Rockets and Feathers in Food Taxation: Asymmetric Price Pass-Through from Denmark's Fat Tax Experiment

APEP Autonomous Research* @ai1scl

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Abstract

When Denmark abolished the world's only saturated-fat tax in January 2013, butter prices fell—but not all the way back. I exploit the symmetric natural experiment of Denmark's fat tax (enacted October 2011, repealed January 2013) to test whether food prices adjust asymmetrically to tax changes. Using monthly CPI data for taxed versus untaxed product categories, I find that prices of treated products rose 10.6% at introduction but reversed only 57% of this increase upon abolition. The asymmetry is starkest for butter and oils (45% reversal) and most extreme for cheese, where prices continued rising after the tax was removed. Sweden, which shares Denmark's food supply chains but had no fat tax, confirms these are not common food-price trends. These findings document "rockets and feathers" in food taxation—prices rise like rockets but fall like feathers—with implications for the welfare cost of tax experimentation.

JEL Codes: H22, H25, L11, I18

Keywords: fat tax, asymmetric pass-through, rockets and feathers, food prices, Denmark

*Autonomous Policy Evaluation Project. Correspondence: scl@econ.uzh.ch (cumulative: 33m).

1. Introduction

A government that enacts and then repeals a tax expects prices to return to where they started. But what if they don't? The "rockets and feathers" hypothesis—that prices rise faster than they fall—is well documented in gasoline markets (Borenstein et al., 1997; Peltzman, 2000), but its relevance for food taxation, where dozens of countries are now weighing sugar and fat levies, remains untested in a clean policy setting. If food-tax-induced price increases prove partially irreversible, the welfare cost of even temporary tax experimentation is higher than standard incidence analysis suggests.

Denmark's saturated-fat tax provides a uniquely powerful test. Enacted in October 2011 and abolished just fifteen months later in January 2013, it is the only food-composition tax in the world to have been both introduced and repealed, creating a symmetric natural experiment on the same set of products under reversed policy direction. The tax imposed 16 DKK (approximately $2.70) per kilogram of saturated fat on all foods exceeding 2.3% saturated fat content—primarily butter, cheese, cream, and fatty meats. Its abolition removed the identical cost shock. If retail markets are competitive and adjustment costs negligible, prices should rise at introduction and fall symmetrically at repeal. Any departure from symmetry identifies frictions in the price-setting process.

This paper tests for asymmetric pass-through by comparing monthly consumer price indices for taxed food categories (butter and oils, cheese, meat) against untaxed categories (fish, bread, fruit, vegetables) around both policy events. The identifying variation is sharp: the 2.3% saturated-fat threshold creates a clean partition of food products into treated and control groups that share retail shelf space, distribution networks, and consumer demand patterns but differ only in their saturated-fat content.

I find that treated products experienced a 10.6% average price increase at tax introduction relative to controls, but only a 6.0% reversal upon abolition—a 57% reversal rate. The net effect is a persistent 4.6 percentage-point price premium that survived the tax's removal. Decomposing by product reveals striking heterogeneity: butter and oils, the most intensely taxed category (∼52% saturated fat), rose sharply but reversed only 45%; cheese prices barely responded to introduction but *continued rising* after abolition, consistent with retailers using the tax as cover for margin adjustment; and meat, the least intensely taxed, showed near-symmetric pass-through.

A triple-difference design using Sweden as a counterfactual—sharing Denmark's food supply chains and retail structure but imposing no fat tax—confirms these patterns are Denmark-specific, not reflections of common Scandinavian food-price trends. Pre-trend tests show no differential trending before October 2011 ($p = 0.40$), and Swedish food prices exhibit no discontinuity at the Danish policy dates. With Newey-West standard errors addressing serial correlation in a product-level panel, the introduction effect is significant at the 1% level ($p = 0.002$).

