When Enron Met Alibaba: The Rise of VIEs in China

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We conduct what is, to our knowledge, the first systematic examination of Chinese-based firms that utilize a variable interest entity (VIE) structure to evade Chinese regulation on foreign ownership to list equity in the U.S. The use of the VIE structure is not only questionable under Chinese laws but also exacerbates the agency costs within the firm. We find that Chinese VIE firms have a Tobin's Q as much as 35% lower than Chinese non-VIE firms, and this discount is concentrated in firms with higher risks of government intervention and managerial expropriation. To remediate these risks, VIE firms are more likely to have a politically connected director on the board, hire a Big N auditor and have higher levels of institutional ownership. All of these characteristics help to remediate the VIE valuation discount. Overall our results suggest that valuation discounts associated with the VIE structure are substantial, vary systematically across settings based on differences in regulatory and agency risk, and can be mitigated by improved monitoring.

"Every V.I.E. company – Baidu, Sina, Alibaba, Tudou, all of them – is operating by the grace of their Chinese partners. This mess is going to make Enron look like a trivial, little drop in the bucket."

---Steve Dickinson, partner at the international law firm Harris and Moure, and author of Chinalawblog.com

1. Introduction

The government of the People's Republic of China (China or the PRC) faces a unique balancing act of satisfying its desire to limit foreign control of sensitive sectors of the economy while granting domestic firms access to foreign capital and expertise to support economic growth. To satisfy both incongruous goals, direct foreign investment is welcomed in some cases, but restricted or even prohibited for a range of politically sensitive industries, including subsectors within banking, newspaper publishing, television broadcasting, wholesaling and retailing, mining, agriculture, utilities, telecommunications and the internet.

Because Chinese companies in general face limits on the availability of domestic capital and expertise to facilitate growth, Chinese firms in restricted industries have adapted by creating financing structures that are designed to satisfy the letter of the law while violating the spirit of the law using variable interest entities (VIEs).[1] In a typical Chinese VIE structure, the foreign investors do not own shares directly in the Chinese operating entity but, rather, own shares in an intermediary wholly foreign-owned entity (WFOE) in China. The WFOE, in turn, provides capital through a loan to a VIE that conducts the operations in China and is wholly owned and operated by local Chinese investors. The uses a loan because foreign investors are not allowed to own equity stakes in the VIE, and the loan is accompanied by various contractual arrangements that are designed to provide a level of control and cash flow rights to the foreign

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[1] Although VIEs can arise for many reasons (e.g., securitizing loans), in this paper, we use the term to refer only to VIEs used by firms domiciled in China for the purpose of evading ownership restrictions. As described below, companies domiciled in China are explicit in the use of VIEs for this purpose.

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investors without explicitly violating the Chinese regulations against foreign investors owning or controlling the VIE. As a result, foreign investors do not have a direct ownership stake or direct control of the underlying Chinese VIE operating entity, and instead only have indirect rights to receive cash flows and exercise control through contracts. The legality and enforceability of these contracts are questionable under Chinese law because the contracts are designed to circumvent the intent of the law and it is unclear whether arrangements explicitly designed to circumvent the spirit of the law are themselves illegal.[2] As a result of the lack of direct ownership by the U.S. shareholders and the difficulty of enforcing these contracts in China, the use of VIEs exacerbates the agency conflicts between U.S. shareholders and the Chinese managers who typically directly own and control the operations of the VIE. For accounting purposes, the VIE is typically consolidated on the books of the U.S.-listed parent, despite the lack of equity ownership interest or direct operating control.[3]

Given that Chinese firms have raised hundreds of billions of dollars in U.S. markets through VIE structures (including Alibaba Holdings Group, the largest IPO in history), government officials are clearly aware of the existence and motivation for VIEs. However, the Chinese government has not, in general, acted to either invalidate or confirm the legality of these structures.[4] One interpretation is that, by permitting ambiguity, the government allows Chinese firms in restricted industries to raise capital while retaining the option to invalidate the structure,

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[2] The U.S.-China Economic and Security Review Commission, in its report to Congress, highlights the riskiness of Chinese VIEs, "In sum, this intricate ruse is a way of making the business appear to be Chinese-owned to Chinese regulators while claiming to be a foreign-owned business to foreign investors. Neither claim is technically true, and the arrangement is highly risky and potentially illegal in China." (Rosier, 2014)

[3] In some sense, there is an inherent inconsistency between the notion that the VIE is owned and controlled by Chinese investors for purposes of regulation in China but is owned and controlled by US investors as a basis for consolidation in the US.

[4] The Chinese government has acted in specific cases to outlaw the structure, most notably in outlawing the Buddha Steel VIE structure. However, as noted by a leading law firm, "it is not clear whether this is a highly sector-focused event, part of a broader move by the PRC government against VIE structures—or … a "one-off" event driven by local facts and circumstances." (Shoesmith, 2011)

either for specific transactions or more generally, at any point (see, for example, Gillis and Lowry, 2014, for a more general discussion of the potential motivations). Further, the implicit threat of potential government action and inherent ambiguity likely disciplines management to undertake actions that support (and avoid actions that run counter to) government priorities to reduce the risk of government intervention. Given the prevalence of VIE firms in important sectors of the economy and the desire of the Chinese government to attract foreign capital, it would be potentially disruptive to invalidate the structure entirely.[5] On the other hand, given that they violate the spirit of the law, foreign investors likely have little or no explicit recourse should it become politically expedient to invalidate the structure, either for specific transactions or more generally.

As discussed in more detail in the next section, the legal ambiguity underlying the VIE structure creates at least three forms of risk to U.S. shareholders. First, government officials (representing the Chinese national government, a local government or judiciary) could intervene to invalidate the VIE structure either in a specific context or more generally, potentially leaving foreign investors with little or no recourse to recover their investment. Alternatively, government officials could use the implicit threat of potential invalidation to pressure the firm to undertake actions that would advance government policies (or benefit government officials) to the detriment of shareholders, such as increasing hiring, donating to specific charities, or sourcing product locally. Second, the Chinese managers of the VIE could expropriate firm assets leaving foreign shareholders with little (if any) legal recourse since the Chinese courts are unlikely to enforce contracts designed to circumvent the spirit of the law. Third, since foreign

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[5] The first VIE-type structure was the Chinese media company, Sina Corporation's, listing on the NASDAQ in 2000. The popularity of the structure initially increased gradually but, absent regulatory backlash, gained traction to include most of the major Chinese listings in recent years across a range of industries. (Roberts and Hall, 2011)

shareholders are not legal owners of the VIE entity, any distributions carry uncertain tax consequences and face possible capital controls.

Despite the prevalence of the VIE structure in practice and its inherent and unique risks, ours is, to our knowledge, the first study to provide systematic direct empirical evidence on Chinese VIEs. In particular, we examine whether U.S. investors discount firms that utilize VIEs, how discounts associated with VIEs change based on Chinese government actions, the cross-sectional determinants of the VIE valuation discounts, actions managers of these firms take to remediate investor concerns, and the extent to which those actions are successful in mitigating the valuation discount.

We begin by gathering a comprehensive sample of VIE firms from a variety of sources including text searches of 10-Ks and other filings. Disclosure regarding the use of VIEs varies dramatically across firms and over time, but generally we observe more thorough disclosures in later years. At the extremes, some firms simply mention the VIE structure in passing, while others explicitly disclosing the legal risks of the VIE, documenting which specific subsidiaries utilize the VIE and providing pro forma balance sheets and income statements for these subsidiaries, as well as summarizing the specific contracts including the parties and terms. As of the most recent period, 42% of the Chinese firms traded in the U.S. use a VIE structure, with representation across 48 two-digit SIC industries, ranging from agricultural production to motion pictures. Business services (SIC 73), electronic equipment (SIC 36), communications (SIC 48), educational services (SIC 82) and chemical products (SIC 28) have the largest number of VIE firms, although those industries also have a substantial number of non-VIE firms.

In our primary analysis, we examine the extent to which foreign investors appear to price protect by reducing the multiples paid in valuing firms with the VIE structure. Given the risk

inherent in utilizing a VIE, we expect that investors will be willing to pay less for firms with the VIE structure, all else equal. We compare Tobin's Q between Chinese firms listed in the U.S. with a VIE structure and Chinese firms listed in the U.S. without a VIE structure. Across a wide range of tests, including t-tests of sample means, OLS regressions with industry- and time-fixed effects and matched-sample tests, we provide consistent evidence that valuations are substantially lower among firms with the VIE structure. Our estimates suggest a discount of as much as 35% in Tobin's Q for the VIE firms, implying a reduction in enterprise value of about $78.5 billion across the VIE firms in our sample. Results are robust to controls for profitability and growth suggesting that the discount reflects concerns about the agency issues and future viability of the VIE structure. The results suggest that, while Chinese restrictions on ownership permit the government to maintain control over sensitive sectors, they also substantially reduce firms' ability to attract capital at attractive valuations.

To corroborate the fact that the relation between the existence of a VIE and firm value is associated with uncertainty inherent in the VIE structure, we next implement an event-study approach and examine the stock market reaction to events that affect the viability of the VIE structure. We search Factiva for Chinese and U.S. news stories related to the VIE structure and find six distinct events that likely affect the risk of government intervention for VIE firms and five distinct events related to the risk of managerial expropriation associated with VIE structures. Using U.S. listed, Chinese non-VIE firms as the benchmark group, we find that the stock prices of VIE firms react negatively (positively) to events in which the aforementioned risks increase (decrease). This evidence is consistent with U.S. equity investors recognizing the unique uncertainties associated with the VIE structure relative to other Chinese investments and adjusting prices as the perceived risk changes.

