

Can Governments Affect Tax Incidence?

Evidence from a Large VAT Cut in Argentina

Youssef Benzarti
UCSB & NBER

Santiago Garriga
Univ. Nac. de La Plata

Dario Tortarolo
Nottingham & IFS

Imperial College London

October 18, 2022

VAT cuts have gained ground amidst rising inflation

- ▶ VAT has become a common policy tool used to affect the economy
- ▶ EU Parliament amended the EU VAT Directive in April 2022
→ grants EU countries flexibility to Δ VAT rates
- ▶ The IMF called for govts to avoid temporary VAT cuts on fuels, elect or food as an attempt to \downarrow the impact of fast-rising inflation

VAT 'inflation' cuts are on the rise

Several countries ↓ VAT rates on a scale not seen before

E.g., for food:

1. **Poland:** 0% on basic food
2. **Bulgaria:** 0% on basic food
3. **Lithuania:** 0% on food from August
4. **North Macedonia:** 0% on basic foodstuff
5. **Romania:** considers cutting foodstuff VAT to 0%
6. **Belgium:** considers cutting fruit and vegetables VAT to 0%
7. **Bosnia:** cut foodstuff VAT from 17% to 5%
8. **Croatia:** cut foodstuff VAT from 13% to 5%
9. **Latvia:** cut foodstuff VAT from 21% to 5%
10. **Turkey:** cut foodstuff VAT from 8% to 1%
11. **Greece:** cut foodstuff VAT from 24% to 13%
12. **Others:** Spain, Italy, Germany, Ireland, Austria, Slovakia

- ▶ Governments often state **specific goals** when cutting VAT rates:
 - ▶ (i) $\downarrow P$ and $\uparrow \text{demand}$, (ii) $\uparrow \text{cash flow/profits}$, (iii) $\uparrow \text{wages}$

E.g., EU Parliament:

"overall, the deal struck by the Council (...) maintains the flexibility for Member States to lower VAT on essential products to benefit low-income households and, as such, tackle the regressiveness of the VAT system"

- ▶ Governments often state **specific goals** when cutting VAT rates:
 - ▶ (i) $\downarrow P$ and $\uparrow \text{demand}$, (ii) $\uparrow \text{cash flow/profits}$, (iii) $\uparrow \text{wages}$

E.g., EU Parliament:

"overall, the deal struck by the Council (...) maintains the flexibility for Member States to lower VAT on essential products to benefit low-income households and, as such, tackle the regressiveness of the VAT system"

- ▶ Implicitly assume that **govts can affect tax incidence**.
Yet little is done to achieve these policy goals

VAT incidence is complicated

Standard model: pass-through of VAT changes to prices

- No role for the government!
- Determined by the relative magnitude of demand/supply elast

VAT incidence is complicated

Standard model: pass-through of VAT changes to prices

- No role for the government!
- Determined by the relative magnitude of demand/supply elast

In practice, it's much more complicated:

- **Limited vs full pass-through** (Benzarti & Carloni, 2019; Kosonen, 2015; Gaarder, 2018; Buettner & Madzharova, 2021; Fuest et al., 2021)
- **Asymmetry and price hysteresis** (Benzarti et al., 2020)
- **Heterogeneity** (e.g., large vs small restaurants) (Harju et al., 2018)

VAT incidence is complicated

Standard model: pass-through of VAT changes to prices

- No role for the government!
- Determined by the relative magnitude of demand/supply elast

In practice, it's much more complicated:

- **Limited vs full pass-through** (Benzarti & Carloni, 2019; Kosonen, 2015; Gaarder, 2018; Buettner & Madzharova, 2021; Fuest et al., 2021)
- **Asymmetry and price hysteresis** (Benzarti et al., 2020)
- **Heterogeneity** (e.g., large vs small restaurants) (Harju et al., 2018)

⇒ These issues substantially complicate using temporary VAT cuts as a policy tool. **Can governments do something about it?**

Can governments affect tax incidence? Yes. But...

This paper

We empirically show that:

- Tax incidence can be affected by govts in spite of the relative elasticities
- But may miss target population due to unexpected incidence effects

Can governments affect tax incidence? Yes. But...

This paper

We empirically show that:

- Tax incidence can be affected by govts in spite of the relative elasticities
- But may miss target population due to unexpected incidence effects

⇒ We exploit a **large and temporary VAT cut** on basic food in Argentine supermarkets along with a variety of govt “mandates”

Can governments affect tax incidence? Yes. But...

This paper

We empirically show that:

- Tax incidence can be affected by govts in spite of the relative elasticities
- But may miss target population due to unexpected incidence effects

⇒ We exploit a **large and temporary VAT cut** on basic food in Argentine supermarkets along with a variety of govt “mandates”

⇒ **Goal:** contain the impact of a ~24% currency devaluation on prices following a surprising presidential primary election

► Timeline

→ Ensuring that the VAT cut was passed on to prices was essential

Reform: a 4.5-month long VAT holiday on basic food

- **VAT cut:** unanticipated, large, salient, and temporary

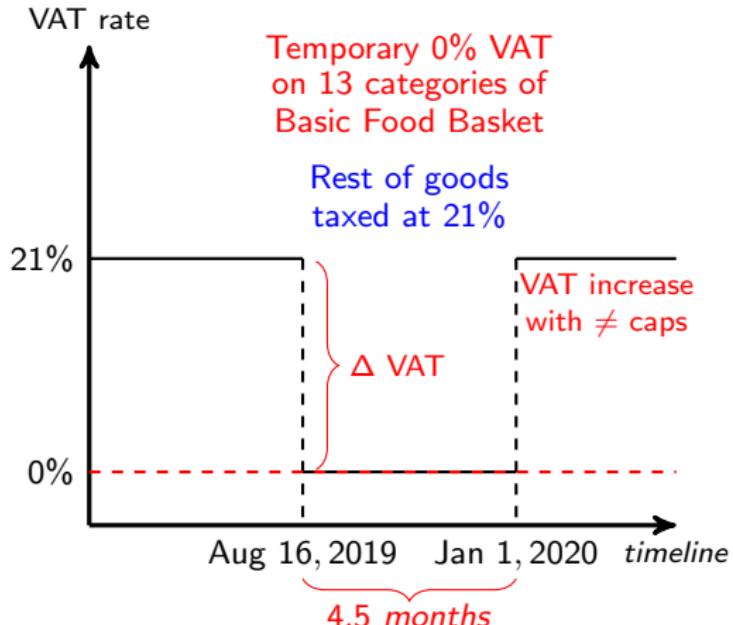
→ Govt urged *full* pass-through to P

- **VAT increase:** back to 21%

→ Govt imposed caps on how much P could increase (0%, 7%, or no cap)

- **Price monitoring system:**

→ In chain supermarkets only



Barcode-level scanner data with P and Q

Treatment	Control
Temporary 0% VAT	Standard 21% VAT
Categories	Categories
Cooking oils (sunflower, corn, mix)	Other cooking oils (olive, soy, canola)
Rice	Rice-based meals
Dried pasta	Breakfast cereal
Tea, Yerba Mate, and Mate Cocido	Coffee
Sugar	Salt
Canned vegetables and beans	Herbs, Spices, & Seasonings
Canned fruits	Dulce de leche (caramel)
Corn flour (<i>polenta</i>)	Jam and Jelly
Wheat flour	Other flours
Fluid milk (whole/skim)	Crackers, Biscuits, Toasts, Puddings
Yogurt (whole or skim)	Chocolate
Eggs	Mayonnaise
Bread	Vinegar
Breadcrumbs and/or batter	Dried legumes and beans

Notes: Wheat flour and bread are taxed at the reduced rate of 10.5%.

Source: Decree 567/2019 - Annex (IF-2019 - 73155740-APN-SCI#MPYT).

Data: Grocery Stores

[1] Supermarket scanner data (Scentia)

- ▶ (1) Large chains (e.g., Walmart), (2) Small independent stores
 - Period: Jan'2018 – Jun'2021 (182 weeks, 42 months)
 - Vars: barcode, description, price, quantity, total sales, 10 regions
- E.g., *Twinings English Breakfast Tea – 25 Bags*

[2] Panel of shoppers & Household Expenditure Survey

- ▶ To analyze distributional effects (8 income groups)
Period: January 2018 – June 2021 - monthly frequency

[3] Price control data (2014-2020)

- ▶ We built a database with all barcodes and regulated prices from '*Precios Cuidados*' and '*Productos Esenciales*'

Empirical strategy: Diff-in-Diffs

Run a dynamic DiD comparing **T (0% VAT)** and **C (21% VAT)**:

$$Y_{it} = \alpha_i + \gamma_t + \sum_{\substack{t=2019w32 \\ t \neq 2020w10}} \beta_t D_{it} + \epsilon_{it}$$

- ▶ Y_{it} : **PRICE** (weighted average across stores) or **QUANTITY** (total sold)
- ▶ $Y_{it^*} = 100$ (outcomes normalized to 100 for each barcode i on 2019w32)
- ▶ D_{it} : indicator for whether barcode i is treated in week t
- ▶ β_t : estimate the difference btw T and C relative to $t^* = 2019w32$
- ▶ We use a balanced panel of $\approx 5,000$ barcodes

The VAT abolition was very salient

August 16, 2019
(1 day post announcement)

LA NACION

Macri eliminó el IVA de 14 alimentos y congeló las cuotas de los créditos UVA

ECONOMÍA. Alcancía a productos de la canasta básica, como leche, pan, yerba, harina y arroz; regirá hasta diciembre; igual que la suspensión del aumento de los préstamos hipotecarios

importante que resultó en la integración de la Bucrana dentro del distrito de la Provincia de Tucumán. Los resultados fueron más allá de los resultados obtenidos por las autoridades en los años 1980 y 1990; en su mayoría se realizó una estrategia a la clase media y media-baja. Tuvo impacto en la población rural y en las ciudades de Mburucuyá y San Pedro de Atacama, que generaron cambios en la forma de vida y en la cultura de la población rural y urbana.

ALEMÁN	
Vocabulario en pdf	
Monos para escuchar	Página 1
Lengüetas para comprender	
extrañas	Página 1
Brasil conmemorando	
Monserrate por Cristina	
Alberto Arromella	Página 1

Dólar: cayó por primera vez desde las PASO

Influyó una medida del Central para Fernández, \$600 en un precio lógico

La inflación de diciembre llegó hasta 15% ayer, se presentó en la noche la sentencia, luego de haber tenido un 10% en noviembre y en octubre, hace diez días que el Banco Central utilizó su flexibilidad y desmanteló su sistema monetario en favor de los mercados que crecían. El 10% convierte a un promedio de \$650,72 en una tasa oficial de precios.

En tanto, el presidente Alberto Fernández continúa buscando medidas que frenen la inflación que ya superó los precios "controlados". Tanto es que el jefe de Estado, presentó

Presión militar china a Hong Kong



卷之三十一

Ejecutaron a
tres hombres

Devaluación. Cómo se protegen los clubes

...and so was the VAT increase with ≠ caps

January 2, 2020
(2 days after VAT was reintroduced)

Clarín

Series 2020

Lo que llega en enero

Las flores más espesas, y las más nominadas, para ser en cable y en las últimas plataformas.

A partir de hoy, con la excepción de la leche

Aumentan hasta 10,5% los productos de la canasta básica por la vuelta del IVA

El Gobierno aumentó con un procedimiento y sorprendió al mercado al trasladar al consumo las alzas de la IVA que se retrasaron a principios de año. Se acuerda un grupo de controles

Mes, que llegaron a 400 al mesero. Exigen que se retrasen a la siguiente factura el 7% en gas licuado, yerba, agua, arena, aceite de cocina y harina. Hasta junio, el 9% en aceites y 10,5% para el resto.

Por Gustavo Alzaga. Al sur (Buenos Aires) tienen cara de fiero. Los turistas que se acercan a playas



Con mal clima y buen panorama la Costa arrancó su temporada

En medio del mal clima que ha dominado la costa este, la actividad turística sigue así, aunque se ha visto impactada por la falta de turistas que algunas visitan a Rosario y Uruguay. En Mar del Plata, los reservados para el verano ya están casi agotados y se acercan a 80%. Los servicios

seguirán promocionando y ofreciendo descuentos para el resto del año. En los últimos días, el presidente Macri se reunió con el gobernador para lo que resta de la semana para abordar, aunque se

espera que sea en febrero, la situación de emergencia. Telén 000 264 413

Jueves 2.1.2020
EDICIÓN ARGENTINA - PÁGINA 10

Sin heridos por pirotecnia en el Instituto del Quemado

En la noche de Fin de Año y por primera vez desde 1982,

Nisman: Alberto dice ahora que no hay pruebas para afirmar que haya asesinado

El Presidente ya habló sobre la gestión de Gendarmería, que no protegió neither la maratón de larga distancia ni el maratón de fondo. El secretario de Convención constituyente criticó que las investigaciones de la comisión de justicia y seguridad no estuvieran a la altura. Dijo que si se

El presidente ya habló sobre la gestión de Gendarmería, que no protegió neither la maratón de larga distancia ni el maratón de fondo. El secretario de Convención constituyente criticó que las investigaciones de la comisión de justicia y seguridad no estuvieran a la altura. Dijo que si se

seguían pidiendo más pruebas para

acabar con la impunidad, se

seguiría demandando

que se siga demandando

It was also highly publicized in stores (mandatory banners/tags)



Preview of findings

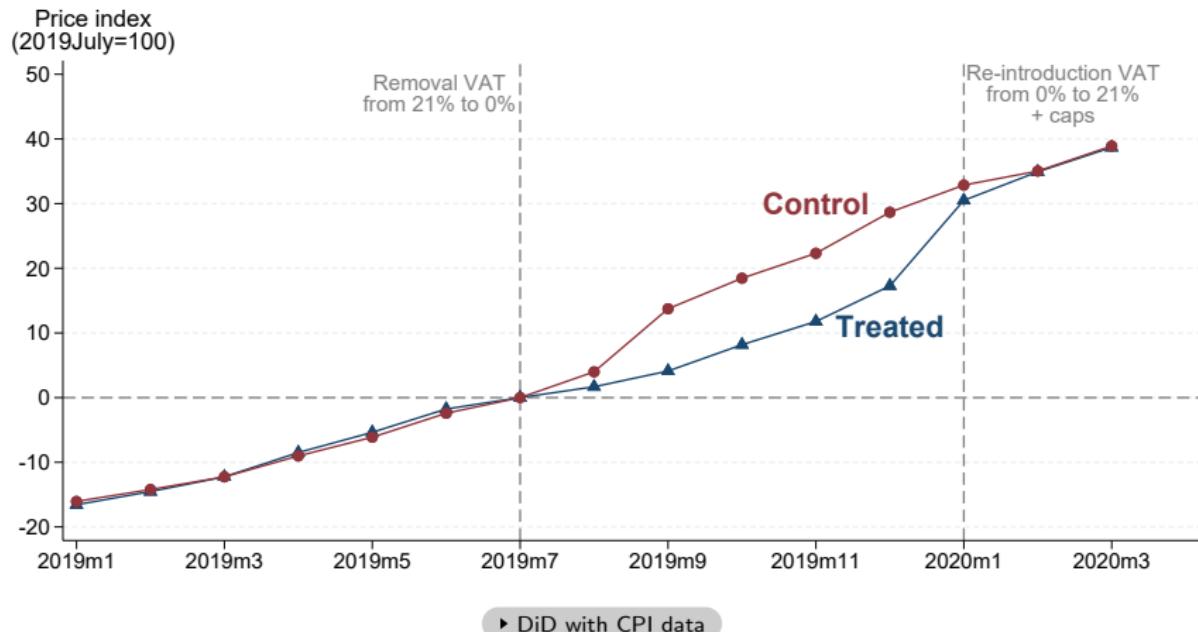
- ▶ A large portion of the VAT cut, $\approx 60\%$, is passed on to lower prices
 - ▶ Price mandates were successful at ensuring gradual price increases when the VAT cut was repealed
 - ▶ Pass-through rate of the VAT cut in chain supermarkets is 2x that of small stores where, we show, low-income households are more likely to shop at
- ⇒ While the govt was successful at engineering a price decrease using the VAT cut, it partially failed to reach the target population

Outline

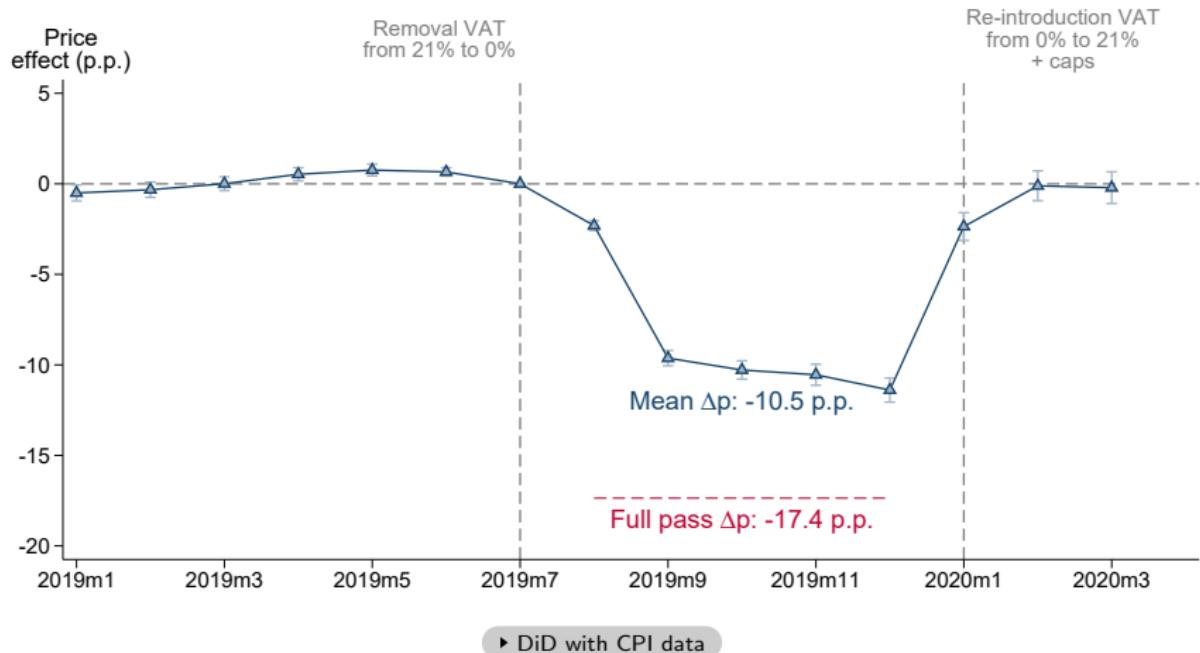
1. Scanner data: Small & Large grocery stores
2. Empirical strategy: Diff-in-Diffs
3. Results
 - 3.1. Price responses pooling all stores
 - 3.2. Split up into large vs small stores
 - 3.3. VAT increase with capped pass-through rates
 - 3.4. Quantity responses (inter-temporal substitution)
 - 3.5. (Unintended) distributional effects

Price responses pooling
large and small stores

Price levels in Large + Small supermarkets

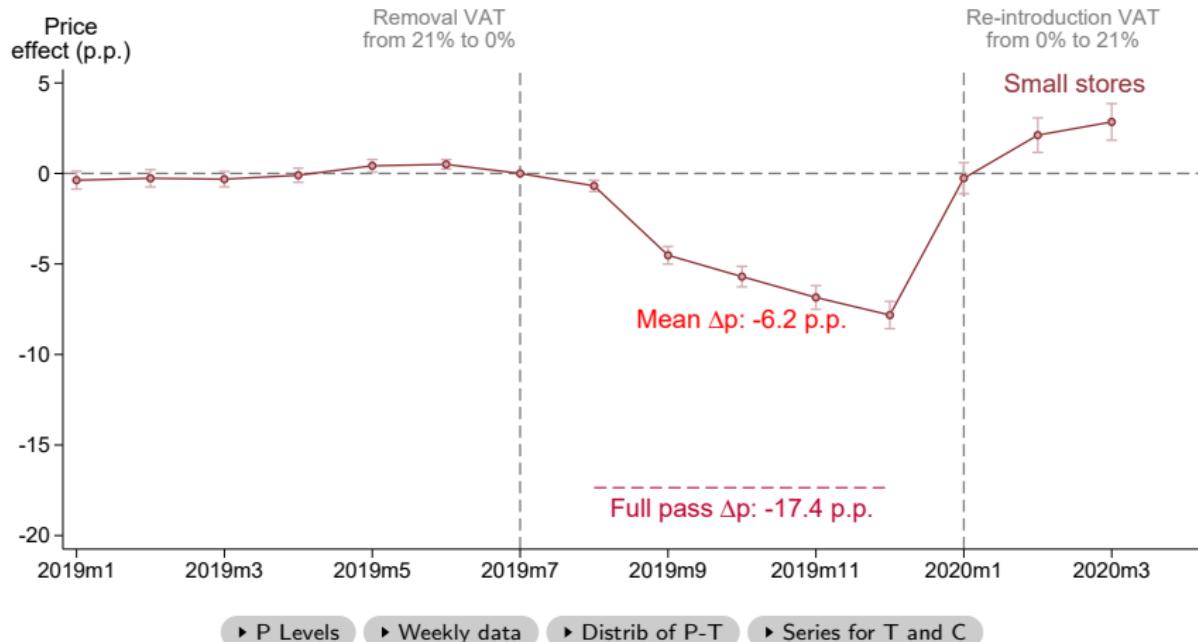


Substantial pass-through of the VAT cut to prices (~60%)

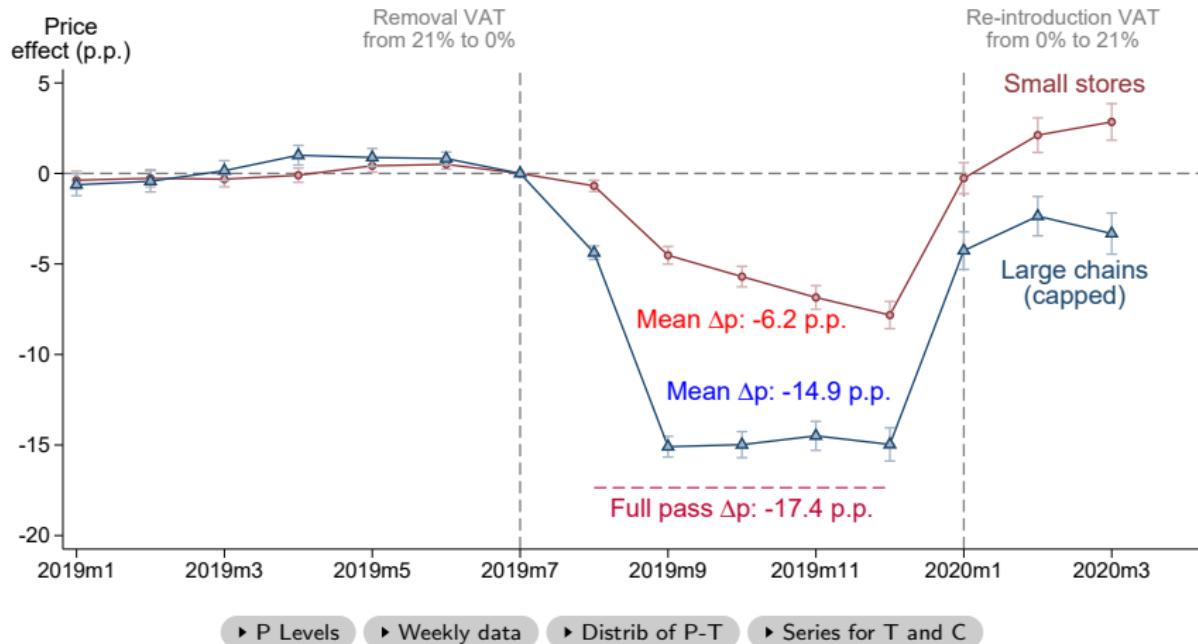


Large vs small
stores separately

Average pass-through of the VAT cut is 35% for indep stores and 85% for supermarket chains



Average pass-through of the VAT cut is 35% for indep stores and 85% for supermarket chains



Monitoring App (in large stores only!)



Tema del día Será anunciado el viernes

Lanzan un sistema para vigilar los precios de los supermercados

Deberán informar en tiempo real sus listas, empezando por los productos de la canasta básica. Y los consumidores podrán elegir a través de la Web donde comprar. El Gobierno, preocupado por la inflación, busca controlar los aumentos y el cumplimiento de los Precios Cuidados. #4

The screenshot shows the website for "Precios Claros". At the top, there is a navigation bar with links for "Precios Claros", "Presidente de la Nación", and "Ayuda". The main header says "PRECIOS CLAROS Comparando elegimos mejor". Below the header, there is a search bar with the placeholder "Buscar productos" and a button "Comparar precios (0)". Further down, there is another search bar with the placeholder "Buscar un producto escribiendo su nombre y/o marca para ver una tabla con resultados." At the bottom, there is a footer with social media links for Facebook, Twitter, and Google+.



The screenshot shows a list of products from the "Precios Claros" website. The products are categorized by type, such as "Almacen", "Aceras", "Aceras y Encurtidos", "Aderezos y Especias", "Arroces, Legumbres Y Semillas", "Conserveras", "Desayuno y Merienda", "Frutas Secas", "Golosinas y Chocolates", "Harinas y Pastes", and "Panificados". Each product entry includes a small image, the brand name, the product name, the price range, and the number of stores where it is available. There are also "comparar" buttons next to each product entry.

