Foreign Economic Relations and Domestic Politics: The Case of Taiwan

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Abstract

How do foreign economic influences shape domestic politics? I study this question leveraging the unique settings of Taiwan, where exports heavily rely on the Chinese market, and the major political cleavage is relations with China. Using a shift-share design, I find that townships with more exports to China vote less for the Democratic Progressive Party, the major party that unequivocally supports Taiwanese independence. I offer suggestive evidence that interested voters may worry about losing economic benefits brought by exports to China and so avoid choices likely to cause tensions. I do not detect impacts on party identification, identity, and attitudes toward unification or independence.

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1 Introduction

Globalization has brought different economies more than ever interlinked, which may produce prominent implications for international relations. Asymmetric economic linkages give some countries leverage to influence others' behavior through economic means (e.g., trade, aid, and outward FDI), known as "economic statecraft" (Baldwin, 2020). Throughout history, it is not uncommon that economic relations were intervened in the hopes of influencing policy and political choices (Hirschman, 1980; Kastner and Pearson, 2016), most recently attested by the US-China trade war (e.g., Kim and Margalit, 2021; Fetzer and Schwarz, 2021).[1] As such, it is useful to understand the political impacts of foreign economic relations.

The current paper provides an empirical investigation of this issue using the unique settings of Taiwan. Specifically, I study how exports from Taiwan to China affect electoral outcomes.[2] In Taiwanese politics, the relationship with China is the major and most enduring cleavage, with two dominant parties taking opposite ideologies — the *Kuomintang* (i.e., Chinese Nationalist Party, KMT hereafter) is more pro-unification with China, while the Democratic Progressive Party (DPP hereafter) officially supports Taiwanese independence (Achen and Wang, 2017; Imai and Shelton, 2011; Wong and Wu, 2016). Not surprisingly, Beijing is openly hostile against the DPP but relatively friendly to the KMT. In addition, the Taiwanese economy heavily relies on the Chinese market. In 2020, 15% of its GDP was exports to the Chinese market (20% if including those to Hong Kong). Beijing has promoted cross-(Taiwan-)Strait economic integration through a range of preferential policies for Taiwanese businesses, hoping that economic benefits would "win hearts and minds" of the Taiwanese and ultimately facilitate the Chinese unification (Kastner and Pearson, 2016)

[1] Hirschman (1980) argues that Nazi Germany used a series of tactics to shape Eastern European countries' dependence on the German market, creating hegemony over those countries even before the war. Kastner and Pearson (2016) review three notable cases of economic statecraft. The Clinton Administration's efforts of integrating China into the global economy were intended to make China adhere to international norms. In the late 1990s, South Korea's "Sunshine Policy" aimed to pacify North Korea's aggressiveness through increasing economic exchanges. Another case in Kastner and Pearson (2016) is the focus of the current study: China has promoted more economic cooperation with Taiwan in the hopes that it would facilitate ultimate Chinese unification. When it comes to the US-China trade war, Kim and Margalit (2021) and Fetzer and Schwarz (2021) find that Chinese retaliatory tariffs were targeted to weaken Republican support.

[2] Throughout this paper, I use "exports to China" and the shorter term "China exports" interchangeably.

Taiwan is an interesting testing ground for the political effects of foreign economic relations. First, its electoral outcome offers a clear-cut measure of citizens' preferences regarding foreign policy. In many democracies, the focal point of elections tends to be on domestic issues, e.g., redistribution, rather than foreign policy. Thus, most quantitative studies have to use high-level measures to capture the influences of foreign economic relations, e.g., voting in the UN General Assembly (Flores-Macías and Kreps, 2013), military conflicts (Martin et al., 2008), territorial disputes (Lee and Mitchell, 2012). Despite rich insights, these measures may not capture citizens' preferences, who may or may not have stakes in foreign economic relations and directly influence domestic politics through the ballot box. There can also be selection concerns when using some of these measures. For instance, researchers can only observe military conflicts that have occurred but have little knowledge about the frequency of under-table tensions.[3] In this regard, the case of Taiwan features a regular examination of how foreign policy preferences vary with foreign economic relations. Second, constrained by measurement availability, most former studies are cross-country by nature. So, unobserved heterogeneity across territories (e.g., geography, cultures, and institutions) may confound identification. This paper exploits the Taiwanese context to hold these factors constant.

Empirically studying the political effects of exports to China is nonetheless challenging. Due to the goal of facilitating unification, Beijing may strategically design purchases of Taiwan's products to maximize political influences on the island. For instance, Beijing may buy more from the stronghold of the pro-independence DPP (Wong and Wu, 2016). On the Taiwanese side, socioeconomic conditions are likely associated with exports and politics. To address these endogeneity concerns, I follow trade and immigration literature (Autor et al., 2013; Imbert et al., 2022; Mayda et al., 2022) to instrument for exports from Taiwan to China using a shift-share design. The shift-share instrument combines industry-level variation in *innovations* of China's demand from other markets ("shifts") and township-level variation in exposure to these export shocks due to differential employment mix ("shares"). The identifying assumption underlying the shift-share design is that the "shifts", i.e., innovations of China's demand from other markets, are quasi-exogenous (Borusyak et al., 2022). I provide support for this assumption by conducting

[3]This is in the spirit of Drezner (2003)'s argument that economic coercion is hidden. Many cases of coercion are in the form of threats and do not ultimately result in sanctions.

balance tests developed by Borusyak et al. (2022), and show that the shifts are not correlated with predetermined industry and local characteristics as well as pretrends in electoral outcomes.

With the shift-share design, three sets of findings emerge. First, I find that in presidential elections between 2008 and 2020, townships with more exports to China voted less for the DPP, the pro-independence party. Though statistically significant, the effect size is small, and I find it unlikely to result in significant political consequences (e.g., change of ruling party). Second, I provide suggestive evidence for one explanation of the political effects uncovered: economic benefits brought by exports to China may incentivize Taiwanese voters to avoid the option that would pose a risk to cross-Strait political stability, e.g., a DPP president. I show that: (i) exports to China have enhanced earnings; (ii) in the 2018 referendum, voters in townships that heavily relied on the Chinese market were less likely to vote for playing as "Taiwan" (instead of "Chinese Taipei") in the 2020 Tokyo Olympics, which would delink Taiwan with China and likely irritate Beijing; and (iii) voters would turn to support the DPP were the dependence on the Chinese market alleviated, for instance, by exports to the US. These results together corroborate my hypothesis that exports to China create stakes such that interested voters conform to Beijing's expectations. Lastly, I find that exports to China also have influences on legislative elections when party ideology becomes more salient. Using survey data, I do not find impacts of exports to China on individual attitudes, including party identification, national identity, as well as attitudes toward unification and independence.

This paper contributes to three lines of scholarly literature. First and foremost, it adds to the voluminous work concerning economic exchanges and international politics (see Aidt et al., 2021 and Schultz, 2015 for review). There has been evidence that political factors shape cross-border economic exchanges. For instance, Martin et al. (2012) find that country dyads that had more *past* wars were more likely to sign regional trade agreements. Korovkin and Makarin (2023) find that Ukrainian firms' trade with Russia sharply declined after the 2014 Ukraine-Russia conflict, and they suggest the destruction of social trust as a driving force. Kuziemko and Werker (2006) take a forensic view and they uncover that a country received more US aid and UN aid once it got a seat in the UN Security Council. There are also papers focusing on economic statecraft, i.e., how economic exchanges map to politics (Marinov, 2005; Flores-Macías and Kreps, 2013; Martin et al.,

2008; Lee and Mitchell, 2012), but the findings are mixed about the efficacy of economic statecraft, varying with specific outcomes examined.

This paper also joins the literature on trade's political effects. Notably, a large body of literature concentrates on the so-called "China shock". Exploiting variation created by spectacular growth in imports from China, scholars find that imports from low-income countries give rise to populism and anti-globalization sentiments in Western democracies, as import competition makes unskilled workers face greater economic insecurity (Autor et al., 2020; Colantone and Stanig, 2018a,b; Dippel et al., 2022; Malgouyres, 2017; Barone and Kreuter, 2021). My paper differs from the "China shock" literature in an important way. Note that political effect in the "China shock" literature does *not* appear politically intended in the first place. It is a (perhaps inevitable) consequence of global labor market adjustments, and it might have arisen anyway as production relocates to low-wage countries (not just China). It is unlikely to be the case where China's trade with the West aims to incite populism. By contrast, Beijing is frank about the political intention of its trade with Taiwan — to entice the Taiwanese and facilitate unification.

Lastly, the current study adds to the burgeoning economics and political science literature that investigates the influences of China's growing economic power in various forms, e.g., trade (Flores-Macías and Kreps, 2013; Kastner et al., 2022), aid (Isaksson and Kotsadam, 2018; Dreher et al., 2021), and outward FDI (McCauley et al., 2022; Wang et al., 2021). Few have touched on Beijing's influences through economic means on Taiwan, which is its "core interest". One exception is Wong and Wu (2016): they look at the 2008 presidential election only, leveraging variation in exposure to Beijing's unilateral tariff cuts for agricultural products before the election, but they do not find notable effects. However, as they have noted, tariff cuts can be designed based on local political conditions and thus endogenous. Extending their insights, my paper submits the inquiry to a larger-sample analysis (elections between 2008 and 2020) and addresses endogeneity with an instrument variable strategy.

The remainder of this paper is organized as follows. Section 2 reviews the institutional background. Section 3 discusses the data sources. Section 4 presents the empirical strategy. Section 5 reports the main results, followed by some extensions in Section 6. Section 7 concludes. Supplemental details and additional results can be found in Online Appendix.

2 Background

2.1 China-Taiwan Relations

The so-called "Taiwan Issue", which is about Taiwan's status, is among the most significant geopolitical issues in East Asia and even in the world (Economist, 2021). It is a consequence of the second phase of the Chinese Civil War (1945–49). In 1949, the Communist Party of China (CPC) defeated the ruling *Kuomintang* (KMT) and took over the Chinese mainland. The CPC founded the People's Republic of China (PRC) on the mainland, while the KMT-led Republic of China (ROC) government retreated to Taiwan and its outlying small islands.

Either the PRC or the ROC claimed itself as the sole legitimate government representing the whole China. However, the ROC downplayed this claim over time, due to the inability to "recover the mainland", the transition to democracy, and that most countries in the world had established diplomatic relations with the PRC. By contrast, the PRC maintains its territorial claim over Taiwan, and it vows to achieve Chinese unification by all possible means, including military actions.[4] This conflict results in recurring political tensions between the two sides and makes any exchanges highly politicized.

2.2 Political Parties and Cleavages in Taiwan

Modern-today Taiwanese politics is dominated by two major political parties: the *Kuomintang* (KMT) and the Democratic Progressive Party (DPP). Their biggest disagreement lies in how to deal with relations with China, which is also the most salient, important, and enduring political cleavage in Taiwanese society (Imai and Shelton, 2011; Wong and Wu, 2016; Achen and Wang, 2017). Despite several nuances in framing, this issue manifests itself in two platforms: eventual unification with or independence from China.

The KMT has been perceived as a pro-unification party due to its long-standing declaration favoring ultimate unification. As mentioned earlier, the KMT was the ruling party of China

[4]Chinese leaders have repeatedly emphasized that China seeks peaceful unification but would not exclude using forceful means. China has also demonstrated the credibility of its military threats against any Taiwanese independence moves through the third Taiwan Strait Crisis in 1996 and most recently, encirclement drills after the US House Speaker Nancy Pelosi's visit in 2022.

until 1949. During the early days in Taiwan, KMT leaders, Chiang Kai-shek and his son Chiang Ching-kuo, were hostile to Chinese Communists, but they insisted on a "one China" claim that the KMT-led ROC government was the sole legitimate government of China (Taiwan included), while the CPC-led PRC was an illegitimate regime. They took Taiwan as the base for "recovering the mainland". Following the two Chiangs' era, the first KMT leader born in Taiwan, Lee Teng-hui, was vague about his views on the unification-or-independence issue most of time, but he turned out to be independence-minded at the end of his tenure, which drew a lot of controversies. In the post-Lee era, especially after it was voted out of power for the first time in the 2000 presidential election, the KMT departed from Lee's pro-independence line. Ideology-wise, today's KMT opposes Taiwanese independence and reserves the option of unification. It accepts the "1992 Consensus", which Beijing takes as the basis of any negotiations with any party in Taiwan. The 1992 Consensus defines "one China" but leaves interpretations of "China" ambiguous. In practice, the KMT stands for maintaining the status quo and developing friendlier relations, especially economic and cultural exchanges, with China.

