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Reversing the Resource Curse: Foreign Corruption Regulation and the Local Economic Benefits of Resource Extraction

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Abstract: We examine how foreign corruption regulation affects the economic benefits communities receive from extraction activities in resource-rich areas of Africa. After a mid-2000s increase in enforcement of the US Foreign Corrupt Practices Act (FCPA), nighttime luminosity increases by 15% (5%) in communities within a 10-(25-) kilometer radius of affected extraction facilities. Cash-wage employment also increases significantly, suggesting that the economic benefits are not limited to electricity access. Consistent with foreign corruption regulation mitigating the political resource curse, we find that perceived corruption decreases following the rise in FCPA enforcement.

Keywords: Foreign Corruption Regulation; Foreign Corrupt Practices Act (FCPA); Natural Resource Extraction; Nighttime Luminosity; Governance

JEL Classification: F50; F60; K2; M4; O1

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1. Introduction

Large natural-resource endowments are often an economic boon for well-governed countries but a burden for those with weak political institutions, a phenomenon known as the “political resource curse” (Mehlum et al. 2006; Armand et al. 2020). In the presence of weak political institutions, the fiscal revenue windfalls from abundant natural resources create opportunities for corrupt government officials to extract rents and divert funds from the local economy (Robinson et al. 2006). With varying degrees of success, policymakers have tried to combat the harmful effects of natural resources in high-corruption-risk countries by strengthening local institutions and governance (e.g., by implementing domestic corruption laws and by tying aid disbursements to a country’s corruption record). Yet, foreign multinational firms are often significant contributors to bad governance and corruption and are typically outside the regulatory reach of local governments (e.g., Guidolin and Ferrara 2007). Recognizing the costs of corruption in the developing world and the reputational consequences to countries where bribe-paying companies are headquartered, governments in many developed countries have enacted anti-corruption regulations to curb firms’ corrupt business practices abroad (e.g., Karpoff et al. 2017; Zeume 2017)—the most prominent and widely enforced being the US Foreign Corrupt Practices Act (FCPA).¹ In this paper, we examine how foreign corruption regulation, in the form of a significant increase in US FCPA enforcement, affects the economic benefits local communities receive from extraction activities in resource-rich areas of Africa.

Foreign corruption regulation could increase the local economic benefits of resource extraction by increasing the costs of corruption and by changing the way firms engage with local communities. That is, if the FCPA increases the costs of

¹ Although all OECD countries have their own foreign corruption regulations and some, such as Germany and the UK, have recently increased enforcement, the US accounts for 83% of all anti-bribery sanctions against legal entities from 1999 to 2018 (OECD 2019).

paying bribes, to secure or maintain operating permissions, foreign extraction firms may instead be forced to engage in activities that are more beneficial to the local community (e.g., paying higher taxes, following environmental regulations, and investing in local infrastructure). The FCPA can reduce corruption, not only among extraction firms, but also among firms that interact with the extraction sector throughout the supply chain. A decline in corruption can mitigate the political resource curse by improving resource allocation and making it harder for extractive political regimes to stay in power (Shleifer and Vishny 1993; Mauro 1995; Acemoglu and Robinson 2012; Ortiz-Ospina and Roser 2016).

To illustrate one channel through which foreign corruption regulation could increase local economic activity, consider the FCPA's potential impact on the fulfillment of the local content obligations (LCOs) included in many resource extraction agreements. These LCOs (ostensibly) aim to promote economic development in resource rich areas by encouraging the transfer of technology and the development of human capital—typically by requiring foreign companies to employ and train local workers and to procure certain quantities of goods and services from local suppliers. However, as detailed in several NGO reports, LCOs are prone to abuse and often facilitate bribes and corruption (e.g., Global Witness 2012; Transparency International 2014). For instance, a local official may leverage an LCO to persuade a foreign firm to contract with a politically-connected shell company that never actually provides any services (see, for example, *In the Matter of Halliburton Company*, 2017)—effectively excluding local communities from any knowledge or technology transfers and giving less efficient, but politically connected, suppliers an advantage. The FCPA explicitly prohibits such arrangements and encourages firms to screen all potential business partners for corruption risk (DOJ and SEC 2012). FCPA enforcement could thus increase local economic activity and employment by prompting foreign firms to legitimately fulfill their LCOs.

More generally, if firms still need to appease local officials to perform extraction activities after the FCPA enforcement increase, they can invest in the community instead of paying bribes. Anecdotal evidence suggests that extraction firms often invest in local communities and that common investments include infrastructure improvements (e.g., providing electricity; see Internet Appendix IA2). Assuming local officials also derive utility from the increased development of the local community (albeit to a lesser extent on a per dollar basis than from a bribe), instead of bribing local bureaucrats and violating the FCPA, firms could instead invest in the local community to obtain or maintain the right to operate. We formalize the intuition for this argument using a stylized model, discussed in Section 4.2 and presented in Internet Appendix Section IA1.

Alternatively, prior research shows that one consequence of the compliance costs imposed by anti-corruption regulation is a reduction in foreign direct investment in high-corruption-risk countries (e.g., Beck et al. 1991; Hines 1995; Cuervo-Cazurra 2006; Christensen et al. 2022). Some argue that without the ability to bribe public officials it is hard to operate in areas with inefficient bureaucracies (Dutt and Traca 2010; Dreher and Gassebner 2013). If the costs imposed by foreign corruption regulation lead to a reduction in economically beneficial foreign investment, or the inability to pay bribes prevents regulated firms from competing against less efficient unregulated firms (Rauter 2020), foreign corruption regulation can lead to lower benefits from resource extraction. Ultimately, the local economic impact of foreign corruption regulation depends on how much the regulation decreases corruption, what regulated firms do instead of paying bribes, and the type of investments forgone because of the regulation.

To assess the impact of foreign corruption regulation, in our primary analysis, we examine changes in nighttime luminosity in African communities near large resource extraction facilities following a major increase in US FCPA enforcement in the mid-2000s. Our research design exploits the fact that 1)

following several prominent legal and regulatory changes (see Section 2), US enforcement of the FCPA against both US and non-US firms under US jurisdiction increased dramatically after 2004 (Martin et al. 2012; Olken and Pande 2012), and 2) for reasons related to the feasibility of enforcement, FCPA cases are almost exclusively limited to firms under US jurisdiction that are headquartered in OECD countries (Christensen et al. 2022). Consequently, the enforcement shock likely impacts only the subset of African communities located near extraction facilities with a beneficial owner that is under US jurisdiction and headquartered in an OECD country. This feature of the setting allows us to estimate the treatment effect of the FCPA benchmarked against a control sample of likely unaffected communities (i.e., those near an extraction facility with an owner that is not subject to the FCPA).

Our study focuses on the extraction industry in Africa, which is a powerful setting to examine the impact of foreign corruption regulation because resource extraction comprises a significant proportion of the African economy, is prone to corruption, and foreign corporations play a major role in these activities (Chuhan-Pole et al. 2017). Our primary outcome variable, luminosity, is based on satellite images depicting the density of nighttime light emissions measured at levels of spatial stratification from 10- to 50-kilometers around an extraction facility. We combine the luminosity data with location, ownership, and commodity data for extraction facilities across Africa. This high degree of spatial resolution allows us to assess the impact of foreign corruption regulation at the local level, where it is most plausible that firm activities could have an effect on the surrounding communities. To alleviate concerns about endogenous extraction site openings, closings, and ownership changes, we determine whether a facility's owner was subject to the FCPA in 2004 (i.e., before the FCPA enforcement increase).

Over a six-year period after 2004, we find that geographic areas with an extraction facility whose owner is subject to the FCPA gradually exhibit higher levels of luminosity relative to areas surrounding extraction sites that are not subject

to the regulation. As we increase the radius of the cell around the extraction site, the estimated average treatment effect monotonically declines; falling from a 15% increase within 10 kilometers of the facility (where the extraction industry plays a central role in the local economy, directly employing nearly 20% of the total workforce) to an increase of 5% within 25 kilometers. Countries with weak political institutions before the FCPA enforcement increase, where the resource curse's effects are most pronounced (e.g., Mehlum et al. 2006), experience the largest increase in luminosity. To corroborate the luminosity results, we use micro data from the *Afrobarometer* survey to examine changes in households' access to electricity. Prior research shows that electricity access can have significant economic benefits for the community (e.g., Dinkelmann 2011; Lipscomb et al. 2013; Bos et al. 2018). Comparing communities located close to extraction facilities subject to the FCPA to those that are located near facilities not subject to the FCPA, we find a 24% increase in electricity access after the FCPA enforcement increase.

To assess whether the observed increase in luminosity is indicative of a broader increase in economic activity, beyond the use of electricity, we use an alternative economic outcome, cash-wage (i.e., formal) employment. Formal employment is relatively low in villages near extraction facilities, with 50% of survey respondents reporting not having a cash-wage-paying job before 2004 (i.e., being either unemployed or working without a cash wage). Following the FCPA enforcement increase, we find that cash-wage employment increases by 11.6 percentage points, likely reflecting both an increase in employment and a shift in employment from the informal to the formal economy.²

Although the observed increase in economic activity following the FCPA enforcement increase appears broader than electricity access alone, it is not obvious

² Such a shift could be attributable to, for example, the fact that the FCPA's recordkeeping provisions require third-party anti-corruption audits of firms' local suppliers, providing an incentive for firms that are subject to the FCPA to contract with more formally established businesses.

that it is accompanied by a widespread reduction in corruption. If, for example, the observed increase in luminosity is driven primarily by extraction firms' investments in local infrastructure, economic activity might well increase while the pervasive corruption that underlies the political resource curse remains largely unchanged.

We conduct two additional analyses to more directly assess whether foreign corruption regulation reduces local corruption. First, using microdata from the *Afrobarometer* survey, we find that individuals living near extraction sites with owners subject to the FCPA are 10% less likely to perceive their government as corrupt. Second, we examine how the association between global commodity prices and luminosity changes around the FCPA enforcement increase. An indirect implication of lower corruption and a weakening resource curse is that local communities should receive a larger share of the rents from resource extraction. That is, given a reduction in corruption, changes in resource prices should map more strongly into local economic activity.³ Consistent with local communities receiving more benefits from resource extraction, our evidence suggests (albeit with limited statistical precision) that, after the FCPA enforcement increase, the elasticity of luminosity to world commodity prices increases by 26% within a 10-kilometer radius of an extraction site. The change in elasticity declines predictably as we increase the radius of the extraction area up to 50 kilometers.

Overall, our results indicate that greater enforcement of foreign corruption regulation leads to an increase in economic activity in communities near resource extraction facilities in Africa. Consistent with a reversal of the political resource curse, perceived corruption decreases and the pass-through from global commodity prices to luminosity increases following the post-2004 rise in FCPA enforcement.

³ For instance, the citizens of Norway, a country with relatively strong political institutions, are likely to benefit (suffer) more from an increase (decrease) in global oil prices than the citizens of Nigeria, a country with relatively weak political institutions. In Section 3.2, we show that, for our sample of African extraction facilities, global mineral prices have a stronger association with luminosity in extraction areas with strong political institutions.

These findings contribute most directly to the literature on anti-corruption regulation. Most prior work focuses on foreign corruption regulation's impact on the operations of multinational corporations (e.g., Graham 1984, Beck et al. 1991; Hines 1995; Zeume 2017; Rauter 2020; Sanseverino 2020; Christensen et al. 2022; Goldman and Zeume 2021). We instead provide evidence on how foreign corruption regulation impacts the economic benefits from resource extraction in the locations where bribes are paid and where the negative consequences of corruption are most acutely felt.

Some studies examine the effects of domestic corruption regulation on corruption (Olken 2007; Ferraz and Finan 2008; Bobonis et al. 2016; Zamboni et al. 2018; Avis et al. 2018), local firm behavior, and economic growth (Colonnelli and Prem 2021; Colonnelli et al. 2022). In contrast, we examine how foreign corruption regulation, originating in developed countries, affects economic conditions in the developing world. Reducing foreign corruption by multinational corporations is likely more difficult than prosecuting domestic corruption because it is challenging for local law enforcement, especially in developing countries with weak institutions, to gather evidence and sanction perpetrators located abroad. Our evidence indicates that, despite any increase in the costs of operating in high-corruption-risk countries, foreign corruption regulation creates economic benefits by changing how foreign extraction firms operate in these regions.

Our results are also related to a large literature that examines the impact of resource extraction on economic development, beginning with the finding by Sachs and Warner (1995) that countries rich in natural resources tend to experience lower growth (i.e., the “resource curse”). Although most recent work does not support an overall negative impact of natural resources on economic growth (e.g., Smith 2015; Mamo et al. 2019), many argue that the local benefits from natural resources are less than one would expect and that the political institutions of host countries explain the divergent outcomes (e.g., Mehlum et al. 2006; Robinson et al. 2006;

Humphreys et al. 2007; Sarr et al. 2011). Consistent with anti-corruption regulation helping to reverse the political resource curse, our results suggest that foreign corruption regulation imposed on multinational corporations by countries with strong institutions (in this case, the US) can reduce corruption and increase the benefits of resource extraction in countries with weak political institutions.

2. Institutional Details and their Connection to the Research Design

Estimating the impact of foreign corruption regulation is challenging because corruption is unobservable and its economic impact on local communities is difficult to measure. To overcome these challenges, we examine a major increase in the enforcement of foreign corruption regulation that affects only a subset of African resource extraction facilities and measure economic activity based on nighttime light emissions and cash-wage employment in highly geographically localized areas around these facilities.

Although Congress enacted the FCPA in 1977, because of a lack of domestic support and limited international cooperation, the law was not widely enforced for over two decades, particularly against non-US firms (Martin et al. 2012). As discussed in Internet Appendix IA3.1, a confluence of factors all occurring in 2004 facilitated an increase in FCPA enforcement, including (i) an expanded legal definition of bribery, (ii) the introduction of deferred and non-prosecution agreements in FCPA cases, and (iii) the enactment of the Sarbanes-Oxley Act (Martin et al. 2012; Brewster 2017). This post-2004 increase in extraterritorial FCPA enforcement likely significantly increased the costs of engaging in corruption for firms under US jurisdiction (Olken and Pande 2012).

Data from the *Stanford Foreign Corrupt Practices Act Clearinghouse*, reported in Table 1 and Figure 1, provide empirical evidence of an economically significant increase in FCPA enforcement related to firm operations in Africa after

2004.⁴ Of the 284 total FCPA enforcement actions between 2005 and 2017, 71 include FCPA violations in Africa (25%). 32 of these cases (45%) are against firms in the natural resource extraction industry. From 1977 until 2004, there were 8 FCPA enforcement actions against firms operating in Africa (0.3 cases per year); from 2005 until 2017, there were 71 cases (roughly 6 per year). For extraction firms operating in Africa, the increase in enforcement was even more pronounced, growing from 1 enforcement action between 1977 and 2004 to 32 cases between 2005 and 2017.⁵ Based on this institutional and empirical evidence, we use 2005 to mark the onset of the treatment period in our empirical analyses.⁶

The FCPA's jurisdictional scope is broad. The SEC and DOJ can bring cases against US- and non-US-domiciled issuers, domestic concerns, and firms acting in US territory (SEC and DOJ 2012). Based on FCPA guidelines, we classify an extraction facility as being under FCPA jurisdiction if at least one of the facility's corporate owners has a stake of 20% or more and is: 1) headquartered in the US, 2) SEC registered, or 3) discloses a US operating segment.⁷ This treatment classification likely biases our estimates toward zero because a firm could fall under US jurisdiction even if it does not meet one of these three criteria (e.g., because we cannot observe all of the actions a firm takes in US territory).

⁴ The first spike in enforcement actions occurs in 2007, which, given that a typical FCPA investigation, from initiation until the filing of an enforcement action, takes multiple years, is consistent with an onset of the ramp up in enforcement around 2005.

⁵ In our sample, about 17% of all treated extraction sites have at least one beneficial owner that has been subject to an FCPA enforcement action (see Internet Appendix IA4.6).

⁶ In Internet Appendix IA3.2, we provide further evidence, based on revealed knowledge from firms' investment policies, to support using 2005 as the onset of the enforcement increase.

⁷ A 20% ownership stake generally provides the owner with significant influence, which is an important factor in determining culpability under the FCPA. Under international accounting standards, if a firm has a significant operational presence in another country, the firm must publicly disclose disaggregated financial information for operations in that country. For foreign firms that disclose a US segment, it is more likely that, if the firm commits an FCPA violation, that action will fall under US jurisdiction.

We obtain information on the owners of extraction sites from *SNL Metals and Mining* (“*SNL*”) and *Enverus International* (“*Enverus*”). For each corporate owner, we verify whether the firm is under FCPA jurisdiction based on the headquarter country, SEC registration status, and the existence of a US reporting segment. In Internet Appendix IA4.2, we explain in detail how we match extraction facilities to corporate owners and headquarter countries.

Effective prosecution of non-US firms under the FCPA typically requires cooperation from foreign regulators. Likely for this reason, FCPA enforcement against non-US firms has been limited to firms headquartered in countries that have signed the legally binding *Convention on Combating Bribery of Foreign Public Officials in International Business Transactions*. The convention requires cooperation among signatory countries and has been signed by all OECD members and six non-members (as of the end of our sample in 2013)—for brevity, we refer to all signatory countries as “OECD countries.”⁸ Of the 97 non-US firms targeted by an FCPA enforcement action between 2005 and 2017, only two were headquartered in a non-OECD country (Stanford FCPA Database 2020). For this reason, we consider only owners that are under US jurisdiction and are also headquartered in an OECD country as being subject to the FCPA (i.e., treated).

To avoid the possibility that our estimates reflect endogenous variation in ownership, we base our treatment assignment on data from 2004 and consider extraction facilities subject to the FCPA in 2004 to always be subject to the FCPA. Figure 2 shows that the location of extraction facilities owned by a company subject (and not subject) to the FCPA is fairly dispersed across Africa.

Because we expect any economic impact of FCPA enforcement to be strongest near an extraction site (e.g., because of local content obligations), our unit of observation is a circular geographic area with a radius of 10 to 50 kilometers

⁸ For a list of Anti-Bribery Convention signatory countries, see www.oecd.org.

around an active extraction facility (henceforth, a “cell”). Using occupational microdata from the 2004 *Afrobarometer* survey (see Section 3.3 for details), in Table 2, we estimate that, within a 10-kilometer radius of an extraction site, 18% of the local workforce is employed in the extraction industry. This proportion monotonically decreases to 7% as the radius is extended to 100 kilometers. In communities not classified as extraction areas (i.e., those more than 100km from an extraction facility), the fraction of mine workers is only 0.5%. *SNL* and *Enverus* provide the latitude and longitude of the mines and oil wells in our sample, which allows us to match these facilities to a particular cell. If more than one commodity is extracted on the same site, that cell appears in the dataset as a separate observation for each commodity. We drop inactive mines, combined oil and gas wells, wells located offshore, and oil drilling blocks operated by multiple owners.⁹

Overall, our sample contains 487 mines of 18 minerals (673 mine-mineral pairs) and 113 oil and gas wells located across 34 African countries. South Africa has the most extraction facilities (48%), followed by Libya (8%), the Democratic Republic of the Congo (5%), and Zimbabwe (5%). In the Internet Appendix, we report the sample composition by country and region (Section IA4.4), and the distribution of extraction facilities across resource types (IA4.3). The largest concentration is in gold (23%), followed by coal (14%), and oil (13%). We indicate the geographic location of the commodities across Africa in Figure 3. As expected, individual resource types cluster geographically, but in none of the five African regions are fewer than eight different types extracted.

Our primary outcome variable is the density of nighttime light emissions. GDP estimates based on national accounts and other common proxies for economic activity are often measured with significant error in developing countries (Johnson et al. 2009) and are generally available only at the national level. In contrast,

⁹ In Internet Appendix IA4.1, we provide further justification for each restriction and details on its impact on the sample.

luminosity estimates are available at a much finer geographic specificity and allow for estimating changes in activity at the subnational level (Henderson et al. 2011; Henderson et al. 2012; Michalopoulos and Papaioannou 2014). Compared to other measures (e.g., GDP), luminosity reflects the level of economic activity more broadly. If the benefits of resource extraction are highly concentrated, it is unlikely to significantly impact luminosity.

We collect luminosity data from the *United States Air Force Defense Meteorological Satellite Program*, which uses satellites to collect data on low-light imaging for every location on the planet every night. The National Geophysical Data Center processes these data (e.g., by removing natural light sources and images obscured by cloud cover) and publishes the final, annualized data. We compute the cloud-free-observation weighted average over all unsaturated stable nightlight pixels for each cell. Table 3 reports descriptive statistics for *Luminosity* across 10,318 cell-year observations from 2000 to 2013.¹⁰ *Luminosity* ranges from 0 (no light) to 62 (a highly developed urban area). Average *Luminosity* within 10 kilometers of an extraction site is 7.7 and monotonically decreases as the radius around the extraction site increases.

3. Effects on Luminosity, Electricity Access, and Cash-Wage Employment

3.1 Nighttime Luminosity

To assess how foreign corruption regulation affects the local economic benefits of resource extraction, we first examine changes in the density of nighttime light emissions after the FCPA enforcement increase. We use a generalized difference-in-differences design that compares luminosity in geographic cells (with radii ranging from 10 to 50 kilometers) around extraction facilities with controlling owners subject to the FCPA to cells around facilities that do not have owners

¹⁰ Our sample ends in 2013 because the National Geophysical Data Center changed its processing methods in 2014.

subject to the FCPA (see Section 2). To capture the evolution of luminosity changes over time, we plot yearly coefficient estimates of the treatment effect ($FCR \times Year$) from the following OLS regression:

$$Luminosity_{c,t} = \beta_1 FCR_i \times Year_t + Fixed\ Effects + \varepsilon_{c,t} \quad (1)$$

Luminosity is the natural logarithm of the average luminosity in cell c and year t plus 1.¹¹ FCR is an indicator equal to one if, in 2004, at least one extraction site owner (of 20% or more) in a cell is subject to the FCPA (i.e., is under US jurisdiction and headquartered in an OECD country). *Year* is a set of indicators for each year. We omit the indicator for 2004, which serves as the benchmark period. To control for differences in luminosity arising from time-invariant (or slow-moving) factors specific to each extraction site (e.g., geological conditions, property size), we include extraction-site-by-commodity fixed effects ($Property \times Commodity$). We add $Commodity \times Year$ fixed effects to account for commodity-specific time trends and include $Region \times Year$ fixed effects to control for time-varying institutional and political factors (e.g., climate conditions, armed conflicts) that are correlated with Africa's five main geographic regions (shown in Figures 2 and 3).¹² We estimate Conley (1999) standard errors that account for spatial correlation within a 100-km radius and infinite serial correlation.

In Figure 4 Panel A, we graph the yearly $FCR \times Year$ coefficient estimates and their corresponding 95% confidence intervals. In support of the parallel-trends assumption, treated and control cells have similar trends in luminosity before 2005. Consistent with foreign corruption regulation increasing the local economic benefits of resource extraction, between 2005 and 2010, treated cells exhibit a

¹¹ To include observations with a value of zero and to account for the variable's skewness, we use the natural logarithm of *Luminosity* plus one in our analyses. We find similar results using an inverse hyperbolic sine transformation (see Tables 4 and 7).

¹² We do not include $Country \times Year$ fixed effects in our main analysis because commodities are geographically clustered (see Figure 3) and it would severely limit the number of observations that contribute to the $FCR \times Year$ coefficient estimates. In Internet Appendix Section IA5.9, we show that inferences are similar including $Country \times Year$ fixed effects.

gradually increasing level of luminosity relative to control cells. From 2010, the treatment effect stabilizes at an approximately 20% higher level (in interpreting the economic significance, it is important to note that we focus on the area in the immediate 10-kilometer-radius vicinity of the facility—an area where the extraction industry employs an estimated 18% of the workforce).

To estimate the average treatment effect and to simplify the reporting of sensitivity tests, we also present results where we replace the individual *Year* indicators with a single *Post 2004* indicator, which equals one for all years after 2004. Table 4 reports results. In Column (1), the $FCR \times Post\ 2004$ coefficient estimate is positive and statistically significant, indicating that luminosity increases by approximately 15% in cells around extraction facilities subject to the FCPA relative to cells that are not.

If the observed luminosity increase is attributable to changes in the extraction sector, we expect the treatment effect's magnitude to diminish as we increase the cell radius and the facility becomes a less central part of economic activity within the cell. In Figure 4 Panel B, we graph the $FCR \times Post\ 2004$ coefficient estimates and their corresponding 95% confidence intervals for cells with radii from 10 to 50 kilometers. The $FCR \times Post\ 2004$ coefficient estimate decreases monotonically with the cell's radius length. The point estimates are positive and statistically significant for radii up to 25 kilometers. At 25-kilometers, the $FCR \times Post\ 2004$ coefficient estimate implies a luminosity increase of approximately 5%.

In Table 4 Columns (2) to (4), we present results for three sensitivity tests.¹³ First, instead of adding one to *Luminosity* to account for zero-value observations,

¹³ In Internet Appendix Section IA5, we report results for additional sensitivity tests. Collectively, these tests show that our inferences are not sensitive to alternative research design choices, including dropping individual commodities, excluding individual countries, excluding overlapping extraction areas, using a control group that includes only domestic African firms, excluding oil wells, using spatial standard error clustering within a 50-, 250-, and 500-km radius, using a 50% ownership

we use an inverse hyperbolic sine transformation. The estimated treatment effect in Column (2) increases from 15% to approximately 20%.

Second, to ensure that we capture economic activity in the communities surrounding extraction sites, rather than only for the extraction site itself, we exclude a one-kilometer-radius cell around the facility. In Column (3), where we re-estimate our baseline model on the donut-shaped 1-10 km area around the extraction site, we find that the estimated treatment effect remains positive, statistically significant, and only slightly attenuates.

