Geopolitics and Export Miracles: Firm-Level Evidence from U.S. War Procurement in Korea*

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November 3, 2025

Abstract

How did geopolitics shape East Asia's economic development? We show that U.S. war procurement during the Vietnam War—a fiscal shock which peaked at 2.9 percent of South Korea's GDP, rivaling the Marshall Plan—catalyzed Korea's export-led industrialization. We construct a new firm-level dataset linking Korean export records with U.S. procurement contracts (1966–1974) to estimate the causal impact of winning a contract on export performance. Winning an initial contract increases a firm's likelihood of exporting by 46 percentage points and triples its export value. These effects extend beyond sales to the United States: treated firms also expanded into third-country markets. We validate our research design using unique, contemporaneous firm-level export targets, showing that contracts were not anticipated and unrelated to export shocks. The policy had lasting effects. We find that firms treated in the 1960s responded more strongly to South Korea's heavy and chemical industry drive of the 1970s, indicating that U.S. procurement and domestic industrial policy were complementary. Our findings reveal a neglected channel through which Cold War geopolitics helped shape the East Asian economic miracle.

*We thank Yiming Cao, Marc Dordal i Carreras, Gordon Hanson, Ruixue Jia, Dani Rodrik, Jón Steinsson, Michael Wong, and seminar participants at Harvard Kennedy School, Oxford University, the IFS-UCL-LSE/STICERD Development WiP Seminar, and the University of Hong Kong for their helpful suggestions.

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1 Introduction

The East Asian miracle was forged in the Cold War. Beyond the battlefields, the Korean and Vietnam Wars reshaped the region's economic landscape. In the 1950s, U.S. military demand from the Korean War jump-started Japan's struggling postwar economy, effectively serving as Japan's Marshall Plan (Johnson, 1972; Nakamura, 1981). A decade later, massive U.S. procurement for the Vietnam War poured into nearly every major ally across the Asia-Pacific, reaching between 2 and 10 percent of GDP annually in emerging economies such as South Korea, Singapore, Hong Kong, and Taiwan (Naya, 1971a; Park and Clayton, 2003; Toye, 2018).

How did Cold War demand shape East Asia's export-led industrialization? Despite the scale and significance of the procurement boom, we know surprisingly little about how U.S. military demand influenced East Asia's export miracle. No modern empirical studies exist. Anecdotally, Korean War contracts rescued major Japanese producers, such as Toyota and Suzuki (Dingman, 1993), while emerging Korean conglomerates, including Hyundai and Samsung, gained experience as suppliers to the Vietnam War effort (Glassman and Choi, 2014). Yet, systematic empirical analysis of the episode is missing.

We examine how the Vietnam War procurement boom shaped South Korea's export development. Between 1966 and 1974, the United States awarded $766 million in military procurement contracts to Korean firms—a fiscal shock which peaked at 2.9 percent of 1968 GDP, rivaling the Marshall Plan.[1] To study the boom, we construct a firm-level dataset that links newly digitized Korean export records with historical U.S. procurement contracts, providing rare micro-level evidence for this historical setting. Using variation in the timing of firm contracts, we implement a staggered event-study design to estimate the impact of procurement on the evolution of firm exports. Moreover, we draw on unique data on firm-level export plans set jointly by firms and the Korean government to validate our identification strategy and test its key assumptions.

We find that winning a procurement contract substantially boosts a firm's exports and yields lasting benefits to exporters. Firms awarded their first military contract experience an immediate increase in both the probability of exporting (extensive margin) and the value of exports (intensive margin). These effects are large: treated firms are 45.9% more likely to

[1] By comparison, the Marshall Plan amounted to roughly 2 percent of GDP for recipient European countries from 1948–51 (Eichengreen, 2010). Korean War procurement for Japan is estimated to be between 3% and 3.5%; Vietnam War procurement for Japan was larger in absolute terms, although smaller as a share of aggregate income.

export, and their export volumes rise by 219%. In addition to increasing exports to the U.S. and South Vietnam, treated firms also increased exports to other third-country markets.

The positive extensive- and intensive-margin effects persist for years after the initial contract —and well beyond the Vietnam War. Even amid South Korea's broader export boom, firms exposed to procurement contracts continued to export significantly more than others. This persistence suggests that procurement has either relaxed long-term constraints or strengthened fundamentals, such as firms' productivity in dealing with foreign buyers and the credibility gained as U.S. government suppliers. Finally, firms that won procurement contracts achieved larger export gains during the subsequent Heavy and Chemical Industry (HCI) drive, suggesting that foreign demand shocks complemented domestic industrial policy.

We validate our research design using both standard diagnostic checks and a distinctive feature of our data: firm-level export targets jointly set by the Korean government and firms. These export targets capture expectations based on information available at the time of planning, enabling us to test the two core threats to identification in our event-study design: (i) selection on expected growth and (ii) anticipation. We find no differential pre-treatment trends in either exports or targets between treated and untreated firms. Furthermore, in the year of a firm's first procurement contract, exports rise sharply, but targets—set one year earlier–do not. One year later, targets increase, consistent with policymakers and firms updating expectations after observing realized export gains. This pattern—parallel pre-trends, immediate effect on exports, but only delayed updating of targets—rules out primary threats to identification, such as selection on expected export growth.

Taken together, our estimates indicate that U.S. military procurement had substantial aggregate effects on South Korea's export boom. On the extensive margin, procurement expanded the number of exporting firms by 68, or about 13.5% of large exporters (those exporting more than $100,000) in 1968 and 8.3% in 1973. On the intensive margin, contract-winning firms persistently tripled their export volumes, raising Korea's total exports by roughly $120 million (26.1% of national exports) in 1968 and $623 million (20.1%) in 1973.

We make four contributions.

First, we provide one of the first quantitative analyses of the geopolitical forces that shaped the East Asian growth miracle, examining how Cold War conflict influenced the industrial dynamism of U.S. allies. By focusing on wartime procurement and demand shocks, we reveal how geopolitical and geoeconomic forces influenced industrialization beyond—

and alongside—national political economy and domestic policy. Thus, we join the emerging economics literature on geoeconomics (Clayton et al., 2023; Mohr and Trebesch, 2025).[2] Our empirical work complements research in geopolitics of trade and capital flows (Kleinman et al., 2024; Horn et al., 2024), by studying how war and strategic global production decisions shaped industrial dynamism.

We also build on—and revisit—political economy and historical scholarship on how Cold War demand shaped the East Asian growth miracle. Scholars have long emphasized that Cold War conflict profoundly influenced the region's economic development (Naya, 1971b; Stubbs, 1999, 2005), a view captured by Bruce Cumings: "warfare in East Asia was handmaiden to economic growth (Cumings, 1997, p.322). Most notably, researchers of postwar Japan have documented how the "Korean boom" laid the foundations for Japan's subsequent miracle (Nakamura, 1981; Kōsai, 1986; Kōsai and Goble, 1989; Beckley et al., 2018; Miller, 2024).[3] Likewise, historians have argued that the Vietnam War was pivotal for Korea's industrial ascent (Amsden, 1989; Woo, 1991; Cumings, 1997; Frentzos, 2004, 2013). Yet the historical evidence remains piecemeal and contested, and systematic economic studies are particularly scarce (see Park and Clayton, 2003; Togo, 2015). Despite the magnitude of the episode, the contribution of foreign military procurement to industrial development remains poorly understood (Woo, 1991; Glassman and Choi, 2014; Park and Clayton, 2003).[4] Our study provides the first empirical analysis of this episode, quantifying the effects of U.S. military demand on South Korea's export development.

Second, our empirical strategy adapts a tool from macroeconomics—military procurement shocks (Nakamura and Steinsson, 2014)—to study external economic development. A large empirical literature has used variation in defense spending to identify the effects of fiscal policy on domestic economies (e.g., Ramey and Shapiro, 1998; Ramey, 2011a,b; Brunet, 2024), particularly the fiscal multiplier. We extend this approach to an international setting by examining how procurement-driven demand shaped one of the most significant episodes of global industrial transformation. In spirit, our approach is closest to Mitrunen (2025), who studies how forced exports imposed by Stalin transformed Finland's economy through human capital accumulation. More broadly, we contribute to the emerging litera-

[2]Following a much longer social science tradition, Clayton et al. (2023) defines geoeconomics as when "governments use their countries' economic strength from financial and trade relationships to achieve geopolitical and economic goals."

[3]For rare quantitative evidence on U.S. assistance and Japanese postwar growth, see Beckley et al. (2018).

[4]The best work of this comes from Korean and Japanese language scholarship. See excellent qualitative work by Kimiya (1996) [in Japanese] and Joo (2018) [in Korean].

ture on procurement and growth by focusing on how external military demand promoted firm-level export capacity and long-run industrialization.

Third, we use procurement shocks from the Vietnam War to provide new evidence on how external demand fosters export development. Our results align with a growing literature in international trade showing that export demand can raise firm productivity (Alfaro-Ureña et al., 2022; Goldberg and Reed, 2023) and generate dynamic economies of scale (Hanlon, 2020; Mitrunen, 2025). We extend this literature by taking a long-run perspective on export promotion and its persistent effects on industrial upgrading. Our historical evidence complements recent experimental studies that exogenously vary firms' market access and trace its short-run impacts on productivity, learning-by-exporting, and quality upgrading (Atkin et al., 2017; Ali et al., 2025).

Finally, we contribute to a long-standing debate in development economics on the effects of aid and external transfers (e.g., Angelucci and Giorgi, 2009; Casey et al., 2012; Qian, 2015; Dreher et al., 2017; Egger et al., 2022). The growth effects of Western aid remain contested, and the economic success of East Asia is often cited as a counterpoint to the perceived aid dependency of other regions (Easterly, 2003). While most studies focus on direct transfers, we highlight a distinct channel of external support—government procurement and preferential market access—that operated through firms rather than fiscal transfers.

