Capital Structure with Risky Foreign Investment

Mihir A. Desai
Harvard University and NBER

C. Fritz Foley
Harvard University and NBER

James R. Hines Jr.
University of Michigan and NBER

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Abstract

Firms facing significant business risks have incentives to mitigate the costs of these risks by adjusting their capital structures. This paper investigates this link by analyzing the exposures of multinational firms to political risks. The evidence indicates that returns on investment in politically risky foreign countries are more volatile than returns elsewhere, and multinational firms reduce their leverage in response to the political risks they face abroad. A one standard deviation increase in foreign political risks is associated with 3.5% reduced leverage. The effect of foreign political risks on leverage is most pronounced for firms in industries whose returns are most susceptible to political influence.

The statistical analysis of firm-level data on U.S. multinational companies was conducted at the International Investment Division, Bureau of Economic Analysis, U.S. Department of Commerce under arrangements that maintain legal confidentiality requirements. The views expressed are those of the authors and do not reflect official positions of the U.S. Department of Commerce. The authors thank Simon Johnson, Bill Schwert, Rohan Williamson, Bill Zeile, Marc Zenner, two anonymous referees, and various seminar participants for helpful comments, and the Division of Research at Harvard Business School for generous funding.

1. Introduction

The relationship between risk exposures and firm financial decisions is an element of many theories of capital structure, but these theories have received only mixed empirical support. Multinational firms operating around the world encounter a wide variety of political regimes, and they face associated risks of sharply reduced profitability. This paper examines the extent to which exposures to political risks influence the capital structures of American multinational firms, thereby illuminating the broader relationship between capital structure and risky investments.

Using detailed data on American multinational firms, the analysis begins by considering the extent to which political risks influence the returns of multinational firms. The evidence indicates that the volatilities of investment returns of subsidiaries owned by the same parent company vary systematically with political risks. An increase in political risk corresponding to the difference between Canada and Mexico is associated with a 22 percent greater standard deviation of a foreign affiliate's return on assets. This increased volatility of returns is also manifest in a greater likelihood of annual losses among foreign affiliates in politically risky countries. Such volatility need not be costly to multinational firms given their ability to diversify risks across countries. An analysis of aggregate foreign risk exposures and foreign returns indicates that diversification benefits are operative but incomplete, as aggregate foreign political risks are associated with significantly more volatile returns.

Previous work suggests that multinational firms respond to political risks by altering financial and operational characteristics of foreign subsidiaries. Desai, Foley and Hines (2004) show that foreign subsidiaries located in politically risky countries are more highly levered than other foreign subsidiaries of the same multinational parents. Henisz (2000) offers evidence that multinational firms serving politically risky foreign markets are more likely than investors in safe locations to share ownership with local partners. Such behavior presumably entails managing political risks by shifting some of the risks to foreign capital providers who can bear these risks in a less costly manner. This earlier work leaves open the question of how political risks influence, if at all, the capital structures of parent companies located in politically stable countries but whose foreign subsidiaries are exposed to political risks.

The evidence indicates that parent companies of multinational groups exposed to significant foreign political risks use less leverage than do parent companies without such exposures. A one standard deviation increase in exposure to foreign risks reduces leverage by 3.5% of its mean level. This effect is large enough that overall firm leverage falls, despite the greater leverage of affiliates in risky countries. A notable aspect of this finding is that it runs counter to the incentives identified by Myers (1977), that shareholders of heavily leveraged firms prefer greater business risks, some of the cost of which is borne by debt holders.

The effects of political risks on capital structure should be particularly manifest in industries that are clearly exposed to such risks. A review of multinational firm experience with political risks suggests that industries primarily serving local markets and the transportation, communication and public utilities industries are particularly susceptible to local political risks. Repeating the analysis on these industry groupings indicates that firms in those industries that face the most significant exposure to political risk also feature the greatest effects of political risk on capital structure. Estimated capital structure effects are similar whether political risk is defined as an aggregate measure of country conditions or as an index that focuses more narrowly on political institutions. These results highlight a cost of operating in politically risky markets and illuminate the degree to which business risk exposures influence financing decisions more generally.

The results in this paper are related to earlier studies of the determinants of capital structure decisions and the distinctive nature of finance in emerging markets. As reviewed in Harris and Raviv (1991), empirical efforts to link the volatility of firm or industry returns to capital structure decisions have not produced strong or consistent results.[1] The mixed results on the role of return volatility in determining capital structure is particularly surprising given that the Graham and Harvey (2001) survey of Chief Financial Officers finds that informal criteria such as financial flexibility, credit ratings, and the volatility of earnings and cash flows are the most important factors influencing

[1] Opler, Pinkowitz, Stulz, and Williamson (1999) examine cash balances as a part of capital structure decisions and find that higher volatility of returns is associated with greater cash balances. Simlarly, Esty (2002) documents that firms consider country risk as well as other types of business risk when setting capital structure in project finance transactions.

borrowing levels. The results in this paper employ heterogeneity in exposures to political risk to identify the role of firm risk on capital structure, finding significant effects in the multinational setting.[2]

As noted in Bekaert (1995), Harvey (1995) and Bekaert and Harvey (1997, 2000), stock markets in emerging markets feature distinctive return distributions; aspects of local institutional environments, including political risk, contribute to higher return volatilities. The evidence indicates that these patterns carry over for multinational firms operating in risky environments, providing some support for the various capital budgeting practices, described in Sabal (2004), used to address such risks. Corporate finance practices in emerging markets have also received increasing attention with particular emphasis on the role of legal or contractual institutions, as in La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997, 1998). While several studies trace the effects of legal or contracting rules on financing and investment patterns, Acemoglu and Johnson (2005) emphasize the distinction between property rights institutions (protections from expropriation by the state) and contractual institutions (the environment for enforcing contacts between private parties), showing that property rights institutions more strongly affect economic outcomes than do contractual institutions. Indeed, Bekaert, Harvey and Lundblad (2005) and Bekaert, Harvey, Lundblad and Siegel (forthcoming) find that political institutions mediate the effects of capital markets liberalizations. This analysis of the behavior of American multinational firms offers evidence of the distinctive role of political institutions in influencing financing decisions.

Section 2 of the paper motivates subsequent empirical tests by sketching the effects of political risks on multinational firms. Section 3 describes the available data on the operations of American firms. Section 4 presents empirical evidence of the effects of political risk on the capital structure decisions of multinational companies. Section 5 is the conclusion.

2. Political Risks and the Multinational Firm

[2] Evidence of the impact of risk on the capital structures of foreign affiliates extend the results of Geczy, Minton and Schrand (1997), Kedia and Mazumdar (2003) and Allayanis, Brown and Klapper (2003) on hedging decisions in emerging markets by considering the responses of multinational firms.

Political risks contribute to the uncertainty of returns to foreign investment by introducing the possibility that foreign governments will take arbitrary actions that directly or indirectly influence the returns of American investors.[3] Such actions include outright expropriation of assets, "creeping" expropriations through tax or regulatory changes, and limitations on the repatriations of profits. These risks are distinct from exposures arising from unstable macroeconomic environments that are manifestations of general monetary or fiscal policies. Similarly, these political risks constitute a subset of the risks that are typically considered institutional in nature. In the language of Acemoglu and Johnson (2005) and Posner (1998), property rights institutions rather than contractual institutions determine the political risks facing multinational firms. As described below, metrics of these political risks used by practitioners are employed to identify variation in these risks, with separate measures used to control for macroeconomic volatility.[4]

The experience of the Overseas Private Investment Corporation (OPIC) offers a more granular insight into the nature of these political risks. OPIC is a U.S. government agency designed to facilitate overseas investment through financing vehicles, including insurance. OPIC's settlement experience from 1966 to 2004, while not necessarily representative of all multinational firm experiences, sheds light on the nature and relevance of political risks. During this period, OPIC settled 287 claims that were classified as arising for four possible reasons: currency inconvertibility, expropriation, war damage or civil strife. The latter two categories comprise only 16% of all such claims, and currency inconvertibility is the most common type of claim.

Distinguishing the effects of foreign political risks by industry affords a useful test of the relationship between political risk and capital structure. The importance of inconvertibility suggests that industries that have opportunities for serving worldwide markets, rather than local markets, would be less susceptible to such political risks, given

[3] Nearly all affiliates are separate legal entities from their parents and, as documented in Desai, Foley, and Hines (2004), financial claims on affiliates do not represent claims on the affiliate's parent. Therefore, a parent's exposure to political risk does not extend beyond the equity and debt provided by the parent to finance the affiliate. This exposure is, on average, equal to 42% of the value of affiliate assets.

[4] It is noteworthy that one of the very few empirical studies of expropriations, Duncan (2006), reports that changes in macroeconomic volatility do not appear to be associated with changed likelihoods of expropriation.

the ease with which exporters can overcome inconvertibility by denominating export contracts in unrestricted currencies or adjusting export prices charged to related parties. Firms in the transportation, communication, and public utilities sectors are particularly subject to political risk. As noted by Moran (1999) and Wells (1999), output in these industries is widely consumed, making these firms popular targets for political actors who question the value of international engagement. Firms in these industries are also often closely regulated and subject to inspection (Alesina et al., 2005), creating potential for regulatory changes that constitute "creeping" expropriation. In addition, these industries often require large upfront investments that cannot be easily relocated.