Third, to further examine the scope of FCPA jurisdiction, we estimate (pseudo) treatment effects for two subgroups of our control sample: 1) firms under US jurisdiction headquartered in *non-OECD* countries and 2) firms we do *not* classify as being under US jurisdiction that are headquartered in OECD countries. As discussed in Section 2, both types of firms are substantially less likely to be FCPA enforcement targets. However, because FCPA jurisdiction is broad and (intentionally) vaguely defined, it is possible that firms in either of these groups could react to the enforcement increase, biasing our estimate of the treatment effect toward zero. In Table 4 Column (4), we present results including separate indicators for *USJ Non-OECD* $\times$ *Post 2004* and *Non-USJ OECD* $\times$ *Post 2004*. In support of our definition of FCPA jurisdiction, we find no evidence of a significant change in luminosity in areas where an extraction facility's owner is under US jurisdiction but *not* headquartered in an OECD country (i.e., the *USJ Non-OECD* $\times$ *Post 2004* coefficient estimate is close to zero and significantly different from the *FCR* $\times$ *Post 2004* coefficient). The *Non-USJ OECD* $\times$ *Post 2004* coefficient is also statistically insignificant but, perhaps consistent with some impact of increased FCPA

threshold, excluding *Luminosity* values of zero and using $\ln(Luminosity)$ as the dependent variable, and keeping only commodities with the highest production value per facility. In Internet Appendix Section IA8, we provide evidence that the observed increase in luminosity is not driven by changes in the ownership of extraction sites.

enforcement on OECD firms that we do not classify as under US jurisdiction, is positive and not significantly different from our main treatment effect.¹⁴

3.2 *Heterogeneity in Political Institutions*

According to the political resource curse hypothesis, the economic benefits a community receives from natural resources depends on the strength of the local institutions and the concentration of political power (e.g., Mehlum et al. 2006; Robinson et al. 2006). Countries with strong institutions that promote political accountability tend to benefit more from their resource endowments because these institutions mitigate rent-seeking opportunities. In countries with weak institutions and concentrated political authority, multinational corporations can exploit bureaucrats' rent-seeking behavior with little threat of local discipline. Accordingly, we expect foreign corruption regulation to have a larger impact on economic activity in countries with weak political institutions, where the political resource curse is most prevalent and where foreign corruption regulation enforced by a country with strong institutions can mitigate the negative interaction between foreign corporations and weak local institutions.

To test this prediction, we estimate Eq. (1) separately for countries with “strong” versus “weak” political institutions based on the Center for Systemic Peace's *Polity IV Democracy Index* in 2004 (i.e., the year before the FCPA enforcement increase). The *Polity IV* index ranks countries based on the strength of their political institutions on a scale from -10 (autocracy) to 10 (full democracy). We classify countries as strong-political-institution countries if their *Polity IV* score

¹⁴ In Internet Appendix Section IA5.6, we present all of the results from Table 4 including these two additional interactions. In Internet Appendix Section IA5.7, we present results from an alternative approach to addressing concerns about macroeconomic shocks in the facility owner's home country where we control for observable macroeconomic conditions. In Internet Appendix Section IA5.8, we perform our analysis within the subsample of OECD (US jurisdiction) firms, only using variation in whether or not the firm is under US jurisdiction (headquartered in an OECD country).

is 6 or higher, the threshold for a democracy (we provide a list of the countries included in each group in Internet Appendix Section IA5.13).

Figure 5 Panel A shows that the post-2004 luminosity increase is substantially larger in weak-political-institution countries (the solid red line) compared to strong-political-institution countries (the dashed blue line). The regression results in Table 4 Columns (5) and (6) corroborate this finding—the treatment effect is limited to and is about 35 percentage points larger in countries with weak political institutions (and the difference is statistically significant). In Figure 5 Panel B, we report the spatial diffusion of the luminosity effect separately for strong- and weak-political-institution countries and again find that, for weak-institution countries, the magnitude of the treatment effect declines monotonically as the distance from the extraction facility increases.¹⁵

3.3 *Electricity Access*

The observed luminosity increase implies that, after 2004, residents of communities near extraction facilities subject to the FCPA likely use more electricity. In this section, to corroborate this finding, we use data on access to the electrical grid, which prior research shows can have significant local economic benefits (e.g., Dinkelmann 2011; Lipscomb et al. 2013; Bos et al. 2018).

We obtain data on access to electricity, geocoded at the subnational level, from the *Afrobarometer* survey. *Afrobarometer* is a non-partisan research institution that regularly conducts public surveys at the individual level in more than 30 African countries. We use data from survey rounds one to six, a period from 1999 to 2015, and measure electricity access based on responses to the question

¹⁵ In Table IA5.14 of the Internet Appendix, we report similar results using Transparency International’s Corruption Perception Index instead of the Polity IV Democracy Index. The similarity of the results across the two, highly correlated, partitioning variables is reassuring, but also highlights the descriptive nature of these cross-sectional results and the difficulty of making causal attributions from such tests. Another limitation of this analysis is that, in Table 4 Columns (5) and (6), the majority of the observations in the strong-political-institution partition come from a single country, South Africa.

“Are the following services present in [your] area: Electricity grid that most houses could access?” We define a binary indicator, *Access to Electricity*, equal to one if an individual responds affirmatively. We restrict the sample to survey respondents between 15 and 60 years of age who live within 100 kilometers of an extraction facility.¹⁶ The sample covers responses from 53,015 participants in 6,165 villages across 31 countries. We aggregate responses to the village level (by taking the mean) to account for correlations within a given village. In Internet Appendix Section IA6.1, we report the number of observations by country and survey round.

Table 5 Panel A presents descriptive statistics. Approximately 16% of surveyed villages are near an extraction site with an owner subject to the FCPA. Average access to electricity in our sample villages is 66%. Roughly 81% of the survey responses were collected after 2004. 54% of respondents are female, 46% live in urban areas, and, on average, respondents are 35 years old and have at least graduated from high school.

To examine how foreign corruption regulation affects electricity access, we estimate the following OLS regression at the village and *Afrobarometer* survey-round level:

$$Access\ to\ Electricity_{i,t} = \beta_1 FCR\ Exposure_i \times Post\ 2004_t + Controls_i + Fixed\ Effects + \epsilon_{i,t} \quad (2)$$

Access to Electricity for village i in survey round t is defined above. *FCR Exposure* is an indicator equal to one if the closest extraction facility (within 100 km) to village i is subject to the FCPA. *Post 2004* is an indicator for survey rounds after 2004. We include controls for several characteristics that could be associated with living standards, including gender (*Female*), *Urban*, age ($Ln(Age)$), and *Education*.

¹⁶ We use a larger radius in this analysis because *Afrobarometer* has limited coverage near extraction sites. Because the survey does not cover the same villages through time, we do not include individual survey respondent or geographic area fixed effects in Eq. (2). We limit the sample to respondents of typical working age (i.e., between 15-60 years of age) for consistency with the cash-wage employment analysis presented in Section 3.4. Our inferences are similar if we do not restrict the age of the survey respondents.

We include *Region*×*Round* fixed effects to account for time-varying economic and political factors that are correlated with Africa’s five main geographic regions. We add *Commodity*×*Round* fixed effects to control for commodity-specific price trends. We test for statistical significance using Conley (1999) standard errors corrected for spatial correlation within a 100-km radius.

Table 5 Panel B Column (1) reports results. The *FCR Exposure*×*Post 2004* coefficient estimate is 0.120 and is statistically significant. The estimated treatment effect implies a 22% increase in electricity access relative to the pre-treatment mean. In Figure 6 Panel A, we plot the effect by survey round and find that the effect increases gradually until Round 4 (2008/2009).¹⁷

3.4 Cash-Wage Employment

To gauge whether the observed increase in luminosity and electricity access is accompanied by other economic benefits, we use an alternative measure of economic activity, cash-wage employment, that is not directly affected by access to electricity. *Cash-Wage Employment* is an indicator equal to one if a respondent answers yes to the *Afrobarometer* survey question “Do you have a job that pays a cash wage?”¹⁸ We limit our analysis to the private sector, typical working age adults (i.e., ages 15-60), and exclude employment in mining and agriculture.¹⁹ The average *Cash-Wage Employment* rate is 46% (see Table 5 Panel A).

¹⁷ We cannot assess pre-treatment trends because *Afrobarometer* did not add the electricity access question until Round 2 (i.e., the round before treatment, which is our benchmark period).

¹⁸ *Afrobarometer* does not include a more general employment question, likely because in some parts of Africa it is hard to define when somebody is employed because of a large informal economy where many people are self-employed.

¹⁹ We exclude children and the elderly because they are less likely to seek cash-wage employment (OECD 2017; US Social Security Administration 2019). We exclude: 1) the public sector because we expect increased FCPA enforcement to have a limited impact on government employment, 2) mining employment to focus on economic activity not directly linked to the extraction facilities themselves, and 3) agriculture jobs because cash-wage employment there is uncommon. We report (generally very similar) results including these sectors (individually and all together) in Internet Appendix Section IA6.4.

For this analysis, we estimate Eq. (2) replacing *Access to Electricity* with *Cash-Wage Employment*. Table 5 Panel B Column (2) reports results. Cash-wage employment increases by a statistically and economically significant 11.6 percentage points in villages located near extraction sites with owners subject to the FCPA. To put the magnitude of this effect into perspective, it is important to note both the large proportion (about 50%) of respondents in our sample who report that they were not working in cash-wage-paying jobs before the increase in FCPA enforcement (i.e., were either unemployed or worked in the informal economy), and the fact that an increase in FCPA enforcement could lead to both a decrease in unemployment and a shift from informal to formal (i.e., cash-wage-paying) employment (e.g., if local suppliers join the formal economy in an attempt to comply with the FCPA’s anti-corruption screening requirements).

In Figure 6 Panel B, we plot the treatment effect over time for each *Afrobarometer* survey round. In support of the parallel-trends assumption, there is no visible difference in the pre-treatment trends in cash-wage employment for areas subject to foreign corruption regulation and those that are not. After 2004, the treatment effect is positive in all periods, but some individual coefficients are not statistically significant (likely because we have less statistical power than when estimating an average effect for the entire post period).

4. Effects on Corruption and the Political Resource Curse

Although our results suggest that foreign corruption regulation is associated with greater economic activity, it is not obvious whether this change is accompanied by a broad decline in the corruption that contributes to the political resource curse. If, for example, luminosity increases only because extraction firms make local infrastructure investments instead of paying bribes, economic activity might increase while corruption otherwise remains widespread.

Alternatively, a decline in corruption among foreign extraction firms could spread to other sectors of the economy with accompanying benefits for the local

community. For example, the FCPA's impact on corruption could extend beyond firms directly under its jurisdiction to these firms' local suppliers and contractors. This is because, besides prohibiting bribery, the FCPA also imposes recordkeeping requirements that force firms to ensure that their internal control systems can prevent and detect improper (i.e., corrupt) payments. To ensure compliance with these provisions, firms typically perform due diligence on their suppliers and service providers and a firm with a history of prior involvement in corruption would almost certainly face difficulties in working with a firm subject to the FCPA (Huskins 2008; SEC and DOJ 2012). Because extraction firms are major purchasers of local services and materials in the communities where they operate, the indirect effects of the FCPA on corruption among local businesses throughout the community could be significant.

In this section, by examining changes in perceived corruption and the benefits that local communities receive from resource extraction, we explore whether foreign corruption regulation affects the corruption that contributes to the political resource curse.

4.1 Perceived Corruption

Providing direct evidence on corruption is difficult because corruption, like bribery, is typically unobservable. Instead, we examine changes in a survey-based measure of local residents' perceptions of corruption. We collect sub-nationally geocoded data on corruption perceptions from *Afrobarometer* and measure perceived corruption based on answers to the question "How many of the following people do you think are involved in corruption: Government officials?" We define an indicator, *Corrupt Government Officials*, equal to one if the response to the question is "most of them" or "all of them." To examine how foreign corruption regulation affects corruption perceptions, we estimate Eq. (2) using *Corrupt Government Officials* as the outcome variable. We add individuals' perceived

corruption of members of parliament (*Corrupt Members of Parliament*) as an additional control variable to account for trust in institutions at the national level.²⁰

The descriptive statistics reported in Table 6 Panel A show that 44% (36%) of survey respondents perceive either all or most government officials (members of parliament) as corrupt. The remaining descriptive statistics are similar to those reported in Table 5 Panel A.

Table 6 Panel B reports the results. The $FCR \times Post\ 2004$ coefficient is negative, statistically significant, and indicates that individuals living near extraction sites with owners subject to the FCPA are 10% less likely to perceive government officials as corrupt after 2004 compared to the pre-period mean. In Figure 7, we plot the treatment effect over time for each *Afrobarometer* survey round. In support of the parallel-trends assumption, there is no visible difference in the pre-treatment trends in corruption perceptions for areas subject to the FCPA compared to those that are not. After 2004, the treatment effect is negative for all periods, indicating that perceived corruption declines around treated extraction areas following the FCPA enforcement increase.

4.2 *Pass-Through from Global Commodity Prices to Luminosity*

As a second way of assessing whether a reduction in corruption contributes to the observed increase in economic activity, we examine whether local communities receive a greater share of the rents from resource extraction after the FCPA enforcement increase—as indicated by the extent of the pass-through from changes in global commodity prices to luminosity.

The political-resource-curse hypothesis posits that weak political institutions allow the rents from resource extraction to be captured through corruption, and thus limit the local economic benefits of resource extraction

²⁰ In Internet Appendix IA6.2, we report results for a placebo analysis examining the effect of foreign corruption regulation on *Corrupt Members of Parliament* and find no economically or statistically significant change in perceived corruption at the national parliament level.

(Robinson et al. 2006). If increased FCPA enforcement makes it costlier to engage in corruption, we expect that firms will instead be forced to engage in activities that are more beneficial to the local community (e.g., paying taxes and the fair price for permits, limiting pollution, fulfilling local content obligations, etc.), thereby increasing the local community's share of the rents from resource extraction.²¹

In Internet Appendix IA1, we formalize this prediction with a simple model. We assume there exists a local official who derives utility from both bribes and, to a lesser extent, the well-being of the community (e.g., because her career advancement depends on public opinion) and an extraction firm that derives utility only from profits. Without a punitive cost of bribery (e.g., as from FCPA enforcement), the profit maximizing firm will pay a bribe to obtain the permissions required to operate and/or circumvent local regulation in any instance where the compliance costs exceed the required bribe. Because the official decides whether the firm is allowed to operate, she will optimally demand a bribe that depends on the profitability of the extraction activities. If the threat of foreign corruption regulation makes it prohibitively costly for the firm to pay a bribe, the official will no longer allow the extraction firm to avoid any compliance obligations that would benefit the local community. Similar to the scenario with no punitive costs of bribing, the magnitude of such community-benefiting activities the official optimally demands will depend on the profitability of local extraction activities. Thus, under this argument, the local community's share of the rents from resource extraction should also be more sensitive to fluctuations in the profitability of extraction activities.

We estimate local communities' share of the rents from resource extraction based on the association between commodity prices and luminosity and examine changes in this association around 2005 for facilities subject to the FCPA relative

²¹ Anecdotal evidence suggests that extraction firms often invest in local communities and that one of the most common investments involves providing electricity (see Internet Appendix IA2.1).

to those that are not. To capture the profitability of local extraction activities, we exploit variation in world commodity prices and assume that the value of natural resources increases as the world commodity price increases (and vice versa). We also assume that fluctuations in world commodity prices are exogenous to individual facilities' operating decisions (i.e., that individual extraction sites are too small to affect global commodity markets; Dube and Vargas 2013; Berman et al. 2017).²² We collect commodity prices from the *US Geological Survey* and the *World Bank Commodities* database and exclude coal and natural gas, which have no uniform global price.

To provide a benchmark, we estimate the unconditional association between commodity prices and luminosity using the following OLS regression:

$$Luminosity_{c,t} = \beta_l Ln(Price_{m,t}) + Fixed\ Effects + \varepsilon_{c,t} \quad (3)$$

Price is the average world price for commodity *m* in year *t*. We include *Property*×*Commodity* and *Region*×*Year* fixed effects. Figure 8 Panel A graphs the β_l coefficient estimates and 95% confidence intervals for cells with radii from 10 to 50 kilometers. The association between luminosity and commodity prices is positive and statistically significant for all radii. At 10 kilometers, the β_l coefficient estimate implies an elasticity of luminosity to world commodity prices of approximately 0.06. Consistent with the increase in luminosity being attributable to the extraction facility, the association between resource prices and luminosity monotonically declines in the radius of the cell.²³

In Figure 8 Panel B, we additionally estimate this association for countries with strong versus weak political institutions. We find that the price-luminosity

²² One potential concern is that commodity prices are highly correlated in time. In Internet Appendix Section IA7, we show that there is substantial variation in commodity prices over time.

²³ Consistent with the evidence in Mamo et al. (2019), the positive association between commodity prices and luminosity provides evidence against a strong form of the resource curse in Africa. It does not preclude a less extreme version of the resource curse whereby the positive economic impact of resource extraction is less than what it would have been in the absence of corruption.

association is significantly stronger in countries with initially stronger institutions (the dashed blue line) than in countries with weaker institutions (the solid red line), consistent with the resource curse mainly being an issue in countries with weak political institutions (Robinson et al. 2006).

To examine how foreign corruption regulation affects the pass-through of commodity prices to luminosity, we estimate the following OLS regression:

$$\begin{aligned} \ln(Luminosity_{c,t}) = & \beta_1 FCR_i \times Year_t \times \ln(Price_m) \\ & + \beta_2 FCR_i \times Year_t + Fixed\ Effects + \varepsilon_{c,t} \end{aligned} \quad (4)$$

Similar to Eq. (1), we first estimate the treatment effect by year and include *Property*×*Commodity*, *Commodity*×*Year*, and *Region*×*Year* fixed effects. In addition, we include *FCR*×*Year* fixed effects to control for time trends in luminosity that differ between cells with facilities that are subject to foreign corruption regulation and cells without (i.e., we hold constant the general increase in economic activity documented in Section 3).

Figure 9 Panel A graphs the results from estimating Eq. (4). The estimated counterfactual treatment effects in the pre-treatment period are close to zero. In the post-period, the association between luminosity and changes in world commodity prices is higher in all years. The treatment effect is statistically significant at the 95% level for the year 2005 and for 2006 and 2007 at the 90% level. The path of the estimated effect from 2000 to 2013 is indicative of an increase in the pass-through of commodity prices to local communities after the increase in FCPA enforcement, but the evidence is not as strong as in our main analysis.

Table 7 Column (1) reports the average increase in the commodity-price pass through over the entire post-2004 period. The *FCR*×*Post 2004*×*Ln(Price)* coefficient estimate (0.016) is statistically significant (at the 90% level) and implies a 26% increase relative to the unconditional association between luminosity and commodity prices in the 10-kilometer radius reported in Figure 8 Panel A.

In Figure 9 Panel B, we graph the $FCR \times Post2004 \times Ln(Price)$ coefficient estimates and their corresponding 95% confidence intervals for cells with radii of 10 to 50 kilometers. We find that the impact of foreign corruption regulation on the association between world mineral prices and luminosity decreases monotonically in the length of the radius around the extraction sites. The point estimates are positive for all radii but statistically significant (at the 90% level) only for the 10-kilometer radius. This monotonic decline in the treatment effect as we expand the radius gives us some confidence that, despite the weak statistical significance, the increase in the commodity price pass-through to luminosity is not spurious.

In Table 7 Columns (2) to (4), we present the results of the same three sensitivity tests as in Table 4. First, the estimated treatment effect increases to 0.020 in Column (2) when we transform luminosity using the inverse hyperbolic sine. Second, we find results almost identical to the baseline model when we measure luminosity based on the donut-shaped 1-10 km area around the extraction site. Third, we examine the impact of the FCPA enforcement increase for *USJ Non-OECD* and *non-USJ OECD* firms. We find no evidence of a significant treatment effect for firms under US jurisdiction that are headquartered in non-OECD countries. However, once again, we find evidence of an insignificant but positive treatment effect for firms headquartered in OECD countries that we do not classify as being under US jurisdiction, consistent with these firms experiencing some impact of the increase in FCPA enforcement.

Overall, the evidence in this section indicates that local communities benefit (suffer) more from higher (lower) commodity prices after the FCPA enforcement increase. Importantly, because electricity access is unlikely to fluctuate with annual commodity price changes, the higher association between luminosity and world commodity prices suggests that the increase in luminosity documented in Section 3 may in part be attributable to a reduction in corruption, and not just improvements in the local electrical grid (or other infrastructure improvements).

5. Conclusion

Recognizing corruption's negative economic consequences in developing countries and the reputational costs to countries where bribe-paying companies are headquartered, governments in many developed countries have enacted regulations to curb the bribery of foreign public officials. The most prominent and widely enforced of these foreign corruption regulations is the US FCPA. We provide evidence that a significant increase in FCPA enforcement increases the economic benefits local African communities receive from extraction activities.

We find that, after the FCPA enforcement increase, nighttime luminosity increases by 15% (5%) in communities within a 10- (25-) kilometer radius of affected resource-extraction facilities. Although electricity access increases, we also find an increase in cash-wage employment, suggesting that living standard improvements are not limited to electricity access. Consistent with a reduction in corruption and a reversal of the political resource curse, we further find that perceived corruption decreases and that the pass-through from global commodity prices to luminosity is higher following the FCPA enforcement increase (although the evidence for the latter finding is weaker). Overall, these results are consistent with foreign corruption regulation shifting extraction firms from bribing government officials to investing in local communities.

These findings suggest that foreign corruption regulation can be an effective policy instrument for changing corporate behavior and that, despite any increase in the costs of operating in high-corruption-risk countries, foreign corruption regulation originating in developed countries can have a positive impact on economic conditions in developing countries—that is, it can mitigate factors that contribute to the political resource curse. This is important because developing countries may not themselves have the institutional strength or political will to address misconduct by multinational corporations.

A natural question is whether our results generalize beyond the resource extraction sector. While our evidence suggests communities benefit from foreign corruption regulation, prior work suggests that foreign corruption regulation decreases foreign direct investment (across all sectors) in high-corruption-risk areas (e.g., Beck et al. 1991; Hines 1995; Cuervo-Cazurra 2006; Christensen et al. 2022). This raises the possibility that our findings might be specific to the extraction sector, where it is more difficult for firms to change the location of their operating activities, which typically require direct access to natural resources, compared to firms from other sectors (e.g., manufacturing).

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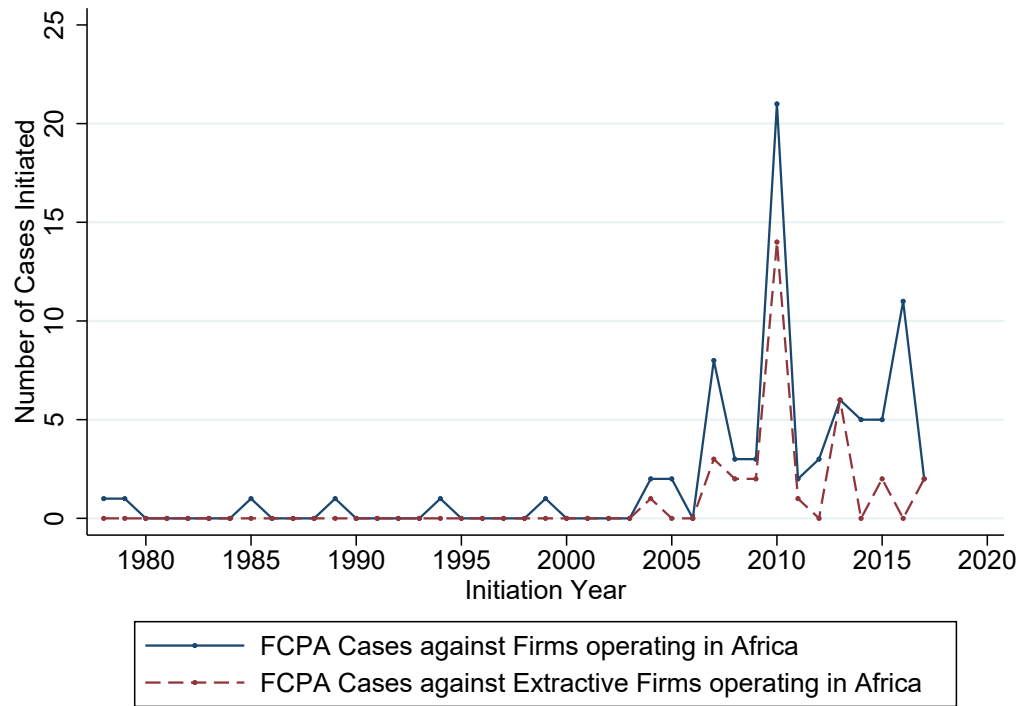
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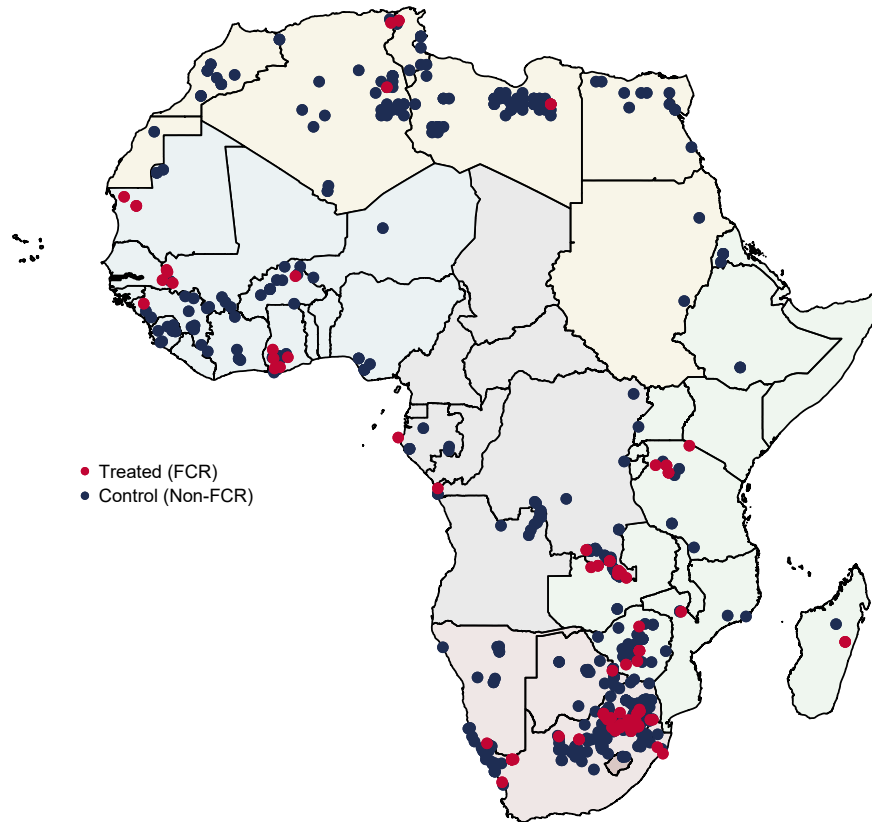
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Figure 1: FCPA Enforcement Increase in the Mid-2000s in Africa



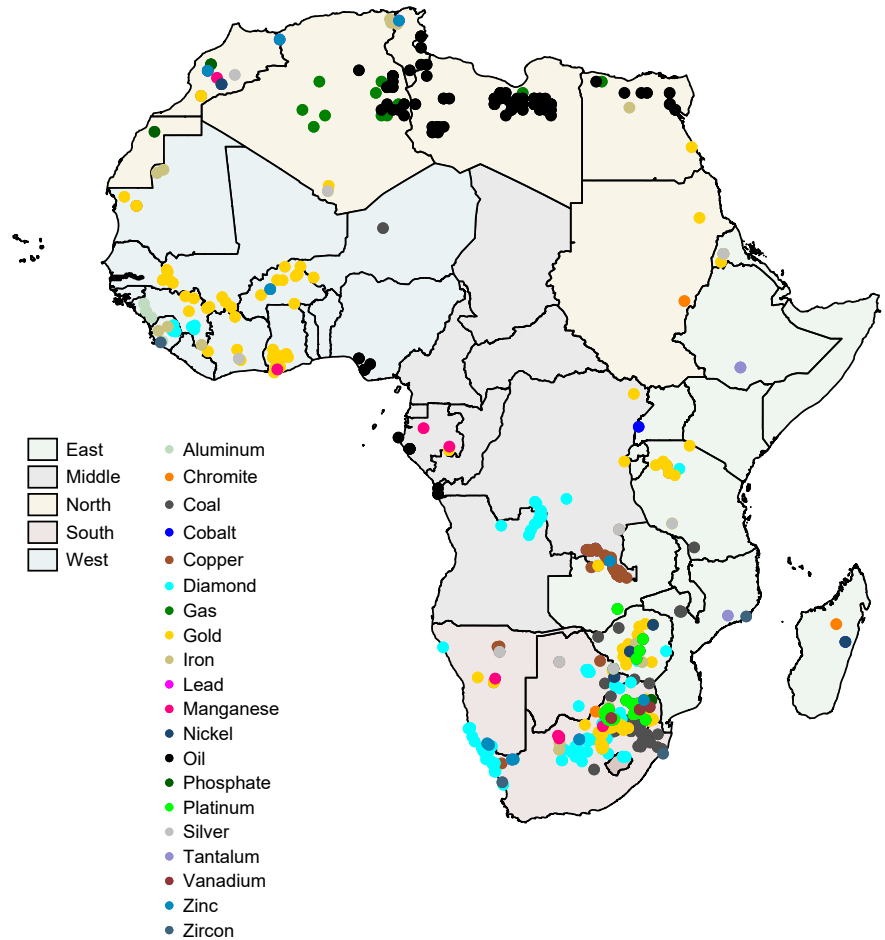
Notes: This figure shows the annual number of FCPA enforcement actions against firms involving bribery in Africa, and the annual number of FCPA enforcement actions against extractive firms involving bribery in Africa filed by the SEC and DOJ against corporations from 1977 to 2017. We collect all (79) enforcement actions against firms involving bribery in Africa, and all (33) enforcement actions against extractive firms involving bribery in Africa from the Stanford Law School FCPA Database.

