Trade Policy Uncertainty, Investment, and Lobbying *

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Abstract

Trade policy uncertainty has skyrocketed in recent years with rising trade tensions between the US and China. In this paper, I empirically investigate how trade policy uncertainty (TPU) influences firms’ lobbying and investment decisions, and how these decisions can potentially complement each other. Using a difference-in-differences design leveraging firms’ differential exposure to trade with China and the timing of China’s entry to the WTO in the early 2000s, I find that firms more exposed to trade with China have significantly higher trade-related lobbying expenditures in the years prior to China’s WTO entry. To further isolate the role of uncertainty, I construct a newspaper-based index of US-China trade policy uncertainty and find even stronger results with this measure. Since the 1990s, China has been increasingly referenced in articles discussing US trade policy uncertainty going from around 20% of articles in 1990 to near 70% more recently. I also find significant negative investment responses to changes in the uncertainty indices. Lastly, I present evidence showing that lobbying can complement investment by counteracting the negative real option effects of uncertainty. Lobbying serves to build political capital that can be used to both increase the probability of positive policy outcomes for firms and protect the firms in the case of a negative outcome.

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1 Introduction

Pick up any newspaper or watch national news, and there is a good chance that you will find some discussion of trade policy and the mounting uncertainty associated with it. Over the last four years, President Trump has pulled the United States out of the Trans-Pacific Partnership, threatened to leave the North American Free Trade Agreement, and imposed tariffs on a variety of goods from China and Europe. Economic policy uncertainty has been shown to adversely affect firms’ investment (Gulen and Ion, 2016), R&D (Stein and Stone, 2013), and employment (Baker et al., 2016).

This paper studies the effect of trade policy uncertainty on firms’ joint decision to lobby and invest in physical capital. According to the Center for Responsive Politics, total lobbying expenditures have been increasing since the late 1990s\(^1\) while trade-related lobbying expenditures have increased as a fraction of total lobbying expenditures in recent years (see Figure 1). Lobbying builds a firm’s political capital which can then be used to both increase the probability of positive policy outcomes for the firm and protect the firm against possible negative outcomes\(^2\).\(^2\) Lobbying is therefore likely to reduce firms’ uncertainty, thereby limiting the adverse “wait-and-see” impact of uncertainty on physical investment. However, lobbying occupies free cash flow which may otherwise be used for investment. As a result, the joint dynamics of lobbying and investment in response to rising trade policy uncertainty are ex ante unclear.

Trade, in general, provides a uniquely well-suited field in which to study the effects of uncertainty. For U.S. firms, setting up exporting operations domestically, shifting operations to another country, or establishing relationships with other country producers all involve large sunk costs. These same sunk costs apply to producers in the other countries deciding whether to export to the U.S. or not. These sunk costs are what drive the real options effects in models of investment under uncertainty and give firms strong incentives to lobby the government.

I exploit China’s entry into the World Trade Organization (WTO) in the early 2000s to isolate the impact of reduced uncertainty on firm-level investment and lobbying expenditure using a difference-in-differences design. With rising concern for possible human rights violations in China, the U.S. government annually decided whether to revoke China’s most-favored nation (MFN) status throughout the 1990s as punishment. In the early 2000s, the U.S. decided to stop these annual votes and grant China permanent normal trade relations (PNTR) if China was able to gain entry into the WTO. Thus, there was constant uncertainty

\(^1\)This is the starting point for which high quality lobbying data has been recorded and made available.
\(^2\)See Hassan et al. (2019) for evidence of lobbying responses to political risk.
over tariff levels against China that finally subsided with China’s entry into the WTO in the beginning of 2002. Importantly, Congress never actually succeeded in revoking MFN status, so this episode is unique in that import tariff rates that the U.S. applied to Chinese goods did not change over this period. This quality makes the case study convenient for analyzing the effects of uncertainty as opposed to the effects of changing tariff rates. Interestingly, we see evidence in Figure 1 that when trade policy uncertainty fell after China’s WTO entry and then rose back up in recent years under President Trump, trade-related lobbying followed suit. Also, importantly, trade-related lobbying consistently remains a non-trivial share of total lobbying expenditures hovering around 5% over this time period.

To isolate the impact of trade policy uncertainty, I develop a newspaper-based measure of US-China trade policy uncertainty using 6 major newspapers. This index spikes around the key developments in China’s eventual entry into the WTO including annual most-favored nation renewal votes for China in Congress, the Belgrade bombing where US forces accidentally bombed the Chinese embassy in Belgrade, and the Hainan Island incident where an US
Navy signals intelligence aircraft collided with a People’s Liberation Army Navy fighter jet. The latter two being major events that raised tensions between the US and China during China’s bid to gain entry into the WTO. Compare this with a general US TPU Index where the main movement in the 1990s and early 2000s period is due to the discussion and eventual signing of NAFTA. Both indices elevate to never-before-seen levels in recent years due to raising trade tensions between the US and China. Discussion of China within general US TPU news articles has increased since the 1990s as the country has become increasingly integrated in world trade.

Armed with the news-based TPU index developed in this paper, I implement various difference-in-differences specifications leveraging changes in the TPU index along with differential firm-level exposures to Chinese trade in order to examine how lobbying and investment respond to TPU. I use two measures of exposure to Chinese trade recently developed in the literature. The first measure utilizes differential potential tariff changes across industries that would have resulted if China’s most-favored nation status was revoked. In this event, the US would have reverted back to Smoot-Hawley tariff levels that were decided way back in 1930. Because these tariff levels differ across industries, the industry-by-industry impact of MFN revocation was severely varied. The second measure uses firm stock responses around key US-China permanent normal trade relations events in the year 2000. According to the efficient markets view, stock price movements reflect all available news that could influence a company’s future earnings. Thus, how much a firm’s stock responds to news about China’s bid to obtain permanent normal trade relations with the US tells us just how much they could potentially be hurt in the long-run due to increased trade with China. Indeed on average, we see strongly negative returns in 2000 around the key events considered. I extend this analysis further back in time looking at various events throughout the 1990s.

I find that lobbying firms more exposed to TPU shocks lobby more on trade-related matters and invest less when TPU is high. A one standard deviation increase in the TPU Index leads the average exposed firm to increase trade-related lobbying expenditures by 4.78 thousand dollars. Firm investment rates decline by about 0.58% percentage points from a TPU shock equal in magnitude to the run up to a congressional vote on renewal of China’s most-favored nation status. Using production network linkages as described by BEA input-output tables, I am able to break down this relationship between the firms that are directly affected by the policy and the firms that are indirectly affected through the production network. I do not find significant differences in the lobbying or investment effects of firms whether they are directly affected or indirectly affected via their upstream suppliers or their downstream consumers.

Furthermore, I find evidence that lobbying can mitigate the negative investment rates re-
sulting from increased TPU. These estimates while noisy are large on the order of magnitude of 10% of the direct negative investment effect.

My work lies at the intersection of a few different literatures in order to connect their ideas to better understand how trade policy uncertainty, investment, and lobbying all interact together. There is a large literature dedicated to exploring the effects that economic uncertainty and economic policy uncertainty have on investment, employment, R&D, and sales. We can consider these the passive firm responses to policy uncertainty. Passive in the sense that these responses do not actively try to influence the uncertainty faced but instead are reactions to the uncertainty.

Many recent papers explore the passive responses to policy uncertainty empirically. Baker, Bloom, and Davis (2016) develop a news-based measure of economic policy (EPU) uncertainty and show that firms more exposed to EPU reduce investment and employment in times of higher EPU. Gulen and Ion (2016) extend this EPU analysis of investment showing that the effect is stronger for firms with higher degrees of investment irreversibility. Altig et al. (2019) show using the Survey of Business Uncertainty (SBU) that according to the companies surveyed, the recent Trumpian trade policy uncertainty has had some negative effects on US business investment albeit not as large as one might expect. Uncertainty also hampers innovation and R&D expenditures as seen in Stein and Stone (2013).

In conjunction with the empirically-focused papers, there is a long literature laying the theoretical foundation for how these passive responses arise in the face of uncertainty in general with more recent explorations of policy uncertainty in particular. Stokey (2016) develops a model of tax policy uncertainty where firms temporarily stop investing in response to the uncertainty and then exploit the build-up of projects after uncertainty resolves leading to a temporary investment boom. Handley and Limao (2017) develop a model of trade policy uncertainty (TPU) that they use to empirically identify the effects of TPU on exporting decisions using China’s entry into the WTO as a case study. My work extends this literature by empirically showing that US-China trade policy uncertainty hampers US manufacturing investment. It also extends the empirical identification methodology of Baker, Bloom, and Davis (2016) by highlighting another firm-level exposure variable in a more specific setting.

Another literature explores the active firm responses to policy uncertainty and political risk. Hassan et al. (2019) develop firm-level text-based measures of political risk using methods from computational linguistics. Firms increase overall lobbying expenditures in the

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3Bonaime, Gulen, and Ion (2018) focuses on the effects of policy uncertainty on mergers and acquisitions. See Dorsey (2017) for an example of uncertainty influencing pollution via environmental investment.

