The Multinational Return Premium: Investor's Perspective

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Keywords: multinational companies, international diversification, returns

JEL Classification: G11, G12, G15

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Abstract

Using monthly returns of 18,996 U.S. stocks over 1973-2015 and 23,965 stocks in 22 countries over 1990-2015, we find that multinational companies earn significantly higher returns than domestic companies by 23bps per month. We further investigate whether the return difference is driven by risk or known asset pricing anomalies, and find that none of them can fully explain the return premium of multinationals. The magnitude of the multinational return premium depends on the location of foreign operations. The return premium is more prominent for multinationals operating in countries where higher costs are incurred - countries with lower GDP growth, lower private credit, lower R&D export, higher labor cost, and larger geographic distance.

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Introduction

The past few decades have witnessed the globalization of markets and the dramatic growth in international business activities. In the U.S., between 1973 and 2015, the fraction of public firms with foreign operations increased from 21% to 52%. From the firm's perspective, whether to expand operations internationally or to remain domestic is an important decision because the geographical structure of a firm necessarily affects its future cash flows and risk exposures. On the other hand, investors, who provide capital to the firm, focus more on the returns of their investments in the firm.

Although many international business and strategy studies have tried to understand why and how firms expand their operations abroad, there is only limited evidence on how the international activities of firms affect stock returns, which investors care about the most. In this paper, we fill this gap by asking the following questions from the perspective of investors: do multinational companies have higher or lower returns than domestic companies, and therefore are multinational companies more or less attractive to investors? If stock return differences exist between multinationals and domestic firms, how is the geographic choice for foreign operations related to the magnitude of the return differences? Following Pinkowitz, Stulz and Williamson (2012), we define multinational companies (hereafter MNCs) as firms with significant operations outside their home countries, and domestic companies (hereafter DCs) as firms with most of their operations concentrated in domestic markets.

Based on previous literature, we establish a set of hypotheses on how the returns of MNCs and DCs would differ.[1] The first set of studies predicts that MNCs would earn lower returns than DCs — the "MNC return discount" hypothesis. MNCs are better able to access capital (Reeb et al. 2001), have a higher proportion of intangible assets (Morck and Young 1992), and operate in more concentrated industries than DCs (Antras and Yeaple 2013). These distinct characteristics of MNCs that motivate firms to have foreign operations are known to be associated with lower stock returns. In addition, in imperfectly integrated global capital markets, investors can diversify their portfolios internationally by holding MNCs, enhancing the stock price of MNCs (Errunza and Senbet 1981, 1984). Therefore, MNCs are traded at higher prices compared to DCs and hence have lower returns.

[1] We briefly discuss the hypotheses in the introduction and a detailed literature review follows in section I.

A second set of studies takes the opposite position and supports the "MNC return premium" hypothesis that MNC returns would be higher than DC returns. The main argument is that operations in foreign countries incur additional risks that DCs do not have to bear such as currency risks (Jorion 1990) or entry costs (Fillat and Garetto 2015). Thus, MNCs should have higher returns than DCs as a result of the higher risk exposures. Meanwhile, because of the complicated corporate structure, investors might demand a premium for processing information on MNCs' operations (Cohen and Lou 2012). Finally, the MNC return premium could be related to two empirical asset pricing anomalies: the idiosyncratic volatility and profitability puzzles. As MNCs have lower idiosyncratic volatility (Ang et al. 2006) and higher profitability (Novy-Marx 2013), MNCs should have higher returns than DCs.

We further develop our hypotheses by relating the return difference between MNC and DC to MNCs' location structures. When firms consider whether to become multinational, they jointly make a decision on where to locate foreign operations. Previous studies have argued that the location choice of foreign operations is determined by the key motivation of the international expansion. For instance, firms that exhaust growth opportunities in domestic markets are more likely to find a new product market to utilize their superior products and skills. Therefore, those firms would enter countries with high growth opportunities (Errunza and Senbet 1981). On the other hand, firms with limited capital would prefer to enter financially developed countries to obtain access to capital in foreign countries (Baker, Foley, and Wurgler 2009, Houston, Itzkowitz, and Naranjo 2007, Jang 2016). Next, the tax avoidance motivation would incentivize firms to locate operations in countries with low corporate income tax (Desai, Foley, and Hines 2006). In this paper, to better understand the underlying reasons behind why MNCs deliver a return premium or discount, we exploit the differences in characteristics and market conditions of host countries where MNCs operate in explaining the magnitude of the return difference.

We start by testing the hypothesis on the return difference between MNCs and DCs. We first examine the U.S. sample over 1973-2015 and document a strong pattern that the monthly returns of MNCs are significantly higher than those of DCs by 23bps per month, after controlling for size, value, momentum, and betas on Fama-French three factors and a foreign exchange rate factor. The MNC return premium is robust across firm size groups, different time periods, and most industries using both cross-sectional and time-series tests. When we extend our sample to 23,965 stocks in 22 developed countries over 1990-2015, the same pattern persists.

Why would MNCs have higher returns than DCs? We first identify alternative channels that could possibly explain the return difference between MNCs and DCs. We consider the following candidates: foreign exchange risk exposures, idiosyncratic volatility, skewness, default risk, profitability, asset growth, industrial diversification, industry concentration, and foreign institutional ownership. After controlling for each of the preceding return determinants, however, the MNC return premium remains large and significant. We find that idiosyncratic volatility, idiosyncratic skewness, gross profitability and asset growth significantly interact with the magnitude of the MNC return premium, but neither diminishes the significance of MNC return premium.

We next link the MNC return premium to the location choice of foreign operations. Using a comprehensive dataset on MNCs' country-level foreign sales, we examine the relation between the return premium and host country characteristics such as GDP growth, labor cost, financial market development, and corporate tax rate. We find that the higher operational costs MNCs tend to pay in foreign countries, the higher the MNC return premium is. Specifically, the MNC return premium is more prominent for MNCs operating in countries with lower GDP growth, lower private credit, and lower R&D export. Using a global sample, we additionally find evidence that MNCs have a higher premium if they operate in countries with higher labor costs and in geographically more distant countries. These results imply that the MNC premium exists to compensate for higher uncertainty in performance when MNCs enter the countries with higher costs of foreign business.

Our paper relates to the international corporate diversification literature which focuses on the valuation effect of corporate international diversification from a corporation's perspective. Previous studies evaluate the costs and benefits of international corporate diversification and discuss what the optimal corporate structure is to maximize firm value. The usual empirical approach is to compare the Tobin's Q of a multinational firm to that of a portfolio of comparable domestic firms operating in the same foreign countries as each foreign segment of the MNC. For example, Denis, Denis and Yost (2002) and Fauver, Houston, and Naranjo (2004) show that firms' international diversification decisions are associated with lower Qs, or the so-called

"international diversification discount."[2] The Tobin's Q measure is reasonable to test whether having geographically diversified segments within a firm creates or diminishes the overall firm value, but it is not an adequate measure for the purposes of our paper.

Our study focuses on the difference in stock returns between MNCs and DCs, rather than Tobin's Q, because a typical investor, presumably an outsider of the firm, would care more about the stock returns. In addition, investors would directly compare returns of individual MNC and DC stocks, because trading a portfolio of domestic firms in multiple foreign countries that mimics an individual MNC stock requires high transaction costs. In this paper, we take the investor's perspective and answer the following question: if everything else remains equal, and the firm's multinational status is publicly available information, should a typical investor invest in a multinational firm or a domestic firm? Our results clearly show that MNCs exhibit higher returns than DCs over the past 40 years not only in the U.S. but also in 22 developed countries. We examine alternative explanations and confirm that none fully explains the magnitude of the MNC return premium. Therefore, we make distinct and significant contributions to the literature by documenting that the multinational status of the firm is relevant information for investors. In addition, we conduct a thorough analysis on how the locations of the foreign operations affect the MNC return premiums, which provides deeper insights on how the MNC return premiums are generated.

One closely related work is Fillat and Garetto (2015), who propose a theoretical model and provide brief empirical results on the return difference between MNCs and DCs. They focus on the high entry cost to foreign countries as one of the explanations on why MNCs earn higher returns than DCs. Our paper provides a more comprehensive examination of the return difference observed between MNCs and DCs, based on previous studies on why and how firms expand operations abroad. We also consider alternative explanations for MNC return premiums, and confirm that a large portion of the MNC return premium cannot be fully explained after controlling for various risk factors. Further, by using international data and MNCs' foreign location information, we document that the magnitude of the MNC premium depends on a variety of host country characteristics that reflect the benefits and costs of foreign operations.

[2] Actually, the evidence of corporate international diversification discount is not conclusive. Creal et al. (2014) find that MNCs are traded at a premium, rather than a discount, when using a different benchmark. Hund, Munk and Tice (2014) argue that the existence of the diversification discount depends on the benchmark and methodology.

The remainder of the paper is organized as follows. Section I provides a comprehensive literature review on why MNCs and DCs might have different returns, and how the MNCs make the location decisions. Section II describes our data sample and reports summary statistics. Section III and IV present our main empirical results for the U.S, and the global sample, respectively. Section V concludes.

I. Literature Review and Hypothesis

The theoretical and empirical evidence on the determinants of firms' international diversification decisions provides insights on how these factors can lead to return differences between MNCs and DCs. In this section, we first review related studies and categorize them into two hypotheses: one predicting a MNC return discount and the other predicting a MNC return premium. Then we review the theories that explain the choice of MNC foreign locations.

A. MNC Return Discount

Corporate diversification studies argue that because multinational firms diversify their operations "geographically", MNCs have lower cash flow volatility than DCs, which results in lower default risks and more positively skewed cash flow distributions. Therefore, a MNC has a put option like feature especially during an economic downturn. The lower default risk of MNCs implies lower returns compared to DCs. For example, Vassalou and Xing (2004) and Chava and Purnanandam (2010) both find a positive cross-sectional relationship between stock returns and default risks.

A company can gain financial advantages in both internal and external capital markets from diversifying operations (see Stein (2003) for a review). MNCs can allocate capital across different divisions through internal capital markets when one of the subsidiaries performs poorly. In addition, a lower default probability increases overall debt capacity and lowers the cost of debt in external capital markets, according to Reeb et al. (2001). Consequently, with better access to internal and external capital markets, MNCs are less financially constrained than DCs. Lamont et al. (2001) and Whited and Wu (2006) argue that the extent to which firms are financially constrained is negatively priced in stock returns because financially constrained firms are more subject to common shocks such as a credit crunch or liquidity shock. Therefore, we expect to observe lower returns for MNCs, which are less financially constrained, compared to DCs.

Early studies in international economics document that the intensity of a firm's international activity is industry-specific. In particular, empirical evidence shows that MNCs are in highly concentrated industries, whereas DCs are in competitive industries (e.g. Antràs and Yeaple (2013)). Hou and Robinson (2006) argue that firms in concentrated industries earn lower returns than firms in competitive industries, because higher entry barriers in concentrated industries decrease the probability of default of existing firms in those industries. The different industry characteristics between MNCs and DCs imply that MNCs mostly operating in concentrated industries would be traded at a discount compared to DCs in competitive industries.

The internalization theory says that firms have incentives to expand their operations abroad when they have a substantial amount of proprietary assets such as R&D. As intangible assets have public good features, firms can increase value by exploiting these assets in broader markets. Consistently, Morck and Yeung (1992) find that the values of MNCs are positively associated with firms' spending on R&D and advertisements. From an asset pricing perspective, it has been shown that the market does not promptly revise its pessimistic expectation for firms with higher intangible assets such as R&D (e.g. Chan, Lakonishock, and Sougiannis (2001)). Therefore, MNCs' long-term investments in intangible assets would be associated with lower returns relative to DCs.

Finally, foreign operations across different countries can affect the base of investors who provide capital to the companies. Early studies, such as Errunza and Senbet (1981, 1984), focusing on investors' portfolio diversification choices, argue that investors can indirectly diversify their portfolios internationally by adding a MNC stock instead of individual foreign stocks. This argument assumes that capital markets are not perfectly integrated, and there are frictions in terms of information asymmetry and transaction costs when purchasing foreign stocks. In imperfect global capital markets, if marginal investors are domestic investors who prefer MNCs, they would highly value MNCs. Thus, we expect lower returns for MNCs than for DCs.

B. MNC Return Premium

The first rationale for MNCs having higher returns is the higher risk exposure of MNCs from their foreign operations. For instance, given that MNCs generate cash flows in different currencies, MNCs are more likely to be exposed to foreign exchange rate risks than DCs. As a

result, investors may require rewards for bearing exchange rate risks. Previous papers, such as Jorion (1990) and Griffin and Stulz (2001), find consistent evidence that the exposure to currency risks is priced in returns. Therefore, we expect MNCs to have higher foreign exchange betas and thus higher returns. In addition to foreign currency risks, firms operating abroad may also face political or cultural risks in foreign countries, which may result in higher operational costs, as indicated in Adler and Dumas (1975) and Reeb, Kwok, and Baek (1998). A recent paper by Fillat and Garetto (2015) develops a real option value model and explains that MNCs are highly exposed to negative shocks in foreign markets, because they are reluctant to cease overseas operations due to the significant amount of sunk costs that have already been incurred. We expect these foreign operations to have higher levels of risk exposures. Accordingly, we also anticipate that MNCs will negate higher returns compared to DCs.

The transaction cost theory in international economics emphasizes production efficiency as a main motivation for foreign direct investment (Caves 1971, Dunning 1973, Vernon 1979, Buckley 1988, and Kogut and Zander 1993). The argument is that cross-border expansion occurs when a firm can attain lower costs or higher productivity by directly owning foreign operations than by importing/exporting to foreign markets (Hennart 1982). Therefore, MNCs tend to be more productive and efficient compared to DCs (Fishwick 1982). A recent paper by Novy-Marx (2013) documents that profitable firms generate significantly higher returns than unprofitable firms. In this sense, we expect that the higher profitability of MNCs could result in higher returns compared to DCs.

As MNCs operate in various countries with different regulations and legal treatments, they have more complex organizational structures than DCs. MNCs usually consolidate financial statements of multiple foreign subsidiaries and only report aggregated business information. Hence, any detailed accounting information on the subsidiary-level operations or on transfers of resources across subsidiaries is not readily available to investors through public sources. Because of this complexity, it might be difficult for investors to evaluate the future prospects of a business or to incorporate industry-specific or country-specific news to stock prices. Therefore, investors would require higher returns for holding MNC stocks to compensate for bearing the information uncertainty or inefficiency of information dissemination, as documented in Zhang (2006), Cohen and Lou (2012) and Huang (2015).

Lastly, home bias literature provides a prediction on how domestic investors treat MNCs differently from DCs. Domestic investors prefer to invest disproportionately in domestic stocks rather than diversifying their portfolios internationally, which is called the "home bias" puzzle (French and Poterba 1991). On the other hand, foreign investors show a preference for multinational stocks (Dahlquist and Robertsson 2001). Previous papers try to explain the home bias puzzle based on an information story: home investors have superior access to information about domestic firms and economic conditions for domestic markets. If domestic investors determine the prices at the margin and if they have superior information about DCs compared to MNCs, they are willing to hold DCs despite their low average returns. Therefore, we would expect to see a higher return for MNCs.

C. Choice of MNC Locations

Previous studies have stated that the location choice of foreign operations is related to the reasons why firms expand their operations abroad, which potentially would affect the returns of MNCs. A firm's decision to become a MNC is an equilibrium outcome of multiple factors, and host country characteristics and market conditions. Ultimately, where MNCs choose to operate provides us with relevant information on the benefits and costs of those foreign operations (Hanson, Matoloni, and Slaughter 2001). We summarize previous theoretical arguments for the motivation of firms' decision to be multinational into five groups, and link each motivation to MNC's location decisions.

