Trade Policy Uncertainty: the Ultimate Wine Label Remover

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Abstract

This paper examines how trade policy uncertainty (TPU) affects the extensive margin of international trade (new product entry decisions) using a novel dataset of wine Certificate of Label Approval (COLA) applications submitted to the U.S. Alcohol and Tobacco Tax and Trade Bureau (TTB). Because TTB regulations do not require new applications for routine vintage updates or minor format changes, each COLA application represents a genuine, forward-looking business decision to introduce a new product or refresh an existing product in the U.S. market. Exploiting the November 2024 U.S. presidential election as a regime change in trade policy uncertainty (TPU), accompanied by various threatened and implemented tariffs in 2025, I estimate difference-in-differences (DiD) models comparing EU wine producers (treated) against domestic U.S. producers (control) using a weekly panel of application counts. While some tariff-related events in 2025 appeared to have more intense negative impacts on weekly EU applications, the coefficient for the post-election treatment implies a 21.7% reduction in EU wine product applications in the 61-week post-election window to the end of 2025. When the TPU index is included as a control, the post-election coefficient is attenuated by approximately 72%, consistent with the sustained post-election rise uncertainty being the primary driver of the decline. To complement the DiD analysis, a counterfactual model that exploits the close pre-2025 relationship between US and EU applications estimates a reduction of 14,899 foregone applications over the post-election period, equivalent to a 23.5% reduction as compared to pre-election figures. These results document an upstream disruption to wine producers that are not directly captured in traditional trade flow statistics: uncertainty deters new product introductions before any tariff is imposed or shipment is made.

Keywords: trade policy uncertainty; wine; difference-in-differences; product entry; tariffs

1 Introduction

Over the past decade, but especially in 2025, trade policy uncertainty has emerged as a major structural challenge for the global wine trade. Alongside the well-documented pressures of declining wine consumption, especially among younger consumers, decreased alcohol consumption overall, and climate change, wine exporters now face a volatile policy environment in the largest destination market: the United States. Yet our understanding of how this uncertainty transmits into wine industry outcomes, even before any tariff is imposed on shipments, remains incomplete.

This paper provides evidence on a segment that is upstream of conventional trade-flow data: new product entry decisions. When a domestic or foreign wine supplier wishes to launch a new product in the U.S., they must first obtain a Certificate of Label Approval (COLA) from the U.S. Alcohol and Tobacco Tax and Trade Bureau (TTB). The decision to file an application likely signals steps towards introducing a new product and can be sensitive to expectations about future market conditions, including trade policy. The regulatory structure makes COLA applications a high-frequency, product-level measure of the *extensive margin* of import entry: not how much of existing products to ship, but whether to introduce new products at all. In 2025, amidst falling EU wine exports to the US and stable export flows elsewhere (see Figure 5 in Section 5.1), as Figure 1 documents, the number of COLA applications for EU wine fell from its more stable pre-2025 cycles.

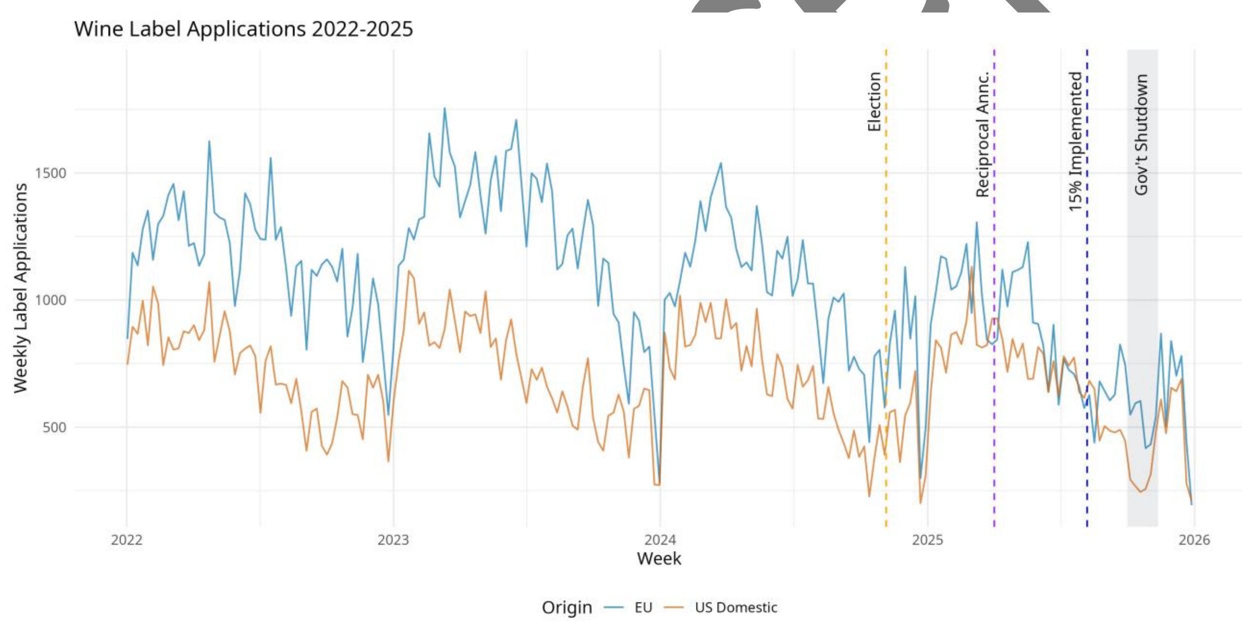

Figure 1: Weekly COLA applications for US and EU producers. Several key events in recent trade policy have been marked. The late-2025 Federal Government Shutdown is shaded in grey, a time during which the TTB was temporarily shuttered, halting COLA approvals and likely delaying the timing of submissions.

My empirical strategy exploits the November 2024 U.S. presidential election, which saw Donald Trump elected to his second term, as a sharp change in the US trade policy regime faced by EU wine producers. The election outcome, combined with explicit campaign-period threats by then-candidate Trump of imposing across-the-board tariffs and other trade barriers on major trading partners, including the EU, represented a significant shift in the probability distribution over future U.S. trade policy. In the following first year of the second Trump administration, various policy proposals, including the eventually imposed flat 15% tariff on EU imports, threats to raise the rate to 50%, and a temporary threat to place a 200% tariff specifically on imports of wine from the EU, all contributed to policy uncertainty.

With this context in mind, I estimate a collection of statistical models that measure the impact that US trade policy, both the actual policy and the uncertainty around it, have had on new wine product introductions into the US from the EU. I first estimate a difference-in-differences (DiD) models comparing weekly COLA application rates for EU producers against U.S. domestic producers over 2022–2025 and assess the impact of various treatment timings. This analysis finds a 21.7% decline in weekly EU applications attributed to the election date as a treatment. Decomposing this effect into various policy-related events in 2025 demonstrates that the election itself didn't affect applications as much as other event treatments did. Including the Trade Policy Uncertainty (TPU) Index from Caldara et al. [2020] as a control attenuates the post-election coefficient by approximately 72%, consistent with elevated trade policy uncertainty, rather than any specific tariff action, driving the bulk of the decline.

