perceivably corrupt countries results in a reduction in corruption in these countries, these cross-sectional results are largely consistent with a leveling the playing field interpretation.[3]

Anti-bribery enforcement actions offer a useful quasi-experimental setting to study the effect of anti-bribery enforcement on unpunished firms since they affect many different host countries and industries at different points in time. However, one concern is the possibility that FCPA enforcement is determined by country-industry characteristics that also predict our results. For instance, a certain host country-industry may be targeted by prosecutors after particular economic, political, or social developments in that host country-industry, and our results might also be explained by these developments. This concern is less present in enforcement actions against non-U.S. firms since their timing may be driven by local U.S. politics (Cohen and Li 2020). To further mitigate the concern that other industry-host country developments may explain enforcement actions and our results, we attempt to predict which host country-industries are treated. Our results reveal that after accounting for industry and country fixed effects, other country-industry characteristics and developments do not predict which country-industries are targeted by enforcement actions. We include *country × year* and *industry × year* fixed effects in our regressions to further mitigate concerns. Our analyses of the distributive effects of FCPA enforcement include *industry × country × year* fixed effects, since we seek to explain cross-sectional within-country-industry variation. We discuss other potential challenges related to the

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[3] This is not to say that deterrence effects are not at play. However, leveling the playing field effects appear to outweigh them on average.

distribution of enforcement actions over time in Subsection 1.2.

This study contributes to several strands of the literature. Closest in spirit to our analysis is a study by D'Acunto, Weber, and Xie (2019) of peer effects around punishments for wrongdoing with respect to loan guarantees in China. Comparing state-owned enterprises (SOE) to non-SOEs, they show that SOEs reduce their loan guarantees after same-prefecture firms suffer regulatory punishment. Since SOEs lack certain traditional governance mechanisms, they suggest that the punishment of other firms can serve as a governance mechanism. Besides the differences in violations—loan guarantees vs. bribery—one distinguishing feature of their work is that most same-prefecture firms do not stand in direct competition for contracts as they typically operate in different industries. Hence, the leveling the playing field interpretation does not naturally arise. Our analysis speaks to same-industry same-country operations that often involve large one-off contracts that may be allocated in auctions, possibly with side payments that are in violation of regulation.

Our paper also provides evidence that the enforcement of a unilateral anti-bribery regulation may benefit competitors of punished firms in countries where bribery occurs. Enforcement of anti-bribery regulations against violators appears to level the playing field in host countries. Some studies have focused on the direct and mostly negative implications of the U.S. FCPA on domestic industries (Hines 1995) or of the U.K. Bribery Act on U.K. and U.K.-exposed firms (Zeume 2017). Others have focused on aggregate implications of the FCPA. While early evidence on the effect of the Act's passage on U.S. exports has been mixed (Graham 1984; Beck, Maher, and Tschoegl 1991), there is more recent evidence that FCPA enforcement hurts U.S. firms in terms of their foreign merger and acquisition (M&A) activity (Graham and Strout 2016) and adversely affects U.S. and non-U.S. firms in terms of their foreign direct investment in high-corruption-risk

countries (Christensen et al. 2020a). Moreover, bribe payments generate a return of $11 of contract value per $1 paid in bribes (Cheung, Rau, and Stouraitis 2012, 2020) and FCPA enforcement actions do not offset the value created by using bribes unless these enforcement actions are also associated with charges for financial fraud (Karpoff, Lee, and Martin 2017). We complement these findings that focus on aggregate U.S. outcomes, aggregate host country outcomes, and directly affected firms by documenting measurable positive and heterogeneous effects, at the micro-level, on the private sector in non-OECD country-industries where violators operate. Enforcement actions result in a reallocation of economic activity from domestic standalone and domestic-owned affiliates to foreign-owned affiliates.

A range of studies have taken the U.S. setting to China and examined the corporate responses to the Chinese anti-corruption campaign. That campaign has been found to benefit small entrepreneurial firms and result in inefficient resource allocation (Giannetti, Liao, You, and Yu 2017), but also to benefit SOEs more than others (Lin, Morck, Yeung, and Zhao 2016). By contrast, others have shown the campaign to have little impact on corporate corruption (Griffin, Liu, and Shu 2018). There are two key differences between these studies and ours: (1) we focus on direct competitors of punished firms and (2) we exploit the extraterritorial application of the U.S. FCPA, which allows us to study host country-industries outside the U.S. Most work on the Chinese anti-corruption campaign has focused on its implementation rather than enforcement. One exception is Agarwal, Qian, Seru, and Zhang (2020), who document that banks reduce preferential treatment of government bureaucrats in response to enforcement actions against province-level politicians. Within our setting, U.S. anti-bribery enforcement in perceivably corrupt countries results in a reduction in corruption perceptions in these countries.

Lastly, part of our result that more productive firms benefit from the punishment of their

competitors likely stems from the fact that U.S. enforcement of the FCPA in perceivably corrupt countries helps reduce corruption in these countries. We provide direct evidence that country-level corruption perception declines after FCPA enforcement actions. These findings complement studies that argue that corruption is detrimental to economic development at the country level (Shleifer and Vishny 1993; Mauro 1995) and those papers that show that enforcement of the FCPA after 2004 resulted in increased economic activity in the mining industry (Christensen et al. 2020b) and that anti-corruption crackdowns at the municipality level benefit economic activity (Colonnelli and Prem 2020). Our results support the interpretation that anti-corruption enforcement of U.S. regulation levels a playing field disrupted by corruption.

2. Data and Methodology

In this section, we discuss our data sources and variable construction. All variables are also defined in Appendix 1. We then elaborate on our methodology and a range of possible concerns that may arise from our identification strategy.

2.1 Data and variables

2.1.1 Orbis

In order to study the effects of anti-bribery enforcement actions on competitors of punished firms, we obtain firm-level accounting and ownership data as well as industry classifications for all public and private firms from Orbis. Compared to most other studies that combine information from multiple vintage DVD and external disk editions of the Orbis database for the 2005-2017 period,

we rely on Orbis' new historical data product.[4] Given that FCPA enforcement actions pick up only in 2004, we restrict our accounting data to the 2000-2017 period. Ownership data are restricted to the 2005-2017 period, and we backfill ownership structure prior to 2005.[5]

With our analysis focused on corruption, we restrict our sample to firms active in non-OECD countries. About 6 million of the 15 million firms contained in Orbis each year are located in these countries. We then require three years of non-missing ownership, industry, revenue, and total asset information. We then apply the standard filters discussed in Kalemli-Ozcan et al. (2019) and exclude very small firms with mean assets of less than $1 million, although this latter restriction does not materially affect our results. Since we are interested in the performance of violators' competitors, we remove firms that are directly punished by the FCPA. Our final sample consists of 420,000 firms and 3.2 million firm-year observations. These firms span 104 countries. Within this sample, we focus on three accounting variables that are well populated and consistent across countries: firms' revenue, assets, and revenue per assets (asset productivity).

Table 1 provides summary statistics. Since many firms are headquartered in Russia and China (Panel A), we repeat our later analysis without firms from these countries. Our results are robust. Also, since one-fourth of sample firms are classified as belonging to the *Wholesale and retail trade* industry, we repeat our analysis without these firms and find our results to be robust. The average sample firm has revenue of $37 million and assets of $32 million. However, as common in such data, the size distribution is skewed, with median revenue and assets at $3.4

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[4] Orbis now offers its own version of data in which prior annual editions of the data are combined into one dataset. We use the 2018 download of this new product. We verify that this new version of the data mirrors the combination of vintage data sets.

[5] Throughout the paper, we require ownership data for the year prior to firms' treatment. Since treatment only starts in 2004 and since Orbis ownership data tends to lag by a year or two on average, the effect of backfilling on how we classify firms is likely small. Our results hold when we restrict our analysis to treatment in 2005-2017.

million. These numbers translate into a dollar of assets generating $1.7 in revenue on average (median $1.0). Firms have an average of 211 employees and a median of 45 employees. Note that the coverage of employee data is limited and regularly based on estimates, which is why our analysis of productivity focuses on revenue per dollar of asset rather than employee-based measures.

--- Table 1 about here ---

2.1.2 FCPA enforcement actions

Data on FCPA enforcement actions is obtained from the SEC (www.sec.gov/spotlight/fcpa/fcpa-cases.shtml). For each case, we collect detailed information about the case decision date, involved firm(s), involved host country (countries), and essence of the crime. We then link involved firms to the Orbis dataset.

The number of anti-bribery enforcement actions by year is shown in Figure 1. We restrict our sample to cases after 2004 since prior to that year cases are sparse (e.g., there are 18 cases in 1977-2003 and firm-level accounting data for pre-case periods are typically unavailable.