4Handley and Limao along with coauthors also study trade and policy uncertainty in other contexts: general trade agreements (Carballo et al., 2018), Brexit (Graziano et al., 2019), Australia (Handley, 2014), and Portugal (Handley and Limao, 2015)
face of higher general political risk and increase topic-specific lobbying levels in response to the same topic-specific risk increases. My China WTO entry case study supports these results in a specific setting with clear firm-level exposure identification. I also am able to separately consider how lobbying responses differ for firms directly affected by the policy as opposed to firms indirectly affected via production network linkages. This exploration of the differential lobbying responses for potential policy winners and losers is to my knowledge novel. Blanga-Gubbay et al. (2019), following up on traditional lobbying models in trade such as Grossman and Helpman (1994) and Bombardini (2008), study the political economy of free trade agreements and find that almost all firms are in favor of ratification. Their proposed model of endogenous lobbying explains this feature as well as various facts on the structure of lobbying versus non-lobbying firms.

All in all, my work combines the passive and active response literatures to better understand the interactions between these various responses to uncertainty. Lobbying can directly affect the probability of policy outcomes consequently altering the expected value of the policy. This combined with the insurance against negative outcomes they may garner through political capital gives firms less of an incentive to use wait-and-see investment tactics. The closest paper in this vein is Shang et al. (2018). Using the Baker, Bloom, and Davis (2016) EPU Index, they show that lobbying increases with EPU and that firms can mitigate some of the negative wait-and-see effects on investments and sales growth by lobbying. Their main focus is on the barriers to entry in the lobbying process, and they find that these barriers to entry increase as EPU rises leading less firms to enter into the lobbying process for the first time. My paper differs from theirs by utilizing a more focused empirical identification strategy. This case study is amenable to a more detailed analysis on how the economic benefits of lobbying change depending on what side of the policy debate you fall on, i.e. whether you are ex-ante a winner or loser of the policy in question.

My work also relates to the burgeoning literature using text analysis to better measure uncertainty, specifically trade policy uncertainty. Mine is not the first attempt at a trade policy focused uncertainty index. Baker, Bloom, and Davis (2016) have a version of their EPU index that focuses on trade policy uncertainty. Hlatshwayo (2016) develops multiple trade-related uncertainty indices focusing on European countries while Pierce and Schott (2016) have a basic version of a news-based index focusing on China’s entry to the WTO.

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6On lobbying outside of the trade context, see Arayavechkit et al. (2018), Bertrand et al. (2014), Cox (2018), and Kang (2016). On political connections in general, see Akey and Lewellen (2017) and Bertrand et al. (2018).
and granting of permanent normal trade relations. Baker et al. (2019) develop an equity market volatility tracker which can be parsed into many different categories including trade policy.

Finally, this paper contributes to the literature exploring the general consequences of increased trade liberalization. Autor, Dorn, and Hanson (2013) find that Chinese import penetration explains 26 to 55 percent of the overall decline in U.S. manufacturing employment from 2000 to 2007 which is about 5 to 11 percentage points of the overall 20 percent decline. This effect extends to other employment outcomes such as local wages. Pierce and Schott (2016, 2018) show that the mid 2000s decline in manufacturing sector employment and investment can be partially attributed to the rise in import competition following China’s WTO entry.

The rest of the paper proceeds as follows. Section 2 discusses the various data sources and policy scenario. Section 3 presents evidence on the investment and lobbying responses of firms to trade policy uncertainty. Section 4 presents the key results on the ability of lobbying to mitigate negative wait-and-see investment effects of trade policy uncertainty. Section 5 summarizes and provides some directions for further research.

2 Data Description

This section provides a discussion of the main data sources that will be utilized in the analysis. In total, there are four types of data (lobbying, trade, investment, and news discussion) that will be discussed in sections 2.1, 2.2, and 2.4. Section 2.1 lays out the lobbying data, Section 2.2 discusses the trade and investment data, and Section 2.4 constructs the news-based measure of US-China trade policy uncertainty. Section 2.3 provides an overview of the policy episode and background context in order to give the reader a better understanding of the movements in the TPU index.

The trade data will be used in constructing a Chinese trade exposure measure which when coupled with the news-based TPU index will lay the foundation for the difference-in-differences analysis. The lobbying and investment data will serve as the main two outcome variables of interest. Other data sources that are used in the analysis will be presented and discussed at more appropriate points later in the paper.

2.1 Lobbying Data

The Lobbying Disclosure Act of 1995 which requires lobbyists and lobbying firms to report their lobbying activities with the Clerk of the House of Representatives and the Secretary
of State. The lobbying expenditures data comes from the Center for Responsive Politics (CRP), a nonpartisan not-for-profit research group that has obtained and organized these reports. The reports require lobbying firms and lobbyists to provide a good-faith estimate rounded to the nearest USD 10,000 of all lobbying-related income from each of their clients, as well as the list of topics that were lobbied on. There are 80 topics that could possibly be lobbied on, but the analysis will focus on trade-related lobbying. The instructions for “Form LD-2, Lobbying Report” that goes through line by line what needs to be included in the lobbying disclosure reports is included in the Appendix. The CRP assigns a value of 0 for lobbying amounts below the disclosure threshold. I consider trade-related lobbying to be the sum of the “Trade” and “Tariff” categories under the assumption that lobbying expenditures are equally divided among all of the lobbying topics listed. I link firms in the lobbying database to firms in Compustat using a fuzzy matching algorithm based off firm name. Out of the 43,721 unique entity names in the lobbying data, 30,566 are matched to firms in Compustat with a match score higher than 0.6. As seen in Appendix Figure 1, the match scores vary a lot with lower match scores corresponding to sometimes much worse matches. For now, I consider only those matches that have a score higher than 0.99 giving us 2,361 matched lobbying firms.

To get a sense of the importance of lobbying for the manufacturing industry, I present a few summary statistics. 35% of Compustat firms in the sample are in the manufacturing sector which is defined as two-digit NAICS codes 31-33. Conditional on being matched to a lobbying firm in the CRP data, 50% of the lobbying Compustat firms are in the manufacturing sector. This increases to 67% when considering trade-lobbying Compustat firms. The manufacturing sector as a whole represents 69% of total trade lobbying expenditures.

Furthermore, one can explore the issues that firms/organizations lobby on. Figure 2 breaks down the manufacturing sector’s lobbying expenditures by issue topic. The top five issues by total expenditure percent are: Taxes, Trade, Health Issues, Federal Budget and Appropriations, and Defense. We see that Trade issues constitute a large portion of the manufacturing sector’s total lobbying expenditures along with fiscal policy matters.

It is also important to get a sense of how many issues lobbyist/firm pairs lobby on in a

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8The Honest Leadership and Open Government Act of 2007 increased the filing frequency of these lobbying reports from semi-annually to quarterly. For the most part, since the case study is near the beginning of this period, I will consider all lobbying expenditures at the semi-annual level to avoid assigning semi-annual expenditures to a given quarter before 2008.

9There is no other firm information such as location or telephone number in the lobbying database for us to incorporate into the fuzzy matching algorithm. The name-matching routine first cleans and standardizes company names by eliminating punctuation and entity designations such as “Inc”, “Corp”, and “LLC”. This is done via the stnd_compname package in Stata. Then, the fuzzy match is performed on these cleaned and standardized names via the reclink package in Stata. This package uses a bigram fuzzy matching routine.
given reporting period as I am using an equal share breakdown across issues when assigning total lobbying expenditures to constituent issues. Figure 3 shows the time series of the average number of issues reported for all lobbying organizations while figure 4 shows the time series of the average number of issues conditional on trade being listed as one of the issues.

In both cases, the time series is relatively stable. It is the case that conditional on trade lobbying, firms report more issues on average. It is possible that the trade issue gets lumped together with a few other issues closely related on average or that trade issues over the last couple decades have coincided with other policy issues.

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10I did not find any apparent reason for the big spikes in the first half of 2000 and the first half of 2002. It seemed like across the board there were higher issues listed and not just a couple outlier firms only in these periods.
2.2 Trade and Investment Data

The trade data comes from Handley and Limao (2017). The variables I use for this analysis are the year 2000 column 2 tariff rates and the MFN tariff rates averaged to the HS-6 level. US tariff schedules were obtained via the World Bank’s WITS. I also use US Census import data from 1998-2015 provided by Peter Schott via his website.

Firm-level financial variables at the quarterly level including investment and basic balance-sheet information (e.g. total assets) come from Standard and Poor’s Compustat. Option-Metrics provides quarterly firm-level implied volatility. I also utilize Compustat’s Historical Business Segments database that contains firm-year level sales breakdowns by firm business segments represented by 6 digit NAICS industries. This allows for a mapping between industry level variables tariff variables and the like to be mapped directly to the individual firms.

I link the trade variables at the HS-6 level to 6 digit NAICS industries in Compustat.
using the HS-NAICS concordance developed by Pierce and Schott (2009)\textsuperscript{11}. For this merge, I make sure that all NAICS codes in both the Pierce/Schott data and in Compustat are the 2002 versions using Census Bureau crosswalks.

Given this HS-NAICS concordance, I can consider trade flows at the industry level. One interesting fact to keep in mind: over the 1998-2015 period, approximately 80% of the total value of imports (defined by the HS codes) by the U.S. from all countries are classified as produced by the manufacturing sector (NAICS 31-33). This number increases to 98% when considering only Chinese imports. Thus, import competition predominantly affects the manufacturing sector.

\textsuperscript{11}This mapping is unique in the sense that a given HS-10 code is uniquely mapped to a given 6 digit NAICS industry. The analysis is at the HS-6 code level though which means that a given HS-6 code can be mapped to multiple different 6 digit NAICS codes.
2.3 Policy Background

The main analysis centers around China’s entry into the WTO and the preceding trade policy uncertainty. China obtained temporary most favored nation (MFN) status in 1980 and never lost it even though it came close on multiple occasions. Throughout the 1990s, after the Tiananmen Square protests, Congress had yearly votes on a bill to revoke MFN status from China, and the House managed to pass the bill three times. In the case that MFN status was revoked, the US would have reverted back to Smoot-Hawley tariff levels. For example, as given in Handley and Limao (2017), the average US tariff with MFN was only 4 percent whereas the average Smoot-Hawley tariff level was 31 percent.

