# Price Ceilings and Market Outcomes: Lessons from the Israeli Dairy Market

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Israeli Economic Association
June 2026

# Motivation: The Rising Cost of Living

- **Concentrated product markets**
  In the US, the median HHI for consumption goods and services is 2045, indicating substantial market concentration (Benkard et al., Forthcoming)
- **High and rising markups**
  Average markups increased from 21% in 1980 to 61% in 2016 (De Loecker et al., 2020)
- **High global cost of living (IMF, 2023)**
  91% of respondents report concern about their cost of living (OECD, 2023)

Can price ceilings be part of the solution to high prices in concentrated markets?

# In This Project

We use the unique setting of the Israeli dairy market to study impacts of targeted price ceilings in concentrated product markets on:

**Research questions**

- **price and quantity of the regulated product**
- **price and quantity of substitute products**

**Approach**

- Use episodes of **deregulation** and the **reintroduction** of price ceilings
- Trace the responses of **regulated products** and **substitute products**

# Price Ceilings?

- Old textbook model: Yes, (Robinson, 1933; Bronfenbrenner, 1947)
- However, a widely held view in economics is captured by Milton Friedman:

*"Economists may not know much, but we know one thing very well: how to produce surpluses and shortages. Do you want a shortage? Have the government legislate a maximum price that is below the price that would otherwise prevail."*

Friedman and Friedman (1980), Free to Choose

- **Good Intentions, Bad Outcomes** – Generate distortions and shortages, and harm economic growth through misallocation

  (Guénette, 2020, World Bank working paper)

# Price Ceilings in Imperfectly Competitive Markets - Theory

- In markets with market power, a binding price ceiling set above marginal cost can lower prices and increase output.

- **Beyond the textbook**
  - Ceilings can act as **focal points** that facilitate tacit coordination
    (Schelling, 1960; Scherer and Ross, 1990; Knittel and Stango, 2003)
  - Ceilings compress price dispersion, weaken **search incentives**, and therefore raise average prices
    (Fershtman and Fishman, 1994; Armstrong, 2015)
  - Firms can **adjust quality** and product mix in response to regulation
    (Leffler, 1982; Besanko et al., 1987; Raymon, 1983)

# Empirical Evidence - Regulated Goods

- **Short run price reductions.** Housing (Sims, 2007; Diamond et al., 2019; Kholodilin, 2024); Food retail (Aparicio and Cavallo, 2021; Mužić and Žilić, 2024); Pharma (Dean, 2025; Li and Wu, 2022)
- **Price increases (focal points).** Energy (Sen et al., 2011; Martin and Verboven, 2025); Credit cards (Knittel and Stango, 2003); Food retail (Genakos et al., 2018); Pharma (Li and Wu, 2022).
- **Shortages and misallocation.** Housing (Glaeser and Luttmer, 2003; Diamond et al., 2019; Kholodilin, 2024); Energy (Agarwal and Deacon, 1985; Davis and Kilian, 2011); Credit (Dasgupta and Mason, 2020).

## Our Contribution - Long-Run Evidence

- We provide unusually long-run documentation of impacts of price ceilings.

# Empirical Evidence - Substitute Goods

- **Existing evidence**

  **Substitution toward uncontrolled goods.** Food retail (Aparicio and Cavallo, 2021; Mužić and Žilić, 2024); Housing (Autor et al., 2014; Diamond et al., 2019).

  **Price increases** Housing (Autor et al., 2014; Diamond et al., 2019).

  **Price decreases** Pharma (Gupta and Cao, 2025)

## Our Contribution

- Prices of unregulated substitutes respond in the same direction as regulated, with stronger co-movement among closer substitutes.

# Preview of Findings

- **Regulated products**

  Prices rise after deregulation and fall by more than 20% after price ceilings are reintroduced.

  These effects are persistent over time.

  Quantities do not decline after regulation; in white cheese, they increase substantially.

- **Unregulated substitutes**

  Prices of close substitutes also respond to regulation and deregulation, with stronger co-movement among closer substitutes.

