

Can VAT Cuts Dampen the Effects of Food Price Inflation?

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NBER Public Economics Program Meeting

October 19, 2023

Food inflation and temporary VAT cuts

- ▶ Many countries are ↓ VAT rates on food on a scale not seen before to help the vulnerable cope with the soaring cost of living

0% on basic food	Partial VAT cuts	Considering cutting...
Peru	Romania (9 to 5%)	Belgium
Poland	Bosnia (17 to 5%)	Italy
Bulgaria	Croatia (13 to 5%)	Austria
Lithuania	Latvia (21 to 5%)	Slovakia
North Macedonia	Turkey (8 to 1%)	Estonia
Cyprus	Greece (24 to 13%)	Netherlands
Uruguay	DR Congo (16 to 8%)	Belgium
Spain	Costa Rica (13 to 1%)	Germany
Portugal		Angola
Fiji		
Oman		
Togo		

Source: VATCalc www.vatcalc.com

Grocery tax cuts are on the rise in the US too...

Kansas, Alabama, Virginia, Illinois, Tennessee

Kansas phases out sales tax cut on food (6.5% to 0%)



~~FOOD SALES TAX~~ ~~\$33~~

FAMILY OF 4 WOULD SAVE:

\$500

A YEAR



**AXE the
FOOD TAX!**

- ▶ These initiatives are at odds with IMF/OECD advice against using VAT cuts in response to rising inflation
- ▶ But no (relevant) evidence → inflation is rare since late 1980s
- ▶ And little is done to achieve (expensive!) policy goals

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- ▶ But no (relevant) evidence → inflation is rare since late 1980s
- ▶ And little is done to achieve (expensive!) policy goals

Can VAT Cuts Dampen the Effects of Food Price Inflation?

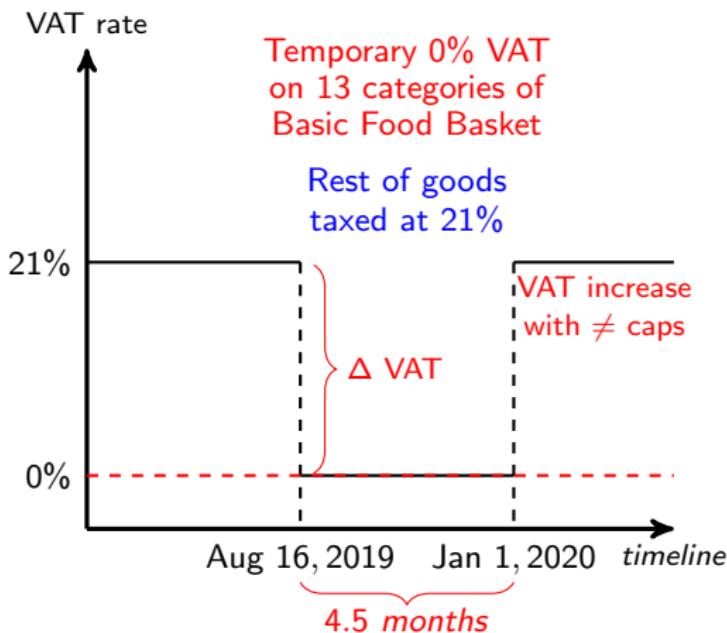
We study whether temporarily reducing VAT rates on foodstuff can mitigate the effects of inflation using **Argentina** as our laboratory

- Do supermarkets lower (VAT-inclusive) prices or pocket some of it?
- Can gov'ts *mandate* tax incidence? (e.g., anti-profiteering clauses)
- What are the distributional effects?

Setting: a 4.5-month long VAT holiday on basic food + a variety of gov't "mandates"

► Timeline/Goal

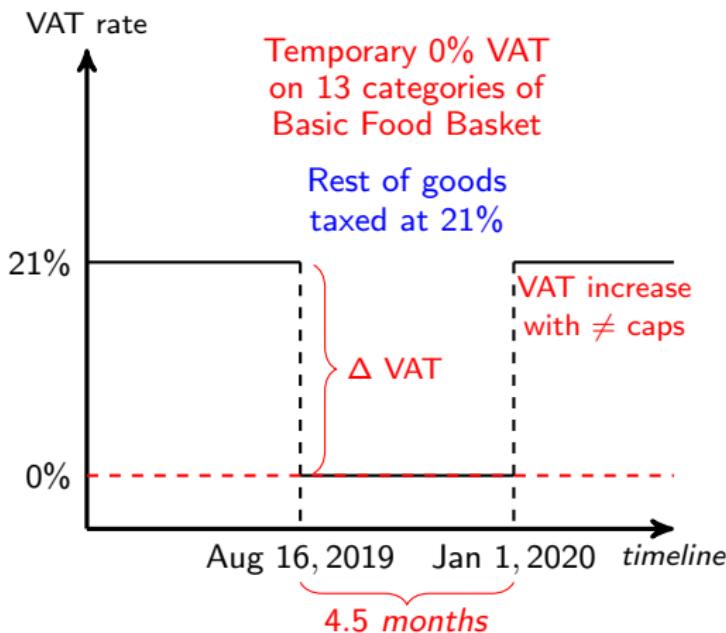
► Enforcement



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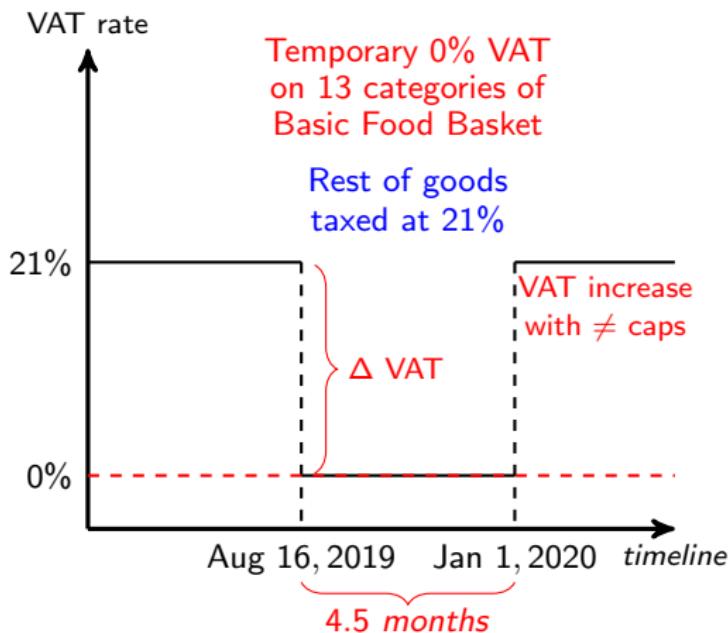
- **VAT cut:** unanticipated, large, salient, and temporary

→ Govt urged *full* pass-through to P
 $(0.21/1.21=17.4\%)$ [link]

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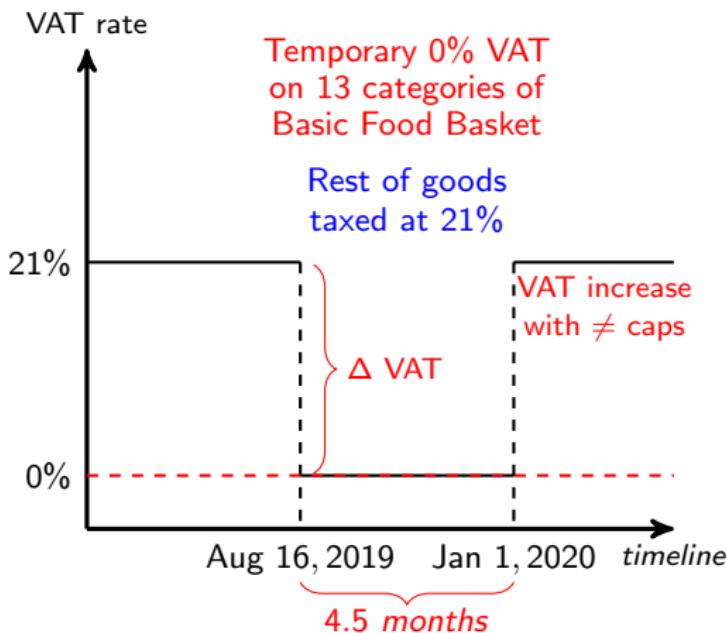
- **VAT increase:** back to 21%

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

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- **Price monitoring system:**

→ In chain supermarkets only! [\[link\]](#)

Data (Scentia scanner data) & Strategy (DiD)

$$Y_{it} = \alpha_i + \gamma_t + \sum_{t \neq 2019m7} \beta_t D_{it} + \epsilon_{it} \quad i : \text{barcodes} \quad t : \text{months-years}$$

Treatment (0% VAT)

Categories	4.4k barcodes
Cooking oils (sunflower, corn, mix)	
Rice	
Dried pasta	
Tea, Yerba Mate, and Mate Cocido	
Sugar	
Canned vegetables and beans	
Canned fruits	
Corn flour (<i>polenta</i>)	
Wheat flour	
Fluid milk (whole/skim)	
Yogurt (whole or skim)	
Eggs	
Bread	
Breadcrumbs and/or batter	

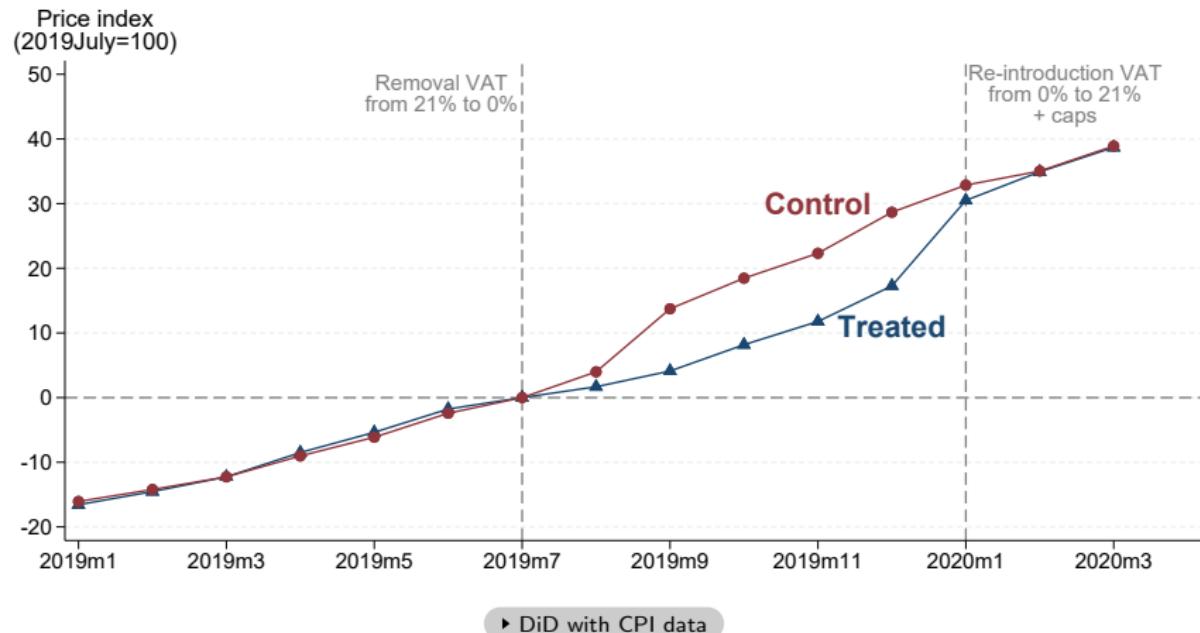
Control (21% VAT)