First, theories of industrial organization justify foreign direct investment in the context of imperfect product and factor markets. With imperfect competition, MNCs can achieve a competitive advantage relative to local firms by selling superior products or producing their goods by providing capital, technology, or managerial skills and using cheap labor and natural resources in foreign countries (see, for example, Errunza and Senbet (1981)). An implication of imperfect product markets is that firms that exhaust growth opportunities in domestic markets are more likely to internationally expand to find a new product market to utilize their superior products and skills. Thus, those firms will tend to enter fast-growing countries. Similarly, if the goal of foreign investment is to lower the input costs, we would expect firms to expand operations to countries with lower labor costs.

Second, if financial markets are imperfectly integrated, firms enter foreign countries to gain access to financing and thus to lower the cost of capital. By having assets in foreign countries, MNCs are able to access to local financing through their foreign subsidiaries; thus, they can lower their cost of capital by exploiting the variation in financial market conditions across countries (Baker, Foley, and Wurgler 2009, Houston, Itzkowitz, and Naranjo 2007, Jang 2016). If the main motivation of foreign expansion is to obtain access to financing, MNCs would prefer to enter financially developed countries.

Third, under the U.S. tax law, profits from foreign operations of multinational companies are taxed at the foreign tax rates in countries in which the profits are generated, and they may additionally incur U.S. tax liabilities when repatriated. Operating in tax havens or low-tax jurisdictions provides opportunities for tax avoidance, especially for firms that face high tax burdens in home country (Desai, Foley, and Hines 2006). Thus, MNCs prefer to establish operations in tax havens or countries with low corporate taxes to reallocate taxable foreign incomes.

Fourth, internalization theory posits that firms internalize markets for their intangible assets by directly investing in foreign countries (Caves 1971, Dunning 1973). Intangible assets such as technologies, patents, and managerial skills are difficult to exchange or trade at arm's length because they are mostly based on firm-specific proprietary information. Thus, firms that intend to exploit their intangible assets outside home countries are more likely to enter countries where their intangible assets can be actively traded.

Lastly, the location choice can be affected by country-specific costs that would be incurred when a firm establishes foreign operations. Previous studies suggest that firms prefer to expand to the countries that are more familiar in terms of culture and those with low information asymmetry. Geographic distance is one of the critical factors in the location decisions as higher geographic distance would increase information asymmetry and limit active transfer of knowledge that is required to succeed in foreign investment. In addition, political risks cannot be easily hedged away so that firms are more likely to choose countries with lower political risks.

It is clear that a firms' location choice reflects the benefits and costs of foreign operations and the main motivations for foreign investment. However, previous studies explained above do not provide direct predictions on whether the location decisions would be positively or negatively associated with MNC returns, which is thus an empirical question. In the next section,

we directly examine whether the above hypotheses on location choices are associated with the magnitude of MNC returns.

II. U.S. Data

A. Multinational vs. Domestic

Our U.S. sample includes U.S. publicly traded firms listed on the New York Stock Exchange, American Stock Exchange, and NASDAQ, excluding firms incorporated outside the U.S. We include ordinary common shares only and exclude ADRs. The monthly return data are obtained from CRSP and accounting data from Compustat. Our sample period begins in January 1973 and ends in December 2015. We apply the following filters to the data: firms are required to have positive total assets and non-missing total income at the end of the previous fiscal-year end; market value of equity is more than $1 million; book value of equity is positive; monthly return is between -100% and 1,000%; and B/M ratio is not in the top or bottom 1% in the country.

Following Pinkowitz, Stulz and Williamson (2012), we classify firms into MNC and DC based on foreign income and foreign income taxes reported in annual financial statements. The SEC (SEC Regulation §210.4-08(h)) requires any U.S. public firms to disclose pre-tax income and deferred taxes for domestic and foreign operations separately, if any of those measures for non-U.S. operations exceed 5% of the consolidated total. We define a firm as a MNC in a given fiscal year if it reports non-missing foreign income (Compustat item: *PIFO*) or foreign income taxes (Compustat item: *TXFO*) in any of the previous three years.[3] It is possible that firms even with large scale foreign operations sometimes do not report foreign income, especially when they earn relatively low or negative foreign income. By using the information from the previous three years, we alleviate the concern that firms that have a large foreign presence but earn low foreign income in a specific year could be defined as domestic.

Other studies use alternative ways of defining multinationals. For instance, Denis, Denis, and Yost (2002) rely on foreign sales information obtained from the *Compustat* Geographic Segment database to define internationally diversified firms. There are several advantages of using foreign income information instead of foreign sales to identify multinationals. First, we have a broader sample of MNCs as the threshold for reporting foreign income is much lower (5%)

[3] Foreign income tax variable (TXFO) is available starting from fiscal year 1969, while the pre-tax foreign income (PIFO) variable becomes available from fiscal year 1984. We use foreign income tax information only to define a MNC prior to 1984, but use both variables after 1985.

than that for reporting foreign sales (10%). Second, foreign sales reported in the Compustat Geographic Segment database include exports of goods, whereas foreign income takes into account the income generated in foreign subsidiaries. Therefore, non-missing foreign income confirms the physical presence of firms in foreign countries. Third, we can use the consistent definitions both for the U.S. and for the global sample. Lastly, foreign income information is available from the early 1970s, allowing us to use a much longer time-series period than when using foreign sales.[4]

Figure 1 reports the distribution of MNCs and DCs for the U.S. sample. In Panel A, about 34% of the U.S. firms are defined as MNCs on average over the sample period. The proportion of MNCs has gradually increased during the 1980s and 1990s, reaching 32% in 2000 and 52% in 2015. In Panel B, we observe that the number of MNCs increased from 637 in 1973 to 1,895 in 2015. On the other hand, the number of DCs gradually increased from 2,340 since 1973, peaked at 5,064 in 1997, and decreased to 1,721 in 2015. In Panel C, we report the average market capitalization of MNCs and DCs. As expected, MNCs are significantly larger than DCs: the average market capitalization of MNCs is $3,177 million, whereas that of DCs is $825 million. The difference in market capitalization has increased over time.

In Table 1 Panel A, we compare the differences in firm-level characteristics and risk exposures between MNCs and DCs. We report the basic stock characteristics for the firm-month sample in Table 1 A1. Not surprisingly, compared to DCs, MNCs have higher market values and lower B/M ratios. These findings suggest that if size and value effects dominate, MNCs would have lower returns than DCs. The previous 6-month return is computed by summing up the monthly returns for the past six months, and the difference between MNCs and DCs is negligible.

Next, we present the summary statistics on factor loadings for both MNCs and DCs in Table 1 A2. We first use the Fama-French 3 factor model to obtain loadings on the market, size and value factors. All factors for the U.S. are obtained from the Kenneth R. French Data Library. To estimate the factor loadings of each stock, we estimate a time-series regression in each month using daily returns, which allows the loadings to be time-varying. We require at least 15 observations in each month for estimation. Compared to DCs, MNCs have significantly higher factor loadings on the market factor but lower loadings on both size and value factors, possibly

[4] We find that our main results are quantitatively similar alternative definitions for MNCs based on the percentage of foreign sales and the percentage of foreign income. In Appendix A3, we discuss the robustness of our results for different definitions of MNC.

because the MNCs tend to be larger firms with lower B/M ratios. To estimate the foreign currency risk, we construct a foreign exchange factor (FX) using the return of the trade-weighted U.S. dollar index (major currencies) from the Federal Reserve Bank of St. Louis. The loading on FX is estimated from the regression of excess return on MKT and FX using daily returns. The mean currency beta for DCs is 0.019, and the mean currency beta for MNCs is 0.008. The MNCs' loadings on currency risk are significantly lower than those of the DCs, which is contrary to our prior. Choi and Jiang (2009) provide a reasonable explanation for MNCs' lower currency betas: MNCs manage foreign exchange risks more actively and effectively than DCs, and therefore it is not clear that MNCs would necessarily have higher currency betas.

Next, we collect information on a few other characteristics that are related to stock returns. Following Ang et al. (2006), we compute idiosyncratic volatility as the annualized volatility of the residuals from the regressions of daily excess returns using the Fama-French 3 factor model. We estimate expected idiosyncratic skewness as in Boyer, Mitton, and Vorkink (2010). Default probability is computed according to Vassalou and Xing (2004). Following Novy-Marx (2013), we define gross profit as revenues minus cost of goods sold scaled by total assets. Following Cooper, Gulen, and Schill (2008), we define asset growth as the change in total assets scaled by lagged total assets. These accounting variables are computed on an annual basis, and we exclude observations at the top and bottom 1%. We also measure whether a firm is industrially diversified using the Compustat industrial segment database. Industry diversification is defined as one if a firm reports more than one industrial segment in a given fiscal year. Following Hou and Robinson (2006), we calculate a sales-based Herfindahl index to measure industry concentration, where we use three-digit SIC industry classifications. A higher value of the Herfindahl index indicates that an industry is more concentrated and thus less competitive. Finally, we calculate the percentage of foreign institutional holdings out of the total shares outstanding (% Foreign Holding) using quarterly 13-F filings. The foreign institutional holding data are available for a much shorter time-series window, which start in 2000 rather than 1973.

We provide descriptive statistics of the above characteristics for the firm-year sample in Table 1 A3. MNCs are significantly different from DCs in multiple dimensions, and the differences are statistically significant. Consistent with diversification effects, MNCs have significantly lower idiosyncratic volatility, idiosyncratic skewness and default probability relative to those of DCs. MNCs are on average more profitable: the average gross profit of

MNCs is about 40%, while the DCs' gross profit is 29%. The average asset growth rate for DCs is 16.1%, and the average growth rate for MNCs is 13.7%, indicating the DCs have higher asset growth rate. MNCs are more likely to be industrially diversified than DCs. In addition, MNCs tend to operate in more concentrated industries as measured by the Herfindahl index of industry-level sales, whereas DCs operate in more competitive industries. Lastly, for the subsample of firms with institutional ownership information available, we find that the percentage of foreign institutional holdings is lower for DCs, which potentially reflects the home bias of investors.

Given the prominence of accounting multiples in the valuation literature, we report two key accounting ratios in Table 1 A4: P/E ratios and P/CF ratios. The average P/E ratio of DCs is 14.04, while that of MNCs is 16.51, with a large and significant difference of 2.47. The pattern of P/CF ratios is quite similar. Following the accounting literature, high valuation ratios, such as P/E, lead to a lower future return, which implies that MNCs might have lower returns than DCs.

B. Locations of Foreign Operations

We obtain the data on foreign operations of MNCs from the Compustat Geographic Segment database, which provides information on the geographic segment-level sales.[5] Compustat Segment data are primarily sourced from the SEC 10-K filings. Although firms are required to separately report sales into each geographic segment in their financial statement, the country by country categorization of the segments is not mandatory. For this reason, sometimes firms report geographic segments at the regional level or they aggregate multiple countries as one geographic segment. For those cases, we are not able to obtain detailed information on foreign operations at the country level. To better match country-level characteristics to each geographic segment, in this section, we restrict the sample to MNCs that report positive amount of foreign sales at the country level. About 62% of MNCs in our U.S. sample are matched to the Compustat geographic segment database, and around 34% of them are dropped because they do not report foreign sales at the country level. We find that MNCs that do not report foreign sales at the country level tend to be smaller and have lower B/M ratios, lower previous returns, and higher market and size betas than MNCs that report county-level sales information. However, we

[5] It might be ideal to use the information on the location of MNCs' assets to identify where MNCs operate. Unfortunately, as sales and profits are the only items that are required to be reported at the geographic segment level, the asset variable is mostly missing in the Compustat geographic segment database. Thus, we rely on foreign segment sales information to identify the location of foreign operations.

do not find any significant difference in returns after controlling for basic stock variables and betas. Thus, we believe that restricting our sample to the MNCs with country-level foreign sales information would not significantly bias our results.

In Table 1 Panel B, we report the top 20 host countries from which MNCs have foreign sales. For each host country in each year, we calculate the percentage MNCs that generate positive sales from the host country and the percentage of foreign sales from the host county (conditional on reporting positive sales from the host country). We then report the time-series averages. Sales to Canada and U.K. account for more than 40% of foreign sales. Emerging markets such as China, Mexico and Brazil also contribute a large proportion of foreign sales to U.S. MNCs. The distribution of MNCs' foreign sales across countries demonstrates a large variation in terms of sources of foreign income even within MNCs.

We consider various country-level characteristics based on the five categories of foreign expansion motivations explained in Section I.C. First, if firms expand to foreign countries to take advantage of different product market factors, MNCs would prefer to enter countries with high growth opportunities and cheap labor costs. We use GDP growth from World Bank to estimate growth opportunity. To estimate the labor input cost, we use the average monthly labor costs per employee adjusted for PPI in USD, which are sourced from OECD, International Labor Organization, or various government agencies located through web search. Second, if the main motivation of foreign investment is to achieve access to foreign capital, firms would expand to countries with developed financial markets. We consider two country-level measures for the financial development in stock and bank loan markets: the first is market capitalization of listed domestic companies as the percentage of GDP, and the second is domestic credit to private sectors as the percentage of GDP. Both are obtained from World Bank. Third, to estimate the tax advantage of having foreign operations, we collect the data on the corporate tax rate of host countries from various sources including OECD and Worldwide Tax Summaries from PwC. Fourth, the internalization theory predicts that firms with high intangible assets would have operations in foreign countries where those assets can be actively traded. To estimate the intensity of trade in intangible assets, we use the proportion of high-technology exports out of manufacturing exports, sourced from World Bank. Lastly, firms prefer to locate in foreign countries with low operational costs. To estimate the country-specific costs for establishing business, we consider geographic distance, trade openness defined as the maximum of exports

and imports of goods and services as the percentage of GDP between home and host countries, and political stability. The political stability variable is obtained from Political Risk Services International Country Risk Guide.

In Appendix Table A2, we report the summary statistics on the country characteristics variables over 1997 to 2015. There is a large variation in the host country characteristics across countries. For example, while China has the highest GDP growth of 9.47%, Italy has the lowest GDP growth at 0.43%. For labor cost, India has the lowest labor cost at $140.87 per month, and Switzerland has the highest at $5487.30 per month. In terms of corporate tax rate, it ranges between Hong Kong (16.58%) and Japan (42%). Overall, the host country characteristic variables show great cross-country variation and may reflect the different costs and benefits of foreign operations in a specific country.

III. The U.S. Evidence

In this section, we examine whether MNCs and DCs deliver different stock returns using a sample of U.S. stocks from 1973 to 2015. We report the main results in Section III.A. and robustness checks in Section III.B. Results on foreign operation are discussed in Section III.C.

A. Main Results

To establish the link between the firm's MNC status and returns, we rely on a Fama-MacBeth (1973) regression approach. In each month, we estimate a cross-sectional regression of monthly excess returns on a MNC dummy and a variety of firm characteristics and risk properties as follows:

$$r_{i,t} = a_t + b_t MNC_{i,t-1} + c_t' controls_{i,t-1} + u_{i,t} \,. \qquad (1)$$

The MNC dummy and control variables are lagged by a month or a year (depending on the data frequency), meaning that all this information is available at the end of previous month. After we estimate the coefficients, a_t, b_t, c_t for each month, we average the monthly time-series of the coefficients over the entire sample period. We compute the time-series standard errors for the coefficients with a Newey-West (1987) adjustment with 3 lags to take into account time-series dependence. If there is no link between the firms' status as a MNC and future returns, after

controlling for firm characteristics and risk properties, we expect that the coefficient on the MNC dummy would not be statistically different from zero.

Table 2 presents our estimation results for equation (1). We report six regressions in Panel A. For each regression, we report the coefficients and their t-statistics. At the bottom of the table, we report the adjusted R squared and the average fraction of MNCs. For all regressions, we include standard firm-level characteristics that might affect future returns, such as Ln(size), B/M, and past 6-month return. We also include firm-level risk exposures, including market beta, size beta, value beta, and currency risk beta.[6] All regressions include industry fixed effects based on the Fama-French 30 industry specifications.