Robustness and additional results

- ▶ Very similar results with official CPI data ➔
- ▶ Pass-through of the Peso depreciation ➔
- ▶ Substitution across products in T and C ➔
- ▶ VAT changes + nominal price freezes ➔
- ▶ Overlap of barcodes across stores ➔
- ▶ Pass-through rates by region ➔

The role of **caps** in the VAT increase

A VAT increase with **capped** pass-through

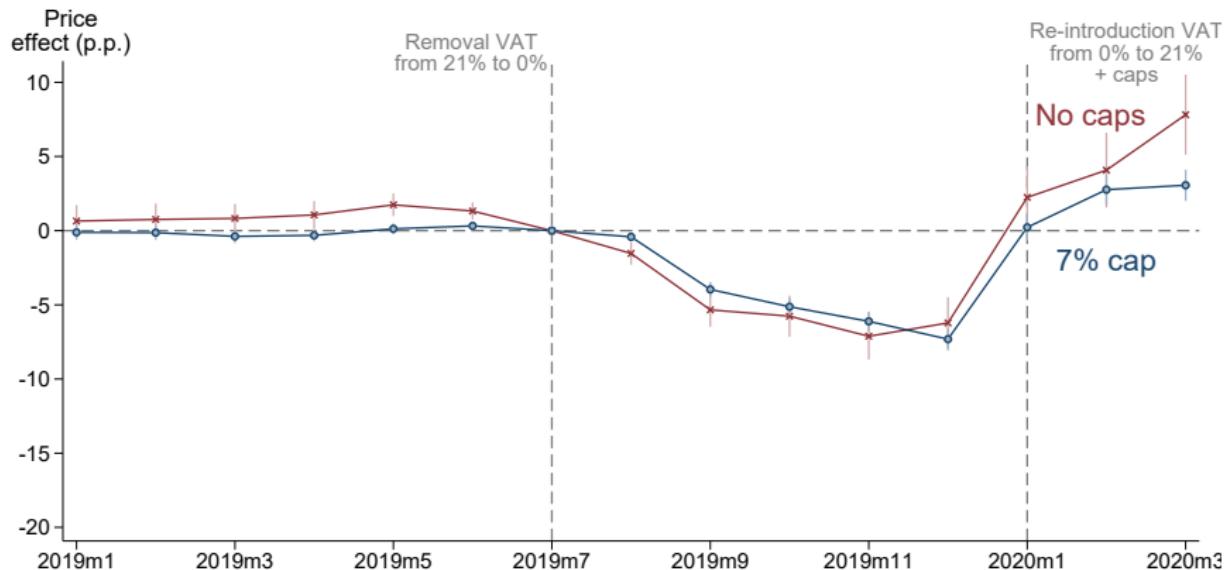
- VAT rate ↑ back to pre-holiday level of 21%
- But new govt limited the price increase with ≠ caps
 - ★ **No caps:** Prices could ↑ up to 21%
 - ★ **Caps:** Force incidence sharing
- We show that govts can successfully limit VAT pass-through

Treated: VAT back to 21%

Categories	Δp cap
Oil (sunflower & mix)	9%
Oil (corn)	No cap
Rice (regular: long grain white)	7%
Rice (other: basmati, brown, organic)	No cap
Dried pasta	7%
Tea, Yerba Mate, and Mate Cocido	7%
Sugar	7%
Canned vegetables and beans	7%
Canned fruits	No cap
Corn flour	7%
Wheat flour	7%
Fluid milk (whole/skim)	0%
Yogurt (regular)	7%
Yogurt (other: w/cereal, fruit chunks)	No cap
Eggs	7%
Sliced Bread (white)	7%
Sliced Bread (rest)	No cap
Breadcrumbs and/or batter	10.5%

Small stores (not subject to caps): No differential effects btw capped and uncapped goods

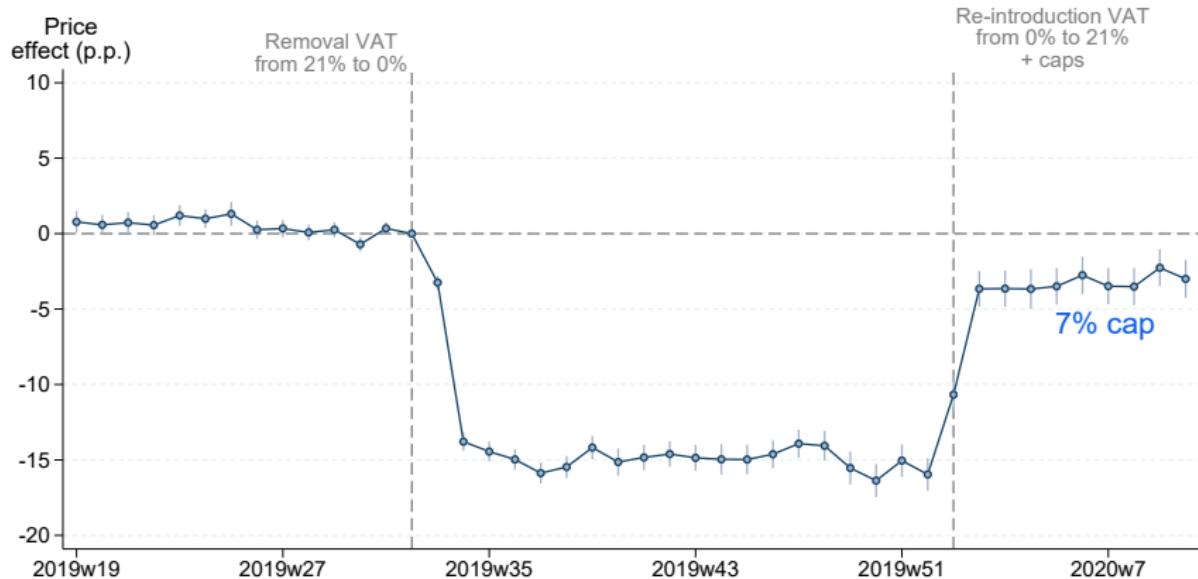
7% cap vs No cap



Large chains: Goods with flexible prices exhibit an increase ~twice that of capped goods

► Recall density

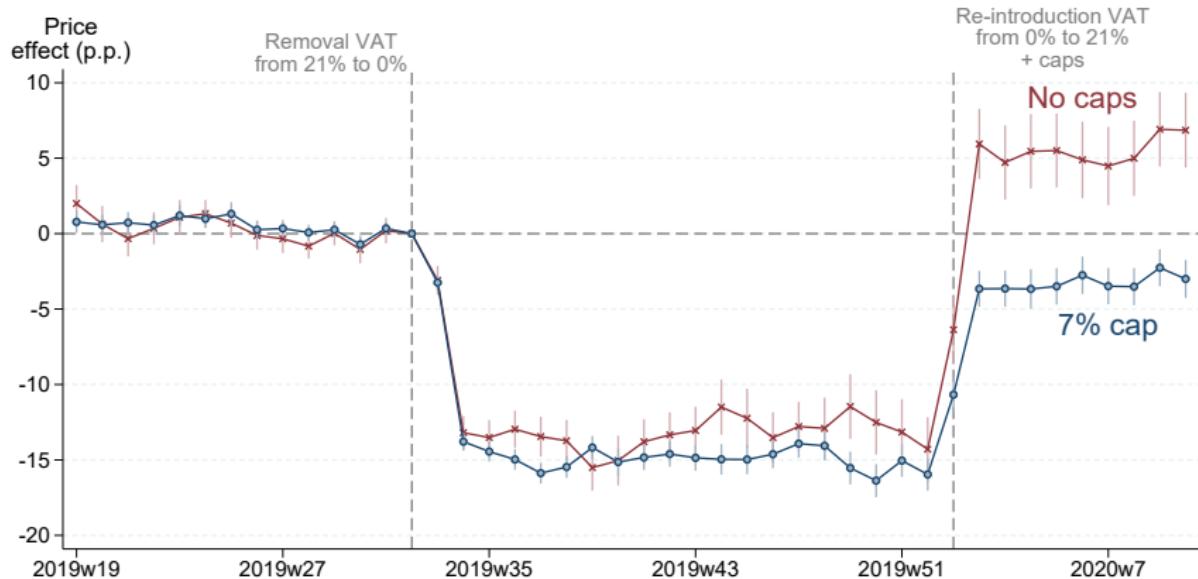
7% cap vs No cap



Large chains: Goods with flexible prices exhibit an increase ~twice that of capped goods

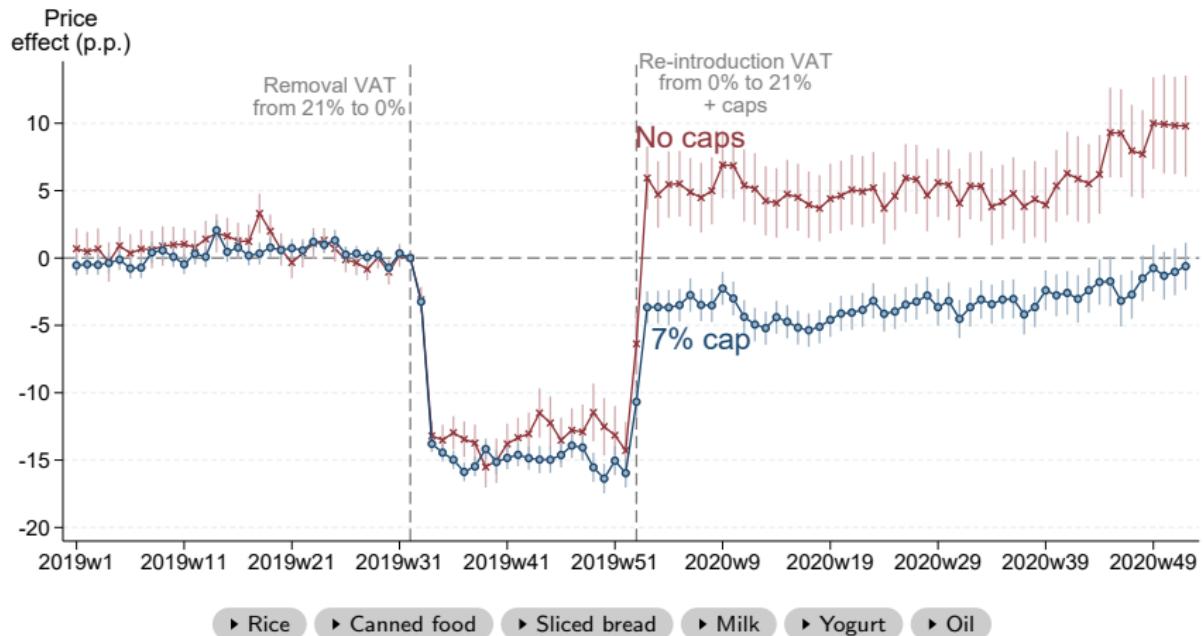
► Recall density

7% cap vs No cap

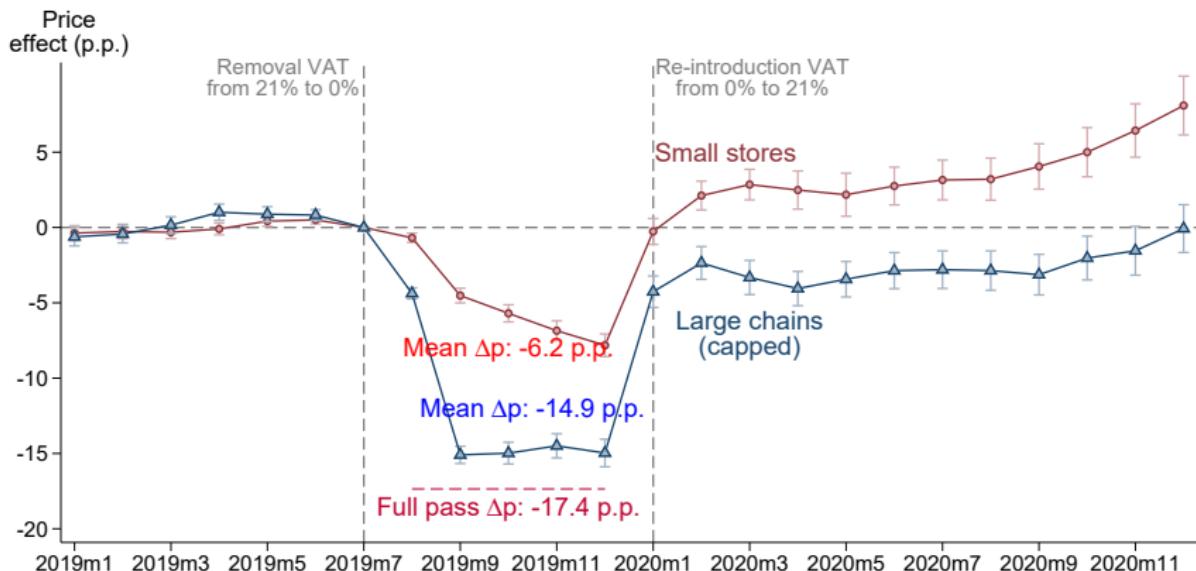


The gap is remarkably persistent (hysteresis)

7% cap vs No cap



Ultimately leading to a permanent price gap in necessities btw small and large supermarkets



The role of *online* monitoring

- ▶ **Small stores:** The association that represents them, FASA, didn't participate in the agreement
- ▶ **Chain supermarkets:** The govt announced they would track prices online. An official public servant declared [1] [2]:

"Supermarkets report their prices online to the Ministry of Commerce. The database is updated as soon as they load the price lists, and we can see it. The sector already showed goodwill by working with us until December 31 and committed to absorb two-thirds of the impact. But obviously we'll be monitoring them."

Purchase responses

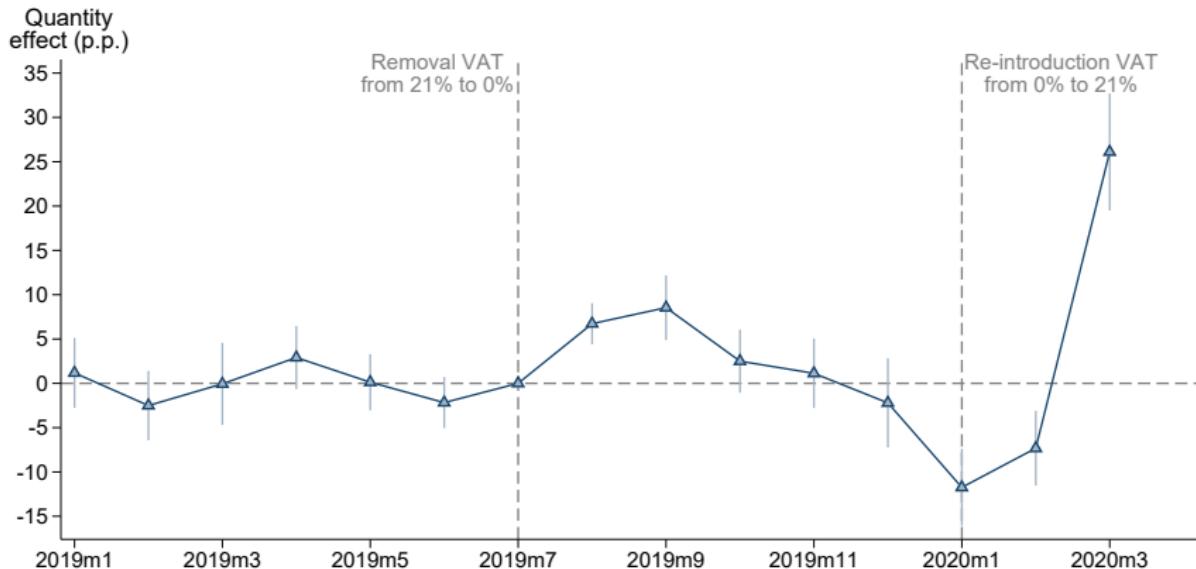
Quantity effects

Policy goal of the temporary VAT cut was to ensure that households would still be able to purchase necessities

- ▶ **Income effect:** increased purchasing power
- ▶ **Intertemporal substitution effect:** cheaper to consume today

An increase in units sold in supermarkets chains

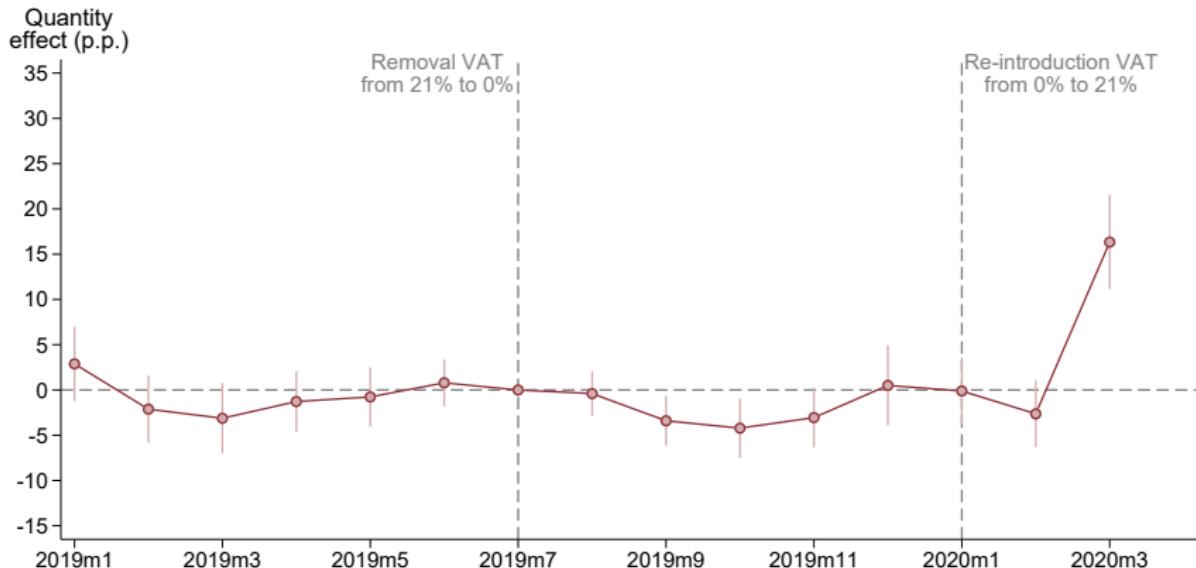
► COVID-19



- The policy was successful at sustaining the demand for basic necessities
- But the govt may have overshot it, leading to some hoarding of commodities

Quantity effect is more muted in small stores

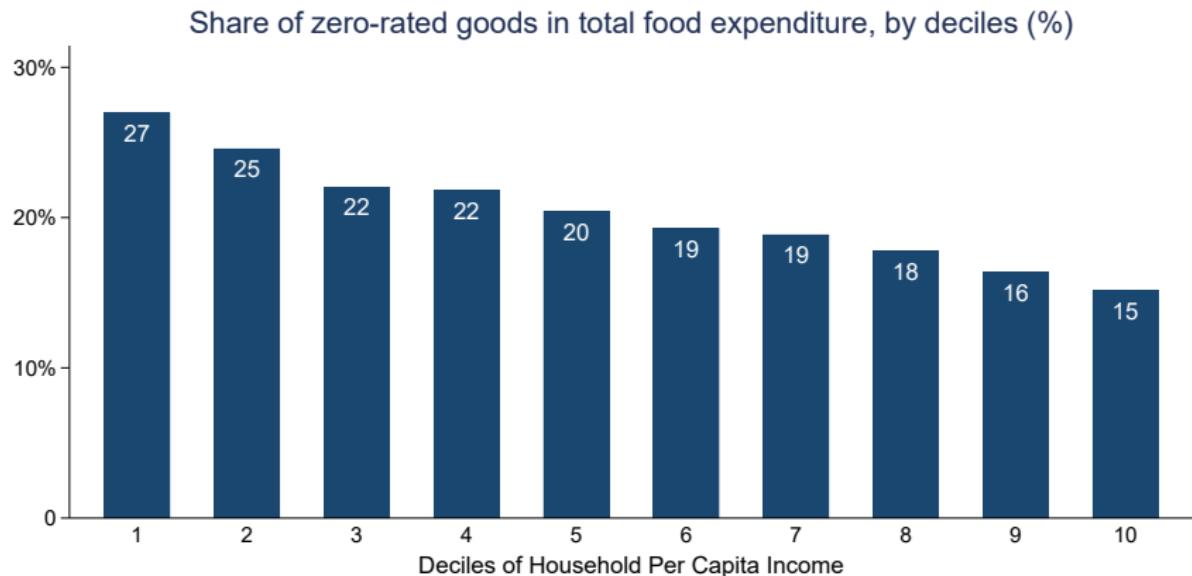
► COVID-19



- The policy was successful at sustaining the demand for basic necessities
- Muted response in small stores where pass-through was limited

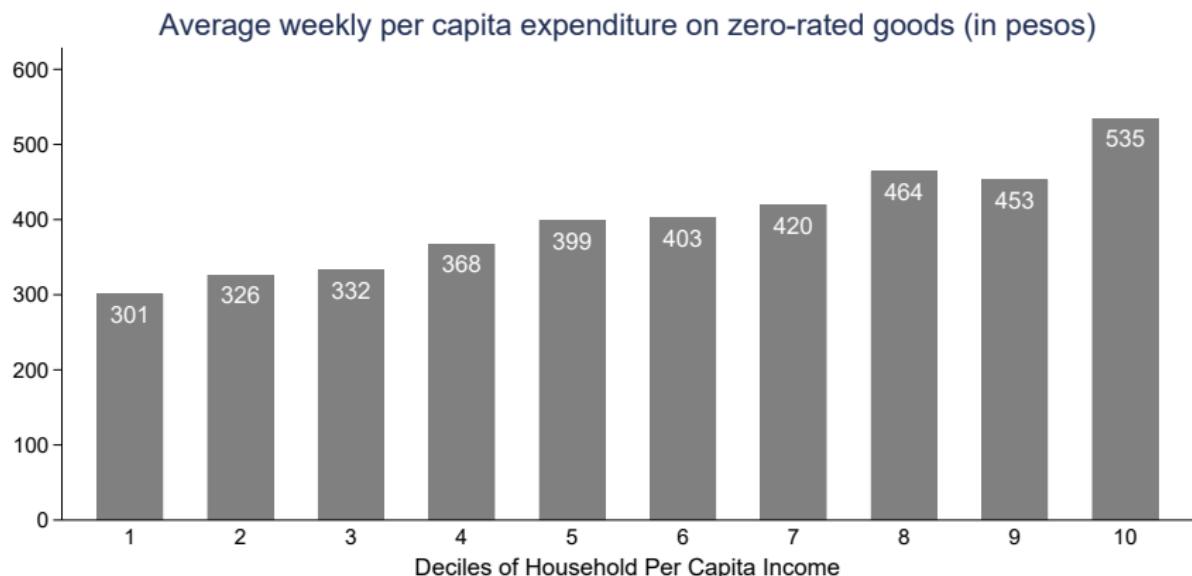
(Unintended) distributional
consequences

Policy goal was to ensure that *low-income* households could still afford basic food in a context of inflation



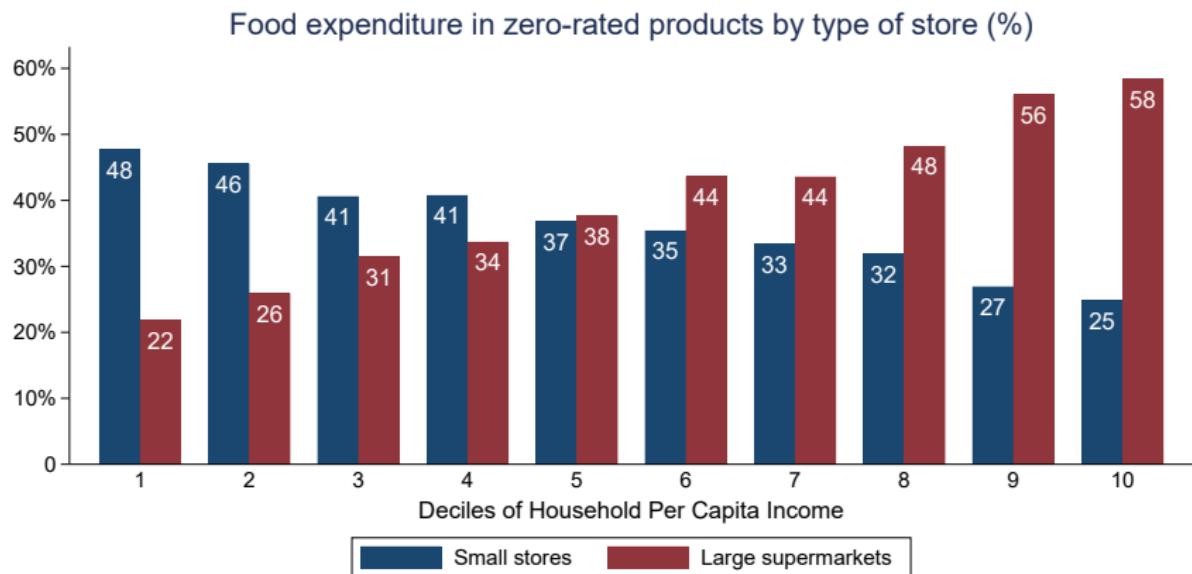
- Targeted goods (T) more heavily consumed by the lowest deciles
- But average expenditure on T increases with income

Policy goal was to ensure that *low-income* households could still afford basic food in a context of inflation

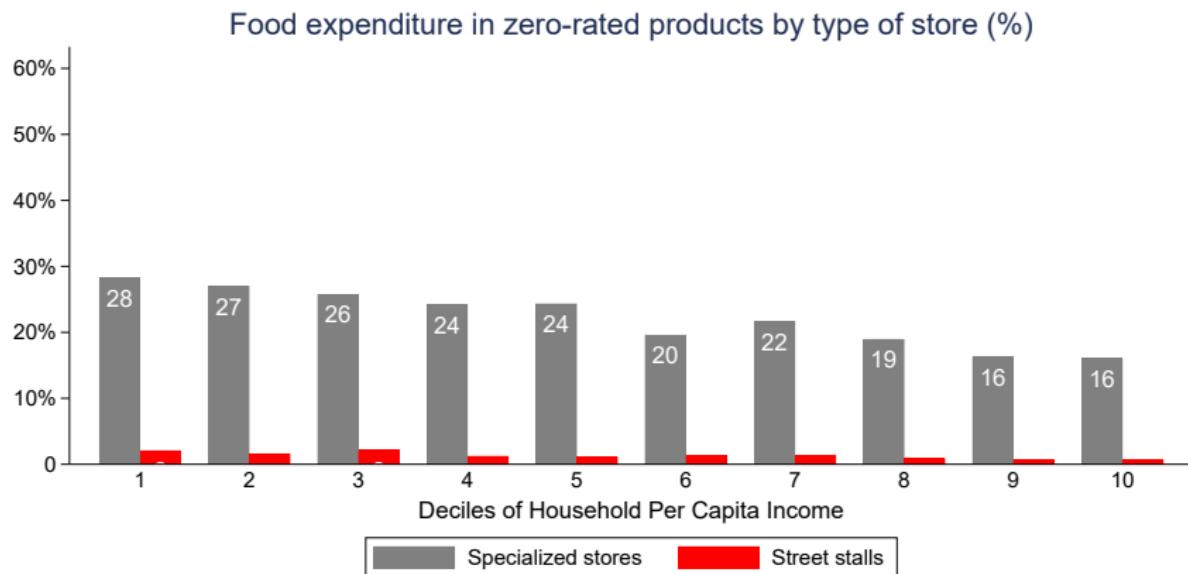


- Targeted goods (T) more heavily consumed by the lowest deciles
- But average expenditure on T increases with income

But low-income people tend to shop at small supermarkets where price pass-through was limited (!)



But low-income people tend to shop at small supermarkets where price pass-through was limited (!)



- VAT cut likely benefited richer households more
- Important policy implication when designing VAT cuts

Conclusion: govts can affect tax incidence with political pressure and/or legislative mandates

- ▶ A substantial portion of the VAT cut was passed on to prices
 - Likely due to political pressure on supermarkets chains + monitoring
- ▶ Govt-imposed caps are effective at mitigating the price increases following the VAT reintroduction
- ▶ Pass through rates are more than twice bigger in chain supermarkets (85%) compared to independent stores (35%)
- ▶ This turns out to have important distributional effects
 1. Poorer households tend to shop more at small supermarkets
 2. Further confirmed by the effect on quantities purchased

Lessons and tools

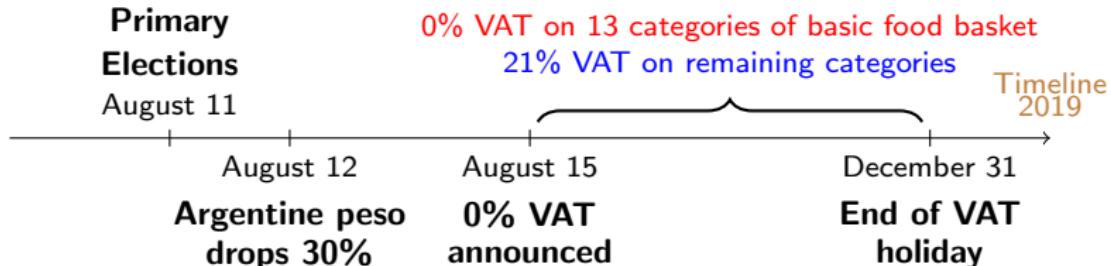
- 👍 Overall, VAT cuts can help ensure continued access to basic necessities during times of high inflation
- 👎 But may miss the targeted population due to unexpected incidence effects (the poor tend to shop in stores that pocket the VAT cut)
- 👍 Our paper offers lessons/tools for Govts to fine tune VAT cuts and ultimately achieve their policy goals

THANK YOU!

