The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

The Enforcement and Revocation Dynamics of Five-Year Reviews in Agricultural Trade

Sijia Chen
sijia.chen@uconn.edu
Department of Agricultural and Resource Economics
University of Connecticut
1376 Storrs Road, Unit 4021
Storrs, CT 06269-4021

Sandro Steinbach
sandro.steinbach@ndsu.edu
Department of Agribusiness and Applied Economics
North Dakota State University
1230 Albrecht Blvd
Fargo, ND 58102

Selected Paper prepared for presentation at the 2025 AAEA & WAEA Joint Annual Meeting in Denver, CO; July 27-29, 2025

Copyright 2025 by Sijia Chen and Sandro Steinbach. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Abstract

The implementation of anti-dumping / countervailing duties as protectionism on international trade protects the U.S. domestic industry from material injury because of the dumped or subsidized imports. As a primary policy instrument, the Five-year Sunset Reviews assess the appropriateness of trade remedies imposed against foreign trading partners to mitigate the risk of prolonged and proliferative remedies. This paper examines the impact of the determinations of the Sunset Reviews on U.S. agricultural and food imports. We compile a comprehensive dataset including Sunset Reviews related data and U.S. monthly import data at the country-product level from 1998 to 2019. The empirical analysis concentrates on the contemporaneous trade effects of Sunset Reviews determinations by identifying the variation between trade remedy targeted countries and products. We also apply the event study method to examine the dynamic trade effects of the Sunset Reviews determinations. Based on our results, except the changes in duty margins bring about trade creation effects on the U.S. imports, no evidence shows that U.S. imports of agricultural and food goods alter by the change of Sunset Reviews determinations dummy. Our analysis indicates that even though the change of duty margins may attract exporters into the U.S. markets, the trade cost, the possible delayed access to the alternative trade supply market also affect the decision of trading economies not to choose to alter their trade.

Keywords: Five-year Sunset Reviews, trade remedy, agricultural imports, dynamic treatment effects, event study

JEL codes: F13, Q17

1. Introduction

Trade remedies like anti-dumping (AD) / countervailing (CVD) duty function as controlling the dumping of exports below the international trade's normal value. Their implementation significantly protects the U.S. trades. Take the 2019 U.S. - China Trade War as an example, the trade remedies become tools of trade protectionism nowadays, where political forces get involved in conducting the anti-dumping / countervailing duty orders to protect the domestic industries (Cheng et al. 2019). Therefore, as one of the AD / CVD duty administrative reviews, the Sunset Reviews play an important role in judging trade remedies' implementation and their impacts on trade. The Department of Commerce (DoC) and the International Trade Commission (USITC) conduct these reviews every five years to examine the existence of the injury of alleged potential dumping/subsidies on domestic industries. The decision to revoke or continue an order relies on feedback provided by involved parties. The Five-year Sunset Reviews eliminate improper trade dumping and its threat of material injury to importers' domestic industries and prevent the imposition of AD / CVD duties as a tool of trade protectionism or to cause material obstruction to domestic industries by requiring the Five-year Sunset Reviews for the termination of anti-dumping duties (Moore 2006; Cadot et al. 2007). Understanding how trade remedies affected trade through the determinations of Sunset Reviews can provide a general picture of the effectiveness and advantages of Sunset Reviews determinations on U.S. agricultural and food imports. It can give insight into how Sunset Reviews balances the U.S. excessive trade protection and reasonable trade protection. Trade partners may also benefit and maximize themselves from different circumstance in the imposition of trade remedies.

A substantive literature studies the imposition of trade remedies and trade. Prusa (2001) finds that the U.S. anti-dumping duties against Japan lead to a decrease in U.S. imports. Durling and Prusa (2006), Lu et al. (2013), Wang and Reed (2015), and Besedeš and Prusa (2017) also provide strong evidence of imposing anti-dumping duties cause a reduction in the U.S. imports from trade remedies targeted exporters. On the other hand, literature finds no evidence of trade diversion effect brought by the imposition of AD / CVD duties in U.S. trades during their studies (Durling and Prusa 2006; Romalis 2007; Meinen et al. 2020), whereas Shen and Fu (2014) points out a long-run diversion effect of the U.S. anti-dumping duty imposed on China. Current literature lacks examining the trade creation effect brought by withdrawing trade remedies that will happen in the U.S. bilateral trade,

especially in the U.S. agricultural and food commodities.

The literature on Sunset Reviews focuses on survival rate analysis to measure the effects of the Uruguay Round Agreements to the lifetime of AD measures (Cadot et al. 2007) and on determinants of decisions during the Review process (Moore 2006; Grossman and Wauters 2008; Dordi 2014; Baugus and Bose 2015). Prusa and Vermulst (2009), Cho (2012), and Saggi and Wu (2013) also examine the effectiveness of the U.S. Department of Commerce's practice of zeroing in the Sunset Reviews. No research has measured the trade impact of Sunset Reviews with a view in the agricultural and food aspect; no empirical results directly show the impact of the duty revocation and the duty margins changes on imports. Therefore, further research is needed to assess how the U.S. trade responds to the Sunset Reviews determinations.

This paper studies the effects of Five-year Sunset Reviews determinations on U.S. imports of agricultural and food products. We compile a comprehensive dataset from the *Five-year Sunset Reviews* database and the *U.S. Imports of Merchandise* monthly database from 1998 to 2019. Firstly, we examine the contemporaneous trade effects of the Sunset Reviews determination to exploit the variety variation in trade flows, where variety represents the country and product pair settings among AD / CVD duty orders (Fajgelbaum et al. 2019). We also conduct an event study for trade effects of Sunset Review determinations, as we set up an entire 25-month symmetric event study window range centered by the effective date of each determination of Sunset Reviews. Our analysis indicates a significant trade creation effects brought by the withdrawal/increase of AD / CVD duty margins on Sunset Reviews, where the Sunset Review determinations dummy places fewer effects on the U.S. agricultural and food imports. Our event study offers no evidence of the characteristics of the dynamic trade effects of determinations on imports.

Our analysis contributes to three aspects. Firstly, this paper is the first to investigate the positive trade creation effect that the revoking AD / CVD duties lead to the U.S. agricultural and food product imports from the original duty-targeted countries. Secondly, the paper offers trade economies insights to protect their trade and to mitigate the damages from over-protectionism or material injuries. For instance, exporters can adjust to trade to fulfill their benefits if Sunset Reviews cancels trade remedies and increases imports. The analysis also provides implications to trade authorities and policy-makers to conduct modification on the standard of Sunset Reviews or the process of Sunset Reviews for

protecting their domestic industry and imports.