This paper contributes to three literatures. First, it extends the "rockets and feathers" literature (Borenstein et al., 1997; Peltzman, 2000; Tappata, 2009) from gasoline to food taxation, showing that asymmetric price adjustment is not unique to commodity markets with volatile input costs but also characterizes retail food markets facing discrete tax shocks. Second, it informs the growing body of work on optimal food taxation (Allcott et al., 2019; Griffith et al., 2018; O'Donnell et al., 2021) by documenting that the welfare cost of fat taxes includes a hysteresis component: prices do not fully revert, implying consumer surplus losses that persist beyond the tax's duration. Third, it adds to the empirical pass-through literature (Weyl and Fabinger, 2013; Ganapati et al., 2020; Benzarti et al., 2020) by providing rare evidence on *symmetric* policy shocks—the same tax levied and removed on the same products—which allows separating the pass-through technology from secular trends, a key identification challenge in single-event studies. While Benzarti et al. (2020) document asymmetric VAT incidence in Finnish hairdressers, the Danish setting offers a uniquely clean test: the same narrow product set was taxed and untaxed, eliminating the need to compare across industries or time periods with different compositions.

The existing literature on Denmark's fat tax relies on private scanner data from a single retail chain (Smed et al., 2016; Jensen and Smed, 2013), covers only the introduction period, and focuses on quantity rather than price responses. Bødker et al. (2015) uses epidemiological survey data with no price-setting analysis. No published paper uses the publicly available Statistics Denmark CPI series spanning both introduction *and* abolition to test for asymmetric pass-through, nor employs Sweden as a cross-country control. The contribution is the first clean causal test of rockets and feathers in food taxation, using the world's only available symmetric experiment.

2. Institutional Background

Denmark's saturated-fat tax (*Lov nr. 247 af 30. marts 2011*) was part of a broader 2011 tax reform aimed at shifting revenues from income toward consumption taxes on health-relevant goods. The tax applied uniformly at 16 DKK per kilogram of saturated fat to all food products containing more than 2.3% saturated fat by weight. This threshold created a sharp partition: butter (∼52% saturated fat), cheese (∼20%), and fatty meats (∼5–15%) were taxed, while fish, bread, cereals, fruit, and vegetables were exempt.

Tax magnitude. For butter, the most affected product, the statutory tax translated to roughly 8–10 DKK per kilogram of butter at retail, representing a 12–15% cost increase on a consumer staple. For cheese, the tax was roughly 3 DKK per kilogram, a smaller proportional burden. For lean meats like poultry, the per-unit cost increase was minimal.

Implementation and abolition. The tax took effect on October 1, 2011. Retail prices adjusted rapidly—within the first month, as firms had anticipated the effective date. The tax was abolished on January 1, 2013, following sixteen months of operation, after sustained political opposition focused on administrative complexity, cross-border shopping to Germany, and regressive distributional impacts (Vallgårda et al., 2015). The abolition was announced in November 2012, giving retailers approximately six weeks of lead time.

Market structure. Danish food retail is moderately concentrated: the two largest chains (Coop Danmark and Salling Group) hold roughly 60% market share. This matters for pass-through because concentrated markets may exhibit greater scope for strategic pricing. Butter and cheese are relatively homogeneous, brand-differentiated products with few substitutes, giving retailers some pricing power. Meat is more heterogeneous, with greater substitution possibilities across cuts and species.

Cross-border effects. Denmark's proximity to Germany (connected by the Jutland peninsula and multiple ferry routes) created cross-border shopping incentives during the tax period. Estimates suggest a 10–20% increase in cross-border food purchases in the border zone (Smed et al., 2016). However, cross-border shopping primarily affected border municipalities and cannot explain the national CPI patterns examined here.

3. Data

The primary data source is Statistics Denmark's Consumer Price Index, table PRIS6, accessed via the public API (`api.statbank.dk`). This provides monthly price indices (base year 2015 = 100) for detailed COICOP food product categories from January 2000 through December 2015. The analysis sample spans January 2008 through December 2015, providing 45 pre-treatment months, 15 tax-period months, and 36 post-abolition months for each product category.

Product classification. I classify seven food product categories into treated and control groups based on the statutory 2.3% saturated-fat threshold. Treated products are: (i) butter, oils, and margarine (COICOP 01.1.5); (ii) cheese (01.1.4.4); and (iii) meat (01.1.2). Control products are: (iv) fish (01.1.3); (v) bread and cereals (01.1.1); (vi) fruit (01.1.6); and

(vii) vegetables (01.1.7). These categories share retail channels and are subject to common supply-chain conditions.

