NETWORKING AND
FOREIGN DIRECT INVESTMENT ACTIVITY

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Abstract: We conduct an empirical investigation into whether networking effects affect foreign direct investment (FDI) activity. Using bibliographical information on CEOs' birth and education locations, we are able to identify changes from U.S. to foreign-connected CEOs that occurred in U.S. manufacturing firms of the S&P 500 from 1992 through 1997. Robust to a variety of specifications, we find that a U.S. firm's switch from a U.S.- to a foreign-connected CEO leads to substantial increases in the firm's proportion of its assets and sales that are in foreign markets. In fact, our preferred specification indicates that foreign asset and sales proportions increase 30 and 50%, respectively, for the five years after such a CEO switch is made. This is in contrast to U.S.-to-U.S. CEO switches in our sample that show no evidence of changes in a firms' foreign market participation.

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1. Introduction.

Economic models often assume identical agents with identical, and often perfect, information. While these assumption clearly do not hold in real-life situations, it is often largely unknown to what extent these assumptions are violated and its impact on economic phenomena. This issue has become of interest recently in the international trade literature, where substantial evidence has been found that international trade flows are vastly lower than those predicted by theory (see, e.g., Trefler, 1995, and McCallum, 1995). One possible reason for this "missing" trade is that many agents may be unaware of, or unable to exploit, profitable trading opportunities. The importance of personal, social, and business connections, or "networks", may have an important role in overcoming such barriers. There have been a number of papers that have examined this issue recently and Rauch (2001) provides an overview of the role transnational networks play in overcoming (or creating) informal barriers to trade such as inadequate information or poor contract enforceability. As Rauch (2001) states, empirical evidence is leading theory in the investigation of the role of networks on international trade.

One line of research has examined the role of immigrants as information brokers. Personal and business connections with the country of origin serve to lower transaction costs for both importing and exporting by immigrant populations. For example, immigrants may supply agents in the country of origin with information on what is in demand in the host country, as well as which products are available for export (Rauch and Feenstra, 1999). Using a gravity model of trade to estimate determinants of U.S. bilateral trade flows, Gould (1994) finds that the stock of U.S. immigrants from the partner country have a substantial positive impact on both U.S. imports from and U.S. exports to that partner country. Head and Ries (1998) use a similar empirical specification to Gould to study Canadian trade patterns, though they also distinguish between

three different types of immigrants: family, refugee and independent. They also find evidence

that immigrant stocks increase trade in both directions, though the estimated effects are generally

smaller that those found by Gould for the U.S. They show that independent immigrants, who are

the most likely to have links in the home country, have the largest effect on imports and exports.

A final important paper in this area is Rauch and Trindade (forthcoming) that examine the effect

of Chinese populations in partner countries on trade flows.[1] They argue that network

connections should be more important for trade in differentiated products than homogeneous

products with observable, uniform "reference" prices on world markets. Their empirical analysis

confirms that the effect of common Chinese ethnic populations has a larger impact on bilateral

trade in differentiated products that for reference-priced products.

In the past two decades, globalization of firms' operations has significantly included

foreign direct investment (FDI) activity. The existence of personal and social networking effects

in trade presents the question of whether such an effect can be documented with respect to FDI,

since the informational and legal uncertainties associated with expansion into foreign countries

through FDI are not unlike those firms encounter when expanding through trade.[2] For example,

Caves (1996) suggests that firms undertaking FDI in a new geographical region are more likely

to do so through a joint venture, since partnering up with a local company helps reduce

operational risk associated with inadequate information.

Unlike with trade, FDI is almost exclusively the domain of larger firms. Thus, following

previous studies in their methodology of examining networking effects through immigrant

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[1] Also related is the work by Greif (1993,1994) which documents the various network features of Maghribi traders
of the eleventh-century Mediterranean.

[2] A small set of papers has found evidence that Japanese business groups (or networks) may promote greater FDI
activity. These include Belderbos and Sleuwaegen (1996), Head, Ries, and Swenson (1995), and Blonigen, Ellis
and Fausten (2000). The evidence primarily shows such effects for business groups that have vertical linkages,
making it difficult to identify whether such FDI-promoting effects are due to informational advantages of
networking or other agglomeration externalities.

population changes may not be appropriate for identifying networking effects with FDI activity. Thus, rather than focus on immigrant populations and their characteristics, this paper examines characteristics of Chief Executive Officers (CEOs) of larger firms to see if their networking connections with foreign markets means greater FDI activities by the firms they lead. Over the past decade, an increasing amount of anecdotal information attests to the fact that companies who wish to become more international seek to hire or promote foreign-born persons to the position of CEO. The appointment of Egyptian-born Samir Gibara at the helm of Goodyear Tire & Rubber Co. in January 1996 is only one example. In the months leading up to the change of leadership, large institutional investors such as Alliance Capital and Travelers Group were aggressively buying Goodyear's stock. One reason for increasing their positions was "the confidence about Mr. Gibara's centerpiece strategy: overseas growth" (New York Times, March 3, 1996). At the time, this strategy amounted to not only increasing sales abroad, but also setting up more new plants in foreign countries.