Because no single event likely explains the change in applications, I also perform a counterfactual analysis that exploits the pre-election stability in the cycle of applications between the US and EU to predict what EU applications would have been, post-election, had they continued to follow the stable US pattern that persisted into 2025. Comparing the counterfactual prediction to actual EU application counts yields an estimated 14,899 foregone EU product applications over 61 post-election weeks, equivalent to 23.5% of pre-election flows.

This paper makes three contributions to the literature on international wine distribution and trade policy. First, I utilize COLA application data as a relatively novel, theoretically well-motivated measure of the extensive margin of wine import entry. Second, I provide evidence that trade policy uncertainty suppresses new product entry decisions, a disruption that occurs upstream of observable trade flows and is thus not directly measured in standard import volume indicators. Third, I document a specific mechanism linking geopolitical disruption to wine export decision-making: the contraction of foreign product variety available to U.S. consumers not necessarily from market exit but from new product non-entry. Such variety loss has implications for consumer welfare beyond a reduction in wine volume sold or any rise in price.

The rest of the paper is as follows: Section 2 reviews the relevant literature. Section 3 describes the data and identification strategy. Section 4 presents the main empirical results. Section 5 discusses implications of the findings. Section 6 concludes.

2 Literature Review

2.1 Uncertainty and Trade

A growing literature establishes that uncertainty about future trade policy, as distinct from the level of applied tariffs, has independent negative effects on trade and investment. Bernanke [2] and Dixit [3] and provide a “real options" foundation: when investments are irreversible and policy is uncertain, the option value of waiting exceeds the option value of committing, leading to inaction even when expected conditions favor entry.

Bloom [4] surveys a broad empirical literature documenting that uncertainty shocks cause firms to pause hiring, investment, and market entry, with effects that are often larger and more persistent than those of comparably sized demand shocks. Critically, the wait-and-see response is strongest at the extensive margin: firms defer entry decisions rather than simply scaling back existing commitments. The effect is amplified when sunk costs are higher, precisely the condition foreign exporters face when needing to navigate cross-border-specific challenges that domestic competitors do not.

Handley and Limão [5, 6] provide direct evidence in a trade context, showing that reductions in *policy* uncertainty, holding applied tariffs constant, generate large increases in exporter entry and volumes for Portugal’s European Communities (EC) accession and China’s WTO accession respectively. Crowley et al. [7] document that Chinese firms reduce market entry in response to tariff threats before any tariff is imposed. Carballo et al. [8] extend this framework to show that both economic and policy uncertainty jointly suppress *aggregate* extensive margin dynamics: during the 2008 trade collapse and its aftermath, the negative effect of uncertainty on export entry was concentrated in destination markets *without* preferential trade agreements with the United States, where policy uncertainty remained unresolved. This finding directly motivates the present paper's identification strategy: the 2024 post-election period represents precisely such a regime, elevated uncertainty without a binding agreement to constrain it. Caldara et al. [1] construct their TPU index from newspaper text analysis and show it correlates negatively with trade and investment. Graziano et al. [9] show Brexit-related TPU had persistent effects on bilateral trade even absent any change in applied rates.

Most closely related in terms of my data source used, Flaaen et al. [10] use COLA application data to document tariff engineering behavior during the 2019–2021, when the U.S. placed 25% tariffs on imports of <14% ABV still wine from France, Germany, Spain, and the UK during an aircraft subsidy dispute. They show that producers systematically shifted product ABV designations above the 14% threshold to avoid the tariffs. My analysis complements theirs by focusing on the *uncertainty* phase that precedes any tariff implementation rather than the product composition response once tariffs are in place.

2.2 The Extensive Margin and Product Variety

Melitz [11] and Chaney [12] formalize the importance of the extensive margin, showing that trade costs affect the number of products and exporters more elastically than volumes per firm. Helpman et al. [13] show empirically that much of the cross-country variation in bilateral trade is accounted for by the extensive margin. Fajgelbaum et al. [14] and Amiti et al. [15] document that the 2018 U.S. tariffs on Chinese goods led to product exit and variety compression, with welfare costs emphasized by Feenstra [16], Klenow and Rodríguez-Clare [17], and Broda and Weinstein [18].

The wine industry is particularly well-suited for studying these effects. Wine is a highly differentiated good, with variety expansion constituting an important component of consumer welfare. EU exporters face significant barriers to entry into the U.S. market. Mariani et al. [19] identify wine labelling regulations as a primary technical trade barrier confronting EU suppliers. Cardebat and Figuet [20] reinforce this interpretation by showing that the US is among the most exchange-rate sensitive destinations for French wine exports, with volume losses of roughly 25–28% over 2000–2011 attributable in part to euro appreciation.

3 Data and Identification Strategy

3.1 *Certificate of Label Approval Data*

The primary data are COLA applications submitted to the TTB, obtained from the publicly available COLAs Online database.[1] Under the Code of Federal Regulations 27 C.F.R. Part 4, any alcoholic drink sold in U.S. interstate commerce requires TTB label approval prior to market entry [21]. The approval requirement covers aspects of the label as a whole, including the brand name, graphic design, appellation of origin, alcohol content, and mandatory disclosures.

Before describing the data, it is useful to distinguish between a COLA application and a COLA approval. An application is the producer's or importer's submission to the TTB requesting authorization to use a given label, the forward-looking business decision that is the object of study in this paper. An approval is the TTB's subsequent grant of that authorization, which typically follows within approximately 9-10 business days. Throughout the analysis, the dependent variable is the weekly count of applications by submission date, not by approval date. This timing is deliberate: the application date captures the producer's decision to commit to a product introduction, whereas the approval date reflects regulatory processing and could introduce a lag that is unrelated to the producer's market entry choice.

The critical regulatory feature is the scope of the requirement. TTB does not require a new application for routine vintage year changes or minor format adjustments when the underlying product identity, producer, and appellation are unchanged.[2] An already-approved label may be updated annually for vintage without reapplication. A new COLA, therefore, typically represents the introduction of a genuinely *new product*: a new label, appellation, brand, or importer relationship. Even if an application represents a refresh of an existing product, it still reflects a renewed commitment by the producer to continue selling the product. Cardebat and Figuet [20] document that French exporters operate under annual contracts with no long-term volume commitments to US importers, implying that product-entry decisions are made on a recurring, margin-sensitive basis, precisely the type of decision that COLA applications are designed to capture. For foreign wines, the fact that a US-side importing company is required to be listed on

[1] https://www.ttbonline.gov/colasonline/publicSearchColasBasic.do
[2] https://www.ttb.gov/regulated-commodities/labeling/allowable-revisions

the label means that an application signals that the producer has sunk a non-trivial cost of securing a new importer relationship or an agreement to expand an existing one. This regulatory structure gives COLA applications a strong interpretive anchor as measures of new product entry decisions: each application reflects a deliberate, forward-looking act that precedes any physical shipment.

