

Bribes and Firm Value

Stefan Zeume*

This Version: September 26, 2013

Abstract

I exploit the passage of the UK Bribery Act 2010 as an exogenous shock to UK firms' cost of using bribes to study whether the ability to pay bribes creates firm value. I find that UK firms operating in high corruption regions of the world exhibit negative abnormal returns upon passage of the Act. This effect is stronger for firms that are not subject to US anti-bribery regulation, are not part of corporate social responsibility indices, operate in concentrated industries, and are better governed. Foreign firms subject to the Act because they have a UK subsidiary also exhibit negative abnormal returns. I also identify real implications of the Act: After enforcement, UK firms expand their subsidiary network less strongly into high corruption regions of the world and their sales in these regions grow 6 percentage points more slowly than sales of comparable continental European firms. Thus, the ability to pay bribes creates firm value and unilateral anti-bribery regulation hurts affected firms.

JEL Classification: G30, G34, G38, K22

Keywords: valuation, regulation, corruption, competition, corporate governance

* Finance Department, INSEAD, Boulevard de Constance, 77300 Fontainebleau, France, Tel: +33 (0)6 01 76 82 39, Fax: +33 (0)1 60 72 40 45, Email: stefan.zeume@insead.edu. I am especially grateful to Morten Bennedsen, Denis Gromb, and Urs Peyer for numerous valuable suggestions and insightful comments. I have benefitted from discussions with Daniel Bens, Pramuan Bunkanwanicha, Adrian Buss, Gavin Cassar, Woo-Jin Chang, Dragana Cvijanovic (discussant), Pushan Dutt, Lily Fang, Antonio Fatas, Sven Feldman, Xavier Giroud, Maria Guadalupe, Gilles Hilary, Ambrus Kecskes, Massimo Massa, Maxim Mironov, Dev Mishra (discussant), Jeff Ng (discussant), Amine Ouazad, Fausto Panunzi (discussant), Daniel Paravisini, Paolo Pasquariello, Joel Peress, Jillian Popadak (discussant), Raghu Rau, Ana Maria Santacreu, David Schumacher, Edmund Schuster, Carsten Sprenger, David Thesmar, Branko Urošević, Theo Vermaelen, Hannes Wagner, Charlie Wang, Franco Wong, as well as participants at the London Transatlantic Doctoral Conference, MIT Asia Conference in Accounting, Young Scholar Symposium in Corporate Finance and Governance at Renmin University, FMA Europe Conference Luxembourg, Asia FA Nanchang, the National Bank of Serbia Young Economists' Conference, ESCP Paris, and INSEAD seminars (Finance, Economics). I would like to thank GAP Books, particularly Alan Philipp, for very generous help with subsidiary data for 2013 as well as FTSE for providing FTSE4Good UK index constituents for 2008. My errors.

1. Introduction

The use of bribes is pervasive in business. Indeed, one in three firms uses bribes to compete for public procurement contracts according to a survey of more than 11 000 firms from 125 countries (D'Souza and Kaufmann 2011).¹ Some developed nations have implemented unilateral anti-bribery regulation punishing the use of bribes yet other nations – notably China and India – have not implemented such regulation.² As a result, regulated firms – limited in their ability to use bribes – compete with firms that can use bribes.

However, assessing whether the ability to use bribes creates firm value is hard because most bribes remain undetected.³ In this paper, I exploit the unexpected passage of the UK Bribery Act 2010 on March 25, 2009. This allows me to address the challenge that most bribes remain undetected. First, I find that UK firms operating in high corruption regions of the world exhibit negative abnormal returns around the time of the passage of the UK Bribery Act. This effect is stronger for firms that are not subject to US anti-bribery regulation, are not part of corporate social responsibility indices, operate in concentrated industries, and are better governed. Foreign firms subject to the Act because they have a UK subsidiary also exhibit negative abnormal returns. Second, I find that the Act has sizeable real implications. After its enforcement, UK firms expand their subsidiary network less into high corruption regions and their sales in these regions grow 6 percentage points more slowly than sales of comparable continental European firms.

This event study requires that the passage of the UK Bribery Act come as a surprise with substantial impact for firms. This is plausibly the case. The Act imposes potentially draconic monetary fines on corporations found to have used bribes and individuals responsible for bribery. It applies equally to UK firms and foreign firms with UK operations, be it for the use of bribes inside or outside the UK. A full defense against bribery allegations is provided if firms can prove that adequate internal bribery prevention

¹ In high-income OECD countries, one in eight firms uses bribes.

² For instance, in 1977, the US passed the Foreign Corrupt Practices Act (FCPA) which fines firms found to have bribed foreign public officials. The Russian Federation implemented anti-bribery regulation only recently, in early 2012.

³ Academic studies have relied on few detected bribery cases. Cheung, Rau and Stouraitis (2012) collect 166 prosecuted international bribery cases that occurred over 37 years. Karpoff, Lee and Martin (2013) study 143 enforcement actions for violations of the FCPA that occurred over 36 years.

controls have been in place. Thus, the Act reduces firms' ability to use bribes. The monetary and personal fines associated with breaking the Act go well beyond previous UK legislation, well beyond requirements of the OECD Anti-Bribery Convention, and well beyond comparable US legislation. Also, the Act prohibits the use of facilitation payments, which goes beyond comparable regulation.⁴ Importantly, the passage of the Act on March 25, 2009 was not anticipated during the weeks prior to this date and the media only covered the passage on the event day and the days thereafter (Figure 1).

--- FIGURE 1 ABOUT HERE ---

The findings of this paper are largely based on 645 listed UK firms. I calculate firms' abnormal stock returns around the passage of the Act to capture firm value implications. The key explanatory variable *Corruption Exposure* measures firms' exposure to regions with high corruption levels. It combines hand-collected headquarter locations of firms' subsidiaries from Dun&Bradstreet's *Who Owns Whom 2008/2009* book series with the country-specific Perceived Corruption Index (CPI) from Transparency International. Both headquarter locations and CPI are reported at the country level. I define a firm's *Corruption Exposure* as the weighted average of its subsidiary country CPIs where weights are determined by the percentage of a firm's subsidiaries in respective countries. Further robustness tests require constructing abnormal returns and *Corruption Exposure* for 2 791 continental European, Indian, and Russian firms.

The main finding is that UK firms with higher corruption exposure are more negatively affected by the UK Bribery Act. Based on abnormal returns around the passage of the Act, a one standard deviation larger exposure to high corruption regions is associated with a 0.48% drop in firm value. This may be because operating a profitable business in more corrupt regions may require resorting more to bribes. And indeed, I find that UK firms expand less into high corruption regions and their sales in these regions grow 6 percentage points more slowly than sales of continental European firms after enforcement of the Act. This

⁴ The Act comprises active and passive bribery. Active bribery is defined by the Act as offering, giving, or promising to give a financial or other advantage to a person in exchange for that person to improperly perform a relevant function. This includes bribery of foreign public officials and other firms. Passive bribery is defined as receiving or agreeing to receive financial or other advantage in exchange for improperly performing a relevant function. Facilitation payments (commonly also known as grease payments) are payments that induce government officials to perform tasks that they are otherwise obligated to perform anyway.

finding shows that the Act has real implications: Negative abnormal returns on the day of the passage of the Act do not merely reflect the cost of implementing regulation.

One immediate concern with this result is that another event specific to high corruption regions may have occurred at the same time. I tackle this concern by examining the impact of the Act on firms from continental Europe, Russia, and India. The Act's jurisdiction comprises foreign firms with UK operations, such as foreign firms with UK subsidiary (*treated*), but not foreign firms without UK operations. I therefore run an event study distinguishing foreign firms that are UK-exposed (i.e. with UK subsidiary) from those that are not. I document that foreign firms operating in high corruption regions experience negative abnormal returns but only if they are UK-exposed. This result is driven by Western European firms. Among Western European firms, firms with UK exposure that operate in regions with high perceived corruption level are 0.5% more negatively affected than comparable firms without UK exposure. Moreover, while continental European firms increase their exposure to corrupt regions between 2008 and 2013, this trend is more pronounced among continental European firms without UK exposure.

To further alleviate the concern that another event in high corruption regions drives the results, I examine abnormal returns of UK firms around other events related to bribery regulation. On 13 distinct days between 2000 and 2013, the UK government announced that it would implement tougher bribery regulation or that plans to implement tougher regulation failed. Staggering all events into one regression, I find that higher corruption exposure is negatively related to returns on event days that suggest a toughening of anti-bribery regulation and vice versa.

I also provide cross-sectional evidence. First, the negative association between exposure to high corruption regions and firm value is more pronounced for firms not already subject to other anti-bribery regulation. I measure exposure to other anti-bribery regulation using a Dummy variable that equals one if a firm has an Advanced Depository Receipt (ADR), which indicates that a firm is subject to the US Foreign Practices Act 1977. This Act makes bribery of foreign public officials a criminal offence. Second, the negative association between exposure to high corruption regions and firm value is more pronounced for firms that

are not considered socially responsible. I consider firms socially responsible if they are part of the *FTSE4Good UK Index*. This index is constructed by FTSE and consists of UK firms that fulfill a range of Corporate Social Responsibility criteria. Third, the association between negative abnormal returns and exposure to high corruption regions is more pronounced for firms operating in concentrated industries. I measure industry concentration using a Herfindahl-Hirschman-type index. A one standard deviation larger exposure to high corruption regions is associated with a 0.95% drop in firm value for firms in concentrated industries, compared to a 0.36% drop for firms in competitive industries. This finding goes in line with predictions from auction models with side payments (Beck and Maher 1986, Lien 1986).

Predicting how governance affects the value of the ability to pay bribes is difficult. Weakly governed firms may be less negatively affected by anti-bribery regulation because they face lower reputational fines, because they bribe less efficiently before anti-bribery regulation is passed (worse incentive alignment), or because a bribery enforcement crackdown improves internal monitoring, hence reduces the extraction of private benefits, which benefits minority shareholders (as in Desai, Dyck and Zingales 2007). However, weakly governed firms may also be more negatively affected if they are unable to implement effective internal anti-bribery controls, resulting in high expected regulatory fines. I establish that UK firms with strong corporate governance, particularly UK firms with high foreign institutional ownership and with independent boards, are more negatively affected by the Act. Firms with above-median institutional ownership (transparency) experience a 1.02% (1.31%) larger drop in firm value.

All results survive standard robustness tests, such as extended event windows and Placebo tests. Also, the results carry over to an alternative measure of corruption exposure. I collect sales data for the subset of UK firms that report geographic sales and show that firms with a larger fraction of sales in Asia and South America are more negatively affected by bribery regulation.

This paper seeks to make three contributions. The first contribution is to show that firms benefit from the ability to pay bribes in a setting where their competitors can use bribes. Indeed, unilateral anti-bribery regulation destroys firm value of affected firms and hence comes hurts shareholders.

Second, the findings of this paper are important to understand the role of governance in creating firm value. It is possible that weakly governed firms find it optimal to circumvent anti-bribery regulation, given lower reputational losses if detected breaking the law. A potential remedy to this is to impose sufficiently severe expected fines on firms and individuals. More likely, however, the weaker effect of the Act on weakly governed firms is explained by the fact that anti-bribery regulation improves internal monitoring.

Third, this paper introduces Dun&Bradstreet's *Who Owns Whom*, a dataset that provides historical data on public and private firms' subsidiary structure. This data can be used to study firm structure over time, geographic exposure of firms over time, and how shocks to particular geographic regions affect firms that operate in these regions. Indeed, the techniques used in this paper can be applied readily to study implications of unilateral regulation (e.g. on child labor) or multilateral agreements (e.g. bilateral trade agreements) for competitiveness of the firm. A particular strength of the data is that it allows for identifying suitable control groups, such as foreign firms without UK exposure in the paper at hand.

A few papers have linked bribery to firm value using detected bribery cases. Cheung, Rau and Stouraitis (2012) document a \$1 bribe payment to create \$11 value in a sample of 166 prosecuted international bribery cases. Karpoff, Lee and Martin (2013) study 143 enforcement actions for violations of the FCPA. They document prosecution costs to be more than offset by the value of contracts obtained through bribe payments. Smith, Stettler and Beedles (1984) show that firms voluntarily disclosing foreign sensitive payments under the SEC Voluntary Disclosure Act prior to the passage of the FCPA suffer negative abnormal returns around disclosure. While these studies allow for studying cross-sectional characteristics of bribe payers and bribe takers, they are subject to potential selection concerns and small sample size.

Some studies outline the broader economic implications of anti-bribery regulation rather than firm-level implications. Hines (1995) finds the FCPA to lead to a decline in US Foreign Direct Investment, US aircraft exports, joint venture activity, and capital-labor ratios. Evidence on the impact of the FCPA on US exports is mixed. Graham (1984) finds no negative impact on US exports overall. Beck, Maher and Tschoegl (1991) find that US exports to non-Latin American bribe-prone countries are negatively affected.