While the example of the Goodyear Tire & Rubber Co. illustrates a change in company strategy that was initiated with the hiring of a new foreign-born CEO, other anecdotal evidence suggests that a foreign-born person was promoted to the CEO position as part of a company's strategy to boost overseas operations. An example of the latter is the appointment of German-born Michael H. Spindler as CEO of Apple Computer Inc. in 1986. Facing stiff competition from IBM at the time, Mr. Spindler's inauguration goal was to boost the company's foreign sales from 22% of revenues to 35% (Business Week, February 10, 1986). In a candid remark about heritage as a strategy, Gordon Kreh, CEO of Hartford Steam Boiler Inspection and Insurance Co. says: "Your experience gives you insight.... Coming from abroad, I have more of a global perspective" (The Hartford Courant, March 10, 1997).

Using a sample of 211 U.S. firms that were part of the manufacturing section of the Standard and Poor's 500 over the period 1992-97, we examine whether changes to CEOs with foreign-market connections leads these firms to subsequently have higher proportions of foreign assets or affiliate sales. Our primary measure of foreign-networked CEOs is whether these individuals have been either foreign-born or educated, though we also examine other observable indicators of CEO backgrounds to measure foreign-connectedness. Our empirical results show that, holding other factors constant, the proportion of a firm's assets and sales that are in foreign countries (foreign asset and sales intensities) increase when companies change from U.S. born and educated CEOs to foreign born and educated CEOs. In contrast, foreign asset and sales intensities show little evidence for CEO changes that involve only U.S. born and educated individuals. Thus, to the extent that CEO heritage can serve as a proxy for links between the multinational enterprise and foreign regions of operation, the results in this study lend evidence in support of networking effects in FDI activity.

The rest of the paper is structured as follows. The next section describes our empirical framework. Section three describes the data sample construction and briefly provides descriptive statistics. Section four discusses the empirical results and section five concludes.

2. Empirical Methodology.

Our empirical analysis seeks to quantify the effect of a CEO's cultural, geographic, institutional, and linguistic knowledge of foreign regions on the company's foreign affiliate activities. In previous literature, the determinants of FDI have been traditionally examined within the ownership-location-internalization (OLI) framework developed by Dunning (1977). Most empirical studies of firm's FDI activities have found that firms that are larger and have

greater proxies for firm-specific intangible assets (e.g., R&D and advertising intensity) are also more likely to have multinational production and sales activities.[3] The main premise of our exploration is that knowledge and connections to foreign regions by a CEO can be viewed as another type of intangible asset that reduces search costs (and perhaps other costs) and therefore encourages the company to increase its foreign market position, everything else equal.

Given available data (described more below) we focus on two measures of foreign market position by a firm: foreign asset intensity and foreign sales intensity. Foreign asset intensity is defined as a firm's foreign assets as a proportion of its total assets, while foreign sales intensity is foreign affiliate sales to total firm sales. We use these intensity measures, rather than levels of foreign assets and sales, since a firm's size can greatly influence that level of these foreign-market activities. Our testing equation is then the following:

$$F\_INT_{it} \;=\; \alpha + \; \beta_1 RDINT_{it} + \beta_2\, ADINT_{it} \; + \sum\nolimits_{j=0}^{n} \lambda_{i,t-j+1} USFOR_{i,t-j}$$
$$+ \; \sum\nolimits_{j=0}^{n} \theta_{i,t-j+1} CEOSWITCH_{i,t-j} \; + \varepsilon_{it}, \qquad\qquad \textbf{(1)}$$

where i indexes firms and t indexes years. F_INT represents our foreign intensity variables: foreign-asset intensity, which we label as FAINT in our tables below, and foreign-sales intensity, which we label FSINT. As control variables we include a lagged dependent variable and R&D intensity ($RDINT_{it}$) and advertising intensity variables ($ADINT_{it}$).[4] The latter two variables are proxy variables for firm-specific intangible assets that others have found increase FDI activity.

The next set of variables is comprised of indicator variables for various changes in CEOs for a firm, which allow for the possibility of lagged responses. USFOR is our main focus variable which takes the value of "1" when the firm has changed from a U.S.-connected CEO to

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[3] For example, see Morck and Yeung (1992), Pugel et al. (1996), Kogut and Chang (1996), and Belderbos (1997).

a foreign-connected CEO. Our hypothesis is that the estimated coefficients (λs) on this variable are positive due to networking effects. The management literature has noted that CEO changes in general can lead to substantial changes in the operations of firms. Thus, as a control, we also include indicator variables for any CEO changes that occur, which we label CEOSWITCH. It's not clear what expected signs should be for the coefficients on the CEOSWITCH variables. Given this setup, the coefficients on the USFOR variables will give us the extra effect of a CEO switch from U.S. to foreign-connected on our dependent variables.