The fixed cost of this decision, however, likely pales in comparison to other fixed costs of new product introduction. There is no fee for filing with the TTB, but producers can pay third parties to handle the application process for them. Even if the producer handles the application themselves, time and other sunk resources must be used to design a label to distinct US regulatory requirements and properly navigate the application and approval process. In U.S. domestic craft beer brewing, Cervantes and Smith [22] and Cervantes et al. [23] document non-trivial monetary costs and time spent on understanding label regulations and working with the TTB over disputes.

The COLA data obtained contain all approvals for wine products for applications submitted between January 1, 2016 and December 31, 2025, excluding exemption applications (which cover small production runs and test products), surrendered approvals, and expired approvals.[3] After these filters, the analysis dataset contains 1,037,942 wine product records from US and all other non-US countries. I then construct a weekly panel by origin group: 579,835 EU applications across all current 27 member states (even if they were not a member at some point in the earlier part of the sample, but excluding the UK) and 365,408 U.S. domestic applications. For the DiD and counterfactual model estimates, I restrict the sample to 2022–2025 to avoid potentially nonrepresentative regimes (25% tariffs from 2019–2021, the onset of economic disruption from the COVID pandemic from 2020–2021, and the bounce-back from both events). In this 4-year window, there are 221,726 EU and 143,971 U.S. applications.

3.1.1 Historical Regime Classification

[3] Unlike Flaaen et al. [10], who accessed COLA data through the commercial COLA Cloud service, I construct the dataset directly from web-scraping the public TTB COLAs Online database, which provides complete coverage of the data of interest (though narrower in scope than that available from COLA Cloud).

The 2016–2025 sample spans four distinct trade policy regimes (see Table 1 and Figure 2). The *stable baseline* (2016–October 2019) is a time period of no major trade policy changes, at approximately 1,195 EU product entries per week. *Section 301 tariff episode* (October 2019–March 2021) imposed 25% duties on wines from France, Germany, Spain, and the UK. This episode serves as a within-sample benchmark for a realized tariff shock, where EU applications declined to approximately 981 per week. However this period also coincided with the disruptions from the COVID pandemic. Marking July 1, 2021 as a reasonable end-date for the greatest COVID-related economic volatility, the intermediary period between the end of the Section 301 tariffs and the end of the COVID volatility brought about a strong recovery in EU applications. The *post-election regime* (November 2024 onward) marks the primary treatment event and produces the lowest observed weekly EU entry rate of the sample: 798.5 per week. On the U.S. side, weekly applications rose during the 2019 Tariff period and show only proportionately smaller decline, from 686 to 627 per week, in the post-election era.

3.2 Trade Policy Uncertainty Measure

I supplement the COLA panel with the weekly Trade Policy Uncertainty (TPU) index of Caldara et al. [1], constructed from automated text analysis of newspaper coverage of trade policy risks. Figure 3 plots this Index against the weekly count of EU applications. Note the spike in the index post-election that coincides with the period of EU application decline. I use this index both to validate the post-election regime change (the TPU index reaches its highest sustained levels of the 2016–2025 sample in the months following the election) and as a continuous regressor to estimate the responsiveness of COLA applications to policy uncertainty.

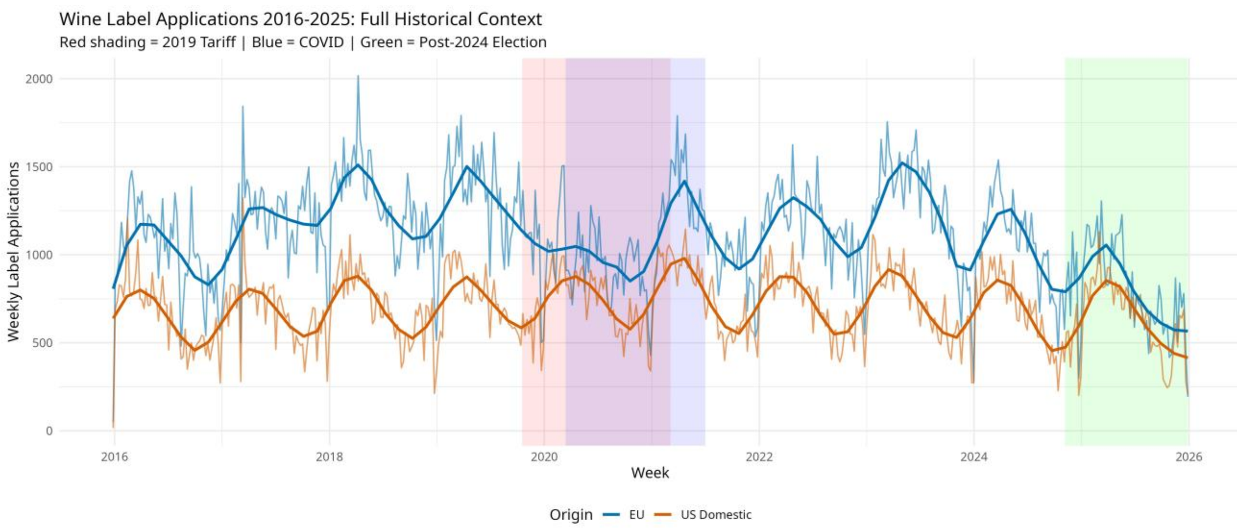

Figure 2: Smoothed EU and US Weekly Wine Label Applications, 2016–2025, with selected regime shading