Categories	3.7k barcodes
Other cooking oils (olive, soy, canola)	
Rice-based meals	
Breakfast cereal	
Coffee	
Salt	
Herbs, Spices, & Seasonings	
Dulce de leche (caramel)	
Jam and Jelly	
Other flours	
Crackers, Biscuits, Toasts, Puddings	
Chocolate	
Mayonnaise	
Vinegar	
Dried legumes and beans	

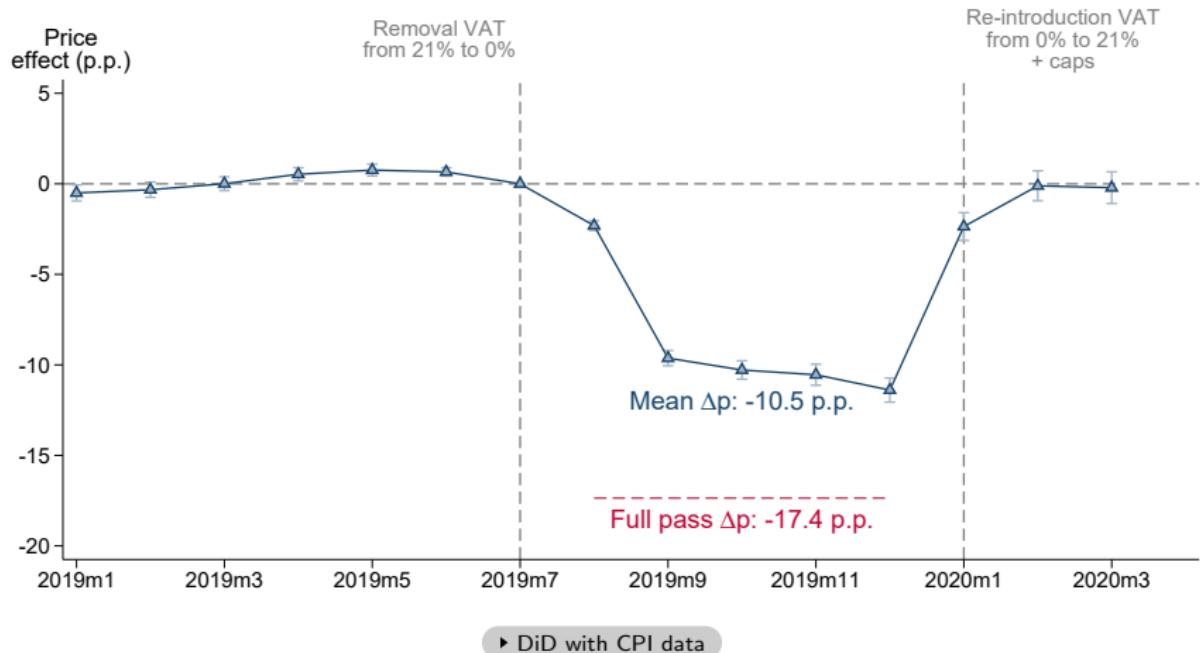
Data provider: Scentia LLC. Barcode-level scanner data from supermarkets with P and Q.

Price responses pooling
chains and indep stores

Price levels in Chains + Independent supermarkets

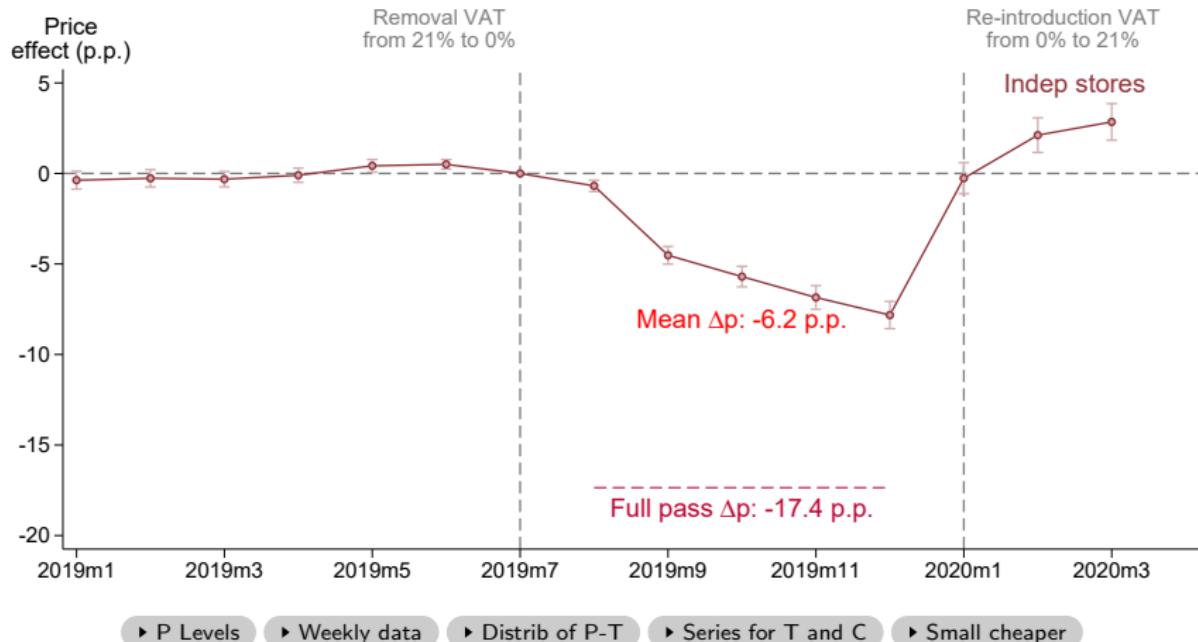


Substantial pass-through of the VAT cut to prices (~60%)