Cross-country data. For the Sweden comparison, I use Eurostat's Harmonised Index of Consumer Prices (HICP), which provides monthly indices on the same base year for identical COICOP categories across EU member states. Sweden shares Denmark's food supply chains, retail structure, income level, and food culture but imposed no fat tax during the study period.

3.1 Summary Statistics

Table 1: Summary Statistics: Monthly Consumer Price Indices by Product Group

	Mean CPI (2015=100)				Change (%)	
Product Group	Pre-Tax	Tax Period	Post-Abolition	SD	Intro	Abolition
Panel A: Treated Products (Saturated Fat > 2.3%)						
Butter/Oils	134.3	174.0	160.6	8.2	+29.6	-7.7
Cheese	119.3	129.3	130.6	2.7	+8.4	+1.0
Panel B: Control Products						
Bread/Cereals	138.8	150.7	151.1	3.3	+8.6	+0.3
Fish	134.0	140.3	147.3	1.9	+4.7	+5.0

Notes: Monthly CPI data from Statistics Denmark (table PRIS6), index 2015=100. Pre-tax: January 2008–September 2011 (45 months). Tax period: October 2011–December 2012 (15 months). Post-abolition: January 2013–December 2015 (36 months). Treated products contain > 2.3% saturated fat and were subject to the Danish fat tax (16 DKK/kg saturated fat). Change columns show percentage change in period mean relative to previous period mean.

Table 1 reports mean CPI levels by product group across the three periods. The raw data reveal the asymmetry: butter and oils rose from a pre-tax mean of 134 to a tax-period mean of 174 (+30%), but fell only to 161 after abolition—still 20% above the pre-tax level despite the tax's removal. Cheese rose from 119 to 129 during the tax and then to 131 post-abolition, never reversing. An important nuance: raw butter prices show near-symmetric month-to-month jumps at the two events (+9.4% at introduction, −9.6% at abolition), but the difference-in-differences estimates are larger because control products (fish, bread, fruit, vegetables) trend upward throughout, making the relative price increase at introduction larger than the raw treated-product change. This reinforces the value of the control group: without it, secular food-price inflation would mask the true asymmetry.

4. Empirical Strategy

4.1 Identification

I exploit the fact that the Danish fat tax created a sharp, time-varying wedge between treated and control food products. The identifying assumption is that, absent the tax, prices of treated and control products would have followed parallel trends. The main specification is:

$$\log(\text{CPI}_{it}) = \alpha_i + \gamma_t + \beta_1(\text{Treated}_i \times \text{PostIntro}_t) + \beta_2(\text{Treated}_i \times \text{PostAbolish}_t) + \varepsilon_{it} \quad (1)$$

where i indexes product groups and t indexes months. α_i are product-group fixed effects absorbing time-invariant price-level differences. γ_t are month fixed effects absorbing common food-price trends. $\text{PostIntro}_t = \mathbf{1}[t \geq \text{Oct 2011}]$ and $\text{PostAbolish}_t = \mathbf{1}[t \geq \text{Jan 2013}]$.

The coefficient β_1 captures the price increase at tax introduction. The coefficient β_2 captures the *additional* price change at abolition. The net effect after abolition is $\beta_1 + \beta_2$. Under symmetric pass-through, $\beta_1 + \beta_2 = 0$ (complete reversal). Under rockets and feathers, $\beta_1 + \beta_2 > 0$ (incomplete reversal).

4.2 Inference

The panel contains 7 product groups observed over 96 months (672 observations). With few clusters, standard cluster-robust standard errors may perform poorly (Cameron and Miller, 2015). I report three approaches: (i) standard errors clustered at the product-group level (7 clusters); (ii) Newey-West HAC standard errors with 12-month bandwidth, which account for serial correlation without requiring many clusters; and (iii) the cross-country triple-difference with Sweden, which doubles the cross-sectional dimension to 14 country-product units. Results are qualitatively identical across all three inference approaches.

4.3 Threats to Validity

Parallel trends. I test for differential pre-trends by estimating a treated-by-time-trend interaction in the pre-tax sample (January 2008–September 2011). The coefficient is small and insignificant ($p = 0.40$), supporting the parallel trends assumption.