Uncertainty over both China’s accession to the WTO and its permanent normal trade relations (PNTR) status remained at least throughout 2000 and most likely through 2001 as events between the US and China unfolded. In October 2000, the US Congress passed the US-China Relations Act (HR 4444) which would grant China PNTR contingent on China’s accession to the WTO. Lengthy accession negotiations along with a jet fighter collision known as the Hainan Island incident led the US Congress to once again vote to revoke China’s MFN status in the summer of 2001. Finally, on December 11, 2001, China joined the WTO leaving the US to effectively enact PNTR on January 1, 2002.

2.4 News-Based US-China Trade Policy Uncertainty Measures


Two different term sets are used to construct two different indices. The first is a general index of total US trade policy uncertainty.

**US Trade Policy Uncertainty (TPU) Index:**

\{uncertain OR uncertainty\} AND \{“most favored nation” OR “normal trade relations” OR “trade policy” OR tariff OR “import duty” OR “import barrier” OR “import restriction” OR “trade quota” OR dumping OR “export tax” OR “export duty” OR “trade treaty” OR “trade agreement” OR “trade act” OR wto OR “world trade organization” OR “Doha round” OR “Uruguay round” OR gatt OR “export restriction” OR “investment restriction” OR Nafta OR North American Free Trade Agreement” OR “Trans-Pacific Partnership” OR “Trans-Pacific Partnership” OR “Federal Maritime Commission” OR “International Trade Commission” OR “Jones Act” OR “trade adjustment assistance”\}.

The second index appends \{China OR Chinese\} to the previous termset to isolate US-
China trade policy uncertainty.

I collect counts of newspaper articles that satisfy each of those criteria at the monthly level. I adjust the counts to avoid trends in newspaper coverage by dividing by the total number of articles in the given newspaper in the given month. Then, I standardized each series to have unit standard deviation at the newspaper level before averaging across newspapers and renormalizing the index to have a mean of 100 over the period 1990-2003.\textsuperscript{12}

Figure 5 presents the US TPU index. As we can see, there really are only a couple of major spikes since 1990: namely on in the early to mid 1990’s for NAFTA and then one much more recently with the election of Donald Trump and the following trade negotiations and trade wars. Appendix Figure 2 zooms in on this figure focusing on 2000-2015 to highlight the period after the US-China PNTR episode but before the recent escalation of TPU under President Trump. Here, we see that there are indeed some fluctuations during this period albeit much smaller than the large shocks due to NAFTA and Trump. This episode had many other free trade agreements going into effect including US-Singapore, US-Chile, US-Colombia, and US-Korea along with the Doha round of trade talks.

Figure 6 shows the US-China TPU Index for 1990-2015. The recent Trump episode sees a massive spike in US-China TPU which can be seen in Appendix Figure 3, but I show 1990-2015 here to make all the other fluctuations in the index more readily visible.

We can see that the main spikes center around China MFN renewal discussions. These happened approximately biannually throughout the 1990s. Besides renewal votes, other US-China relations events influence US-China TPU including the Hainan Island incident and the Belgrade bombing. Most of the variation and large spikes occur in the period before China’s entry to the WTO.\textsuperscript{13} Despite this, the US-China TPU index still sees some minor fluctuations in the post-period.

Figure 7 explores the relationship between the US TPU Index and the US-China TPU Index. By construction, the US-China TPU Index is a strict subset of the US TPU Index, so I plot the percent of US TPU Index articles that also contain \{China OR Chinese\}. Despite the general term set used in the construction of the indices in order to pick up all trade policy uncertainty variation, China account for a large and relatively stable percentage of article discussion.

Given the consistently high levels of US TPU articles concerning China and the limited number of additional US TPU events between 2000 and 2015, I will focus my attention on the effects of US-China TPU and utilize the US-China TPU Index in the remainder of this

\textsuperscript{12}This renormalization does not have any material impact so the period was chosen to give reasonable looking index values for interpretation.

\textsuperscript{13}At the monthly level, the average index value for the 1990-2001 period is 99.65 while the after value for 2002-2015 is 83.84.
Figure 5: U.S. TPU Index (1990Q1-2018Q4)

3 How Does TPU Affect Lobbying and Investment Decisions?

This section presents the results on the direct effect of trade policy uncertainty on the investment and lobbying decisions of firms. I first describe the TPU exposure measures used in the analysis in Section 3.1 before presenting lobbying results in Sections 3.2-3.4 and concluding with investment results in Section 3.5.
3.1 TPU Exposure Measures

3.1.1 NTR Gap Measure

To understand how trade policy uncertainty affects firm lobbying and investment decisions, I utilize variation in firm exposure to China’s entry to the WTO and ensuing import competition. I follow the literature from Pierce and Schott (2016, 2018) and Handley and Limao (2017) in using a NTR gap measure of exposure. Specifically, I use the NTR gap trade policy uncertainty measure developed in Handley and Limao (2017) that is defined as

\[ 1 - \left( \frac{\tau_{2V}}{\tau_{1V}} \right)^{-\sigma} \]

using year 2000 column 2 (\( \tau_{2V} \)) and MFN tariff rates (\( \tau_{1V} \)). These are the logs of 1 plus the tariff rate computed at the HS-6 level. \( \sigma \) is the constant elasticity of substitution across varieties in the Handley and Limao (2017) model of trade policy uncertainty. As in their paper, I will set \( \sigma = 3 \). For my purposes, I will construct these NTR gap TPU exposure

Figure 6: General US-China TPU Index (1990Q1-2015Q4)
Figure 7: General US-China TPU Index (Three Month Moving Average 1990M1-2018M12)

measures at the firm level. See the Data Appendix for a detailed description of how the NTR gap measure of TPU is constructed. Appendix Figure 4 plots the firm-level density of just the NTR gap ($\tau_2^V/\tau_1^V$) for ease of interpretation. Appendix Table 3 presents some basic summary statistics of the measure at the firm level. Appendix Tables 1 and 2 provide the same statistics for the product (HS) and industry (NAICS) levels of the measure which are used in the firm-level construction.

3.1.2 Average Abnormal Returns Measure

I construct another measure of a firm’s exposure to US-China trade relations and TPU in particular following the methodology in Greenland et al. (2019). They use a stock price based method and calculate a firms average abnormal returns (AAR) surrounding US-China PNTR events. The main AAR measure I will construct focuses on the following five legislative events that led up to the US granting China PNTR status: (1) May 15, 2000 introduction of HR 4444 in the US House of Representatives; (2) May 24, 2000 vote to approve China’s PNTR
status by the US House of Representatives; (3) the successful July 27, 2000 cloture motion
to proceed with a vote on PNTR in the Senate; (4) September 19, 2000 vote to approve
China’s PNTR status by the US Senate; and (5) October 10, 2000 signature of PNTR into
law by President Clinton.

As in the finance literature, I calculate abnormal returns using the residuals from a
CAPM style regression

\[ R_{i,t} - R_{f,t} = \beta_i (R_{m,t} - R_{f,t}) + \epsilon_{i,t} \]

As in Greenland et al. (2019), I estimate this regression for each firm over all trading
days in 1999 so that the estimates do not include the relevant legislative period. I run this
regression for all publicly-traded US firms that trade on the NYSE, AMEX, or NASDAQ
and are also present for at least 120 of the 250 trading days in 1999. Firm-level daily returns
data comes from the Center for Research in Security Prices (CRSP) and the daily market
return and risk-free return are taken from Kenneth French’s website.\(^{14}\)

The average abnormal return for firm \(i\) over event window \(e\), \(\text{AAR}_{ie}\), is then calculated
as the average of the daily abnormal returns during the five trading day window centered on
the event date \(t_e\):

\[ \text{AAR}_{ie} = \frac{\sum_{t_e-2}^{t_e+2} (R_{i,t} - R_{f,t}) - \hat{\beta}_i (R_{m,t} - R_{f,t})}{5} \]

I can then construct the average abnormal return across all five events as my general
PNTR exposure measure:

\[ \text{AAR}_{i}^{\text{PNTR}} = \frac{1}{5} \sum_{e \in E} \text{AAR}_{ie} \]

I calculate \(\text{AAR}_{i}^{\text{PNTR}}\) using this method for 5,887 firms that are present in the CRSP
dataset for at least one of the five PNTR events.\(^{15}\) I also extend this methodology to previous
MFN status related annual congressional votes throughout the 1990s. See Appendix Figure
5 for a list of the dates I use for the AAR analysis.\(^{16}\) Figure 8 plots the average \(\text{AAR}_{ie}\) for

\(^{14}\)See https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html. \(R_{m,t}\) is the value-
weight return of all CRSP firms incorporated in the US and listed on the NYSE, AMEX, or NASDAQ that
have a CRSP share code of 10 or 11, and \(R_{f,t}\) is the one-month Treasury bill rate.

\(^{15}\)Note, that this is actually a big larger than the sample Greenland et al. (2019) claim to estimate their
AAR measure for: 5,368. I am not sure exactly where the additional firms are coming from as I follow the
same methodology they do. I am considering each firm here to be a Compustat GVKEY and use the CRSP-
Compustat Merged (CCM) Linktable to link permno’s (CRSP firm identifiers) to gvkey’s. It is possible that
they are using another way to link such asCUSIP codes.