Another stream of the literature studies self-reported bribes from surveys. Ugandan survey data identifies bribe payers to be firms receiving public services contracts and engaging in trade (Svensson 2003). Bennedsen, Feldmann and Lassen (2009) use the World Bank's WBES survey on Eastern European and Central Asian firms and find large firms to bend the laws to their advantage (*lobbying*) while small firms bribe. Focusing on utilities, Clarke and Xu (2004) find bribe payers to be more profitable de novo private firms that have greater overdue payments. Serafeim (2013) obtains global survey data from PwC's forensic practice and shows detection of bribery to impact competitiveness, particularly morale, reputation, and regulatory relations. Survey data allows studying characteristics of bribes and parties involved yet raises selection and measurement concerns, which have implications for inference.⁵ Anonymity of survey participants reduces available information, thereby further limiting inference.

Last but not least, while I focus on the firm value implications of bribes, a large body of economics literature examines the implications of corruption for economic welfare.⁶

Taken together, the results of this paper suggest that the ability to pay bribes creates firm value and that unilateral anti-bribery regulation hurts affected firms.

The remainder of this paper is organized as follows. Section 2 outlines history and content of the UK Bribery Act 2010 and why March 25, 2009 is the event date. Section 3 derives predictions. Section 4 describes data and variable construction. Section 5 presents results for abnormal returns and Section 6 for real implications. Section 7 presents an alternative identification strategy using multiple events. Section 8 offers a battery of robustness checks. Section 9 concludes.

⁵ Svensson (2003) runs a battery of robustness tests on firms' self-selection into responding to the survey questions. Further concern arises from the fact that subjective dependent variables may be biased (their measurement error is likely causally related to independent variables; Bertrand and Mullainathan 2001), and from the indices used to measure corruption (Knack 2006).

⁶ Mauro (1995) shows corruption to reduce investment, thereby lowering growth. Fisman and Svensson (2007) show corruption to be more damaging to growth than taxation, which Shleifer and Vishny (1993) argue to be due to the illegality and the need for secrecy associated with corruption. See Bardhan (1997) and Svensson (2005) for reviews of studies on corruption.

2. The UK Bribery Act 2010

This paper exploits the passage of the UK Bribery Act 2010 as a shock to firms' cost of using bribes. In this section, I describe history and content of the Act. I then argue why the passage of the draft of the UK Bribery Act on March 25, 2009 constitutes the event date and why the UK Bribery Act has considerable implications, especially in comparison to the OECD Bribery Convention and US regulation.

2.1 History

The UK implemented the Bribery Act 2010 after years of ignoring its commitments to reform existing legislation. In fact, part of prior corruption legislation in the UK dates back to the late 19th and early 20th century. The *Public Bodies Corrupt Practices Act 1889*, modified by the *Statute Law Revision Act 1908*, the *Criminal Cases Act 1908*, and the *Criminal Justice Act (1967, 1988)*, criminalizes the acts of active and passive bribery of public officials in the UK. This Act defines active bribery as the promising, giving, or offering of gifts, loans, fees, rewards, or advantages to members, officers, or servants of any public body in order to influence decisions within their power. Passive bribery is defined as the receiving of gifts, loans, fees, rewards, or advantages by members, officers, or servants of any public body. Penalties for first offences include fines, imprisonment, and constraints to re-election; second offences involve fines such as incapability of being re-elected along with the loss of pension claims⁷.

The UK had also committed to implement the OECD Anti-Bribery Convention. This convention was ratified in 1997 and signed by the UK in 1999. Under the convention, signatory countries agree to put in place legislation that puts under legal punishment the bribing of foreign public officials. In 2000, the OECD urged the UK to toughen its anti-bribery regulation to match the OECD convention yet subsequent attempts to follow that urge failed in 2002 and 2005. The OECD's monitoring process allows to highlight local non-compliance to the governments. Moreover, in the case of repeated non-compliance, signatory countries can take measures such as exclusion of non-compliant countries. On repeated occasions, the UK

⁷ See for example <http://www.legislation.gov.uk/ukpga/Vict/52-53/69>

had been reported to be non-compliant to a satisfactory degree, most firmly in a letter by the anti-bribery working group of the OECD, delivered to the UK government in June 2008. This letter attacks the UK of neither having brought to court a single foreign bribery case nor having reformed its anti-corruption laws⁸.

2.2 Content and event date

The UK Bribery Act was passed by a UK government commission on March 25, 2009 and came into force on July 1, 2011. The Act makes it a criminal offence for individuals and corporations to use bribes, as well as for corporations to fail to have in place internal control procedures that prevent associated persons such as employees from acts of bribery. This comprises active bribery and passive bribery. Active bribery is defined by the Act as offering, giving, or promising to give a financial or other advantage to a person in exchange for that person to improperly perform a relevant function. This includes bribery of foreign public officials and other firms. Passive bribery is defined as receiving or agreeing to receive financial or other advantage in exchange for improperly performing a relevant function. Importantly, facilitation payments fall under the Act. Facilitation payments are described as payments that induce government officials to perform tasks that they are otherwise obligated to perform anyway. The Act imposes potentially unlimited monetary fines on firms found guilty of bribery. Individuals, such as managers responsible for breaching the Act, can be charged with monetary fines and prison terms. Both UK firms and non-UK firms with links to the UK fall within the jurisdiction of the Act – regardless where bribery takes place. Organizations can defend against allegations by proving that they have adequate procedures in place to prevent bribery.⁹

On March 25, 2009, the UK government commission passed the draft of the UK Bribery Act 2010. Newspapers did not discuss the vote on the passage of the UK Bribery Act 2010 prior to March 25, 2009. Only on the day of the passage did newspapers start reporting on content and implications of the Act (Figure 1).

⁸ Financial Times, August 17, 2008 and British Business Monitor, August 18, 2008.

⁹ See http://www.legislation.gov.uk/ukpga/2010/23/pdfs/ukpga_20100023_en.pdf (accessed September 16, 2013) for the official text of the Bribery Act 2010 and see <http://www.justice.gov.uk/downloads/legislation/bribery-act-2010-quick-start-guide.pdf> (accessed September 16, 2013) for a quick guide provided by the Ministry of Justice.

The passage of the draft of the UK Bribery Act 2010 on March 25, 2009 marks the event date for this event study. Of course, in the UK, there is a formal procedure to turn a draft/bill into an Act of Parliament (i.e. into legislation).¹⁰ Arguably, after the passage of the UK Bribery Act, the Act was at risk of being watered down or even failing.

However, in the case of the UK Bribery Act, this legislative procedure was very likely to be successful without major changes to the content of the draft for two reasons. First, the *Labour Party* was in control of drafting the Act and in control of turning it into legislation. The draft of the Act was passed by a government commission, members of which reflect the majority in the *House of Commons*. At the time the draft was passed, the *House of Commons* was dominated by the *Labour Party* (355 of the 646 Seats in Parliament after the 2005 General Election in the UK), and so was the government commission. While both *House of Commons* (lower house) and *House of Lords* (upper house) participate in the process of turning bills into Acts of Parliament, a Bill can be passed by the House of Commons using the Parliament Acts if no agreement is reached between the two parties.

Second and more distinct from previous attempts to implement anti-bribery regulation, the *Labour Party* was pressured to act quickly, facing OECD pressure and having at its disposal a relatively short time horizon until the next general elections in 2010. With election outcomes unfavorable or at least uncertain (and eventually indeed unfavorable for Gordon Brown), the only chance to turn the Act into legislation was to act quickly, without time-consuming amendments that would have contained additional news. Indeed, subsequent Amendments focused on wordings of the draft rather than substantial content.

2.3 Comparison

The UK Bribery Act is considered to “[create] a platform for what could be the toughest [anti-bribery] enforcement regime in any jurisdiction”; some journalists describe the Act as toothless though.¹¹ I argue in this subsection that the Act does constitute tough regulation with costly implications for non-compliers.

¹⁰ An outline of this procedure is presented in the Appendix.

¹¹ Mondaq Business Briefing, June 21 2010, “The UK Bribery Act 2010 - What US Companies Need to Know”.

Not only does the Act extend the jurisdiction and the associated fines of prevailing UK legislation considerably, but it also goes well beyond the OECD Anti-Bribery Convention, as well as comparable legislation such as the US Foreign Corrupt Practices Act. For instance, prior UK legislation does neither explicitly account for corporate offenses nor explicitly address bribery by firms. Also, prior attempts to change UK anti-bribery regulation did not extend to non-UK firms with UK operations.

The severity of the UK Act becomes most apparent in comparison to the Foreign Corrupt Practices Act (FCPA), enacted by the US in 1977. The FCPA forbids the bribery of foreign public officials by US firms. The UK Bribery Act 2010 differs along several dimensions. First, the UK Bribery Act 2010 makes it criminal to receive bribes (passive bribery) and to give bribes (active bribery), while the FCPA covers active bribery only. Second, while the FCPA focuses on bribing foreign public officials, the UK Bribery Act covers the bribing of private persons, other firms, and their employees, too. Third, both private persons and firms are concerned under the UK Bribery Act, with strict liability assumed for firms that do not have in place procedures meant to prevent bribery, such as internal controls. Fourth, potential firm fines are unlimited under the original draft of the UK Bribery Act, rather than limited by \$2 million under the FCPA.¹² Fifth, facilitation payments are criminalized under the UK draft, while US legislation excludes such payments from the list of punishable offences. Sixth, the jurisdiction of the UK Bribery Act explicitly extends to non-UK firms with UK operations (even bribery on foreign ground). The FCPA is only recently applied to foreign firms and does not explicitly mention foreign firms. In sum, the UK Bribery Act extends regulatory punishment and jurisdiction of the FCPA considerably.¹³

3. Hypotheses

In this section, I derive hypotheses about the implications of bribes for firm value. The theoretical literature has studied bribes as side payments within Vickrey's (1961, 1962) first price auction framework. Beck and

¹² However, US legislation allows for fines up to \$25 million under the Books and Records and Internal Controls provisions.

¹³ Taken from UK Bribery Act (2010) (see <http://www.legislation.gov.uk/ukpga/2010/23/contents>), Gerrard (2010) "The UK Bribery Act 2010 – What US Companies Need to Know", *Mondaq Business Briefing*, June 21, 2010, Flint (2010) "The UK Bribery Act 2010 v Foreign Corrupt Practices Act Of 1977: How different are they & should your business be Concerned?", *Mondaq Business Briefing*, April 26, 2010.

Maher (1986) and Lien (1986) find auctions with side payments (bribes) and without frictions to lead to efficient resource allocation. Further relevant to the development of the hypotheses, Beck and Maher (1989) show that costly anti-bribery regulation which affects a subset of firms leads to a decline in competition and may lead to inefficient resource allocation¹⁴.

With these theoretical frameworks in mind, illustratively, consider a government official (agent) who tenders a contract on behalf of the government (principal) to firms that compete for the contract. The firm that wins the contract is assumed to enjoy a rent. I assume some incentive alignment problem or imperfect monitoring between principal and agent so the government agent finds it optimal to award the contract to the firm offering him the largest bribe. In turn, each firm finds it optimal to bribe, i.e. to share its rent with the agent, in order to maximize firm value because not using bribes leads to zero probability of winning the contract.¹⁵

In this setting, consider surprisingly implemented local anti-bribery regulation that affects a subset of firms. One can think of such regulation as imposing a cost to using bribes borne by each. If such regulation is sufficiently costly, it will force all regulated firms to stop engaging in bribery. For regulated firms, the expected value from competing for the contract drops to zero, given that the probability of winning the contract drops to zero. Non-regulated firms continue to pay bribes in competition for the contract and may see an increase in expected value from using bribes, explained by a drop in competition (Beck and Maher 1986).

First, consider firms' exposure to corrupt agents. In a region with incorruptible agents where contracts are allocated independently of bribes, firms have no incentive to bribe. Firms enjoy the full expected rent from

¹⁴ Harstad and Svensson (2011) follow a different modeling approach that focuses on implications of lobbying and bribing for economic development. Firms bribe, which benefits only the firm, or lobby collaboratively, which benefits their entire industry. As country-level development increases, firms switch from the use of bribes to the use of lobbying. If the UK Bribery Act affected bribes only and not lobbying, this would allow us to distinguish firm value reaction in less developed and more developed countries. However, as established by Smith, Stettler and Beedles (1984), anti-bribery regulation introduces uncertainty under which some firms consider actions such as lobbying or greasing illegal. Moreover, it is harder to derive implications for industry competition from this framework.

¹⁵ This set-up follows Beck and Maher (1986) and Lien (1986). Firms assign a common value to a contract, draw gross profit from a common distribution, and compete for the contract in a first-price auction with side payments. Focus is on the implications of fines for the decision to bribe rather than on the type of agency conflict or on the sharing rule between firm and agent.

competing over the contract and are unaffected by anti-bribery regulation. In a region where contracts are allocated only to firms that pay a bribe, however, firms find it optimal to share part of their rent in form of a bribe. Regulating a subset of firms that operate in such regions reduces firm value.