By contrast, the DPP is a pro-independence party. Unlike the KMT, the party has no historical roots in China. It was founded by activists in Taiwan's pro-democracy movements. Many of the activists were born in colonized Taiwan and so had fewer emotional attachments to China, and if any, they were almost erased by the Chinese-origin KMT's repression of the Taiwanese. Moreover, after democratic reforms, the DPP needed to find a new issue to keep mobilizing its supporters. The pursuit of Taiwanese independence became a good option: it was associated with the party founders' ideology, and it could effectively stimulate the public's emotions since it connected to the important social cleavage of Chinese and Taiwanese identities. The DPP's pro-independence ideology was formally presented by its *Taiwan Independence Clause* in 1991, which set achieving *de jure* Taiwanese independence as the party's goal, as well as by the *Resolution of Taiwan's Future* in 1999, which stressed more on Taiwan's *de facto* independence. Despite practical political considerations and constraints, DPP politicians' policies and opinions nonetheless reflect the party's intention to distinguish Taiwan from China. For instance, DPP President Chen Shui-bian (2000–2008) pushed Taiwan nationalism to downplay or erase China-related elements in Taiwan, e.g., government agencies were presented as those of "the ROC (Taiwan)" rather than of "the ROC".

Another DPP President, Tsai Ing-wen (2016–present), openly rejected the 1992 Consensus and framed China and Taiwan as two nations.[5]

The Taiwanese public has well perceived the two parties' sharp cleavage in the unification-or-independence issue. As shown by the first two bars in Figure 1, when asked to rate the KMT's and the DPP's support of unification with China (on a 0–10 scale, the higher the more supportive), the average respondent considers the KMT to be much more pro-unification than the DPP (7.328 versus 2.564). This is not to say there are no other cleavages between the two parties in the public's eyes. Figure 1 presents public perceptions of the two parties' platforms on three other issues that have been raised in Taiwan's modern history or other democracies: (i) welfare state, (ii) economic development versus environmental protection, (iii) reforms versus social stability, and (iv) right wing. Though there are some cleavages in perceived platforms between the two parties, they are not as large as that in the unification-or-independence issue. It is worth noting that there is almost no difference between the two parties' perceived platforms on the welfare state, which tends to be the major cleavage in many democracies.[6] Moreover, these issues had short-lived political salience, because different parties soon converge to similar policy platforms, or they are quickly overwhelmed by the unification-or-independence discussion (Norris, 2004; Achen and Wang, 2017; Durrer de la Sota and Gethin, 2021).[7]

Besides the KMT and the DPP, there are some other small parties in Taiwan. Nonetheless, many of them can be categorized as either pro-unification or pro-independence, and they are often allies of the KMT of the DPP. Thus, the KMT and its allies form the so-called pan-blue coalition, while the DPP and its allies form the pan-green coalition.

[5] In a 2021 speech, Tsai alleged that "the ROC and the PRC are not subordinate to each other" (https://www.mac.gov.tw/en/News_Content.aspx?n=2BA0753CBE348412&s=B0E7F4592FFE89DC).

[6] Achen and Wang (2017) point out that parties differ little in the welfare state issue because no party wants to be considered as not caring about people's livelihood. For example, when the DPP proposed a pension for seniors, the KMT later followed up with a health insurance program.

[7] Norris (2004) claims that *"in Taiwan the parties were identified mainly by nationalist issues, about relationships with China, rather than by left-right ideology."* Chapter 5 of Achen and Wang (2017) offers detailed discussions about why the unification-or-independence issue remains dominantly salient in Taiwanese politics. Durrer de la Sota and Gethin (2021) point that although the unification-or-independence issue relates to ethnic conflicts between mainlanders and Taiwanese, it is about identities rather than about ethnic inequalities: income is only weakly correlated with ethnicity in Taiwan, despite increasing income inequalities on the island.

2.3 Trade Between China and Taiwan

Due to political conflicts, there was no trade between the two sides of the Taiwan Strait for a long period. Taiwan's leaders, Chiang Kai-shek and his son Chiang Ching-kuo, stuck to a "no contact" principle, prohibiting trade with China. Only in the late days under Chiang Ching-kuo did indirect trade through a third party (e.g., Hong Kong) become allowed. In the periods that followed, cross-Strait trade sharply increased as direct trade was deregulated and China became more involved in the global economy.[8]

Today, China has become the leading destination of Taiwan's exports, while the US is the second. Figure 2a shows the Chinese market's growing importance to Taiwan. For instance, in 2020, nearly one third of Taiwan's exports went to China, which amounted to 15.3% of GDP. If including exports to Hong Kong, an important destination that re-exports goods to China and is under the Chinese government's influence, 20% of Taiwan's GDP in 2020 relied on exports to the Chinese market. By contrast, Taiwan's export dependence on the US, the second largest destination, is much lower: its exports to the US amounted to 7.5% of GDP in 2020. In international criteria, Taiwan's dependence on the Chinese market is also remarkable. Figure 2b compares Taiwan to South Korea and Australia, showing that Taiwan has had a persistently high dependence on the Chinese market. This comparison may hint at the political plight faced by Taiwan. Leveraging its economic power, Beijing had already used import bans to punish South Korea and Australia for geopolitical conflicts in recent years, which had drawn global attention (Carothers, 2022; CSIS, 2021). When it comes to Taiwan, it depends more on the Chinese market but does not face fewer, in fact substantially more, political pressures from Beijing. That said, Taiwan's vulnerability to economic coercion could be larger in the event of escalations than South Korea and Australia.[9]

The Chinese government is candid about its political goals embedded in cross-Strait trade, or economic exchanges at large. Yang Shangkun, the Chinese President from 1988 to 1993, made it clear: *"we [the Chinese government] should lead cross-Strait exchanges in the direction to facilitate the unification of the motherland."* Tellingly, the Chinese government has offered a range of preferential

[8] China and Taiwan joined the WTO in November 2001 and January 2002, respectively.

[9] Actually, Beijing has also used trade sanctions to punish Taiwan's behavior that it considered as "pro-independence". For instance, it suspended imports of some fruits and seafood from Taiwan after Nancy Pelosi's visit in 2022 (CNN, 2022).

policies for Taiwanese businesses in order to win their hearts and minds (Kastner and Pearson, 2016). For instance, in 2005, Beijing unilaterally offered tariff exemptions to some of Taiwan's agricultural products and asked for nothing in return. Critically, this happened after the then *out-of-power*, pro-unification KMT's leader Lien Chan visited mainland. Beijing also stated frankly in the official readout that the tariff cuts could help the KMT win support in Southern Taiwan, the pro-independence DPP's stronghold (Wong and Wu, 2016).

On the Taiwanese side, unsurprisingly, the KMT and the DPP's contrasting ideologies politicize the issue of trading with China. To be sure, each party's ideology shapes its respective capacity to deal with China. Beijing welcomes the pro-unification KMT but is hostile to the pro-independence DPP. As a result, the KMT has the comparative advantage of negotiating economic exchanges with Beijing. This is well captured by the public: Imai and Shelton (2011) find that the stock price of mainland-investing firms increased when the electoral outlook favored the KMT.

In addition, different ideologies fit into different trade policies. The KMT is more comfortable with deepening economic integration with China for Taiwan's economic prosperity, while the DPP worries that increasing ties with China could threaten Taiwan's independence. For instance, during the KMT candidate, Ma Ying-jeou's 2008 presidential campaign, he proposed to establish a "cross-Strait common market", which the DPP candidate criticized as a preliminary step towards unification with China. Later in Ma's presidency, the KMT intended to push for a free trade agreement between China and Taiwan, but it was opposed by the DPP, concerned that the agreement might increase Beijing's influence on Taiwan. Disputes later triggered a massive student protest against the agreement and an over-twenty-day occupation of the legislature, known as the Sunflower Movement, which reflected concerns about trading with China not only between parties but also among the Taiwanese people.

3 Data

In this section, I briefly introduce two sets of main variables in my sample: political outcomes and China export shocks. Other variables would be introduced when they become pertinent. Further details about data sources and data cleaning can be found in Appendix A. The unit of analysis is the

township-by-year level. Below counties, townships are the second level of Taiwan's administrative divisions (equivalent to counties in the US). My sample covers the entirety of 368 townships in 22 counties.

3.1 Political Outcomes

The main focus of subsequent analysis is on presidential elections, where the relationship with main China receives supreme salience. All election data are obtained from Taiwan's Central Election Commission.

My sample includes presidential elections in 2008, 2012, 2016, and 2020. The main outcome of interest is the DPP's vote share of all votes. Though contests were always between the KMT and the DPP, there was a third-party candidate in the last three elections, the People First Party's Soong Chu-yu. He got nontrivial vote shares (2012: 2.76%; 2016: 12.83%; 2020: 4.26%), so I decide not to use the two-party vote share to measure the DPP's electoral support. However, like KMT candidates, if not more, Soong also held China-friendly political views.[10] That is to say, the DPP is the sole party with explicit anti-China ideology in presidential elections.

3.2 China Export Shocks

Ideally, I would like to trace each township's yearly changes in China exports ("China export shocks"). However, such data are not available. Following previous literature (Autor et al., 2013, 2020), I measure the China export shock faced by township i in year t in a shift-share fashion:

$$\Delta EX_{it}^{tw-cn} = \sum_k s_{ik} \times \Delta g_{kt}^{tw-cn}. \tag{1}$$

where $s_{ik} = \frac{L_{ik}}{\sum_k L_{ik}}$, and $\Delta g_{kt}^{tw-cn} = \frac{\Delta X_{kt}^{tw-cn}}{\sum_i L_{ik}}$. L_{ik} is the employee size of township i in industry k. $\Delta X_{kt}^{tw-cn} = X_{kt}^{tw-cn} - X_{k,t-1}^{tw-cn}$ is the change in *total* exports from Taiwan to China of industry k in year t. Therefore, s_{ik} is township i's share of employment in industry k, thus the "share" component;

[10] Soong was born in China and used to be a KMT member. He openly identified himself as Chinese, even in a presidential TV debate.

and Δg_{kt}^{tw-cn} proxies for the gains or losses from exporting to China that is experienced by an average employee of industry k in year t, thus the "shift" component.

To construct this variable, I measure X_{kt}^{tw-cn} using trade flows at the Harmonized System (HS) two-digit industry level, reported by the Taiwanese Customs. It is in the unit of 1,000 constant US dollars (the base year is 2002). Regarding L_{ik}, I primarily use the 2006 Industrial and Service Census, compiled by Taiwan's Statistical Bureau. To the best of my knowledge, it is the earliest publicly available dataset that contains township-level employment information in mining, manufacturing, and services. I supplement it with agricultural employment reported by the 2010 Population Census, obtained from official sources.[11] One challenge in implementing Equation 1 is to harmonize industry classifications in trade and employment data. I create a crosswalk to map employment industries to 94 HS two-digit industries.[12] Appendix A provides more details of data processing.

4 Empirical Strategy

4.1 Estimating Equation

My analysis relies on the following regression:

$$\Delta y_{it} = \alpha + \beta \cdot \Delta EX_{it}^{tw-cn} + \Delta W_{it}'\Gamma + \lambda_i + \mu_{c(i)t} + \varepsilon_{it}, \tag{2}$$

where i indexes townships and t indexes calendar years. z_{it} denotes variable z observed in township i and year t. The dependent variable is the change in political outcome (e.g., vote share, turnout) vis-à-vis last election, formally $\Delta y_{it} = y_{it} - y_{i,t-4}$. The key independent variable is the China export shock, ΔEX_{it}^{tw-cn} (unit: 1,000 dollars in 2002). It is worth noting that presidential elections were held in January, thus, ΔEX_{it}^{tw-cn} is measured at the beginning of year t,[13] so that it reflects the China

[11] One may be concerned that agricultural employment is measured shortly after the sample starts (2008).

[12] There are 96 HS two-digit industries in total. Two industries are excluded from my crosswalk: (i) tobacco and manufactured tobacco substitutes (HS = 24), and (ii) miscellaneous manufactured articles (HS = 96). The former is excluded because as Taiwan had very few firms in this industry, the Statistical Bureau omitted the employment data to prevent firms' information from being identified. The latter is excluded because it is the residual category.