Given that foreign investors appear to apply a discount in valuing firms with a VIE structure, we then examine two cross-sectional differences in firm characteristics that could affect the valuation discount associated with the VIE structure. First, we examine variation in the geographic location of operations and assets. Based on our conversations with securities lawyers in China, U.S. investors have more recourse, and therefore less risk, when the VIE firm has operating assets outside China because it is easier for the foreign investors to seek recourse in non-Chinese courts. As a result, we expect that the valuation discount would be reduced for VIE firms with substantial foreign operations. Second, we expect larger firms to be less exposed to risks associated with VIEs. Specifically, the Chinese government is likely to be hesitant to crack down or permit expropriation from "too big to fail" VIE firms because it could shake confidence among foreign investors more generally. One argument in favor of investments in VIE firms, despite the inherent risk, is that the potential fall of large VIE firms could disrupt the Chinese economy if they were permitted to fail (see, for example, Hogan and Levells 2012). In fact, some of these firms are among the "crown jewels" of the Chinese economy and reflect China's successes in moving from an economy based on manufacturing to one diversified with high-value services and information technology. Empirical results confirm these predictions, suggesting that the VIE discounts tend to be larger in smaller firms with fewer overseas operations.

After establishing that foreign investors appear to discount Chinese firms using the VIE structure, we next examine whether VIE firms are more likely to hire directors with political connections to alleviate the risks of government intervention. Politically connected directors could mediate between Chinese managers and local officials to moderate any demands that might arise, and ensure the continued viability of operations, similar to the "embedded

intermediaries" as documented in Li et al. (2016). Consistent with this reasoning, we find that VIE firms are twice as likely to have a director with a political connection, and the presence of high-level, politically-connected directors significantly tempers the valuation discount associated with VIE firms.

We then examine two oversight mechanisms that could alleviate the managerial expropriation issues created by VIEs.[6] First, prior research such as Fan and Wong (2005) suggests that Big N auditors can mitigate agency conflicts. In our context, the increased scrutiny associated with a large auditor is more likely to reduce asset expropriation by Chinese owners of the VIE. Second, studies suggest that institutional investors tend to invest in firms with fewer agency issues and have greater incentives to monitor firms (Gillan & Starks, 2003). We find that VIE firms are 11% more likely to employ large auditors, and 26% more likely to have institutional ownership above the median, relative to non-VIE firms. In addition, the types of institutional investors in the VIE firms tend to be those that prior research suggests are more likely to actively monitor management actions.

We next examine whether enhanced external oversight among VIE firms mitigates the valuation discount of VIE firms. We find that the valuation discount is statistically and economically lower for VIE firms that retain a Big N auditor or have an above-median level of institutional ownership. Broadly, our results suggest that investors perceive that VIE firms with these characteristics have less risk and that the importance of these oversight mechanisms is greater for VIE firms relative to non-VIE firms.

Finally, in ongoing research, we provide some preliminary evidence that the political

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[6] We view the presence of a Big-N auditor or institutional investors as indicators of firms that are likely to be characterized by fewer agency issues, both because firms with fewer inherent agency issues are likely to attract higher quality auditors and institutional investors, and because the auditors and institutional investors provide greater oversight once they are in place.

risks inherent in the VIE structure may create incentives for managers to undertake actions to further Chinese public policy goals. In particular, we find that VIE firms are characterized by "excess" levels of employment relative to non-VIE firms and relative to their underlying economics, especially at the beginning of the life of the VIE when political scrutiny is likely to be the highest. Although these results are consistent with the effects of greater political pressures, we interpret them with caution as they are preliminary and the motives behind the firms' decisions are not directly observable. We are in the process of reinforcing and expanding this analysis.

We believe that an understanding of the VIE structure, its implications for investors and managerial responses is important for several reasons. First, because this structure is widely used in practice for U.S. investors wishing to gain access to Chinese investments in important sectors, understanding the potential agency and resulting valuation issues is inherently interesting.[7] As we document, foreign shareholders have invested hundreds of billions of dollars in Chinese firms with VIE structures and the proportion of investments using VIEs has increased consistently over time. In addition, many of the largest and best-known U.S. listed companies from China use the VIE structure, including Alibaba, Baidu, Weibo, Sina and Autohome. Given the prevalence, magnitude of investments, and growth over time, and the fact that in many cases using a VIE is the only feasible approach for U.S. investors to gain access to certain Chinese sectors, we believe that understanding the prevalence, valuation implications and managerial responses associated with the VIE structure is likely to be important to a wide range of investors, regulators and legal scholars.

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[7] For example, Tom Shoesmith, head of the China practice at law firm Pillsbury Winthrop Shaw Pittman LLP observes, "You can't walk down the street in Palo Alto without tripping over a VIE situation, because if you are in the Internet space and looking at China you are looking at VIE," *Wall Street Journal,* April 19, 2015.

Second, the VIE structure is likely to be of interest to researchers and practitioners who are interested in understanding China more generally because it illustrates how the Chinese government attempts to balance state control with access to foreign capital and expertise for economic development. The legal ambiguity associated with the VIE structure permits the Chinese government flexibility to effectively dissolve at will VIEs in sensitive sectors of the economy by invalidating the structure, and entails an implicit threat to managers and shareholders of VIEs to help ensure that their behavior is consistent with government priorities. While the Chinese government and officials likely benefit from the regulation and use of the VIE structure, our results suggest potential costs in terms of valuation discounts.

Third, the Chinese VIE structure is likely to be of interest to U.S. regulators and standard setters. Chinese VIEs are generally consolidated onto the books of the US partner, which may lead readers to presume that the listed holding company has direct ownership rights in the VIE instead of contractual rights with questionable legal standing.[8] The Financial Accounting Standards Board (FASB) is currently considering VIE accounting as part of its consolidations project. Our analysis suggests that, at a minimum, standard setters might consider better defining disclosure requirements for VIEs. In particular, investors would likely find disclosure of explicit contract terms, risk factors and, perhaps, pro forma financial statements for the subsidiaries utilizing VIE structures to be useful information. This is particularly important as we observe significant variation in the proportion of the holding company's operations that utilize the VIE structure. However, in many cases, relatively little information is explicitly disclosed, limiting the ability of investors to incorporate the implications of the VIE structure in valuing the

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[8] In particular, the FASB issued Interpretation Number 51 which requires consolidation if the sponsor entity can direct the VIE activities, has the obligation to absorb expected losses, or the right to receive residual returns (FASB, 2003).

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firm. At a minimum, our results suggest that the VIE structure may have significant valuation implications and likely merits thorough disclosure.

Our analysis is, of course, also subject to important caveats. In particular, we cannot observe what valuations for the VIE firms would have been absent the VIE structure. Rather, we rely on a control sample of US-listed Chinese non-VIE firms matched on, and controlling for, variables likely to affect valuations in our primary specifications. In addition, we provide important confirmatory evidence based on tests evaluating the stock price reaction to events likely to affect VIE discounts as well as cross-sectional analyses of the predicted determinants of VIE discounts. Nevertheless, we acknowledge that our evidence is necessarily circumstantial given the inherent inability to observe the counterfactual.

In the next section, we provide more details on the VIE structure and the related research literature. Then, we discuss our sample, empirical approach and results. In the final section, we provide conclusions and discuss ongoing research.

2. Background and related literature

The term "Variable Interest Entity" has its origins in the FASB's Interpretation No. 46, Consolidation of Variable Interest Entities (FIN 46). FIN 46 defines ''variable interest entities'' as thinly capitalized entities with equity interests insufficient to finance the operations of the entity and not possessing the usual relationship between ownership, control, and risk. Under FIN 46, the entity exposed to the majority of expected losses or residual rewards is deemed the primary beneficiary and must consolidate the entity, regardless of equity ownership (FASB 2003).

As noted earlier, the purpose for using a VIE structure in the China context is to allow

foreign investment into regulated companies that operate in "sensitive" sectors while avoiding direct ownership or control to avoid running afoul of the letter of the Chinese regulations.[9] To be effective, the VIE must serve two basic, but conflicting, functions: (1) convince Chinese regulators that the structure is legal under Chinese law in that foreigners do not own or control Chinese companies operating in sensitive sectors, and (2) at the same time convince foreign investors that they do, in fact, have effective ownership and control. To do so, managers execute a variety of contracts between the publicly listed holding company and the VIE and its Chinese owners. These agreements transfer funding to the VIE owners in the form of a loan in exchange for cash flow and some form of control rights or indirect oversight. To the extent that the publicly listed foreign company is deemed to be the primary economic beneficiary of the VIE, it consolidates its operations under FIN 46. For more information on this structure, see the appendix.

The Ministry of Commerce (MOFCOM), and the National Development and Reform Commission (NDRC) promulgate the regulations governing foreign ownership. The Catalog for the Guidance of Foreign Investment Industries (the Catalog), a publication jointly issued by the NDRC and MOFCOM, delineates three broad categorizations of industries—those for which foreign investment is encouraged, restricted or prohibited. This regulation restricts foreign ownership to less than 50% (0%) if a sector is in the restricted (prohibited) category. If the Catalog does not list a sector, direct foreign investment is generally permitted. By instituting the VIE structure, foreign investors are able to gain an economic interest in restricted and prohibited industries as long as the Listed Company does not have any direct equity ownership in the

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[9] Firms are often quite clear as to the intent of their VIE structures. For example, the 2008 annual report for China Forestry Inc. explains the purpose of the corporate structure in footnote 1: "these arrangements have been undertaken solely to satisfy the PRC regulations, which prohibits [sic] foreign companies from owning or operating the forestry business in the PRC."

operating company (VIE). The use of the VIE structure enables Chinese domestic operating entities to gain access to foreign capital markets and expertise through offshore listings while abiding by the letter of the Chinese government restrictions on foreign ownership.