The remainder of our paper is organized as follows. Section 2 covers the Five-year Sunset Reviews and theoretical model of trade creation effects and trade diversion effects brought by determinations of reviews. In Section 3, we lay out our empirical methodology of examining the trade effects of the Five-year Sunset Review as well as the data used to evaluate the trade effects. In Section 4, we discuss the empirical results from our estimations and finally conclude our results as well as our potential plan for improvement in Section 5.

2. Theoretical model

2.1 Five-year Sunset Reviews

The Five-year Sunset Reviews are one of the major anti-dumping / countervailing administrative reviews in the United States. The *Anti-dumping Agreement*, issued by the World Trade Organization in January 1995, aims not only to eliminate improper trade dumping and its threat of material injury to the domestic industries of the importers but also to prevent the imposition of anti-dumping (AD) / countervailing (CVD) duties as a tool of trade protectionism or to cause material obstruction to domestic industries by requiring the Five-year Sunset Reviews for the termination of anti-dumping duties (Moore 2006). The United States passed the *Uruguay Round Agreement Act* to establish the Sunset Reviews system in the same year in response to the WTO requirement.

The Sunset Reviews in the United States are conducted by the U.S. Department of Commerce (DoC) and the U.S. International Trade Commission (USITC). The DoC is responsible for identifying whether trade dumping/subsidies will continue or re-occur after repealing AD / CVD measures, while the International Trade Commission takes charge of reviewing and deciding whether the material injury will continue to re-emerge after repealing AD / CVD measures. If both make with affirmative decisions referring to the feedback of all stakeholders[1], the AD / CVD measures will continue with a duty margin updates or otherwise, being revoked in the end. *Appendix A* illustrates the timeline of the Five-year Sunset Reviews response to different feedbacks of stakeholders. If the Sunset Reviews publish

[1] Information provided by the U.S. International Trade Commission webpage: *Understanding Five-Year Sunset Reviews*

a revocation determination on AD / CVD duty orders, the duty margins of trade remedies imposed on targeted imports from duty order targeted exporters are withdrawn. The U.S. imports from targeted exporters may change theoretically, as the imports from trade remedies non-targeted exporters may also shift. When Sunset Reviews determine to continue the imposition of AD / CVD duty orders, the DoC and USITC will increase the duty rate of related trade remedies. The U.S. imports may also change while comparing with the trade affected by revoked determinations. Changes in trade attribute to the trade creation and diversion effects brought by Sunset Reviews determinations. We will discuss these trade effects in the next subsection.

2.2 Trade creation and diversion effects

Our paper investigates the trade creation and trade diversion effect of the Sunset Reviews on U.S. agricultural and food imports. Both trade effects refer to the effects of the change of duty orders or duty rates on bilateral trade related to the United States. Our theoretical model for trade effect analysis refers to the three-country dumping analyzing oligopoly model from Bown and Crowley (2007) and Carter and Gunning-Trant (2010), which represent the change of trade flows among three countries brought by the existence of AD / CVD duty orders.

Assuming three countries in the trade market which is indexed by i or $j \in A, B, C, i = j$. Each country has one firm, indexed i or j, which produces a single good, m_{ij}, for domestic consumption and export. Therefore, a good imported to country j produced by firm i is represented as m_{ij}. Assume that product markets are segmented, all firms compete on quantity, and the goods produced for domestic consumption and the imported goods are strategic substitutes (Bown and Crowley 2007). The Cournot Nash equilibrium quantities imported from the firm of each exported country are given by

$$IM_{ij} = f(p(Q_i, I_i), c(x_i), \tau_{ij}) \qquad \forall i, j \in A, B, C \tag{1}$$

where the $p(\cdot)$ denotes the inverse demand function, Q_i, I_i represent the total output (the sum of domestic consumption and imports from the all exported countries) sold in country i and national income of country i, respectively. The $c(\cdot)$ denotes the cost function depended on x_i where τ_{ij} represents

the trade remedies decided by Sunset Reviews.

Figure 1 demonstrates the trade creation effect and diversion effect brought by the Sunset Reviews revoked determinations. Country A represents the country importing goods from country B and country C, and Country A imposes AD / CVD duty orders on imports from country B but not on imports from country C. The best-response reaction functions for country B and C are demonstrated by $r_B(IM_{CA})$ and $r_C(IM_{BA})$. The IM^*_{BA} and IM^*_{CA} denote the equilibrium imports of country A from country B and C at the original states before the Sunset Reviews determinations.

The Sunset Reviews revoke the AD / CVD duty order initially imposed on products from one trading partner leads to an increase in the U.S. agricultural and food imports from this partner, which we refer to as the *trade creation effect*. The Sunset Reviews continue the AD / CVD duty order imposed initially on products from one trading partner, leading to an increase in the U.S. agricultural and food imports from exporters other than this trading partner refers to as the *trade diversion effect*. In our paper, we also consider the trade effects brought by the opposite situation of both definition above as *negative trade creation effect* and *negative trade diversion effect*, respectively.

As shown in Figure 1, assume the Sunset Reviews determine to continue the AD / CVD duty orders imposed by country A against country B, B's reaction function shifts downwards from $r_B(IM_{CA})$ to $r^{\alpha}_B(IM_{CA})$. Country A's imports from country B drop from IM^*_{BA} to IM^{α}_{BA}, which we see it as a negative *trade creation effect*. The imports from country C to country A instead increase from IM^*_{CA} to IM^{α}_{CA}, which we refer to as positive *trade diversion effect*. In the situation when the Sunset Reviews revoke the AD / CVD duty orders imposed on country B originally, B's reaction function shift upwards from $r_B(IM_{CA})$ to $r^{\tau}_B(IM_{CA})$. The imports from country B increase from IM^*_{BA} to IM^{τ}_{BA} due to the withdrawal of trade remedies, which is the positive *trade creation effect*.

3. Data and empirical model

3.1 Data

We compile data from the Sunset Reviews related data for agricultural and food products targeted duty orders and the monthly U.S. import trade data of agricultural and food products. We collect a set of Sunset Reviews information including the HTS code related to each AD / CVD duty order, the effective

date of each Sunset Reviews determination, the last and current AD / CVD duty margins for each duty order, the sequential number of each Sunset Reviews, the review type of each Sunset Reviews from each DoC and USITC *Notices of Sunset Reviews final determinations* published on Federal Register as well as the USITC Five-year Sunset Reviews database. Then we use this information to construct our Sunset Reviews dataset from May 1998 to August 2019. The U.S. monthly import trade data comes from the Census Bureau U.S. Imports of Merchandise monthly dataset for 1998 to 2019. The import data include import values, quantities, and prices at country and product levels. We also calculate the import duty-inclusive prices as $\frac{\text{values + duties}}{\text{quantity}}$ using the Most Favored Nation (MFN) tariff monthly data collected from USITC.