Figure 2: Extraction Facilities in Africa



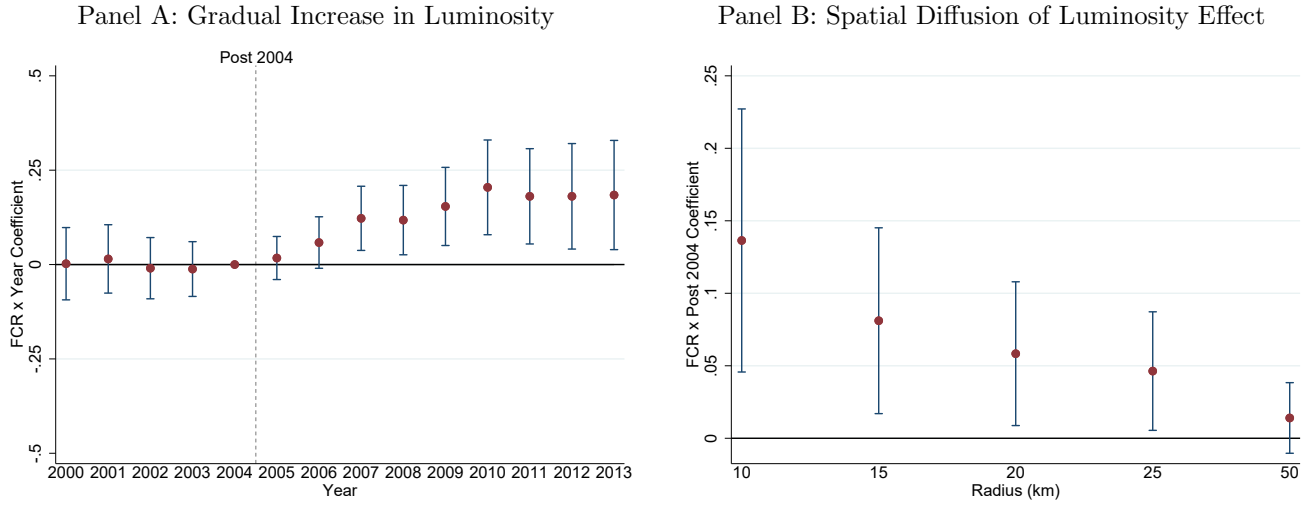
Notes: This figure shows the geographical location of treated and control facilities in our sample. Treated extraction facilities have at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. All other extraction facilities belong to the control group.

Figure 3: Extracted Commodities in Africa



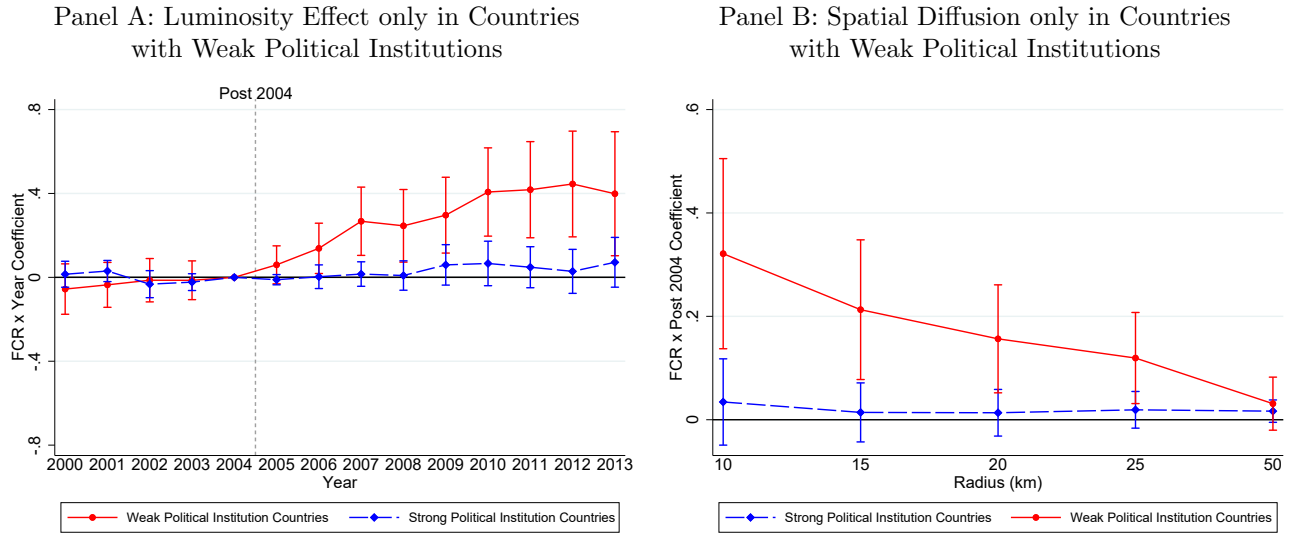
Notes: This figure shows the geographical location of extraction facilities in our sample by commodity. Both figures also show the five main geographic regions of Africa.

Figure 4: Nighttime Luminosity



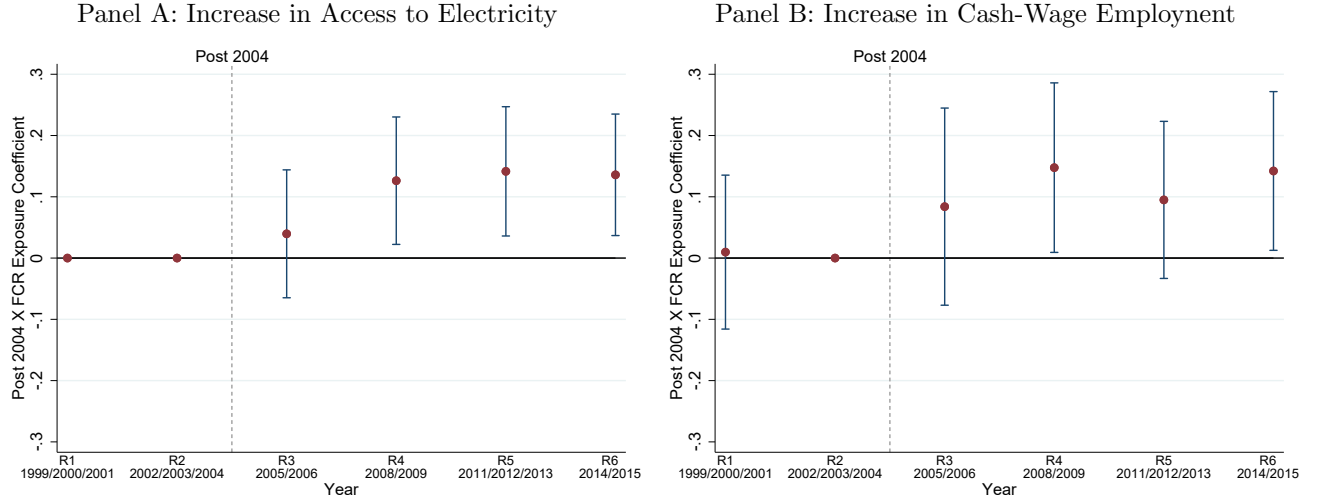
Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (1) of Table 4 but replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $FCR \times Post\ 2004$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km, respectively. We estimate the model from Column (1) of Table 4 but use different cell areas for our dependent variable.

Figure 5: Political Institutions and Nighttime Luminosity



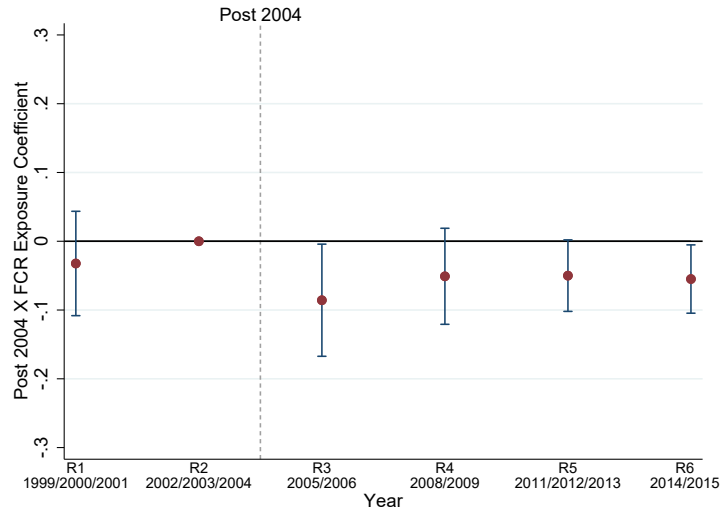
Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity for weak and strong political institution countries, respectively. We estimate the model from Columns (5) and (6) of Table 4 but replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $FCR \times Post\ 2004$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km for weak and strong political institution countries, respectively.

Figure 6: Access to Electricity and Cash-Wage Employment



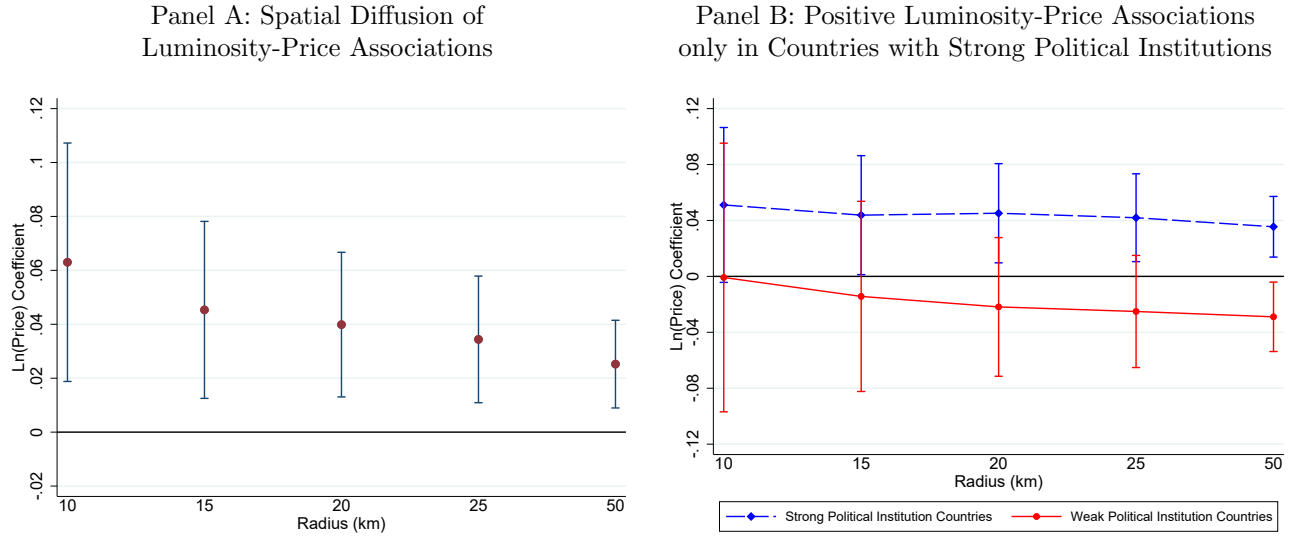
Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the access to electricity. We estimate the model from Column (1) of Table 5 Panel B, but replace the *FCR Exposure* $\times$ *Post 2004* indicator with separate interactions for each survey round in our sample (except for round 2, which serves as the benchmark). Panel B shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the cash-wage employment. We estimate the model from Column (2) of Table 5 Panel B, but replace the *FCR Exposure* $\times$ *Post 2004* indicator with separate interactions for each survey round in our sample (except for round 2, which serves as the benchmark).

Figure 7: Reduction in Local Corruption Perceptions



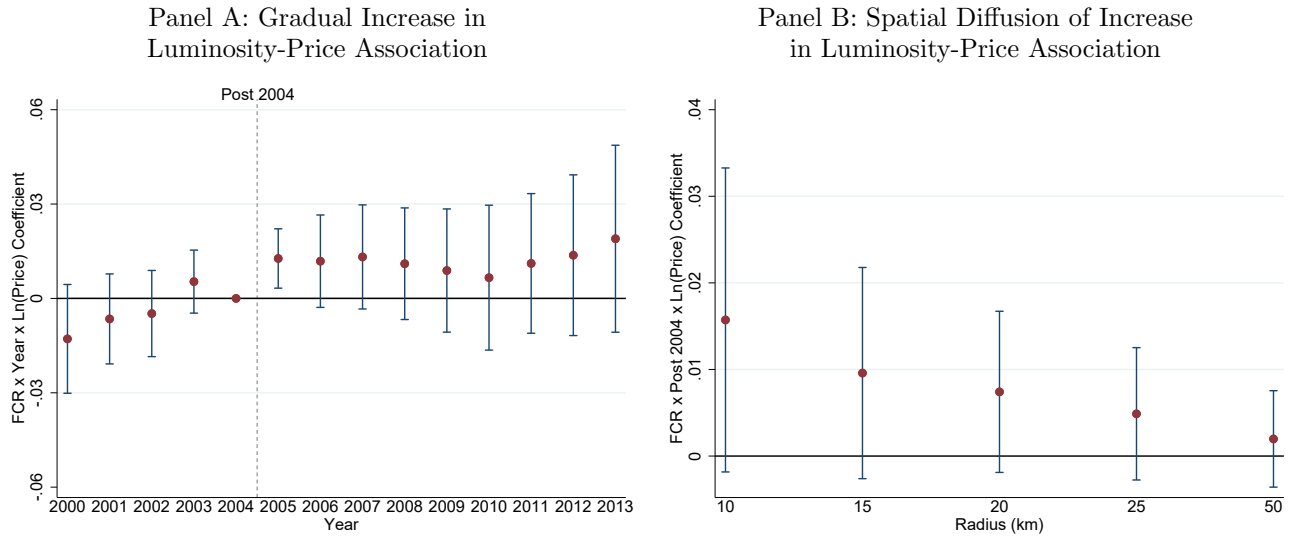
Notes: This figure shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the perceived corruption of government officials. We estimate the model from Column (1) of Table 6 Panel B, but replace the *FCR Exposure* $\times$ *Post 2004* indicator with separate interactions for each survey round in our sample (except for round 2, which serves as the benchmark).

Figure 8: Unconditional Association between Commodity Prices and Luminosity



Notes: Panel A shows the coefficient estimates and 95% confidence intervals of OLS regressions estimating the association between world commodity prices and nighttime luminosity for cell areas with radii of 10km, 15km, 20km, 25km, and 50km, respectively. Panel B shows the same coefficient estimates and 95% confidence intervals for weak and strong political institution countries, respectively.

Figure 9: Pass-Through from Commodity Prices to Nighttime Luminosity



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the association between world commodity prices and nighttime luminosity. We estimate the model from Column (1) of Table 7 but replace the $\text{FCR} \times \text{Post } 2004 \times \ln(\text{Price})$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $\text{FCR} \times \text{Post } 2004 \times \ln(\text{Price})$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km, respectively. We estimate the model from Column (1) of Table 7 but use different cell areas for our dependent variable.

Table 1: FCPA Enforcement Actions by Industry

Industry	Number of FCPA Cases		Number of FCPA Cases Involving Bribery in Africa	
	Before FCR (27 years)	After FCR (13 years)	Before FCR (27 years)	After FCR (13 years)
Extractive Industries	11	71	1	32
Consumer Goods	7	41	0	5
Healthcare	5	40	0	2
Industrial Goods	9	32	2	6
Technology	3	29	0	3
Aerospace/Defense	8	11	3	6
Communication Services	2	15	0	2
Transportation	2	14	1	3
Services	3	10	0	2
Financial	1	10	0	4
Conglomerates	1	7	0	3
Utilities	1	4	1	3
Total	53	284	8	71

Notes: This table shows the annual number of FCPA enforcement actions filed by the SEC and DOJ against corporations by defendant firm's industry from 1977 to 2017. We collect all (337) enforcement actions against corporations from the Stanford Law School FCPA Database.

Table 2: Employment in Mining Sector

	Number of Respondents	Fraction of Mine Workers	Difference Mining vs. Non-Mining Areas
Mining Areas:			
0-10km	1,407	0.182	0.177 (0.000)
0-15km	2,369	0.179	0.174 (0.000)
0-20km	3,709	0.166	0.161 (0.000)
0-25km	5,115	0.154	0.149 (0.000)
0-50km	15,874	0.097	0.092 (0.000)
0-100km	54,817	0.070	0.065 (0.000)
Non-Mining Areas (> 100km)	15,260	0.005	

Notes: This table presents descriptive statistics for mining-related employment in mining and non-mining areas. P-values of the mean comparison t-tests are reported in parentheses. A survey location is in a mining area if the distance between the survey location and the closest mine is less than or equal to 10km, 15km, 20km, 25km, 50km, and 100km, respectively. A survey location is in a non-mining area if the distance between the survey location and the closest mine is more than 100km. *Fraction of Mine Workers* is the fraction of workers that indicated their main occupation as *Miner* based on the Afrobarometer survey question: *What is your main occupation? (If unemployed, retired, or disabled, what was your last main occupation?)*.

Table 3: Descriptive Statistics for Nighttime Luminosity Analyses

	N	Mean	SD	P1	P25	P50	P75	P99
<i>Luminosity (10)</i>	10,318	7.662	10.399	0.000	0.476	3.046	10.317	44.141
<i>Luminosity (1-10)</i>	10,318	7.596	10.369	0.000	0.449	2.964	10.158	44.151
<i>Luminosity (15)</i>	10,318	6.190	8.566	0.000	0.439	2.336	8.843	37.104
<i>Luminosity (20)</i>	10,318	5.361	7.329	0.000	0.393	2.071	7.750	32.284
<i>Luminosity (25)</i>	10,318	4.786	6.396	0.000	0.396	2.045	7.099	28.341
<i>Luminosity (50)</i>	10,318	3.544	4.619	0.000	0.308	1.651	4.824	20.418
<i>FCR</i>	10,318	0.155	0.362	0.000	0.000	0.000	0.000	1.000
<i>USJ Non-OECD</i>	10,318	0.187	0.390	0.000	0.000	0.000	0.000	1.000
<i>Non-USJ OECD</i>	10,318	0.141	0.348	0.000	0.000	0.000	0.000	1.000
<i>Post 2004</i>	10,318	0.643	0.479	0.000	0.000	1.000	1.000	1.000
<i>Price</i>	8,694	6,430.251	10,334.401	0.024	1.450	51.800	10,400.000	38,200.000

Notes: This table presents descriptive statistics for the luminosity analyses in Table 4 and Table 7. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. *Luminosity (X)* is the stable light mean unsaturated nighttime luminosity within an X km radius of the respective property, where we consider X values of 10, 1-10, 15, 20, 25, and 50. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004. *Price* (in USD, per kilogram) is the world price of a given commodity in a given year.

Table 4: Increase in Nighttime Luminosity

	Baseline	Sensitivity Analyses				Role of Institutions	
	(1)	(2)	(3)	(4)		(5)	(6)
Dependent Variable:	0-10 km	Asinh	1-10 km	USJ Non-OECD		Weak	Strong
$\ln(\text{Luminosity (10)} + 1)$	Radius	(Luminosity)	Radius	and Non-USJ OECD		Political	Political
<i>FCR</i> $\times$ <i>Post 2004</i>	0.136 (0.046)	0.183 (0.059)	0.131 (0.045)	0.137 (0.049)		0.321 (0.094)	0.034 (0.043)
<i>USJ Non-OECD</i> $\times$ <i>Post 2004</i>				-0.025 (0.051)			
<i>Non-USJ OECD</i> $\times$ <i>Post 2004</i>				0.045 (0.042)			
Difference in Coefficients (p-value):							
[FCR-USJ Non-OECD] $\times$ Post 2004				0.01			
[FCR-Non-USJ OECD] $\times$ Post 2004				0.11			
Weak-Strong Political Institutions						0.01	
Fixed Effects:							
Property $\times$ Commodity	Yes	Yes	Yes	Yes		Yes	Yes
Region $\times$ Year	Yes	Yes	Yes	Yes		Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes	Yes		Yes	Yes
Property-Commodity-Year Observations	10,318	10,318	10,318	10,318		3,822	5,824

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity in extraction areas. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004.

Table 5: Access to Electricity and Cash-Wage Employment**Panel A: Descriptive Statistics for Access to Electricity and Cash-Wage Employment Analyses**

	N	Mean	SD	P1	P25	P50	P75	P99
<i>FCR Exposure</i>	5,876	0.162	0.368	0.000	0.000	0.000	0.000	1.000
<i>Access to Electricity</i>	5,618	0.660	0.461	0.000	0.000	1.000	1.000	1.000
<i>Cash-Wage Employment</i>	5,876	0.459	0.344	0.000	0.154	0.438	0.750	1.000
<i>Post 2004</i>	5,876	0.808	0.394	0.000	1.000	1.000	1.000	1.000
<i>Female</i>	5,876	0.538	0.233	0.000	0.478	0.500	0.667	1.000
<i>Urban</i>	5,876	0.459	0.498	0.000	0.000	0.000	1.000	1.000
<i>Age</i>	5,876	35.128	6.546	21.750	30.750	34.600	38.866	54.667
<i>Education</i>	5,876	1.528	0.675	0.000	1.000	1.600	2.000	3.000

Notes: This table presents descriptive statistics for the perception analyses in Table 5 Panel B. We define all variables in Table 5 Panel B. The sample is from 1999 to 2015.

Panel B: Increase in Access to Electricity and Cash-Wage Employment

	(1) Access to Electricity	(2) Cash-Wage Employment
<i>FCR Exposure</i> $\times$ <i>Post 2004</i>	0.120 (0.044)	0.116 (0.044)
<i>FCR Exposure</i>	-0.042 (0.040)	-0.004 (0.037)
Controls:		
<i>Female</i>	0.025 (0.034)	-0.153 (0.025)
<i>Urban</i>	0.267 (0.019)	0.053 (0.011)
<i>Ln(Age)</i>	-0.057 (0.031)	0.125 (0.028)
<i>Education</i>	0.263 (0.017)	0.176 (0.011)
Fixed Effects:		
Region $\times$ Round	Yes	Yes
Commodity $\times$ Round	Yes	Yes
R-Squared	0.488	0.294
Observations	5,618	5,876

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the access to electricity and the cash-wage employment. The sample is from 1999 to 2015. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *FCR Exposure* is a binary indicator equal to one if the closest extraction facility within 100 km of a survey respondent has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *Cash-Wage Employment* is a binary indicator equal to one if the response value to the following Afrobarometer survey question equals “Yes, part time” or “Yes, full time”: *Do you have a job that pays a cash income? If yes, is it full-time or part-time? If no, are you presently looking for a job?* *Access to Electricity* is a binary indicator equal to one if the response value to the following Afrobarometer survey question equals “Yes”: *Are the following services present in the primary sampling unit/enumeration area: Electricity grid that most houses could access?* *Post 2004* is a binary indicator equal to one for years after 2004. *Female* is a binary indicator equal to one if the respondent’s gender is female. *Urban* is a binary indicator equal to one if the respondent lives in an urban area. *Age* is the age of the respondent. *Education* is a variable equal to zero, one, two, or three, if the respondent claims to have received the education level of no formal schooling, primary only, secondary, or post-secondary, respectively.

Table 6: Local Corruption Perceptions

Panel A: Descriptive Statistics for Corruption Perceptions Analysis

	N	Mean	SD	P1	P25	P50	P75	P99
<i>FCR Exposure</i>	6,165	0.165	0.371	0.000	0.000	0.000	0.000	1.000
<i>Corrupt Government Officials</i>	6,165	0.437	0.277	0.000	0.250	0.429	0.625	1.000
<i>Post 2004</i>	6,165	0.786	0.410	0.000	1.000	1.000	1.000	1.000
<i>Female</i>	6,165	0.518	0.137	0.000	0.500	0.500	0.571	1.000
<i>Urban</i>	6,165	0.433	0.495	0.000	0.000	0.000	1.000	1.000
<i>Age</i>	6,165	34.330	5.622	22.500	30.500	34.000	37.750	49.429
<i>Education</i>	6,165	1.488	0.651	0.000	1.000	1.522	2.000	3.000
<i>Corrupt Members of Parliament</i>	6,165	0.358	0.277	0.000	0.143	0.333	0.500	1.000

Notes: This table presents descriptive statistics for the perception analyses in Table 6 Panel B. We define all variables in Table 6 Panel B. The sample is from 1999 to 2015.