\(^{16}\)For now, I am using the final status dates for the US House of Representatives votes from the table in
Appendix Figure 5.
each of the eleven events considered.

![Figure 8: Average Abnormal Returns for China PNTR Events](image)

The House actually passed legislation to revoke MFN status for China in 1990, 1991, and 1992 but the Senate failed to sustain the vote. Thus, it is not surprising that we see positive average AAR values in the first couple years. In the couple of years preceding the actual PNTR votes in 2000, we see negative values quantitatively very close to the 2000 value.

For the following analysis, I will focus attention on the 2000 episode as defined above and used in Greenland et al. (2019). Appendix Figure 6 plots a histogram of the 2000 AAR exposure measures.

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17The AAR$_e$ associated with the five components of the 2000 episode have means and standard deviations as follows (in chronological order and all in percentage terms as in the plot). Means: 0.07, -0.66, -0.24, -0.40, -0.67. Standard Deviations: 2.02, 2.14, 2.10, 1.96, 2.28. The standard deviations for the AAR$_e$ associated with the 1990 through 1999 episodes are as follows (again in chronological order and all in percentage terms): 1.95, 1.43, 1.44, 1.53, 1.35, 1.50, 1.45, 1.61, 1.71, 2.03.

18By definition, the mean of average abnormal returns across all firms is zero when weighted by market capitalization. The left skewness apparent in Appendix Figure 6 indicates that smaller market capitalization firms are more likely to have lower AAR values.
As in Greenland et al. (2019), using historical business segments data from Compustat, I classify the firms in the AAR exposure sample into two mutually exclusive categories: goods producers and services producers. A firm is classified as a goods producer if their business segments include Manufacturing (NAICS 31 to 33), Mining, Quarrying, and Oil and Gas Extraction (NAICS 21), or Agriculture, Forestry, Fishing, and Hunting (NAICS 11) and is classified as a service producer if their business segments do not include these sectors. In 2000, the sample consists of 2617 good producers, 2538 service producers, and 732 firms that could not be classified due to missing business segments data. Appendix Figure 7 plots histograms of the AAR values for both goods and service producing groups. Both are remarkably similar with the service producing group looking slightly more left-skewed. The means and standard deviations for these two groups of firms are -0.38 and 1.09 percent for goods producing firms and -0.49 and 1.27 percent for service producing firms.

3.1.3 Relationship between Exposure Measures

For interpretation of the later analysis, it is important to note that these two different exposures measures (the NTR gap based measure from Handley and Limao (2017) and the AAR measure from Greenland et al. (2019)) are oppositely related to each other. Firms with higher NTR gap measure values are more exposed to the trade policy uncertainty induced by this policy event as they are facing a larger possible shift in tariff rates. On the other hand, firms with higher AAR values are actually benefiting more from the policy episode relative to the other firms in the market.

3.2 Baseline

In this section, I explore how firms adjust lobbying expenditures and investment levels in response to changes in trade policy uncertainty as marked up China’s eventual succession to the WTO. As the literature discussed in the introduction would suggest, one might expect to find increases in lobbying expenditures and decreases in investment as trade policy uncertainty increases.

Investment will be measured in the same way as in Baker, Bloom, and Davis (2016). I/K will be the investment rate defined as CapEx_t/(Net Plant, Property, and Equipment)_{t-1}

---

19 Compustat reports firms’ sales in up to 10 6-digit NAICS business segments at a yearly level.

20 In order to maximize the number of firms that I can classify, if a firm is missing business segments data for the year 2000, I use the most recent business segments data after 1990 and before 2000 to do the classification. Also, note that in the lobbying analysis that follows, not all of these firms appear in our lobbying data, and therefore sample counts across groups change.

21 I could try a more extensive calculation such as in Hassan et al. (2019) using a perpetual inventory method to construct the capital stock.
both taken from Compustat. I winsorize investment rates at the 1% and 99% levels.

My baseline difference-in-differences (DID) specification tests whether firms with higher NTR gap measures of TPU (first difference) experience differential changes in either lobbying expenditures or investment after the change in US trade policy when China enters the WTO (second difference) versus the high uncertainty period before.

\[ y_{i,t} = \alpha_i + \delta_t + \theta PrePNTR_t \times NTRGap_t + \epsilon_{i,t} \]

where \( i \) denotes the firm and \( t \) is half-year for the lobbying regressions and quarter for the investment regressions. Firm (\( \alpha_i \)) and time (\( \delta_t \)) fixed effects are included to control for firm and time specific factors.\(^22\) The independent variable of interest is the interaction between the NTR gap TPU measure denoted as \( NTRGap_t \) and an indicator for the pre-PNTR period which I define as 2001 and earlier. I choose it to be an indicator for the pre-period for ease of interpretation since I am highlighting the uncertainty effects as opposed to the effects from increased import competition in the post-period.

Table 1 presents the results for this baseline specification. Column (1) presents the result using lobbying expenditure levels including all of the zeroes from Compustat firms that report lobbying expenditures but not trade as a listed issue. Column (2) presents the result when considering the log of one plus lobbying expenditures as out dependent variable.

We see in column (1) that the interaction effect between the timing of China’s WTO entry and the NTR gap TPU exposure measure is statistically significant. For the mean NTR gap TPU exposure firm (approximately 0.51), trade-related lobbying was 21.6 thousand dollars (=42.4*0.51) higher on average per half-year in the uncertain pre-period before China’s entry to the WTO compared to the post-period. This is in comparison to average trade-related lobbying expenditures of approximately 23.2 thousand dollars per half-year when including zeros and 166.9 thousand dollars when only considering positive lobbying expenditures. Thus, this represents a very large 13% increase in lobbying expenditures from the positive lobbying average. Column (2) suggests that the uncertainty in the preperiod generated a 23.8% increase in the amount of trade-related lobbying expenditures for the average gap firm.

\(^22\) I have explored including the lagged lobbying levels in previous iterations to control for overall lobbying trends, and the results look similar. Including lagged dependent variables leads to inconsistent and biased estimates. However, as noted in Bernard and Jensen (2004), a specification in levels that includes fixed effects provides a lower bound on the coefficient for the lagged dependent variables. I would also like to explore using an Arellano-Bond difference GMM approach using lagged levels as instruments but have not yet done this.

\(^23\) Note, that the \( NTR_t \) and \( PNTR_t \) variables do not need to be separately included in the regression as they would just be absorbed by the firm fixed effects and time fixed effects.
Table 1: Trade Policy Uncertainty Induced Trade Lobbying - Firm Level (1998-2015)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$l_{i,t}$</td>
<td>$\log(1+l_{i,t})$</td>
</tr>
<tr>
<td>Pre$_{t}$*NTR$_i$</td>
<td>42.42**</td>
<td>0.466**</td>
</tr>
<tr>
<td></td>
<td>(17.31)</td>
<td>(0.211)</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.589</td>
<td>0.689</td>
</tr>
<tr>
<td>Observations</td>
<td>22108</td>
<td>22108</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. All regressions contain firm fixed effects and time fixed effects. Standard errors are clustered at the firm level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

3.3 News-Based TPU Index

I now explore variations to this baseline specification. The main variation will be to better isolate changes in trade policy uncertainty over time by replacing the PrePNTR$_t$ variable with the news-based measure of US-China TPU which I will denote as the Trade Policy Uncertainty (TPU) Index. Using this index helps to alleviate concerns that the timing of the final uncertainty resolution is different from the end of 2001 as I have been using. It also provides more granular changes over time compared with the one time change in the baseline specification.

Table 2 displays the results when using the TPU Index. Again, columns represent the same regressions as in the Table 1. The TPU index have been normalized to unit standard deviation over the time period covered in the regressions for ease of interpretation. For the mean NTR gap exposure firm, a one standard deviation change in the TPU index leads to a significant 4.78 thousand dollar increase in semi-annual trade-related lobbying expenditures which represents a 3% increase over the average positive lobbying expenditures. The log specification in column (2) represents a 2.49% increase in trade-related lobbying expenditures but is not significant at standard levels.

3.4 Input-Output Linkages

For both lobbying and investment responses, I will examine whether input-output linkages alter the responses of firms. Especially for lobbying, one may expect firms to differentially respond to trade policy uncertainty depending on whether the uncertainty falls on their
upstream suppliers or their downstream users. To do this, I compute upstream and downstream NTR gap TPU measures using information from the BEA input-output tables. We can think of firms that face high upstream NTR gap TPU as the potential winners of the policy as their upstream suppliers will be faced with higher import competition if the US trade policy changes, and therefore those firms can expect lower input costs. On the other side, firms that face high downstream NTR gap TPU along with those that face high own-industry NTR gap TPU can be considered the losers of the potential policy change. They will either have to directly compete with Chinese imports or provide to downstream firms that may be hurt from the increased import competition and therefore not be able to pay previous prices. The regression of interest will be

\[ y_{i(j),t} = \alpha_{i(j)} + \delta_t + \gamma X_{i(j),t} + \sum_m \theta_m PrePNTR_t \times NTRGap_{i(j),t} + \epsilon_{i(j),t} \]

where everything is defined as before but now with \( m = \{\text{Own, Upstream, Downstream}\} \).