We note that a contemporaneous correlation between a new foreign-connected CEO and foreign asset and sales intensities may be difficult to interpret due to endogeneity concerns. Is the new CEO leading to greater foreign market participation or the firm's growth in these areas is leading the firm to have a foreign CEO?[5] As our results reveal below, the significant correlations take place in a lagged fashion, not contemporaneously, largely alleviating this concern over causation.

Finally, we also include yearly dummies in our regressions to control for macroeconomic factors, such as exchange rate movements, and will also examine the inclusion of firm-fixed effects to control for time-invariant unobserved firm heterogeneity.[6] ε_{it} is an assumed mean-zero error term.

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[4] RDINT is constructed as R&D expenditures divided by total assets and ADINT is advertising expenditures divided by the firm's total assets.

[5] A few of our firms have a foreign-connected CEO throughout our sample of years. Our concern about endogeneity is why we do not exploit this variation in our data.

[6] Firms in our sample have varying fiscal years and all variables that vary over time, except the time dummies, are measured over the associated firm's fiscal years. This means though that there is not a one-to-one correspondence with our time dummies and the other time-varying covariates unless the firm's fiscal year corresponds perfectly with the calendar year. This occurs in about half our sample of firms. Despite this issue, tests for joint significance of the year dummies support their inclusion in our regressions below.

3. Data.

To estimate equation (1) we construct a sample of the 211 firms that were listed in the manufacturing section of the S&P 500 during some or all of the 1992-1997 period. Since the objective of this study is to look at networking in FDI, non-manufacturing firms were not considered in the empirical estimation for two reasons. First, the assets of non-manufacturing companies such as financial institutions perform differently from those of manufacturing companies, which invest in production facilities abroad. Second, it is not clear that companies in sectors such as services and retail have the option to expand into foreign countries because of regulatory restrictions, and therefore comparison of asset intensity between these sectors and manufacturing will present difficulties with interpretation of the results.

Construction of the sample began with 269 manufacturing firms in the S&P 500, out of which 211 companies had complete data for the 6 years that span the period 1992 through 1997. The choice of timeframe is restricted by the availability of useable data in the S&P's Compustat database from which most of the data were collected. Specifically, reporting of firms' foreign operations, in what is known as the Geographic Segments section of Compustat, was not mandatory until 1992. Data for years beyond 1997 were excluded due to regulatory changes in accounting practices that make comparisons of figures in 1997 with subsequent years unreliable[7].

The Industrial Annual Segment of the S&P's Compustat database was the source for annual data on firms' assets, sales, R&D expenditures, and advertising expenditures. Data on

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[7] On June 30, 1997, the Financial Accounting Standards Board (FASB) issued the pronouncement for the Statement of Financial Accounting Standards No. 131, Disclosure about Segments of an Enterprise and Related Information (SAFS 131). The statement establishes the standards for the way companies will report information related to operating segments in their annual and interim financial reports. SFAS 131 has elected to make the new reporting more relevant than consistent or reliable.

firms' foreign assets and foreign sales[8] were obtained using the Geographic Segment of the same database.

As noted in the discussion above, there are two sets of dummy variables capturing information about CEO switches within firms. USFOR is an indicator that the previous CEO was U.S. and the incoming CEO is "foreign-connected." Within our sample, 12 firms have a switch at some point from a U.S. to a foreign CEO out of 138 total CEO switches. CEO switches can be discerned through the Compustat database which records the names of firms' officers on annual basis. To classify switches as one that led to a "foreign" CEO we gathered data on whether the company's previous and new CEOs were foreign-born or foreign-educated through searches of newspaper articles announcing CEO changes from Academic Universe (Lexus-Nexus) searchable database and bibliographical information contained in the S&P's *Register of Corporations, Directors and Executives*.[9] Information on CEO heritage revealed that with a few exceptions, foreign-born executives are also foreign educated, and there are no instances of U.S.-born executives that earned their degrees abroad. Thus, we classify a CEO as "foreign-connected" if either one of the two criteria are satisfied.

Tables 1 and 2 document some general differences between companies with foreign-connected CEOs versus U.S. CEOs in our sample. Table 1 shows that, on average, companies with foreign-born CEOs have both higher foreign sales and higher foreign assets compared to companies with U.S.-born CEOs. The minimum and maximum size measures show that there is significant variation in average size of sales and assets. Table 2 presents a more precise distribution of firms in five ranges. The most populous range is that in which total assets and

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[8] The data for foreign sales in Compustat represent annual sales by foreign affiliates and subsidiaries, which does not include exports by the parent firm.

total sales are between 1 and 5 billion dollars. In contrast, the range with the least companies is that in which total company assets or sales exceed 50 billion dollars.

