Multinational Investment Activity under Policy Uncertainty in Host and Competing Countries

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Abstract

Policy uncertainty challenges multinational corporations seeking stable destinations for Foreign Direct Investment (FDI). This study examines the influence of economic policy uncertainty in both potential host countries and competitor nations. Analyzing firm-destination data, we find that higher economic policy uncertainty in host countries discourages greenfield FDI inflows by US multinationals. Conversely, higher economic policy uncertainty in competing destinations presents an attractive alternative, leading to increased FDI inflows. Notably, competitor uncertainty's influence has grown in recent years following the uneven rise in global economic policy uncertainty. Our findings highlight the competitive advantage associated with policy stability and predictability for attracting FDI.

JEL Codes: D8, F21, F23, F6.
Keywords: Economic policy uncertainty; Foreign direct investment; Global value chains; Greenfield FDI; Multinational Frims; Offshoring.

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1 Introduction

The late 1990s and early 2000s witnessed a profound surge in globalization and trade liberalization, during which China emerged as a central manufacturing hub within global value chains (GVCs). It attracted significant Foreign Direct Investment (FDI) and earned recognition as the "world's factory." However, the past decade has seen a shift towards de-globalization (Antràs 2020), a return to protectionism (Fajgelbaum, Goldberg, Kennedy and Khandelwal 2020), and substantial reallocations within GVCs (Alfaro and Chor 2023), marked by a global (uneven) rise in geopolitical tensions and economic uncertainty. This trend has become particularly pronounced after 2015, with China facing escalated uncertainty as evidenced by economic slowdowns, changes in currency adjustments, and the US-China trade war. Consequently, China's appeal as the primary investment destination has waned, prompting multinational corporations (MNCs) to embark on a strategic journey of reshoring and diversifying their supply chains, thereby reducing their heavy reliance on China.

In response to the evolving landscape, this study investigates the influence of economic policy uncertainty (EPU) on global investment patterns. We examine how EPU, not just within a potential host country but also in competing destinations, shapes the decisions of MNCs to relocate investments. EPU presents significant challenges for MNCs, as it directly affects factors like navigating regulations, managing entry costs, and mitigating inherent risks. As a result, high EPU dampens FDI inflows by US MNCs in high-uncertainty destinations while conversely presenting an opportunity for more stable competing destinations. The influence of competing countries' EPUs has been remarkably increasing in recent years (coinciding with the uneven rise in global EPU) more than that of a country's own EPU. Consequently, these factors can significantly impact FDI decisions and ongoing reallocations within GVCs.

To estimate the impact of EPU on US MNCs' greenfield FDI flows, we employ the gravity equation framework with Poisson Pseudo Maximum Likelihood (PPML) regressions on firm-destination-level greenfield FDI data acquired from the Financial Times (FT) fDiMarkets database (2003–2021), allowing for glandular investigation of destinations and the nature ofMCs' investment.[1] Our panel regression with fixed effects includes each destination country's BBD index (Baker, Bloom and Davis 2016) as our proxy for EPU. To ensure the reliability and validity of our results, we incorporate relevant country- and firm-level control variables from CEPII, WITS, and Compustat Fundamentals Annual databases.

Our first analysis reveals a pronounced negative impact of destination country EPU on US MNC greenfield FDI. This translates to an estimated 2.8–3.2% decrease in FDI counts and volume, triggered by a 10% increase in the destination country's EPU. This decline is not just about direct reductions in investment levels; it also involves a 2.5% decline in the share of total FDI allocated

[1]This extensive repository compiles major greenfield FDI announcements from diverse MNCs, drawing its data from news reports, expert insights, and press releases. Notably, this dataset provides nearly universal coverage of significant FDI announcements on a global scale, a resource also employed by the United Nations Conference on Trade and Development (UNCTAD) for its annual World Investment Report. Crucially, this dataset allows precise identification of the destination and nature of each FDI announcement.

elsewhere, reflecting significant within-firm reallocation effects triggered by EPU. US MNCs, demonstrating sensitivity to EPU, deliberately distribute resources away from riskier foreign destinations to more stable ones. This strategic behavior by MNCs underscores the importance of not just a potential host country's EPU, but also the EPU of competing destinations. Consequently, the next step in our investigation is to examine the EPU spillover effect: how EPU in competing destinations influences MNCs' FDI decisions.

Since 2015, the global average EPU has increased significantly, with substantial variations observed across countries. Particularly noteworthy is the sharp rise in China's EPU, which has the potential to influence the global investment strategies of US MNCs and reduce their dependence on China. Given China's central role in GVCs and the surge in its EPU, it is plausible to anticipate increased investments by US MNCs in other regions, especially in industries with a high reliance on China within GVCs. However, the impact of China's rising EPU may be limited in industries with minimal reliance on GVCs involving China.

In line with this, we establish a country-industry-specific EPU of competitors. Specifically, we calculate the average EPU of competing destination countries, weighted by the initial FDI share of the other countries in each industry. We then construct a country's EPU relative to its competitors. We examine its impact on US MNCs' investment decisions using PPML regressions. The results indicate a clear pattern: a 10% increase in a country's EPU relative to its competing countries leads to a 2.3–3.2% decrease in US MNCs FDI inflows. This decline is evident in both the scale of investment and within-firm reallocation effects.

Furthermore, we separately include both own EPU and the EPU spillover term (the weighted average of EPUs of competing countries) in our PPML regressions. This allows us to observe a notable difference in the impact of EPU before and after 2015, which coincides with an increase in the global average and dispersion of EPUs. Before 2015, when EPU levels were generally lower and less dispersed across countries, MNCs primarily focused on an individual destination's EPU level. This explains why the decline in FDI flows due to high own EPU was significant during this period. However, with the rise of global uncertainty and a sharper, uneven increase in EPU after 2015, the direct impact of a single country's EPU (own EPU) becomes smaller or insignificant. Conversely, the EPU spillover effect (competitor EPU) becomes a more prominent factor, significantly incentivizing US MNCs to relocate investments to destinations with greater stability and predictability compared to their competitors.

These findings emphasize the critical role of economic policy stability and predictability in attracting FDI and hosting MNCs as production locations. We find evidence for a dynamic shift in the role of EPU. Initially, with lower and more even EPU levels, MNCs focused primarily on individual destination EPU. However, as global EPU has increased sharply and unevenly, MNCs have become more active in seeking stable destinations by comparing EPU across competing locations. These findings highlight the adaptability of US MNCs in response to heightened EPU in China (a major FDI destination) and many other countries. In recent years, this evolving EPU landscape has become a pivotal factor in shaping their investment strategies.

Our paper complements the literature concerning the restructuring of GVCs, a comprehensive transformation often referred to as the "Great Reallocation." This phenomenon, as outlined by Alfaro and Chor (2023), portends the impending upheaval in supply chains, with US companies grappling with heightened uncertainties and revisiting their international business strategies. Recent events, ranging from the US-China trade war (Fajgelbaum et al. 2020, Benguria, Choi, Swenson and Xu 2022 among many others) to the COVID-19 pandemic (Altig, Baker, Barrero, Bloom, Bunn, Chen, Davis, Leather, Meyer, Mihaylov et al. 2020, Bonadio, Huo, Levchenko and Pandalai-Nayar 2021, Ramelli and Wagner 2020, Hyun, Kim and Shin 2022 among many others), and even the Russia-Ukraine conflict (Bachmann, Baqaee, Bayer, Kuhn, Löschel, Moll, Peichl, Pittel and Schularick 2022, Itskhoki and Mukhin 2022, Ghironi, Kim and Ozhan 2024a,b among many others), have exposed the vulnerabilities of firms and countries to the disruptive dynamics of the global landscape. These developments significantly enhance our understanding of the global investment decisions of US MNCs, particularly due to the combined challenges of economic uncertainties and geopolitical risks from partner countries.

In line with this, our study finds its place in a new strand of literature that addresses the recent rise of disruptions in GVCs and the accompanying government policies aimed at risk reduction. Disasters (Han and Lee 2023), tariff shocks (Heise, Pierce, Schaur and Schott 2023), COVID-19 (Alessandria, Khan, Khederlarian, Mix and Ruhl 2023), and Russia's invasion of Ukraine (Gopinath, Gourinchas, Presbitero and Topalova 2024) have had disruptive impacts on global economic activities. In response, Antràs (2020) predicts that potential deglobalization movements, if any, would be institutional and political in nature. Alfaro and Chor (2023) already partially observe the looming Great Reallocation in supply chains. In that sense, Aiyar, Malacrino and Presbitero (2024) document that multinationals are increasing reliance on friendshoring, which are blocs of nations with shared objectives related to economic security. Moreover, Gopinath et al. (2024) show that Russia's Invasion of Ukraine has led to the emergence of a cohort of nonaligned connector countries. These nations serve as pivotal bridges between various blocs, enhancing the resilience of GVCs, although their effects on diversification and independence remain ambiguous.

Furthermore, our paper contributes to the growing body of literature on economic uncertainty in economics, where there is a prevailing consensus that various forms of uncertainty tend to impede investment and economic activities (Handley and Limão, 2015, 2017). Since the seminal work on "economic" policy uncertainty by Baker et al. (2016), subsequent studies have developed indices for measuring various types of uncertainty, including "finance" (Alfaro, Bloom and Lin 2024), "trade" (Caldara, Iacoviello, Molligo, Prestipino and Raffo 2020, Handley, Limão, Ludema and Yu 2024), "monetary" (Husted, Rogers and Sun 2020), and "geopolitical risk" (Caldara and Iacoviello 2022). These research efforts have focused on understanding the impacts of these distinct forms of uncertainty, relating to the central theme of our paper.

In addition to the firm-level evidence, the aggregate-level analysis suggests that policy uncer-

tainty can hinder cross-border capital flows.[2] For example, Julio and Yook (2016) reveal that FDI flows from the US to the rest of the world stagnate in the lead-up to elections but rebound once election uncertainties are resolved. Our paper stands out from Julio and Yook (2016) by conducting a detailed analysis at the firm level, offering granular insights into the effects of uncertainty. Additionally, Bonaime, Gulen and Ion (2018) ascertain that political and regulatory uncertainty, as gauged by the BBD index, exerts a detrimental influence on merger and acquisition (M&A) activities (1985 and 2014). Our study deviates from Bonaime et al. (2018), as our primary emphasis is on greenfield FDI, a realm that exhibits marked differences in its economic implications.[3] Furthermore, our analysis extends to the post-2018 period, a juncture marked by a pronounced surge in EPU.

Lastly, our paper aligns with the literature examining risk exposure stemming from foreign operations and the role of international market diversification in risk management. Numerous studies have shown that heavy dependence on foreign suppliers and exports can amplify the adverse effects of global or foreign crises, e.g., Reeb, Kwok and Baek (1998), Boehm, Flaaen and Pandalai-Nayar (2019), Ramelli and Wagner (2020), and Hyun et al. (2022). Our research also aligns with the extensive literature in business management, which explores how foreign operations impact corporate returns and risks (Jacquillat and Solnik 1978, Doukas and Kan 2006, Hendricks, Singhal and Zhang 2009, and reference therein). A closely related study by Lee and Makhija (2009) points out the importance of firms' FDIs and export-related international investments in providing valuable flexibility for Korean firms during the Asian economic crisis.

The remainder of this paper is structured as follows. Section 2 provides a detailed description of the dataset and presents relevant statistics. Section 3 offers an empirical analysis examining the impact of destination EPU on US MNCs' FDI decisions. Section 4 investigates the EPU spillover of competing countries in shaping US MNCs' decisions. The final section concludes our research.

2 Data and Measurements

2.1 Firm-Level Greenfield FDI

Financial Times fDiMarkets database Our firm-destination-level greenfield Foreign Direct Investment (FDI) data is sourced from the Financial Times (FT) fDiMarkets database for the period from 2003 to 2021. FT fDiMarkets is a comprehensive database containing establishment-level information for all countries and sectors globally. Notably, this dataset has been extensively used in the international economics literature, particularly in studies comparing greenfield and brownfield FDI (Davies, Desbordes and Ray 2018, Takayama 2023, Dur, Kandilov and Leblebicioglu 2024) and for questions of policy and multinational activity (Jungmittag and Marschinski 2022). Most recently, Alfaro and Chor (2023) have used this data to observe the possible reallocation in global supply

[2]Domestic capital flow can also be hindered by uncertainty. For instance, Carrière-Swallow and Céspedes (2013) document that uncertainty shocks can especially be detrimental to emerging countries due to their credit constraints.

[3]For instance, an M&A deal would involve an acquirer and a target firm, in which the target firm can take advantage of the acquiring firm's economic policy uncertainty, according to Bonaime et al. (2018). In contrast, US MNCs conducting greenfield FDI projects would be subject to different policy hurdles, such as local regulations.

chains and Gopinath et al. (2024) for estimating the impact of Russia's Invasion of Ukraine on FDI flows. FT fDiMarkets data set tracks the near universe of formal announcements of greenfield FDI every month since 2003. UNCTAD relies on the same data source for analyzing multinational activities in its annual World Investment Reports.[4]

For each greenfield FDI project, we utilize data sourced from FT fDiMarkets, encompassing two key sets of information: (i) details regarding the parent company, including its name and headquarters location, and (ii) project-specific information, such as the destination country, project date (month and year), capital expenditure value, and activity type. The primary variable of interest, denoting the announced greenfield FDI project amount in millions of USD, is represented by the capital expenditure value (retrieved from the FT fDiMarkets monthly item `CAPEX`). Notably, our analysis focuses exclusively on companies headquartered in the United States.