Additional results

Elections, currency devaluation, and VAT cut/hike

▶ Back

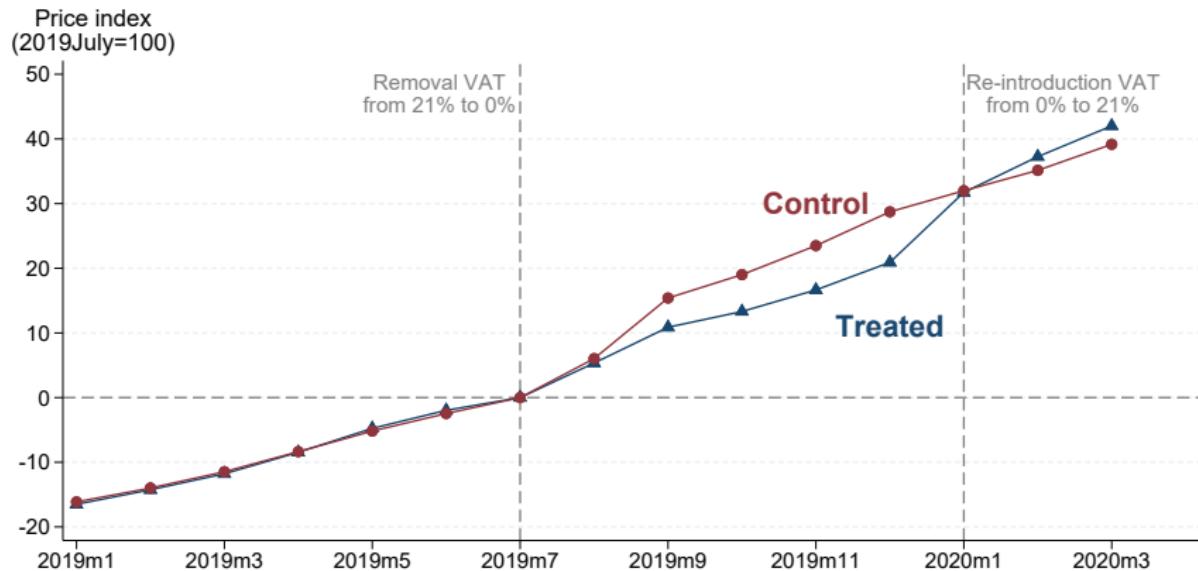


Context: high inflation (~ 55%), elections, currency devaluation

- 1) President Macri defeated in primary presidential elections by a 15.5 p.p. margin (much wider than expected)
- 2) Day after: Argentina's currency collapsed ($45 \rightarrow 62$ pesos-dollar)
- 3) Govt implements a targeted and temporary VAT cut with due date Dec 31, 2019 [Goal: to contain the impact of currency devaluation on prices]
- 4) New president Fernandez didn't extend the VAT holiday
Regulated repeal: limit price increase to 7% (0% for milk, no cap for some)

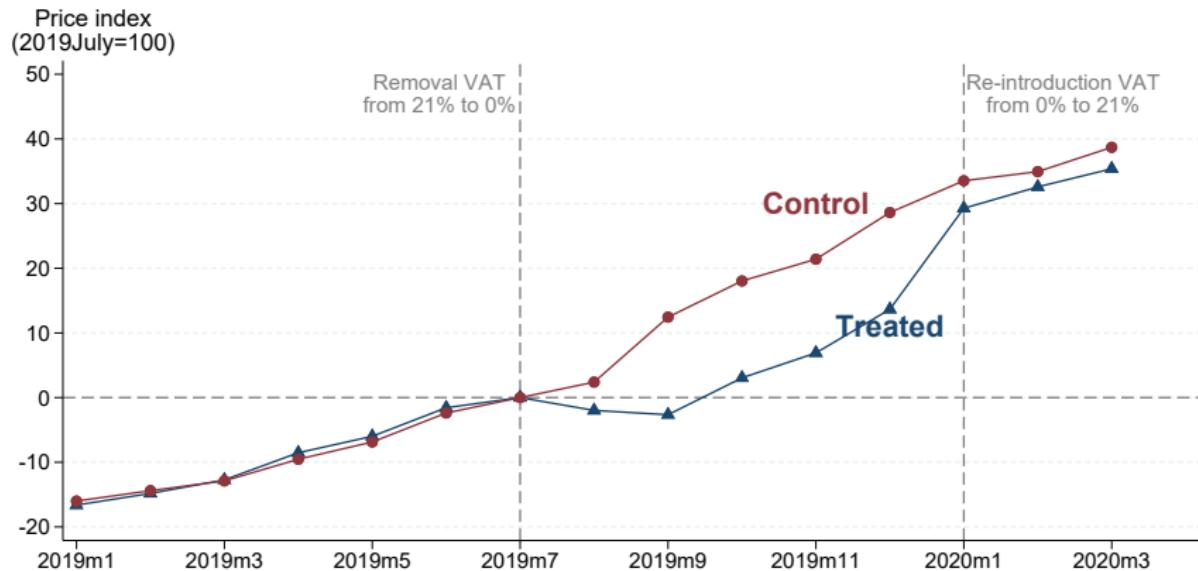
Price levels in small independent stores

▶ Back



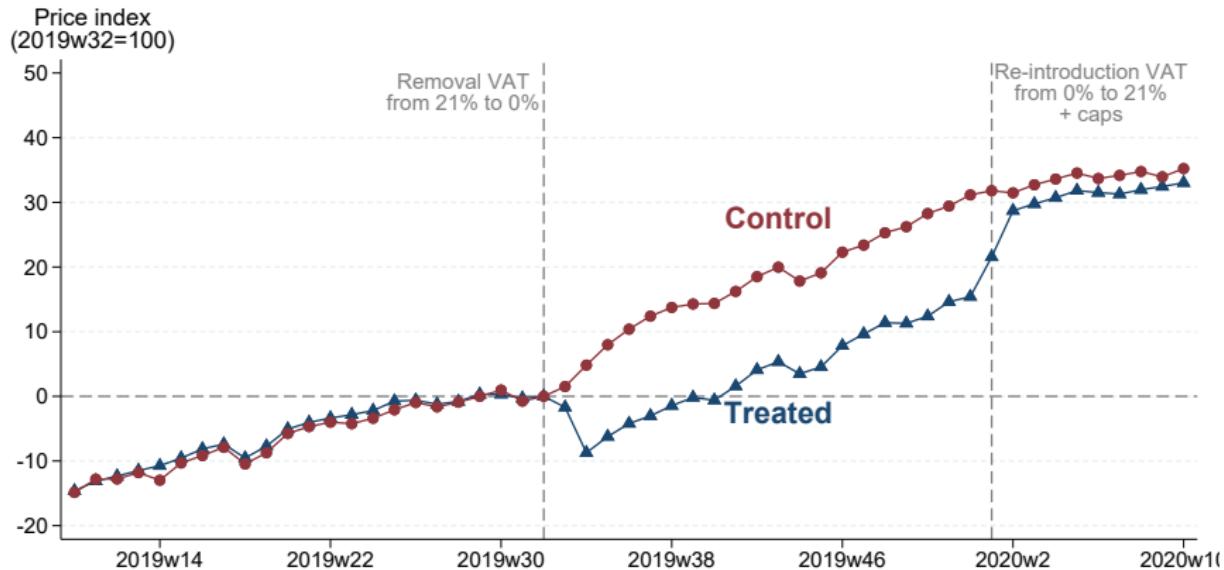
Price levels in supermarket chains (prices are monitored)

Back



Price levels in supermarket chains (weekly data)

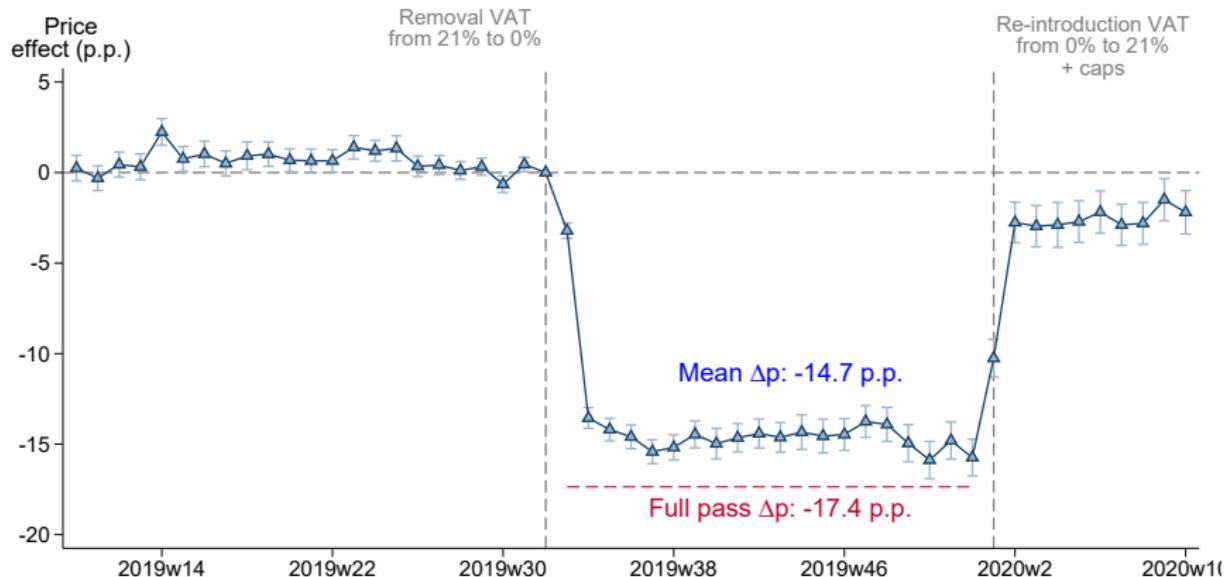
▶ Back



Note: Obs=2,541,535 (4645 EANs: 2,032 treated + 2,613 control)

Average price pass-through of ~85% in large chains

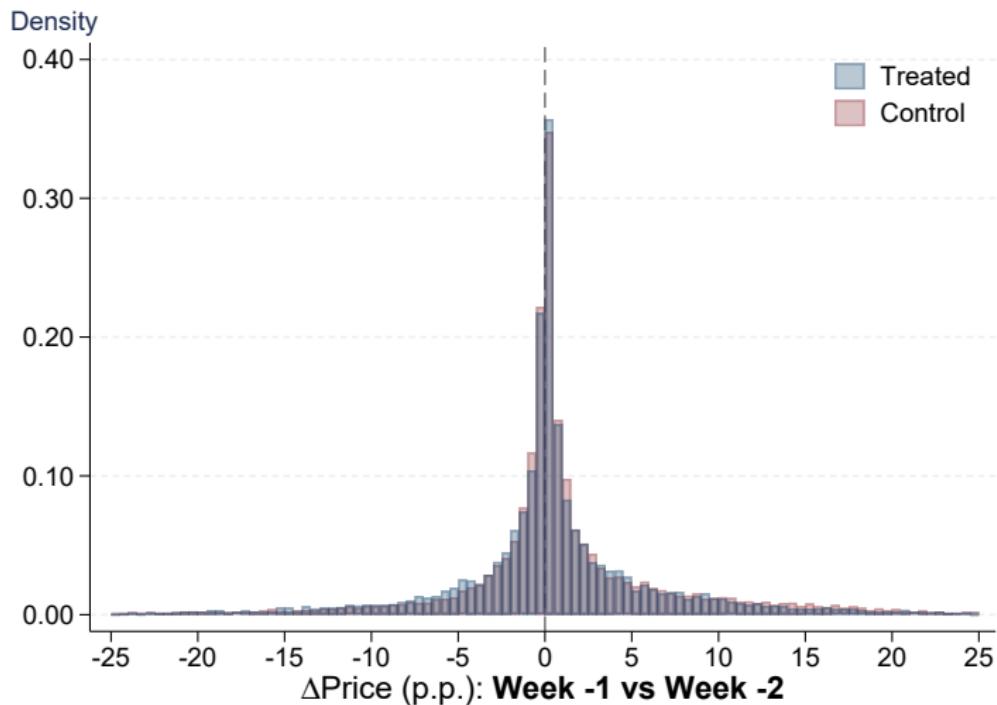
▶ Back



Note: Obs=2,541,535 (4645 EANs: 2,032 treated + 2,613 control)

Distrib of price changes two weeks **before** VAT removal

Large chains (prices are monitored) [▶ Back](#)



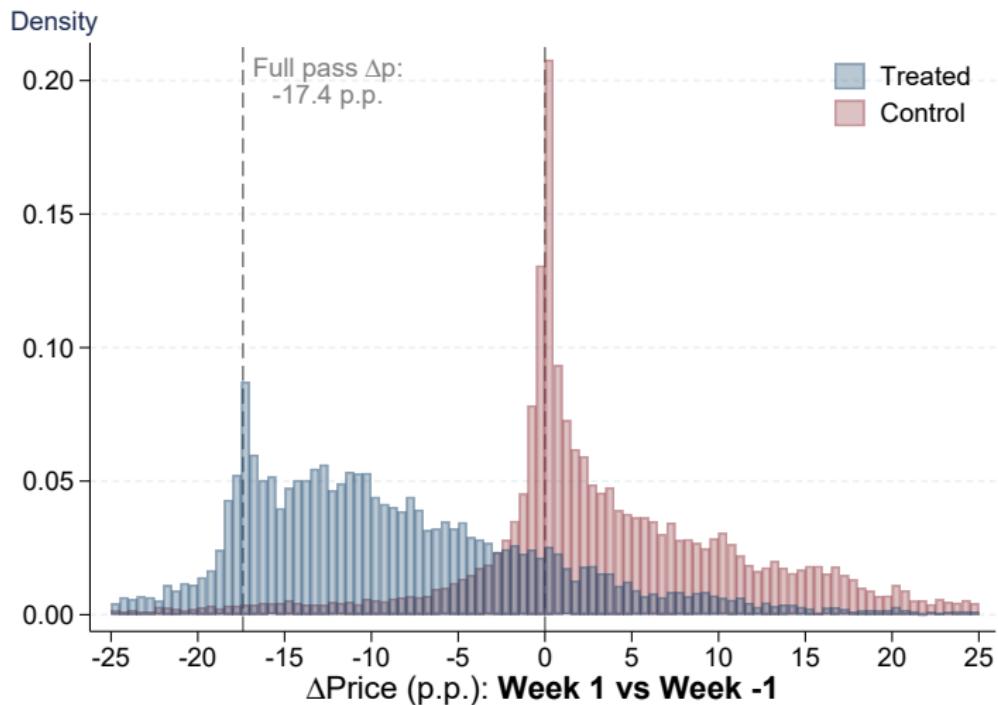
Distrib of price changes right after VAT removal

Large chains (prices are monitored)

▶ Zoom in

▶ Substitutes

▶ Back



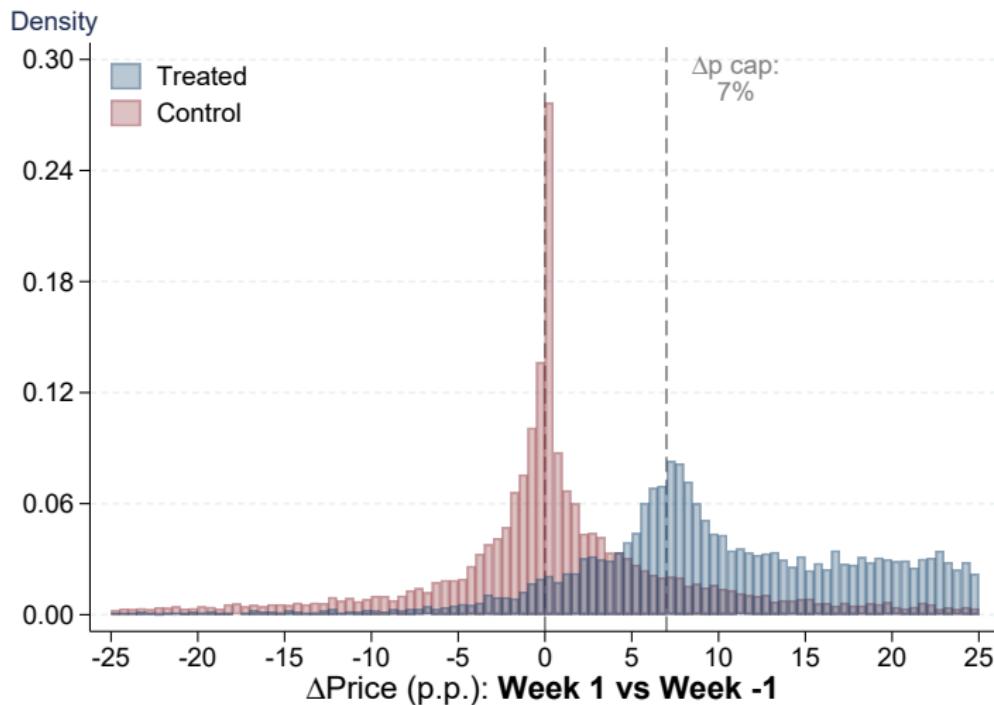
Distrib of price changes right after VAT reinstated

Large chains (prices are monitored)

► Zoom in

► Cap section

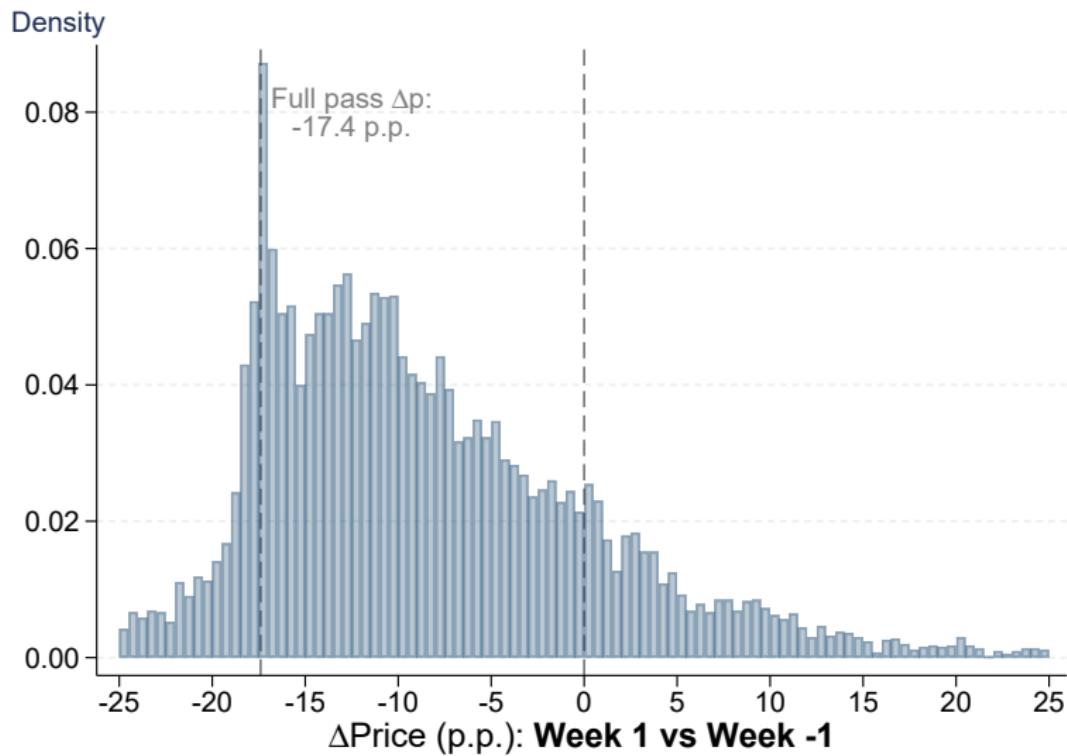
► Back



Distrib of price changes right after VAT removal

▶ Back

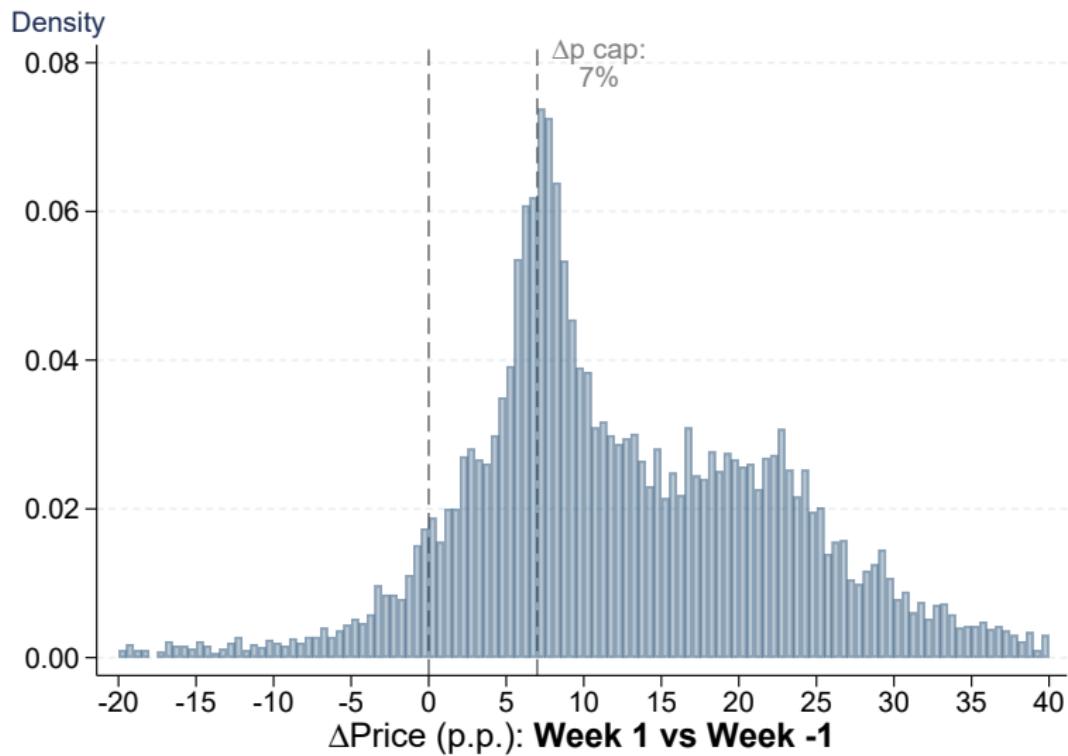
Large chains (treated goods)



Distrib of price changes: VAT reinstated

[Back](#)

Large chains

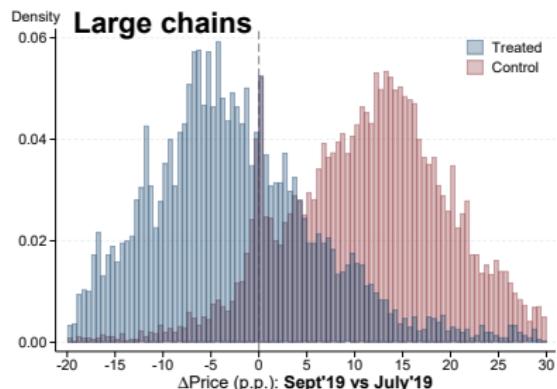
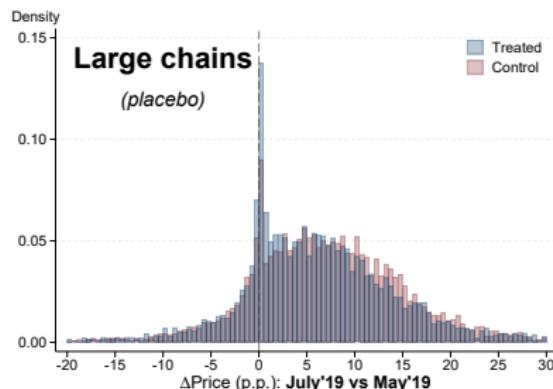
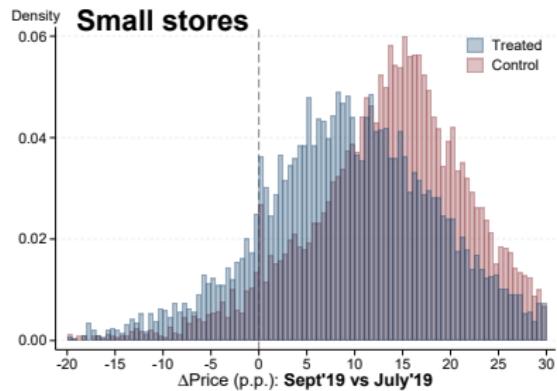
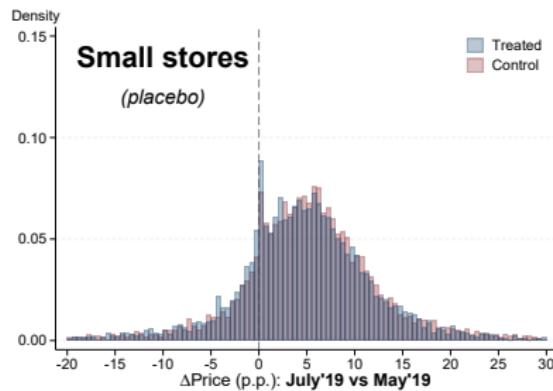