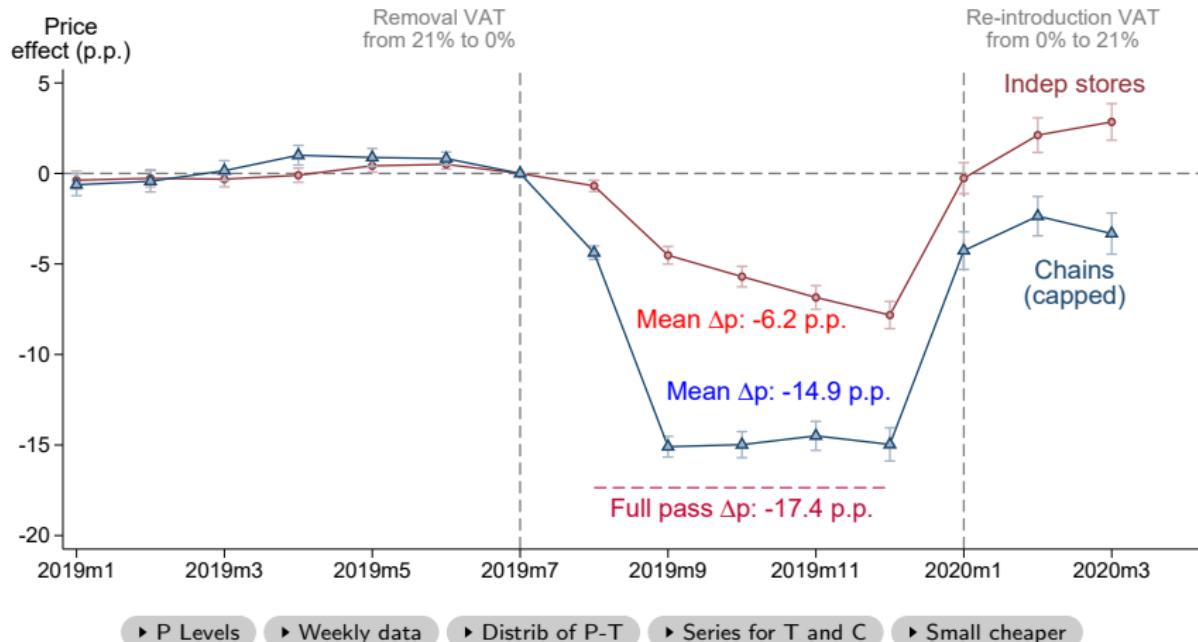


Chain vs Independent stores

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

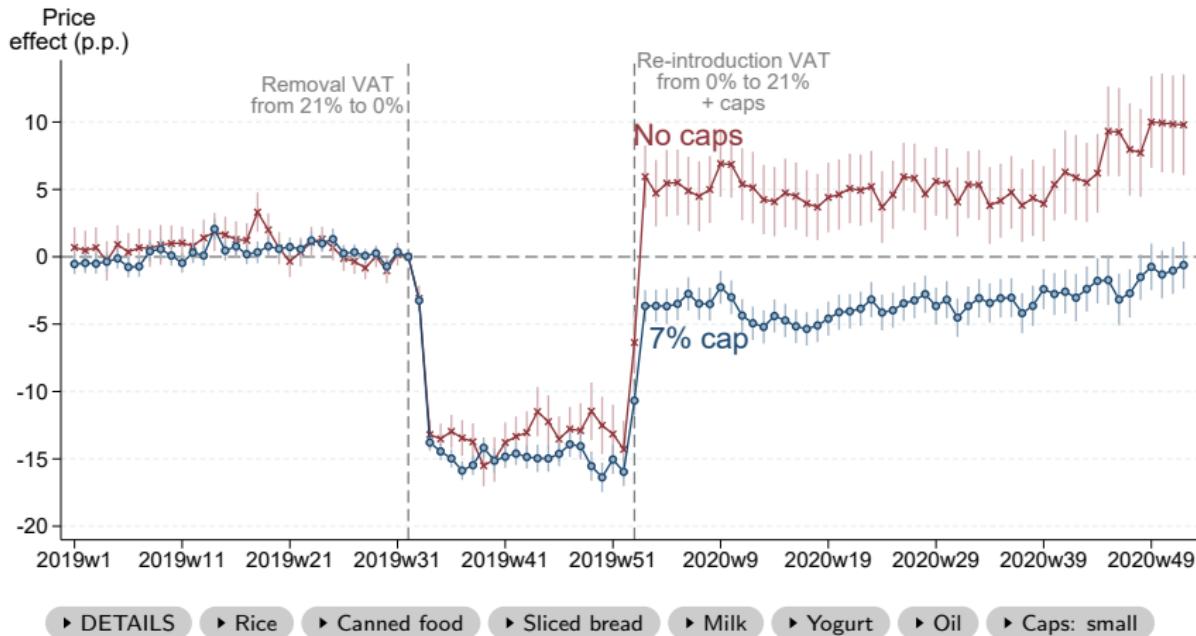


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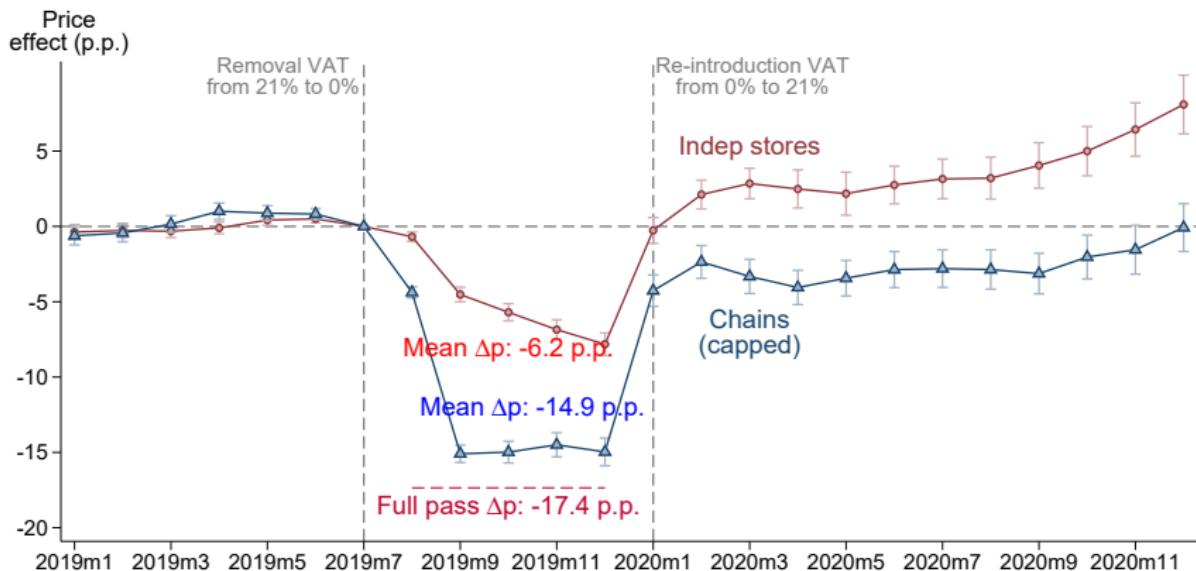
Mitigating subsequent
price increases using
pass-through caps

VAT rate reinstated at 21% but pass-through was **capped** in chain supermarkets at ~7% for some goods



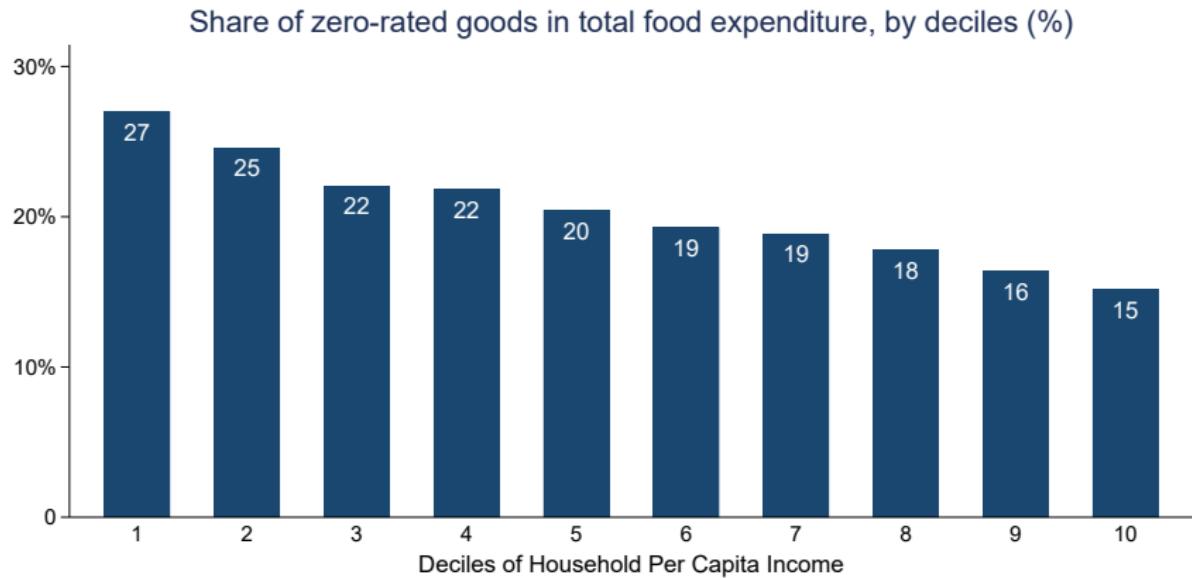
- ▶ Goods w/flexible prices exhibit an increase ~2x that of capped goods
- ▶ The gap is remarkably persistent → hysteresis

Ultimately led to a permanent price gap in necessities btw independent and chain supermarkets



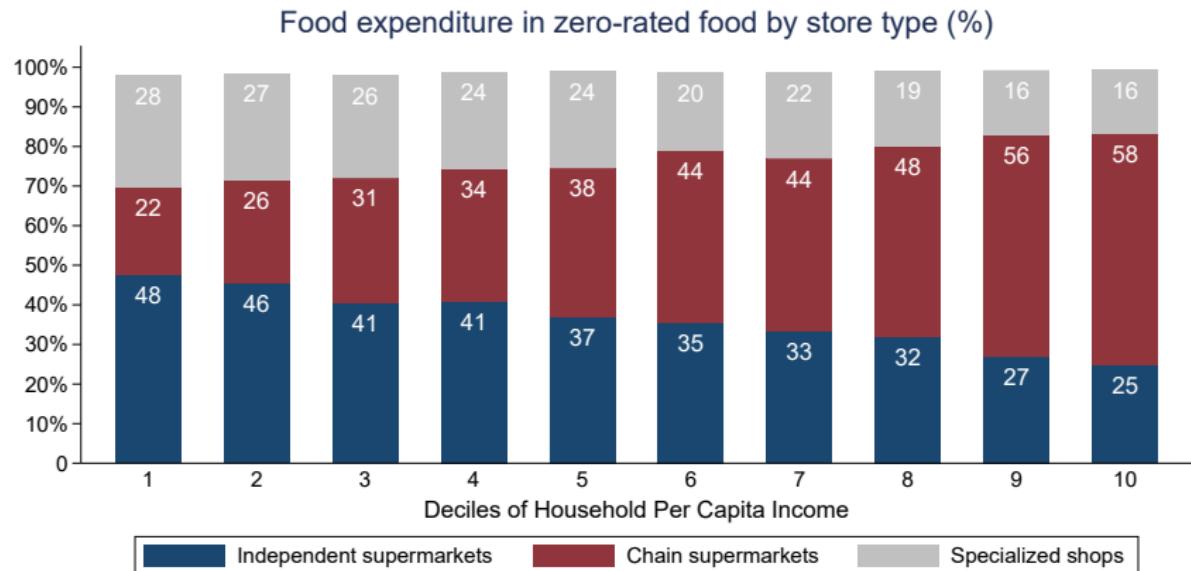
(Unintended) distributional
consequences

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

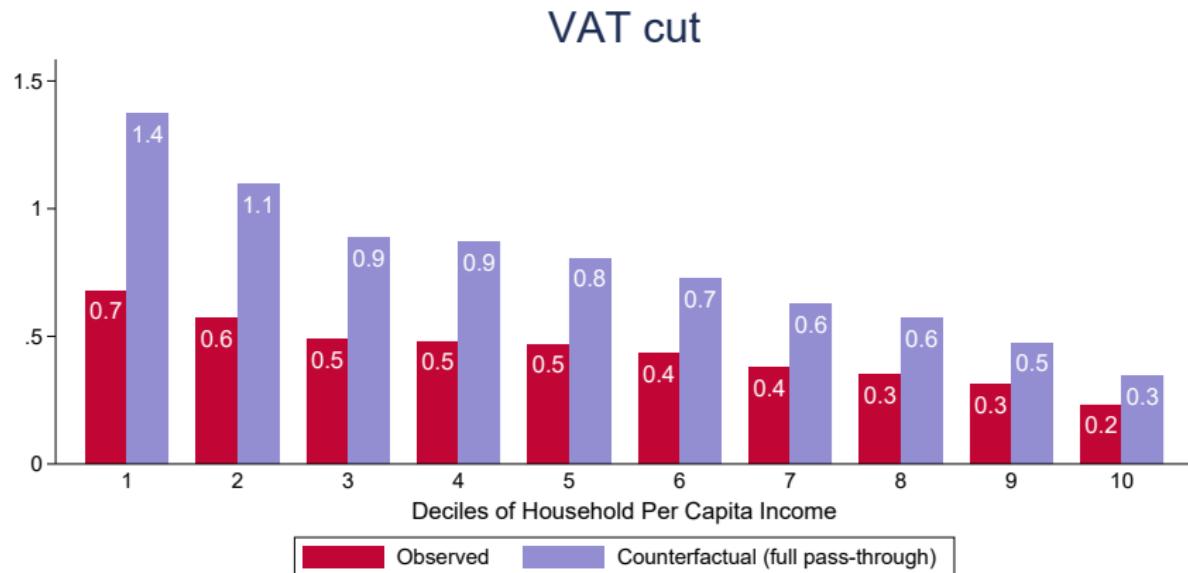


- Important policy implication when designing VAT cuts

Welfare implications

VAT cut benefits the poor (albeit w/leakages)

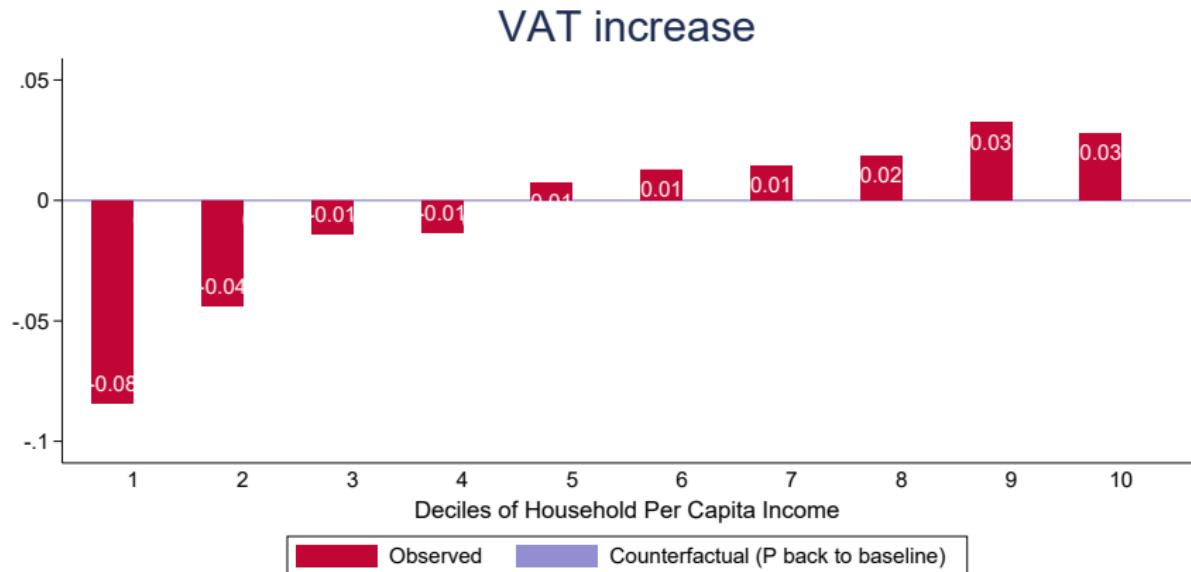
- CES model provides simple expression based on observable expenditure shares and price changes: $d \ln V_h = - \sum_g \alpha_{gh} \cdot d \ln p_{gh}$



Welfare implications

VAT increase hurts the poor

- CES model provides simple expression based on observable expenditure shares and price changes: $d \ln V_h = - \sum_g \alpha_{gh} \cdot d \ln p_{gh}$



Possible mechanisms

Chains vs independent stores

- ▶ Enforcement (price monitoring in chains) ➔

- ▶ Evasion (independent stores)

[Bachas et al, 2020; Kopczuk et al, 2016]

- ▶ Pricing strategies (rigidities and menu costs) ➔

[DellaVigna & Gentzkow, 2019; Harju et al, 2018]

- ▶ Competition ➔

[Genakos & Pagliero, 2022]

Robustness and additional results

- ▶ Very similar results with official CPI data ➔
- ▶ Substitution across products in T and C ➔
- ▶ VAT changes + nominal price freezes ➔
- ▶ Pass-through rates by region ➔
- ▶ Store-switching behavior ➔
- ▶ Purchase responses (Q) ➔

Concluding remarks

While VAT cuts + gov't 'mandates' can be effective tools to

- ↳ lower prices in grocery stores,
- ↳ ensure continued access to basic food during high inflation,
- ↳ mitigate subsequent price increases

They can lead to

- ↖ asymmetric responses across chain and indep supermarkets,
- ↖ hysteresis effects in the medium-run,
- ↖ unintended distributional/incidence effects

⇒ In all, the Arg experience helps us advance knowledge on: (i) how tax incidence might operate in supermarkets, (ii) policy design.