[13] For instance, $\Delta EX_{i,2020}^{tw-cn}$ is the change in exports from Taiwan to China completed in 2019.

export shock that voters were exposed to just ahead of elections. ε_{it} is the error term. Standard errors are clustered at the township.[14]

Equation 2 controls for factors that may confound the relationship between exports and voting. W_{it} is a set of time-varying demographic variables likely associated with exports and politics, and $\Delta W_{it} = W_{it} - W_{i,t-1}$ captures the changes. λ_i is the township fixed effect, absorbing any township-level invariant heterogeneity. $\mu_{c(i)t}$ is the county-by-year fixed effect, where $c(\cdot)$ maps township i to the county it locates in. $\mu_{c(i)t}$ flexibly controls for differential trends across counties. Equation 2 is thus a relatively demanding specification: β is estimated using within-township variation in export shifts that are off secular trends of a county.

In an ideal experiment, β would capture how the electorate responds to an exogenous, instantaneous change in exports to China. That is to say, causally interpreting the OLS estimate of β requires exogeneity of ΔEX_{it}^{tw-cn}, i.e., *changes* in China exports are orthogonal to unobserved *changes* in political outcomes. However, this assumption can be overly strong and hard to hold. First, there may be omitted variables: ΔEX_{it}^{tw-cn} likely relates to local socioeconomic dynamics conducive to politics, despite demanding controls using fixed effects and covariates. Second, reverse causality is likely at play. In the special context here, Beijing may make some trade policies out of political considerations. As mentioned in Section 2.3, Beijing unilaterally offered tariff cuts to Taiwanese agricultural products in an effort to weaken the DPP's stronghold in Southern Taiwan. Lastly, because of the construction nature, potential measurement error in ΔEX_{it}^{tw-cn} could attenuate the OLS estimate.

4.2 Instrument Variable

To advance in causal identification, I instrument for ΔEX_{it}^{tw-cn} using a shift-share design and estimate Equation 2 with two-stage least squares (2SLS). This methodology has been widely adopted in the literature that studies the effects of trade and migration (e.g., Autor et al., 2013, 2020; Campante et al., 2022; Mayda et al., 2022; Imbert et al., 2022). The instrument variable (IV) exploits variation in shifts of exports from the rest of the world (excluding China and Taiwan, ROW

[14] Results are robust to alternative standard errors and statistical inference approaches.

hereafter) to China, based on the following formula:

$$\Delta EX_{it}^{row-cn} = \sum_k s_{ik} \times \Delta g_{kt}^{row-cn}. \tag{3}$$

In the expression, $\Delta g_{kt}^{row-cn} = \frac{\Delta X_{kt}^{row-cn}}{\sum_i L_{ik}}$, where ΔX_{kt}^{row-cn} is the change in exports from the ROW to China, calculated using data from the UN Comtrade database (unit: 1,000 dollars). Note that ΔEX_{it}^{row-cn} differs from ΔEX_{it}^{tw-cn} in the shift component: Δg_{kt}^{row-cn} replaces Δg_{kt}^{tw-cn}. Therefore, the idea behind my instrumentation is to leverage variation in China's global demand for products of certain industries to predict its demand for similar products made in Taiwan.

For the instrument variable strategy to be valid, ΔEX_{it}^{row-cn} should strongly predict ΔEX_{it}^{tw-cn}. More importantly, the exclusion restriction must be met: conditional on covariates and fixed effects, ΔEX_{it}^{row-cn} affects Δy_{it} only through ΔEX_{it}^{tw-cn}. Given that my shift-share design leverages variation in the shifts, this assumption hinges on the exogeneity of the *shifts* Δg_{kt}^{row-cn}'s (Borusyak et al., 2022).[15] Specifically, Borusyak et al. (2022) show formally that the shift-share IV estimator is consistent under two key conditions (their Proposition 4): conditional covariates and fixed effects, (i) the shifts are quasi-randomly assigned across industries in Taiwan; (ii) the shifts are mutually uncorrelated.[16]

The premise for these conditions is that the ROW's exports to China reflect the Chinese demand for products of certain industries, thus orthogonal to factors in Taiwan that could drive both exports and politics. It is not very likely that China's geopolitical considerations in the Taiwan Strait would drive the ROW's exports. Also, Taiwan's exports to China, partially driven by geopolitical reasons, should not significantly substitute China's demand for the ROW, given that the ROW's

[15] Goldsmith-Pinkham et al. (2020) show that the shift-share estimator is also consistent if instead, the *shares* are exogenous. However, this does not apply in the case here, because (i) the shares, local employment structures, are likely correlated with politics and thus endogenous, and (ii) it is the shifts rather than the shares that provide variation in the instrumentation.

[16] In light of Borusyak et al. (2022), I also check that another two conditions. First, $\sum_k (\sum_i s_{ik}/I)^2$ (I = number of townships, 368) is small. Note that $\sum_i s_{ik}/I$ is the *cross-township* average exposure to the export shift of industry k. So, $\sum_k (\sum_i s_{ik}/I)^2$ reads as the Herfindahl–Hirschman index (HHI) of average export shit exposure, and its small size suggests that effects would not be driven by a few industries, i.e., there are enough many industries, with sufficient dispersion of industry sizes. To benchmark my check: Borusyak et al. (2022)'s Monte-Carlo exercises show that consistency follows even when the HHI is 0.05, i.e., there are 20 equal-sized industries; by contrast, my case has a HHI of 0.009 and 94 industries. Second, the HHI of local industrial concentration, $\sum_k s_{ik}^2$, is not too small on average across townships so that export shifts have some impacts on all townships, ensuring IV relevance (this is evident according to large F-statistics shown later).

exports are twenty times larger than Taiwan's. Reassuringly, the first-stage results show that the ROW's and Taiwan's exports to China are complements rather than substitutes, reinforcing the idea of instrumentation: expansion of China's demand for other markets creates opportunities for Taiwanese exporters.

Nonetheless, I am concerned that conditions (i) and (ii) would fail if there are globe-wide, cross-industry shocks influencing both the ROW's and Taiwan's exports as well as politics. I address this concern in three ways. First, I augment the construction of the IV to tease out possible confounders. Specifically, in Equation 3, I replace Δg_{kt}^{row-cn} with its *innovation*, denoted by $\Delta \hat{g}_{kt}^{row-cn}$. Therefore, the ultimate IV used in my analysis is specified as:

$$\Delta \widehat{EX}_{it}^{row-cn} = \sum_k s_{ik} \times \Delta \hat{g}_{kt}^{row-cn}. \tag{4}$$

The innovation $\Delta \hat{g}_{kt}^{row-cn}$ is the residual from an AR(1) regression:

$$\Delta g_{kt}^{row-cn} = \pi_0 + \pi_1 \cdot \Delta g_{k,t-1}^{row-cn} + \delta_k + \phi_t + \nu_{kt}, \tag{5}$$

where δ_k and ϕ_t are industry and year fixed effects, purging temporal and cross-industry correlations.[17] Table A7 shows that in contrast to original shifts Δg_{kt}^{row-cn}'s, the innovations $\Delta \hat{g}_{kt}^{row-cn}$'s exhibit no significant serial correlations, suggesting that they are likely idiosyncratic and so suffice the identifying assumption.

Second, my empirical results provide evidence against global business cycle effects. I find that China exports lower the electoral support for the DPP when it is incumbent, which cannot be explained by incumbency advantages positively related to business cycles.

Last but not least, I shed more light on the exogeneity of $\Delta \hat{g}_{kt}^{row-cn}$'s by testing if $\Delta \hat{g}_{kt}^{row-cn}$'s are balanced across predetermined industry-level and share-weighted township-level factors, following the approach developed by Borusyak et al. (2022). Table 1 displays the results of balance tests, where each row represents a regression of the dependent in the first column on $\Delta \hat{g}_{kt}$. Tellingly, in Panel A, one can see that $\Delta \hat{g}_{kt}^{row-cn}$'s are not associated with industry-level characteristics measured in 2001. Panels B and C look at the associations between $\Delta \hat{g}_{kt}^{row-cn}$'s and predetermined township-

[17] The model is fitted using yearly data from 2005 through 2020.

level characteristics.[18] Panel B shows that $\Delta\hat{g}_{kt}^{row-cn}$'s do not relate to township-level historical characteristics back to 1955 and 1965, right after the KMT retreated from China to Taiwan. More importantly, as Panel C shows, there are no correlations between $\Delta\hat{g}_{kt}^{row-cn}$'s and lagged political outcomes (DPP vote share, turnout), in terms of both levels and changes. Taken together, these results lend support to the validity of the instrument variable strategy.

5 Main Results

5.1 First-Stage Results

I start by presenting the first-stage results: how do exports from the ROW to China affect Taiwan's exports? Table 2 displays the results using data from all 368 Taiwanese townships and four election years (2008, 2012, 2016, and 2020). Recall that all exports are in 1,000 dollars. Columns (1)–(2) show that more exports from the ROW to China lead to significantly more exports from Taiwan to China. Notably, including covariates does not markedly change the point estimate but makes it more precise. Columns (3)–(4) represent a placebo test, showing that the ROW's exports to China have no impact on Taiwan's exports to the US, the island's second-largest export destination.

These results lend support to the IV strategy's validity. First, they alleviate the aforementioned concern about global shocks (e.g., technological changes and business cycles) that could drive Taiwan's exports to different destinations. However, we see that the IV exclusively predicts exports from Taiwan to China but not to the US, indicating that it mainly exploits China's demand-side factors rather than global shocks. Second, the positive association between the ROW's and Taiwan's China exports suggests that China's increasing global demand or purchasing power creates opportunities for Taiwanese exporters. Thus, it is against a trade diversion story that could raise endogeneity concerns: out of political goals, China buys more from Taiwan to substitute for the ROW's products, and Taiwan diverts exports from the US market to the Chinese market.

[18] These regressions can be run because Borusyak et al. (2022)'s approach converts a township-level variable z_{it} to industry-level $z_{kt}^{\perp}$ (same level as $\Delta\hat{g}_{kt}^{row-cn}$'s), after accounting for the variation due to covariates (ΔW_{it}) and fixed effects (λ_i and $\mu_{c(i)t}$). They show that a (weighted) industry-level regression of $z_{kt}^{\perp}$ on $\hat{g}_{kt}^{row-cn}$ delivers the same estimate as the township-level regression of z_{it} on $\Delta\widehat{EX}_{it}^{row-cn}$ (controlling for covariates and fixed effects). Therefore, this approach is useful in examining how $\Delta\hat{g}_{kt}^{row-cn}$'s relate to local conditions.

Figure 3a visualizes the relationship between the ROW's and Taiwan's China exports. To create this figure, I run partitioned regressions of the specification in Column (2) to derive residualized exports that partial out variations explained by fixed effects and covariates. As shown by Figure 3a, the nonparametric relationship between two the ROW's and Taiwan's China exports is nearly linear, favoring a monotonic property of the instrument: at least during the sample periods, the ROW's China exports universally increase Taiwan's China exports. This suggests that the subsequent IV estimates could be interpreted as local average treatment effects (LATEs, Angrist and Imbens, 1995), which are the average effects among the very Taiwanese townships that export more to China precisely due to the expansion of Chinese demand.

5.2 How Did China Exports Affect Electoral Outcomes?

Estimates. Table 3 looks into four presidential elections between 2008 and 2020. Columns (1)–(3) first investigate the DPP's electoral support. Panel A displays the OLS estimates from Equation 2. The first two columns show that more exports to China are associated with a lower DPP vote share in presidential elections.

Motivated by these correlational observations, I move to IV estimation to shed light on causality. Panel B displays the IV estimates, largely confirming qualitative patterns shown by OLS estimates. Column (1) only includes fixed effects, giving a point estimate of -0.810. In Column (2), adding covariates reduces the marginal effect to -0.737, indicating that on average, the DPP would see a 0.737-percentage-point reduction in its vote share were there a 1,000-dollar per worker increase in exports to China.[19] Figure 3b visualizes this specification.