Our evidence suggests that a specific form of aid—preferential access to U.S. procurement contracts for Korean firms—substantially increased their exports and generated effects large enough to be macroeconomically significant. Yet the scale and composition of Western aid in the East Asian Miracle remain underappreciated: between 1946 and 1978, South Korea received $12.6 billion in American military and economic assistance, while Taiwan received $5.6 billion—compared with $6.9 billion in economic aid for all of Africa.[5] Our results situate East Asia within the broader debate on the historical impact of aid and foreign economic intervention. More broadly, the large effects of procurement suggest lessons for modern programs that seek to promote exports in developing countries, such as the African Growth and Opportunity Act (AGOA).

Layout The paper proceeds as follows. Section 2 outlines the historical context. Section 3 describes the data and summary statistics. Section 4 presents the empirical strategy and main results. Section 5 concludes.

[5] See Figure 7 in Appendix A.

2 Historical Context

2.1 War Procurement and the East Asian Miracle

War procurement spurred by America's conflicts during the Cold War played an important, though often overlooked, role in shaping East Asia's industrial development. The demand booms from the Korean and Vietnam Wars, along with broader U.S. military spending, profoundly altered the economies of allied countries across the Asia-Pacific. In the 1950s, the Korean War helped catalyze growth in Japan, whose economy had been teetering on the brink of recession (Johnson, 1972; Dingman, 1993). War procurement specifically is credited with reviving the Japanese automobile industry—a cornerstone of Japan's reindustrialization—through a surge in purchases from Nissan, Isuzu, and most famously Toyota, which was on the brink of failure before an American order for 1,000 trucks.

In the 1960s, America's massive military spending on the Vietnam War had profound effects beyond South Vietnam itself, transforming the economies of newly industrializing nations, including South Korea, Taiwan, Singapore, Thailand, and the Philippines (Central Intelligence Agency, 1969). South Korea was a particularly significant beneficiary. Its Western-allied president, Park Chung-hee, struck a deal with the United States to deploy Korean combat and non-combat troops to South Vietnam in exchange for substantial economic benefits: American procurement of Korean "supplies, services, and equipment" plus $150 million in additional aid (Woo, 1991). This arrangement was formalized in the Brown Memorandum of March 4, 1966 (Frentzos, 2013).

The deal with the United States was a major economic and diplomatic coup for Park Chung-hee's regime (Halloran, 1970). When Park seized power in 1961, South Korea was heavily dependent on American support; U.S. aid was equivalent to 12% of South Korea's GDP, covering 73% of its imports (Woo, 1991). From the U.S. government's perspective, the South Vietnam deal served two major purposes. First, military procurement could compensate for an expected reduction in American aid, and second, it would bind South Korea geopolitically to America's security apparatus (Frentzos, 2013). South Korea ultimately sent 350,000 troops to South Vietnam, making it the second-largest contributor of forces on the non-communist side after the United States.[6]

The Vietnam War presented a major growth opportunity for fledgling Korean companies

[6]These forces—described as "mercenaries" by U.S. officials who sponsored South Korea's role in the war (Baldwin, 1975)—were implicated in numerous war crimes, including the massacre of at least 9,000 South Vietnamese civilians throughout the war.

(Park and Clayton, 2003). These companies secured lucrative procurement contracts in two key areas: manufacturing goods in South Korea for the American war effort and providing services directly in South Vietnam:

> The major forms of U.S. commercial assistance were procurement of war supplies in South Korea and construction/service contracts for R.O.K. firms in Vietnam. Among the major South Korean exports to Vietnam were military uniforms, jungle boots, corrugated metal roofing and cement. In the construction and service field, at one point more than eighty South Korean companies held contracts with the U.S. government in Vietnam. Their activities included construction and engineering, transportation of goods, and operating service facilities such as laundry shops and entertainment clubs (Baldwin, 1975).

The Vietnam War was profitable for the emergent *chaebols* (Kim et al., 2011), family-owned business conglomerates with close links to the state. One firm that benefited significantly from war procurement was Hyundai. Throughout the 1960s, Hyundai's construction arm completed numerous war-related construction contracts that escalated in scale: from the construction of the Pattani–Narathiwat Highway in Thailand from 1965-68, to the dredging of South Vietnam's Cam Ranh Bay, to eventually the building of U.S. military bases in Guam from 1969-75 (Glassman and Choi, 2014). From 1963 to 1966, military contracts accounted for 77% of Hyundai's total profits. Importantly, the experience gained by Hyundai's engineers and managers provided a springboard for the company to begin winning lucrative construction contracts in the Middle East in the 1980s (Steers, 1998).

This paper builds on the substantial qualitative literature documenting the benefits of the war procurement boom, providing the first *quantitative* estimates of the effect of war procurement on individual firms.

2.2 The Contract Procurement Process

In theory, contract procurement was supposed to be controlled by the U.S. military. Proposals over $10,000 were first sent to a U.S. estimator and an Independent Government Cost Estimate (IGCE), which would then be forwarded to American military units: the U.S. Korean Procurement Agency (KPA), a unit of the Eighth Army, for in-Korea procurement, or the Far East District of Engineers for out-of-country procurement (House of Representatives, 1978). The KPA would then compile a list of bidders (usually ten or so in a request for proposals), supplied from the Korean Ministry of Commerce and Industry. Contractors

submitted sealed bids, which were unsealed simultaneously. Bidders would negotiate over price and contract specifications, then an American contracting officer would pick the winning contract. For payment, U.S. dollars would be routed to the Bank of Korea, which paid the contractor in Korean *won*.

In practice, however, the Korean state made extensive efforts to influence the in-country procurement process (House of Representatives, 1978; Jones and Il, 1980). Korean nationals in the KPA office would regularly leak information to the Korean government, which would then coordinate firms through industry organizations to collude on their bids (U.S. congressional researchers also suspected the involvement of the Korean Central Intelligence Agency, or KCIA). Typically, one firm would be chosen to be the winner, and the other firms would collectively submit bids that were too high to be competitive. This collusion allowed the Korean state and firms to maximize their inflow of valuable U.S. dollars.

In effect, then, American procurement contracts acted as a form of joint Korean-American industrial policy—the American military set the demands, and the Korean government usually picked the winners. It is also well-documented that the Korean government supported exporters with a wide range of policy instruments, including heavily discounted real interest rates and privileged access to foreign exchange (Woo, 1991). The observed effect of winning an American procurement contract can thus be interpreted as the combined effect of increased exporting to the United States and any additional industrial policy support received from the Korean government.

From an identification perspective, the involvement of the Korean state in the selection process raises concerns that contract winners may differ systematically from losers. For instance, the wartime export success of *chaebols* like Hyundai suggests that political connections may have mattered for contract selection (Glassman and Choi, 2014). We address this empirical concern by examining the export target system in the 1960s and 1970s in Section 4.2.

3 Data

We assemble unique, newly digitized firm-level export data and link them to archival data on U.S. military procurement contracts to study how military demand shaped export development. This section outlines the construction of our micro panel, which tracks firm exports during Korea's miracle period, details the procurement data and linking process, and presents descriptive statistics to motivate our empirical analysis.

3.1 Trade Data

We construct firm-level export data from the Comprehensive Export Directory, an annual publication of the Korea Trade Promotion Agency (KOTRA). Established in 1962, KOTRA served as the government's central body for promoting and monitoring South Korea's trade, operating a network of overseas offices staffed by a capable export bureaucracy (Barteska and Lee, 2025).

Each year, KOTRA assembled the Comprehensive Export Directory from firms' mandatory export reports filed with the Ministry of Commerce when obtaining or renewing export licenses. The directories, circulated internally and to KOTRA's overseas missions, listed detailed information on exporting firms, including company identifiers, product information, and export values and targets.

We digitize the directories for 1968–1977 to create a rich microdata panel covering the core decade of South Korea's export expansion.[7] After data entry, cleaning, and record linkage, the resulting microdata contain 1,952 firms. Beyond firm and product metadata, we next consider two crucial values in our data: export values and export targets.

Export Measures We use official trade values, reported in nominal U.S. dollars, to construct measures on the margins of trade. We always report results separately for the extensive and intensive margin of exporting. The extensive margin equals one if a firm reports any export value in a given year and zero otherwise.

We isolate the intensive margin of exporting via a transformation inspired by Chen and Roth (2023) that places all observations on a common log scale, preserves a balanced panel despite 0s, and transparently shuts down the extensive margin.

$$y_{i,t} = \begin{cases} \log(100{,}000), & \text{if exports}_{i,t} < 100{,}000, \\ \log(\text{exports}_{i,t}), & \text{otherwise.} \end{cases} \tag{1}$$

Observations with no exports or values below $100,000$ are assigned $\log(100{,}000)$—roughly the 10th percentile of positive export values in our data ($108,000$)—and are therefore treated as the minimum value on the adjusted scale. This transformation gives rise to conservative estimates of intensive margin effects, as some smaller, true effects are censored at zero, attenuating the estimates (see Section 4).

[7] The 1974 volume is currently being digitized.

Export Targets Uniquely, the *Comprehensive Export Directory* also reports the export-target figures that every firm was required to submit for the upcoming calendar year. Those targets are available for 1970, 1971, and 1972.

As we discuss in greater detail in Section 4.2, export targets were set jointly by the firm and the Korean government for the following year. We understand these targets as largely reflecting expectations about future exports. Our analysis corroborates this: targets are very predictive of subsequent exports. We use targets—expected exports—to show that firms and government did not anticipate an increase in exports in the year of the procurement contract, as reported before receiving the procurement contract, alleviating several potential concerns regarding the parallel trends assumption underlying our identification strategy.

3.2 Procurement Data and Matching

Our main source for U.S. military contract data is the U.S. Department of Defense's archival database of DD-350 procurement forms, which are available from 1966 to 2006. Before 1983, these forms included any purchase greater than $10,000, ranging from the purchase of uniforms or "guard services" to orders of surface-to-air missiles. Moreover, this database includes the English name of the firm, its country of origin, the type of good or service procured, and the fiscal year the contract was awarded.[8]

We merge the English-language procurement contracts with the export panels using the English transliterations of Korean firm names in our dataset. Due to inconsistent Romanization and ambiguities where different Korean words can be transliterated in the same way, our matching procedure errs on the side of conservatism, with the idea that measurement error should only attenuate our estimates. From 1968-73, there were a total of 5,692 procurement contracts, with a combined $618 million in value. A large share of these contracts were in services, meaning that many of these contracted firms were unlikely to be exporters and thus appear in our trade data. Our merged dataset of exporting firms and procurement contracts includes $N = 433$ contracts with a total of $193 million in value, or around 31% of the total value of contracts.