THANK YOU!

Dario Tortarolo
dtortarolo@worldbank.org

Additional results

Contribution [REMOVE SLIDE?]

1. VAT as a tool to affect economic variables:

- ★ Blundell (2009); Crossley et al (2009); Bachmann et al (2021); Slemrod (2011); Benzarti & Tazhitdinova (2011); Pomeranz (2015); Naritomi (2019); D'Acunto et al (2022)

→ While VAT can be effective at lowering prices, the distributional effects can be unintended, in part because we don't yet fully understand tax incidence

2. Economic incidence of consumption taxes and empirical anomalies:

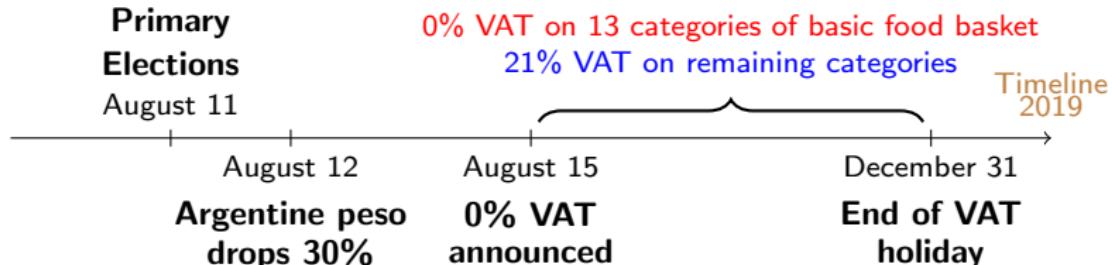
- ★ Fullerton & Metcalf (2002); Benzarti et al (2020); Benzarti & Carloni (2019); Kosonen (2015); Kopczuk et al (2016); Benedek et al (2019); Carbonnier (2007); Fuest et al (2021); Buettner & Madzharova (2020); Harju et al (2018); Gaarder (2018); Bachas et al (2020); Genakos & Pagliero (2022)

→ Govts can influence how much of a statutory tax change is passed on to consumers prices beyond relative magnitudes of S and D elasticities

→ Pass-through can vary widely by type of supermarket consumers shop at

Elections, currency devaluation, and VAT cut/hike

▶ Back



Context: high inflation (~ 55%), elections, peso 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 temporary VAT holiday on basic food set to expire on Dec 31, 2019 [Goal: to contain the impact of 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)

At the core of the debate...

▶ Back



Alberto Fernández



@alferdez

Representante gubernamental de Argentina

...

No parece razonable reducir el IVA indiscriminadamente como se ha hecho. Ello no redundará en una merma de los precios. Seguramente se convertirá en una ganancia adicional para las empresas. Hubiera sido mejor devolver el IVA a los sectores más postergados.

[Translate Tweet](#)

9:02 PM · Aug 16, 2019

7,051 Retweets 943 Quote Tweets 23.4K Likes

"It's unreasonable to reduce the VAT indiscriminately as has been done. This will not result in a decrease in prices. It will surely be pocketed by companies. It would have been better to rebate the VAT to the most neglected sectors."

Normative debate: VAT cuts or targeted tax rebates



- Commonly argued that policy should target the most needy

★ E.g., VAT rebates through debit cards

• Tarjeta Alimentar

★ Debit card to purchase basic food

★ For AUH recipients with children up to 14yo

★ 2.5m cardholders (95% are women) covering about 4m children

- A tool with potential for targeted VAT rebates [Press]

★ But subject to pitfalls when poorly designed (e.g., see Cruces et al, 2020)

Enforcement tools at hand

► Back

► Mechanisms

Media article (August 16, 2019)

≡ infobae

INFOBAE

Cuál será el efecto de la reducción del IVA en los alimentos básicos: habrá controles y sanciones del Gobierno

El director nacional de Defensa del Consumidor, Fernando Blanco Muñoz, precisó qué tipo de herramientas se emplearán para que los precios no sigan en alza

16 de Agosto de 2019

Article translates to: “*What will be the effect of the VAT cut on basic food: there will controls and sanctions from the govt*”

VAT cut enforced by the Consumer Protection Agency:

'Precios Claros' webpage

The screenshot shows a search interface with a placeholder 'Nombre de producto o marca'. Below it, a sidebar lists categories like 'Mostrar como', 'Cambiar ubicación', and 'Ver productos de'. A main grid displays several food products with their prices and a '+ button' to add them to a list. The products shown include:

Imagen	Nombre del producto	Precio
	Biscochitos con Galleta Salada Don Salta 250 Gr	\$34.99 a \$40.00
	Galletitas Vainilla con Rejilla de Frambuesa Soria 110 Gr	\$36.49 a \$60.00
	Biscochitos Agujeros 5 de Oro 250 Gr	\$28.99 a \$40.00
	Galletitas Chocolate con Rejilla de Vainilla Manía 185 Gr	\$38.99 a \$66.00
	Galletitas Temptaciones Mousse	\$38.49 a \$70.00
	Galletitas Chocolate con Rejilla de Limón Metta 120 Gr	\$30.60 a \$90.00

1) *Precios Claros*: Online price monitoring system since Feb'16 → **in chains only!**

2) *Ley de Lealtad Comercial*: Fair Retail Law passed in Apr'19

Enforcement tools at hand

► Mechanisms

The Head of the Consumer Protection Agency stated: [[link](#)]

- *“Daily, between 6 and 8am, all supermarket chains in the country submit their prices through the App ‘Precios Claros’. This provides us with updated info that can be compared with historical data.”*
- *“We will control stores to ensure that the tax cut is passed on to lower prices and not higher profits.”*
- *“The Consumer Protection Agency will act through the regime of fines supported by the Fair Retail Trade Law.”*

VAT cut/increase was highly publicized in the media & (chain) supermarkets (mandatory banners/tags)

► Mechs

Clarín

Spot

En la piel de Carlos Tevez

Bahía Bar Muriel, un chico de 15 años, interpreta al crack de Boca en la serie "Aparche", que se estrena hoy.



Viernes 16.8.2019
MUNDO / ARGENTINA / PRECIO DEL IVA

Soldano, la nueva apuesta de gol en Boca

"Mi desafío más grande", afirma. Debuta el domingo. ■■■

Tema del día » Nuevas medidas económicas

Eliminan IVA en alimentos, congelan cuotas UVA y habría cambios de Gabinete

El Gobierno continúa con las reformas para cumplir los compromisos de acuerdo a lo establecido en el acuerdo con el Fondo. Dispuso que el 10% del impuesto del 22% a cereales, arroz, aceite, harina, azúcar y frutas, entre otros. Además, se mantendrá el efecto de inflación por rebaja de los cuota-

tas de crédito. Hay cambios en los IVA's, así como en el manejo de las reservas del Banco Central. Aunque Macri evalúa cambios en el Gabinete para potenciar las manos creativas. Una vez que se acuerde, habrá cambios drásticos en el gabinete. Algunos de los consejeros oficiales ya han sido informados de la reunión con el presidente Macri. ■■■

Defensor
Ricardo Kirschbaum

El diálogo y un atípico
de tregua ■■■

BAJO MÍS DE \$3 Y CORRIÓ A \$60.
Para Alberto F. el dólar a \$ 60
está bien y no
hay razón para
que aumente

El coordinador del Frente de Todos habló ayer del valor de la divisa y dijo que lo que quería transmitir. Pidió el cese de la inflación y la devolución de las reservas del Banco Central y sobre todo que a aplicar "todo lo que sea necesario para que el país no se quede sin reservas" con el presidente Macri. ■■■



Clarín

Series 2020

Lo que llega en enero

Las ficciones más esperadas y las más nominadas para ver en el año y las distrititas platenses. ■■■

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 acordó hoy con los proveedores y supermercadistas una tasa del 10,5% de aumento en los precios de los principales artículos de la canasta básica. Se aplicará donde hay un producto básico que no tiene competencia. ■■■



Sin heridos por pirotecnia en el Instituto del Quemado

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

10 AÑOS DE LA MUERTE DEL FISCAL

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

El Presidente también criticó la performance de la justicia y pidió que se responda a la petición de la ministra de Seguridad. Fue el ex comisario que Gobernó la causa de Nisman y que llevó a un fiscal a la cárcel, caso que sigue siendo un misterio. El fiscal que llevó la causa, Alberto Nisman, falleció el 19 de enero de 2015. Fue asesinado. ■■■

El Perón sigue
CARLOS CARIGNAN



Repeal, pass-through caps, and *online* monitoring

- ▶ **Chain supermarkets:** govt said they would track prices daily: [\[link\]](#)

"Supermarkets report their prices online to the Ministry of Commerce. The database is updated as soon as they upload 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"

- ▶ **Small stores:** FASA association not part of the agreement [\[link\]](#)

Translation: “*The government assures that it will control ‘online’ that the new food price agreement is fulfilled*” [Jan 1st, 2020]

El Gobierno asegura que controlará "online" que se cumpla el nuevo acuerdo por los precios de los alimentos

Será a través de la Secretaría de Comercio, según confiaron a Clarín fuentes oficiales.



El ministro de Producción, Matías Kulfas, estuvo a cargo del acuerdo por el NPA de los alimentos.



Eduardo Paladini



Collusion? Unlikely

► Back



• Cambiar ubicación

Calle 24 618, La Plata, Provincia

Ver productos de Alimentos congelados

Almacén

Bebidas con alcohol

Bebidas sin alcohol

Bebés

Electrodomésticos y equipamiento para el hogar

Frescos

Limpieza

Mascotas

Materiales para la construcción

Perfumería y cuidado personal

Refinar por

Típo de comercio (?)