Regression I is our baseline regression. The coefficient on the MNC dummy is 0.226, with a highly significant t-statistic of 5.02. Our results suggest a MNC return premium: after we control for firm-level characteristics and risk exposures, MNCs deliver significantly higher returns than DCs by 0.23% per month or around 2.71% per year. In addition, we find a negative coefficient on firm size and positive coefficients on B/M and the past 6-month return. Those coefficients on the firm-level characteristics are all statistically significant, and the signs are consistent with previous literature. Out of market, size, value, and currency betas, only the size beta is significant with a negative sign.

To confirm that our results are robust to different definitions for MNCs, in Appendix Table A3, we estimate the regressions with continuous variables indicating the magnitude of foreign operations instead of the dummy variable for MNCs. We use the percentage of foreign sales and the percentage of foreign income. The coefficients on the % of foreign sales and % of foreign income are positive and statistically significant, suggesting that the MNC premium increases in the importance of foreign operations. The more a firm relies on foreign operations, the higher the return premium is.

From the summary statistics in Table 1, we know that MNCs are on average larger than DCs in terms of total assets and market capitalization. To make sure that the results are robust across different size groups, we re-estimate equation (1) for firms with different sizes to allow greater flexibility along the size dimension in the Fama-MacBeth framework. We first sort stocks into quintiles each month, based on the market capitalization in the previous month, with group 1

[6] As an alternative specification, we also estimate the regressions including the momentum beta. With this specification, the magnitude of the MNC coefficient decreases slightly to 0.214.

being the smallest and group 5 being the largest. Then we re-estimate equation (1) within each size group. In this way we allow all coefficients, including the coefficient on the MNC dummy, to vary across different size groups.

For regressions II to VI for firms within each size quintile, the MNC dummy remains positive and statistically significant for all size groups, indicating that the MNC return premium is robust across size. Interestingly, the MNC premium is much larger for small and medium-size firms than for large firms. For the smallest size quintile, the coefficient on the MNC dummy is 0.358 with a t-statistic of 3.65. The three medium size quintiles have slightly smaller MNC dummy coefficients ranging from 0.205 to 0.206. For the largest 20% of firms, the coefficient on the MNC dummy decreases to 0.115 with a t-statistic of 2.04.

The bottom of the table presents the distribution of MNCs among the five size quintiles. For the smallest size group, about 16.28% of firms are MNCs, while for the largest size group, about 56.34% of firms are MNCs. This is consistent with the summary statistic indicating that large firms are more likely to be MNCs. Overall, we find a MNC return premium for all size groups, and the effect is much larger for smaller firms. The analysis by size groups also confirms that our results are not driven by a specific subset of large or small stocks.

B. Alternative Explanations and Robustness

B1. Asset Pricing Anomalies vs. MNC Return Premium

Given the large literature in asset pricing on various return anomalies, it is natural to ask whether the MNC return premium is driven by well-known empirical patterns. In this section, we consider eight previously-documented empirical anomalies that predict cross-sectional stock returns.

To examine whether these anomalies can explain away the MNC return premium, for each pattern/anomaly, we include the key variable of the anomaly in equation (1) as an additional control. If the MNC return premium is driven by the anomalies, the additional control presumably would absorb the return difference associated with the MNC status, and the MNC dummy coefficient would become smaller and insignificant. These results are reported in Table 3 Panel A. In the first 8 regressions, we include asset pricing anomalies one by one, and we include all of them in the last regression. The number of months included in the regressions changes across different specifications due to the data availability of each control variable added.

From summary statistics in Table 1, we observe that MNCs have lower idiosyncratic volatility, lower idiosyncratic skewness, lower default probability, higher profitability and higher asset growth. The above five characteristics are directly linked to five well-known patterns in asset pricing literature. Ang et al. (2006) document the idiosyncratic volatility effect that firms with higher idiosyncratic volatility have lower returns. Boyer, Mitton, and Vorkink (2010) claim that investors prefer "lottery-like" stocks, which might be overpriced. Therefore, the idiosyncratic skewness effect implies that firms with positive skewness would have lower returns in the future. Campbell, Hilscher and Szilagyi (2008) find that the default probability coefficient is negatively related with stock return. A recent study by Novy-Marx (2013) finds that gross profit is positively related to expected return, which is called the profitability puzzle. Finally, Cooper, Gulen, and Schill (2008) find the asset growth anomaly, documenting that asset growth is negatively associated with subsequent abnormal returns.

In regression I to V, we include the above five variables as an additional control one by one to examine whether the MNC dummy would decrease in significance and/or magnitude. In the benchmark regression in Table 2, the MNC dummy coefficient is 0.226 with a t-statistic of 5.02. For regression I to V, the MNC dummy coefficient varies between 0.157 and 0.272, all with t-statistics above 3.50. The results suggest that none of the five anomalies can explain away the MNC return premium. Consistent with previous studies, the above five control variables are all significant themselves with consistent signs. This indicates that the five previously known anomalies found in the literature also exist in our sample.

Firms normally consider two alternative diversification strategies: geographical diversification and industrial diversification. As in Denis et al (2002), these two diversification strategies are not substitutes for each other, and they might have different impacts on stock returns. Table 1 shows that internationally diversified firms tend to be industrially diversified at the same time. This raises the possibility that MNCs earn higher returns than DCs because they are industrially diversified. Meanwhile, as documented in Cohen and Lou (2012), the industry-level diversification could be positively associated with future returns due to the complex firm structures. In regression VI, we consider whether industry diversification affects the return difference related to geographic diversification. The coefficient on the industry diversification is insignificantly different from zero, which indicates that after controlling for other characteristics,

the industry diversification does not affect stock returns. The coefficient on the MNC dummy remains at 0.211 with a t-statistic of 4.73.

Hou and Robinson (2006) find that firms in concentrated industries (i.e. less competitive industries) exhibit a return discount. In Table 1, we observe that MNCs appear more frequently in less competitive industries. In regression VII, the coefficient on the industry concentration variable is negative but not significant. The lack of significance is because we include industry dummies, which is highly correlated with the concentration index at the industry level.[7] The coefficient on the MNC dummy is still 0.226 with a t-statistic of 5.00.

Finally, we examine whether foreign institutional investor holdings lead to return differences between MNCs and DCs. We include the percentage of foreign institutional holdings out of the total number of shares outstanding to indirectly control for home bias.[8] Notice that data for foreign holdings are available for a much shorter period, restricting the sample to 186 months of observations. After controlling for foreign institutional investor holdings, the MNC dummy coefficient becomes slightly smaller but still significant at 0.217 with a t-statistic of 2.38.[9]

In the last regression in Table 3 Panel A, we include all the control variables mentioned above except the percentage of foreign institutional holding due to the short period of data availability. With all seven additional controls, the MNC dummy coefficient is 0.156, which is still 69% of the magnitude in the baseline regression, and the t-statistic is highly significant at 2.48. Out of the six controls, idiosyncratic volatility, default probability, and asset growth are significant with signs in line with our expectations. By and large, we confirm that the MNC return premium cannot be entirely explained by previously documented anomalies.[10]

[7] When we estimate regression VII without industry dummies as an alternative specification, the coefficient on industry concentration becomes more negative (-0.362) and significant at 5% level.

[8] From regressions not reported, when we examine the percentage of foreign institutional holdings out of total institutional holdings, the results are similar.

[9] We also consider the real option value theory in Fillat and Garetto (2015). However, the theory is based on the sunk cost incurred associated with entering a foreign market, which is not directly observable. We use fixed costs at both firm and industry levels as a proxy for sunk cost, but the fixed cost variables fail to explain the MNC premium.

[10] When we include the MNC dummy and the other control variables in the same regression, it proves robustness rather than causality. To understand channels through which MNCs earn higher returns than DCs, we further examine the possible driving forces for the higher returns associated with MNCs in more depth by using a two-stage approach. To save space, results are reported Appendix Table A4. We find that none of the nine channels can explain more than half of the MNC return premiums.

B2. Sub-period Patterns

Is it possible that main results are driven by specific time-periods? To estimate the magnitude of MNC return premiums by sub-period, we divide our sample period into four sub-periods: 1973-1983, 1984-1993, 1994-2003 and 2004-2015. The results are presented in Panel B of Table 3. For the four 10-year sub-periods, the coefficient for the MNC dummy starts at 0.115 for 1973-1983, increases to 0.211 for 1984-1993, peaks at 0.426 for 1994-2003, and drops to 0.173 for 2004-2015. All coefficients are statistically significant over all sub-periods except in the last 12 years. In Figure 2, we plot the time-series coefficients on the MNC dummy over the entire U.S. sample period. The coefficient on the MNC dummy stays mostly positive over 1973 to 2015. However, consistent with our results by sub-periods, we observe the worst performance for the MNC premium during the recent financial crisis: the coefficient on the MNC dummy is strongly negative.

To examine the reason for the lower premium in the most recent period, we separately look at the financial crisis period between 2007Q3 and 2009Q1. Part of the drop in the MNC return premium and the lower statistical significance over the last 12 years is due to the financial crisis. During 2007Q3 and 2009Q1, the MNC dummy has a negative coefficient of -0.279, yet is statistically insignificant, possibly due to the short and noisy sample period. If we exclude the financial crisis periods, MNCs earn significantly higher returns by 0.250% than DCs during the period of 2004-2015. We also separate our samples based on the NBER economic recession periods. We find that the coefficient for MNC dummy in a non-recession period is at 0.279 with a t-statistic of 6.25, while during NBER recession periods, the MNC dummy coefficient is insignificantly different from zero.

Combining all results in Panel B, we observe a clear pattern that MNCs have higher returns than DCs over the past 43 years except during the financial crisis period and NBER recessions. The theoretical model in Fillat and Garreto (2015) indicates that MNCs have higher exposures to downside market risks, and thus they should have higher returns. Our empirical results suggest that MNCs have lower returns than DCs during a financial crisis, which is consistent with their model. However, the higher market risk exposures of MNCs may not be the ultimate reason for the high returns of MNCs, because we allow market betas to vary over time within the Fama-MacBeth framework. After controlling for the increased market risk exposures

of MNCs during recessions, we still find that the MNCs return premium is positive and significant.

B3. A Portfolio Approach

The MNC return premium documented in Table 2 implies that a firm's multinational status might be useful information for investors to form their investment portfolios. Does a trading strategy of taking long positions on MNCs and short positions on DCs create abnormal returns? To answer this question, we first construct MNC and DC portfolios based on their MNC status in the past year. Next, we calculate the monthly value-weighted excess returns of each portfolio, and then obtain the abnormal returns (alphas) from a time-series regression of portfolio excess returns on Fama-French three factors (FF3) and a momentum factor (FF4).

We present the portfolio returns, alphas, and their differences in Table 3 Panel C. The average monthly excess return for MNCs is 0.921%, while the excess return for DCs is 0.806%. The difference is 0.115% with a t-statistic of 1.57. Using the Fama-French three factor model, we find that the monthly alphas of the MNC and DC portfolios are 0.059% and -0.098%, respectively. The difference in alphas between MNC and DC portfolios is 0.156%, which is statistically significant with a t-statistic of 2.16. When we add the momentum factor, the difference in alphas is very similar at 0.155% per month with a t-statistic of 2.09. This result implies that a trading strategy that exploits information on firms' multinational status generates significant and positive abnormal returns, especially after controlling for risk factors.

In the right half-panel of Panel C of Table 3, we sort firms into size quintiles and construct MNC and DC portfolios within each size quintile. For the smallest firms, the excess return difference is 0.392%, and the alpha for the FF4 model is 0.545%, both of which are highly significant. For the next three size groups, the return differences are all significant and positive, but the magnitude of returns to the MNC portfolios gradually decreases in firm size. For the largest size group, the excess return difference is 0.128%, positive but insignificant, while the alphas from the FF3 and FF4 models are 0.156% and 0.152%, both positive and significant.[11]

[11] In Appendix A5, we present the return difference between MNC and DC by various industries, and we find that MNC return premiums are more prominent for tradable industries than for non-tradable industries.

C. Locations of Foreign Operations

To examine whether and how the locations of MNCs' foreign operations are related to the magnitude of MNC's return differences, we estimate the Fama-MacBeth regression as follows:

$$r_{i,t} = a_t + b_{1t}MNC_{i,t-1} + b_{2t}MNC \times Host\ Country\ Indicator + c_t'controls_{i,t-1} + u_{i,t} \quad (2)$$

In addition to the MNC dummy, we add the interaction terms between the MNC dummy and the indicator of host-country characteristics. For example, in the case of GDP growth, each host country is defined as high GDP growth country if its GDP growth is above the median among the 70 host countries over the sample period. For each MNC, in a given year, *High GDP Growth* is defined as one if the firm has more than 50% of foreign sales in high GDP growth countries. Thus, *High GDP Growth* represents MNCs that have most of their foreign operations in countries with high growth opportunities.[12] If a specific host country characteristic is an important driver of the MNC premium, we expect the coefficient on the interaction term (b_{2t}) to be statistically significant.

The results are reported in Table 4. First of all, the coefficients on the MNC dummy itself are positive and significant, which is consistent with our main results, and provide the baseline for the interaction terms. When we look at the interaction terms with various host country characteristics, we find that the magnitude of the MNC premium depends on some of the location choice variables with statistical significance.

The first set of location choice variables is related to economic conditions and the cost of inputs such as labor, which are included in regression I and II. In regression I, the interaction term of the MNC dummy with *High GDP Growth* is -0.270 with t-stat of -2.10. The result implies that if MNCs have operations mostly in low GDP growth countries, they have higher returns than DCs by 0.293% per month. In regression II, the interaction between the MNC dummy and the *Low Labor Cost* dummy is -0.168, but statistically insignificant. The MNCs that have selected the location for their foreign operations based on lowering labor costs do not have significantly different returns from other MNCs.

[12] We use alternative cutoffs other than 50% for the foreign sales, and the results are quantitatively similar.

Second, we consider the financial development of host countries. In regression III, the interaction term for the MNC dummy with the high market capitalization variable is statistically insignificant. In regression IV, when we consider the bank capital development of host countries, we find that the coefficient on the interaction term is -0.136 with a t-stat of -1.97. This result implies that the MNC premium is 0.280% per month compared to a DC, on average, but the magnitude of MNC premium decreases by 0.136% per month for the MNCs that mostly locate in countries with high private credit.

If the main motivation of expanding foreign operations is to avoid high corporate taxes in a home country, MNCs would locate foreign operations in low corporate tax countries. We find that in regression V, the interaction term is negative but insignificant.

Based on the internalization theory, we consider the risks of trading intangible assets. Firms with more intangible assets have a stronger incentive to invest in foreign countries, especially in the countries that have active markets for their main assets. In regression VI, we find that the interaction term with the MNC dummy and the indicator for firms operating in countries with high R&D exports is -0.184, which is statistically significant. That is, when firms locate their foreign operations in countries with higher R&D exports, the MNC return premiums would be lower by 0.18% per month.

Lastly, we look at additional proxies for the costs of foreign operations: geographic distance, trade openness, and political stability. Conditional on the decision to be multinational, firms might prefer to enter countries with lower trade costs (i.e. lower geographic distance and higher trade openness) and with lower political risks (i.e. high political stability). In regressions VII to IX, we do not find the coefficients of interaction terms statistically significant.

Overall, by using the detailed data on the geographic structures of MNCs, we find that the return premium becomes more prominent for MNCs operating in countries with lower GDP growths, lower private credit, and lower R&D exports. These results suggest that MNC return premium is higher if the foreign operations are located in countries with lower benefits of foreign operations, and the high return is probably compensation for the high uncertainty related to performance in these countries.