[8]Procurement contracts were dated using the fiscal year. Before 1976, the U.S. government fiscal year ran from July 1 to June 30—for instance, the 1966-67 fiscal year (FY1967 in shorthand) ran from July 1, 1966, to June 30, 1967 (Nakamura and Steinsson, 2014). To avoid attributing effects of procurement contracts to *before* they were actually procured, in our contract data, we subtract 1 from the time index of contracts, i.e., fiscal year 1976 becomes calendar year 1975.

3.3 Descriptive Statistics

Figure 1a depicts the total value of all procurement contracts as a share of the South Korean economy throughout our sample period. Using nominal GDP data from the World Bank, we find that the total value of American procurement contracts rose rapidly from near 0 in 1965 to a peak of 2.9% of GDP in 1968 ($183 million), before falling to 1.3% by 1970 and less than 1% in 1971. This represented a significant fiscal shock, comparable to the 2% of GDP received by Marshall Plan recipient countries (Eichengreen, 2010).

The late 1960s and early 1970s also saw a sizable takeoff in Korea's exports—the beginning of Korea's "Miracle on the Han" (Woo, 1991). Figure 1b plots the growth in Korea's aggregate exports in nominal dollars, obtained from the *Comprehensive Export Directory*. Nominal exports grew 18-fold in the years of the procurement boom (1964-1974)[9] —an annualized growth rate of 38%. As a share of the overall economy, exports grew from just 5.0% of GDP in 1964 to over 22.2% in 1974.

We now turn to the summary statistics of our merged procurement contract and export dataset, presented in Table 1. Panel A summarizes the matched procurement contracts by year. The mean contract was around $450,000 in nominal U.S. dollars, representing around 15% of our sample's average firm exports. There was substantial dispersion in the size of contracts, with a long right tail: the median contract was just $135,000, far smaller than the mean.

Panel B examines the growth of exports in our merged firm dataset. Exports grew more than tenfold in a decade, from $460 million in 1968 to $4.9 billion in 1977, or an annualized growth rate of 30%. The period's export expansion reflected growth both on the extensive and the intensive margin for firms. The number of exporting firms more than doubled in the ten years of the sample, from $N = 504$ in 1968 to $N = 1,107$ in 1977, while the average exports by firm more than quadrupled, from $912,769 in 1968 to $ 4.4 million in 1977.[10]

To what extent did the Vietnam War, in particular U.S. military procurement, contribute to this export expansion? We empirically explore this question next in Section 4.

[9] Based on World Bank data of Exports of goods and services (constant 2015 US$) (NE.EXP.GNFS.KD).

[10] This suggests that, on balance, within-firm intensive growth was the main driver of export growth, rather than the entry of new firms.

4 Empirical Results

4.1 Empirical Strategy

Design We estimate the impact of U.S. military procurement on firm-level export development during the East Asian miracle. Our empirical strategy uses cross-firm variation in the timing of each firm's first procurement contract to trace how exports evolve after the initial award of a contract. Specifically, we estimate dynamic effects using a staggered event-study design and consider the following specification:

$$y_{i,t} \;=\; \sum_{h \neq -1} \tau_h \, \mathbb{1}\{K_{i,t} = h\} \;+\; \theta_i \;+\; \kappa_t \;+\; \varepsilon_{i,t}, \tag{2}$$

where $y_{i,t}$ denotes firm i's exports in year t; θ_i and κ_t are firm and year fixed effects, respectively; and $\varepsilon_{i,t}$ is the error term. Let G_i denote the first-award year (first year with a contract), and $K_{i,t} = t - G_i$ denote the years since treatment. The indicator $\mathbb{1}\{K_{i,t} = h\}$ equals one if firm i is at event time h in year t, and zero otherwise. Treatment is absorbing: once $t \geq G_i$ (i.e., $h \geq 0$), the firm remains treated. The reference period is $h = -1$, which corresponds to the last pre-treatment year.

Our outcome variables $y_{i,t}$ capture firm-level exporting behavior and are constructed from digitized trade data (Section 3.1). The primary outcome is a binary indicator for the extensive margin of exporting. Additionally, we examine the total intensive margin—measured as the log-transformed nominal export value, with a lower bound applied to small or zero exports (see Section 3.1). This transformation addresses zeros in export values, yielding conservative estimates.

We estimate the sequence of average treatment effects using the imputation estimator proposed by Borusyak et al. (2023) (BJS), which is well-suited for staggered adoption and our setting, in particular. The BJS estimator imputes untreated potential outcomes using only non-treated and not yet treated firms, and cleanly handles staggered comparisons. Importantly, BJS also accommodates rich heterogeneity in treatment. We use firm-clustered standard errors throughout.

Our coefficients of interest, τ_h, capture the average effect of treatment h years after receiving the first contract. We follow common practice, where the treatment is an absorbing state. Practically, τ_h combines the effect of the initial award bundle (see Section 2.2) and

the consequences that naturally follow—renewals, greater foreign credibility, follow-on awards, learning, and related support, etc.—which are part of the treated potential-outcome path. Hence, τ_h should be read as the dynamic effect of crossing into the *ever-awarded* state h years earlier, not the impact of a one-off contract.

Econometrically, pairing the absorbing-state design with the BJS imputation estimator provides a clean setup: each treated firm has a single cohort date G_i, event time is $h = t - G_i$, and counterfactual outcomes are constructed only from never-treated or not-yet-treated observations.

Identifying Assumptions Our estimator identifies dynamic treatment effects under the standard (i) parallel-trends and (ii) no-anticipation assumptions. In our setting, let $Y_{it}(0)$ denote firm i's exports absent treatment, and let treatment occur in the first-award year G_i. In the absence of treatment, exports reflect firm characteristics, market-wide conditions, and temporary firm-specific factors u_{it}: $Y_{it}(0) = \theta_i + \kappa_t + u_{it}$. Formally, these assumptions are:

$$\text{(i) } \mathbb{E}[Y_{it}(0) \mid \theta_i, \kappa_t, G_i] = \theta_i + \kappa_t \quad \text{for all } i, t, \qquad \text{(ii) } Y_{it} = Y_{it}(0) \quad \text{for } t < G_i.$$

Parallel trends require that the *timing* of adoption is not driven by short-run, unit-specific fluctuations; equivalently, $\mathbb{E}[u_{it} \mid G_i] = 0$. Treated and control firms may differ in time-invariant characteristics (e.g., political connections, captured by θ_i), and the volume of contracts may covary with the business cycle or the state of the Vietnam War (captured by κ_t). See Section 2.2 for discussion.[11]

In our setting, threats arise if short-run idiosyncratic movements drive the timing of awards. For instance, this may occur if contracts target firms following short-run export spikes (lasting a couple of months), i.e., $\mathbb{E}[u_{it} \mid G_i = t] > 0$, or if firms pursue contracts ahead of anticipated export declines, i.e., $\mathbb{E}[u_{i,t+1} \mid G_i = t] < 0$. The assumption also fails if cohort-specific shocks that are not absorbed by κ_t (e.g., sector×year demand shifts) are correlated with G_i, so that $\mathbb{E}[u_{it} \mid G_i = t, \text{sector} = s] \neq 0$. Although these assumptions are often difficult to test, we use features of our setting and data to explore them below.

[11] A natural concern for our identification strategy is that firms selected for procurement contracts may have differed systematically from firms that were passed over. As discussed in Section 2.2, this is especially true given that the Korean government likely coordinated firms through the Korean Military Contract Association (KMCA) (House of Representatives, 1978).

4.2 Testing Identifying Assumptions and Export Targets

In this section, we test the identifying assumptions of our model, emphasizing a distinctive feature of our data: firm-level export targets. We use the information encoded in these firm-level export targets, which summarize the expectations of export performance, to analyze the validity of our identifying assumptions. Using our data, we show evidence that idiosyncratic export shocks did not drive the timing of procurement, and that treatment was not anticipated.

The targets were an important policy tool to encourage firms to export, with incentives often tied to setting higher targets and achieving them: for instance, the government would suggest profitable markets and promise both quantifiable and non-quantifiable support, such as subsidized loans, offering flexible incentives for exporters to achieve their target numbers (Jones and Il, 1980; Westphal, 1977, 1990). President Park Chung-hee famously held monthly meetings to plan the country's export promotion strategy, in which the aggregate targets were featured as an important policy variable.[12]

Export targets for firm i are set in period $t-1$ for period t, and are denoted by $T_{i,t}$. Let $\mathcal{I}_{i,t-1}$ be the information available when the target is set. Formally, targets are (possibly noisy or biased) expectations of next year's exports:

$$T_{i,t} \;=\; \mathbb{E}\big[Y_{i,t} \mid \mathcal{I}_{i,t-1}\big] \;+\; v_{i,t},$$

where $\mathbb{E}[Y_{i,t} \mid \mathcal{I}_{i,t-1}]$ is the conditional expectation given period-$t-1$ information, and $v_{i,t}$ collects "stretch" or policy bias and forecast error.[13]

In our setting, targets are useful as an empirical device, whether they behave like forecasts ($\mathbb{E}[v_{i,t}] = 0$) or like normative goals ($\mathbb{E}[v_{i,t}] \neq 0$). In either case, they embed only information available before the year starts. To use targets for identification, we assess below if they have predictive content and are approximately calibrated in the pre-treatment data.

[12] Also, adjoining the Minister of Commerce and Industry's office was an "export situation" room laid out so that potential short-falls in targets could be easily found. A large staff maintained almost daily contact with the major exporters, and it was not uncommon for the Minister to intercede in the event of possible difficulties in meeting targets (Westphal, 1977).

[13] For example, firms might report overly optimistic targets to receive higher subsidies or appease the government.

4.2.1 Targets embed information about future exports

To use targets for identification, we first verify that they have predictive content for next year's exports. In other words, do targets set before the year begins line up with realized exports? This may not be the case, as predicting firm performance can be challenging or targets may be uncalibrated to realistic economic conditions.

