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California Retail Pork Prices and Consumption Two Years into the Proposition 12 Implementation

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In January 2024, California fully implemented Proposition 12, which imposes minimum confinement standards for breeding sows and restricts the sale of non-compliant pork products within the state. This white paper evaluates the impact of Proposition 12 on California's retail pork market. Using high-frequency scanner-level retail data, the analysis estimates changes in retail pork prices and consumption volumes in California relative to national trends. Results indicate substantial and persistent price increases for regulated pork cuts. California's share of national pork consumption declined across all major products, with no signs of recovery during the post-policy period. Econometric assessment finds that Proposition 12 increased California's pork prices by 20 percent and reduced pork consumption by 15 percent. Robustness checks using exempt products show minimal change in prices or volumes, supporting the policy-specific nature of the results. Overall, the findings suggest that Proposition 12 led to lasting changes in California's pork market, characterized by higher retail prices and reduced consumption.

This white paper examines the impact of Proposition 12 on California's retail pork market, with a particular emphasis on changes in retail prices and consumption volumes relative to national trends. Previously, Hawkins, Arita, and Meyer (2024) analyzed the price and consumption impacts during the first year of implementation, documenting substantial market disruptions in California's pork sector. This white paper extends that analysis, drawing on high-frequency retail data covering July 2022 to June 2025, providing a detailed dataset that includes a full year before enforcement and over two years following implementation. This scope enables the examination of both short-term disruptions and longer-term market responses. To identify the causal effects of Proposition 12, the white paper employs a difference-in-differences framework, using national market trends as a counterfactual to control for broader economic forces. The results provide evidence on how regulatory supply constraints influence price formation, consumer behavior, and structural market outcomes in a large, policy-relevant region.

