The Shopping Cart Exodus: Exchange Rate Shocks and Retail Desertification in Swiss Border Communities

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Abstract

On January 15, 2015, the Swiss National Bank abandoned its EUR/CHF floor, appreciating the franc by 15% overnight and making cross-border shopping dramatically cheaper. Using the universe of Swiss business establishments from STATENT (2011–2023) and a difference-in-differences design exploiting continuous variation in cantonal border exposure, I find that the shock reduced retail employment in border cantons by 6.3% per unit of exposure ($p = 0.012$) relative to interior cantons. The event study reveals flat pre-trends and persistent, growing post-treatment effects reaching 9.5% by 2022. A triple-difference comparing retail against non-tradable sectors within the same cantons yields a 6.5% employment decline ($p = 0.03$), while placebo sectors show null effects. The results document a permanent retail desertification: border communities lost retail jobs that were never replaced, even as the franc partially recovered.

JEL Codes: F31, L81, R12, J21

Keywords: exchange rate, retail sector, border effects, cross-border shopping, Switzerland

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1. Introduction

When the Swiss National Bank unexpectedly abandoned its EUR/CHF 1.20 floor on January 15, 2015, one million Swiss residents living within a 15-minute drive of a French, German, or Italian supermarket woke up 15% richer in euro terms. What happened next was predictable in direction but remarkable in permanence: Swiss border communities experienced a sustained exodus of retail activity that persisted long after the franc partially recovered.

Exchange rate movements are among the most studied macroeconomic phenomena, yet their effects on the spatial distribution of retail activity remain poorly understood. The standard trade literature focuses on manufacturing firms adjusting export prices (Gopinath et al., 2010; Amiti et al., 2014), while the retail literature examines competition and entry within national borders (Jia, 2008; Ellickson et al., 2020). A missing piece connects exchange rate shocks to the *destruction* of domestic retail in border regions—communities where consumers can costlessly substitute to foreign retailers when relative prices shift. This margin matters: retail is the largest private employer in most OECD economies, and unlike manufacturing jobs lost to trade, retail jobs cannot relocate to low-cost countries. They simply disappear.

This paper provides the first causal estimates of how a large, unexpected exchange rate appreciation affects retail firm survival and employment in border communities. The January 2015 Swiss franc shock offers near-ideal conditions for identification. The SNB's decision was genuinely unexpected—the bank had publicly committed to the floor just days earlier (Auer et al., 2021; Kaufmann and Renkin, 2021). The appreciation was instantaneous (intraday), large (approximately 15%), and affected all Swiss border communities simultaneously. Crucially, the shock created continuous variation in treatment intensity across cantons based on their geographic exposure to cross-border shopping opportunities.

I exploit this variation in a difference-in-differences framework using the universe of Swiss business establishments from the Federal Statistical Office's Structural Business Statistics (STATENT) census. The panel covers all 26 cantons, 85 economic sectors at the NOGA two-digit level, and 13 years (2011–2023). Treatment intensity is measured as a continuous index of cantonal border exposure to accessible cross-border retail destinations, ranging from zero for interior cantons like Bern and Lucerne to one for cantons nearly surrounded by foreign territory like Basel-Stadt, Schaffhausen, and Geneva.

The main finding is that the franc shock caused a large and persistent decline in retail employment in border cantons. A one-unit increase in border exposure is associated with a 6.3% decline in retail employment after 2015 ($p = 0.012$), with the effect growing over time rather than reverting. The event study specification reveals textbook identification: pre-treatment coefficients (2011–2014) are indistinguishable from zero, while post-treatment effects emerge immediately and reach −9.5% by 2022. The retail share of total establishments falls by 0.58 percentage points ($p < 0.001$), indicating that the decline is specific to retail rather than a general border canton phenomenon.

To address the concern that border cantons may have experienced differential trends for reasons unrelated to cross-border shopping, I implement two placebo tests. First, non-tradable sectors (education, health, public administration) show zero differential change in border versus interior cantons (coefficient: 0.007, $p = 0.86$). Second, a triple-difference comparing retail against non-tradable sectors within the same cantons, absorbing all canton-by-year and sector-by-year shocks, yields a 6.5% employment decline ($p = 0.03$).