Todos

Comercios (46)

Todos

Puntos de venta (30)

Todos



NesCafe Gold Blend 100 Gr

76103031154111



• Cambiar ubicación

Calle 24 618, La Plata, Provincia

Ver productos de Alimentos congelados

Almacén

Bebidas con alcohol

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Bebés

Electrodomésticos y equipamiento para el hogar

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Típo de comercio (?)

Todos

Comercios (46)

Todos

Puntos de venta (30)

Todos

Supermercados DIA

Collusion? Unlikely

Back

Cambiar ubicación

Calle 24 698, La Plata, Provincia

Ver productos de
Alimentos congelados

Almacén

Bebidas con alcohol

Bebidas sin alcohol

Bebés

Electrodomésticos y
equipamiento para el
hogar

Frescos

Limpieza

Mascotas

Materiales para la
construcción

Perfumería y cuidado
personal

Refinar por

Típos de comercio (7)

Todos

Ganancias (46)

Todos

Puntos de venta (31)

Todos



Coca Cola sin Azucar 1.5 Lt
7790895067556

Comercio

Distancia

Precio de lista

Promo A

Promo B



Supermercados DIA
Calle 48 N°944 Nonoé
BUENOS AIRES

101 kilómetros

\$225,50



Supermercados DIA
Av 44 2059
BUENOS AIRES

130 kilómetros

\$225,50



Supermercados DIA
Av 532 101
BUENOS AIRES

211 kilómetros

\$225,50



Market
Calle 12 1000
La Plata

207 kilómetros

\$297,50



Supermercados DIA
Av. 7 423 Nonoé
BUENOS AIRES

239 kilómetros

\$279,36



Market
Calle 7 767
La Plata

239 kilómetros

\$297,50



SUPERMERCADOS EL
NORTE
Calle 30 2056
LA PLATA

239 kilómetros

\$322,50



Supermercados DIA
Av 44 567
BUENOS AIRES

244 kilómetros

\$225,50



Supermercados DIA
Calle 12 1514
BUENOS AIRES

248 kilómetros

\$225,50



Cervecería Obrera Lú
isbel, Sarmiento y
Villegas
Av 53 7224
La Plata

289 kilómetros

\$362,00



Fideos Tallarines Matarazzo 500
Gr
7790070318657

Comercio

Distancia

Precio de lista

Promo A

Promo B



DIA
Calle 30 Y Calle 47 777
LA PLATA

136 kilómetros

\$211,00



Supermercados DIA
Calle 48 N°944 Nonoé
BUENOS AIRES

131 kilómetros

\$204,35



COTO CICSA
Calle 43 702
La Plata

135 kilómetros

\$20,52



Supermercados DIA
Av 44 2099
BUENOS AIRES

130 kilómetros

\$204,35



Supermercados DIA
Av 52 101
BUENOS AIRES

241 kilómetros

\$204,35



Market
Calle 12 1000
La Plata

237 kilómetros

\$203,00



Supermercados DIA
Av 7 423 Norte
BUENOS AIRES

231 kilómetros

\$204,35



Market
Calle 7 767
La Plata

237 kilómetros

\$203,00



SUPERMERCADOS EL
NORTE
Calle 30 2056
LA PLATA

239 kilómetros

\$195,00



Supermercados DIA
Av 44 567
BUENOS AIRES

244 kilómetros

\$204,35



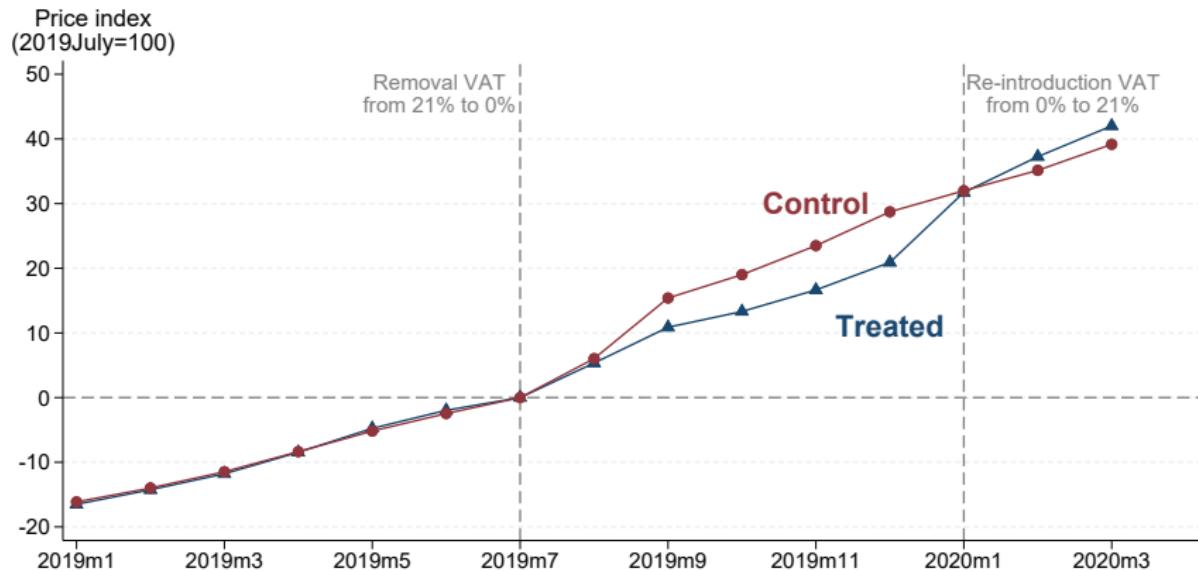
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BUENOS AIRES

248 kilómetros

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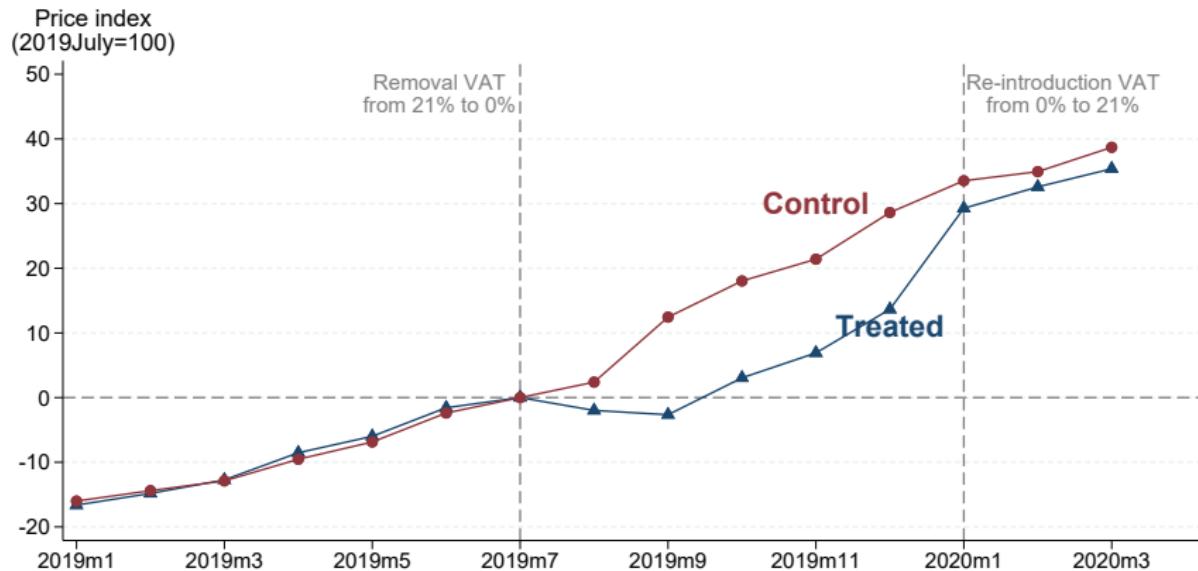
Price levels in small independent stores

▶ Back



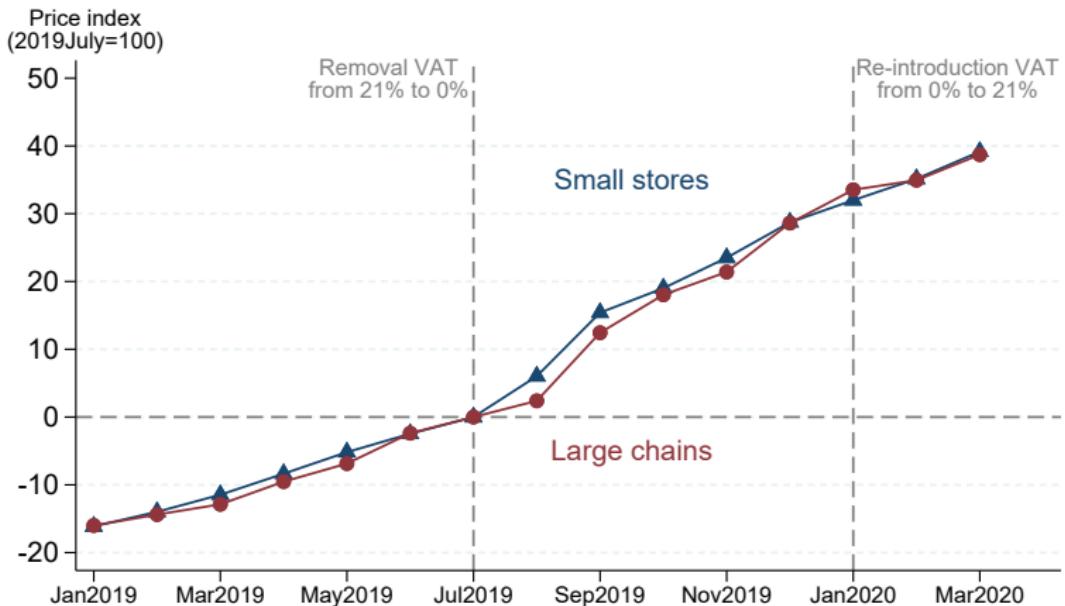
Price levels in supermarket chains (prices are monitored)

Back



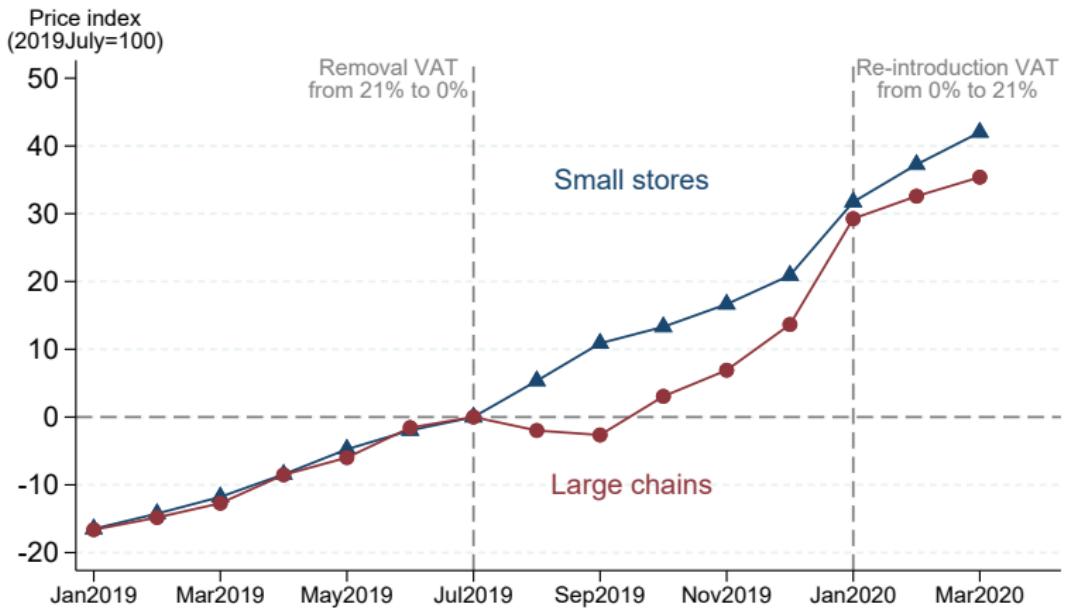
Control goods: Large chains vs Small stores