The Ministry of Commerce's website contains a list of encouraged, restricted and prohibited sectors.[10] The MOFCOM and NDRC do not disclose the criteria or process for adding or removing sectors from the list, but the list appears to reflect a broad range of considerations such as protecting China's cultural heritage, influencing educational content, enhancing national security, controlling access to information, fostering nascent industries and discouraging certain types of behavior. The list includes dozens of subsectors within broader categories of farming, mining, manufacturing, utilities, transportation, wholesale and retail trade, banking and insurance, real estate, leasing and commercial services, research and technical services, education, and arts and entertainment. In many cases, the distinctions are narrow between encouraged, restricted and prohibited sectors. For example, NQ Mobile ("a leading global provider of mobile internet services") operates in a restricted sector (utilizing the VIE structure) and is in the same 2-digit SIC industry classification (73) as Global Sources Ltd. ("a leading business-to-business media company"), which is not in a restricted sector (and does not use a VIE). As a result, the same two-digit SIC code contains both firms with and without VIE structures, which permits us to make comparisons between VIE and non-VIE firms within the same two-digit SIC code in our empirical analysis.[11]

The Chinese VIE structure entails at least three broad categories of risk for the foreign investor. The first, as discussed above, is regulatory risk. The Chinese government has neither

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[10] See: http://english.mofcom.gov.cn/article/policyrelease/aaa/201203/20120308027837.shtml accessed May, 2017.
[11] We also include industry and year fixed effects as well as controls for other factors such as profitability and growth that might affect valuations in our empirical analyses.

explicitly approved nor disallowed VIEs designed to evade ownership restrictions. Given that

the VIE structure violates the spirit of the law, VIEs could be invalidated at any time, potentially

retroactively, leaving foreign investors with little or no recourse to recover their investment. In

fact, some Chinese regulators have issued pronouncements invalidating the VIE structure in

specific cases, although the structure remains in use.[12] More generally, Chinese regulators have

not endorsed the legality of the VIE structure, although they have not explicitly outlawed it

either.[13] Recent draft regulations acknowledge the existence of VIEs, and propose approaches to

help clarify the notion of "actual control" for purposes of determining whether foreign

investments satisfy ownership restrictions.[14] However, those measures have not yet been

enacted.

Second, given that the VIE structures are designed to circumvent government regulations,

the contracts between the non-Chinese shareholders and the local Chinese companies (the VIEs)

may not be legally enforceable, which exacerbates the agency issues between the managers and

shareholders and possibly facilitates managerial expropriation.[15] The Chinese legal system, in

general, provides fewer protections for foreign owners, making it difficult to enforce contracts

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[12] For example, the Ministry of Industry and Information Technology issued a circular in 2009 prohibiting the use of the VIE structure by companies in the internet gaming sector. However, the prohibition appears to have been largely ignored (Gillis, 2012). More substantively, Buddha Steel was forced to withdraw its public offering in 2011 because the Chinese government disallowed its VIE structure. It is unclear whether the prohibition was indicative of a more general shift in perspective or reflected specific concerns about those sectors.

[13] Alibaba's prospectus, for example, explicitly states "If the PRC government deems that the contractual arrangements do not comply with PRC governmental restrictions…we could be subject to penalties or be forced to relinquish our interests in those operations".

[14] Given their importance to the Chinese economy, commentators differ on the likelihood of new regulations being passed and the effect on existing and future VIEs of the regulations if they are enacted. (See, for example, Dickinson, 2015 and Betts et al., 2015).

[15] Perhaps the most famous case highlighting the agency issues associated with VIEs occurred in 2012 when Alibaba's holding company unilaterally moved the Alipay subsidiary out of the consolidated group and into a company wholly owned by Jack Ma. Yahoo (which owned 43% of Alibaba Group) and Softbank (which owned 30%) were not notified or consulted. In response, the hedge fund Greenlight Capital Inc. sold all of its Yahoo stock, noting, "Shortly after the purchase, the value of the Chinese assets came into doubt as the CEO of the Chinese unit hived-off a valuable subsidiary into a corporation that he personally controls. This wasn't what we signed up for." (Millman, 2014).

through the legal system. More substantively, and more specifically relevant to the VIE structure, the law prohibits enforcement of contracts that are designed to circumvent the intent of the law. This is clearly an issue in the case of VIEs since the structure is explicitly designed to circumvent the limitations on ownership and control by foreign investors. As noted by Steve Dickinson, partner at Harris & Moure and co-author of the China Law Blog, "To the extent a VIE contract structure is designed to circumvent the requirements of Chinese law, such contracts are void. Not voidable, void. It is as if they did not exist." (Aubin 2013).[16] Consistent with that interpretation, in cases in which foreign investors have litigated over contract violations associated with VIEs, Chinese courts have, in all cases of which we are aware, invalidated contracts that were designed to circumvent the spirit of the law prohibiting foreign control of Chinese companies in the sector, leaving foreign investors with little or no recourse.[17]

Third, when the VIE wishes to return profits to the foreign entity, it faces additional risks associated with capital controls and taxes. In particular, the tax status of payments from the VIE to the foreign entity is unclear and may result in double taxation of profits—once when received by the VIE subject to business tax in China as a domestic entity and again when transferred from the VIE to the listed parent WFOE. In addition, payments for licensing and other fees from the VIE to the parent, which are one method to return capital to foreign investors, are subject to transfer pricing oversight (Roberts and Hall, 2011). In practice, taxation is unclear because VIEs have not generally, to date, attempted to return profits to the foreign investors, either because of tax concerns or because of requirements limiting capital flows out of the country (Gillis, 2012).

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[16] See: http://www.chinalawblog.com/ accessed May, 2017.
[17] For example, in the 2012 Chinachem case, the China Supreme Court invalidated the ownership claims of the outside investors and ruled that the contracts were unenforceable because the VIE-like structure amounted to "concealing illegal intentions with a lawful form" (Gough 2012). In the Gigamedia case, a Shanghai arbitrator reached a similar conclusion (Gillis and Lowry 2014). In both cases, the foreign investors were left with no recourse.

While ours is the first paper, of which we are aware, to directly investigate the implications of the VIE structure for foreign investors, it is related to several streams of literature. Research such as Dyck and Zingales (2004) documents the value of control rights relative to cash flow rights. Our setting is different in that we explore the vagaries of the regulatory structure and resulting agency issues. In particular, a unique aspect of the Chinese VIE situation is that much of the risk facing foreign investors of VIE firms has less to do with the explicit terms of the contractual relationships and more to do with how the government and local owners of the VIE operating entities will apply those contractual rights in practice given the potential absence of legal recourse. Other research such as Fan and Wong (2005) and Gerakos et al. (2013) considers the role of auditors in remediating conflicts associated with agency and regulatory issues. Our setting is different in that we do not explore concentrated ownership but, rather, regulatory and legal uncertainty emanating from VIE structures.[18] In short, our setting is unique in that we analyze the costs and market responses to an implicitly second-best governance structure resulting from specific governmental restrictions, resulting in very specific agency issues and associated risks.[19]

3. Research design and sample

3.1 Sample construction

To obtain our sample of U.S.-listed firms headquartered in China, we begin by searching

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[18] This distinction is important because ownership concentration is typically driven by a lack of local institutions and property rights (La Port et al., 1999), whereas VIEs exist only to evade Chinese restrictions on foreign ownership.

[19] Secondarily, this paper is related to research that considers agency issues among Chinese firms using reverse mergers (e.g. Lee et al 2014 and Beatty et al 2013). However, our setting is different in that we do not investigate the manner in which the firm goes public (i.e., via reverse merger versus initial public offering), but the legal structure of the company itself. Further, we include controls for firms that listed using reverse mergers in our empirical analyses.

Compustat and Datastream for any U.S.-listed firm headquartered in China or Hong Kong.[20] We then search their annual reports to ensure that the firm actually conducts operations in China or Hong Kong. Next, to determine whether the firm uses a VIE structure, we search all associated annual reports in EDGAR for the phrase "variable interest entity" and related terms.[21] For each annual report containing these terms we read the associated text to ensure that it is a VIE structure driven by foreign ownership restrictions.[22] We omit any firm potentially employing a VIE structure if we could not confirm that it had a VIE since the first annual report listed in EDGAR.[23] Next, we compare our list of VIEs with the 108 VIEs identified by Gills and Lowry (2014) and, after confirming their validity, add three observations from their analysis that we had not identified in our initial search. We end the sample in 2014, consistent with Gills and Lowry (2014), to permit analysis of the period following the listing. After restricting the sample to firms with sufficient data to conduct our empirical analyses, we are left with a sample of 198 VIE firms (944 firm years) and 412 U.S. listed Chinese firms (2,448 firm years) that do not have a VIE structure.

3.2 Incidence of VIEs by Industry and Year

Table 2 documents the incidence of VIEs across 2-digit SIC codes (Panel A) and over time (Panel B). Of the sixty 2-digit SIC industries, VIEs are represented in forty-eight,

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[20] Firms headquartered in Hong Kong are also subject to the Chinese ownership restrictions.

[21] For example, if we find no matches searching for "variable interest entity" we also search for "variable interest", "variable", "VIE", and "FIN 46".

[22] We only include VIEs created for the purpose of evading Chinese ownership restrictions. For example, under the applicable standard at the time (FIN 46R), Unicom New Horizon was classified as a VIE for financial reporting purposes and consolidated in the financial statements of China Unicom Ltd. because leases between the two companies were subject to indefinite renewal options which transferred substantial operating risks to China Unicom Ltd. However, since the VIE was not designed to evade ownership restrictions (and, therefore, does not entail the same regulatory and agency issues), we do not classify it as such in our analyses.