Our research investigates the influence of EPU on greenfield FDI decisions by US MNCs. Greenfield FDI refers to establishing a new investment in a foreign country, involving building new facilities or operations from the ground up. This stands in contrast to brownfield FDI, which involves acquiring or merging with existing foreign businesses. We focus on greenfield FDI as it allows us to examine how EPU shapes decisions regarding entirely new investments abroad by US MNCs, potentially reflecting a strategic shift in response to a changing global economic landscape.

One distinguishing characteristic of the FT fDiMarkets dataset is its categorization of greenfield FDI projects into 16 distinct activity types.[5] In our primary analysis, we incorporate all of these activity types except for extraction. It is worth noting that the activity type differs from the sector or industry of the parent firm, as it specifically elucidates the motivations behind FDI. To provide further clarity, we include examples of observations categorized by activity type sourced from FT fDiMarkets in Appendix Table A.1.

In our sub-sample analysis, we leverage the activity-type information to discern heterogeneity within global value chains. This strategic focus allows us to explore the dynamics of global investment and production. Appendix Figure A.1 illustrates the cumulative capital expenditure value and frequency spanning from 2003 to 2021 across major activity types. Notably, Manufacturing emerges as the standout category, boasting the highest total capital expenditure value, nearing the 300 billion USD mark, and the second-highest frequency, encompassing over 5,400 investment projects. Since 2003, it has unequivocally remained the cornerstone of greenfield FDI for US MNCs. It is essential to emphasize that our definition of manufacturing activity diverges from traditional sector-based classifications, encompassing a broad spectrum of two-digit Standard Industrial Classification (SIC) codes. Out of a total of 82 two-digit SIC codes, our sample includes 54.

[4] Annex tables 13-18 available at https://unctad.org/topic/investment/world-investment-report (access date: April 23, 2023) show the aggregated value and number of announced greenfield FDI projects, spanning the period 2003 to 2021 by source, destination, and sector/industry. However, UNCTAD does not publicly provide complete establishment-level information for researchers, which is the central novelty of the data. In contrast, these firm-level data are available to us.

[5] 1. Business Services, 2. Construction, 3. Customer Contact Center, 4. Education & Training, 5. Electricity, 6. Extraction, 7. Headquarters, 8. ICT & Internet Infrastructure, 9. Logistics, Distribution & Transportation, 10. Maintenance & Servicing, 11. Manufacturing, 12. Recycling, 13. Research & Development, 14. Sales, Marketing & Support, 15. Shared Services Center, and 16. Technical Support Center.

Among other investment types, Sales, Marketing, and Support activities rank as the most frequent, boasting over 8,000 investment projects. However, despite its high frequency, the total capital expenditure value for this activity amounts to only approximately 100 billion USD over the entire period, which pales in comparison to manufacturing. Additional prominent activities include Business Services, Research & Development, and Logistics, Distribution & Transportation.

Measuring US MNCs' greenfield FDI For US MNCs, we compile the aggregate count and value of capital expenditure for announced greenfield FDI projects targeting a specific destination country (c) within twelve months of a single calendar year (t). These metrics are denoted for each firm (i) as follows:

$$\texttt{FDI Count}^{c}_{i,t} \equiv \sum_{m=1}^{12} \sum_{p \in \mathcal{P}_{i,t_m}} \mathbb{1}\{\texttt{CAPEX}^{c}_{i,t_m,p} > 0\} \quad \text{and} \quad \texttt{FDI}^{c}_{i,t} \equiv \sum_{m=1}^{12} \sum_{p \in \mathcal{P}_{i,t_m}} \texttt{CAPEX}^{c}_{i,t_m,p}, \tag{1}$$

where $\mathbb{1}\{\cdot\}$ is an indicator function, which takes the value of 1 if the condition inside the curly braces is true (i.e., $\texttt{CAPEX}^{c}_{i,t_m,p} > 0$ indicates a project with positive capital expenditure in country c for firm i in month t_m), and 0 otherwise. Also, t_m is the month in year t, p indexes the project, and $\mathcal{P}_{i,t_m}$ is the set of firm i's all projects at t_m. To mitigate the influence of outliers, we employ winsorization, capping extreme values at $\texttt{FDI Count}^{*} = 10$ and $\texttt{FDI}^{*} = 1000$ (million USD). These values were chosen because they are close to the top 1 percentiles of non-zero observations in our sample, effectively addressing outliers without significantly altering the core distribution of the data.

To explore within-firm resource allocation decisions, we construct an additional variable by calculating the share of a firm's resources dedicated to greenfield FDI in a particular country. The total greenfield FDI value for firm i to country c as a share of its total capital FDI value to all countries in calendar year t is as follows:[6]

$$\texttt{FDI Share}^{c}_{i,t} = \frac{\texttt{FDI}^{c}_{i,t}}{\texttt{FDI}_{i,t}} \quad \text{where} \quad \texttt{FDI}_{i,t} = \sum_{c \in \mathcal{C}} \texttt{FDI}^{c}_{i,t}. \tag{2}$$

The share indicates what portion of a firm's FDI expenditure is allocated in destination c.

Zero observations Appendix Table A.3 presents summary statistics. The first two panels offer insights into greenfield FDI activity at a firm-country-year level, both with and without zero observations. Notably, these panels reveal a prevalence of zero observations, mirroring patterns commonly observed in bilateral trade data. This observation later motivates us to employ an approach proposed by Silva and Tenreyro (2006) to address this issue effectively. For non-zero observations, the median number of announcements stands at one, with an average investment

[6]Note that we set the share to be missing ($\texttt{FDI Share}^{c}_{i,t}$ = n.a.) when firm i does not make any investment at time t ($\texttt{FDI}_{i,t} = 0$). Alternatively, we can define $\texttt{FDI Share}^{c}_{i,t} = 0$ instead of it being missing, and this modification does not affect our results.

value of $21 million, constituting approximately 46% of the total investment for that year for an average US MNC investing in a destination country. This observation implies MNCs' FDIs are concentrated in one or few destinations in each year.

2.2 Economic Policy Uncertainty

Baker, Bloom, and Davis (BBD) database We employ the Baker et al. (2016) (BBD) index to proxy for economic policy uncertainty (EPU). (The data set is publicly available at http://www.policyuncertainty.com. The BBD index is a widely recognized metric in finance for the analysis of EPU, employed in studies such as Nguyen and Phan (2017), Bonaime et al. (2018) for its impact on cross-border mergers and acquisitions and Gulen and Ion (2016) for its impact on corporate investment.

This index furnishes monthly data observations for major countries and is derived from a weighted average of three principal components. The first component, drawn from news articles sourced from ten leading newspapers, concentrates on articles featuring keywords such as "economic" and "uncertain." These articles undergo careful review and coding, with those meeting specific criteria designated as EPU=1, reflecting uncertainty surrounding policy decisions, economic ramifications, potential inaction, and other pertinent factors.

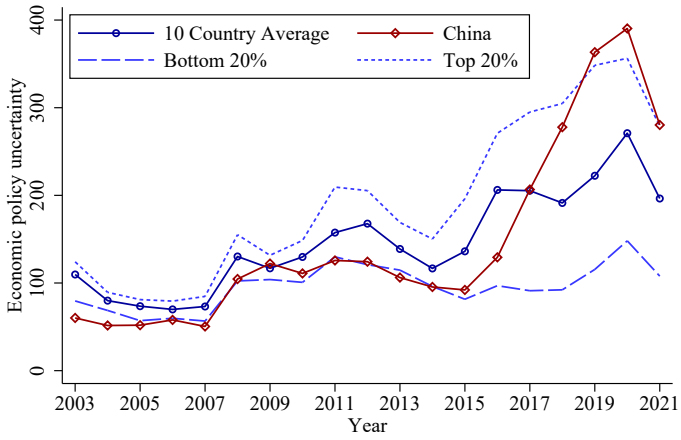
The second component revolves around tax code alterations, sourced from reports by the Congressional Budget Office, which signal uncertainty regarding the future trajectory of the federal tax code. Lastly, the third component evaluates economic uncertainty by examining the dispersion in predictions sourced from the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters, utilizing the interquartile range as a metric for analysis.

The composite BBD index is computed as a weighted average of these constituent components, with a 50% weighting assigned to the newspaper component and an equal 50% weighting allocated to the tax code changes and disagreements component. An index score of 100 denotes the anticipated level of certainty, with higher scores signaling heightened levels of policy uncertainty.

Originally designed for the US economy, the BBD index has become a template for crafting similar indices worldwide. Consequently, the database has been expanded to encompass EPU measurements for 21 countries, namely: Australia, Brazil, Canada, Chile, China, Colombia, France, Germany, Greece, India, Ireland, Italy, Japan, Mexico, Netherlands, Russia, Singapore, South Korea, Spain, Sweden, and the United Kingdom.

When we merge the comprehensive EPU database covering 21 countries with firm-level greenfield FDI data, we confront an empirical hurdle characterized by an abundance of zero observations for FDI flows at firm, industry, and even country levels. To address this issue, we narrow down our focus to the top 10 countries receiving FDI flows from US MNCs. Alongside the United States as the origin country, our dataset encompasses ten other destination countries denoted by $c \in \mathcal{C}$: Brazil, Canada, China, Germany, India, Ireland, Mexico, Singapore, Spain, and the United Kingdom. We also conduct robustness tests in our empirical analysis by considering 17 countries, excluding Chile, Colombia, Greece, and Sweden, from the initial set of 21 countries. This exclusion is justified due to

Figure 1: The Evolution of Economic Policy Uncertainty: Global and China



Notes: This figure depicts the annualized averages of the economic policy uncertainty index (Baker et al. 2016) from 2003 to 2021 (consistent with the period of our FDI data) for destination countries of US MNCs. The solid red line (diamond symbol) represents data specific to China, while the solid blue line (circle symbol) illustrates the averages across the ten major potential destination countries (including Brazil, Canada, China, Germany, India, Ireland, Mexico, Singapore, Spain, and the United Kingdom). Additionally, the blue short and long dashed lines depict the upper and lower bounds of the top and bottom 20% of these ten potential destination countries, respectively. Appendix Figure A.2 displays the corresponding plots with 17 destinations.

their minimal shares of FDI from US MNCs.

The rise in global and China EPU Figure 1 presents the evolution of global EPU from 2003 to 2021, utilizing the BBD index.[7] To construct this visualization, we compute the annual average values of the monthly BBD index for each country across the years.

The solid red line (depicted by diamond symbols) corresponds to data specific to China, whereas the solid blue line (represented by circle symbols) illustrates the averages across the top 10 destination countries for US MNCs' greenfield FDI. Analysis of the data underscores that during the initial phase of the sample period, EPU remained relatively stable for both groups. From 2003 to 2015, the annualized BBD index for the global averages hovered around or below 150, signaling a period characterized by economic stability. The sole exception was in 2012, following the Global Financial Crisis, when the index neared 150, indicating a modest uptick in uncertainty. It is noteworthy that China's EPU during this period consistently remained at or below the global averages, suggesting that China exhibited relatively greater stability in economic policy compared to other countries.

However, a notable divergence in trajectories between the two groups emerged after 2015. China's BBD index exhibited a steady ascent from 100 in 2015 to 400 in 2020, marking a fourfold increase in just five years. In stark contrast, over the same period, the ten-country average BBD index fluctuated, ultimately peaking at 250. This disparity emphasizes China's substantial influence

[7]Appendix Figure A.2 displays the corresponding plots with 17 destinations, showcasing the robustness of the observed patterns across different country selections.

on the overall increase in global economic uncertainty during this period. Hence, the exceptional rise in China's post-2015 EPU suggests that US MNCs may not regard China as a preferred investment destination compared to other countries.

Huang and Luk (2020) document domestic policy shifts in China since 2015 that have demonstrably contributed to economic turbulence, as evidenced by the EPU index. Concerns regarding an economic slowdown in February 2015 were followed by a series of unforeseen currency adjustments in August 2015. These events coincided with a tumultuous decline in the Chinese stock market. The subsequent implementation of a circuit-breaker mechanism in January 2016, intended to stabilize the market, proved ineffective. Analysis of policy-specific indices suggests that a confluence of uncertainties surrounding monetary and exchange rate policies significantly elevated China's EPU in 2015. Furthermore, the inauguration of President Trump in January 2017 marked a turning point, introducing a new dimension of political uncertainty from the US that resonated with China's EPU. Importantly, the policy-specific index reveals that trade policy uncertainty only became a significant factor influencing the overall EPU after 2018.

The cross-country dispersion of EPU While comparing China's EPU with global averages provides a compelling narrative, it overlooks the notable shifts in EPU distribution among the ten destination countries. Realistically, US MNCs cannot seamlessly redirect their investments across all ten countries as an alternative to China. Each country competes with one another, and this competition intensifies when countries exhibit similar levels of EPU. Therefore, it is crucial to examine the entire distribution of EPU for these countries to gain insight into the so-called "competitor's EPU." To understand the evolution of this distribution, we plot the upper and lower bounds of the top and bottom 20% of these ten potential destination countries in Figure 1.

The analysis of percentiles reveals a heightened heterogeneity in EPU observed after 2015. This is evident in Figure 1, where the upper and lower bounds of the top and bottom 20% of the destination countries diverge. The increase in the global average EPU primarily stems from countries with EPUs in the top 20% of the distribution, while those in the bottom 20% remain unchanged. This disparity underscores the significance of considering competitors' EPUs in recent years. From 2003 to 2015, the evolution of these upper and lower percentiles in relation to the average remained relatively consistent over time. However, since 2015, the increase in average EPU has been driven dominantly by countries with EPUs in the top 20% of the distribution, indicating a widening dispersion of EPU. This uneven rise in global EPUs emphasizes the growing importance of competitors' EPUs in shaping investment decisions in recent years.