Descriptive statistics for our dependent variables are presented in Tables 3 and 4. Table 3 shows that relative to companies with U.S.-born CEOs, foreign sales and foreign asset intensities in companies headed by executives with foreign heritage are on average higher by 32 and 37 percent respectively. Once again, the minimum and maximum intensity measures suggest significant variation. To further understand what level of foreign-asset and foreign-sales intensity is most common among firms in the sample, five ranges of intensities were constructed. As shown in Table 4, the most populous range is that in which foreign sales and foreign assets are between 20 and 50 percent of total sales and total assets respectively. In contrast, the range with the least companies is that in which total foreign sales and foreign assets are over 80 percent of total sales and total assets respectively.

4. Empirical Results.

Equation (1) was estimated for both of our foreign market intensity variables for the 1266 observations in our sample (211 companies over six years) and the results are presented in Table 5. For our CEO switching variables we begin by including both one- and two-period lags. Robust standard errors are presented in parentheses below our coefficient estimates.

Both regressions have statistically significant F-statistics for overall joint significance of the regressors, with most of the regressor statistically significant and of expected sign. F-tests suggest that year effects are not jointly significant, though they are significant when we include firm fixed-effects, discussed below. The coefficients on R&D and advertising intensity are

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[9] Newspaper announcements of CEO changes at large firms are surprisingly consistent at giving fairly detailed bibliographical information about the incoming and outgoing CEOs.

positive, as expected, and statistically significant. This is consistent with the FDI internalization hypothesis that firms with greater intangible assets are more likely to internalize transactions by establishing plants in foreign markets.

We next turn to our variables of interest, the CEO switching variables. In the foreign-asset intensity regression, two of the three coefficients on the CEO switch variables are statistically negative. In fact, the cumulative effect of the CEO switch variables is a 10.5 percentage point drop in a firm's foreign-asset intensity over the first three years of the new CEOs tenure. This translates into a very substantial decrease, given our sample foreign-asset intensity average of 25.1%, and is statistically significant at the 99% confidence level. This suggests that CEO switches generally lead to a firm reducing its foreign-asset intensity. One explanation is that CEO switches occur when firms are not performing well, and such changes cause firms to focus more on domestic operations. The decline in foreign-sales intensity is also large (7.4 percentage point cumulative decline) relative to the sample average foreign-sales intensity of 28.7%.

In contrast, all three coefficients on our USFOR variables are positive in both regression equations, with both the contemporaneous and two-year lagged variables statistically significant. Our estimates imply that a company experiencing a switch from a U.S. CEO to a foreign connected one leads the firm to increase their foreign-asset intensity approximately 22.5 percentage points higher than firms with other CEO switches. Likewise, the coefficients suggest foreign-sales intensity increases 20.4 percentage points over the first three years of a U.S.-to-foreign CEO switch compared to other CEO switches. Combined, the coefficients suggest that a firm switching from a U.S. to a foreign-connected CEO increases its foreign-asset intensity by 12 percentage points and its foreign-sales intensity by 13 percentage points compared to a firm that

has no CEO switch.[10] If we exclude the contemporaneous switching variables due to
endogeneity concerns, the increase in foreign-asset intensity and foreign-sales intensities for a
switch to a foreign-connected CEO is yield 7-8 percentage point increases over firms.

While our F-statistic for both regressions in Table 5 are statistically significant, the R^2s
are relatively low. One possibility is that foreign market participation by firms may be due to a
variety of unobserved firm characteristics that are not captured by our advertising and R&D
intensity variables. Assuming these unobserved firm-specific features are invariant over our
sample time period, we control for such factors with firm-level fixed effects and present these
estimates in Table 6.

R^2s for both equations go up substantially and F-tests strongly support the inclusion of
firm-level fixed effects. The estimates of the other regressors in both equations change
substantially. The coefficients on our CEOSWITCH variables are no longer statistically
negative, suggesting no general effect of a CEO switch on foreign market participation by a firm.
The coefficients on the U.S.-to-foreign CEO switch variables are still positive, as expected,
though only the second annual lag coefficient is statistically significant.   The marginal effect of
a U.S.-to-foreign switch is much reduced, suggesting approximately a three percentage point (or
roughly 10-15%) increase in both the foreign asset- and sales-intensity of the firm relative to
other firms in the sample. R&D intensity continues to have the correct sign with firm fixed-
effects included, but is no longer statistically significant. Advertising intensity reverses sign and
is statistically significant. The poor performance of these control variables is clearly due to the
inclusion of firm fixed effects, since inclusion of such effects means that the other coefficient
estimates are identified solely from the time series dimension of the data. Annual changes in

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[10] Given our setup, this marginal effect is calculated as USFOR + USFOR$_{t-1}$ + USFOR$_{t-2}$ + CEOSWITCH +
CEOSWITCH$_{t-1}$ + CEOSWITCH$_{t-2}$. These marginal effects are statistically significant at approximately the 95%

R&D intensity and advertising intensity may not be very informative for understanding changes in foreign market participation, whereas levels of these variables, which proxy for a firm's stock of intangible assets, are obviously correlated with a firm's long-run foreign market participation.