The effects on the DPP vote share are statistically distinguishable from zero. F statistics are high in terms of conventional criteria (Staiger and Stock, 1997). However, Lee et al. (2022) suggest that in some scenarios, the F statistics here may not be high enough to maintain the t-ratio tests using usual critical values.[20] To address this issue, I implement Lee et al. (2022)'s tF approach that uses

[19] Compared to OLS estimates, IV estimates are much larger: for instance, in Column (2), the IV estimate is 40% larger. Using methodologies developed by (Ishimaru, 2021), I find that the IV-OLS gap in Column (2) can be attributed to two sources: (i) endogeneity bias purged by IV (45.4%), (ii) difference in weights placed on heterogeneous treatment effects by IV and OLS (54.6%). I conduct some heterogeneity exercises in Section 5.

[20] Lee et al. (2022) show that the validity of t-ratio tests for single-IV and just-identified cases relies on the F statistic and the correlation between the first-stage residual and the second-stage error term. They find that in the worst case, the F statistic needs to be at least 142.6 so that one can use conventional critical values to conduct t-ratio tests of 5% size.

alternative critical values to conduct t-ratio tests. As shown by confidence intervals in the bottom of Table 3, I can reject the null that China exports have no impact on the DPP vote shares at the 5% level.

In Columns (3)–(4) of Table 3, I find that China exports have negligible effects on voter turnout. Take the IV estimate in Column (4) as an example, if anything, a 1,000-dollar increase in China exports per worker increases the turnout rate by a 0.070 percentage point. Even if one assumes that these new participating voters are the DPP supports, 1,000-dollar more China exports on average still reduce the DPP vote share by $0.737 - 0.072 = 0.665$ percentage point (p-value < 0.001). Therefore, China exports may effect by altering existing voters' behavior rather than by changing the electorate's composition.

Effect Size. Thus far, the results show that an instantaneous increase in China exports could weaken the DPP's electoral support in presidential elections. A natural question is: how large is the effect? To answer this question, I first compare my estimate to the results of previous literature on trade's political effects in multiple contexts. I also conduct some simple back-of-envelope calculations to shed light on the political significance of the estimate.

1. Comparison to the Literature. The burgeoning "China shock" literature exploits the variation created by increasing *imports* from China to study the effects of import competition on politics in the US and Europe (Autor et al., 2020; Che et al., 2022; Colantone and Stanig, 2018a; Barone and Kreuter, 2021; Malgouyres, 2017; Dippel et al., 2022). I submit my estimate to comparison with four papers that similarly use shift-share designs to study voting outcomes. Figure 4 presents this comparison. I convert all estimates to be per thousand dollars' effect on the vote share of interest (in percentage points). In terms of magnitude, my estimate appears moderate: it is smaller than the effects of import competition on votes for the Republican Party in the US (Autor et al., 2020) and populist parties in Italy (Barone and Kreuter, 2021), while it is much larger than the effects on support for the National Rally in France (Malgouyres, 2017) and far-right parties in Germany (Dippel et al., 2022).

2. Back-of-Envelope Calculations. Table 4 considers the presidential elections. I take the estimate from Column (2) of Table 3, $\hat{\beta} = -0.737$. Panel A assesses how much voting behavior is explained

by China exports. For each election, I divide townships into two groups by the median DPP vote share, i.e., "$<$ Meidan" versus "$\geq$ Median". Then, I calculate the gap in average DPP vote shares between the two groups, denoted by $GapDPP$ and displayed in Column (1). In Column (2), I similarly calculate the gap in average China export levels, denoted by $GapCNEX$. Notably, all the values of $GapCNEX$ are positive, showing that townships less supportive of the DPP export more to China. Therefore, $\frac{GapCNEX \times \hat{\beta}}{GapDPP} \times 100\%$ measures the fraction of the cross-township gap in DPP vote shares that can be explained by the gap in China exports. Column (3) exhibits this metric for four presidential elections that I study. It appears that the gap in China exports merely accounts for 4.5–8.7 percent of the gap in DPP vote shares, suggesting that the estimated effect of China exports on the DPP vote share is small in terms of political influences.

Panel B conducts another exercise to understand the estimate's political significance: how much more should China buy so that the pro-unification KMT could win? Among the four presidential elections studied, the KMT lost in 2016 and 2020 (the DPP and KMT vote shares are displayed in Columns (1) and (2), respectively). I find that based on my estimate, to reverse election outcomes, China should have bought 17,017 (12,563) dollars more per worker in 2016 (2020). Considering that Taiwan's GDP per capita was 17,376 (19,270) dollars in 2016 (2020), such hypothetical "interventions" seem to be implausible.

5.3 Heterogeneous Effects

The results above provide evidence that more exports to China have led to fewer votes for the DPP in presidential elections. In this section, I gauge the heterogeneity in influences of China exports.

Effects by Election. I first investigate how China exports' political effects vary by election. Figure 5 presents the results, which are derived through estimating Equation 2 with 2SLS separately by election. One can see that the negative impacts on the DPP vote share were more pronounced in 2008 and 2020. Interestingly, the DPP was the incumbent party in these two elections. This alleviates the concern that the findings might have been confounded by global business cycles. Were global business cycles the main driver, one would expect an "incumbency advantage" that good economic performance, represented by growth in exports to China, benefits the incumbent

party, according to economic voting theory (Singer and Carlin, 2013; Aytaç, 2018).[21] Nonetheless, the opposite is observed here: the DPP's electoral performance was more negatively affected by China exports precisely when it was incumbent.

The strong impacts in 2008 and 2020 also suggest the importance of China exports in Taiwanese politics, given the special political atmosphere in 2008 and 2020 elections. In the 2008 presidential election, KMT candidate Ma Ying-jeou's agenda featured greater economic integration with China to rescue the deteriorating Taiwanese economy under eight years of a DPP government. My results may suggest that Ma's strategy successfully harnessed the support of voters whose townships had benefited from exporting to China before, as for these people, Ma's agenda seemed to be more credible. When it comes to the 2020 presidential election, it is remarkable that China exports could still, at the margin, weaken support for the DPP, even when Hong Kong's turmoil raised extensive concerns about the relations with China and Taiwan's economic performance was not good in the past four years of the DPP's reign.[22]

Effects by Other Dimension. Figure 6 reports interesting heterogeneity along other dimensions, despite statistical insignificance. First, I find that China exports had a greater impact on weakening the DPP's performance in townships less supportive of the DPP in the past (2000 DPP presidential vote share > median). This may indicate the limitations of China's political influences through trade ties — it is easier to "buy" those who are loosely attached to the DPP. Second, the less educated population (measured by the share of college graduates in 2008) appears to be affected more, which may be due to the greater salience of economic benefits brought by trading with China for less educated people. This is in the spirit of Chiang et al. (2013), who find that outward investments in China reduce unskilled (below-college) workers' probability of voting for pan-blue parties, as outward investments undermine their economic opportunities. Moreover, I find that China exports reduce votes for the DPP more in townships where the income inequality was lower (measured by the coefficient of variation in 2008).

[21] Tellingly, I find that exports to China are associated with increases in earnings (see Section 5).

[22] It was reported that Tsai Ing-wen's reelection was mainly due to the rise of nationalism. Economic performance was worse than her predecessor in her first term (BBC, 2020).

6 Extensions

6.1 Suggestive Evidence for Channels

Thus far, I find that exports to China weaken support for the DPP. Given the unique nature of Taiwanese politics that the major political cleavage is about relations with China, my preferred interpretation is: if voters benefit from exports to China, they would be concerned about interruptions of trade due to cross-Strait tensions; as such, they become less likely to vote for the DPP, which is ideologically at odds with Beijing and is more conservative about trading with China. I shed light on this interpretation by showing (i) that China exports bring economic benefits to the Taiwanese, and (ii) that China exports seem to make Taiwanese voters worried about irritating Beijing.

Economic Benefits from China Exports. In Table 5, I study the effects of China exports on household income, using annual township-level data between 2009 and 2018 from Taiwan's Ministry of Finance. I estimate the same specification given by Equation 2 but replace the dependent variable as the change in income measure of interest. As Column (1) of Table 5 shows, exports to China lead to an increase in mean household income. Specifically, a 1,000-dollar increase in China exports translates into an increase in mean income by $0.389 \times 1{,}000 = 389$ dollars. Columns (2)–(4) zoom into this average effect. It appears that China exports significantly make all households along the income distribution better off; however, the high-income group (the top tercile) has benefited the most from exports to China. Why the economic benefits of China exports are distributed unequally calls for future research.

Voters' Worries. I hypothesize that China exports may make interested voters less likely to support the DPP out of geopolitical tensions and Beijing's retaliation. I corroborate this argument using two pieces of evidence below.

1. Evidence from the 2018 Referendum. Taiwan's referendum in November 2018 provides a unique ground to test this hypothesis. The focal point of the referendum was on two issues (DW, 2018): (i) whether to legalize same-sex marriage (Issue No.12) and (ii) whether to play as "Team of Taiwan"

(rather than "Team of Chinese Taipei") in the 2020 Tokyo Olympics (Issue No.13). The former was passed, making Taiwan the first in Asia to legalize same-sex marriage, while the latter was not.

Apparently, these two issues have completely different implications for cross-Strait relations. Same-sex marriage represents a cultural cleavage. Though it is surely politicized it was unlikely to draw any attention from Beijing and have any impacts on cross-Strait relations. By contrast, playing as "Taiwan" in the Olympics was likely to seriously irritate Beijing. Because Taiwan is part of China, Beijing opposes Taiwan's participation in governmental organizations, e.g., the United Nations and its affiliated organizations. Beijing allows Taiwan to participate in non-governmental organizations, but under a name implying that Taiwan is tied with China, e.g., "Chinese Taipei", "Taipei, China", and "Taiwan, China".[23] Therefore, playing as "Taiwan" in the Olympics would be perceived as a move toward Taiwanese independence.[24]

I study how China exports influenced support for these two issues using the following specification, which is similar to the one Colantone and Stanig (2018a) uses to study the impact of globalization on Brexit:

$$y_{ir} = \alpha + \beta \cdot \Delta EX^{tw-cn}_{i,2018} + \Delta W'_{i,2018}\Gamma + \delta_{c(i)} + \varepsilon_{ir}. \tag{6}$$

y_{ir} is township i's vote share in support of issue $r \in \{\text{same-sex marriage, playing as Taiwan}\}$. $\Delta EX^{tw-cn}_{i,2018}$ is Taiwan's China export changes in 2018, instrumented by the ROW's China export changes $\Delta EX^{row-cn}_{i,2018}$. $\Delta W_{i,2018}$ includes changes in 2018 of the same set of variables in Equation 2. $\mu_{c(i)}$ is the county fixed effect.

Columns (1) and (2) of Table 6 report the 2SLS estimates of β in Equation 6, showing that voters in townships with rising exports to China were less likely to support playing as "Taiwan" in the Tokyo Olympics, while there was no discernible effect on supporting same-sex marriage. Due to the cross-sectional nature of analysis, one may be concerned that the estimates pick up unobserved heterogeneity across townships (note that township fixed effects would be collinear with $\Delta EX^{tw-cn}_{i,2018}$

[23] These have been explicitly stated in the Chinese government's white books on the Taiwan Issue (see https://www.fmprc.gov.cn/ziliao_674904/zt_674979/dnzt_674981/qtzt/twwt/twwtbps/).

[24] In fact, historically there was a long-lasting diplomatic battle between China and Taiwan on the issue of Olympic participation. It started with which team, the PRC or the ROC, could represent "China". After the PRC was widely recognized as the legitimate government representing China, the International Olympic Committee decided in 1979 that Taiwan should participate under the name of "Chinese Taipei" and not use the ROC's national flag and national anthem.

in Equation 6). To alleviate this concern, I stack regressions of voting for two issues, which allows for controlling township fixed effects:

$$y_{ir} = \alpha + \beta(\Delta EX_{i,2018}^{tw-cn} \times D_r) + \phi D_r + \Delta W_{i,2018}'\Gamma + \lambda_i + \varepsilon_{ir}, \tag{7}$$

where D_r is a dummy variable that equals one if issue r is about playing as Taiwan, and λ_i is the township fixed effect. $\Delta EX_{i,2018}^{tw-cn}$ does not appear in the equation as its main effect would be absorbed by the township fixed effects. Thus, Equation 7 resembles a difference-in-differences strategy that uses the geopolitical insensitive same-sex marriage issue for comparison, controlling for local political preferences (possibly determined by cultures, partisanship, as well as other factors). Reassuringly, Column (3) shows that more exports to China relate to lower support for playing as Taiwan in the Olympics.