Hypothesis 1 (Corruption Exposure): *Firms that operate in regions with high corruption levels experience a larger drop in firm value when anti-bribery regulation is passed.*

Second, consider firms that are less likely to bribe, either because they are subject to prior regulation or because they consider themselves ethical. For instance, some firms are subject to non-UK anti-bribery regulation already, such as the US Foreign Corrupt Practices Act 1977 (FCPA). Thusly pre-regulated firms may have decided to comply with pre-existing regulation or may have decided and implemented ways to circumvent such regulation. Pre-regulated firms that decided to comply and no longer pay bribes are then unaffected by the passage of the UK Bribery Act. The same goes for firms that openly disclose not to be bribing if such disclosure is believable.

Hypothesis 2 (Less Affected Firms): *Firms that are already subject to anti-bribery regulation or make believably public that they do not engage in bribery experience a smaller drop in firm value when anti-bribery regulation is passed.*

Third, consider competition. In first price auctions and Cournot competitions, expected payoff decreases in the number of competitors. This extends to first price auctions with side payments (Beck and Maher 1986, Lien 1986).

Hypothesis 3 (Competition): *Firms that operate in more concentrated industries experience a larger drop in firm value when anti-bribery regulation is passed.*

Fourth, consider the role of firm governance. Uzun, Szewczyk and Varma (2004) and Crutchley, Jensen and Marshall (2007) document detected cases of corporate fraud to be more likely to occur within weakly governed firms. On the one hand, this finding may reflect the fact that strongly governed firms have stronger incentives to comply with anti-bribery regulation, e.g. due to a larger loss in reputation if

discovered to be using bribes¹⁶ or due to larger personal punishment of managers that are responsible for breaking the law (such as documented by Karpoff, Lee and Martin 2008). By this argument, strongly governed firms are more negatively affected by regulation. On the other hand, weakly governed firms may be less able to implement regulation effectively or to disguise breaches of the law. By this argument, with considerable regulatory fines, weakly governed firms are more negatively affected by regulation.

A further argument for the prediction that strongly governed firms are more negatively affected arises from heterogeneous ability to bribe optimally. Better incentive alignment in strongly governed firms may incentivize managers to bribe optimally in the interest of shareholders prior to anti-bribery regulation, resulting in a more negative impact of anti-bribery regulation on firm value.

Moreover, anti-bribery regulation can be interpreted as an increase in regulatory enforcement, which strengthens internal monitoring. Desai, Dyck and Zingales (2007) predict and confirm empirically that weakly governed firms experience a less severe drop in firm value when tax enforcement increases in Russia. There are two mechanisms at play. First, a tax crackdown reduces firms' ability to avoid taxes, resulting in a decrease in firm value. Second, a tax crackdown also reduces firms' ability to expropriate minority shareholders, more so in weakly governed firms. This results in an increase in firm value, more so for weakly governed firms. Translated to bribery, regulatory enforcement may cost contracts but may also reduce expropriation if channels used to pay bribes are used to expropriate minority shareholders.

Hypothesis 4 (Firm Governance):

4a: Weakly governed firms are more negatively affected by anti-bribery regulation.

4b: Strongly governed firms are more negatively affected by anti-bribery regulation.

¹⁶ For a sample of UK firms, Armour, Mayer and Polo (2011) document abnormal stock market returns associated with the announcement of regulatory enforcement actions to be approximately 9 times higher than the actual regulatory fine, which they interpret as a value loss to corporate reputation.

4. Sample and data

This paper employs event study techniques in order to link firm characteristics to firm value. In this section, I describe sample selection, data sources, and variable construction.

The main result is based on publicly listed UK firms as UK firms are directly affected by the passage of the UK Bribery Act. I remove firms that do not have daily stock return data on the day of the passage of the UK Bribery Act and the day thereafter, firms that have fewer than 100 daily stock return observations the year before the passage, and firms that do not have accounting controls and subsidiary data the year before the passage. These criteria leave a sample of 645 UK firms.

The dependent variable is $CAR[0;1]$, firms' cumulative abnormal return on the day of the passage of the UK Bribery Act (March 25, 2009) and one day after the passage. $CAR[0;1]$ are calculated from a Carhart (1997) model estimated for the period starting 294 days before the event and ending 41 days before the event. I obtain stock return data of UK firms, UK stock market returns, UK T-Bill returns, and accounting information for Carhart (1997) factors (book value, market value) from Datastream.¹⁷ The equally weighted cumulative abnormal return around the event date is -0.85% (median -0.96%) (Table 1).¹⁸ Prior to the event and after the event, equally-weighted cumulative abnormal returns are economically insignificantly negative at -0.06% for $[-20;-1]$ and -0.06% for $[2;20]$, respectively.

--- TABLE 1 ABOUT HERE ---

The key variable to test hypothesis 1 is *Corruption Exposure*, measured by UK firms' exposure to regions with high perceived corruption levels. *Corruption Exposure* combines two sources. First, I hand-collect data on headquarter locations of subsidiaries and subsidiaries of subsidiaries using Dun & Bradstreet's *Who Owns Whom 2008/2009 UK & Ireland*. Dun & Bradstreet publishes all subsidiaries, private and

¹⁷ I follow Ince and Porter (2006) in cleaning daily return data. Long-short portfolios on size, book-to-market, and momentum are constructed in line with Kenneth French's Data Library though I split size into top-30% and bottom-70% firms to account for the skewed size distribution in the UK though results are not sensitive to this split. Parameters obtained from a Carhart model over $[-294;-41]$ are then used to calculate alphas during the event period $[0;1]$.

¹⁸ The value-weighted $CAR[0;1]$ is -0.005%.

public, for ultimate parent firms over various years along with subsidiary headquarter countries. Subsidiaries are defined by ownership exceeding 50%.¹⁹ Second, I obtain the country-specific Perceived Corruption Index (CPI) for 2008 from Transparency International (TI) for all headquarter countries.

I combine both data sources into a measure of corruption exposure for each firm i :

$$Corruption\ Exposure_i = \sum_{c \in C} ((10 - CPI_c) * \#subsidiaries_{i,c} / \#subsidiaries_i) \quad (4)$$

where CPI_c is the Perceived Corruption Index of country c in 2008, $\#subsidiaries_{i,c}$ is the number of subsidiaries of firm i in country c in 2008/2009, and $\#subsidiaries_i$ is the total number of subsidiaries of firm i in 2008/2009. By construction, this measure is increasing in firms' exposure to corruption and bounded by [0.7;8.2] given the least corrupt countries Denmark, Sweden, and New Zealand (10-CPI is 10-9.3=0.7) and the most corrupt countries Iran, Uzbekistan, and Zimbabwe (10-CPI is 10-1.8=8.2). The average sample firm has a *CPI Exposure* of 2.47 (Table 1B). The *Corruption Exposure* measure assumes that all subsidiaries are equally important to a firm. I provide a measure of relative importance, based on geographic sales reported by a subset of firms, in the robustness section.

Hypothesis 2 relates to firms being affected by the UK Bribery Act. First, some firms may have to comply with other regulation, most notably the US Foreign Corrupt Practices Act 1977. I obtain US cross-listings as an indicator of firms having to comply with this US Act 1977 from *Bank of New York's* list of ADRs; I combine this list ADR information from Worldscope/Datastream. 23% of sample firms had an ADR in the 2 years preceding March 25, 2009. Second, some firms have selected to adhere to corporate social responsibility (CSR) standards. Comparable to the *Domini 400 Social Index* for S&P500 firms in the US, FTSE publishes the *FTSE4Good UK Index* for UK FTSE All-Share firms. *FTSE4Good UK Index*

¹⁹ The average publicly listed UK firm has 59 subsidiaries, 38 thereof in the UK, 11 in continental Europe, 4 in the US, and 6 in the rest of the world. The median UK firm has 16 subsidiaries in Europe and no subsidiary in US/non-US-non-Europe. 40% of the sample firms have fewer than 10 subsidiaries. 17% of the sample firms have more than 100 subsidiaries. A few firms drive up the mean, namely a few banks (Royal Bank of Scotland with 1165 subsidiaries, HSBC with 1036, Barclays with 601) and oil corporations (Royal Dutch Shell with 906, BP with 583). For firms not listed in *Who Owns Whom*, I use *CapitalIQ* subsidiary information. *CapitalIQ's* ownership information is contemporaneous. All my results hold when restricting the sample to firms identified in Dun&Bradstreet.

constituents are firms identified to be complying with environment, human rights, social, and stakeholder relations criteria. Information is obtained from publicly available sources but also and directly from companies. I obtain a list of *FTSE4Good UK* constituents for the end of 2008. 33% of my sample firms are FTSE4Good constituents.

I measure industry concentration (Hypothesis 3) constructing a Hirschman-Herfindahl Index (HHI) type measure from market values. The HHI of industry J is given by $HHI_J = \sum_{i \in J} ((MV_i / \sum_{i \in J} MV_i)^2)$ where MV_i the market value of firm i in industry J prior to the event date and industry classifications follow Datastream/ Worldscope.²⁰ The mean (median) HHI is 0.19 (0.03). This skewed distribution of HHI is driven by a few very concentrated industries and discourages from interpreting the economic significance of a shift in HHI by one standard deviation around the mean. Instead, I will group industries by above- and below-median concentration. The most competitive industries (lowest HHI) are Support Services, Travel & Leisure, and Real Estate Investment & Services. The most concentrated industries (highest HHI) are Alternative Energy, Automobiles & Parts, and Mobile Telecommunications.

In order to proxy for firm governance (Hypothesis 4), I suggest three measures. First, I measure governance by institutional ownership which proxies for monitoring. I follow Ferreira and Matos (2007) in constructing institutional ownership as the fraction of a firm's market capitalization held by foreign institutional investors that are not headquartered in the UK. Average institutional ownership is 9.8%.

Second, following Aggarwal et al. (2009), I measure firm governance using forty-four governance attributes provided by *RiskMetrics/ISS*²¹. The overall measure reflects the percentage of non-missing governance attributes that a firm satisfies; it increases in firm governance. I can match 317 of the sample firms to ISS. The average UK firm fulfills 85% of the governance criteria.

²⁰ All results are qualitatively unaffected when I measure competitiveness on the basis of book value, as well as when I measure HHI only for UK firms and when I measure HHI using Fama-French industry classifiers (FF48, FF12, FF10).

²¹ ISS obtains information from regulatory filings, annual reports, and company websites. For a more detailed description of the dataset and a list of the 44 attributes, see Aggarwal et al. (2009).

Third, I use detailed governance data from ISS/RiskMetrics to measure firm transparency. *Transparency* is given by the sum of dummies that equal one if a firm has independent *board*, *compensation committee*, *nomination committee*, and *audit committee*, respectively. The median firm fulfills 2 of the 4 criteria.

Control variables include the log of the number of subsidiaries, the log of assets, capital expenditures divided by assets, returns on assets, and the number of as a percentage of assets, respectively. The mean (median) sample firm has a capitalization of \$4580mn (\$472mn), CAPEX of 4.1%, and ROA of 2.0%

5. Results

In this section, I study the implications of the UK Bribery Act for firm value using event study techniques around the passage of the UK Bribery Act. I explain abnormal returns of UK firms and foreign firms using their exposure to high corruption regions and then examine cross-sectional characteristics of UK firms.

5.1 UK firms

Step by step, Table 2 develops the full regression specification for UK firms. The dependent variable is $CAR[0;1]$, firms' Cumulative Abnormal Returns on the event day March 25, 2009 and the day thereafter. The main control is *Corruption Exposure*, which increases in firms' exposure to corrupt regions.

--- TABLE 2 ABOUT HERE ---

In Column 1, $CAR[0;1]$ is explained by *Corruption Exposure* on its own. In line with hypothesis 1, *Corruption Exposure* loads significantly negative with a coefficient of -0.657: Firms that are more exposed to high corruption regions are more negatively affected by the passage of the UK Bribery Act. Certain industries are more likely to use bribes. The main result survives after additionally controlling for industry fixed effects (Column 2).

Extending the analysis to the full set of industry and firm level controls (Column 3), *Corruption Exposure* still significantly explains abnormal returns. A one standard deviation increase in *Corruption Exposure* is associated with a 0.48% ($=0.65 \times 0.745\%$) drop in firm value, reflecting \$2.27mn ($=\$472\text{mn} \times 0.48\%$) for the

median firm and \$21.98mn(=\$4,580mn*0.48%) for the mean firm. For illustration of a one standard deviation difference in *Corruption Exposure*, compare a UK firm with 6 subsidiaries in the UK (*Corruption Exposure* of 2.3=10-7.7) to an otherwise comparable UK firm that operates 1 subsidiary in China and 5 subsidiaries in the UK (*Corruption Exposure* of 2.98=(5/6)*(10-7.7)+(1/6)(10-3.6)).