Panel B: Reduction in Local Corruption Perceptions

	Corrupt Government Officials
<i>FCR Exposure</i> $\times$ <i>Post 2004</i>	-0.045 (0.021)
<i>FCR Exposure</i>	0.014 (0.019)
Controls:	
<i>Female</i>	-0.047 (0.025)
<i>Urban</i>	0.011 (0.007)
<i>Ln(Age)</i>	0.047 (0.022)
<i>Education</i>	0.034 (0.007)
<i>Corrupt Members of Parliament</i>	0.601 (0.020)
Fixed Effects:	
Region $\times$ Round	Yes
Commodity $\times$ Round	Yes
R-Squared	0.464
Observations	6,165

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the perceived corruption of government officials and the perceived satisfaction with local governments. The sample is from 1999 to 2015. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *FCR Exposure* is a binary indicator equal to one if the closest extraction facility within 100 km of a survey respondent has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *Corrupt Government Officials* is a binary indicator equal to one if the response value to the following Afrobarometer survey question equals “Most of them” or “All of them”: *How many of the following people do you think are involved in corruption, or haven't you heard enough about them to say: Government officials?* *Post 2004* is a binary indicator equal to one for years after 2004. *Female* is a binary indicator equal to one if the respondent's gender is female. *Urban* is a binary indicator equal to one if the respondent lives in an urban area. *Age* is the age of the respondent. *Education* is a variable equal to zero, one, two, or three, if the respondent claims to have received the education level of no formal schooling, primary only, secondary, or post-secondary, respectively. *Corrupt Members of Parliament* is a binary indicator equal to one if the response value to the following Afrobarometer survey question equals “Most of them” or “All of them”: *How many of the following people do you think are involved in corruption, or haven't you heard enough about them to say: Members of Parliament?*

Table 7: Increase in Luminosity-Price Association

Dependent Variable: $\text{Ln}(\text{Luminosity (10)} + 1)$	Baseline	Sensitivity Analyses		
	(1) 0-10 km Radius	(2) Asinh (Luminosity)	(3) 1-10 km Radius	(4) USJ Non-OECD and Non-USJ OECD
$\text{FCR} \times \text{Post 2004} \times \text{Ln}(\text{Price})$	0.016 (0.009)		0.015 (0.009)	0.019 (0.009)
$\text{FCR} \times \text{Ln}(\text{Price})$	0.081 (0.062)		0.081 (0.059)	0.106 (0.066)
$\text{FCR} \times \text{Post 2004} \times \text{Asinh}(\text{Price})$		0.020 (0.011)		
$\text{FCR} \times \text{Asinh}(\text{Price})$		0.112 (0.080)		
$\text{USJ Non-OECD} \times \text{Post 2004} \times \text{Ln}(\text{Price})$				-0.005 (0.012)
$\text{USJ Non-OECD} \times \text{Ln}(\text{Price})$				0.012 (0.043)
$\text{Non-USJ OECD} \times \text{Post 2004} \times \text{Ln}(\text{Price})$				0.016 (0.012)
$\text{Non-USJ OECD} \times \text{Ln}(\text{Price})$				0.072 (0.049)
Difference in Coefficients (p-value):				
$[\text{FCR}-\text{USJ Non-OECD}] \times \text{Post 2004} \times \text{Ln}(\text{Price})$				0.08
$[\text{FCR}-\text{Non-USJ OECD}] \times \text{Post 2004} \times \text{Ln}(\text{Price})$				0.87
Fixed Effects:				
Property $\times$ Commodity	Yes	Yes	Yes	Yes
Region $\times$ Year	Yes	Yes	Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes	Yes
FCR $\times$ Year	Yes	Yes	Yes	Yes
USJ Non-OECD $\times$ Year	No	No	No	Yes
Non-USJ OECD $\times$ Year	No	No	No	Yes
Property-Commodity-Year Observations	8,694	8,694	8,694	8,694

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the association between world commodity prices and nighttime luminosity. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004. *Price* (in USD, per gram) is the world price of a given commodity in a given year.

For Online Publication

Reversing the Resource Curse: Foreign Corruption Regulation and the Local Economic Benefits of Resource Extraction

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October 2022

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Section IA1: Model for Buying the Community versus the Local Official

In this section, we develop a simple model of foreign corruption regulation, bribery, and communities' benefits from local firms as a framework to interpret our main results.

We consider one representative firm and one official and assume that the community has no direct decision rights (i.e., it takes what it gets). The firm can make two types of payments to the official to obtain or maintain the right to operate: 1) bribes, b , that the official privately consumes (e.g., direct cash or shell company payments) or 2) payments to the local community, c . Payments to the local community can take the form of, for example, infrastructure improvements, fulfilment of local content agreements (i.e., training and using legitimate local suppliers), taxes and permits, or compliance costs to satisfy environmental regulations.

The official's utility equals:

$$U(b, c) = u(b) + ac,$$

where $u(b)$ is the utility that the official derives from the bribe, b . $u(b)$ is a concave function because we assume the official has decreasing marginal utility of private consumption. a is a parameter between 0 and 1 that captures how much the official "cares about her community," with higher values capturing a higher weight on community welfare. Bribes have a higher benefit for the official than community payments since $a < 1$. The official cares about her community either because of altruistic reasons or because her job security and career advancement depend on the public's opinion.

The firm's profit net of transfers to external stakeholders equals:

$$p(\Pi, b, c, \alpha) = \Pi - b - c - \alpha b,$$

where Π is the profit before transfers and α is the expected per dollar punishment for paying bribes. If $\alpha > 0$, the firm is willing to make higher transfers if they are community payments instead of bribes.

Assuming that the local official has the decision rights over the firm's operating permissions, the firm makes zero profits and b and c maximize the utility of the official subject to the firm's participation constraint. Thus, the official's maximization problem is:

$$\begin{aligned} \text{Max}_{b, c} \quad & U(b, c) = u(b) + ac \\ \text{subject to} \quad & \Pi - b - c - \alpha b = 0 \text{ and } b, c \geq 0 \end{aligned}$$

To solve this optimization problem, we substitute the firms' participation constraint into the official's utility function and take the first derivative with respect to b , which yields:

$$U'(b) = u'(b) - a(1 + \alpha).$$

If the marginal utility at the maximum possible bribe $u'(b_{\max}) = u'(\Pi/(1+\alpha))$ is negative and $u'(0) > a(1+\alpha)$, i.e., the marginal utility at the first unit of the bribe is sufficiently high and the cost of bribing is sufficiently low, we obtain an interior solution with $b^* > 0$ and $c^* > 0$. At this interior solution, the marginal utility of bribing equals zero, i.e., $U'(b) = u'(b) - a(1+\alpha) = 0$ or $u'(b) = a(1+\alpha)$. We assume a functional form of the official's utility of $U(b, c) = \sqrt{b} + ac$, implying that the marginal utility of the bribe b decreases faster than the community payment c , which seems realistic because b is part of the bureaucrat's private wealth whereas c is not. Given this utility function, the optimal bribe b^* and community payment c^* equal:

$$b^* = \left(\frac{1}{2a(1+\alpha)} \right)^2 \quad \text{and} \quad c^* = \Pi - \left(\frac{1}{4a^2(1+\alpha)} \right).$$

In the context of this model, we can interpret the FCPA enforcement increase as an increase in the expected cost of bribery α . We compute the comparative statics of b^* and c^* with respect to α to derive the following propositions:

Proposition 1: Since $\frac{\partial b^*}{\partial \alpha} < 0$, the amount of bribes paid decreases after an increase in FCPA enforcement.

Proposition 2: Since $\frac{\partial c^*}{\partial \alpha} > 0$, the amount of community payments c increases after an increase in FCPA enforcement.

A direct implication of Proposition 1 is that the level of corruption should decline after the FCPA enforcement shock. Moreover, if buying the community is more conducive to development than bribes, Proposition 2 implies that the local economic benefits of natural resource extraction should increase after the regulation. Payments made to the community could be more conducive to local economic activity because corruption has negative economic externalities (e.g., inefficient resource allocation) and/or because the payments to the community could have a direct economic benefit (e.g., training and using local suppliers to fulfil local content obligations, providing electricity and other infrastructure, or complying with environmental and other regulation).

Our model can also shed light on the mediating role of political institutions in determining the local economic effects of FCPA enforcement. Recall that a is the weight the official puts on community payments, which is plausibly determined in part by the prevailing level of democracy. In a democracy, the extent to which the official cares about her community is typically higher than in an autocracy or a dictatorship because of electoral competition and the fact that public opinion directly impacts the official's re-election probability (or indirectly through job security). Assuming that FCPA enforcement makes it prohibitively costly to pay bribes (i.e., α goes to infinity), the firm pays the price for permits only through community payments. In this case, $c_{\text{post-FCR}}^* = \Pi$, leading to the following proposition:

Proposition 3: Since $\Delta c^* = c_{post-FCR}^* - c^* = \frac{1}{4a^2(1+\alpha)}$, the increase in community payments after an FCPA enforcement increase is larger for areas with weak political institutions (i.e., areas with a lower value for a).

Thus, Proposition 3 implies that the increase in local economic activity after FCPA enforcement will be larger in countries with weak political institutions.

Finally, we use the model to derive a prediction for the potential change in the extent to which communities share the rents from resource extraction with the official around the increase in FCPA enforcement:

Proposition 4: Since $\frac{\partial c^*}{\partial \alpha} > 0$ and $\frac{\partial c^*}{\partial \Pi} > 0$ while $\frac{\partial b^*}{\partial \Pi} = 0$, the association between resource rents Π and community payments c increases after the rise in FCPA enforcement.

Our proxy for resource rents is Π , the amount of firm profits before transfers to outside stakeholders. Proposition 4 indicates that local communities share more of the rents from resource extraction after the regulation.

Section IA2: Evidence on How Firms Buy Local Communities

IA2.1 Corporate Social Responsibility Reports

In this section, we provide anecdotal evidence on how the treated firms in our sample report that they contribute to local communities where they operate, which is an important aspect of our conceptual framework (see Internet Appendix Section IA1). This evidence allows us to establish the types of services extraction firms typically provide to local communities and to assess whether those services could lead to greater local economic activity.

The data is based on publicly available corporate social responsibility (CSR) reports (also known as sustainability or community reports). 18 of the 30 firms in our treated sample have published a CSR report. When a CSR report is available, we use the first CSR report after 2004. We do not go through all reports published since 2005 to avoid concerns about cherry picking examples that fit a particular explanation. Very few firms disclose CSR reports prior to 2005, which precludes a time-series analysis around the increase in FCPA enforcement. Importantly, all information is voluntarily self-reported.

We find that almost all firms that publish a CSR report disclose doing something for the local community and that these activities depend on what the community needs or asks for. The most common services include 1) healthcare services, 2) water and sewage, 3) roads or road maintenance, and 4) electricity. We then read each report and identify the firms that report providing one of these common services. Table IA2.1 presents representative quotes for each parent company that publishes a CSR report.

The most common community services are related to healthcare (100%); followed by water and sewage (78%), road maintenance (44%), and electricity (33%). Each of these services could lead to an increase in economic activity but through somewhat different channels. Healthcare can increase economic activity if it prevents or cures diseases decrease worker productivity. Improved water and sewage systems can increase economic activity if the systems reduce waterborne diseases, reduce the time needed to obtain water, or increase agricultural yields. Well-maintained roads could increase economic activity if they reduce traffic congestion or allow people to travel further and faster. Increased access to electricity can have a substantial impact on economic growth (e.g., Dinkelmann 2011; Lipscomb et al. 2013; Bos et al. 2018).

Table IA2.1: Anecdotal Evidence on Local Community Services Provided by Extraction Companies

Parent Company Name	Number of Properties (main sample)	Community Investments					Quotes	
		Electricity	Roads	Water and Sewage	Health-care	CSR Report (Year)	Infrastructure	Healthcare
Alcan Inc.	2	No	Yes	Yes	Yes	2005	"In the Bauxite and Alumina group at Compagnie des Bauxites de Guinée (CBG), a wastewater treatment project is currently under way for the city of Kamsar. [...] Alcan's investment in the project through CBG is an estimated US\$6.3 million." "At the Alcan Composites site in Shanghai, China a reflecting mirror at the road corner behind the facility has improved visibility on the only access road to the immediate neighbouring community."	"Alcan's Ghana Bauxite Company Limited (GBC) operates a Maternal Child Health Clinic in the community and also participates in a national immunization program where vaccines, needles, syringes and monitoring are all part of the service." "With the aid of 'rapid HIV testing kits' purchased by the Polokwane plant clinic in early 2004, 52 employees were tested. Three were unfortunately diagnosed as being HIV positive."
Anglo American Plc	27	Yes	No	No	Yes	2005	"In South Africa, a significant number of peak load-reducing projects have been completed, with more in progress. These aim to reduce the cost of electricity to individual divisions by moving away from peak tariffs. This will enable the South African electricity supply system to operate more efficiently and provide further opportunity for economic growth."	"Our community programmes are designed to build capacity for comprehensive HIV/AIDS services in communities associated with our operations." "Certification to 3rd party health and safety systems will be at least 75% complete by the end of 2005." "Through the Anglo American Chairman's Fund, the company made an initial grant of R30 million (\$4.7 million) over three years to loveLife, a national South African youth HIV-prevention and skills development programme."
ArcelorMittal	1	No	No	No	Yes	2005	"We made a substantial contribution towards addressing air pollution in communities by providing subsidised steel for gas cylinders in an attempt to decrease smoke and emissions from coal fires in townships. This project will continue during the current financial year."	"Our response strategy has focused on HIV/AIDS awareness education aimed at reducing the prevalence rate of 9.3% by encouraging behaviour change." "During the reporting period we contributed a sum of approximately [...] R650,000 to HIV/AIDS initiatives."
BHP Billiton	14	Yes	Yes	Yes	Yes	2005	"Through the Mozal project, the region has been provided with significant public infrastructure, including roads and bridges, potable water supplies, electricity supplies, telephone services, sewage treatment works, housing units and general amenities buildings."	"We have also progressed a project during the year supporting the development of a new treatment for HIV/AIDS that may be applicable to the African subcontinent. The Company has provided significant funding to develop a clinical trial on this treatment, which is given as an injectable therapeutic vaccine." "In an effort to limit development of the disease, we have embarked on a screening program to detect latent TB infection in our workforce and the local community."
Barrick Gold Corporation	5	No	No	Yes	Yes	2008	"At the Buzwagi development project in Tanzania, a comprehensive resettlement program [...] was completed in 2008. [...] Over fifty community water wells have been deepened or improved."	"A sample of Barrick's numerous wide-ranging health programs include funding community-based HIV/AIDS awareness programs and clinics in Tanzania, Papua New Guinea, North America and Australia; teaming up with World Vision to fight child malnutrition and poverty in Peru"

Eni	4	Yes	No	No	Yes	2006	"In Kazakhstan various public infrastructures were restructured and the creation of Village Councils was promoted to facilitate the participation of communities in the development of local projects." In Ecuador: "Moreover, a program of community development will provide support to indigenous communities through the construction of basic infrastructures (houses, basic sanitation infrastructures, hydroelectric generation systems, radio-communication structures), the access to air transport services and the promotion of initiatives for the local social and economic development." "In 2006 the expenditure for communities amounted to €74.70 million, 54% of which refer to the development of infrastructures and social actions."	"With expenditure of €48 million in 2006, the health management system has 307 health facilities of which 90 are in Italy and 217 abroad and on ships." "In some situations abroad Eni's health centers also offer services to families of local workers and expatriates in full cooperation with the local public health institutions, such services take on strategic value in relations with the communities."
First Quantum Minerals Limited	6	Yes	Yes	Yes	Yes	2016	"In recent years First Quantum has invested up to \$10 million annually in a wide range of programs – from health care and education to housing, infrastructure and livelihood development – all aimed at strengthening the social and economic well-being of Akjoujt and the surrounding region." "And then there are welcome amenities such as a reliable supply of potable water, and solar panels generating electricity for much of the day." "Creating a direct link to the recently completed smelter at the Kansanshi mine in Zambia was vital to avoid congestion on existing roads and ensure the new facility ran smoothly. But just as importantly, people living and farming along the new road had to feel they were better off after it was built."	"First Quantum takes a hybrid approach to managing its health commitments. Prevention and wellness promotion programs are developed and delivered by a corporate team; clinics, while benefitting from company subsidies, are operated autonomously by medical professionals and administrative staff." "The company funds mobile testing and antiretroviral treatment units which regularly visit local communities around Solwezi, Kalumbila and Ndola. First Quantum also provides free condoms in work-site washrooms, as well as medication for employees who are HIV-positive."
Freeport Minerals Corporation	3	Unclear	Unclear	Unclear	Yes	2008	"We invested approximately \$113 million in programs and activities to stimulate infrastructure and economic development in 2008." "In 2008, we made direct contributions of approximately \$190 million to support local communities and organizations in the geographic areas where we operate."	"The company regularly conducts targeted insecticide spraying – including indoor residual spraying (IRS) in people's homes – to eliminate likely sources of malaria." "In the 2014–2015 fiscal year, First Quantum's total annual expenditure on health-related programs in Zambia was \$12.5 million. Of this, approximately 80% was allocated to the delivery of clinical and community-based health services, with the balance going to prevention and education programs."
Glencore Plc	11	No	Yes	Yes	Yes	2010	The company takes a case study approach to illustrate how it helps communities. In the 2010 report, they describe what they have done for infrastructure in various communities: "Katanga has provided boreholes for drinking water for several villages in and around olwezi, most notably in Musonoi and Mutoshi, plus five new boreholes, along with associated equipment and pumps, for Kolwezi. It has paved 19 km of roads in Kolwezi and maintains a further 30 km between nearby villages, along with investing USD \$ million for refurbishing roads in Lubumbashi and USD 1.2 million to replace the heavy vehicle barge on the Lualaba river."	"...Mopani has been partnering with other stakeholders, including the Zambian government, to increase the coverage of key malaria and HIV/AIDS interventions." "Mutanda constructed two additional clinics and formed an alliance with the DRC government to open a vaccination clinic for underfives"

Golden Star Resources Limited	2	Yes	Yes	Yes	Yes	2011	"We constructed and upgraded community road infrastructure, purchased equipment, made donations towards community infrastructure improvements, supported farming and fish pond projects, and undertook two GSSTEP programs (see GSSTEP case study)." "Commencement of the Bondaye Nsuta Mbease electricity provision project - electricity poles and wiring for the main town supply line, which will service over 3,000 people." "Provision of a 4 water supply boreholes, a pipe-borne water supply system, and pumps for two existing water systems, as well as system repairs and maintenance."	"Furnishing of the Bondaye clinic, constructed as a GSDF project in 2010." "As part of our corporate social responsibility programs, we built a health centre at Nsaweso, an Outpatients Department at the Prestea Government Hospital, nurses quarters at Bogoso, and a community health post at Bondaye." "GSR supports and participates in national immunisation programs, including the 2011 Ghana national yellow fever immunisation program, as well as, providing health and family planning education and participating in World AIDS day programs."
IAMGOLD Corporation	3	No	Yes	Yes	No	2007	"In Guyana, we assisted with road repairs after heavy rain damage, gave books and cricket equipment to a school in exchange for expertise needed for a roof repair, and employed a summer school student for a recycling exercise." "At Buckreef in Tanzania, we provided \$60,000 towards school construction, at the request of the community. We also donated US\$120,000 for four water wells to be drilled and pumps to be installed in four communities. Further, we established community water committees to manage the wells and helped train technicians to ensure that the wells remain functional."	"Occupational diseases are monitored at all our operations. As of 2007 no cases had been reported at any of our operations."
Kinross Gold Corporation	4	No	Yes	Yes	Yes	2009	"While road maintenance is carried out by the Chilean Ministry of Public Works, Kinross contributes financially to support ongoing road work." "Committed \$250,000 in 2009 to improve water flow in Espalha Creek"	"Providing support for the House for Native Health, where traditional healing methods are practised and taught" "Established a partnership with Atenas Medical College and the City of Paracatu to build a new emergency care unit in the municipal hospital, contributing \$400,000 to buy materials for the construction of the new emergency care unit and hospital expansion"
Mineral Deposits Limited	1	No	No	Yes	Yes	2017	"GCO's social responsibility activities focus on enhancing local economic development opportunities, strengthening local community infrastructure, supporting community capacity building and entrepreneurship programs in agriculture and small business development (particularly for women and young people) and building company-community relationships." "Having completed the project associated with extending Diogo's water supply network to 13 villages in the GCO active area, a new water distribution network project involving three villages was initiated in 2017."	"GCO also participates in government health initiatives through its partnership with organisations such as AFRIVAC which aims to increase child immunisation rates across Africa."
Nevsun Resources Limited	1	No	No	Yes	Yes	2012	"The CAP will provide materials and technical expertise for a number of infrastructure projects, including: > Enhanced local transportation routes; > Improved sanitation facilities; > Increased supply of safe drinking water; and > Improved wells, piping, and diversion channels. In 2012, there was no specific CAP activities undertaken but the Company is actively looking for opportunities in 2013."	"To promote public health and safety we have developed the following four public programs: > Providing medical services at the mine site clinic; > Implementing healthy lifestyles campaigns for workers; and > Providing health checkups and other relevant medical testing"

Newmont Mining Corporation	2	No	No	Yes	Yes	2014	"Newmont invested \$28 million globally in 2014 to support a wide range of community initiatives." "This joint initiative by Yanacocha and the municipal water authority included the expansion of water pipelines; upgrades of local water treatment plants; and construction of a new reservoir and network system." 2014 monetary community investments (in thousands) Civil projects \$1,047.6 Community capacity building \$6,204.1 Education \$2,643.5 Farming \$1,042.7 Health \$4,580.6 Public infrastructure \$2,915.2 Other activities \$8,557.7	"To aid in the health and humanitarian fight against the world's deadliest outbreak of the Ebola virus in 2014, Newmont joined other mining companies that operate in West Africa to call on the international community to step up the fight against Ebola. We also became active participants in a coalition of private companies, government agencies and NGOs working to halt the spread of the disease in West Africa. [...] And we partnered with Project C.U.R.E. – an international humanitarian relief organization – to deliver donated medical supplies and protective gear worth more than \$700,000 to Guinea and Liberia."
Rio Tinto	2	No	No	No	Yes	2010	"In addition to direct economic contributions through salaries, wages, taxes, royalties and local service and supply, our businesses supported 2,900 socio-economic programmes covering a wide range of activities such as health, education, business development, housing, environmental protection and agricultural development during 2010."	"Rio Tinto operates in countries where the prevalence of human immunodeficiency virus (HIV), tuberculosis and malaria are high. We work closely with the international health community on these problems not only in Africa, but globally. Where our operations are located in regions with a generalised HIV epidemic (as defined by UNAIDS) we actively encourage all employees to know their HIV status through voluntary testing. We also ensure that all employees in these regions and their nominated partner have affordable access to treatment, care and support, including antiretroviral drugs."
Vale S.A.	1	No	Yes	Yes	Yes	2006	"The investments – in projects in education, culture, health, infrastructure, farming, and social assistance – were guided by the concept of hearing the demands of the communities of Moatize and Tete." "In Mário de Campos, improvements were made to a highway interchange and the main routes that carry intensive traffic of trucks with iron ore in the region. A contribution of R\$1 million was made to Margarida Municipal Hospital of the municipality of João Monlevade" "In Governador Valadares CVRD invested R\$5.465 million in 2006 for construction of the Altinópolis viaduct, which, this year, will now serve approximately 15,000 people who cross the rail tracks daily." "During this period, the community, CVRD and the public authority chose the investments that were a priority for each town such as water, drainage works, and a sewage network in Barão de Cocais – R\$1.4 million has already been allocated for their construction."	With indigenous communities, and Quilombolas: "The company invested in works, such as construction of a health center" "Other investments included R\$1.6 million to Nossa Senhora das Dores Hospital, for the purchase of new equipment for hemodialysis, works on the remodeling the pediatricians' and obstetricians' section, and equipment for the sterilized material center."
Xstrata Limited	11	Yes	No	Yes	Yes	2005	"Extension of electricity supply for communities, e.g. at Project Lion in South Africa and Minera Alumbrera, Argentina" "Water management and conservation initiatives (all operations)" "Irrigation systems are being constructed and healthy cattle will be introduced to improve the local genetic pool and a health prevention system will be established to protect the new cattle from disease." "Expansion and refurbishment of schools, provision of education materials to more than 200 primary and secondary schools in Argentina"	"HIV/AIDS education, prevention and training initiatives; voluntary counselling, testing and treatment programmes" "Primary healthcare community clinics, support for regional healthcare services and facilities, particularly for remote communities"
No. of "Yes"		6	8	13	17			

IA2.2 UN African Investor Survey

The evidence from CSR reports in Section IA2.1 focuses on how firm self-report that they invest in communities through infrastructure and healthcare. Firms can also “buy the local community” by treating local suppliers and employees better. To examine this channel, in this section, we look at how foreign extraction firms interact with local African communities in the post-2004 period.

We obtain data on local supplier and labor policies of foreign firms from the *African Investor Survey* of the *United Nations Industrial Development Organization* (UNIDO). In 2010, UNIDO conducted a large-scale survey among foreign firms with operations in Africa to elicit their investment motives and policies (Amendolagine et al. 2013). Our sample covers the survey responses of 155 foreign extractive firms with investments in 19 African countries. The advantage of the UN survey data is that it allows us to provide direct ground-level evidence on how foreign firms integrate local communities into their operations. The drawback is that the UN conducted this particular survey only once, in 2010, which limits our inferences to cross-sectional comparisons between foreign extraction firms. Moreover, because the survey was fully anonymized, we cannot observe the names of individual companies and assess whether they are under US jurisdiction. As an alternative, we assign treatment based on whether the firm is headquartered in an OECD country and thus is subject to the OECD Anti-Bribery Convention.

We compare local supplier and labor policies between OECD and non-OECD firms in 2010, accounting for host country and subsector fixed effects (i.e., oil/gas extraction, mining, and natural resource refining). In Table IA2.2, we find that OECD firms operating in Africa are more likely than non-OECD firms to purchase from local suppliers, train local employees, and pay their employees more in 2010 (after the increase in foreign corruption regulation). These results are consistent with the idea that foreign corruption regulation incentivizes firms to pursue business practices that are more beneficial to the local communities where they operate as a substitute for paying bribes. However, because our analysis relies on only one year of cross-sectional data in the post-FCR period (i.e., 2010), we cannot rule out that OECD firms already interacted more with local African communities than non-OECD firms before the increase in FCPA enforcement. Readers should interpret the results in Table IA2.2 with this caveat in mind.