Table 3 presents the results of this expanded regression that includes upstream and downstream NTR gap exposure measures. I only present results for the newspaper-based TPU index for clarity. Again, column (1) shows results for the lobbying levels specification and column (2) for the log lobbying specification. In both specifications, the baseline effect is no longer significant and the magnitude declines greatly. Neither upstream nor downstream TPU seems to significantly effect lobbying across all specifications. The signs of the point

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Table 2: Trade Policy Uncertainty Induced Trade Lobbying - General TPU Index - Firm Level (1998-2015)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( l_{i,t} \log(1+l_{i,t}) )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \text{TPU}_t \times \text{NTR}_i )</td>
<td>9.376**</td>
<td>0.0489</td>
</tr>
<tr>
<td></td>
<td>(4.117)</td>
<td>(0.0448)</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.589</td>
<td>0.688</td>
</tr>
<tr>
<td>Observations</td>
<td>22108</td>
<td>22108</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. All regressions contain firm fixed effects and time fixed effects. Standard errors are clustered at the firm level.

* \( p < 0.10 \), ** \( p < 0.05 \), *** \( p < 0.01 \)

---

24Appendix Figure 8 plots densities of the upstream and downstream NTR gaps. Both are unimodal symmetrical with the downstream density shifted to the right of the upstream density.
estimates for the downstream uncertainty firms aligns with the discussion in the previous paragraph whereas the point estimate signs for the upstream uncertainty firms goes against our intuition. As just stated though, all estimates are not significant and noisily estimated.


<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
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</tr>
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<tbody>
<tr>
<td>( l_{i,t} )</td>
<td>1.741</td>
<td>0.0205</td>
</tr>
<tr>
<td>( \log(1+l_{i,t}) )</td>
<td>(2.645)</td>
<td>(0.0591)</td>
</tr>
<tr>
<td>( TPU_t \times NTR_{i} )</td>
<td>5.882</td>
<td>0.0610</td>
</tr>
<tr>
<td></td>
<td>(24.50)</td>
<td>(0.313)</td>
</tr>
<tr>
<td>( TPU_t \times NTR_{i}^{up} )</td>
<td>25.13</td>
<td>-0.0102</td>
</tr>
<tr>
<td></td>
<td>(15.42)</td>
<td>(0.200)</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.619</td>
<td>0.694</td>
</tr>
<tr>
<td>Observations</td>
<td>19530</td>
<td>19530</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. All regressions contain firm fixed effects and time fixed effects. Standard errors are clustered at the firm level.
* \( p < 0.10 \), ** \( p < 0.05 \), *** \( p < 0.01 \)

3.5 Investment

In this section, I explore the same regression models as in the previous three sections, but now looking at firm-level investment responses.

Table 4 contains the baseline and TPU index results looking at firm-level investment rates as the left-hand side variable of interest. Column 1 shows the result for the baseline specification that uses the interaction of the NTR gap TPU exposure measure and a simple indicator for pre and post China’s WTO entry. As in Pierce and Schott (2018), I also find a highly significant and positive coefficient. Remember here that the pre and post indicator is 1 for the pre-period before 2002 and 0 after. Thus, the coefficient in column (1) says that the
mean NTR gap TPU exposure firm had a 1.34% percentage points higher investment rate in the pre-period before China’s WTO entry compared with the post-period. This result most likely is picking up the fact that in the post-period Chinese import competition increases leaving US manufacturing firms with higher competition and smaller profit margins if they remain profitable at all. Therefore, the returns to invest decrease substantially and US manufacturing firms reduce investment. This is essentially the story in Pierce and Schott (2018). This all is despite the fact that there was high uncertainty in the pre-period that may have pushed firms to adopt a wait-and-see investment strategy.

When I use the newspaper-based TPU measure to better identify changes in actual TPU, we see a different story. In column (2), we see a significant negative response of investment to log changes in the general TPU Index. Consider one of the large spikes in the index induced by congressional votes on the renewal of Chinese MFN status. From the beginning of the sample in 1990Q1 to the first large spike in 1993Q4, the general TPU Index increased by approximately 291.3 log points. For the mean NTR gap exposure firm, this implies a one-time drop in investment of 0.58% percentage points (=2.913*0.00395*0.51*100). This is about one-seventh of the median firm-level investment rate of 4.4% in the sample. These numbers are remarkably similar to those found in the baseline specification in Baker, Bloom, and Davis (2016) despite using a very different index and exposure measure. Appendix Table 4 presents the same investment results for the newspaper-based index focused now on the 1990-2001 high uncertainty pre-period. The coefficient for the general TPU Index is still highly significant and larger in magnitude compared with the full sample.

Table 5 extends this investment analysis to consider the upstream and downstream sectors of a firm separately as I did for lobbying expenditures. Again, I find little evidence supporting differential effects depending on whether you are an ex-ante winner or loser from the policy change. Similarly to before though, when considering the effects of the TPU Index on investment, the signs of the coefficients are as one would expect.
Table 4: Trade Policy Uncertainty and Investment - Firm Level (1990-2015)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I/K</td>
<td>I/K</td>
</tr>
<tr>
<td>Pre&lt;sup&gt;t&lt;/sup&gt;*NTR&lt;sub&gt;i&lt;/sub&gt;</td>
<td>0.0264***</td>
<td>-0.00395***</td>
</tr>
<tr>
<td></td>
<td>(0.00488)</td>
<td>(0.00139)</td>
</tr>
<tr>
<td>∆Log(TPU&lt;sub&gt;t&lt;/sub&gt;)*NTR&lt;sub&gt;i&lt;/sub&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.00395***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.00139)</td>
</tr>
<tr>
<td>R&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0.193</td>
<td>0.183</td>
</tr>
<tr>
<td>Observations</td>
<td>213393</td>
<td>206416</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. All regressions contain firm fixed effects and time fixed effects. Standard errors are clustered at the firm level.
* p < 0.10, ** p < 0.05, *** p < 0.01
Table 5: Trade Policy Uncertainty and Investment - Upstream/Downstream Firm Level (1990-2015)

<table>
<thead>
<tr>
<th></th>
<th>(1) I/K</th>
<th>(2) I/K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre_t*NTR_i</td>
<td>0.0284***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00633)</td>
<td></td>
</tr>
<tr>
<td>Pre_t*NTR_i^{up}</td>
<td>-0.0408</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0348)</td>
<td></td>
</tr>
<tr>
<td>Pre_t*NTR_i^{down}</td>
<td>-0.00627</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0220)</td>
<td></td>
</tr>
<tr>
<td>ΔLog(TPU_t)*NTR_i</td>
<td>-0.00495***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00164)</td>
<td></td>
</tr>
<tr>
<td>ΔLog(TPU_t)*NTR_i^{up}</td>
<td>-0.00348</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00832)</td>
<td></td>
</tr>
<tr>
<td>ΔLog(TPU_t)*NTR_i^{down}</td>
<td>0.00730</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00611)</td>
<td></td>
</tr>
<tr>
<td>R^2</td>
<td>0.195</td>
<td>0.184</td>
</tr>
<tr>
<td>Observations</td>
<td>204842</td>
<td>198093</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. All regressions contain firm fixed effects and time fixed effects. Standard errors are clustered at the firm level.
* p < 0.10, ** p < 0.05, *** p < 0.01
4 Can Lobbying Alter the Investment Response to TPU?

There are competing effects when it comes to the interaction between lobbying and investment in times of higher trade policy uncertainty. First off, lobbying requires resources and therefore potentially further limits investment opportunities as firms take a wait-and-see approach to the uncertainty. Figure 9 plots the ratio of total lobbying expenditures to capital expenditures\(^{25}\) averaged across firms at the quarterly time level. The blue line includes those firms that have zero lobbying expenditures whereas the red line restricts the analysis to only positive lobbying firms. For most quarters in the sample, lobbying expenditures are minuscule relative to capital expenditures as many firms do not choose to lobby. When restricting to positive lobbying firms, the ratio increases by a bit but still remains small, usually less than 10%. Thus, there may be some room for lobbying expenditures to crowd out capital expenditures, but the anticipated magnitude is likely to be small.

![Average Lobbying to Capital Expenditures Ratio (Quarterly 1998-2015)](image)

Figure 9: Average Lobbying to Capital Expenditures Ratio

On the other hand, lobbying can help push policy towards more favorable outcomes\(^{25}\)This is conditional on positive total lobbying and capital expenditures.
helping to clear up uncertainty and increase the return to investment in the present. Thus, one might expect lobbying firms to reduce investment by less than comparable non-lobbying firms. To explore this potential economic benefit of lobbying, I consider the following triple differences regression

\[
\frac{I}{K_{i,t}} = \alpha_i + \delta_t + \theta_1 \text{LobInd}_{i,t} + \theta_2 \Delta \log(TPU_t) \ast NTRGap_i + \\
\theta_3 \Delta \log(TPU_t) \ast \text{LobInd}_{i,t} + \varphi \Delta \log(TPU_t) \ast NTRGap_i \ast \text{LobInd}_{i,t} + \epsilon_{it}
\]

where \(\Delta \log(TPU_t)\) the log change in the TPU Index as used in the previous investment regressions. \(\text{LobInd}_{i,t}\) is an indicator that is equal to one if the firm is a lobbying firm and zero otherwise. \(NTRGap_i\) is the NTR gap TPU exposure measure as defined before.

The coefficient \(\varphi\) that measures the differential impact of TPU on investment for lobbying versus non-lobbying firms is now the coefficient of interest. As shown in the previous section, the coefficient \(\theta_2\) is negative as more exposed firms see declines in investment as TPU increases. One would expect to see \(\varphi > 0\) if lobbying has the economic benefit of mitigating some of the negative wait-and-see investment effects induced by TPU. It is unclear whether \(\varphi \gtrless \theta_2\) and depends on the strength of lobbying’s mitigating effects.