IV. The Global Evidence

Is the MNC premium U.S. specific or does it exist in other countries outside the U.S. as well? To answer this question, we examine the return difference between MNCs and DCs in non-U.S. countries. We introduce the data in Section IV.A. The main results for the global sample are presented in Section IV.B. In Section IV.C, we investigate possible explanations for the MNC return premium in the global sample.

A. **Global Sample Data**

For the global sample, we include 23 countries that are classified as developed markets by MSCI as of December 2015, which includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom, and the U.S. For countries outside of U.S., we obtain U.S. dollar-denominated monthly stock returns from Datastream and annual accounting data from Worldscope. We include ordinary common stocks only and exclude depositary receipts (DRs), real estate investment trusts (REITs), and preferred stocks.[13] Our sample period begins in January 1990 and ends in December 2015. The sample starts from 1990 because Worldscope data coverage on international firms is limited before 1990 for several countries.[14] As in the U.S. sample, we classify firms into MNCs and DCs in the global sample based on the foreign income variable (Worldscope item: WC08741). A firm is defined as a MNC if it reports non-missing foreign income in any of the previous three years.

Summary statistics on the global sample are reported in Table 5. In Panel A, we report the average number of MNCs and DCs each year, as well as their average market capitalization by country. The proportion of MNCs in other countries is much lower compared to the U.S. sample. The proportion of MNCs varies considerably across countries (8.82% to 37.77%), and MNCs are substantially larger in terms of market capitalization than DCs as in the U.S. Specifically, firms in Hong Kong, Ireland, Singapore and U.K. are more globalized (more than

[13] Following Karolyi and Wu (2012), we also exclude stocks with name including "REIT", "REAL EST", "GDR", "PF", "PREF", "PRF", "ADS", "CERTIFICATES", "RESPT", "Rights", "Paid in", "UNIT", "INCOME FD", "INCOME FUND", "HIGH INCOME", "INC.&GROWTH", "INC.&GW", "UTS", "RTS", "CAP.SHS", "SBVTG", "STG.SAS", "GW.FD", "RTN.INC", "VCT", "ORTF", "HI.YIELD", "GUERNSEY", "DUPLICATE", "DUAL PURPOSES", and "NOT Rank for Dividend".

[14] Here we list the countries which enter our sample after 1990: the Netherlands (1992), New Zealand (1992), Switzerland (1994), Germany (1996), Sweden (1996), Israel (1997), Norway (1997), Austria (2002), Denmark (2003), Belgium (2004), Finland (2005), Portugal (2005), Italy (2006), Spain (2006).

30% of firms are MNCs), while firms in Norway, Sweden, and Israel are more likely to focus on domestic operations (less than 10% of firms are MNCs).

Panel B reports summary statistics on firm level characteristics and risk exposures. There are two differences between the global sample and the U.S. sample. First, we construct a "global accessibility" variable to measure the extent to which globalization of financial markets affects the return difference between MNCs and DCs. As documented in Karolyi and Wu (2012), globally accessible firms might have different risk properties than locally accessible firms, which could drive the difference in returns between MNCs and DCs. We compute the global accessibility dummy, which equals one if the firm is globally accessible and zero otherwise, following Karolyi and Wu (2012).[15]

The second difference for the global sample is that we compute the betas differently. For the U.S. analysis, we only consider the U.S. risk factor exposures by including betas on market, size, and value factors measured in the U.S. market. In the global sample analysis, following Bekaert, Hodrick and Zhang (2009), we include risk exposures to both local and global risk factors to accommodate for all possible levels of integration in global financial markets. If the global capital markets are fully integrated, then only the global factors are relevant. If the global capital markets are fully segmented, then only the local factors are relevant. If they are partially integrated, then we would expect both global and local factors to be relevant. Following Bekaert et al. (2009), we consider the global-local Fama-French 3 factor model, where we control for both global and local market, size, and value factors. We first calculate a country-level market factor as the value-weighted return of all firms in that country. To obtain country-level size factors, for each month we sort firms into three size groups within the country based on the 6-month lagged market value, and then compute the value-weighted return difference between firms in the bottom tercile (smallest) and firms in the top tercile (biggest). Similarly, we calculate the country value factor as the value-weighted return difference between firms in the highest B/M tercile and the lowest B/M tercile. The global factors are calculated as the value-weighted

[15] A firm is defined as globally accessible if one of its securities is listed in any of the following markets: (i) U.S., including NYSE/AMEX, NASDAQ, and the Non-NASDAQ OTC markets; (ii) U.K., including the London Stock Exchange, London OTC Exchange, London Plus Market, and SEAQ International; (iii) Europe, including Euronext at Amsterdam, Brussels, Lisbon, Paris, and EASDAQ; (iv) Germany in which the Frankfurt Stock Exchange is located; (v) Luxembourg in which the Luxembourg Stock Exchange is located; (vi) Singapore, including the Singapore Stock Exchange, Singapore OTC Capital, and Singapore Catalist; and (vii) Hong Kong in which the Hong Kong Stock Exchange is located. Under this definition, all the firms in the U.S., Belgium, Portugal, and Singapore are globally accessible.

sum of country level factors, where the weight equals the lagged market value of all stocks in each country. For the currency risk, we construct the same foreign exchange factor (FX), as with the U.S. testing, using the return of the trade-weighted U.S. dollar index (major currencies) from the Federal Reserve Bank of St. Louis. The loading on FX is estimated from the regression of excess returns on the global market, local market and FX. The betas are estimated at the firm level with time-series regressions in each month using daily returns, which allow the loadings to be time-varying. For the global sample, idiosyncratic volatility is estimated from the regression of daily excess return on the global and local market, size and value factors. We exclude observations in the top and bottom 1% of factor loadings in each month to exclude outliers.

We report the summary statistics of our global sample in Panel B of Table 5. Similar to the U.S. sample, we find that MNCs are larger, have lower B/M ratios and higher past returns than DCs. MNCs also have lower idiosyncratic volatility, higher profitability, and lower asset growth than DCs, and they are more globally accessible. In terms of betas, MNCs have higher exposures to both global- and local-market risks and lower global- and local-size factors than DCs while the exposures to value factors are mixed. For the currency betas, as opposed to the U.S. sample, MNCs in non-U.S. countries have significantly higher currency betas than DCs.

We obtain locations of foreign operations of MNCs in the global sample from Capital IQ. Capital IQ collects the data on sales by geographic segments of companies in major countries from various sources, and the primary source is financial statements of firms, which are equivalent to 10-Ks of U.S. firms. As for the U.S. sample, for an analysis of MNCs' foreign locations, we restrict our global sample to the MNCs that report at least one positive amount for foreign sales at the country level. We consider nine country-level variables for host country characteristics, similar to the U.S. analysis: GDP growth, labor cost, market capitalization, private credit, corporate tax, R&D exports, geographic distance, trade openness, and political stability.

In Table 5 Panel C, we report the top 20 host countries of our global sample. The list of popular countries for non-U.S. MNCs is similar to that of U.S. MNCs. The U.S. is the top country that hosts a number of foreign MNCs, followed by the U.K., Japan and Canada.

B. **Main Results on the Global Sample**

For the global sample, we re-estimate the benchmark equation (1) with both country fixed effect and industry fixed effect. The industry classification is based on the FTSE level-4 industry identifications and SIC, as in Bekaert, Hodrick and Zhang (2009).

Table 6 reports the Fama-MacBeth regression results for the global sample. To save space, we present results for firms in all countries, U.S. only, and non-U.S. countries separately. We use factor loadings from the global-local Fama-French three factor model. As before, we control for firm characteristics such as B/M, Ln (size), past 6-month return, and global and local factor loadings.

For all firms in the global sample in regression I, the MNC dummy coefficient is 0.237 with a t-statistic of 4.59. This suggests that in the global sample, MNCs have higher returns than DCs by 0.237% per month, and the difference is highly significant. Compared to 0.259 in the U.S. sample (regression II) over the same sample period, the magnitude of the MNC dummy coefficient using the global sample is slightly smaller, but they are similarly significant. When we move on to the non-U.S. sample in regression III, the coefficient on the MNC dummy becomes 0.145 with a t-statistic of 2.85, which indicates that the MNC premium is also sizable and significant in non-U.S. countries. For the control variables, size, BM, and past returns are all significant with expected signs. For the betas, the size betas are significant but with negative signs.

C. **Alternative Explanations for the MNC Return Premium**

For the global sample, due to data limitations, we are unable to conduct a thorough robustness check as in the U.S. sample, but we focus on the idiosyncratic volatility, gross profitability, asset growth, and global accessibility as additional controls. As before, if any of the controls is the reason for the MNC premium, we expect that the MNC dummy would lose its significance by controlling for these anomalies.

Results are presented in Table 7. In regressions I to IV, we include the idiosyncratic volatility, profitability, asset growth and global accessibility variable one by one, and in regression V, we include all four controls. The MNC dummy coefficient varies between 0.159 and 0.254, and is always statistically significant. Among the four controls, the coefficient on idiosyncratic volatility is negative as expected, but it is statistically insignificant. The coefficient

on gross profit is positive and significant, and the coefficient on asset growth is negative and significant, both of which are the same as in the U.S. sample. Finally, the coefficient on global accessibility is 0.637 and statistically significant, indicating that access to the global capital market is an important determinant of stock returns.

In column V, when we include all control variables, the MNC premium decreases to 0.159% per month, but it remains statistically significant with a t-statistic of 2.32. That is to say, the MNC return premium is positive and significant in the global sample, and the magnitude of the MNC premium cannot be explained by the idiosyncratic volatility, gross profit, asset growth and global accessibility effects.

D. **Locations of Foreign Operations**

Parallel to the U.S. results, here we examine how the location of the foreign operation affects the return premium associated with MNCs in the global sample. We re-estimate the Fama-MacBeth regressions as in equation (2) with the global sample.

Instead of using the whole sample median to determine whether a country has high or low GDP growth as in the U.S. analysis, with the global sample, we are able to compare the relative country characteristics between home and host countries. For each country-level characteristic except geographic distance, host countries are sorted into the high (low) group if the value of the host country is above (below) the value of the home country. For geographic distance, host countries are sorted into the high (low) group if the distance between the host and home country is above (below) the median. For each MNC, high (low) host country characteristic equals 1 if more than 50% of foreign sales come from host countries in the high (low) group.[16] In addition, the regressions for the global sample include country dummies.

The results are reported in Table 8. First of all, the coefficients on the MNC dummy itself are all positive and significant, indicating the baseline MNC return premium is also positive and significant.

For the economic condition variables in regression I and II, we find that the interaction coefficient between the MNC dummy and high GDP growth is -0.264 with a t-statistic of -3.44. That is to say, if a firm's foreign operation is located in a country with lower GDP growth, the MNC return premium is reduced by 0.26% per month, while the unconditional MNC return

[16] We also estimate regressions using the same specifications for the U.S. sample, and the results are similar.

premium is 0.42% per month. Similarly, if a firm's foreign operation is located in a country with lower labor cost, the MNC return premium is reduced by 0.12% per month, and the coefficient is marginally significant. The results are similar to those for the U.S. sample.

For the country financial development variables in regression III and IV, the interaction coefficients on high market cap and high private credit are both negative and significant, indicating that the MNC premium is more prominent for the MNCs operating in countries with less financial development.

When we look at the corporate tax rate in regression V, the coefficient on the interaction term is small and insignificant, which implies that tax considerations do not have a significant impact on return differences. For intangibility of assets, we find in regression VI, the MNC return premium would be significantly reduced if the foreign operation is located in countries with higher R&D exports.

Finally, from the perspective of operational cost, the interaction between the MNC dummy and low geographic distance is -0.159 and statistically significant. The MNC return premium is more prominent if the foreign operations are distant from the home country.

To summarize, MNCs operating in foreign countries with lower GDP growth, higher labor costs, lower financial development, and greater geographic distance are associated with a higher MNC premium, consistent with the U.S. results.

V. Conclusions

Using the monthly returns of 18,996 individual U.S. stocks from 1973 to 2015, we find strong evidence that multinational stocks earn significantly higher returns by 23bps over domestic stocks. This MNC return premium is persistent for different size groups and over different time periods, while the magnitude of the MNC premium is much stronger in smaller firms and during non-recession times. The higher returns of MNCs are not associated with previously known return determinants. We consider various determinants, including idiosyncratic volatility, idiosyncratic skewness, default probability, profitability, asset growth, industry diversification, industry concentration, and foreign investors' holdings. After controlling for these potential factors, we confirm the strong and reliable explanatory power of a firm's multinational status in stock returns.

Based on previous studies on the determinants of international corporate diversification strategies, we also examines various alternative explanations by which MNCs yield higher returns than DCs. Interestingly, foreign exchange risk does not seem to be an important channel explaining a MNC's higher returns. None of the existing risk factors or know anomalies can fully explain the magnitude of MNC premium. We find a similar pattern of higher monthly stock returns for MNCs compared to DCs when we use a sample of 23,965 stocks in 22 developed countries over the period 1990-2015. The results using the global stock returns are robust to various specifications controlling for both local- and global-factors.

The return premium is clearly associated with the location of MNC's foreign operations. We find that the MNC return premiums become more prominent for MNCs operating in countries with lower GDP growth, lower private credit, and lower R&D exports. Overall, the MNC return premium is higher if MNCs' foreign operations are located in foreign countries with lower benefits (higher costs). The analysis of MNC's foreign operations suggests a potential source for the MNC return premium: investors are compensated for the high uncertainty related to firm performance in countries with high foreign operational costs through higher stock returns.

Our findings provide strong evidence that the existence of firms' international activities is relevant in determining stock returns. One implication of our results is that as firms' operations become more globalized, international expansion decisions would affect how investors recognize those firms in the global stock markets. Therefore, understanding why and how firms expand their operations abroad would provide insights on how investors incorporate that information into stock prices.

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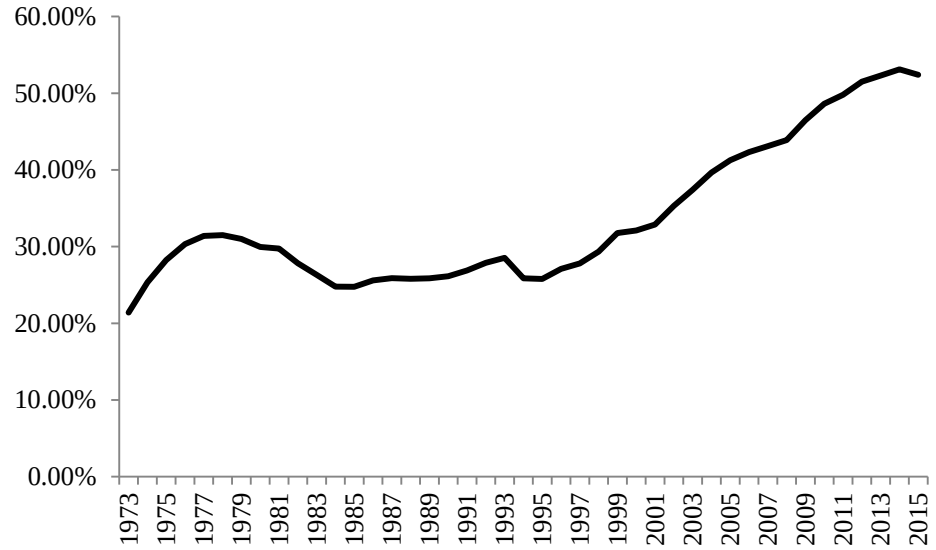
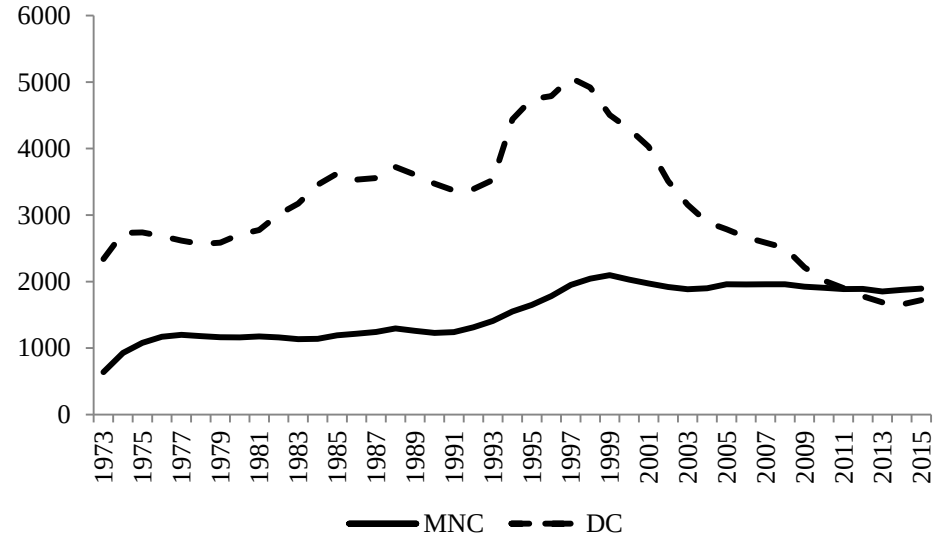
Figure 1. Distribution of MNC and DC 1973-2015: U.S. Sample

This figure shows the number and market capitalization of MNCs and DCs over time. In each year over the sample period between 1973 and 2015, we obtain the number and average market capitalization of MNCs and DCs, and calculate the percentage of MNCs. Panel A presents the percentage of MNC in terms of numbers. Panel B presents the number of MNCs (solid line) and DCs (dashed line). Panel C presents the average market capitalization in $ millions of MNCs (solid line) and DCs (dashed line).