[23] We do so because any firms that do not disclose a VIE consistently since the IPO either do not do so because of an omission in disclosure, or because the firm added a subsidiary in a regulated sector requiring a VIE. In these few cases, we read the annual reports and could not discern between these explanations. Further, in the case that a VIE is later added, it is likely inconsequential to the broader company. Results are robust to inclusion of these observations.

suggesting that the use of VIEs is pervasive across industries and that Chinese regulations are too nuanced to allow for identification of VIEs simply by industry code.[24] This is important as studies such as He, Wong and Young (2012) have identified VIEs based on 2-digit SIC code.[25] Only four of the two-digit SIC industries--forestry (SIC 08), nonmetallic minerals except fuels (SIC 14), personal services (SIC 72) and insurance agents, brokers and service (SIC 64)--contain exclusively VIE firms, and these four industries account for only 2% of all VIEs. We attribute this to the fact that VIEs are regulated by activity and not by broader industry measures.[26] Industries with the greatest concentration of VIEs include business services (35% of all VIEs), electronic and other electric equipment (8%) and communications (7%). In terms of mean market capitalization, the industries with the largest VIE firms are communications ($5,138 million), transportation services ($1,598 million), business services ($1,544 million) and hotels and other lodging places ($1,149 million). We also do not note any obvious patterns in terms of the representation of VIEs with respect to industry mean levels of ROA, Tobin's Q or market capitalization. VIE firms appear in industries with relative high and low mean levels of these characteristics.

Panel B tabulates the incidence of VIE firm-years in the sample over time. The number of VIE-years has increased almost monotonically from a low of four in 2000 to 126 in 2013. The number peaked with 149 in 2010, which corresponded with the period in which many Chinese companies came under scrutiny for concerns relating to financial reporting (Lee, Li, & Zhang, 2014) and, as a result, fewer Chinese firms were listed on U.S. exchanges in general.

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[24] For parsimony, we only tabulate 2-digit industries which include VIE firms.

[25] He, Wong and Young (2012) include a control variable for industries that are likely to include VIE firms. However, our analysis suggests that VIE firms are generally intermixed in a wide range of 2-digit industries.

[26] As an illustration of the subtle distinctions in the restrictions, foreign investment in the "development and production of tea drinks" is generally "encouraged" while foreign investment into the "processing of green tea and special tea with Chinese traditional techniques" is "prohibited", likely reflecting the greater cultural importance of traditional teas over standard teas.

Further, the proportion of VIE firms has increased sharply over the sample period. In 2000, only 4% of the firms incorporated a VIE structure, compared with 42% in 2013.

3.3 Univariate comparison of VIE and non-VIE firms

Table 3 presents descriptive evidence on differences in firm characteristics for Chinese firms using the VIE structure and Chinese firms not using the VIE structure. In general, the mean VIE year has a lower Tobin's Q, lower equity market value, higher ROA, higher institutional ownership and is younger and more likely to hire a Big N audit firm.[27] However, it is difficult to draw strong conclusions from the univariate comparisons because the industry composition tends to differ across the two samples.

4. Empirical Results

4.1 Multivariate tests of the relation between VIE and Tobin's Q

To control for industry composition and other factors, we next conduct multivariate tests of the relation between the use of the VIE structure and Tobin's Q using the following OLS model:

$$Tobin's\ Q = \beta_0 + \beta_1 VIE + \beta_2 Age + \beta_3 Reverse\ Merger + \beta_i \sum_i Industry + \beta_j \sum_j Year + \varepsilon$$
(1)

We follow Guiso et al. (2014) and estimate Tobin's Q as the sum of market value of common equity and total assets less common equity and deferred taxes scaled by total assets.[28] In the case of missing deferred taxes, we set this value to zero. We control for firm age, and whether the firm went public via a reverse merger as prior evidence indicates that these firms

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[27] The higher median Tobin's Q for VIE firms reflects differences in industry characteristics such as concentration, size and age. In untabulated quantile regressions, we regress Tobin's Q on the VIE indicator and industry-fixed effects (to control for differences in industry concentration) and find that the median Tobin's Q for VIE firms is statistically and economically lower than for non-VIE firms, consistent with our primary regression analysis.
[28] In all tests we examine the log of Tobin's Q because the distribution is highly skewed. However, inferences are unchanged if we use the raw value.

faced increased scrutiny by regulators (He, Wong, & Young, 2012; Darrough, Huang, & Zhao, 2015). We include industry-fixed effects to control for variations in valuation across sectors of the economy and year-fixed effects to control for valuation differences over time. We expect a negative coefficient on the VIE indicator, β_1, indicating that Tobin's Q is lower for VIE firms after accounting for cross sectional differences related to Tobin's Q.

Table 4 reports OLS tests of the relation between the use of the VIE and Tobin's Q. Controlling for only age and reverse merger in model 1, we find that firms with a VIE have a lower Tobin's Q (coefficient=-0.17, t-stat=-2.11). This relation strengthens in the models that include industry-fixed effects (model 2) and industry- and yearly-fixed effects (models 3 and 4). The coefficient in the specification including industry and year fixed effects (model 4) is -0.44 with a t-stat of -4.54. Economically, the implied effect of a VIE is quite large. In particular, the coefficient estimate of -0.44 in the model 4 specification implies a reduction in the Tobin's Q for the median firm of 0.46, which is a decline of about 35%, or an aggregate reduction of enterprise value of about $78.5 billion across all firms in our sample.[29]

While the specifications in models 1-4 suggest that firms with a VIE have a lower Tobin's Q, it is possible that there are systematic differences in expected earnings growth that affect the valuation discount between VIE and non-VIE firms. While we do not have analysts' forecasts for most of our sample firms, we can use future realized earnings growth as a proxy for expected growth assuming perfect foresight. Model 5 reports results including current and two years of future realized earnings growth. We lose a significant number of observations because we require future earnings, which, in some cases, are not available. However, the tenor of the

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[29] While the implied magnitude is large, it is consistent with reports from analysts that investors demand substantial discounts to compensate for VIE structure risk. For example, Shaw (2011) cites analyst research estimating that institutional investors applied a discount of 30-35% to Baidu, reflecting the risks associated with its VIE structure.

results is very similar and, if anything, the relation between VIEs and Tobin's Q becomes slightly stronger, suggesting that the valuation results do not reflect expectations of near-term earnings growth.[30] Overall, the results across models in Table 4 are consistent in suggesting that foreign investors price protect by requiring significant valuation discounts for firms that adopt a VIE structure.

4.2 Event study tests

Having established a negative relation between the level of Tobin's Q and the use of the VIE structure, we next take an event-study approach to investigate the stock market reaction to events that affect the perceived level of risk inherent to the VIE structure. To the extent that the valuation discounts we observe result from uncertainty related to VIE's, we would expect the stock market to react predictably to events that affect the viability and expected profitability of the VIE structure.

We identify events by searching Factiva using the terms "VIE", "variable interest entity" and "Chinese IPO". Given that important events could occur in China without coverage in the U.S., we also search for similar terms in the Chinese press. We then identify the events that likely had a significant valuation effect on VIE firms, and categorize the events based on whether the likely effect would be attributable to the risk of government intervention or to the risk of managerial expropriation. Admittedly, this approach is challenging because we do not observe prior expectations with respect to the events, and because the Chinese media often covered events before the U.S. press, so the exact event date is less clear.

Table 5 lists the resulting 11 events and our prediction as to whether each event increased or decreased the perception of risk inherent to the VIE structure (as noted by the predicted sign).

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[30] Results are very similar if we include only current earnings growth, or include current and future profitability.

As with all event-study tests, we rely on both the correct identification of information events and the absence of confounding news during the event window. Therefore, we aggregate the three-day returns (centered on each event date) into a returns portfolio for each event, which mitigates these concerns. Further, we also benchmark returns for VIE firms relative to a control sample of non-VIE Chinese firms to ensure that we are effective in isolating events that are associated with VIE firms as opposed to reflecting conditions in China more generally. We construct portfolio event returns by value weighting each firm's return based on the firm's equity market value at the end of the most recent quarter prior to the event. We draw inferences using portfolio return statistics because portfolio estimates are robust to potential cross-sectional correlation (Sefcik & Thompson, 1986).[31] Because some events are unfavorable and some are favorable to VIEs, we multiply the latter by minus one so that an aggregate negative return is consistent with our predictions. We then conduct a t-test of differences in means across the VIE and non-VIE portfolios.[32]

Table 5 presents the portfolio return results. For each of our 11 events, we report the raw return for the portfolio of VIE firms and for the portfolio of non-VIE firms, and the differences between these returns. At the bottom of each group, we tabulate the mean of the portfolio event return after adjusting for the predicted sign (i.e. subtracting the return for events predicted to increase the value of the VIE firm). Overall, as predicted, we find a much stronger stock price reaction for the VIE firms relative to non-VIE firms in the hypothesized direction. VIE firms experience average returns of -0.026 relative to 0.003 for non-VIE firms. The incremental negative return for VIE firms of -0.029 is statistically significant (t-statistic of -4.30).

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[31] The portfolio approach assumes perfect correlation between firms' returns in each event window, which results in a conservative test by limiting the power to detect statistical significance.

[32] The standard deviation used in the test is derived from the distribution of the 11 portfolio event returns. Consistent with Fama and MacBeth (1973), we assume portfolio returns across events are uncorrelated.

In terms of specific events, the stock price reactions to most of the events are consistent with predictions, although the magnitudes vary. The primary events driving the overall results are news about increased Chinese government scrutiny of VIE's in 2011, which reduced the value of VIE firms shares (relative to non-VIE shares) by -7.3%, the announcement of the SEC's investigation of a VIE involved in accounting fraud in 2012 (-6.5%), the news that China was tightening rules for internet companies using the VIE structure in 2006 (-4.5%), and when the founder of Alibaba unexpectedly and unilaterally removed Alipay from the VIE structure in 2011 (-3.7%). While descriptive, the stock price reaction suggests that uncertainty about the legal standing of VIEs can result in significant stock price movements when potentially important events occur that affect the likely viability of the VIE structure. Further, these overall results provide some comfort that the valuation differences we document between VIE and non-VIE firms likely reflect, at least in part, the regulatory and agency-cost uncertainties associated with the VIE structure.

4.3 Cross-sectional differences in the relation between VIE and Tobin's Q

We next examine whether the valuation discount varies predictably across firm characteristics which affect the underlying risk of the VIE.[33] In all of our cross-sectional analyses we include the non-VIE Chinese firms as a control sample so that the comparison is within VIE firms relative to non-VIE firms and should capture the normal cross sectional relation between valuation and our variables of interest absent the VIE structure.