40% of UK firms do not have subsidiaries outside of the UK; they will have the same *Corruption Exposure* of 2.3. I re-run all main regressions on the sub-sample of UK firms with at least one foreign subsidiary (Columns 4-6). With all controls, the coefficient on *Corruption Exposure* is significantly negative at -.846. Using standard deviation of *Corruption Exposure* and market value conditional on firms being in the sample, a one standard deviation increase in *Corruption Exposure* is associated with a 0.68%(=0.80*0.846%) drop in firm value, reflecting \$5.68mn(=\$835mn*0.68%) for the median firm.

Both cross-listing and FTSE4Good controls load positively on CAR[0;1] with 0.707% and 0.584%, respectively, but insignificantly so, lending weak support to Hypothesis 2. Industry concentration is controlled for indirectly via industry fixed effects. The number of subsidiaries is negatively associated with CAR[0;1]; assets are weakly positively associated.²²

5.2 Spillovers to foreign firms

One concern so far is that a shock specific to high corruption regions drives the result. In order to alleviate this concern, I study spillovers of the UK Bribery Act to foreign firms. Foreign firms with high corruption exposure and UK operations are directly subject to the Act (*treated*). Foreign firms with high corruption exposure and no UK operations are not directly subject to the Act.

Thus, foreign firms with high corruption exposure and UK operations should have negative abnormal returns around the passage of the UK Bribery Act. I test this prediction by collecting subsidiary data on publicly listed continental European firms as well as Russian and Indian firms from Dun&Bradstreet's

²² Assets and number of subsidiaries are positively correlated with rho=.68. Results are unaffected when removing one or both controls, alleviating potential multicollinearity concerns.

Who Owns Whom 2008/2009 Continental Europe and *Who Owns Whom 2008/2009 Australasia, Asia, Africa & Middle East*.²³ Abnormal returns over the event window [0;1] around the passage of the UK Bribery Act are constructed from parameters of a Carhart 4-factor model estimated over days [-294;-41] using local benchmarks and risk free rates. *Corruption Exposure* is constructed as before. *UK Link* is a Dummy that equals 1 if a foreign firm has at least one subsidiary in the UK and zero otherwise.

For a sample of 2,791 non-UK foreign firms, Table 3 presents summary statistics (Panel A) as well as abnormal return results for sample splits (Panel B) and multivariate regressions (Panel C). During the event window [0;1] around the passage of the UK Bribery Act, non-UK firms experience an equally weighted cumulative abnormal return of -0.079% (Panel A). The mean corruption exposure ranges from 1.43 (Swedish firms) to 7.34 (Russian firms).²⁴ 32% of the sample firms have a UK link. Reflecting geographic proximity and historical ties, 93% of the Irish sample firms have at least one subsidiary in the UK, while only 7% of the Polish firms have a UK link.

--- TABLE 3 ABOUT HERE ---

Panel B reports equally weighted *CAR* for sample splits by (i) firms having above/below country-median *Corruption Exposure*, (ii) firms having/not having a *UK link*, and (iii) the interaction of the two. First, among the four resulting subsets, foreign firms with UK exposure that operate in regions with high perceived corruption level are most negatively affected around the passage of the UK Bribery Act (-0.31%; sub-Panel (1)). Compared to foreign firms with UK Link but with low corruption exposure, these firms are 0.46% more negatively affected. Compared to foreign firms without UK Link but strong exposure, these firms are 0.39% more negatively affected. The difference in difference shows that non-UK firms with UK Link and strong exposure to corrupt regions are 0.63% more negatively affected.

²³ I only include EU countries if I can collect all relevant information (subsidiaries, abnormal returns, accounting controls) for at least 20 publicly listed firms. I do not study US firms (4,500 firms) as they are subject to the US Foreign Corrupt Practices Act of 1977. I expect the effect of the UK Bribery Act on US firms with UK exposure to be negative but close to zero.

²⁴ Recall: The measure of corruption exposure is an inverse measure of Transparency International's Perceived Corruption Index. I take 10- *Perceived Corruption Index* to get a measure that increases in corruption.

Not all foreign firms are equally affected by UK regulation, partly due to home country differences in detection probabilities, detection costs, prosecution probabilities, enforcement probabilities, or reputational losses. Splitting the sample of foreign firms into Western European foreign firms (Sub-Panel (2)) and Eastern European and Asian foreign firms (Sub-Panel (3)) illustrates this notion: The previous result is driven by Western European foreign firms which lose 0.49% more in value if exposed to the UK and exposed to regions with high perceived corruption levels. The evidence weakly suggests that Eastern European and Asian firms without UK link even benefit from the passage of the UK Bribery Act though this result does not carry through to the difference-in-difference. This last result might hint at the presence of a competition effect. As UK and continental European competitors are forced to stop bribing for contracts, Eastern European and Asian firms extract higher rents (e.g. in a Cournot competition or a first price auction with a reduction in competition without replacement by new entrants; see Beck and Maher 1986, 1989, Lien 1986).

A split by *UK Link* and by *corruption exposure* may reflect a split among another dimension, such as industry or size. If an industry – such as mining – contains many firms with UK link and high corruption exposure and is particularly negatively affected on that day, this might explain the results in Panel B. To alleviate this concern, I provide multivariate analysis in Panel C, controlling for industry and country fixed effects as well as the number of subsidiaries, firm size, %capex, and %roa.

All results are robust in a multivariate setting. Firms with UK link and above-median exposure to corruption have 0.4%pts lower abnormal returns than firms with UK link but below-median corruption exposure; firms without UK link and above-median exposure to corruption have a 0.1%pt higher abnormal return than comparable firms with low exposure (Panel C Column 2). The difference in difference of 0.5%pts is significant. Again, this result is driven by Western European sample firms for which the difference of 0.5% is significant at 1% level. Eastern European and Asian firms do not reveal this pattern.

Overall, this subsection suggests that the results for UK firms are indeed driven by bribery. Some firms create firm value by engaging in bribery. Some of that value is destroyed through the UK Bribery Act

2010. Methodologically, the spillover results exclude alternative explanations such as a global event that negatively affects perceivably corrupt countries on the day of the passage of the UK legislation. The spillover results therefore lend strong robustness to the results on UK firms.

5.3 Cross-sectional characteristics

For the sample of UK firms, I now turn to cross sectional characteristics that drive the main result. As before, the dependent variable is $CAR[0;1]$.

Table 4 analyzes the role of cross-listings, social responsibility, and industry competition. Columns 1-3 focus on the full sample of UK firms. Columns 4-6 provide robustness tests for the subset of UK firms with at least one foreign subsidiary. The set-up follows exactly Table 2 Column 3 and the focus is on the interaction between *Corruption Exposure* and cross-sectional controls.

--- TABLE 4 ABOUT HERE ---

In line with Hypothesis 2, *Corruption Exposure* explains abnormal returns more strongly for UK firms that are not already subject to the Foreign Corrupt Practices Act 1977 (Column 1). Similarly, *Corruption Exposure* explains abnormal returns more strongly for UK firms that are not identified to be socially responsible by FTSE (Column 2). These results are supported in the subset of UK firms that have at least one foreign subsidiary and give support to Hypothesis 2: Firms that are less likely to bribe are less affected by the UK Bribery Act.

Supporting Hypothesis 3, *Corruption Exposure* explains abnormal returns significantly for UK firms that operate in concentrated industries. For firms in concentrated and competitive industries, a one standard deviation increase of *Corruption Exposure* is associated with a .95% and 0.36% reduction in firm value, respectively. Using conditional median firm size, these reflect \$3.50mn and \$1.81mn, respectively.²⁵ In unreported results with double interactions, I document that the association between *Corruption Exposure*

²⁵ For firms in concentrated (competitive) industries, the conditional standard deviations of *Corruption Exposure* is .67(.65) and the median size is \$368mn (\$502mn).

and firm value is strongest among (i) firms without cross-listing that are not FTSE4Good constituents, (ii) firms without cross-listing that operate in concentrated industries, and (i) firms that are not FTSE4Good constituents and operate in concentrated industries.

Table 5 entertains the role of firm governance following exactly the specification in Table 2, Column 3. Given that governance controls were not included in Table 2 (in order to keep a large sample), odd-numbered Columns of Table 5 introduce governance controls. Even numbered columns interact governance with *Corruption Exposure*. Columns 1 and 2 focus on institutional ownership, Columns 3 and 4 focus on the overall ISS/RiskMetrics governance measure, and Columns 5 and 6 focus on *Transparency*.

--- TABLE 5 ABOUT HERE ---

First, I document that better governance is associated with a larger drop in firm value on the day of the passage of the UK Bribery Act and the day thereafter. Firms with above-median institutional ownership experience a 1.02% larger drop in firm value (Column 1). Firms with above-median Transparency experience a 1.31% larger drop in firm value (Column 5). Notice that *Corruption Exposure* coefficients are larger, reflecting a lower standard deviation of corruption exposure in the subset of firms that have governance data. The real implications for firm value are comparable to those reported above.

Second, I document that the association between *Corruption Exposure* and firm value is stronger in strongly governed firms. Among firms with above-median and below-median institutional ownership, a one standard deviation increase in *Corruption Exposure* is associated with a 0.87% and 0.45% reduction in firm value, respectively.²⁶ Among firms with above-median and below-median transparency, reductions are 0.77% and 0.56%, respectively.

In unreported results, examine a range of individual governance attributes. I find that firms with independent boards are more negatively affected by anti-bribery regulation than firms with dependent

²⁶ For firms with above-(below-) median institutional ownership, the conditional standard deviation of *Corruption Exposure* is .53(.42). For firms with above-(below-)median transparency, the conditional standard deviation of *Corruption Exposure* is .30(.39).

board. Indeed, having an independent board (nomination committee, compensation committee, audit committee) is associated with a 0.9% (1.3%, 1.2%, 1.2%) more negative abnormal return. While board size does not appear to matter, I find that classified boards (as opposed to annually elected boards) are negatively related to abnormal returns. Moreover, firms with CEOs that report related party transactions and firms with unreasonably risky option grants are less negatively affected.

6. Real implications of the UK Bribery Act

So far, I have shown that firms are negatively affected by the UK Bribery Act. However, do negative abnormal returns reflect real implications for firms' ability to compete by paying bribes? I.e. do negative abnormal returns reflect the value of paying bribes? Or do abnormal returns largely reflect one-off costs of implementing internal anti-bribery controls but do firms in fact maintain their ability to compete?

To answer these questions, this section considers two real implications: Firms' subsidiary presence in regions where corruption levels are perceived to be high and firms' sales in such regions. I compare UK firms to continental European firms in order to control for macro-economic trends.

6.1 Firm presence in regions where the level of corruption is perceived to be high

A shock to the cost of paying bribes affects the decision to open (continue) subsidiaries. Consider a subsidiary that generates revenues through paying bribes to local authorities or contractors. Anti-bribery regulation increases expected costs of paying bribes. An increase in expected costs will affect profits; a sufficiently large increase may even turn the subsidiary unprofitable.

To test this idea, I investigate whether UK firms change their physical presence in regions where corruption levels are perceived to be high subsequent to the passage of the UK Bribery Act 2010. I augment the 2008/2009 subsidiary data used before by hand-collected subsidiary data for 2013. I construct firms' *Corruption Exposure* measure for 2013 as before, though I weigh subsidiaries with the *Perceived Corruption Index* for 2008 so that my results are not driven by changes in the perceived corruption index.

As before, the measure increases in exposure to corrupt regions. Table 6 reports the results for a balanced Panel of 650 UK firms²⁷ and 1,526 continental European firms.

--- TABLE 6 ABOUT HERE ---

UK firms increase their exposure to corrupt regions significantly by 0.026, from an average 2.408 in 2008 (prior to the passage of the Act) to an average 2.435 in 2013 (after the Act is enforced; Panel A). Over the same time period, European firms increase their exposure highly significantly by 0.077. The difference between continental European and UK firms is significant. In economic terms, UK firms do not completely follow the general trend to increase exposure to regions with high perceived corruption levels.

This result may be driven by a UK-specific trend. I therefore split continental European firms into firms that are affected by the UK Bribery Act because they have at least one subsidiary in the UK in 2008 (treated) and firms that are not directly affected by the Act. Continental European firms that are affected by the Act increase their exposure by 0.066 while firms that are not directly affected increase their exposure by 0.086, lending weak support to the idea that the UK Bribery Act affects geographic presence.

A comment on the magnitude and significance of these effects is in order. The average UK sample firm in this sub-section has 59 subsidiaries and a *Corruption Exposure* of 2.408 in 2008. If such firm opens one additional subsidiary in China (Perceived Corruption Coefficient in 2008 is $10 - 3.6 = 6.4$) then *Corruption Exposure* increases by 0.067 to $2.475 = (2.408 * 59 + 6.4) / (59 + 1)$. This is more than twice the change observed for UK firms, and reflects roughly the change observed among European firms.