Multinational firms can mitigate foreign political risks in several ways, each of which, however, is subject to its own drawbacks. It is possible to purchase insurance against political risk, but only certain types of risks are contractible, and adverse selection makes such insurance expensive. Bilateral Investment Treaties (BITs) allow multinational firms limited protection from certain state actions, but most forms of creeping expropriation are extremely difficult to identify, and claim resolutions are slow, costly and uncertain. Firms can diversify their foreign risks by investing in many disparate foreign locations, but doing so entails undertaking investments that might not have a positive net present value. Finally, financing decisions at the subsidiary level can be employed to share risk with local investors who might price this risk differently. Indeed, Desai, Foley and Hines (2004) and Henisz (2000) show that multinational firms limit parent capital exposures by relying on local lenders and shareholders in settings characterized by significant political risk.[5]

Parent firms exposed to residual political risks face the prospect of potential revenue shortfalls at times when internal funds are most needed, either to mitigate financial distress or to finance worthwhile domestic investments. Firms can reduce the likelihood and cost of any subsequent financial distress by reducing the financial leverage

[5] Various articles in the popular press suggest that political risk insurance is employed sparingly. High premia (as much as three percent of the project value) and claims disputes are typically cited as reasons why many companies do not buy political risk insurance. See Charles Simonds, "FDI Caught in the Crossfire," *FDI Magazine*, August/September 2002, available at <http://www.fdimagazine.com>. For a discussion of the role of BITs and their evolution, see Desai and Moel (2006). For a further discussion of the logic of differential pricing of risk by local lenders and shareholders, see Desai, Foley and Hines (2006).

of their U.S. assets. Consequently, to the extent that foreign earnings volatility makes financial distress more likely, forward-looking firms facing significant foreign political risks have incentives to reduce U.S. leverage. U.S. borrowing by firms in industries that are most exposed to foreign political risks should, all other considerations equal, exhibit the greatest responsiveness to foreign political conditions.

3. Data

The empirical work presented in section 4 is based on the most comprehensive available data on the activities of American multinational firms. The Bureau of Economic Analysis (BEA) annual survey of U.S. Direct Investment Abroad from 1982 through 1999 provides a panel of data on the financial and operating characteristics of U.S. firms operating abroad. U.S. direct investment abroad is defined as the direct or indirect ownership or control by a single U.S. legal entity of at least ten percent of the voting securities of an incorporated foreign business enterprise or the equivalent interest in an unincorporated foreign business enterprise. A U.S. multinational entity is the combination of a single U.S. legal entity that has made the direct investment, called the U.S. parent, and at least one foreign business enterprise, called the foreign affiliate. As a result of confidentiality assurances and penalties for noncompliance, BEA believes that coverage is close to complete and levels of accuracy are high.

The foreign affiliate survey forms that U.S. multinational enterprises are required to complete vary depending on the year, the size of the affiliate, and the U.S. parent's percentage of ownership of an affiliate. The most extensive data for the period examined in this study are available for 1982, 1989, 1994, and 1999, when BEA conducted Benchmark Surveys. For 1982, 1989 and 1994, all affiliates with sales, assets, or net income in excess of $3 million in absolute value and their parents were required to file extensive reports; in 1999, the exemption limit increased to $7 million.[6]

Table 1 provides descriptive statistics for the variables used in the regression analysis described below. The first panel provides descriptive statistics of the affiliate level data used in the analysis presented in Table 2. This analysis focuses on explaining

[6] In non-benchmark years, exemption levels were higher and less information was collected from each survey respondent. From 1983 to 1988, data on affiliates with sales, assets, or net income greater than $10 million were collected, and this cutoff rose to $15 million for 1990-1993 and $20 million for 1995-1998.

the annual return experiences of individual affiliates over periods between benchmark years. The second panel displays descriptive statistics for the variables that appear in regressions presented in Table 3. These specifications consider the impact of political risk on the annual returns of foreign affiliates aggregated across affiliates of the same parent. Descriptive statistics of the variables used in the analysis presented in tables 4-7 appear in the third panel. This analysis tests for effects of political risk on the leverage of a firm's U.S. operations as well as its worldwide operations.

Measures of political risk are based on the index of country specific, time-varying political risk that appears in the *International Country Risk Guide* (ICRG). This guide assigns numbers between 0 and 100 to countries that represent aggregations of various components of political stability.[7] The political risk variables used in the analysis equal one minus the ratio of the corresponding ICRG measures to 100, thereby imposing that measures of political risk lie between 0 and 1, with higher numbers corresponding to greater political instability.

The political risk measure exhibits considerable variation. As indicated in the top panel of Table 1, this variable has a mean value across all affiliate-year observations of 0.2263, and a standard deviation of 0.1071. In 1989, for example, Canada had a value of 0.13, Mexico a value of 0.33, and Nigeria a measure of 0.53. While such measures are sufficient to characterize political risk exposures of individual affiliates, characterizing parent company political risk exposures requires aggregation across foreign affiliates. This aggregation is discussed in Section 4.1, and summary statistics of aggregated measures of political risk appear in the second and third panels of Table 1.

4. Impact of Foreign Political Risk

4.1. Return characteristics in politically risky countries

[7] The International Country Risk Guide data are compiled by the editors of *International Reports* based on subjective evaluations of specific features of local political conditions in each country. These specific features are aggregated to produce local measures of government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality; and, in turn, these measures are aggregated to produce single measures of local political stability. The data are reported monthly; annual political risk measures used in the regressions represent averages of these monthly values. Since these data are available from 1984 onwards, 1984 data are used for the 1982 period in the BEA data. The International Country Risk Guide methodology is described in detail at www.icrgonline.org. Further analysis employing selected components of the index is described below.

While previous studies describe links between political risks and stock market return variability, it is useful to consider the extent to which American multinational firms are impacted by political risks. Multinational firms may have market positions and political power that could limit their exposures to political risks more than is the case for local investors. Furthermore, previous studies of stock market returns reflect both capital market conditions and the operating environments of individual firms.

Table 2 presents the results of estimating the effect of political risk on two different measures of earnings volatility. The first three columns of Table 2 report estimated coefficients from regressions in which the dependent variable is the standard deviation of an affiliate's return on assets between benchmark survey years.[8] Column 1 presents estimated coefficients from regressing the standard deviation of returns on measures of local political risk, a dummy variable for each country, and a dummy variable for each parent company in each benchmark year.[9] The inclusion of this set of dummy variables implies that the effect of political risk is identified by comparing changes in the variability of returns earned by affiliates of the same company located in different foreign countries whose levels of risk change over time. The estimated 0.1123 coefficient in column one implies that a one standard deviation (0.1071) increase in political risk is associated with 0.0120 higher standard deviation of returns. Evaluated at the mean standard deviation of return on assets of 0.0861, this corresponds to a 14 percent greater variability of returns.

The variability of affiliate returns may reflect operational and financial decisions that firms make in response to political risk. As noted in section two, there is evidence that affiliates located in risky countries are financed with higher debt/equity ratios than are affiliates in politically safe locations, so the endogeneity of affiliate leverage alone might account for the correlation of return volatility and political risk. In order to explore this possibility, the regression reported in column two includes a measure of affiliate leverage as an independent variable, and indeed, the results indicate that affiliates

[8] The sample is limited to observations based on at least five years of annual affiliate data. There is a maximum of three observations for each affiliate, representing standard deviations of returns separately calculated for 1982-1989, 1990-1994, and 1995-1999.

[9] The standard errors presented in Table 2 are computed following the procedure described in Cameron, Gelbach and Miller (2006) that allows for two-way clustering by parent and country.

financed with higher levels of debt exhibit greater return variability.[10] The inclusion of leverage controls does not, however, reduce the estimated effect of political risk on the standard deviation of returns. The regression reported in column two also adds a measure of affiliate size, its -0.0182 estimated coefficient suggesting that larger affiliates exhibit somewhat smaller standard deviations of returns.

Countries with high degrees of political risk may also feature unstable macroeconomic conditions that influence the variability of returns earned by multinational investors. The regression reported in column three of Table 2 adds three variables corresponding to measurable aspects of local macroeconomic conditions. Growth Rate Volatility is the standard deviation of a country's annual GDP growth rate between benchmark years; Exchange Rate Volatility is the standard deviation of the dollar-denominated exchange rate measured at an annual frequency between benchmark years, and Inflation Rate Volatility is the standard deviation of annual consumer price index inflation between benchmark years. The coefficients reported in column three imply that all three of these measures of macroeconomic instability are positively associated with volatility of affiliate returns. Inclusion of these variables reduces the estimated magnitude of the effect of political risk on affiliate return volatility, but the effect remains sizable and statistically significant.[11] Based on the estimate of the effect of political risk in column 3, an increase in political risk corresponding to the difference between Canada and Mexico translates into an increase in the standard deviation of the return on assets of a multinational subsidiary equal to 22 percent of its mean value

While the standard deviation of returns is a conventional measure of risk, many concerns about the impact of political risk center on the possibility that affiliates might display increased likelihood of negative returns in politically risky countries. Table 1 reports that foreign affiliate net income is negative 21.87 percent of the time. Columns 4-6 of Table 2 present regressions in which the dependent variable is the fraction of the years between benchmark surveys in which net income is negative, and the independent

[10] The BEA data do not include annual information on affiliate interest payments, so it is not possible to analyze a measure of the standard deviation of foreign affiliate earnings (such as EBITDA) that is adjusted for interest payments.