The U.S. International Trade Commission and the U.S. Department of Commerce do not fully publish up to date HTS code of import products on the announcements in Federal Register. During the data processing, we match the HTS code at a ten-digit level covered in AD / CVD duty orders with a data compiled all the updated USITC concordance in January and July from 1998 to 2019. For those unmatched HTS codes, we track their latest applied dates in concordance data, and change them into the renewed HTS codes to get a completely up-to-date HTS code list (Pierce and Schott 2009). Then, we use the ten-digit *HTS codes* and the *duty orders targeted country codes* to match the updated Sunset Review dataset with the U.S. monthly import data to get our comprehensive dataset.

3.2 empirical model

To investigate the trade creation and trade diversion effects brought by Sunset Review determination, we develop the following auto-regressive count data regression model as our baseline model with dummy specification:

$$Import_{ijdkt} = \exp\left\{\sum_{n=1}^{8}\left[\delta_n \sum_{p=0,1} I(TP_k = p) \times I(TC_{ij} = p) \times I(Dec_d = p)\right] + X(Dec_d, TC_{ij}, TP_k) + \alpha_{ijt} + \alpha_{ijk} + \alpha_{kt}\right\}\eta_{ijdkt} \tag{2}$$

Model (2) estimates the trade effects of the Sunset Reviews determinations with dummy specification, which accounts for changes to the Sunset Reviews determinations at product and country levels

over time presented as dummy variable Dec_d. We define $Import_{ijdkt}$ as the set of independent variables presenting the import of product k from exported country i to the United States j at month t is targeted by a continued (revoked) AD / CVD duty order determination d made by Sunset Reviews. The set contains the import value, the import quantity, the import price, and duty-inclusive import price. TP_k denotes the dummy variable of the AD / CVD duty order targeted product. Dec_d denotes the dummy variable of the Sunset Reviews determination for AD / CVD duty orders. TC_{ij} denotes the dummy variable of AD / CVD duty targeted country. $Time_t$ denotes the time dummy of the effective date of the Sunset Review determinations (!=0 represents the periods after the effective date of Sunset Reviews decisions). The sum index n represents eight combination of interactive terms among TP_k, TC_{ij}, Dec_d, and $Time_t$. The index p represents the value 0 / 1 for each dummy variables. The set $X(\cdot)$ compose of partial and marginal effect of Sunset Reviews decisions with a formula of $\sum_{q=1}^{4}\Big[\sum_{p=0,1}\big[\beta_{1q}I(TP_k = p)\times I(Dec_d = p)+\beta_{2q}I(Time_t = p)\times I(Dec_d = p)+\beta_{3q}I(TC_{ij} = p)\times I(Dec_d = p)\big]\Big]$. The sum index q in the variable set $Xthatrepresentsfourcombinationofinteractivetermsamong\mathrm{TP}_k$, TC_{ij}, and Dec_d; Specifically, the parameters of interest in our baseline model (2) are δ_n ($n \in [1,4] \in \mathbb{Z}$) which are expressing the trade creation and diversion effects for both continued and revoked determinations.

We also adopt the Model (3) with duty specification to study the trade effects, analyzing an extra marginal duty effect withdrawn/increased by reviewing determinations on imports.

$$Import_{ijdkt} = \exp\left\{\sum_{n=1}^{8}\delta_n\sum_{p=0}^{1}\Big[I(TP_k = p)\times I(TC_{ij} = p)\times I(Dec_d = p)\big(1+\gamma_n DDutyMargin_{ijdkt}\big)\Big] + X(Dec_d, TC_{ij}, TP_k) + \alpha_{ijt} + \alpha_{ijk} + \alpha_{kt}\right\}\cdot\eta_{ijdkt} \tag{3}$$

In Model (3), the parameters of interest are $\delta_n \times \gamma_n$ ($n \in [1,4] \in \mathbb{Z}$) which are expressing the trade creation and diversion effects for both continued and revoked determinations. As an addition to Model 2, we interact the $DDutyMargin_{ijdkt}$ to estimate the marginal duty effect with a formula of the difference between log value of last duty margin and the current duty margin for each AD / CVD duty orders.

When considering the endogeneity issues, we apply three fixed effects to our models. The α_{ijk}

denotes the exporter-importer pair and product fixed effects, and the α_{ijt} represents the importer-exporter pair and month fixed effects for controlling the variation among different bilateral trade parties over time, such as trade transportation cost, and GDP variation among country pairs. The α_{kt} represents product-month fixed effects, which control for the shocks at the product level over months. The fixed effects do not control the terms of the (partial) marginal effect of Sunset Reviews decisions.

For identifying the trade effects of Sunset Reviews decisions compared to the control group and the dynamic characteristics of treatment effects over time, we also implement an event study to investigate the time-varying treatment effects of Sunset Reviews decisions. The event study model is shown as:

$$Import_{ijdkt} = \exp\Bigg\{ \sum_{m=-12}^{12} \Bigg[\sum_{n=1}^{8} \delta_{nm} \sum_{p=0}^{1} \Big(I(TP_k = p) \times I(TC_{ij} = p) \times I(Dec_d = p) \times I(Event_{ijdkt} = m) \Big) + X_m(Dec_d, TC_{ij}, TP_k) \Bigg] + \alpha_{ijt} + \alpha_{ijk} + \alpha_{kt} \Bigg\} \cdot \eta_{ijdkt} \tag{4}$$

In model (4), the index m represents each of the event window intervals of 12 months before the effective date of each review determination and 12 months afterward. The index p, index q, dependent variable, and dummy variables are consistent with our model (2) and (3). Similarly, the set term $X(\cdot)$ formalizes as $\sum_{q=1}^{4} \Big[\sum_{p=0,1} \big[\beta_{1q} I(TP_k = p) \times I(Dec_d = p) + \beta_{2qm} I(Event_{ijdkt} = m) \times I(Dec_d = p) + \beta_{3q} I(TC_{ij} = p) \times I(Dec_d = p) \big] \Big]$. The parameters we are interested in are δ_{nm} ($n \in [1, 4] \in \mathbb{Z}$), which represents how the U.S. agricultural and food imports react to different Sunset Reviews determinations over time.

4. Results

4.1 Results of trade effects with dummy specification

Table 1 summarizes the estimated results of trade effects of Sunset Reviews determination on the U.S. agricultural and food imports with dummy specifications. Overall, as for both the continued or revoked AD / CVD duty orders decided by Sunset Reviews, we see no sign of negative trade

creation and diversion effects on the import values, quantities, and prices. Only the import prices of agricultural and food products from non-targeted exporters show a significant increase of 68% and 66%, respectively, when Sunset Reviews continues the AD / CVD duty orders. No evidence shows the existence of trade diversion effect from revoked determinations on imports, indicating that the U.S. agricultural imports from both trade remedies non-targeted exporters and targeted exporters are inelastic to the Sunset Reviews determinations.