Table IA2.2: Local Suppliers and Labor Policies of OECD Firms in Africa

Panel A: Descriptive Statistics

	N	Mean	SD	P1	P25	P50	P75	P99
<i>OECD</i>	150	0.200	0.401	0.000	0.000	0.000	0.000	1.000
<i>New Local Suppliers Added</i>	129	5.519	14.027	0.000	0.000	0.000	4.000	60.000
<i>Employee Training</i>	150	0.467	0.501	0.000	0.000	0.000	1.000	1.000
<i>Wage Production Workers</i>	133	305.988	340.422	0.000	124.064	198.102	353.406	2,012.516
<i>Wage Technical Workers</i>	137	976.088	1,167.823	0.000	297.152	598.167	1,250.962	6,061.056
<i>Wage Clerical Workers</i>	139	554.985	782.390	0.000	158.018	292.036	535.860	3,804.607

Notes: This table presents descriptive statistics for the regression analyses in Table [IA2.2 Panel B](#). *OECD* is a binary indicator equal to one if the firm is headquartered in a country that ratified the OECD Anti-Bribery Convention before 2004. *New Local Suppliers Added* is the number of new local suppliers that have been added to the firm's supplier list during the last three years. *Employee Training* is a binary indicator equal to one if the firm provides formal internal or external training to its employees. *Wage Production Workers* is the average monthly wage or salary paid to production workers during the last fiscal year. *Wage Technical Workers* is the average monthly wage or salary paid to technical, supervisory, or managerial staff during the last fiscal year. *Wage Clerical Workers* is the average monthly wage or salary paid to clerical or administrative staff during the last fiscal year.

Panel B: Regressions

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:	Ln(1+New Local Suppliers Added)	Employee Training	Ln(1+Wage Production Workers)	Ln(1+Wage Technical Workers)	Ln(1+Wage Clerical Workers)
<i>OECD</i>	0.901 (0.415)	0.373 (0.111)	0.734 (0.251)	0.954 (0.320)	0.747 (0.397)
Fixed Effects:					
Host Country	Yes	Yes	Yes	Yes	Yes
Subsector	Yes	Yes	Yes	Yes	Yes
Adjusted R-Squared	0.07	0.12	0.14	0.14	0.26
Firm Observations	129	150	133	137	139

Notes: This table reports coefficient estimates of OLS regressions examining the local supplier and labor policies of OECD and non-OECD firms in Africa. Standard errors clustered at the firm level are reported in parentheses. *OECD* is a binary indicator equal to one if the firm is headquartered in a country that ratified the OECD Anti-Bribery Convention before 2004. *New Local Suppliers Added* is the number of new local suppliers that have been added to the firm's supplier list during the last three years. *Employee Training* is a binary indicator equal to one if the firm provides formal internal or external training to its employees. *Wage Production Workers* is the average monthly wage or salary paid to production workers during the last fiscal year. *Wage Technical Workers* is the average monthly wage or salary paid to technical, supervisory, or managerial staff during the last fiscal year. *Wage Clerical Workers* is the average monthly wage or salary paid to clerical or administrative staff during the last fiscal year.

Section IA3: Reasons for and Timing of the FCPA Enforcement Increase

IA3.1 *Reasons for the FCPA Enforcement Increase after 2004*¹

Figure 1 in the Manuscript plots the number of FCPA enforcement actions related to operations in Africa per year from 1977 to 2017. We collect all enforcement actions against corporations from the *Stanford Law School FCPA Database*. FCPA cases increase sharply after 2005. The first spike in enforcement actions occurs in 2007, which, given that a typical FCPA investigation, from initiation until the filing of an enforcement action, takes multiple years, is consistent with an onset of the ramp up in enforcement around 2005. Importantly, SEC-registered firms are generally required to publicly disclose FCPA investigations when they become aware of them. Evidence in Cassin (2018) suggests that public disclosure typically occurs a few years before cases are resolved. From 1977 until 2004 there were 53 FCPA enforcement actions (fewer than 2 per year); since then, there have been 284 cases (more than 20 per year).

A confluence of factors, all occurring in 2004, help to explain the timing of the FCPA enforcement increase. Below, we discuss these factors in detail.

United States v. Kay

A 2004 ruling by the US Court of Appeals in *United States v. Kay* expanded the legal definition of a bribe paid to “obtain or retain” business, and thereby broadened the scope of the FCPA beyond government procurement contracts to include a variety of potential interactions with public officials when conducting business abroad (e.g., payments for customs duties, licenses, permits, taxes, etc.). Consistent with the importance of the *Kay* decision, Martin et al. (2012) find that, compared to the period from 1977 to 2004, the percentage of FCPA enforcement actions targeting activities besides government procurement contracts nearly doubled after 2005.

Deferred Prosecution and Non-Prosecution Agreements

In late 2004, the DOJ used a non-prosecution agreement for the first time in a case against InVision Technologies and General Electric. Previously, the DOJ relied on filing formal charges as its only FCPA-enforcement option. In January of 2005, the DOJ, again for the first time, employed a deferred-prosecution agreement in a case against Monsanto. These alternative resolution vehicles forgo formal charges in favor of allowing the accused to acknowledge wrongdoing, pay a monetary penalty, and prospectively demonstrate good conduct. The possibility of using these agreements greatly reduced the likelihood that the DOJ would have to fulfill the burden of proof in court, and thus increased the agency’s willingness to pursue cases.

Although the possibility of using deferred and non-prosecution agreements existed before 2005, their usage in FCPA cases beginning in 2004 appears to reflect a change in tactics by the DOJ. Mark Mendelsohn, the former deputy chief of the DOJ’s FCPA enforcement unit, whose tenure at the DOJ began in 2005, stated publicly that if the agency did not have the option of resolving FCPA enforcement cases with non-prosecution or deferred-prosecution agreements, it would “certainly bring fewer cases” (Corporate Crime Reporter 2010). Consistent with this argument, Martin et al. (2012) show that since 2004 the DOJ has resolved 75% of all corporate FCPA

¹ The discussion in this section is based on Christensen et al. (2021): “Policeman for the World: The Impact of Extraterritorial FCPA Enforcement on Foreign Investment and Internal Controls.”

enforcement actions with non- or deferred-prosecution agreements.

The Sarbanes-Oxley Act (SOX)

Regulatory changes arising from SOX increased the consequences to firms and their senior corporate officers for failing to maintain adequate internal control systems, such as those required under the FCPA's accounting provisions (98% of all successful FCPA cases after 2005 involve violations of the FCPA's accounting provisions. see Christensen et al. 2021 for further details). SOX Section 404, which became effective in November 2004 (for most firms), requires SEC registrants and their external auditors to assess the effectiveness of firms' internal control systems, including the firm's FCPA compliance programs, and to publicly disclose the results in the auditor's report. Increased scrutiny under SOX made it more likely that internal control failures and questionable transactions would be detected. An increased awareness of potential improprieties, coupled with the requirement under SOX Section 302 that senior corporate officers certify the accuracy of the firm's financial statements, increased the incentives for managers to self-report potential FCPA violations. Because the SEC and DOJ consider the extent of a company's cooperation, self-reporting misconduct upon discovery can also lead to less severe sanctions (SEC and DOJ 2012).

The DOJ has referenced SOX Sections 404 and 302 as important drivers of the increase in FCPA enforcement. During a 2010 Senate FCPA hearing a DOJ representative stated: "We are getting a significant number of disclosures from corporations about their own criminal conduct. I think that, in part, relates to the passage of Sarbanes-Oxley legislation, which encourages corporations to review their own books and records." In 2011 the same official stated "...one likely cause for this increase in cases is disclosures by companies consistent with their obligations under the Sarbanes-Oxley Act, which requires senior corporate officers to certify the accuracy of their financial statements. This has led to more companies discovering FCPA violations and making the decision to disclose them to the SEC and DOJ" (Koehler 2019).

IA3.2 Revealed Corporate Awareness of the FCPA Enforcement Increase

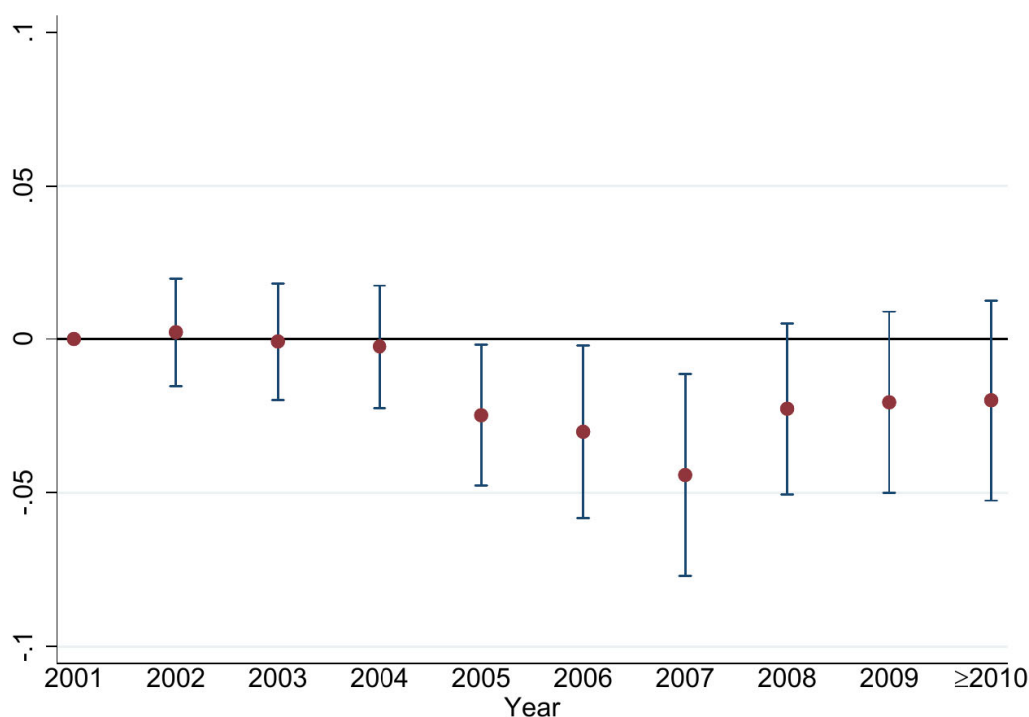
The three regulatory events discussed in Section IA3.1 can explain why FCPA enforcement actions increased after 2004. A related question is when multinational firms became aware of the FCPA enforcement increase and, hence, when the deterrent effect started to materialize. One empirical approach to assess when firms became aware of the enforcement threat is to examine the timing of changes in corporate policies that (i) respond to increased enforcement of foreign corruption regulation and (ii) are relatively easy to adjust and hence are expected to occur soon after firms become aware of an increase in enforcement.

The level of *new* investments in high-corruption-risk countries is a relatively fast-moving outcome that we expect to change when firms become aware of the increase in FCPA enforcement. Since forgoing marginal investment opportunities likely does not entail significant adjustment costs, multinational firms can quickly change their investments in a given host country. Zeume (2017) and Sanseverino (2021) find that multinational firms slow their expansion to high-corruption-risk countries almost immediately after an increase in anti-corruption enforcement due to the passage of the UK Bribery Act. Based on these papers, we gauge when multinational firms likely became aware of the increase in FCPA enforcement by looking at when their new investments in high-corruption-risk countries change relative to their investments in low-corruption-risk countries.

To do so, we compare changes in bilateral foreign direct investment (FDI) flows for firms headquartered in OECD countries (that are subject to the FCPA because their home country signed the OECD Anti-Bribery Convention) versus non-OECD firms in high- versus low-corruption-risk countries. We use the same data sources and essentially the same empirical model (excluding control variables) as in Christensen et al. (2021). In Figure IA3.2, we plot the yearly coefficient estimates of the treatment effect relative to 2001, which serves as the benchmark year. Before 2005, OECD firms have almost identical patterns in FDI flows as non-OECD firms. However, starting in 2005, OECD firms sharply curtail their new investments in high-corruption-risk countries. This decrease in FDI flows persists through the end of our sample period.

Taken together, the timing of the investment reduction suggests that multinational firms subject to the FCPA became aware of the enforcement increase beginning in 2005. Thus, we choose 2005 as the onset of the treatment period (i.e., when the deterrent effect of the FCPA most likely starts to materialize for our sample firms).

Figure IA3.2: Revealed Knowledge of FCPA Enforcement – Foreign Direct Investment Flows in High-Corruption-Risk Areas



Notes: This figure shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of increased FCPA enforcement on foreign direct investments in high-corruption-risk countries.

Section IA4: Sample Selection and Composition

IA4.1 Sample Selection Criteria

In Table IA4.1, we describe how we construct the sample for our luminosity analyses and provide a breakdown of the number of observations affected by each step of the sample selection for the mining facilities (Panel A) and the oil and gas facilities (Panel B).

For the mining sample (Table IA4.1 Panel A), there are 3,842 extraction facilities in the *SNL* Database in December 2018. However, most of the extraction sites (3,355) report zero production for our sample period (2000 to 2013). After excluding these facilities, we have 487 unique facilities and 186 of these facilities extract two minerals. We perform the main analysis at the facility×mineral level and when we account for multiple minerals at the same facility, we have 673 facility-mineral observations (we provide results only including the main mineral in Section IA5.4). For each facility, we have 14 years of data and we exclude facilities that produce minerals without price data and singletons. After applying all selection criteria, the baseline mine-mineral-year sample consist of 8,736 observations.

For the oil and gas sample (Table IA4.1 Panel B), there are 3,026 wells in the *Enverus International* database in June 2019. However, after excluding duplicates, wells without location data, and wells that opened after 2004 (i.e., the year before treatment), there are 2,404 wells. Oil and gas wells are often located close together in blocks, which makes it difficult to isolate each well's contribution to growth. To address this issue, we exclude blocks with multiple owners (2,132 wells). We further exclude offshore wells because our measures of growth (nighttime luminosity and cash-wage employment) make little sense for non-land environments. Finally, we exclude abandoned, shut in, depleted and newly discovered wells and one well for which we have no luminosity data, which results in 113 wells left in our final sample. Again, for each well we have 14 years of data. After applying all selection criteria, the baseline oil well sample consists of 1,582 observations.

Our combined sample of mining and oil and gas facilities consists of 10,318 (8,736+1,582) observations.

Table IA4.1: Sample Selection Criteria

Panel A: Mining Sample

Sample Selection Step	Mine Observations	Luminosity Observations	Δ
Raw mine level data (downloaded from the SNL Database in Dec. 2018)			
(1) Raw mine observations	3,842		
(2) Excluding mines with zero reported production from 2000 to 2013	487		-3,355
(3) Adding observations for mines that produce multiple minerals	673		+186
Luminosity data			
(4) Luminosity observations at the mine-mineral-year level		9,422	$\times 14$
(5) Excluding minerals with no price data		8,778	-644
(6) Excluding singletons		8,736	-42
Final baseline sample of mine-mineral-year observations		8,736	

Panel B: Oil and Gas Sample

Sample Selection Step	Oil Well Observations	Luminosity Observations	Δ
Raw oil well data (downloaded from Enverus International in June 2019)			
(1) Raw oil well observations	3,026		
(2) Excluding duplicate observations	3,021		-5
(3) Excluding observations with no location data	3,012		-9
(4) Excluding wells discovered after 2004	2,404		-608
(5) Excluding wells located in blocks where multiple firms operate	272		-2,132
(6) Excluding offshore wells	193		-79
(8) Excluding abandoned, shut in, depleted, or discovery wells	114		-79
(9) Excluding wells with no luminosity data	113		-1
Luminosity data			
(10) Luminosity observations at the well-year level		1,582	$\times 14$
Final baseline sample of well-year observations		1,582	

Notes: This table describes the sample selection process for our luminosity analyses. The sample is from 2000 to 2013.

IA4.2 Mapping Extraction Sites to Owners and Treatment Classification

Mining Sample

For each mine in our sample, the *SNL Metals and Mining* database provides the name, headquarter country, and ownership percentage of all corporate owners of the mine by year.² Based on this information, we check for each owner whether the firm is under US jurisdiction and thus subject to the FCPA. Based on FCPA guidelines, we classify a mine as being under US jurisdiction if at least one of the facility's corporate owners has a stake of 20% or more and is: 1) headquartered in the US, 2) has an SEC-registered cross-listing on a US stock exchange, or 3) discloses an operating segment in the US (SEC and DOJ 2012). We verify whether an owner is headquartered in the US based on the home country information provided in the *SNL Metals and Mining* data. To assess whether the corporate owner has an SEC cross listing in the US, we merge US cross-listings data from the websites of the major depository banks (Bank of New York and Citibank) and verify that a cross-listed firm is an SEC registrant through a search of 20-F and 40-F filings in the *SeekEdgar* database. Finally, we merge to each owner data on reporting segments from *Worldscope* to check whether the firm discloses an operating segment in the US. We consider only owners that are under US jurisdiction and are also headquartered in an OECD country as being subject to the FCPA (i.e., treated) because enforcement of the FCPA has in practice been limited to firms headquartered in OECD Anti-Bribery Convention signatory countries. We use the home country information in *SNL Metals and Mining* to verify whether the corporate owner has its headquarters in an OECD country. Overall, this multi-step procedure allows us to classify mines as treated or control facilities.

Oil and Gas Sample

For each oil well in our sample, we observe in the *Enverus International* database the owner's name in the year the well started operating. In contrast to mines, oil wells in our data are owned by one individual firm. We first conduct a manual web search on the headquarter country of the well owner to check whether the firm is headquartered in the US or in another OECD country. Then, we merge the owner list with the US cross-listings data, SEC-registration data, and geographic segment data as described above. Equivalent to our mining sample, we classify wells as treated if they are under US jurisdiction and headquartered in an OECD country.

² We access the *SNL Metals and Mining* database through the [S&P Global Market Intelligence](#) platform.

IA4.3 Sample Composition by Commodity

Table IA4.3 reports the distribution of extraction facilities across commodity types. Our sample includes facilities that extract 20 different commodities, with the largest concentration in gold (23%), followed by coal (14%), and oil (13%).

Table IA4.3: Sample Composition by Commodity

	Unique Properties	Unique Foreign Properties	Unique USJ Properties	Unique FCR Properties	Property-Year Observations	FCR Property-Year Observations
Aluminum	5	3	2	2	70	28
Chromite	18	10	10	8	252	112
Coal	102	35	46	31	1,428	434
Cobalt	22	15	9	5	308	70
Copper	73	37	28	13	1,022	182
Diamond	85	43	11	2	1,190	28
Gas	14	1	1	1	196	14
Gold	170	78	86	27	2,380	378
Iron	19	2	6	2	266	28
Lead	7	5	5	3	98	42
Manganese	11	5	3	2	154	28
Nickel	36	11	13	2	504	28
Oil	99	19	7	4	1,386	56
Phosphate	4	0	0	0	56	0
Platinum	39	12	15	1	546	14
Silver	12	7	3	1	168	14
Tantalum	3	0	0	0	42	0
Vanadium	3	2	2	2	42	28
Zinc	11	8	9	6	154	84
Zircon	4	3	2	2	56	28
Total	737	296	258	114	10,318	1,596

Notes: This table presents descriptive statistics by commodity for our luminosity sample. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. FCR properties have at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention.

IA4.4 Sample Composition by Facility Country and Region

Table IA4.4 provides descriptive statistics on the sample composition by facility country (Panel A) and facility region (Panel B). Of note is the fact that, within many countries, there are relatively few treated and/or control properties. Indeed, in 14 countries there are no treated properties and in 8 countries there is only one treated property. However, within region there is much more variation in treated and control properties. Northern Africa has the lowest fraction of treated properties (5.26%) and Southern Africa has the highest fraction of treated properties (54.38%). The lack of treated or control properties in many African countries is why we do not, in our main analysis, include *Country* $\times$ *Year* fixed effects and instead report results with *Region* $\times$ *Year* fixed effects (see sensitivity tests in Section IA5.9).

Table IA4.4: Sample Composition by Country and Region

Panel A: By Country

	Unique Properties	Treated Properties	% Treated Properties within Country
Algeria	31	2	6.45
Angola	10	1	10.00
Botswana	21	1	4.76
Burkina Faso	11	1	9.09
Cote d'Ivoire	6	0	0.00
Dem. Rep. Congo	36	7	19.44
Egypt	11	0	0.00
Eritrea	4	0	0.00
Ethiopia	2	0	0.00
Gabon	7	1	14.29
Ghana	17	5	29.41
Guinea	9	1	11.11
Lesotho	3	0	0.00
Liberia	1	0	0.00
Libya	57	2	3.51
Madagascar	3	2	66.67
Mali	9	3	33.33
Mauritania	6	3	50.00
Morocco	13	0	0.00
Mozambique	5	1	20.00
Namibia	20	1	5.00
Niger	2	0	0.00
Nigeria	7	0	0.00
Senegal	1	1	100.00
Sierra Leone	8	0	0.00
South Africa	351	60	17.09
Sudan	2	0	0.00
Swaziland	1	0	0.00
Tanzania	12	6	50.00
Tunisia	10	2	20.00
Uganda	1	0	0.00
Western Sahara	1	0	0.00
Zambia	23	7	30.43
Zimbabwe	36	7	19.44
Total	737	114	

Panel B: By Region

	Unique Properties	Treated Properties	% Treated Properties within Region
East Africa	86	23	26.74
Middle Africa	53	9	16.98
North Africa	125	6	4.80
Southern Africa	396	62	15.66
West Africa	77	14	18.18
Total	737	114	

Notes: This table presents descriptive statistics by country and region for our luminosity sample. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Treated properties have at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention.

IA4.5 Sample Composition by Owner Country

Table IA4.5 reports the number of facility owners by headquarter country and treatment or control group. We focus on parent companies with an ownership stake in the given extraction facility of at least 20% in 2004. Note that the number of treated properties in Table IA4.5 equals 121 (instead of 114 treated properties in the Manuscript) because seven properties have two separate FCR owners. Most of our treated properties are owned by firms located in Canada (29%), the United Kingdom (26%), Switzerland (18%), Australia (13%), and the United States (7%). Properties owned by domestic firms that are neither subject to US jurisdiction nor located in the OECD are primarily from South Africa (42%), Libya (12%), Algeria (6%), the Democratic Republic of the Congo (5%), and Zimbabwe (4%).

Table IA4.5: Sample Composition by Owner Country

	FCR Properties	USJ Non-OECD Properties	Non-USJ OECD Properties	Non-USJ Non-OECD Foreign Properties	Non-USJ Non-OECD Domestic Properties
Algeria	0	0	0	0	27
Angola	0	0	0	0	7
Australia	16	0	17	0	0
Austria	0	0	1	0	0
Barbados	0	0	0	2	0
Bermuda	0	24	0	4	0
Botswana	0	0	0	0	17
Brazil	1	0	1	0	0
British Virgin Islands	0	0	0	4	0
Burkina Faso	0	0	0	0	1
Canada	35	0	32	0	0
Cayman Islands	0	0	0	1	0
China	0	3	0	2	0
Cote d'Ivoire	0	0	0	0	1
Cyprus	0	0	0	1	0
Dem. Rep. Congo	0	0	0	0	23
Egypt	0	0	0	0	9
Eritrea	0	0	0	0	4
Ethiopia	0	0	0	0	2
France	3	0	3	0	0
Gabon	0	0	0	0	2
Germany	0	0	1	0	0
Ghana	0	0	0	0	4
Guinea	0	0	0	0	5
Indonesia	0	0	0	2	0
Ireland	0	0	1	0	0
Italy	4	0	0	0	0
Lesotho	0	0	0	0	2
Liberia	0	0	0	0	1
Libya	0	0	0	0	53
Luxembourg	1	0	21	0	0
Madagascar	0	0	0	0	1
Mali	0	0	0	0	8
Malta	0	0	0	3	0
Mauritania	0	0	0	0	3
Morocco	0	0	0	0	13
Mozambique	0	0	0	0	3
Namibia	0	0	0	0	12
Netherlands	0	0	4	0	0
Niger	0	0	0	0	1
Nigeria	0	0	0	1	6
Portugal	0	0	1	0	0
Russia	0	0	0	3	0
Sierra Leone	0	0	0	0	7
South Africa	0	132	0	6	181
Sudan	0	0	0	0	2
Swaziland	0	0	0	0	1
Switzerland	22	0	2	0	0
Tanzania	0	0	0	0	4
Tunisia	0	0	0	0	5
USA	8	0	0	0	0
Uganda	0	0	0	0	1
United Arab Emirates	0	0	0	2	0
United Kingdom	31	0	31	0	0
Western Sahara	0	0	0	0	1
Zambia	0	0	0	1	5
Zimbabwe	0	0	0	0	18

Notes: This table presents descriptive statistics by owner country for our luminosity sample. We consider the headquarter country of all owners with an ownership stake of 20% or more in 2004. If ownership information of a property is missing, we consider the property to be domestically owned.

IA4.6 Characteristics of Treated Firms

In Table IA4.6, we provide descriptive information for the treated oil/gas and mining firms in our analysis sample. Our 121 treated facilities are owned by only 30 different companies because the extractive sector is highly concentrated and dominated by relatively few multinational firms. Note that the number of treated properties in Table IA4.6 equals 121 (instead of 114 treated properties in the Manuscript) because seven properties have two separate FCR owners. In fact, the 30 treated companies in our sample represent 31% (\$556 bn.) of the total market capitalization (\$1,771 bn.) of all listed extractive firms covered in *S&P Global* in 2004.

Our treatment sample is skewed towards mining and contains all major mining firms in the world (e.g., Glencore, BHP Billiton, Rio Tinto, Anglo American, Vale). In contrast, our sample only contains two major treated oil and gas firms, Eni and Total. Our sample does not include other major oil corporations (like ExxonMobil, Chevron, or Shell) because, in Africa, these firms only operate in large multi-firm oil blocks and/or offshore blocks. We exclude offshore oil wells because they do not fit our research question/design (i.e., there are no villages on open water) and drop blocks with multiple owners since wells in multi-firm blocks are often located close together, which makes it difficult to isolate each well's impact on local communities.

Finally, three of our treated firms (10%) became targets of FCPA enforcement actions (17% of treated properties). Our documented treatment effects need not necessarily operate through direct enforcement actions and the threat of enforcement likely plays a significant role. For instance, Zeume (2017) finds deterrence effects with very few anti-corruption cases in a UK setting.