[11] Robustness tests that add measures of financial development (the ratio of private credit plus stock market capitalization to GDP, as reported by Beck, Demirgüç-Kunt, and Levine (2000)) and per capita GDP as explanatory variables yield results very similar to those reported in Table 2.

variables are the same as those in the regressions presented in columns 1-3. The 0.1530 coefficient on political risk in the regression reported in column 4 implies that a one standard deviation increase in political risk is associated with a 1.6 percent greater chance that annual returns are negative, thereby raising the chance of negative returns by 7.5 percent of its mean value. Inclusion of measures of affiliate leverage and macroeconomic instability produce an effect of political risk, reported in column 6, that is somewhat larger than that reported in column 4.[12] Greater political risk appears to influence both the volatility of affiliate returns and the likelihood of negative outcomes.[13]

Risks faced by foreign affiliates in countries with high degrees of political instability may not impose significant costs on parent companies if firms are able to diversify costlessly by investing in multiple risky environments. Opportunities for diversification are limited by the relatively small number of foreign countries in which most parent companies invest, and any positive correlation among foreign risks. In view of the difficulty of identifying any cross-country correlation of foreign political risk, the analysis below considers two polar cases, one in which foreign political risks are independent, and a second in which they are perfectly correlated. As the Appendix illustrates, these two cases correspond to alternative aggregation methods with distinct weightings of country risks. If political risks are perfectly correlated across countries, then aggregate risk exposure depends on the weighted sum of foreign risks, with weights equal to the share of activity in each country. Alternatively, if political risks are independent, then aggregate risk exposure depends on the weighted sum of foreign risks, with weights equal to squared shares of activity in each country.

Table 3 presents regressions in which the dependent variable is the standard deviation of annual aggregate returns of the foreign affiliates owned by a parent company, and the independent variables include alternative measures of foreign political risks.[14] The regressions presented in columns one and two use a foreign political risk measure that corresponds to the case of perfectly correlated risks. Specifically, they

[12] The results in columns 4-6 are also robust to including measures of financial development (the ratio of private credit plus stock market capitalization to GDP, as reported by Beck, Demirgüç-Kunt, and Levine (2000)) and per capita GDP as explanatory variables.
[13] Additional analysis indicates that mean returns do not vary systematically with political risk.
[14] The sample of affiliates whose returns are aggregated for this analysis is the sample used in the analysis presented in Table 2.

include as a measure of foreign risk the share of foreign affiliate sales located in countries whose ICRG-measured political risk levels exceed the sample median value. The estimates indicate that this share-weighted measure of foreign political risk is positively associated with the standard deviation of the aggregate return on foreign assets, though the effect is not statistically significant when measures of macroeconomic volatility are included in the regression reported in column 2. All of the regressions in Table 3 include controls for two measures of levels of foreign activity, numbers of foreign affiliates and logs of aggregate foreign assets; both are negatively correlated with the standard deviation of foreign returns, though only in the case of aggregate foreign assets is the effect significant across specifications.

The regressions reported in columns 3 and 4 add a variable equal to the difference between the share-weighted risk measure and the squared share-weighted risk measure to the specifications used in columns 1 and 2. Since the share weighted risk measure is appropriate if risks are perfectly correlated, and the squared share weighted risk measure is appropriate if risks are independent, the difference between these provides a measure of the extent of diversification benefits. The significant and large negative estimated coefficients on this difference variable in both regressions indicate that the standard deviation of returns on foreign assets is more directly influenced by the squared share-weighted measure of foreign risks than it is the share-weighted measure. As such, the results imply that firms can avail themselves of diversification benefits by investing in multiple locations. Accordingly, the regressions reported in columns 5 and 6 of Table 3 include only the squared-share weighted fraction of sales by foreign affiliates located in countries with above-mean political risks. This variable has a significant positive effect on parent company foreign return volatility in both specifications.[15]

Even though diversification appears to mitigate risk, the evidence indicates that firms do not diversify away all their political risks. The limited extent to which firms achieve diversification of political risk is manifest in the extent to which measures of

[15] Supplementary regressions (not reported) indicate that adding additional independent variables measuring levels of average foreign financial development (using the ratio of private credit plus stock market capitalization to GDP, as reported by Beck, Demirgüç-Kunt, and Levine (2000)), legal formalism (using the proxy related to collecting on an unpaid check reported by Djankov et al. (2003)) and per capita GDP changes very little the estimated effects of foreign political risks on the standard deviation of foreign returns that are reported in column 6 of Table 3.

exposures affect the volatility of aggregate foreign returns. The 0.2840 standard deviation of the squared share weighted measure of foreign political risk exposure and the 0.0138 coefficient in column 6 together imply that a one standard deviation increase in exposure increases the standard deviation of foreign returns by 0.0039 percent, or 6.4 percent of its mean value. Taken together, analysis of the impact of political risks on the volatility of foreign earnings indicates that these risks are potentially diversifiable, but that, as a practical matter, they continue to have meaningful effects.

4.2. U.S and worldwide leverage

Multinational parents with particularly high operating risks stand to benefit from reducing their financial risks, since these parent firms may need to draw on costly external finance to fund ongoing operations. Anticipating this possibility, parent companies whose foreign investments are located in countries with significant political risk have incentives to economize on the use of debt. The empirical work presented in this section measures the extent to which this consideration appears to influence leverage levels of their U.S. and worldwide operations. Given the finding of other studies that affiliates located in countries with high levels of political risk make greater use of leverage, effects of political risk on U.S. leverage may simply serve to offset the effects of political risks on borrowing by foreign affiliates.

Figure 1 compares the U.S. leverage of companies whose foreign affiliates are located in countries with greater than average political risks with U.S. leverage ratios of companies whose foreign affiliates are located in politically safer countries. For such a comparison, political risk must be aggregated to the parent level. This is accomplished by computing the share of worldwide activity each parent system performs in countries with above the median level of political risk. Figure 1 breaks the sample of parent companies into two groups, those with above-average and below-average sales-weighted foreign political risks. As is evident from the figure, parent companies facing greater foreign political risks use less U.S. leverage (defined as the ratio of the sum of domestic current liabilities and long-term debt to domestic assets) than do parent companies operating in safer foreign environments. The median U.S. debt/asset ratio of the sample of parent companies with risky foreign operations is 0.4217, whereas the corresponding median U.S. debt/asset ratio for parent firms whose foreign operations are located in safer

countries is 0.4615. This 4.0 percent difference in the use of debt as a share of assets is a difference of 8.5 percent of the mean value of U.S. leverage in the overall sample.

While illustrative, the comparison in Figure 1 does not control for parent characteristics and exposures to macroeconomic risks that have the potential to influence capital structures. Table 4 presents the results of regressing two measures of U.S. leverage on independent variables that include the fraction of parent company foreign investments in countries with above-average political risks. The dependent variable in the regressions presented in columns 1 and 2 is the same U.S. leverage measure depicted in Figure 1. Exposure to political risk is computed as the sum of squared shares of total firm sales in countries with above median political risks. This measure is appropriate if political risks are independent across countries, which is consistent with the return volatility analysis presented in Section 4.1.[16] The regressions include independent variables measuring firm size, the degree of multinationality, concentration of assets in tangible capital, profitability, and contemporaneous market measures of parent industry *q*. The regressions also include industry and year dummy variables.

The -0.2329 coefficient in column 1 indicates that increased political risk exposure reduces U.S. borrowing. A similar result appears in the regression reported in column 2, which includes controls for growth rate volatility, exchange rate volatility, and inflation rate volatility. The negative coefficients on growth rate volatility and exchange rate volatility indicate that higher volatility is associated with lower U.S. leverage, but these effects are not statistically significant. Many of the parent firm characteristics exhibit robust correlations with U.S. leverage that are consistent with findings in the empirical capital structure literature such as Titman and Wessels (1988) and Rajan and Zingales (1995). Larger U.S. operations support higher levels of U.S. leverage, and firms with more profitable U.S. operations, and operations in high *q* industries, employ lower U.S. leverage. Firms that have greater levels of foreign activity, as measured by the log of aggregate affiliate assets, appear to have lower levels of U.S. leverage.

[16] Qualitatively similar results are obtained for Tables 4-7 if one computes exposure to political risks using the sum of shares, rather than squared shares, of total firm sales in countries with above median politcal risks.