As a robustness test, I restrict the previous analysis to firms that have at least one foreign subsidiary in 2008. Firms that did not have foreign exposure in 2008 may be firms that do not intend to open subsidiaries abroad (biasing the change in exposure downwards), or growing firms that are more likely to soon open a subsidiary (biasing the change in exposure either way). In particular, the subsample of

²⁷ The results in this Section are based on a slightly different sample than the summary statistics in Table 1. This section contains some firms for which accounting information was unavailable (these are omitted in Table 1) but this section also discards some

continental European firms with UK subsidiary in 2008 is constructed of firms that operate abroad already, while the subsample of continental European firms without UK exposure in 2008 contains both firms that operate only in their home country and firms that operate abroad. The robustness test supports and strengthens the previous result (Panel B). UK firms with at least one foreign subsidiary in 2008 increase exposure to corrupt regions by an insignificant 0.025, while continental European firms increase exposure by 0.086. Among continental European firms, firms that do not have a UK subsidiary in 2008 increase their exposure more strongly by 0.113 compared to 0.066; the difference is significant.

Overall, this subsection suggests that the UK Bribery Act affects firms' decision to continue and open subsidiaries in corrupt regions; it hampers affected firms' presence in corrupt regions.

6.2 Sales and earnings in corrupt regions

The second test of real implications looks at firm sales in regions where the corruption level is perceived to be high. Firms affected by anti-bribery regulation should suffer a reduction of sales in these regions.

I obtain geographic segment revenues for UK firms and continental European firms from CapitalIQ. Not all firms report geographic revenues, either because they do not have sales outside their home country or because they have only a small fraction of revenues outside their home country. I aggregate quarterly firm sales and earnings from non-US non-Europe operations at three points in time: prior to the passage of the Act (*pre-event*; 2nd quarter 2008 – 1st quarter 2009), after passage but before enforcement of the Act (*mid-event*; II/2009-II/2011), and after the passage of the Act (*post-event*; III/2011-I/2012).²⁸ Given that reported segments are not standardized, I construct generic categories. This subsection focuses on sales in corrupt regions, notably in regions outside Europe and outside the US.²⁹

firms that could not be identified in 2013. Results of this sub-section are unaffected when constraining the sample to the firms used in Table 1 and 2.

²⁸ Data availability limits the sample period to the first quarter of 2012. In order to avoid capturing seasonal sales (earnings) effects arising from the fact that the post-event period only covers quarters III, IV, and I, I compute sales and earnings for the pre-event and mid-event periods only on the basis of quarters III, IV, and I. Only few firms make both earnings and sales data available so that I cannot study whether anti-bribery regulation affects return on assets in regions with high perceived corruption levels.

²⁹ In some cases, firms report very broad geographic segments. Some firms report revenues by country, by precise economic area, or by geographic area in which case I can identify the continent (e.g. revenues exclusively from “China”, or revenues exclusively from “Africa” all qualify as *geographic revenues outside Europe and outside the US*). Some firms distinguish UK revenues from

In terms of overall sales growth in regions where corruption levels are perceived to be high, UK firms suffer a competitive disadvantage over continental European competitors. Between passage of the Act in March 2009 and enforcement in July 2011, foreign sales of UK firms go up by 0.4% compared to sales prior to passage of the Act, while foreign sales of continental European firms go up by 6.4% over the same period. After enforcement of the Act, foreign sales soar but less so for UK firms (Table 7).

--- TABLE 7 ABOUT HERE ---

Moreover, UK firms that operate in more corrupt regions are more adversely affected. For a balanced panel of 256 UK firms with geographic sales in perceivably corrupt regions, I run a panel regression with indicators for the mid-event and post-event period that are then interacted with *Corruption Exposure* (Table 7). These regressions include firm fixed effects and firm-level controls. In all regressions, standard errors are robust. I restrain from clustering at the time level given that mid-event and post-event dummies are essentially time fixed effects.

Both mid-event and post-event dummy load insignificantly positively, in line with the previous result that UK sales go up (Panel B Column 1).³⁰ However, I find that sales of UK firms that operate in more corrupt regions are negatively affected in the mid-event period already. Post-event, sales of such UK firms are even more affected. Mid-event, a one standard deviation increase in *Corruption Exposure* is associated with a 14.2%(=27.4%*0.52) sales reduction; post-event, a one standard deviation increase in *Corruption Exposure* is associated with a 16.7%(=32.2%*0.52) sales reduction³¹.

worldwide non-UK revenues in which case I can only categorize the UK revenues as *exclusively Europe* while I cannot split worldwide non-UK revenues by *Europe*, *US*, and *rest of the world*. Some firms report revenues from “*Europe, Africa, and Australia*” or, in a rather extreme example, revenues from “*Tanzania, Singapore, and France*” in which case I cannot categorize revenues for the purpose of this analysis. I drop such observations.

³⁰ Insignificant time controls in Table 7 may appear at odds with positive growth in Table 6. Note however that Table 6 is based on an unbalanced panel including newly listed firms and firms that become subject to a change in geographic sales reporting standards. Table 7 is based on a balanced Panel of firms that do not change geographic sales reporting over roughly 4 years.

³¹ From my source, I cannot construct relative firm performance (e.g. earnings/sales). Firstly, not all firms report both geographic sales and geographic earnings in Capital IQ. Secondly, firms that report both sales and earnings do not always report coherent geographic regions. For instance, a firm might report sales in “UK” and “Rest of the World” while reporting earnings in “UK”, “China”, and “Europe and Rest of the World”.

7. Alternative identification: Related events

I have so far focused on the passage of the UK Bribery Act on March 25, 2009 as a shock to bribery in the UK. In order to alleviate the concern of other non-bribery related events driving the results on that day, I used the jurisdiction of the UK Bribery Act 2010 as a natural experiment: Foreign firms with UK exposure are subject to the Act (treated); foreign firms without UK exposure are not subject to the Act.

An alternative way to exclude other shocks as a potential explanation is to use multiple bribery-related events. The passage of the draft Act on March 25, 2009 is not the only bribery-related event that occurred in the UK during the early 21st century. If alternative events are not perfectly correlated with bribery-related events, staggering multiple events into one regression helps exclude alternative explanations.

Problematically, this method requires identifying bribery-related events from the media. This is inherently subjective: Deciding whether announced regulatory action and announced failure of regulatory action are important or not requires a judgment call. Additionally, this method requires coding of the direction of news, particularly when events are staggered into one regression. This again can be subject to judgment.

Based on *Factiva* searches, I identify announcements of attempts to pass anti-bribery regulation in the UK in 2000-2011, as well as failure of such attempts. These events constitute updates of the probability of having anti-bribery regulation in the UK. Events are from *Factiva* via a search for ‘bribery’ in UK newspaper articles between 2000 and 2011. Just as in Figure 1, I remove non-events, i.e. articles that do not constitute news, such as journalistic opinions on events of the past. I also exclude articles linked to bribery regulation elsewhere (the US) and articles related to potential bribery cases as opposed to bribery regulation (e.g. speculation about bribery of the Olympic Committee or bribery in cricket).

Table 8 lists events that indicate that the UK will implement bribery regulation at some point in the early 2000s, as well as reversals of these indications. Table 8 then reports the coefficient on corruption exposure of a regression that follows exactly the main regression of this paper in explaining abnormal returns on the

respective event date (Table 2 Column 3). A negative corruption exposure coefficient indicates that firms with higher exposure to high corruption regions have more negative abnormal returns on that day.

--- TABLE 8 ABOUT HERE ---

While not statistically significant in most individual cases, the coefficients on corruption exposure reliably follow the direction of news. In 2000, following OECD pressure to line up UK legislation with the OECD Corruption Directive, the UK government announced a toughening of bribery regulation in May and June 2000, and again in November 2001. The corruption exposure coefficient is insignificantly negative on these days, indicating that firms exposed to regions with high perceived corruption levels are negatively affected. When news that the plans to tighten bribery regulation failed spread on September 2, 2002, the coefficient is positive, reflecting a drop in the probability of UK anti-bribery regulation being passed. In 2003, the UK government issues a draft bill (-0.9%, significant at 10% level) which subsequently failed (+0.48%, +0.41%). In 2005 and 2008, the government again announced that bribery regulation will be toughened; coefficients are negative but insignificantly so. As discussed in the remainder of this paper, the passage of the draft UK Bribery Act is accompanied with a negative coefficient on corruption exposure. Subsequent delays of the Act have no notable impact.

Staggering all events into one regression allows controlling for time fixed effects which I interact with industry fixed effects. I cluster at the firm level given that the key independent variables are constant over events. *Corruption Exposure* does not explain abnormal returns on event days that constitute news in favor of firms that use bribes. However, *Corruption Exposure* significantly explains abnormal returns on event days that constitute adverse news to firms that use bribes. Staggering all events into one regression and multiplying the dependent variable by minus one if events are favorable gives a negative significant coefficient, in line with the main result of this paper.

The results of this subsection confirm the previous main result with an alternative identification strategy.

8. Robustness

I conduct a range of robustness checks. A first concern is that a short event window does not capture the full implications of the event. This would be the case if some information about the passage of the UK Bribery Act had leaked into the market prior to the event without being picked up by major news sources. Similarly, market participants might have been slow to react, e.g. because implications of the regulatory change were unclear initially and became apparent only slowly as more details of the regulatory change became public. I address this concern by running the main regressions for alternative event windows. Table 9 (Panel A) reports the results. I find that *Corruption Exposure* loads negatively only when event date returns are included in cumulative abnormal returns. For 4-week event windows ending before (starting after) the event, the coefficients are insignificant.

--- TABLE 9 ABOUT HERE ---

A related concern is that the main coefficients systematically explain a fraction of returns that is not captured by the Carhart factors. Consider running – on randomly selected days – the main specification with *Corruption Exposure* (from Table 2 Column 1). If *Corruption Exposure* systematically explained abnormal returns, I would find its coefficient to be significantly positive or negative more often than expected by chance. To address this concern, I run the main regressions for each day within four trading weeks around the event. The dependent variable is the abnormal return on each of the trading days. I report significance levels of each *Corruption Exposure* coefficient in Figure 2.³² The coefficient is significant at 1% level only on the event day but not otherwise, easing the initial concern.

--- FIGURE 2 ABOUT HERE ---

Second, one might argue that the measure of corruption exposure does not account for the importance of individual subsidiaries for firms' operations as the measure is based on subsidiary counts rather than size-

³² In unreported results, I confirm this for interactions of corruption exposure, ADR, and industry concentration (from Table 2 Column 4) and governance (from Table 4 Columns 2, 8, and 10).

related subsidiary characteristics. For robustness, I hand-code self-reported geographic segment sales for 2008 from CapitalIQ in order to explain abnormal returns on the event date. Abnormal returns are a relative measure of firm value; I therefore express a firm's segment sales as a percentage of the firm's overall segment sales such that all segments initially add up to 100%. The majority of segment revenues come exclusively from the EU (46.5%). A small fraction comes exclusively from the US (2.9%) and exclusively from non-EU non-US segments (6.4%), with Asia (2.9%) and non-US America (1.4%) the strongest continents. I cannot categorize 44% of revenues.

Using thusly constructed segment sales to explain cumulative abnormal returns on the event day, I confirm the previous results for those 430 firms that report segment sales: Abnormal returns around the event date decrease in non-Europe non-US sales (Table 9 Panel B).

Third, results on governance are based on a subsample of UK firms. In order to address selection concerns, I follow Svensson (2003) and compare the characteristics of firms with governance data to those without. Selected firms are larger (reflecting that large firms are more likely covered by RiskMetrics) and slightly less exposed to corrupt regions. Fourth, one concern with the results on industry concentration is that corruption and concentration are highly correlated. While this concern is addressed by including 48FF industry fixed effects, I also run the main regressions with an *industry corruption* control. I construct an industry-level measure of corruption from World Bank's Business Environment and Enterprise Performance Survey (BEEPS). The measure reflects the fraction of firms in an FF48 industry that consider corruption a *severe* obstacle to conducting business (BEEPS Question J.30).³³ Controlling for industry corruption does not affect the results on industry concentration.

Last but not least, I check that the results are not sensitive to other specifications of the estimation period and outliers. Using a shorter estimation period of 100 days does not affect the results. Removing abnormal returns at the 1st and 99th, 2nd and 98th, and 5th and 95th percentile, respectively, does not affect the results.

³³ BEEPS does not report FF48 industries. However, firms report their *main product's* SIC code which allows me to derive the FF48 industry code. For missing FF48 industries, I use the corresponding FF10 industry corruption level. I construct the measure

9. Conclusion

In a setting where some firms are subjected to local anti-bribery regulation while other firms are not, I show that the ability to pay bribes creates firm value. Unilateral anti-bribery regulation destroys firm value and hence hurts shareholders of regulated firms. At the same time, shareholders of unregulated firms may even benefit from a drop in competition for contracts that are assigned via bribe payments.