Distrib of price changes after VAT removal

Small stores vs Large chains

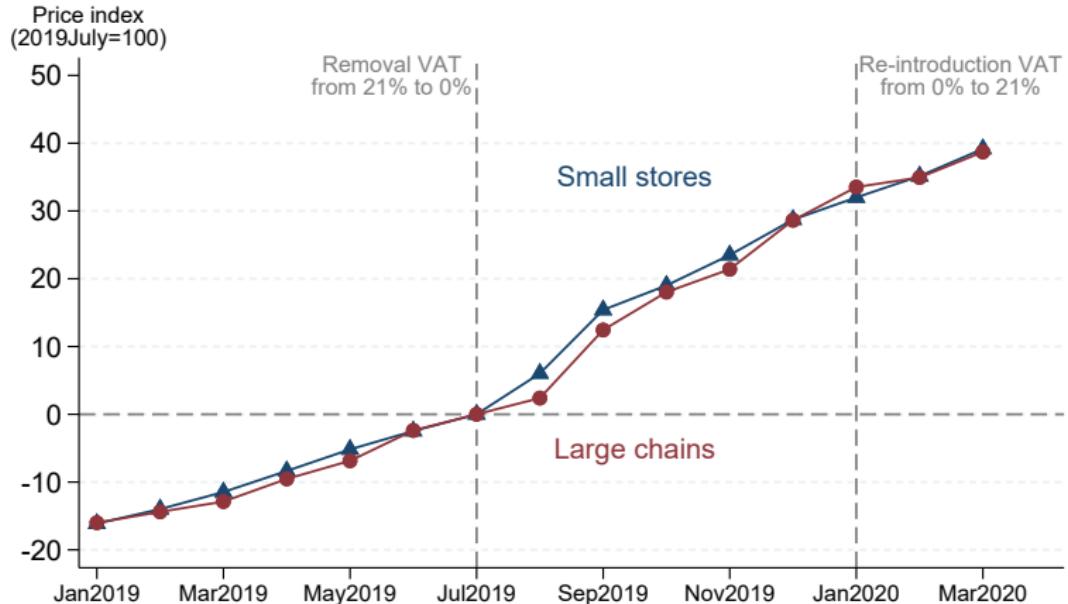
► Overlap T & C

► Back



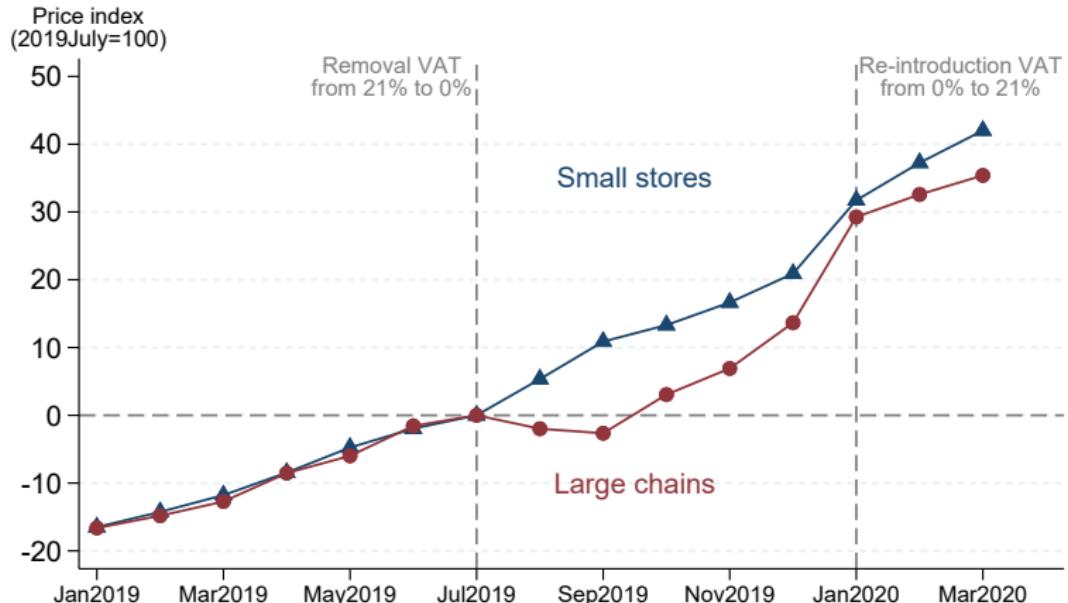
Control goods: Large chains vs Small stores

[Back](#)



Treated goods: Large chains vs Small stores

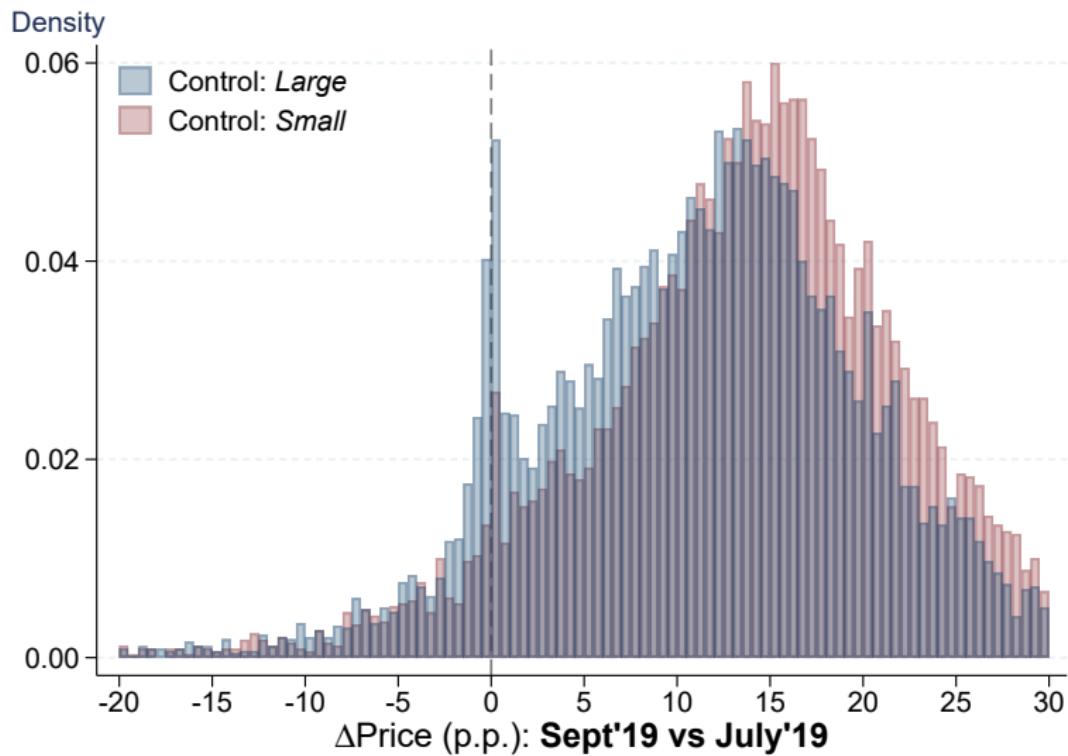
▶ Back



Distrib of price changes: VAT removal

▶ Back

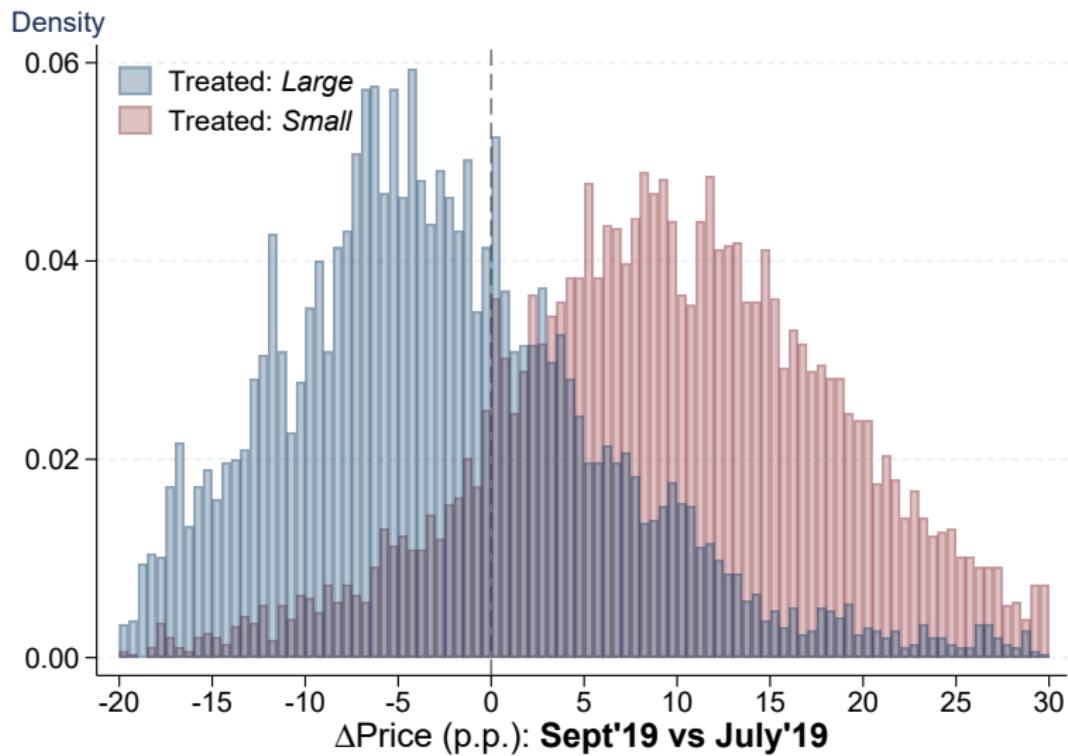
Small stores vs Large chains



Distrib of price changes: VAT removal

▶ Back

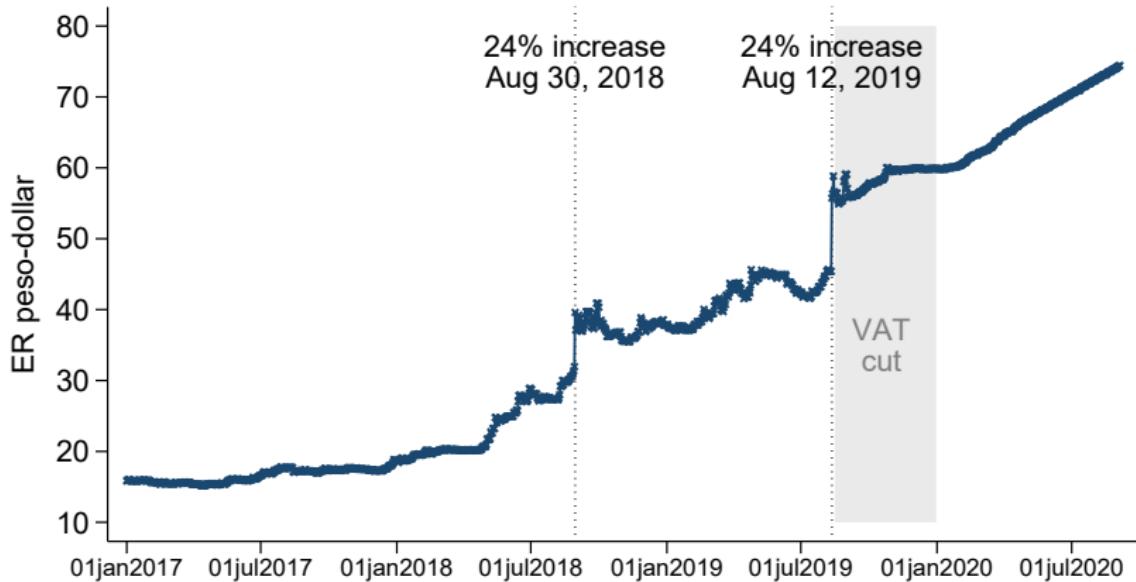
Small stores vs Large chains



Pass-through of the 2018 peso depreciation

▶ Back

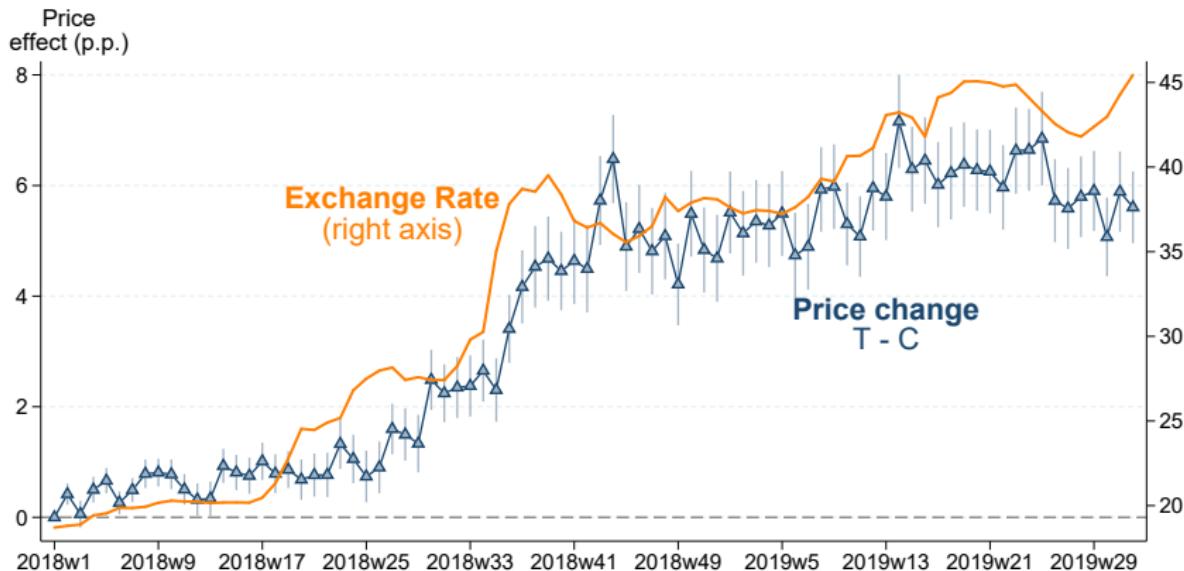
Exchange Rate (pesos per dollar)



Source: BCRA, Tipo de Cambio de Referencia - Comunicación "A" 3500 (Mayorista).

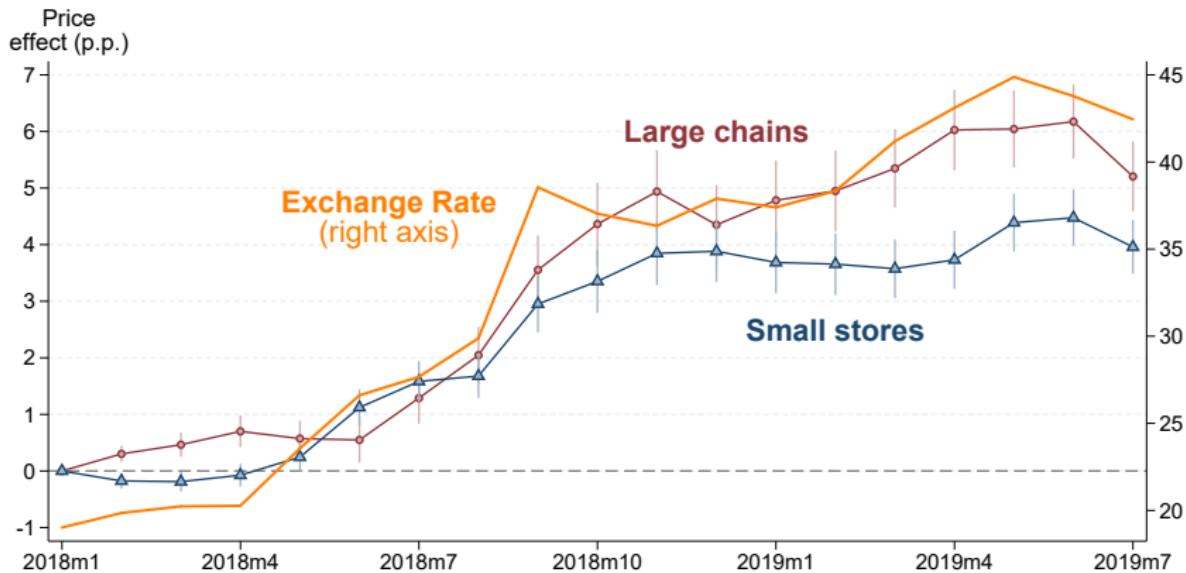
Are goods in **T** and **C** similarly affected by the 2018 peso depreciation?

▶ Back

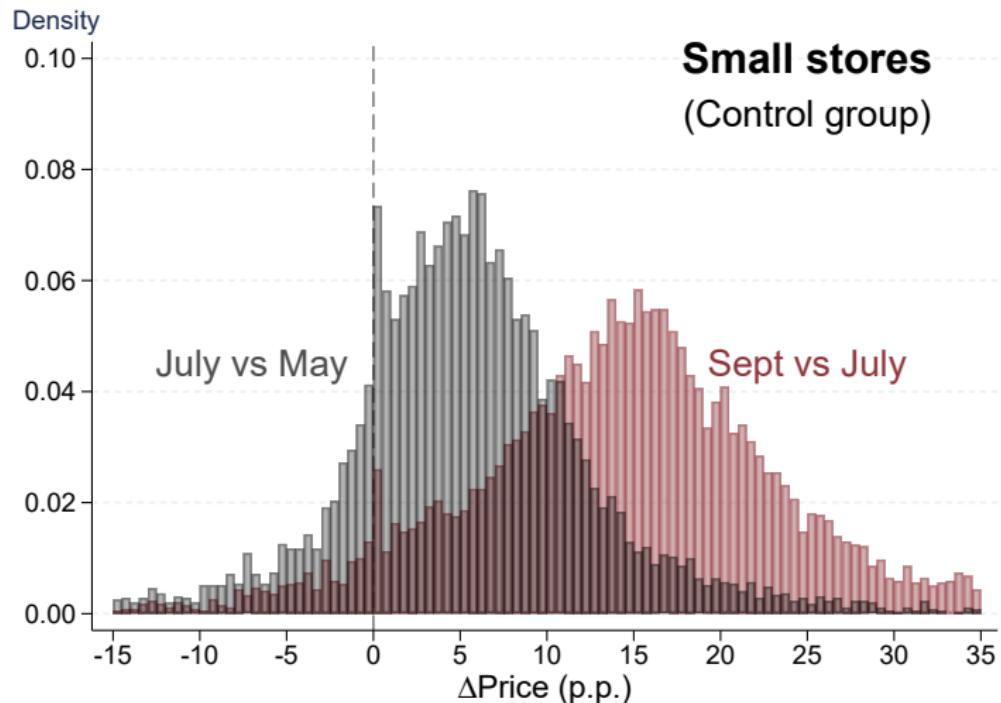


Do large and small stores respond *differently* to a large economic shock with no govt mandate?

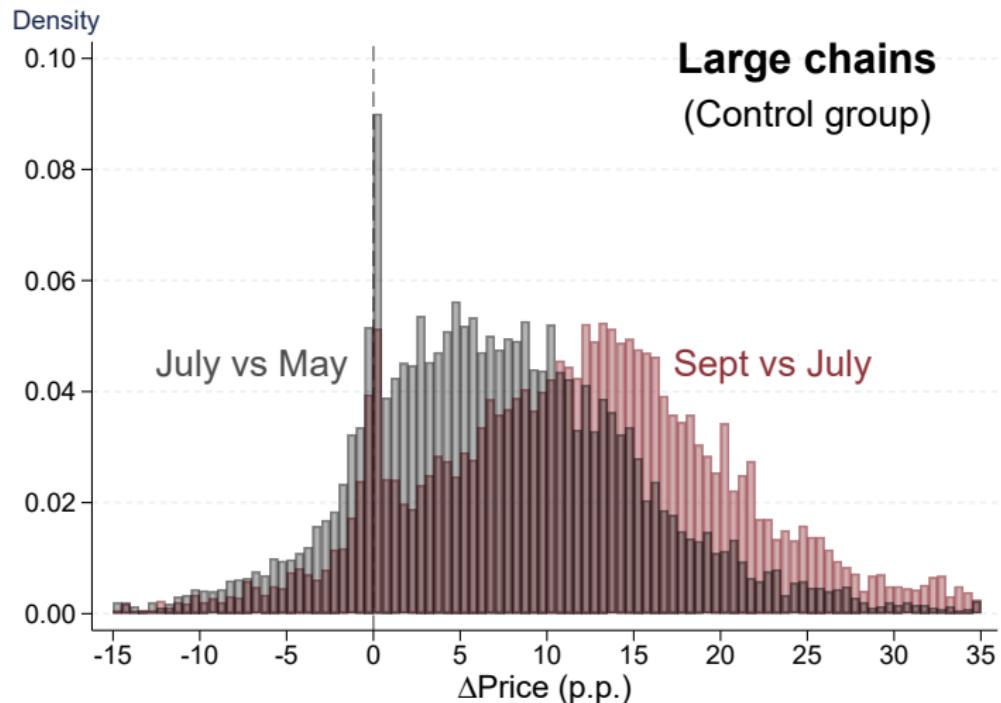
▶ Back



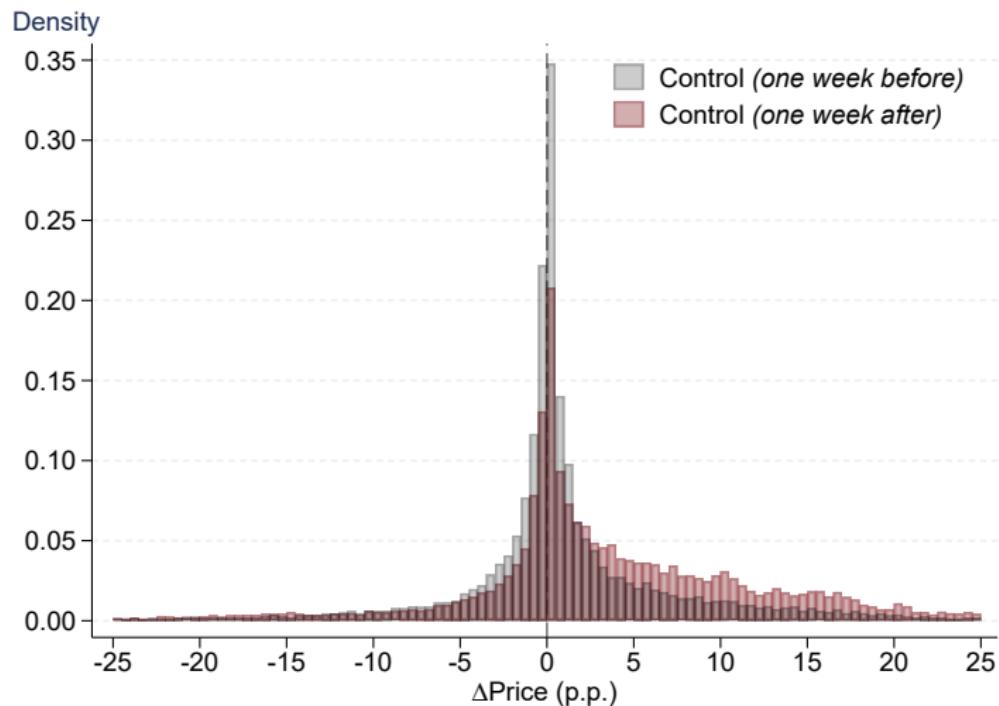
Pass-through of a 24% currency devaluation (no mandate)
is similar in small and large supermarkets



Pass-through of a 24% currency devaluation (no mandate)
is similar in small and large supermarkets



Pass-through of currency devaluation: short run (Large chains)

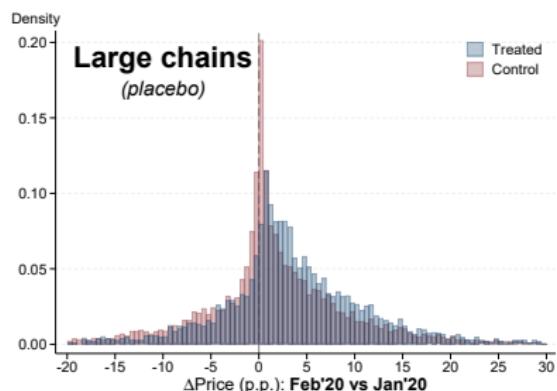
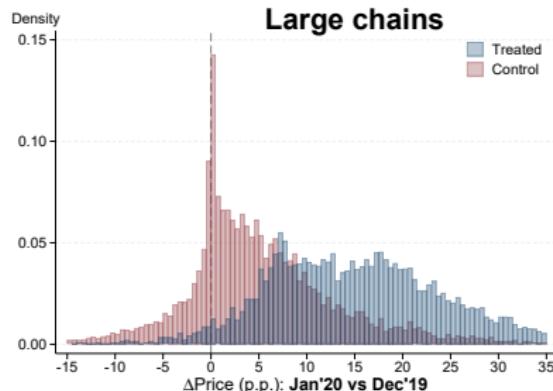
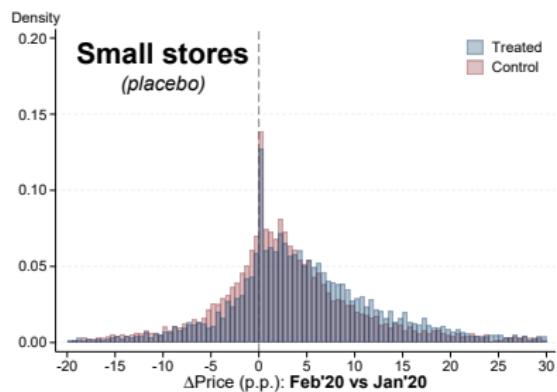
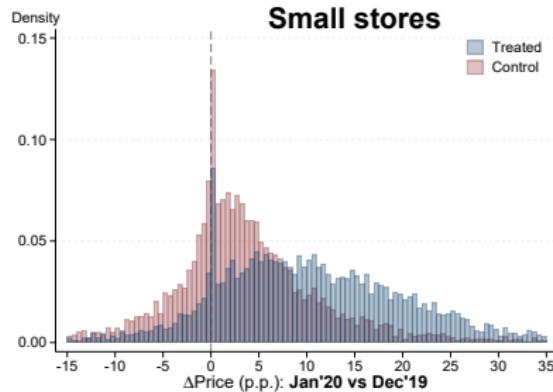