--- Figure 1 about here ---

2.2 Methodology

We use FCPA enforcement actions to proxy for the weakening of local industry corruption in a difference-in-differences (DiD) setting to study the effect of a weakening of corruption on firm outcomes. Firms are defined as treated when a peer that operates in the same host country and industry experiences an FCPA enforcement action. We estimate the effect of FCPA enforcement actions on firm-level outcomes over a 7-year window centred on the event year using a DiD

approach in the spirit of Bertrand and Mullainathan (2003).[6] Specifically, we estimate:

$$Y_{icst} = \beta(FCPA_{cst}) + \gamma_{ct} + \zeta_{st} + \eta_i + \epsilon_{icst} \tag{1}$$

where Y_{icst} is an outcome variable of interest (e.g., *revenue* or *revenue per assets*) for firm i in country c, industry s, and year t. $FCPA_{cst}$ identifies treated country-industries and switches to one the year after an FCPA enforcement case is brought to conclusion and punishment is determined. We include country-year fixed effects (γ_{ct}) and industry-year fixed effects (ζ_{st}) to account for the time-varying characteristics of host country and industry, along with firm fixed effects (η_i) to account for time-invariant firm characteristics. ϵ_{icst} is the error term. Standard errors are clustered at the country-industry level (i.e., the level of the shocks) but the results are robust to alternative clustering specifications.

In augmented specifications, we additionally interact treatment with characteristics of firm i's parent company by estimating the following:

$$Y_{icst} = \beta(FCPA_{cst} \times ParentType_i) + \delta_{cst} + \eta_i + \epsilon_{icst}, \tag{2}$$

where $ParentType_i$ denotes the parent characteristic prior to the enforcement action. In a small number of cases, parents change over time and, therefore, parent characteristics could vary. Our results are unaffected by accounting for this time variation.

Next, we discuss potential concerns with our DiD setting. First, we verify that FCPA enforcement actions are meaningful shocks to local corruption levels. Figure 2 shows the country-level corruption perception, measured as 100 minus Transparency International's Corruption Perception Index (CPI), in event-time around the first year each host country experiences an

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[6] Our results are robust to alternative specifications. We discuss the results of robustness tests in Section 5.

enforcement action.[7] Coefficients and 95% confidence intervals are obtained from a regression of countries' annual corruption perception on country fixed effects and dummy variables indicating the distance to the first FCPA enforcement action in each country. We find that host countries do not exhibit pre-trends in corruption levels but do exhibit a noticeable and significant downtick in corruption levels in the years following the country's first FCPA enforcement action vis-à-vis other countries that did not experience FCPA enforcement actions. This result, also supported in Appendix 2 by regressions, suggests that FCPA enforcement actions result in reductions in host country corruption levels.

--- Figure 2 about here ---

Second, one potential concern with our study is that FCPA enforcement actions might be concentrated in one specific year, industry, or country. An economic development during such year, in such country, or in such industry might coincide with a large fraction of FCPA enforcement actions and drive our results. Figure 1 highlights one spike in the number of enforcement actions in 2016, but this spike only accounts for 16.8% of all enforcement actions over our sample period. Figure 3 points out that multiple host countries (Panel A) and industries (Panel B) are treated in most, particularly later, years.

--- Figure 3 about here ---

Importantly for our analysis, the number of treated firms is spread over the sample period and across countries. Table 2 shows that a substantial number of firms get treated in each year. For example, over 5,000 firms get treated for the first time in each of the years 2005, 2007, 2010, 2012, and 2016. This is important because other events could explain our results if most firms were

[7] Transparency International's Corruption Perception Index measures corruption perception on a scale from 0 to 100, where a higher number indicates less corruption perception. Therefore, throughout the analysis, we measure corruption perception as 100 minus the Corruption Perception Index.

treated in just one sample year.

Third, as is now standard in staggered DiD settings (e.g., Gentzkow and Shapiro 2019), to alleviate concerns that obvious time trends might drive our later results, in Figure 4 we plot raw revenue for treated and untreated firms over the sample period. With the exception of the last two sample years, treated firms are slightly smaller than control firms. There are no apparent time trends with respect to firm-level outcome.

--- Figure 4 about here ---

Another related concern is that FCPA enforcement actions are driven by other geography-specific characteristics or developments that might also drive firm-level outcomes. Thus, our results could reflect that the SEC targets specific host countries and industries, or that regulatory action may be responding to changes in economic development or institutions. To understand whether observable industry and host country characteristics are associated with bribery cases, we compare the characteristics of host country industries with a case to those without. We use 2003 characteristics and focus on FCPA enforcement cases that occur in 2004 and thereafter. The results are presented in Table 3. While of no consequence for the results, the table is restricted to a sample of non-OECD countries because our firm-level analysis focuses on these countries. Unsurprisingly, FCPA enforcement actions are more likely to affect more corrupt countries, as measured by 100 minus the Transparency International's Corruption Perception Index (see Panel A). Enforcement actions are also more pronounced among host country-industries with more firms, more U.S. firms, with at least one U.S. firm, and in larger host country-industries as measured by revenue and assets. Firms in affected host country-industries are characterized by

relatively lower profitability among all firms, but higher profitability among U.S. firms.[8] After controlling for industry and country fixed effects, most of these differences are no longer statistically significant. Notably, targeted host country-industries tend to have a larger number of U.S. firms but U.S. firms tend to be relatively less important in terms of their revenue and assets.

--- Table 3 about here ---

As for host country-industry developments, enforcement actions tend to be aimed at host country-industries that experience higher growth in number of firms and in number of U.S. firms, higher growth in the relative importance of U.S. firms, and higher growth in profit and gross margin of U.S. firms. However, these differences disappear when we control for host country and industry characteristics. In fact, most of the differences disappear with country fixed effects on their own, suggesting that the unconditional differences in target host country-industry developments are driven by the SEC's targeting of specific countries. In any case, to rule out the possibility that our results are driven by the characteristics of targeted host countries or industries, we include country × year and industry × year fixed effects in our regressions, which are effective controls for the country- and industry time-varying omitted variables.

3. Main Results

In this section, we present our main results. We first study the effect of anti-bribery enforcement actions on all sample firms, then compare standalone firms to business group affiliates, and then examine foreign business group affiliates.

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[8] Note that some affected host country-industries contain no U.S. firm in 2003: Not all FCPA enforcement actions are aimed at U.S. firms, U.S. firms may enter certain industry-host countries only after 2003, and some FCPA violations are against firm representatives in countries where their firm does not operate a subsidiary.

3.1 Average effect of FCPA enforcement actions on firms

Table 4 presents the results of the estimation of equation (1), which gauges the effect of FCPA enforcement actions on firms active in the same country-industry as the violator. We assess this effect on firms' revenue, assets, and asset productivity. All dependent variables are logged .

--- Table 4 about here ---

We start by estimating the effect of FCPA enforcement actions on the average sample firm. The coefficient in column (1) of Table 4 indicates that an FCPA enforcement action has a positive effect on the revenue of firms operating in same country-industries as the violator. On average, firms experience a statistically significant 6.4% increase in revenue in the three years after the enforcement action. The coefficient on total assets (column (2)) is also positive but smaller in magnitude (1.4%) and statistically insignificant at conventional levels. Together, these results suggest that firms become more productive on average, generating more revenue with a similar amount of assets. This is confirmed by asset productivity, which increases by 4.2% on average (column (3)).

3.2 Standalone firms and business group affiliates

Next, we separately assesses the effect for standalone firms and business group affiliates. Estimating equation (1) in turn for business group affiliates and standalone firms, we find that the beneficial effects of FCPA enforcement are concentrated among business group affiliates. The coefficients in columns (4) to (6) in Table 4 indicate that business group affiliates experience substantial increases in revenue and asset productivity, although small increases in assets. On average, a business group affiliate experiences an 8.9% increase in revenue, a 2.9% increase in total assets, and a 5.3% increase in revenue per assets. In contrast, the estimates for the sample of standalone firms (columns (7) to (9)), while positive, are small in magnitude and statistically

indistinguishable from zero. For revenue and asset productivity, the difference in the effect on business groups and standalone firms is statistically significant at the 5% level.

Even though our events are staggered over time, industries, and host countries, one may be concerned that the results merely reflect time trends. Figure 5 displays the average effect of FCPA enforcement actions on business group affiliates' revenue in event time from five years before to five year after the enforcement action. The year of the enforcement action is the benchmark year and normalized to zero. Each dot on the plot represents the regression coefficient of revenue on an event-time indicator. The regressions include firm, country-year, and industry-year fixed effects. The figure shows that there are no differential pre-trends between affiliates in country-industries that are subject to FCPA enforcement actions and those that are not. The coefficients on years -5 to -1 are close to zero and statistically insignificant. Those on +1 to +5 progressively increase, suggesting that it takes a few years for the enforcement actions to have a detectable effect on revenue.