The first dimension we test relates to the extent to which the Chinese firm has foreign operations. This is important because U.S. investors likely have more recourse to assets that reside outside the PRC if a conflict arose between Chinese managers and U.S. shareholders. As

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[33] We thank anonymous securities lawyers in China for providing insight into the types of situations in which agency and regulatory risks are likely to be most pronounced.

a result, we expect VIE firms with foreign operations to experience a smaller valuation discount relative to the VIE firms with operations only in China. Second, we look at the level of total assets. The Chinese government has an incentive to protect large and visible VIE firms to ensure that foreign investors remain willing to provide capital for these structures. As a result, we expect VIE discounts to be tempered among more visible firms.[34]

Results in Table 6 are consistent with the above predictions. In particular, VIE discounts tend to be tempered for firms with foreign operations as the coefficient on the interaction between foreign operations and VIE indicator is positive (0.47) and statistically significant (t-stat=3.05). Similarly, consistent with the prediction that large companies are less sensitive to VIE risk, the VIE discount is much smaller for large firms (interaction coefficient =0.67, t-stat=4.05). Overall, the results suggest that agency issues are particularly acute among VIE firms which are smaller and have limited foreign operations, consistent with greater risks of government intervention or managerial expropriation for firms which are less visible with more concentrated Chinese operations.

4.4 Tests of the use of Political Connections to Remediate Regulatory Risks

We next determine whether VIE firms are more likely to have a politically connected director, and the effect of political connections on the relation between the presence of a VIE and Tobin's Q. To do so we estimate the following OLS models.[35]

Political Connection (1/0) = β₀ + β₁VIE+ β₂Log Market Value + β₃ROA + β₄Leverage

$$Political\ Connection\ (1/0) = \beta_0 + \beta_1 VIE + \beta_2 Log\ Market\ Value + \beta_3 ROA + \beta_4 Leverage$$

$$+ \beta_i \sum_i Industry + \beta_j \sum_j Year + \varepsilon \qquad (2)$$

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[34] We measure size using total assets rather than market capitalization because market capitalization is directly affected by the VIE discount. Results are consistent if size is measured by total sales or market capitalization.
[35] We follow Duchin and Sosyura (2014) in using linear probability models because including fixed effects (which we use in all models) and interactions (which we use in some models) can bias coefficient estimates in nonlinear models. Using non-linear models does not change the inferences of the tests.

To control for firm variation in the demand for politically connected directors that is not related to the presence of a VIE we include the log of market value of equity, ROA and leverage as well as industry- and year-fixed effects.

To obtain our data on political connections, we first intersect our sample with Boardex and examine the backgrounds of directors to determine whether the director has an employment history with a government institution, and, if so, whether it reflects a high-level, managerial role (as opposed to staff or advisory) where the director would be better positioned to shield the company from government intervention.[36] Because Boardex contains only 210 firms in our (VIE and non-VIE) sample, we then hand collect director backgrounds from annual reports and proxy statements from EDGAR for the remaining VIE firms. To make the hand collection process manageable, we run a propensity model following equation 1 and identify a similar group of non-VIE firms. We then hand collect director backgrounds on this sample of VIE and non-VIE firms from EDGAR for all VIE firms with sufficient data to estimate equation 2.

Panel A of Table 7 documents multivariate tests of the relation between the presence of VIEs, and the likelihood of a politically connected director on the board. Firms with VIEs are more likely to have a director with a political connection of any kind (coefficient=0.10, t-stat=2.40), and are more likely to have a director with high-level connections (coefficient=0.08, t-stat=2.04).

While the preceding suggests that firms with VIE structures are more likely to have political connections on the board, it is also interesting to document the extent to which those efforts affect the reduction in Tobin's Q documented previously. In particular, if investors

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[36] Boardex lists the role of the director within the given institution. In some cases, managerial positions are obvious (such as "Vice President", "Deputy Director", etc.), in other cases it is not as clear ("expert", "member", etc.). In these cases, we examine the detailed description of the role to determine whether the director had managerial responsibilities.

perceive that political connections mitigate regulatory risks, we would expect VIE firms with political connections to be associated with lower valuation discounts. To do so, we test whether the presence of a political connection on the board tempers the discount in Tobin's Q documented in the previous tables. In particular, we estimate equation 1 after adding the political connection variable main effect as well as interactions with every other variable in the model. Results, tabulated in panel B, suggest that the discount for having a VIE is moderated in the presence of a high-level political connection (coefficient=0.74, t-stat=2.53). While we note that all political connections appear to moderate the discount, this effect is not statistically significant at conventional levels for the broader definition (coefficient=0.32, t-stat=1.19), suggesting that the presence of political connections is particularly important for higher-level executives. Broadly, this table suggests that political connections on the board are more common among firms that utilize a VIE, and the market interprets political connections as a defense against value-eroding regulatory issues and intervention, particularly for high-level executives.

4.5 Tests of the use of Monitors to Remediate the Risk of Managerial Expropriation

The magnitude of the discount VIE firms face likely creates incentives for Chinese managers to mitigate VIE risk by "bonding" to increase transparency and oversight. So doing could help to alleviate concerns that managers could expropriate assets and leave shareholders with little recourse. Fan and Wong (2005) demonstrate that East-Asian (non-Chinese) firms with concentrated ownership structures are more likely to hire a Big N auditor, which marginally mitigates share price discounts arising from agency problems. Our setting is different in that we explore risks resulting from the lack of direct ownership rights emanating from regulatory policy, as opposed to an ownership structure that endogenously arises in other Asian countries. As such, we explore the existence of and costs to a clear second-best governance structure. That said, the

underlying argument is similar—reputable auditors may mitigate agency conflicts between U.S. investors and the local Chinese managers who control the VIE. As a result, we expect that firms with VIE structures would be more inclined to hire Big N auditors and that the VIE valuation discount would be smaller in the presence of such auditors.

Similarly, we examine whether institutional ownership is higher among VIE firms and whether their presence mitigates the valuation discount. Prior research suggests that institutional investors have strong incentives to monitor firm operations (Gillan & Starks, 2003), which may mitigate the ability of local owners to expropriate assets from the VIE. In addition, given China's desire to increase foreign investment, the Chinese government is likely to be hesitant to alienate large US institutional investors by invalidating VIE structures in firms in which they invest. As a result, we expect firms with VIE structures to be more active in attracting institutional investors and their presence to reduce valuation discounts as it may moderate risks of political interference as well as managerial expropriation.

We test whether VIE firms are more likely to employ a Big N audit firm and have greater institutional ownership using the following OLS models:

$$Big\ N = \beta_0 + \beta_1 VIE + \beta_2 Log\ Market\ Value + \beta_3 ROA + \beta_4 Leverage + \beta_i \sum_i Industry + \beta_j \sum_j Year + \varepsilon \qquad (3a)$$

$$Instit\ Ownership = \beta_0 + \beta_1 VIE + \beta_2 Log\ Market\ Value + \beta_3 ROA + \beta_4 Leverage + \beta_i \sum_i Industry + \beta_j \sum_j Year + \varepsilon \qquad (3b)$$

Following Fan and Wong (2004), we control for size (log of market value of equity), ROA and leverage as well as whether the firm went public via reverse merger, age, and industry- and year-fixed effects. The dependent variables in both models are binary indicating either the presence of a Big N auditor (equation 3a), or whether the firm is above the median in

institutional ownership (equation 3b).[37] We expect that the coefficient on VIE, β_1, will be

significantly positive in both equations, indicating that VIE firms are more likely to hire a Big N

auditor and have higher institutional ownership.

We obtain data on institutional ownership from Factset (Lionshares) which covers equity

holdings by global funds from a variety of sources including the 13F filings of U.S. institutions.

Because our interest is in identifying institutions that are likely to play a monitoring role, we

follow Ferreira and Matos (2008) in focusing our analysis on the group of "independent"

institutions, which are more closely associated with monitoring managers than "passive"

institutions.[38]

Table 8, panel A documents multivariate tests of the relation between the presence of

VIEs, use of Big N auditors and the presence of institutional investors. As predicted, firms with

VIEs are significantly more likely to hire a Big-N auditor (coefficient=0.11, t-stat=2.65), and

have higher levels of independent institutional ownership (coefficient=0.26, t-stat=4.34).

Panel B of table 8 examines whether monitors are successful in mitigating the VIE

discount by estimating equation 1 and interacting all variables in these models with the presence

of a Big N auditor and a high level of institutional ownership (firms with institutional ownership

greater than the median). As predicted, valuation discounts tend to be smaller for the VIE firms

with Big N auditors and high institutional ownership. The coefficient on the interaction between

the VIE indicator and the presence of a Big N auditor is positive (0.64) and statistically

significant (t statistic = 4.07). Similarly, the coefficient on the interaction between the VIE

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[37] We employ an indicator variable based on the median for institutional investment to permit comparison with our other variables which are also based on indicators. Results are consistent if we use a continuous variable for institutional ownership (coefficient on VIE indicator=0.05, t-statistic=2.97). We set to zero the level of institutional ownership if the value is missing, consistent with Ferreira and Matos (2008).

[38] See Ferreira and Matos (2008) for a detailed description of the data and categorization of institutions. We find consistent results if we examine all institutions, and note that the majority of the institutional ownership in our sample is of the independent variety.

indicator for high independent institutional ownership is positive (0.36) and statistically

significant (t-statistic = 1.80). Overall, these results suggest that VIE discounts are concentrated

among firms with non-Big N auditors and fewer independent institutional investors, suggesting a

reduction in agency and regulatory issues resulting from Big N auditors and institutional

investors.