Some regulated firms may still have incentives to bribe when local regulation is not strong enough. To prevent this, severe fines imposed on firms and individuals found guilty, along with effective regulatory monitoring, seem in order. These translate into high expected detection costs and therefore drive firms towards compliance.

The techniques and data used in this paper are not restricted to studying bribery; they provide potentially fruitful avenues for future research on firms faced with unilateral regulation (e.g. on child labor) and bilateral agreements (e.g. bilateral trade agreements). The empirical setting in this paper allows studying firm value; it does not allow testing implications for the efficiency of contract allocation. Future research may be interested in implications of unilateral anti-bribery regulation for contract allocation.

on the basis of firms that report corruption to be a '*severe*' issue, but results also hold when I construct the measure on the basis of firms reporting corruption to be a *minor*, *medium*, or *major* issue.

Appendix: Brief Outline of the Legislative Procedure in the UK

In the UK, a draft (bill) has to go through various formal stages in the *House of Lords* (upper house) and the *House of Commons* (lower house); it has to be passed in the same form by both *Houses* before it receives Royal Assent (a formality) and becomes an Act.³⁴

A timeline of events related to the UK Bribery Act is shown in Table A1 below. The UK Bribery Act first went through the House of Lords. 1st and 2nd Readings in the House of Lords take place in front of the (present) Lords; the 1st Reading is without debate and concerns can be raised during the 2nd reading. Sittings take place in Committees of interested members of the House of Lords and comprise a detailed line-by-line examination of the bill. Amendments are collected before sittings and discussed/voted during the sitting. In a House of Lord sitting, subjects discussed and time of discussion cannot be restricted by the government. The bill is then printed with all agreed amendments and moved to the report stage during which all members of the Lords can make amendments and vote. The bill is ‘cleaned up’ during the 3rd reading and moved to the House of Commons. Here, it follows the same steps though sittings are more restricted by subject and time. One amended and voted during Report Stage, the Bill is cleaned up and moved back to the House of Lords in order to agree on the amendments made by the House of Commons. ‘Ping-Pong’ is the act of moving a bill back and forth between both houses until both houses reach agreement on the exact wording. Royal Assent is when the Monarch formally agrees to turn the bill into an Act. If no agreement is reached in the two Houses, the Bill falls but can be passed by the House of Commons using the Parliament Acts, without receiving the consent of the Lords.

Table A1: Timeline of the legislative process of the UK bribery Act 2010

Date	Stage
19/11/2009	1 st Reading: House of Lords
09/12/2009	2 nd Reading: House of Lords
07/01/2010	1 st Sitting: House of Lords
13/01/2010	2 nd Sitting: House of Lords
02/02/2010	Report Stage: House of Lords
08/02/2010	3 rd Reading: House of Lords
09/02/2010	1 st Reading: House of Commons
03/03/2010	2 nd Reading: House of Commons Programme Motion: House of Commons
16/03/2010	1 st Sitting: House of Commons 2 nd Sitting: House of Commons
18/03/2010	3 rd Sitting: House of Commons 4 th Sitting: House of Commons
23/03/2010	5 th Sitting: House of Commons
07/04/2010	Report Stage: House of Commons 3 rd Reading: House of Commons
08/04/2010	Ping Pong: House of Lords Royal Assent

³⁴ See <http://www.parliament.uk/about/how/laws/passage-bill/lords/lrds-lords-first-reading/> (accessed August 15, 2013) for a detailed description of the process.

References

- Aggarwal, Reena, Isil Erel, René Stulz, and Rohan Williamson, 2009, "Differences in governance practices between U.S. and foreign firms: Measurement, causes, and consequences", *The Review of Financial Studies*, 22(8), 3131-3169.
- Armour, John, Colin Mayer, and Andrea Polo, 2011, "Regulatory sanctions and reputational damage in financial markets", *SSRN Working Paper*.
- Bardhan, Pranab, 1997, "Corruption and development: A review of issues", *Journal of Economic Literature*, 35, 1320-1346.
- Beck, Paul J. and Michael W. Maher, 1986, "A comparison of bribery and bidding in thin markets", *Economic Letters*, 20, 1-5.
- Beck, Paul J. and Michael W. Maher, 1989, "Competition, regulation and bribery", *Managerial and Decision Economics*, 10, 1-12.
- Beck, Paul J., Michael W. Maher, and Adrian E. Tschoegl, 1991, "The impact of the Foreign Corrupt Practices Act on US exports", *Managerial and Decision Economics*, 12(4), 295-303.
- Bennedsen, Morten, Sven A. Feldmann, and David Dreyer Lassen, 2009, "Strong firms lobby, weak firms bribe – A survey-based analysis of the demand for influence and corruption", *Working paper*.
- Bertrand, Marianne and Sendhil Mullainathan, 2001, "Do people mean what they say? Implications for subjective survey data", *American Economic Review*, 91, 67-72.
- Carhart, Mark M., 1997, "On persistence in mutual fund performance", *The Journal of Finance*, 52(1), 57-82.
- Cheung, Yan Leung, R. Raghavendra Rau, and Aris Stouraitis, 2012, "How much do firms pay as bribes and what benefits do they get? Evidence from corruption cases worldwide", NBER Working Paper Series.
- Clarke, George R. G. and Lixin Colin Xu, 2004, "Privatization, competition, and corruption: How characteristics of bribe takers and payers affect bribes to utilities", *Journal of Public Economics*, 88, 2067-2097.
- Crutchley, Claire E., Marlin R. H. Jensen, and Beverly B. Marshall, 2007, "Climate for scandal: Corporate environments that contribute to accounting fraud", *The Financial Review*, 42, 53-73.
- D'Souza, Anna E. and Daniel Kaufmann, 2011, "Who bribes in public contracting and why? Worldwide evidence from firms", *SSRN Working Paper*.
- Desai, Mihir A., Alexander Dyck, and Luigi Zingales, 2007, "Theft and taxes", *Journal of Financial Economics*, 84, 591-623.
- Ferreira, Miguel and Pedro Matos, 2008, "The colors of investors' money: The role of institutional investors around the world", *Journal of Financial Economics*, 88, 499-533.
- Fisman, Raymond and Jakob Svensson, 2007, "Are corruption and taxation really harmful to growth? Firm level evidence", *Journal of Development Economics*, 83(1), 63-75.
- Graham, John L., 1984, "The Foreign Corrupt Practices Act: A new perspective", *Journal of International Business Studies*, 15(3), 107-121.
- Harstad, Bård and Jakob Svensson, 2011, "Bribes, lobbying, and development", *American Political Science Review*, 105(1): 46-63.
- Hines, James R. Jr., 1995, "Forbidden payment: Foreign bribery and American business after 1977", *NBER Working Paper*.
- Ince, Ozgur S. and R. Burt Porter, 2006, "Individual equity return data from Thomson Datastream: Handle with care!", *Journal of Financial Research*, 29(4): 463-479.
- Karpoff, Jonathan M., D. Scott Lee, and Gerald S. Martin, 2008, "The consequences to managers for financial misrepresentation", *Journal of Financial Economics*, 88, 193-215.
- Karpoff, Jonathan M., D. Scott Lee, and Gerald S. Martin, 2013, "The economics of foreign bribery: Evidence from FCPA Enforcement Actions", *SSRN Working Paper*.
- Knack, Stephen, 2006, "Measuring corruption in Eastern Europe and Central Asia: A critique of the cross-country indicators", World Bank Policy Research Working Paper 3968.

- Lien, Da-Hsiang Donald, 1986, "A note on competitive bribery games", *Economic Letters*, 22, 337-341.
- Mauro, Paolo, 1995, "Corruption and economic growth", *The Quarterly Journal of Economics*, Vol. 110(3), 681-712.
- Serafeim, George, 2013, "Firm competitiveness and detection of bribery", *SSRN Working Paper*.
- Shleifer, Andrei and Robert W. Vishny, 1993, "Corruption", *Quarterly Journal of Economics*, 108, 599-617.
- Smith, David B., Howard Stettler, and William Beedles, 1984, "An investigation of the information content of foreign sensitive payment disclosure", *Journal of Accounting and Economics*, 6, 153-162.
- Svensson, Jakob, 2003, "Who must pay bribes and how much? Evidence from a cross section of firms.", *The Quarterly Journal of Economics*, 118(1), 207-230.
- Svensson, Jakob, 2005, "Eight questions about corruption", *The Journal of Economic Perspectives*, 19(3), 19-42.
- Uzun, Hatice, Samuel H. Szewczyk, and Raj Varma, 2004, "Board composition and corporate fraud", *Financial Analyst Journal*, 60(3), 33-43.
- Vickrey, W., 1961, "Counterspeculation, auctions and competitive sealed tenders", *Journal of Finance*, 16, 8-37.
- Vickrey, W., 1962, "Auctions and bidding games" in *Recent Advances in Game Theory*, Princeton Conference Series, 29, Princeton, NJ: Princeton University Press, 15-27.

Table 1: Summary Statistics

This table provides summary statistics for UK firms. The sample consists of all publicly listed UK firms with non-missing accounting data in 2008, non-missing subsidiary information in 2008, and non-missing abnormal returns on March 25 and 26, 2009. Cumulative Abnormal Returns (CAR) over event windows [-20;-1], [0;1], and [2;20] around the event date are obtained from parameters of a 4-factor Carhart (1997) model estimated over days [-294;-41]. The event date is March 25, 2009 which is when the draft of the UK Bribery Act was passed by the UK government commission. *Corruption Exposure* combines, for each firm, subsidiary data from Dun&Bradstreet's *Who Owns Whom 2008/2009 UK and Ireland* with Transparency International's *Perceived Corruption Index* for the year 2008. For each firm, *Corruption Exposure* is the sum over all *countries* of (percentage of firm's subsidiaries headquartered in *country* in 2008 * Perceived Corruption Index of *country* in 2008). The resulting sum is subtracted from 10 so that *Corruption Exposure* increases in firms' exposure to high corruption regions. *US Cross-Listing* is a dummy equal to one if a firm was cross-listed via an ADR in the US in March 2009 or in the prior two years. *FTSE4GOOD Constituent* is a dummy equal to one if a firm was constituent of the FTSE4GOOD UK Index in 2008. *Industry Concentration* is a Herfindahl-Hirschman type measure constructed on the basis of market value of all UK firms in Datastream/Worldscope, using Fama-French 48 industries. Institutional ownership is the fraction of a company's outstanding shares owned by institutional investors obtained from Bureau van Dijk. *ISS Governance* is a measure of corporate governance that denotes the percentage of 44 governance features fulfilled by a firm. Governance data is obtained from ISS/RiskMetrics; the measure increases in governance quality. Transparency is the sum of dummies that equal one if *board*, *compensation committee*, *nomination committee*, and *audit committee* are independent, respectively. Number of subsidiaries gives the number of subsidiaries reported by Dun&Bradstreet's *Who Owns Whom 2008/2009 UK and Ireland*. *Market value* is obtained from Datastream/Worldscope for 2008. *%CAPEX* and *%ROA* are *capital expenditure* and *earnings before interest and taxes* in 2008 scaled by *total assets* in 2008.