# Why the Israeli Dairy Market?

**A relevant case**

- Highly concentrated, like many grocery categories: soft drinks, cereals, frozen vegetables, etc.

**A uniquely useful setting**

- Common and transparent input costs
- Rich variation in price ceiling regulation
- Close substitutes for studying spillovers

# The Dairy Products Supply Chain

**Market structure**

- Few large producers, alongside smaller firms
- Product-level variation in concentration and regulatory status

**Policy environment**

- Limited import competition due to tariffs, Kosher constraints, and technological barriers
- Price ceilings on selected dairy products
- Several products deregulated, with some later reinstated during 2000-2025

# Data

- **StoreNext data** (2006–2024): monthly prices and quantities from retail transactions, observed at the branded product–store-type–month-year level and aggregated to the national level across six store types
- **CBS data** (1990–2025): branded product–store–month-year observations for selected high-consumption products, used to extend price series over a longer horizon
- **Institutional data**: official retail price ceilings and the raw milk target price
- **Product coverage**: white cheese, whipping cream, semi-hard yellow cheese, UHT milk, and desserts with and without whipped cream

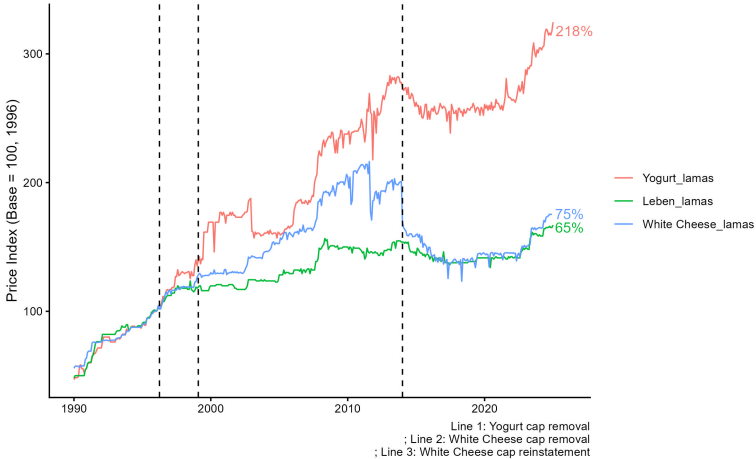
# Empirical Strategy

- **Current evidence:** product-specific analyses around deregulation and the reintroduction of price ceilings, tracing price and quantity responses of regulated products and close substitutes
- **Planned extensions:** pooled panel analysis, cost-based counterfactual price paths, and explaining heterogeneity in price responses using own- and cross-price elasticities

# Preliminary Results - Long-Run Price of the Regulated Products

35 years of price trends for close substitutes: white yogurt, leben, and white cheese

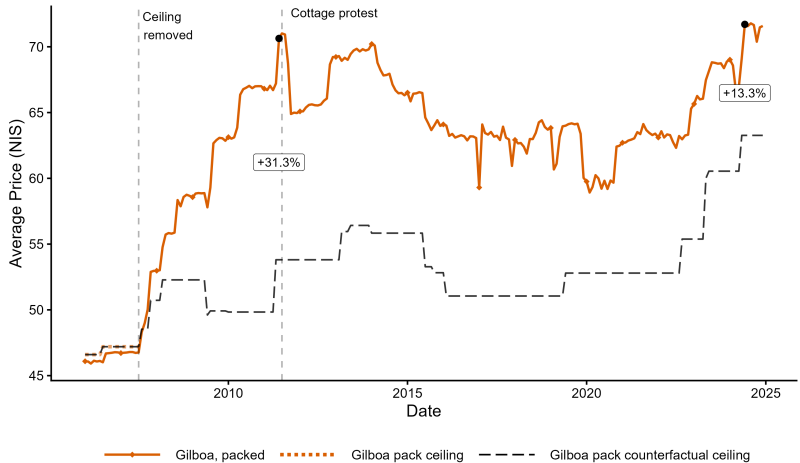
Deregulated yogurt prices rose by 150% more than regulated products with similar production costs