Distrib of price changes after VAT re-introduction

Small stores vs Large chains

► Overlap T & C

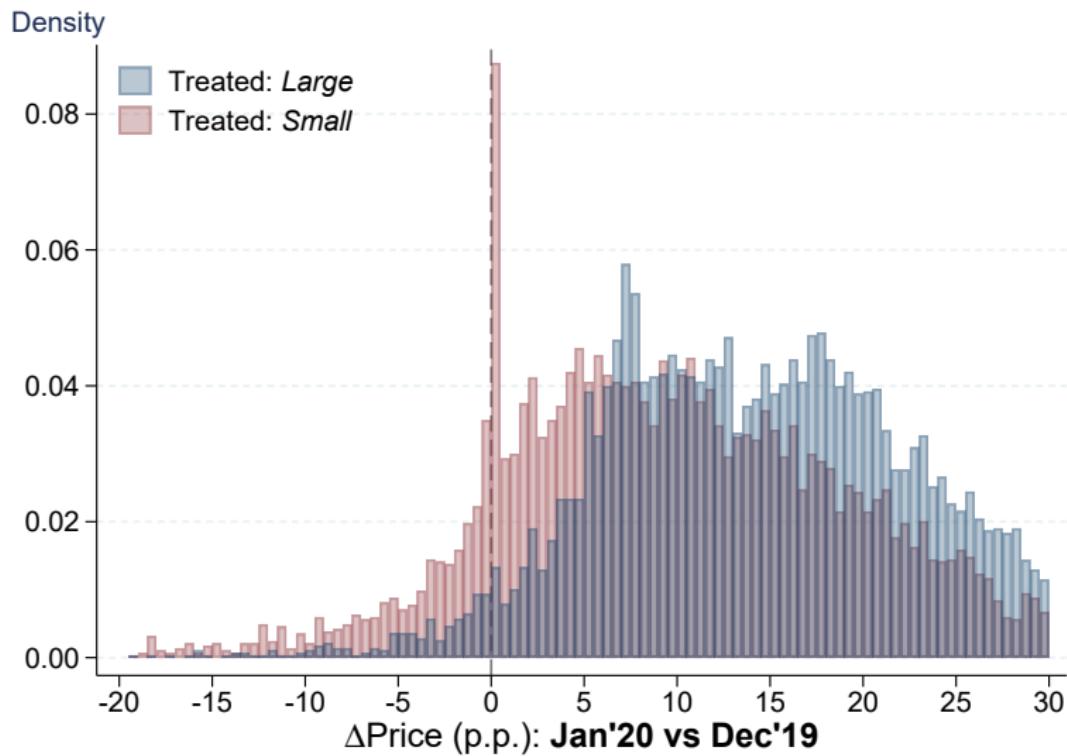
► Back



Distrib of price changes after VAT re-intro

▶ Back

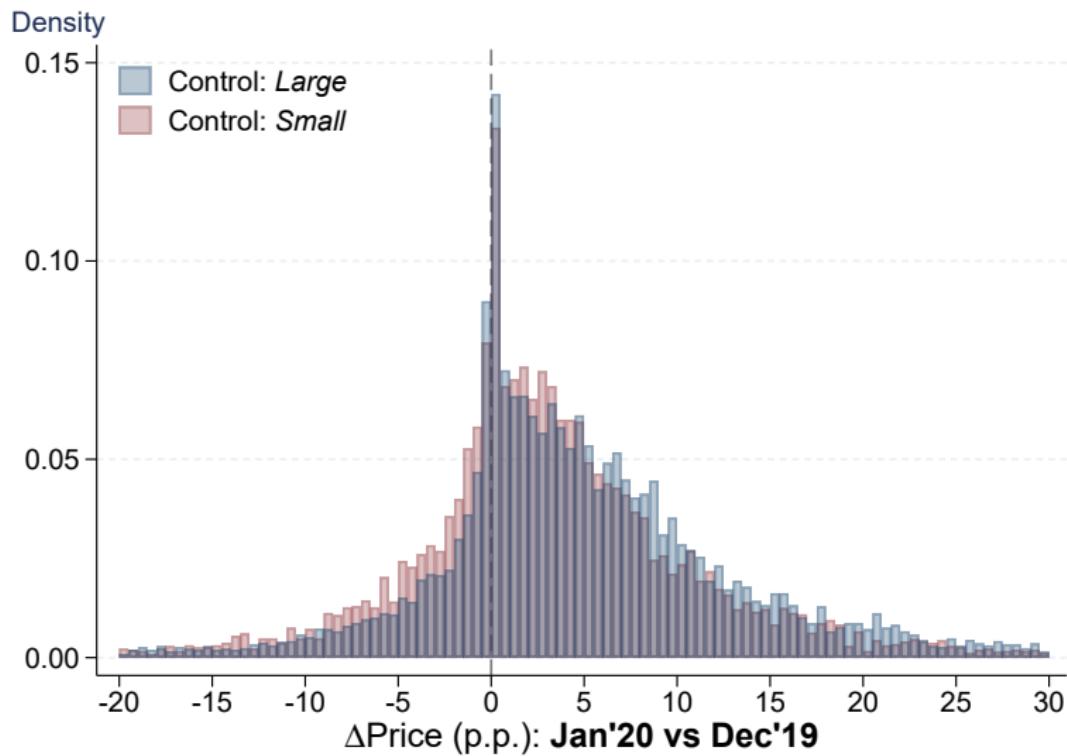
Small stores vs Large chains



Distrib of price changes after VAT re-intro

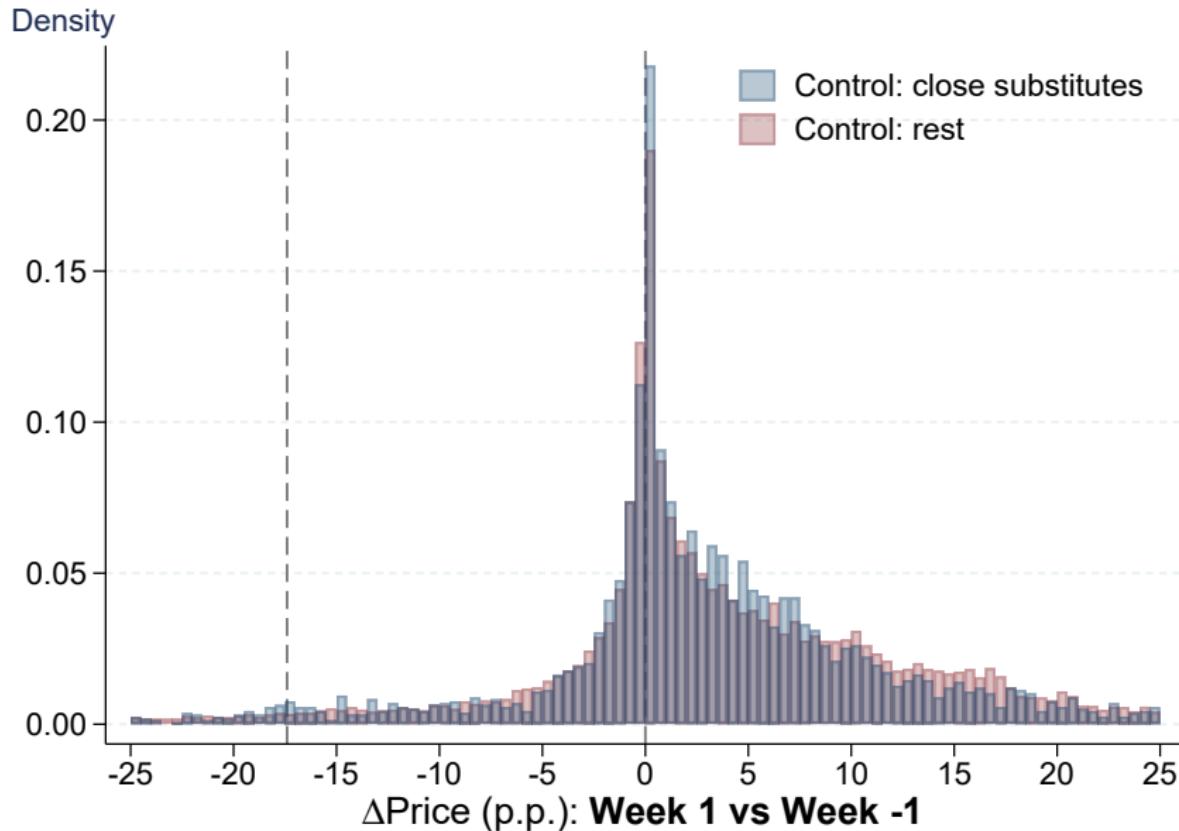
[Back](#)

Small stores vs Large chains



Close substitutes in C (e.g., coffee) do not seem to adjust prices after the VAT cut

▶ Back

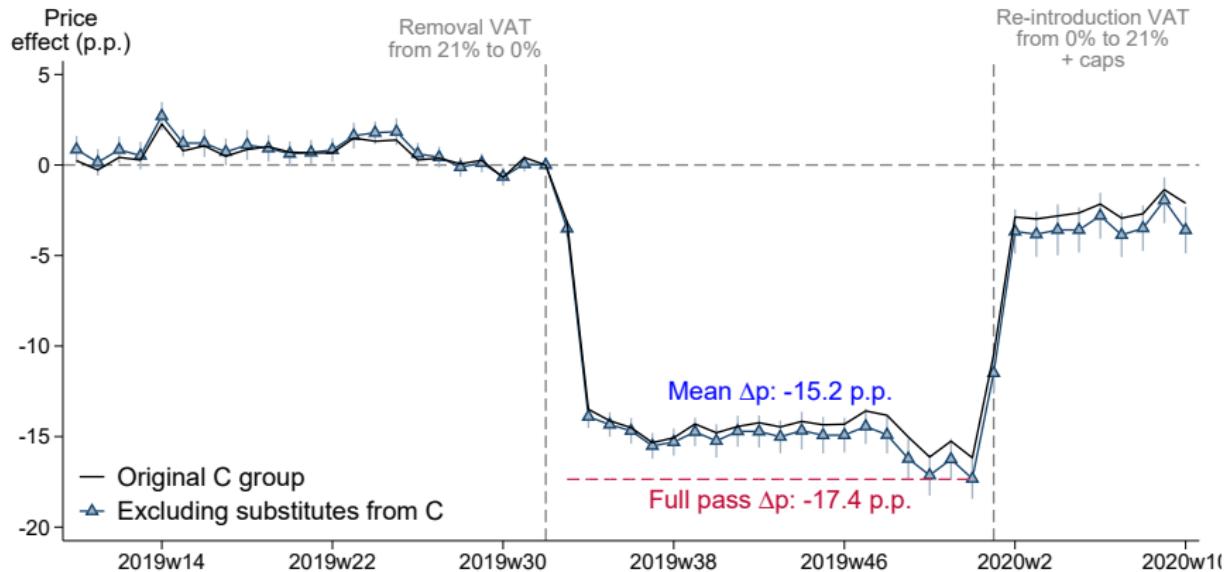


Does substitution across T and C bias our price effects?

The results barely change when:

▶ Back

- Including and excluding close substitutes in the control group
- Using food and non-food products in the control group

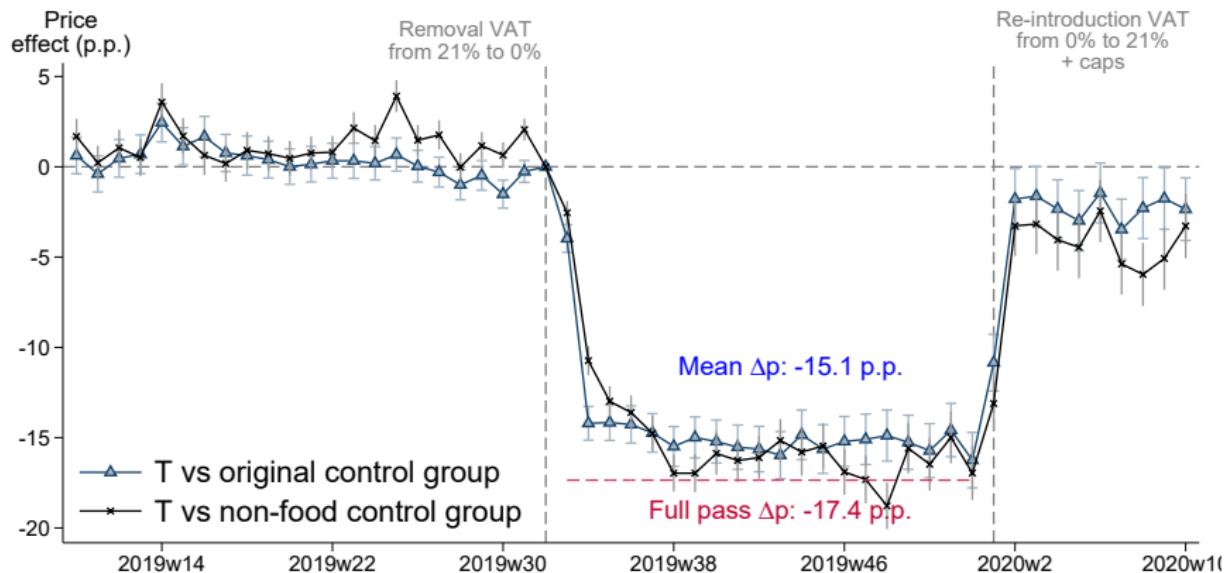


Does substitution across T and C bias our price effects?

The results barely change when:

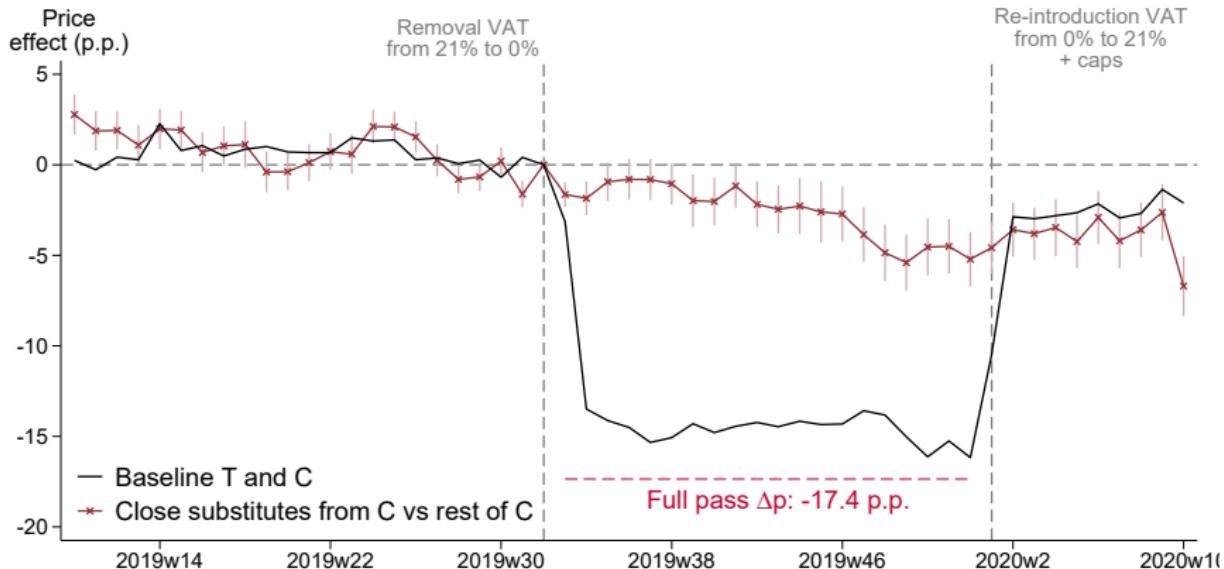
▶ Back

- Including and excluding close substitutes in the control group
- Using food and non-food products in the control group



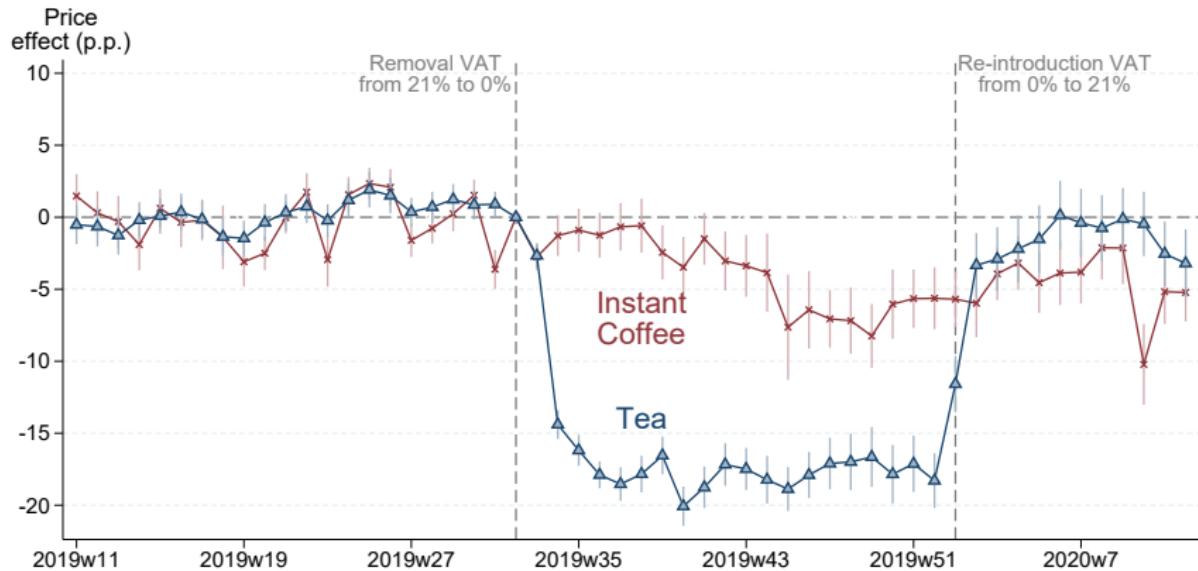
DiD of close substitutes in C vs rest of C

▶ Back



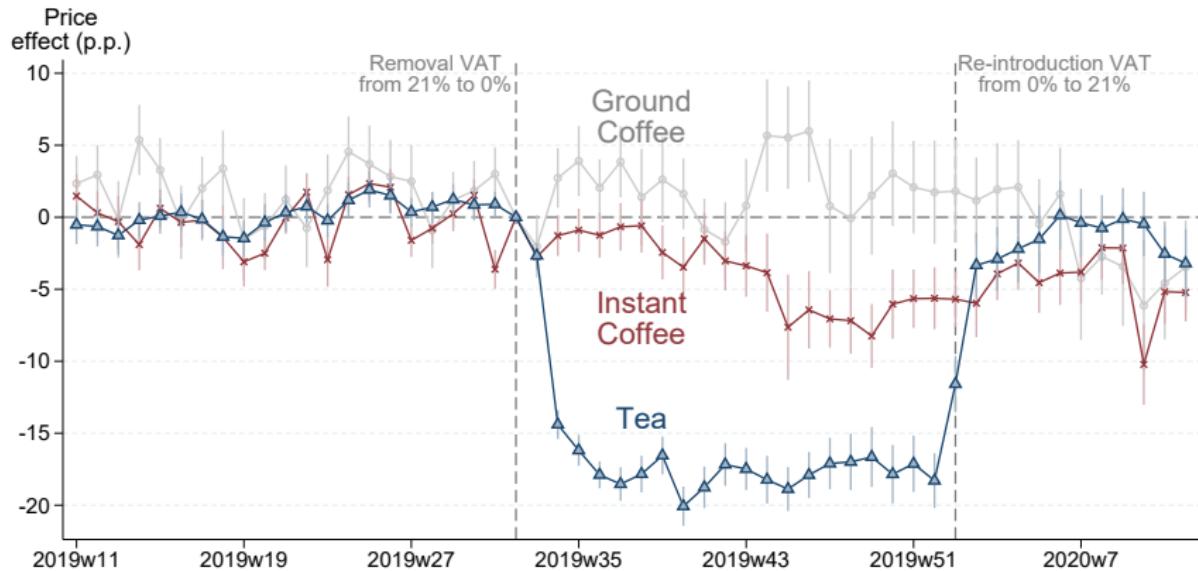
T vs Close substitutes in C (case studies)

▶ Back



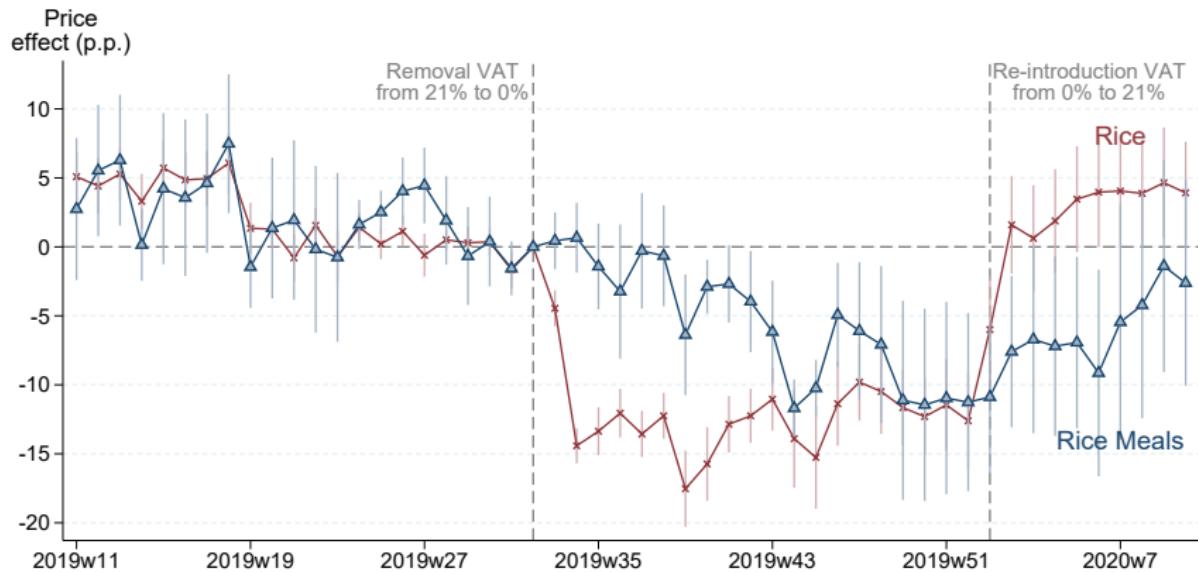
T vs Close substitutes in C (case studies)

▶ Back



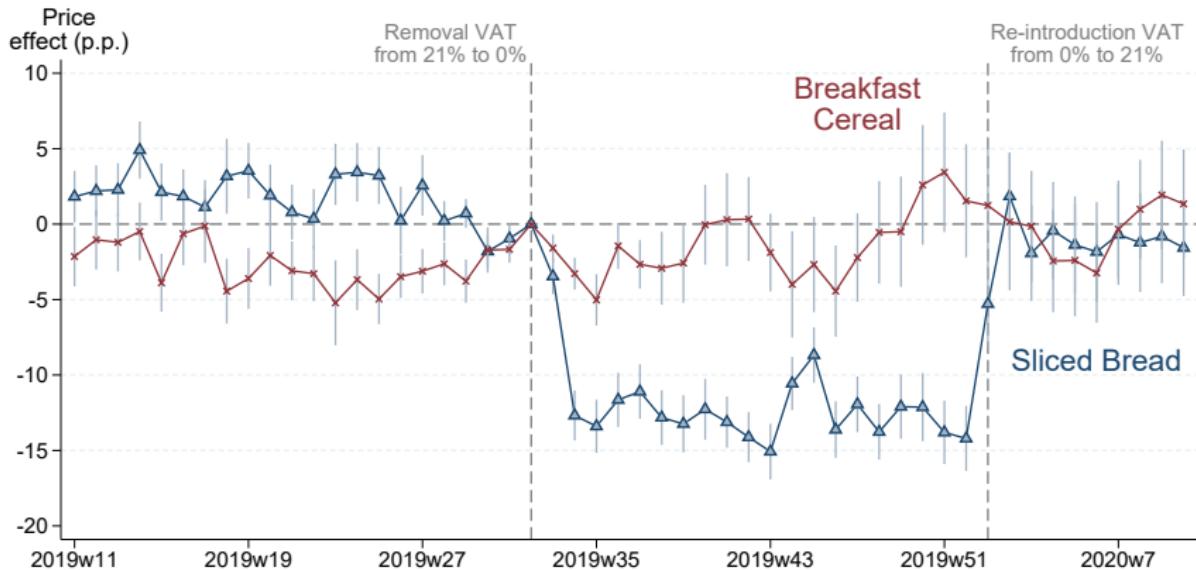
T vs Close substitutes in C (case studies)

▶ Back



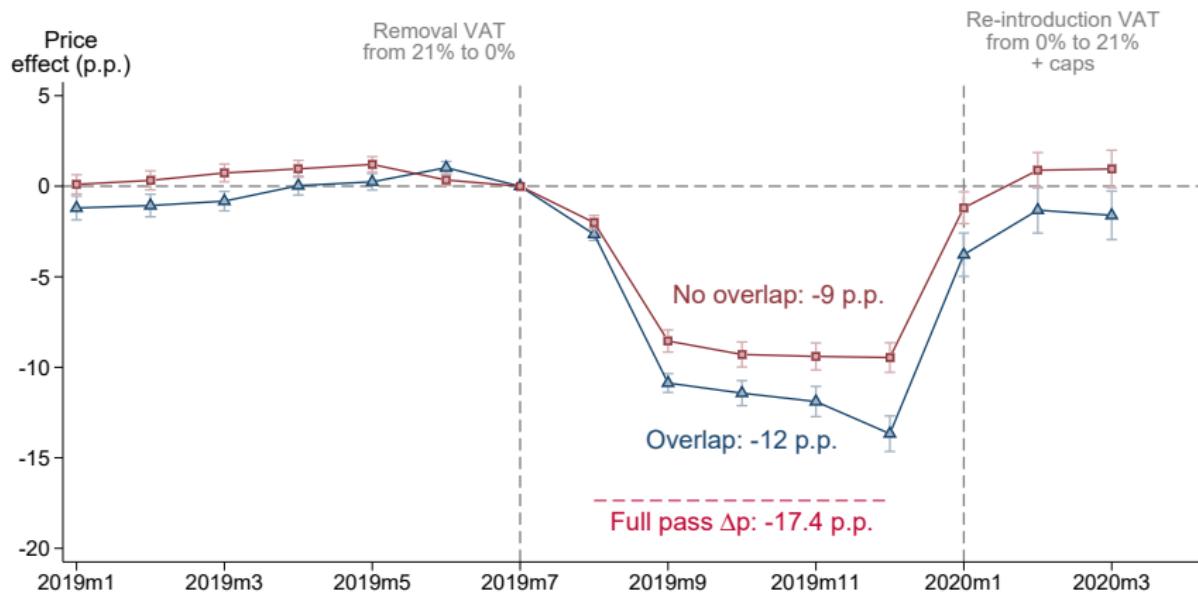
T vs Close substitutes in C (case studies)

▶ Back



Barcodes sold in both small & large stores (overlap) vs sold in either small or large stores (no overlap)

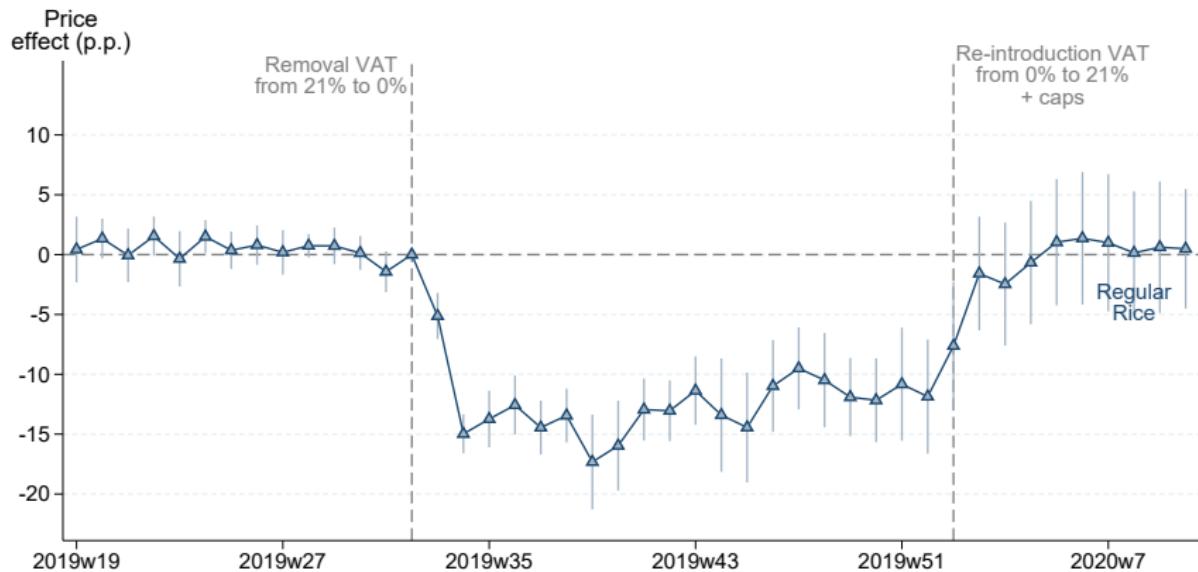
▶ Back



Capped VAT increase: Rice

Back

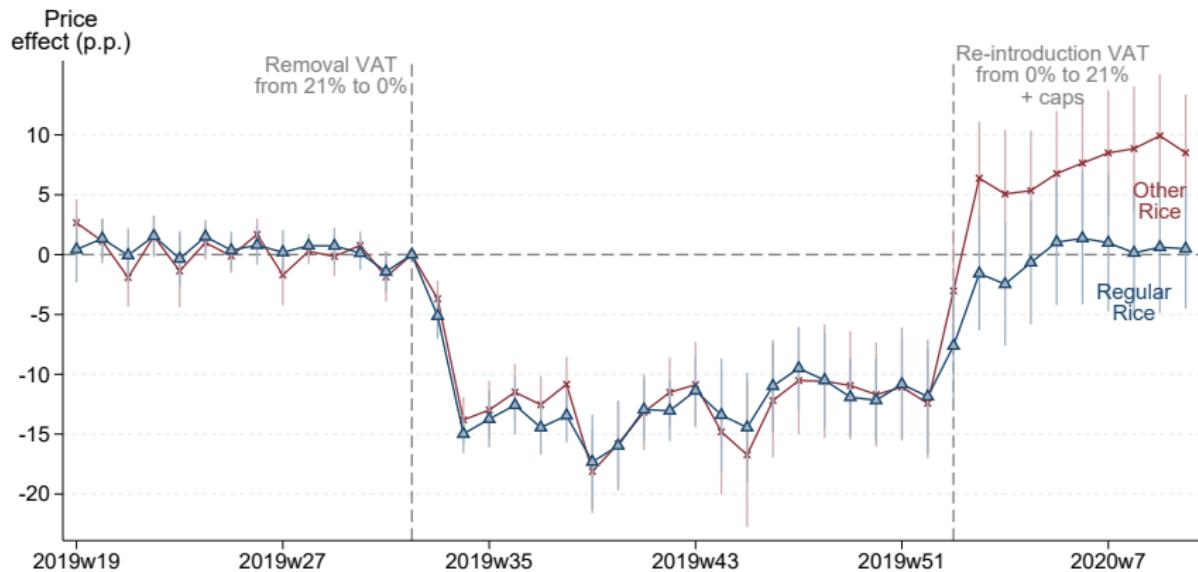
Regular Rice (7% cap) vs Other Rice (no cap)