--- Figure 5 about here ---

The main result of this subsection—that business group affiliates gain more from FCPA enforcement actions than standalone firms—appears more consistent with the view that enforcement actions level the playing field than with the view that they deter firms from doing business in perceivably corrupt markets. This is because the FCPA is enforceable against firms with U.S. exposure, while standalone firms that are headquartered in non-OECD countries are less likely to have such exposure. Therefore, if deterrence is the main mechanism at play, one would expect business group affiliates to be more negatively affected by anti-bribery enforcement actions than standalone firms, which is not what we find.

The result that standalone firms are unaffected by enforcement actions is also in line with

the notion that market segments within which standalone domestic firms and business group affiliates compete are different. For instance, these firms may compete for contracts of substantially different scale. Therefore, in what follows, we focus on business group affiliates and their characteristics, particularly with respect to their parent firms.

3.3 Affiliates of foreign and domestic parents

In this subsection, we examine the implications of anti-bribery enforcement for affiliates of domestic and foreign parents. On the one hand, if anti-bribery enforcement actions deter firms from competing in perceivably corrupt environments, foreign-owned firms likely benefit less from FCPA enforcement actions against same-industry same-country competitors. This is because such actions likely increase detection and expected punishment for the former firms. On the other hand, if anti-bribery enforcement levels the playing field, foreign-owned firms likely benefit from enforcement actions. This is because such firms are less likely to bribe prior to the enforcement actions, given higher expected detection costs at home,[9] and because such firms are typically more productive (Guadalupe et al. 2012), which gives them a competitive advantage in winning contracts in a level environment.

We present the results of this analysis in Table 5. Odd-numbered columns display the coefficients obtained from equation (1), where we also interact the *FCPA* dummy with *Foreign Parent*, an indicator variable for foreign business group affiliates. Even-numbered columns present the coefficients from a more saturated specification with country × industry × year fixed effects that absorb all time-varying country-industry variations, including the *FCPA* dummy.

--- Table 5 about here ---

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[9] By definition, firms that we classify as domestic-owned are headquartered exclusively in non-OECD countries, which typically have higher corruption levels.

The coefficients in columns (1) and (2) indicate that after an FCPA enforcement action, the revenue of foreign parents' affiliates grow by 10% to 13% relative to the revenue of domestic parents' affiliates; in column (1), the coefficient on *FCPA × Foreign* measures the incremental effect of foreign affiliates relative to domestic affiliates, which are the benchmark and represented by the *FCPA* indicator in the regression. The results in columns (3) and (4) suggest that FCPA enforcement does not differentially affect the asset size of domestic and foreign affiliates. The point estimates in these asset regressions are small (0.3% - 2%) and statistically insignificant. Thus, in the three years after the enforcement action, foreign affiliates generate substantially more revenue with the same asset base. Columns (4) and (6) indicate that revenue per asset increases by 8% to 9% for the affiliates of foreign parents relative to those of domestic parents. It is also noteworthy that we do not find any significant effects from the enforcement actions on domestic business group affiliates. Specifically, in columns (1), (3), and (5), the *FCPA* coefficient represents the effect of the enforcement action on affiliates of domestic business groups.[10] The *FCPA* point estimates for revenue, assets, and revenue per asset are all small in magnitude (between 0.8% and 3.8%) and statistically insignificant at conventional levels.

So far, we have examined the effect of FCPA enforcement actions on the intensive margin of firms' outcomes. Because all the regressions include firm fixed effects, the estimates are identified from firms in the sample before and after an FCPA enforcement action. In columns (7) to (10), we study the effect of FCPA enforcement on domestic and foreign firms' entry and exit decisions. We define the year of entry as the earliest year in which we observe a firm in the sample. By analogy, the year of exit is the last year in which we observe a firm in the sample.

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[10] In columns (2), (4), and (6), the coefficient on *FCPA* is subsumed by the country × industry × year fixed effects.

We find that FCPA enforcement actions have a significant effect on foreign affiliates' business dynamics in affected country-industries. The results in column (7) indicate that the affiliates of foreign business groups are less likely to exit in the three years after an FCPA enforcement action. We do not find any effect for domestic affiliates. Foreign affiliates experience a 1.5 percentage point decline in the probability of exit after an enforcement action. This result is robust to within country-industry-year comparisons between the affiliates of foreign and domestic parents, as shown in column (8). The 1.5 percentage point decline represents a 9% decrease in the unconditional probability of exit (16%). FCPA enforcement actions are also promoting market entry by foreign business groups (column (9)), and this result is robust to controlling for country × industry × year fixed effects when comparing to domestic business groups' affiliates (column (10)). In fact, we do not find that FCPA enforcement actions affect market entry of domestic business groups' affiliates.

In sum, foreign business group affiliates experience a more positive effect on revenue and asset productivity than same-industry same-host country domestic affiliates after anti-bribery enforcement actions. Foreign affiliates are also more likely to enter and less likely to exit affected markets in response to such actions.

At the aggregate level, overall market size, as measured by aggregate revenue at the host country-industry level, does not increase significantly.[11] Since, as depicted in Figure 6, foreign affiliates' market share increases vis-à-vis their domestic counterparts, the results are consistent with the notion that anti-bribery enforcement actions result in a reallocation of economic activity from domestic standalone and domestic-owned affiliates to foreign-owned affiliates.

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[11] The DiD estimate is 0.3%, with a t-statistic of 0.04.

--- Figure 6 about here ---

4. Cross-sectional Results

We next examine a range of cross-sectional characteristics of foreign business group affiliates to better understand the nature of the reallocation taking place after FCPA enforcement actions. Specifically, we consider whether affiliates are differentially affected when they (i) operate in industries that rely on government contracts, (ii) are owned by parents with corruption experience, or (iii) are owned by parent firms that are productive, and (iv) have U.S.-based parents. The analysis of these characteristics helps us to confirm our results in settings where bribery is more prevalent and investigate further whether enforcement actions deter or level the playing field in certain settings. It also allows us to include additional high-dimensional fixed effects in the regressions.

4.1 Government contractors

First, we focus on sales to the government. Enforcement actions may primarily affect firms active in industries that have repeated interactions with the government, such as those in which governments are more likely to be a customer. Supporting this consideration, seven in eight FCPA enforcement actions are for violations that involve a host country government official.[12]

We capture industry exposure to government sales by *Government Contracts*, a dummy variable that is set equal to one for industries with an above-median fraction of sales to the government. To estimate industries' sales to the government, we use FactSet's Revere database. We aggregate the sales of firms that have a government as a major customer by industry in 2005-

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[12] Authors' calculation. We go through all FCPA enforcement actions and identify those where a government employee (e.g., politicians or customs officials) receives the bribe. Non-government related violations involve bribes paid to other firms or individuals that are unrelated to the government.

2015 and scale by total industry sales. Industries with the highest fraction of sales to the government are construction; education & health; chemicals; and gas, water, and electricity. Those with the smallest fraction of sales to the government are insurance; food, beverage, and tobacco; textiles; and publishing and printing.

Table 6 presents the results for our assessment of the differential effect of FCPA enforcement actions on affiliates of foreign parents in industries with different government contracting intensity. The results suggest that the beneficial effect of FCPA enforcement actions on foreign parents is driven by industries where the government plays an important role as a customer. In these industries, the revenue and asset productivity of the affiliates of foreign parents grow by 13.6% and 9.7%, respectively, after an enforcement action (columns 1 and 3). In contrast, in industries with low government contract intensity, anti-bribery enforcement actions do not seem to materially affect the performance of foreign affiliates. The coefficients on revenue and asset productivity are close to zero (-0.5% and -1.1%, respectively) and statistically insignificant. These results are consistent with the notion that anti-bribery enforcement actions benefit the affiliates of foreign parents by altering the nature of the interactions between firms and the government in perceivably corrupt environments.

--- Table 6 about here ---

4.2 Corruption experience

Next, we focus on parent firms' corruption experience as one characteristic that may explain the positive effect of FCPA enforcement actions on foreign business group affiliates. If enforcement restricts competition to competition without bribes, we expect affiliates of parents with less corruption experience to benefit relatively more from FCPA enforcement actions as these firms likely have a comparative disadvantage when competing in the presence of bribery. Vis-à-vis their corruption-experienced counterparts, these firms should thrive on a level playing field.