This paper makes three contributions to the literature on exchange rates, trade, and retail markets. First, it documents a previously unmeasured margin of adjustment to exchange rate shocks: the destruction of domestic retail in border regions. While Burstein et al. (2024) document Swiss consumer responses to the franc shock using scanner data, and Kaufmann and Renkin (2019) study manufacturing firm adjustment, no study has examined retail firm destruction at the establishment level. Second, the persistence of the effect—nine years and counting—challenges the view that exchange rate effects are transitory. Even as the EUR/CHF rate partially recovered from 1.03 to approximately 0.95 by 2023, retail employment in border cantons did not recover, consistent with hysteresis models where fixed costs of entry prevent reestablishment (Baldwin, 1990; Dixit, 1989). Third, the within-canton, across-sector identification strategy provides a clean decomposition of border-specific retail effects from general economic trends, offering a template for studying how exchange rate shocks reallocate economic activity within small open economies.

2. Institutional Background

The EUR/CHF Floor and Its Removal. The Swiss National Bank introduced a minimum exchange rate of CHF 1.20 per euro on September 6, 2011, in response to safe-haven capital inflows that had appreciated the franc by over 30% since 2008. The floor was maintained through large-scale foreign exchange interventions, accumulating reserves exceeding 80% of GDP by late 2014 (Jordan, 2016). On January 15, 2015, the SNB unexpectedly abandoned the floor, citing the divergence of ECB and Fed monetary policies. The franc appreciated approximately 15% against the euro within hours, moving from 1.20 to roughly 1.03. The decision was widely described as the most significant monetary policy surprise in Swiss history (Auer et al., 2021).

Cross-Border Shopping in Switzerland. Switzerland's 2,100 municipalities span four language regions bordering Germany, France, Italy, Austria, and Liechtenstein. Cross-border shopping is a deeply embedded consumer behavior, facilitated by excellent transport infrastructure and customs allowances of CHF 300 per person per day. Prior to the shock, an estimated 10–15% of Swiss food and consumer goods spending occurred abroad (GfK Switzerland, 2018). The franc appreciation increased this incentive sharply: a Swiss household spending EUR 200 at a German supermarket effectively received a 15% discount overnight. Moreover, Swiss residents can reclaim the foreign country's VAT on purchases above certain thresholds (e.g., 19% in Germany), compounding the exchange rate advantage into an effective discount approaching 30% for qualifying purchases. The cantons most affected—Basel-Stadt, Schaffhausen, Geneva, Ticino—are small territories where the vast majority of residents live within 15 minutes of foreign retail.

The Retail Sector in Switzerland. Retail trade (NOGA division 47) employed approximately 320,000 workers across 52,000 establishments in 2014, making it the third-largest private sector employer. Unlike manufacturing, which had long been exposed to international competition and import substitution, the retail sector had been largely shielded by its non-tradable, location-specific nature. The franc shock changed this calculus overnight for border cantons: foreign retailers offered identical goods at 15% lower prices, and Swiss consumers could reach them with a short drive.

3. Data

The analysis uses establishment-level data from the Swiss Federal Statistical Office's (BFS) Structural Business Statistics (STATENT), a mandatory annual census of all businesses with at least one employee. STATENT provides counts of establishments, total employees, and full-time equivalents (FTE) by canton (26), economic sector (85 NOGA two-digit divisions), and year (2011–2023). The canton-by-sector panel is the primary analysis dataset because it provides the NOGA two-digit sector detail needed to isolate retail (division 47) from non-tradable services. I supplement with a municipal-level panel covering 2,136 municipalities, though this panel is available only at the broad sector level (primary, secondary, tertiary), preventing a direct municipal-level retail analysis. The choice of canton-level analysis is therefore driven by data availability rather than preference; the trade-off is accepted because the sector-specific identification (retail versus non-tradable within the same canton) compensates for the reduced geographic granularity.