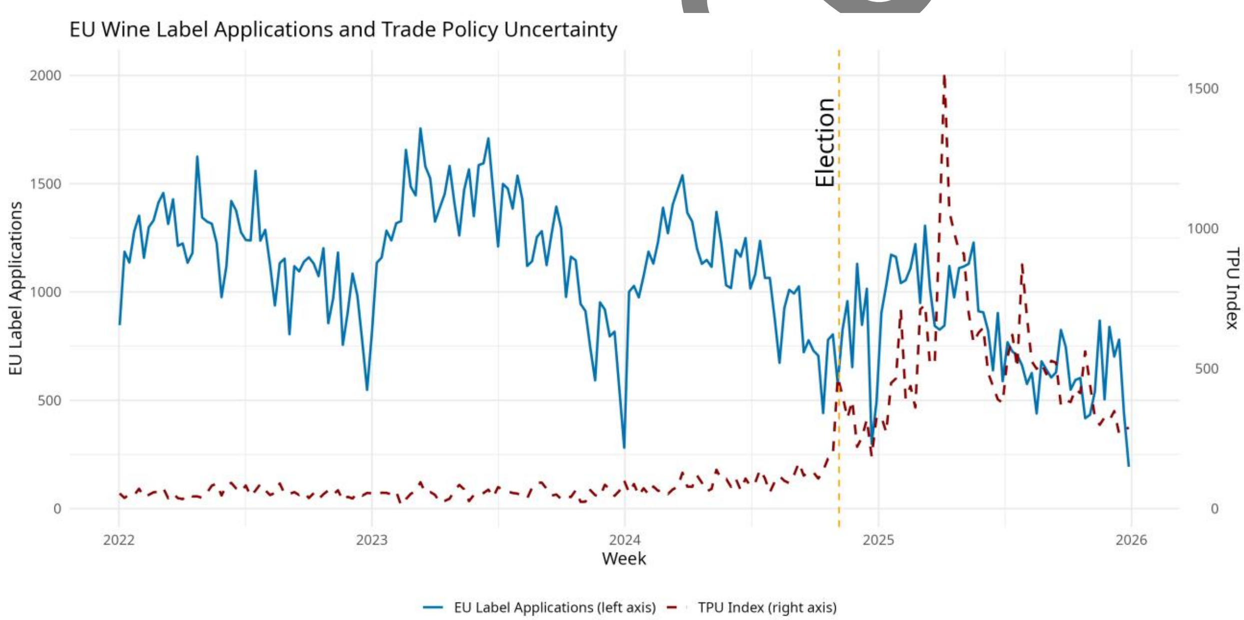

Figure 3: EU Wine Label Applications and Trade Policy Uncertainty

Table 1: Wine Product Applications by Historical Regime

Regime	Weeks	EU Entries	US Entries	EU/Week	US/Week
Pre-2019 Tariff (2016–Oct 2019)	199	237,710	136,514	1,194.5	686.0
2019 Tariff (Oct 2019–March 2021)	73	71,630	53,368	981.2	731.1
COVID Post-Tariff (March 2021–June 2021)	18	23,374	15,768	1,298.6	876.0
Post-COVID Recovery (July 2021–Oct 2024)	176	198,413	121,513	1,127.3	690.4
Post-Election (Nov 2024–Dec 2025)	61	48,708	38,245	798.5	627.0
Full sample	527	579,835	365,408	1,100.3	693.4

Source: TTB COLAs Online database. EU comprises all 27 member states; UK excluded. Regime boundaries: Section 301 tariff imposed October 9, 2019; suspended March 5, 2021; COVID-related volatility “ends" July 1, 2021, Post-Election period begins November 5, 2024.

3.3 *Empirical Strategy*

3.3.1 Difference-in-Differences

The baseline specification is a two-period DiD model on weekly COLA application counts. Let Y_{it} denote EU or U.S. domestic applications in week t:

$$ln(Y_{it}) = \alpha + \beta\,(\mathrm{EU}_i \times \mathrm{Post}_t) + \gamma_i + \delta_t + \lambda_{i,s(t)} + \varepsilon_{it}, \qquad (1)$$

where EU_i indicates EU origin, Post_t indicates the post-election period (November 5, 2024 onward), γ_i are origin group fixed effects, δ_t are week fixed effects, and $\lambda_{i,s(t)}$ are EU-calendar-week fixed effects that absorb EU-specific seasonal patterns in the case that EU producers face different harvest and processing seasonality and also need to account for the additional time for the international shipping process. The coefficient β is the object of interest: the differential change in EU application rates following the election, relative to U.S. domestic producers. I also estimate event study specifications with week-by-treatment-status interactions to assess pre-trend parallelism.

The key identifying assumption is that, absent the post-election regime change, EU and U.S. domestic weekly application rates would have followed parallel trends. Three features support this assumption. First, seasonality across regimes is statistically stable: an F-test for interaction between seasonal week dummies and regime indicators yields $F(51,268) = 0.93$, $p = 0.62$, confirming that the EU and U.S. seasonal patterns are each stable across historical periods. In other words, past regime changes have not been accompanied by shifts in EU or U.S. seasonal patterns, making a spurious seasonal explanation for the 2025 decline implausible. Second, event-study pre-period coefficients for the election-timed treatment are centered near zero, supporting pre-treatment parallel trends (Figure A1 in the Appendix). Third, TTB processing times are similar for EU and U.S. producers both pre- and post-election (approximately 9–10 days for both groups in both periods), ruling out differential regulatory treatment as an alternative explanation.

As a robustness check, the model is estimated under five additional treatment timings in 2025 that coincide with notable threats or actual changes in U.S. trade policy towards EU imports (Timings from Dingwall [24], Bade [25], and Bade et al. [26]):

- February 26: President Trump threatens to place a 25% tariff on all EU imports
- March 13: President Trump threatens to place a 200% tariff on EU wine imports
- April 2: "Liberation Day" where the Trump Administration declares the "Reciprocal Tariff" rates that almost all trading partners will pay (20% is the initial level for the EU)
- May 23: President Trump threatens to raise the tariff rate on the EU to 50%. Three days later, he announces he will delay this increase to July 9. The rate is eventually negotiated down to 15%
- August 7: Reciprocal Tariffs officially go into effect, including the EU's 15%

It is highly unlikely that any one event truly explains any post-election change in application counts, and a model with a single treatment timing will have a treatment coefficient that is absorbing the effects of other events. To decompose the effects of multiple potential events, I also estimate a model that includes all six treatment timings. This shows the marginal effect any one event treatment has on EU applications.

3.3.2 Counterfactual Analysis

As Figure 2 shows, in the pre-election era, weekly EU and US applications moved in similar seasonal cycles where EU applications were higher than US applications with some consistency in the magnitude of the difference (after smoothing over weekly volatility). The one exception is the era of the 2019 tariff. The steady continuance of US application trends and fall in EU applications in 2025 during a period of great trade policy uncertainty and volatility suggests that EU applications could have followed their pre-election trend with US applications absent the threats and imposition of tariffs. As a complement to the DiD analysis, I construct a *cumulative forgone applications* measure using a time-series counterfactual model estimated on the main 2022–2024 (pre-election) baseline window. I regress weekly EU applications on U.S. domestic applications and seasonal controls. I then input the US weekly application count and seasonal indicators into the fitted model to produce a measure of *predicted EU applications* in the 61-week post-2024-election era. The cumulative gap between predicted and actual represents the total "forgone" applications in the post-election era that can potentially be attributed to trade policy. Coefficient uncertainty is propagated via parametric simulation (2,000 draws) to construct 95% confidence intervals on the cumulative gap.