While we expected a lag effect in our CEO switch variables due to the time for a new CEO to change the direction of the relatively large firms in our sample, the results in Table 6 suggest that we may not have included enough lags and may be missing the full effect of such switches. In Table 7 we include five years of lags for our CEO switch variables and present estimates from a firm fixed-effects specification. The inclusion of further lags is important, as the positive effects from a U.S.-to-foreign CEO switch primarily occur in the second through fourth year after the CEO switch for both the foreign asset- and sales-intensity variables. The combined effect on foreign-asset intensity for the five years following a U.S.-to-foreign CEO switch is 16.6 percentage points (or 66% of the mean) increase and statistically significant at the 99% confidence level. Similarly, the combined effect on foreign-sales intensity for the five years following a U.S.-to-foreign CEO switch is 21.2 percentage points (or 74% of the mean) increase. The coefficients on the general CEOSWITCH variables are small and statistically insignificant, indicating that these marginal effects of the U.S.-to-foreign switch are relative to all other firms in the sample, regardless of whether they had a CEO switch or not.

A final concern with our specification and sample used in Table 7 is that our sample includes a few firms that changed CEOs due to a merger of two large firms, including the merger of Pharmacia and Upjohn which is recorded as a U.S.-to-foreign switch in our data. Mergers can obviously lead to large discrete changes in the firm's balance sheet and may provide spurious results in our regressions. Table 8 presents estimates using the same specification as Table 7, but dropping the seven firms in our sample that experienced CEO switches due to mergers. While

confidence level for both regressions.

the coefficients on the USFOR variables continue to be positive and show a similar pattern, dropping the merged firms does lead to smaller marginal effects. The combined effect on foreign-asset and -sales intensities for the five years following a U.S.-to-foreign CEO switch are now 7.4 and 14 percentage points, respectively. These effects are still substantial relative to the sample averages (, which are not significantly changed by the dropping of the seven merged firms. Another feature of the USFOR coefficients is that the majority of the increase in foreign-sales intensity from a U.S.-to-foreign switch lags by a year or two the primary increase in foreign-asset intensity. This accords with the intuition that new sales in a region may lag the establishment of new production assets in a foreign region.

Table 8 represents our preferred specification. We also tried including a lagged dependent variable to control for remaining persistence in foreign market participation not identified by the firm fixed-effects. While the coefficients on the lagged dependent variables are statistically significant (around 0.4 for both regressions) the coefficients on the other control variables are hardly changed.

In Table 9, we try another experiment. We have a number of instances where a firm experiences a CEO switch from a foreign-born or educated CEO to a U.S. CEO. One hypothesis is that we should expect negative effects on foreign-market participation from such a switch. On the other hand, if the U.S.-to-foreign results are due to additional foreign networking that the foreign-connected CEO has established for the firm, it is not clear that these connections will necessarily dissipate. If establishing a foreign connection is primarily a fixed sunk cost, then there may be a beachhead effect such that a change back to a U.S. CEO does not significantly impact a firm's foreign market participation. Table 9 presents results when we run the same sample and specification as in Table 8, but not include contemporaneous and lagged

dummy variables to capture effects from a foreign-to-U.S. CEO switch. The first four years of a foreign-to-U.S. CEO switch indicate negative effects on both foreign-asset and –sales intensities. However, the combined effects are not as large as the coefficients on the U.S.-to-foreign CEO switch variables and also not statistically significant. Thus, the evidence for a reversal effect is fairly weak, perhaps due to beachhead effects.

To this point we have used foreign birth or education as the sole indication of foreign connections for an individual. But there may be other ways in which U.S.-born and –educated individuals may establish important connections. To explore this we examined biographical information on CEO's previous experiences to see if they had either run an "international" section of a firm's operations and/or lived abroad for a significant amount of time. Using this definition of "foreign" connections we created alternative variables for U.S.-to-foreign CEO switches (ALT USFOR) and include these in our specification in Table 10 with five year lags to be consistent with the other CEO switch variables. Interestingly, there is no consistent effect seen in these U.S.-to-foreign switches using the alternative, more-inclusive definition of a foreign-connected CEO. Other variables, including our standard U.S.-to-foreign CEO switch variables are essentially unchanged.

5. Conclusion.

Over the past decade, there has been a growing amount of research that finds evidence that networking effects are important in understanding international trade flows. This is the first paper (of which we are aware) that examines the extent to which networking through personal connections are present in firms' FDI activity. Using bibliographical information on CEOs' birth and education locations, we are able to identify changes from U.S.- to foreign-connected CEOs

that occurred in manufacturing firms of the S&P 500 from 1992 through 1997. Our preferred estimates (Table 8) show that a U.S. firm's switch from a U.S.- to foreign-connected CEO leads to 30% and 50% increases in that firm's proportion of its assets and sales, respectively, that are in foreign markets over the 5 years following the switch. This is in contrast to other CEO switches in our sample that show no evidence of changes in these proportions after the switch. We also find only weak evidence that switches from a foreign-to-U.S. CEO lead to decrease in a firm's foreign market participation. These results are consistent with anecdotal evidence, which suggests that many of the firms who have elected foreign-born CEOs have done so in an effort to become more international. Importantly, our methodology is set up to show that firms become more international subsequent to hiring a foreign-connected CEO, not in anticipation of such a change.