Table IA4.6: Characteristics of Treated Firms

Parent Company Name	Headquarter Country	Number of Properties (our sample)	FCPA Case	Market Capitalization 2004 (M USD)
Alcan Inc.	Canada	2	--	18,075
Anglo American Plc	United Kingdom	27	--	35,263
ArcelorMittal	Luxembourg	1	--	71,039
BHP Billiton	Australia	14	Yes	74,154
Barrick Gold Corporation	Canada	5	--	12,869
Breakwater Resources Ltd.	Canada	2	--	172
Caledonia Mining Corporation Plc	United Kingdom	1	--	328
Crew Gold Corporation	United Kingdom	1	--	172
Dynatec Corporation	Canada	2	--	--
Eastwest Gold Corporation	Canada	3	--	1,222
Eni	Italy	4	Yes	94,628
First Quantum Minerals Limited	Canada	6	--	949
Freeport Minerals Corporation	USA	3	--	9,486
Glencore Plc	Switzerland	11	--	--
Gold One International Ltd South Africa	Australia	1	--	344
Golden Star Resources Limited	Canada	2	--	570
High River Gold Mines Ltd.	Canada	1	--	215
IAMGOLD Corporation	Canada	3	--	971
Kinross Gold Corporation	Canada	4	--	2,422
Mineral Deposits Limited	Australia	1	--	37
Nevsun Resources Limited	Canada	1	--	140
Newmont Mining Corporation	USA	2	--	19,798
Placer Dome Inc.	Canada	2	--	8,187
Rio Narcea Gold Mines, Ltd.	Canada	1	--	359
Rio Tinto	United Kingdom	2	--	40,528
Stamper Oil & Gas Corporation	Canada	1	--	9
Total S.A.	France	3	Yes	129,653
Vale S.A.	Brazil	1	--	32,565
Vectra Co.	USA	3	--	923
Xstrata Limited	Switzerland	11	--	11,145
Total		121		566,224

Section IA5: Supplementary Tests for Luminosity Analyses

IA5.1 Jackknife Procedure Excluding Individual Commodities

In Table IA5.1, we present results dropping each commodity from the sample in turn. Excluding the two commodities with the largest number of observations, coal and gold (see Table IA4.3), significantly impacts the estimated treatment effects. Excluding coal increases the estimated treatment effect and excluding gold decreases it.

Table IA5.1: Jackknife Procedure Excluding Individual Commodities

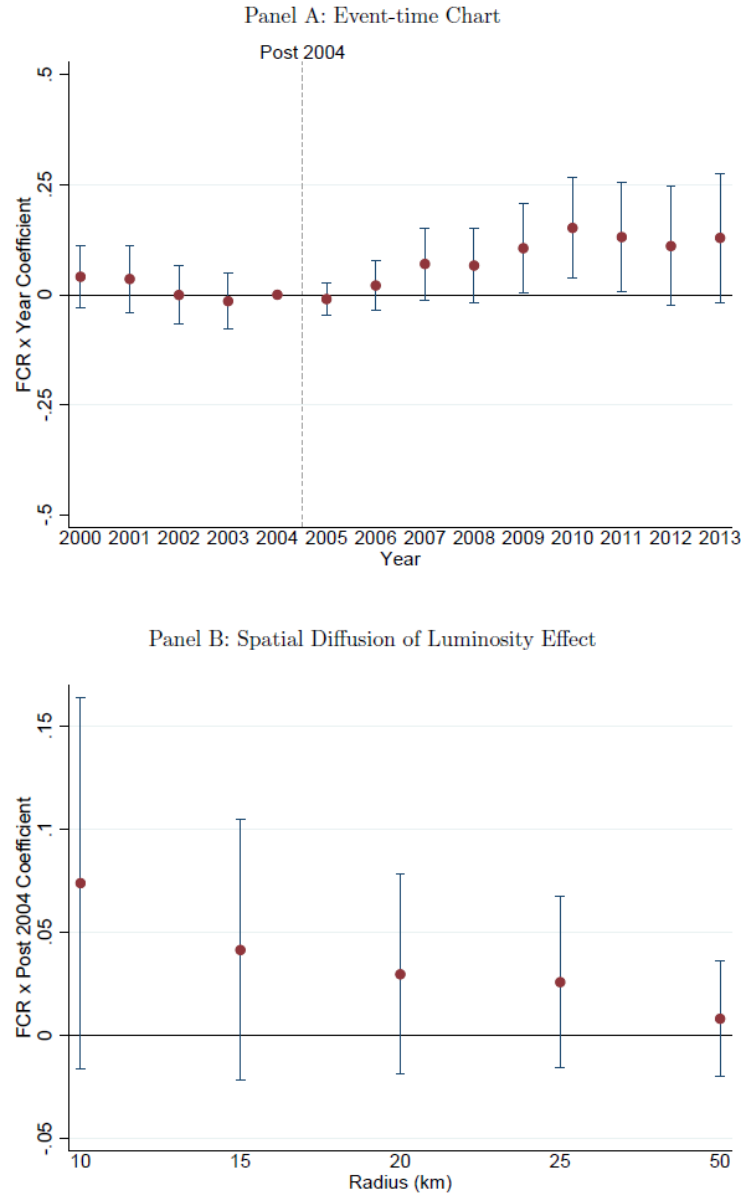
	(1) Excluding Aluminum	(2) Excluding Chromite	(3) Excluding Coal	(4) Excluding Cobalt	(5) Excluding Copper	(6) Excluding Diamond	(7) Excluding Gas	(8) Excluding Gold	(9) Excluding Iron	(10) Excluding Lead
Dependent Variable: $\text{Ln}(\text{Luminosity } (10) + 1)$										
$\text{FCR} \times \text{Post } 2004$	0.137 (0.047)	0.131 (0.048)	0.191 (0.059)	0.142 (0.047)	0.122 (0.041)	0.141 (0.048)	0.126 (0.046)	0.074 (0.046)	0.138 (0.047)	0.143 (0.046)
Fixed Effects:										
Property $\times$ Commodity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region $\times$ Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,248	10,066	8,890	10,010	9,296	9,128	10,122	7,938	10,052	10,220

	(1) Excluding Manganese	(2) Excluding Nickel	(3) Excluding Oil	(4) Excluding Phosphate	(5) Excluding Platinum	(6) Excluding Silver	(7) Excluding Tantalum	(8) Excluding Vanadium	(9) Excluding Zinc	(10) Excluding Zircon
Dependent Variable: $\text{Ln}(\text{Luminosity } (10) + 1)$										
$\text{FCR} \times \text{Post } 2004$	0.136 (0.047)	0.134 (0.046)	0.132 (0.048)	0.137 (0.046)	0.138 (0.047)	0.143 (0.046)	0.136 (0.046)	0.135 (0.047)	0.143 (0.047)	0.139 (0.047)
Fixed Effects:										
Property $\times$ Commodity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region $\times$ Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,164	9,814	8,932	10,262	9,772	10,150	10,276	10,276	10,164	10,262

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (1) of Table 4 in the Manuscript, but separately exclude individual commodities. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *Post 2004* is a binary indicator equal to one for years after 2004.

In Figure IA5.1, we plot the treatment effect of the FCPA on luminosity in event time excluding gold. In the pre-treatment period, there are no statistically significant differences between the treatment and control groups. In the post-treatment period, the path looks similar to the baseline specification including gold (reported in the Manuscript in Figure 4) but the magnitude of the estimated treatment effects is generally lower.

Figure IA5.1: Luminosity Effects Excluding Gold



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (1) of Table 4 in the Manuscript but exclude extraction areas around gold mines and replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $FCR \times Post\ 2004$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km, respectively. We estimate the model from Column (1) of Table 4 in the Manuscript but exclude extraction areas around gold mines and use different cell areas.

IA5.2 Jackknife Procedure Excluding Individual Countries

In Table IA5.2 below, we present results dropping each country from the sample in turn. Our results are not driven by any single country. South Africa is unique in that it is one of the most economically and politically developed countries in Africa and has the largest number of mining facilities in our sample. Nevertheless, it does not single-handedly drive our results.

Table IA5.2: Jackknife Procedure Excluding Individual Countries

	(1) Excluding Algeria	(2) Excluding Angola	(3) Excluding Botswana	(4) Excluding Burkina Faso	(5) Excluding Cote d'Ivoire	(6) Excluding Dem. Rep. Congo	(7) Excluding Egypt	(8) Excluding Eritrea
Dependent Variable: Ln(Luminosity (10) + 1)								
<i>FCR</i> × <i>Post 2004</i>	0.127 (0.046)	0.139 (0.047)	0.135 (0.046)	0.136 (0.047)	0.138 (0.046)	0.145 (0.048)	0.137 (0.046)	0.139 (0.046)
Fixed Effects:								
Property × Commodity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	9,884	10,178	10,024	10,164	10,234	9,814	10,164	10,262

	(9) Excluding Ethiopia	(10) Excluding Gabon	(11) Excluding Ghana	(12) Excluding Guinea	(13) Excluding Lesotho	(14) Excluding Liberia	(15) Excluding Libya	(16) Excluding Madagascar	(17) Excluding Mali
Dependent Variable: Ln(Luminosity (10) + 1)									
<i>FCR</i> × <i>Post 2004</i>	0.136 (0.046)	0.128 (0.047)	0.129 (0.047)	0.137 (0.047)	0.136 (0.046)	0.136 (0.046)	0.140 (0.047)	0.131 (0.047)	0.133 (0.047)
Fixed Effects:									
Property × Commodity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,290	10,220	10,080	10,192	10,276	10,304	9,520	10,276	10,192

	(18) Excluding Mauritania	(19) Excluding Morocco	(20) Excluding Mozambique	(21) Excluding Namibia	(22) Excluding Niger	(23) Excluding Nigeria	(24) Excluding Senegal	(25) Excluding Sierra Leone	(26) Excluding South Africa
Dependent Variable: Ln(Luminosity (10) + 1)									
<i>FCR</i> × <i>Post 2004</i>	0.125 (0.047)	0.134 (0.046)	0.142 (0.047)	0.136 (0.046)	0.136 (0.046)	0.130 (0.046)	0.131 (0.046)	0.137 (0.047)	0.282 (0.075)
Fixed Effects:									
Property × Commodity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,234	10,136	10,248	10,038	10,290	10,220	10,304	10,206	5,404

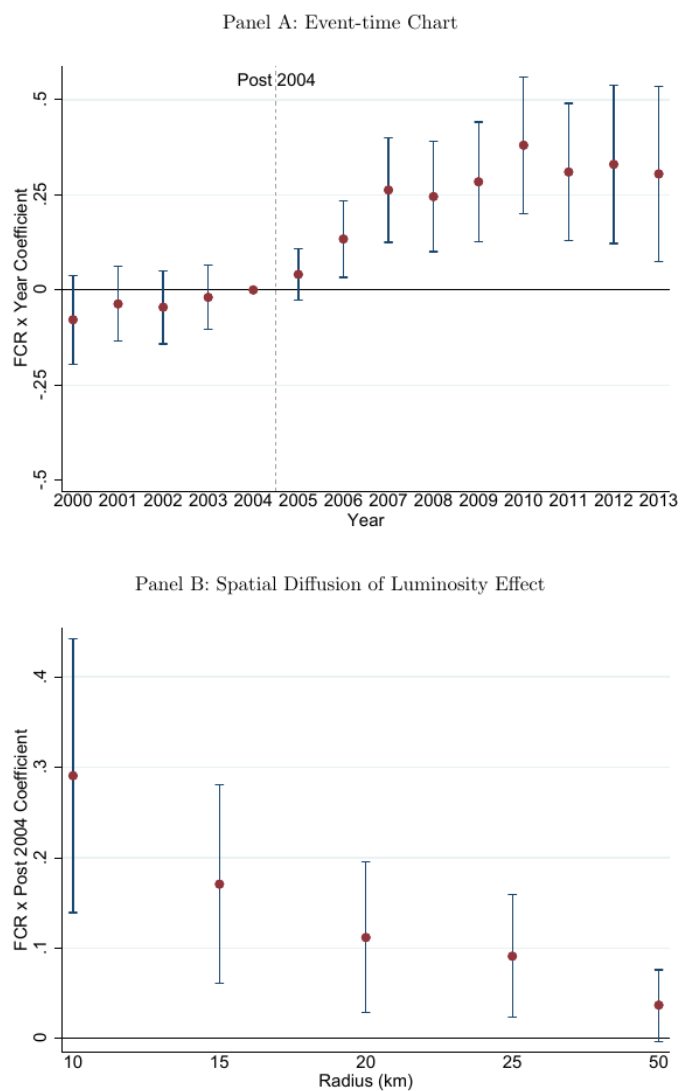
	(27) Excluding Sudan	(28) Excluding Swaziland	(29) Excluding Tanzania	(30) Excluding Tunisia	(31) Excluding Uganda	(32) Excluding Western Sahara	(33) Excluding Zambia	(34) Excluding Zimbabwe
Dependent Variable: Ln(Luminosity (10) + 1)								
<i>FCR</i> × <i>Post 2004</i>	0.134 (0.046)	0.136 (0.046)	0.121 (0.048)	0.144 (0.047)	0.135 (0.046)	0.136 (0.046)	0.108 (0.041)	0.128 (0.047)
Fixed Effects:								
Property × Commodity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,290	10,304	10,150	10,178	10,304	10,304	9,996	9,814

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (1) of Table 4 in the Manuscript, but separately exclude individual countries. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *Post 2004* is a binary indicator equal to one for years after 2004.

IA5.3 Excluding Overlapping Extraction Areas

In the Manuscript, our main unit of observation is the 10-kilometer circular geographic area around an active extraction facility. For facilities located near each other, these areas might overlap. When the observed increase in luminosity in treated areas spills over to overlapping control areas, measurement error is introduced and our estimated treatment effects understate the effects of foreign corruption regulation. In Figure IA5.3 and Table IA5.3, we assess the effect of treatment spillovers by excluding extraction areas that overlap within a 10-kilometer radius. Consistent with these spillovers biasing our estimates towards zero, the economic magnitude of our main results becomes larger. For example, the coefficient on $FCR \times Post\ 2004$ increases from 0.136 in Table 4 of the Manuscript to 0.291 in Table IA5.3.

Figure IA5.3: Luminosity Effects Excluding Overlapping Extraction Areas



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (1) of Table 4 in the Manuscript but exclude extraction areas that overlap within a 10-kilometer radius, and replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $FCR \times Post\ 2004$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km, respectively. We estimate the model from Column (1) of Table 4 in the Manuscript but exclude extraction areas that overlap within a 10-kilometer radius and use different cell areas.

Table IA5.3: Luminosity Effects Excluding Overlapping Extraction Areas

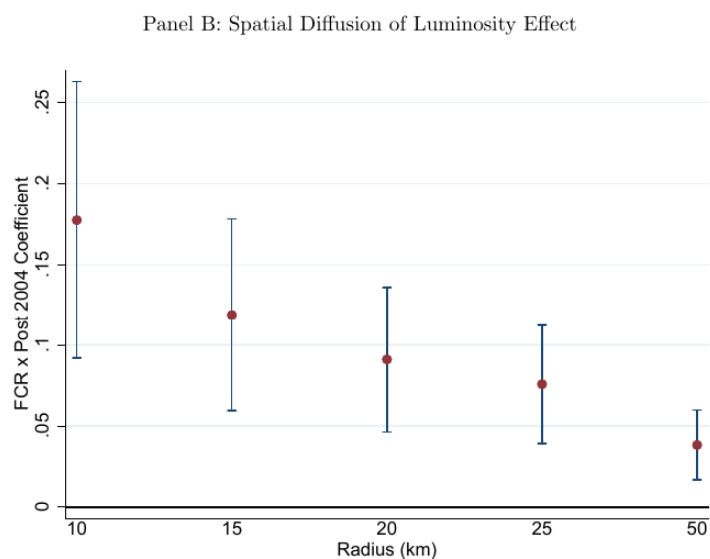
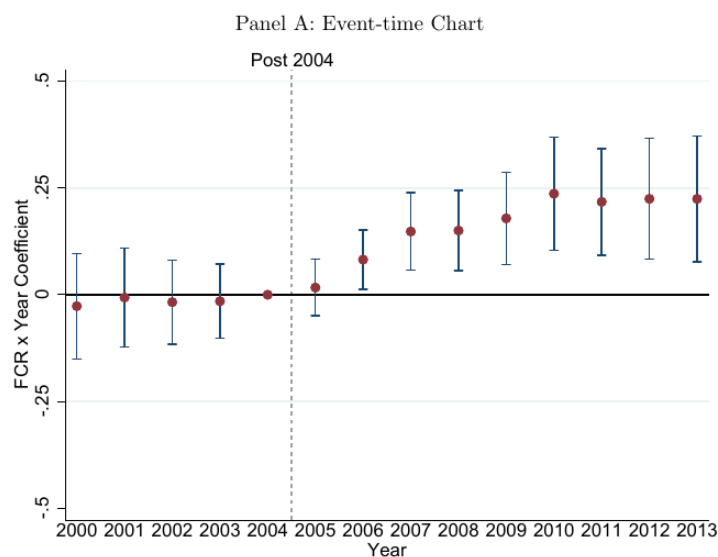
	Baseline	Sensitivity Analyses		
	(1)	(2)	(3)	(4)
Dependent Variable:	0-10 km	Asinh	1-10 km	USJ Non-OECD
Ln(Luminosity (10) + 1)	Radius	(Luminosity)	Radius	and Non-USJ OECD
<i>FCR</i> × <i>Post 2004</i>	0.291 (0.077)	0.383 (0.098)	0.281 (0.076)	0.291 (0.083)
<i>USJ Non-OECD</i> × <i>Post 2004</i>				-0.100 (0.101)
<i>Non-USJ OECD</i> × <i>Post 2004</i>				0.075 (0.054)
Difference in Coefficients (p-value):				
[FCR-USJ Non-OECD] × Post 2004				0.00
[FCR-Non-USJ OECD] × Post 2004				0.01
Fixed Effects:				
Property × Commodity	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	5,194	5,194	5,194	5,194

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We exclude extraction areas that overlap within a 10-kilometer radius. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004.

IA5.4 Keeping only the Main Commodity

In our baseline sample, 16% of the mines (77 out of 478 mines) produce more than one commodity. If more than one commodity is extracted on the same site, that cell appears in our dataset as a separate observation for each commodity. Our approach implicitly assumes that commodities from the same facility are independent from each other, which they likely are not, given that these commodities are, in most cases, jointly extracted at the same site. The potential interdependence of observations could bias our inferences. As a robustness test, we include each extraction facility only once, based on the commodity with the highest production value. In Figure IA5.4 and Table IA5.4, we find that the estimated treatment effects are generally larger if we keep only the commodity with the highest production value.

Figure IA5.4: Luminosity Effects Keeping Only the Main Commodity



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (1) of Table 4 in the Manuscript but only keep the main commodity of each mine, and replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $FCR \times Post\ 2004$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km, respectively. We estimate the model from Column (1) of Table 4 in the Manuscript but only keep the main commodity of each mine and use different cell areas.

Table IA5.4: Luminosity Effects Keeping Only the Main Commodity

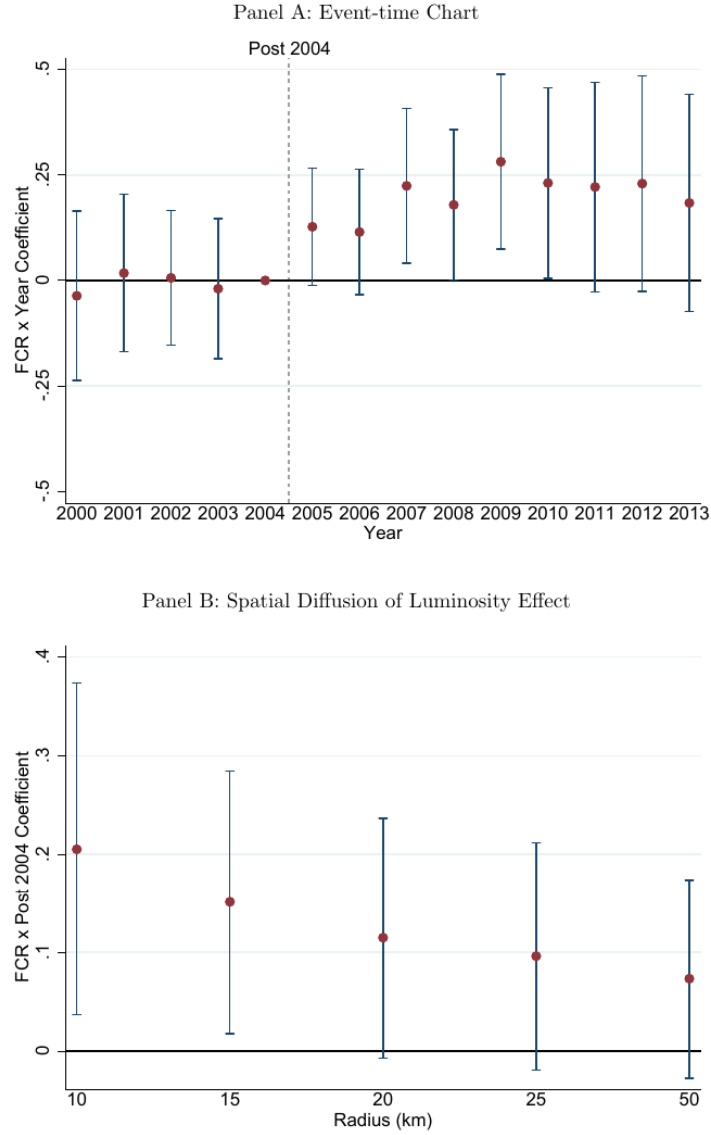
	Baseline	Sensitivity Analyses		
Dependent Variable:	(1)	(2)	(3)	(4)
$\text{Ln}(\text{Luminosity (10)} + 1)$	0-10 km Radius	Asinh (Luminosity)	1-10 km Radius	USJ Non-OECD and Non-USJ OECD
$FCR \times \text{Post } 2004$	0.178 (0.044)	0.233 (0.056)	0.173 (0.043)	0.174 (0.046)
$USJ \text{ Non-OECD} \times \text{Post } 2004$				-0.051 (0.039)
$Non-USJ \text{ OECD} \times \text{Post } 2004$				0.067 (0.042)
Difference in Coefficients (p-value):				
$[FCR-USJ \text{ Non-OECD}] \times \text{Post } 2004$				0.00
$[FCR-Non-USJ \text{ OECD}] \times \text{Post } 2004$				0.06
Fixed Effects:				
Property $\times$ Commodity	Yes	Yes	Yes	Yes
Region $\times$ Year	Yes	Yes	Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	8,246	8,246	8,246	8,246

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We only keep the main commodity of each mine, determined by maximum production value over the sample period. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004.

IA5.5 Ln(Luminosity) as an Alternative Outcome Variable

In the Manuscript, our main dependent variable is the natural logarithm of *Luminosity* plus 1 (we also report results using the inverse hyperbolic sine in sensitivity analyses reported in Tables 4 and 7 of the Manuscript). We include observations with a value of zero because a luminosity value of zero does not necessarily imply an absence of economic activity (Hodler and Raschky 2014). In Figure IA5.5 and Table IA5.5, we drop zero-value observations and use $\text{Ln}(\textit{Luminosity})$ as the dependent variable. In these alternative specifications, we find that the estimated treatment effects mostly increase in magnitude relative to those reported in the Manuscript.

Figure IA5.5: Luminosity Effects using Ln(Luminosity) as Outcome Variable



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (1) of Table 4 in the Manuscript but do not add 1 when log transforming *Luminosity*, and replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $FCR \times Post\ 2004$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km, respectively. We estimate the model from Column (1) of Table 4 in the Manuscript but do not add 1 when log transforming *Luminosity* and use different cell areas.

Table IA5.5: Luminosity Effects using Ln(Luminosity) as Outcome Variable

	Baseline	Sensitivity Analyses		
	(1) 0-10 km Radius	(2) Asinh (Luminosity)	(3) 1-10 km Radius	(4) USJ Non-OECD and Non-USJ OECD
Dependent Variable: Ln(Luminosity (10))				
<i>FCR</i> × <i>Post 2004</i>	0.205 (0.086)	0.183 (0.059)	0.201 (0.084)	0.215 (0.092)
<i>USJ Non-OECD</i> × <i>Post 2004</i>				-0.041 (0.083)
<i>Non-USJ OECD</i> × <i>Post 2004</i>				0.150 (0.118)
Difference in Coefficients (p-value):				
[<i>FCR</i> – <i>USJ Non-OECD</i>] × <i>Post 2004</i>				0.01
[<i>FCR</i> – <i>Non-USJ OECD</i>] × <i>Post 2004</i>				0.63
Fixed Effects:				
Property × Commodity	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	8,770	10,318	8,769	8,770

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We do not add 1 when log transforming *Luminosity*. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004.

IA5.6 Treatment Effects for Subsets of the Control Group

In Table IA5.6, we present all of the results from Table 4 including the two additional *USJ Non-OECD* × *Post 2004* and *Non-USJ OECD* × *Post 2004* interaction terms. Across all specifications, we find no evidence of a statistically significant counterfactual treatment effect from being under US jurisdiction or being headquartered in an OECD country absent an increase in the threat of FCPA enforcement. However, the coefficient on *Non-USJ OECD* × *Post 2004* is positive in all specifications, which is consistent with all OECD firms experiencing some increase in FCPA enforcement after 2004.

Table IA5.6: Placebo Treatment Effects

Dependent Variable: Ln(Luminosity (10) + 1)	Baseline	Sensitivity Analyses		
	(1) 0-10 km Radius	(2) Asinh (Luminosity)	(3) 1-10 km Radius	(4) USJ Non-OECD and Non-USJ OECD
<i>FCR</i> × <i>Post 2004</i>	0.137 (0.049)	0.185 (0.063)	0.131 (0.048)	0.137 (0.049)
<i>USJ Non-OECD</i> × <i>Post 2004</i>	-0.025 (0.051)	-0.032 (0.064)	-0.026 (0.050)	-0.025 (0.051)
<i>Non-USJ OECD</i> × <i>Post 2004</i>	0.045 (0.042)	0.066 (0.054)	0.042 (0.041)	0.045 (0.042)
Difference in Coefficients (p-value):				
[<i>FCR</i> – <i>USJ Non-OECD</i>] × <i>Post 2004</i>	0.01	0.00	0.01	0.01
[<i>FCR</i> – <i>Non-USJ OECD</i>] × <i>Post 2004</i>	0.11	0.11	0.11	0.11
Fixed Effects:				
Property × Commodity	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,318	10,318	10,318	10,318

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity controlling for *USJ Non-OECD* and *Non-USJ OECD* properties. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004.

IA5.7 *Controlling for Economic Conditions in Headquarter Countries*

Our classification of treated facilities is partly determined by whether the facility's parent company (i.e., the ultimate owner of the facility) is headquartered in a country that is a member of the Organization for Economic Co-operation and Development (OECD). OECD membership requires a commitment to democracy and a market economy, implying that OECD countries differ from non-OECD countries along many dimensions. Perhaps the most concerning difference for our research design is that OECD countries' macroeconomic fluctuations are highly correlated (and almost certainly more correlated than those of non-OECD countries). In our difference-in-differences design, the concern is that our estimated treatment effect of foreign corruption regulation could be biased if 1) an economic shock occurred around 2005 (i.e., concurrent to the FCPA enforcement increase), 2) this shock differentially affected OECD and non-OECD countries, and 3) macroeconomic fluctuations in headquarter countries impact how firms operate their extraction facilities in Africa.