Columns 3 and 4 repeat these regressions using a dependent variable in which parent cash holdings are treated as negative debt; the results are quite similar to those appearing in columns 1 and 2.[17] The -0.2458 coefficient in column 4 implies that a one standard deviation (0.0599) increase in political risk exposure decreases U.S. leverage by 0.015, or 3.5 percent of its mean value. Given the squared share weighting, this difference in political risk exposure corresponds to the difference between having no operations in risky foreign countries and having 24 percent of foreign operations in risky countries. This evidence suggests that exposures to risky foreign environments encourage parent companies to reduce their U.S. leverage ratios.[18]

Prior research indicates that American multinational firms with exposures to politically risky environments respond by increasing the leverage of the exposed foreign operations. The differing effect of political risk on U.S. borrowing implies that the net effect of foreign risks on total firm borrowing could be negative or positive. In order to consider these net effects, the regressions in Table 5 use as dependent variables worldwide leverage ratios, defined to include total parent and affiliate borrowing. Specifically, the dependent variable in the regressions presented in columns 1 and 2 of Table 5 is the ratio of the sum of parent and affiliate borrowing to total parent and affiliate assets; the dependent variable in the regressions presented in columns 3 and 4 is the same variable, except that parent company cash assets are subtracted from the numerator.[19]

The coefficient estimates in the regressions reported in Table 5 imply that greater exposure to foreign political risks is associated with reduced worldwide leverage. The -0.2014 coefficient in column 1 implies that increased political risk exposure reduces total firm leverage. Greater political risk is associated with reduced worldwide borrowing in the regression reported in column 2, that adds controls for macroeconomic risks, and in

[17] Significant cash holdings reduce the likelihood and magnitude of subsequent cash shortfalls and associated financial distress, suggesting that cash be treated as negative debt. This view is consistent with some of the evidence presented in Acharya, Almeida, and Campello (2005), Opler, Pinkowitz, Stulz and Williamson (1999) and Pinkowitz and Williamson (2006).

[18] Separate robustness tests in which U.S. leverage is regressed on the standard deviation of foreign returns yield results that higher standard deviations of foreign returns are associated with reduced domestic borrowing.

[19] Given the selective reporting of cash assets at the affiliate level, aggregate affiliate cash is not subtracted in constructing the dependent variable for the regressions reported in columns 3 and 4.

the regressions reported in columns 3 and 4, that treat cash as negative debt. The -0.2121 coefficient in column 4 implies that a one standard deviation increase in political risk reduces worldwide leverage by 0.013, or 2.9 percent of its mean value. This effect, which is smaller than the effect of political risk on domestic borrowing alone, nonetheless is both statistically significant and economically consequential for multinational investors.[20]

This analysis of the relationship between political risk and capital structure takes a firm's investment profile as given. As investment and financing choices are jointly determined, it is worth considering the implications of the endogeneity of investment to financing. One type of concern about endogeneity follows from Myers (1977), who notes that the incomplete nature of debt contracts creates an incentive for equity holders to have their firms undertake risky investments. This incentive increases with the share of debt financing, thus inducing a positive correlation between leverage and the risk of investment choices. In the context of multinational firms exposed to political risk, this potential endogeneity of investment choice implies that heavily leveraged multinational parent companies have incentives to locate investment in unusually risky countries. In fact, the opposite pattern appears in the data, suggesting that the effects of risky investment returns on capital structure dominate any effects of capital structure choice on the risk of investment. In order to address further concerns about endogeneity and alternative explanations more generally, it is informative to test if political risks have their most pronounced effects in industries where risks should be most relevant.

4.3. Industry variation

The estimated capital structure effects of political risks presented in Tables 4 and 5 correspond to average effects for firms in all industries. In fact, the effects of political risk are likely to vary with industry characteristics corresponding to exposures to, or protections from, political risk. A number of considerations suggest that political risk is particularly salient for multinational firms in industries in which foreign affiliates are

[20] Robustness tests indicate that adding independent variables measuring levels of average foreign financial development (using the ratio of private credit plus stock market capitalization to GDP, as reported by Beck, Demirgüç-Kunt, and Levine (2000)), legal formalism (using the proxy related to collecting on an unpaid check reported by Djankov et al. (2003)) and per capita GDP change very little the estimated effects of foreign political risks on borrowing that are reported in column 4 of Table 4 and column 4 of Table 5.

focused on serving their local markets. Currency convertibility restrictions, a primary manifestation of political risk, constrain those industries unable to earn foreign exchange through exports most, as export earnings facilitate circumventing such restrictions. Similarly, industries entirely reliant on local customers have limited bargaining power against a government that might impose price controls, increase taxes, or engage in other methods of "creeping" expropriation. Another industry grouping particularly susceptible to political risk is the set of industries related to transportation, communication, and public utilities. Affiliates in this sector tend to be focused on serving the local economy, and in addition they are often closely regulated and monitored by the government. It is useful to consider the degree to which industries reliant on local markets, and those that are heavily regulated, are particularly responsive to political risks.

Table 6 presents the results of specifications explaining U.S. and overall leverage as a function of political risk exposure and a set of controls, distinguishing firms by industry. The dependent variable in columns 1-3 is the same as that in columns 3 and 4 of Table 4—the ratio of domestic current liabilities and long term debt less cash to domestic assets. The sample used in the first column includes firms in industries that are oriented toward sales outside of the local market. These firms are likely to be less affected by political risks than are the firms analyzed in column 2 that primarily sell to local markets. The local sales distinction is identified by first computing the average ratio of local affiliate sales to total affiliate sales for each 3-digit industry over all years covered in the data. Next, the sample of parent firms is split into two groups at the sample median of industry local sales shares. At the median, 77 percent of sales are directed towards the local market. The sample used in the third column includes all firms in the transportation, communication, and public utilities industries.[21]

[21] All industries in the transportation, communication, and public utilities sectors except for the travel agency industry are classified as being industries that primarily sell to the local market. The drug industry, which is often highly regulated, is also classified as being focused on local sales. The textile, industrial chemical, computer and office equipment, household appliance, electronic components and accessories, and medical instruments industries are all classified as being focused on non-local sales. It is useful to note that the characterization of the susceptibility of industry activity to political risk used roughly corresponds to the findings of an earlier study of nationalizations of foreign enterprises. Specifically, Williams (1975) provides data on nationalizations by country and industry, finding that mining and smelting, agriculture, public utilities, transport and banks are more likely to be nationalized relative to the remaining industries of oil and gas, manufacturing, trade, and tourism. He explains these patterns by emphasizing the relative

The coefficient on political risk exposure in the second column of Table 6, estimated on the sample of firms in industries oriented toward local sales, is negative and significant. It differs sharply from the insignificant positive coefficient on political risk exposure in the first column of Table 6, which reflects the behavior of firms in industries directed at non-local sales. The -0.4039 coefficient on political risk exposure in column 2 indicates that a one standard deviation increase in political risk exposure lowers use of domestic debt as a share of assets by 0.024. This reduction in U.S. leverage is economically sizeable, as it equals 5.8 percent of the sample mean value of U.S. leverage (treating cash as negative debt). An F-test confirms that the estimated coefficient on political risk exposure in column 2 differs significantly from that in column 1. The -0.6636 coefficient in column 3 implies that the effect of political risk for firms in the transportation, communication, and utilities industries is greater still. The specifications presented in columns 4-6 repeat the analysis of columns 1-3 with worldwide leverage (again treating cash as negative debt, as in columns 3-4 of Table 5) as the dependent variable. The results of these specifications also indicate that the effects of political risk on capital structure are most pronounced in industries focused on local sales, and in the transportation, communication, and utilities industries, where these risks are particularly relevant.[22]

One of the difficulties of analyzing the impact of operational characteristics on financial choice is that a firm's operational and financial decisions are jointly determined in its pursuit of profits. As a result, it is possible that greater riskiness of a firm's financial position – the use of excessive leverage, for example – might directly affect its operational choices. The prevailing theory of the impact of leverage on operational risk-taking (Myers, 1977) implies that there would be a positive correlation between the two,

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bargaining power of states and these private actors, much as the division of industries by their focus on local sales is meant to capture. Given differing industry definitions, it is not possible to map precisely this categorization to the data used in the present study, but several industries are similarly classified.

[22] Additional tests confirm that measured political risk significantly increases the standard deviation of foreign returns for firms in industries focused on local sales, and does not do so for firms in industries focused on non-local sales. The small sizes of the sample of firms in the transportation, communication and utilities industries, together with the need for multiple years of data to construct standard deviation measures, makes it impossible to repeat this exercise for firms in those industries. A separate industry breakdown, distinguishing firms based on their dependence on local external finance (based on the investment intensity measure suggested by Rajan and Zingales (1998)), shows no significant difference in the effect of political risk exposure on U.S. and worldwide leverage – suggesting that estimated effects of political risk are unlikely to reflect financial dependence.

whereas the evidence from American multinational firms indicates that the correlation is negative, suggesting that the impact of operations on financing is more powerful than any effect of financing on operations. The industry-based evidence reported in Table 6 is consistent with this interpretation, though it is worth bearing in mind that firms in industries whose sales tend to be local can choose whether or not to invest in countries with high levels of political risk.