4 Empirical Results

4.1 *Difference-in-Differences Results*

4.1.1 Main Specification

Table 2 reports the DiD estimates of the treatment coefficient across treatment definitions, where each estimation includes only one treatment. All standard errors are estimated with the Driscoll-Kraay method [27] to account for heteroskedasticity, serial correlation, and cross-sectional dependence that are common in panel data.

Coefficients are all statistically significant and negative. While the overlapping 95% confidence intervals around each coefficient mean none are statistically significantly different from each other, the point estimates imply a range of weekly application reductions of 21.7% to 30.6% compared to the US control. Estimating the DiD with the application counts in linear form produces a coefficient of -265.8 for the post-election treatment. Over the 61-week post-election period, this would imply a cumulative reduction of 16,214 applications.

Table 2: DiD Estimates by Treatment Event (One treatment per estimation)

Event	Coefficient	% Change
Election (Nov 5, 2024)	−0.244** (0.100)	−21.7%
25% Tariff Threat (Feb 26, 2025)	−0.327*** (0.098)	−27.9%
200% Wine Threat (Mar 13, 2025)	−0.326*** (0.103)	−27.8%
Reciprocal Tariffs Announced (Apr 2, 2025)	−0.320*** (0.110)	−27.4%
50% Tariff Threat (May 23, 2025)	−0.364*** (0.121)	−30.6%
15% Tariff Implemented (Aug 7, 2025)	−0.266** (0.124)	−23.4%

***$p < 0.01$, **$p < 0.05$, *$p < 0.10$. Standard errors (Driscoll-Kraay) in parentheses.
% Change = $(e^{\beta} - 1) \times 100$.

Table 3 reports the DiD estimates of the treatment coefficients in the model where all six treatments are included as regressors. In essence, this estimation decomposes the marginal effect each event has on the overall decline in EU applications post-election. The election event effect itself, being small and statistically insignificant, appears to have made little contribution to the decline. The largest negative treatment effects come from the 25% tariff threat in February and the 50% threat in May. The February event may have loomed large as the first major threat made to place tariffs on all imports from the EU, while the May threat may have impacted weary EU exporters who believed that the Reciprocal Tariff announcements in April had resolved some uncertainty. Notably, the 200% wine-specific tariff threat did not appear to have a marginal effect on applications. Potentially, it was not seen as credible or any additional threat beyond what had already been discussed. The two events with positive coefficients are also the ones that most resemble a “resolution" of uncertainty: the official Reciprocal Tariff announcements and the actual implementation of the 15% tariff on imports from the EU. One could interpret these as an incomplete *recovery* in applications after some uncertainty was resolved. The cumulative effect from this joint model (-0.263, summing all coefficients in Table 3) closely matches the August 7 post-implementation estimate (-0.266) from the single-event model in Table 2, confirming internal consistency.

Table 3: DiD Estimates: All Treatment Events Estimated Jointly (Log-Linear Specification)

Event	Coefficient	% Change
Election (Nov 5, 2024)	0.020 (0.080)	2.1%
25% Tariff Threat (Feb 26, 2025)	−0.381* (0.212)	−31.7%
200% Wine Threat (Mar 13, 2025)	−0.040 (0.247)	−3.9%
Reciprocal Tariffs Announced (Apr 2, 2025)	0.281** (0.117)	32.4%
50% Tariff Threat (May 23, 2025)	−0.431*** (0.132)	−35.0%
15% Tariff Implemented (Aug 7, 2025)	0.287* (0.166)	33.3%

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$. Standard errors (Driscoll-Kraay) in parentheses.
% Change = $(e^{\beta} - 1) \times 100$.

4.1.2 The Trade Policy Uncertainty Channel

To quantify the role of general TPU in driving the post-election decline, I estimate a log-log *mediation* specification in which both the dependent variable and the TPU index enter in logarithmic form, so that the TPU coefficient is interpretable as an elasticity.[4] The results, presented in Table 4, indicate that a 1% increase in the TPU index is associated with a -0.056% decline in weekly applications. The interaction between EU origin and log TPU is negative and marginally significant, implying a further -0.068% decrease in EU applications with a 1% increase in TPU (-0.124% combined)

Controlling for TPU reduces the post-election DiD coefficient from -0.348 to -0.096, a 72.4% attenuation. Rather than reading this as a precise decomposition of the underlying mechanism, the pattern simply is consistent with elevated uncertainty being a primary driver: the post-election rise in the TPU index to its highest sustained levels of the sample coincides closely with

[4] For this specification, calendar week fixed effects are substituted for week fixed effects since the week fixed effects would introduce collinearity with TPU. This also means that this model does not account for EU-specific seasonality. The baseline non-TPU-included treatment effect that the TPU-included model is compared to is therefore not the same effect estimated in the main DiD model in the previous section.

the period of declining EU applications, and conditioning on it substantially absorbs the post-election EU-U.S. differential. At the other extreme, the residual post-election coefficient after controlling for TPU is statistically indistinguishable from zero (p = 0.261), consistent with elevated uncertainty accounting for the full post-election effect. Taken together, these results support the interpretation that the decline in EU wine label applications reflects the elevated uncertainty environment that followed the 2024 election, rather than any specific tariff action or wine-sector development, while acknowledging that this inference is associational rather than a formal causal decomposition.

Table 4: TPU Attenuation Analysis (Log-Linear Specification)

	Without TPU	With TPU
EU × Post-Election	-0.348^{***}	-0.096
	(0.047)	(0.085)
log(TPU)		-0.056^{***}
		(0.019)
EU × log(TPU)		-0.068^{*}
		(0.040)
Coefficient attenuation		72.4%

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$. Standard errors (Driscoll-Kraay) in parentheses. Both specifications include calendar week and country-origin fixed effects.

Dependent variable: log(weekly applications). TPU share = $(\hat{\beta}_{\text{no TPU}} - \hat{\beta}_{\text{with TPU}})/\hat{\beta}_{\text{no TPU}}$.

4.1.3 *First-Time Application Analysis*

A potential concern is that COLA applications partly reflect label updates (substantial enough to require re-certification) for products that are already being sold in the U.S. Even among this group of applications, however, a label refresh for an imported wine can reflect a renewed commitment to offer the product for sale in the U.S., as Cardebat and Figuet [20] note French exporters explicitly do this on a regular basis. In other words, the product might have been removed from the U.S. market had the producer not felt it worth the trouble to update a label for better marketing/identity or to fix an issue with the label being out of regulatory compliance.

To see how sensitive the analysis is to the identification of potentially trivial “repeat" applications, I restrict the 2022–2025 sample of applications down to products appearing for the first time under a given brand-country-importer combination. I then restrict applications further under a stricter first-time brand-country combination. Under the brand-country-importer definition, EU applications from the entire 2016–2025 period are split between 66.3% new products versus 33.7% repeats, while U.S. domestic producers show the reverse pattern (39.0% new, 61.0% repeat)

Results of DiDs run on these two stricter definitions are in Table A1 in the Appendix and show that the post-election treatment effect is significant at the 5% level or less for both samples. Converting the log-linear coefficients, the estimated decline is -23.5% for the brand-country-importer combination, and -24.4% for the new brand-country combinations. Compare this to 21.7% from the baseline DiD model with all applications, where none of the 3 coefficients are statistically significantly different from each other. The consistency across definitions suggests that post-election uncertainty operated as a broad dampener on label commitment activity rather than selectively discouraging one type of application.