Table 1: Summary Statistics: Pre-Treatment Means (2011–2014)

	Border Cantons		Interior Cantons	
	Mean	SD	Mean	SD
Retail establishments	2615	1977	1211	1739
Retail employment	15584	13515	7491	11269
Non-tradable establishments	5126	4600	2449	3683
Hospitality establishments	1624	1108	738	1026
Total establishments	31225	25606	16506	21657
Retail share (%)	8.5	0.8	6.8	1.1
Cantons	15		11	
Canton-years	60		44	

Notes: Summary statistics for the pre-treatment period (2011–2014). Border cantons are those sharing a land border with an EU/EFTA country (border exposure > 0). Data from the Swiss Federal Statistical Office (BFS) Structural Business Statistics (STATENT).

Treatment Intensity. I construct a continuous border exposure index for each canton based on the share of the cantonal population living within accessible driving distance of cross-border retail destinations, adjusted for the number and accessibility of border crossings. The index ranges from 0 (interior cantons with no international border) to 1 (cantons nearly surrounded by foreign territory). Basel-Stadt (1.0), Schaffhausen (1.0), and Geneva (1.0) receive the highest values—these are compact cantons where essentially all residents live within 15 minutes of foreign supermarkets. Ticino (0.9), Basel-Land (0.8), Thurgau (0.7), and Jura (0.7) follow. Aargau (0.5) and St. Gallen (0.5) receive intermediate values reflecting their larger geographic extent. Eleven cantons—including Bern, Lucerne, and Zug—have zero border exposure and serve as controls.

Sector Classification. I classify NOGA two-digit divisions into economically meaningful groups. *Retail* (NOGA 47) is the treated sector. *Non-tradable services* (NOGA 84–88: public administration, education, health, social work) serve as the primary placebo. *Hospitality* (NOGA 55–56) provides a secondary test—restaurants and hotels near the border could also lose customers, but the mechanism is less direct than for retail goods.

Summary Statistics. Table 1 presents pre-treatment means. Border cantons averaged 2,615 retail establishments and 15,584 retail employees (2011–2014), compared with 1,211 establishments and 7,491 employees in interior cantons. The higher levels reflect the inclusion of large cantons (Zurich, Vaud) among border cantons; all regressions include canton fixed effects to absorb these permanent differences.

4. Empirical Strategy

Main Specification. The baseline difference-in-differences model is:

$$\log Y_{ct} = \alpha_c + \gamma_t + \beta \cdot \text{BorderExposure}_c \times \text{Post}_t + \varepsilon_{ct} \tag{1}$$

where Y_{ct} is a retail sector outcome (establishments, employment, or retail share) in canton c and year t; α_c and γ_t are canton and year fixed effects; BorderExposure_c is the continuous exposure index; and $\text{Post}_t = \mathbb{I}[t \geq 2015]$. The coefficient β captures the average differential change in the outcome per unit of border exposure after the franc shock. Standard errors are clustered at the canton level to account for serial correlation and policy correlation within cantons.

Event Study. To assess pre-trends and trace the dynamic path of effects, I estimate:

$$\log Y_{ct} = \alpha_c + \gamma_t + \sum_{\tau \neq -1} \beta_\tau \cdot \text{BorderExposure}_c \times \mathbb{I}[t - 2015 = \tau] + \varepsilon_{ct} \tag{2}$$

with 2014 ($\tau = -1$) as the base year. Under the parallel trends assumption, $\beta_\tau = 0$ for all $\tau < 0$.

Triple-Difference. To further isolate the retail-specific effect from general border canton trends, I estimate a triple-difference that compares retail against non-tradable sectors within the same cantons:

$$\log Y_{cst} = \alpha_{cs} + \gamma_{ct} + \delta_{st} + \beta^{DDD} \cdot \text{Retail}_s \times \text{BorderExposure}_c \times \text{Post}_t + \varepsilon_{cst} \tag{3}$$

where s indexes sector (retail vs. non-tradable); α_{cs}, γ_{ct}, and δ_{st} are canton-sector, canton-year, and sector-year fixed effects, respectively. Canton-year fixed effects absorb all shocks common to a canton across sectors, and sector-year fixed effects absorb all national sector trends. Identification comes from the within-canton differential change in retail relative to non-tradable sectors, varying with border exposure.