4.6 Ongoing Research

One additional risk that VIE firms could face is the risk of governmental intervention in

business operations. The Chinese government expects firms to operate in a "politically correct"

and/or socially responsible way that follows the government's policy guidance and political

agenda. Behaving in a manner consistent with these ends in return for government support is

often viewed as an informal contract between companies and local/national governments. This

could influence managers of VIE firms to take actions consistent with public policy, and "toe the

party line," given that they are particularly dependent on support by the government. As an

illustration, coverage of the purchase of South China Morning Post by The Alibaba Group was

motivated, at least in some degree, "to reshape media coverage of its home country, taking aim at

what company executives call the 'negative' portrayal of China in the Western media."

Testing whether Chinese firms with a VIE feel more political pressure in how they

operate is inherently challenging because the motive behind the firm's operating decisions is

unobservable, and public policy is dynamic. Nonetheless, an important, and consistent, tenet of

public policy in China is to maintain high levels of employment in order to promote social

stability. Therefore, we next test whether firms with a VIE employ "excess" workers relative to

firms without a VIE, controlling for other economic factors. To do so, we model the level of

employees as a function of ROA, market value, leverage and whether the company is a state

owned enterprise. Because VIE firms likely face the greatest amount of political scrutiny immediately around the IPO, we focus on the first year that the firm is publicly traded.

Table 9 documents the results of these tests. In model one, the VIE indicator is positive (0.25) and statistically significant (T-stat=1.65) indicating that VIE firms have a higher number of employees after taking into consideration such factors as ROA, size, leverage, industry and year. In model two, the coefficient on the VIE indicator more than doubles (to 0.59), and increases in statistical significance (T-stat=2.63) indicating a stronger effect in the first year when the firm begins trading publicly. Taken together, these results suggest that VIE firms do have greater levels of employment in the earliest years of their public lives, which is consistent with these firms facing greater political scrutiny than non-VIE firms. That said, we obviously need to interpret these results with caution. Although we include industry and year fixed-effects, as well as other control variables, and compare VIE firms to non-VIE firms, it is possible that employment levels are driven by omitted factors. We are in the process of refining the employment tests to include, for example, other actions taken by VIE firms such as charitable contributions that may reflect perceived political pressure.

4.7 Robustness Tests

In addition to the tests documented above, we also implement a propensity score model to ensure that the negative relation between Tobin's Q and the presence of a VIE is not attributable to changes in the research design. To conduct this test we model the likelihood of a VIE using the covariates in equation 1, and also add the presence of a big N auditor and reverse merger (although results do not vary if we do not include these variables). We then match VIE firms to the closest 1, 3 and 5 non-VIE firms in the same 2-digit SIC code, as well as the same 2-digit SIC code and year and conduct a t-test of Tobin's Q. We find that VIE firms report a

statistically and economically lower Tobin's Q than non-VIE firms, similar to the results documented in our primary analysis.

5. Conclusion

In this study, we systematically examine U.S. listed Chinese firms that utilize variable interest entities to evade Chinese regulations against foreign ownership. We document the increasing prevalence of these firms over our sample period, the wide variety of their operations across multiple industry designations, and fundamental characteristics relative to U.S.-listed Chinese firms that do not use the VIE structure. We then examine whether investors discount VIE firms, what actions Chinese managers take to potentially remediate these discounts, and whether they are successful in doing so.

We find that investors discount Chinese firms with a VIE structure by more than 30% relative to non-VIE Chinese firms, and that these discounts are concentrated among small firms and firms without international operations. Next, we document that VIE firms are more likely to have a director with a political connection, utilize a Big N auditor, and have a high level of independent institutional ownership. These characteristics appear successful in tempering the valuation discount associated with the VIE structure. Broadly, these results suggest that Chinese entities operating in sensitive sectors pay a substantial price in terms of valuation discounts in instituting VIE structure to satisfy regulation prohibiting international ownership. However, the magnitude of the valuation discount varies cross-sectionally based on the likely regulatory and agency risks inherent to the entity. In addition, the presence of political connections on the board, Big N auditors and independent institutional owners appears to mitigate perceived risks of the VIE structure.

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Foreign Companies at Risk from Proposed Chinese Law: New regulation may render illegal a
corporate structure used in China by companies like Amazon, CBS, Wall Street Journal,
April 19. 2015.

Appendix 1: Background on Variable Interest Entities

A. Structure of Chinese Firms with Variable Interest Entities

        Chinese regulations restrict (or forbid altogether) foreign ownership to firms in certain sensitive sectors of the economy. As a potential solution to this limitation, some Chinese companies have established a corporate structure through which restricted companies funding abroad in a manner that avoids direct share ownership. As an example, Figure 1 denotes this structure as extracted from Alibaba's registration statement.

Figure 1: Corporate Structure of Alibaba (from prospectus)
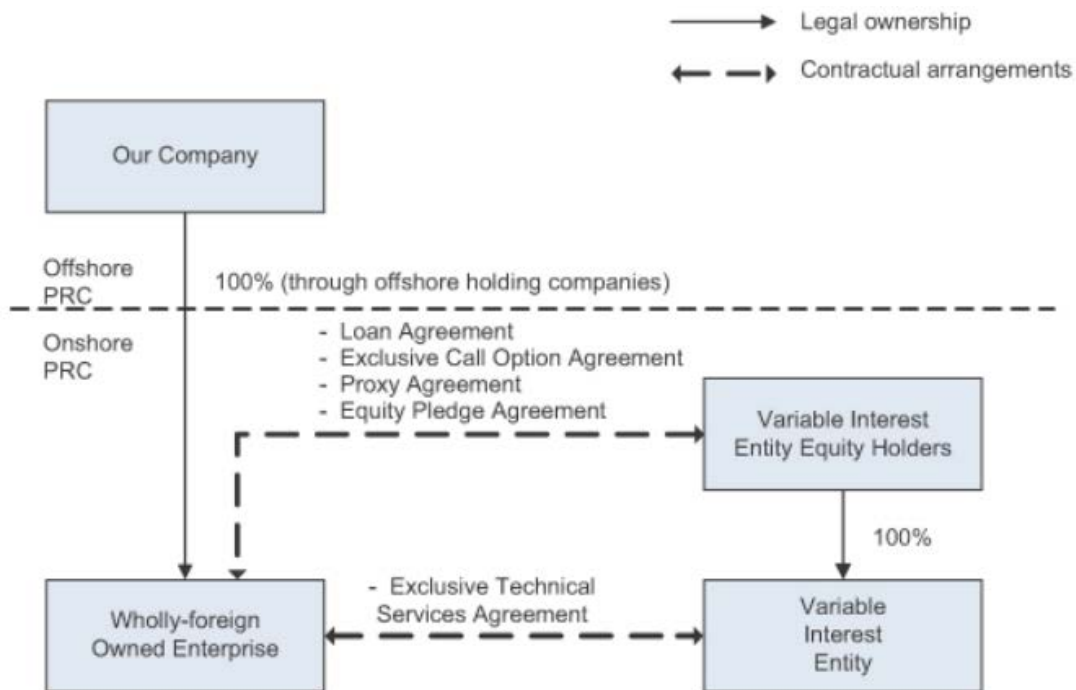
        In this chart, "Our Company" represents the publicly-listed entity domiciled in the Cayman Islands. This entity, in turn, directly owns an entity within China designated as a "wholly-foreign owned enterprise" (WFOE) because the legal owners reside outside the PRC. Since Chinese law prohibits direct foreign ownership of the underlying assets of Alibaba (which are in the VIE), the WFOE has a contractual relation with the VIE and the VIE's owners.

These agreements are designed to transfer the economic benefits (and risks) from the VIE to the WFOE. The agreements between the WFOE and VIE's owners facilitate the transfer of funds in the form of a long-term interest free loan to the VIE in exchange for dividend, managerial and voting rights. The WFOE also signs an agreement with the VIE itself to provide training, administrative services, and other services. The purpose of this agreement is to facilitate the future liquidation of profits out of the VIE to the foreign shareholders (Gillis & Lowry, 2014).

B. Accounting and tax implications

In the aftermath of Enron and corporate scandals in the turn of the 21st century, FASB adopted FIN 46(R) to guide the consolidation of entities for which control is unclear. FIN 46 (R) requires the consolidation of entities for which it "absorbs a majority of the entity's expected losses, or receives a majority of it expected residual returns, or both, as a result of holding variable interests, which are the ownership, contractual, or other pecuniary interests in an entity…"(FASB 2003). Because the contracts between the WFOE and VIE owners transfer many of the risks and benefits of the VIE, the publicly listed holding company can consolidate the operations of the foreign VIE under US GAAP.

From a tax perspective, VIEs create additional complexities as the liquidation of earnings from the VIE to the legal owners, or directly to the WFOE could be characterized either as dividends (taxed at 20%), interest on the loan (taxed at 25%), or service payments (taxed at 5%) or some combination (e.g. both a dividend and interest payment). Further, authorities might disagree with the classification of the transfer between the VIE and WFOE as a maintenance/managerial fee and instead make a transfer pricing adjustment. For these reasons, as well as the fact that VIEs need the capital, few VIEs have made payments to the WFOE.

Additionally, many VIEs have not accrued deferred taxes to account for the eventual liquidation,

because they do not intend to ever liquidate (Gillis & Lowry, 2014).