Panel A. The percentage of MNC



Panel B. The number of MNC and DC



Panel C. The average market capitalization of MNC and DC (in $ Millions)

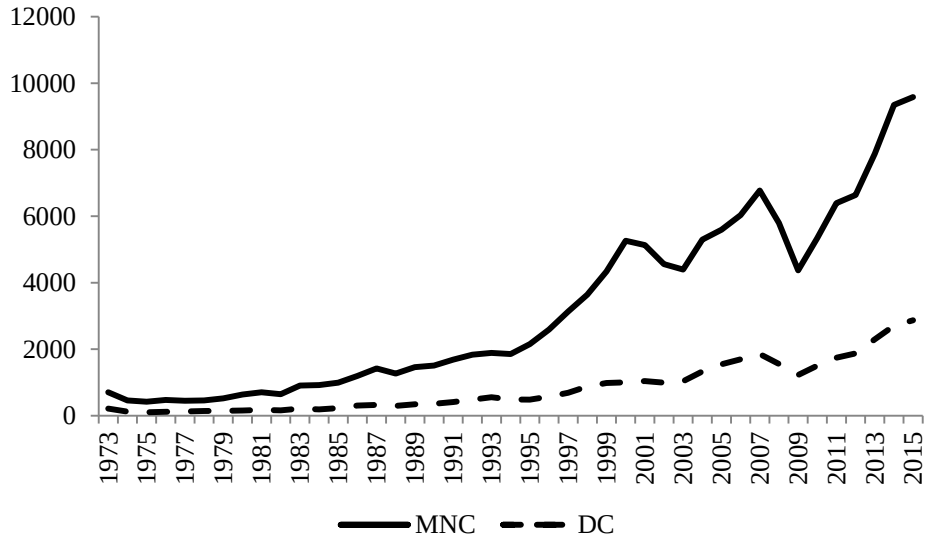


Figure 2. Time-Series Plot of MNC Coefficient: U.S. Sample

This figure plots the time-series coefficients on the MNC dummy from the Fama-MacBeth regression for the U.S. sample (Table 3, Model I) over the sample period. The U.S. sample period is from February 1973 to December 2015.

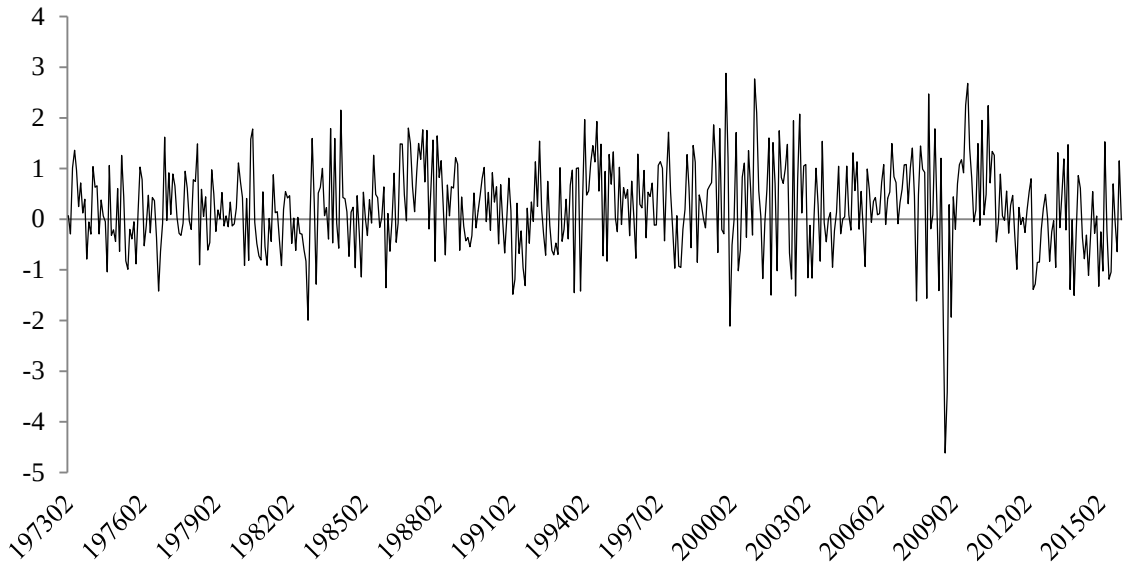


Table 1. Summary Statistics: U.S. Sample

This table reports the summary statistics for DCs and MNCs in the U.S. and the top 20 host countries for U.S. MNCs. Panel A presents the summary statistics of the U.S. sample. The sample period is from February 1973 to December 2015. A firm is defined as a MNC if it reports non-missing foreign income (Compustat item: PIFO) or foreign income taxes (Compustat item: TXFO) in any of the previous three years. Other variables are defined in Appendix A1. Total assets, gross profit, asset growth, industry diversification, industry concentration, P/E ratio and P/CF ratio are at an annual frequency. % Foreign Holding in is at a quarterly frequency. All other variables are at a monthly frequency. Panel B presents the list of the top 20 host countries from which U.S. MNCs generate foreign sales. The sample includes MNCs that report foreign sales at the country level from 1997 to 2014. For each host country in each year, we calculate the percentage of MNCs as the number of MNCs that report sales from the host country divided by the total number of MNCs in the sample and the average percentage of foreign sales from the host country, defined as sales from the host country divided by total foreign sales. We then report the time-series average and order the top 20 host countries by the highest average percentage of MNCs. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

Panel A. Summary Statistics

	DC				MNC				Diff. (MNC-DC)	
Variable	**N**	**Mean**	**Median**	**Std**	**N**	**Mean**	**Median**	**Std**	**Mean**	**t-value**
A1. Stock Characteristics										
Ln(Size)	1,385,191	4.307	4.158	1.989	713,492	5.877	5.851	2.173	1.570	510.04***
B/M	1,385,191	0.892	0.703	0.737	713,492	0.770	0.582	0.666	-0.122	-120.98***
Previous 6-Month Return	1,385,191	8.045	6.069	41.082	713,492	8.110	7.172	36.010	0.065	1.190
A2. Factor Loadings										
b(MKT)	1,385,191	0.783	0.695	2.014	713,492	0.992	0.953	1.591	0.209	82.20***
b(SMB)	1,385,191	0.698	0.536	2.730	713,492	0.684	0.549	2.206	-0.014	-3.98***
b(HML)	1,385,191	0.224	0.216	3.372	713,492	0.131	0.121	2.754	-0.094	-21.58***
b(FX)	1,385,191	0.019	0.001	2.876	713,492	0.008	0.003	2.379	-0.011	-2.91***
A3. Other Characteristics										
Total Assets ($ Million)	124,923	2495.914	88.866	32440.527	62,536	5121.250	348.545	41320.662	2625.336	13.89***
Idiosyncratic Volatility	1,380,476	0.477	0.360	0.434	713,092	0.382	0.297	0.315	-0.095	-181.91***
Idiosyncratic Skewness	1,172,463	1.173	1.133	0.715	600,742	0.951	0.914	0.589	-0.221	-219.80***
Default Probability	1,080,370	0.100	0.054	0.586	565,878	0.074	0.038	0.393	-0.026	-33.61***
Gross Profit	124,642	0.285	0.226	0.293	62,501	0.399	0.370	0.239	0.114	89.96***
Asset Growth	110,852	0.161	0.079	0.391	59,407	0.137	0.074	0.337	-0.024	-13.23***
Industry Diversification	122,965	0.255	0.000	0.436	62,380	0.499	0.000	0.500	0.244	103.52***
Industry Concentration	124,874	0.219	0.159	0.203	62,526	0.247	0.195	0.205	0.028	27.78***
% Foreign Holding	320,871	0.025	0.013	0.033	270,718	0.044	0.038	0.039	0.019	199.51***
A4. Accounting Multiples										
P/E ratio	110,932	14.042	10.455	46.443	57,057	16.512	13.139	48.702	2.470	9.999***
P/CF ratio	105,084	7.869	7.068	26.951	56,921	10.120	8.598	25.140	2.251	16.767***

Panel B. Top 20 Host Countries

Host Country	Average Percentage of MNCs (%)	Average Percentage of Foreign Sales (%)
Canada	42.39	47.91
United Kingdom	29.06	48.96
Japan	20.89	30.66
Germany	17.13	36.06
China	15.10	34.69
Mexico	11.21	27.68
Australia	10.33	23.09
France	9.91	26.07
South Korea	6.38	18.40
Taiwan	6.18	23.27
Brazil	4.73	26.13
Italy	4.23	19.70
Singapore	3.85	22.72
Netherlands	3.39	32.52
India	2.44	23.49
Spain	2.40	21.55
Hong Kong	1.87	24.56
Malaysia	1.80	20.23
Belgium	1.77	17.93
New Zealand	1.76	14.02

Table 2. Fama-MacBeth Regression Results: U.S. Sample

This table reports the Fama-MacBeth regression results for the U.S. sample. The sample period is from February 1973 to December 2015. Column I presents the time-series averages of monthly cross-sectional regression coefficient estimates and t-statistics in parenthesis for the full sample. Column II-VI present the time-series averages of monthly cross-sectional regression coefficient estimates and t-statistics by size groups. In each month, we sort the stocks into quintiles based on their market capitalization in the previous month. All regressions include industry dummies based on the 30 Fama-French industry classification. The bottom row presents the percentage of MNCs in the full sample and among the five size quintiles. All variables are defined in Appendix A1. T-statistics, adjusted for serial correlation using Newey and West (1987) standard errors with three lags, are presented in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

	Full Sample	**Size Group**				
		1 Smallest	**2**	**3**	**4**	**5 Largest**
	I	**II**	**III**	**IV**	**V**	**VI**
Intercept	0.541	4.267***	-0.800	0.015	0.424	0.822*
	(1.09)	(5.45)	(-1.22)	(0.03)	(0.73)	(1.84)
MNC Dummy	0.226***	0.358***	0.205***	0.205***	0.206***	0.115**
	(5.02)	(3.65)	(2.94)	(3.24)	(3.11)	(2.04)
Ln(Size)	-0.102***	-1.830***	0.110	0.028	-0.010	-0.092**
	(-2.71)	(-14.02)	(0.97)	(0.30)	(-0.15)	(-2.51)
B/M	0.633***	0.710***	0.609***	0.480***	0.330***	0.336***
	(9.35)	(10.31)	(7.52)	(5.69)	(3.38)	(3.44)
Previous 6-Month Return	0.005***	-0.002	0.012***	0.012***	0.010***	0.005**
	(4.09)	(-1.08)	(8.12)	(7.64)	(4.96)	(2.41)
b(MKT)	-0.051	-0.056	-0.084	-0.038	-0.045	-0.086
	(-1.04)	(-1.29)	(-1.50)	(-0.59)	(-0.60)	(-1.03)
b(SMB)	-0.080***	-0.068***	-0.064**	-0.075***	-0.080**	-0.104***
	(-3.60)	(-2.70)	(-2.25)	(-2.80)	(-2.53)	(-3.10)
b(HML)	0.013	0.002	0.010	0.011	0.003	0.020
	(0.57)	(0.09)	(0.37)	(0.39)	(0.09)	(0.46)
b(FX)	0.005	0.010	-0.000	0.002	0.018	-0.007
	(0.49)	(0.52)	(-0.03)	(0.12)	(0.97)	(-0.31)
Industry Dummies	Y	Y	Y	Y	Y	Y
Adjusted R^2	5.60%	3.00%	4.80%	6.40%	9.80%	16.30%
% of MNCs	34.50%	16.28%	24.56%	33.52%	41.77%	56.34%

Table 3. Alternative Explanations and Robustness: U.S. Sample

This table examines alternative explanations and robustness of MNC return premium for the U.S. sample. Panel A reports the Fama-MacBeth regression results with additional control variables, including idiosyncratic volatility, idiosyncratic skewness, default probability, gross profit, asset growth, industry diversification, industry concentration and % foreign holding. Panel B presents the coefficients and t-stats of the MNC dummy, the average number of firms, and the average percentage of MNCs for each 10-year subperiod, the financial crisis period between 2007Q3 and 2009Q1, the non-financial crisis period during 2004-2015 and (non) NBER recessions, based on Model I in Table 2. Panel C presents the performance of MNC and DC portfolios from time-series regressions for the full sample and by size group. In each month, we form portfolios based on the MNC status in the previous month and calculate the value-weighted excess returns, FF3 alpha, and FF4 alpha. FF3 alpha is the intercept from a regression of monthly excess return on Fama-French three factors. FF4 alpha is the intercept from a regression of monthly excess return on Fama-French three factors and momentum. All variables are defined in Appendix A1. T-statistics, adjusted for serial correlation using Newey and West (1987) standard errors with three lags, are presented in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