*Source: CBS aggregated data. Prices indexed to the pre-deregulation mean.*

# Long-Run Price of the Regulated Products

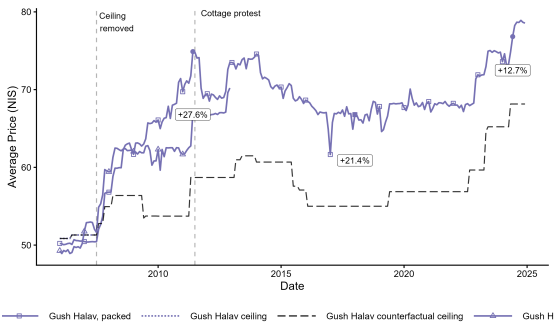
The price increased by 31% above counterfactual following deregulation, later declining to 13%

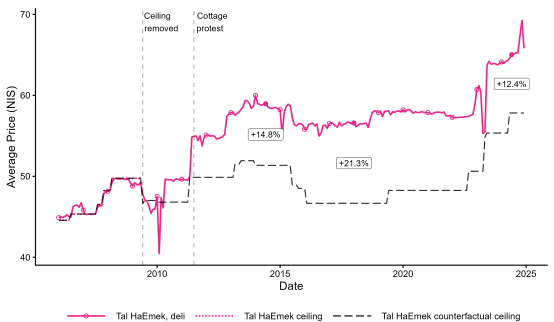



*Source: StoreNext data. Prices are expressed per kilogram.*

# Long-Run Price of the Regulated Products

## Similar patterns appear in other yellow-cheese products

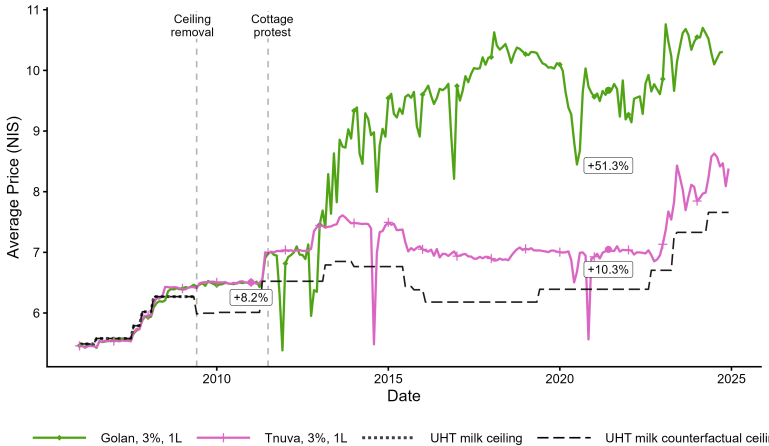



*Source: StoreNext data. Prices are expressed per kilogram.*

# Long-Run Price of the Regulated Products

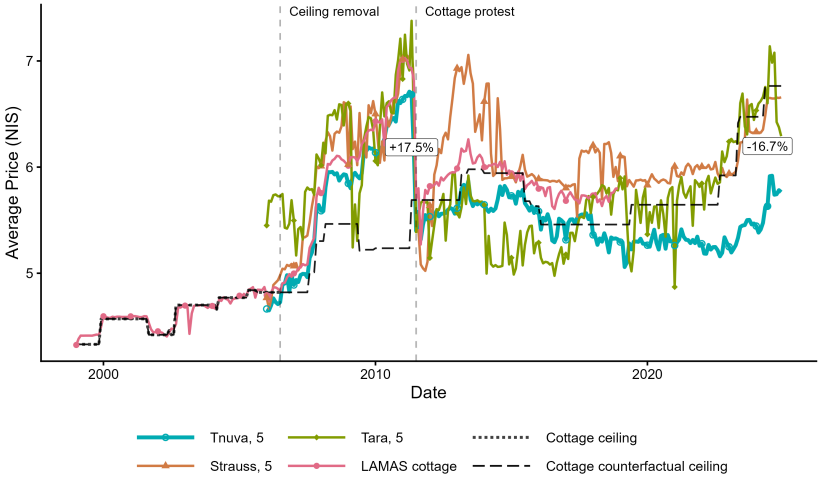
## UHT milk remains close to the price of regulated fresh milk - smaller impact of deregulation for leader