We measure parent corruption experience using the average *Corruption Perception Index* of all the parents' subsidiary headquarter countries.[13] We create a *Low Parent Corruption Experience* indicator variable set equal to one when a parent has corruption experience below the median the year prior to the enforcement action. That indicator is imposed on all subsidiaries of a given parent and interacted with the *FCPA* dummy. Since there is variation in this indicator variable at the host country-industry-year level, we can include *country × industry × year* fixed effects in the regressions. In our analysis, treatment (previously captured by the variable *FCPA*) is now subsumed by these fixed effects and we can compare outcomes for the affiliates of parents with low corruption exposure to outcomes of same-country same-industry affiliates of parents with high corruption exposure.

Table 7 presents the results assessing the differential effect of FCPA enforcement actions on affiliates of foreign parents with different levels of corruption experience. Affiliates from parents with less experience in competing within a corrupt environment benefit more from FCPA enforcement actions. Relative to affiliates from parents with high corruption experience, affiliates from parents with low corruption experience realize a 9% increase in revenue and a 6% increase in asset productivity.

--- Table 7 about here ---

These results are consistent with a level playing field effect of anti-bribery enforcement actions. Firms that have a comparative disadvantage in competing in a corrupt environment benefit from anti-bribery enforcement actions.

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[13] This measure is based on all of a firm's subsidiaries in Orbis, including those in non-OECD countries.

4.3 Parent productivity

If anti-bribery enforcement actions level the playing field, we would expect affiliates of more productive parents to benefit from FCPA enforcement actions. This is because a reduction in the importance of bribery should allow firms to better compete for contracts (Arbatskaya and Mialon 2020). In order to test this idea, we examine the role of parent productivity in explaining the positive effect of FCPA enforcement actions on business group affiliates.

We measure parent asset productivity as the log of the ratio of the parent's revenue to assets.[14] As before, since there is variation in this measure at the host country-industry-year level, we include high-dimensional fixed effects and focus on differences in parent productivity after controlling for other developments at the country-industry-year level. The results in Table 8 indicate that affiliates of more productive parents experience both larger revenue growth and a larger increase in productivity following FCPA enforcement actions than affiliates with less productive parents. A one standard deviation increase in parent productivity (1.2) is associated with a 2.5% increase in revenue and 2.2% increase in productivity.

--- Table 8 about here ---

This result—that affiliates of more productive parents benefit more from FCPA enforcement actions—is also consistent with anti-bribery enforcement actions providing the most benefits to firms that have a comparative disadvantage in competing on bribes.

4.4 Subsidiaries of U.S. firms

In a last test, we assess the effect of FCPA enforcement actions on affiliates of U.S.-headquartered business groups. Such business groups may experience a greater increase in expected detection

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[14] We use information from the parent's consolidated accounts when available. When consolidated accounts are not available, we use information from the parent's unconsolidated accounts.

costs than non-U.S.-based business groups when host country-industry peers are punished for FCPA violations. This is the case to the extent that U.S.-based business groups are more likely targeted by regulators, that their bribery activities may be more easily detectable, and that they are more easily sanctioned by U.S. regulators for FCPA violations. Under the "deterrence" effect, U.S.-based business groups are more likely to withdraw from or downsize in country-industries under regulatory scrutiny. Their economic activity should shrink compared to non-U.S.-based business groups.

When we examine whether the affiliates of U.S.-based business groups are differentially affected by FCPA enforcement actions, we find little evidence of this shrinkage. Specifically, the results in Table 9 show that affiliates of U.S. parents do not perform better or worse than the affiliates of other parents.

--- Table 9 about here ---

5. Robustness

We conduct a range of robustness tests to confirm our main results in Table 5 (columns (2), (4), and (6)), which are presented in Table 10. In order to facilitate comparison, our baseline results are presented in row 1 of Table 10.

--- Table 10 about here ---

First, we remove Russia and China, countries that account for the largest fractions of firms and treated firms (rows (2)-(3)). This test is aimed at alleviating concerns that our results are entirely driven by one country; when we exclude these countries, our results are robust. Second, we relax restrictions on the width of our event widow. We extend our event window to five years around the FCPA enforcement action (row 4) and alternatively include all sample years (2000-2017; row 5); our results are also robust to these variations. Third, we impose the restriction that

firms must exist three years prior to the FCPA enforcement action. Even though the SEC does not typically disclose early-stage investigations and their progress, results of such test alleviate concerns that our earlier results are driven entirely by firms founded after bribery is detected and investigations start but before enforcement takes place. This possibility would subject our results to an alternative interpretation in which increased activity and productivity are driven by the start of an investigation, rather than an enforcement action, but this does not seem to be the case (row 6). We further repeat our analysis including firms with fewer than $1 million in assets (row 7) and remove sectors that account for the largest fraction of firms (rows (8) and (9)); our results are little affected.

6. Conclusion

There is ample evidence that bribery is detrimental to economic growth and investment, and that anti-bribery enforcement actions hurt directly punished firms. In this paper, we show that anti-bribery enforcement benefits unpunished firms when their host country-industry peers are punished for FCPA violations. Unpunished firms experience an increase in revenues (+6.4%) and asset productivity (+4.2%) subsequent to enforcement actions. Our results are driven by business group affiliates, particularly foreign-owned ones, and are not present for standalone firms. For business group affiliates, the results are further amplified when they are active in government-dependent industries, when their parent firm is more productive, and when their parent firm has less experience dealing with corruption. We also show that anti-bribery enforcement reduces corruption levels in perceivably corrupt countries.

Taken together, our results are consistent with the notion that anti-bribery enforcement levels a playing field disrupted by corruption. Future research could examine other settings where

the deterrence effect may particularly prevail and provide a theoretical underpinning for the interplay between leveling and deterrence effects.

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Figure 1. FCPA Enforcement Actions over the Sample Period

This figure shows the total number of FCPA enforcement actions by year over the 2004-2017 period. Data on FCPA enforcement actions are obtained from the SEC (https://www.sec.gov/spotlight/fcpa/fcpa-cases.shtml) and restricted to cases where at least one target firm and at least one target host country can be identified from the case description.
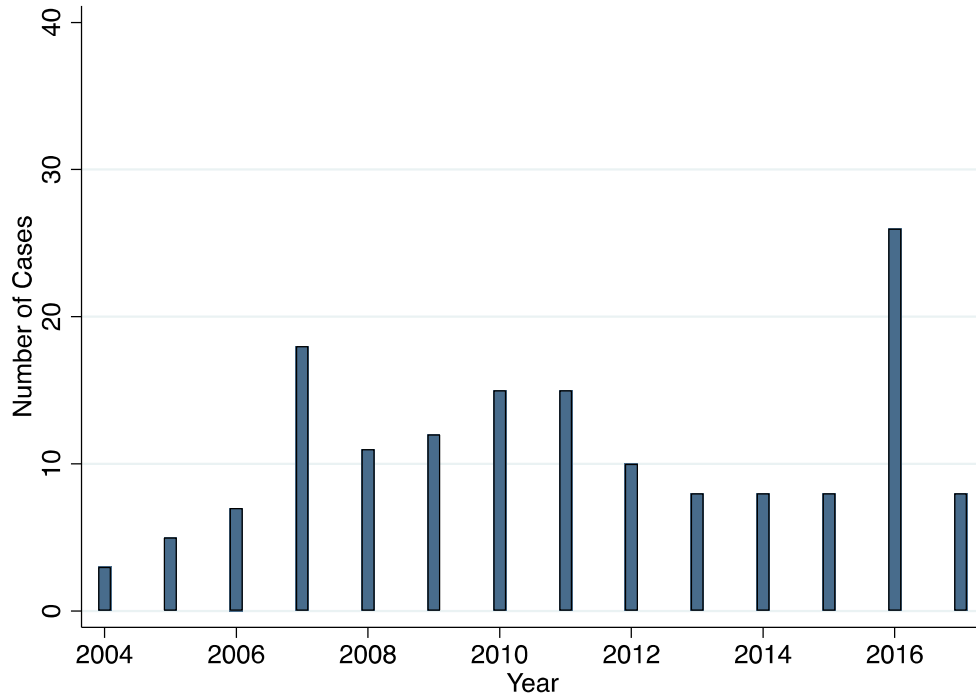
Figure 2. Corruption Level around FCPA Enforcement