One way to address this issue is to control for some observable macroeconomic conditions in the parent country and assess how those controls impact our estimated treatment effects. This approach directly addresses selection on the observables we control for and, to the extent observable and unobservable factors are correlated, provides a way to gauge the magnitude of any potential unobservable confound (Altonji et al., 2005). That is, we first reproduce the main results without any control variables for the sample where the control variables are available and then add the control variables and assess the change in the magnitude of the estimated treatment effect.

We select variables that are likely highly associated with macroeconomic shocks that could potentially provide alternative explanations for our results, particularly factors that may affect firms' ability to expand their operations abroad. We focus on GDP growth, exports, FDI outflows, and unemployment rates. GDP growth, exports, and FDI outflows are likely associated with financial shocks and unemployment levels are likely associated with labor market constraints (i.e., a higher labor supply increases a firm's ability to expand operations).

Table IA5.7 Panel A mirrors Table 4 of the Manuscript but conditions the sample on non-missing macroeconomic controls. The results are virtually identical to those reported in the Manuscript. In Table IA5.7 Panel B, we use the same regression sample but include GDP growth, exports, FDI outflows, and the unemployment rate of the owner's headquarter country as control variables (stand alone and interacted with *Post 2004*). The estimated treatment effect remains roughly the same and, if anything, slightly increases in magnitude and statistical significance (compared to the results without any macro controls; see Table IA5.7 Panel A).

Overall, these results suggest that observable, and correlated unobservable, macroeconomic factors in the headquarter country of a facility's owner are unlikely to explain our results.

Table 5.7: Controlling for Macroeconomic Conditions in Headquarter Country

Panel A: Without Macroeconomic Controls

	Baseline	Sensitivity Analyses		
	(1) 0-10 km Radius	(2) Asinh (Luminosity)	(3) 1-10 km Radius	(4) USJ Non-OECD and Non-USJ OECD
Dependent Variable: Ln(Luminosity (10) + 1)				
<i>FCR</i> × <i>Post 2004</i>	0.132 (0.043)	0.176 (0.055)	0.127 (0.042)	0.133 (0.045)
<i>USJ Non-OECD</i> × <i>Post 2004</i>				-0.033 (0.046)
<i>Non-USJ OECD</i> × <i>Post 2004</i>				0.053 (0.040)
Difference in Coefficients (p-value): [FCR-USJ Non-OECD] × <i>Post 2004</i> [FCR-Non-USJ OECD] × <i>Post 2004</i>				0.00 0.15
Fixed Effects:				
Property × Commodity	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes
R-Squared	0.964	0.960	0.965	0.964
Property-Commodity-Year Observations	8,498	8,498	8,498	8,498

Panel B: With Macroeconomic Controls

	Baseline	Sensitivity Analyses		
	(1) 0-10 km Radius	(2) Asinh (Luminosity)	(3) 1-10 km Radius	(4) USJ Non-OECD and Non-USJ OECD
Dependent Variable: Ln(Luminosity (10) + 1)				
<i>FCR</i> × <i>Post 2004</i>	0.145 (0.048)	0.188 (0.062)	0.140 (0.047)	0.188 (0.056)
<i>USJ Non-OECD</i> × <i>Post 2004</i>				-0.059 (0.050)
<i>Non-USJ OECD</i> × <i>Post 2004</i>				0.113 (0.056)
Owner Country Controls:				
<i>GDP Growth</i>	0.001 (0.004)	0.002 (0.005)	0.001 (0.004)	0.001 (0.004)
<i>GDP Growth</i> × <i>Post 2004</i>	-0.000 (0.004)	-0.001 (0.005)	-0.000 (0.004)	-0.000 (0.004)
<i>Unemployment Rate</i>	0.008 (0.004)	0.011 (0.005)	0.008 (0.004)	0.005 (0.004)
<i>Unemployment Rate</i> × <i>Post 2004</i>	0.004 (0.002)	0.005 (0.002)	0.004 (0.002)	0.007 (0.002)
<i>Exports</i>	-0.001 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.000 (0.002)
<i>Exports</i> × <i>Post 2004</i>	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
<i>Foreign Direct Investment Outflow</i>	-0.001 (0.019)	-0.003 (0.024)	-0.001 (0.019)	0.008 (0.019)
<i>Foreign Direct Investment Outflow</i> × <i>Post 2004</i>	0.006 (0.047)	0.015 (0.060)	0.007 (0.046)	-0.014 (0.049)
Difference in Coefficients (p-value): [FCR-USJ Non-OECD] × <i>Post 2004</i> [FCR-Non-USJ OECD] × <i>Post 2004</i>				0.00 0.18
Fixed Effects:				
Property × Commodity	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes
R-Squared	0.965	0.960	0.965	0.965
Property-Commodity-Year Observations	8,498	8,498	8,498	8,498

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We restrict the sample to extraction facilities whose main owner country in 2004 has non-missing GDP growth data, non-missing employment rate data, non-missing exports data, and non-missing foreign direct investment outflow data. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004. *GDP Growth* is the annual percentage growth rate of real GDP per capita of the property's main owner country in 2004. *Unemployment Rate* is the annual rate of unemployment (in percentage points) of the property's main owner country in 2004. *Exports* is the exports of goods and services measured as the percentage of GDP of the property's main owner country in 2004. *Foreign Direct Investment Outflow* is the aggregate, bilateral foreign direct investment flow divided by the GDP of the outflow country, which is the property's main owner country in 2004.

IA5.8 *Alternative Research Design*

By design, our empirical tests preclude any alternative explanations that equally affect all firms globally such as worldwide economic growth (i.e., we have a control group of extraction sites not under US jurisdiction and not headquartered in the OECD). Thus, any endogeneity concerns are limited to factors that differentially affect firms under US jurisdiction and headquartered in the OECD. To further address the possibility that a confounding association between FCPA enforcement and headquarter-country economic growth could explain our results, we provide two additional tests.

First, we perform our analysis *within* the subsample of firms headquartered in OECD countries, only using variation in whether or not the firm is under US jurisdiction. In Table IA5.8 Panel A below, we find that our luminosity results are robust to this alternative research design, suggesting that our inferences are not spuriously driven by differential macroeconomic factors in OECD and non-OECD headquarter countries. The $USJ \times Post2004$ coefficients are statistically significant at the 95% level and similar in magnitude compared to our main analysis.

Second, analogous to the OECD-headquarter-country only test, to address the possibility that economic shocks that differentially affect firms under US jurisdiction could explain our results, we restrict the sample to only firms under US jurisdiction and only exploit variation in whether the firm is headquartered in an OECD country. In Table IA5.8 Panel B below, we continue to find a positive and highly significant increase in luminosity after 2004, indicating that correlated shocks to US jurisdiction firms unrelated to FCR are unlikely to drive the observed increase in luminosity.

Table 5.8: Alternative Research Design

Panel A: Only OECD Facilities using Variation in US Jurisdiction

	Baseline	Sensitivity Analyses	
	(1)	(2)	(3)
Dependent Variable:	0-10 km	Asinh	1-10 km
Ln(Luminosity (10) + 1)	Radius	(Luminosity)	Radius
$USJ \times Post\ 2004$	0.126	0.168	0.123
	(0.062)	(0.081)	(0.061)
Fixed Effects:			
Property $\times$ Commodity	Yes	Yes	Yes
Region $\times$ Year	Yes	Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes
Property-Commodity-Year Observations	3,122	3,122	3,122

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity in extraction areas for properties in the control group with at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *USJ* is a binary indicator equal to one if a property has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004.

Panel B: Only US Jurisdiction Facilities using Variation in OECD

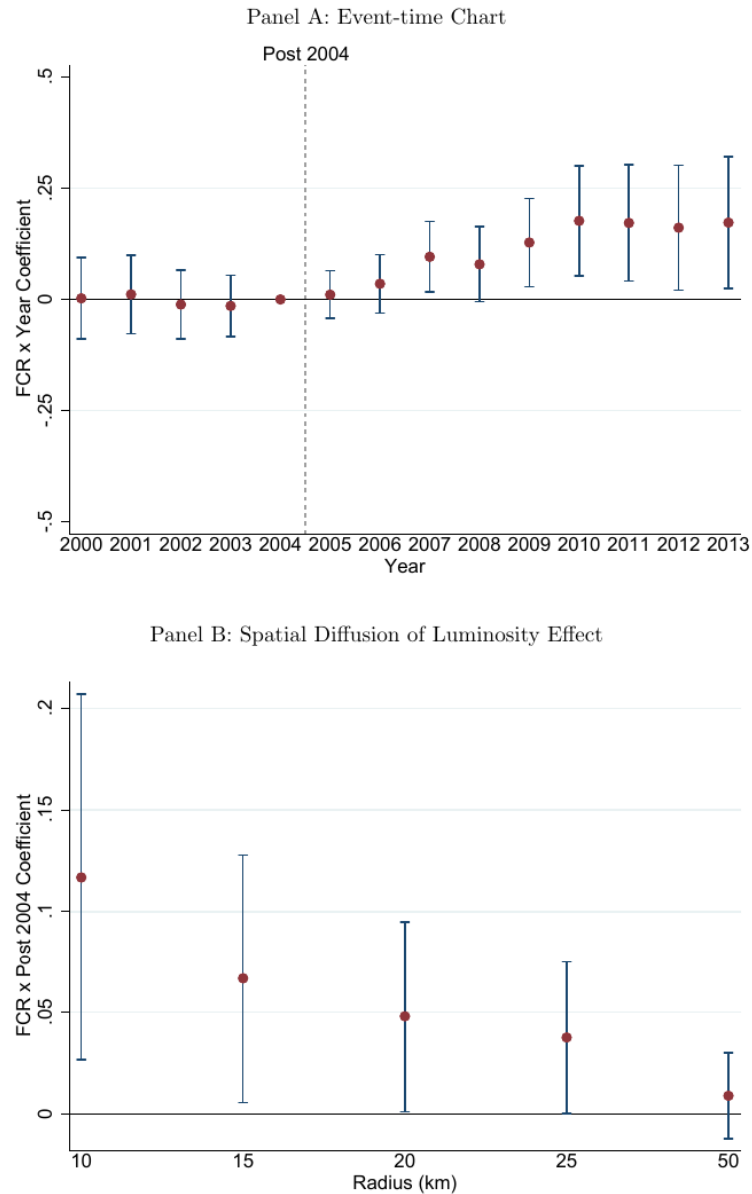
	Baseline	Sensitivity Analyses	
	(1)	(2)	(3)
Dependent Variable:	0-10 km	Asinh	1-10 km
Ln(Luminosity (10) + 1)	Radius	(Luminosity)	Radius
$OECD \times Post\ 2004$	0.185	0.249	0.180
	(0.061)	(0.078)	(0.060)
Fixed Effects:			
Property $\times$ Commodity	Yes	Yes	Yes
Region $\times$ Year	Yes	Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes
Property-Commodity-Year Observations	3,598	3,598	3,598

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity in extraction areas for properties in the control group with at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *OECD* is a binary indicator equal to one if a property has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention. *Post 2004* is a binary indicator equal to one for years after 2004.

IA5.9 Country-Year Fixed Effects

In Figure IA5.9 and Table IA5.9 we present results including $Country \times Year$ fixed effects instead of $Region \times Year$ fixed effects. Figure IA5.9 and Table IA5.9 reproduce Figure 4 and Table 4 from the manuscript with the alternative fixed effect structure, respectively. The results are similar to those reported in the Manuscript.

Figure IA5.9: Reproducing Figure 4 from the Manuscript replacing $Region \times Year$ with $Country \times Year$ Fixed Effects



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (1) of Table IA5.9 but replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $FCR \times Post\ 2004$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km, respectively. We estimate the model from Column (1) of Table IA5.9 but use different cell areas.

Table IA5.9: Reproducing Table 4 from the Manuscript replacing *Region* $\times$ *Year* with *Country* $\times$ *Year* Fixed Effects

	Baseline	Sensitivity Analyses		
	(1)	(2)	(3)	(4)
Dependent Variable:	0-10 km	Asinh	1-10 km	USJ Non-OECD
$\ln(\text{Luminosity } (10) + 1)$	Radius	(Luminosity)	Radius	and Non-USJ OECD
$FCR \times \text{Post } 2004$	0.117 (0.046)	0.158 (0.059)	0.112 (0.045)	0.121 (0.047)
$USJ \text{ Non-OECD} \times \text{Post } 2004$				-0.007 (0.049)
$Non-USJ \text{ OECD} \times \text{Post } 2004$				0.042 (0.045)
Difference in Coefficients (p-value):				
$[FCR-USJ \text{ Non-OECD}] \times \text{Post } 2004$				0.03
$[FCR-Non-USJ \text{ OECD}] \times \text{Post } 2004$				0.22
Fixed Effects:				
Property $\times$ Commodity	Yes	Yes	Yes	Yes
Country $\times$ Year	Yes	Yes	Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,248	10,248	10,248	10,248

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity in extraction areas. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004.

IA5.10 Alternative Radii for Spatial Standard Error Clustering

In Table 5.10 below, we show that our results from Table 4 of the Manuscript are robust to correcting standard errors for spatial correlation within a 50-, 250-, and 500-kilometer radius of the respective extraction property (Conley 1999).

Table IA5.10: Luminosity Effects using Alternative Radii for Spatial Standard Error Clustering

	Baseline	Sensitivity Analyses		
	(1)	(2)	(3)	(4)
Dependent Variable:	100 km Radius	50 km Radius	250 km Radius	500 km Radius
$\text{Ln}(\text{Luminosity (10)} + 1)$	Spatial Correlation	Spatial Correlation	Spatial Correlation	Spatial Correlation
$\text{FCR} \times \text{Post } 2004$	0.136 (0.046)	0.136 (0.045)	0.136 (0.047)	0.136 (0.047)
Fixed Effects:				
Property $\times$ Commodity	Yes	Yes	Yes	Yes
Region $\times$ Year	Yes	Yes	Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,318	10,318	10,318	10,318

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km, 50km, 250km, and 500km radius and for infinite serial correlation are reported in parentheses in each column, respectively. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *Post 2004* is a binary indicator equal to one for years after 2004.

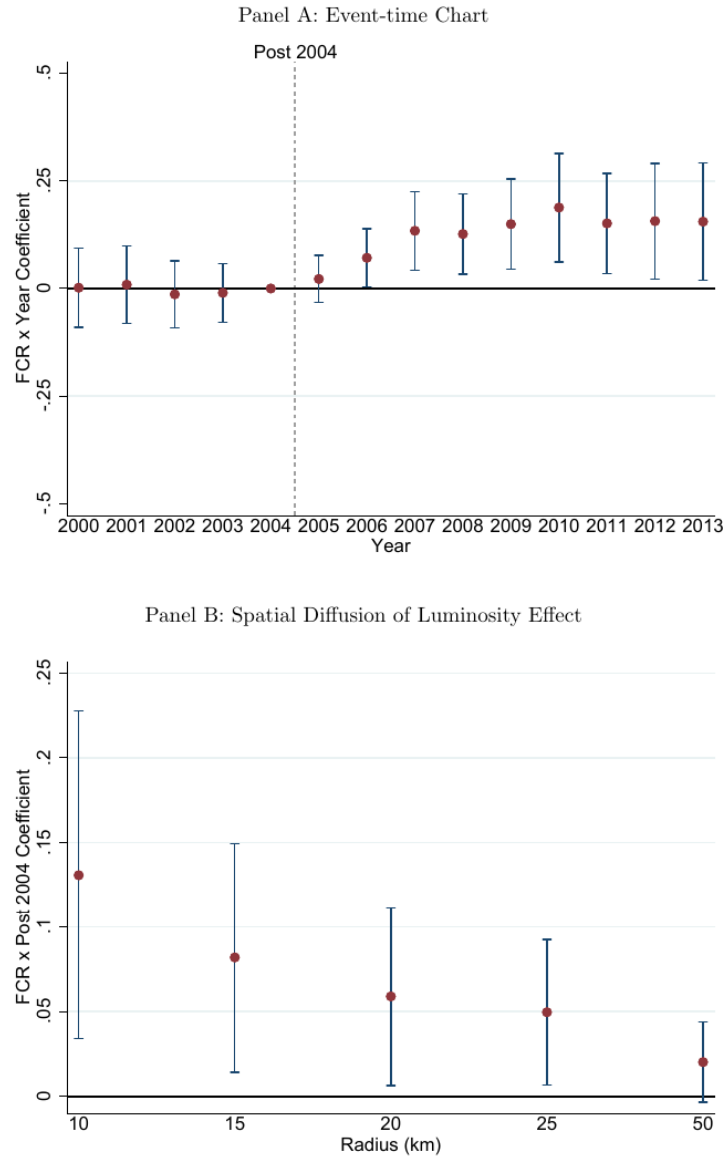
IA5.11 Ownership Requirement 50% (Rather than 20%)

Our baseline specifications in the Manuscript, we use a threshold of at least 20% ownership to identify facility owners that are subject to the FCPA. Under the FCPA, a company is generally liable for violations of subsidiaries (i.e., entities the company controls via an ownership of more than 50%) and affiliates (i.e., entities where a company can exercise “significant influence” via an ownership of between 20% and 50%). Accounting standards apply the term “significant influence” to situations where a moderately high, but not controlling, level of ownership (i.e., between 20% and 50%) likely indicates that the investor company can have an impact on the investee’s operating activities and decisions (*Accounting Standards Codification* 323-10-15-6). So, an ownership level of greater than 20% is a natural threshold at which to assign liability under the FCPA.

However, the FCPA does make some distinctions between subsidiaries and affiliates regarding an investor company’s required level of oversight and potential liability. For instance, in the case of affiliates, a parent company only needs to “proceed in good faith to use its influence, to the extent reasonable under the issuer’s circumstances, to cause such domestic or foreign firm to devise and maintain a system of internal accounting controls consistent with [Section 13(b)(2)].” Whereas for subsidiaries, the requirement to maintain control systems includes no such exceptions. So, although an ownership level above 20% will likely make a parent company liable for FCPA violations of an affiliated company, ownership of more than 50% likely increases the level of liability.

In Figure IA5.11 and Table IA5.11 we present results where US jurisdiction is determined based on 50% ownership (full control) rather than the 20% threshold we use in the Manuscript. For this analysis, we exclude facilities that are classified as treated in the main analysis because of ownership between 20% and 50%. Figure IA5.11 and Table IA5.11 reproduce Figure 4 and Table 4 from the manuscript with a 50% ownership threshold, respectively. The results are similar to those reported in the Manuscript.

Figure IA5.11: Reproducing Figure 4 from the Manuscript using 50% Ownership Threshold rather than 20%



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (1) of Table 5.11 but replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $FCR \times Post\ 2004$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km, respectively. We estimate the model from Column (1) of Table 5.11 but use different cell areas.

Table 5.11: Reproducing Table 4 from the Manuscript using 50% Ownership Threshold rather than 20%

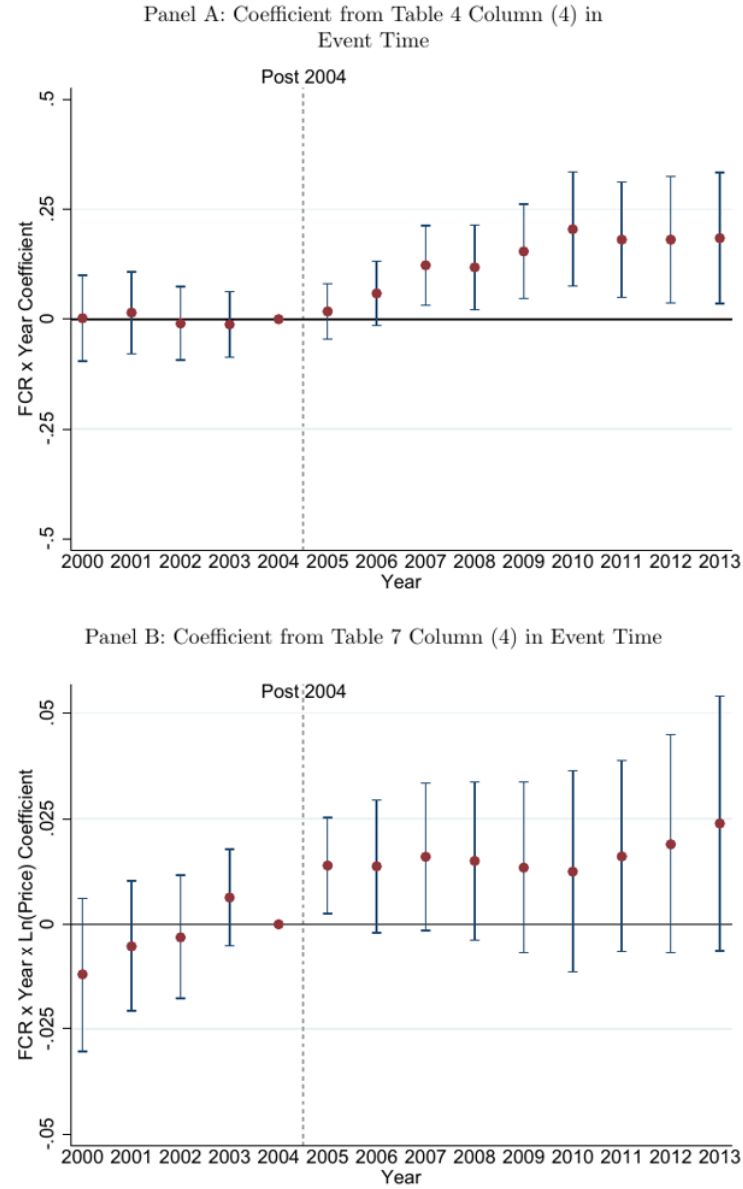
	Baseline	Sensitivity Analyses		
Dependent Variable:	(1)	(2)	(3)	(4)
$\text{Ln}(\text{Luminosity (10)} + 1)$	0-10 km Radius	Asinh (Luminosity)	1-10 km Radius	USJ Non-OECD and Non-USJ OECD
$\text{FCR} \times \text{Post 2004}$	0.131 (0.049)	0.177 (0.063)	0.127 (0.048)	0.130 (0.052)
$\text{USJ Non-OECD} \times \text{Post 2004}$				-0.027 (0.051)
$\text{Non-USJ OECD} \times \text{Post 2004}$				0.045 (0.042)
Difference in Coefficients (p-value):				
$[\text{FCR}-\text{USJ Non-OECD}] \times \text{Post 2004}$				0.01
$[\text{FCR}-\text{Non-USJ OECD}] \times \text{Post 2004}$				0.16
Fixed Effects:				
Property $\times$ Commodity	Yes	Yes	Yes	Yes
$\times$ Year	Yes	Yes	Yes	Yes
Commodity $\times$ Year	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,164	10,164	10,164	10,164

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity in extraction areas. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property. *Luminosity (1-10)* is the stable light mean unsaturated nighttime luminosity within a 1-10 km radius of the respective property. *FCR* is a binary indicator equal to one if an extraction facility has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *USJ Non-OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is cross-listed or operates a segment in the US but is not from a signatory country of the OECD Anti-Bribery Convention. *Non-USJ OECD* is a binary indicator equal to one if a property in the control group has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is from a signatory country of the OECD Anti-Bribery Convention but is not cross-listed and does not operate a segment in the US. *Post 2004* is a binary indicator equal to one for years after 2004.

IA5.12 Domestic African Firms as Control Group

In Figure IA5.12 below, we map out the treatment effects of Table 4 Column (4) and Table 7 Column (4) over our sample period.

Figure IA5.12: Event Time Charts for Column 4 in Table 4 and Table 7 of the Manuscript



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity. We estimate the model from Column (4) of Table 4 of the Manuscript but replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the association between world commodity prices and nighttime luminosity. We estimate the model from Column (4) of Table 7 of the Manuscript but replace the $FCR \times Post\ 2004 \times Ln(Price)$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark).

IA5.13 Countries with Strong/Weak Political Institutions

In Section 3.2 of the Manuscript, we separately estimate our baseline specification for countries with “strong” versus “weak” political institutions based on the Center for Systemic Peace’s *Polity IV Democracy Index* in 2004. In Table IA5.13 below, we tabulate the countries in each group.

Table IA5.13: Country Classification by Strength of Political Institutions

Strong Political Institutions	Weak Political Institutions
Botswana	Algeria
Ghana	Angola
Lesotho	Burkina Faso
Madagascar	Egypt
Namibia	Eritrea
Niger	Ethiopia
Senegal	Gabon
South Africa	Guinea
	Libya
	Mali
	Mauritania
	Morocco
	Mozambique
	Nigeria
	Sierra Leone
	Sudan
	Swaziland
	Tanzania
	Tunisia
	Uganda
	Zambia
	Zimbabwe

Notes: This table lists strong and weak political institution countries in 2004, respectively.

IA5.14 Alternative Partition of Countries by Corruption Perceptions Index

In Section 3.2 of the Manuscript, we use the Polity IV index, and its characterization of democratic and autocratic regimes, to examine heterogeneity in the luminosity effect by country based on the idea that the prevalence of the political resource curse (and the sharing of natural resource wealth) is dependent on the strength of political institutions and the concentration of political power (e.g., Robinson et al. 2006).

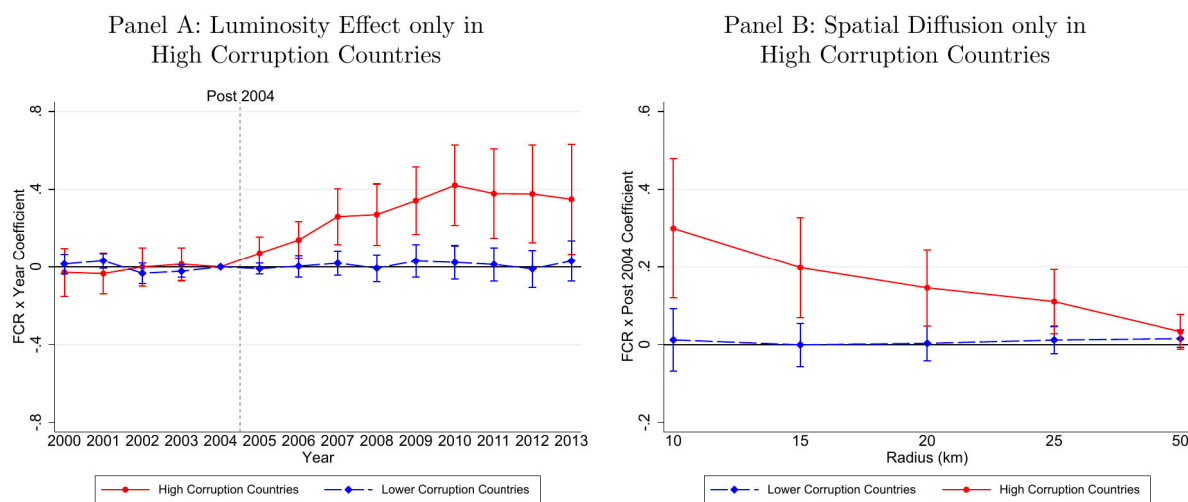
The level of institutional corruption is also likely to affect the pervasiveness of the political resource curse. As an alternative test, we repeat the analyses of Table 4 Columns (5)-(6) and Figure 5 using the Corruption Perceptions Index (CPI) by Transparency International as cross-sectional partitioning variable (i.e., instead of the Polity IV index). The CPI is a composite score of how corrupt a country's public sector is perceived to be, ranging from 0 (most corrupt) to 100 (least corrupt). We classify countries as *High Corruption Countries* (*Lower Corruption Countries*) if their CPI in 2004 (i.e., the year before the FCPA enforcement increase) was higher than the in-sample median. In Table IA5.14 and Figure IA5.14 below, we find very similar results to those based on the Polity IV measure, which is not surprising given that the two partitioning indicators are highly correlated (correlation of 0.95) and likely capture a similar underlying construct. The similarity of the results across measures also highlights the descriptive (as opposed to causal) nature of these cross-sectional tests.