*Source: StoreNext data. Prices in ILS per liter. Percentages indicate price difference from synthetic counterfactual.*

# Long-Run Price of the Regulated Products

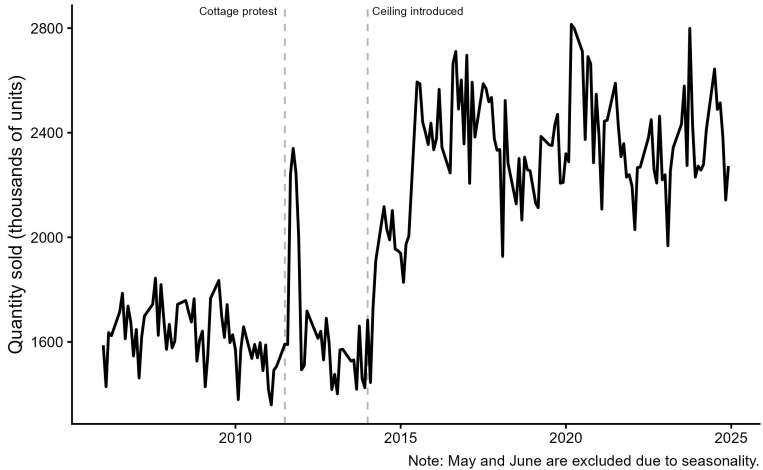
## Cottage cheese




*Source: StoreNext data. Prices are expressed per 250-gram container.*

# Long-Run Quantity Effects of Price Ceilings

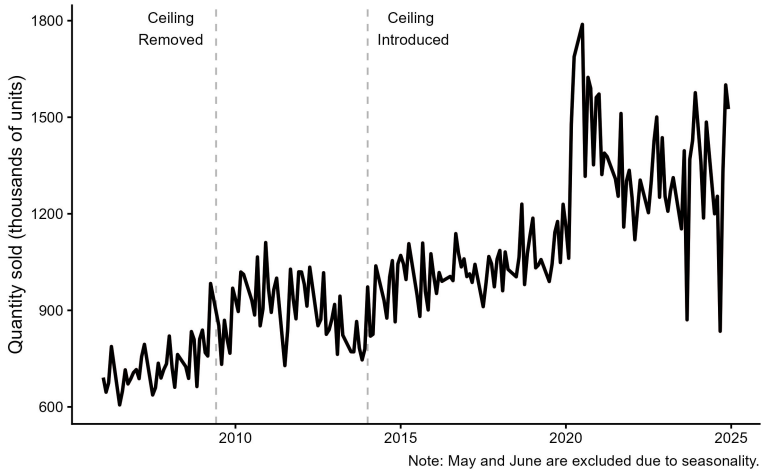
White cheese quantities increase after the reintroduction of price ceilings




*Source: StoreNext data.*

# Long-Run Quantity Effects of Price Ceilings

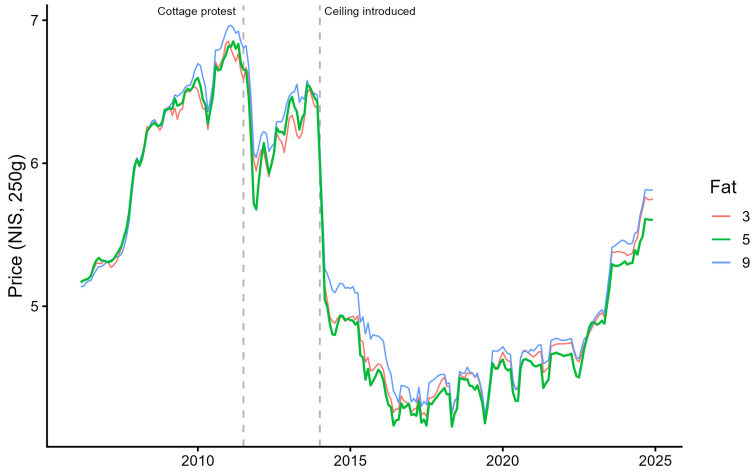
Cream quantities show a moderate increase following the reintroduction of price ceilings