This figure shows the evolution of countries' corruption level around the time of first treatment by an FCPA enforcement action. Corruption level is measured as 100 minus Transparency International's Corruption Perception Index (CPI) and increases in perceived corruption. The sample consists of all countries and the sample period is 2002-2017. Coefficients and 95% confidence intervals are obtained from a regression of countries' annual corruption level on country fixed effects and dummy variables indicating the distance to the first FCPA enforcement action in each respective country. Standard errors are clustered by country.
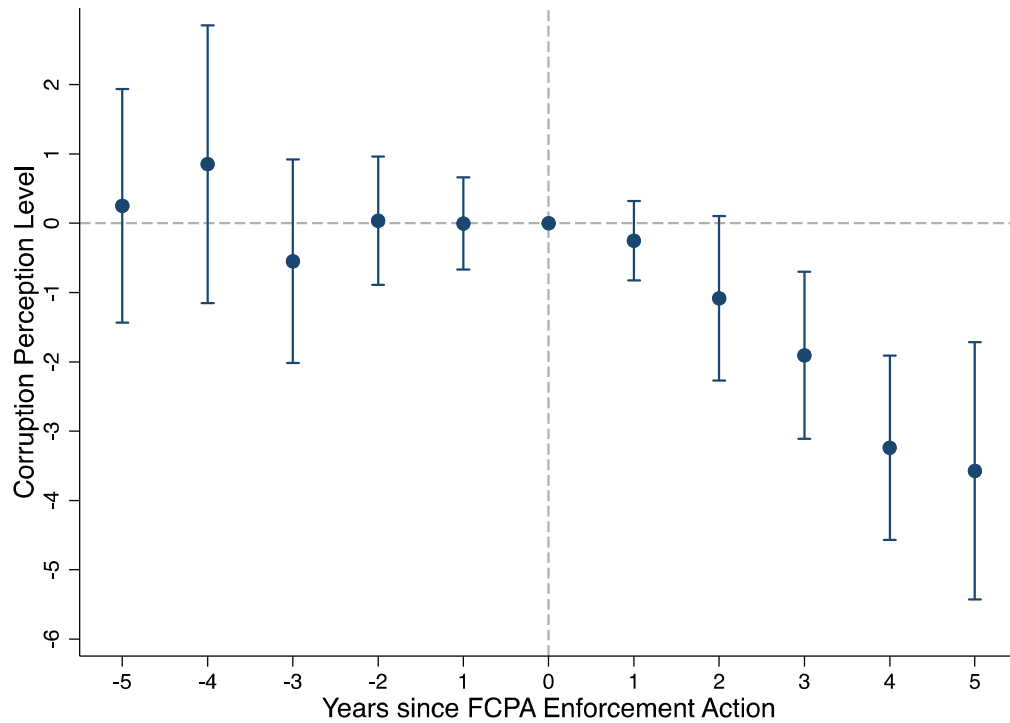
Figure 3. Treated Countries and Industries over Time

This figure shows the number of distinct countries (Panel A) and industries (Panel B) affected by FCPA enforcement actions for the first time each year. Data on FCPA enforcement actions are obtained from the SEC (https://www.sec.gov/spotlight/fcpa/fcpa-cases.shtml). Firms are affected by FCPA enforcement actions when an FCPA enforcement action results in action against a firm within their home country and industry. Sample firms are all Orbis firms headquartered outside of the OECD.

Panel A: Number of Treated Countries

Panel B: Number of Treated Industries
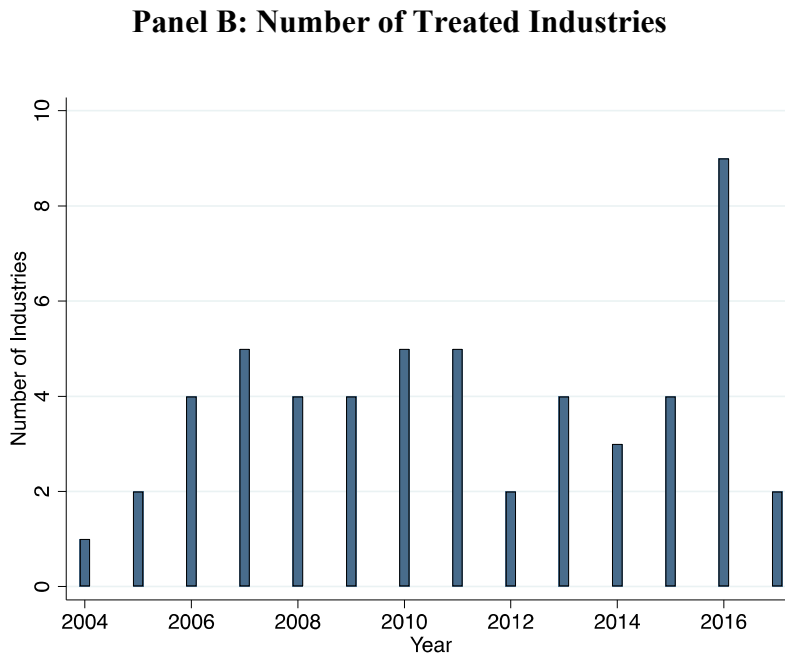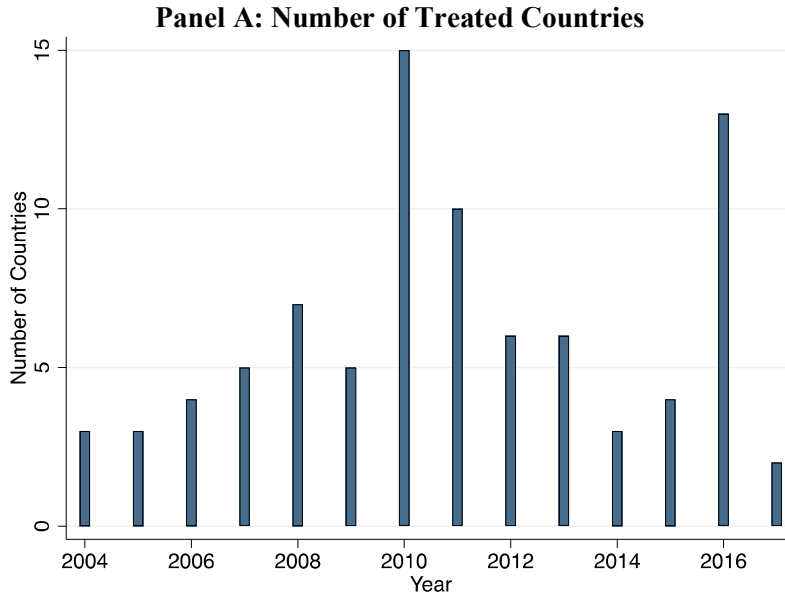
Figure 4. Revenue of Treated and Control Firms

This figure shows the median logarithm of revenue for treated and control firms, relative to the median of the country-industry over the 2004-2017 sample period. Treated firms are firms in country-industry in which an FCPA enforcement action ever took place. Control firms are firms in country-industry without any FCPA enforcement action. Years prior 2004 contain few treated observations.
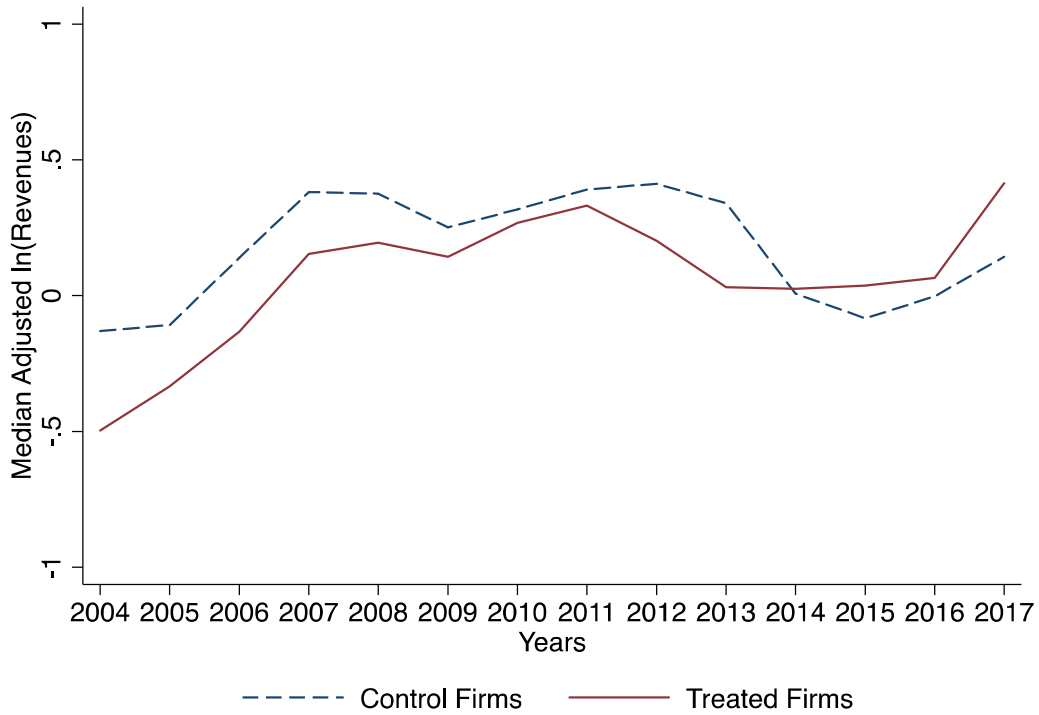
Figure 5. Revenue of Business Groups' Subsidiaries after an FCPA Enforcement Action