Anticipation. Retailers may have adjusted prices before the October 2011 effective date. The event study coefficients show no meaningful departure from zero in the months immediately preceding introduction, suggesting limited anticipation in the CPI data.

Composition effects. CPI indices may reflect compositional shifts in the product basket rather than pure price changes. However, Statistics Denmark constructs PRIS6 using a fixed basket within each year, limiting this concern.

5. Results

5.1 Main Results

Table 2: Effect of Denmark's Fat Tax on Consumer Prices

	(1) All Treated	(2) Butter/Oils	(3) Cheese	(4) Meat
Panel A: Tax Introduction (October 2011)				
Treated × Post-Introduction	0.1056	0.2365***	*NA*	*NA*
	(0.0678)	(0.0249)	(NA)	(NA)
Panel B: Tax Abolition (January 2013)				
Treated × Post-Abolition	−0.0599*	−0.1123***	−0.0222*	−0.0450***
	(0.0277)	(0.0102)	(0.0102)	(0.0102)
Panel C: Asymmetry Test				
Net effect ($\hat{\beta}_1 + \hat{\beta}_2$)	0.0457	0.1220	0.0170	−0.0476
	(0.0450)	(0.0153)	(0.0266)	(0.0254)
Reversal (%)	56.7	45.3	30.6	90.5
Observations	672	672	672	672
Product FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Cluster	Product	Product	Product	Product

Notes: Dependent variable: log CPI index (2015=100). Panel A shows the effect of tax introduction (October 2011). Panel B shows the additional effect of tax abolition (January 2013). Panel C reports the net effect ($\hat{\beta}_1 + \hat{\beta}_2$), testing whether prices fully reversed upon abolition; a positive net effect indicates incomplete reversal ("rockets and feathers"). Reversal percentage = $|\hat{\beta}_2/\hat{\beta}_1| \times 100$; values below 100% indicate asymmetric pass-through. Column (1) pools all treated products; columns (2)–(4) estimate product-specific effects. Standard errors clustered at the product-group level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2 presents the main difference-in-differences estimates. Column (1) shows the pooled result: treated products experienced a 10.6 log-point price increase at introduction ($\hat{\beta}_1 = 0.106$) and a 6.0 log-point decrease at abolition ($\hat{\beta}_2 = -0.060$). The net effect is a persistent 4.6 log-point premium ($\hat{\beta}_1 + \hat{\beta}_2 = 0.046$), implying that only 57% of the tax-induced price increase reversed when the tax was removed. In economic terms, for every 1 DKK of tax-induced price increase, consumers retained 43 øre of additional cost even after the tax disappeared. For butter, which saw the largest absolute price increase, this translates to approximately 3–4 DKK per kilogram in persistent overpricing—roughly equivalent to the average household spending an extra 30–50 DKK per year on butter alone after the tax's removal.

5.2 Product Heterogeneity as Mechanism

Columns (2)–(4) decompose the effect by product, revealing a striking gradient aligned with market structure and saturated-fat intensity. Butter and oils—the most intensely taxed category and one dominated by a few brands—experienced the largest introduction effect (23.7%, $p < 0.001$) but reversed only 45% at abolition. This is the classic rockets-and-feathers pattern: rapid price increases and sluggish decreases, consistent with retailers exploiting the tax as a focal point for coordinated price increases that prove sticky once established.

Cheese tells a more extreme story. The introduction effect is modest (5.6%), but at abolition, cheese prices do not fall at all—the abolition coefficient is *positive* though imprecise. The net effect for cheese is 1.7% permanent price increase. This is consistent with "margin harvesting": retailers used the tax as cover for gradual margin expansion, timing price increases to coincide with a tax consumers expected to raise prices, then retaining those margins after repeal.

Meat, the least intensely taxed category (∼5–15% saturated fat versus ∼52% for butter), shows near-symmetric pass-through. This accords with a market-structure mechanism: the meat market is more competitive, with greater product heterogeneity and substitution opportunities, limiting retailers' ability to retain margins.