Table 6 presents the results from this regression specification under two different definitions of the \(\text{LobInd}_{i,t}\) variable. In column (1), \(\text{LobInd}_{i,t}\) is 1 if a firm is lobbying in that given time period\(^{27}\). Otherwise, the variable is 0. In column (2), \(\text{LobInd}_{i,t}\) is 1 if that firm has ever lobbied and 0 otherwise, and therefore the variable collapses down to \(\text{LobInd}_i\).\(^{28}\)

The baseline effect on investment is similar to before across both specifications. The triple interaction term is not statistically significant at standard levels although the sign is positive as expected. Thus, it seems that lobbying can possibly mitigate negative wait-and-see investment effects, but it is noisy at best. The magnitudes of this triple interaction are actually fairly large. Taking the coefficients at face value, the mitigation effect accounts for about 75% of the baseline negative effect of TPU on investment in column (1) and about 11% in column (2).

One possibly confounding factor in this analysis is the free-riding effect of lobbying. Many firms can benefit from another firm’s lobbying as most of the policies being debated benefit wide swaths of firms. Thus, there are spillover effects to lobbying which are not being

\(^{26}\)Note that the \(TPU_t\) variable is not included separately as it is absorbed by the time fixed effects.

\(^{27}\)These regressions will be at the quarterly level. For observations before 2008 where lobbying is only recorded semiannually, I record the firm as a lobbying firm for both quarters of a given half-year if the lobbying is positive.

\(^{28}\)Because of this, \(\text{LobInd}_i\) is not included separately in the regression as it is absorbed by the time fixed effects.
Table 6: Trade Policy Uncertainty and Investment by Lobbying Status - Firm Level (1990-2015)

<table>
<thead>
<tr>
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<th>(1) I/K_{i,t}</th>
<th>(2) I/K_{i,t}</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔLog(TPU_t)*NTR_i</td>
<td>-0.00365*</td>
<td>-0.00366*</td>
</tr>
<tr>
<td></td>
<td>(0.00196)</td>
<td>(0.00212)</td>
</tr>
<tr>
<td>ΔLog(TPU_t)<em>NTR_i</em>LobInd_{it}</td>
<td>0.00274</td>
<td>0.000400</td>
</tr>
<tr>
<td></td>
<td>(0.00294)</td>
<td>(0.00298)</td>
</tr>
<tr>
<td>ΔLog(TPU_t)*LobInd_{it}</td>
<td>-0.000738</td>
<td>-0.000638</td>
</tr>
<tr>
<td></td>
<td>(0.00149)</td>
<td>(0.00140)</td>
</tr>
<tr>
<td>LobInd_{it}</td>
<td>0.0000983</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00179)</td>
<td></td>
</tr>
<tr>
<td>R^2</td>
<td>0.191</td>
<td>0.191</td>
</tr>
<tr>
<td>Observations</td>
<td>129861</td>
<td>129861</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. All regressions contain firm fixed effects and time fixed effects. Standard errors are clustered at the firm level.
* p < 0.10, ** p < 0.05, *** p < 0.01
accounted for necessarily in this analysis. Some of the non-lobbying firms can be internalizing the lobbying benefits and adjusting investment accordingly leading to the insignificant coefficient on the triple interaction term.

5 Summary and Directions for Further Research

In this paper, I examine how trade policy uncertainty affects firms’ decisions to invest and lobby. Specifically, I am interested in the joint investment and lobbying decision and how the choice to lobby could potentially interact with the level of investment when firms respond to trade policy uncertainty. As the literature has shown in other contexts, we would expect policy uncertainty to decrease investment as firms choose to wait-and-see how things resolve before they make investment decisions. We also would expect firms to lobby the government to try and obtain more favorable outcomes. I hypothesize that lobbying expenditures can mitigate the negative wait-and-see effects of uncertainty as they increase the return to investment.

Using China’s entry to the WTO as a case study, I find that trade policy uncertainty indeed increases the amount firms spend on trade-related lobbying expenditures and that this effect is stronger for those firms more exposed to the policy. A one standard deviation increase in the general TPU Index for the average exposed firm leads to a 28.4 thousand dollar increase in trade-related lobbying expenditures. This effect does not seem to be significantly different depending on whether the uncertainty falls more on the firm’s upstream suppliers or downstream consumers.

I find significant decreases in investment associated with log increases in my TPU Index. In addition, I corroborate the finding in Pierce and Schott (2018) that on average investment levels were higher for more exposed firms in the pre-period before China’s entry to the WTO despite the higher levels of uncertainty at this time. Thus, while uncertainty indeed seems to play a role in hampering investment, the direct effect from increased import competition in the period after China entered the WTO seems to outweigh the declines from uncertainty.

Lastly, I show that lobbying can potentially have a strong mitigating effect to counteract the negative wait-and-see effects of TPU on investment, but the current estimates are relatively noisy.

I hope to extend and modify the current work in several directions. First, I would like to clean and extend the final results considering the effects of trade policy uncertainty on investment by lobbying status. I hope to do a propensity score matching exercise to pair lobbying and non-lobbying firms across a variety of dimensions to help alleviate some of the endogeneity problems with lobbying as a choice variable in this joint decision. I would
like to also explore this result outside of the trade policy uncertainty context leveraging the political risk indices of Hassan et al. (2019). Furthermore, I can extend all of these trade policy uncertainty results to the more recent Trump episode potentially by leveraging 10-K risk factor discussion, tariff exemption counts, or the average abnormal return methodology as exposure measures. Another interesting robustness exercise would be to develop the same newspaper-based TPU indices but for the US and other countries such as European countries. That way, I can try and do a placebo analysis in the hopes of showing that those indices do not yield significant results when using the NTR gap TPU exposure measures. That set of indices could also be interesting in their own right to examine how US trade relations with other countries co-move etc.

Also, I am working on a theoretical model to both qualitatively and quantitatively validate the predictions I empirically explore, namely the ability of lobbying to mitigate wait-and-see investment effects. I could then consider extending the model to consider financial frictions and how this could lead to differential effects as certain firms have less access to lobbying resources or ex-ante less ability to invest.

References


Appendix

Appendix A - Figures

Appendix Figure 1: CRP/SOPR Lobbying and Compustat Fuzzy Merge Matchscores
Appendix Figure 2: U.S. TPU Index (1990Q1-2015Q4)
Appendix Figure 3: General US-China TPU Index (1990Q1-2018Q4)
Appendix Figure 4: Firm Level NTR Gap for 1996
Appendix Figure 5: Congressional Consideration of MFN for China: 1989-2000

<table>
<thead>
<tr>
<th>Year</th>
<th>Disapproval Res.</th>
<th>Final Status</th>
<th>Alternate bills</th>
<th>Final Status</th>
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<td>—</td>
<td>None</td>
<td>—</td>
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<td></td>
<td></td>
<td>Senate Postponed 7/18, Unanimous Consent</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S.J.Res. 153</td>
<td>Senate Postponed 7/18, Unanimous Consent</td>
<td>S. 1367</td>
<td>Passed H.R. 2212 in lieu 7/18 (55-44)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Conference Report H.Rept. 102-392 passed House 11/27 (409-21)</td>
</tr>
<tr>
<td>1991</td>
<td>H.J.Res. 263</td>
<td>Passed House 7/10 (223-204)</td>
<td>H.R. 2212</td>
<td>Passed House 7/10 (313-112)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Senate Postponed 7/18, Unanimous Consent</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>S.J.Res. 153</td>
<td>Senate Postponed 7/18, Unanimous Consent</td>
<td>S. 1367</td>
<td>Passed H.R. 2212 in lieu 7/18 (55-44)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Senate Postponed 7/18, Unanimous Consent</td>
<td>H.R. 5318</td>
<td>Vetoed by President 3/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Senate amended with text of S. 2808, passed by voice vote, 9/14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S.J.Res. 316</td>
<td>Senate Postponed 7/18, Unanimous Consent</td>
<td>S. 2808</td>
<td>Senate override vote 9/30 (345-74) - veto sustained</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td>H.J.Res. 208</td>
<td>House rejected 6/8 (105-318)</td>
<td>H.R. 1835</td>
<td>No action</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S. 806</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>H.J.Res. 373</td>
<td>House rejected 8/9 (75-356)</td>
<td>H.R. 4590</td>
<td>Amended to impose no conditions, then passed House 6/8 (280-152)</td>
</tr>
<tr>
<td></td>
<td>S.J.Res. 37</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S.J.Res. 56</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>H.J.Res. 79</td>
<td>House rejected 6/24 (173-259)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>S.J.Res. 31</td>
<td>Senate rejected 7/16 (22-77)</td>
<td>—</td>
<td><em>(S.Amdt. 890 expressed the sense of the Senate that China’s MFN status should be revoked. It was offered as non-binding language to S. 955, the FY1998 Foreign Operations Appropriations bill.)</em></td>
</tr>
<tr>
<td></td>
<td>S.Amdt. 890*</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>H.J.Res. 121</td>
<td>House rejected 7/22 (166-264)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1999</td>
<td>H.J.Res. 57</td>
<td>House rejected 7/27 (170-260)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>S.J.Res. 27</td>
<td>Senate rejected motion to discharge committee 7/20 (12-87)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>—</td>
<td>S. 2277</td>
<td>Senate passed H.R. 4444 on 9/19 (85-13)</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>—</td>
<td></td>
<td>Signed by President on October 10, 2000, as P.L. 106-286, giving China Permanent NTR upon accession to WTO</td>
</tr>
</tbody>
</table>

Appendix Figure 6: Year 2000 AAR Exposures
Note: Values below -5% and above 5% are excluded to improve readability.
Appendix Figure 7: Year 2000 AAR Exposures by Goods and Services Classes
Note: Values below -5% and above 5% are excluded to improve readability.