These results suggest that the Chinese market's importance could have made interested voters divert their votes away from options that Beijing dislikes.

2. Evidence from Exports to Other Destinations. Were interested voters "forced" not to support the DPP due to fears of interruptions of China exports, they could be emboldened to do so by access to alternative markets. In this regard, I compare the effects of exports to China and to the US. This investigation *per se* is interesting. First, trailing China, the US is the second largest export destination of Taiwan. Second, the US more or less offers backing to Taiwan to counter Beijing's geopolitical ambitions, and Beijing often accuses the US of intervening in the Taiwan Issue. Thus, I compare the effect on DPP presidential vote shares of exports to China against that of exports to the US. Specifically, I measure Taiwanese townships' exports to the US, ΔEX_{it}^{tw-us}, in a way similar to ΔEX_{it}^{tw-cn}. It is instrumented by $\Delta\widehat{EX}_{it}^{row-us}$, which are constructed following $\Delta\widehat{EX}_{it}^{row-cn}$. Then, I estimate a specification as follows:

$$\Delta y_{it} = \alpha + \beta_1 \cdot \Delta EX_{it}^{tw-cn} + \beta_2 \cdot \Delta EX_{it}^{tw-us} + \Delta W_{it}'\gamma + \lambda_i + \mu_{c(i)t} + \varepsilon_{it}. \tag{8}$$

Figure 7 displays the results. Because of the low first-stage F statistic (6.572), I present weak-IV robust confidence intervals using Sun (2018)'s approach. Tellingly, more exports to the US *enhance* electoral support for the DPP, contrasting the negative effect of exports to China. Moreover,

the effect size of US exports is far greater than that of China exports.[25] I read these results as corroborating that the effects of China exports are channeled by creating fears of trade interruptions in the event of tensions, but voters would turn to support the DPP if the dependence on China could be alleviated. These patterns may suggest pervasive nationalism and dislike of China in Taiwanese society (Devlin, 2020).

6.2 Effects of China Exports on Other Political Outcomes

Legislative Elections. Besides the presidential elections, I also examine China exports' impacts on legislative elections. As mentioned in Section 3.1, Taiwan's legislative elections consist of two votes: one to decide the representative for their constituency, and the other for a political party to decide the party-list proportional representation. Taiwan adopted this system in 2008, so the sample analyzes legislative elections of 2012, 2016, and 2020 in order to calculate changes in political outcomes properly for Equation 2.

Table 7 displays the results for IV estimates. I estimate China exports' effects on two votes of legislative elections separately. Columns (1)–(2) examine the representative vote. I include only those townships where there were always DPP or pan-green candidates contesting, which leaves me 292 townships (out of 368).[26] I do not find statistically significant linkages between China exports and voting for the DPP and the pan-green coalition. Column (3)–(4) turn to look at the party vote. Interestingly, China exports reduce electoral support of both the DPP and the pan-green coalition. One likely explanation for such distinction is: relations with China do not have much political salience in the representative vote section, where voters are more focused on local issues; but in the party vote section, relations with China loom large, as people are asked to choose between parties and they may take more into account parties' ideologies.

Individual Political Attitudes. I also study the impacts of China exports on the Taiwanese's political attitudes, including their party identification, national identity, and attitudes toward unification and independence. I use four waves of the Taiwan Election and Democratization Survey

[25] Similar patterns arise if comparing the effects of Taiwan's exports to China and Japan (see Figure A1). Japan is currently the third-largest export destination of Taiwan.

[26] The results do not change when using all the township-year observations where there were the DPP or pan-green candidates contesting.

(TEDS) between 2008 and 2020, which surveyed people about their political attitudes after the presidential elections. I estimate the following specification:

$$y_{vit} = \alpha + \beta \cdot \Delta EX_{it}^{tw-cn} + Z_i'\gamma + \lambda_i + \mu_{c(i)t} + \varepsilon_{ivt}. \tag{9}$$

y_{vit} is the attitudinal outcome of respondent v living in township i and surveyed in year t. ΔEX_{it}^{tw-cn} is the measure of China exports as defined in Equation 1. Z_i contains a set of individual characteristics: gender, marital status, educational attainment, whether parents migrated from China, employment status, birth cohort, as well as the like of the KMT and the DPP. λ_i and $\mu_{c(i)t}$ are township and county-by-year fixed effects, respectively. As before, Equation 9 is estimated using 2SLS, with ΔEX_{it}^{tw-cn} being instrumented by ΔEX_{it}^{row-cn}.

Table 8 displays the results. Column (1) looks at whether one identifies with the DPP. Column (2) examines national identity: Chinese (either pure Chinese or both Chinese and Taiwanese) versus pure Taiwanese. The rest columns focus on the unification-independence spectrum. Column (3) looks at the self-reported position in the spectrum, which ranges from 0 to 10 with 0 being the most pro-independence and 10 being the most pro-unification. Columns (4) and (5) investigate respondents' attitudes toward unification and independence in more nuanced circumstances: whether to unification if China and Taiwan share similar sociopolitical institutions (Column (4)) and whether to independence if it wouldn't trigger war (Column (5)). One can see that China exports have no discernible effects on any of these attitudinal outcomes. This may suggest that imports from Taiwan do not win the Taiwanese's hearts and minds, reinforcing the idea that China exports exert an impact on elections mainly by raising fears of economic losses.

6.3 Robustness Checks

In this subsection, I conduct a battery of robustness checks for my results. To save space, I only briefly discuss potential concerns, exercises conducted, and findings below. More details are provided in Appendix B.

Statistical Inference. In the main results, standard errors are clustered at the township level. Appendix B.1 shows that statistical inference is robust to using alternative standard errors, including

(i) clustering at the county level with wild bootstrapping to address the small number of clusters (Cameron et al., 2008), (ii) two-way clustering at both township and county-by-year levels, and (iii) Conley standard errors to address spatial correlations (Conley, 1999). I also implement the inference approach for shift-share designs proposed by Adao et al. (2019).

Alternative Specifications and Measures. In Appendix B.2, I explore a range of modified specifications of Equation 2: (i) dropping the township fixed effects but including the lagged dependent variable, i.e., lagged change in DPP vote share, to control for township-specific factors; (ii) dropping the township fixed effects but including the lagged DPP vote share in the level form to control for likely mean reversion; (iii) including interactions of historical variables (those in Panel B of Table 1) and year dummies to Equation 2; and (iv) estimating Equation 2 in the sample that excludes likely peculiar observations from outlying islands (Kinmen, Lienchiang, and Penghu) and major metropolitan areas (Taipei, New Taipei, Taoyuan, Taichung, Tainan, and Kaohsiung). All the results confirm that exports to China weaken the DPP support in presidential elections.

In the previous analysis, the measure of China export shock, ΔEX_{it}^{tw-cn}, is an instantaneous change (from $t-1$ to t) in employment-weighted export flows to China. In Appendix B.2, I show that the results are robust to using alternative measures. First, I find that the lagged China export shock, $\Delta EX_{i,t-1}^{tw-cn}$, has no significant effect on votes for the DPP, but the shock right before elections, i.e., ΔEX_{it}^{tw-cn}, remains impactful, which may suggest recency bias. Second, measuring China export shocks in a long-difference form does not change the results. Lastly, I find that *net* exports to China also weaken support for the DPP.

Instrument Validity. Section 4.2 has offered some evidence that the instrument may be excludable. To alleviate the concern that there could still be some omitted variables threatening the exclusion restriction, I conduct a sensitivity test developed by Conley et al. (2012) to examine the sensitivity of my 2SLS results to violations of the exclusion restriction. The approach allows the instrument to enter the second stage (Equation 2) with a coefficient of γ, where γ is set by the researcher and explicitly measures the extent to which the exclusion restriction is violated. Then, for each given γ, I can test whether instrumented exports from Taiwan to China has a significant effect on the DPP's vote share. Because I find China exports have a negative effect, violations of the exclusion would be problematic only when γ is negative. Thus, I calculate the largest negative

value of γ such that the resultant 2SLS estimate is still significant at the 5 percent level. This γ is denoted by $\bar{\gamma}$ and scaled by the instrument's reduced-form effect on the DPP vote share, α_1. Therefore, the ratio $\bar{\gamma}/\alpha_1$ can be interpreted as the maximum hypothetical violation of the exclusion restriction relative to the reduced-form effect that can be allowed for without rejecting my findings. This exercise yields a ratio $\bar{\gamma}/\alpha_1$ of 0.4, suggesting that the 2SLS estimate is robust to substantial violations of the exclusion restriction.[27]

Migration. One concern is that China export shocks may cause migration across townships to pursue economic opportunities (c.f. Section 6.1). If such migration response is substantial and marginal migrants possess systematically different political preferences, then previous findings might not accurately reflect the impacts of exports to China on voters' calculations.[28] To alleviate this concern, I examine the effects of China exports on migration. Table A5 shows that exports to China have negligible effects on a township's total population, population by gender, population by age groups (5-year bins), and population by educational attainment. It suggests that selection due to migration would not be a serious threat to my findings. The results echo some papers' findings in the US that recent local economic shocks do not produce population effects (Autor et al., 2013; Choi et al., 2021).

I note the caveat that some voters may work in a township different from their residing township (where they cast votes), leading to a measurement error that some voters in township i are not exposed to township i's China export shocks (ΔEX_{it}^{tw-cn}) but to township j's shocks ($\Delta EX_{it}^{tw-cn}, j \neq i$).[29] Given that Taiwan is small, this type of movement is not uncommon. However, in Appendix B.3, I show that my findings survive accounting for likely spillovers (voting in township i could be affected by township j's China export shocks).

[27] Conley et al. (2012) does not provide a rule-of-thumb cutoff for γ/α_1. However, using Conley et al. (2012) approach, researchers have demonstrated the robustness of their 2SLS estimates given the following $\bar{\gamma}/\alpha_1$ ratios: 0.3 in Fatás and Mihov (2013) and 0.46 in Bentzen et al. (2017).

[28] It is unclear whether there is overestimate or underestimation, which depends on marginal migrants' characteristics.

[29] Note that when constructing ΔEX_{it}^{tw-cn}, local employment structure does not distinguish between native workers and migrant workers.

7 Conclusions

This paper studies the impacts of economic statecraft on domestic politics. Leveraging the unique context of Taiwan, I find some evidence for the efficacy of economic statecraft: Taiwanese townships with more exports to China voted less for the pro-independence DPP in presidential elections between 2008 and 2020, though the effect size is small. Further investigation suggests that interested voters may worry about losing economic benefits brought by China exports, thus they avoid choices that are likely to cause tensions.

The uniqueness of Taiwanese settings should not be overlooked when interpreting the findings here. Though the sharp party cleavage in relations with China helps with empirically testing the impacts of economic statecraft using electoral outcomes, it could also be the reason why the very impacts arise. In other settings, there could be more or less disagreement in foreign policy between political parties. For instance, Carothers (2022) finds that unlike Taiwan, conservatives and progressives in South Korea united in response to Chinese economic sanctions against the deployment of Terminal High Altitude Area Defense. In addition, Taiwan's export dependence on a single market is also remarkable, which may shape the political equilibrium. Martin et al. (2008)'s theoretical work shows that globalization may not reduce conflicts since it reduces trade dependence on any given partner. Therefore, other settings with different levels of trade dependence may exhibit distinct reactions to economic statecraft. Nonetheless, this paper provides a useful case study of the impacts of economic statecraft in Taiwan and calls for further research on this topic.