Key Insights

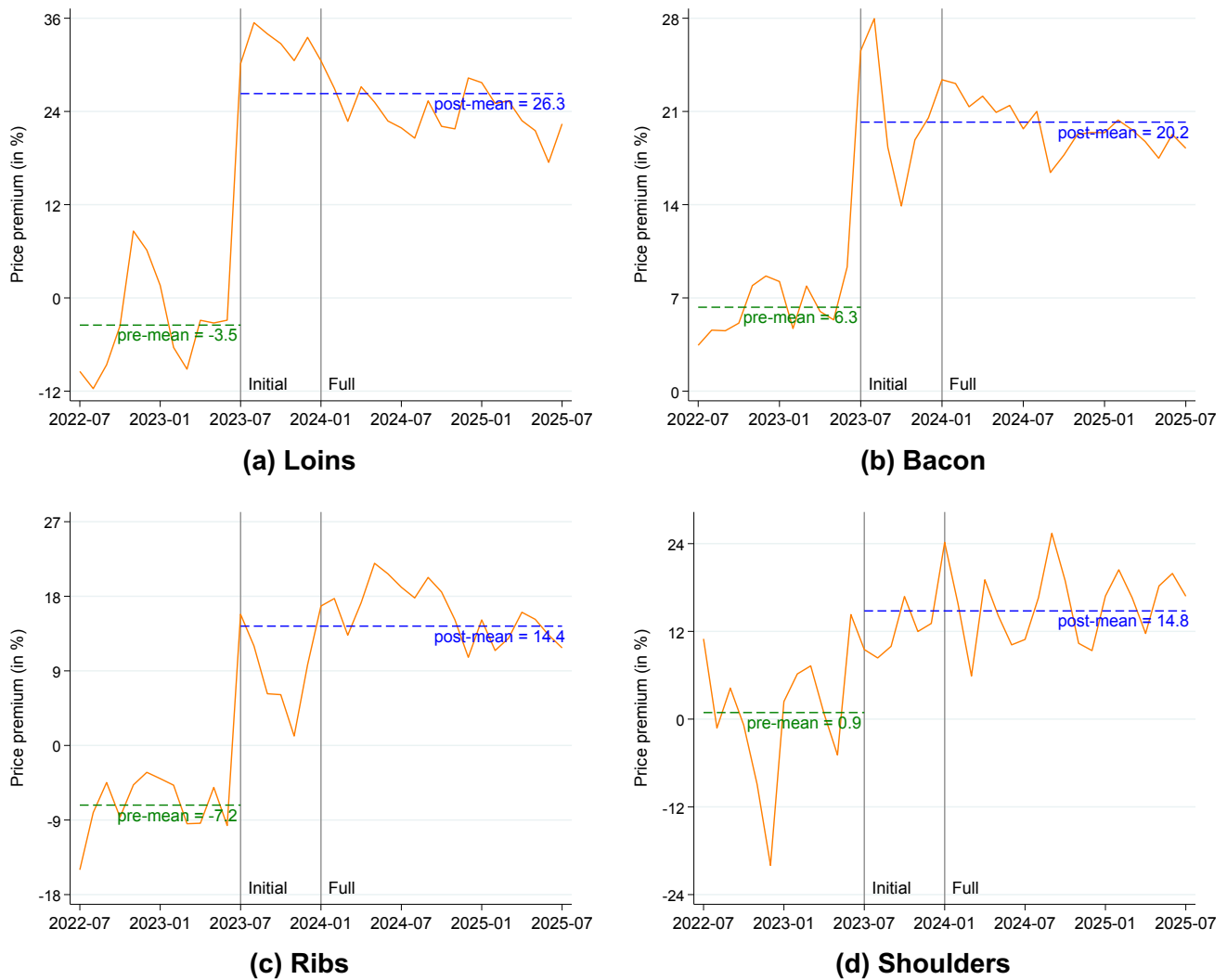
- Updated data through June 2025 indicate that the impacts of Proposition 12 on California's pork market have been both substantial and persistent. Price premiums and reduced consumption volumes have continued well beyond the initial enforcement period.
- Retail pork prices in California have increased markedly across all major product categories. Price premiums have reached approximately 30 percent for loins, 21 percent for ribs, and 14 percent for both shoulders and bacon. Rather than diminishing over time, these elevated price levels have remained stable throughout the two-year implementation period.
- California's share of national pork consumption has declined significantly since the implementation of this policy. The state's overall volume share fell from 8.8 percent before Proposition 12 to 7.5 percent after enforcement. The largest declines occurred in ribs and loins, the same cuts that are facing the steepest price increases.
- No signs of market recovery are evident. California's pork volume shares have stabilized at these lower levels through mid-2025, suggesting that the combination of higher prices and limited availability has produced lasting structural changes in consumption, rather than a short-term adjustment.
- Preliminary econometric estimates, controlling for national trends and unrelated market forces to isolate the impact of Proposition 12, show that:
 - Retail pork prices in California are significantly higher due to Proposition 12. On average, prices for regulated products are approximately 20 percent higher, with loins up 32 percent, ribs 22 percent, shoulders 18.5 percent, and bacon 12.9 percent.
 - Proposition 12 reduced California pork consumption substantially, with total loin purchases down 31 percent, ribs down 21 percent, and shoulders and bacon each down 12 percent. Overall consumption volumes have declined by approximately 15.4 percent.
 - Both price and volume effects have remained consistent throughout the post-enforcement period, with no evidence of attenuation over time.
- The results highlight how supply-side regulations, such as Proposition 12, can lead to persistent changes in market structure by increasing retail prices and reducing consumption over an extended period.

Changes in California Price Premiums Surrounding Proposition 12

Figure 1 shows how Proposition 12 affected California pork prices relative to national benchmarks across four major product categories: bacon, shoulders, ribs, and loins. The analysis uses Circana scanner data from July 2022 to June 2025 to calculate weekly price premiums, defined as the percentage difference between California retail prices and national averages for the same product and week.

Positive premiums indicate higher prices in California; negative values indicate lower prices. This approach provides a consistent measure of how price differentials evolved before and after enforcement. The data reveal apparent shifts in relative pricing following the implementation of Proposition 12, with several products moving from below-average prices to sustained premiums.