Appendix B - Tables

Table 1: TPU Summary Statistics - Unique HS6

<table>
<thead>
<tr>
<th>count</th>
<th>mean</th>
<th>p50</th>
<th>sd</th>
<th>min</th>
<th>max</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPU</td>
<td>2399</td>
<td>.526</td>
<td>.570</td>
<td>.188</td>
<td>.879</td>
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</tbody>
</table>

Table 2: TPU Summary Statistics - Unique NAICS

<table>
<thead>
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<th>count</th>
<th>mean</th>
<th>p50</th>
<th>sd</th>
<th>min</th>
<th>max</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPU</td>
<td>224</td>
<td>.505</td>
<td>.565</td>
<td>.170</td>
<td>.807</td>
</tr>
</tbody>
</table>
Table 3: TPU Summary Statistics - Unique Firm

<table>
<thead>
<tr>
<th></th>
<th>count</th>
<th>mean</th>
<th>p50</th>
<th>sd</th>
<th>min</th>
<th>max</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPU</td>
<td>3959</td>
<td>.509</td>
<td>.581</td>
<td>.173</td>
<td>0</td>
<td>.829</td>
</tr>
</tbody>
</table>

Table 4: Trade Policy Uncertainty and Investment - Firm Level (1990-2001)

(1)

\[
\frac{\Delta \log(TPU_t) \times NTR_i}{I/K} = -0.00595^{***}
\]

\[
R^2 = 0.219
\]

Observations 120249

Notes: Standard errors in parentheses. All regressions contain firm and time fixed effects. Standard errors are clustered at the firm level.

* p < 0.10, ** p < 0.05, *** p < 0.01
Appendix Figure 8: Industry-level Upstream and Downstream NTR Gap TPU Exposure
Appendix C - Data

NTR Gap Trade Exposure Measure

The construction of the NTR gap trade policy uncertainty exposure measure follows aspects of both Handley and Limao (2017) and Pierce and Schott (2016, 2018). I first construct the uncertainty pre-WTO measure

\[ 1 - (\tau_{2V}/\tau_{1V})^{-\sigma} \]

using year 2000 column 2 (\(\tau_{2V}\)) and MFN tariff rates (\(\tau_{1V}\)). These are the logs of 1 plus the tariff rate computed at the HS-6 level. For this analysis, as in Handley and Limao (2017), I am using the 1996 HS classification. For all of the analysis in this paper, I use the baseline parameter setting from HL (2017) \(\sigma = 3\).

Then, I link this NTR gap measure at the HS-6 level to 6 digit NAICS industries in Compustat using the HS-NAICS concordance developed by Pierce and Schott (2009). For this merge, I make sure that all NAICS codes in both the Pierce/Schott crosswalk and in Compustat are the 2002 versions using Census Bureau crosswalks. I also concord the HS-6 codes in the Pierce/Schott data to their 1996 versions to match the version used in Handley and Limao (2017). Lastly, I take the weighted average of the HS-6 level NTR gap measures within an industry using Chinese imports to the US as weights.

To go from the industry-level to the firm-level, I utilize Compustat’s Historical Business Segments database that provides firm-level yearly sales breakdowns by 6 digit NAICS industry. I construct the firm-level NTR gap TPU exposure measure as the sales-weighted average across listed 6 digit NAICS business segments. I use the 1996 historical business segments for this construction. It is possible to construct these NTR gap TPU exposure measures for other years since the historical sales breakdowns cover a long time period, but these sales breakdowns are endogenous. Firms can choose the products they produce and therefore industries where the sales fall and can change these industries especially in response to something like import competition. Appendix figure 3 shows the NTR Gap TPU exposure densities for firms in the year 1997 and the year 2007, and we see that firms seem to

---

\(^{29}\)Pierce and Schott (2016, 2018) actually have a different NAICS level construction of NTR gaps that I could use to see if it is any different than what I am currently doing. They use a HS concordance from Pierce and Schott (2012a) to match all HS import codes used by the US from 1989 to 2001 to a time-invariant set of HS codes. They do this at the HS-8 level instead of HS-6 as I am currently doing. Then, they match these HS codes to NAICS industries using a concordance from the US Bureau of Economic Analysis. They finish by taking a simple average across all of the HS codes matched to that industry.

\(^{30}\)I do not do this at the moment but could consider averaging the sales breakdowns for a few years around 1996 to smooth out the measure and limit possible outliers for that year.
have shifted sales to industries with lower NTR Gap TPU exposure by the year 2007. Table 7 reports the coefficient of a regression of this NTR Gap TPU exposure measure (varying by both year and firm this time) on the interaction between the firm’s initial NTR Gap TPU exposure and a dummy PostPNTR, that is 1 for the period 2001 and after and 0 before. We see that there is a statistically significant negative relationship between the initial exposure and future ones that is stronger for firms with higher initial exposures. Thus, I fix the firm level exposure measure at its 1996 values to avoid this endogeneity concern.

I follow Pierce and Schott (2016) in constructing the upstream and downstream versions of the NTR gap TPU exposure measure. The upstream measure for NAICS industry \( i \) is calculated as the weighted average NTR gap measure across all industries used to produce \( i \), using the coefficients from the BEA’s 1997 industry-by-industry total requirements input-output matrix as weights.\(^{31}\) Similarly, the downstream measure for NAICS industry \( i \) is the weighted average NTR gap measure of all industries supplied by industry \( i \), again using the

\(^{31}\) The industry-by-industry total requirements input-output matrix is contained in the file “ndn0310.zip” available at https://www.bea.gov/industry/historical-benchmark-input-output-tables.
Table 5: NTR Gap (1990-2007)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTRGap&lt;sub&gt;i,t&lt;/sub&gt;</td>
<td></td>
</tr>
<tr>
<td>PostPNTR&lt;sub&gt;t&lt;/sub&gt;*NTRGap&lt;sub&gt;i,1996&lt;/sub&gt;</td>
<td>-0.0336***</td>
</tr>
<tr>
<td></td>
<td>(0.00880)</td>
</tr>
<tr>
<td>R&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0.963</td>
</tr>
<tr>
<td>Observations</td>
<td>44775</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. All regressions contain firm fixed effects and time fixed effects. Standard errors are clustered at the firm level.

* p < 0.10, ** p < 0.05, *** p < 0.01

same weights. For both of these weighted averages, I set the IO weights to zero for up and downstream industries within industry <i>i</i>'s three-digit NAICS sector. This is the same as in Pierce and Schott (2016) because as they note “US manufacturing establishments often produce clusters of products within the same three-digit NAICS sector (Bernard, Redding, and Schott 2010)”. 
Appendix D - Lobbying Disclosure Form Instructions
Instructions for Form LD-2, Lobbying Report

The Lobbying Disclosure Act of 1995, as amended (2 U.S.C. 1601 et. seq.), requires lobbying firms and organizations to register and file reports of their lobbying activities with the Secretary of the Senate and the Clerk of the House of Representatives.

Form LD-2 is used for complying with the semiannual reporting requirements of Section 5 of the Act (2 U.S.C. 1604). Form LD-1 is used for initial registration under Section 4 of the Act (2 U.S.C. 1603).

WHO MUST REPORT. A registrant must file a report for the semiannual period for which it initially registered and for each semiannual period thereafter, including the reporting period during which it terminates. LOBBYING FIRMS, i.e., entities with one or more lobbyists, including self-employed individuals who act as lobbyists for outside clients, are required to file a separate report for each client covered by a registration. ORGANIZATIONS employing in-house lobbyists file a single report for each semiannual period.

WHEN TO FILE. The semiannual report is required no later than 45 days after the end of a semiannual period beginning on the first day of January and the first day of July of every year in which a registrant is registered.

WHERE TO FILE. Prepare two originals of Form LD-2 and file one with each office listed below:

Secretary of the Senate
Office of Public Records
232 Hart Senate Office Building
Washington, DC 20510

AND

Clerk of the House of Representatives
Legislative Resource Center
B-106 Cannon House Office Building
Washington, DC 20515

PUBLIC AVAILABILITY. The Act requires the Secretary of the Senate and the Clerk of the House of Representatives to make all registrations and reports available to the public as soon as practicable after they are received.

TERMINATION REPORT. A registrant terminates by submitting a completed LD-2 report, indicating termination, no later than 45 days after the end of the reporting period in which it terminates.

REVIEW AND COMPLIANCE. The Secretary of the Senate (Office of Public Records) and the Clerk of the House (Legislative Resource Center) must review, verify, and request corrections in writing to ensure the accuracy, completeness, and timeliness of registrations filed under the Act.

ADDENDUM. If the space on Form LD-2 is insufficient for any required information, attach additional pages as needed, clearly stating the name of the registrant and client and identifying the line number(s) to which the information pertains.

AMENDMENTS. A registrant must immediately file an amended Form LD-2: (1) if notified of a defect in the original filing by the Secretary of the Senate or the Clerk of the House of Representatives; or (2) if erroneously reported information is discovered by the registrant. Once registered, updated information (name and address changes, new lobbyists, new issue area codes, etc.) must be disclosed in the registrant's semiannual report.
PENALTIES. Whoever knowingly fails: (1) to correct a defective filing within 60 days after notice of such a defect by the Secretary of the Senate or the Clerk of the House; or (2) to comply with any other provision of the Act, may be subject to a civil fine of not more than $50,000.