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Figures

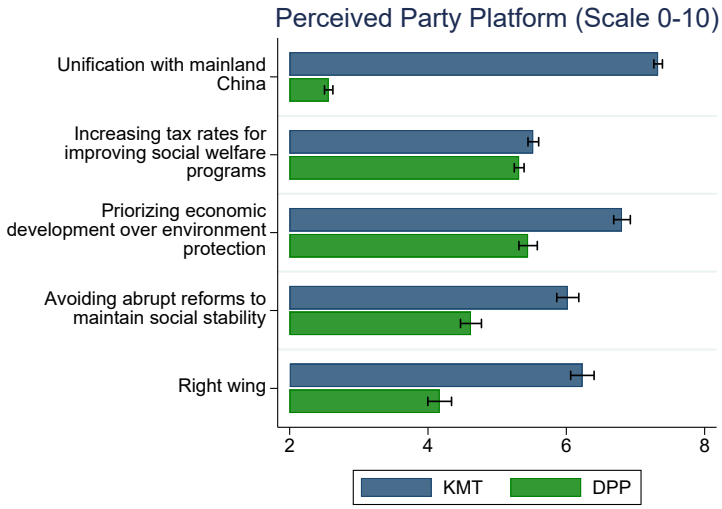
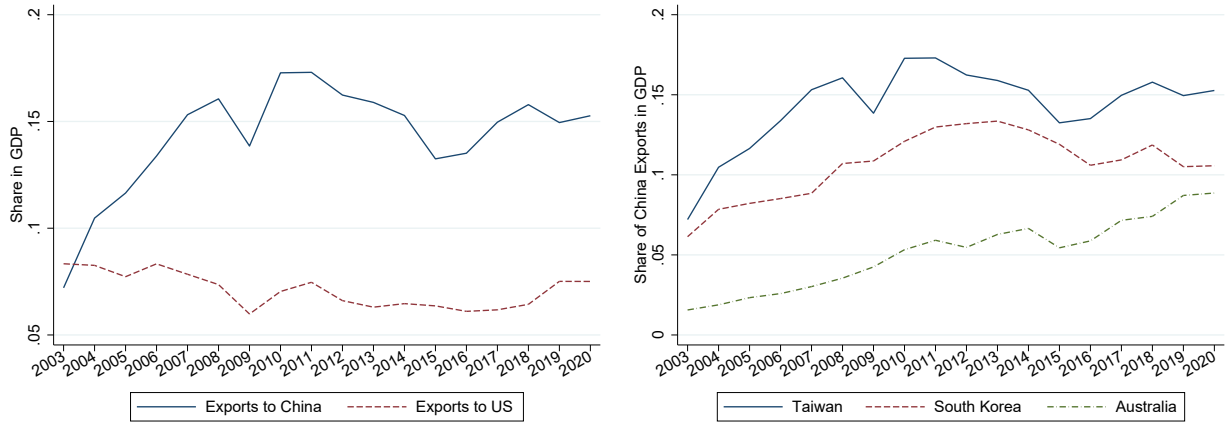


Figure 1. Perceived Political Cleavages Between the KMT and the DPP

Note: Data are from the Taiwan Election and Democratization Survey (TEDS) of 2008, 2012, 2016, and 2020. TEDS elicited people's perceptions of a party's degrees of support for different issues (on a 0–10 scale, the higher the more supportive): (i) unification with China, (ii) increasing tax rates to improve welfare programs, (iii) prioritizing economic development over environmental protection, (iv) avoid abrupt reforms to maintain social stability, and (v) right wing. The sample includes respondents born between 1950 and 1985 (sample size = 4,953). The bars are averages of a party's perceived platforms regarding different issues. The caps are 95 percent confidence intervals, constructed using robust standard errors.

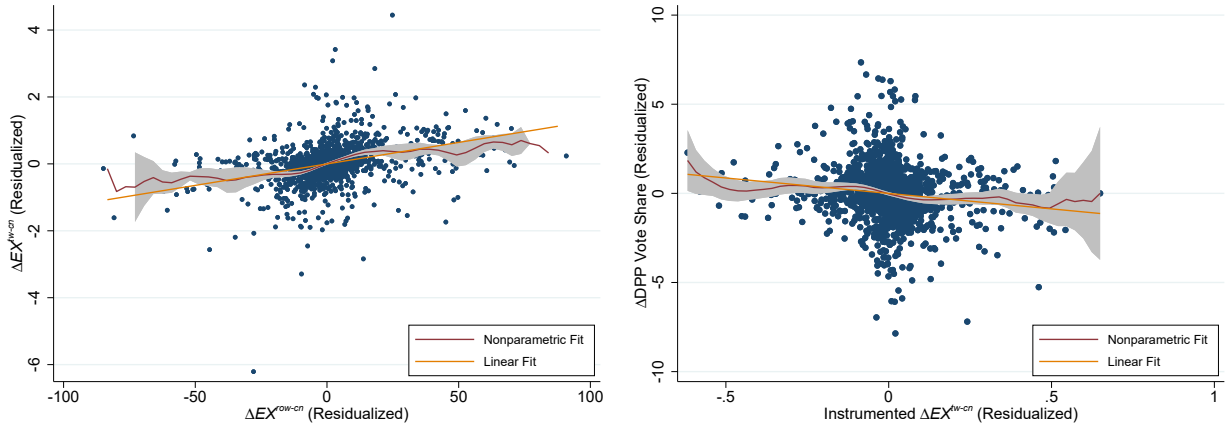


a. Exports from Taiwan to China and to the US

b. China Exports: Taiwan, South Korea, and Australia

Figure 2. Time Series of Exports from Taiwan to China

Note: Taiwan's exports and GDP data are from the Taiwanese Customs and the Statistical Bureau of the Executive Yuan. South Korea's and Australia's trade data are obtained from UN Comtrade, and their GDP data are from the World Bank.



a. First Stage Visualized

b. Second Stage Visualized

Figure 3. Instrument Variable Strategy Visualized

Note: This figure visualizes the instrument variable strategy, with the first stage in Panel A and the second stage in Panel B. To create these bivariate figures, partitioned regressions are used to partial out variations explained by fixed effects and covariates. Nonparametric fits adopt local linear regressions with a bandwidth of 5 (0.05) in Panel A (B).

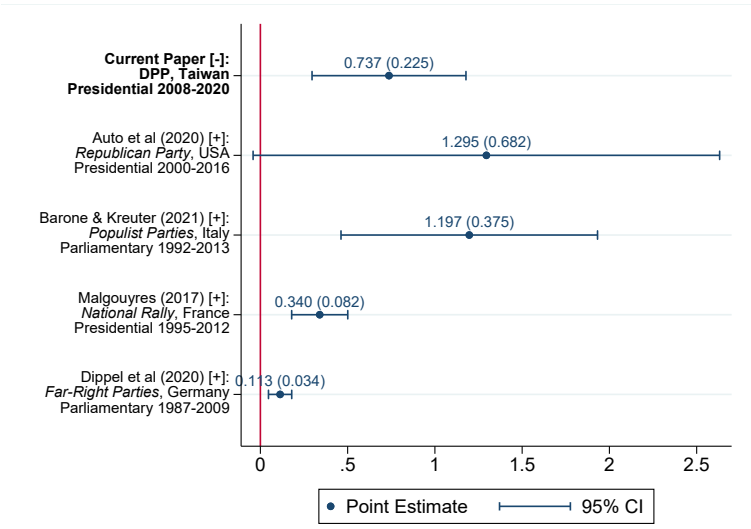


Figure 4. Comparison to Estimates in Previous Literature

Note: This figure compares my estimate to previous literature. All point estimates are in absolute terms. To ease comparison, I convert all estimates to be per thousand dollars' effect on the vote share of interest (in percentage points). Values of point estimates and standard errors (in parentheses) are reported near the solid dots that represent point estimates. In the vertical axis, I report brief information on each study: (i) the sign of effect (in brackets), (ii) the party (or parties) of interest, and (iii) the elections studied.

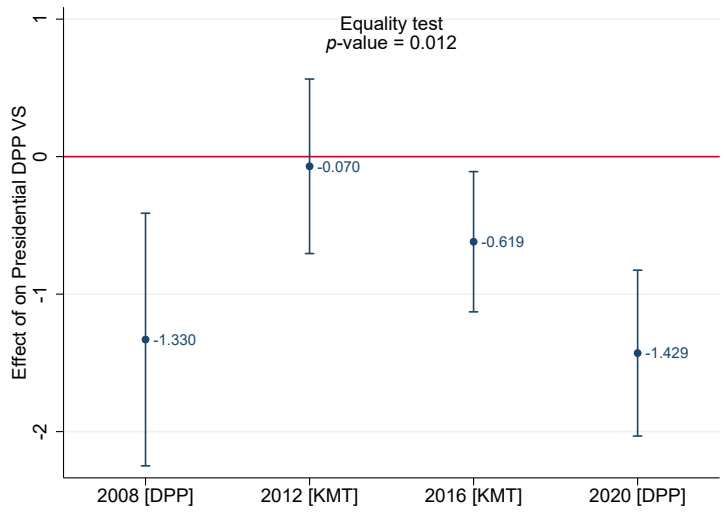


Figure 5. Effects of China Exports by Election

Note: This figure reports the effect of China exports on DPP vote share by election. Equation 2 is estimated with 2SLS separately by election. In the figure, solid dots are point estimates, and the caps are 95% confidence intervals, constructed using robust standard errors. The equality test's null is that the effects are equal across four elections. *p*-value of the test is reported.

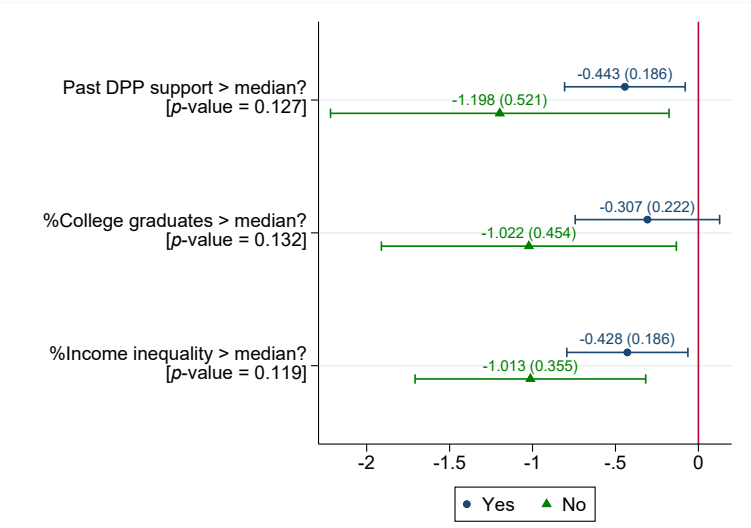


Figure 6. Effects of China Exports by Other Dimension

Note: This figure explores the heterogeneity of China exports' political effects in different dimensions: (i) past DPP support (measured by DPP presidential vote share in 2000), (ii) education level (measured by the share of college graduates in 2008), and (iii) income inequality (measured by the coefficient of variation in 2008). In each dimension, I divide the full sample into two groups: above-mean versus below-mean. I then estimate Equation 2 with 2SLS in two separate subsamples. The solid dots/triangles in the figure are point estimates, and the caps are 95% confidence intervals, constructed using standard errors clustered at the township level (in parentheses). On the vertical axis, the *p*-value beneath each label is for testing the null that the effects are equal between the above-median and below-median groups.

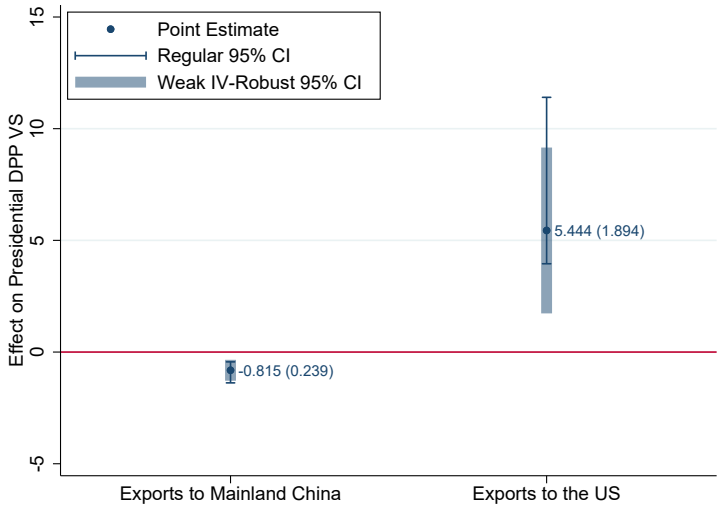


Figure 7. Effects of Exports to China versus the US

Note: This figure compares the effects of exports to China and to the US. Equation 8 is estimated using 2SLS. The solid dots present the point estimates. The regular 95% confidence intervals are constructed using robust standard errors clustered at the township level (in parentheses following the point estimates). Weak IV-robust confidence intervals are computed following Sun (2018).