Figure 1. California Retail Price Premiums Before and After Proposition 12 Implementation.



Source: NDSU-ARPC & USDA-OCE using data from Circana.

California grocery prices are generally higher than national averages due to higher operating costs (e.g., labor, real estate, etc.). Pork follows this pattern; even before Proposition 12 took effect, most cuts were sold at a modest premium in the state. However, some products, particularly ribs and loins, were priced below the national average before implementation. This likely reflects differences in product composition or consumer preferences unique to the California market. The key question is not whether California prices were higher overall, but whether the price gap changed once Proposition 12 began to constrain the supply of compliant pork.

Table 1 presents the change in average price premiums between the pre-implementation period (July 2022 to June 2023) and the post-implementation period (July 2023 to June 2025). The figures represent simple averages of the weekly premiums shown in **Figure 1**.

Table 1. Average Changes in California Retail Pork Price Premiums Due to Proposition 12.

Cut	Pre-Policy Premium	Post-Policy Premium	Pre vs Post Policy Change (percentage points)
Loins	-4 percent	+26 percent	+30
Bacon	+6 percent	+20 percent	+14
Ribs	-7 percent	+14 percent	+21
Shoulders	+1 percent	+15 percent	+14

Source: NDSU-ARPC & USDA-OCE using data from Circana.

Summary of Retail Price Changes for Major Pork Cuts in California

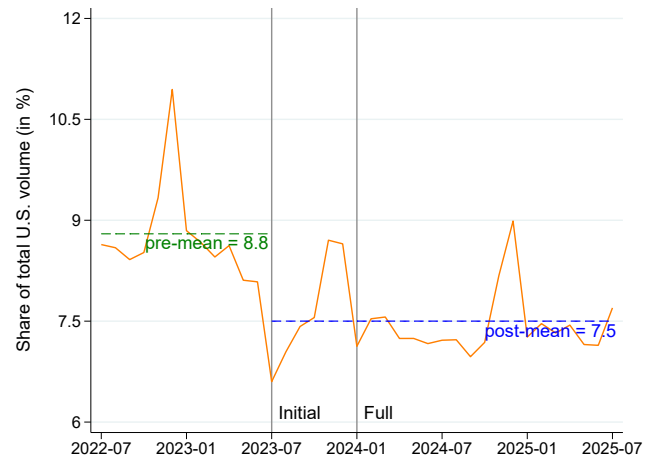
- Loins had the most pronounced change. Before Proposition 12, loin prices were 4 percent below the national average. Following enforcement, the average premium rose to 26 percent, a 30 percentage-point increase that represents the largest jump among the four product categories.
- Bacon was priced approximately 6 percent above the national average before Proposition 12, reflecting California's generally higher food costs. Following enforcement, the premium increased to approximately 20 percent and remained within the 12 to 20 percent range through June 2025.
- Ribs began the pre-policy period priced about 7 percent below the national average, likely due to regional preferences in product composition. After enforcement, the price of ribs shifted to a 14 percent premium, marking a 21 percentage-point increase and a clear shift in relative pricing.
- Shoulders were near price parity before implementation, with an average premium of 1 percent. After enforcement, prices rose and stabilized at a 15 percent premium.

Changes in California Pork Consumption Before and After Proposition 12

California's adoption of Proposition 12 led to measurable shifts in pork consumption within the state. Reduced availability of compliant pork and sustained price increases have contributed to a decline in California's share of national pork consumption. These changes appear persistent rather than transitory, reflecting broader adjustments in consumer behavior. **Figure 2** presents California's monthly share of total U.S. pork consumption from July 2022 to June 2025, while **Figure 3** breaks out changes in the volume shares for the top four product categories: loins, bacon, ribs, and shoulders, and **Table 2** summarizes the changes in purchase volumes before and after the implementation of Proposition 12.