4.2 Results of marginal duty effects of Sunset Reviews determinations

Table 2 displays the marginal anti-dumping / countervailing duty effects on the U.S. agricultural and food imports by Sunset Reviews determinations. The parameter estimates of marginal duty on trade creation effects for Sunset Reviews continued determinations are significantly positive for both import values and import quantity. Based on the format of duty variable as a difference between the former duty margins and current duty margins, the duty estimates indicate that the increase of duty margin for continued v duty orders brings about a significant 0.8% decrease on the U.S. import values and a 2.3% decline on the import quantities from the duty order targeted exporters, respectively.

Additionally, when Sunset Reviews revoke the anti-dumping / countervailing duty orders, the AD / CVD duty orders' withdrawal brings the positive trade creation effect about 16.3% and 34.3% on the imports values and quantities, respectively from targeted exporters. On the contrary, column 3 and column 4 display the significantly negative estimates of marginal duty effects on import prices and duty-inclusive prices (about 30% and 31%, respectively). However, comparing with the dummy specification estimates in Table 2, the marginal duty effects estimates indicate that the total trade effects of Sunset Reviews determinations dummy on the U.S. agricultural and food imports are minimal.

4.3 Event study results of the trade effects

Figure 2 demonstrates the results of the event study for trade creation and diversion effects on the U.S. agricultural and food imports. As the subfigure 2a and 2b shows, the import quantities from duty order targeted exporters turn downwards after the first month of continuation determination being effective. When Sunset Rseviews continues the AD / CVD duty orders, the import values alter upwards after a sudden decrease. The subfigure 2c and 2d indicate no sign of trade diversion effects brought by both Sunset Reviews determinations. The trends of imports are overall balanced before

or after the effective date of Sunset Review determinations; no significant changes display around the window 0. These results demonstrate that little existence of the trade creation and diversion effects of Sunset Reviews for both continued and revoked determinations.

5. Conclusions

This paper examines the impact of Sunset Reviews determinations on the U.S. agricultural and food trade. Specifically, we focus on both the trade dummy effect and AD / CVD duty effect of Sunset Review determinations on the U.S. agricultural and food imports. After the empirical analysis using the process of Sunset Review related data the AD / CVD duty margins data, we not only implement the contemporaneous trade effects in dummy and duty levels but also conduct the event study estimation for the trade creation and diversion effects of Sunset Reviews determinations within a two-year window. Our results indicate that, compared with continued determination, the withdrawal of duty margins for Sunset Reviews makes it more possible to enhance the specific imports from duty orders targeted exporters; while increasing the duty margins may bring about fewer imports from duty orders targeted exporters. Secondly, our analysis provides no evidence of the trade diversion effects brought by the Sunset Reviews determinations on the U.S. agricultural and food imports, which is consistent with the findings of Meinen et al. (2020).

In the light of our overall estimations, the Sunset Reviews determination may have no impact on U.S. trade flow of agricultural and food products. One possible explanation is that when regarding the exporters outside the U.S. market, revoking the AD / CVD duty orders may not attract them to supply the exports to the U.S. market immediately before considering external factors like the trade restart costs. On the other side, the exported countries may not be impelled quickly to leave the U.S. trade market when facing a continued AD / CVD duty order. Our analysis fills the lack of literature about the trade effects of Sunset Reviews system on the U.S. imports of agricultural industries. It also offers trade remedies reviews related authorities an array on how to improve the Sunset reviews system based on the trade reaction of trading economies.

There is a limitation to our methods used in this study that worth discussing. Our analysis on trade effects of Sunset Review determinations focuses on the whole agricultural and food goods exported to the U.S. We do not identify the product heterogeneity of more specific product categories

for agricultural and food imports, where the average trade effects of Sunset Reviews may vary among different categories of agricultural goods. We will conduct the robustness check to examine the correctness of our estimation results, and investigate on the agricultural sub-categories product variation of the trade effects of Sunset Reviews determinations.

References

Baugus, B. and Bose, F. (2015). Sunset Legislation in the States: Balancing the Legislature and the Executive. Mercatus research.

Besedeš, T. and Prusa, T. J. (2017). The Hazardous Effects Of Antidumping. *Economic Inquiry*, 55(1):9–30.

Bown, C. P. and Crowley, M. A. (2007). Trade Deflection and Trade Depression. *Journal of International Economics*, 72(1):176–201.

Cadot, O., de Melo, J., and Tumurchudur, B. (2007). Anti-Dumping Sunset Reviews: The Uneven Reach of WTO Disciplines. CEPR Discussion Papers 6502.

Carter, C. A. and Gunning-Trant, C. (2010). U.S. Trade Remedy Law and Agriculture: Trade Diversion and Investigation Effects. *The Canadian Journal of Economics*, 43(1):97–126.

Cheng, M.-C., Chen, Y.-H., Lee, C.-C., and Le, P.-A. (2019). The Impact of Anti-dumping Policy on the Import Volume of Shrimp Product in the United States. *Global Review of Accounting and Finance*, 10(1):47–76.

Cho, S. (2012). No More Zeroing?: The United States Changes its Antidumping Policy to Comply with the WTO.

Dordi, C. (2014). The Appellate Body Interpretation of Sunset Reviews Provisions of AD and CVM Agreements: A Critical Analysis. Bocconi legal studies research paper.

Durling, J. P. and Prusa, T. J. (2006). The Trade Effects Associated with an Antidumping Epidemic: The Hot-rolled Steel Market, 1996-2001. *European Journal of Political Economy*, 22(3):675–695.

Fajgelbaum, P. D., Goldberg, P. K., Kennedy, P. J., and Khandelwal, A. K. (2019). The Return to Protectionism. *The Quarterly Journal of Economics*, 135(1):1–55.

Grossman, G. M. and Wauters, J. (2008). United States - Sunset Reviews of Anti-Dumping Measures on Oil Country Tubular Goods from Argentina: A Cloudy Sunset. *World Trade Review*, 7(1):235–264.

Lu, Y., Tao, Z., and Zhang, Y. (2013). How do Exporters Respond to Antidumping Investigations? *Journal of International Economics*, 91(2):290–300.

Meinen, P., Schulte, P., Cigna, S., and Steinhoff, N. (2020). The Impact of US Tariffs Against China on US Imports: Evidence for Trade Diversion? Deutsche Bundesbank Discussion Paper 46/2019.

Moore, M. O. (2006). An Econometric Analysis of U.S. Antidumping Sunset Review Decisions. *Review of World Economics*, 142(1):122–150.