Table 1
Variable Definitions

Variable Name	Definition	Source
Age	= the number of years the firm has data reported in Compustat or Datastream.	Compustat, Datastream
Assets	= total assets.	Compustat, Datastream
Big N Auditor	= indicator variable that takes a value of (1) if the audit firm is a member of the Big N and (0) otherwise.	Compustat, Datastream
Contemporaneous Earnings Growth	= current earnings scaled by prior year's earnings.	Compustat, Datastream
Equity Market Value	= market value of common equity estimated as the product of common shares outstanding (CSHO) and price per share (PRCC_F).	Compustat, Datastream
Foreign Operations	= indicator variable that takes a value of (1) if the firm reports operations outside of China (not missing PIFO or as having non-Chinese operations in Datastream.) and (0) otherwise.	Compustat, Datastream
Future Earnings Growth	= earnings in two years scaled by current year's earnings.	Compustat, Datastream
High Assets	indicator variable that takes a value of (1) if the firm has total assets above the median and (0) otherwise.	Compustat, Datastream
High Instit. Ownership	= indicator variable that takes a value of (1) if the firm has institutional ownership above the median and (0) otherwise.	Factset
High Level Political Connection	= indicator variable that takes a value of (1) if the firm has a board member with work experience in a government instutition at a managerial level or above and (0) otherwise. To obtain this measure, we follow the same process as identifying political connections and determine whether the title of the person would allude to influence beyond their immediate role such as a director, president, manager, etc. While all directors of public companies have clearly reached a level of stature, we find that many began their careers in public service and later made their careers in the private sector. In such cases we do not label these directors as high level political connections as the value they add is likely not attributable to their public service.	Boardex, Hand Collection
Instit. Ownership	= the percentage of independent institutional ownership from Factset classified as the percentage of equity holdings held by independent institutions, and set to 0 when missing, following Ferreira et al. (2008).	Factset
Leverage	= ratio of total liabilities (LT) to total assets (AT).	Compustat, Datastream
Log Employees	= log of the number of employees.	Compustat, Datastream
Political Connection	= indicator variable that takes a value of (1) if the firm has a board member with work experience in a government instutition and (0) otherwise. We measure this variable by reviewing the work experience of every board member in Boardex, or in the case that the firm is not covered by Boardex, by reviewing the biographies present in the proxy statement. We count political connections as any prior work experience associated with the government of the PRC, communist party, or local or regional governments.	

Table 1 (Continued)
Variable Definitions

Variable Name	Definition	Source
ROA	= return on assets defined as income before extraordinary items (IBQ) divided by assets as the beginning of the quarter (ATQq-1).	Compustat, Datastream
State Owned Ent.	= indicator variable that takes a value of (1) if the firm is a state owned enterprise and (0) otherwise. We obtained this variable by searching annual reports for terms such as "state owned" and searched for major shareholders. In cases where the annual report did not include these terms, but the name of the firm alluded to state ownership (such as including the word "China", a province or city name) we conducted online searches in attempt to identify whether the company was state owned.	Hand Collection
Std Returns	= standard deviation of daily returns during the contemporaneous fiscal year.	CRSP, Datastream
Tobin's Q	= log of tobin's Q measured as: (Market Value Equity+Total Assets-BV Equity)/(Total Assets).	Compustat, Datastream
VIE	= indicator variable that takes a value of (1) if the firm uses a variable interest entity and (0) otherwise. We obtained this variable by searching the annual report for "variable interest", "VIE", and related terms. We include only VIEs explicitly designed to evade ownership restrictions, and not because of any economic reasons (e.g. lease agreements, securitizations, etc.). In several cases we found that the firm clearly disclosed a VIE in a later year in the sample, but not in an earlier year. In such cases, we attempt to identify whether the name of the VIE identified in the later year was also consolidated in an earlier year. In most cases, we could identify the firm as a VIE throughout the life. In the cases where could not identify the subsidiary in the earlier year we did not include the firm in the sample to avoid misclassification.	Hand Collection

Table 2
Incidence of VIE Years by Industry and Calendar Year

Panel A: Incidence of VIE Years by 2 Digit Industry for Industries with at least One VIE Observation

2 digit SIC	2 Digit Industry Description	VIE		Non VIE Firm Years	% VIE in industry	% total VIEs	Industry Mean		
		# of Firm Years	Mean Market Cap				ROA	Tobin's Q	Market Cap
73	Business services	328	1,544	183	64%	35%	-0.75	17.79	1,022
36	Electronic & other electric equipment	78	456	302	21%	8%	-0.11	8.43	815
48	Communications	65	5,138	143	31%	7%	-0.38	10.63	11,072
82	Educational services	51	667	16	76%	5%	0.05	5.92	513
28	Chemicals and allied products	41	58	287	13%	4%	-0.02	11.80	258
65	Real estate	31	401	123	20%	3%	-0.07	6.83	2,428
1	Agricultural production-crops	24	110	20	55%	3%	-1.21	33.08	95
20	Food and kindred products	23	143	89	21%	2%	0.09	1.94	549
33	Primary metal industries	23	153	55	29%	2%	0.08	1.27	2,445
59	Miscellaneous retail	23	488	27	46%	2%	-0.12	5.75	33,220
47	Transportation services	22	1,598	7	76%	2%	0.01	4.02	1,231
35	Industrial machinery & equipment	17	33	72	19%	2%	-0.08	1.75	283
70	Hotels and other lodging places	16	1,149	29	36%	2%	-0.02	3.50	3,298
99	Other	15	7	26	37%	2%	-3.47	77.28	17
39	Misc. manufacturing industries	13	73	16	45%	1%	-0.76	1.16	76
44	Water transportation	11	809	2	85%	1%	0.00	1.58	711
50	Wholesale trade-durable goods	11	62	85	11%	1%	-0.02	5.13	58
51	Wholesale trade-nondurable goods	11	79	40	22%	1%	0.14	19.57	242
32	Stone, clay, and glass products	9	30	21	30%	1%	0.04	0.87	65
38	Instruments & related products	8	260	43	16%	1%	-1.27	47.48	813
55	Automotive dealers & service stations	8	303	5	62%	1%	-0.01	1.22	215
64	Insurance agents, brokers & service	7	554	0	100%	1%	0.12	1.61	554
78	Motion pictures	7	173	6	54%	1%	-0.24	1.42	157
8	Forestry	6	11	0	100%	1%	-0.37	2.51	11
26	Paper and allied products	6	70	32	16%	1%	-0.01	3.48	50
29	Petroleum and coal products	6	48	38	14%	1%	-0.01	1.52	50,076
49	Electric, gas & sanitary services	6	116	90	6%	1%	0.19	2.00	7,422
2	Agricultural production-livestock	5	37	3	63%	1%	0.39	1.14	72
15	General building contractors	5	25	97	5%	1%	0.06	1.12	8,202
27	Printing and publishing	5	429	27	16%	1%	0.11	1.80	332

Table 2 (continued)

Incidence of VIE Years by Industry and Calendar Year

Panel A: Incidence of VIE Years by 2 Digit Industry for Industries with at least One VIE Observation

2 digit SIC	2 Digit Industry Description	VIE		Non VIE Firm Years	% VIE in industry	% total VIEs	Industry mean		
		# of Firm Years	Aggregate Market Cap				ROA	Tobin's Q	Market Cap
34	Fabricated metal products	5	72	44	10%	1%	0.04	1.44	69
54	Food stores	5	68	11	31%	1%	-0.05	0.98	2,395
62	Security and commodity brokers	5	577	9	36%	1%	-0.15	4.45	592
67	Holding & other investment offices	5	55	31	14%	1%	-5.67	174.54	67
79	Amusement & recreation services	5	468	15	25%	1%	0.16	1.77	2,960
80	Health services	5	19	12	29%	1%	0.03	4.27	102
12	Coal Mining	4	106	17	19%	0%	0.14	1.36	3,813
14	Nonmetallic minerals, except fuels	4	75	0	100%	0%	-0.04	2.09	75
23	Apparel & other textile products	4	37	25	14%	0%	0.23	1.64	771
63	Insurance carriers	4	214	14	22%	0%	-0.25	1.88	55,310
87	Engineering & management services	4	786	27	13%	0%	-5.91	121.07	417
17	Special Trade Contractors	3	3	4	43%	0%	-3.50	3.00	96
10	Metal mining	2	174	20	9%	0%	-3.74	116.35	73
37	Transportation equipment	2	66	48	4%	0%	0.11	1.75	4,376
58	Eating and drinking places	2	216	21	9%	0%	-1.00	46.42	667
72	Personal services	2	117	0	100%	0%	1.30	3.46	117
30	Rubber and Misc. products	1	3	42	2%	0%	-1.54	23.23	123
61	Nondepository institutions	1	78	3	25%	0%	-0.33	2.19	21
	Total	944		2,227		100%			

This panel provides descriptive statistics by industry. In this panel, market cap is expressed in millions USD an is defined as "equity market value" in table 1. Market cap, ROA, and Tobin's Q are winsorized at 1%.

Table 2 (Continued)
Incidence of VIE by industry and year

Panel B: Incidence of VIE Years by Calendar Year

Year	VIE	Non VIE	Total Sample	% VIE in year	% of total VIEs
2000	4	103	107	4%	0%
2001	7	123	130	5%	1%
2002	10	114	124	8%	1%
2003	12	102	114	11%	1%
2004	24	110	134	18%	3%
2005	31	125	156	20%	3%
2006	40	153	193	21%	4%
2007	63	210	273	23%	7%
2008	92	245	337	27%	10%
2009	115	265	380	30%	12%
2010	149	281	430	35%	16%
2011	141	243	384	37%	15%
2012	130	203	333	39%	14%
2013	126	171	297	42%	13%
Total	944	2,448	3,392		100%

This panel illustrates the sample composition by whether the firm uses a VIE and year.

Table 3

Descriptive Statistics

Variable	VIE				No VIE			
	N	Mean	Std	Median	N	Mean	Std	Median
Log Tobin's Q	944	0.43	1.01	0.26	2,448	0.54	1.36	0.17
Age	944	3.74	2.52	3.00	2,448	4.83	3.43	4.00
ROA	889	-0.14	2.10	0.05	2,307	-0.49	2.91	0.04
Equity Market Value	937	1,101	4,444	155	2,439	4,885	17,210	134
Big N Auditor	928	0.53	0.50	1.00	2,343	0.46	0.50	0.00
Instit. Ownership	944	0.12	0.16	0.06	2,448	0.04	0.09	0.00

This table provides descriptive statistics for the main samples used in this paper. The difference tabulates T-tests of differences in means across whether the firm utilized a VIE structure. ***,**,* represents significance at a p<0.01, p<0.05, p<0.1 level, respectively using two-sided tests. Variables are defined in table 1.