[Back](#)



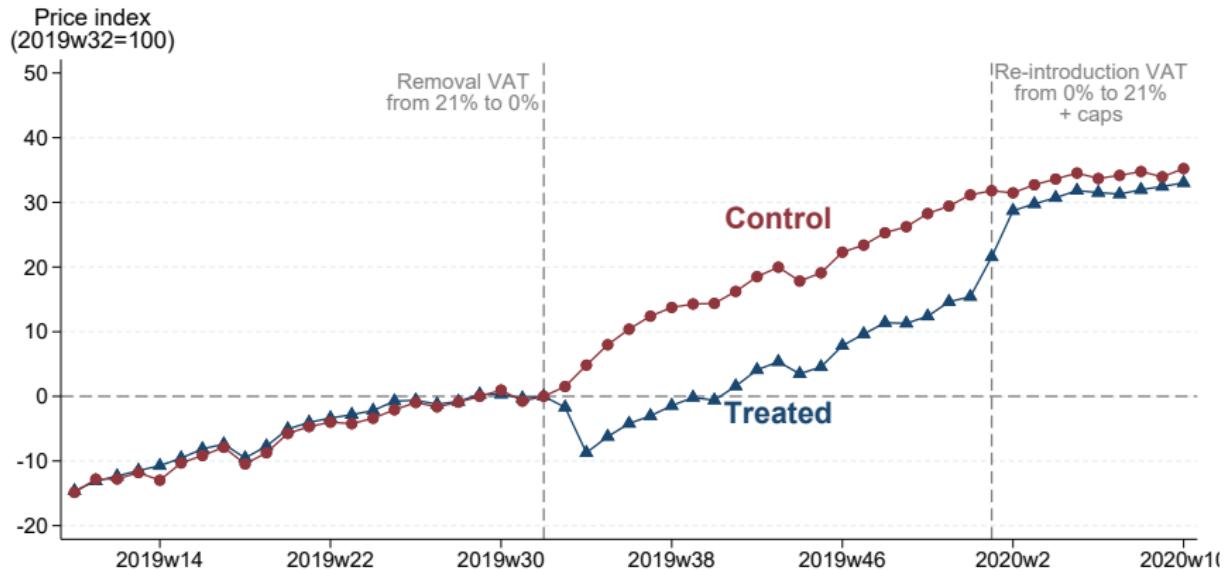
Treated goods: Large chains vs Small stores

▶ Back



Price levels in supermarket chains (weekly data)

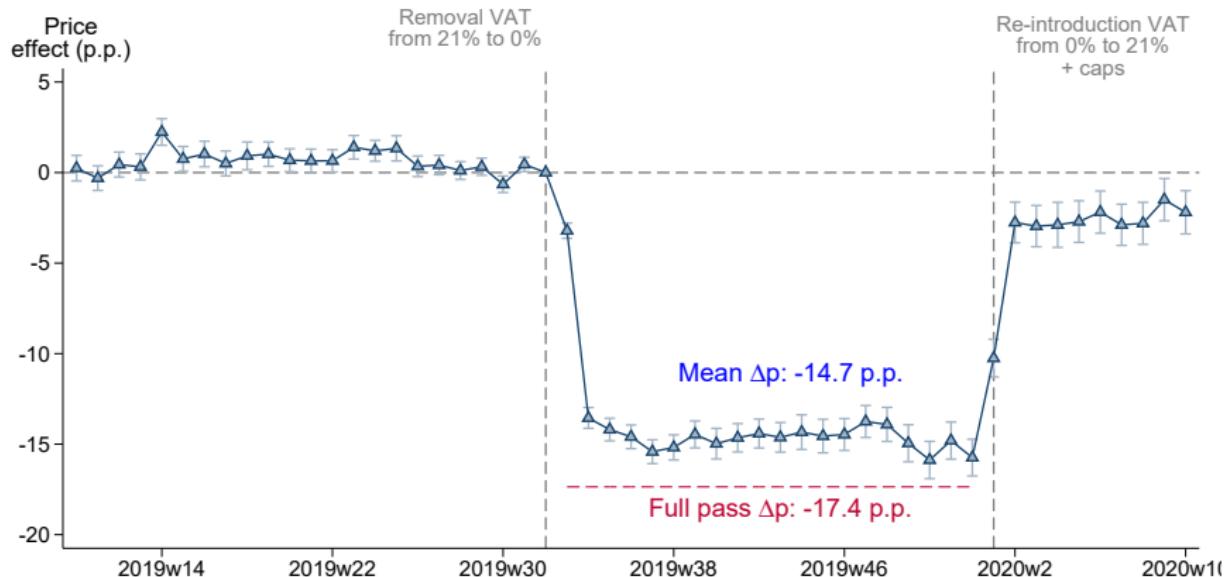
▶ Back



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

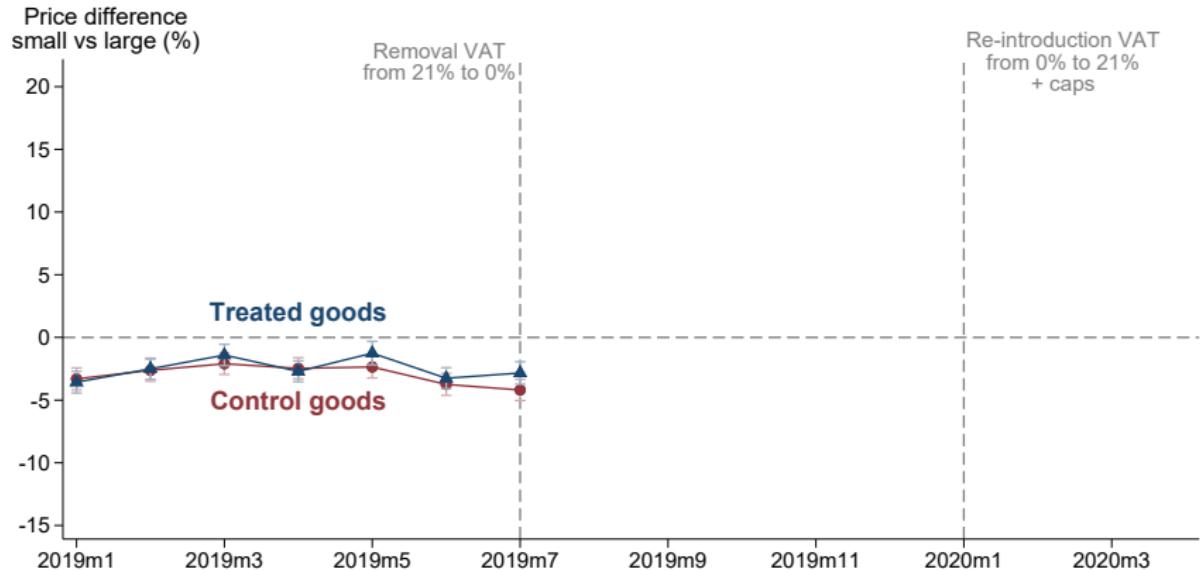
Average price pass-through of ~85% in large chains

▶ Back



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

Indep stores cheaper (pre-reform) than chain supermarkets

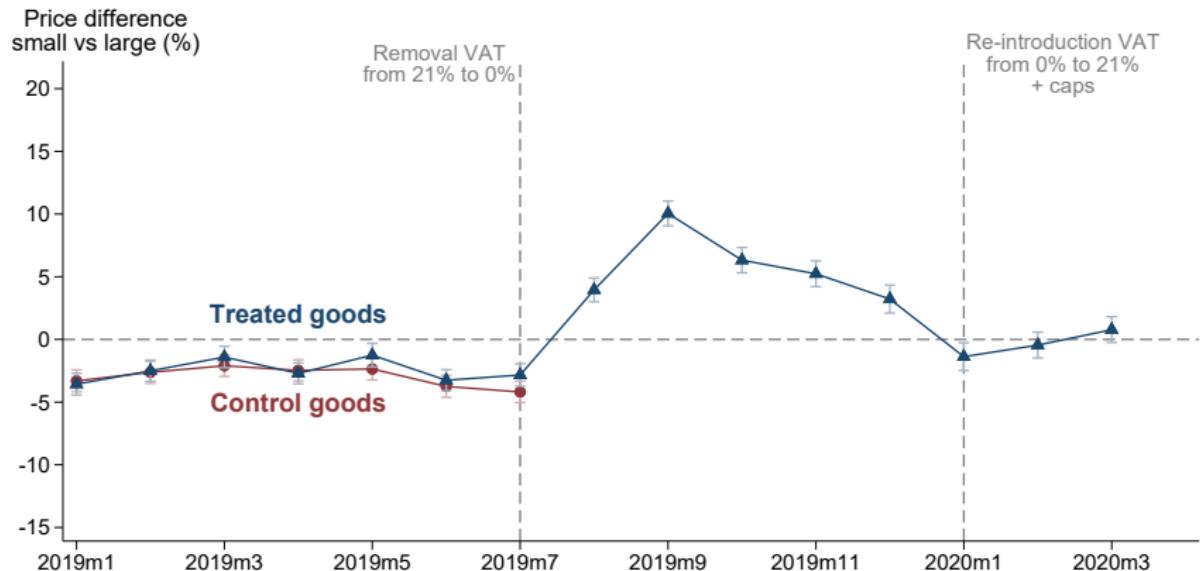


$$\log P_{irst} = \alpha_{irt} + \sum_{t=2019m7}^{2020m3} \beta_t \text{IndepStore}_{irt} + \epsilon_{irst}$$