Panel (a) of Figure 2 shows the relationship between realized exports and year-ahead targets. For each year t, we plot firm i's log realized exports ($\log Y_{i,t}$) against log year-ahead targets ($\log T_{i,t}$, set in $t-1$). Importantly, these two series come from different government publications – $T_{i,t}$ is published one year before $Y_{i,t}$. The red line represents the 45° line, the benchmark for perfect forecast accuracy. We find that 44% of observations lie above this line (targets exceed exports) and 56% lie below (exports exceed targets). Overall, the tight clustering around the 45° line indicates that Korean firms' realized exports closely followed their targets.

Panel (b) of Figure 2 plots the distribution of forecast errors: $\log Y_{i,t} - \log T_{i,t}$. The distribution is clustered around zero with a mean of -0.181, a median of -0.093, and a standard deviation of 0.989. The negative mean indicates that, on average, realized exports undershoot targets by approximately 17%. In the median, realized exports undershoot targets by approximately 9%. These patterns suggest that while targets contained substantial noise and were sometimes overly ambitious, they were mostly achievable and calibrated to the firm's export capacity.

Thus, targets contain reasonable predictive content about future exports. Of course, these targets were not intended to be used as pure forecasts of future exports, but also reflect normative industrial policy goals. However, for our empirical use case, the highlighted predictive value of the targets makes them a useful proxy for expectations, in absence of contract awards.

4.2.2 Targets indicate treatment was not anticipated

We next test whether procurement awards were anticipated. We use event time h (years relative to treatment) and compute cohort means for the sample of treated firms. Our test compares realized exports, $\bar{Y}_h$, with targets, $\bar{T}_h$, set in the previous event year ($h-1$). We analyze two pieces of evidence. First, if the government did not anticipate the procurement award and its effect on exports, this would be reflected in a positive gap between realized exports and targets in the treatment period, i.e., $\bar{Y}_0 > \bar{T}_0$. Second, if the government or the

firm anticipated the award and its effect on exports, the targets for the award year would increase: $\bar{T}_0 > \bar{T}_{-1}$. Conversely, if the award was unanticipated, targets would be similar across $h = -1$ and $h = 0$, i.e., $\bar{T}_0 \approx \bar{T}_{-1}$, even if realized exports jump, i.e., $\bar{Y}_0 > \bar{Y}_{-1}$.

The top panels of figure 3 present this test graphically, and show evidence that contracts were unanticipated. The panels show realized exports $\bar{Y}_h$ (blue) and targets $\bar{T}_h$ (red) for event years $h \in \{-1, 0, 1\}$, with panel (a) displaying the extensive margin and panel (b) the intensive margin. In the pre-event year ($h = -1$), realizations closely track targets, $\bar{Y}_{-1} \approx \bar{T}_{-1}$. In other words, before treatment, forecast targets and export realizations were aligned, establishing baseline accuracy.

However, in the award year ($h = 0$), realized exports jump sharply above targets: the gap $\bar{Y}_0 - \bar{T}_0$ is substantial. Meanwhile, targets themselves remain nearly identical to those set for $h = -1$ (i.e., $\bar{T}_0 \approx \bar{T}_{-1}$). This pattern indicates that targets set prior to the award did not embed expectations of the forthcoming contract, providing evidence against anticipation. Targets for exports adjust upward after the award year ($h = 1$), newly reflecting information from the treatment period (including the awarded contract and realized export increases during that period).

4.2.3 Targets indicate treatment is not driven by selection

We now directly use export targets to evaluate the parallel trends assumption, as well as the anticipation assumption. Having established that targets contain useful *ex-ante* information about future firm behavior, we use targets as primitives to analyze the parallel trends assumption. We estimate selection on expected growth by examining whether government export targets exhibit differential trends for the treatment year. As these targets are pre-determined (one year prior), differential trends in the treatment year would indicate selection into treatment, on expected export growth.

Setup: Targeting estimator and selection To use targets to analyze selection, we first represent targets $T_{i,t+1}$ as a projection on fixed effects:

$$T_{i,t+1} = \alpha_i + \beta_{t+1} + r_{i,t} \tag{3}$$

where α_i are a firm's target levels and β_{t+1} are predictions of next year's macroeconomic conditions. Each effect is a proxy for θ_i and the time fixed effects κ_{t+1} from equation (2), respectively. Our residual term $r_{i,t}$ represents the "idiosyncratic innovation" of the target,

beyond level and common time effects. Thus, $r_{i,t}$ captures transitory selection that would violate parallel trends if correlated with treatment.

We test selection on expected growth by using an event-study regression of targets. Because target data is available for three years, there are two outcomes of interest which we compare to targets for exports in the year before the first contract: (i) targets for exports in the year of the first contract—which were still decided before receiving the contract; (ii) targets for exports in the year after the first contract—which were decided once the contract was known. We estimate:

$$T_{i,t+1} = \alpha_i + \beta_{t+1} + \sum_{\ell=0,1} \delta_\ell \cdot \mathbb{1}\{(t+1) - G_i = \ell\} + \varepsilon_{i,t+1}, \tag{4}$$

where $\ell = (t+1) - G_i$ is event time of the target period. Hence, these targets are set in event year $\ell - 1$ and reflect information available at $\ell - 1$. The coefficients δ_ℓ directly capture whether target shocks (r_{it} in equation (3)) differ systematically across cohorts after partialing out persistent differences (α_i) and common trends (β_{t+1}). If $\delta_0 \neq 0$, this would imply systematic differences across cohorts due to selection on temporary or expected shocks. If $\delta_0 = 0$ and $\delta_1 > 0$, this would imply that export targets incorporate information about the procurement shock's effect on exports, but only after the contract has been awarded—implying that procurement contracts are not related to expected outcomes.

Results: Contracts are not related to expected outcomes. The bottom panel of Figure 3 reports event-study estimates of equation (4). Panel (c) reports the extensive margin, while panel (d) reports the intensive one. We use the de Chaisemartin and D'Haultfœuille (2020) estimator; the Borusyak et al. (2023) estimator cannot be applied as target data is available for only three periods (1970, 1971, and 1972). The estimates yield two findings that bolster our core identifying assumptions.

First, critically, targets do not move differentially between treated and control firms in the event year ($\delta_0 \approx 0$), providing evidence that targets were not set differentially for next year's contract recipients.

Second, we observe a *delayed* treatment effect on targets ($\delta_1 > 0$): after winning their contract, treated firms are expected to export more.[14] This lagged pattern—flat at implementation, and an increase post-treatment—indicates that contracts do not target firms

[14] Our discussion here focuses on stark patterns in the point estimates. Due to the limited number of years for which targets are available, statistical power in these regressions is somewhat limited and $\hat{\delta}_1$ is not statistically different from 0.

with expected export increases, alleviating concerns about key potential channels of reverse causality. Instead, firms and the government update expectations only in response to realized outcomes.

Taken together, the patterns in Figure 3—parallel evolution in the treatment year, and lagged updating—support our identifying assumptions. In particular, treatment timing appears unrelated to expected changes in exports. We next use equation (2) to estimate the causal effect of receiving an export contract.

4.3 Main Results: Procurement Contracts Increase Exports

Results: Main margins of trade Figure 4 plots the main event-study estimates τ_h from equation (2) for the effect of a firm's first U.S. military procurement contract on exports. Panel (a) reports effects for the *extensive margin*—an indicator for exporting at least \$100,000 to any destination. Panel (b) in Figure 4 examines the effect of the first procurement contract on the *intensive margin* of exporting—i.e., the (natural logarithm of the) dollar volume of exports, censored at a minimum of \$100,000—to any destination.

The estimates in Panel (a) show that winning a first U.S. procurement contract is associated with actual immediate entry into export markets. Before $h = 0$, pre-trends are flat: coefficients are small and statistically indistinguishable (individually and jointly) from zero, supporting our parallel trends assumption. At $h = 0$, the contract award itself translates into exported shipments. The probability of exporting jumps by 45.9 percentage points (95% Confidence Interval: [35.5, 56.2] percentage points), a salient and immediate effect. After the initial awards, $h > 0$, the impact of the first award date fades partly, accompanied by a persistent component: ever-treated firms remain significantly active in export markets.

The estimate in Panel (b) shows a similar pattern for the intensive margin, yet emphasizes the intensive margin of of firm. After winning their first contract, firms experience an immediate, statistically significant 1.2 log-point increase in their export values, corresponding to a substantial 219% rise in the value of exports. Moreover, the intensity of exports is highly persistent (and significant) in the years following the initial award.

Results: Margins of trade by destination Do the effects only reflect exports to the U.S. military or the U.S. market? No. The second row of Figure 4 reports effects on exports to all countries *other than* the United States. Panel (c) shows the extensive margin—the probability a firm exports at least \$100,000 to non-U.S. destinations—and Panel (d) shows

the intensive margin (log total exports outside the United States, using the same adjustment as above).

Excluding the United States, the effects remain large. On the extensive margin, first-time contract winners are 39.3 percentage points more likely to export to non-U.S. destinations after winning their first contract. On the intensive margin, they experience a 1.03 log-point rise in export volumes outside the United States (approximately a 180% increase, since $e^{1.03} - 1 \approx 1.80$). These patterns indicate broad-based growth across destinations rather than effects driven solely by U.S. trade, consistent with procurement improving firms' fundamentals (e.g., lower foreign-market access costs, improved reputation, or productivity gains).

The third row of Figure 4 isolates exports to the United States, one of Korea's two largest partners in the 1970s. Panels (e)–(f) show that winning a procurement contract raises both the probability of exporting to the United States and U.S.-bound export volumes, though these effects are somewhat smaller than for overall exports or non-U.S. destinations. Together, the results suggest that procurement has capability-building effects that generalize beyond direct U.S. demand.

Results: Sensitivity to Log Imputation We present further variations on our main specification to test the robustness of our main results. One concern is whether our intensive margin results are sensitive to the choice of log(100,000) to address the problem of logs of zero (Section 3). In Figure 8 and Figure 9 of Appendix A, we vary this parameter to log(10,000) and log(1,000,000), respectively.

Our overall findings of large increases in exports on the intensive and extensive margins are not sensitive to this parametrization. One pattern worth noting, however, is that the larger the imputation parameter, the smaller the estimated treatment effects.