4.4. Alternative measures of political risk

The preceding analysis employs the aggregate measure of political risk that ICRG provides to investors and scholars. Several previous studies have also chosen to investigate the relevance of a subset of the components that make up this aggregate measure. Such investigations are particularly useful as they emphasize those components of the broader index that are of the greatest relevance to the problems at hand. Specifically, Bekaert, Harvey and Lundblad (2006) develop a Quality of Institutions index designed to capture the quality of political institutions that aggregates the subcomponents of corruption, law and order, and bureaucratic quality. They also investigate the role of the investment profile component of the aggregate index. Given the focus in the analysis on the effects of political risk on financial choices of foreign investors, it is also informative to add the investment profile component to the Quality of Institutions index. This added component captures risks that are likely to be particularly relevant to foreign investors, risks related to contract viability, expropriation, profit repatriation, and payment delays.

In order to consider the robustness of the results to these alternative measures of political risk, Table 7 reports estimated coefficients from repeating the regressions in column 4 of Table 4 and column 4 of Table 5, in which the dependent variables are U.S. leverage and worldwide leverage, both computed treating cash as negative debt. The specification in columns 1 and 3 replace the political risk variable based on the entire ICRG index with a political risk variable based on a measure of Quality of Institutions drawn from Bekeart, Harvey and Lundblad (2006). The specifications presented in columns 2 and 4 use instead a political risk exposure variable based on the Quality of Institutions index modified to incorporate the investment risk profile component reported

by ICRG. In each of these specifications, the results are broadly consistent with those reported in Tables 4 and 5.

5. Conclusion

American firms investing abroad face significantly greater risks than they do when they invest in the United States. Political risks are manifest in more volatile returns at the affiliate level. Analysis of the volatility of aggregate foreign returns indicates that political risks are potentially diversifiable, but that, in practice, these risks nonetheless affect the variability of foreign returns. Firms respond to these political risks by reducing their U.S. and worldwide leverage. As these adjustments are costly, their magnitudes illuminate one aspect of the costs that investors bear in politically unstable foreign environments.

This investigation of the risks facing multinational firms illuminates more general determinants of capital structure. Myers (1977) suggests that more highly leveraged firms will undertake riskier investments, which is inconsistent with the evidence reported in this paper. Risky investment returns faced by multinational firms appear to have implications for capital structure that are stronger than any effects of capital structure on the risk profile of foreign investments. The impact of risks created through foreign investments offers a window onto corporate reactions to general operating risks, which have been difficult to measure. Domestic operating risks are likely to reduce leverage for many of the same reasons that foreign business risks do so.

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Appendix

In order to construct a measure of the political risks to which American companies are exposed, it is useful to consider a firm investing in *n* foreign countries. Let x_i denote the realized return to investing one dollar of assets in country *i*; this return is a random variable, with mean $\bar{x}_i$ and (finite) variance denoted σ_i^2. This variance is a function of the level of political risk in country *i*. The firm invests A_i in country *i*, and has total assets given by $\sum_{i=1}^{n} A_i \equiv \tilde{A}$. The firm's total foreign returns are $\sum_{i=1}^{n} A_i x_i$, and the variance of these returns, denoted Ψ, taking $E\{\cdot\}$ to be the expectations operator, is given by:

$$\Psi = E\left\{\left[\sum_{i=1}^{n} A_i x_i - \sum_{i=1}^{n} A_i \bar{x}_i\right]^2\right\} = E\left\{\left[\sum_{i=1}^{n} A_i x_i\right]^2\right\} - \left[\sum_{i=1}^{n} A_i \bar{x}_i\right]^2. \tag{1}$$

Since $\sigma_i^2 \equiv E\{x_i^2\} - \bar{x}_i^2$ and the covariance of *i* and *j* is defined as $Cov_{ij} \equiv E\{x_i x_j\} - \bar{x}_i \bar{x}_j$, equation (1) simplifies to:

$$\Psi = \sum_{i=1}^{n} A_i^2 \sigma_i^2 + \sum_{i=1}^{n} \sum_{j \neq i} A_i A_j Cov_{ij}\ . \tag{2}$$

Consider two special cases where covariances need not be measured. First, if all of the covariances are zero, so that the returns to investments in foreign countries are all independent, then equation (2) can be expressed as:

$$\Psi = \tilde{A}^2 \sum_{i=1}^{n} s_i^2 \sigma_i^2\ . \tag{3}$$

in which $s_i \equiv \frac{A_i}{\tilde{A}}$ is the share of foreign assets located in country *i*. Since Ψ is a variance, the standard deviation of foreign returns, normalized by total foreign assets, is given by:

$$\frac{\sqrt{\Psi}}{\tilde{A}} = \left[\sum_{i=1}^{n} s_i^2 \sigma_i^2\right]^{1/2}. \tag{4}$$

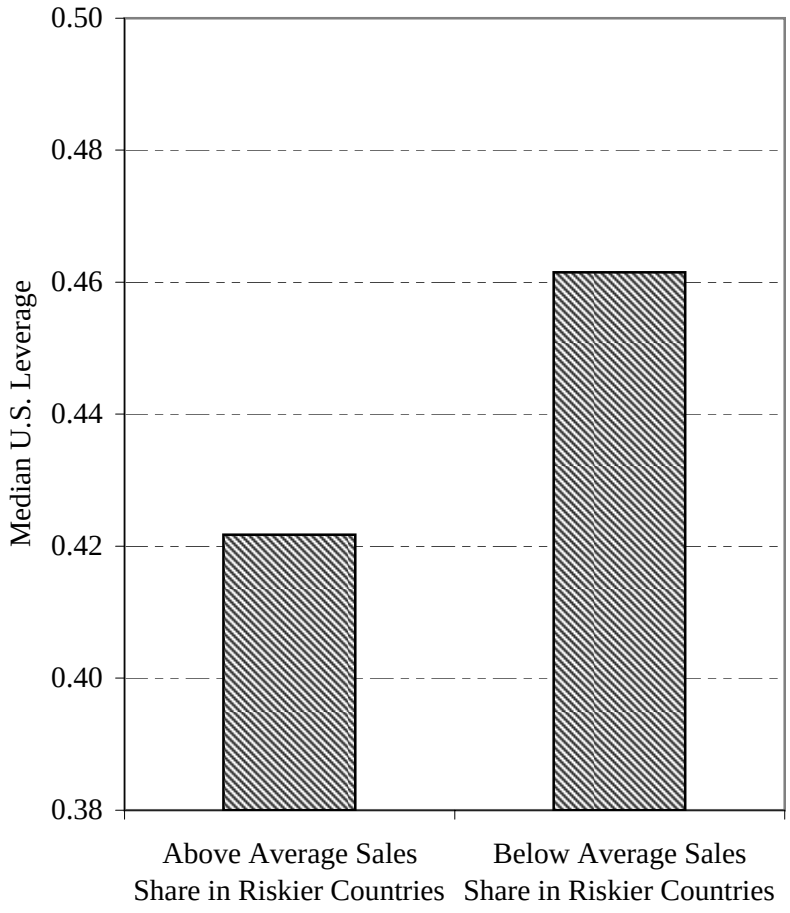
Equation (4) embodies the familiar $\sqrt{n}$ rule for the benefits of diversification, since, with equal-sized foreign investments $\left(s_i = s_j, \forall i, j\right)$ and constant variances $\left(\sigma_i = \sigma_j \equiv \sigma, \forall i, j\right)$, equation (4) simplifies to $\frac{\sqrt{\Psi}}{\tilde{A}} = \frac{\sigma}{\sqrt{n}}$. Hence a firm with four equal-sized foreign affiliates with independent risks is exposed to half the aggregate risk as a firm with just one foreign affiliate with the same individual variance of returns. More generally, aggregate risk exposure in the case of independent returns depends on the extent to which foreign investments are concentrated in risky foreign locations, as measured by the weighted sum of foreign risks, with weights equal to squared concentration shares.

Second, consider the alternative that there exists perfect correlation among foreign risks, in which case it is straightforward to show that equation (4) becomes:

(5) $$\frac{\sqrt{\Psi}}{\tilde{A}} = \left[\sum_{i=1}^{n} s_i \sigma_i^2\right]^{1/2}.$$

Comparison of these expressions indicates that distinction between independent and perfectly correlated risks takes the form of whether shares of foreign investment (as in equation 5, characterizing perfectly correlated risks) or squared shares of foreign investment (as in equation 4, characterizing independent risks) are used as weights in constructing a measure of aggregate risk that is appropriate for parent companies.

Figure 1 : The Relationship Between Political Risk Exposures and U.S. Leverage



Notes: The figure plots the median ratio of parent U.S. current liabilities and long term debt to parent U.S. assets for firms with above and below average exposures to political risk. A firm's exposure to political risk is measured as the share of total firm sales in countries with above median political risk. Political risk is derived from the ICRG political risk data and has been rescaled to lie between zero and one with higher numbers reflecting higher risks.