Pierce, J. R. and Schott, P. K. (2009). Concording u.s. harmonized system categories over time. Working Paper 14837, National Bureau of Economic Research.

Prusa, T. J. (2001). On the Spread and Impact of Anti-dumping. *Canadian Journal of Economics*, 34(3):591–611.

Prusa, T. J. and Vermulst, E. (2009). A One-Two Punch on Zeroing: US-Zeroing (EC) and US-Zeroing (Japan): United States-Laws, Regulations and Methodology for Calculating Dumping Margins (Zeroing) and United States-Measures Relating to Zeroing and Sunset Reviews. *World Trade Review*, 8(1):187–241.

Romalis, J. (2007). NAFTA's and CUSFTA's Impact on International Trade. *The Review of Economics and Statistics*, 89(3):416–435.

Saggi, K. and Wu, M. (2013). Yet Another Nail in the Coffin of Zeroing: United States - Anti-Dumping Administrative Reviews and Other Measures Related to Imports of Certain Orange Juice from Brazil. *World Trade Review*, 12(2):377–408.

Shen, G. and Fu, X. (2014). The Trade Effects of US Anti-dumping Actions against China Post-WTO Entry. *The World Economy*, 37(1):86–105.

Wang, X. and Reed, M. (2015). Trade deflection arising from u.s. antidumping duties on imported shrimp. (1375-2016-109540):15.

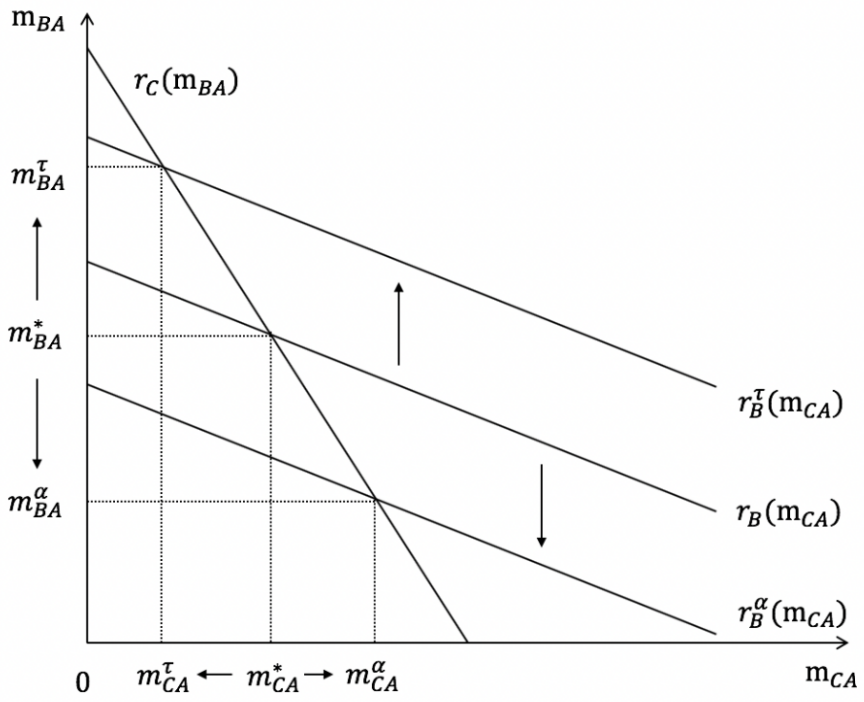


Figure 1: Trade diversion effects and creation effects of the Sunset Reviews determinations

Table 1: Trade Effects of Sunset Reviews Determinations-Dummy Specification

	Import Value	Import Quantity	Import Price	Duty-inclusive Import Price
Continued Determination				
Trade Creation Effect				
Targeted country x	-0.052	0.043	-0.066	-0.074
Targeted products	(0.063)	(0.034)	(0.135)	(0.131)
Trade Diversion Effect				
Non-targeted country x	0.015	-0.129	0.518***	0.506***
Targeted products	(0.093)	(0.257)	(0.171)	(0.171)
Revoked Determination				
Trade Creation Effect				
Targeted country x	-0.048	-0.009	0.008	0.006
Targeted products	(0.050)	(0.031)	(0.103)	(0.101)
Trade Diversion Effect				
Non-targeted country x	0.063	0.084	0.145	0.144
Targeted products	(0.060)	(0.060)	(0.128)	(0.126)
Observation	466153	466153	466153	466153
Pseudo R-squared	0.969	0.974	0.871	0.871

Notes: This table reports the baseline estimates for the trade creation effect and trade diversion effect of the U.S. agricultural and food imports brought by the two Sunset Reviews determinations. We include exporter-product at ten digits, the exporter-month, and the product at ten digits-month fixed effects in the model. All exporters-product at eight digits clustered standard errors are in parentheses. Asterisks denote p-value < 0.10 (*), < 0.05 (**), or < 0.01 (***).

Table 2: Trade Effects of Sunset Reviews Determinations-Duty Specification

	Import Value	Import Quantity	Import Price	Duty-inclusive Import Price
Continued Determination				
Trade Creation Effect				
Targeted country x	-0.026	0.093	-0.068	-0.077
Targeted products	(0.078)	(0.063)	(0.135)	(0.133)
Marginal duty x				
Targeted country x	0.008*	0.023*	0.000	0.000
Targeted products	(0.005)	(0.013)	(0.001)	(0.001)
Trade Diversion Effect				
Non-targeted country x	-0.030	0.035	0.005	0.003
Targeted products	(0.061)	(0.045)	(0.102)	(0.101)
Revoked Determination				
Trade Creation Effect				
Targeted country x	-0.374**	-1.051*	1.476***	1.489***
Targeted products	(0.173)	(0.563)	(0.435)	(0.429)
Marginal duty x				
Targeted country x	0.151**	0.295**	-0.360**	-0.367***
Targeted products	(0.068)	(0.142)	(0.145)	(0.140)
Trade Diversion Effect				
Non-targeted country x	0.128	0.100*	0.144	0.143
Targeted products	(0.139)	(0.053)	(0.129)	(0.128)
Observation	466153	466153	466153	466153
Pseudo R-squared	0.969	0.974	0.871	0.871

Notes: This table reports the baseline estimates for the trade creation effect and trade diversion effect of the U.S. agricultural and food imports brought by the two Sunset Reviews determinations. We include exporter-product at ten digits, the exporter-month, and the product at ten digits-month fixed effects in the model. All exporters-product at eight digits clustered standard errors are in parentheses. Asterisks denote p-value < 0.10 (*), < 0.05 (**), or < 0.01 (***).