Panel A. Additional Control Variables

	I	II	III	IV	V	VI	VII	VIII	IX
Intercept	1.034**	1.948***	0.459	0.251	0.988	0.575	0.734	0.537	1.718***
	(2.31)	(3.27)	(0.97)	(0.49)	(1.35)	(1.16)	(1.47)	(0.89)	(3.27)
MNC Dummy	0.225***	0.232***	0.272***	0.157***	0.158***	0.211***	0.226***	0.217**	0.156**
	(4.95)	(4.92)	(5.04)	(3.55)	(3.64)	(4.73)	(5.00)	(2.38)	(2.48)
Ln(Size)	-0.149***	-0.215***	-0.082**	-0.093**	-0.091**	-0.101***	-0.109***	-0.089*	-0.198***
	(-4.64)	(-5.61)	(-2.21)	(-2.45)	(-2.48)	(-2.71)	(-2.89)	(-1.94)	(-5.57)
B/M	0.624***	0.667***	0.657***	0.683***	0.567***	0.628***	0.625***	0.469***	0.605***
	(9.52)	(9.59)	(9.61)	(9.96)	(8.32)	(9.31)	(9.20)	(3.95)	(8.58)
Prev. 6-Month Ret.	0.005***	0.006***	0.008***	0.005***	0.004***	0.006***	0.005***	0.001	0.006***
	(3.91)	(3.91)	(5.61)	(4.07)	(3.40)	(4.22)	(3.84)	(0.46)	(3.23)
b(MKT)	-0.015	-0.053	-0.041	-0.046	-0.033	-0.055	-0.048	-0.108	0.007
	(-0.34)	(-0.99)	(-0.75)	(-0.94)	(-0.68)	(-1.10)	(-0.96)	(-0.99)	(0.12)
b(SMB)	-0.078***	-0.082***	-0.055**	-0.078***	-0.083***	-0.079***	-0.081***	-0.092**	-0.066***
	(-3.70)	(-3.77)	(-2.34)	(-3.56)	(-3.78)	(-3.60)	(-3.62)	(-2.27)	(-3.08)
b(HML)	0.004	0.012	0.007	0.011	0.004	0.014	0.012	-0.016	-0.009
	(0.18)	(0.48)	(0.28)	(0.50)	(0.20)	(0.61)	(0.53)	(-0.34)	(-0.37)
b(FX)	0.007	0.011	0.007	0.005	0.004	0.008	0.005	0.007	0.002
	(0.61)	(0.89)	(0.60)	(0.42)	(0.39)	(0.75)	(0.49)	(0.25)	(0.14)
Idio. Volatility	-0.863***								-1.369***
	(-5.26)								(-7.25)
Idio. Skewness		-0.658***							-0.197
		(-4.33)							(-0.89)
Default Prob.			-1.823***						-1.368*
			(-3.97)						(-1.76)
Gross Profit				0.812***					0.432
				(6.35)					(1.54)
Asset Growth					-0.708***				-0.676***
					(-9.10)				(-6.21)
Ind. Diversification						0.020			-0.019
						(0.52)			(-0.51)
Ind. Concentration							-0.130		-0.119
							(-1.37)		(-0.31)
% Foreign Holding								0.928	
								(0.75)	
Industry Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y
Start Date	197302	197302	197302	197302	197302	197302	197307	200007	197307
End Date	201512	201201	201101	201512	201512	201512	201512	201512	201101
Adjusted R^2	6.00%	6.50%	6.80%	5.70%	5.90%	5.60%	5.40%	6.30%	8.00%

Panel B. By Subperiod

	1973-1983	1984-1993	1994-2003	2004-2015	Financial Crisis	Excl. Financial Crisis	NBER Recess.	Excl. NBER Recess.
MNC Dummy	0.115*	0.211**	0.426***	0.173	-0.279	0.250***	-0.096	0.279***
***t*-statistics**	(1.86)	(2.44)	(5.31)	(1.58)	(-0.60)	(2.56)	(-0.62)	(6.25)
# of Firms	3,349	4,082	5,331	3,779	3,897	3,753	3,690	4,138
% of MNCs	29.29%	27.53%	31.29%	46.53%	44.87%	46.88%	33.25%	34.70%

Panel C. Time-Series Regression Result

	Full Sample			MNC-DC: By Size Group				
	MNC	**DC**	**Difference**	**1 Smallest**	**2**	**3**	**4**	**5 Largest**
Excess Return	0.921***	0.806***	0.115	0.392***	0.330***	0.313***	0.199**	0.128
	(3.41)	(3.27)	(1.57)	(3.56)	(3.57)	(3.94)	(2.26)	(1.44)
FF-3 Alpha	0.059**	-0.098*	0.156**	0.474***	0.226***	0.237***	0.111	0.156**
	(2.03)	(-1.91)	(2.16)	(4.30)	(2.60)	(3.18)	(1.41)	(1.98)
FF-4 Alpha	0.075**	-0.080	0.155**	0.545***	0.310***	0.316***	0.227***	0.152*
	(2.54)	(-1.53)	(2.09)	(4.88)	(3.56)	(4.26)	(2.94)	(1.88)

Table 4. Explaining MNC Return Premium using Host Country Characteristics: U.S. Sample

This table reports the Fama-MacBeth regression results with the interactions of the MNC dummy with host country characteristics. The sample includes DCs and MNCs that report foreign sales at the country level in the U.S. sample. For each country-level characteristic, host countries are sorted into high and low groups based on the sample median. For each MNC, High (Low) equals one if more than 50% of foreign sales come from host countries in the high (low) group. Regressions include the control variables (coefficients not shown) used in Table 2 and industry dummies. The coefficients on the control variables are not reported to save space. T-statistics, adjusted for serial correlation using Newey and West (1987) standard errors with three lags, are presented in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

	I	II	III	IV	V	VI	VII	VIII	IX
Intercept	0.334	0.385	0.389	0.331	0.386	0.334	0.331	0.330	0.569
	(0.53)	(0.59)	(0.60)	(0.52)	(0.59)	(0.53)	(0.52)	(0.52)	(0.87)
MNC Dummy	0.293***	0.202**	0.202*	0.280**	0.198**	0.304***	0.245**	0.237**	0.203*
	(2.80)	(2.16)	(1.83)	(2.50)	(2.03)	(2.76)	(1.99)	(2.31)	(1.75)
MNC Dummy × High GDP Growth	-0.270**								
	(-2.10)								
MNC Dummy × Low Labor Cost		-0.168							
		(-1.08)							
MNC Dummy × High Market Capitalization			-0.088						
			(-1.02)						
MNC Dummy × High Private Credit				-0.136**					
				(-1.97)					
MNC Dummy × Low Corporate Tax					-0.162				
					(-1.33)				
MNC Dummy × High R&D Export						-0.184**			
						(-2.25)			
MNC Dummy × Low Geographic Distance							-0.046		
							(-0.43)		
MNC Dummy × High Trade Openness								0.053	
								(0.43)	
MNC Dummy × High Political Stability									0.101
									(0.85)
Controls & Industry Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y
Start Date	199807	199907	199807	199807	199907	199807	199807	199807	199907
End Date	201512	201512	201512	201512	201512	201512	201512	201512	201506
Adjusted R^2	6.90%	7.00%	7.00%	6.90%	7.00%	6.90%	6.90%	6.90%	6.90%

Table 5. Summary Statistics: Global Sample

This table reports the summary statistics of the global sample. Panel A presents the number of MNCs and DCs, the percentage of MNCs, the percentage of globally accessible firms, and the average of market capitalization by country. The global sample includes firms from 23 developed markets as defined by MSCI. The sample period is from January 1990 to December 2015. A firm is defined as a MNC if it reports non-missing foreign income (Worldscope item: WC08741) in any of the previous three years. For each country in each year, we obtain the number of MNCs and DCs, the percentage of MNCs in terms of numbers, the percentage of globally accessible firms, and the average market capitalization of MNCs and DCs (in $ millions), and the percentage of MNCs in terms of market capitalization. We then report the time-series average over the sample period for each country. Panel B presents the summary statistics for the global sample. All variables are defined in the Appendix A1. Gross profit, asset growth, and globally accessible are reported at an annual frequency. All other variables are at a monthly frequency. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels. Panel C presents the list of top 20 host countries from which MNCs in the global sample generate foreign sales. The sample includes MNCs that report foreign sales at the country level from 2000 to 2015. For each host country in each year, we calculate the percentage of MNCs that have positive foreign sales from each host country and the percentage of foreign sales from the host country. We then report the time-series averages and host countries are sorted in the descending order of the percentage of MNCs with foreign sales.

Panel A. The percentage of MNCs

	Number of Firms				Market Capitalization (in $Millions)		
Country	**MNC**	**DC**	**% of MNCs**	**% of Globally Accessible**	**MNC**	**DC**	**% of MNCs**
Australia	183.81	651.81	29.32	47.84	1391.21	539.53	72.21
Austria	23.07	58.86	28.34	65.90	2194.56	987.17	69.67
Belgium	18.42	87.00	17.48	100.00	8005.08	1570.41	82.73
Canada	151.04	933.42	22.28	69.31	3006.26	578.42	74.48
Denmark	16.75	133.42	11.16	26.99	1693.98	1185.77	57.87
Finland	17.64	102.09	14.79	54.93	1073.84	1639.35	36.78
France	76.27	497.50	12.53	97.17	6282.04	1762.26	75.48
Germany	68.75	592.60	9.89	86.68	9660.38	1330.38	84.72
Hong Kong	218.23	462.62	36.78	99.81	1636.77	1122.79	54.77
Ireland	18.24	33.24	35.02	88.50	1689.91	734.19	73.88
Israel	14.47	209.42	8.82	44.07	1366.76	476.94	69.13
Italy	28.20	208.20	11.99	49.96	4842.97	2229.80	66.48
Japan	540.60	2696.95	16.67	25.96	3165.18	678.77	81.99
Netherlands	21.45	103.05	18.62	99.35	10235.25	3472.28	74.98
New Zealand	19.83	57.33	26.74	36.78	615.41	367.08	61.02
Norway	17.00	153.79	9.53	49.77	1861.36	1019.62	63.87
Portugal	10.55	34.91	23.45	100.00	3211.96	1417.23	65.42
Singapore	95.00	295.46	33.92	100.00	1339.48	588.57	62.80
Spain	22.60	101.60	18.17	61.66	11373.91	3901.28	73.84
Sweden	30.50	284.56	8.87	38.67	2661.53	1107.62	70.28
Switzerland	28.64	174.59	13.44	61.79	10411.99	3046.77	77.65
United Kingdom	423.31	868.12	32.59	98.90	3387.89	686.58	83.28
United States	1739.46	3105.77	37.77	100.00	4810.53	1289.91	79.39

Panel B. Firm Characteristics

	DC				MNC				Difference (MNC-DC)	
Variable	**N**	**Mean**	**Median**	**Std**	**N**	**Mean**	**Median**	**Std**	**Mean**	**t-value**
Ln(Size)	2,886,073	4.572	4.403	1.969	982,419	6.015	5.943	2.158	1.443	585.14***
B/M	2,886,073	0.954	0.710	0.869	982,419	0.803	0.572	0.766	-0.152	-163.60***
Previous 6-Month Return	2,886,073	6.621	4.042	43.415	982,419	6.997	5.811	38.898	0.376	8.02***
b(WMKT)	2,886,073	0.023	-0.008	2.762	982,419	0.035	-0.001	2.473	0.012	4.04***
b(WSMB)	2,886,073	0.079	0.068	4.246	982,419	0.061	0.041	3.787	-0.018	-3.98***
b(WHML)	2,886,073	0.016	0.006	5.048	982,419	0.040	0.022	4.569	0.024	4.34***
b(MKT)	2,886,073	0.886	0.847	2.188	982,419	0.980	0.955	2.007	0.094	39.17***
b(SMB)	2,886,073	0.606	0.497	2.489	982,419	0.557	0.412	2.375	-0.049	-17.61***
b(HML)	2,886,073	0.136	0.080	2.988	982,419	0.121	0.083	2.891	-0.015	-4.49***
b(FX)	2,886,073	-0.334	-0.403	2.926	982,419	-0.124	-0.158	2.494	0.210	69.01***
Idiosyncratic Volatility	2,886,073	0.400	0.284	0.416	982,419	0.336	0.255	0.306	-0.064	-162.11***
Gross Profit	247,785	0.246	0.197	0.270	86,479	0.330	0.292	0.248	0.084	84.11***
Asset Growth	253,348	0.258	0.050	1.337	85,506	0.158	0.054	0.684	-0.100	-28.31***

Panel C. Top 20 Host Countries

Host Country	Average % of MNCs	Average % of Foreign Sales
United States	37.89	53.74
China	25.87	58.47
Australia	10.65	29.57
United Kingdom	10.21	33.57
Germany	8.64	29.71
New Zealand	7.28	43.08
France	5.66	27.34
Canada	5.04	26.47
Ireland	3.98	37.65
Netherlands	3.93	22.69
Belgium	3.83	20.15
Malaysia	3.82	36.27
Spain	3.60	27.02
Japan	3.21	20.80
Russia	2.91	27.73
Italy	2.87	22.59
Taiwan	2.72	21.55
Switzerland	2.70	22.60
Mexico	2.56	25.14
Singapore	2.50	24.87

Table 6. Fama-MacBeth Regression Results: Global Sample

This table reports the Fama-MacBeth regression results for the global sample. The sample period is from January 1990 to December 2015. The global sample includes firms from 23 developed markets as defined by MSCI. A firm is defined as a MNC if it reports non-missing foreign income (Compustat item: PIFO, Worldscope item: WC08741) or foreign income taxes (Compustat item: TXFO) in any of the previous three years. All variables are defined in the Appendix A1. T-statistics, adjusted for serial correlation using Newey and West (1987) standard errors with three lags, are presented in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

	I Global	II U.S.	III Non-U.S.
Intercept	1.504***	1.155*	0.959*
	(2.75)	(1.87)	(1.80)
MNC Dummy	0.237***	0.259***	0.145***
	(4.52)	(4.04)	(2.85)
Ln(Size)	-0.148***	-0.103**	-0.127***
	(-4.43)	(-2.19)	(-4.23)
B/M	0.478***	0.584***	0.394***
	(8.83)	(5.53)	(8.46)
Previous 6-Month Return	0.007***	0.005***	0.010***
	(4.50)	(2.92)	(5.35)
b(WMKT)	-0.025	-0.069	0.019
	(-1.04)	(-1.33)	(0.63)
b(WSMB)	-0.053***	-0.051**	-0.053***
	(-5.03)	(-2.58)	(-3.71)
b(WHML)	0.007	0.004	0.014
	(0.81)	(0.24)	(1.39)
b(MKT)	-0.020	-0.036	-0.004
	(-0.71)	(-0.58)	(-0.10)
b(SMB)	-0.115***	-0.098***	-0.082***
	(-8.76)	(-3.53)	(-3.36)
b(HML)	-0.012	-0.017	-0.022
	(-0.81)	(-0.57)	(-1.36)
b(FX)	-0.021**	-0.022	-0.021
	(-2.01)	(-1.41)	(-1.57)
Industry Dummies	Y	Y	Y
Country Dummies	Y	N	Y
Number of Months	312	312	312
Adjusted R^2	8.00%	5.90%	10.00%

Table 7. Alternative Explanations: Global Sample

This table reports the Fama-MacBeth regression results with additional controls for the global sample. The sample period is from January 1990 to December 2015. A firm is defined as a MNC if it reports non-missing foreign income (Compustat item: PIFO, Worldscope item: WC08741) or foreign income taxes (Compustat item: TXFO) in any of the previous three years. All variables are defined in the Appendix A1. T-statistics, adjusted for serial correlation using Newey and West (1987) standard errors with three lags, are presented in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

	I	II	III	IV	V
Intercept	1.518***	1.175**	1.635***	0.911*	0.592
	(3.49)	(2.00)	(3.05)	(1.86)	(1.38)
MNC Dummy	0.236***	0.188***	0.185***	0.254***	0.159**
	(4.55)	(3.41)	(3.47)	(3.64)	(2.32)
Ln(Size)	-0.146***	-0.146***	-0.142***	-0.182***	-0.163***
	(-5.24)	(-4.22)	(-4.30)	(-4.68)	(-4.88)
B/M	0.481***	0.543***	0.444***	0.494***	0.524***
	(9.11)	(9.45)	(8.26)	(7.55)	(8.17)
Previous 6-Month Return	0.007***	0.007***	0.006***	0.007***	0.007***
	(4.76)	(4.47)	(4.24)	(4.05)	(4.19)
b(WMKT)	-0.023	-0.025	-0.030	-0.024	-0.027
	(-1.02)	(-0.99)	(-1.25)	(-1.02)	(-1.17)
b(WSMB)	-0.056***	-0.051***	-0.051***	-0.048***	-0.049***
	(-5.31)	(-4.70)	(-4.45)	(-4.23)	(-3.85)
b(WHML)	0.009	0.007	0.008	0.012	0.012
	(1.07)	(0.83)	(0.87)	(1.36)	(1.47)
b(MKT)	-0.013	-0.016	-0.019	-0.021	-0.010
	(-0.52)	(-0.57)	(-0.66)	(-0.76)	(-0.37)
b(SMB)	-0.118***	-0.111***	-0.114***	-0.120***	-0.119***
	(-8.87)	(-8.04)	(-8.29)	(-8.67)	(-7.82)
b(HML)	-0.013	-0.011	-0.013	-0.007	-0.009
	(-0.92)	(-0.75)	(-0.84)	(-0.48)	(-0.63)
b(FX)	-0.021**	-0.022**	-0.020*	-0.004	-0.005
	(-1.98)	(-2.14)	(-1.82)	(-0.25)	(-0.35)
Idiosyncratic Volatility	-0.087				0.074
	(-0.50)				(0.38)
Gross Profit		0.846***			0.739***
		(7.06)			(5.32)
Asset Growth			-0.318***		-0.289***
			(-6.93)		(-6.18)
Globally Accessible				0.637***	0.656***
				(3.06)	(3.14)
Industry Dummies	Y	Y	Y	Y	Y
Country Dummies	Y	Y	Y	N	N
Adjusted R^2	8.30%	8.10%	8.30%	4.70%	5.50%