Table 1

Descriptive Statistics

Notes: The table presents descriptive statistics of variables used in the regression analysis. The first panel describes affiliate level data used in the analysis presented in Table 2. The Standard Deviation of Affiliate ROA is the standard deviation of a foreign affiliate's annual return on assets for periods between benchmark surveys. The Share of Occurrences of Negative Net Income is the ratio of numbers of years with negative net income to numbers of years with reported income for periods between benchmark surveys. Political Risk is a linear transformation of the ICRG data scaled to lie between zero and one with higher values indicating higher risks. Affiliate Leverage is the ratio of affiliate current liabilities and long term debt to affiliate assets. Growth rate volatility, exchange rate volatility and inflation rate volatility are measures of standard deviations of GDP growth rates, real exchange rates, and CPI inflation. Standard deviations are calculated using annual observations in intervals between benchmark years. The second panel describes parent level data used in the analysis presented in Table 3. The Standard Deviation of Foreign ROA is the standard deviation of a parent company's annual aggregate foreign return on aggregate foreign assets for periods between benchmark surveys. Foreign Political Risk Exposure (Share Weighted) equals the share of foreign sales in countries with above median political risk based on ICRG data. Median political risk measures are calculated using all affiliates in the sample. Foreign Political Risk Exposure (Squared Share Weighted) equals the sum of squared shares of foreign sales in countries with above median political risk based on ICRG data. Log of number of affiliates is the natural log of the number of foreign affiliates owned by a parent company. Aggregate Affiliate Leverage is the ratio of the sum of liabilities across all affiliates to the sum of assets across all affiliates. Log of Aggregate Affiliate Assets is the natural log of the sum of affiliate assets. Growth rate volatility, exchange rate volatility and inflation rate volatility are weighted measures, using assets as weights, of standard deviations of GDP growth rates, real exchange rates, and CPI inflation. Standard deviations are calculated using annual observations in intervals between benchmark years. The third panel displays descriptive statistics for the parent level analysis presented in Tables 4-7. U.S. Leverage is the ratio of domestic current liabilities and long term debt to domestic assets. Worldwide Leverage is the ratio of firmwide current liabilities and long term debt to firmwide assets. U.S. Leverage (Cash Treated as Negative Debt) subtracts cash holdings from the numerator of U.S. Leverage; similarly, Worldwide Leverage (Cash Treated as Negative Debt) subtracts U.S. cash holdings from the numerator of Worldwide Leverage. Political Risk Exposure (Squared Share Weighted) equals the sum of squared shares of total firm sales in countries with above median political risk based on ICRG data. Quality of Institutions is an index of political risk that aggregates only the Corruption, Law and Order, and Bureacratic Quality subcomponents of the ICRG political risk measure. Quality of Institutions for FDI adds to Quality of Institutions the Investment Profile subcomponent. Both of these subindicies are scaled to lie between zero and one, with higher values indicating higher risks. Log of U.S. Assets is the natural log of domestic assets held by U.S. parent companies. Log of Aggregate Affiliate Assets is the natural log of the sum of affiliate assets. U.S. Net PPE/U.S. Assets is the ratio of parent company domestic net property, plant and equipment to parent domestic assets, and U.S. EBITDA/U.S. Assets is the ratio of U.S. parent company domestic earnings before interest, taxes, depreciation and amortization to parent company domestic assets. Industry q is the median industry q for Compustat firms in the parent company's three-digit SIC industry. Growth rate volatility, exchange rate volatility and inflation rate volatility are weighted measures, using assets as weights, of standard deviations of GDP growth rates, real exchange rates, and CPI inflation. Standard deviations are calculated using annual observations in intervals between benchmark years.

	Number of Observations	Mean	Standard Deviation
Variables used in Table 2			
Standard Deviation of Affiliate ROA	19488	0.0861	0.0932
Share of Occurrences of Negative Net Income	19488	0.2187	0.2711
Political Risk	19488	0.2263	0.1071
Affiliate Leverage	16895	0.5220	0.2500
Log of Affiliate Assets	16895	10.6130	1.2157
Growth Rate Volatility	16293	0.0239	0.0165
Exchange Rate Volatility	16293	0.1347	0.1162
Inflation Rate Volatility	16293	0.3184	1.7962
Variables used in Table 3			
Standard Deviation of Foreign ROA	2694	0.0562	0.0614
Foreign Political Risk Exposure (Share Weighted)	2694	0.3467	0.3281
Foreign Political Risk Exposure (Share Weighted) - Foreign Political Risk Exposure (Squared Share Weighted)	2694	0.1607	0.1925
Foreign Political Risk Exposure (Squared Share Weighted)	2694	0.1861	0.2840
Log of Number of Affiliates	2694	1.0978	1.1273
Log of Aggregate Affiliate Assets	2694	11.7331	1.7839
Aggregate Affiliate Leverage	2694	0.4641	0.2214
Growth Rate Volatility	2694	0.0213	0.0106
Exchange Rate Volatility	2694	0.1129	0.0840
Inflation Rate Volatility	2694	0.1714	0.9574

Variables used in Tables 4-7

U.S. Leverage	6931	0.4701	0.2401
U.S. Leverage (Cash Treated as Negative Debt)	6892	0.4168	0.2671
Worldwide Leverage	6903	0.4850	0.2085
Worldwide Leverage (Cash Treated as Negative Debt)	6877	0.4421	0.2295
Political Risk Exposure (Squared Share Weighted)	6931	0.0152	0.0599
Political Risk Exposure Based on Quality of Institutions	6892	0.0124	0.0580
Political Risk Exposure Based on Quality of Institutions for FDI	6892	0.0158	0.0649
Log of U.S. Assets	6931	12.7106	1.8843
Log of Aggregate Affiliate Assets	6931	10.8973	2.1185
U.S. Net PPE/U.S. Assets	6931	0.3564	0.2780
U.S. EBITDA/U.S. Assets	6931	0.1328	0.1071
Industry q	6931	1.4437	0.5643
Growth Rate Volatility	6931	0.0160	0.0056
Exchange Rate Volatility	6931	0.0232	0.0280
Inflation Rate Volatility	6931	0.0455	0.1983

Table 2
Political Risk and the Volatility of Earnings

Notes: The table presents estimated coefficients from regressions explaining affiliate return volatility as a function of political risk and other variables. The dependent variable in columns 1-3 is the standard deviation of a foreign affiliate's annual return on assets for periods between benchmark surveys. The dependent variable in columns 4-6 is the ratio of numbers of years with negative net income to numbers of years with reported income for periods between benchmark surveys. Political Risk is a linear transformation of the ICRG data scaled to lie between zero and one with higher values indicating higher risks. Affiliate Leverage is the ratio of affiliate current liabilities and long term debt to affiliate assets. Log of Affilate assets is the natural log of affiliate assets. Growth rate volatility, exchange rate volatility and inflation rate volatility are measures of standard deviations of GDP growth rates, real exchange rates, and CPI inflation. Standard deviations are calculated using annual observations in intervals between benchmark years. All regressions are estimated by ordinary least squares and include parent/year and country fixed effects. Standard errors computed using the technique described in Cameron, Gelbach, and Miller (2006), that corrects for two way clustering of errors by country and parent, are presented in parentheses.

Dependent Variable:	Standard Deviation of Affiliate ROA			Share of Negative Occurrences of Net Income		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.1093	0.2551	0.2714	-0.3068	0.2043	-0.2182
	(0.0272)	(0.0158)	(0.0179)	(0.0327)	(0.0512)	(0.0691)
Political Risk	0.1123	0.1101	0.0953	0.1530	0.2087	0.2154
	(0.0115)	(0.0299)	(0.0260)	(0.0764)	(0.0902)	(0.0851)
Affiliate Leverage		0.0199	0.0219		0.2917	0.2943
		(0.0044)	(0.0046)		(0.0200)	(0.0200)
Log of Affiliate Assets		-0.0182	-0.0179		-0.0192	-0.0189
		(0.0012)	(0.0012)		(0.0040)	(0.0041)
Growth Rate Volatility			0.2481			0.3937
			(0.1058)			(0.3218)
Exchange Rate Volatility			0.0287			0.0339
			(0.0121)			(0.0271)
Inflation Rate Volatility			0.0023			0.0045
			(0.0004)			(0.0013)
Country Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Parent/Year Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	19,488	16,895	16,293	19,488	16,895	16,293
R-Squared	0.2984	0.3553	0.3601	0.2810	0.3488	0.3529

Table 3
Political Risk and the Volatility of Aggregate Foreign Earnings

Notes: The table presents estimated coefficients from regressions explaining the volatility of a parent company's foreign returns as a function of aggregate political risk and other variables. The dependent variable is the standard deviation of a parent company's annual aggregate foreign return on aggregate foreign assets for periods between benchmark surveys. Foreign Political Risk Exposure (Share Weighted) equals the share of foreign sales in countries with above median political risk based on ICRG data. Median political risk measures are calculated using all affiliates in the sample. The political risk index been rescaled to lie between zero and one, with higher values indicating higher risks. Foreign Political Risk Exposure (Squared Share Weighted) equals the sum of squared shares of foriegn sales in countries with above median political risk based on ICRG data. Log of number of affiliates is the natural log of the number of foreign affiliates owned by a parent company. Log of Aggregate Affiliate Assets is the natural log of total foreign affiliate assets. Aggregate Affiliate Leverage is the ratio of the sum of liabilities across all affiliates to the sum of assets across all affiliates. Growth rate volatility, exchange rate volatility and inflation rate volatility are weighted measures, using assets as weights, of standard deviations of GDP growth rates, real exchange rates, and CPI inflation. Standard deviations are calculated using annual observations in intervals between benchmark years. All regressions are estimated by ordinary least squares and include industry and year fixed effects. Standard errors that correct for clustering of errors by parent company are presented in parentheses.