Intuitively, in our approach, when we set this parameter to (say) log(1,000,000), all variation on the intensive margin less than $1,000,000 is set to 0, which attenuates the estimated treatment effect. As a result, our estimated intensive-margin effects, particularly at higher values like $100,000 or $1,000,000, are likely conservative.

Obviously, a larger threshold can also lead to smaller effects on the extensive margin—as some firms that start exporting export less than, e.g., $1,000,000. [15]

[15] As few exporters export less than $100,000, the extensive margin effects are almost the same whether the threshold is $10,000 or $100,000.

Results: Interpretation Taken together, these results indicate that procurement contracts had strong, positive effects on Korean firms' probability of exporting and on their export volumes.

The treatment effects are large: firms winning their first contract were almost 50 percentage points more likely to export, and their export volumes more than tripled. For comparison, Alfaro-Ureña et al. (2022) find that Costa Rican firms that join multinational supply chains see a 20% increase in sales to other buyers.

Importantly, our findings suggest that procurement contracts raised exports not only by inducing entry into export markets but also by encouraging firms to expand their volumes. This pattern is consistent with the idea that increases in exports per exporter were central to the expansion of Korean exports over this period, as shown in the descriptive statistics in Section 3.3.

Back-of-the-envelope calculations using our point estimates imply sizable aggregate effects for the broader South Korean economy. On the extensive margin, combining a 46-percentage-point treatment effect with 148 treated firms implies that war procurement increased the number of exporting South Korean firms by 68, roughly 8.3% of the firms exporting more than $100,000 in 1973.[16]

On the intensive margin, our estimated treatment effect of 1.2 implies that treated firms' exports would have been 69.9% lower in the absence of the procurement contracts. In 1973, treated firms' total exports were $905 million, implying that procurement contracts accounted for $623 million, or 20.1% of Korea's overall exports that year.[17]

4.4 Do Increases in Exports Persist?

One question raised by the previous results is whether the export gains from winning a procurement contract persist over time. Figure 5 examines this persistence. In panel (b), we find a sustained intensive-margin advantage among treated firms, even during South Korea's export boom period (1968-1977). On the extensive margin, panel (a) shows that the probability of exporting rises sharply in the year of the award—by 46 percentage points—but the effect declines to about 20 percentage points by year 3 and roughly 5 percentage

[16] If we drop our imputation approach, we find that procurement contracts were increased the number of firms who export at all by 8.8%.

[17] By comparison, in 1968, South Korea's overall export values were lower, but firms with procurement contracts accounted for a larger share. Based on those values, had all procurement contracts occurred by 1968, they would have been responsible for $120 million in exports in 1968—26.1% of Korea's total.

points by year 4. Together, panels (a) and (b) indicate that treated firms continue to export relatively more than control firms.

Panel (a)'s declining extensive-margin effect reflects control-group catch-up rather than a decline among treated firms. Because the KOTRA data include only active exporters, the entry of new exporters mechanically narrow the treated-control gap in estimates of entry. Panel (c) shows average export probabilities by treatment status: treated firms maintain stable export rates after the procurement period, while control firms steadily enter export markets. Panels (e) and (f) test this mechanism by restricting the sample to firms that had exported by 1969, thereby excluding firms that had never exported. In other words, panels (e) and (f) exclude firms that are in the data *only because they exported in later sample years*. Under this restriction, panel (e) shows largely persistent extensive-margin effects through years 1–4, and panel (f) shows stable intensive-margin effects. Hence, the convergence in panel (a) arises from sample construction—control firms entering as new exporters gradually narrow the treated–control gap.

4.5 Which Sectors Were Impacted? Light Industry, Vietnam War Procurement, and the HCI Drive

If procurement influenced exports, where were these effects concentrated? We examine sectoral heterogeneity and its interaction with Korea's later heavy industrial policy. Following the Vietnam War, the government shifted from general export promotion to the Heavy and Chemical Industry (HCI) drive launched in 1973 (Lane, 2025). This shift redirected state support toward heavy industries, away from agriculture and light manufacturing.

Figure 6 shows the average exports of procurement-treated firms across three broad sectors—Agriculture, Textiles, and Heavy and Chemical Industries (HCI). Textiles represent Korea's leading light manufacturing industry of the procurement period. We track firm-level export patterns across two policy regimes: the Vietnam War procurement boom (winding down by 1973) and the subsequent HCI drive (beginning in 1973). Panels (a) and (b) group heavy industry and textiles together as "manufacturing".

Panels (a) and (b) of Figure 6 show that procurement contracts spurred export growth primarily in manufacturing rather than agriculture. Both panels focus on treated firms. On the extensive margin, treated firms became far more likely to export manufacturing products, with export participation rising from roughly 25% to more than 60% during the war procurement period. Agricultural exports also increased, but more modestly—from about

10% to 25%. On the intensive margin, the contrast is sharper: during the procurement boom (1968–73), treated firms' manufacturing exports experienced an increase exceeding one on the log-scale between 1968 and 1971—more than a 170% increase—while agricultural exporters showed virtually no growth.

Panels (c) and (d) of Figure 6 focus on manufacturing, decomposing results by treatment status and by industry—textiles versus Heavy and Chemical Industries (HCI). Panel (c) shows the extensive margin, and panel (d) the intensive margin.

Panels (c) and (d) show three insights for the procurement period. First, the surge in manufacturing exports during the war procurement period was driven almost entirely by treated firms. Second, these effects were strongest for textiles exports, not heavy and chemical industries. Third, beginning in 1973, control firms experienced a modest rise in heavy-and-chemical-industry exports; however, this increase was small compared with the scale of increase in HCI exports among procurement-treated manufacturers.[18]

During the HCI period, panels (c) and (d) show treated firms' HCI exports pulling ahead of their textile exports. This coincides with the government's new industrial strategy, which explicitly prioritized heavy and chemical industries. Although exports of heavy and chemical industries rose for both procurement-treated and procurement-untreated firms, the increase was most pronounced among firms previously treated under the procurement program.

Taken together, these results suggest that U.S. war procurement and the subsequent HCI drive were complementary rather than substitutive. The HCI drive relied disproportionately on firms that had entered export markets during the earlier procurement boom. We find little evidence that this industrial policy crowded out textiles: textile exports continued to grow throughout, in particular on the intensive margin.

5 Conclusion

By building a unique firm-level dataset of Korean exports and American military contracts, this paper brings novel causal evidence demonstrating the importance of U.S. policies, motivated by geopolitics, to the South Korean economic miracle.

[18] During the government's Heavy and Chemical Industry (HCI) drive, treated firms' exports of HCI products surpassed their textile exports. On the extensive margin, the probability of exporting textiles plateaued after 1973, while the likelihood of exporting HCI products rose from 45% to 70%. On the intensive margin, treated firms' HCI exports grew by roughly 300%.

We show that winning a U.S. military procurement contract significantly increased Korean firms' probability of exporting (on the extensive margin) and their volume of exports (on the intensive margin). The overall effects of American military procurement are economically significant—large enough to explain a substantial share of Korea's rapid exports boom. Our estimates imply that procurement contracts were responsible for the entry of 8.3% of large exporting firms into export markets by 1973, and for 20.1% of Korea's overall exports in that year. By providing firms a large source of demand, as well as crucial experience interacting with foreign buyers, the procurements boom helped foster the growth of Korea's later export champions—among them, *chaebols* such as Samsung and Hyundai. Moreover, firms who won war procurement contracts saw larger increases in exports in line with the later Heavy and Chemical Industry (HCI) drive, suggesting that domestic industrial policy and external demand shocks complemented each other.

Our results show an important role for American economic policy in fostering the South Korean export miracle. Moreover, it provides suggestive evidence in support of the transformational effect of the previous Korean War boom in Japan, and the contemporaneous Vietnam War procurement booms in Taiwan, Hong Kong, and Singapore. In the current global environment of aid cuts and increased protectionism, understanding the role of foreign economic support in fostering development is highly salient. In particular, our results suggest that, unlike many forms of aid, war procurement contracts succeeded in inducing significant and persistent growth in manufacturing exports. This experience could help inform the design of programs like the African Growth and Opportunity Act (AGOA), which was intended to grow the export manufacturing capacity of countries in Sub-Saharan Africa.

Of course, the war procurements boom alone cannot explain the Korean miracle—for instance, South Vietnam was also a major recipient of American aid, but failed to build an effective state with broad popular support, let alone engineer an economic takeoff. Understanding the interaction between foreign demand shocks and the domestic institutions that can transform them into sustained growth constitutes a potentially fruitful direction for future research.

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Tables and Figures

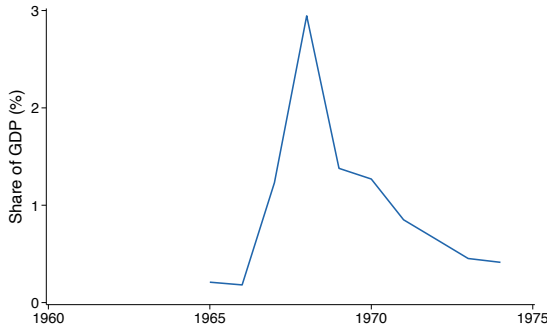
Table 1: Summary Statistics: Procurement Contract and Exports (U.S. Dollars)

Panel A: Procurement Contracts					
	Mean	Std. Dev.	Median	All	N
1968	274,642	413,443	114,000	22,246,000	81
1969	362,800	801,082	106,000	32,652,000	90
1970	480,469	1,161,643	159,000	38,918,000	81
1971	704,794	1,455,415	158,000	44,402,000	63
1972	515,136	874,111	241,000	30,393,000	59
1973	417,983	904,356	123,000	24,661,000	59
Total	446,356	973,574	135,000	193,272,000	433
Panel B: Exports					
	Mean	Std. Dev.	Median	All	N
1968	912,769	1,990,486	284,756	460,035,511	504
1969	1,456,392	2,820,820	500,052	834,512,591	573
1970	1,965,762	3,515,798	698,074	1,081,168,848	550
1971	2,270,948	4,305,850	727,496	1,271,731,148	560
1972	2,528,779	4,797,056	872,213	1,618,418,611	640
1973	3,604,899	6,387,215	1,247,000	3,172,311,000	880
1975	3,160,245	6,219,658	977,000	3,760,692,000	1,190
1976	3,161,160	5,646,826	1,096,000	3,584,756,000	1,134
1977	4,428,878	6,726,549	1,947,000	4,902,768,000	1,107
Total	2,898,066	5,470,465	1,003,410	20,686,393,709	7,138

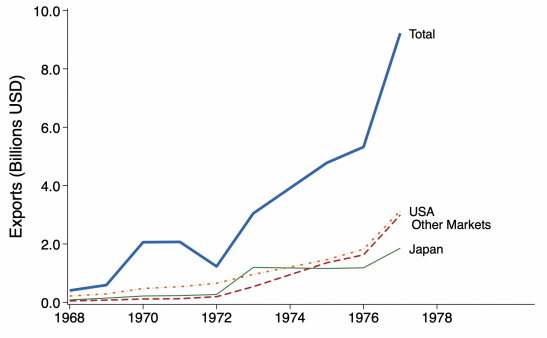
This table shows summary statistics for matched procurement contracts (panel A) and non-zero exporter firm-year observations (panel B). All values are in U.S. dollars. 1974 export levels are missing as we were unable to find archival data.