Table 8. Explaining MNC Return Premium using Host Country Characteristics: Global Sample

This table reports the Fama-MacBeth regression results with interactions of the MNC dummy with host country characteristics. The sample includes domestic firms and MNCs that report foreign sales at country level in the global sample. For each country-level characteristic except geographic distance, host countries are sorted into the high (low) group if the value of the host country is above (below) the value of the home country. For geographic distance, host countries are sorted into the high (low) group if the distance between the host and home country is above (below) the median. For each MNC, high (low) equals 1 if more than 50% of foreign sales come from host countries in the high (low) group. Regressions include the control variables (coefficients not shown) used in Table 6, country dummies and industry dummies. T-statistics, adjusted for serial correlation using Newey and West (1987) standard errors with three lags, are presented in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

	I	II	III	IV	V	VI	VII	VIII	IX
Intercept	1.318**	0.385	1.309**	0.331	0.386	0.334	0.331	0.330	0.569
	(2.12)	(0.59)	(2.10)	(0.52)	(0.59)	(0.53)	(0.52)	(0.52)	(0.87)
MNC Dummy	0.420***	0.202**	0.334***	0.280**	0.198**	0.304***	0.245**	0.237**	0.203*
	(6.26)	(2.16)	(4.41)	(2.50)	(2.03)	(2.76)	(1.99)	(2.31)	(1.75)
MNC Dummy × High GDP Growth	-0.264***								
	(-3.44)								
MNC Dummy × Low Labor Cost		-0.121*							
		(-1.91)							
MNC Dummy × High Market Capitalization			-0.180**						
			(-2.40)						
MNC Dummy × High Private Credit				-0.215**					
				(-2.06)					
MNC Dummy × Low Corporate Tax					-0.053				
					(-0.62)				
MNC Dummy × High R&D Export						-0.250***			
						(-2.81)			
MNC Dummy × Low Geographic Distance							-0.159**		
							(-2.02)		
MNC Dummy × High Trade Openness								-0.032	
								(-0.35)	
MNC Dummy × High Political Stability									-0.011
									(-0.15)
Controls & Industry/Country Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y
Start Date	200107	200107	200107	200107	200107	200107	200107	200107	200107
End Date	201512	201512	201512	201512	201512	201512	201512	201512	201512
Adjusted R^2	7.40%	7.40%	7.40%	7.40%	7.40%	7.40%	7.40%	7.40%	7.40%

Appendix

A1. Variable Description

Variable	Description
MNC Dummy	For U.S. firms, this variable equals 1 if the firm reports non-missing foreign income (Compustat item: PIFO) or foreign income taxes (Compustat item: TXFO) in any of the previous three years and 0 otherwise. For non-U.S. firms, this variable equals 1 if the firm reports non-missing foreign income (Worldscope item: WC08741) in any of the previous three years, and 0 otherwise.
Excess Return	U.S. dollar-denominated stock return (from Datastream) minus U.S. T-bill rate (from Kenneth R. French Data Library), multiplied by 100.
Ln (Size)	The natural logarithm of market value, in US$ millions.
B/M	Book equity divided by market value of equity. The market value of equity from July of year t to June of year t + 1 is matched to the book equity at the end of year t − 1.
Previous 6-Month Return	The sum of monthly returns in the previous 6 months.
Idiosyncratic Volatility	For the U.S. sample, idiosyncratic volatility is the annualized volatility of the residuals from the regressions using the Fama-French three factor model (Ang et al. (2009)). For the global sample, idiosyncratic volatility is estimated from the regressions using the global-local Fama-French three factor model as in Bekaert, Hodrick and Zhang (2009).
Idiosyncratic Skewness	Expected idiosyncratic skewness, from Brian Boyer's website http://marriottschool.net/emp/boyer/Research/skewdata.html
Default Probability	Measure of default risk from Vassalou and Xing (2004).
b(MKT), b(SMB), b(HML), b(WMKT), b(WSMB), b(WHML)	For the U.S. sample, b(MKT), b(SMB), and b(HML), are the loadings on MKT, SMB, and HML factors, respectively, from the monthly regression of daily excess return on the Fama-French three factors (from the Kenneth R. French Data Library). For the global sample, b(MKT) , b(SMB), b(HML), b(WMKT) , b(WSMB), and b(WHML) are the loadings on the local and global factors, respectively, from the monthly regression of daily excess return on global and local MKT factors or from the monthly regression of daily excess return on the global and local Fama-French three factors. Local MKT factor is the value-weighted return of all firms in the country, where the weight equals the lagged market value of each stock in that country. The global MKT factor, WMKT, is the value weighted sum of local MKT factors for all countries, where the weight equals the lagged market value of all stocks in each country. To obtain the local SMB factors at country level, we sort all firms in that country into three size groups in each month based on the 6-month lagged market value and calculate SMB as the value-weighted return difference between firms in size group 1 (smallest) and size group 3 (largest). The global SMB factor, WSMB, is the value weighted sum of local SMB factors for all countries, where the weight equals the lagged market value of all stocks in each country. Similarly, the local HML factor is the value-weighted return difference between firms in B/M group 3 (highest) and B/M group 1 (lowest). The global HML factor, WHML, is the value weighted sum of local HML factors for all countries, where the weight equals the lagged market value of all stocks in each country.

b(FX)	For the U.S. sample, b(FX) is the loading on the foreign exchange factor, FX, from the monthly regression of daily excess return on the MKT factor and FX factor. For the global sample, b(FX) is the loading on the FX factor from the monthly regression of daily excess return on the local MKT factor, global MKT factor (WMKT) and FX factor. The FX factor is the return of the trade weighted U.S. dollar index (major currencies) from the Federal Reserve Bank of St. Louis.
Gross Profit	For the U.S. sample, this variable is defined as revenues minus cost of goods sold (REVT − COGS) scaled by total assets (AT) (Source: Compustat). For the global sample, it is defined as (WC01001 – WC01051)/WC02999 (Source: Worldscope).
Industry Diversification	An indicator variable equal to one if the firm has more than one industry segment. (Source: Compustat Segment)
Industry Concentration	A sales-based Herfindahl index (Hou and Robinson (2006)). Industry Concentration = $\sum_{i=1}^{N} s_{ij}^2$, where s_{ij} is the market share (in terms of sales) of firm *i* in industry *j*. Industries are classified based on three-digit SIC codes. A larger value implies a higher industry concentration. (Source: Compustat)
Asset Growth	The change in total assets (AT) scaled by lagged total assets.
% Foreign Holding	The percentage of foreign institutional holdings out of the total shares outstanding. (Source: Thomson Reuter's quarterly 13-F filings).
P/E Ratio	Price to earnings ratio, calculated as market value at the end of June of *t* divided by income before extraordinary items during the last fiscal year ended in *t-1*.
P/CF Ratio	Price to cash flow ratio, calculated as market value at the end of June of *t* divided by income before extraordinary items and depreciation during the last fiscal year ended in *t-1*.
GDP Growth	The annual real growth rate of GDP. (Source: World Bank)
GDP per capita	The annual GDP (in U.S. dollars) divided by population. (Source: World Bank)
Labor Cost	Mean monthly labor costs per employee by country adjusted for PPI in USD. (Source: OECD, International Labor Organization, web search)
Market Capitalization	Market capitalization of listed domestic companies (% of GDP). (Source: World Bank)
Private Credit	Domestic credit to private sector (% of GDP). (Source: World Bank)
Corporate Tax	Highest corporate marginal income tax rate. (Source: OECD, World Bank, Worldwide Tax Summaries from PwC)
R&D Export	High-technology exports (% of manufactured exports). (Source: World Bank)
Trade Openness	The maximum of exports and imports of goods and services (% of GDP). (Source: World Bank)
Geographic Distance	The negative of the great circle distance between the capitals of home(i) and host(j) countries. We obtain latitude and longitude of capital cities of each country. 3963 * arccos [$\sin(lat_i) * \sin(lat_j) + \cos(lat_i) * \cos(lat_j) * \cos(lon_j - lon_i)$], where lon and lat are the longitudes and latitudes of the capitals of country i and j.
Political Stability	The score on the political stability and absence of violence, scaled from zero (unstable) to one (stable). (Source: Political Risk Services International Country Risk Guide (PRS))

Globally Accessible	A firm is globally accessible if it has stocks listed in any of the following markets: (i) the U.S., which includes NYSE/AMEX, NASDAQ, and the Non-NASDAQ OTC markets; (ii) the U.K., which includes the London Stock Exchange, London OTC Exchange, London Plus Market, and SEAQ International; (iii) Europe, which includes Euronext at Amsterdam, Brussels, Lisbon, Paris, and EASDAQ; (iv) Germany in which the Frankfurt Stock Exchange is located; (v) Luxembourg in which the Luxembourg Stock Exchange is located; (vi) Singapore, which includes the Singapore Stock Exchange, Singapore OTC Capital, and Singapore Catalist; and (vii) Hong Kong in which the Hong Kong Stock Exchange is located (Karoyli and Wu, 2012).

A2. Country-Level Characteristics of Top Host Countries

Table A2. Country-Level Characteristics

This table presents the top host countries for U.S. and non-U.S. MNCs and the summary statistics of country-level characteristics. The sample includes MNCs that report foreign sales at country level. The variables are defined in Appendix A1.

Country	GDP Growth (%)	GDP per capita ($)	Labor Cost ($)	Market Cap. (% of GDP)	Priv. Credit (% of GDP)	Corp. Tax (%)	R&D Export (%)	Geo. Distance	Trade (% of GDP)	Political Stability
Australia	3.26	38,622.76	3,939.89	105.20	106.86	31.56	12.84	9.20	21.07	0.82
Belgium	1.80	36,556.89	2,240.32	65.72	89.71	36.05	9.78	8.26	73.64	0.78
Brazil	3.03	6,954.31	1,111.24	50.52	41.84	33.11	12.30	8.35	13.13	0.86
Canada	2.61	36,596.88	3,416.39	124.91	107.80	35.76	14.43	6.13	36.22	0.81
China	9.47	2,948.31	300.27	50.51	117.51	29.89	24.43	8.84	25.36	0.82
France	1.58	34,326.68	1,917.85	73.20	117.09	35.37	22.45	8.25	27.72	0.79
Germany	1.34	35,767.81	2,076.88	45.93	133.71	38.55	16.16	8.34	37.20	0.89
Hong Kong	3.49	29,633.53	1,422.68	694.95	165.30	16.58	15.72	9.01	182.40	0.69
India	6.90	887.67	140.87	75.29	39.14	35.03	6.71	8.92	21.14	0.70
Ireland	4.51	43,589.35	2,922.90	54.76	162.82	17.00	33.26	8.13	91.06	0.85
Italy	0.43	30,431.00	1,549.09	38.22	102.27	36.70	7.77	8.41	26.00	0.70
Japan	0.69	36,853.41	3,346.74	74.24	123.69	42.11	21.87	8.82	14.20	0.75
South Korea	4.23	17,950.83	1,902.69	65.69	114.13	27.56	29.69	8.85	41.93	0.72
Malaysia	4.60	6,669.56	577.67	136.84	119.12	26.94	51.10	9.16	100.79	0.76
Mexico	2.75	7,880.93	724.88	29.47	17.23	31.25	18.76	7.54	28.72	0.60
Netherlands	1.81	41,190.63	2,510.11	97.84	176.97	29.82	26.34	8.26	68.48	0.71
New Zealand	2.57	26,812.20	2,254.49	36.23	118.84	31.39	9.92	9.09	30.66	0.75
Norway	1.97	68,225.67	4,720.41	49.72	72.10	27.94	17.10	8.26	41.30	0.84
Singapore	5.40	35,326.43	2,478.09	198.72	103.07	21.06	53.72	9.18	198.00	0.56
Spain	2.02	24,765.10	1,425.61	100.39	164.43	32.92	6.91	8.24	29.19	0.67
Sweden	2.44	43,802.92	3,374.63	103.25	95.47	26.96	16.11	8.33	44.49	0.85
Switzerland	2.01	59,685.33	5,487.30	216.58	154.02	23.10	23.78	8.32	56.66	0.62
Taiwan	5.44	16,940.33	1,249.04	N/A	N/A	22.78	N/A	8.97	52.32	0.46
United Kingdom	2.10	36,216.37	3,738.05	134.48	150.31	28.50	25.55	8.21	29.10	0.79
United States	2.38	43,559.03	3,845.81	126.37	60.73	39.27	26.94	-9.39	14.92	0.72

A3. Alternative Definitions of MNC

In this section, we re-estimate the baseline Fama-MacBeth regression using alternative definitions of MNC, including % of foreign sales and % of foreign income. The results are presented in Table A2.

Table A3. Alternative Definitions of MNC

This table presents Fama-MacBeth regression results using alternative definitions of MNC, including % of foreign sales and % of foreign income. Panel A presents the results for U.S. sample. % of foreign sales is defined as total foreign sales divided by total sales. % foreign income is defined as the absolute value of foreign income divided by the sum of the absolute value of foreign income and the absolute value of domestic income. Panel B presents the results for the non-U.S. sample. % of foreign sales is defined as total foreign sales divided by total sales (Worldscope item: WC08731). % foreign income is defined as the foreign income divided by total income (Worldscope item: WC08741). All variables are defined in the Appendix. T-statistics, adjusted for serial correlation using Newey and West (1987) standard errors with three lags, are presented in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

Panel A. U.S. Sample

	I	II
Intercept	0.658	0.334
	(1.23)	(0.55)
% of Foreign Sales	0.322**	
	(2.05)	
% of Foreign Income		0.328***
		(3.34)
Ln(Size)	-0.099**	-0.057
	(-2.33)	(-1.41)
B/M	0.585***	0.596***
	(7.25)	(7.16)
Previous 6-Month Return	0.005***	0.004***
	(3.37)	(2.89)
b(MKT)	-0.082	-0.066
	(-1.49)	(-1.03)
b(SMB)	-0.086***	-0.126***
	(-3.34)	(-4.83)
b(HML)	0.006	0.003
	(0.23)	(0.08)
b(FX)	0.008	0.010
	(0.60)	(0.68)
Industry Dummies	Y	Y
Start Date	197707	198507
End Date	201512	201512
Adjusted R^2	5.50%	5.20%

Panel B. Non-U.S. Sample

	I	II
Intercept	0.882	0.895*
	(1.63)	(1.65)
% of Foreign Sales	0.219***	
	(2.64)	
% of Foreign Income		0.135**
		(2.28)
Ln(Size)	-0.125***	-0.118***
	(-4.12)	(-3.94)
B/M	0.395***	0.400***
	(8.57)	(8.63)
Previous 6-Month Return	0.010***	0.010***
	(5.50)	(5.49)
b(MKT)	0.029	0.030
	(0.66)	(0.68)
b(SMB)	0.008	0.008
	(0.14)	(0.14)
b(HML)	-0.003	-0.003
	(-0.26)	(-0.25)
b(FX)	0.882	0.895*
	(1.63)	(1.65)
Industry Dummies	Y	Y
Country Dummies	Y	Y
Start Date	199001	199001
End Date	201512	201512
Adjusted R^2	7.90%	7.90%

A4. Possible Channels of MNC Return Premium: Two-Stage Approach

When we include the MNC dummy and the other control variables in the same regression, it only proves robustness rather than causality. To understand channels through which MNCs earn higher returns than DCs, we further examine the possible driving forces for the higher returns associated with MNCs in more depth by using a two-stage approach.