4.2 Counterfactual Model - Cumulative "Forgone" Applications

The counterfactual model regresses weekly EU application counts on the US counts with seasonal week effects over the 2022 to 2024 pre-election period. The model has an R^2 of 0.75, meaning that it explains 75% of the variation in EU applications during the pre-treatment period (2022-2024). With weekly US application counts as inputs in the post-election period, Figure 4 plots *actual* weekly EU applications against the *counterfactual projection* from the model. The two series track closely through the first several weeks of the post-election period. However, from approximately February 2025 onward, actual applications fall persistently below the predicted counterfactual, with a small break in May, and another narrowing in the final months of 2025.

The integrated shortfall (cumulative forgone applications) over the 61-week post-election period is a mean of -14,899 (95% CI: -16,928 to -12,835), based on 2,000 parametric simulations propagating model coefficient uncertainty). This estimate is robust to baseline period choice: alternative baseline windows ranging from 2016–2018 through 2021–2024 yield cumulative gaps of -19,050 to -14,554, all with confidence intervals entirely below zero (Table A2 in the Appendix). This is comparable with the reduction of 16,214 applications from extending the estimate of the weekly coefficient in the linear-linear DiD post-election treatment model.

Considering that there were approximately 63,400 EU applications from the 61 weeks prior to the election, 14,899 “forgone" applications is equivalent to 23.5% of that pre-election total. This is comparable to the coefficient on the DiD post-election treatment that translates to a 21.7% reduction in the weekly count.

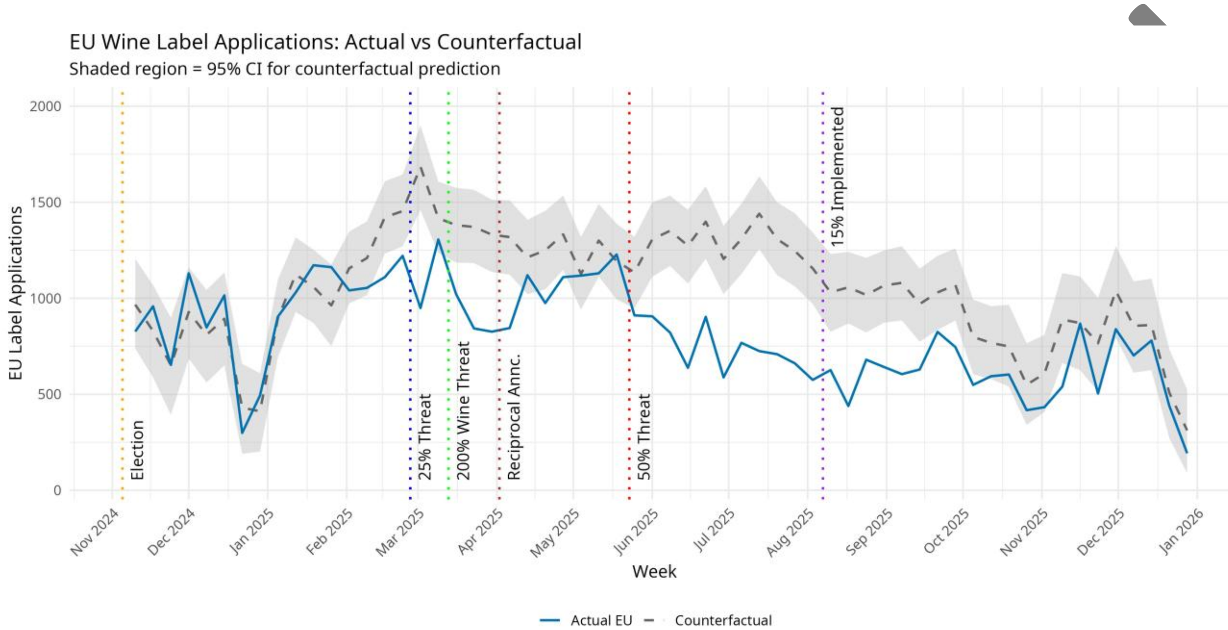

Figure 4: Actual EU Applications vs. Counterfactual Projection

When restricting the sample to first-time appearances of brand-country-importer combinations (see Section 4.1.3), the sample size is smaller, so any estimate of the cumulative reductions in applications from a counterfactual model calibrated on these data would likely be smaller as well. Indeed, comparing actual to predicted counts yields a cumulative reduction of -10,044 applications (95% CI: -8,673 to -11,435) in the 61-week post-election period. However, this is still a sizable reduction in what are much more likely to be genuinely new EU wine products.

5 Discussion

5.1 Other Explanations

The model doesn’t explicitly control for other short-term factors that affected the wine industry in 2025 nor other longer-term trends that continued into the year. However, for any non-trade-policy omitted factor to partially explain the estimated “forgone" applications, it would have to apply to imports of EU wines into the U.S. but not U.S. domestic wines (or not as intensely), or it would have to explain the exporting country’s wines in general and not just those that are or could have been sent to the US. I document two potential non-TPU factors and why they are unlikely to explain the estimated magnitudes in the previous section

1. A general decrease in wine consumption. There is a documented long-term consumer shift away from consumption of wine and alcoholic beverages in general [28,29], both in the U.S. and abroad. This affects U.S. producers as well. The DiD models control for weekly trends faced by both the US and EU cross sections, and the counterfactual estimate is based in part on the pattern of US activity, which is not directly (or not as intensely) affected by U.S. trade barriers but is affected by general consumer trends.