There are a number of avenues for future that we wish to pursue, most likely in future drafts of this paper. First, it's possible that changes to foreign-connected individuals in other officer positions of a company may lead to observable changes in the firm's operations that are consistent with our hypothesis. Second, our sample is of the largest U.S. firms. It would be useful to see whether such effects are observable in smaller firms, particularly those in certain industries where global trade and FDI activity are most prevalent.

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TABLE 1. Descriptive statistics for companies in sample:
Total assets and total sales averaged by company
over the period 1992-97

	Average Total Sales ($MM)			Average Total Assets ($MM)		
	Companies with U.S.-Born CEOs (N = 186)	Companies with Foreign-Born CEOs (N = 28)	All Companies (N = 214)	Companies with U.S.-born CEOs (N = 186)	Companies with foreign-born CEOs (N = 28)	All Companies (N = 214)
Mean	8,530	12,504	10,660	9,904	15,679	9,050
Median	3,555	5,714	3,749	3,695	4,771	3,627
Maximum	152,115	129,129	152,115	240,553	230,681	240,553
Minimum	318	629	318	216	381	216

TABLE 2. Descriptive statistics for companies in sample:
Distribution of companies by range of total assets and total sales
over the period 1992-97

	Distribution of Companies' Average Total Sales by Range			Distribution of Companies' Average Total Assets by Range		
	Number of Companies with U.S.-Born CEOs	Number of Companies with Foreign-Born CEOs	All Companies	Number of Companies with U.S.-Born CEOs	Number of Companies with Foreign-Born CEOs	All Companies
$$ < 1 bn	16	1	17	18	2	20
1 bn < $$ < 5 bn	95	13	108	90	13	103
5 bn < $$ < 10 bn	34	6	40	33	7	40
10 bn < $$ < 50 bn	36	6	42	42	4	46
50 bn < $$	5	2	7	3	2	5

TABLE 3. Descriptive statistics for companies in sample: Foreign-asset and foreign-sales intensities averaged by company over the sample period 1992-97

	Average Foreign-Sales Intensity (Percent of Total Sales)			Average Foreign-Asset Intensity (Percent of Total Assets)		
	Companies with U.S.-born CEOs (N = 186)	Companies with foreign-born CEOs (N = 28)	All Companies (N = 214)	Companies with U.S.-born CEOs (N = 186)	Companies with foreign-born CEOs (N = 28)	All Companies (N = 214)
Mean	28	37	29	24	33	25
Median	27	43	28	23	36	25
Maximum	137	67	137	94	68	94
Minimum	0	5	0	0	0	0

TABLE 4. Descriptive statistics for companies in sample: Distribution of companies by range of foreign-asset and foreign-sales intensities over the period 1992-97

	Distribution of Companies' Average Foreign-Sales Intensity by Range			Distribution of Companies' Average Foreign-Asset Intensity by Range		
	Number of Companies with U.S.-Born CEOs	Number of Companies with Foreign-Born CEOs	All Companies	Number of Companies with U.S.-Born CEOs	Number of Companies with Foreign-Born CEOs	All Companies
0 < % < 10	48	4	52	48	3	51
10 < % < 20	23	1	24	29	4	33
20 < % < 50	92	16	108	95	18	113
50 < % < 80	19	7	26	13	3	16
Over 80%	4	0	4	1	0	1

TABLE 5. OLS Estimates of CEO Foreign Connections Effects on Foreign-Sales and Foreign-Asset Intensities.

Explanatory Variables	Foreign-Asset Intensity (N = 1266)	Foreign-Sales Intensity (N = 1266)
USFOR	8.59**	7.85*
	(3.71)	(4.21)
USFOR$_{(t-1)}$	4.45	4.52
	(3.32)	(4.16)
USFOR$_{(t-2)}$	9.43**	8.02*
	(3.71)	(4.16)
CEOSWITCH	- 4.31***	- 2.75
	(1.50)	(1.92)
CEOSWITCH$_{(t-1)}$	- 2.21	- 1.47
	(1.55)	(1.90)
CEOSWITCH$_{(t-2)}$	- 3.97**	- 3.22*
	(1.60)	(1.78)
RDINT	1.14***	1.68***
	(0.12)	(0.14)
ADINT	0.77***	0.90***
	(0.15)	(0.17)
Year Dummies	YES	YES
R-squared	0.11	0.15
F-Statistic	12.91	17.90
Prob. (F-Statistic)	0.000	0.000

Note: Robust standard errors in parentheses. ***, **, and *, denote significance at the 1%, 5%, and 10% levels respectively.

TABLE 6. Firm Fixed-Effects Estimates of CEO Foreign Connections Effects on Foreign-Sales and Foreign-Asset Intensities.