2.3 Other Variables

One notable limitation of the FT fDiMarkets data is its lack of details regarding individual parent companies' financial statements and macroeconomic indicators associated with destination countries. To address this constraint, we undertake a data integration process by merging the fDiMarkets dataset with firm-level and country-level databases.

Firm-level For the firm-level variables, we use the Compustat Fundamentals Annual dataset. Our focus remains on US parent companies listed on the S&P 500 index, ensuring a robust sample. We confine our analysis to companies headquartered within the United States from 2003 to 2021. Additionally, we filter out non-positive or missing observations of key variables such as sales, assets, capital expenditure, and employment to ensure data integrity. To facilitate the integration of these datasets, we establish connections between the parent companies identified in the FT fDiMarkets dataset and the unique ticker identifiers in the Compustat dataset. This merging process follows established methodologies, as demonstrated in previous studies such as Takayama (2023). In Appendix Table A.2, we provide a comprehensive list of all firm-level variables utilized in our study. We employ winsorization techniques to mitigate the influence of outliers, capping extreme values at the 1st and 99th percentiles.

Country-level Once we have merged the firm-destination-level greenfield data, we combine it with country-level data sources to analyze and control for country-level characteristics in empirical exercises. In this context, we rely on CEPII for gravity variables, specifically concerning the income levels of destination countries measured in current USD (CEPII annual item `gdpcap_d`). We also utilize a dummy variable for regional trade agreements between the US and destination countries (CEPII annual item `fta_wto`). Moreover, we use the World Bank's World Integrated Trade Solution (WITS) database to control the export tariff rates that the US faces from its trading partners and the import tariff rates that the US imposes on the same trading partners. Specifically, we make use of the effectively applied weighted average tariff rate, which is the average of tariffs weighted by the corresponding trade values (WITS annual item `AHS Weighted Average (%)`). Within the various product group classifications of this tariff rate, we primarily utilize the rates on "All."

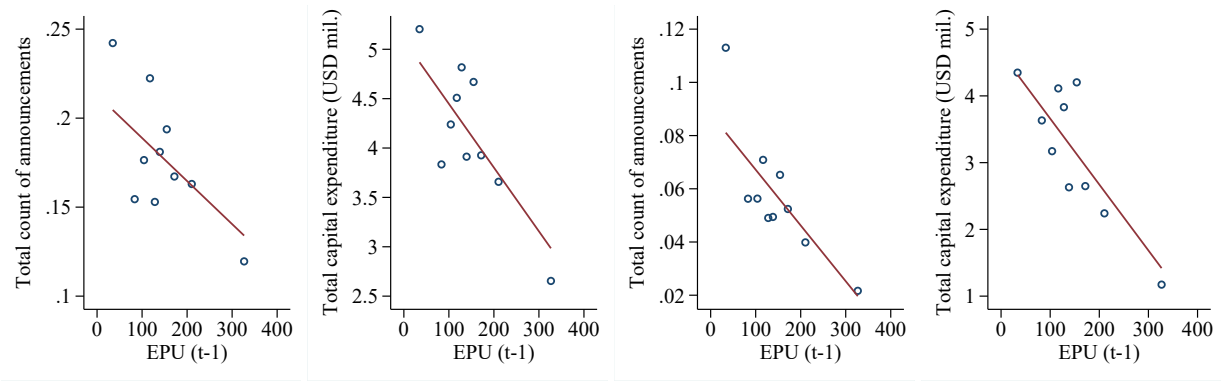
3 The Effects of Economic Policy Uncertainty

In this section, we assess the influence of the destination country's economic policy uncertainty (EPU) on the outbound greenfield Foreign Direct Investment (FDI) strategy of US Multinational Corporations (MNCs).

3.1 Descriptive Evidence

We begin our analysis with descriptive evidence of the association between destination EPU and US MNCs' outward FDI. Figure 2 presents the binned scatter plot (using ten bins) for our sample firms and countries, employing destination fixed effects to account for time-invariant characteristics specific to each country. Here, we assume that US MNCs observe EPU before making investment decisions. Therefore, we utilize a one-year lagged value of the destination country's EPU index on the x-axis. The y-axes represent either the total count or value of capital expenditure for announced greenfield FDI projects. Figures 2a and 2b display all investments, whereas Figures 2c and 2d plot

Figure 2: Destination EPU and US MNCs' Outward FDI, 2003–2021



(a) FDI Counts (All Activities) **(b)** FDI Values (All Activities) **(c)** FDI Counts (Manufacturing) **(d)** FDI Values (Manufacturing)

Notes: This figure displays a binned scatter plot of the association between the destination economic policy uncertainty (EPU) index with a one-year lag (x-axis) and the number and value of announced greenfield FDI projects (y-axes). The number of bins is ten. To account for invariant destination characteristics, we incorporate destination-fixed effects. Our sample encompasses ten potential destination countries for US MNCs. The EPU data is retrieved from Baker et al. 2016. The unwinsorized FDI data is sourced from FT fDiMarkets, which allows us to decompose the observations by investment activity type (All vs. Manufacturing).

for manufacturing-related projects only. This distinction allows us to compare aggregate data with FDI activity, specifically in the manufacturing sector, as captured by the FT fDiMarkets database.

Our analysis reveals a consistent negative correlation between destination EPU and US MNCs' outward greenfield FDI announcements, regardless of the investment type (all activities vs. manufacturing only). This trend suggests that heightened levels of EPU tend to dissuade US MNCs from establishing new facilities overseas. On average, in the lowest EPU category, FDI amounts surpass $4 million for any activity type. However, as uncertainty escalates (reflected by the higher EPU bins on the x-axis), investment enthusiasm wanes, with the highest EPU category coinciding with the lowest FDI counts and values. In summary, the correlation study underscores that elevated uncertainty in host countries can curtail both the frequency and scale of new greenfield FDI ventures initiated by US MNCs in those locales.

It is important to acknowledge that while the scatter plots depict a negative correlation, they do not necessarily establish a causal relationship between EPU and FDI. External factors not accounted for in the scatter plots could also influence FDI decisions. We will address this limitation in the next subsection by employing an econometric framework to estimate the causal effect of EPU on US MNCs' greenfield FDI decisions.

3.2 Empirical Framework

This subsection investigates the formal econometric analysis of the relationship between US MNCs' greenfield FDI and the level of EPU in potential destination countries. We transition from the initial descriptive observations to a more rigorous framework that accounts for various factors influencing

investment decisions.

A notable challenge with our data is its unbalanced panel structure, characterized by numerous zero flows alongside positive values for greenfield FDI announcements. Traditional Ordinary Least Squares (OLS) regressions are unsuited for this data type, as they can produce biased estimates. To address this hurdle, we employ Poisson Pseudo Maximum Likelihood (PPML) estimators as our preferred approach. PPML is specifically designed for addressing count variables with an excess of zeros, offering more reliable estimates compared to OLS (Silva and Tenreyro 2006).

Baseline Regression Equation Our firm-destination-year panel regression model is built upon the gravity equation framework and is specified as follows:

$$y_{i,t+1}^{c} = \exp\left[\beta \ln \texttt{EPU}_{t}^{c} + (\mathbf{x}_{t}^{c})^{\top}\boldsymbol{\theta}_{x} + (\mathbf{z}_{i,t})^{\top}\boldsymbol{\theta}_{z} + \alpha_{i} + \delta_{c} + \lambda_{s,t} + \epsilon_{i,t}^{c}\right], \tag{3}$$

where $y_{i,t+1}^{c}$ represents the dependent variable, referring to greenfield FDI from US MNC i to destination country c in calendar year $t+1$. Our primary independent variable is $\ln \texttt{EPU}_{t}^{c}$, which reflects the natural logarithm of the annualized BBD index for each country c during calendar year t, serving as a proxy for EPU. Other key components of our model include α_i as a firm fixed effect, δ_c as a destination country fixed effect, and $\lambda_{s,t}$ as a two-digit SIC $\times$ calendar year fixed effect. Thus, the regression controls for the unobserved time-invariant firm and destination country characteristics as well as time-variant global factors for each industry. We account for standard errors clustered at the two-digit SIC level.

While firm and destination country fixed effects help control for unobserved characteristics, we acknowledge the potential for additional systematic influences on US MNCs' investment decisions. To provide robustness of our findings, we incorporate a vector of control variables at the country- and firm-level, $\mathbf{x}_{t}^{c}$ and $\mathbf{z}_{i,t}$, into the linear function. These controls encompass two aspects of global investment strategies: destination country-level factors and firm-level characteristics.

Alternative Regression Equation Despite our rigorous efforts to account for temporal fluctuations in firms or industries through the inclusion of firm-level controls, firm fixed effects, and industry fixed effects, there remains the possibility that our baseline model may not fully capture all relevant dynamics. Therefore, as an alternative, we introduce firm-year and industry-destination country fixed effects. This refined specification offers a distinct advantage by enabling comprehensive control over all time-varying factors affecting firms, including those within industries.

$$y_{i,t+1}^{c} = \exp\left[\beta \ln \texttt{EPU}_{t}^{c} + (\mathbf{x}_{t}^{c})^{\top}\boldsymbol{\theta}_{x} + \alpha_{i,t} + \delta_{s,c} + \epsilon_{i,t}^{c}\right], \tag{4}$$

where the industry-destination fixed effects ($\delta_{s,c}$) control for the destination country's time-invariant comparative advantages as production locations in industry s. By design, we no longer need the firm-level control variables. We compare this alternative specification with the baseline in the main

analysis.

Dependent variables Our analysis employs three distinct versions of the dependent variable, $y^c_{i,t+1}$, representing various aspects of US MNCs' greenfield FDI decisions: The first two versions are the total count and value of capital expenditure of announced greenfield FDI projects ($\texttt{FDI Count}^c_{i,t+1}$ and $\texttt{FDI}^c_{i,t+1}$), as in equation (1). These level variables provide insights into the overall scale and intensity of investment by US MNCs in establishing new operations abroad. The third version is $\texttt{FDI Share}^c_{i,t+1}$, which corresponds to equation (2). This share variable indicates the within-firm investment allocation.

Destination country-level controls The destination country-level controls, $\mathbf{x}^c_t$, include the following variables. We first incorporate the destination country's (log) GDP per capita as a control, acknowledging that income distribution can affect product quality for exports and international trade (Fajgelbaum, Grossman and Helpman 2011). Second, a dummy variable for regional trade agreements (including free trade agreements) is included to capture the influence of trade relations between the US and its trade partners.[8] Last, the average weighted tariff rates encompassing both exports and imports from the US perspective are included as a control. Tariff hikes can act as deterrents for firms entering foreign markets (Crowley, Meng and Song 2018), and including annual tariff rate values helps mitigate confounding effects. However, we acknowledge that the US-China trade war from 2018 transcended mere tariff adjustments (Fajgelbaum et al. 2020). As such, we dedicate a separate section to robustness checks in our analysis to explore this issue further alongside our baseline results.

Firm-level controls To account for variations in firm characteristics that might influence investment decisions, we incorporate the following firm-level controls, $\mathbf{z}_{i,t}$. We control for a firm's overall scale and resource base using (log) of assets. We include returns on assets as a control variable to capture the financial performance. Also, (log) labor productivity (sales/employment) and the sales ratio to variable costs (sales/cost of goods sold) present the non-financial firm performance. Firms with stronger performance may be more likely to undertake foreign investments. Finally, we incorporate leverage (total liabilities to assets) to assess a firm's financial health. Firms with lower leverage and higher ratio of assets to market value may be better positioned to finance new investments abroad.[9]

3.3 Main Results

Table1 presents US MNCs' estimated PPML coefficients for outbound greenfield FDI, considering the destination country's average level of EPU in the preceding calendar year. This analysis seeks

[8]The US has free trade agreements with Canada and Mexico throughout the sample period, while Australia, Chile, Colombia, South Korea, and Singapore signed FTAs with the US within our study timeframe.

[9]The full descriptions of each variable are available in Appendix Table A.2, Panel A.