This figure provides an event study plot for the natural logarithm of the revenue of business group subsidiaries around an FCPA enforcement action. The figure is constructed by plotting the coefficient on event-time dummies in a regression of the natural logarithm of revenue on these event-time dummies, firm fixed effects, country×year fixed effects, and industry×year fixed effects. The dotted bar indicates the 95% confidence intervals, based on standard errors clustered at the country×industry level.
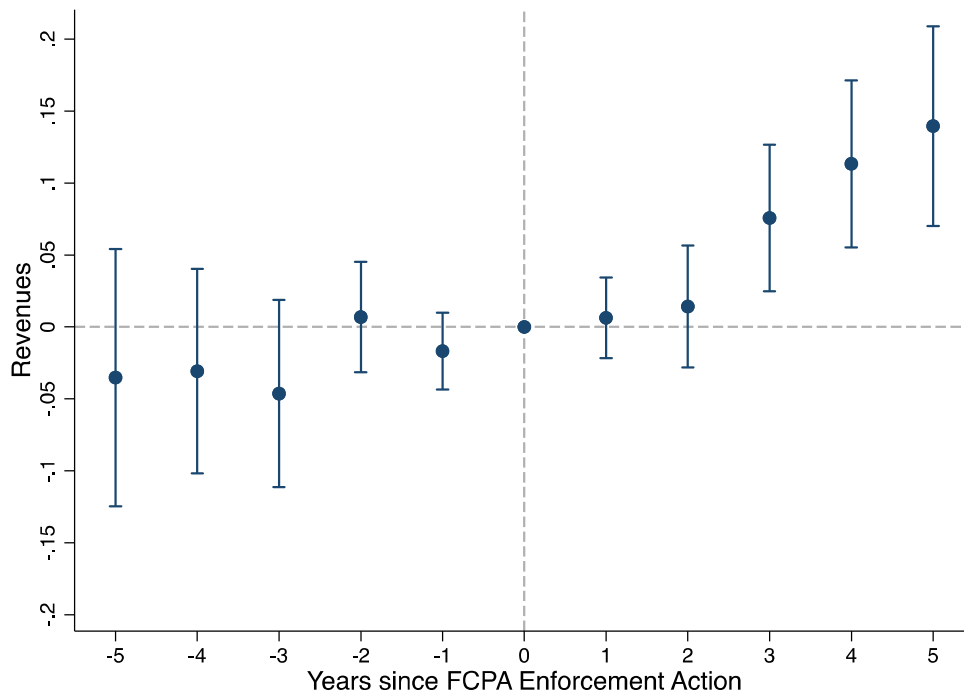
Figure 6: Market Share of Foreign Business Groups after an FCPA Enforcement Action

This figure shows the revenue market share of foreign business group subsidiaries around an FCPA enforcement action. For each industry-host country that experiences an FCPA enforcement action, the market share of foreign business group subsidiaries is calculated around enforcement actions using total industry-host country subsidiary revenue as the denominator. The figure shows the average market share.
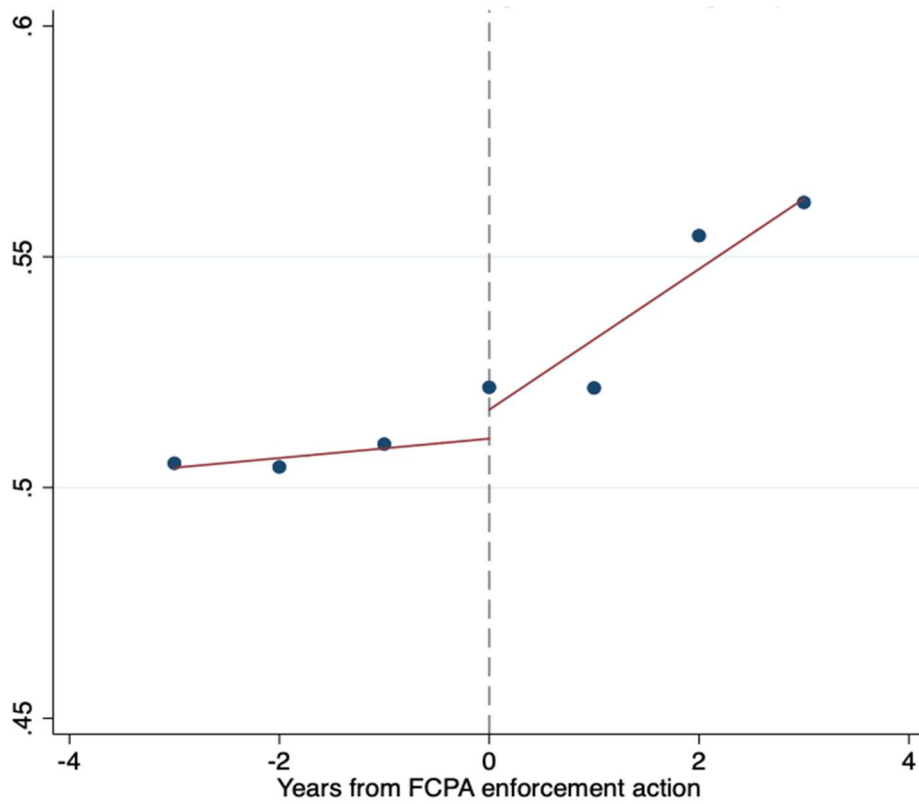
Table 1. Sample and Descriptive Statistics

This table displays sample composition and summary statistics. The sample includes all firms in Orbis that are headquartered in non-OECD countries with average total assets greater than $1 million over the 2004-2017 period. Panel A shows the number of firms by country (for the top 20 countries) and industry. Industry classifications are Bureau van Dijk's major sectors. Panel B presents descriptive statistics for all firms. Variables are defined in Appendix 1.

Panel A: Sample Composition by Country and by Industry

Country	# Firms	Industry	# Firms
Bosnia & Herzegovina	2,937	Chemicals (and similar) products	26,107
Bulgaria	18,846	Construction	45,497
Brazil	4,631	Education, health	3,575
China	67,862	Food, beverages, tobacco	17,520
Colombia	5,606	Gas, water, electricity	10,627
Croatia	9,555	Hotels & restaurants	6,785
India	7,697	Machinery, equipment, furniture, recycling	36,068
Morocco	1,972	Metals & metal products	14,712
Macedonia	2,637	Other services	86,211
Malta	1,805	Post & telecommunications	2,498
Malaysia	15,301	Primary sector	25,437
Philippines	2,049	Publishing & printing	4,235
Romania	24,557	Textiles, wearing apparel, leather	11,346
Serbia	10,248	Transport	17,712
Russia	179,220	Wholesale & retail trade	113,624
Singapore	4,112	Wood, cork, paper	6,316
Thailand	19,352		
Taiwan	2,076		
UAE	21,382		
Vietnam	16,440		

Panel B: Descriptive Statistics

	Mean	SD	P25	P50	P75	N
Revenue ($m)	32.1	112.7	0.9	3.4	13.0	3,192,029
Assets ($m)	37.5	143.0	1.4	3.4	12.1	3,381,423
# of employees (estim.)	210.9	574.6	14.0	45.0	147.0	2,589,758
Rev. per assets	1.7	3.5	0.4	1.0	1.9	3,156,653

Table 2. Number of Treated Firms by Country and Year

This table displays the number of treated firms by country and year for the top ten countries. Firms are considered as treated when their country-industry becomes subject to an FCPA enforcement action.