In the first stage, we project the MNC indicator variable on a possible channel as below:

$$MNC_{i,t} = a_t + b_t proxy_{i,t} + \varepsilon_{i,t}\,, \qquad (1)$$

where the proxy can be a variety of possible channels, such as idiosyncratic volatility or profitability, that might be related or affect a firm's multinational status. After we estimate the specification above, we can decompose the MNC indicator into two parts:

$$MNC_{i,t+1} = \left(\hat{a}_t + \hat{b}_t proxy_{i,t+1}\right) + \hat{\varepsilon}_{i,t+1} = XMNC_{i,t+1} + EMNC_{i,t+1}. \qquad (2)$$

That is, XMNC represents the part of the MNC dummy predicted by (or associated with) a potential channel, and EMNC is the part of the MNC dummy orthogonal to the potential channel.

At the second stage, we re-estimate the following predictive regression:

$$r_{i,t} = c_t + d_t XMNC_{i,t-1} + e_t EMNC_{i,t-1} + f_t' controls_{i,t-1} + u_{i,t}\,. \qquad (3)$$

From prior results, we already know that the MNC dummy itself has a significant positive coefficient. If the proxy used in the first stage is an important component of the MNC's predictive power, we expect the coefficient, d_t, to be significant. If the coefficient e_t is significant, it means that a potential channel in the first stage might not be the only important reason for the MNC's predictive power.

We can estimate the specifications in equations (1) and (3) using either the Fama-MacBeth regression or the pooled panel regression. To be consistent with previous analysis and to allow the predictive power of each potential channel to vary across time, we present our results estimated using the Fama-MacBeth regression approach. The results using the pooled panel regression are quantitatively similar.

We report the first stage estimation results in Panel A. In columns I to VIII, we consider nine alternative channels one by one. In the last column IX, we project a MNC dummy on all channels together except the percentage of foreign holdings (due to a shorter time period) in the first stage. Consistent with the univariate comparison in Table 1, we find that idiosyncratic volatility, idiosyncratic skewness, and default probability are negatively related to the MNC dummy, while the profitability, industrial diversification, industry concentration, and the percentage of foreign investor holdings are positively related to the MNC dummy. This result confirms our finding that MNCs share many common features. However, in terms of R^2, none of the above variables can explain more than 7% of the cross-sectional variation between MNCs and DCs. When we put all eight variables together except the foreign investor holdings, the average R^2 increases to 12.46%.

Based on the first stage estimation, we decompose the MNC dummy into XMNC and EMNC, and include them in the second-stage regression predicting future stock returns. These results are reported in Panel B. In the first nine columns, we include one channel individually, and in the last column, we include all potential channels. In column I, we first consider the idiosyncratic volatility channel. The predicted MNC variable using the idiosyncratic volatility has a positive coefficient but is only marginally significant. The error term, the EMNC, however, has a highly significant coefficient with a t-statistic of 4.94. This finding suggests that the MNC's lower idiosyncratic volatility partially explains the MNC premium, but the predictive power of the MNC dummy does not solely stem from its correlation with the idiosyncratic volatility. A similar pattern exists for idiosyncratic skewness, gross profit and asset growth.

In column II, the coefficient on XMNC predicted by idiosyncratic volatility is highly significant, suggesting that a MNC's lower idiosyncratic volatility is an important source of the MNC premium. On the other hand, the coefficient on EMNC is also significant, which implies that there might be other underlying factors that explain the MNC premium other than idiosyncratic volatility.

In columns IV and V, we consider the gross profitability and asset growth channels. The coefficients on XMNC are 2.217 with a t-statistic of 2.81 and 6.987 with a t-statistic of 2.21, respectively. On the other hand, the coefficients on EMNC are 0.156 and 0.169, which are statistically significant at the 1% level. This indicates that part of the positive predictive power of the MNC dummy is from its relation with the MNC's higher profitability and lower asset growth.

However, the significance of the coefficient on EMNC implies that both of them are not the only channels that affect the predictive power of a firm's status as a MNC.

In the last regression, we include all potential channels except the percentage of foreign holding. We find that both the XMNC and EMNC are positive and significant and the magnitude of the coefficient on EMNC decreases to 0.101. The result in column X implies that the potential channels we considered above partially explain why MNCs have higher future returns than DCs, but many other factors are still not accounted for.

Overall, we examine nine alternative explanations for the MNC return premiums, and none of the explanations can fully explain the MNC return premium.

Table A4. Possible Channels of MNC Return Premium: Two-Stage Approach

This table examines the possible channels of MNC return premium using two-stage approach. For the first stage, in each period *t*, we project MNC dummy on a proxy by running a cross-sectional regression: $MNC_{i,t}=a_t+b_tProxy_{i,t}+e_{i,t}$. We obtain the coefficients, $\hat{a}_t, \hat{b}_t$, t-statistics of $\hat{b}_t$ and the R^2. We then decompose the MNC dummy in period t+1, $MNC_{i,t+1}$, into $XMNC_{i,t+1}$ and $EMNC_{i,t+1}$, where $XMNC_{i,t+1}= \hat{a}_t + \hat{b}_t Proxy_{i,t+1}$, $EMNC_{i,t+1}= MNC_{i,t+1} - XMNC_{i,t+1}$. For idiosyncratic volatility, idiosyncratic skewness, default probability, and b (FX), we run the first stage regression by month. For gross profit, industry diversification, and industry concentration, we run the first stage regression by year. For % foreign holding, we run the first stage regression by quarter. For the second stage, we adopt our baseline Fama-MacBeth regression except that we replace the MNC dummy with XMNC and EMNC obtained from first stage, i.e. $exret_{i,t}=c_t+d_tXMNC_{i,t-1}+e_tEMNC_{i,t-1}+f_t'Controls_{i,t-1}+u_{i,t}$. Panel A reports the time-series average of the coefficient and the t-statistic for each proxy and the R^2 from the first stage regressions. The last column "All Variables" reports the results from the regression including all proxies except % of foreign holding as independent variables. To save space, we do not report the time-series average of b and t (b) of each variable. Panel B presents the Fama-MacBeth regression results from the second stage regressions. T-statistics, adjusted for serial correlation using Newey and West (1987) standard errors with three lags, are presented in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

Panel A. Two Stage Approach: First Stage

	I Idiosyncratic Volatility	II Idiosyncratic Skewness	III Default Probability	IV Gross Profit	V Asset Growth	VI Industry Diversification	VII Industry Concentration	VIII % of Foreign Holding	IX b(FX)	X All
b	-0.145***	-0.178***	-0.382***	0.340***	-0.025***	0.206***	0.149***	3.715***	0.000	
t(b)	(-56.09)	(-55.74)	(-15.43)	(15.01)	(-3.12)	(15.46)	(13.75)	(39.41)	(1.10)	
R^2	1.23%	4.23%	0.84%	4.69%	0.19%	5.28%	0.51%	6.73%	0.07%	12.07%

Panel B. Two Stage Approach: Second Stage

	I Idio. Volatility	II Idio. Skewness	III Default Probability	IV Gross Profit	V Asset Growth	VI Industry Div.	VII Industry Con.	VIII % of Foreign Holding	IX b(FX)	X All
Intercept	-0.977	-1.241	-3.355	-0.218	-1.251	0.609	0.720	0.620	-5.213	-0.283
	(-0.82)	(-1.07)	(-1.28)	(-0.39)	(-1.02)	(1.14)	(1.24)	(1.02)	(-0.70)	(-0.53)
XMNC	5.347*	6.917***	12.670	2.217***	6.987**	0.104	-0.150	0.404	15.995	1.703***
	(1.87)	(2.88)	(1.58)	(2.81)	(2.12)	(0.17)	(-0.19)	(1.19)	(0.79)	(7.20)
EMNC	0.225***	0.233***	0.277***	0.156***	0.169***	0.209***	0.228***	0.213**	0.226***	0.101*
	(4.94)	(4.92)	(5.13)	(3.54)	(3.92)	(4.68)	(4.94)	(2.30)	(5.02)	(1.68)
Ln(Size)	-0.150***	-0.218***	-0.083**	-0.093**	-0.094**	-0.101***	-0.110***	-0.095**	-0.103***	-0.124***
	(-4.68)	(-5.74)	(-2.23)	(-2.44)	(-2.56)	(-2.70)	(-2.87)	(-2.05)	(-2.75)	(-3.36)
B/M	0.622***	0.664***	0.653***	0.683***	0.583***	0.627***	0.616***	0.460***	0.630***	0.626***
	(9.49)	(9.56)	(9.57)	(9.96)	(8.53)	(9.30)	(8.99)	(3.83)	(9.32)	(8.53)
Prev. 6-Month Ret.	0.005***	0.006***	0.008***	0.005***	0.005***	0.006***	0.005***	0.001	0.005***	0.008***
	(3.89)	(3.89)	(5.59)	(4.06)	(3.53)	(4.21)	(3.75)	(0.27)	(4.07)	(5.14)
b(MKT)	-0.015	-0.053	-0.042	-0.046	-0.039	-0.055	-0.047	-0.109	-0.051	-0.032
	(-0.34)	(-0.99)	(-0.76)	(-0.94)	(-0.79)	(-1.11)	(-0.92)	(-0.98)	(-1.04)	(-0.56)
b(SMB)	-0.079***	-0.083***	-0.056**	-0.078***	-0.083***	-0.079***	-0.084***	-0.080**	-0.081***	-0.073***
	(-3.74)	(-3.80)	(-2.37)	(-3.55)	(-3.75)	(-3.59)	(-3.70)	(-2.03)	(-3.63)	(-3.05)
b(HML)	0.004	0.012	0.007	0.011	0.006	0.014	0.012	-0.027	0.013	0.003
	(0.18)	(0.48)	(0.29)	(0.49)	(0.28)	(0.60)	(0.50)	(-0.59)	(0.57)	(0.11)
b(FX)	0.006	0.010	0.007	0.005	0.004	0.008	0.006	0.005	0.002	-0.002
	(0.59)	(0.88)	(0.60)	(0.41)	(0.37)	(0.74)	(0.48)	(0.20)	(0.82)	(-0.16)
Industry Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Start Date	197302	197302	197302	197302	197302	197302	197307	200007	197302	197307
End Date	201512	201201	201101	201512	201512	201512	201512	201512	201512	201101
Adjusted R^2	5.90%	6.50%	6.80%	5.70%	5.90%	5.60%	5.40%	6.40%	5.50%	7.00%

A5. MNC Return Premium by Industry

Similar to the size dimension approach, we re-estimate the Fama-MacBeth regression in equation (1) within each industry, allowing the coefficients to vary across industries, using Fama-French 30 industry classifications.[17] In Table A4, we first present the number of firms and the percentage of MNCs within each industry. "Chemicals", "Fabricated Products and Machinery" and "Automobiles and Trucks" are the top three industries with the highest MNC percentage around 65%, while "Utilities", "Banking", and "Retail" are the bottom three with the MNC percentage under 20%. In the next two columns, we find that the coefficients for the MNC dummy are positive for all but eight industries, varying between 0.036 and 0.468, indicating that the MNC premium is not restricted to a subset of industries. For eight industries, the coefficient is positive and statistically significant at 10% or lower. In particular, the "Chemicals" industry has the largest coefficient, 0.468, on the MNC dummy of 0.468, followed by "Automobiles and Trucks" and "Personal and Business Services".

To further understand whether the different magnitude of MNC premium across industries depends on the types of the products and services that firms produce, following Mian and Sufi (2014), we categorize industries into tradable and non-tradable industries using the 4-digit NAICS industry codes. While tradable industries are involved in intensive imports and exports of goods, non-tradable industries including retail, food service, and construction produce services that are not easily traded. At the bottom of the Table A4, we find that the MNC coefficient of tradable industries is positive and highly significant, while the coefficient is marginally significant for non-tradable industries. The results of higher returns for MNCs in tradable industries are consistent with the hypothesis that MNCs are exposed to additional foreign operational risks that domestic firms do not have to bear, resulting in higher returns.

[17] To obtain relatively reliable estimates, we require each industry to have at least 20 firms each month, resulting in three industries dropped from the sample (Beer and Liquor, Tobacco Products, and Coal).

Table A5. MNC Return Premium by Industry: U.S. Sample

This table reports the Fama-MacBeth regression results by industry for the U.S. sample. The sample period is from February 1973 to December 2015. This table presents the average number of firms, and the average percentage of MNCs, the coefficients and t-stats of the MNC dummy by industry based on the Fama-French 30 industry classification. The results are sorted in descending order based on the size of the coefficient on MNC dummy. Industries with less than 20 firms are omitted. Tradable and non-tradable industries are based on Mian and Sufi (2014). T-statistics, adjusted for serial correlation using Newey and West (1987) standard errors with three lags, are presented in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.

FF 30 Industry	Description	# of Firms	% of MNC	MNC Dummy	*t*-stat
9	Chemicals	77	68.39%	0.468**	(2.18)
15	Automobiles and Trucks	59	64.24%	0.456*	(1.65)
22	Personal and Business Services	408	42.72%	0.443***	(3.95)
21	Communication	79	22.84%	0.441**	(2.28)
8	Healthcare, Medical Equipment, Pharmaceutical Products	316	34.62%	0.421***	(2.80)
16	Aircraft, Ships, and Railroad Equipment	30	48.53%	0.391*	(1.65)
13	Fabricated Products and Machinery	157	65.97%	0.374**	(2.36)
23	Business Equipment	411	56.16%	0.329***	(2.83)
14	Electrical Equipment	94	50.40%	0.224	(1.15)
10	Textiles	33	45.64%	0.213	(0.77)
29	Banking, Insurance, Real Estate, Trading	642	9.24%	0.203	(1.52)
30	Others	98	37.29%	0.190	(1.06)
1	Food Products	95	39.41%	0.175	(1.19)
4	Recreation	86	39.09%	0.155	(0.82)
19	Petroleum and Natural Gas	163	34.89%	0.113	(0.85)
11	Construction and Construction Materials	159	39.51%	0.101	(0.74)
24	Business Supplies and Shipping Containers	66	55.59%	0.097	(0.62)
27	Retail	209	18.96%	0.069	(0.50)
6	Consumer Goods	85	53.83%	0.036	(0.19)
20	Utilities	151	3.57%	-0.032	(-0.13)
7	Apparel	57	45.99%	-0.075	(-0.35)
26	Wholesale	160	35.37%	-0.079	(-0.68)
5	Printing and Publishing	59	39.25%	-0.099	(-0.55)
17	Precious Metals, Non-Metallic, and Industrial Metal Mining	36	36.33%	-0.100	(-0.36)
25	Transportation	89	28.76%	-0.105	(-0.70)
28	Restaurants, Hotels, Motels	85	20.72%	-0.138	(-0.74)
12	Steel Works	61	47.36%	-0.157	(-0.98)
	Tradable Industries	1,988	53.93%	0.372***	(4.77)
	Non-tradable Industries	2,050	22.41%	0.139*	(1.77)