Capped VAT increase: Rice

Back

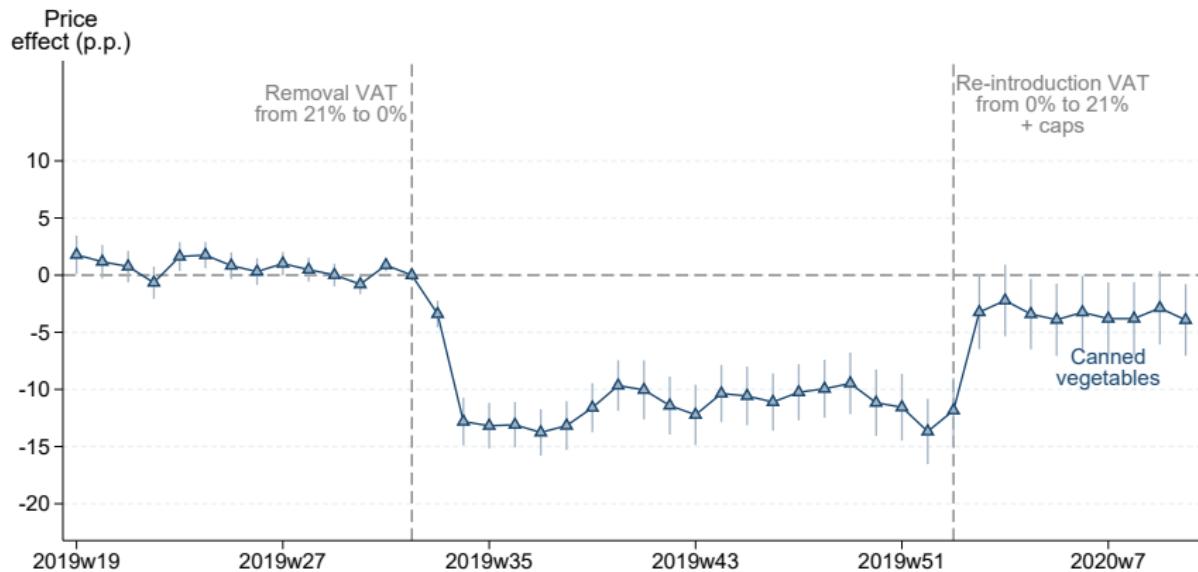
Regular Rice (7% cap) vs Other Rice (no cap)



Capped VAT increase: Canned food

▶ Back

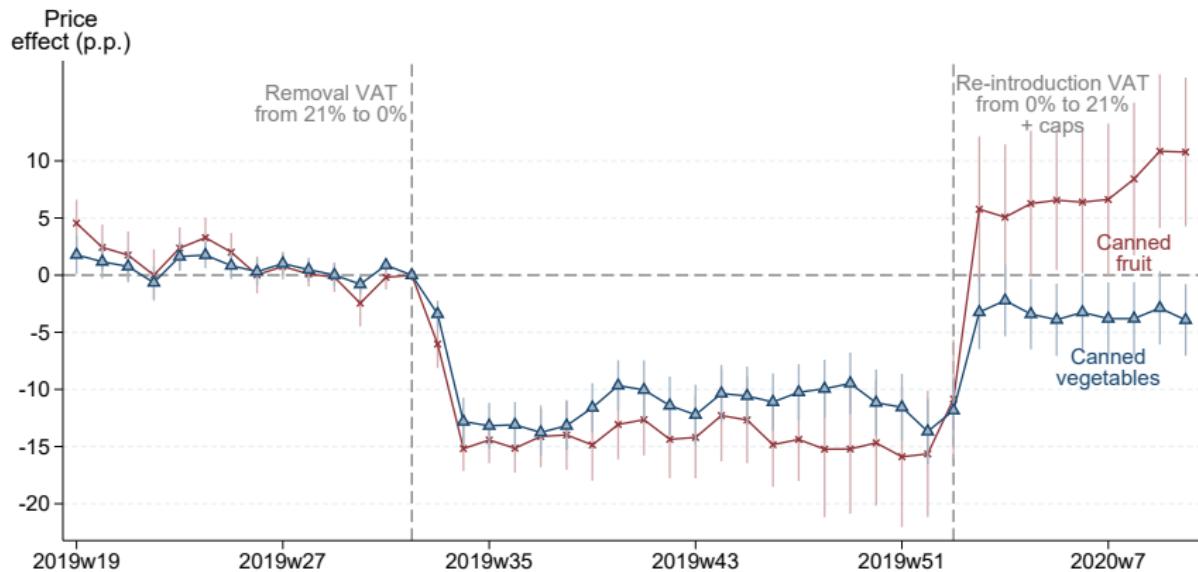
Canned vegetables (7% cap) vs Canned fruit (no cap)



Capped VAT increase: Canned food

▶ Back

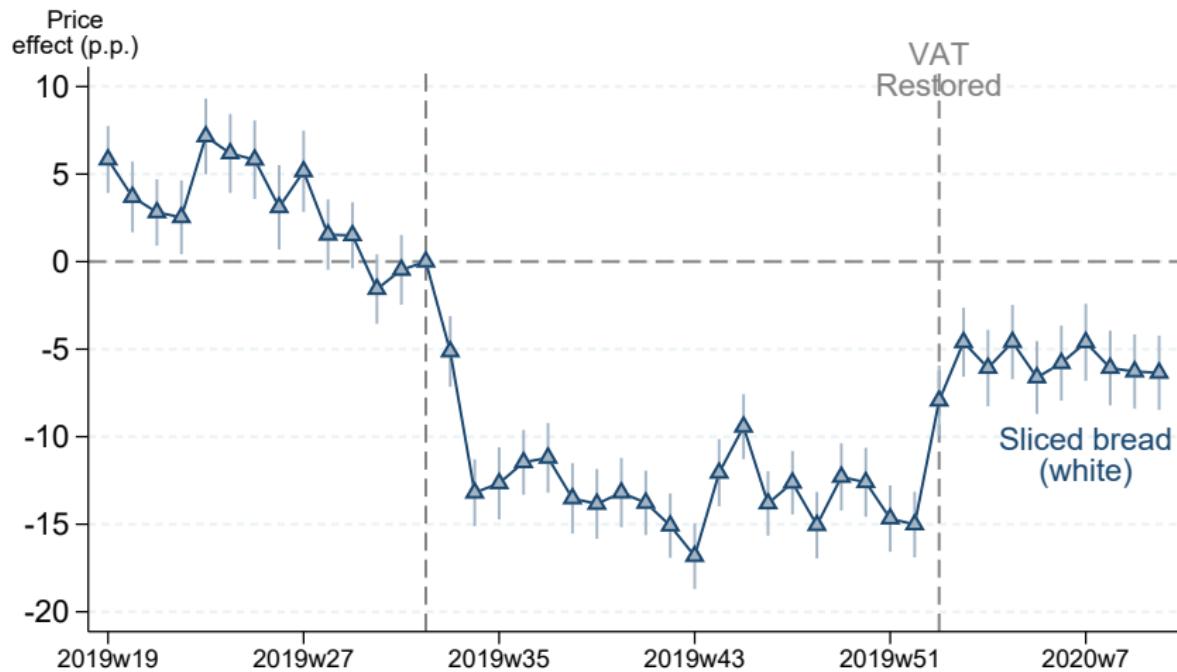
Canned vegetables (7% cap) vs Canned fruit (no cap)



Capped VAT increase: Sliced bread

▶ Back

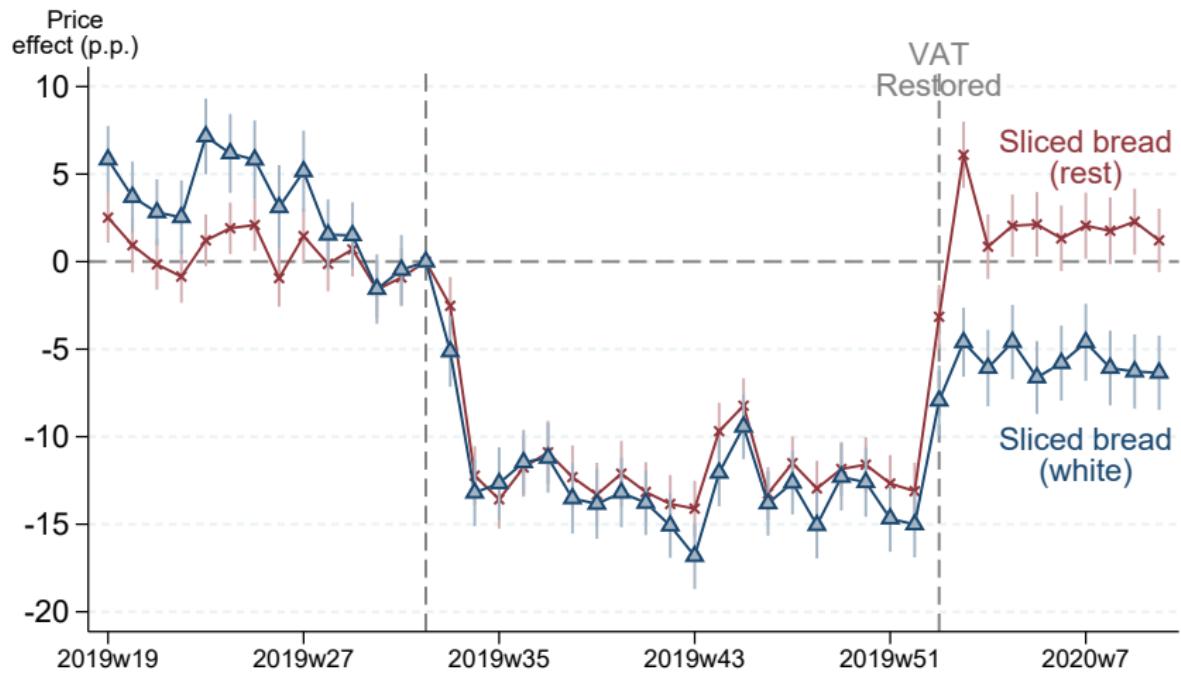
Slide bread (white) (7% cap) vs Sliced bread (rest) (no cap)



Capped VAT increase: Sliced bread

▶ Back

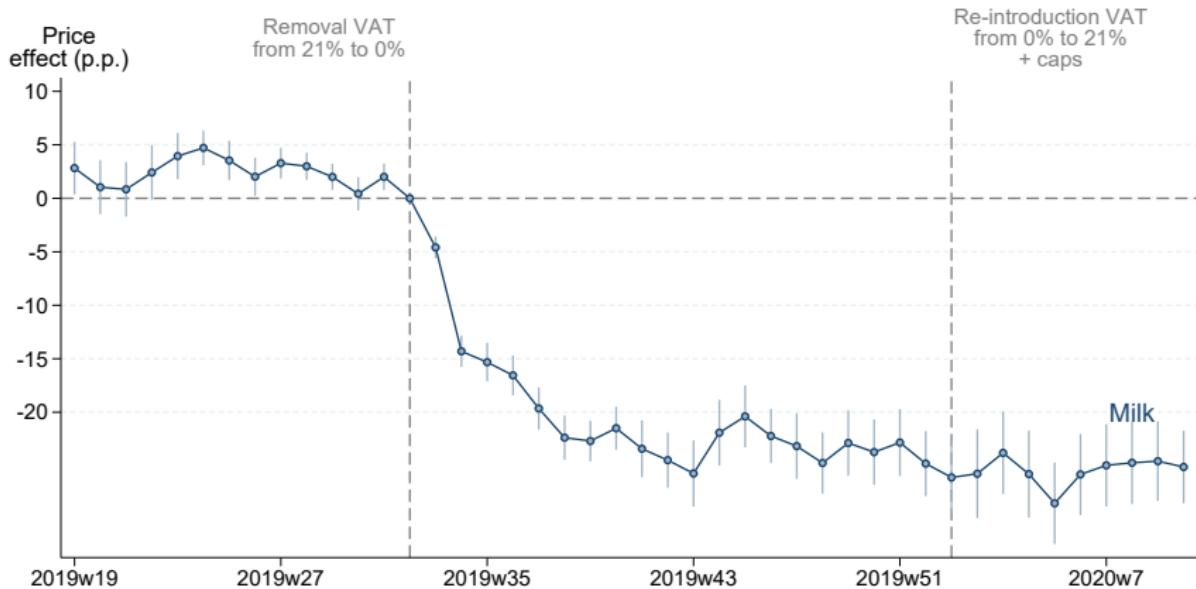
Slide bread (white) (7% cap) vs Sliced bread (rest) (no cap)



Capped VAT increase: Milk

▶ Back

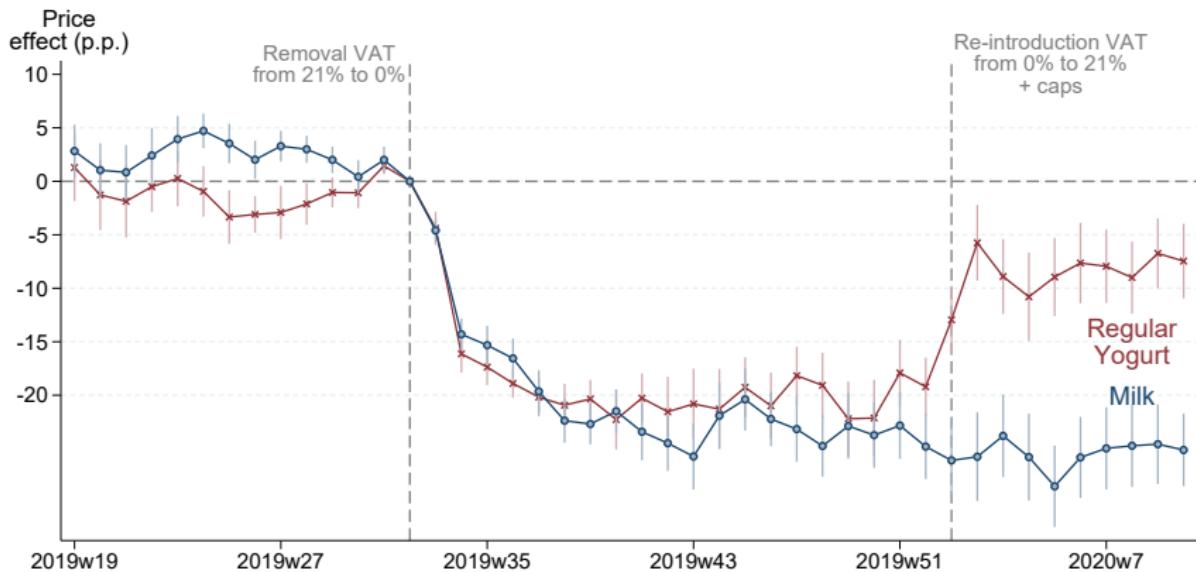
Milk (0% cap): Full incidence on the supply



Capped VAT increase: Milk

▶ Back

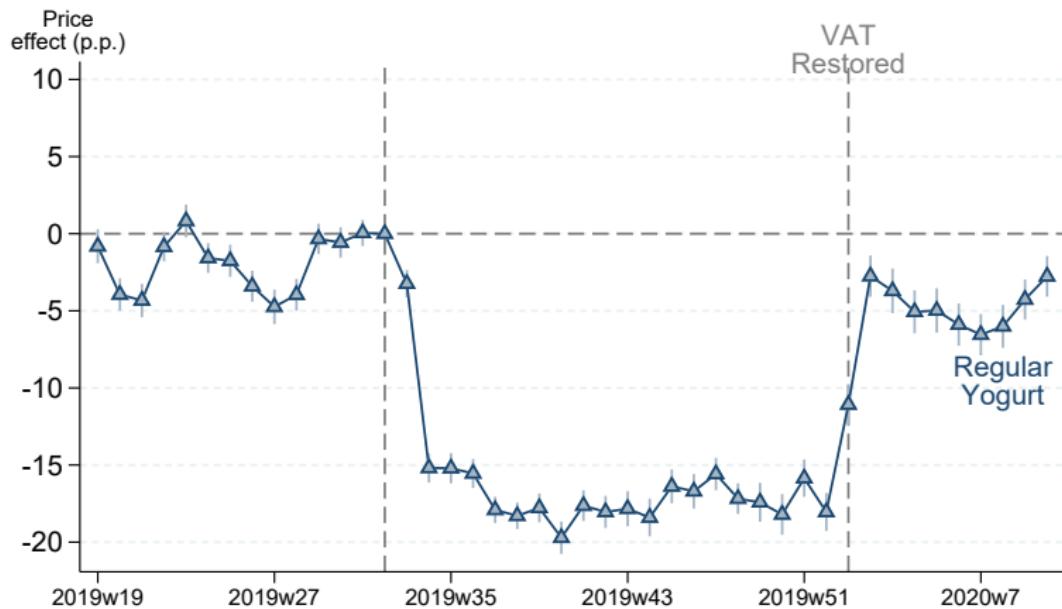
Milk (0% cap): Full incidence on the supply



Capped VAT increase

▶ Back

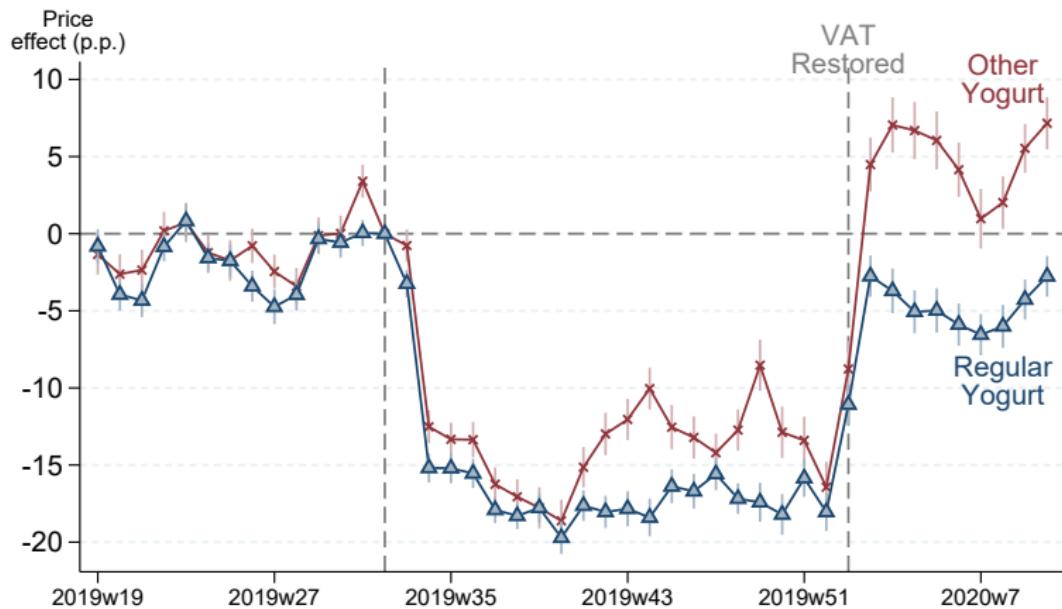
Regular Yogurt (7% cap) vs Other Yogurt (no cap)



Capped VAT increase

▶ Back

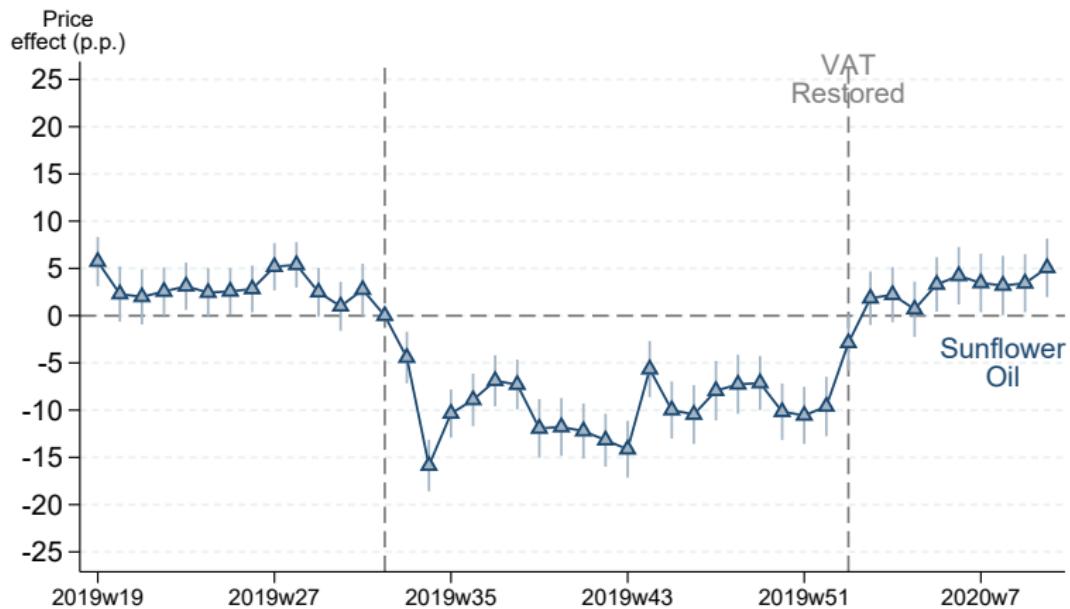
Regular Yogurt (7% cap) vs Other Yogurt (no cap)



Capped VAT increase

▶ Back

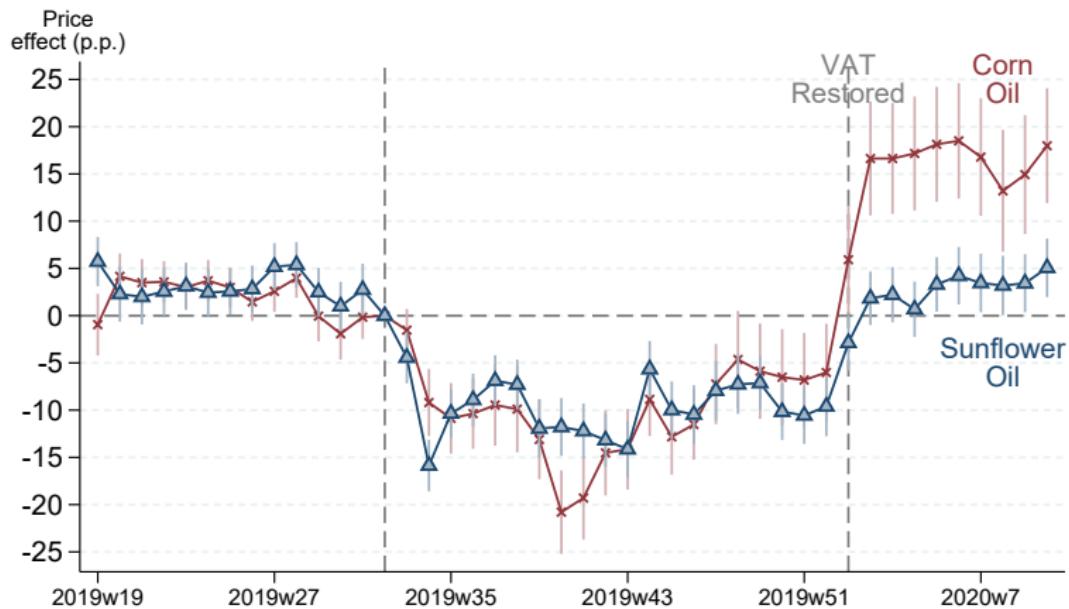
Sunflower Oil (9% cap) vs Corn Oil (no cap)



Capped VAT increase

▶ Back

Sunflower Oil (9% cap) vs Corn Oil (no cap)



Pass-through under nominal price controls

We show that price freezes are more effective at keeping controlling prices than capping the percent increase in prices

Productos Esenciales: 64 barcodes of the Basic Food Basket with price frozen for 6 months (Apr 29–Oct 31, 2019) ▶ Tag ▶ More

- ▶ **Logic:** Price caps limit the incidence of VAT cuts:
Stores keep regulated price \Rightarrow pocket entire VAT reduction

We flag these 64 barcodes in our data and run the DiD

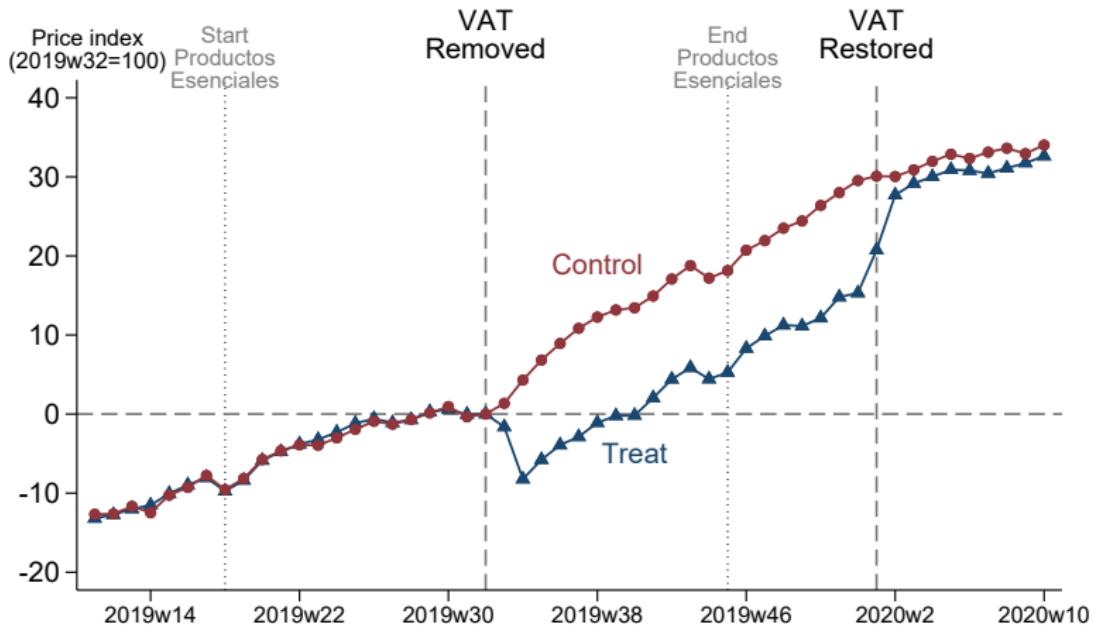
- Treated: 38 EANs (N=34,795)
- Control: 10 EANs (N=11,863); 16 missing (no data)