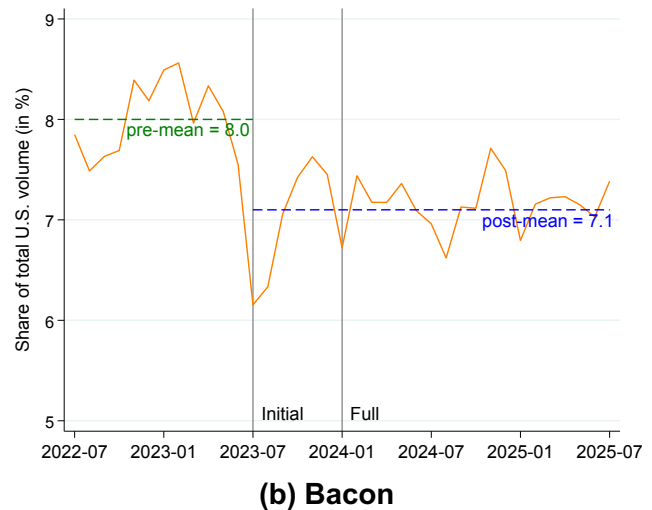
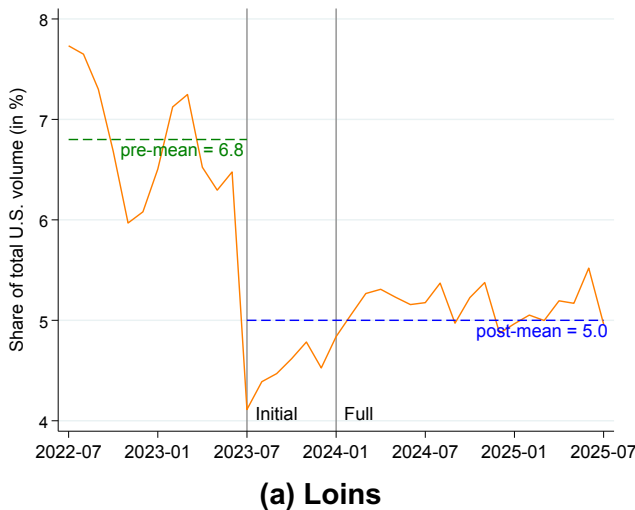
In the year preceding enforcement, California accounted for approximately 8.8 percent of the national pork volume. Following the implementation of Proposition 12 in July 2023, this share began to decline steadily. By late 2024, California's share had dropped to around 7 percent before stabilizing at approximately 7.5 percent in early 2025. Although modest seasonal increases are observed around the holiday period, these do not reflect a broader recovery. Instead, the data show a consistent downward trend that has persisted throughout the enforcement period. This decline suggests that the combination of elevated retail prices and limited availability of compliant products has led to a structural reduction in pork demand.

Figure 2. California's Share of Total U.S. Pork Consumption.

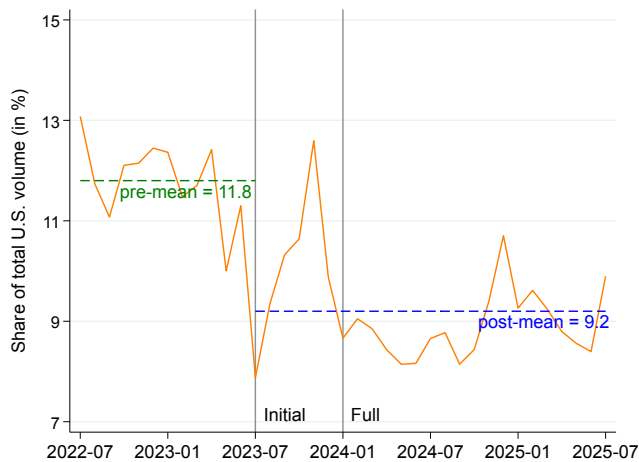


Source: NDSU-ARPC & USDA-OCE, using Circana Data.