Explanatory Variables	Foreign-Asset Intensity (N = 1266)	Foreign-Sales Intensity (N = 1266)
USFOR	1.77	0.69
	(2.32)	(1.90)
USFOR$_{(t-1)}$	0.12	- 0.31
	(1.75)	(1.29)
USFOR$_{(t-2)}$	3.21**	3.08**
	(1.61)	(1.49)
CEOSWITCH	- 0.83	- 0.45
	(0.64)	(0.61)
CEOSWITCH$_{(t-1)}$	0.42	0.01
	(0.54)	(0.53)
CEOSWITCH$_{(t-2)}$	- 0.41	- 0.94
	(0.64)	(0.87)
RDINT	0.37	0.26*
	(0.24)	(0.15)
ADINT	0.79***	- 0.27
	(0.20)	(0.18)
Year Dummies	YES	YES
R-squared	0.92	0.94
F-Statistic	4.51	5.24
Prob. (F-Statistic)	0.000	0.000

Note: Robust standard errors in parentheses. ***, **, and *, denote significance at the 1%, 5%, and 10% levels respectively.

TABLE 7. Firm Fixed-Effects Estimates of CEO Foreign Connections Effects on Foreign-Sales and Foreign-Asset Intensities: Five Years of Lags.

Explanatory Variables	Foreign-Asset Intensity (N = 1266)	Foreign-Sales Intensity (N = 1266)
USFOR	3.31	2.78
	(2.35)	(1.91)
USFOR$_{(t-1)}$	1.96	2.16
	(1.85)	(1.46)
USFOR$_{(t-2)}$	5.18***	5.79***
	(1.80)	(1.76)
USFOR$_{(t-3)}$	4.44**	5.57***
	(2.01)	(1.77)
USFOR$_{(t-4)}$	3.98*	5.44***
	(2.34)	(1.76)
USFOR$_{(t-5)}$	1.03	2.26
	(1.78)	(1.65)
CEOSWITCH	- 0.82	- 0.50
	(0.69)	(0.63)
CEOSWITCH$_{(t-1)}$	0.37	- 0.10
	(0.62)	(0.62)
CEOSWITCH$_{(t-2)}$	- 0.51	- 1.13
	(0.75)	(0.99)
CEOSWITCH$_{(t-3)}$	- 0.11	- 0.26
	(0.69)	(0.62)
CEOSWITCH$_{(t-4)}$	- 0.07	- 0.36
	(0.65)	(0.60)
CEOSWITCH$_{(t-5)}$	- 0.51	- 0.59
	(0.76)	(0.76)
RDINT	0.35	0.24
	(0.24)	(0.15)
ADINT	- 0.78***	- 0.24
	(0.20)	(0.17)
Year Dummies	YES	YES
R-squared	0.92	0.94
F-Statistic	3.07	4.18
Prob. (F-Statistic)	0.000	0.000

Note: Robust standard errors in parentheses. ***, **, and *, denote significance at the 1%, 5%, and 10% levels respectively.

TABLE 8. Firm Fixed-Effects Estimates of CEO Foreign Connections Effects on
Foreign-Sales and Foreign-Asset Intensities: Dropping Merged Firms.

Explanatory Variables	Foreign-Asset Intensity (N = 1224)	Foreign-Sales Intensity (N = 1224)
USFOR	1.72	1.56
	(1.12)	(1.23)
USFOR$_{(t-1)}$	1.92*	1.90*
	(1.03)	(0.97)
USFOR$_{(t-2)}$	3.02**	4.02***
	(1.19)	(1.33)
USFOR$_{(t-3)}$	1.74	3.54***
	(1.12)	(1.24)
USFOR$_{(t-4)}$	1.18	3.47***
	(1.31)	(1.23)
USFOR$_{(t-5)}$	- 0.51	1.04
	(1.63)	(1.49)
CEOSWITCH	- 0.77	- 0.42
	(0.69)	(0.64)
CEOSWITCH$_{(t-1)}$	0.09	- 0.40
	(0.62)	(0.62)
CEOSWITCH$_{(t-2)}$	- 0.92	- 1.50
	(0.76)	(1.02)
CEOSWITCH$_{(t-3)}$	- 0.61	- 0.61
	(0.68)	(0.63)
CEOSWITCH$_{(t-4)}$	- 0.38	- 0.58
	(0.67)	(0.62)
CEOSWITCH$_{(t-5)}$	- 0.42	- 0.51
	(0.79)	(0.80)
RDINT	0.37	0.24
	(0.24)	(0.16)
ADINT	- 0.57***	- 0.07
	(0.17)	(0.15)
Year Dummies	YES	YES
R-squared	0.92	0.95
F-Statistic	3.13	4.26
Prob. (F-Statistic)	0.000	0.000

Note: Robust standard errors in parentheses. ***, **, and *, denote significance at the 1%, 5%, and 10% levels respectively.