Table 1: US MNCs' Outward FDI and Destination EPU

Dep. Variable	$\texttt{FDI Count}^c_{i,t+1}$			$\texttt{FDI}^c_{i,t+1}$			$\texttt{FDI Share}^c_{i,t+1}$		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$\ln \texttt{EPU}^c_t$	-0.30***	-0.28***	-0.29***	-0.38***	-0.32***	-0.31***	-0.28***	-0.24***	-0.25***
	(0.06)	(0.06)	(0.06)	(0.07)	(0.08)	(0.07)	(0.05)	(0.05)	(0.05)
ln GDP per capita^c_t		-0.91***	-0.77***		-0.36	-0.20		-0.61***	-0.60***
		(0.16)	(0.14)		(0.25)	(0.23)		(0.13)	(0.13)
Trade agreement dummy^c_t		-0.30	-0.23		-0.13	-0.11		0.59**	0.60**
		(0.39)	(0.46)		(0.50)	(0.60)		(0.27)	(0.27)
Import tariff^c_t/100		-0.09	0.12		0.12	0.71		0.43	0.42
		(0.39)	(0.46)		(0.45)	(0.48)		(0.49)	(0.49)
Export tariff^c_t/100		0.76	0.51		-5.44**	-5.76**		0.02	-0.02
		(1.53)	(1.62)		(2.59)	(2.81)		(1.56)	(1.54)
ln Assets$_{i,t}$		0.63***			0.76***			0.31***	
		(0.09)			(0.09)			(0.04)	
ln Labor productivity$_{i,t}$		0.33**			0.18			0.01	
		(0.17)			(0.27)			(0.11)	
Sales/variable costs$_{i,t}$		0.01			0.03			-0.01	
		(0.03)			(0.03)			(0.02)	
Return on assets$_{i,t}$		0.11			1.24***			0.08	
		(0.31)			(0.47)			(0.33)	
Leverage$_{i,t}$		0.67			0.75**			-0.06	
		(0.53)			(0.36)			(0.33)	
Observations	53,065	50,505	20,487	53,065	50,505	20,487	53,065	50,505	20,487
R2	0.368	0.380	0.376	0.463	0.454	0.552	0.120	0.098	0.092
Firm FE	✓	✓		✓	✓		✓	✓	
Country FE		✓			✓			✓	
Country×Industry FE	✓		✓	✓		✓	✓		✓
Year FE	✓			✓			✓		
Year×Firm FE			✓			✓			✓
Year×Industry FE		✓			✓			✓	

Notes: This table presents the estimated coefficients from a PPML regression of the form given in equations (3) and (4). The sample firms consist of S&P 500 companies headquartered in the US from 2003 to 2021. These US MNCs have ten potential destinations for announcing greenfield FDI projects. The dependent variables in Columns (1)–(3) and (2)–(5) are the number and value of US MNCs' announced greenfield FDI expenditure toward country c in calendar year $t+1$ ($\texttt{FDI Count}^c_{i,t+1}$ and $\texttt{FDI}^c_{i,t+1}$, respectively), and in Columns (6)–(9) are as a share of US MNCs' total FDI expenditure value ($\texttt{FDI Share}^c_{i,t+1} = \texttt{FDI}^c_{i,t+1}/\texttt{FDI}_{i,t+1}$). All independent variables are measured at time t. The main regressor ($\ln \texttt{EPU}^c_t$) refers to the economic policy uncertainty index (Baker et al. 2016) for country c. The destination country c's (log) GDP per capita and the FTA dummy variables are sourced from CEPII gravity data. Import and Export tariff variables are sourced from the WITS database. Firm control variables are firm i's (log) assets, (log) labor productivity (sales/employment), returns of assets, sales to variable costs (COGS) ratio, and leverage, all sourced from Compustat annual items. The standard errors are clustered at the industry (two-digit SIC) level and shown in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

to rigorously explore whether the differing degrees of EPU across ten destination countries have influenced US MNCs' decisions to announce the establishment or expansion of facilities overseas.

The results are presented based on three dependent variables: the total number of FDI projects (Columns 1–3), the total value of FDI projects (Columns 4–6), and the share of a firm's total FDI allocated to a specific country (FDI share) (Columns 7–9). For each dependent variable, we show results from two model specifications. Columns (2), (5), and (8) present the estimates from our baseline model (equation 3), which includes firm fixed effects, destination country fixed effects, and industry-year fixed effects. Columns (1), (4), and (7) offer a parsimonious model without control variables to illustrate a basic association between EPU and FDI.

Consistently across FDI count and FDI value dependent variables, the coefficient for EPU is negative and statistically significant, ranging from approximately –0.28 to –0.38. This indicates that a 10% increase in a country's EPU level is associated with a decrease of 2.8% to 3.8% in the investment scale (number or value of projects) undertaken by US MNCs in that country. Similarly, a 10% rise in EPU corresponds to a reduction of 2.4% to 2.8% in the share of a firm's total FDI allocated to a more uncertain destination. In essence, higher levels of EPU act as a deterrent, discouraging US MNCs from both initiating new investments and allocating a larger share of their FDI resources to countries with heightened uncertainty.

The robustness of our findings is further bolstered by the results in Columns (3), (6), and (9), which utilize an alternative model specification (equation 4). This alternative model incorporates firm-year fixed effects and industry-destination country fixed effects, providing even more control for unobserved factors that might influence FDI decisions. While this approach reduces the number of observations by nearly 60%, the coefficient of EPU remains remarkably consistent across all three dependent variables (Columns 1–3, 4–6, and 7–9). This consistency suggests that selection bias due to unobserved, time-varying firm characteristics is unlikely to be a major concern in our analysis, given the control variables already included. However, if unobserved firm characteristics that change over time play a role in how firms are exposed to destination country uncertainty, then including firm fixed effects might be necessary to address potential bias and potentially alter the coefficient estimates.

Discussion Our findings reveal a distinct trend across diverse model specifications and dependent variables: US MNCs display a diminished inclination to invest in destinations marked by elevated uncertainty. Furthermore, our analysis reveals that when investments proceed in such environments, a subsequent reduction is observed in the firm's magnitude and proportion of total FDI. These observations illuminate not only the behavioral patterns of firms regarding foreign investment but also hold significant macroeconomic implications for destination countries, underlining the critical influence of policy uncertainty on investment decisions.

Our results align with prior research on cross-border investment behavior. For instance, Bonaime et al. (2018) find a negative coefficient linking US MNCs' brownfield FDI decisions (cross-border mergers and acquisitions) with the BBD index, employing a similar uncertainty

measure. This consistency, despite differences in estimation methods (Poisson Pseudo Maximum Likelihood vs. logit regressions) and sample periods (2003–2021 vs. 1985–2014), reinforces our conclusion that EPU significantly shapes the global investment strategies of US MNCs. Furthermore, our study extends this body of knowledge (e.g., Nguyen and Phan 2017) by highlighting a complementary outcome: the impact of EPU on greenfield FDI mirrors that on brownfield FDI.

The potential for financial constraints to amplify the negative effects of EPU on investment decisions is worth considering. Alfaro et al. (2024) point out that financially constrained firms react more strongly by reducing investments in response to uncertainty shocks encompassing exchange rate volatility, policy changes, and energy price fluctuations. Financial frictions, characterized by the inherent uncertainty surrounding capital projects, can further exacerbate these effects. Similarly, our analysis suggests that elevated EPU in specific countries might intensify firms' reluctance to invest, particularly for firms facing financial constraints.

Strategically reallocating resources away from riskier foreign locations not only impacts individual companies but also generates negative macroeconomic repercussions for host countries, particularly developing nations. These nations heavily rely on capital accumulation, with foreign direct investment playing a crucial role, to fuel economic growth. Research by Demir and Lee (2022) reveals that countries with poorer institutional quality, which often coincides with higher EPU, tend to attract fewer FDI inflows, ultimately hindering economic growth. Our findings, therefore, underscore the critical importance of host countries actively managing and mitigating EPU levels as part of their economic development agendas.

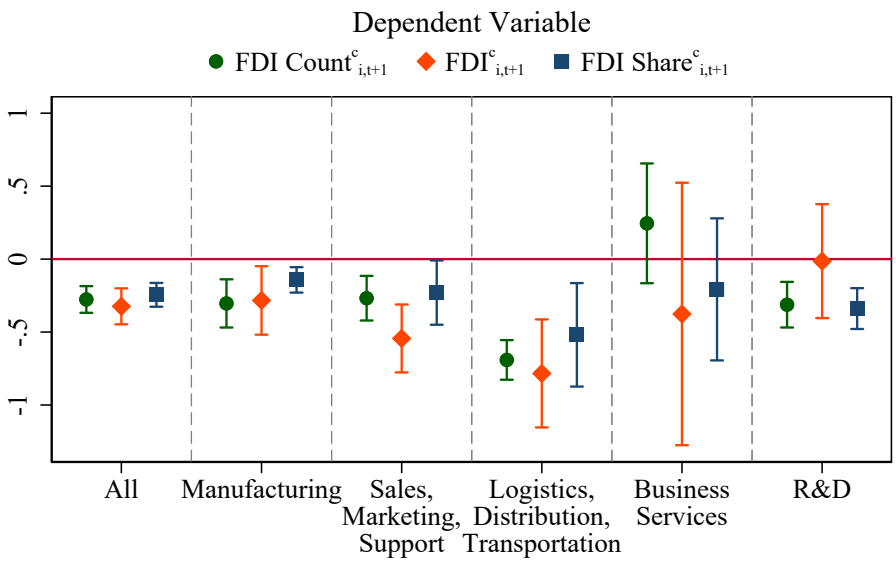
Addressing the complexities of mitigating EPU extends beyond the scope of this research. However, emerging evidence suggests potential strategies for host countries. One approach involves leveraging favorable trade agreements or minimizing the likelihood of trade conflicts. Handley and Limão (2015) utilize a dynamic model and empirical evidence from Portuguese exporting firms to highlight the positive impact of credible preferential trade agreements on reducing future uncertainty within the European Community, leading to increased investment in export activities. Similarly, Heise, Pierce, Schaur and Schott (2024) employ a model and data from Japan, revealing that a decrease in the probability of a trade war resulted in heightened Japanese imports from China and fostered long-term improvements in importer-exporter relationships. These findings underscore the potential efficacy of proactive trade reforms in mitigating economic policy uncertainty and fostering economic resilience in host countries.

3.4 Results by Investment Activity

Our dataset allows for a unique analysis: examining how EPU affects different types of greenfield FDI activities undertaken by US MNCs. By leveraging the detailed classifications in the FT fDiMarkets data, we can see if our overall findings about FDI apply to specific investment categories. This approach helps us understand how US MNCs adjust their foreign investment strategies based on the type of investment and the level of uncertainty in the destination country.

We estimate the baseline specification in equation (3) for each dependent variable by major

Figure 3: US MNCs' Outward FDI and Destination EPU by Investment Activity



Notes: This figure plots the estimated β coefficients from a PPML regression of the form given in equation (3) by major investment activity defined by FT fDiMarkets data. "All" corresponds to the point estimates of $\ln \texttt{EPU}_t^c$ in Table 1, Columns (2), (5), and (8). The vertical lines refer to the 95% confidence interval. The horizontal line is drawn at zero. See Figure B.1 for the same outcome using the alternative specification in equation (4), which corresponds to Columns (3), (6), and (9) of Table 1.

activity type and present the results in Figure 3. Each point depicts the coefficients for the logarithmic BBD index ($\ln \texttt{EPU}_t^c$), and the corresponding lines represent the 95% confidence intervals (CIs). The horizontal line is drawn at zero to indicate that any point estimates or their CIs touching or crossing it are not statistically different from zero. As a point of comparison, we can see that the point estimates and CIs for "All" activities are identical to the EPU coefficients in Columns (2), (5), and (8) of Table 1.

The analysis by investment activity confirms the significance of EPU in shaping MNCs' offshoring decisions. Activities like manufacturing or logistics and transportation (LDT)—key components of global value chains (GVCs)— demonstrate high sensitivity to EPU. For these activities, US MNCs adjust both the investment scale and the share of total FDI allocated to countries with high EPU. This cautious approach suggests a reluctance to initiate new production or distribution projects in uncertain environments, particularly considering the potentially long-term nature of such investments (e.g., building factories) due to their high sunk costs, i.e., irreversibility. Studies by Gulen and Ion (2016) and Jens (2017) support this notion, highlighting how US firms are particularly responsive to policy uncertainty when making investment decisions, often aiming to mitigate sunk costs.

Our analysis also sheds light on how EPU impacts R&D activities, often seen as a proxy for innovation. Interestingly, while US MNCs establish fewer innovation centers and reduce

their reliance on them in countries with high EPU, the overall scale of R&D investment remains relatively stable. This could suggest a shift towards alternative methods of conducting R&D in uncertain environments, potentially relying more on internal resources, geographically dispersed R&D hubs, or alternative approaches to conducting R&D in uncertain environments. This trend has potential long-run consequences, as research by Ramondo and Rodríguez-Clare (2013) and Arkolakis, Ramondo, Rodríguez-Clare and Yeaple (2018) suggests that declining innovation can have a significant negative impact on a nation's long-term economic growth.

In contrast, US MNCs appear less concerned about EPU when investing in business services like consulting or accounting. This might be because these services are intangible, more reversible (meaning easier to exit with lower sunk costs), and less reliant on physical infrastructure within the host country. They may also exhibit a shorter investment horizon compared to manufacturing or R&D, potentially making them less susceptible to long-term policy uncertainties.

By analyzing EPU's impact across different investment activities, we better understand how US MNCs adapt their foreign investment strategies in response to varying levels of uncertainty in potential host countries. The findings suggest a strategic prioritization of risk reduction, particularly for investments with long-term implications, when navigating uncertain economic environments.

3.5 Robustness

17 destination countries Initially, we merge data from FT fDiMarkets and Baker et al. (2016)'s database to obtain a pool of 21 countries for our investigation. However, to ensure robustness and focus our analysis on the most significant destinations for US MNCs, we have narrowed down our sample to the top 10 countries in terms of FDI inflows from the US. This deliberate selection allows us to assess our results against a more concentrated set of destinations while also testing the sensitivity of our findings to the inclusion of less attractive destinations. Upon reviewing the data, we find that Chile, Colombia, Greece, and Sweden have insufficient non-zero observations of US MNCs' FDI flows. Consequently, we exclude these countries from our analysis. Although these four countries are included in our regression sample, their impact on the results is negligible as they are either treated as singletons or separated by fixed effects.

In Appendix Table B.1, Panel A presents the regression results based on the remaining 17 destination countries. The estimated coefficients of EPU remain statistically negative at the 1% significance level. While the absolute values of these coefficients are slightly smaller compared to those in Table 1 featuring our benchmark sample (top 10 countries), the differences are not statistically significant. This consistency reaffirms the robustness of our findings across different subsets of destination countries, bolstering the validity of our conclusions.