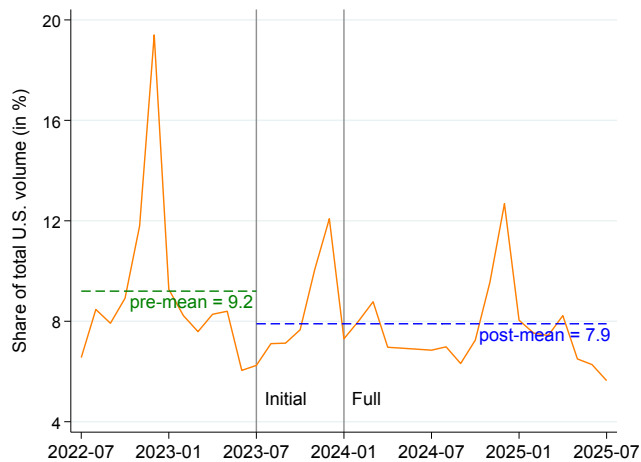
Figure 3. California's Share of U.S. Pork Consumption for the Top 4 Pork Products.



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(c) Ribs



(d) Shoulders

Source: NDSU-ARPC & USDA-OCE using data from Circana.

Table 2. Changes in California Market Shares Due to Proposition 12.

Product	Pre-Policy Market Share	Post-Policy Market Share	Pre vs Post Policy Change (percentage points)
Aggregate	8.8 percent	7.5 percent	-1.3
Loins	6.8 percent	5.0 percent	-1.8
Bacon	8.0 percent	7.1 percent	-0.9
Ribs	11.8 percent	9.2 percent	-2.6
Shoulders	9.2 percent	7.9 percent	-1.3

Source: NDSU-ARPC & USDA-OCE using data from Circana.

Summary of Consumption Share Changes for Major Pork Cuts in California

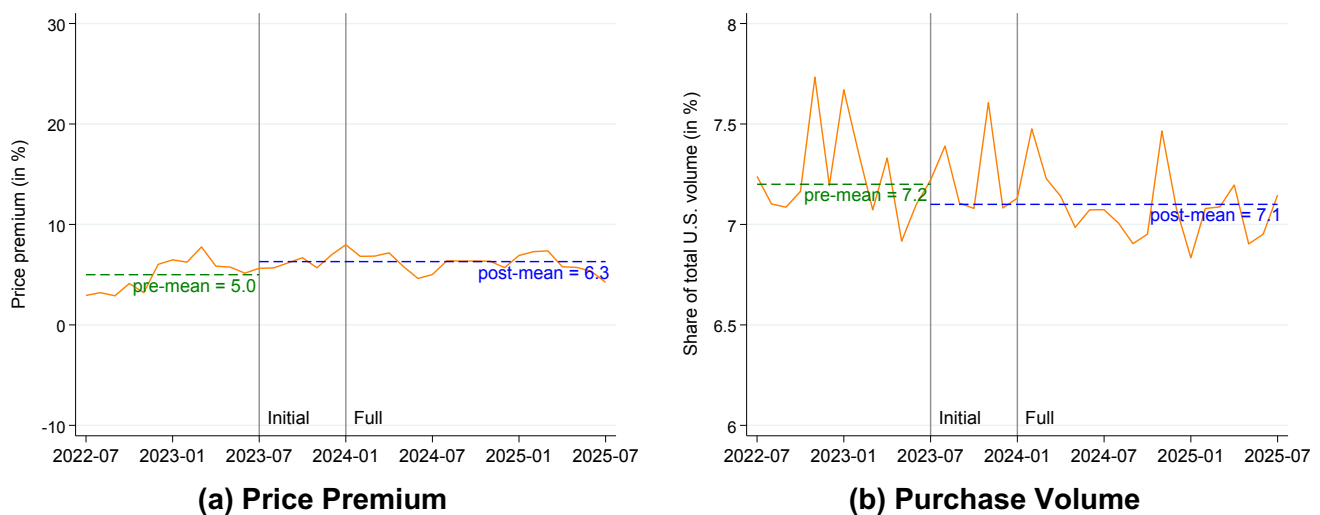
- Loins showed a significant reduction in consumption share. The state's portion of national loin volume declined from 6.8 percent to 5.0 percent, a decrease of 1.8 percentage points.
- Bacon recorded the smallest but persistent decline, with California's share dropping from 8.0 percent to 7.1 percent.
- Ribs experienced the largest decline in market share. California's share of national rib consumption fell from 11.8 percent before Proposition 12 to 9.2 percent after enforcement. This 2.6 percentage point drop reflects the most pronounced shift among the four major cuts.
- Shoulders also contracted, with California's share falling from 9.2 percent to 7.9 percent. The 1.3 percentage point decline suggests a sustained response to post-policy market conditions.