- (1) Compare Essential barcodes in T vs Rest of goods in T and C
- (2) Compare Essential barcodes in T vs C

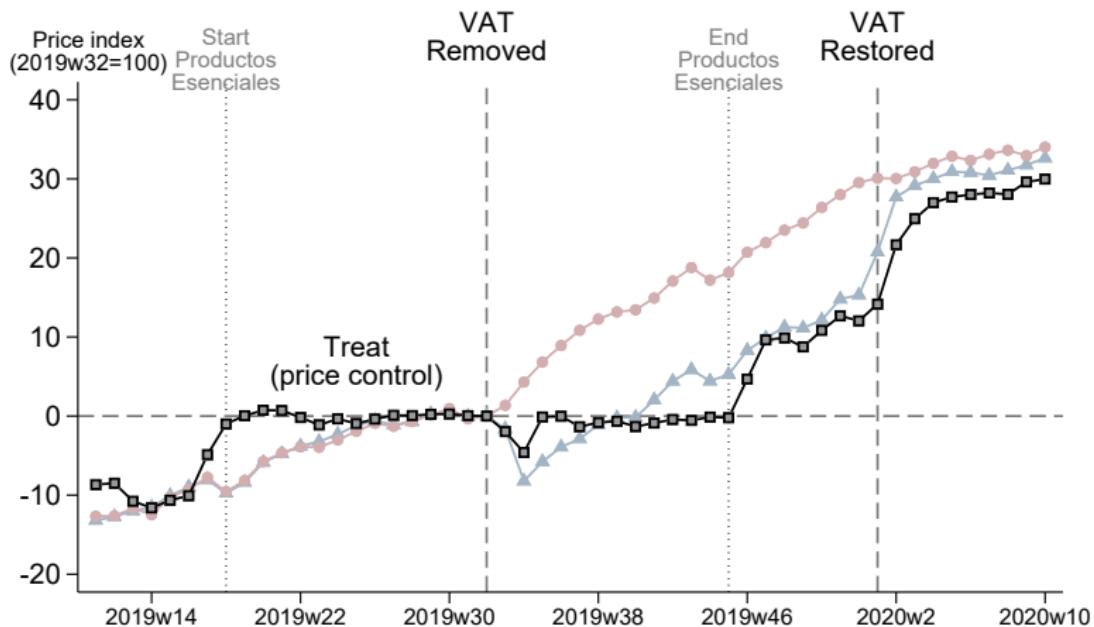
Price Controls: mandatory tags, banners, and App



[1] Productos Esenciales (in T) vs Rest (T and C)

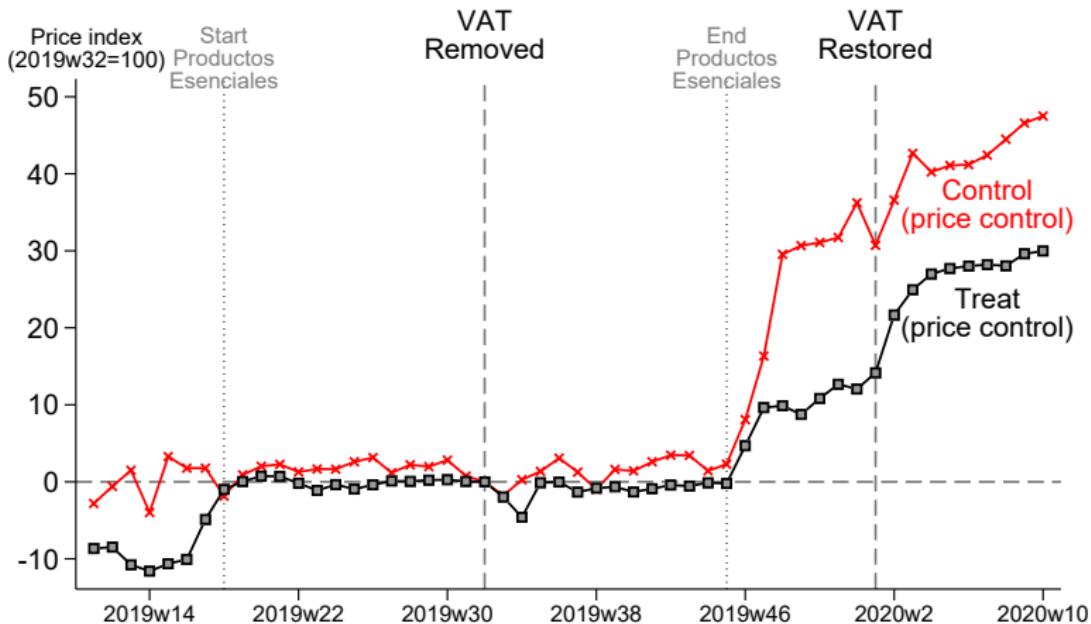


[1] Productos Esenciales (in T) vs Rest (T and C)



[2] Productos Esenciales: in T and C

► DiD



Monitoring App:

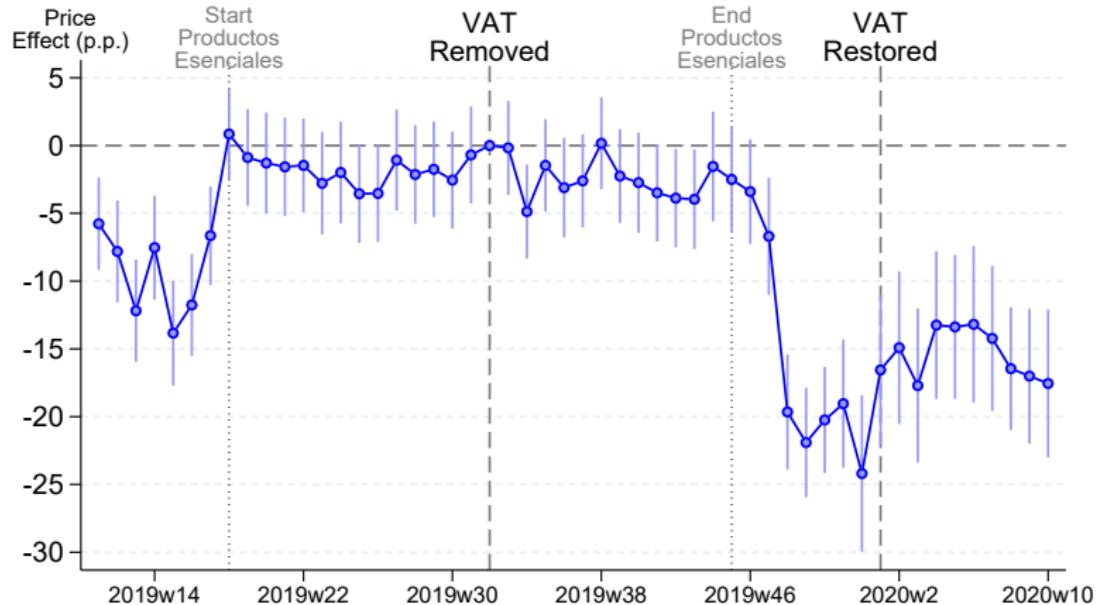
- ▶ **Precios Claros:** an Electronic Price Advertising System (SEPA) launched in 2016. Goal: ↑ price visibility
 - Large grocery stores must report daily price data ([Art 4: except SMEs](#))
 - Consumers can search prices/location from web-page or app
 - Administered/enforced by the Consumer Protection Office

Price Controls:

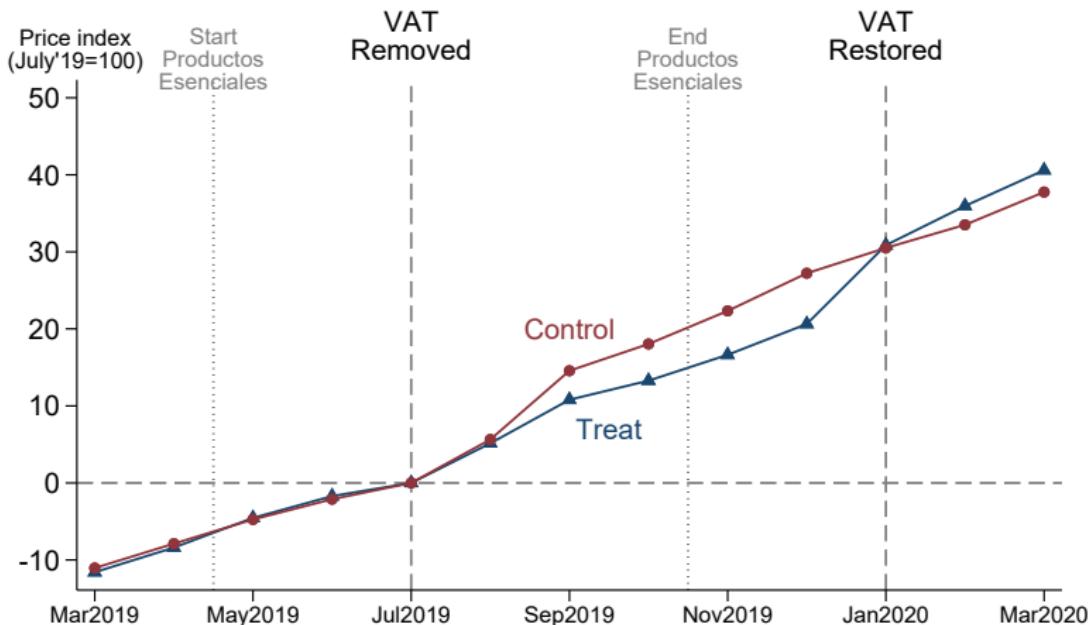
- ▶ **Precios Cuidados:** A list of mass consumption goods with controlled prices (\approx 500 barcodes, e.g., Coke 1.5L). Since 2014
 - Updated every 4 months; Mandatory tags; Audits; High penalties
- ▶ **Productos Esenciales:** Govt froze the price of 64 barcodes in the Basic Food Basket for 6 months (Apr 29–Oct 31, 2019)
 - ▶ High compliance: Daily audits in 2,500 points of sale in the country to detect non-compliance and missing products

[2] Productos Esenciales: Dynamic DiD

▶ Back

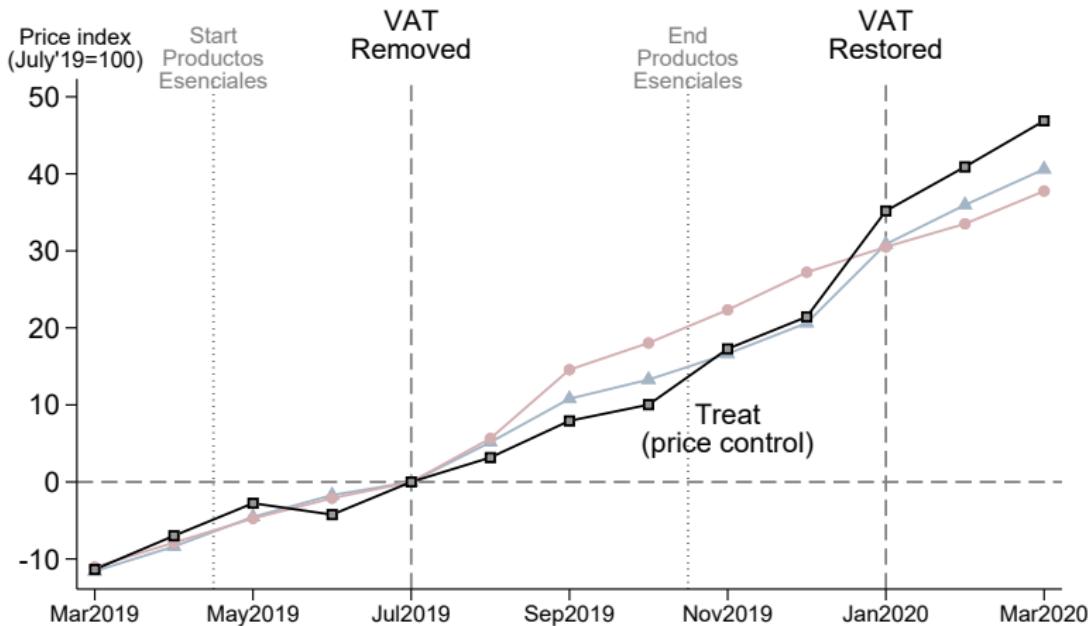


[1] Productos Esenciales (in T) vs Rest (T and C)

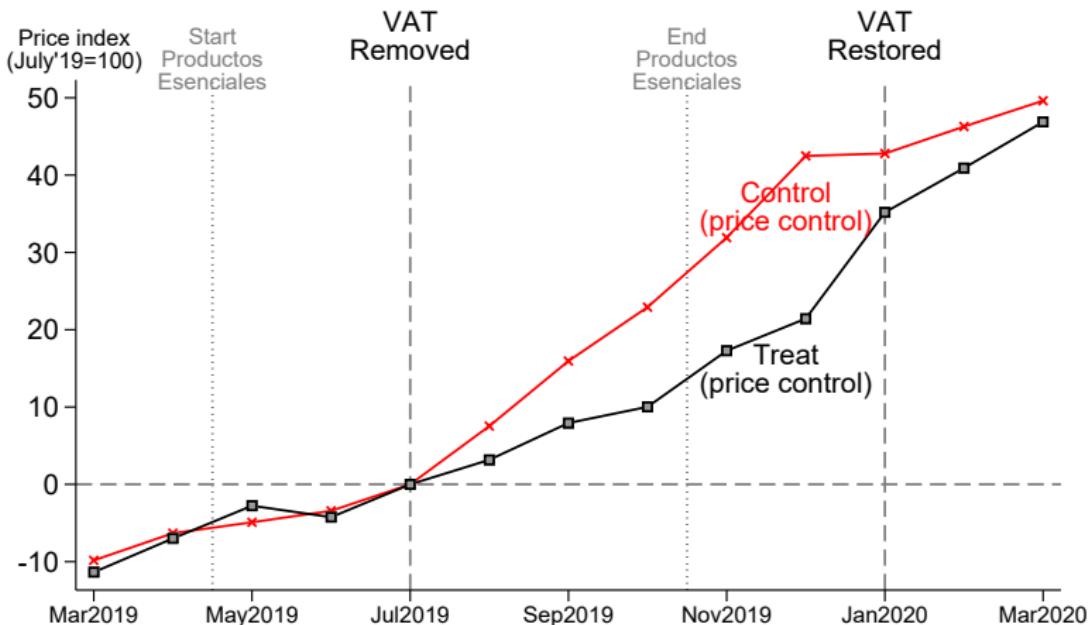


[1] Productos Esenciales (in T) vs Rest (T and C)

Back

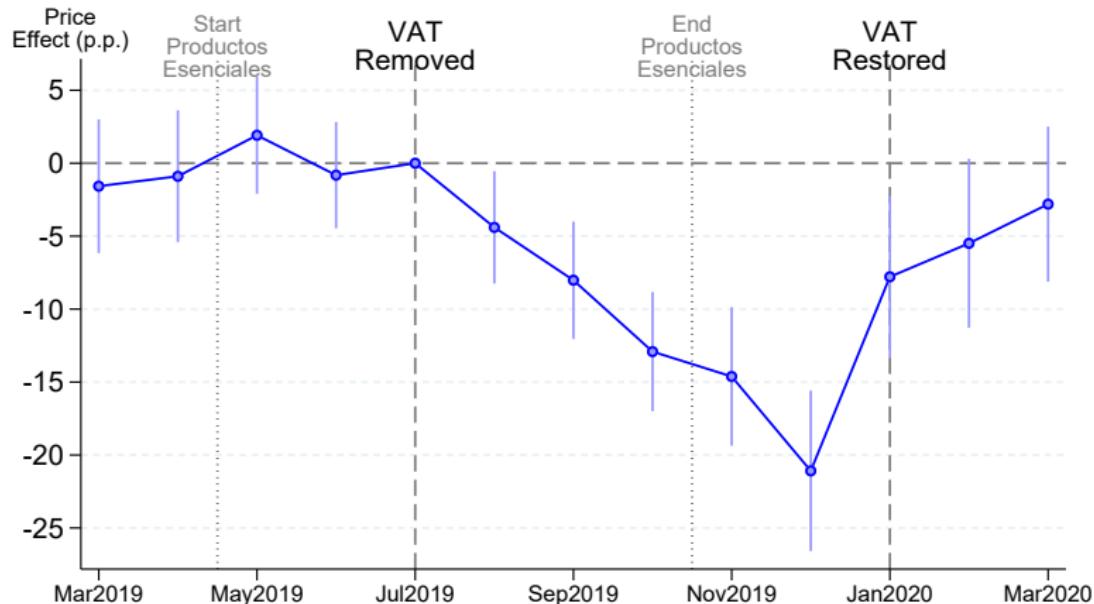


[2] Productos Esenciales: in T and C



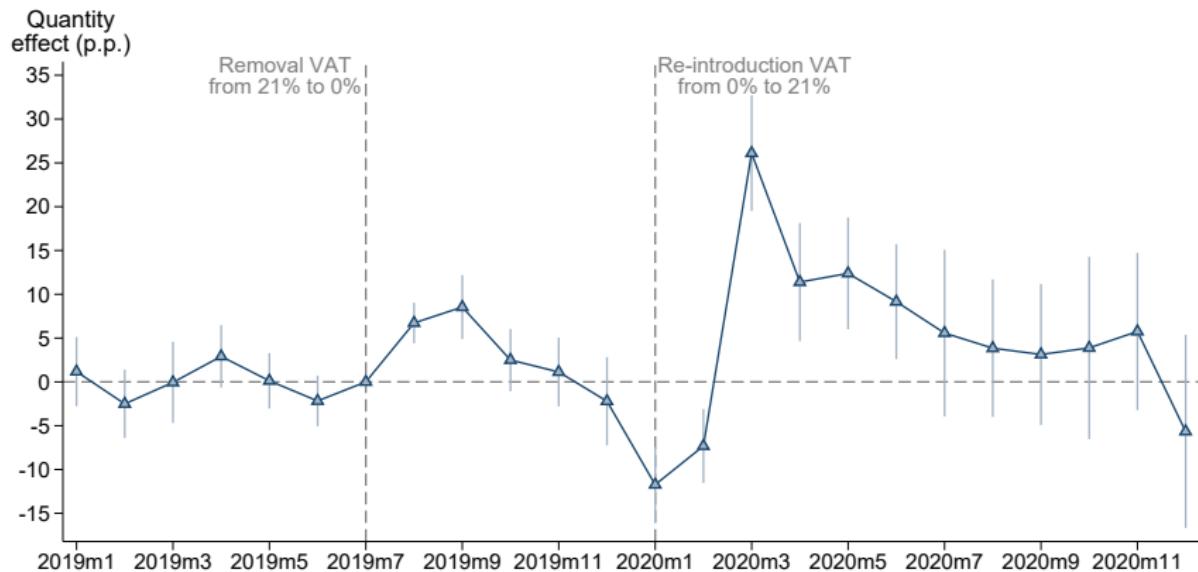
[2] Productos Esenciales: Dynamic DiD

▶ Back



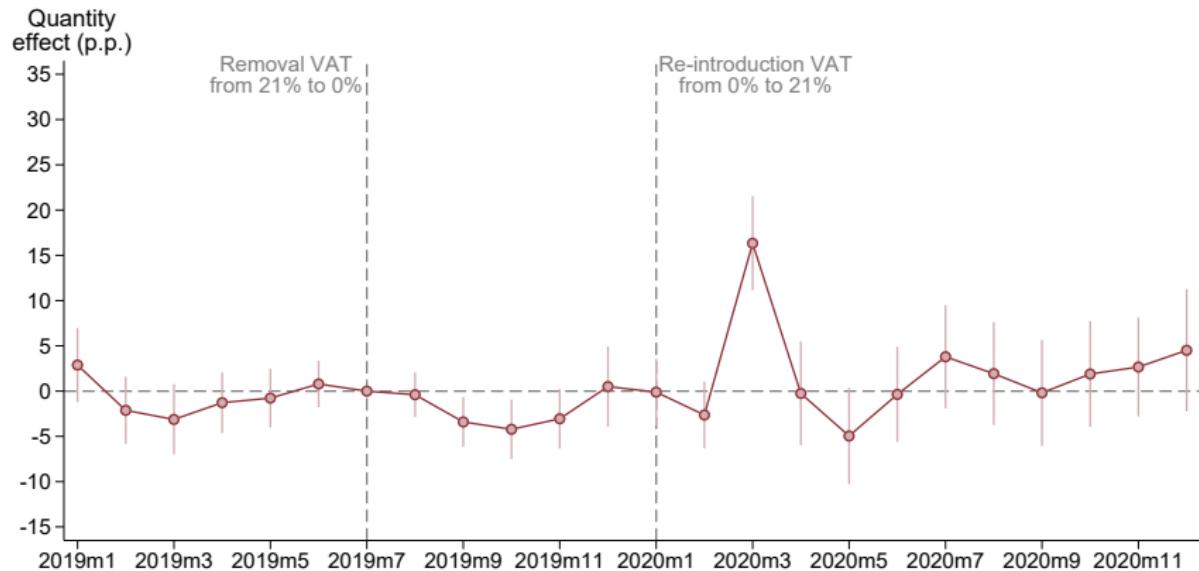
Quantity effects in the longer run

▶ Back



Quantity effects in the longer run

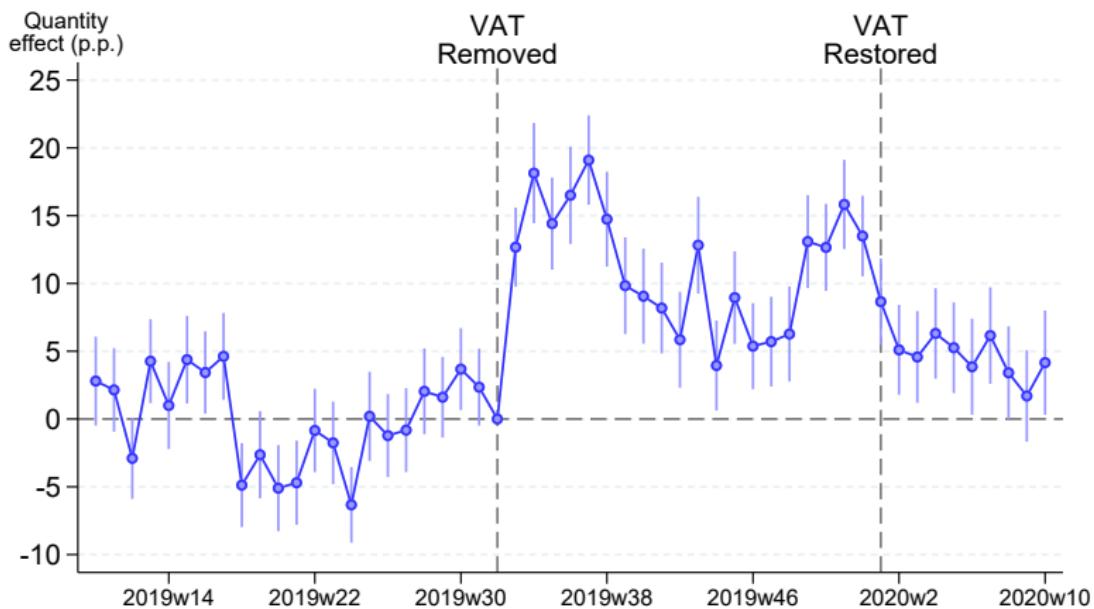
▶ Back



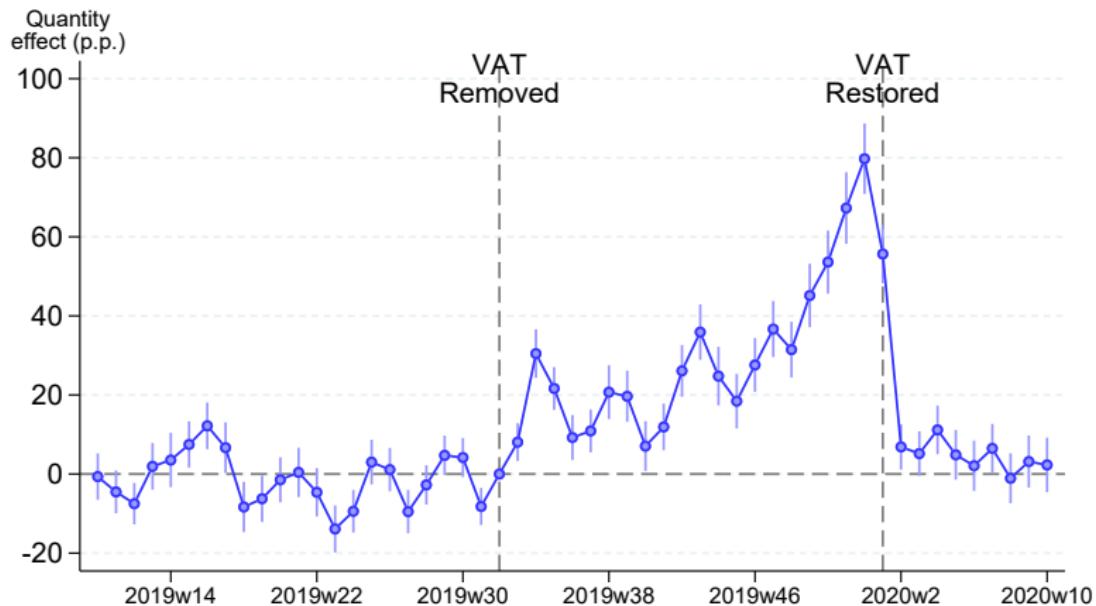
Quantity effect (Dynamic DiD): Large chains

[Back](#)