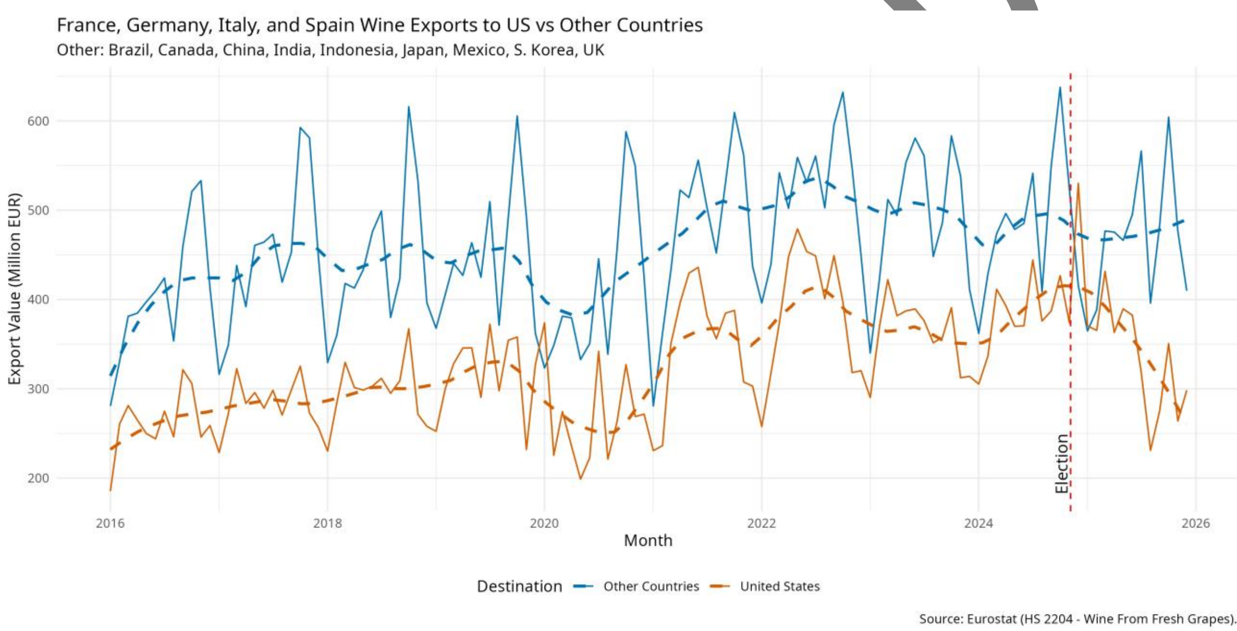

Figure 5: France, Germany, Italy, Spain Wine Exports to the US and Other Countries

2. A major contraction in European producers, especially in France. This too has been well-documented [30]. While I do not have access to product introduction data for non-US destinations for EU wine exports nor that for the EU-based domestic markets, it may be instructive to look at traditional trade flows to see how notable the decline in EU export volumes to the US is relative to other large economies. Figure 5 plots a smoothed time

series of wine exports from France, Germany, Italy, and Spain to the U.S. and other major economies. Notice that exports to the U.S. have curtailed sharply while those to other countries is trending slightly upward. While these trade flows are more indicative of the *intensive margin* of activity, it would be unlikely to see such a large differential between the US and non-US economies in 2025 if there weren't also substantial differences in new product introductions.

5.2 *Interpreting the Magnitude*

Centering the discussion around the -14,899 applications estimate from the counterfactual estimation, each of these forgone products represents a product that, had it entered, would have occupied shelf space, generated consumer choice, and potentially developed into a sustained trading relationship. Although welfare effects are not estimated here, future work on the effects of the post-election shift in trade policy on imports like wine will need to grapple with this loss of variety in order to incorporate a potentially major source of welfare loss. Klenow and Rodríguez-Clare [17] show that variety gains from trade liberalization can account for a substantial share of the total welfare gains from trade, in some specifications exceeding the conventional gains from specialization and scale.

The comparison with the 2019 tariff episode is illuminating. The October 2019 Section 301 tariffs produced a clear and immediate decline, an indexed drop of 21.5% in the first 26 post-event weeks, but also a recovery once the tariff was lifted in 2021. The post-election uncertainty episode, by contrast, shows almost no initial decline but a gradual, compounding withdrawal that ultimately produces a larger cumulative shortfall. This temporal pattern is consistent with the real options mechanism: a known, bounded tariff shock is easier for producers to plan around than open-ended uncertainty about whether, when, and at what level tariffs will materialize. Flaaen et al. [10] document that retail price effects from the 2019 tariffs took nearly 12 months to materialize at the consumer level, consistent with the gradual, compounding pattern in COLA applications documented here. This also suggests that the pipeline effects of 2025 uncertainty may similarly persist long after the policy environment stabilizes.

5.3 *International Wine Trade Implications*

The results speak directly to how wine producers are adapting to a changing world. The disruption documented here operates entirely upstream of realized trade flows. It is invisible to standard customs data, which record shipments of existing products. In addition to the previously mentioned variety-related welfare losses that such trade flow statistics may not fully capture, the recovery path from TPU disruption may be slow. COLA applications may precede importation by months, and the introduction or reintroduction of products may require years to complete if they must start at the beginning of the value chain (i.e. growing decisions at the vineyard). The pipeline of new products that EU producers chose not to develop in 2025 will not reach U.S. consumers regardless of what happens to tariff policy in the near term.

5.4 *Limitations*

Several limitations deserve acknowledgment. First, although I do estimate one DiD specification that includes multiple treatment timings, it is still difficult to assign variations in applications to specific events in the post-election period where the numerous treatment events cross-contaminate each other, and there are likely anticipatory effects. The counterfactual analysis, which does not rely on the DiD framework and produces confidence intervals entirely below zero across all baseline specifications, may provide the more compelling evidence of a real and substantial shortfall.

Second, I cannot directly observe the decision not to file a COLA application. The missing applications are, by construction, unobservable. The counterfactual projection relies on a model estimated from a relatively short pre-election baseline and is subject to the usual out-of-sample forecasting risks.

Third, the analysis measures the intent to enter (applications) rather than realized entry (approvals leading to shipments). Applications are the decision point of interest, but future work linking COLA approvals to subsequent import transactions would strengthen the welfare interpretation. If the proportion of label applications that lead to actual new product importation also *declined* for EU producers as a result of 2025 uncertainty (compared to the pre-2025 period), then the observed decline in applications could *underestimate* the magnitude of the decline in actual new product entry.

Fourth, the analysis does not account for the upstream production timeline that precedes a COLA application. A product that appears as a new label application may represent decisions taken months or years earlier at the stage of vineyard planning, winemaking, or the negotiation of an importer relationship. The 61-week post-election window likely captures the most downstream responses to uncertainty (label design, importer contracting, application filing), while more upstream decisions (grape variety selection, production volumes, and long-term market commitments) may not yet manifest in application counts within the sample period. This suggests the estimated shortfall may represent only the leading edge of a larger disruption: producers who responded to 2025 uncertainty by curtailing upstream production decisions may generate further foregone applications in subsequent years, even if the policy environment stabilizes. Future work with longer post-treatment windows would be well positioned to assess the full cumulative magnitude.

Finally, without a more extensive model, I cannot model the effect that US trade policy has on COLA applications and product introduction for US domestic producers to ensure it serves as an effective control. Despite being a target for protectionism, US wine producers can also be negatively affected by trade barriers and uncertainty. Sumagaysay [31] documents the fact that domestic wine distributors who are harmed from revenue loss from selling imported wines are then less able to effectively sell domestic wines as well. Additionally, domestic producers may face tariffs on imported corks, bottles, and other equipment, and they may face retaliatory tariffs in their export markets. If this all serves to make US COLA applications lower than what they would have been otherwise, this also makes the estimates of EU decreases a *lower bound* on the magnitude of the loss of foreign product variety.