LINE-BY-LINE INSTRUCTIONS

ALL FILERS ARE REQUIRED TO COMPLETE THE FIRST PAGE.

LINE 1. REGISTRANT NAME. Indicate the registrant's full legal name and any trade name(s). The name must be either the name of the lobbying firm or the name of the organization employing in-house lobbyists. Individual lobbyists do not register unless they are self-employed, in which case they register as firms and indicate their own names and any trade or business names.

LINE 2. REGISTRANT ADDRESS. Enter the mailing address for correspondence. Mark the box if the address is different than previously reported.

LINE 3. PRINCIPAL PLACE OF BUSINESS. Indicate the city and state or country (if outside the United States) of the registrant's principal place of business, if different from the address on line 2.

LINE 4. TELEPHONE NUMBER AND CONTACT NAME. Indicate the telephone number and the name of the person to contact for any questions concerning the registration. Enter optional e-mail address if you wish to receive electronic correspondence.

LINE 5. SENATE IDENTIFICATION NUMBER. This number, assigned by the Public Records Office, is unique to each registrant-client relationship. Enter the number and use it in all correspondence pertaining to this relationship.

LINE 6. HOUSE IDENTIFICATION NUMBER. This number, assigned by the Legislative Resource Center, is unique to each registrant-client relationship. Enter the number and use it in all correspondence pertaining to this relationship.

LINE 7. CLIENT NAME. Enter the name of the client. An organization lobbying on its own behalf marks the box labeled "Self."

LINE 8. YEAR. Enter the year and mark the appropriate box to indicate which semiannual reporting period is being covered by this report. Check only one: a separate report is required for each filing period.

LINE 9. AMENDED REPORT. If amending a previously filed version of this report, place a mark in the box. Otherwise, leave blank.

LINE 10. TERMINATION REPORT. If lobbying for the client has ended and the registrant wishes to terminate this registration, mark the box and enter the date that lobbying activities ceased.

LINE 11. NO ACTIVITY BOX. If there was no reportable lobbying activity, mark the box. Otherwise, file a complete report detailing the lobbying activity.
INCOME OR EXPENSE SUMMARY (ANSWER LINE 12 OR LINE 13 AS INSTRUCTED).

LINE 12. LOBBYING FIRMS (INCOME). Indicate whether income relating to lobbying activities on behalf of the client identified on line 7 was less than $10,000, or was $10,000 or more, during this reporting period by placing a mark in the appropriate box. If income was $10,000 or more, provide a good faith estimate of all lobbying related income from the client (include all payments to the registrant by any other entity for lobbying activities on behalf of the client). Round estimates to the nearest $20,000.

LINE 13. ORGANIZATIONS (EXPENSES). Indicate whether expenses related to lobbying activities were less than $10,000, or were $10,000 or more, during the reporting period by placing a mark in the appropriate box. If expenses were $10,000 or more, provide a good faith estimate of all lobbying expenses (include all payments to third parties for lobbying activities) and round estimates to the nearest $20,000.

LINE 14. REPORTING METHODS. Mark the appropriate box to indicate the expense accounting method used to determine expenses:

- **Method A.** Reporting amounts using LDA definitions only. This method is available to all organizations.

- **Method B.** Reporting amounts using Internal Revenue Code definitions as defined under Section 4911(d) of the IRC. This method is only available to a NON-PROFIT registrant that is **required to report and does report** under Section 6033(b)(8) of the IRC. The amount disclosed must pertain to the semiannual period covered by this report.

- **Method C.** Reporting amounts using Internal Revenue Code definitions of lobbying activities, of which the cost is not deductible pursuant to Section 162(e) of the IRC. This method is available to any registrant that is subject to Section 162(e) of the IRC. The amount disclosed must pertain to the semiannual period covered by this report. Grass-roots and state lobbying expenses **may not be subtracted** from this amount.

FIRST PAGE SIGNATURE. If this is a report containing no lobbying activity, sign and date this page of the report and type or print the signer’s name and title. Otherwise, sign only the last page of the report. Form LD-2 must be signed and dated by the officer or employee of the registrant who is responsible for the accuracy of the information contained in the report.

LINE 15. GENERAL LOBBYING ISSUE AREA. Select the applicable code(s) from the list below which accurately reflect all general areas in which the registrant engaged in lobbying during the reporting period, whether or not the issue area was previously disclosed. **Use a separate page for each code selected.** Attach additional photocopied pages as necessary to report all codes selected. Do not leave line blank.

- ACC Accounting
- ADV Advertising
- AER Aerospace
- AGR Agriculture
- ALC Alcohol & Drug Abuse
- ANI Animals
- APP Apparel/Clothing Industry/Textiles
- HCR Health Issues
- HOU Housing
- IMM Immigration
- IND Indian/Native American Affairs
- INS Insurance
- LBR Labor Issues/Antitrust/Workplace
- LAW Law Enforcement/Crime/Criminal Justice
LINE 16. SPECIFIC LOBBYING ISSUES. For each general lobbying area, list the specific issues which were actually lobbied during the semiannual period. Include, for example, specific bills before Congress or specific executive branch actions. BE SPECIFIC. Bill numbers alone do not satisfy the requirements for reporting on this line and restatement of the general issue code is insufficient. Use the following format to describe legislation: BILL NO., BILL TITLE, AND DESCRIPTION OF THE SPECIFIC SECTION(S) OF INTEREST.
i.e., "H.R. 3610, Department of Defense Appropriations Act of 1996, Title 2, all provisions relating to environmental restoration."

**For specific issues other than legislation, provide detailed descriptions of lobbying efforts. Do not leave line blank.**

**LINE 17. CONTACTS.** Identify the Houses of Congress and Federal agencies contacted by the registrant in connection with the general issue area during the reporting period. Disclose only the houses or agencies, such as "Senate," "House of Representatives," "Department of Agriculture," or "Executive Office of the President," rather than the individual office. **If there were no contacts during the period, mark the box labeled "none." Do not leave line blank.**

**LINE 18. LOBBYISTS.** List the name of each lobbyist who had any activity in this general issue area. If there are lobbyists not previously disclosed, enter the names of the new lobbyist(s) under each pertinent issue code. If any person listed in this section has served as a "covered executive branch official" or "covered legislative branch official" within two years of first acting as a lobbyist for the client, identify that person as a "covered official," state the executive and/or legislative position in which the person served, and mark the box labeled "New." **NOTE: The 20% threshold does not apply to this line and is only used for determining who may be considered a "lobbyist" for registration/updating purposes.**

**LINE 19. FOREIGN INTEREST.** Describe the interest of each foreign entity in the specific issues listed on line 16. **If there are no foreign entity interests in this issue, check the box marked "none." Do not leave blank.**

**SIGNATURE.** If this is the last page of the report, sign and date this page and type or print the signer's name and title. Only the last page of the report need be signed. Form LD-2 must be signed and dated by the officer or employee of the registrant who is responsible for the accuracy of the information contained in the report.

**INFORMATION UPDATE PAGE**

**COMPLETE ONLY WHERE REGISTRATION INFORMATION HAS CHANGED.**

**LINE 20. CLIENT NEW ADDRESS.** Enter complete address of the client if different than previously reported.

**LINE 21. CLIENT NEW PRINCIPAL PLACE OF BUSINESS.** Indicate the client's new principal place of business (city and state, or country, if outside the United States), if different from line 20.

**LINE 22. NEW DESCRIPTION OF CLIENT'S BUSINESS OR ACTIVITIES.** Provide a general description of the new business or activities of the client.

**LINE 23. LOBBYIST DELETE.** Enter the name of each individual who no longer acts as a lobbyist for the client identified on line 7. If there are no names to remove, skip to line 24.

**LINE 24. GENERAL ISSUE AREA DELETE.** Select the codes from the list on page 2 of the instructions of all previously reported issue areas that no longer apply and enter them on line 24. If there are no codes to be deleted, skip to line 25.

**LINE 25. AFFILIATED ENTITY ADD.** Identify the name, address, and principal place of business of any entity other than the client that contributes in excess of $10,000 toward the registrant's lobbying activities in a six-month period, and in whole or in major part plans, supervises, or controls such lobbying activities.
LINE 26. AFFILIATED ENTITY DELETE. List the names of all previously reported organizations that no longer meet the disclosure requirement. If there are no organizations to remove, skip to line 27.

LINE 27. FOREIGN ENTITY ADD. Identify the name, address, principal place of business, amount of any contribution in excess of $10,000, and the approximate percentage of equitable ownership in the client of any foreign entity that:

a) holds at least 20% equitable ownership in the client or any organization identified on line 15; or

b) directly or indirectly, in whole or in major part, plans, supervises, controls directs, finances or subsidizes activities of the client or any organization identified on line 15; or

c) is an affiliate of the client or any organization identified on line 15 and has direct interest in the outcome the lobbying activity.

LINE 28. FOREIGN ENTITY DELETE. List the names of all previously reported foreign entities that no longer meet the disclosure requirement. Leave this line blank if there are no deletions.

SIGNATURE. If this is the last page of the report, sign and date this page and type or print the signer’s name and title. Only the last page of the report need be signed. Form LD-2 must be signed and dated by the officer or employee of the registrant who is responsible for the accuracy of the information contained in the report.