Pork Sausages as a Robustness Check

To assess whether the observed effects of Proposition 12 are specific to regulated pork products, we conduct a robustness check using sausage, a pork product explicitly exempt from Proposition 12's confinement requirements. Since sausage is not subject to the same compliance restrictions, it serves as a helpful comparison for identifying broader market trends unrelated to the policy. Panel (a) shows the retail price premium for sausage in California relative to the national average, while panel (b) displays California's share of national sausage volume from July 2022 through June 2025.

Figure 4 shows minimal change in sausage market outcomes following the enforcement of Proposition 12. As indicated in panel (a), the average retail price premium for sausage increased slightly, from 5.0 percent before enforcement to 6.3 percent afterward. This small change contrasts with the sharp and persistent price increases observed for regulated cuts such as loins and ribs. Panel (b) confirms the stability in consumption patterns. California's share of national sausage volume remained nearly flat, with a pre-policy average of 7.2 percent and a post-policy average of 7.1 percent. Unlike regulated products, sausage did not experience a meaningful drop in volume share during the post-enforcement period.

Figure 4. Price Premiums and Consumption Volumes for Pork Sausages in California.



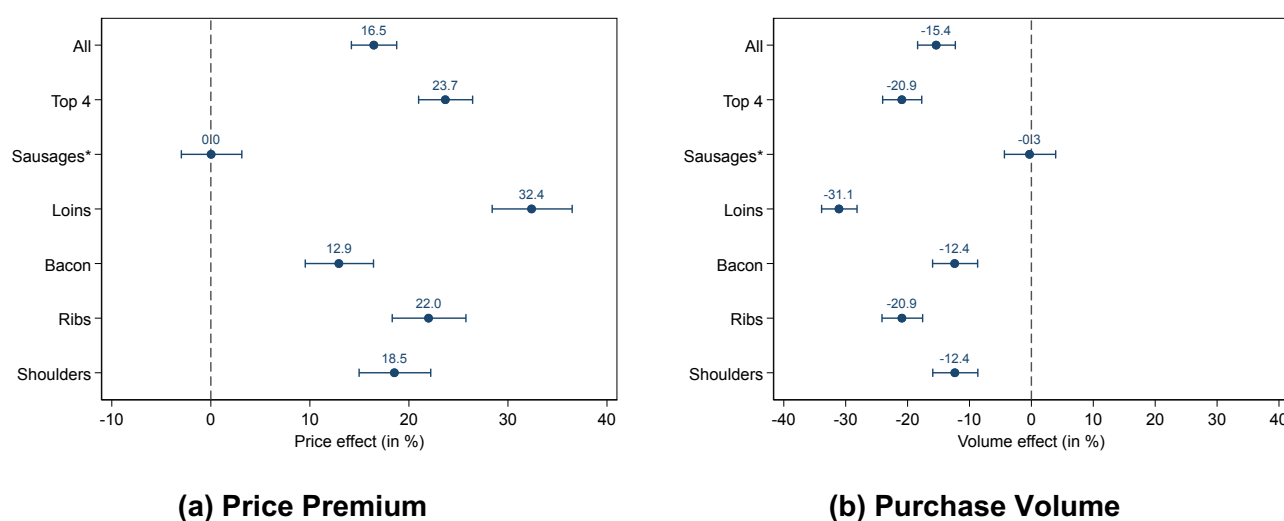
Source: NDSU-ARPC & USDA-OCE using data from Circana.