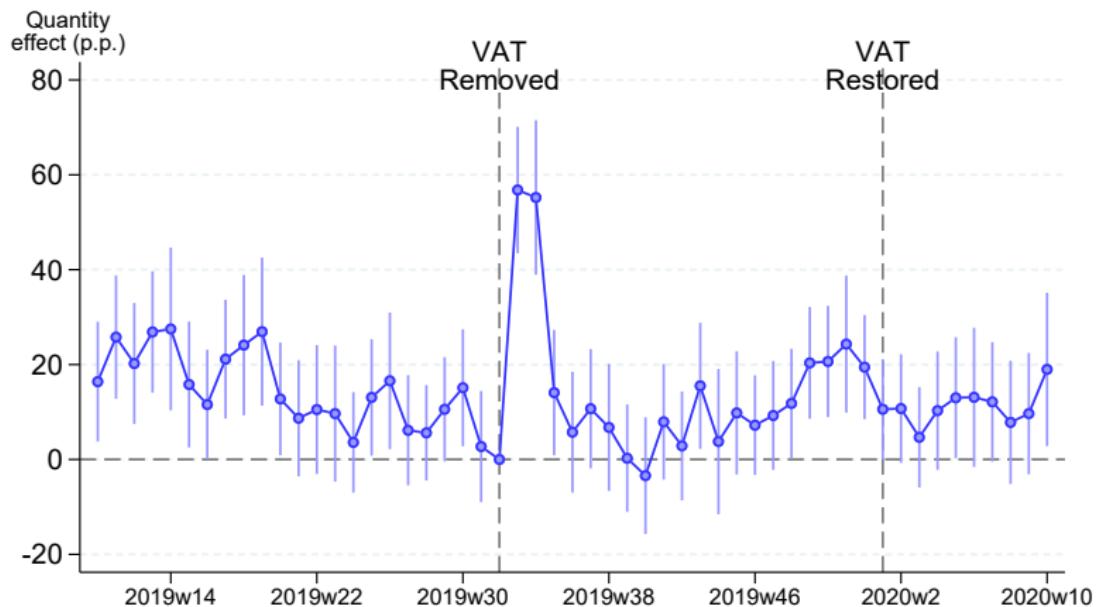
Yerba Mate vs Control



Canned fruit/veg vs Control

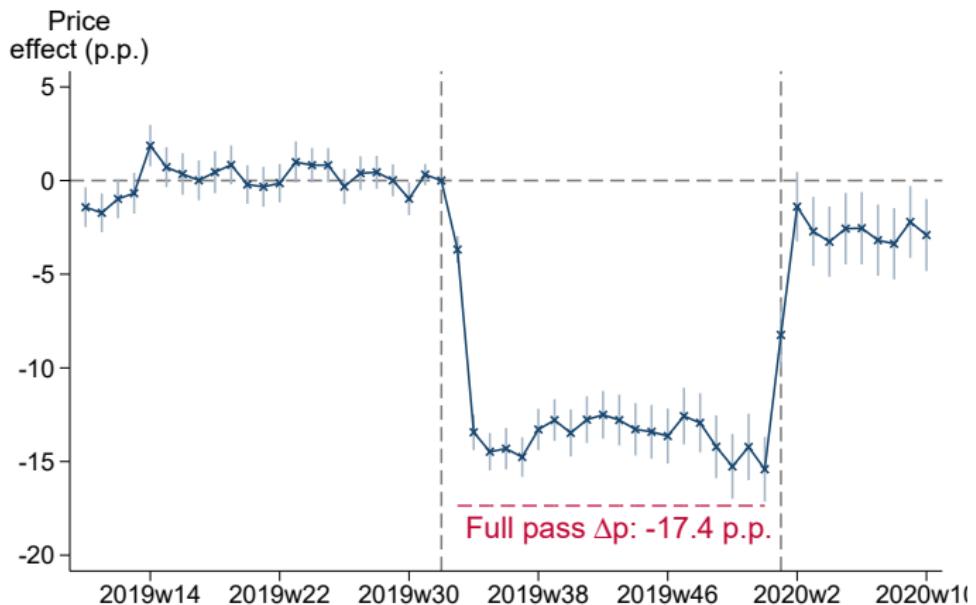


Cooking oil vs Control



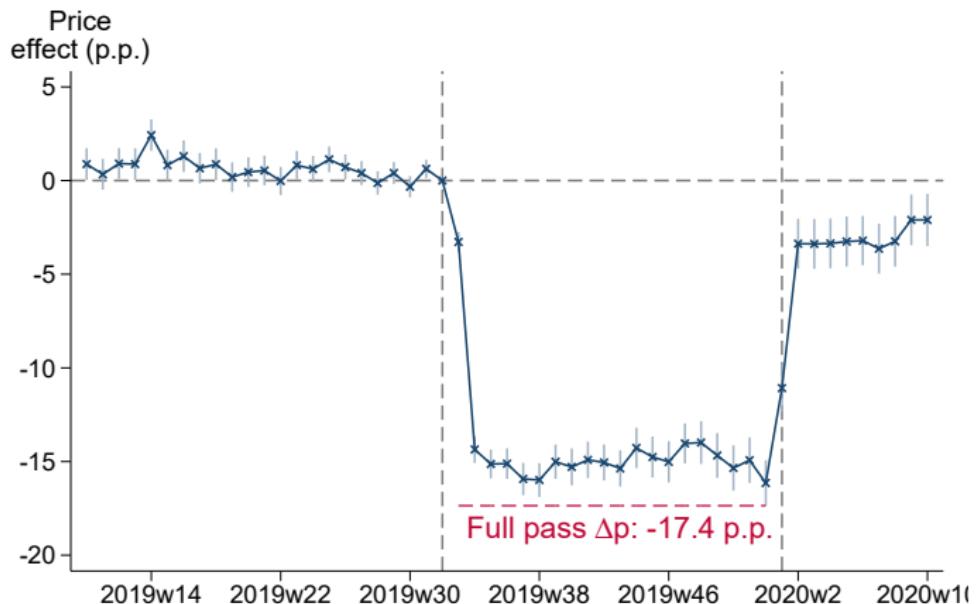
Heterogeneities by region

AUSTRAL



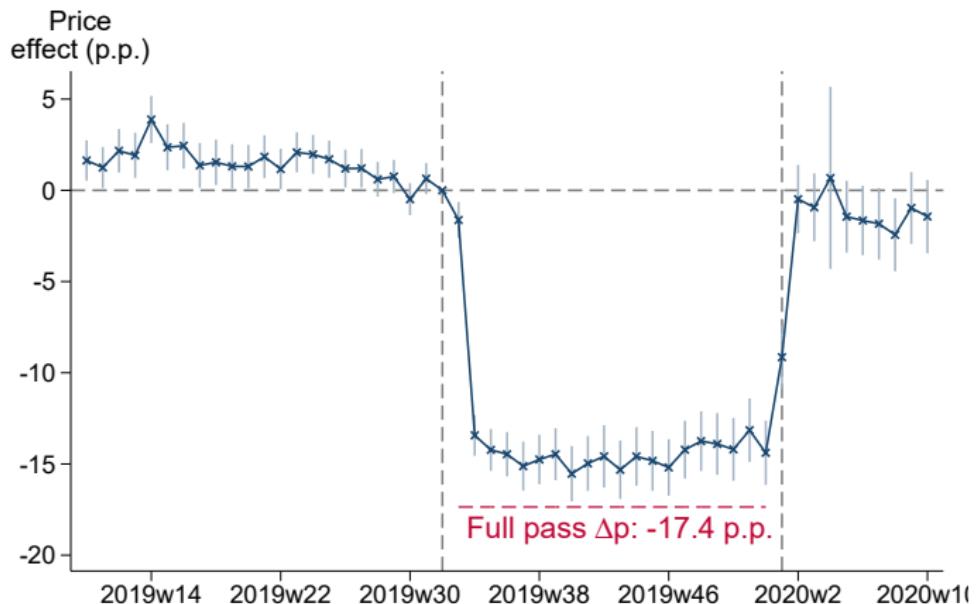
Heterogeneities by region

BS. AS. RESTO



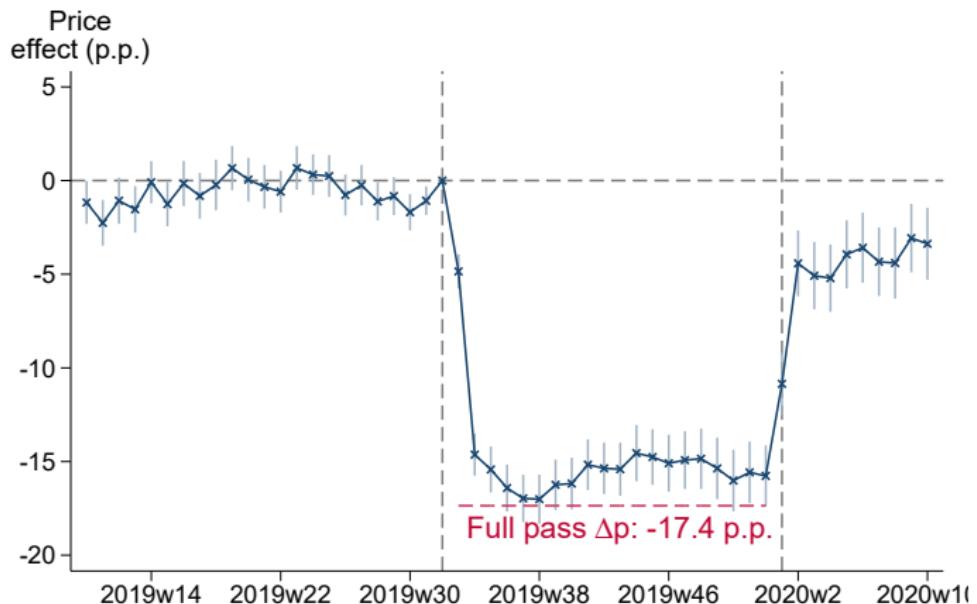
Heterogeneities by region

CAPITAL FEDERAL



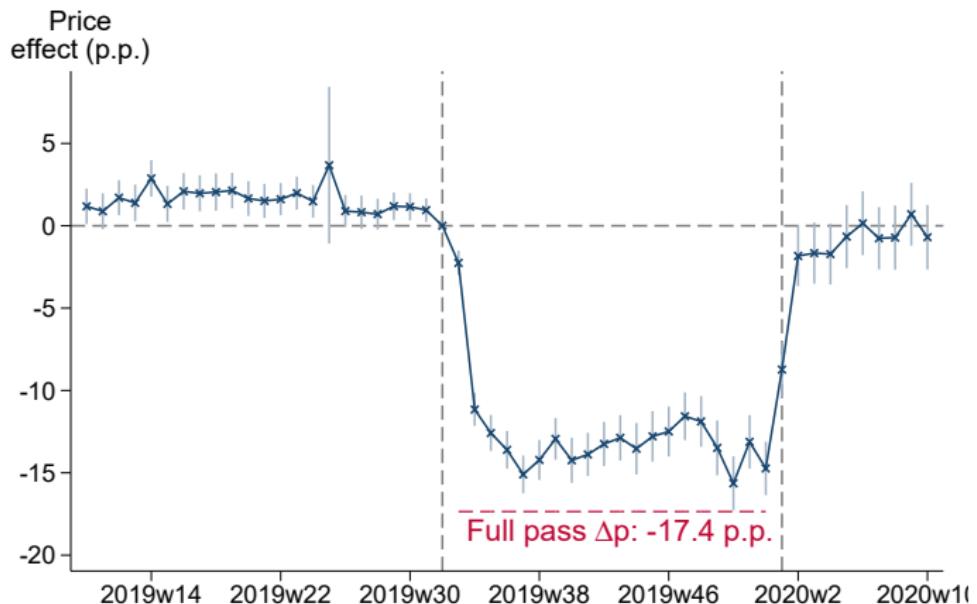
Heterogeneities by region

CORDOBA



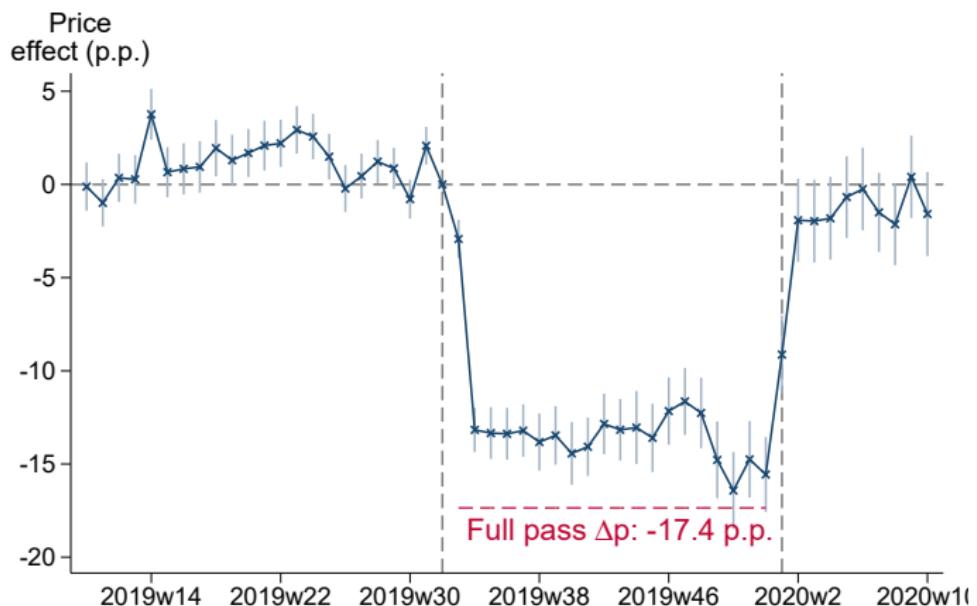
Heterogeneities by region

CUYO



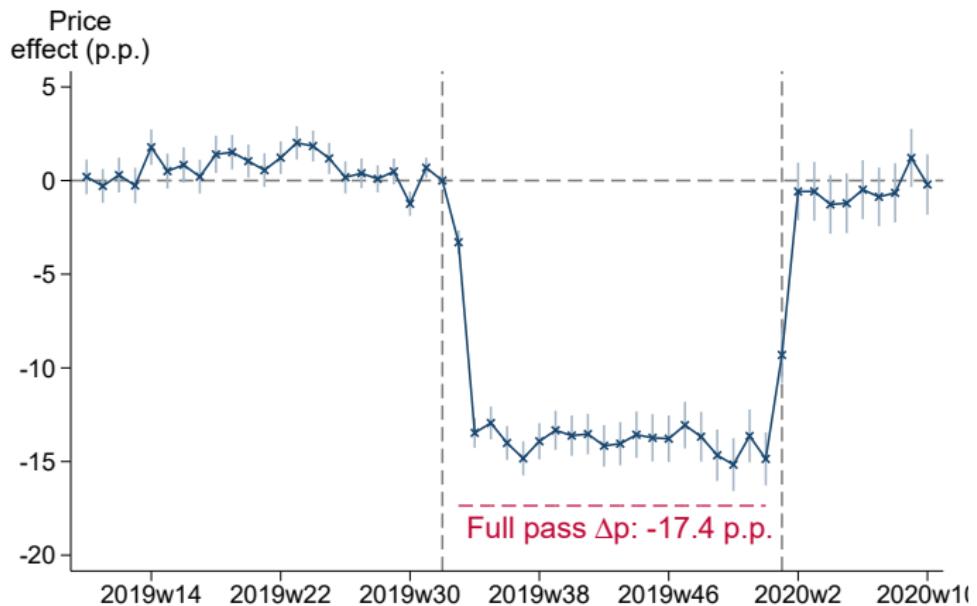
Heterogeneities by region

LITORAL NORTE



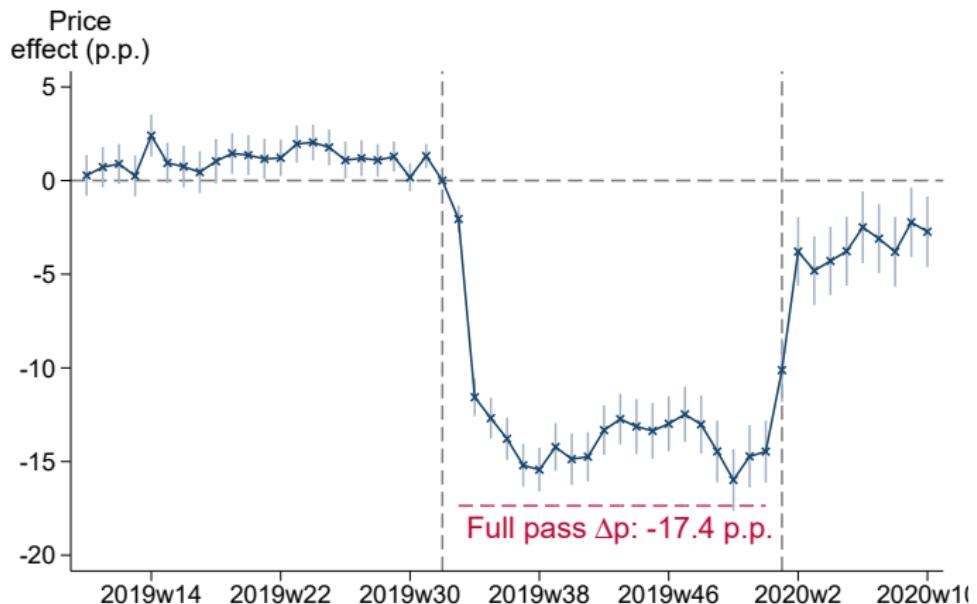
Heterogeneities by region

LITORAL SUR



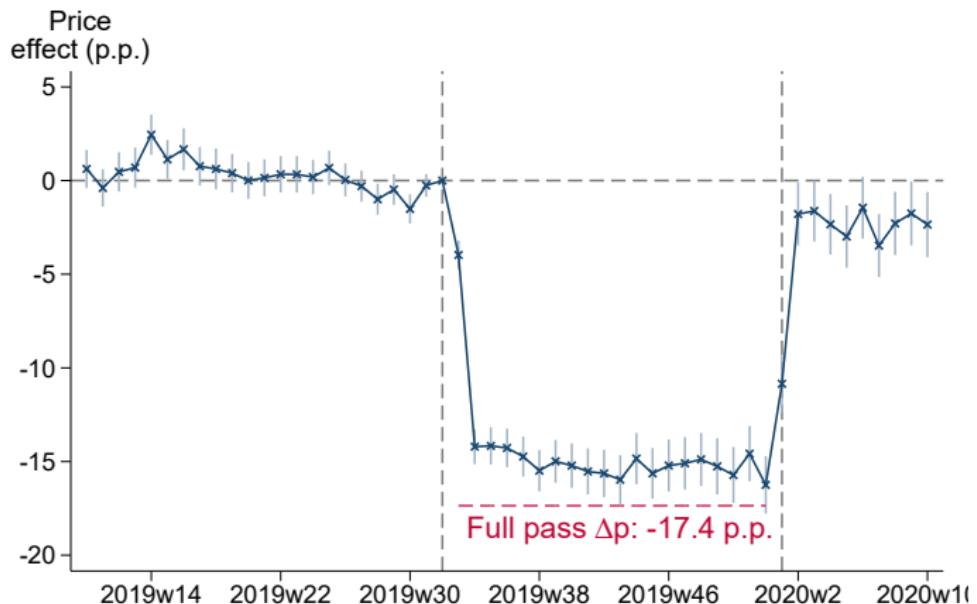
Heterogeneities by region

NOA



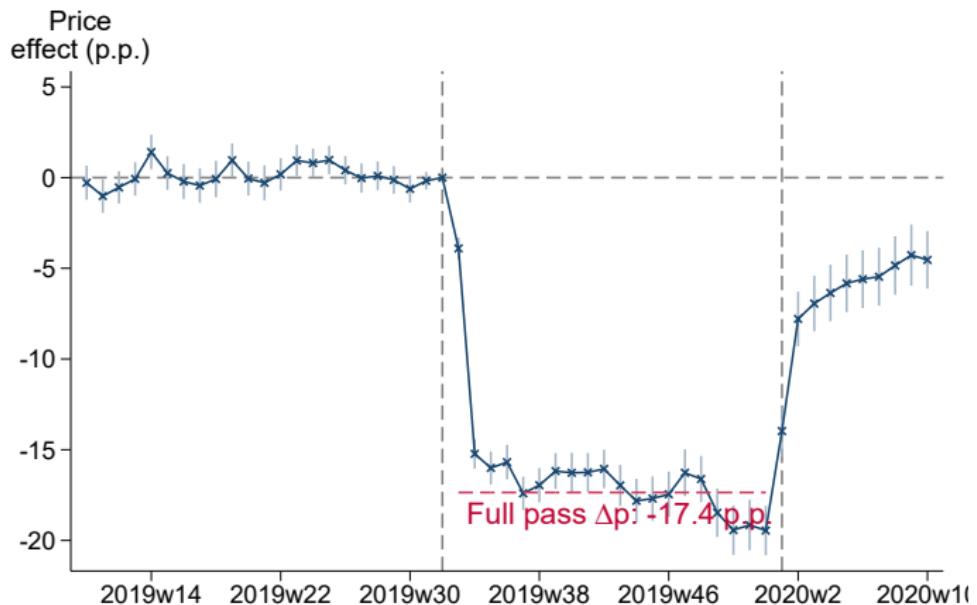
Heterogeneities by region

PERIFERIA

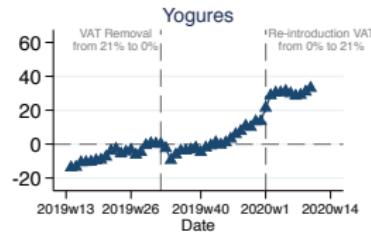
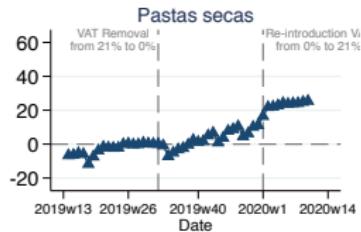
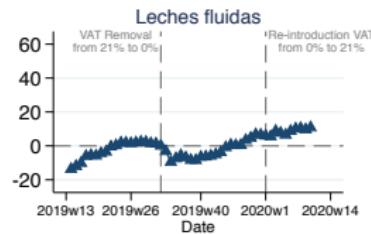
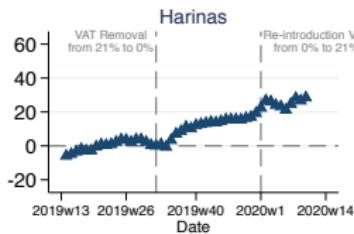
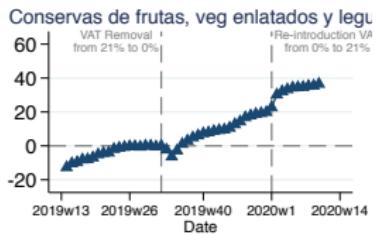
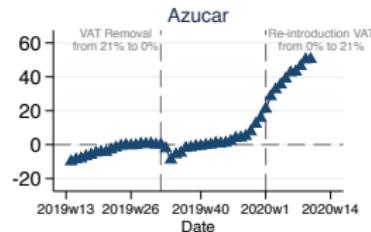
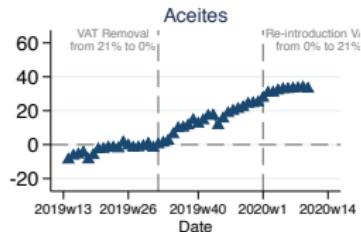


Heterogeneities by region

SUR



Heterogeneities by products



Robustness (aggregate price data)

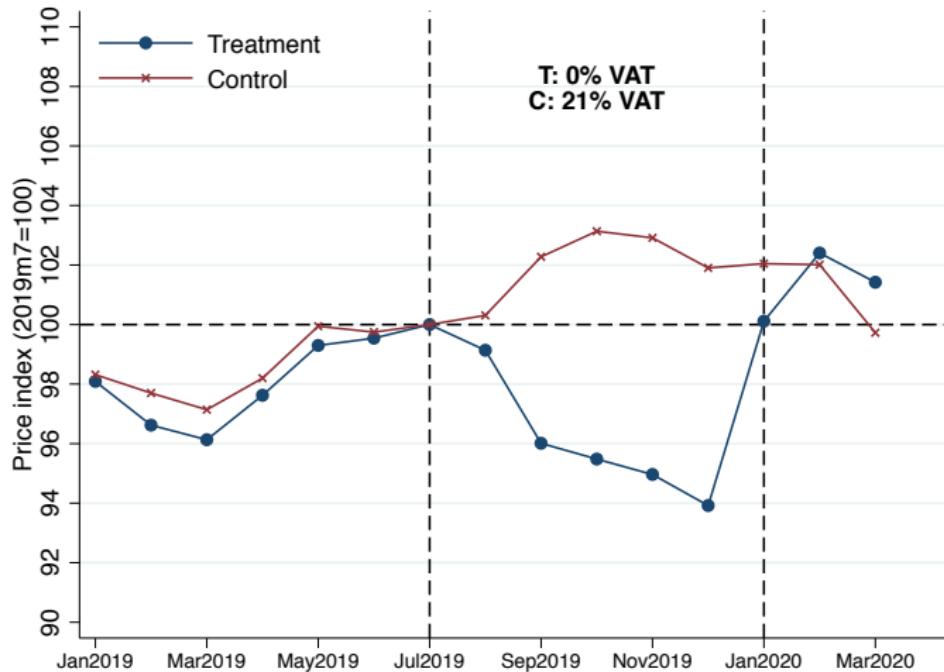
- ▶ Result is also present in aggregate price data!
- ▶ National Institute of Statistics (INDEC) publishes average monthly **prices** of some products ([link](#)) used in the CPI index (59 products in GBA; 14 products across 6 regions)
- ▶ We break the list into T (0% VAT) and C (21% VAT) and run:

$$\log P_{it} = \alpha_i + \gamma_t + \sum_{t=2019m7}^{2020m5} \beta_t D_{it} + \epsilon_{it}$$

D_{it} is an indicator that denotes whether product i is treated in month t

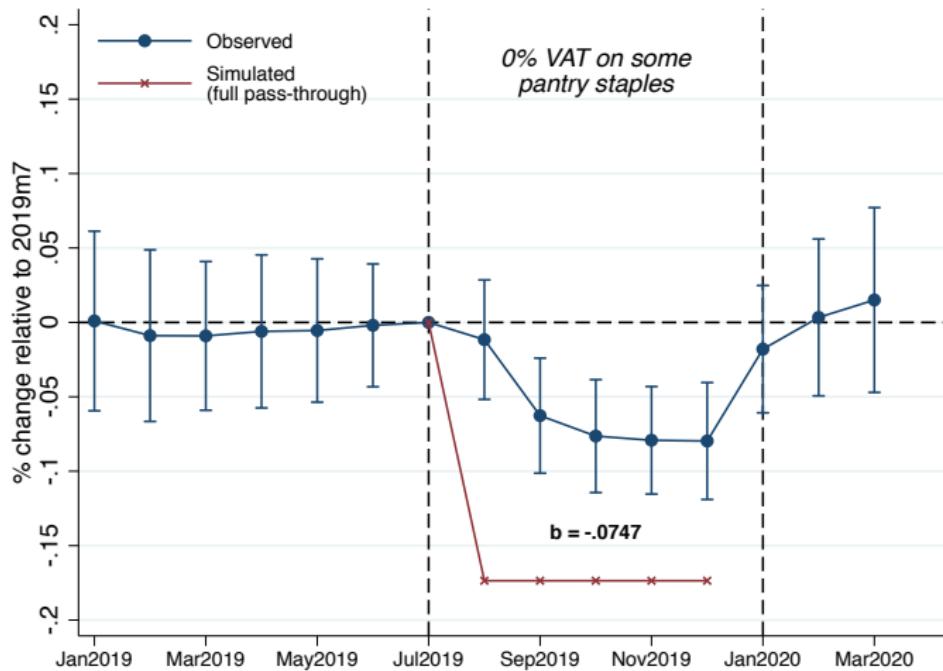
Coefficients β_t test the effect relative to 2019m7

Pass-through to consumer prices [levels]



Partial pass-through [DiD]

▶ Back



$$\log P_{it} = \alpha_i + \gamma_t + \sum_{t \neq 2019m7} \beta_t D_{it} + \epsilon_{it}$$

2020m5