Dependent Variable:	Standard Deviation of Foreign ROA					
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.1325	0.1320	0.1336	0.1333	0.1328	0.1326
	(0.0172)	(0.0174)	(0.0171)	(0.0174)	(0.0171)	(0.0174)
Foreign Political Risk Exposure (Share Weighted)	0.0109	0.0082	0.0164	0.0142		
	(0.0046)	(0.0050)	(0.0056)	(0.0059)		
Foreign Political Risk Exposure (Share Weighted) - Foreign Political Risk Exposure (Squared Share Weighted)			-0.0276	-0.0312		
			(0.0110)	(0.0110)		
Foreign Political Risk Exposure (Squared Share Weighted)					0.0158	0.0138
					(0.0056)	(0.0059)
Log of Number of Affiliates	-0.0054	-0.0049	-0.0019	-0.0009	-0.0034	-0.0033
	(0.0023)	(0.0023)	(0.0027)	(0.0027)	(0.0023)	(0.0023)
Log of Aggregate Affiliate Assets	-0.0066	-0.0067	-0.0068	-0.0070	-0.0067	-0.0068
	(0.0016)	(0.0016)	(0.0016)	(0.0016)	(0.0016)	(0.0016)
Aggregate Affiliate Leverage	0.0149	0.0168	0.0143	0.0162	0.0146	0.0165
	(0.0078)	(0.0078)	(0.0078)	(0.0078)	(0.0078)	(0.0078)
Growth Rate Volatility		0.2289		0.2548		0.2164
		(0.1304)		(0.1297)		(0.1287)
Exchange Rate Volatility		-0.0211		-0.0244		-0.0236
		(0.0144)		(0.0144)		(0.0144)
Inflation Rate Volatility		0.0013		0.0013		0.0012
		(0.0011)		(0.0010)		(0.0010)
Industry and Year Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	2,694	2,694	2,694	2,694	2,694	2,694
R-Squared	0.1640	0.1663	0.1660	0.1688	0.1656	0.1679

Table 4
The Impact of Political Risk on U.S. Leverage

Notes: The table presents estimated coefficients from regressions explaining a company's U.S. leverage as a function of the aggregate foreign political risks that it faces, along with other variables. The dependent variable in columns 1 and 2 is the ratio of domestic current liabilities and long term debt to domestic assets; in columns 3 and 4, the dependent variable is computed similarly but domestic cash holdings are subtracted from the numerator. Political Risk Exposure (Squared Share Weighted) equals the sum of squared shares of total firm sales in countries with above median political risk based on ICRG data. Log of U.S. Assets is the natural log of domestic assets held by U.S. parent companies. Log of Aggregate Affiliate Assets is the natural log of the sum of affiliate assets. U.S. Net PPE/U.S. Assets is the ratio of parent company domestic net property, plant and equipment to parent domestic assets, and U.S. EBITDA/U.S. Assets is the ratio of parent company domestic earnings before interest, taxes, depreciation and amortization to parent domestic assets. Industry q is the median industry q for Compustat firms in the parent company's three-digit SIC industry. Local sales share is a three-digit SIC industry measure of the ratio of local sales to total sales by foreign affiliates of U.S. multinational firms. Growth rate volatility, exchange rate volatility and inflation rate volatility are weighted measures, using assets as weights, of standard deviations of GDP growth rates, real exchange rates, and CPI inflation. Standard deviations are calculated using annual observations in intervals between benchmark years. All regressions are estimated by ordinary least squares and include industry and year fixed effects. Standard errors that correct for clustering of errors by parent company are presented in parentheses.

Dependent Variable:	U.S. Leverage		U.S. Leverage (Cash Treated as Negative Debt)	
	(1)	(2)	(3)	(4)
Constant	0.5285	0.5361	0.3871	0.3992
	(0.0309)	(0.0334)	(0.0310)	(0.0388)
Political Risk Exposure (Squared Share Weighted)	-0.2329	-0.2245	-0.2542	-0.2458
	(0.0732)	(0.0749)	(0.0716)	(0.0735)
Log of U.S. Assets	0.0185	0.0169	0.0231	0.0219
	(0.0033)	(0.0040)	(0.0036)	(0.0044)
Log of Aggregate Affiliate Assets	-0.0159	-0.0142	-0.0138	-0.0125
	(0.0027)	(0.0037)	(0.0029)	(0.0040)
U.S. Net PPE/U.S. Assets	-0.0667	-0.0666	-0.0232	-0.0232
	(0.0164)	(0.0164)	(0.0177)	(0.0177)
U.S. EBITDA/U.S. Assets	-0.4313	-0.4311	-0.5166	-0.5167
	(0.0328)	(0.0329)	(0.0365)	(0.0366)
Industry q	-0.0299	-0.0301	-0.0445	-0.0447
	(0.0083)	(0.0083)	(0.0100)	(0.0101)
Growth Rate Volatility		-0.5139		-0.5830
		(1.1950)		(1.2446)
Exchange Rate Volatility		-0.1020		-0.0674
		(0.1856)		(0.1949)
Inflation Rate Volatility		0.0028		0.0030
		(0.0148)		(0.0148)
Industry and Year Fixed Effects?	Yes	Yes	Yes	Yes
No. of Obs.	6,931	6,931	6,892	6,892
R-Squared	0.1261	0.1262	0.1314	0.1314

Table 5

The Impact of Political Risk on Worldwide Leverage

Notes: The table presents estimated coefficients from regressions explaining a company's worldwide leverage as a function of the aggregate foreign political risks that it faces, along with other variables. The dependent variable in columns 1 and 2 is the ratio of firmwide current liabilities and long term debt to firmwide assets; in columns 3 and 4, the dependent variable is computed similarly but subtracts U.S. cash holdings from the numerator. Political Risk Exposure (Squared Share Weighted) equals the sum of squared shares of total firm sales in countries with above median political risk based on ICRG data. Log of U.S. Assets is the natural log of domestic assets held by U.S. parent companies. Log of Aggregate Affiliate Assets is the natural log of the sum of affiliate assets. U.S. Net PPE/U.S. Assets is the ratio of parent company domestic net property, plant and equipment to parent domestic assets, and U.S. EBITDA/U.S. Assets is the ratio of parent company domestic earnings before interest, taxes, depreciation and amortization to parent company domestic assets. Industry q is the median industry q for Compustat firms in the parent company's three-digit SIC industry. Local sales share is a three-digit SIC industry measure of the ratio of local sales to total sales by foreign affiliates of U.S. multinational firms. Growth rate volatility, exchange rate volatility and inflation rate volatility are weighted measures, using assets as weights, of standard deviations of GDP growth rates, real exchange rates, and CPI inflation. Standard deviations are calculated using annual observations in intervals between benchmark years. All regressions are estimated by ordinary least squares and include industry and year fixed effects. Standard errors that correct for clustering of errors by parent company are presented in parentheses.