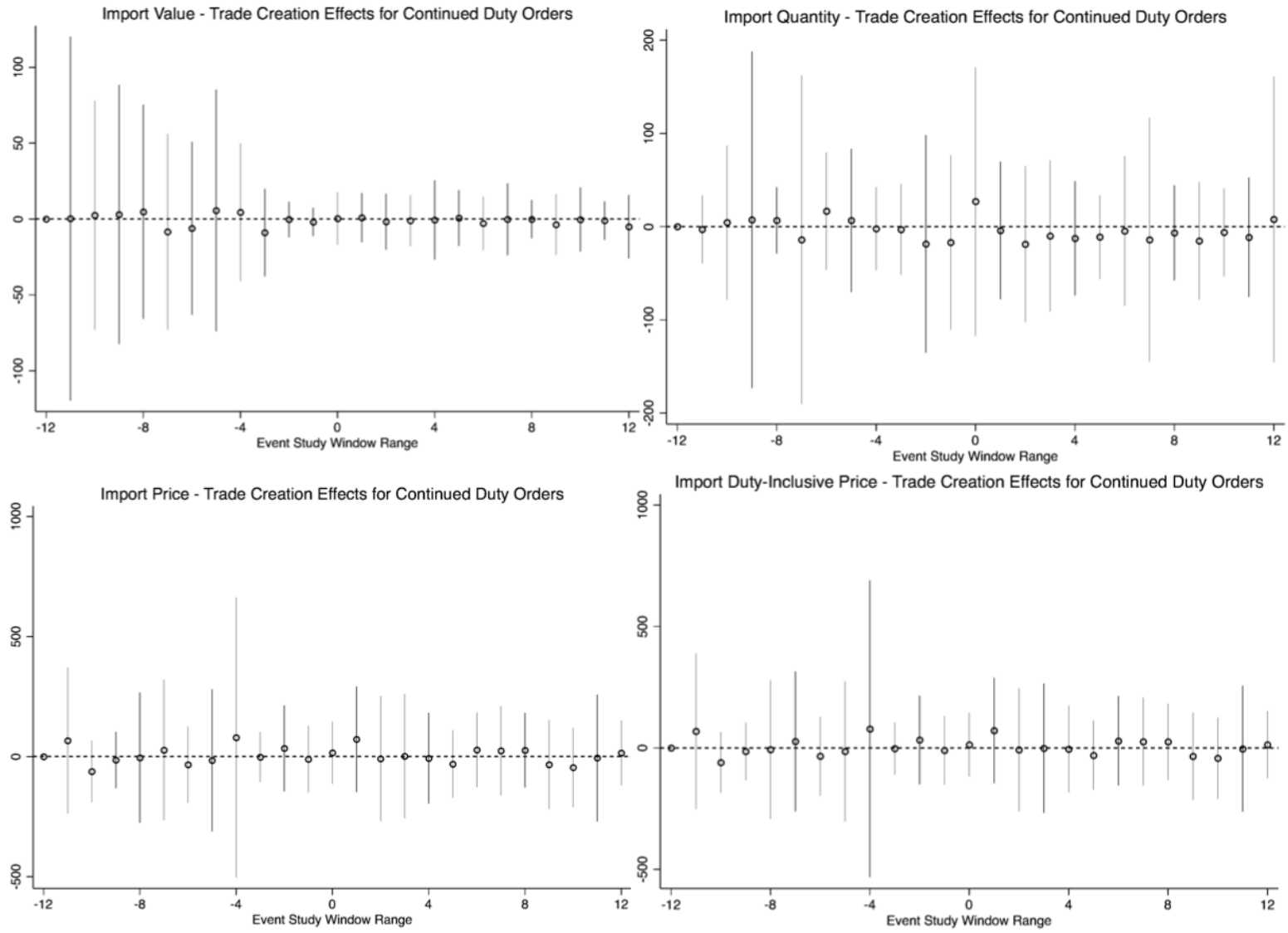


Figure 2a: Trade Creation Effects of Continued Sunset Reviews Determinations

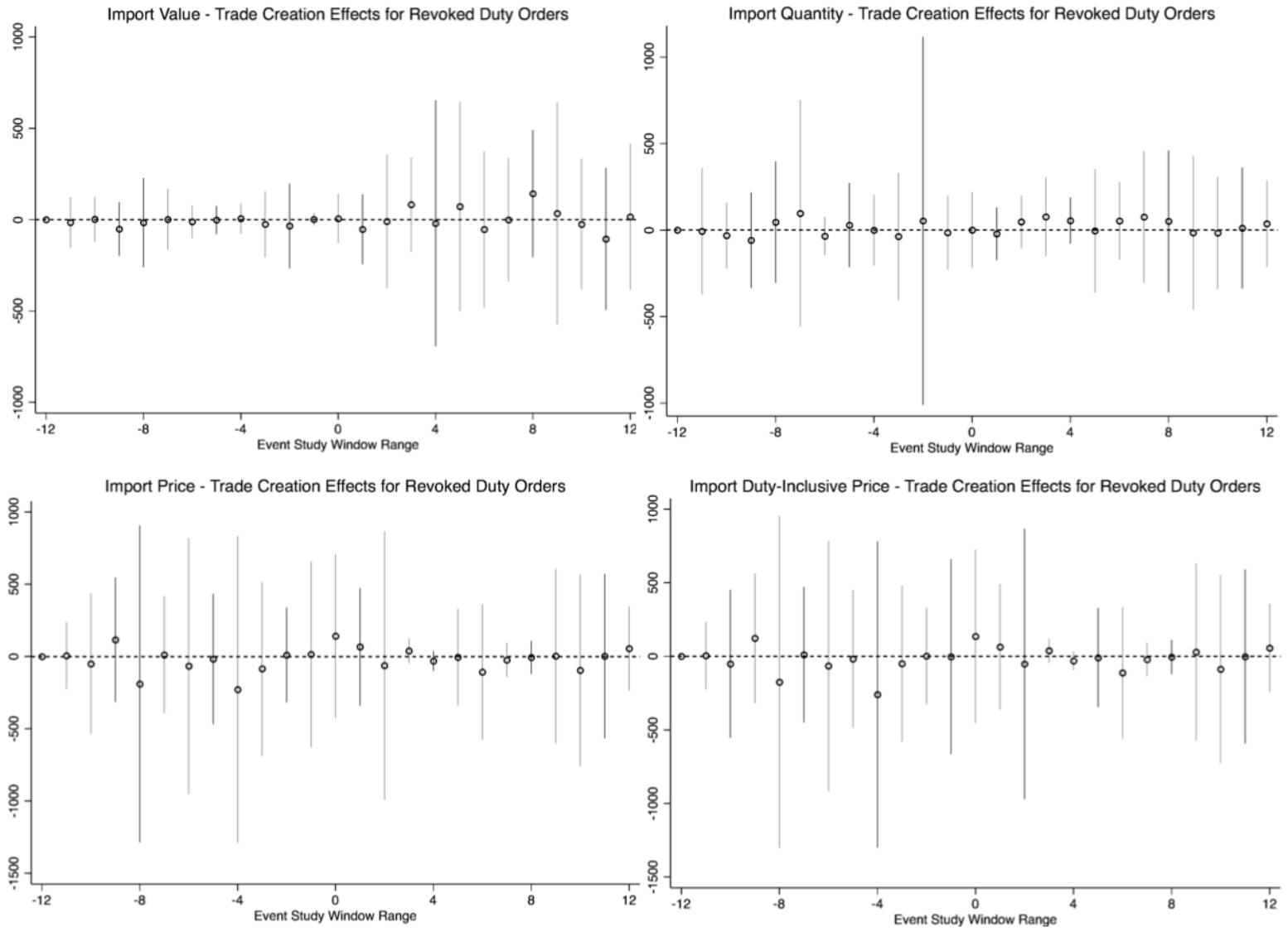


Figure 2b: Trade Creation Effects of Revoked Sunset Reviews Determinations

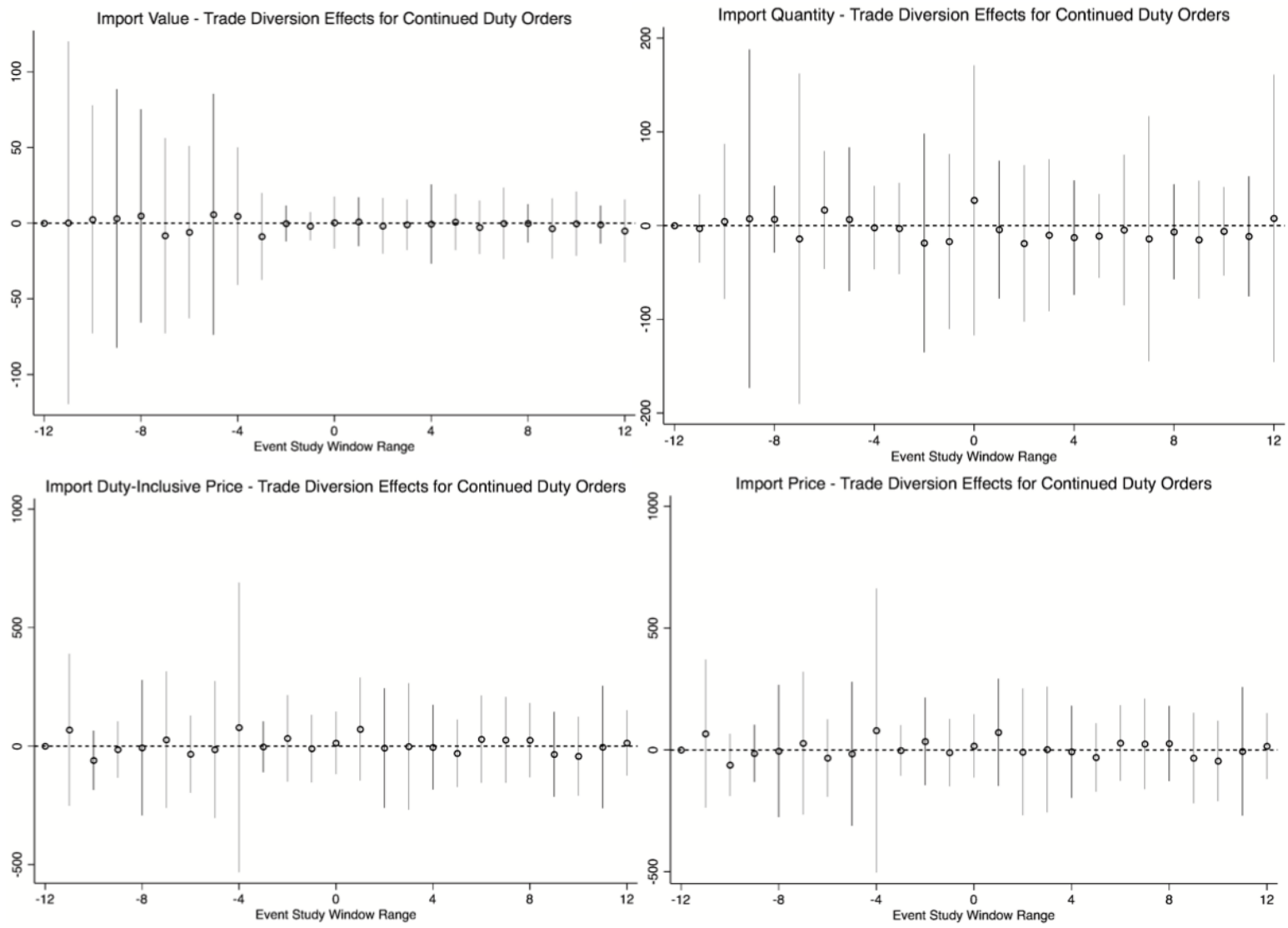


Figure 2c: Trade Diversion Effects of Continued Sunset Reviews Determinations