Figure 1: The U.S. Procurement Shock and Korea's Export Miracle

(a) Total procurement contracts (% of GDP)



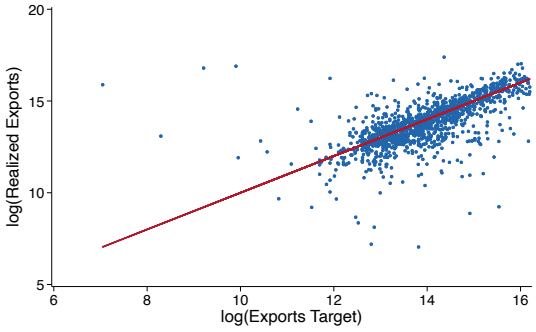
(b) Increases in aggregate exports



This figure documents the overall macroeconomic background of the U.S. war procurement shock on South Korea. Panel (a) shows the value of U.S. procurement contracts as a share of South Korean GDP. Panel (b) shows the total volume of exports of the firms in our data set to all countries (Total), the United States, Japan, and all other markets.

Figure 2: The Accuracy of Year-Ahead Export Targets

(a) Export Targets vs. Realized Exports



(b) The Distribution of Log Target Error

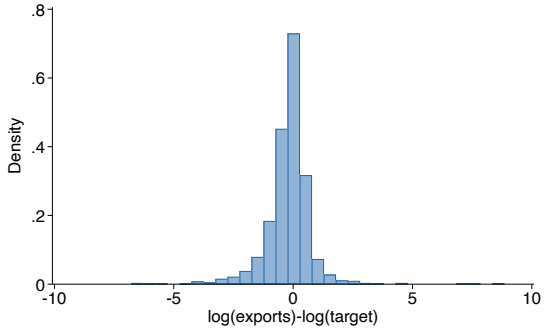
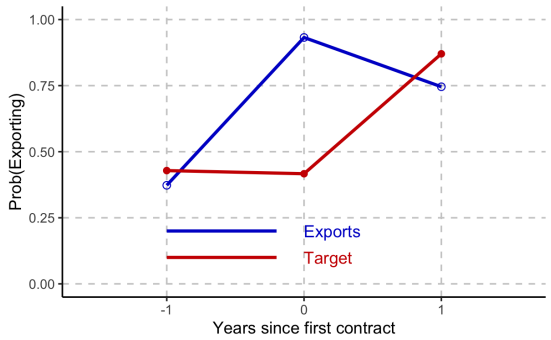


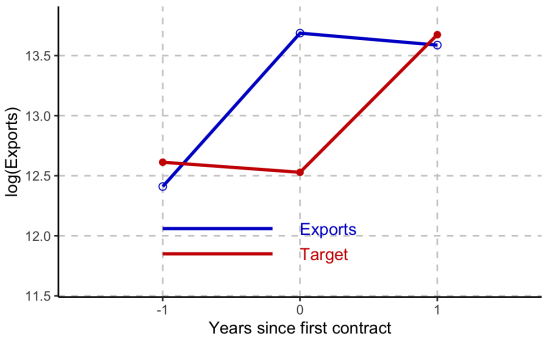
Figure 2a scatters the log of export targets (set in year t for the year ahead) against the log of realized exports (in year $t+1$). The red line plots $y = x$, the benchmark of perfect forecast accuracy. Figure 2b plots the target errors: the difference between log export targets and the log of realized exports—i.e., the vertical distance from the line in the previous graph. The mean log target error is -0.181 and the standard deviation is 0.989. Export targets are available for 1970, 1971, and 1972.

Figure 3: Procurement Contracts Were Unanticipated

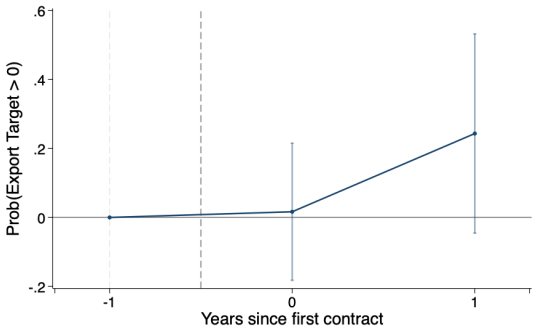
(a) Mean Export Targets for Treated Firms, Extensive Margin



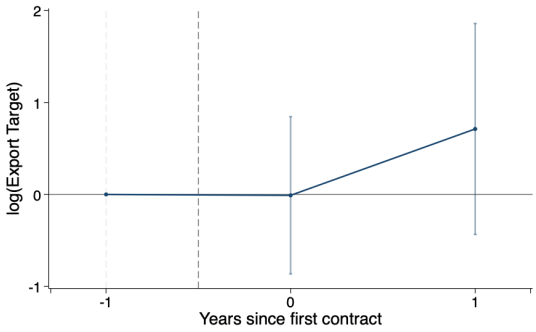
(b) Mean Export Targets for Treated Firms, Intensive Margin



(c) Export Targets, Event Study, Extensive Margin



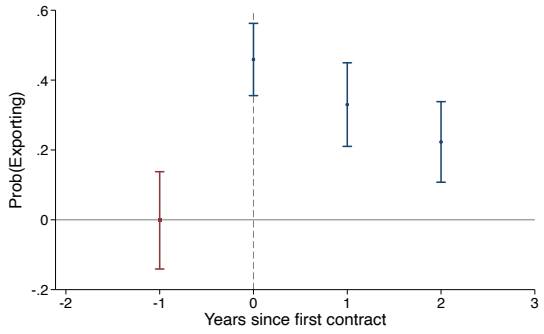
(d) Export Targets, Event Study, Intensive Margin



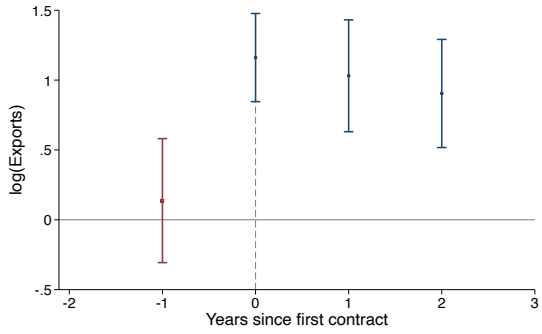
This figure shows how Korean government exports and export targets evolve for firms around the time of winning a procurement contract. Panels (a) and (b) plot simple means by event year, whereas (c) and (d) show event-study estimates for the targets. Panels (a) and (c) isolate the extensive margin, whereas panels (b) and (d) isolate the intensive margin, an approach inspired by Chen and Roth (2023) to net out the extensive margin without having to exclude observations with zero exports (which would make estimates hard to interpret). Instead we address the problem of logs of zero by treating exports below $100,000 as equal to $100,000. Each panel shows no increases in targets—anticipated exports—in event year 0, suggesting that exports were expected to follow parallel trends. Panels (c) and (d) show the same data, focusing on targets, transformed into an event study, using the estimator proposed by de Chaisemartin and D'Haultfœuille (2020).

Figure 4: Firm-level Effect of Winning First Contract: Extensive and Intensive Margin

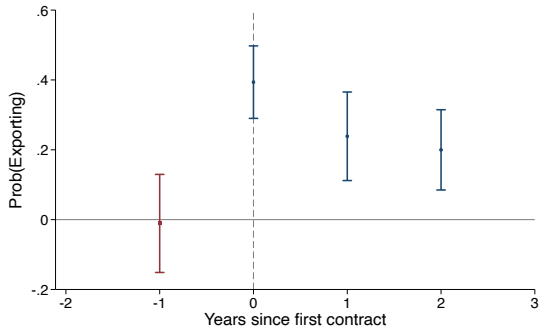
(a) Probability of Exporting: All Countries



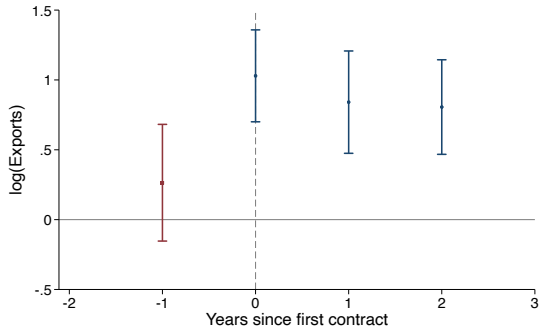
(b) log(Exports): All Countries



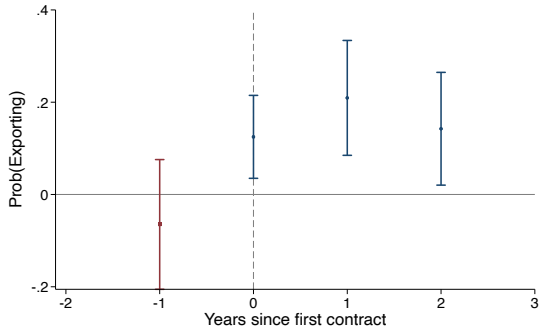
(c) Prob. of Exporting: All Countries, Ex. USA