Econometric Estimates of Proposition 12 Effects on Retail Prices and Purchase Volumes

To move beyond simple descriptive comparisons and isolate the causal impact of Proposition 12, we estimate a difference-in-differences model using weekly scanner-level data. This method compares changes in retail pork prices and purchase volumes in California before and after enforcement with

those in the rest of the United States over the same period. By accounting for shared national trends and unrelated market shocks, the analysis provides a clearer estimate of the policy’s direct effects. **Figure 5** presents the main results. Panel (a) displays the estimated price effects, while panel (b) shows the corresponding changes in weekly purchase volumes. Both panels summarize the average treatment effects for all pork products and for the four major regulated cuts: loins, bacon, ribs, and shoulders, along with the one unregulated cut: sausages.

Figure 5. Econometric Effects of Proposition 12 on Retail Pork Prices and Purchase Volumes in California.



Source: NDSU-ARPC & USDA-OCE using data from Circana.

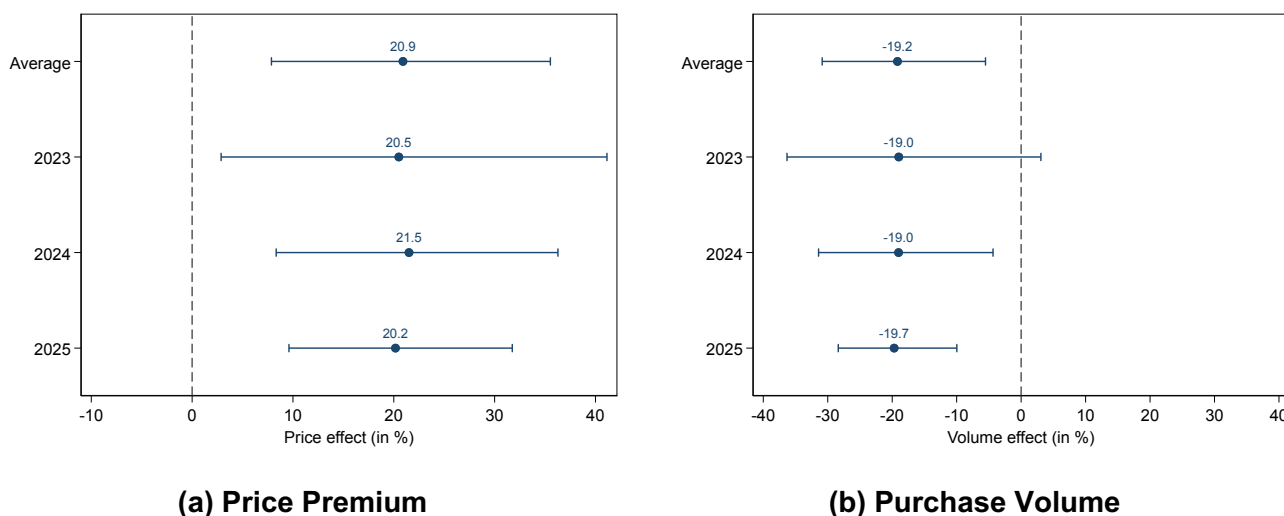
The estimates indicate that retail pork prices in California rose significantly following the implementation of Proposition 12. Across all pork products, prices increased by an average of 16.5 percent relative to national trends. When the analysis is restricted to the four regulated cuts, the average price effect increases to 23.7 percent. Among these products, loins saw the highest increase at 32.4 percent, followed by ribs at 22.0 percent, shoulders at 18.5 percent, and bacon at 12.9 percent. In contrast, prices for sausages, which is exempt, showed no statistically significant change, reinforcing the interpretation that the observed price increases were linked to the regulatory requirements.