	Total	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
China	35,466	0	17,228	3,467	47	0	1,582	699	0	0	0	0	2,523	9,920	0
Russia	29,561	0	0	0	4,087	0	0	19,650	0	4,628	0	0	0	1,196	0
Thailand	4,682	0	1,137	0	0	0	0	2,103	620	0	0	0	0	822	0
Romania	2,030	0	0	0	0	0	0	0	764	0	1,266	0	0	0	0
India	2,016	0	0	0	1,656	0	0	138	174	48	0	0	0	0	0
UAE	1,614	0	0	0	0	0	0	0	0	0	916	0	0	698	0
Croatia	754	0	0	0	0	0	0	436	0	318	0	0	0	0	0
Brazil	583	0	0	0	0	173	157	253	0	0	0	0	0	0	0
Serbia	382	0	0	0	0	0	0	0	0	382	0	0	0	0	0
Colombia	317	0	0	0	0	0	0	0	0	0	0	0	0	0	317
Others	1,671	17	147	7	6	180	19	849	132	54	24	31	78	74	53
Total	79,076	17	18,512	3,474	5,796	353	1,758	24,128	1,690	5,430	2,206	31	2,601	12,710	370

Table 3: Determinants of FCPA Cases

This table provides the results of an examination of the characteristics of host countries and industries that are subject to an FCPA enforcement action (Treated) in the sample period and those that are never subject to an FCPA case (Control), respectively. Characteristics are constructed in 2003 (Panel A) and from 2000 to 2003 (Panel B). All characteristics other than Corruption Level are constructed at the host country-industry level using Orbis data. Host country-industries are included if they contain at least one firm in 2003. Also reported are differences in mean, differences in mean after controlling for industry means, differences in mean after controlling for host country means, and differences in mean after controlling for host country and host country means. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Static Characteristics (Measured in 2003)

Variable	Obs.	Mean	Mean Treated	Mean Control	Diff Unadjusted	Diff Industry FE	Diff Host Country FE	Diff Ind-Host Country FE
Corruption Level	734	38.45	30.27	39.42	-9.15***	-11.13***	NA	NA
Number of Firms	788	2.86	4.05	2.73	1.32***	1.17***	0.81***	0.05
Number of U.S. Firms	788	0.14	0.49	0.10	0.39***	0.31***	0.29***	0.12**
Has U.S. Firm	788	11.42%	30.77%	9.30%	21.47%***	16.9%***	14.17%***	2.86%
% U.S. Firms	788	0.34%	0.45%	0.33%	0.12%	-0.02%	-0.02%	-0.26%
ln(Sum of Revenue)	788	19.31	21.15	19.10	2.04***	2.06***	0.93**	0.08
% U.S. Firm Revenue	775	0.30%	0.37%	0.30%	0.07%	-0.11%	-0.13%	-0.49%**
ln(Sum of Assets)	788	19.87	21.44	19.70	1.75***	1.82***	0.75**	-0.03
% U.S. Assets	780	0.26%	0.28%	0.25%	0.02%	-0.19%	-0.06%	-0.43%**
Avg. Profit Margin	752	9.36%	5.95%	9.73%	-3.77%*	-3.64%*	0.49%	0.64%
Avg. U.S. Firm Profit Margin	788	0.85%	2.33%	0.69%	1.64%***	1.51%**	1.65%**	1.22%
Avg. Gross Margin	640	37.81%	32.66%	38.49%	-5.83%**	-4.07%	-2.93%	-0.52%
Avg. U.S. Firm Gross Margin	788	2.04%	5.82%	1.62%	4.2%***	4.04%***	1.95%*	0.59%

Panel B: Changes in Characteristics (Measured from 2000-2003)

Variable	Obs.	Mean	Mean Has Case	Mean No Case	Diff	Diff Industry FE	Diff Host Country FE	Diff Ind-Host Country FE
Corruption Level	511	0.43	0.79	0.38	0.41	0.68	NA	NA
Number of Firms	565	0.78	1.25	0.73	.52***	.57***	0.12	0
Number of U.S. Firms	561	0.11	0.28	0.09	.18***	.15***	.08*	-0.02
Has U.S. Firm	568	11.09%	28.07%	9.20%	18.87%***	17.31%***	6.47%	-0.49%
% U.S. Firms	561	0.19%	0.25%	0.19%	0.07%	0.08%	-0.17%	-0.22%
ln(Sum of Revenue)	561	0.89	1.17	0.86	0.31	.4*	0.05	0.03
% U.S. Firm Revenue	556	0.18%	0.47%	0.15%	.32%**	.34%**	0.17%	0.09%
ln(Sum of Assets)	548	0.77	0.95	0.75	0.21	0.2	-0.03	-0.12
% U.S. Assets	542	0.14%	0.32%	0.12%	.2%*	.24%**	0.13%	0.14%
Avg. Profit Margin	528	1.49%	0.59%	1.59%	-1%	0.09%	1.21%	2.72%
Avg. U.S. Firm Profit Margin	561	0.84%	2.90%	0.62%	2.28%***	2.14%***	1.75%***	1.23%*
Avg. Gross Margin	443	2.70%	1.18%	2.90%	-1.72%	-1.27%	0.49%	1.41%
Avg. U.S. Firm Gross Margin	565	1.71%	5.60%	1.28%	4.33%***	3.97%***	1.41%	-0.07%

Table 4. Average Effect of FCPA Enforcement Actions on Firms

This table presents the results of regressions assessing the effect of FCPA enforcement actions on firm outcomes at the firm-year level. The sample includes firms located in non-OECD countries and with average total assets greater than $1 million over the sample period. Columns (1) – (3) present the results for the full sample, columns (4) – (6) for the subsidiaries of business groups (BG), and columns (7) – (9) for standalone firms (SA). Dependent variables include revenue, assets, and revenue over assets, all of which are logged. Further details on variable construction are in Appendix 1. Standard errors clustered by country-industry are displayed in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	All Firms			Affiliates of Business Groups			Standalone Firms		
	Revenue	Assets	Revenue over Assets	Revenue	Assets	Revenue over Assets	Revenue	Assets	Revenue over Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FCPA	0.064***	0.014	0.042***	0.089***	0.029*	0.053***	0.037	0.003	0.023
	(0.024)	(0.018)	(0.016)	(0.022)	(0.016)	(0.014)	(0.032)	(0.023)	(0.022)
Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,133,692	3,133,692	3,133,692	1,330,066	1,330,066	1,330,066	1,803,385	1,803,385	1,803,385
p-value BG vs. SA							0.033**	0.130	0.047**

Table 5. Domestic- and Foreign-Owned Subsidiaries around FCPA Enforcement Actions

This table presents the results of regressions assessing the effect of FCPA enforcement actions on firm outcomes at the firm-year level. The sample includes firms located in non-OECD countries, with average total assets greater than $1m dollar over the sample period, and that are owned by a business group. Ownership is defined as being more than 50% directly held by a parent company through the parent company or any of that parent company's subsidiaries. The focus is on comparing the productivity of subsidiaries of foreign parents with that of domestic parents. Foreign subsidiaries are those owned by a parent headquartered outside the subsidiary's headquarter country. *FCPA* is a dummy set equal to 1 after an FCPA enforcement action is concluded. *Foreign Parent* is a dummy variable that equals 1 if the subsidiary is owned by a foreign parent. Exit and entry are indicators that equal 1 after (from) the last (first) year the firm is observed in the sample, after balancing the panel. All dependent variables are logged. Standard errors clustered by country-industry are displayed in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Revenue		Assets		Revenue over Assets		P(Exit)		P(Entry)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FCPA	0.038		0.027		0.008		-0.001		-0.015	
	(0.026)		(0.017)		(0.016)		(0.006)		(0.010)	
FCPA × Foreign Parent	0.098***	0.103***	0.003	0.003	0.088***	0.091***	-0.015***	-0.015***	0.037***	0.032**
	(0.027)	(0.028)	(0.012)	(0.012)	(0.021)	(0.022)	(0.005)	(0.005)	(0.012)	(0.013)
Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country × Year FE	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry × Year FE	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Country × Ind × Year FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1,330,066	1,327,484	1,330,066	1,327,484	1,330,066	1,327,484	1,570,049	1,567,636	2,932,668	2,929,866

Table 6. Government Contractors around FCPA Enforcement Actions

This table presents the results of regressions assessing the differential effect of FCPA enforcement actions on subsidiaries that operate in industries that depend on government contracts to a different extent. The sample includes subsidiaries located in non-OECD countries, with average total assets greater than $1m dollar over the sample period, that belong to a foreign business group. Government Contracts is a dummy variable set equal to one for industries for which the fraction of sales to the government is greater than for the median industry. Sales to the government are obtained from FactSet's Revere database for the years 2005 to 2015. All dependent variables are logged. Standard errors clustered by country-industry are displayed in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Revenue	Assets	Revenue over Assets
	(1)	(2)	(3)
FCPA	-0.005	0.002	-0.011
	(0.035)	(0.022)	(0.024)
FCPA × Government Contracts	0.136***	0.036	0.097***
	(0.048)	(0.030)	(0.030)
Firm FE	Yes	Yes	Yes
Country × Year FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
Observations	665,787	665,787	665,787

Table 7. The Role of Parent Corruption Experience around FCPA Enforcement Actions