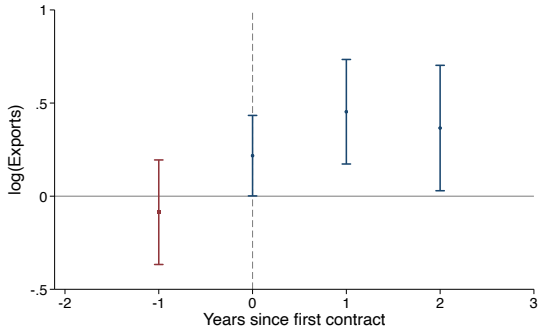
(d) log(Exports): All Countries, Ex. USA



(e) Probability of Exporting: USA



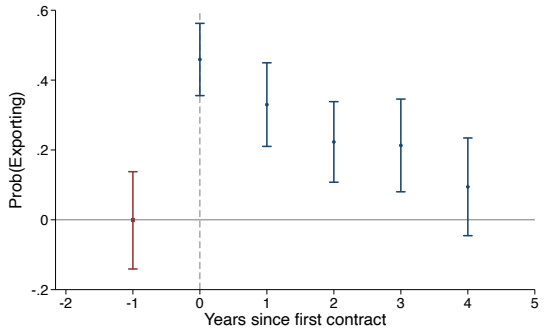
(f) log(Exports): USA



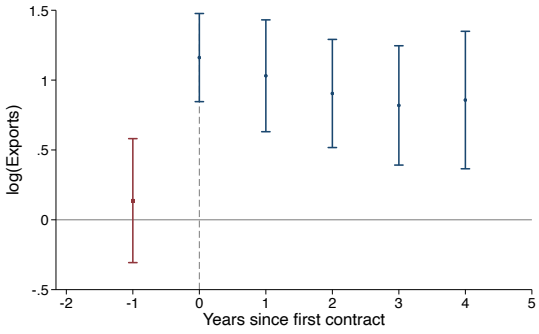
This figure shows the effects of a firm winning its first contract on the probability of exporting and the log of total exports, using the Borusyak et al. (2023) staggered difference-in-difference estimator and an approach inspired by Chen and Roth (2023) to net out the extensive margin without having to exclude observations with zero exports (which would make estimates hard to interpret). Instead we address the problem of logs of zero by treating exports below $100,000 as equal to $100,000. Please note, that the Borusyak et al. (2023) estimator reports different types of estimates for pre- and post-periods: in the post-periods, it reports imputed differences relative to the average pre-period differences; in the pre-period it reports imputed differences relative to the last omitted pre-period. The first row shows exports to all countries, the second row shows exports to all countries excluding the USA, and the third row shows exports to just the USA. The vertical bars mark 95% confidence intervals.

Figure 5: Persistence of Firm-level Effect of Winning First Contract

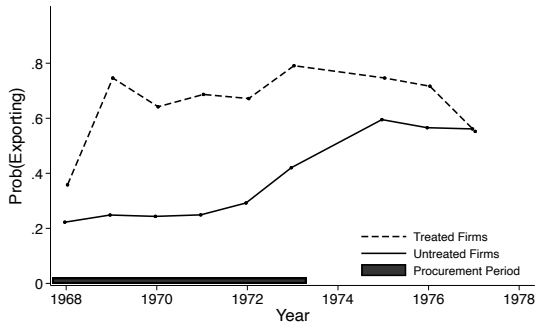
(a) Prob. of Exporting, Event Study



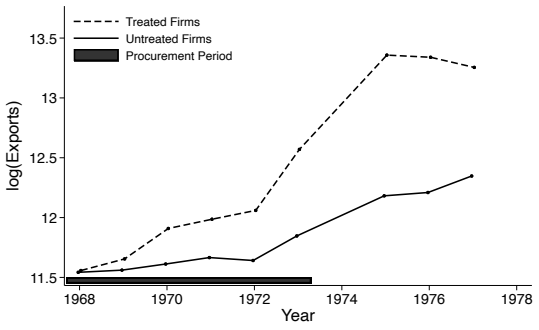
(b) log(Exports), Event Study



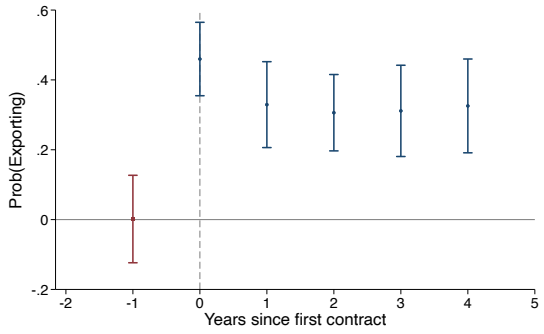
(c) Prob. of Exporting, Means



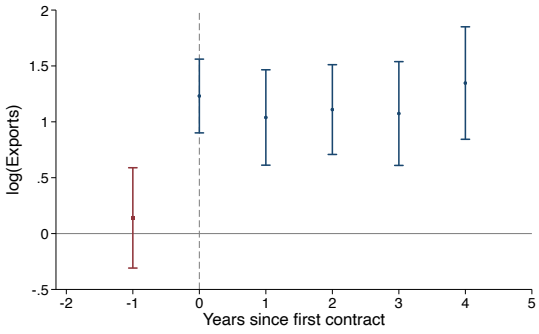
(d) log(Exports), Means



(e) Prob. of Exporting, Event Study, Pre-1969 Exporters



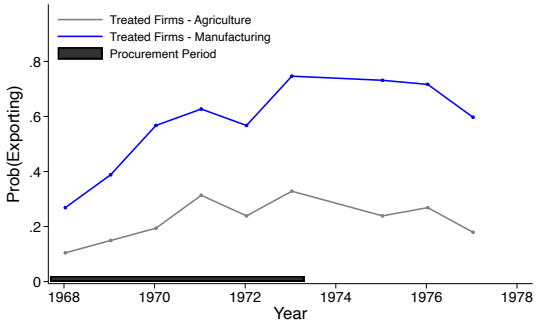
(f) log(Exports), Event Study, Pre-1969 Exporters



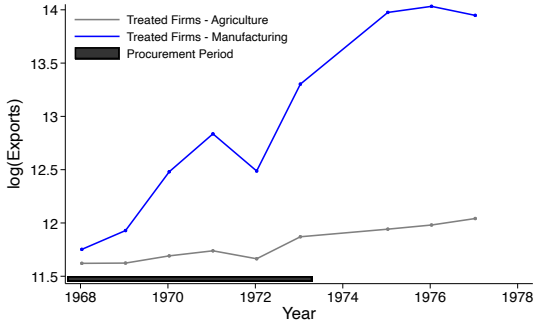
This figure shows the longer term effects of a firm winning its first contract on the probability of exporting—panels (a), (c), (e)—and the intensive margin—panels (b), (d), (f)—, using the Borusyak et al. (2023) staggered difference-in-difference estimator. Panels (b), (d), and (f) isolate the intensive margin, following the approach inspired by Chen and Roth (2023) to net out the extensive margin while addressing the problem of logs of zero by treating exports below $100,000 as equal to $100,000. The first row shows results using all the data, the second row shows simple means by treatment status, the third row shows estimates restricted to firms that exported before 1969 to avoid mechanical catch-up in the control-group. The vertical bars mark 95% confidence intervals.

Figure 6: Treated Firms Export Textiles & HCI, and React Strongly to HCI Drive

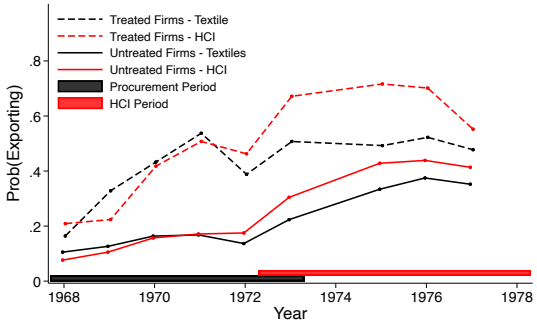
(a) Treated Firms' Exports by Sector, Extensive



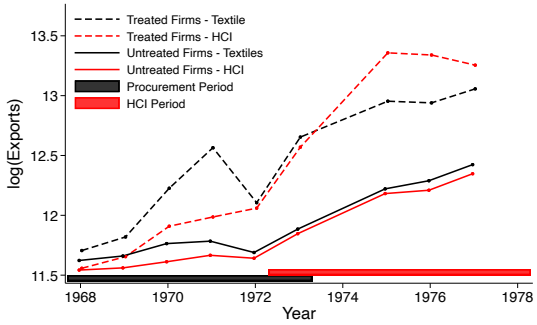
(b) Treated Firms' Exports by Sector, Intensive



(c) Exports by Treatment & Sector, Extensive



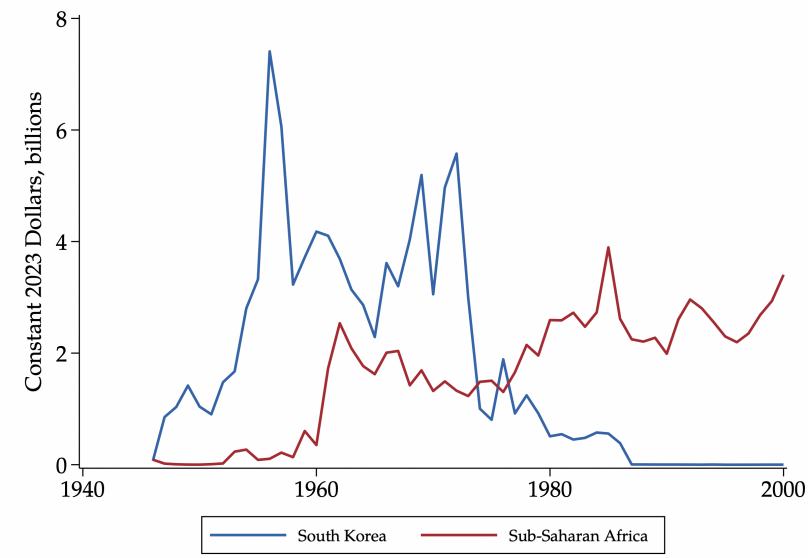
(d) Exports by Treatment & Sector, Intensive



This figure shows export outcomes for treated firms (who received procurement contracts) and control firms, broken down by sector. Panels (a) and (c) show results for the extensive margin (the probability of exporting), while panels (b) and (d) show results for the intensive margin (mean log exports) using an approach inspired by Chen and Roth (2023) to net out the extensive margin without having to exclude observations with zero exports (which would make estimates hard to interpret). Instead we address the problem of logs of zero by treating exports below $100,000 as equal to $100,000. The top panels (a) and (b) display exports of manufacturing vs agricultural products, while the bottom panels splits up manufacturing into two major components: textiles as well as heavy and chemical industries (HCI). The bottom lines on the x-axis show a timeline of policy treatments: black indicates the period of American Vietnam War procurement contracts, while red indicates the Heavy and Chemical Industry (HCI) drive.