Sub-period The structural changes in FDI trends, notably the pre-2008 surge followed by stagnation and subsequent disruptions such as the 2018 US-China trade war and recent shifts in global supply chains, present a challenge to our ability to draw clear conclusions. Despite our efforts to control for these confounding factors using industry-year or firm-year fixed effects and

import/export tariff rates, there may still be concerns that recent developments in global trade overshadow our findings. To address this concern, we conduct sensitivity analyses by excluding data from specific time periods. Specifically, we examine two scenarios: excluding data before 2008 and excluding data after 2016.

The results of these sub-period analyses are presented in Panels B and C of Appendix Table B.1. When restricting the sample period to 2008–2021 (Panel B) and 2003–2016 (Panel C), we consistently observe a negative association between EPU and FDI decisions. This holds true for both the scale of investment and within-firm investment reallocation. These findings suggest that changes in the global trade and investment environment, such as globalization, deglobalization, and the US-China trade war shocks, are unlikely to confound our results.

Growths and lags of regressors Appendix Table B.2 provides estimates of EPU obtained from different time dimensions. In our baseline estimates, we examine how the EPU level in time t influences FDI decisions in time $t+1$. Panel A includes the lagged EPU level ($\ln \texttt{EPU}^c_{t-1}$) alongside $\ln \texttt{EPU}^c_t$. In Panel B, we report estimation results using the growth rate of EPU ($\Delta \ln \texttt{EPU}^c_t = \ln \texttt{EPU}^c_t - \ln \texttt{EPU}^c_{t-1}$), representing the log time difference between t and $t-1$, instead of the EPU level. Encouragingly, the estimates demonstrate consistent qualitative patterns across different time dimensions compared to the baseline estimates, with negative coefficients observed.

Also, we augment the analysis by adding lagged country and firm variables ($\boldsymbol{x}^c_{t-1}$ and $\boldsymbol{z}_{i,t-1}$) to the variables at time t ($\boldsymbol{x}^c_t$ and $\boldsymbol{z}_{i,t}$). As shown in Table 1 and Appendix Table B.2 (Panel C), the estimated coefficients and standard errors of EPU remain consistent regardless of the inclusion of lagged control variables. Similarly, the R-squared values exhibit minimal variation. Consequently, we opt for regressions with $\boldsymbol{x}^c_t$ and $\boldsymbol{z}_{i,t}$ without their lags, given their negligible impact on the results.

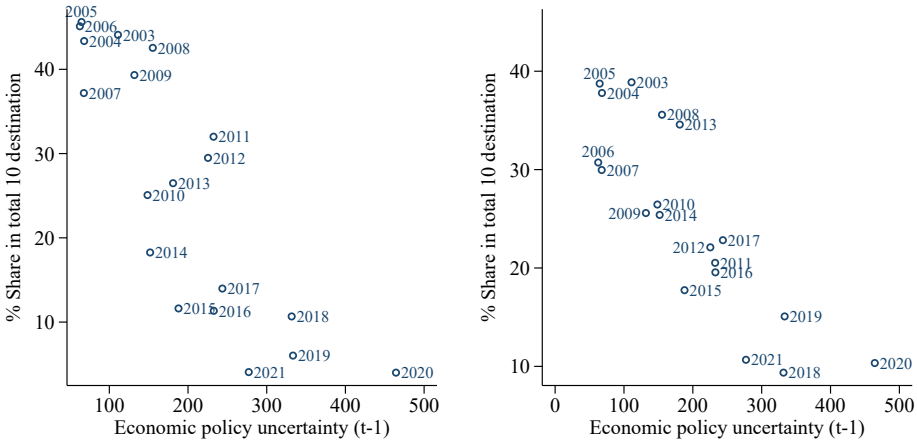
4 The Role of Competing Countries' Uncertainty

Our analysis reveals US MNCs' sensitivity to EPU, reducing investments in unstable destinations. This naturally prompts the question: Where do they relocate? They would compare all possible destinations. This highlights the importance of EPU in competing destinations (destination competition and spillover). The following section explores how EPU variations across potential locations influence US MNCs' FDI decisions.

A case in point is China's rising EPU since 2015, exceeding the global average (Figure 1). This uncertainty may compel US MNCs to explore alternative investment destinations, especially for industries heavily integrated with China in GVCs. However, the impact might be limited in other industries and countries less reliant on Chinese GVCs.

This pattern extends to any competing destinations. We examine how the relative EPU between countries (own EPU vs. competitor EPU) influences US MNCs' investment decisions. To achieve this goal, we introduce a weighted average EPU of competing destinations in an industry. This

Figure 4: China's Economic Policy Uncertainty and Inward FDI Share



(a) Number of announcements **(b)** Total capital expenditure

Notes: This figure depicts the association between China's economic policy uncertainty (x-axis) and US MNCs' greenfield FDI in China (y-axis). The x-axis is from Baker et al. (2016) economic policy uncertainty index for China with a one-year lag from 2003 to 2021. The y-axis is from (unwinsorized) FT fDiMarkets data with two variations: China's share in the total count of announcements worldwide (left panel) and total capital expenditure worldwide (right panel), where the worldwide refers to 10 potential destination countries for the US MNCs.

enables us to rigorously examine the impact of relative uncertainty (the disparity between a country's own EPU and that of its competitors) and the spillover effects (competitor's EPU). We then explore how the interplay between the direct effects of a country's own EPU and the spillover effects from competitor EPU has evolved over time, particularly in the context of the recent increase in global EPU average and dispersion.

4.1 The Rise of EPU and Its Spillover: A Narrative Example of China

China exemplifies the rise of EPU and its spillover effects. While Figure 1 shows a global increase in EPU, a closer look reveals it is driven by a few countries, particularly China, which has experienced a substantial rise since 2015. This surge in Chinese EPU, coinciding with recent trade conflicts, geopolitical tensions, and economic concerns, may be causing a seismic shift in global investment flows. For years, China's large and growing market attracted US MNCs. However, these recent developments may be causing them to hesitate about investing there, potentially reallocating investments elsewhere.

In this vein, we examine the evolution of China's attractiveness as a destination for US FDI in relation to its EPU. Figure 4 illustrates the correlation between China's annual EPU index and inward greenfield FDI flows from US MNCs within the sample period of 2003–2021. In the left panel (Figure 4a), we present China's share in the global total count of announcements among the top ten potential destinations for US MNCs, while the right panel (Figure 4b) displays its share in the global total capital expenditure.

The dominance of China as a preferred investment destination is evident in the earlier phases of our sample period. For example, from 2003 to 2005, over 40% of the total announced FDI projects and nearly 40% of the total capital expenditures were directed toward China. However, in the later years, these shares have dropped to below or around 10% between 2018 and 2021. The general trend is clear: the increase in China's EPU after 2015 is associated with a reduction in China's significance as a preferred destination.

The noteworthy decrease in China's attractiveness implies that US MNCs might be exploring alternative investment destinations characterized by lower EPU, possibly influenced by spillover effects stemming from China's escalating uncertainty. With China's share at 10% in 2021, it's evident that the remaining 90% is accounted for by alternative investment destinations. Assuming that the economic conditions of these alternatives have not undergone significant changes, there appears to be a discernible relationship wherein these destinations are capitalizing on China's diminished allure. (Appendix Figure C.1 replicates both graphs with China's share in a total of 17 destination countries, and the trend is similar.)

Motivated by the observed decline in US MNCs' preference for China and the potential spillover effects to alternative destinations, the next subsection incorporates the influence of competitors' uncertainty in our regression analysis.

4.2 The Weighted Average EPU of Competing Destinations

US MNCs evaluate multiple potential production bases when making investment decisions. To account for the relative attractiveness of competing destinations, we introduce the concept of weighted average EPU of competing destinations for each industry. This measure considers the existing investment levels (initial FDI share) of US MNCs in each competitor country. In simpler terms, countries with a larger share of US FDI are considered more significant competitors.

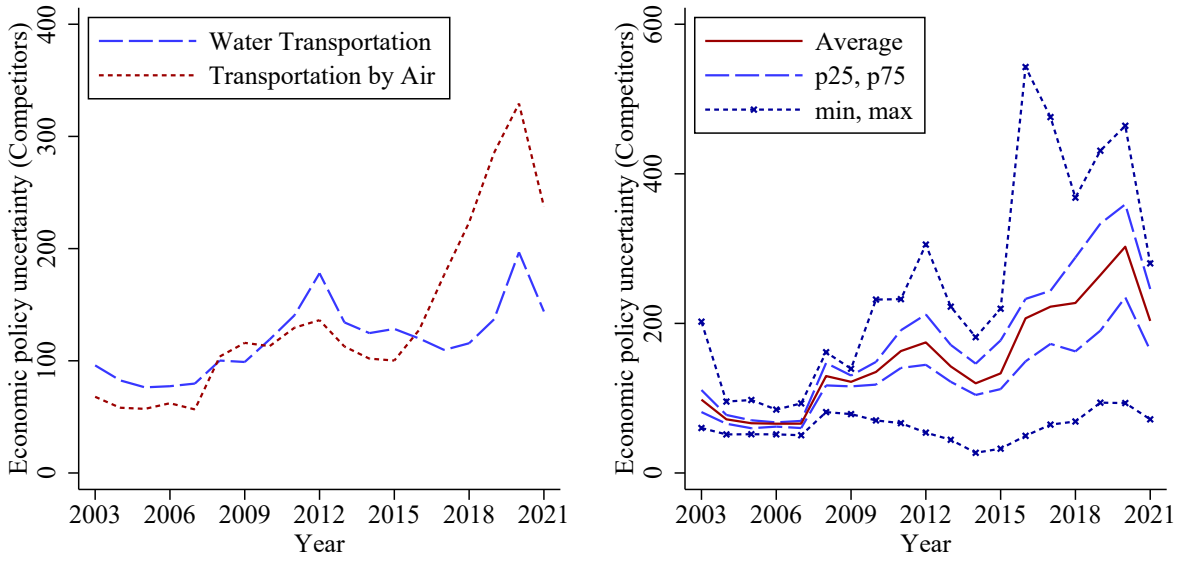
To begin, we establish the average EPU of competing destinations for each industry. We achieve this by first calculating the initial FDI flows ($\overline{\texttt{FDI}}_s^c$) for each industry s within a destination country c. This involves aggregating the average FDI flows of US MNCs between 2003 and 2004, categorized by two-digit Standard Industrial Classification (SIC) industry codes.

$$\overline{\texttt{FDI}}_s^c = \sum_{i \in \mathcal{I}_s} \frac{\texttt{FDI}_{i,2003}^c + \texttt{FDI}_{i,2004}^c}{2}, \tag{5}$$

where $\mathcal{I}_s$ is a set of firms in industry s.

The importance of analyzing EPU effects by industry is evident in our data. For example, China's initial FDI share in the transportation by air industry (SIC 45) is significantly higher (56%) compared to the water transportation industry (SIC 44, 0%). This highlights the heterogeneity in FDI intensity across industries and destinations, necessitating a measure for competitors' EPU that accounts for industry-specific investment patterns. Our weighted average EPU, introduced later, addresses this by considering the existing investment levels (FDI share) of US MNCs in each

Figure 5: The Weighted Average EPU of Competing Destinations, Germany



(a) Industry Example

(b) Distribution Across Industry

Notes: The figure plots the weighted average Economic Policy Uncertainty (EPU) of Germany's competitors from 2003 to 2021. The y-axis shows the exponentiated values of $\ln \texttt{OthersEPU}_{s,t}^{\text{Germany}}$ to represent the original EPU scale. The left panel plots the weighted averages for water transportation (SIC 44) and air transportation (SIC 45) industries, with initial FDI shares of China being 0% and 56%, respectively. The right panel shows the distribution of weighted averages across all industries in the German economy. Each year includes data from 54 industries.

competitor country.

Based on the initial FDI flows, we define the weighted average EPU of competing destinations for industry s as:

$$\ln \texttt{OthersEPU}_{s,t}^{c} = \sum_{c' \neq c} \left(\frac{\overline{\texttt{FDI}}_{s}^{c'}}{\sum_{c'' \neq c} \overline{\texttt{FDI}}_{s}^{c''}} \right) \times \ln \texttt{EPU}_{t}^{c'}, \tag{6}$$

where the weight in this equation is the initial FDI share of each country c' in the global FDI flows for industry s. The FDI share reflects the revealed importance of each country c' to a US MNC. The rationale behind this weight is that MNCs are more likely to be concerned by EPU in countries where they have existing investments, compared to countries with minimal investment activity.

Figure 5 plots the weighted average EPU of Germany's competitors from 2003 to 2021. The y-axis shows the exponentiated values of $\ln \texttt{OthersEPU}_{s,t}^{\text{Germany}}$ to represent the original EPU scale. Figure 5a demonstrates the industry-specific effects of China's EPU on Germany using our weighted average EPU measure. Due to China's dominant presence in the air transportation industry (SIC 45), Germany's weighted average EPU for competing destinations in this sector ($\exp(\ln \texttt{OthersEPU}_{\text{SIC45},t}^{\text{Germany}})$) starts rising after 2015, coinciding with China's EPU increase. In contrast, Germany's weighted average EPU for water transportation ($\exp(\ln \texttt{OthersEPU}_{\text{SIC44},t}^{\text{Germany}})$)

remains constant after 2015, likely because China is not a major competitor in this industry.

Figure 5b shows the average EPU of Germany's competitors along with the top and bottom 25 percentiles, minimum and maximum values across all 54 industries in the German economy over time. The plot reveals an increase in the average EPU of competitors after 2015, along with significant variation across industries. This variation has further increased after 2015, following the rise in both the global average EPU and cross-country dispersion.