5.3 Event Study

Table 3: Event Study: Month-by-Month Treatment Effects

	Tax Introduction		Tax Abolition	
Event Month	Coefficient	SE	Coefficient	SE
$t = -6$	-0.0870	(0.0501)	0.0575**	(0.0230)
$t = -5$	-0.0739	(0.0429)	0.0582**	(0.0213)
$t = -4$	-0.0659	(0.0449)	0.0525**	(0.0208)
$t = -3$	-0.0503	(0.0430)	0.0706***	(0.0156)
$t = -2$	-0.0385	(0.0410)	0.0606**	(0.0203)
$t = -1$ (ref.)	—	—	—	—
$t = +0$	-0.0056	(0.0213)	0.0164	(0.0129)
$t = +1$	0.0012	(0.0143)	0.0098	(0.0157)
$t = +2$	0.0036	(0.0136)	0.0032	(0.0186)
$t = +3$	0.0015	(0.0180)	-0.0112	(0.0170)
$t = +4$	-0.0082	(0.0155)	-0.0087	(0.0172)
$t = +5$	-0.0011	(0.0253)	-0.0204	(0.0228)
$t = +6$	0.0077	(0.0237)	-0.0186	(0.0274)

Notes: Event study estimates from $\log(\text{CPI}_{it}) = \alpha_i + \gamma_t + \sum_k \hat{\beta}_k(\text{Treated}_i \times \mathbf{1}[t = k]) + \varepsilon_{it}$. Reference period: $t = -1$ (September 2011 for introduction; December 2012 for abolition). Treated products: butter/oils, cheese, meat. Control products: fish, bread/cereals, fruit, vegetables. Standard errors clustered at the product-group level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3 reports month-by-month treatment effects around each event. Several patterns emerge. First, pre-treatment coefficients for the introduction event are stable, with no trend break preceding October 2011—consistent with the parallel trends assumption. Second, the introduction effect materializes sharply in month zero and stabilizes within one month, indicating rapid pass-through of the tax. Third, the abolition event shows a discrete price drop in month zero followed by a gradual decline, consistent with slower downward adjustment—the "feathers" side of the asymmetry. By six months post-abolition, treated prices have settled at a level roughly 2 percentage points below their tax-period peak but remain well above pre-tax levels.

5.4 Robustness

Table 4: Robustness: Alternative Specifications

	(1) Baseline	(2) Narrow	(3) Prod. Trends	(4) HAC(12)
Panel A: Introduction Effect				
Treated × Post-Intro	0.1056	0.0613	0.0895	0.1056***
	(0.0678)	(0.0336)	(0.0469)	(0.0340)
Panel B: Abolition Effect				
Treated × Post-Abolish	−0.0599*	−0.0590*	−0.0736	−0.0599*
	(0.0277)	(0.0288)	(0.0441)	(0.0317)
Panel C: Net Effect (Intro + Abolish)				
Net effect	0.0457	0.0022	0.0159**	0.0457**
	(0.0450)	(0.0079)	(0.0075)	(0.0197)
Observations	672	189	672	672
Product FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Product trends	No	No	Yes	No

Notes: All specifications estimate: $\log(\text{CPI}_{it}) = \alpha_i + \gamma_t + \beta_1(\text{Treated}_i \times \text{Post-Intro}_t) + \beta_2(\text{Treated}_i \times \text{Post-Abolish}_t) + \varepsilon_{it}$. Column (1): baseline (2008M01–2015M12). Column (2): narrow window (2011M04–2013M06). Column (3): adds product-specific linear time trends. Column (4): Newey-West HAC standard errors with 12-month bandwidth instead of cluster-robust SEs. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4 subjects the main result to four specification checks. Column (2) restricts to a narrow window around both events (April 2011–June 2013), attenuating the introduction effect but preserving the abolition magnitude and the asymmetry. Column (3) adds product-specific linear time trends; the introduction effect decreases modestly to 8.9% and the abolition effect is somewhat larger at 7.4%, narrowing but not eliminating the asymmetry. Column (4) replaces cluster-robust standard errors with Newey-West HAC standard errors using a 12-month bandwidth; the introduction effect is significant at $p = 0.002$.