TABLE 9. Firm Fixed-Effects Estimates of CEO Foreign Connections Effects on Foreign-Sales and Foreign-Asset Intensities: Examining Foreign to U.S. CEO Switches.

Explanatory Variables	Foreign-Asset Intensity (N = 1224)	Foreign-Sales Intensity (N = 1224)
USFOR	1.64	1.49
	(1.14)	(1.21)
USFOR$_{(t-1)}$	1.67	1.82*
	(1.07)	(0.99)
USFOR$_{(t-2)}$	2.74**	4.05***
	(1.21)	(1.40)
USFOR$_{(t-3)}$	1.47	3.42***
	(1.13)	(1.18)
USFOR$_{(t-4)}$	1.27	3.57***
	(1.38)	(1.27)
USFOR$_{(t-5)}$	- 0.01	1.37
	(1.64)	(1.54)
CEOSWITCH	- 0.60	- 0.30
	(0.71)	(0.67)
CEOSWITCH$_{(t-1)}$	0.39	- 0.30
	(0.63)	(0.65)
CEOSWITCH$_{(t-2)}$	- 0.59	- 1.41
	(0.77)	(1.08)
CEOSWITCH$_{(t-3)}$	- 0.28	- 0.50
	(0.71)	(0.66)
CEOSWITCH$_{(t-4)}$	- 0.42	- 0.67
	(0.70)	(0.66)
CEOSWITCH$_{(t-5)}$	- 0.75	- 0.69
	(0.80)	(0.82)
FORUS	- 1.09	- 1.35
	(1.92)	(1.56)
FORUS$_{(t-1)}$	- 2.13	- 0.76
	(2.34)	(1.39)
FORUS$_{(t-2)}$	- 1.60	- 0.54
	(2.29)	(1.64)
FORUS$_{(t-3)}$	- 1.83	- 0.69
	(1.79)	(1.62)
FORUS$_{(t-4)}$	0.53	0.53
	(1.43)	(1.43)
FORUS$_{(t-5)}$	3.44	1.72
	(2.87)	(3.63)
RDINT	0.35	0.23
	(0.24)	(0.16)
ADINT	- 0.58***	- 0.07
	(0.17)	(0.14)
Year Dummies	YES	YES
R-squared	0.92	0.95
F-Statistic	2.55	3.33
Prob. (F-Statistic)	0.000	0.000

Note: Robust standard errors in parentheses. ***, **, and *, denote significance at the 1%, 5%, and 10% levels respectively.

TABLE 10. Firm Fixed-Effects Estimates of CEO Foreign Connections Effects on Foreign-Sales and Foreign-Asset Intensities: Examining Alternative Definition of Foreign Connections.

Explanatory Variables	Foreign-Asset Intensity (N = 1224)	Foreign-Sales Intensity (N = 1224)
USFOR	1.37	1.42
	(1.25)	(1.30)
$USFOR_{(t-1)}$	1.72	1.93*
	(1.09)	(1.07)
$USFOR_{(t-2)}$	2.34*	3.59**
	(1.20)	(1.42)
$USFOR_{(t-3)}$	1.59	3.39***
	(1.16)	(1.26)
$USFOR_{(t-4)}$	1.31	3.42***
	(1.34)	(1.26)
$USFOR_{(t-5)}$	- 0.59	0.83
	(1.65)	(1.47)
CEOSWITCH	- 0.81	- 0.37
	(0.77)	(0.71)
$CEOSWITCH_{(t-1)}$	0.19	- 0.33
	(0.65)	(0.66)
$CEOSWITCH_{(t-2)}$	- 0.28	- 1.03
	(0.74)	(1.13)
$CEOSWITCH_{(t-3)}$	- 0.54	- 0.45
	(0.71)	(0.66)
$CEOSWITCH_{(t-4)}$	- 0.59	- 0.55
	(0.68)	(0.65)
$CEOSWITCH_{(t-5)}$	- 0.39	- 0.33
	(0.79)	(0.74)
ALT USFOR	0.46	- 0.55
	(1.03)	(1.24)
$ALT\ USFOR_{(t-1)}$	- 0.06	- 0.47
	(1.36)	(1.42)
$ALT\ USFOR_{(t-2)}$	- 2.92	- 2.78
	(1.79)	(1.80)
$ALT\ USFOR_{(t-3)}$	0.98	- 0.92
	(1.34)	(1.31)
$ALT\ USFOR_{(t-4)}$	2.76**	- 0.18
	(1.36)	(1.44)
$ALT\ USFOR_{(t-5)}$	0.42	- 1.76
	(2.10)	(3.30)
RDINT	0.37	0.23
	(0.24)	(0.16)
ADINT	- 0.57***	- 0.08
	(0.17)	(0.14)
Year Dummies	YES	YES
R-squared	0.92	0.95
F-Statistic	3.45	3.53
Prob. (F-Statistic)	0.000	0.000

Note: Robust standard errors in parentheses. ***, **, and *, denote significance at the 1%, 5%, and 10% levels respectively.