Next, we calculate country c's own EPU ($\ln \texttt{EPU}_t^c$) relative to other countries in industry s:

$$\ln \texttt{RelativeEPU}_{s,t}^c = \ln \texttt{EPU}_t^c - \ln \texttt{OthersEPU}_{s,t}^c. \tag{7}$$

In broad terms, a positive value of $\ln \texttt{RelativeEPU}_{s,t}^c$ indicates that US MNCs might perceive destination country c as less attractive for investment compared to its competitors in industry s, due to a higher relative EPU. Conversely, a negative value indicates potentially greater attractiveness.

Therefore, our relative EPU measure enables an in-depth examination of the effects by industry and country, providing insights into how changes in EPU influence investment decisions and market dynamics in multinational contexts. In Appendix Table A.3's Panels D and E, the summary statistics provide insights into a country's own EPU ("EPU in log"), its competitors' EPU ("Competing countries' EPU in log"), and the difference between the two ("Relative EPU in log"). Compared to the mean of –0.045 (4.833 minus 4.878), the standard deviation of 0.527 is much larger, indicating a substantial variance in the relative EPU arose from industry variations in the initial FDI shares as shown in Figure 5. This variation underscores the potential utility of leveraging relative EPU as a source of identification in our analysis.

4.3 The Effects of Relative Economic Policy Uncertainty

The weighted average EPU of competing destinations constructed in the previous section allows us to closely analyze the dynamic between a country's own EPU and its competitors' EPU. Using this novel variable, we formally investigate the likelihood of a country receiving FDI from US MNCs in relation to its alternatives.

We establish a regression framework to examine whether a rise in EPU among competitor countries leads to increased outward FDI from US MNCs towards alternative destinations. To achieve this, we modify the benchmark and alternative regression models in equations (3) and (4) by replacing a country's own EPU ($\ln \texttt{EPU}_t^c$) with its relative EPU ($\ln \texttt{RelativeEPU}_{s,t}^c$), defined in equation (7). Relative EPU considers both a country's EPU and the weighted average EPU of its competitors within the same industry.

The resulting specification for analyzing the competition effect (CE) through EPU, the role of EPU with destination competition, is as follows:

$$y_{i,t+1}^c = \exp\left[\beta_{\text{cont}}^{\text{CE}} \ln \texttt{RelativeEPU}_{s,t}^c + \text{other controls \& fixed effects} + \epsilon_{i,t}^c\right]. \tag{8}$$

In this modified specification, a negative coefficient for the relative EPU term ($\ln \texttt{RelativeEPU}^c_{s,t}$) would indicate that when a country's EPU rises faster than the EPU in its competitor destinations (increasing relative EPU), US MNCs decrease their investments in that country. This approach provides a better understanding of MNCs' FDI decisions when many potential destinations compete to attract investments, by accounting for the relative level of uncertainty across potential investment destinations.

Incorporating a discrete measure alongside the continuous variable enhances our analysis. While the continuous variable offers insights into the strength of relative EPU differences, integrating a discrete measure allows us to gauge whether a country's attractiveness increases when its EPU is lower than that of its peers. Although this discrete approach may sacrifice some granularity compared to the continuous measure, it furnishes a straightforward interpretation, highlighting the presence or absence of the destination competition channel related to EPU. Hence, as an alternative specification, we introduce an indicator variable to classify countries based on their EPU relative to competitors in equation (9). This methodological adjustment provides a robust framework for investigating the competition effect (CE) of EPU on destination's attractiveness for MNCs in an industries.

$$y^c_{i,t+1} = \exp\left[\beta^{\text{CE}}_{\text{disc}} \mathbb{1}\{\ln \texttt{EPU}^c_t > \ln \texttt{OthersEPU}^c_{s,t}\} + \text{other controls \& fixed effects} + \epsilon^c_{i,t}\right], \quad (9)$$

where the indicator, $\mathbb{1}\{\cdot\}$, takes a value of 1 only when a country's EPU is higher than the average EPU of its competitors ($\ln \texttt{EPU}^c_t > \ln \texttt{OthersEPU}^c_{s,t}$), i.e., positive relative EPU in log ($\ln \texttt{RelativeEPU}^c_{s,t} > 0$).

Table 2 reports the estimation results of EPU with competition effects conducted using both discrete and continuous measures of EPU relative to competitors. In Panel A, estimates derived from the discrete variable, as outlined in equation (9), are presented. The statistically significant negative coefficients ($\beta^{\text{CE}}_{\text{disc}}$) signify average declines in FDI count, value, and share when a country's EPU surpasses that of its competitors, in contrast to the base case where the country's EPU equals or falls below that of its competitors.

Panel B presents the estimates from the continuous variable, derived in equation (8). Across all specifications, we consistently observe a negative coefficient ($\beta^{\text{CE}}_{\text{cont}}$) for the relative EPU term, ranging from approximately –0.22 to –0.28. This suggests that as a country's EPU increases by 10% more than its competitors, US MNCs decrease their FDI count, value, or share in that country by 2.2% to 2.8%. These findings indicate that a country's attractiveness as an investment destination diminishes when its EPU rises at a faster pace compared to its competitors, even after accounting for industry-specific factors.

The economic significance of the relative EPU effect is particularly interesting when compared to the findings from the own EPU analysis (summarized in Table 1). The impact of relative EPU (2.2% to 2.8%) shows a narrower range compared to the effect of own EPU (2.8% to 3.8%). This comparison suggests that the negative influence of EPU on FDI decisions is somewhat mitigated

Table 2: US MNCs' Outward FDI and EPU Relative to Competing Destination Countries

Dep. Variable	$\texttt{FDI Count}^c_{i,t+1}$		$\texttt{FDI}^c_{i,t+1}$		$\texttt{FDI Share}^c_{i,t+1}$	
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A. Discrete Measure of EPU Relative to Competitors					
$\mathbb{1}\{\ln \texttt{EPU}^c_t > \ln \texttt{OthersEPU}^c_{s,t}\}$	-0.27***	-0.26***	-0.32***	-0.27***	-0.23***	-0.24***
	(0.05)	(0.05)	(0.10)	(0.08)	(0.06)	(0.06)
Observations	49,489	20,283	49,489	20,283	49,489	20,283
R2	0.38	0.37	0.45	0.55	0.098	0.091
	Panel B. Continuous Measure of EPU Relative to Competitors					
$\ln \texttt{RelativeEPU}^c_{s,t}$	-0.26***	-0.25***	-0.28***	-0.24***	-0.23***	-0.22***
	(0.05)	(0.06)	(0.07)	(0.06)	(0.05)	(0.05)
Observations	49,489	20,283	49,489	20,283	49,489	20,283
R2	0.37	0.37	0.45	0.55	0.098	0.091
	Panel C. Specification of Panels A and B					
Firm Controls	✓		✓		✓	
Country Controls	✓	✓	✓	✓	✓	✓
Firm FE	✓		✓		✓	
Country FE	✓		✓		✓	
Country×Industry FE		✓		✓		✓
Year×Firm FE		✓		✓		✓
Year×Industry FE	✓		✓		✓	

Notes: This table presents the estimated coefficients from a PPML regression of the form given in equation (3) (Columns 1, 3, and 5) and equation (4) (Columns 2, 4, and 6) with replacing our main regressor, $\ln \texttt{EPU}^c_t$, with $\mathbb{1}\{\ln \texttt{EPU}^c_t > \ln \texttt{OthersEPU}^c_{s,t}\} = \mathbb{1}\{\ln \texttt{RelativeEPU}^c_{s,t} > 0\}$ in Panel A (equation 9) or $\ln \texttt{RelativeEPU}^c_{s,t}$ in Panel B (equation 8). The logarithmic EPU relative to competing countries is the logarithmic difference between own and competing countries' average EPU weighted by the initial FDI share of country in each industry: $\ln \texttt{RelativeEPU}^c_{s,t} = \ln \texttt{EPU}^c_t - \ln \texttt{OthersEPU}^c_{s,t}$, derived from equations (6) and (7). The regression specification and sample are the same as in Table 1 except for the EPU regressors. The standard errors are clustered at the industry (two-digit SIC) level and shown in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

when considering the relative uncertainty levels of competing destinations. Consequently, these results provide compelling evidence of destination competition stemming from EPU in other countries. US MNCs appear to be strategically adjusting their investment decisions based on the comparative risk environment across potential host countries.

4.4 The Direct vs. Spillover Effects by Period

While we have examined the overall impact of both a country's own EPU (direct effect) and the EPU of its competitors (spillover effect) on US MNCs' FDI decisions (as measured by $\ln \texttt{RelativeEPU}^c_{s,t}$), a key question remains. How has the relative importance of a country's own EPU (direct effect, $\ln \texttt{EPU}^c_t$) and the EPU of its competitors (spillover effect, $\ln \texttt{OthersEPU}^c_{s,t}$) changed over time, particularly in the context of the recent increase in global EPU dispersion? This subsection explores

this dynamic by analyzing the potential shift in EPU's influence before and after 2015, coinciding with the rise in global EPU average and dispersion.

To explore the evolving dynamics, we decompose the EPU impact into direct and spillover effects using a regression framework with interaction terms. We introduce a reference year ($t*$), set to 2015, to capture the potential shift in EPU's influence. As discussed in Section 2.2, we chose 2015 as the reference year because the average and dispersion of EPU began to increase around that time. Indicator variables differentiate between the pre-2015 and post-2015 periods, allowing us to estimate separate coefficients for the direct and spillover effects in each era.

To test our hypothesis, we modify the specifications from equations (3) and (4) to incorporate an interaction term with a time dummy variable:

$$\begin{aligned} y^c_{i,t+1} = \exp\Bigg[& \beta^{\text{DE}}_{\text{pre}} \mathbb{1}\{t \geq t^*\} \times \ln \texttt{EPU}^c_t + \beta^{\text{SE}}_{\text{pre}} \mathbb{1}\{t \geq t^*\} \times \ln \texttt{OthersEPU}^c_{s,t} \\ & + \beta^{\text{DE}}_{\text{post}} \mathbb{1}\{t < t^*\} \times \ln \texttt{EPU}^c_t + \beta^{\text{SE}}_{\text{post}} \mathbb{1}\{t < t^*\} \times \ln \texttt{OthersEPU}^c_{s,t} \\ & + \text{other controls \& fixed effects} + \epsilon^c_{i,t} \Bigg], \end{aligned} \tag{10}$$

where $\mathbb{1}\{t \geq t^*\}$ and $\mathbb{1}\{t < t^*\}$ are the indicator variables for before and after the reference year t^*, respectively. Our reference year is 2015. For the direct effects (DE) and spillover effects (SE), the outcomes of these regressions will offer valuable insights into the primary channel through which EPU influences FDI allocation before and after the surge in global average and dispersion of EPU.

Table 3 reveals a clear pattern. In the pre-2015 era, a country's own EPU exerted the primary influence on US MNC FDI allocation decisions. This is evidenced by the negative and statistically significant coefficients for own EPU (ranging from –0.30 to –0.49), with a stronger magnitude compared to the entire sample period (2003–2021) as shown in Table 1 (–0.28 to –0.38). However, the significance of own EPU has diminished since 2015. For the FDI count, the impact after 2015 ($\beta^{\text{DE}}_{\text{post}}$) is approximately half the observed effect in the pre-2015 era. Furthermore, the impact is notably weaker for FDI value and share variables, as indicated by lower coefficient magnitudes and statistical insignificance.

Table 3 also highlights the increasing influence of competitor EPU. Pre-2015 spillover effects were insignificant. After 2015, however, the spillover effect coefficients ($\beta^{\text{FE}}_{\text{post}}$) become significantly positive at the 5–10% level. This suggests competitor EPU is a pronounced factor in recent FDI allocation decisions. Notably, these coefficients (0.82–1.14) exceed the absolute value of those related to own EPU. This might be due to the relative rarity of significant decreases in competitor EPU, given it is calculated as a weighted average of 9 destinations.

Our findings reveal a significant shift in the drivers of US MNC FDI allocation decisions. While own EPU dominated pre-2015, rising global uncertainty has elevated the importance of competitor EPU in recent years, highlighting the growing interconnectedness of the global FDI landscape related to policy stability and predictability.

To ensure the validity of our findings regarding the reference year, we repeat the analysis using

Table 3: US MNCs' Outward FDI and Own and Competing Countries' EPU: Before and After the Uneven Rise in Global EPU

Dep. Variable	$\texttt{FDI Count}^c_{i,t+1}$		$\texttt{FDI}^c_{i,t+1}$		$\texttt{FDI Share}^c_{i,t+1}$	
	(1)	(2)	(3)	(4)	(5)	(6)
$\mathbb{1}\{t < 2015\} \times \ln \texttt{EPU}^c_t$	-0.37***	-0.30***	-0.49***	-0.36**	-0.36***	-0.34***
	(0.08)	(0.09)	(0.14)	(0.15)	(0.11)	(0.10)
$\mathbb{1}\{t \geq 2015\} \times \ln \texttt{EPU}^c_t$	-0.18**	-0.17**	-0.21*	-0.16	-0.07	-0.06
	(0.08)	(0.09)	(0.11)	(0.13)	(0.08)	(0.08)
$\mathbb{1}\{t < 2015\} \times \ln \texttt{OthersEPU}^c_{s,t}$	-0.51	-0.50	-1.50	-1.05	-0.50	0.05
	(0.88)	(0.67)	(1.50)	(0.87)	(1.09)	(0.63)
$\mathbb{1}\{t \geq 2015\} \times \ln \texttt{OthersEPU}^c_{s,t}$	0.82**	0.84**	0.94**	0.94*	1.14**	0.89**
	(0.40)	(0.36)	(0.41)	(0.49)	(0.45)	(0.36)
Observations	49,489	20,283	49,489	20,283	49,489	20,283
R2	0.375	0.372	0.447	0.548	0.098	0.092
Firm Controls	✓		✓		✓	
Country Controls	✓	✓	✓	✓	✓	✓
Firm FE	✓		✓		✓	
Country FE	✓		✓		✓	
Country×Industry FE		✓		✓		✓
Year×Firm FE		✓		✓		✓
Year×Industry FE	✓		✓		✓	

Notes: This table presents the estimated coefficients from a PPML regression of the form given in equation (10). We allow the different coefficients for before and after $t^* = 2015$. The regression specification and sample are the same as in Table 1 except for the EPU regressors. The standard errors are clustered at the two-digit SIC level and shown in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. See Table C.1 for different reference years ($t^* = 2014$ and 2016).