Tables

Table 1. Balance Tests for Shocks $\Delta\hat{g}_{kt}$'s

	Coef.	SE	p-value	Obs.
Panel A: 2001 Industrial Survey				
Firm size	-0.065	0.048	0.180	292
Floor areas used	-0.067	0.054	0.217	292
Wage rate	-0.167	0.141	0.241	292
Cost of revenue ratio	-0.006	0.010	0.563	292
Return on assets	-0.010	0.015	0.524	292
% Value-added in product value	0.008	0.011	0.490	292
% Fixed assets in total assets	-0.003	0.043	0.950	292
% Expenditure on raw materials	-0.046	0.048	0.345	292
% Expenditure on R&D	-0.021	0.039	0.583	292
% Expenditure on environmental protection	-0.029	0.021	0.175	292
Panel B: 1955 & 1965 Censuses				
% Female population, 1955	-0.036	0.039	0.362	376
% Mainlanders, 1955	0.008	0.031	0.806	376
% Employment in agriculture, 1965	0.078	0.046	0.095	376
% Employment in mining, 1965	0.010	0.021	0.638	376
% Employment in manufacturing, 1965	-0.077	0.063	0.231	376
% Employment in salt industry, 1965	-0.075	0.050	0.137	376
% Employment in commerce, 1965	-0.070	0.053	0.191	376
% Employment in transportation, 1965	-0.080	0.054	0.145	376
% Employment in personnel management, 1965	-0.071	0.031	0.027	376
% Employment in public service, 1965	-0.041	0.018	0.022	376
% Employment in defense, 1965	0.019	0.033	0.577	376
Panel C: Former Presidenital Elections				
Lagged DPP vote share	0.062	0.053	0.241	376
Lagged turnout	0.039	0.096	0.686	376
Lagged trends in DPP vote share	-0.054	0.054	0.319	376
Lagged trends in turnout	0.249	0.195	0.205	376

Note: $\Delta\hat{g}_{kt}$'s are measured in 2008, 2012, 2016, and 2020 for 94 HS 2-digit industries. Each row represents a regression of the dependent in the first column on $\Delta\hat{g}_{kt}$. Standard errors are clustered at the industry level. Variables in Panel A are only available for 73 industries due to an incomplete crosswalk between employment industry codes in 2001 and 2006. Variables in Panels B and C are converted to industry level using Borusyak et al. (2022)'s algorithm.

Table 2. First Stage: Effects of Exports from the ROW to China

	(1) ΔEX^{tw-cn}	(2) ΔEX^{tw-cn}	(3) ΔEX^{tw-us}	(4) ΔEX^{tw-us}
ΔEX^{row-cn}	0.008***	0.007***	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
No. townships	368	368	368	368
F stat.	56.956	65.981	0.188	0.191
County × year FE	Y	Y	Y	Y
Township FE	Y	Y	Y	Y
Covariates		Y		Y
Obs.	1472	1472	1472	1472
R^2	0.666	0.692	0.712	0.723

Note: This table reports the effects of the ROW's China exports on Taiwan's exports to China and the US. Robust standard errors clustered at the township level are reported in parentheses. Covariates include population density, shares of college graduates, shares of people between 21 and 70 (5 years binned), and the share of the female population.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Table 3. Effects of China Exports on Presidential Elections

	ΔDPP [Mean DPP = 48.156%]		$\Delta Turnout$ [Mean $Turnout$ = 69.533%]	
	(1)	(2)	(3)	(4)
Panel A: OLS Estimates				
ΔEX^{tw-cn}	-0.602***	-0.513***	0.269***	0.228***
	(0.103)	(0.104)	(0.052)	(0.056)
Panel B: IV Estimates				
ΔEX^{tw-cn}	-0.810***	-0.737***	0.122	0.072
	(0.225)	(0.225)	(0.230)	(0.237)
No. townships	368	368	368	368
F stat.	56.956	65.981	56.956	65.981
tF 95% CI	[-1.265, -0.355]	[-1.180, -0.294]	[-0.342, 0.585]	[-0.395, 0.539]
County × year FE	Y	Y	Y	Y
Township FE	Y	Y	Y	Y
Covariates		Y		Y
Obs.	1472	1472	1472	1472

Note: Robust standard errors clustered at the township level are reported in parentheses. The *tF* 95% confidence intervals are computed using Lee et al. (2022)'s approach. Covariates include population density, shares of college graduates, shares of people between 21 and 70 (5 years binned), and the share of the female population.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Table 4. Political Significance of China Exports in Presidential Elections

$\hat{\beta} = -0.737(0.225)$

Panel A: DPP Support Explained by China Exports

	DPP VS (%) > Median vs. < Median (1)	China Exports ($1k) > Median vs. < Median (2)	%Explained $= \hat{\beta} \times (2)/(1)$ (3)
2008	-24.364	2.021	0.061 (0.019)
2012	-24.609	2.915	0.087 (0.027)
2016	-23.288	1.639	0.052 (0.016)
2020	-21.471	1.308	0.045 (0.014)

Panel B: China Exports Needed to Reverse Outcomes

	DPP VS (%) (1)	KMT VS (%) (2)	China Exports ($1k) $= [(2)-(1)]/2\hat{\beta}$ (3)
2016	56.123	31.041	17.017 (5.198)
2020	57.131	38.614	12.563 (3.838)

Note: This table evaluates the political significance of the effect of China exports on presidential elections, $\hat{\beta} = -0.731$, from Column (2) of Table 3. In Panel A, for each election, townships are divided into two groups according to whether they are above or below the median of township-level DPP vote shares. Column (1) is the gap in average DPP vote shares between the two groups, while Column (2) is the gap in average China export levels. Using these numbers and the estimate $\hat{\beta}$, Column (3) gives the fraction of the gap in DPP vote shares that can be explained by the gap in China exports.

Table 5. Effects of China Exports on Household Income

	(1) ΔMean	(2) Δ1st Tercile	(3) ΔMedian	(4) Δ2nd Tercile
ΔEX^{tw-cn}	0.389***	0.042***	0.080**	0.225***
	(0.072)	(0.016)	(0.034)	(0.061)
F-stat.	65.401	65.401	65.401	65.401
Township FE	Y	Y	Y	Y
County × year FE	Y	Y	Y	Y
Covariates	Y	Y	Y	Y
Obs.	3680	3680	3680	3680

Note: Robust standard errors clustered at the township level are reported in parentheses.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Table 6. Effects of China Exports on 2018 Referendums

	(1) Playing as Taiwan	(2) Same-Sex Marriage	(3) Vote of Support
ΔEX^{tw-cn}	-1.623**	0.207	
	(0.736)	(0.375)	
ΔEX^{tw-cn} × Playing as Taiwan			-1.539*
			(0.843)
Playing as Taiwan			-8.919**
			(3.555)
DV mean	45.115%	61.589%	53.352%
No. townships	368	368	368
F stat.	76.377	76.377	120.143
tF 95% CI	[-3.017, -0.228]	[-0.504, 0.918]	[-3.152, 0.074]
Covariates	Y	Y	Y
County FE	Y	Y	
Township FE			Y
Obs.	368	368	736

Note: For the first two columns, robust standard errors are reported in parentheses. In Column (3), standard errors clustered at the township level are reported in parentheses. Covariates include population density, shares of college graduates, shares of people between 21 and 70 (5 years binned), and the share of the female population.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Table 7. Effects of China Exports on Legislative Elections

	Representative		Party List	
	(1)	(2)	(3)	(4)
$\Delta y =$	ΔDPP	$\Delta PanGreen$	ΔDPP	$\Delta PanGreen$
ΔEX^{tw-cn}	0.201	0.574	-1.277***	-0.722***
	(0.770)	(0.713)	(0.413)	(0.252)
y mean	51.191%	52.021%	36.664%	47.77%
No. townships	292	292	368	368
F stat.	72.645	72.645	75.517	75.517
tF 95% CI	[-1.287, 1.690]	[-0.804, 1.951]	[-2.089, -0.464]	[-1.217, -0.227]
County × year FE	Y	Y	Y	Y
Township FE	Y	Y	Y	Y
Covariates	Y	Y	Y	Y
Obs.	876	876	1104	1104

Note: This table reports the effects of China exports on legislative elections. Robust standard errors clustered at the township level are reported in parentheses. The *tF* 95% confidence intervals are computed using Lee et al. (2022)'s approach. Covariates include population density, shares of college graduates, shares of people between 21 and 80 (5 years binned), and the share of the female population.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Table 8. Effects of China Exports at the Individual Level

	(1) DPP Leaning (0/1)	(2) Chinese Identity (0/1)	(3) Unif.-Indep. Attitude (0–10)	(4) Unification if Similar (0/1)	(5) Independence if No War (0/1)
ΔEX^{tw-cn}	0.036	-0.023	-0.057	-0.037	0.036
	(0.024)	(0.024)	(0.083)	(0.028)	(0.033)
DV mean	0.323	0.429	4.436	0.371	0.644
No. townships	195	195	195	195	195
F-stat.	20.885	20.783	21.680	20.872	21.398
Township FE	Y	Y	Y	Y	Y
County × year FE	Y	Y	Y	Y	Y
Covariates	Y	Y	Y	Y	Y
Obs.	4692	4628	4461	4328	4411

Note: Robust standard errors clustered at the township level are reported in parentheses.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Online Appendix

(For Online Publication Only)

A Data Appendix

A.1 Data Sources

This paper combines the following data sources.

1. Central Election Commission (https://www.cec.gov.tw/)
   - Presidential elections: 2000–2020, every four years
   - Legislative elections: 2008–2020, every four years, both votes for representatives and parties
   - Referendum in 2018: "same-sex marriage" (Issue No.12), "playing as Taiwan in the 2020 Tokyo Olympics" (Issue No.13)
2. UN Comtrade Database (https://comtrade.un.org/data/)
   - Exports from the ROW (Taiwan excluded) to China: 2002–2020, 2-digit HS industry level
3. Taiwanese Customs (https://portal.sw.nat.gov.tw/APGA/GA30)
   - Exports from Taiwan to China/the US: 2003–2020, 2-digit HS industry level
4. Industry and Service Survey (https://www.stat.gov.tw/cl.aspx?n=2737).
   - 2006 survey: used to calculate local employment structure (see Appendix A.2 for details)
   - 2001 survey: used to measure predetermined industry characteristics
5. Taiwan Election and Democratization Survey (TEDS) (http://teds.nccu.edu.tw/main.php)
   - TEDS: 2008–2020, every four years
6. Other Data Sources (all at the township level)
   - Household income: 2008–2018 (https://www.fia.gov.tw/multiplehtml/43)
   - Population: 2008–2020 (https://segis.moi.gov.tw/)
   - Education: 2011–2020, imputed to 2008–2020 (https://segis.moi.gov.tw/)

- 1955 Census: population (http://140.112.36.98:10100/)
- 1965 Census: industrial structure (http://140.112.36.98:10100/)
- 2010 Census: agricultural employment, migrant workers (https://segis.moi.gov.tw/)

A.2 Data Cleaning

To construct the measure of China export shocks $\Delta EX_{it}^{tw-cn} = \sum_k s_{ik} \times \Delta g_{kt}^{tw-cn}$, I need to know L_{ik}, the employee size of township i in industry k. However, it is not directly reported in the 2006 Industry and Service Survey. Instead, the Survey reports:

- f_{ik}: the number of establishments of industry k in township i;
- T_{ck}: the number of workers of industry in county c (that township i belongs to).

Therefore, L_{ik} is proxied using the following formula:

$$L_{ik} = f_{ik} \times \underbrace{\frac{T_{ck}}{\sum_{\{j \text{ in county } c\}} f_{jk}}}_{\text{averge establishment size in county } c} . \tag{A1}$$

B Robustness Checks

B.1 Statistical Inference

Standard Errors. Table A1 re-estimates Equation 2 but uses three alternative standard errors. SE1 is clustered at the county level, allowing unobserved disturbances to be correlated for townships within the same county. I calculate p-value using wild bootstrapping to address the small number of clusters (22), following Cameron et al. (2008). SE2 is the Conley standard error (Conley, 1999), used to address spatial and temporal autocorrelations. townships are set to be correlated if their distance is less than 50 kilometers, and a given township's observations are correlated from 2008 through 2020. SE3 is clustered at both township and county-by-year levels. Tellingly, the estimate is statistically significant no matter which standard error is used.