A Appendix: Tables and Figures

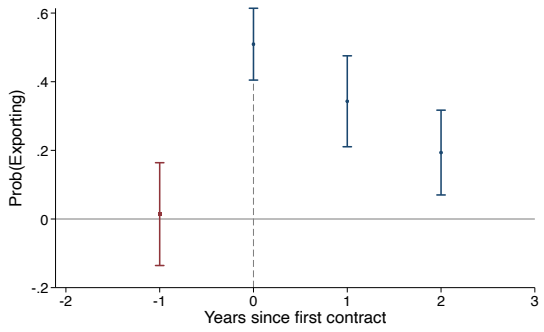
Figure 7: Korea received more aid than Sub-Saharan Africa until the mid-1970s



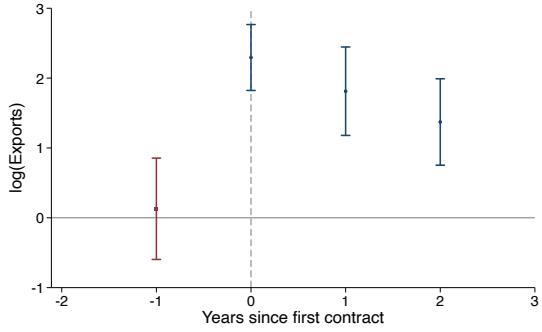
This figure compares the total volume of U.S. aid to South Korea and Sub-Saharan Africa, using official data from ForeignAssistance.gov (in billions of constant 2023 dollars).

Figure 8: Effect of First Contract: Ext. and Int. Margins, imputation based on $10,000+

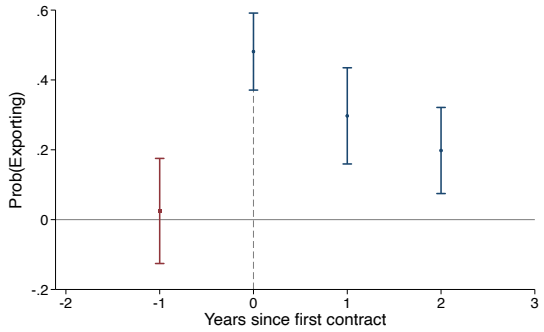
(a) Probability of Exporting: All Countries



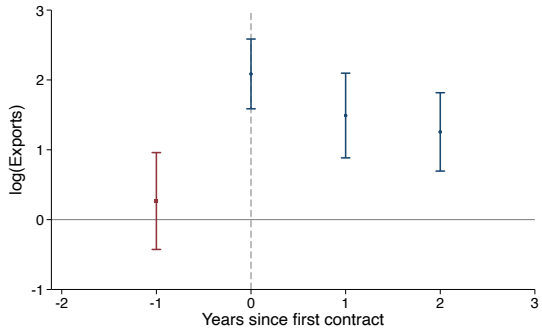
(b) log(Exports): All Countries



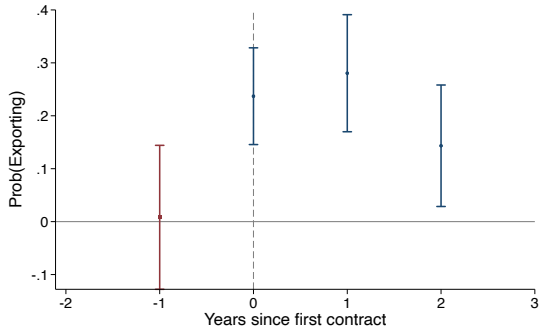
(c) Prob. of Exporting: All Countries, Ex. USA



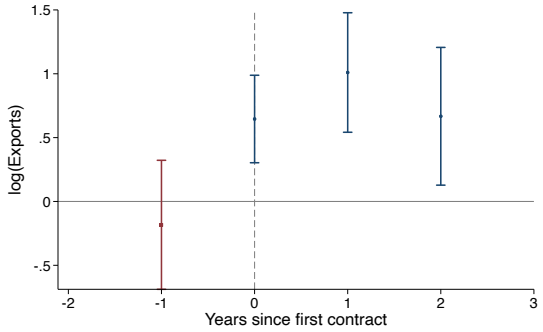
(d) log(Exports): All Countries, Ex. USA



(e) Probability of Exporting: USA



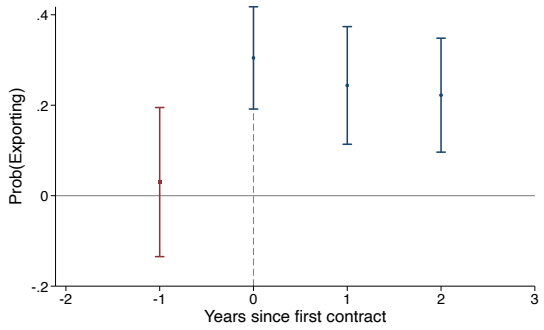
(f) log(Exports): USA



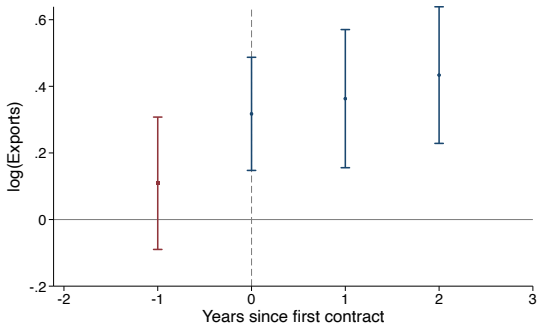
This figure shows the effects of a firm winning its first contract on the probability of exporting and the log of total exports, using the Borusyak et al. (2023) staggered difference-in-difference estimator and an approach inspired by Chen and Roth (2023) to net out the extensive margin without having to exclude observations with zero exports (which would make estimates hard to interpret). Instead we address the problem of logs of zero by treating exports below $10,000 as equal to $10,000. The first row shows exports to all countries, the second row shows exports to all countries excluding the USA, and the third row shows exports to just the USA. The vertical bars mark 95% confidence intervals.

Figure 9: Effect of First Contract: Ext. and Int. Margins, imputation based on $1,000,000+

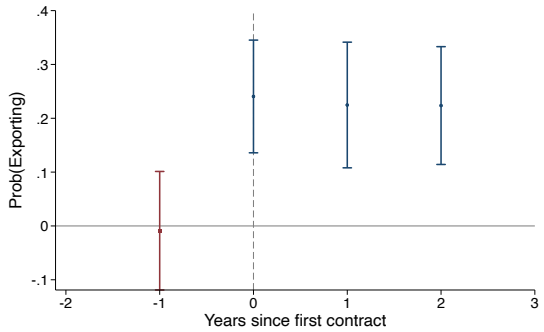
(a) Probability of Exporting: All Countries



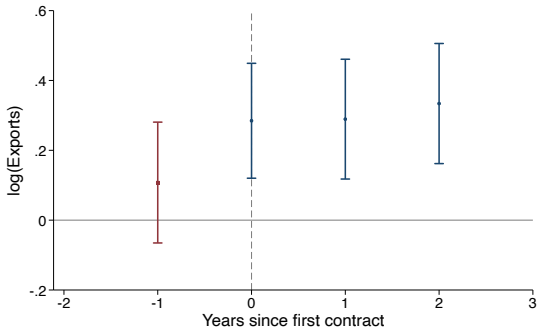
(b) log(Exports): All Countries



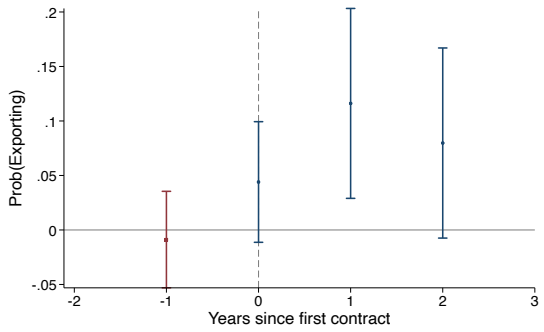
(c) Prob.: All Countries, Ex. USA



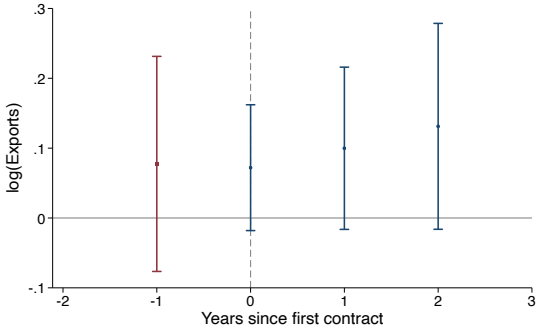
(d) log(Exports): All Countries, Ex. USA



(e) Probability of Exporting: USA



(f) log(Exports): USA



This figure shows the effects of a firm winning its first contract on the probability of exporting and the log of total exports, using the Borusyak et al. (2023) staggered difference-in-difference estimator and an approach inspired by Chen and Roth (2023) to net out the extensive margin without having to exclude observations with zero exports (which would make estimates hard to interpret). Instead we address the problem of logs of zero by treating exports below $1,000,000 as equal to $1,000,000. The first row shows exports to all countries, the second row shows exports to all countries excluding the USA, and the third row shows exports to just the USA. The vertical bars mark 95% confidence intervals.