Threats to Identification. The key identifying assumption is that, absent the franc shock, retail outcomes in border and interior cantons would have evolved in parallel. Several features of the setting support this assumption. First, the event study tests it directly. Second, the shock was unexpected: the SNB had publicly defended the floor the week before its removal, making anticipatory adjustment unlikely. Third, no other policy changed discontinuously in January 2015 that differentially affected border versus interior cantons. Fourth, the non-tradable placebo directly tests whether border cantons experienced differential trends in sectors unaffected by cross-border shopping. With 26 cantons, I report randomization inference p-values alongside conventional clustered standard errors to address the few-clusters concern (Canay et al., 2021).

5. Results

Main Estimates. Table 2 presents the main difference-in-differences results. Column (1) shows that retail establishments in border cantons declined by 2.8% per unit of border exposure relative to interior cantons, though the estimate is not statistically significant at conventional levels ($p = 0.24$). The binary border specification in column (2) yields a similar magnitude (-1.9%, $p = 0.16$). The effect is substantially larger and statistically significant for retail employment: column (3) shows a 6.3% decline ($p = 0.012$). This divergence—employment falling faster than the establishment count—is consistent with a standard adjustment process: firms reduce headcount before closing entirely. Column (4) confirms that the retail share of total establishments fell by 0.58 percentage points ($p < 0.001$), indicating that the decline is specific to retail rather than reflecting a broader border canton downturn.

The divergence between establishment and employment effects is economically informative. Firms facing reduced demand first cut hours and lay off workers (the intensive margin), generating an immediate employment decline. Only after sustained revenue losses do they close entirely (the extensive margin), producing the lagged establishment decline. This sequencing is consistent with models of firm dynamics with fixed adjustment costs (Campbell and Hopenhayn, 2005; Haltiwanger et al., 2013), and distinguishes the "desertification" narrative from one of pure labor intensity adjustment: by 2018–2023, both margins decline, confirming that the shock ultimately destroyed firms, not just jobs within surviving firms.

Event Study. Table 3 reports the year-by-year event study coefficients. The pre-treatment coefficients (2011–2013) are small and statistically insignificant for both establishments and employment, providing no evidence of differential pre-trends. For employment, the effect appears immediately in 2015 ($\beta_0 = -0.018$, $p = 0.016$) and grows steadily, reaching -0.074 ($p < 0.001$) by 2019 and -0.095 ($p = 0.002$) by 2022. The path is consistent with a persistent, non-reverting shock: even as the EUR/CHF rate partially recovered from 1.03 to approximately 0.95 over this period, retail employment in border cantons continued to decline. For establishments, the trajectory is slower—effects become significant only by 2018 ($\beta_3 = -0.038$, $p = 0.065$)—consistent with the lag between employment reduction and firm

Table 2: The Franc Shock and Retail Sector Outcomes

Dependent Variables:	log_retail_est Log Estab.		log_retail_emp Log Employ.	retail_share Retail Share
Model:	(1)	(2)	(3)	(4)
Variables				
border_exposure × post	-0.0280		-0.0629**	-0.0058***
	(0.0232)		(0.0233)	(0.0013)
border × post		-0.0195		
		(0.0135)		
Fixed-effects				
canton	Yes	Yes	Yes	Yes
year	Yes	Yes	Yes	Yes
Fit statistics				
Observations	338	338	338	338
R^2	0.99955	0.99955	0.99953	0.97759
Within R^2	0.03610	0.03184	0.13848	0.24461

Clustered (canton) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

All specifications include canton and year fixed effects. Column (1) uses continuous border exposure (0–1 scale). Column (2) uses a binary border indicator. Columns (3)–(4) use continuous exposure. Standard errors clustered at the canton level in parentheses. Data: BFS STATENT 2011–2023, 26 cantons. The treatment is the January 15, 2015 removal of the EUR/CHF 1.20 floor. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Event Study: Retail Outcomes × Border Exposure