► Back

i : barcodes, r : 5 regions, t : month-year, s : store type

Indep stores cheaper (pre-reform) than chain supermarkets

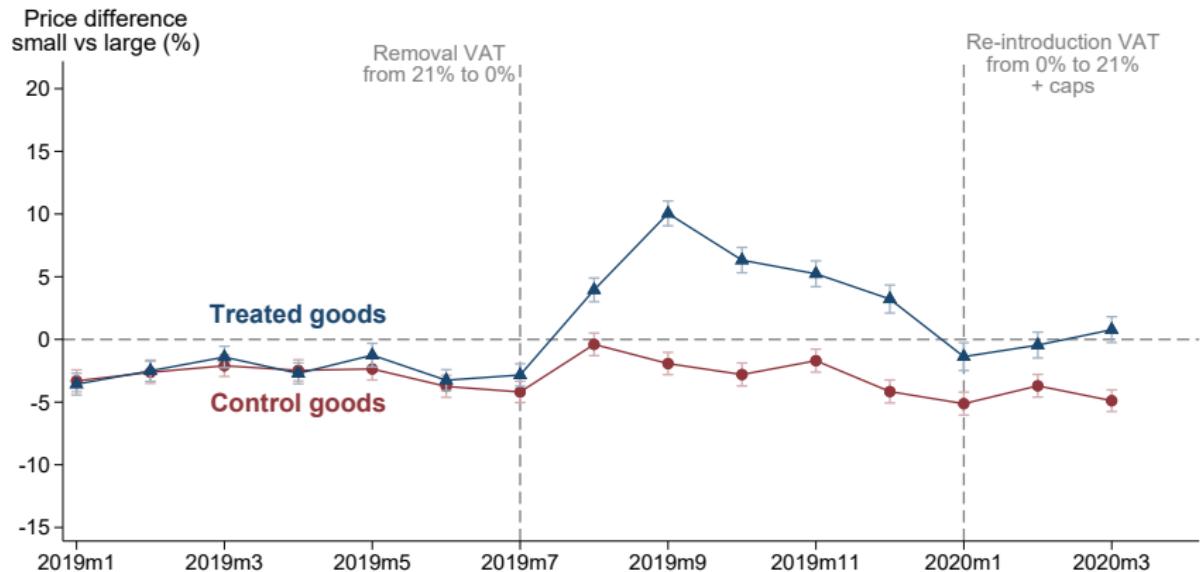


$$\log P_{irst} = \alpha_{irt} + \sum_{t=2019m7}^{2020m3} \beta_t \text{IndepStore}_{irt} + \epsilon_{irst}$$

► Back

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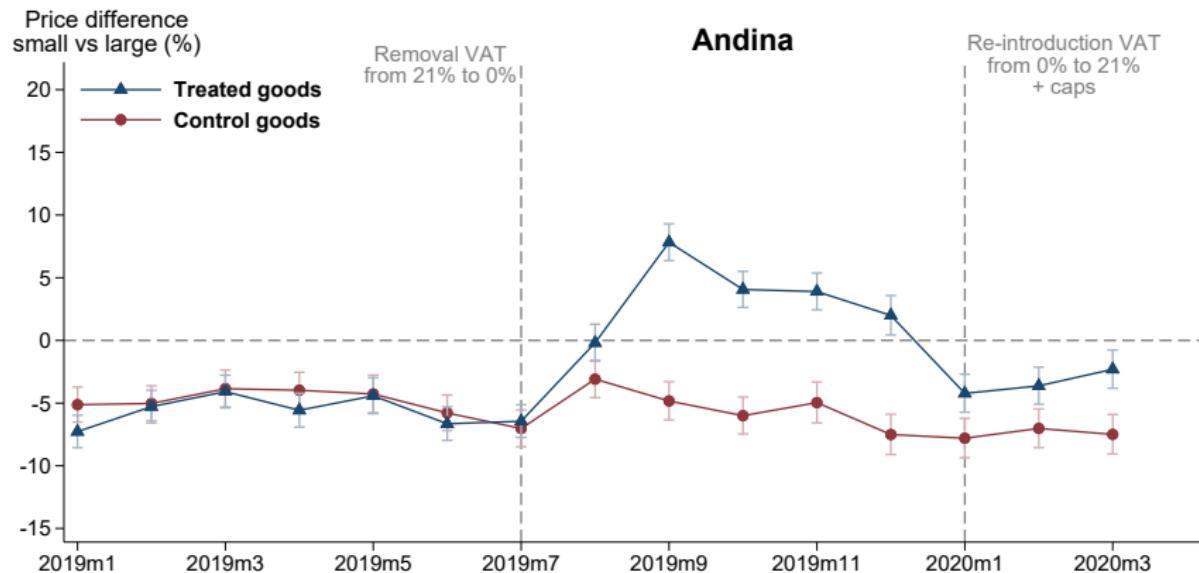
$$\log P_{irst} = \alpha_{irt} + \sum_{t=2019m7}^{2020m3} \beta_t \text{IndepStore}_{irt} + \epsilon_{irst}$$

► Back

i : barcodes, r : 5 regions, t : month-year, s : store type

But largely heterogeneous across the 5 regions

▶ Back

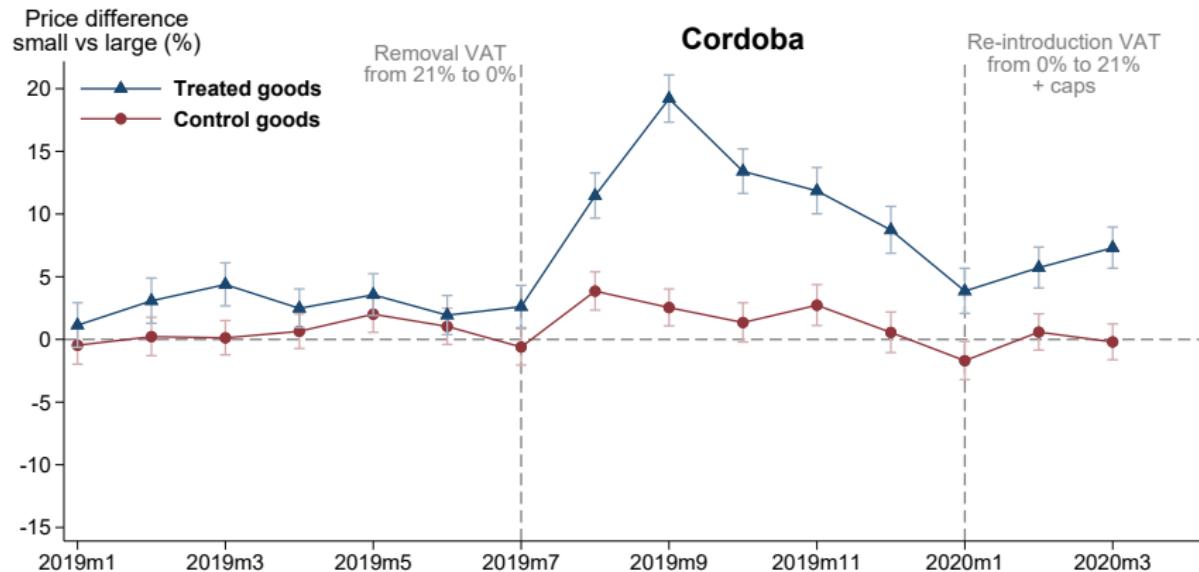


$$\log P_{irst} = \alpha_{irt} + \sum_{t=2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

i : barcodes, *r* : 5 regions, *t* : month-year, *s* : store type

But largely heterogeneous across the 5 regions

▶ Back

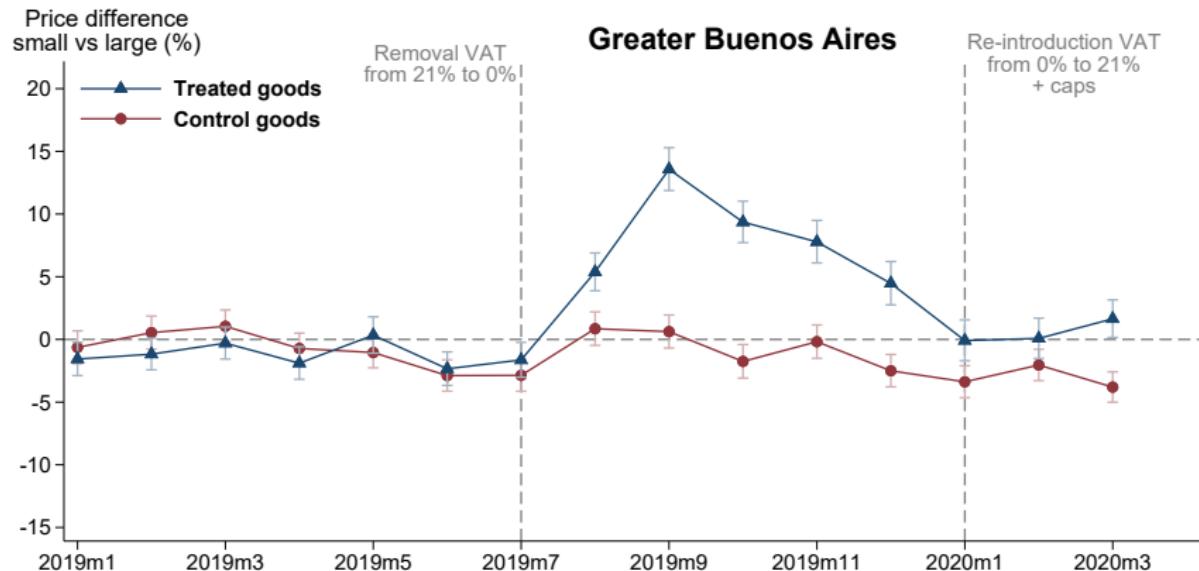


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▶ Back

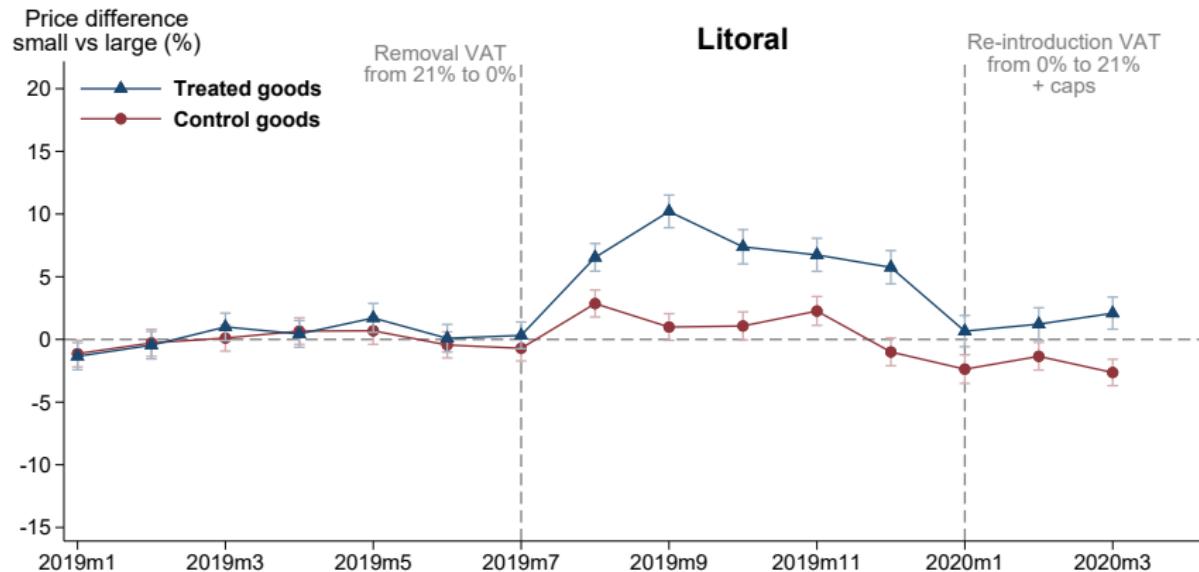


$$\log P_{irst} = \alpha_{irt} + \sum_{t=2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