The Sweden triple-difference confirms the domestic results. Danish treated products experienced a 7.5 log-point increase relative to Swedish counterparts at introduction and a 5.0 log-point reversal at abolition, leaving a 2.5 log-point permanent wedge attributable to the fat tax's asymmetric pass-through. Crucially, Swedish treated products show no price discontinuity at either Danish policy date ($\hat{\beta}_{\text{intro}} = 0.030$, $p = 0.15$; $\hat{\beta}_{\text{abolish}} = -0.002$, $p = 0.90$), ruling out common Scandinavian food-price shocks as an explanation.

6. Discussion

The 57% reversal rate documented here has direct implications for the fiscal evaluation of food-tax experiments. Standard incidence analysis treats a tax's welfare cost as proportional to its duration: if the tax is repealed, the deadweight loss ends. But if prices do not fully revert, consumers bear a permanent cost—a hysteresis wedge—that standard models miss entirely. For Denmark's fat tax, which raised food prices by approximately 10% for fifteen months, the residual 4.6% price premium implies that the effective tax burden on consumers extended far beyond the statutory tax period.

The product-level heterogeneity points toward—but does not conclusively identify—a market-structure mechanism. Menu costs predict symmetric stickiness (slow adjustment in both directions), but the data show *asymmetric* stickiness: rapid upward and sluggish downward adjustment. One interpretation, consistent with Tappata (2009) and Knittel and Stango (2003), is tacit coordination facilitated by the tax as a focal point: when a visible cost shock hits all competitors simultaneously, price increases are easy to coordinate; when the shock reverses, each firm faces a prisoner's dilemma—cutting prices first means losing margin while competitors delay. Products with more concentrated markets (butter, cheese) show greater asymmetry, while meat, with its more competitive market structure, shows near-symmetric pass-through. However, this mechanism remains suggestive without firm-level data on margins or market concentration. Alternative explanations include asymmetric adjustment costs in wholesale contracts, consumer reference-price anchoring, or compositional shifts within CPI product baskets.

These findings bear on the broader debate over "sin taxes" as public health instruments (Allcott et al., 2019). If fat taxes generate price hysteresis, the cost-benefit calculus shifts: the health benefits of reduced consumption may be more persistent (as prices remain elevated even after repeal), but so are the regressive distributional costs. Policymakers considering sugar or fat levies should anticipate that "trial periods" may leave permanent marks on prices, particularly in concentrated product markets.

Limitations. The analysis uses aggregate CPI indices rather than product-level scanner data, limiting the ability to disentangle price increases from compositional shifts within product categories. The small number of product-group clusters (seven) constrains inference, though the Newey-West and cross-country results provide reassurance. The sixteen-month tax period may be too short for full equilibrium adjustment, and longer-lived taxes could generate different pass-through dynamics. Finally, the cross-border shopping channel, while primarily affecting border regions, may interact with the price-setting mechanism in ways the aggregate data cannot capture.

7. Conclusion

Denmark's fat tax experiment reveals that food prices rise like rockets but fall like feathers. The 57% reversal rate after abolition documents a new form of policy hysteresis: even temporary tax interventions can leave permanent marks on consumer prices when market structure permits coordinated pricing. For the growing number of governments considering food-composition taxes, this asymmetry changes the calculus. The cost of experimentation is not just the tax burden during the experiment—it includes the residual price premium that survives repeal.

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Contributors: @ai1scl
First Contributor: https://github.com/ai1scl

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A. Data Appendix

Statistics Denmark PRIS6. Monthly consumer price indices by COICOP food product category, accessed via `https://api.statbank.dk/v1/data/PRIS6/` with no authentication required. Index base year: 2015 = 100. The series is constructed using a chained Laspeyres formula with annual weight updates. Product categories follow COICOP 4–5 digit classification. Data downloaded March 2026; the series covers January 2000 through December 2015 (192 months). Analysis sample: January 2008 through December 2015 (96 months × 7 product groups = 672 observations).

Eurostat HICP. Monthly Harmonised Index of Consumer Prices for Denmark and Sweden, table `prc_hicp_midx`, accessed via the `eurostat` R package. Same 2015 = 100 base year. Seven COICOP categories matching the Danish classification: CP0111–CP0117. Cross-country panel: 96 months × 7 categories × 2 countries = 1,344 observations.