6 Conclusions

This paper documents a novel channel through which trade policy uncertainty disrupts the international distribution of wine: the suppression of new product entry decisions, measured through TTB COLA applications. Using a weekly panel spanning 2016–2025 and exploiting the November 2024 U.S. presidential election as a sharp regime change in the trade policy environment, I estimate that approximately 14,899 EU wine product applications, potential new product introductions to the U.S. market, were foregone in the 61 weeks following the election.

Under alternative model calibrations, this number could be as high as 19,050, and a model estimated under a stricter definition of a “new product" estimates a reduction of 10,044. Conditioning on the Caldara-Iacoviello TPU index attenuates the post-election coefficient by approximately 72%, a result consistent with elevated TPU being the primary driver of the decline in product introductions, with the residual perhaps reflecting specific tariff events or other wine-sector developments.

The finding that threats of tariffs, before any tariff is implemented, can remove thousands of prospective wine labels from the U.S. market illustrates the “option value of waiting” mechanism in a policy-relevant setting. The comparison with the 2019 tariff episode, whose price effects are traced in detail by Flaaen et al. [10], reveals that uncertainty may ultimately produce larger cumulative disruptions than a realized tariff of comparable magnitude, because open-ended policy risk deters commitment more persistently than a bounded, known shock.

For wine producers, the findings suggest that TPU costs are material and partly invisible to standard monitoring. Producers, importers, and policymakers who rely on import volume data to gauge the effects of trade policy rhetoric may significantly underestimate the disruption already underway. For researchers, COLA application data offer a promising source for studying extensive margin dynamics in a setting with clean regulatory identification of one part of the entry decision.

Data availability: COLA application data are publicly available from the TTB COLAs Online database, but they offer no bulk download mechanism. Upon request, I can share my comprehensive collection of the data from 2016–2025. The Trade Policy Uncertainty index is publicly available from https://www.policyuncertainty.com.

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Appendix

A.1 Additional Figures

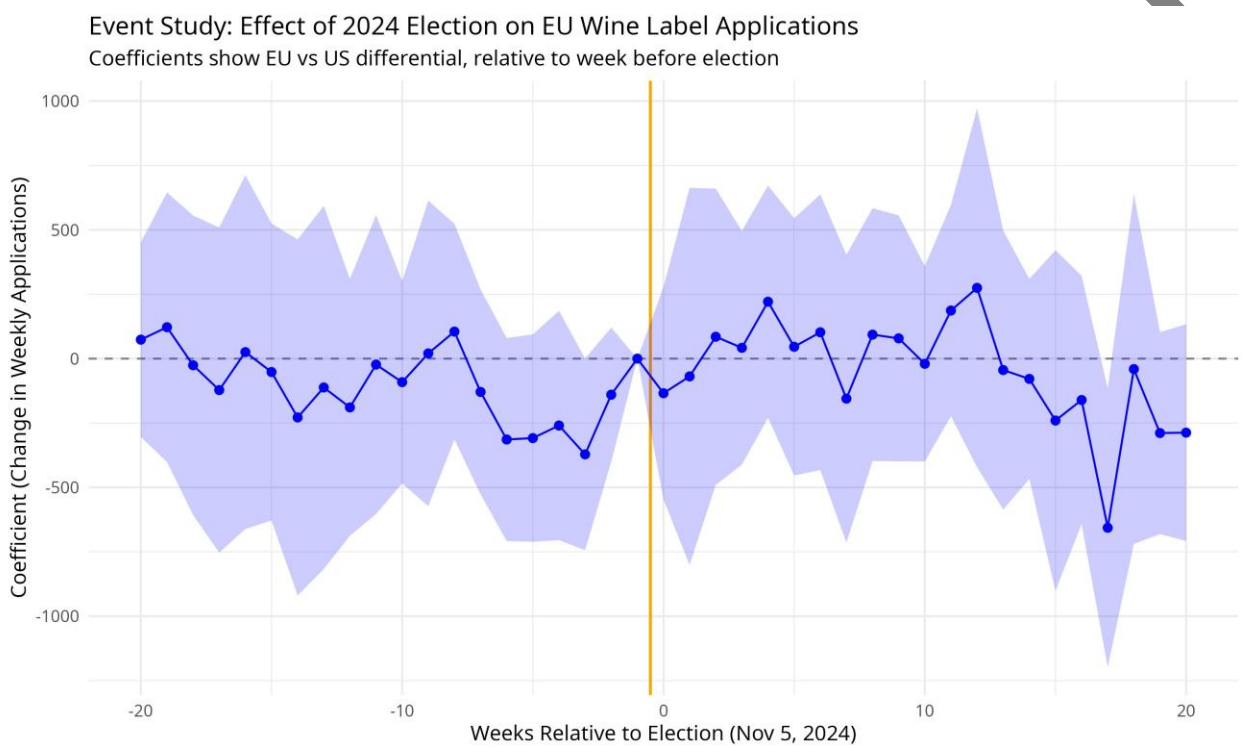

Figure A1: Event study: EU vs. U.S. differential application rate, relative to election week (week = 0). Coefficients show the weekly EU − U.S. differential relative to the omitted week −1. Pretreatment coefficients center near zero, supporting parallel trends. Shaded band = 95% CI.

A.2 Additional Tables

Table A1: Robustness of Main DiD Estimate to Product Application Definition

	DiD Coefficient (Log-Linear)	
Application Definition	Estimate	Std. Error
All Applications	-0.244^{**}	0.100
New Importer-Brand-Origin Combinations	-0.268^{**}	0.106
New Brand-Origin Combinations	-0.281^{***}	0.095

Notes: Each row reports the post-election DiD coefficient from a separate log-linear specification using the indicated application definition as the dependent variable.
$^{**}p < 0.05$; $^{***}p < 0.01$.

Table A2: Counterfactual Sensitivity to Baseline Period Choice

Baseline Period	Weeks	R_2	Gap (Mean)	95% CI
2016–2018 (pre-any-tariff)	144	0.69	−17,604	[−19,670, −15,508]
2016–2019 (pre-tariff implementation)	196	0.68	−19,050	[−20,828, −17,350]
2021–2024 (post-tariff recovery)	174	0.75	−14,554	[−16,389, −12,695]
2022–2024 (recent, preferred)	148	0.75	−14,899	[−16,928, −12,835]

All gaps represent cumulative foregone EU applications over the 61-week post-election window. CIs from 2,000 parametric simulations. Longer baseline windows including the 2019 tariff period produce larger estimated gaps because they incorporate the tariff-period decline as part of the “normal” level.