*Source: StoreNext data.*

# Price Responses of Substitute Products

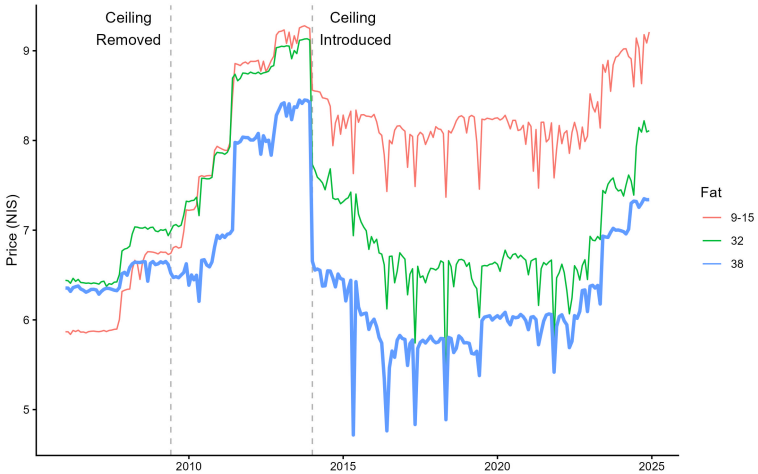
Prices of unregulated white cheese products move closely with the regulated 5% product




*Source: StoreNext data.*

# Price Responses of Substitute Products

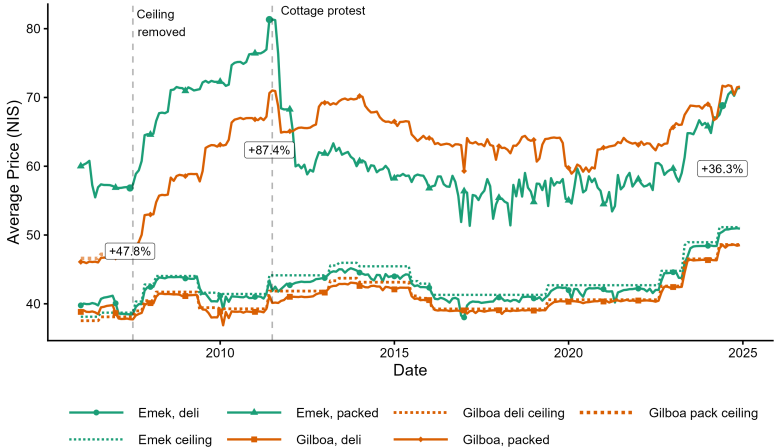
Prices of unregulated cream products also respond, with stronger co-movement among closer substitutes




*Source: StoreNext data. Prices are in ILS per 250-gram carton.*

# Price Responses of Substitute Products

Unregulated Emek prices (28% fat, packed) surge after Gilboa (22% fat, packed) is deregulated




*Source: StoreNext data. Prices are in ILS per kg. Percentages indicate the price difference between never regulated packed Emek and the always-regulated deli Emek.*

# Summary

## Main findings

- Price ceilings reduce the prices of regulated products, with persistent effects
- We do not find evidence of quantity reductions following regulation
- Prices of substitute products also respond, especially among closer substitutes

## Policy implications

- Price ceilings can compress markups without persistent shortages
- Regulating a prominent product can affect prices beyond the regulated good

# Thank you

Comments welcome

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