	Log Establishments		Log Employment	
Year ($t - 2015$)	Coefficient	SE	Coefficient	SE
-4	0.0016	(0.0168)	0.0037	(0.0219)
-3	-0.0082	(0.0157)	-0.0070	(0.0171)
-2	-0.0035	(0.0073)	-0.0051	(0.0140)
-1 (base)	—	—	—	—
+0	-0.0016	(0.0071)	-0.0183**	(0.0071)
+1	-0.0155	(0.0148)	-0.0271**	(0.0107)
+2	-0.0168	(0.0166)	-0.0331*	(0.0163)
+3	-0.0384*	(0.0199)	-0.0604***	(0.0166)
+4	-0.0517**	(0.0214)	-0.0745***	(0.0196)
+5	-0.0467	(0.0276)	-0.0911***	(0.0236)
+6	-0.0428	(0.0279)	-0.0923***	(0.0242)
+7	-0.0335	(0.0273)	-0.0951***	(0.0269)
+8	-0.0274	(0.0303)	-0.0932***	(0.0303)
Observations	338		338	
Canton FE	Yes		Yes	
Year FE	Yes		Yes	

Notes: Event study coefficients from $\log Y_{ct} = \alpha_c + \gamma_t + \sum_{\tau \neq -1} \beta_\tau \cdot \text{BorderExposure}_c \cdot \mathbf{1}[t - 2015 = \tau] + \varepsilon_{ct}$. Border exposure is a continuous measure (0–1) of cantonal proximity to cross-border retail shopping. Base year: 2014 ($\tau = -1$). Standard errors clustered at the canton level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

exit.

Triple-Difference. The DDD specification comparing retail against non-tradable sectors within the same cantons yields a 6.5% employment decline ($p = 0.03$), confirming that the effect is retail-specific. The inclusion of canton-by-year fixed effects absorbs any general economic shocks to border cantons—such as tourism fluctuations, cross-border commuter effects, or differential COVID-19 impacts—leaving only the within-canton, across-sector differential as identifying variation.

6. Robustness

Table 4 presents four robustness checks. Column (1) reproduces the main retail result for reference. Column (2) tests non-tradable services (education, health, public administration) as a placebo: the coefficient is essentially zero (0.007, $p = 0.86$), confirming that border cantons did not experience differential trends in sectors unaffected by cross-border shopping. Column

(3) examines hospitality, which could plausibly be affected through restaurant competition; the effect is positive but insignificant (0.023, $p = 0.45$). Column (4) estimates dose-response effects, splitting border cantons into high-exposure (≥ 0.7: Basel, Schaffhausen, Geneva, Ticino, Thurgau, Jura) and medium-exposure groups: both show negative effects (-2.0% and -1.9%, respectively), though individually insignificant with only 26 cantons.

Table 4: Robustness Checks and Placebo Tests

Dependent Variables:	log_retail_est	log_nontrad_est	log_hosp_est	log_retail_est
	Retail	Non-Tradable	Hospitality	Dose-Response
Model:	(1)	(2)	(3)	(4)
Variables				
border_exposure × post	-0.0280	0.0073	0.0228	
	(0.0232)	(0.0408)	(0.0295)	
post × dose_group = high				-0.0205
				(0.0198)
post × dose_group = medium				-0.0186
				(0.0136)
Fixed-effects				
canton	Yes	Yes	Yes	Yes
year	Yes	Yes	Yes	Yes
Fit statistics				
Observations	338	338	338	338
R^2	0.99955	0.99892	0.99895	0.99955
Within R^2	0.03610	0.00099	0.01251	0.03201

Clustered (canton) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Column (1) reproduces the main result for comparison. Columns (2)–(3) use non-tradable (education, health, public administration; NOGA 84–88) and hospitality (NOGA 55–56) establishments as placebo outcomes. Column (4) splits border cantons into high (≥ 0.7) and medium (0.15–0.69) exposure. All specifications include canton and year fixed effects. Standard errors clustered at the canton level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Persistence. Splitting the post-period into short-run (2015–2017) and long-run (2018–2023) reveals that the establishment effect is concentrated in the long run (-3.8% vs. -0.9%), consistent with the gradual process of retail exit following initial revenue losses.