Estimated volume effects reveal a similar pattern. Total pork consumption in California declined by 15.4 percent relative to the rest of the country. For the four regulated cuts, purchase volumes fell by 20.9 percent. Loins experienced the largest decline at 31.1 percent, followed by ribs at 20.9 percent. Volumes for shoulders and bacon dropped by 12.4 percent each. These declines are statistically significant and persist across the full post-enforcement period. The combined estimates confirm that Proposition 12 led to sustained price increases and meaningful reductions in pork consumption within

California. The magnitude and persistence of these effects suggest a structural shift in both supply and demand rather than a short-term market adjustment.

Figure 6 shows how retail pork prices and sales volumes in California changed each year following the implementation of Proposition 12. Panel (a) highlights the price effects for the top 4 pork products (loins, bacon, ribs, and shoulders). Prices rose sharply after enforcement began in July 2023, increasing by about 20.2 percent in the first year. These higher price levels continued into 2024 and 2025, rising slightly to 20.5 and 21.5 percent, with no sign of decline. This pattern suggests that neither supply chains nor retailers have adjusted enough to offset the cost increases from the new requirements. Panel (b) shows the corresponding effects on sales volumes. The data reveal steady declines in pork purchases across all three years: down 19.2 percent in 2023, 19.0 percent in 2024, and 19.7 percent in the first half of 2025. These results point to a lasting drop in pork consumption following the policy, with no signs of recovery in the short term.

Figure 6. Year-by-Year Changes in California Pork Prices and Sales After Proposition 12.



Source: NDSU-ARPC & USDA-OCE using data from Circana.

Conclusion

Two years into the enforcement of Proposition 12, scanner-level retail data provide strong evidence that the policy has had measurable and sustained effects on California's pork market. Retail prices for regulated pork products rose significantly compared to national benchmarks, with the largest increases observed for loins and ribs. These elevated price levels have remained stable across the two-year post-enforcement period, showing no signs of attenuation. At the same time, California's market share of national pork consumption has declined across all major product categories, suggesting persistent changes in purchasing behavior.

The volume effects are consistent with a structural shift in consumer demand. California's share of U.S. pork consumption fell substantially after enforcement, especially for the products that experienced the steepest price increases. Econometric estimates confirm these patterns, indicating that the observed price and volume effects are statistically significant and attributable to the policy rather than broader market forces. Results from a robustness check using sausages, a pork product exempt from Proposition 12, showed minimal changes in either price or consumption, reinforcing the causal nature of the policy impact.

Together, the evidence suggests a durable shift in California's pork market. The combination of higher compliance costs, constrained supply, and reduced consumer demand has reshaped both pricing structures and consumption patterns. As California continues to implement animal welfare standards through its retail channels, this case provides a clear example of how regulatory interventions can influence food markets through both price and volume channels. Future analysis will examine the wholesale and farm-level price effects of Proposition 12, assessing their impacts on other aspects of the supply chain and whether these effects persist or evolve as supply chains continue to adapt.

References

Hawkins, Hannah, Shawn Arita, and Seth Meyer. 2024. "Proposition 12 Pork Retail Price Impacts on California Consumers." *ARE Update* 27(3): 5–8. University of California Giannini Foundation of Agricultural Economics.

Disclaimer

This report is intended to inform ongoing discussions about the retail market effects of California's Proposition 12. The findings are based on available retail scanner data and preliminary econometric analysis covering the period from July 2022 through June 2025. While the report may be cited or shared, it may not reflect subsequent changes in policy, supply chain dynamics, or market conditions. The analysis, findings, and conclusions represent the interpretation of the authors and do not necessarily reflect the views of the U.S. Department of Agriculture, Circana, or any affiliated institution. The authors are solely responsible for any errors or omissions. Users of this report are encouraged to consult additional data sources and expert perspectives when forming policy, legal, or business decisions.

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