Dependent Variable:	Worldwide Leverage		Worldwide Leverage (Cash Treated as Negative Debt)	
	(1)	(2)	(3)	(4)
Constant	0.5703	0.5635	0.4714	0.4459
	(0.0269)	(0.0288)	(0.0268)	(0.0337)
Political Risk Exposure (Squared Share Weighted)	-0.2014	-0.1991	-0.1976	-0.2121
	(0.0517)	(0.0514)	(0.0520)	(0.0522)
Log of U.S. Assets	0.0085	0.0117	0.0069	0.0126
	(0.0029)	(0.0036)	(0.0032)	(0.0039)
Log of Aggregate Affiliate Assets	0.0085	0.0117	0.0069	0.0126
	(0.0029)	(0.0036)	(0.0032)	(0.0039)
U.S. Net PPE/U.S. Assets	-0.0633	-0.0633	-0.0301	-0.0299
	(0.0141)	(0.0140)	(0.0153)	(0.0152)
U.S. EBITDA/U.S. Assets	-0.4098	-0.4116	-0.4749	-0.4768
	(0.0274)	(0.0274)	(0.0308)	(0.0307)
Industry q	-0.0267	-0.0262	-0.0391	-0.0383
	(0.0071)	(0.0071)	(0.0086)	(0.0086)
Growth Rate Volatility		-0.6095		0.4322
		(1.0555)		(1.1630)
Exchange Rate Volatility		0.3010		0.4513
		(0.1464)		(0.1527)
Inflation Rate Volatility		-0.0222		-0.0258
		(0.0106)		(0.0095)
Industry and Year Fixed Effects?	Yes	Yes	Yes	Yes
No. of Obs.	6,903	6,903	6,877	6,877
R-Squared	0.1385	0.1398	0.1306	0.1323

Table 6

Industry Heterogeneity and the Impact of Political Risk on Leverage

Notes: The table presents estimated coefficients from regressions explaining a company's U.S. and worldwide leverage as functions of aggregate foreign political risks and other variables, distinguishing firms by the extent to which foreign affiliates in their industries sell their output locally. The dependent variable in columns 1, 2 and 3 is the ratio of domestic current liabilities and long term debt (less cash) to domestic assets; in columns 3, 4 and 5, the dependent variable is computed similarly but for worldwide debt and assets. The samples in columns 1 and 4 (2 and 5) include firms in three-digit SIC industries with below (above) median ratios of local sales to total sales by foreign affiliates of U.S. multinational firms. The sample for the specifications in columns 3 and 6 is limited to firms in Transportation, Communications and Utilities industries. Political Risk Exposure (Squared Share Weighted) equals the sum of squared shares of total firm sales in countries with above median political risk based on ICRG data. Log of U.S. Assets is the natural log of domestic assets held by U.S. parent companies. Log of Aggregate Affiliate Assets is the natural log of the sum of affiliate assets. U.S. Net PPE/U.S. Assets is the ratio of parent company domestic net property, plant and equipment to parent domestic assets, and U.S. EBITDA/U.S. Assets is the ratio of parent company domestic earnings before interest, taxes, depreciation and amortization to parent company domestic assets. Industry q is the median industry q for Compustat firms in the parent company's three-digit SIC industry. Growth rate volatility, exchange rate volatility and inflation rate volatility are weighted measures, using assets as weights, of standard deviations of GDP growth rates, real exchange rates, and CPI inflation. Standard deviations are calculated using annual observations in intervals between benchmark years. All regressions are estimated by ordinary least squares and include industry and year fixed effects. Standard errors that correct for clustering of errors by parent company are presented in parentheses.

Dependent Variable:	U.S. Leverage (Cash Treated as Negative Debt)			Worldwide Leverage (Cash Treated as Negative Debt)		
	Industries Focused on Non-Local Sales	*Industries Focused on Local Sales*	*Transportation, Communication, and Utilities*	*Industries Focused on Non-Local Sales*	*Industries Focused on Local Sales*	*Transportation, Communication, and Utilities*
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.3570	0.4450	0.7318	0.4343	0.4619	0.5568
	(0.0525)	(0.0566)	(0.1940)	(0.0439)	(0.0493)	(0.1852)
Political Risk Exposure	0.0148	-0.4039	-0.6636	-0.0709	-0.3048	-0.4346
(Squared Share Weighted)	(0.1181)	(0.0745)	(0.1271)	(0.0704)	(0.0681)	(0.1627)
Log of U.S. Assets	0.0202	0.0225	-0.0274	0.0119	0.0132	-0.0267
	(0.0061)	(0.0062)	(0.0128)	(0.0056)	(0.0054)	(0.0115)
Log of Aggregate Affiliate	-0.0085	-0.0155	0.0089	-0.0038	-0.0099	0.0073
	(0.0057)	(0.0056)	(0.0086)	(0.0051)	(0.0049)	(0.0082)
U.S. Net PPE/U.S. Assets	-0.0252	-0.0218	0.1030	-0.0351	-0.0239	0.0854
	(0.0242)	(0.0262)	(0.0705)	(0.0210)	(0.0224)	(0.0681)
U.S. EBITDA/U.S. Assets	-0.5581	-0.4749	-0.5154	-0.4979	-0.4626	-0.4257
	(0.0489)	(0.0545)	(0.2388)	(0.0428)	(0.0443)	(0.2125)
Industry q	-0.0311	-0.0485	-0.0567	-0.0279	-0.0408	-0.0339
	(0.0158)	(0.0130)	(0.0553)	(0.0128)	(0.0112)	(0.0515)
Growth Rate Volatility	-1.1705	-0.3912	5.5946	-2.0662	2.2738	13.3469
	(1.8527)	(1.6608)	(3.7391)	(1.3880)	(1.6506)	(5.3081)
Exchange Rate Volatility	-0.2323	0.0402	-2.1084	0.2257	0.6782	-1.6435
	(0.2285)	(0.3306)	(1.0843)	(0.1837)	(0.2450)	(1.0155)
Inflation Rate Volatility	-0.0028	0.0101	0.1472	-0.0264	-0.0244	0.0134
	(0.0179)	(0.0229)	(0.0466)	(0.0129)	(0.0140)	(0.0320)
Industry and Year Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	3,584	3,308	301	3,576	3,301	301
R-Squared	0.1252	0.1395	0.1542	0.1205	0.1415	0.1429

Table 7

Alternative Measures of Political Risk

Notes: The table presents estimated coefficients from regressions explaining a company's U.S. and worldwide leverage as functions of alternative measures of aggregate foreign political risks, along with other variables. The dependent variable in columns 1 and 2 is the ratio of domestic current liabilities and long term debt (less cash) to domestic assets; in columns 3 and 4, the dependent variable is computed similarly but for worldwide debt and assets. The two measures of political risk exposure equal sums of squared shares of firm sales in countries with above median Quality of Institutions and above median Quality of Institutions for FDI, calculated using the median quality of institutions measures across all affiliates in the sample. Quality of Institutions is an index of political risk that aggregates only the Corruption, Law and Order, and Bureaucratic Quality subcomponents of the ICRG political risk data. Quality of Institutions for FDI adds the Investment Profile subcomponent to Quality of Institutions. Both of these subindicies are scaled to lie between zero and one, with higher values indicating higher risks. Log of U.S. Assets is the natural log of domestic assets held by U.S. parent companies. Log of Aggregate Affiliate Assets is the natural log of the sum of affiliate assets. U.S. Net PPE/U.S. Assets is the ratio of parent company domestic net property, plant and equipment to parent domestic assets, and U.S. EBITDA/U.S. Assets is the ratio of parent company domestic earnings before interest, taxes, depreciation and amortization to parent company domestic assets. Industry q is the median industry q for Compustat firms in the parent company's three-digit SIC industry. Growth rate volatility, exchange rate volatility and inflation rate volatility are weighted measures, using assets as weights, of standard deviations of GDP growth rates, real exchange rates, and CPI inflation. Standard deviations are calculated using annual observations in intervals between benchmark years. All regressions are estimated by ordinary least squares and include industry and year fixed effects. Standard errors that correct for clustering of errors by parent company are presented in parentheses.

Dependent Variable:	U.S. Leverage (Cash Treated as Negative Debt)		Worldwide Leverage (Cash Treated as Negative Debt)	
	(1)	(2)	(3)	(4)
Constant	0.4004	0.4002	0.4467	0.4470
	(0.0389)	(0.0390)	(0.0339)	(0.0339)
Political Risk Exposure Based on Quality of Institutions	-0.1526		-0.1396	
	(0.0776)		(0.0598)	
Political Risk Exposure Based on Quality of Institutions for FDI		-0.1700		-0.1373
		(0.0731)		(0.0518)
Log of U.S. Assets	0.0230	0.0225	0.0136	0.0132
	(0.0044)	(0.0044)	(0.0039)	(0.0039)
Log of Aggregate Affiliate Assets	-0.0129	-0.0127	-0.0074	-0.0072
	(0.0040)	(0.0040)	(0.0036)	(0.0036)
U.S. Net PPE/U.S. Assets	-0.0209	-0.0215	-0.0282	-0.0283
	(0.0177)	(0.0177)	(0.0152)	(0.0152)
U.S. EBITDA/U.S. Assets	-0.5141	-0.5154	-0.4746	-0.4755
	(0.0367)	(0.0366)	(0.0308)	(0.0308)
Industry q	-0.0445	-0.0447	-0.0381	-0.0383
	(0.0101)	(0.0101)	(0.0086)	(0.0086)
Growth Rate Volatility	-1.2776	-0.9908	-0.1220	0.0184
	(1.2547)	(1.2697)	(1.1679)	(1.1839)
Exchange Rate Volatility	-0.1019	-0.0826	0.4241	0.4344
	(0.1967)	(0.1962)	(0.1534)	(0.1533)
Inflation Rate Volatility	0.0055	0.0041	-0.0238	-0.0248
	(0.0146)	(0.0147)	(0.0092)	(0.0094)
Industry and Year Fixed Effects?	Yes	Yes	Yes	Yes
No. of Obs.	6,892	6,892	6,877	6,877
R-Squared	0.1297	0.1301	0.1306	0.1308