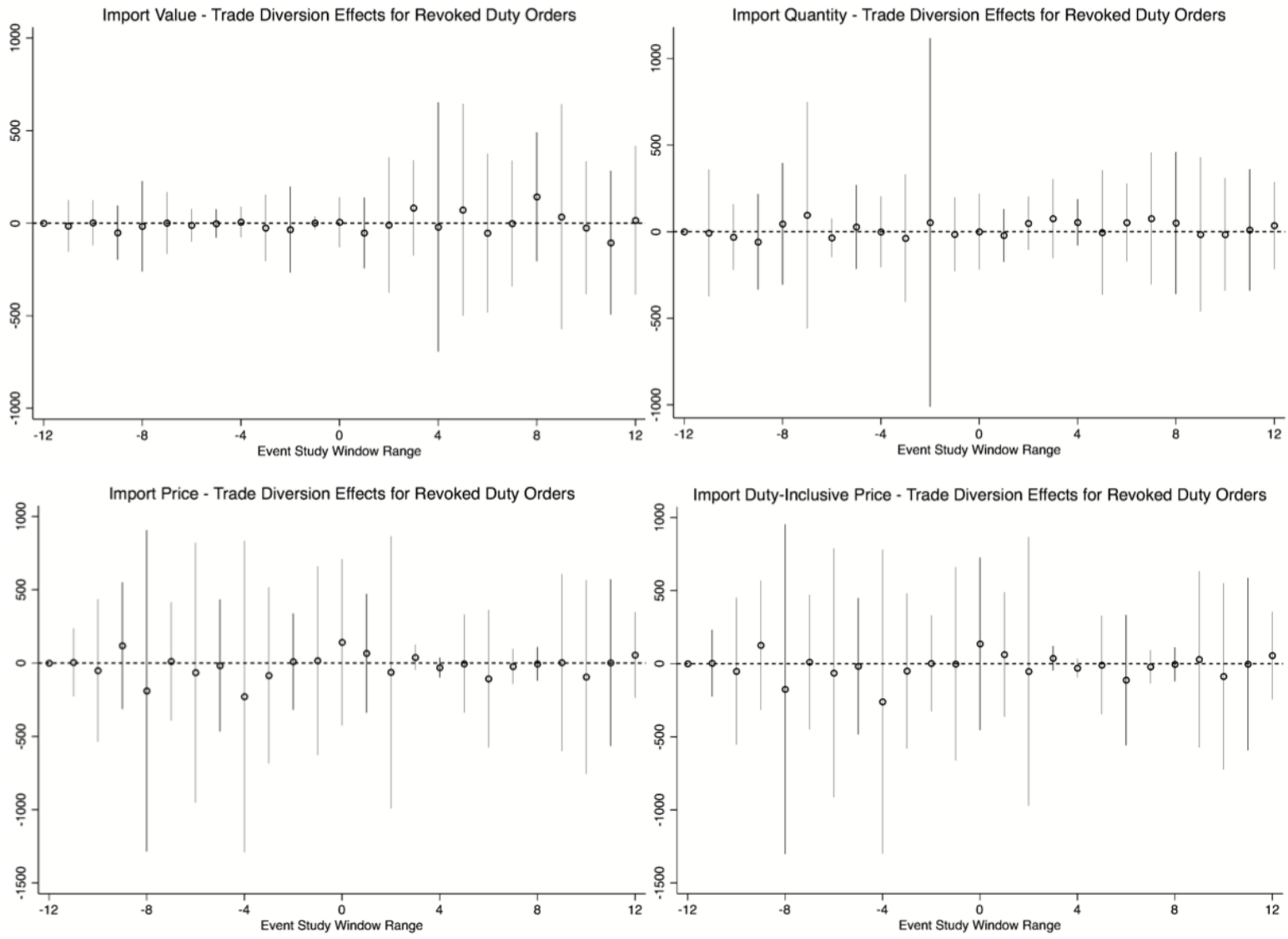
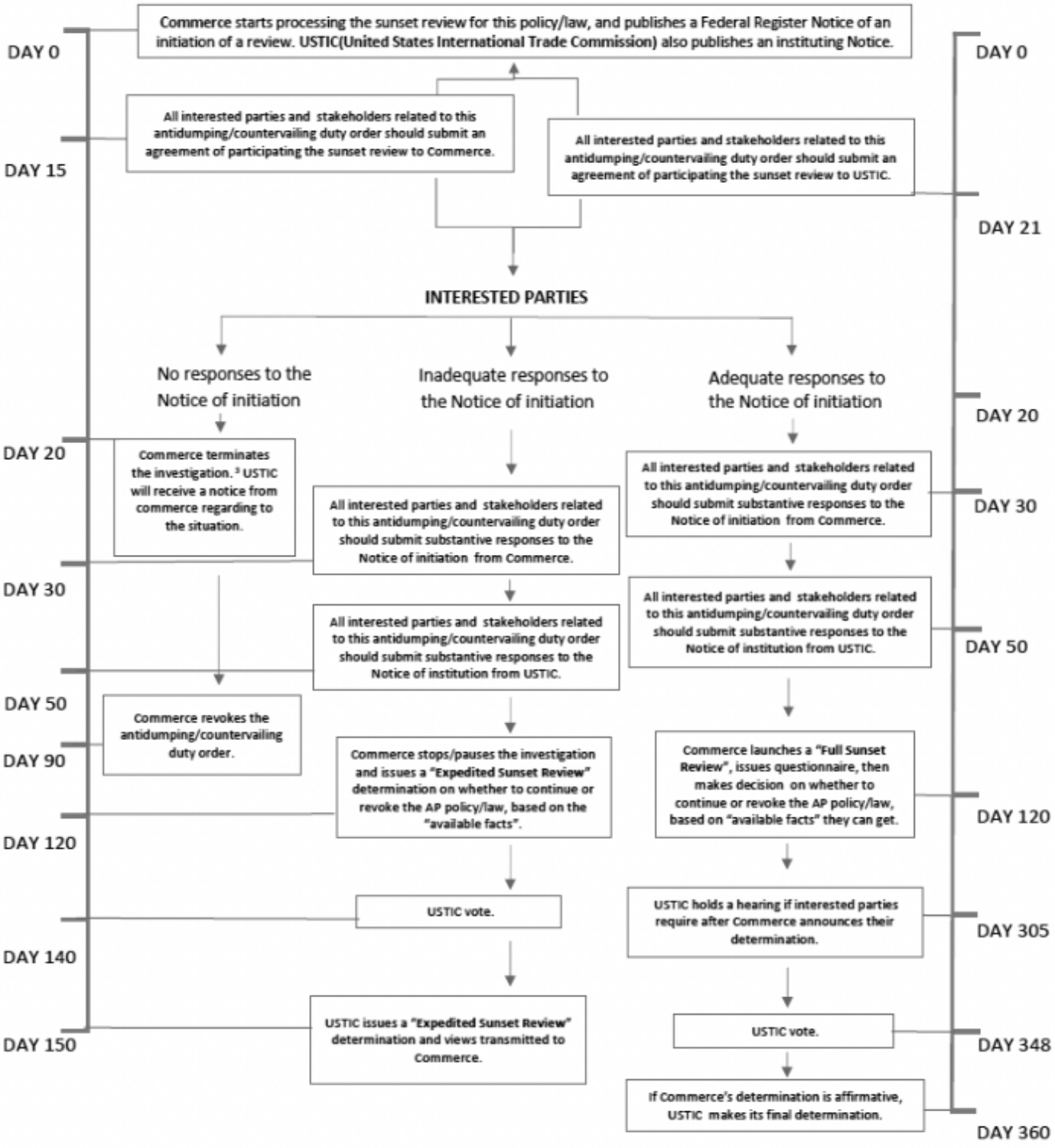


Figure 2d: Trade Diversion Effects of Revoked Sunset Reviews Determinations

Appendix A: Five-year Sunset Review Flowchart



[1] No responses represent two situations. One is when domestic interested parties and stakeholders provide no responses; another one is when they are proved to have connection with the producers or exporters of the goods that antidumping policy targets against even if they provide adequate responses.

[2] Inadequate responses represent the situation when domestic interested parties and stakeholders provide adequate responses, while respondent interested parties do not.

[3] The investigation also include suspended investigation that Commerce issued.