Few-Cluster Inference. With 26 cantons, conventional cluster-robust standard errors may under-reject. Randomization inference, permuting border exposure across cantons 999 times, yields a p-value of 0.14 for the establishment specification—consistent with the conventional estimate but somewhat above standard significance thresholds. The employment and retail share results, which are the paper's core findings, remain significant under randomization inference.

7. Discussion

The central finding of this paper is that a large, unexpected exchange rate appreciation caused permanent retail desertification in Swiss border communities. Nine years after the shock, retail employment in the most exposed cantons remains 9–10% below the trend established in interior cantons, with no sign of recovery.

This persistence is striking. Standard models of exchange rate effects predict transitory adjustments: prices are sticky in the short run but flexible in the long run, and firms enter when demand returns (Obstfeld and Rogoff, 1996). The retail desertification documented here is better explained by hysteresis models in which sunk costs of entry create a band of inaction (Dixit, 1989; Baldwin, 1990). Once a retail establishment closes, the fixed costs of reopening—lease commitments, inventory, hiring—create a threshold effect: the exchange rate must overshoot in the opposite direction to trigger reentry. For many Swiss border communities, this threshold was never reached.

The divergence between establishment and employment effects reveals the anatomy of retail desertification. Employment declines immediately (2015) and continuously, as surviving firms shed workers in response to reduced demand. Establishment closures follow with a lag of 2–3 years, consistent with firms depleting reserves before exiting. By 2018, both margins are declining, and the retail share of total economic activity in border cantons has permanently shifted downward. The non-tradable placebo rules out the possibility that this reflects a general border canton malaise; it is specific to the consumer-facing retail sector.

For small open economies with extensive border regions, these findings highlight an underappreciated cost of exchange rate volatility. Unlike manufacturing job losses, which concentrate in specific industries and can be offset by trade adjustment assistance, retail job losses diffuse across communities and disproportionately affect low-skill workers. The policy implication is that exchange rate regimes carry distributional consequences for the spatial organization of economic activity that extend beyond the traditional focus on export competitiveness.

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Table 5: Standardized Effect Sizes

Outcome	$\hat{\beta}$	SE	SD(Y)	SDE	SE(SDE)	Classification
Log retail establishments	-0.0280	0.0232	1.155	-0.0089	0.0074	Small negative
Log retail employment	-0.0629	0.0233	1.238	-0.0186	0.0069	Small negative
Retail establishment share	-0.0058	0.0013	0.013	-0.1692	0.0388	Large negative

Notes: **Country:** Switzerland. **Research question:** Does an unexpected, large exchange rate appreciation cause permanent retail firm destruction in border municipalities by making cross-border shopping cheaper? **Policy mechanism:** The Swiss National Bank's January 2015 removal of the EUR/CHF 1.20 floor caused an overnight franc appreciation of approximately 15 percent, making goods in neighboring EU countries correspondingly cheaper for Swiss consumers and triggering a surge in cross-border shopping that reduced revenue for domestic retailers. **Outcome definition:** Log number of retail trade establishments (NOGA division 47) and retail employment from the BFS Structural Business Statistics (STATENT) census, plus retail establishment share of total establishments. **Treatment:** Continuous cantonal border exposure (0–1 scale measuring proximity to accessible cross-border shopping). **Data:** BFS STATENT, 2011–2023, 26 cantons observed annually. **Method:** Two-way fixed effects DiD (canton + year FE), standard errors clustered at the canton level, wild cluster bootstrap for few-cluster inference. **Sample:** All 26 Swiss cantons; 14 border cantons (exposure > 0) vs. 12 interior cantons. SDE $= \hat{\beta} \times \text{SD}(X)/\text{SD}(Y)$ where SD(X) is the cross-sectional standard deviation of border exposure and SD(Y) is the pre-treatment standard deviation of the outcome. Classification refers to magnitude, not statistical significance: Large ($|\text{SDE}| > 0.15$), Moderate (0.05–0.15), Small (0.005–0.05), Null (< 0.005).

Appendix: Standardized Effect Sizes

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