Table A1. Alternative Standard Errors

	Coef.	SE1	SE2	SE3
ΔEX^{tw-cn}	-0.737	(0.310)**	[0.272]***	{0.255}***
Obs.	1472			

Note: In parentheses, standard errors clustered at the county level are reported, and p-values are computed using a wild bootstrap-t procedure following Cameron et al. (2008) due to the small number of clusters (22). In brackets, Conley standard errors are used to address spatial and temporal autocorrelations: townships are correlated if their distance is less than 50 kilometers, and a given township's observations are correlated from 2008 through 2020. In braces, standard errors are subject to two-way clustering at the township and county-by-year levels.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Adao et al. (2019)'s Method. Adao et al. (2019) suggest that in shift-share designs, error terms may be correlated across locations with similar "share" composition, regardless of their geographic proximity, as they are similarly exposed unobserved shift-level shocks that affect the outcome of interest. That said, standard errors that are clustered by location (in our context, by township) could be biased downward.

I implement the alternative inference approach they propose to account for such correlations. Table A2 reports the results. Here township fixed effects are dropped. Two types of confidence intervals are given (AKM and AKM1). Tellingly, the results reject the null that China exports have no impact on votes for the DPP at the 5% level.

Table A2. Adao et al. (2019)'s Method

	Coef	AKM 95% CI	AKM0 95% CI
	(1)	(2)	(3)
Presidential ΔDPP	-0.827	-0.924, -0.730	-0.921, -0.726

Note: This table implements Adao et al. (2019)'s inference approach for shift-share designs.

B.2 Alternative Specifications and Measures

Table A3 examines the robustness of findings using several alternative specifications, in the order of columns:

1. Drop township fixed effects and include the lagged dependent variable, $\Delta DPP_{i,t-1}$, to account for township-specific factors;
2. Drop township fixed effects and include the lagged outcome in the level form, $DPP_{i,t-1}$, to account for mean reversion;
3. Estimate Equation 2 that includes interactions between historical variables (i.e., those in Panel B of Table 1) and year dummies (note: 10 townships in outlying islands are either dropped since they were not surveyed back then);
4. Re-estimate Equation 2 but exclude observations of townships in outlying islands (Kinmen, Lienchiang, and Penghu) and in six major metropolitan areas (Taipei, New Taipei, Taoyuan, Taichung, Tainan, Kaohsiung), to ensure the results are not driven by peculiar patterns in these special regions.

Tellingly, we can see from Table A3 that China exports still reduce support for the DPP.

Table A3. Robustness Check: Alternative Specifications

	(1) Presidential ΔDPP	(2) Presidential ΔDPP	(3) Presidential ΔDPP	(4) Presidential ΔDPP
ΔEX^{tw-cn}	-0.882***	-0.777***	-0.530***	-1.470***
	(0.270)	(0.232)	(0.195)	(0.421)
No. townships	368	368	358	199
F stat.	69.481	69.143	41.995	22.466
tF 95% CI	[-1.287, -0.313]	[-1.037, -0.246]	[-0.932, -0.129]	[-2.454, -0.487]
Obs.	1472	1472	1432	796

Note: Robust standard errors clustered at the township level are reported in parentheses.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Alternative Measures. In the previous analysis, the measure of China export shock, ΔEX_{it}^{tw-cn}, is an instantaneous change (from $t-1$ to t) in employment-weighted export flows to China. In Table A4, I show that the results are robust to using alternative measures:

1. Column (1) shows that the lagged China export shock, $\Delta EX_{i,t-1}^{tw-cn}$, has no significant effect on votes for the DPP, but the shock right before elections, i.e., ΔEX_{it}^{tw-cn}, remains impactful, which may suggest recency bias;
2. Column (2) measures China export shocks in a long-difference form:

$$\Delta_{\text{long}} EX_{it}^{tw-cn} = \sum_k s_{ik} \frac{X_{it}^{tw-cn} - X_{i,t-4}^{tw-cn}}{\sum_i L_{ik}}, \tag{A2}$$

   where $X_{it} - X_{i,t-4}$ is the change in China exports between the last and current elections. This does not change the results that China exports weaken support for the DPP.
3. Column (3) uses *net* exports to China,

$$\Delta_N X_{it}^{tw-cn} = \sum_k s_{ik} \frac{NX_{it}^{tw-cn} - NX_{i,t-1}^{tw-cn}}{\sum_i L_{ik}}, \tag{A3}$$

   and the findings survive.

Table A4. Robustness Check: Alternative Measures

	(1) Presidential ΔDPP	(2) Presidential ΔDPP	(3) Presidential ΔDPP
ΔEX^{tw-cn}	-0.847***		
	(0.294)		
ΔEX_{-1}^{tw-cn}	0.311		
	(0.298)		
$\Delta_{\text{long}} EX^{tw-cn}$		-0.478***	
		(0.139)	
ΔNX^{tw-cn}			-0.666*
			(0.397)
No. townships	368	368	368
F stat.	13.047	26.789	11.595
tF 95% CI		[-0.797, -0.159]	[-1.844, 0.512]
Obs.	1472	1472	1472

Note: Robust standard errors clustered at the township level are reported in parentheses.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

B.3 Migration

Population Estimates. I investigate the effects of China exports on population changes using Equation 2. Data are annual and from 2009 through 2020. Table A5 presents the results. The first column lists the dependent variables. All coefficients are multiplied by 100 so that they can be seen. Apparently, there are negligible effects of exports to China on total population (in logs), population by gender (share), population by age groups (share), and population by educational attainment (share).

Table A5. Population Changes

	Coef.	SE
ln(Total Population)	0.043	(0.056)
% Female	-0.006	(0.009)
% Age 21–25	-0.012	(0.009)
% Age 26–30	0.006	(0.009)
% Age 31–35	0.004	(0.008)
% Age 36–40	0.006	(0.009)
% Age 41–45	-0.017	(0.013)
% Age 46–50	-0.008	(0.013)
% Age 51–55	0.021**	(0.009)
% Age 56–60	-0.008	(0.016)
% Age 61–65	0.020	(0.015)
% Age 66–70	0.001	(0.006)
% High school graduates	-0.018	(0.026)
% College+ graduates	-0.031	(0.024)
F stat.	54.195	
County $\times$ year FE	Y	
Township FE	Y	
Obs.	4416	

Note: Robust standard errors clustered at the township level are reported in parentheses. All coefficients are multiplied by 100 so that they can be seen.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Accounting for Spillovers. Since Taiwan is small, it is not surprising that many people would move from their residing township to another township for work. In fact, the 2010 Census reports that an average township has around one third of workers doing so. Because when constructing the measure of China export shocks, the data on local employment do not distinguish between migrant workers and native workers, the measure likely has some measurement error — some voters in township i are not exposed to township i's China export shocks (ΔEX_{it}^{tw-cn}) but to township j's

shocks ($\Delta EX_{it}^{tw-cn}, j \neq i$). This would lead to some spillovers of China export shocks experienced by a township.

To ascertain that my results are not confounded by working out of residing places, I use the following specification to account for spillovers:

$$\Delta y_{it} = \alpha + \beta_1 \cdot \Delta EX_{it}^{tw-cn} + \beta_2 \cdot Neighboring\Delta EX_{it}^{tw-cn} + \Delta W_{it}'\Gamma + \lambda_i + \mu_{c(i)t} + \varepsilon_{it}. \quad \text{(A4)}$$

$Neighboring\Delta EX_{it}^{tw-cn}$ is the average of ΔEX_{jt}^{tw-cn} where j is any township adjacent to township i. That said, $Neighboring\Delta EX_{it}^{tw-cn}$ captures the average China export shocks of township i's neighboring townships, which is potentially the main source of spillovers since people presumably are more likely to go to neighboring areas for work if ever. Therefore, in Equation A4, β_1 captures the effect on native workers, while β_2 captures the effect on migrant workers.

Table A6 displays 2SLS estimates from several variants of Equation A4. $Neighboring\Delta EX_{it}^{tw-cn}$ is instrumented by $Neighboring\Delta \widehat{EX}_{it}^{row-cn}$, the average of $\widehat{EX}_{jt}^{row-cn}$ where j is any township adjacent to township i. Note that to estimate Equation A4, a township must have neighboring townships. 11 outlying townships do not. Therefore, for comparison, I drop these 11 townships and re-estimate Equation 2 (or Equation A4 with β_2 assumed to be zero). Column (1) shows the estimate, which is close to the baseline estimate. Column (2) reports the estimates of Equation A4 using the "full" sample. It confirms the existence of spillovers ($\beta_2 < 0$), but a township's own shock still has a discernible effect ($\beta_1 < 0$).

One concern is that the spillovers detected may result not only from migrant workers who are influenced by China exports elsewhere, but also from other trade-correlated regional factors that also influence politics, which could make my main results contaminated. I argue that it appears that other regional shocks are not very concerning. If migrating for work plays the main role, then we would expect that in townships with fewer (more) *outward* migrant workers, β_1 is large (small) and β_2 is small (large). Columns (3) and (4) corroborate this argument. I divide the sample into two groups: townships with outward migrants below or above the median level (data from 2010 Census). Column (3) shows that in townships with fewer outward migrant workers, β_1 is strongly negative but β_2 is small and insignificant. It is expectedly the opposite in Column (4).

Taken together, there are indeed some spillovers. However, this is because of people's movements between townships for work rather than other regional confounding factors. The results nonetheless confirm that China exports do weaken support for the DPP, though people may receive the influences outside their residence (where they cast votes).

Table A6. Spillovers in Presidential Elections

	Presidential ΔDPP			
	(1) Main Specification	(2) Spillover Effects	(3) % Mig. Workers $<$ Median	(4) % Mig. Workers $>$ Median
ΔEX^{tw-cn}	-0.781***	-0.539**	-1.528***	0.214
	(0.234)	(0.262)	(0.349)	(0.210)
Neighboring ΔEX^{tw-cn}		-0.849***	-0.676	-1.384***
		(0.317)	(0.517)	(0.522)
No. townships	357	357	176	178
F stat.	61.525	15.148	8.769	8.112
Township FE	Y	Y	Y	Y
County $\times$ year FE	Y	Y	Y	Y
Covariates	Y	Y	Y	Y
Obs.	1428	1428	712	716

Note: Robust standard errors clustered at the township level are reported in parentheses.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

C Additional Results

Table A7. Autocorrelations of Shocks in Exports to China

	(1) Δg^{row-cn}	(2) $\Delta \hat{g}^{row-cn}$
L.Δg^{row-cn}	0.057**	
	(0.024)	
L.$\Delta \hat{g}^{row-cn}$		0.010
		(0.026)
Industry FE	Y	Y
Year FE	Y	Y
Obs.	1504	1410
R^2	0.122	0.000

Note: Robust standard errors clustered at the industry level ($N = 94$) are reported in parentheses.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

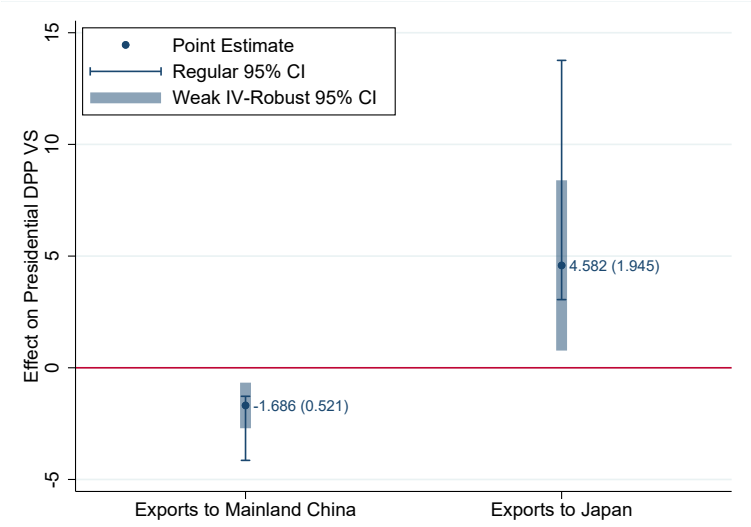


Figure A1. Effects of Exports to China versus Japan

Note: This figure compares the effects of exports to China and to Japan. Equation 8 is estimated using 2SLS. The solid dots present the point estimates. The regular 95% confidence intervals are constructed using robust standard errors clustered at the township level (in parentheses following the point estimates). Weak IV-robust confidence intervals are computed following Sun (2018).

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