Variable	Mean	SD	Median	# Obs
Dependent Variable				
CAR [-20;-1]	-0.06%	0.77%	-0.08%	645
CAR [0;1]	-0.85%	2.60%	-0.96%	645
CAR [2;20]	-0.06%	0.73%	-0.07%	645
Main Controls				
Corruption Exposure	2.47	0.65	2.30	645
US Cross-Listing	23%	42%	0%	645
FTSE4GOOD Constituent	33%	47%	0%	645
Industry Concentration	19%	36%	3%	645
Governance Variables				
Institutional Ownership	9.8%	7.8%	8.2%	464
ISS Governance	85	11	87	317
Transparency	2.2	1.3	2.0	302
Other Controls				
Number Subsidiaries	59	114	19	645
Market Value (\$mn)	4580	17140	472	645
%Capex	4.1%	5.0%	2.3%	645
%ROA	2.0%	11.9%	3.1%	645

Table 2: Corruption Exposure and Abnormal Returns of UK Firms around the Passage of the UK Bribery Act 2010

This table relates cumulative abnormal returns of UK firms around the Passage of the UK Bribery Act 2010 to corruption exposure to establish the main result. Columns (1)-(3) consider the whole sample of UK firms; Columns (4)-(6) consider the subsample of UK firms that have at least one subsidiary outside the UK. The dependent variable is *Cumulative Abnormal Returns (CAR)* in % on days [0;1] around the event date. The event date is March 25, 2009 which is when the draft of the UK Bribery Act was passed by the UK government commission. The key explanatory variable is *Corruption Exposure* which increases in firms' exposure to high corruption regions. These and all other variables are constructed as described in Table 1. Columns (2), (3), (5), and (6) include industry fixed effects (Fama-French 48 Industries). *t*-statistics of robust regressions are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	All UK Firms			All UK Firms with Foreign Subsidiary		
	(1) CAR[0;1]	(2) CAR[0;1]	(3) CAR[0;1]	(4) CAR[0;1]	(5) CAR[0;1]	(6) CAR[0;1]
Corruption Exposure	-0.657** (-2.28)	-0.729** (-2.27)	-0.745** (-2.33)	-0.670** (-2.24)	-0.853** (-2.35)	-0.846** (-2.24)
ADR			0.707 (1.14)			0.640 (0.80)
FTSE4GOOD Constituent			0.584 (1.14)			0.954 (1.56)
Log(Number Subsidiaries)			-0.598*** (-2.64)			-0.520 (-1.60)
Log(Assets)			0.295 (1.57)			0.277 (1.13)
%CAPEX			-4.379 (-0.89)			-5.910 (-0.85)
%ROA			3.132 (1.56)			4.095 (1.60)
Industry Fixed Effect (48FF)	No	Yes	Yes	No	Yes	Yes
<i>N</i>	645	645	645	416	416	416
Adj. R-square	0.005	0.024	0.038	0.009	0.030	0.043

Table 3: Corruption Exposure, UK Exposure, and Abnormal Returns of non-UK (*foreign*) Firms

The UK Bribery Act 2010 applies to non-UK firms with UK operations. This table relates cumulative abnormal returns of non-UK (*foreign*) firms around the Passage of the UK Bribery Act 2010 to corruption exposure and UK exposure. Panel A reports number of observations and means of key variables for publicly listed foreign firms by headquarter country. CAR[0;1] denotes *Cumulative Abnormal Returns (CAR)* in % on days [0;1] around the event date. The event date is March 25, 2009 which is when the draft of the UK Bribery Act was passed by the UK government commission. For each firm, cumulative abnormal returns are obtained from Carhart (1997) models estimated over [-294;-41] using local factors. *Corruption Exposure* increases in firms' exposure to high corruption regions and is constructed as described in Table 1. *UK Link* is a dummy equal to one if a firm has at least one subsidiary in the UK. Panel B splits sample firms by corruption exposure and UK Link and reports equally weighted CAR[0;1] of thusly created portfolios. Sub-Panel (1) is based on all sample firms. Sub-Panel (2) is based on Western European sample firms. Sub-Panel (3) is based on non-Western European sample firms (Hungarian, Indian, Polish, and Russian firms). Each Panel reports CAR for all firms (Field 1i), for firms split by having above/below median corruption exposure within their country (columns ii and iii), for firms split by (not) having a UK link (rows 2 and 3), and for the interaction of the two. Each Panel also reports differences in CAR of subsamples. Panel C extends the analysis of Panel B to a multivariate setting, controlling for log(number of subsidiaries), log(assets), %capex, and %roa as well as Fama-French 48 industry fixed effects (Fama-French 10 for Hungarian, Indian, Polish, and Russian firms) and country fixed effects. *t*-statistics of robust regressions are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level.

Panel A: Summary Statistics

Country	#Obs	CAR[0;1]	Corruption Exposure	UK Link
Austria	47	-0.38%	3.13	49%
Belgium	88	-0.23%	2.74	36%
Denmark	99	-0.29%	1.71	38%
Finland	93	-0.16%	1.92	37%
France	280	0.26%	3.07	49%
Germany	580	-0.20%	2.42	33%
Hungary	20	-0.07%	4.81	20%
India	469	-0.12%	5.74	15%
Ireland	27	0.04%	2.39	93%
Italy	224	0.02%	4.34	29%
Netherlands	101	0.17%	2.00	56%
Norway	118	0.10%	2.28	47%
Poland	214	0.12%	5.31	7%
Portugal	32	0.38%	3.79	25%
Russia	56	0.51%	7.34	16%
Spain	111	-0.01%	3.63	37%
Sweden	232	-0.12%	1.43	42%
Total	2 791	-0.04%	3.47	32%

Panel B: Sample Split

(1) All Sample Firms (2791 observations)

	All Firms	Corruption Exposure		Difference
		Low	High	(High-Low)
	(i)	(ii)	(iii)	(iii)-(ii)
(1) All Firms	-0.04%	-0.02%	-0.07%	-0.05%
(2) With UK Link	-0.10%	0.15%	-0.31% ***	-0.46% ***
(3) Without UK Link	-0.01%	-0.08%	0.08%	0.16%
(3)-(2) Difference (Without Link-With Link)	0.09%	-0.23% *	0.39% ***	0.63% *** (Dif-in-Dif)

(2) Western European Sample Firms (2032 observations)

	All Firms	Corruption Exposure		Difference
		Low	High	(High-Low)
	(i)	(ii)	(iii)	(iii)-(ii)
(1) All Firms	-0.08%	0.06%	-0.20% ***	-0.25% **
(2) With UK Link	-0.11%	0.23% *	-0.32% ***	-0.55% ***
(3) Without UK Link	-0.05%	-0.03%	-0.09%	-0.06%
(3)-(2) Difference (Without Link-With Link)	0.05%	-0.26%	0.24%	0.49% ** (Dif-in-Dif)

(3) Indian, Russian, Polish, and Hungarian Sample Firms (759 observations)

	All Firms	Corruption Exposure		Difference
		Low	High	(High-Low)
	(i)	(ii)	(iii)	(iii)-(ii)
(1) All Firms	0.05%	-0.15% *	0.54% ***	0.69% ***
(2) With UK Link	-0.05%	-0.10%	1.63%	1.73%
(3) Without UK Link	0.07%	-0.16% *	0.53% ***	0.69% ***
(3)-(2) Difference (Without Link-With Link)	0.11%	-0.06%	-1.10%	-1.04% (Dif-in-Dif)

Panel C: Multivariate Analysis

	All non-UK Firms		Western European Firms		Indian, Russian, Polish, and Hungarian Firms	
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR[0;1]	CAR[0;1]	CAR[0;1]	CAR[0;1]	CAR[0;1]	CAR[0;1]
UK Link (=1 if firm has UK subsidiary)	0.001 (0.59)	0.003** (2.12)	0.000 (0.18)	0.003 (1.66)	0.006** (2.62)	0.005*** (3.48)
High Corruption Exp.	-0.002 (-1.38)		-0.002 (-1.09)		0.001 (0.42)	
High Corruption Exp. x UK Link (i)		-0.004*** (-3.25)		-0.004** (-2.65)		0.001 (0.32)
High Corruption Exp. x No UK Link (ii)		0.001 (0.53)		0.001 (0.58)		0.001 (0.29)
Constant & Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	48FF	48FF	48FF	48FF	10FF	10FF
	Country	Country	Country	Country	Country	Country
<i>N</i>	1680	1680	1426	1426	254	254
Adj. R-square	0.022	0.024	0.027	0.030	0.014	0.009
p-value for (i)=(ii)		0.003		0.003		0.959

Table 4: Cross Sectional Characteristics and Abnormal Returns of UK Firms around the Passage of the Bribery Act

This table relates cumulative abnormal returns of UK firms around the Passage of the UK Bribery Act 2010 to corruption exposure and cross-sectional firm characteristics. Columns (1)-(3) consider the whole sample of UK firms; Columns (4)-(6) consider the subsample of UK firms that have at least one subsidiary outside the UK. The dependent variable is *Cumulative Abnormal Returns (CAR)* in % on days [0;1] around the event date. The event date is March 25, 2009 which is when the draft of the UK Bribery Act was passed by the UK government commission. The variable *Corruption Exposure* (increasing in exposure to high corruption regions) is interacted with no ADR and ADR (Columns (1) and (4)), No FTSE4GOOD Constituent and FTSE4GOOD Constituent (Columns (2) and (5)), and Concentrated Industry and Competitive Industry (Columns (3) and (6)), respectively. All variables are constructed as described in Table 1 except Concentrated Industry and Competitive Industry which are dummies equal to one if a firm operates in an industry with above- and below-median industry concentration, respectively. All regressions include controls (constant, ADR, FTSE4GOOD, log(number of subsidiaries), log(assets), %ROA, %CAPEX) and industry fixed effects (Fama-French 48 Industries). *t*-statistics of robust regressions are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	All UK Firms			All UK Firms with foreign Subsidiary		
	(1) CAR[0;1]	(2) CAR[0;1]	(3) CAR[0;1]	(4) CAR[0;1]	(5) CAR[0;1]	(6) CAR[0;1]
Corruption Exposure x No ADR	-0.781** (-2.45)			-0.882** (-2.37)		
Corruption Exposure x ADR	-0.584 (-1.46)			-0.745 (-1.50)		
Corruption Exposure x Not FTSE4GOOD		-0.776** (-2.42)			-0.894** (-2.36)	
Corruption Exposure x FTSE4GOOD		-0.544 (-1.44)			-0.554 (-1.28)	
Corruption Exposure x Concentrated Industry			-1.415** (-2.06)			-1.555* (-1.88)
Corruption Exposure x Competitive Industry			-0.556 (-1.53)			-0.648 (-1.56)
Constant & Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	645	645	645	416	416	416
Adj. R-square	0.036	0.037	0.038	0.039	0.043	0.042

Table 5: Firm Governance and Abnormal Returns of UK Firms around the Passage of the UK Bribery Act 2010

This table relates cumulative abnormal returns of UK firms around the Passage of the UK Bribery Act 2010 to corruption exposure and firm governance. The dependent variable is *Cumulative Abnormal Returns (CAR)* in % on days [0;1] around the event date. The event date is March 25, 2009 which is when the draft of the UK Bribery Act was passed by the UK government commission. In Columns (1) and (2), *Governance Up (Down)* is a Dummy equal to one if a firm has above (below) median *Institutional Ownership*. In Columns (3) and (4), *Governance Up (Down)* is a Dummy equal to one if a firm has above (below) median *ISS Governance*. In Columns (5) and (6), *Governance Up (Down)* is a Dummy equal to one if a firm has above (below) median *Transparency*. All variables are constructed as described in Table 1. All regressions include controls (constant, ADR, FTSE4GOOD, log(number of subsidiaries), log(assets), %ROA, %CAPEX) and industry fixed effects (Fama-French 48 Industries). *t*-statistics of robust regressions are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Governance Measure	(1) Institutional Ownership CAR[0;1]	(2) Institutional Ownership CAR[0;1]	(3) ISS Governance CAR[0;1]	(4) ISS Governance CAR[0;1]	(5) Transparency CAR[0;1]	(6) Transparency CAR[0;1]
Corruption Exposure	-1.425** (-2.39)		-1.683 (-1.42)		-2.135* (-1.89)	
Corruption Exposure x Governance Up		-1.639** (-2.34)		-1.528 (-1.06)		-2.560** (-2.03)
Corruption Exposure x Governance Low		-1.070 (-1.05)		-1.785 (-1.24)		-1.434 (-0.78)
Governance Up	-1.016* (-1.77)	0.333 (0.11)	-0.548 (-0.92)	-1.162 (-0.30)	-1.308* (-1.94)	1.356 (0.27)
Constant & Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	464	464	317	317	302	302
Adj. R-square	0.054	0.052	0.064	0.061	0.094	0.091

Table 6: Firms' Corruption Exposure before and after the Passage of the UK Bribery Act

This table establishes real implications of the UK Bribery Act for firms' exposure to high corruption regions. Reported are the mean *Corruption Exposure* for UK Firms and non-UK European firms in 2008 (before the Act was passed) and 2013 (after the Act was in force). Non-UK European firms are further split into firms that had at least one UK Subsidiary in 2008 (and are therefore subject to the UK Bribery Act) and firms that did not have a UK Subsidiary in 2008. *Corruption Exposure* increases in exposure to high corruption regions and is constructed as described in Table 1. Data for 2013 is obtained from Dun&Bradstreet's 2013/2014 *Who Owns Whom* book series. Panel A reports *Corruption Exposure* for all firms with subsidiary data in both 2008 and 2013 (balanced panel). Panel B reports *Corruption Exposure* for all firms with subsidiary data in both 2008 and 2013 and at least one foreign subsidiary in 2008 (balanced panel). *, **, and *** denote significance of differences and difference-in-differences at the 10%, 5%, and 1% level, respectively.