TABLE 4

Multivariate Tests of Tobin's Q

	(1)	(2)	(3)	(4)	(5)
VIE	-0.17**	-0.45***	-0.44***	-0.44***	-0.48***
	(-2.11)	(-5.20)	(-4.54)	(-4.54)	(-4.13)
Age	-0.06***	-0.05***	-0.05***	-0.05***	-0.06***
	(-6.21)	(-5.23)	(-3.75)	(-3.69)	(-3.13)
Reverse Merger	-0.43***	-0.25***	-0.27***	-0.27***	-0.19**
	(-5.79)	(-3.24)	(-3.28)	(-2.66)	(-2.35)
Constant	0.92***	0.91*	0.52	0.52	0.75
	(11.47)	(1.66)	(1.02)	(0.99)	(1.60)
Contemporaneous Earnings Growth					0.01**
					(2.12)
Future Earnings Growth					0.00
					(0.99)
Fixed Effects	None	SIC2	SIC2, Year	SIC2, Year	SIC2, Year
Observations	3,392	3,392	3,392	3,392	2,256
R-squared	0.04	0.21	0.25	0.25	0.31
Cluster	firm	firm	firm	firm, year	firm, year

*** $p<0.01$, ** $p<0.05$, * $p<0.1$ using two-sided tests. This table tabulates OLS regressions of the relation between Tobin's Q and the presence of a VIE. Variables are defined in table 1.

TABLE 5
Event Study Tests of Events Affected the Viability of Chinese Registrants Using the VIE Structure

Event	Event Description	Date	Predicted Sign	3-day Raw Returns		
				(A) VIE	(B) Non-VIE	(C) Difference
Risk of Government Intervention						
1	China tightened rules on internet company, WSJ news	7/27/2006	-	-0.009	0.036	-0.045
2	China banned foreign investment in operating online games	10/10/2009	-	-0.012	0.006	-0.018
4	Buddha Steel event, VIE structure found illegal in a local Chinese court	7/12/2011	-	-0.025	-0.020	-0.004
6	News about increased government security on VIE	9/28/2011	-	-0.089	-0.017	-0.073
9	Wal-Mart incidence: China government banned Wal-Mart from using the VIE structure to acquire a Chinese retail company	8/14/2012	-	0.010	0.043	-0.032
11	China proposed legalization of VIEs	1/22/2015	+	0.042	0.031	0.012
Risk of Managerial Expropriation						
3	Gigamedia's shareholders disputed with Chinese executivies	11/26/2010	-	0.013	0.014	-0.001
5	Alipay incidence: the founder of Alibaba split Alipay from the VIE structure without informing other sharehoders of the holding company	5/11/2011	-	-0.034	0.003	-0.037
7	ChinaCast incidence: Chinese managers expropriated assets of the VIE	6/26/2012	-	-0.019	-0.003	-0.016
8	New Oriental Education incidence: SEC started an formal investigation of the Chinese VIE about potential accounting fraud.	7/17/2012	-	-0.059	0.006	-0.065
10	Ambow Education incidence: The Chinese VIE orchestrated a fake acquision to boost its US IPO	6/23/2013	-	-0.018	-0.003	-0.015
	Mean return across events (adjusted for predicted sign)			**-0.026**	**0.003**	**-0.029**
	t-statistics					**-4.300**

This table presents the results of an event study test of 3-day portfolio returns centered on 11 events that affect the inherent risk of the VIE structure. Column (A) reports the value weighted portfolio returns for Chinese firms with a VIE. Column (B) is similarly constructed over firms without a VIE, and column (C) is the difference in the two portfolio returns (A-B). The predicted sign relates to the predictions for the sign of Column (C). Mean return across event is computed as the mean of the portfolio 12 event returns, after multiplying by -1 returns from events with a positive predicted sign. The t-statistic assesses whether the mean return in Column C is different from zero.

TABLE 6
Cross-Sectional Tests of Tobin's Q

	(1) Foreign Operations	(2) High Assets
VIE	-0.57***	-0.71***
	(-4.74)	(-4.69)
Characteristic	-1.08*	-1.65**
	(-1.75)	(-2.45)
VIE x Characteristic	0.47***	0.67***
	(3.05)	(4.05)
Controls?	Yes	Yes
Observations	3,392	3,391
All variable interactions?	Yes	Yes
R-squared	0.27	0.32
Cluster	firm	firm
Fixed Effects	SIC 2, year	SIC 2, year

*** p<0.01, ** p<0.05, * p<0.1 using two-sided tests with standard errors clustered by firm. This table tabulates OLS regressions of the relation between the existence of a VIE and Tobin's Q. Variables of interest are the interactions between the existence of the VIE and the binary characteristic listed at the column heading. Variables are defined in table 1.

TABLE 7

Multivariate Tests of Political Connections

Panel A: Tests of the Relation between VIE and Political Connections

	(1) Political Connection	(2) High Level Political Connection
VIE	0.10**	0.08**
	(2.40)	(2.04)
ROA	-4.87	-3.06
	(-0.88)	(-0.65)
Log Market Value	1.33	3.18
	(0.14)	(0.37)
Leverage	-1.57	1.20
	(-0.44)	(0.41)
Constant	0.21	0.27
	(0.79)	(1.04)
Observations	1,332	1,332
R-Squared	0.28	0.30
Cluster	firm	firm
Fixed Effects	SIC 2, year	SIC 2, year

*** p<0.01, ** p<0.05, * p<0.1 using two-sided tests with standard errors clustered at the firm level. This panel tabulates OLS regressions of the relation between the presence of a VIE and a Big N auditor (column 1), or a high level of institutional ownership (column 2). Variables are defined in table 1. In this table, Log Market Value, ROA and Leverage are scaled by 1,000.

TABLE 7 (Continued)
Multivariate Tests of Political Connections

Panel B: Tests of the Effect of Political Connections on the Relation Between VIE and Tobin's Q

	(1) Political Connection	(2) High Level Political Connection
VIE	-0.66***	-0.64***
	(-3.73)	(-3.74)
Political Connection	-2.16	-2.61*
	(-1.54)	(-1.86)
VIE x Political Connection	0.32	0.74**
	(1.19)	(2.53)
Controls?	Yes	Yes
Fixed Effects	SIC 2, year	SIC 2, year
All variable interactions?	Yes	Yes
Observations	1,882	1,882
R-squared	0.33	0.32
Cluster	firm	firm

*** $p<0.01$, ** $p<0.05$, * $p<0.1$ using two-sided tests with standard errors clustered by firm. This panel tabulates OLS regressions of the relation between the existence of a VIE and Tobin's Q. Variables of interest are the interactions between the existence of the VIE and the binary characteristic listed at the column heading. In these models, all control variables are included separaterly as well as interacted with the political connections variable to allow the coefficients to vary across political connections. Variables are defined in table 1.

TABLE 8

Multivariate Tests of External Monitors

Panel A: Tests of the Relation between VIE and the Presence of External Monitors

	(1) Big N Auditor	(2) High Instit. Ownership
VIE	0.11***	0.26***
	(2.65)	(4.34)
Log Market Value	0.10***	0.01
	(11.94)	(1.14)
ROA	0.01***	0.02***
	(3.03)	(3.54)
Leverage	-0.01	-0.01*
	(-1.44)	(-1.88)
Constant	0.03	0.37***
	(0.25)	(2.86)
Observations	2,685	2,783
R-Squared	0.60	0.36
Cluster	firm	firm
Fixed Effects	SIC 2, year	SIC 2, year

*** $p<0.01$, ** $p<0.05$, * $p<0.1$ using two-sided tests with standard errors clustered at the firm level. This table tabulates OLS regressions of the relation between the presence of a VIE and a Big N auditor (column 1), and the level of institutional ownership (column 2). Variables are defined in table 1.

TABLE 8 (Continued)

Multivariate Tests of External Monitors

Panel B: Tests of the Effect of Auditor and Independent Institutions on the Relation Between VIE and Tobin's Q

	(1) Big N Auditor	(2) High Instit. Ownership
VIE	-0.59***	-0.52***
	(-4.31)	(-2.89)
Monitor	-0.80	-0.87
	(-1.06)	(-0.69)
VIE x Monitor	0.64***	0.36*
	(4.07)	(1.80)
Controls?	Yes	Yes
All variable interactions?	Yes	Yes
Observations	3,271	3,392
R-squared	0.32	0.31
Cluster	firm	firm
Fixed Effects	SIC 2, year	SIC 2, year

*** p<0.01, ** p<0.05, * p<0.1 using two-sided tests with standard errors clustered by firm. This table tabulates OLS regressions of the relation between the existence of a VIE and Tobin's Q. Variables of interest are the interactions between the existence of the VIE and the binary characteristic listed at the column heading. In these models, all control variables are included separaterly as well as interacted with the monitor variable to allow the coefficients to vary across monitors. Variables are defined in table 1.

TABLE 9

Multivariate Tests of the Level of Employees

	(1) All Years	(2) First Year
VIE	0.25*	0.59***
	(1.65)	(2.63)
ROA	0.09***	0.03
	(5.10)	(0.73)
Log Equity Market Value	0.64***	0.61***
	(20.30)	(12.13)
Leverage	-0.06	-0.10
	(-1.59)	(-1.24)
State Owned Ent.	-0.05	-0.78
	(-0.13)	(-0.96)
Constant	3.30***	3.10***
	(11.83)	(8.04)
Observations	2,757	353
R-Squared	0.70	0.68
Cluster	firm	firm
Fixed Effects	SIC 2, year	SIC 2, year

*** $p<0.01$, ** $p<0.05$, * $p<0.1$ using two-sided tests with standard errors clustered at the firm level. This table tabulates OLS regressions of the relation between the presence of a VIE and the log value of employees. Variables are defined in table 1.