2014 and 2016 as alternatives. Appendix Table C.1 presents the analyses using 2014 or 2016 as the reference years. The results remain the same, which implies that the observed evolution in the importance of relative EPU has begun quite early, in concurrence with the investors' potential concerns with China. At the same time, the within-firm reallocation spillover effect is much stronger for the 2016 reference year (1.31 and 1) than the baseline reference year of 2015 (1.14 and 0.89), which indicates that the spillover effect has become a critical factor in more recent years.

In summary, our decomposition exercise of the direct vs. spillover effects reveals a significant shift in the dynamics of EPU on US MNCs' greenfield FDI decisions. Before 2015, a country's own EPU held sway as the dominant factor, but its influence has markedly diminished in the post-2015 era, signaling a paradigm shift in the direct effect. Conversely, the EPU of the country's competitors has emerged as the primary determinant after 2015, highlighting the growing role of spillover effects. This uncovering of recent dynamics sheds light on the evolving strategies of US MNCs in navigating global economic uncertainties.

Discussion Our research points out the importance of considering the characteristics of host country competitors in MNCs' FDI decisions. This marks a substantial departure from the conven-

tional emphasis solely on host country attributes.[10] These characteristics not only influence the attractiveness of the host country for FDI but also create a dynamic interplay with the investment climate of competing nations.

Our findings present a fresh perspective compared to existing literature. Traditionally, competition for FDI has revolved around host countries offering incentives like relaxed tax rates and subsidies to attract investment, as exemplified by Konrad and Kovenock (2009). This approach has spurred a race to the bottom in capital gains tax rates among developing nations, which has uncertain long-term benefits on these nations. In contrast, our research suggests that competition for stability and predictability in economic policies offers a sustainable path. Moreover, while Nguyen, Kim and Papanastassiou (2018) discuss the impact of the EPU ratio between origin and host countries on multinational decisions, they do not explore inter-competition dynamics among host countries.

The evolution of EPU's importance since 2015 (after the uneven rise in global EPU) underscores the pressing need for future research to comprehend its implications for policymakers and MNCs navigating the intricate global investment landscape. Recent trends indicate geopolitical realignments and strategic partnerships aimed at forging secure global investment connections, e.g., Kandogan and Hiller (2018), Aiyar et al. (2024), and Gopinath et al. (2024). Our comparative analysis of host and competing country dynamics aims to contribute to this burgeoning area of literature.

5 Conclusion

The global landscape of foreign direct investment (FDI) can be characterized by intense competition among countries vying for investments from multinational corporations (MNCs). Governments traditionally employed a range of industrial policies, such as tax breaks and subsidized infrastructure, to entice these investments. These policies are typically rooted in the neo-classical model's expectation of economic growth through capital accumulation and enhanced domestic firm performance via supply chain linkages and increased exports (Alfaro-Urena, Manelici and Vasquez 2022 and Demir and Lee 2022). Additionally, they aim to generate both macro- and microeconomic benefits (Alfaro 2017). This competition has manifested in a dramatic rise in Special Economic Zones—a popular policy tool for attracting FDI—from 76 in 1986 to over 4,500 globally by 2018 (Alfaro-Urena et al. 2022). This highlights the increasing importance of a stable and predictable economic environment, or the lack thereof (policy uncertainty), in influencing US MNCs' FDI decisions.

Our study investigates the influence of economic policy uncertainty (EPU) on how US MNCs navigate the global investment landscape, especially considering the recent rise in global EPU and

[10] Until now, the prevailing understanding has centered on factors such as the host country's absorptive capacity, including robust contracting institutions as highlighted by Acemoglu, Antràs and Helpman (2007), as well as institutional reforms regarding tariffs and R&D subsidies as demonstrated by Egger and Keuschnigg (2015), and the level of financial development, as evidenced by Desbordes and Wei (2017), Bilir, Chor and Manova (2019).

its increasing variation across countries. We first find that EPU within a potential host country discourages investment by US MNCs. This aligns with their risk-averse nature, especially for long-term (irreversible) investments like building factories or establishing logistic and R&D centers. We also demonstrate the EPU spillover effect: EPU creates an opportunity in more stable competing destinations. This finding emphasizes the growing importance of a country's EPU relative to its competitors in shaping FDI decisions. Interestingly, the impact of EPU appears dynamic. As global uncertainty has risen, the negative influence of a single country's EPU seems to be lessening, while the positive influence of competitor EPU (spillover effect) has become increasingly prominent after the uneven rise in global EPU (around 2015).

These findings suggest policymakers to prioritize fostering a stable and predictable economic policy environment to attract and retain FDI in today's increasingly competitive global landscape. This can be achieved through measures promoting transparency, reducing regulatory burdens, and maintaining clear communication regarding economic policy direction. By prioritizing policy stability, countries can position themselves to attract crucial FDI and contribute to a more resilient global supply chain network.

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A Supplementary Figures and Tables to Section 2

Table A.1: Sample FT fDiMarkets data observations

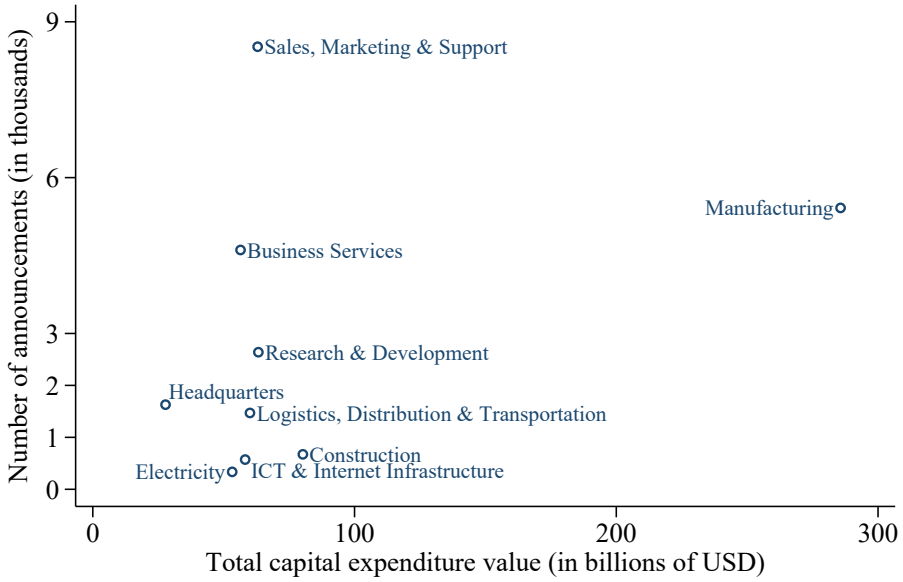
(1) Firm	(2) Destination	(3) Activity	(4) Month	(5) CAPEX (million USD)
GM	South Korea	Headquarters	2018m5	19.4
GM	Mexico	Education & Training	2018m6	1.2
GM	Mexico	Manufacturing	2018m8	89.8
GM	Brazil	Manufacturing	2019m2	331
GM	Canada	Manufacturing	2019m5	126.55
GM	Mexico	Research & Development	2019m8	16.2
GM	China	Research & Development	2020m10	143.2
GM	Canada	Manufacturing	2021m1	8
GM	Mexico	Manufacturing	2021m4	1
GM	Brazil	Research & Development	2021m11	56.6

Notes: This table presents an example of FT fDiMarkets observations from the perspective of General Motors Corporation (GM) as the parent company. We list the ten most recent greenfield FDI projects announced by GM.

Using Appendix Table A.1, we show an example of FT fDiMarkets greenfield FDI observations. As in Alfaro and Charlton (2009), we use the General Motors Corporation (GM) to illustrate the utility of distinguishing among projects at this level of detail when assessing FDI data. Between 2003 and 2021, as the global parent company, GM announced 238 greenfield FDI projects outside the US. Within our data, the global parent company is the largest entity in the multinational network. Within this network, foreign subsidiaries, joint ventures, or affiliates of GM can invest in cross-border greenfield FDI projects. We include all of them as part of GM's multinational activity based on our assumption that economic policy uncertainty may directly or indirectly influence them. For instance, it would be reasonable to assume that when GM's subsidiary in Mexico decides to expand its factory, GM executives would consider Mexico's economic and political environments. At the same time, this decision may derive from the rise of EPU in China. Among GM's 238 greenfield FDI projects, 142 of them (a total share of 60%) are classified as the manufacturing activity type.

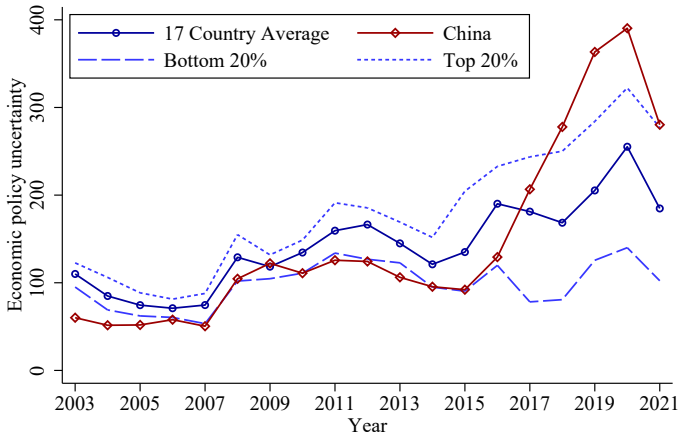
Table A.1 shows observations of the fDiMarkets data using GM's ten most recent greenfield FDI projects until 2021. We report the name of the global ultimate parent company (column 1) with various destination countries (column 2), each with a unique investment activity type (column 3), timing (column 4), and capital expenditure amount in millions of USD (column 5). Each project is unique, even if the projects share the same destination or activity type. For instance, GM has invested in a series of greenfield FDI projects in Mexico, from an education & training center in June 2018 for 1.2 million USD to manufacturing facilities in August 2018 and April 2021 for a combined amount of 90.8 million USD to an R&D center on August 2019 for 16.2 million USD. Regarding manufacturing, GM has made much more significant investments in Brazil (331 million USD) and Canada (134.55 million USD) than Mexico for the 2019 and 2021 figures.

Figure A.1: US MNC's Greenfield FDI Projects by Activity



Notes: For the 21 sample destination countries based on the availability of the EPU database, this figure depicts aggregated values of US MNC's greenfield FDI projects from 2003 to 2021 by activity type, using the FT fDiMarkets data. We depict only major activities in this figure: Customer Contact Center, Education & Training, Maintenance & Servicing, Shared Services Center, Technical Support Center, Recycling, and Extraction are not included because of their marginal values.

Figure A.2: The Evolution of Economic Policy Uncertainty: Global and China (17 Destination countries)



Notes: This figure depicts the annualized averages of the economic policy uncertainty index (Baker et al. 2016) from 2003 to 2021 (consistent with the period of our FDI data) for destination countries of US MNCs. The solid red line (diamond symbol) represents data specific to China, while the solid blue line (circle symbol) illustrates the averages across the 21 potential destination countries (including Australia, Brazil, Canada, China, France, Germany, India, Ireland, Italy, Japan, Mexico, Netherlands, Russia, Singapore, South Korea, Spain, and the United Kingdom). Additionally, the blue short and long dashed lines depict the upper and lower bounds of the top and bottom 20% of these 17 potential destination countries, respectively.

Table A.2: Variable Definitions

Variable	Definition	Source
	Panel A: Firm-level variables	
Sales	Total sales	Compustat annual item `SALE`
Assets	Total assets	Compustat annual item `AT`
Variable costs	Costs of Good Sold	Compustat annual item `COGS`
Sales / variable costs		Compustat annual item `SALE/COGS`
Employment	Total employment	Compustat annual item `EMP`
Labor productivity	Sales / employment	Compustat annual item `SALE/EMP`
Return on assets	Return on assets	Compustat annual item `ROA`
Leverage	Long & short term debt / Assets	Compustat annual item (`DLTT+DLC`)/`AT`
	Panel B: Country-level variables	
FTA dummy	Regional Trade Agreements	CEPII annual item `fta_wto`
Income	GDP per capita (current US$)	CEPII annual item `gdpcap_d`
Tariff	Import and export tariff rates	WITS annual item `AHS Weighted Average (%)`

Notes: Following Bonaime et al. (2018), we winsorize the firm control variables at the 1^{st} and 99^{th} percentiles.