Table IA5.14: Alternative Partition of Countries by Corruption Perceptions Index

	Baseline	Sensitivity Analyses			Role of Institutions	
	(1)	(2)	(3)	(4)	(5) High Corruption Countries	(6) Low Corruption Countries
Dependent Variable: Ln(Luminosity (10) + 1)	0-10 km Radius	Asinh (Luminosity)	1-10 km Radius	USJ Non-OECD and Non-USJ OECD		
<i>FCR × Post 2004</i>	0.136 (0.046)	0.183 (0.059)	0.131 (0.045)	0.137 (0.049)	0.300 (0.092)	0.012 (0.041)
<i>USJ Non-OECD × Post 2004</i>				-0.025 (0.051)		
<i>Non-USJ OECD × Post 2004</i>				0.045 (0.042)		
Difference in Coefficients (p-value):						
[FCR-USJ Non-OECD] × Post 2004				0.01		
[FCR-Non-USJ OECD] × Post 2004				0.11		
Weak-Strong Political Institutions					0.01	
Fixed Effects:						
Property × Commodity	Yes	Yes	Yes	Yes	Yes	Yes
Region × Year	Yes	Yes	Yes	Yes	Yes	Yes
Commodity × Year	Yes	Yes	Yes	Yes	Yes	Yes
Property-Commodity-Year Observations	10,318	10,318	10,318	10,318	3,990	5,838

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity in extraction areas. We describe the sample selection in Internet Appendix Section IA4. The sample is from 2000 to 2013. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *Luminosity (10)* is the stable light mean unsaturated nighttime luminosity within a 10 km radius of the respective property.

Figure IA5.14: Alternative Partition of Countries by Corruption Perceptions Index



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on nighttime luminosity for high and lower corruption countries, respectively. We estimate the model from Columns (5) and (6) of Table 4 of the Manuscript but replace the $FCR \times Post\ 2004$ indicator with separate interactions for each of the years in our sample (except for 2004, which serves as the benchmark). Panel B shows coefficient estimates of $FCR \times Post\ 2004$ and 95% confidence intervals for cell areas with radii of 10km, 15km, 20km, 25km, and 50km for high and lower corruption countries, respectively.

Section IA6: Supplementary Statistics and Tests for Survey Analyses

IA6.1 Composition of Afrobarometer Survey Sample

In Table IA6.1, we provide a breakdown of the number of villages in the *Afrobarometer* data by country and survey round. Overall, our sample covers the responses of 53,015 African citizens in 6,165 villages across 31 African countries and 6 survey rounds between 1999 and 2015. Individual survey locations are widely dispersed across Africa. The countries that contribute the most observations are South Africa (25.3%), Zimbabwe (9.2%), Ghana (8.9%), Botswana (6.7%), and Uganda (5.0%). Data coverage has improved over time—rounds 1 to 4 of the Afrobarometer include fewer countries and respondents (18 countries; 49.1% of observations) than rounds 5 and 6 (31 countries; 50.9%). Nevertheless, the first two survey rounds conducted before the FCPA enforcement increase (i.e., before 2005) cover 15 countries and 1,319 village observations (21.4%), providing us with pre-period data for our difference-in-differences regressions in Table 5 and Table 6 of the Manuscript.

Table IA6.1: Survey Villages in Extraction Areas by Country and Round

	All Villages	Round 1 1999/2000/2001	Round 2 2002/2003/2004	Round 3 2005/2006	Round 4 2008/2009	Round 5 2011/2012/2013	Round 6 2014/2015
Algeria	29	.	.	.	.	14	15
Botswana	407	45	67	76	78	76	65
Burkina Faso	240	.	.	.	75	85	80
Burundi	67	.	.	.	.	32	35
Egypt	39	.	.	.	.	39	.
Gabon	16	.	.	.	.	.	16
Ghana	548	.	81	83	85	152	147
Guinea	181	.	.	.	.	87	94
Ivory Coast	83	.	.	.	.	43	40
Kenya	52	.	14	7	8	8	15
Lesotho	307	46	42	40	49	63	67
Liberia	90	.	.	.	31	32	27
Madagascar	54	.	.	18	16	.	20
Malawi	10	4	1	1	1	2	1
Mali	149	15	28	26	22	30	28
Morocco	48	.	.	.	.	22	26
Mozambique	89	.	8	18	19	16	28
Namibia	93	7	11	14	28	17	16
Niger	35	.	.	.	.	21	14
Nigeria	170	.	31	47	37	28	27
Senegal	14	.	2	2	5	2	3
Sierra Leone	234	.	.	.	.	118	116
South Africa	1,557	159	233	244	295	318	308
Sudan	2	.	.	.	.	1	1
Swaziland	152	.	.	.	.	81	71
Tanzania	277	70	35	37	36	51	48
Togo	17	.	.	.	.	8	9
Tunisia	106	.	.	.	.	50	56
Uganda	310	61	87	38	31	51	42
Zambia	220	21	42	35	38	41	43
Zimbabwe	569	116	93	68	97	36	159
Total	6,165	544	775	754	951	1,524	1,617

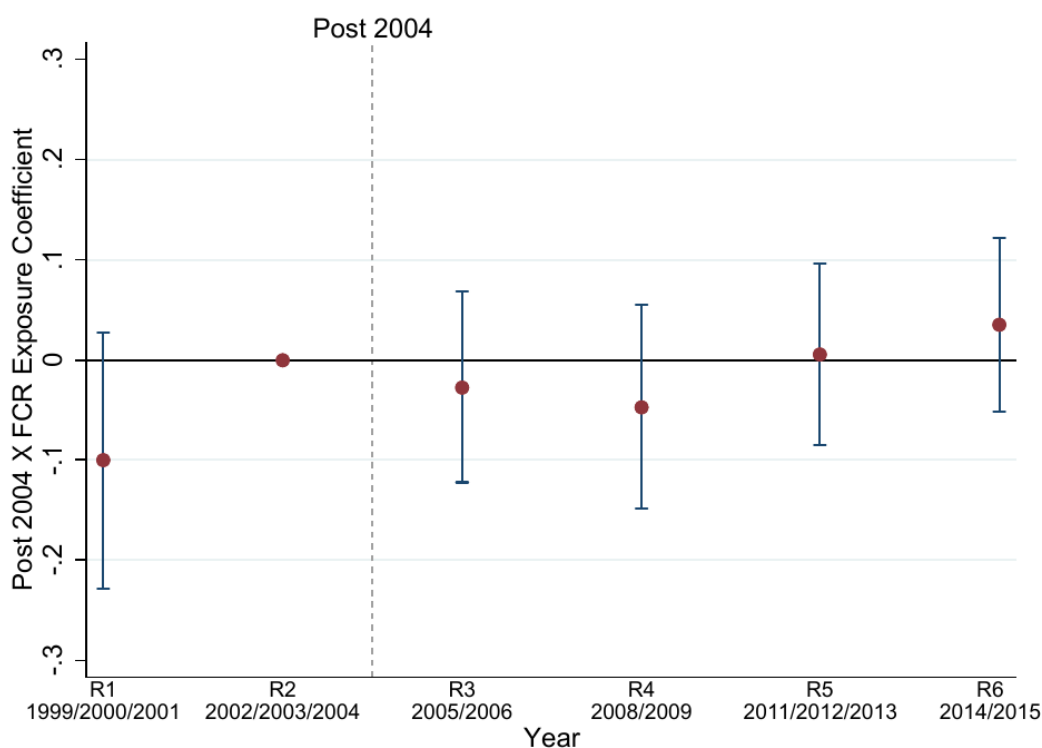
Notes: This table presents the number of Afrobarometer survey villages by country and survey round.

IA6.2 Placebo Corruption Question from the Afrobarometer

In this section, we report results for a placebo analysis that examines the effect of foreign corruption regulation on the perceived corruption of members of a country's national parliament. We expect there to be less of a (or no) change in corruption for these officials (given their distant proximity to the extraction facility) following the increase in FCPA enforcement. Specifically, we use the following question from the Afrobarometer survey for our placebo test: "How many of the following people do you think are involved in corruption: Members of Parliament?" We define an indicator, *Corrupt Members of Parliament*, equal to one if the response to the question is "most of them" or "all of them."

In Table IA6.2 and Figure IA6.2 below, we find that the *FCR Exposure* $\times$ *Post 2004* coefficients are virtually zero and statistically insignificant, consistent with the idea that foreign corruption regulation does not affect individuals' corruption perceptions of national politicians who are less likely to be affected by local extraction-related corruption.

Figure IA6.2: Foreign Corruption Regulation and Perceived Corruption of Members of Parliament



Notes: This figure shows coefficient estimates and 95% confidence intervals for OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the perceived corruption of members of parliament. We estimate the model from Table [IA6.2](#) but replace the *FCR Exposure* $\times$ *Post 2004* indicator with separate interactions for each survey round in our sample (except for round 2, which serves as the benchmark).

Table IA6.2: Effect of Foreign Corruption Regulation on Perceived Corruption of Members of Parliament

	Corrupt Members of Parliament
<i>FCR Exposure</i> $\times$ <i>Post 2004</i>	0.039 (0.037)
<i>FCR Exposure</i>	-0.047 (0.034)
Controls:	
<i>Female</i>	-0.051 (0.029)
<i>Urban</i>	0.023 (0.009)
<i>Ln(Age)</i>	0.031 (0.028)
<i>Education</i>	0.069 (0.011)
Fixed Effects:	
Region $\times$ Round	Yes
Commodity $\times$ Round	Yes
R-Squared	0.175
Observations	6,170

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the perceived corruption of members of parliament. The sample is from 1999 to 2015. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *FCR Exposure* is a binary indicator equal to one if the closest extraction facility within 100 km of a survey respondent has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *Corrupt Members of Parliament* is a binary indicator equal to one if the response value to the following Afrobarometer survey question equals “Most of them” or “All of them”: *How many of the following people do you think are involved in corruption, or haven’t you heard enough about them to say: Members of Parliament?* *Post 2004* is a binary indicator equal to one for years after 2004. *Female* is a binary indicator equal to one if the respondent’s gender is female. *Urban* is a binary indicator equal to one if the respondent lives in an urban area. *Age* is the age of the respondent. *Education* is a variable equal to zero, one, two, or three, if the respondent claims to have received the education level of no formal schooling, primary only, secondary, or post-secondary, respectively.

IA6.3 Cash-Wage Employment Results by Job Category

In Table IA6.3 below, we decompose the observed increase in cash-wage employment into different job categories to shed light on which sectors expand in local extraction areas after the FCPA enforcement increase. In Column (1), we reproduce the baseline result from Table 5B Column (2) of the Manuscript. In Column (2), we focus on the businesses sector, i.e., individuals who own or work for firms. We observe an increase in cash-wage employment for the business sector, consistent with the mechanism that FCPA enforcement pushes foreign firms to properly fulfill their local content obligations by hiring and training local suppliers. In Column (3), we find higher cash-wage employment for retail and trade-related jobs, suggesting broader increases in local economic activity. In Column (4), the positive coefficient for manual labor is again indicative of FCPA enforcement stimulating local investment by FCPA-regulated firms. However, the lack of statistical significance limits the strength of the inferences we can draw from Column (4) on this point.

Table IA6.3: Cash-Wage Employment Results by Job Category

Dependent Variable:	(1)	(2)	(3)	(4)
<i>Cash-Wage Employment</i>	Full Sample	Business Owners & Business Employees	Retail & Trade	Manual Labor
<i>FCR Exposure</i> × <i>Post 2004</i>	0.116 (0.044)	0.283 (0.116)	0.249 (0.105)	0.081 (0.095)
<i>FCR Exposure</i>	-0.004 (0.037)	-0.111 (0.102)	-0.145 (0.096)	-0.026 (0.069)
Controls:				
<i>Female</i>	-0.153 (0.025)	0.055 (0.094)	-0.102 (0.040)	-0.088 (0.089)
<i>Urban</i>	0.053 (0.011)	0.074 (0.041)	-0.014 (0.023)	0.071 (0.036)
<i>Ln(Age)</i>	0.125 (0.028)	-0.055 (0.130)	0.052 (0.066)	-0.117 (0.113)
<i>Education</i>	0.176 (0.011)	0.179 (0.053)	0.129 (0.025)	0.069 (0.046)
Fixed Effects:				
Region × Round	Yes	Yes	Yes	Yes
Commodity × Round	Yes	Yes	Yes	Yes
R-Squared	0.294	0.270	0.202	0.106
Observations	5,876	505	1,624	728

Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the cash-wage employment. The sample is from 1999 to 2015. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *FCR Exposure* is a binary indicator equal to one if the closest extraction facility within 100 km of a survey respondent has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *Cash-Wage Employment* is a binary indicator equal to one if the response value to the following Afrobarometer survey question equals “Yes, part time” or “Yes, full time”: *Do you have a job that pays a cash income? If yes, is it full-time or part-time? If no, are you presently looking for a job?* *Post 2004* is a binary indicator equal to one for years after 2004. *Female* is a binary indicator equal to one if the respondent's gender is female. *Urban* is a binary indicator equal to one if the respondent lives in an urban area. *Age* is the age of the respondent. *Education* is a variable equal to zero, one, two, or three, if the respondent claims to have received the education level of no formal schooling, primary only, secondary, or post-secondary, respectively.

IA6.4 Cash-Wage Employment Results including Agriculture, Government, and Mining Jobs

For the cash-wage employment analysis in Table 5B Column (2) of the Manuscript, we limit our sample to the private sector and exclude mining and agriculture jobs (see footnote #19 for why we exclude these sectors). In Table IA6.4 below, we assess the sensitivity of our employment test to these sample restrictions. In Column (1), we reproduce the cash-wage employment result from the Manuscript as a benchmark. In Columns (2) to (5), we include respondents who work in agriculture, government, and mining jobs, either jointly (Column 2) or one-by-one (Columns 3-5). The estimated treatment effects attenuate in magnitude but remain statistically significant at the 95% level or higher.

Table IA6.4: Cash-Wage Employment Results including Agriculture, Government, and Mining Jobs

Dependent Variable:	(1)	(2)	(3)	(4)	(5)
<i>Cash-Wage Employment</i>	Baseline Results	Including Mining, Agriculture, and Government Jobs	Including Mining Jobs	Including Agriculture Jobs	Including Government Jobs
<i>FCR Exposure × Post 2004</i>	0.116 (0.044)	0.090 (0.043)	0.115 (0.042)	0.112 (0.045)	0.094 (0.043)
<i>FCR Exposure</i>	-0.004 (0.037)	0.001 (0.037)	-0.001 (0.036)	-0.010 (0.038)	-0.000 (0.037)
Controls:					
<i>Female</i>	-0.153 (0.025)	-0.145 (0.033)	-0.146 (0.024)	-0.153 (0.029)	-0.124 (0.026)
<i>Urban</i>	0.053 (0.011)	0.045 (0.011)	0.055 (0.011)	0.050 (0.011)	0.053 (0.010)
<i>Ln(Age)</i>	0.125 (0.028)	0.231 (0.028)	0.120 (0.028)	0.119 (0.029)	0.249 (0.028)
<i>Education</i>	0.176 (0.011)	0.171 (0.013)	0.176 (0.011)	0.179 (0.013)	0.161 (0.011)
Fixed Effects:					
Region × Round	Yes	Yes	Yes	Yes	Yes
Commodity × Round	Yes	Yes	Yes	Yes	Yes
R-Squared	0.294	0.277	0.295	0.294	0.264
Observations	5,876	6,111	5,883	6,066	5,981

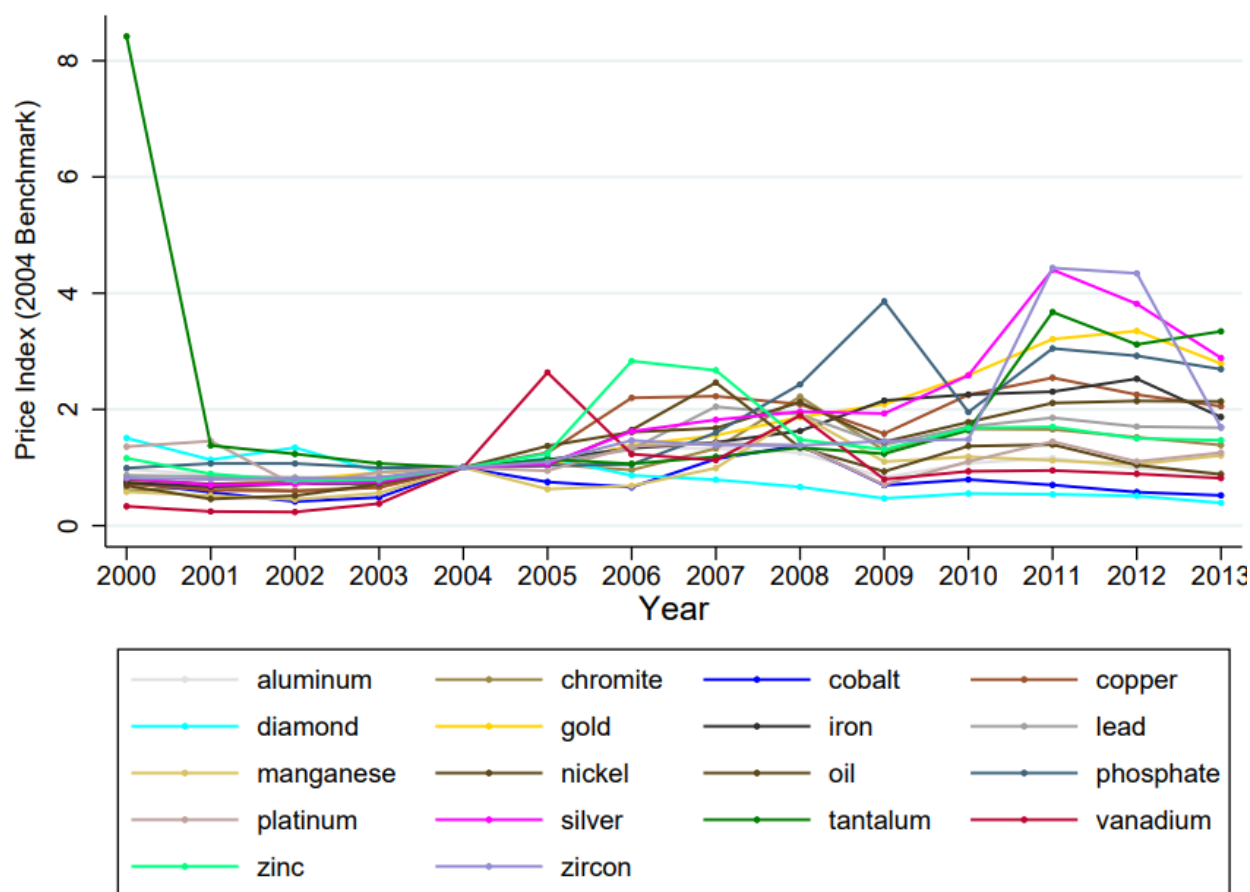
Notes: This table reports coefficient estimates of OLS regressions estimating the effect of the post-2004 increase in FCPA enforcement on the cash-wage employment. The sample is from 1999 to 2015. Conley (1999) standard errors allowing for spatial correlation within a 100km radius and for infinite serial correlation are reported in parentheses. *FCR Exposure* is a binary indicator equal to one if the closest extraction facility within 100 km of a survey respondent has at least one significant owner (with an ownership stake of 20% or more) in 2004 who is headquartered, cross-listed, or operates a segment in the US and is from a signatory country of the OECD Anti-Bribery Convention. *Cash-Wage Employment* is a binary indicator equal to one if the response value to the following Afrobarometer survey question equals “Yes, part time” or “Yes, full time”: *Do you have a job that pays a cash income? If yes, is it full-time or part-time? If no, are you presently looking for a job?* *Post 2004* is a binary indicator equal to one for years after 2004. *Female* is a binary indicator equal to one if the respondent’s gender is female. *Urban* is a binary indicator equal to one if the respondent lives in an urban area. *Age* is the age of the respondent. *Education* is a variable equal to zero, one, two, or three, if the respondent claims to have received the education level of no formal schooling, primary only, secondary, or post-secondary, respectively.

Section IA7: Commodity Price Variation

In Section 4.2 of the Manuscript, we use variation in world commodity prices to examine whether foreign corruption regulation increases the commodity-price pass through to local communities surrounding extraction sites. One potential concern with the price variable is that the prices of all our sample commodities change around the same time, and so there is not enough variation to estimate the $FCR \times Post2004 \times Ln(Price)$ effect.

To examine how highly commodity prices are correlated over time, we plot the price paths of the 18 commodities in our sample over the sample period (note: there are no world prices for coal and gas, which is why there are only 18 commodities in Table 7 but 20 commodities in Table 4 of the Manuscript). We index all commodities to their respective price level in 2004, the year before the FCPA enforcement increase. In Figure IA7.1, we find that there is significant variation in world prices across commodities over time. Note that the large drop in price of tantalum from 2000 to 2001 is not a data error and can likely be explained by capacitor producers switching to alternative commodities in 2001 (Mancheri et al. 2018). The inclusion of tantalum does not affect our estimates (see Section IA5.1).

Figure IA7.1: Commodity Prices Over Time



Notes: This figure shows world commodity prices from 2000 to 2013. All prices are indexed to 2004.

Section IA8: New Firms Entering the Extraction Sector

In Footnote 13 of the Manuscript, we discuss the role of ownership changes. To assess whether the selection of more productive firms contributes to the observed increase in luminosity, we compare the level of luminosity around mine ownership changes in the post-2004 period, by estimating the following OLS regression:

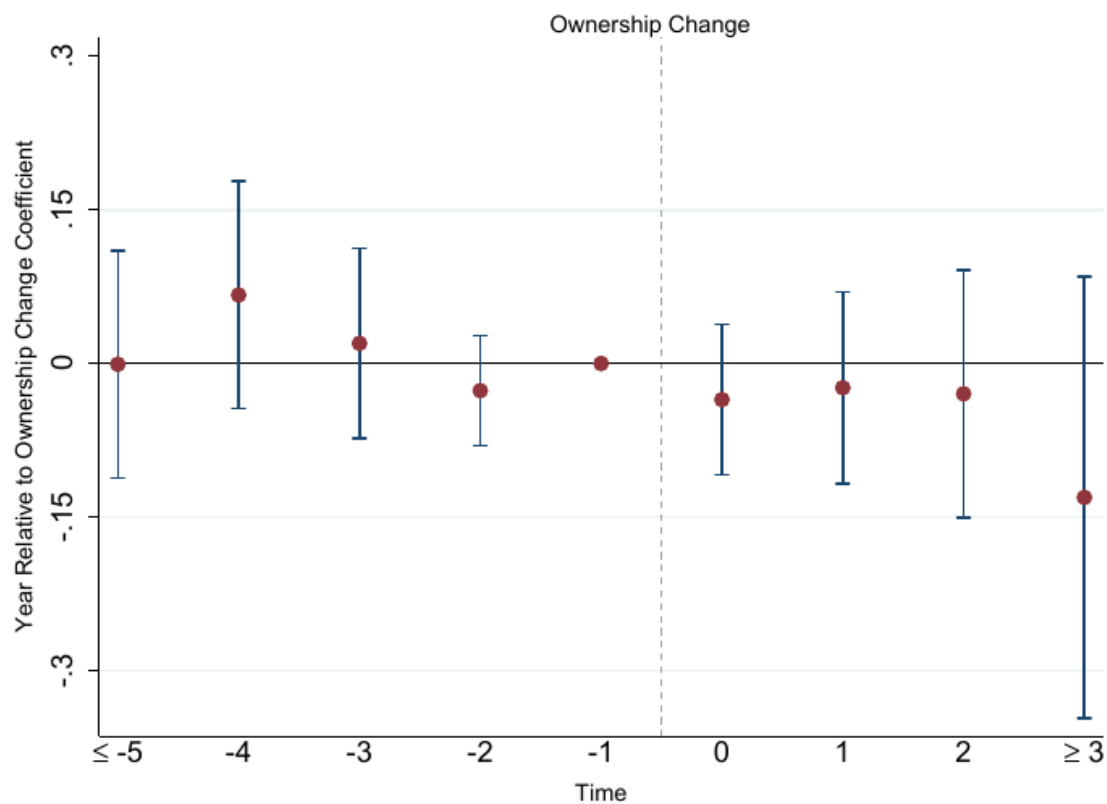
$$\begin{aligned} \ln(1 + \text{Luminosity}_{c,t}) = & \sum_t \beta_1 \text{Year Relative to Ownership Change}_{c,t} \\ & + \text{Fixed Effects} + \varepsilon_{c,t} \end{aligned} \quad (\text{IA.8})$$

In Eq. (IA.8), we examine changes in the level of luminosity. *Year Relative to Ownership Change* is a set of event-time indicators for each year relative to the ownership change. The other variables and fixed effects are the same as in Eq. (1) in the Manuscript. We limit our sample to mines because we cannot observe ownership changes at the facility level for oil and gas wells. To be included in our sample, we require a mine to experience at least one ownership change after 2004. To simplify the analysis, we further limit the sample to extraction facilities that are subject to the FCPA, which is why *FCR* is not included in the regression.

In Figure IA8.1, we plot the *Year Relative to Ownership Change* coefficient estimates from estimating Eq. (IA.8). The pattern is inconsistent with the entry of new firms explaining our main results. Instead, the figure shows that the increases in luminosity are concentrated in the years *prior* to an ownership change. After an ownership change, luminosity gradually decreases relative to the benchmark year, *t-1*.

These results suggest that the evidence reported in Table 4 is unlikely explained by ownership changes, but rather are likely more indicative of changes in the activities of existing mining firms.

Figure IA8.1: Foreign Corruption Regulation and Within Extraction Sector Resource Allocation



Notes: Panel A shows coefficient estimates and 95% confidence intervals for OLS regressions examining changes in nighttime luminosity around ownership changes of FCR mines after 2004.

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