Panel A: All Firms

	Corruption Exposure			Difference	Dif-in-Dif
	Pre-Event (2008)	Post-Event (2013)			
UK Firms (650 firms)	2.408	2.435	(i)	0.026**	(ii)-(i)
European Firms (1,526 firms)	2.559	2.636	(ii)	0.077***	0.051**
thereof with UK Subsidiary (678 firms)	2.600	2.666	(iii)	0.066***	(iv)-(iii)
thereof without UK Subsidiary (848 firms)	2.526	2.612	(iv)	0.086***	0.020

Panel B: Firms with at least one foreign subsidiary in 2008

	Corruption Exposure			Difference	Dif-in-Dif
	Pre-Event (2008)	Post-Event (2013)			
UK Firms (409 firms)	2.472	2.497	(i)	0.025	(ii)-(i)
European Firms (1,183 firms)	2.592	2.679	(ii)	0.086***	0.061**
thereof with UK Subsidiary (678 firms)	2.600	2.666	(iii)	0.066***	(iv)-(iii)
thereof without UK Subsidiary (505 firms)	2.583	2.695	(iv)	0.113***	0.047*

Table 7: Sales in High Corruption Regions around the Passage of the UK Bribery Act

This table establishes real implications of the UK Bribery Act for firms' annual sales outside Europe and outside the US. Panel A reports the evolution of revenues for all sample firms, as well as for firms split by UK firms and non-UK firms. Sales are reported for the *pre-event period* (before the UK Bribery Act is passed; III/2008-I/2009), the *mid-event period* (after the Act is passed and before the Act comes into force; II/2009-II/2011), and the *after-event period* (III/2011-I/2012). The sample is unbalanced and constructed from all listed firms that reported sales by *geographic segments* in CapitalIQ (accessed August 2012) but only if segments could be exclusively categorized as 'outside Europe and outside the US'. As the *after-event* period only contains quarters III, IV and I, sales for pre- and mid-event periods are also constructed only from these quarters. Sales are then annualized. Panels B examines the real implications of the UK Bribery Act for UK firm sales as a function of Corruption Exposure in a multivariate setting. The dependent variable as the log of a firm's mean quarterly sales outside the US and outside Europe in each of the relevant periods for quarters III, IV and I. Thus, each firm is represented by 3 observations. *Mid-event* and *post-event* are dummy variables equal to one if an observation occurs in the respective period. *Corruption Exposure* is constructed as in Table 1 and increases in exposure to high corruption regions. *t*-statistics in parentheses are for robust standard errors. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Panel A: Evolution of Revenues: UK Firms and non-UK Firms (Unbalanced)

	Pre-Event (III/08-I/09)	Mid-Event (II/09-II/11)	Post-Event (III/11-I/12)
Sales (in \$000s per annum)			
All Sample Firms	474 451	498 466	695 587
Non-UK Firms	371 178	394 794	556 823
UK Firms	103 273	103 672	138 765
Sales growth			
All Sample Firms		5.1%	39.5%
Non-UK Firms		6.4%	41.0%
UK Firms		0.4%	33.8%

Panel B: Exposure to High Corruption Regions and Sales

	(1) Log(Sales)	(2) Log(Sales)
Mid-Event (=1 if II/2009-II/2011)	0.013 (0.21)	0.009 (0.15)
Mid-Event x Corruption Exposure		-0.274** (-2.12)
Post-Event (=1 if III/2011-I/2012)	0.086 (1.27)	0.080 (1.19)
Post-Event x Corruption Exposure		-0.322*** (-2.35)
Fixed Effects	Firm	Firm
<i>N</i>	705	705
Adj. R2	0.950	0.951

Table 8: Abnormal Returns on Dates of Attempts to Pass Anti-Bribery Regulation

This table establishes implications of news related to bribery regulation for firm value of UK firms. Events are from a Factiva search for 'bribery' in UK Newspapers. Events that are not related to bribery regulation, as well as non-events (such as journalistic opinions on events of the past), are removed. For each event, the table reports the coefficient on *Corruption Exposure* for a regression that follows exactly Table 2 Column 3. The dependent variable is *Cumulative Abnormal Returns (CAR)* in % on days [0;1] around respective dates. The passage of the draft of the UK Bribery Act 2010 on March 25, 2009 through a UK government commission is included for comparison. The key explanatory variable *Corruption Exposure* increases in firms' exposure to high corruption regions. In addition to the controls use in Table 2 Column 3, all staggered regressions include *FF48 x Date* fixed effects. For the staggered regression with all events, CAR[0;1] of events with positive predicted direction are multiplied by -1. *, **, and *** denote significance at the 10%, 5%, and 1% level. Standard errors are robust for regressions with only one event and clustered at firm level for staggered regressions.

Date	Headline/Content	Source	Predicted Direction	Corruption Exposure
30/03/2000	OECD urges UK to toughen anti-bribery laws.	The Guardian.	-	-0.06%
23/05/2000	UK government to announce new laws aimed at bribery crackdown.	The Guardian; Financial Times.	-	-0.57%
21/06/2000	UK home secretary announces new anti-bribery law.	The Independent; The Guardian.	-	-0.16%
09/11/2001	UK Government announces measures to tackle international corruption, proposes tightening bribery laws, crack down on bribery by Britons abroad.	Associated Press Newswires; Evening News - Scotland.	-	-0.67%
02/09/2002	British anti-corruption plans branded toothless. Blair proposal wins backing of just five firms.	The Guardian.	+	0.69%
25/03/2003	UK government issues draft corruption bill.	WMRC Daily Analysis.	-	-0.90% *
01/08/2003	Corruption bill faces delay over loopholes.	Financial Times.	+	0.48%
18/02/2004	UK government backtracks over bribery.	Financial Times.	+	0.41%
09/12/2005	Corruption laws to be overhauled in the UK.	Global Insight Daily Analysis.	-	-0.23%
19/11/2008	Bribery law reform plans focus on overseas work of businesses. Managers face jail in bribery cases. (published 20/11/2008)	The Times; Press Association National Newswire; The Guardian; The Daily Telegraph.	-	-0.77%
25/03/2009	Draft bribery bill (<i>UK Bribery Act 2010</i>) passed by government commission & reaches parliament.	Reuters; Guardian; Financial Times; Press Association National Newswire.	-	-0.75% **
20/07/2010	Clarke delays enforcement of bribery law.	Financial Times.	+	0.22%
31/01/2011	UK delays enforcement of UK Bribery Act 2010 by 3 months.	The Wall Street Journal; Reuters.	+	-0.20%
Staggered				
All Positive Events			1	0.16%
All Negative Events			-1	-0.53% **
All Events				-0.34% **

Table 9: Robustness: Alternative Event Windows and Alternative Measure of *Corruption Exposure*

This tables establishes robustness of the main result for alternative event windows and an alternative measure of corruption exposure. Panel A is a robustness check for the main result using alternative event windows around the event date (Columns 1-2), before the event date (Columns 3-4), and after the event date (Column 5). The set-up follows exactly the original set-up (Table 2 Column 3) except for the dependent variable which is replaced by cumulative abnormal returns for [-1;+1], [-20;-1], [-2;-1], and [+2;+20], respectively. The event date (day 0) is March 25, 2009 which is when the draft of the UK Bribery Act was passed by the UK government commission. For comparison, results of the original set-up are reported in Column 2 (highlighted in grey). For brevity, only the key explanatory variable *Corruption Exposure* (which increases in firms' exposure to high corruption regions) is reported. Panel B is a robustness check for the main result using an alternative measure of *Corruption Exposure*. The set-up follows exactly the original set-up (Table 2 Column 3) except the main control *Corruption Exposure* is now measured by geographic revenues. Geographic revenues are obtained from CapitalIQ but reported only by a subset of firms. %Revenue US, %Revenues Europe non-UK and %Revenues nonUS nonEurope measures the percentage of a firm's overall revenues that come exclusively from the US, exclusively from Europe (excluding the UK), and exclusively from non-US non-Europe, respectively. In both panels, *t*-statistics in parentheses are for robust regressions. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Panel A: Alternative Event Windows

	CAR Around Event Date		Before Event		After Event
	(1)	(2)	(3)	(4)	(5)
	[-1;+1]	[0;+1]	[-20;-1]	[-2;-1]	[+2;+20]
Corruption Exposure	-0.684*	-0.745**	0.317	0.049	-0.136
	(-1.76)	(-2.33)	(0.34)	(0.14)	(-0.12)
Constant & Controls	Yes	Yes	Yes	Yes	Yes
Fixed Effects	48FF	48FF	48FF	48FF	48FF
<i>N</i>	645	645	645	645	645
R2	0.034	0.038	0.097	0.032	0.017

Panel B: Geographic Revenues as Alternative Measure for *Corruption Exposure*

	(1) CAR[0;1]
Split:	All firms
%Revenue US	0.012
	(0.71)
%Revenue Europe non-UK	-0.001
	(-0.18)
%Revenue nonUS nonEurope	-0.029**
	(-2.05)
Controls	Yes
Industry FE	48FF
<i>N</i>	430
R-square	0.078

Figure 1: Number of newspaper articles that cover anti-bribery regulation around the passage of the UK Bribery Act

This figure illustrates newspaper coverage of anti-bribery regulation in major UK newspapers around the passage of the draft of the UK Bribery Act 2010 on March 25, 2009 by the UK government commission. The figure is based on a *Factiva* search in UK newspaper articles that (i) include the term ‘bribery’ and (ii) include the terms ‘United Kingdom’ or ‘Britain’ and (iii) do not include the terms ‘cricket’, ‘olympic’, ‘football’, or ‘contract notice’.

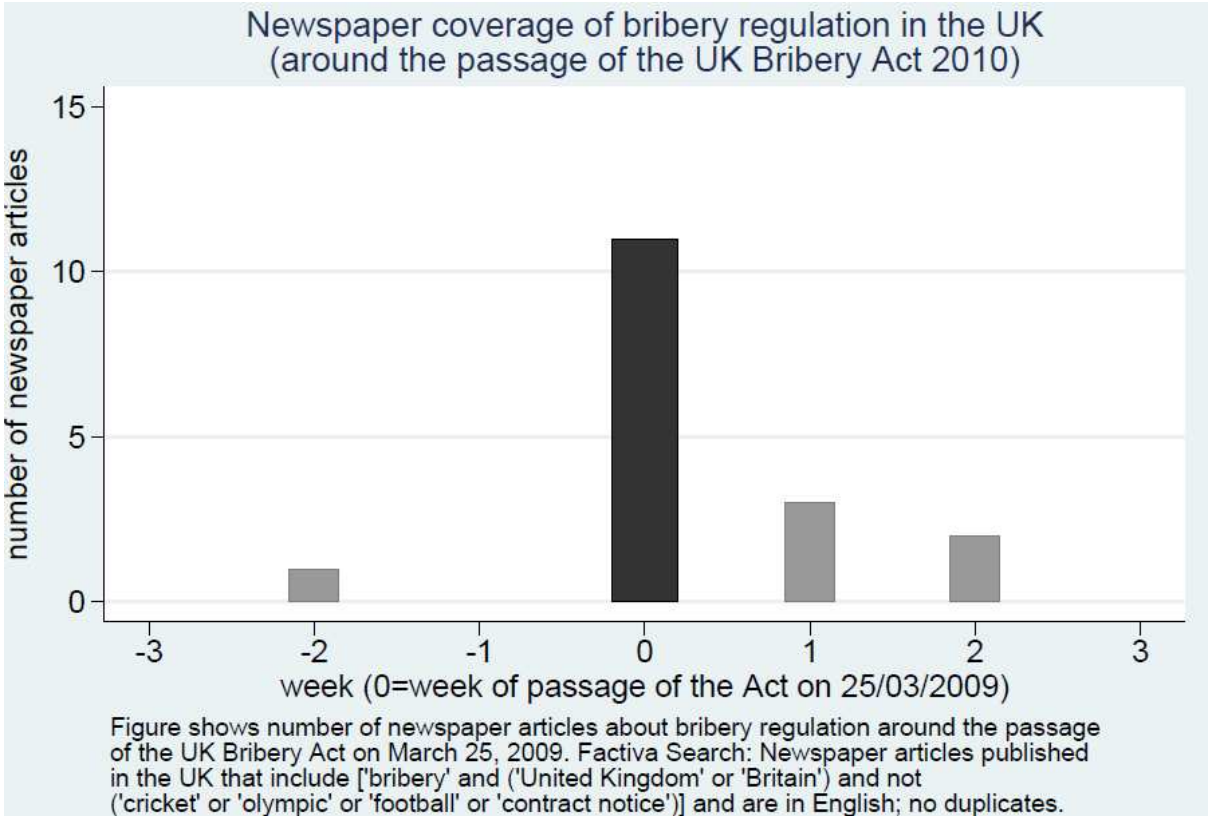


Figure 2: Explanatory Power of *Corruption Exposure* around the Passage of the UK Bribery Act 2010

This figure reports the explanatory power of the *Corruption Exposure* coefficient in OLS regressions for each day within four trading weeks around the event date. The regression set-up follows exactly Table 2 (Column 3), except for the dependent variable which is replaced by firms' daily abnormal returns on trading days -9, -8, ..., 0, ..., 8, and 9 relative to the event date, respectively. Trading days are denoted on the x-axis; t-statistics of the main regression coefficient *Corruption Exposure* (increasing in firms' exposure to high corruption regions) are reported on the y-axis (light grey) and highlighted if significant at 1% level (black; robust cluster). The event date is March 25, 2009 which is when the draft of the UK Bribery Act was passed by the UK government commission.