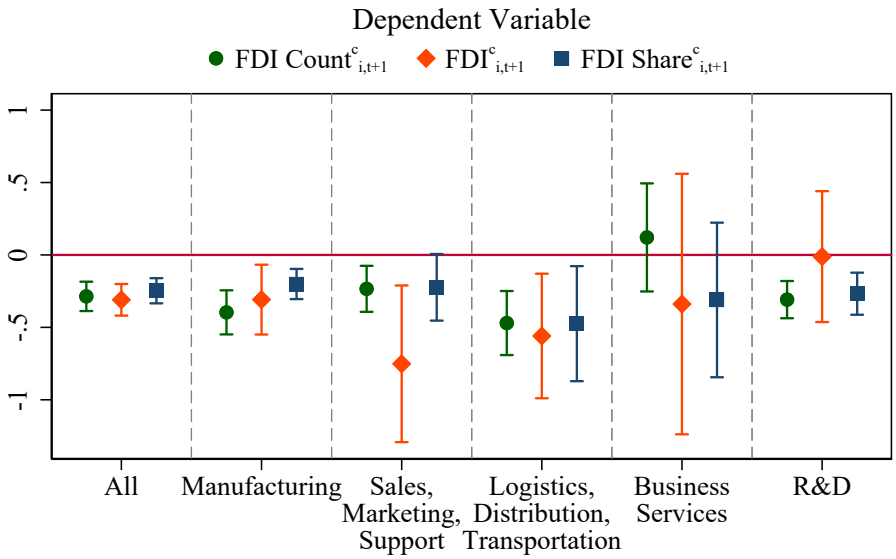
Table A.3: Summary Statistics

Variable	Observations	Mean	S.D.	Percentile			
				p25	p50	p75	p95
	Panel A. Firm-Country-Year Level						
FDI count	66840	0.137	0.786	0	0	0	1
FDI (USD million)	66840	4.112	34.75	0	0	0	6.60
FDI share	62870	0.035	0.167	0	0	0	0.128
	Panel B. Firm-Country-Year Level Without Zeros						
FDI count	4531	2.026	2.298	1	1	1	9
FDI (USD million)	4531	60.65	119.93	6.10	21.30	58.10	267.00
FDI share	4302	0.517	0.397	0.113	0.464	1	1
	Panel C. Firm-Year Level						
Assets (USD million) in log	397	10.19	1.31	9.28	10.07	11.05	12.63
Sales / Employment	397	6.206	0.814	5.702	6.070	6.733	7.706
Sales / Cost of Good Sold	396	2.590	2.217	1.438	1.847	2.770	6.759
Return of assets	397	0.081	0.073	0.032	0.070	0.116	0.229
Leverage	397	0.660	0.226	0.505	0.665	0.801	1.038
	Panel D. Country-Industry-Year Level						
Relative EPU in log	29273	-0.045	0.527	-0.278	0.026	0.262	0.717
Competing countries' EPU in log	29273	4.878	0.493	4.533	4.875	5.206	5.711
	Panel E. Country-Year Level						
EPU	190	147.98	89.60	81.35	124.95	179.39	331.68
EPU in log	190	4.833	0.556	4.399	4.828	5.190	5.804
GDP per capita (USD thousand)	190	29.23	21.60	8.62	30.55	46.25	61.22
Trade agreement dummy	190	0.295	0.457	0	0	1	1
Import tariff (%)	190	2.442	7.379	0.130	1.909	2.884	3.443
Export tariff (%)	187	3.378	3.617	0.982	1.867	5.899	8.349

Notes: This table presents the summary statistics of the key variables used in our analyses. We include firms with positive sales, assets, capital expenditure, and employment. All firm level variables are winsorized at the 1% and 99% levels. Detailed description on each variable can be found in Section 2.

B Supplementary Figures and Tables to Section 3

Figure B.1: US MNCs' Outward FDI and Destination EPU by Investment Activity: Alternative Specification



Notes: This figure plots the estimated β coefficients from a PPML regression of the form given in equation (4) by major investment activity defined by FT fDiMarkets data. "All" corresponds to the point estimates of $\ln \texttt{EPU}_t^c$ in Table 1, Columns (3), (6) and (9). The vertical lines refer to the 95% confidence interval. The horizontal line is drawn at zero. See Figure 3 for the benchmark specification results, corresponding Columns (2), (5) and (8) in Table 1.

Table B.1: US MNCs' Outward FDI and Destination EPU: Sub-sample

Dep. Variable	$\texttt{FDI Count}^c_{i,t+1}$		$\texttt{FDI}^c_{i,t+1}$		$\texttt{FDI Share}^c_{i,t+1}$	
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A. 17 Destination Countries					
$\ln \texttt{EPU}^c_t$	-0.22***	-0.21***	-0.31***	-0.29***	-0.20***	-0.20***
	(0.05)	(0.05)	(0.07)	(0.07)	(0.06)	(0.06)
Observations	89,557	37,734	89,557	37,734	89,557	37,734
R2	0.377	0.375	0.440	0.530	0.102	0.106
	Panel B. Alternative Sample Period I: t =2008–2021					
$\ln \texttt{EPU}^c_t$	-0.37***	-0.37***	-0.51***	-0.49***	-0.26***	-0.27***
	(0.07)	(0.08)	(0.12)	(0.12)	(0.06)	(0.07)
Observations	35,308	14,492	35,308	14,492	35,308	14,492
R2	0.357	0.359	0.449	0.561	0.083	0.088
	Panel C. Alternative Sample Period II: t =2003–2016					
$\ln \texttt{EPU}^c_t$	-0.21***	-0.24***	-0.24*	-0.28**	-0.27***	-0.28***
	(0.07)	(0.07)	(0.13)	(0.11)	(0.07)	(0.07)
Observations	37,580	16,023	37,580	16,023	37,580	16,023
R2	0.388	0.387	0.462	0.565	0.100	0.100
	Panel D. Specification of Panels A, B, and C					
Firm Controls	✓		✓		✓	
Country Controls	✓	✓	✓	✓	✓	✓
Firm FE	✓		✓		✓	
Country FE	✓		✓		✓	
Country×Industry FE		✓		✓		✓
Year×Firm FE		✓		✓		✓
Year×Industry FE	✓		✓		✓	

Notes: This table presents robustness checks to the baseline results in Table 1, Columns (2)–(3), (5)–(6) and (8)–(9). Specifically, we extend our sample to 17 sample countries (top 10 countries + Australia, France, Italy, Japan, South Korea, Netherlands, and Russia). Also, to avoid rapid globalization and the US-China trade war, we restrict our sample period to 2008–2021 and 2003–2016. The standard errors are clustered at the industry (two-digit SIC) level and shown in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

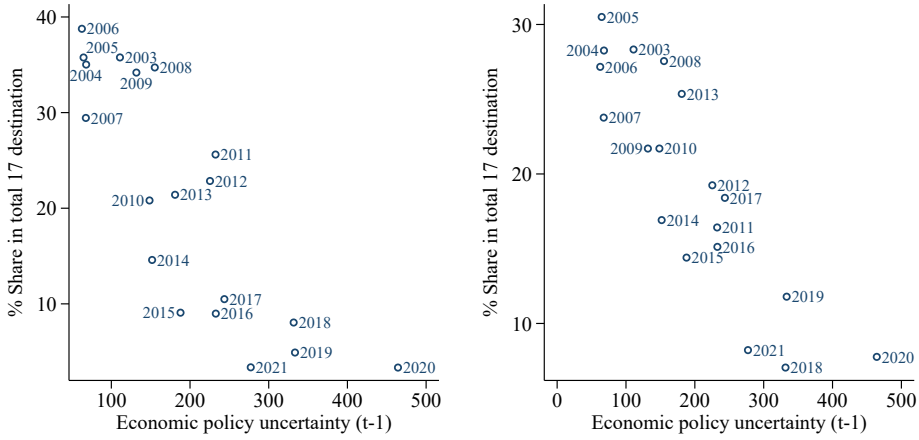
Table B.2: US MNCs' Outward FDI and Destination EPU: Growths and Lags

Dep. Variable	$\texttt{FDI Count}^c_{i,t+1}$		$\texttt{FDI}^c_{i,t+1}$		$\texttt{FDI Share}^c_{i,t+1}$	
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A. Specification with Lagged EPU					
$\ln \texttt{EPU}^c_t$	-0.41***	-0.37***	-0.54***	-0.47***	-0.34***	-0.35***
	(0.08)	(0.08)	(0.12)	(0.10)	(0.10)	(0.11)
$\ln \texttt{EPU}^c_{t-1}$	0.17	0.10	0.26**	0.20**	0.14	0.15
	(0.10)	(0.09)	(0.11)	(0.10)	(0.12)	(0.13)
Observations	46,389	19,174	46,389	19,174	46,389	19,174
R2	0.374	0.375	0.447	0.550	0.092	0.090
	Panel B. Specification with EPU Growth					
$\Delta \ln \texttt{EPU}^c_t$	-0.29***	-0.37***	-0.40***	-0.34***	-0.24**	-0.25**
	(0.08)	(0.08)	(0.10)	(0.09)	(0.10)	(0.12)
Observations	46,389	19,174	46,389	19,174	46,389	19,174
R2	0.374	0.375	0.446	0.549	0.091	0.089
	Panel C. Specification with Lagged Firm and Country Controls					
$\ln \texttt{EPU}^c_t$	-0.27***	-0.27***	-0.29***	-0.27***	-0.22***	-0.23***
	(0.06)	(0.06)	(0.08)	(0.07)	(0.05)	(0.06)
Lagged Firm Controls	✓		✓		✓	
Lagged Country Controls	✓	✓	✓	✓	✓	✓
Observations	45,684	18,654	45,684	18,654	45,684	18,654
R2	0.375	0.375	0.450	0.553	0.093	0.092
	Panel D. Specification of Panels A, B, and C					
Firm Controls	✓		✓		✓	
Country Controls	✓	✓	✓	✓	✓	✓
Firm FE	✓		✓		✓	
Country FE	✓		✓		✓	
Country×Industry FE		✓		✓		✓
Year×Firm FE		✓		✓		✓
Year×Industry FE	✓		✓		✓	

Notes: This table presents robustness checks to the baseline results in Table 1, Columns (2)–(3), (5)–(6) and (8)–(9). Specifically, various time dimensions of $\ln \texttt{EPU}^c_t$ are used. The standard errors are clustered at the industry (two-digit SIC) level and shown in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

C Supplementary Figures and Tables to Section 4

Figure C.1: China's Economic Policy Uncertainty and Inward FDI Share in 17 Destinations



(a) Number of Announcements **(b)** Total Capital Expenditure Value

Notes: This figure depicts the association between China's economic policy uncertainty (x-axis) and US MNCs' greenfield FDI in China (y-axis). The x-axis is from Baker et al. (2016) economic policy uncertainty index for China with a one-year lag from 2003 to 2021. The y-axis is from (unwinsorized) FT fDiMarkets data with two variations: China's share in the total count of announcements worldwide (left panel) and total capital expenditure worldwide (right panel), where the worldwide refers to 17 potential destination countries for the US MNCs.

Table C.1: US MNCs' Outward FDI and Own and Competing countries' EPU: Before and After 2014 or 2016

Dep. Variable	$\texttt{FDI Count}^c_{i,t+1}$		$\texttt{FDI}^c_{i,t+1}$		$\texttt{FDI Share}^c_{i,t+1}$	
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A. Before vs. After t^* =2014					
$\ln \texttt{EPU}^c_t$						
t <2014	-0.56***	-0.47***	-0.76***	-0.59***	-0.47***	-0.45***
	(0.11)	(0.12)	(0.20)	(0.23)	(0.13)	(0.11)
$t \geq$2014	-0.16**	-0.14*	-0.18*	-0.12	-0.08	-0.07
	(0.08)	(0.08)	(0.11)	(0.12)	(0.08)	(0.07)
$\ln \texttt{OthersEPU}^c_{s,t}$						
t <2014	-0.63	-0.66	-1.65	-1.18	-0.37	0.13
	(0.88)	(0.66)	(1.56)	(0.92)	(1.10)	(0.57)
$t \geq$2014	0.80**	0.86**	0.88**	0.91*	1.02**	0.81**
	(0.40)	(0.35)	(0.42)	(0.46)	(0.44)	(0.34)
Observations	49,489	20,283	49,489	20,283	49,489	20,283
R2	0.375	0.372	0.448	0.548	0.098	0.092
	Panel B. Before vs After t^* =2016					
$\ln \texttt{EPU}^c_t$						
t <2016	-0.36***	-0.31***	-0.46***	-0.32***	-0.31***	-0.29***
	(0.08)	(0.10)	(0.13)	(0.12)	(0.11)	(0.10)
$t \geq$2016	-0.17*	-0.15*	-0.19*	-0.15	-0.05	-0.05
	(0.09)	(0.09)	(0.11)	(0.12)	(0.08)	(0.08)
$\ln \texttt{OthersEPU}^c_{s,t}$						
t <2016	-0.03	-0.07	-1.15	-0.70	-0.58	-0.05
	(0.98)	(0.77)	(1.31)	(0.77)	(1.17)	(0.73)
$t \geq$2016	0.66*	0.76*	0.94**	0.93*	1.31***	1.00**
	(0.40)	(0.42)	(0.44)	(0.50)	(0.47)	(0.40)
Observations	49,489	20,283	49,489	20,283	49,489	20,283
R2	0.375	0.372	0.447	0.548	0.098	0.092
	Panel C. Specification of Panels A and B					
Firm Controls	✓		✓		✓	
Country Controls	✓	✓	✓	✓	✓	✓
Firm FE	✓		✓		✓	
Country FE	✓		✓		✓	
Country×Industry FE		✓		✓		✓
Year×Firm FE		✓		✓		✓
Year×Industry FE	✓		✓		✓	

Notes: This table presents robustness checks to the baseline results in Table 3 by allowing the different reference year $t^* = 2014$ (Panel A) or $t^* = 2016$ (Panel B). The standard errors are clustered at the two-digit SIC level and shown in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.