This table presents the results of regressions assessing the differential effect of FCPA enforcement actions on subsidiaries of business groups with parents that have different experience with corruption. The sample includes subsidiaries located in non-OECD countries, with average total assets greater than $1m dollar over the sample period, that belong to a foreign business group, with non-missing data on parent corruption experience. Corruption experience is measured as the weighted average corruption perception index across the countries in which the parent has subsidiaries (weighted by the number of subsidiaries in each country). Low corruption experience is an indicator that equals 1 if the subsidiary has a parent with corruption experience lower than the sample median. All dependent variables are logged. Standard errors clustered by country-industry are displayed in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Revenue	Assets	Revenue over Assets
	(1)	(2)	(3)
FCPA × Parent Low	0.084**	0.021	0.058**
Corruption Experience	(0.039)	(0.021)	(0.025)
Firm FE	Yes	Yes	Yes
Country × Ind × Year FE	Yes	Yes	Yes
Observations	459,381	459,381	459,381

Table 8. The Role of Parent Productivity around FCPA Enforcement Actions

This table presents the results of regressions assessing the differential effect of FCPA enforcement actions on subsidiaries of business groups with parents that have different productivity. The sample includes subsidiaries located in non-OECD countries, with average total assets greater than $1m dollar over the sample period, that belong to a foreign business group, with non-missing data on parent productivity. Parent productivity is the parent natural logarithm of revenue over assets. All dependent variables are logged. Standard errors clustered by country-industry are displayed in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Revenue	Assets	Revenue over Assets
	(1)	(2)	(3)
FCPA × Parent Productivity	0.023*	0.005	0.016*
	(0.013)	(0.006)	(0.009)
Firm FE	Yes	Yes	Yes
Country × Industry × Year FE	Yes	Yes	Yes
Observations	459,381	459,381	459,381

Table 9. The Role of Having a U.S. Parent

This table presents the results of regressions assessing the effect of FCPA enforcement actions on subsidiaries of domestic business groups, foreign business groups and foreign business groups with U.S. parents. A subsidiary with U.S. parent is defined as one for which the parent firm is headquartered in the US. The sample includes subsidiaries located in non-OECD countries, with average total assets greater than $1m dollar over the sample period, and that belong to a business group. All dependent variables are logged. Standard errors clustered by country-industry are displayed in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Revenue		Assets		Revenue over Assets	
	(1)	(2)	(3)	(4)	(5)	(6)
FCPA	0.038		0.027		0.008	
	(0.026)		(0.017)		(0.016)	
FCPA × Foreign Parent	0.097***	0.102***	0.003	0.003	0.087***	0.091***
	(0.028)	(0.029)	(0.012)	(0.011)	(0.021)	(0.022)
FCPA × Foreign Parent	0.012	0.004	0.005	-0.003	0.010	0.010
× U.S. parent	(0.033)	(0.033)	(0.018)	(0.018)	(0.019)	(0.018)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	No	Yes	No	Yes	No
Country × Year FE	Yes	No	Yes	No	Yes	No
Country × Ind × Year FE	No	Yes	No	Yes	No	Yes
Observations	1,330,066	1,327,484	1,330,066	1,327,484	1,330,066	1,327,484

Table 10. Robustness

This table presents the results of regressions assessing the robustness of the differential effect of FCPA enforcement actions on subsidiaries of foreign and domestic parents. The sample includes firms located in non-OECD countries, with average total assets greater than $1m dollar over the sample period, and that are owned by a business group. Ownership is defined as being more than 50% directly held by a parent company through the parent company or any of that parent company's subsidiaries. The focus is on comparing the productivity of subsidiaries of foreign subsidiaries with that of domestic subsidiaries. Foreign subsidiaries are those owned by a parent headquartered outside the subsidiary's headquarter country. *FCPA* is a dummy set equal to 1 the year of the three years after an FCPA enforcement action is concluded. *Foreign Subsidiary* is a dummy variable that equals 1 if the subsidiary is owned by a foreign parent. Each cell presents the result of a separate regression. All regressions include firm and country×industry×year fixed effects. All dependent variables are logged. Standard errors clustered by country-industry are displayed in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

		Revenue	Assets	Revenue over Assets
(1) Baseline:	FCPA × Foreign	0.103***	0.003	0.092***
N=1,327,484		(0.028)	(0.012)	(0.022)
(2) Removing Russia:	FCPA × Foreign	0.076**	0.004	0.066***
N=905,504		(0.030)	(0.018)	(0.017)
(3) Removing China:	FCPA × Foreign	0.168***	0.018	0.136***
N=1,138,364		(0.028)	(0.014)	(0.021)
(4) Five years around FCPA:	FCPA × Foreign	0.141***	0.021	0.107***
N=1,463,880		(0.046)	(0.018)	(0.026)
(5) No restriction around FCPA:	FCPA × Foreign	0.160**	0.030	0.118***
N=1,846,716		(0.062)	(0.047)	(0.021)
(6) Firm existing 3 years before FCPA:	FCPA × Foreign	0.078**	0.010	0.069***
N=1,164,752		(0.032)	(0.014)	(0.024)
(7) Include firms with less than $1m in assets	FCPA × Foreign	0.133***	0.032***	0.095***
N=2,318,729		(0.024)	(0.011)	(0.015)
(8) Remove firms in Wholesale & Retail Trade sector	FCPA × Foreign	0.115***	0.008	0.098***
N=1,062,144		(0.027)	(0.012)	(0.022)
(9) Remove firms in Other Services sector	FCPA × Foreign	0.081***	0.004	0.072***
N=1,084,719		(0.026)	(0.016)	(0.015)

Appendix 1: Variable definitions

Variable	Definition	Source
FCPA	An indicator that equals one for firms in a country-industry targeted by an FCPA enforcement action in the years after such action occurred.	Securities and Exchange Commission
Country Corruption level	100 minus the Transparency International's Corruption Perception Index. Measure increases in perceived corruption level.	Transparency International
Revenue	ORBIS variable *operatingrevenueturnover*. Logged in regressions.	ORBIS
Assets	ORBIS variable *totalassets*. Logged in regressions.	ORBIS
Revenue over asset	The ratio of *Revenue* over *Asset*. Logged in regressions.	ORBIS
Parent low corruption experience	An indicator that equals 1 for affiliates that have a parent of which the corruption experience is lower than the median in the year. Parent corruption experience is the average of country corruption levels across the countries in which the parent has affiliates.	ORBIS and Transparency International
Parent productivity	*Revenue over Asset* calculated at the parent level using consolidated accounting information where available.	ORBIS
Industry	Bureau Van Dijk major sector classification.	ORBIS
Entry	An indicator that equals one from the first year in which the firm appears in the sample, after fully balancing the sample between 2000 and 2017.	ORBIS
Exit	An indicator that equals one after the last year in which the firm appears in the sample, after fully balancing the sample between 2000 and 2017.	ORBIS
Business group affiliate	A time-invariant indicator that equals one if another firm (i.e., the parent) ever owns more than 50% of the firm's capital.	ORBIS
Foreign business group affiliate	A time-invariant indicator that equals one if the affiliate and the affiliate's parent are incorporated in different countries.	ORBIS
Affiliate of U.S.-exposed parent	A time-invariant indicator that equals one if the affiliate's parent owns a subsidiary or a branch in the U.S.	ORBIS

Appendix 2: Host Country Corruption Perception around FCPA Enforcement

This table presents the results of event-study regressions assessing the effect of FCPA enforcement actions in a country on the country's corruption level. Country corruption level is measured as 100 minus the Transparency International's Corruption Perception Index. The sample consists of all countries and the sample period is 2002-2017. The coefficients displayed in the table are those on time indicators relative to the first FCPA enforcement action in the country. Standard errors clustered by country are in parentheses.

	Country Corruption Level		
	(1)	(2)	(3)
Before FCPA enforcement			
5 years before	-0.581		
	(0.942)		
4 years before	0.335	0.255	
	(1.076)	(1.067)	
3 years before	-1.256	-1.268	-1.237
	(0.807)	(0.781)	(0.766)
2 years before	-0.080	-0.170	-0.158
	(0.510)	(0.504)	(0.508)
1 year before	-0.202	-0.311	-0.366
	(0.334)	(0.320)	(0.325)
Year of FCPA enforcement (omitted)			
After FCPA enforcement			
1 year after	-0.238	-0.192	-0.165
	(0.317)	(0.317)	(0.319)
2 years after	-0.479	-0.458	-0.435
	(0.596)	(0.598)	(0.599)
3 years after	-1.426**	-1.444**	-1.411**
	(0.646)	(0.643)	(0.641)
4 years safter	-2.369***	-2.369***	
	(0.716)	(0.718)	
5 years after	-2.715***		
	(0.968)		
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	2,095	1,973	1,843