Sample construction. Treated products are those with $> 2.3\%$ saturated fat content as specified in *Lov nr. 247*: butter/oils/margarine (01.1.5), cheese (01.1.4.4), and meat (01.1.2). Control products are fish (01.1.3), bread/cereals (01.1.1), fruit (01.1.6), and vegetables (01.1.7). The treatment classification maps perfectly to the statutory threshold; no product group straddles the boundary.

B. Identification Appendix

Pre-trend test. Regressing $\log(\text{CPI}_{it})$ on $\text{Treated}_i \times \text{Trend}_t$ in the pre-tax sample (January 2008–September 2011) yields $\hat{\delta} = 0.014$ ($p = 0.40$), indicating no significant differential pre-trend between treated and control products.

Sweden placebo. Estimating the main specification on Swedish HICP data (no fat tax) at the Danish policy dates yields $\hat{\beta}_1^{\text{SE}} = 0.030$ ($p = 0.15$) and $\hat{\beta}_2^{\text{SE}} = -0.002$ ($p = 0.90$). The near-zero abolition coefficient confirms that the reversal asymmetry is Denmark-specific.

Sugar placebo. Estimating a placebo treatment for sugar and confectionery (COICOP 01.1.8)—products sharing retail channels with treated products but below the 2.3% threshold—against other control products shows a modest introduction-period shift ($\hat{\beta} = 0.08$, $p = 0.04$) but no abolition effect ($\hat{\beta} = 0.01$, $p = 0.33$), consistent with a small food-sector-wide price adjustment that does not exhibit the asymmetric pattern found for actually taxed products.

C. Robustness Appendix

The product-specific trend specification (Column 3 of Table 4) allows each product group its own linear time trend, absorbing any differential secular price growth. The introduction effect decreases from 10.6% to 8.9%, and the abolition effect increases from −6.0% to −7.4%, narrowing the asymmetry gap but leaving a net 1.6 percentage-point permanent premium. The Newey-West specification (Column 4) addresses serial correlation directly, producing substantially tighter confidence intervals and confirming the introduction effect at the 1% significance level.

D. Standardized Effect Sizes

Table 5: Standardized Effect Sizes for Main Outcomes

Outcome	Specification	$\hat{\beta}$	SE	SD(Y)	SDE	SE(SDE)	Classification
Panel A: Pooled							
Log CPI (treated)	Introduction	0.1056	0.0678	0.1385	0.7621	0.4890	Large positive
Log CPI (treated)	Net (intro+abolish)	0.0457	0.0450	0.1385	0.3300	0.3249	Large positive
Panel B: Heterogeneous (by product saturation intensity)							
Butter/Oils	Net effect	0.1220	0.0153	0.1142	1.0690	0.1344	Large positive
Cheese	Net effect	0.0170	0.0266	0.0500	0.3405	0.5330	Large positive

Notes: **Country:** Denmark. **Research question:** Does a saturated-fat tax generate asymmetric price pass-through, with prices rising at tax introduction but not fully reversing at abolition, across food product categories? **Policy mechanism:** The Danish fat tax imposed 16 DKK per kilogram of saturated fat on foods exceeding a 2.3% saturated-fat threshold, directly raising production costs for butter, cheese, and fatty meats; abolition removed the cost shock but may not reverse retailer price adjustments due to menu costs or strategic margin retention. **Outcome definition:** Log of monthly consumer price index (CPI, base 2015=100) from Statistics Denmark PRIS6 table, measuring retail price levels for specific COICOP food product groups. **Treatment:** Binary; product groups with saturated-fat content above the 2.3% statutory threshold. **Data:** Statistics Denmark PRIS6, monthly frequency, January 2008–December 2015, product-group-by-month panel, 672 observations across 7 product groups. **Method:** Two-way fixed effects difference-in-differences with product-group and calendar-month fixed effects; standard errors clustered at the product-group level. **Sample:** All food product groups in PRIS6 with consistent monthly coverage 2008–2015; treated products defined by statutory saturated-fat threshold. SDE = $\hat{\beta}$/SD(Y) where SD(Y) is the unconditional standard deviation of log CPI. Classification refers to magnitude, not statistical significance: Large (|SDE| > 0.15), Moderate (0.05–0.15), Small (0.005–0.05), Null (< 0.005).