i : barcodes, *r* : 5 regions, *t* : month-year, *s* : store type

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▶ Back

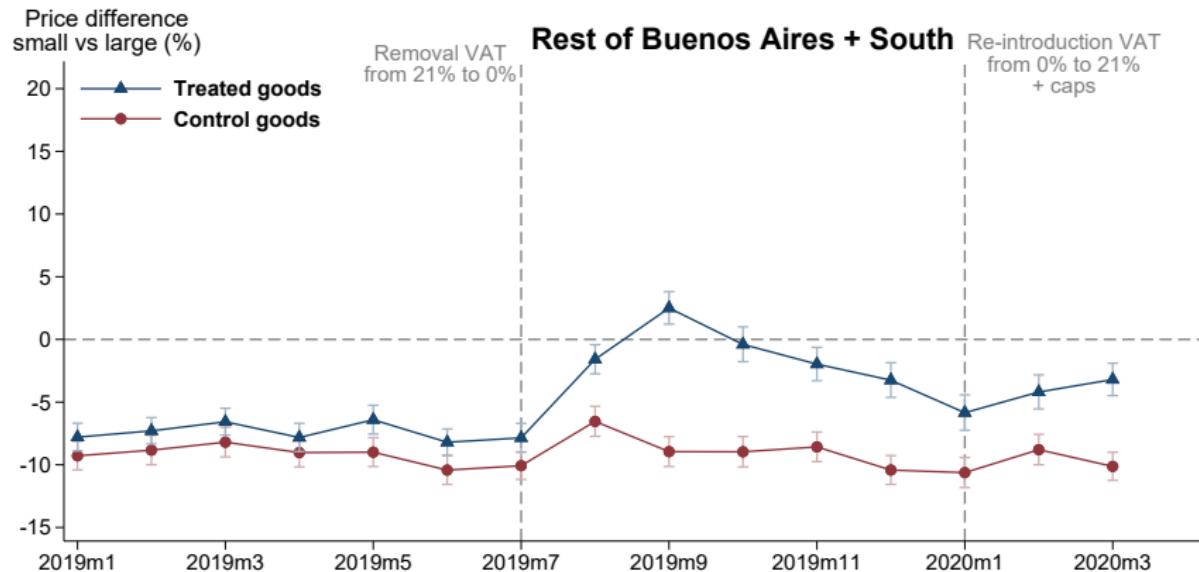


$$\log P_{irst} = \alpha_{irt} + \sum_{t=2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

i : barcodes, *r* : 5 regions, *t* : month-year, *s* : store type

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▶ Back

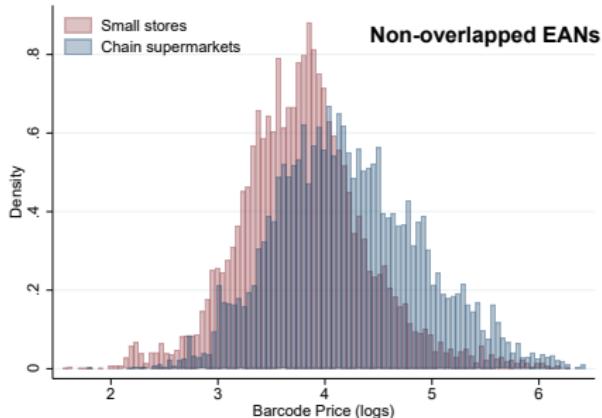
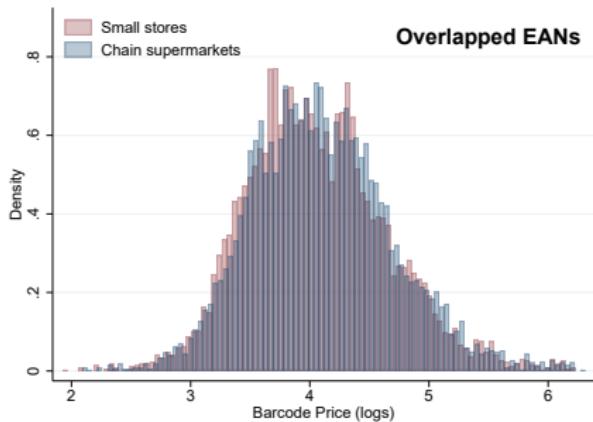


$$\log P_{irst} = \alpha_{irt} + \sum_{t=2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

i : barcodes, *r* : 5 regions, *t* : month-year, *s* : store type

Price density for overlapped and non-overlapped barcodes

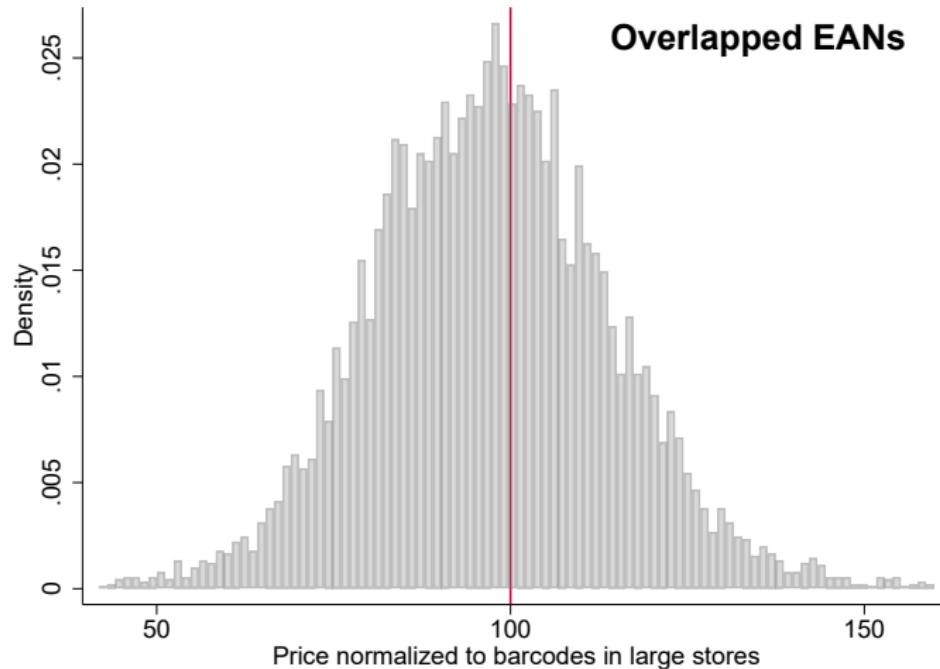
▶ Back



Price density for overlapped barcodes

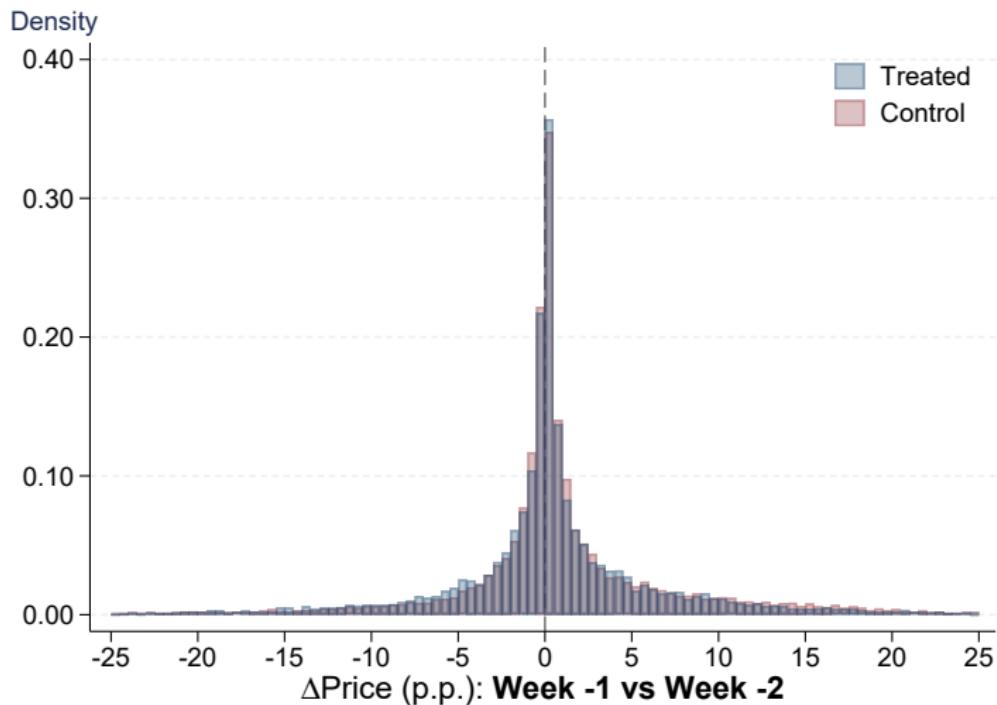
▶ Back

Var: $P_{ir,t0}^{\text{Small}} / P_{ir,t0}^{\text{Large}} * 100$



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

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



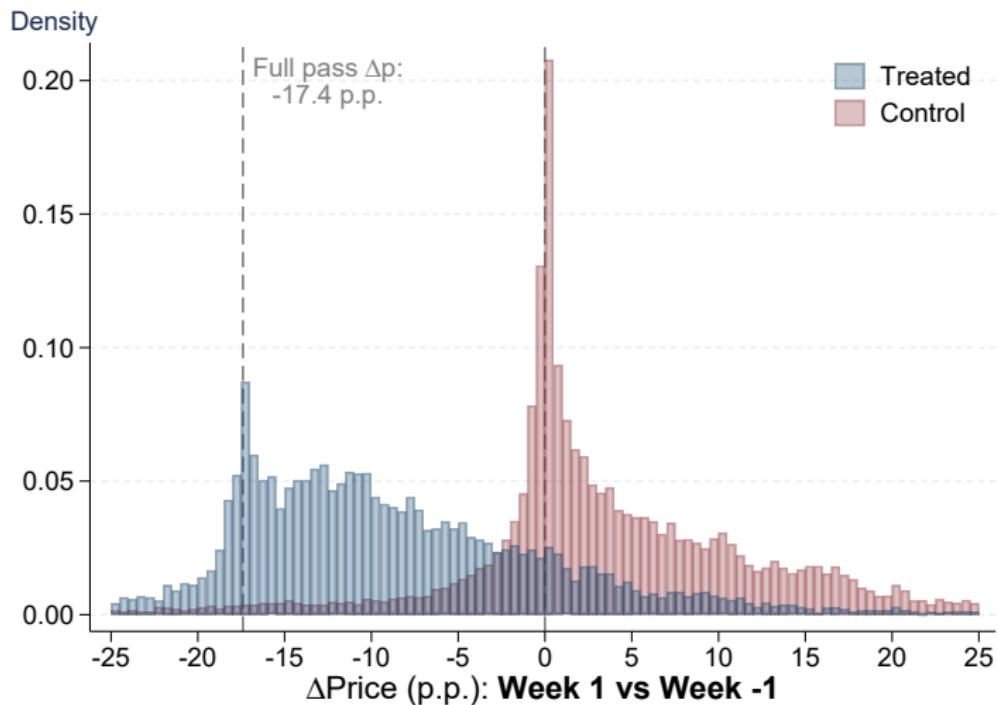
Distrib of price changes right after VAT removal

Large chains (prices are monitored)

▶ Zoom in

▶ Substitutes

▶ Back



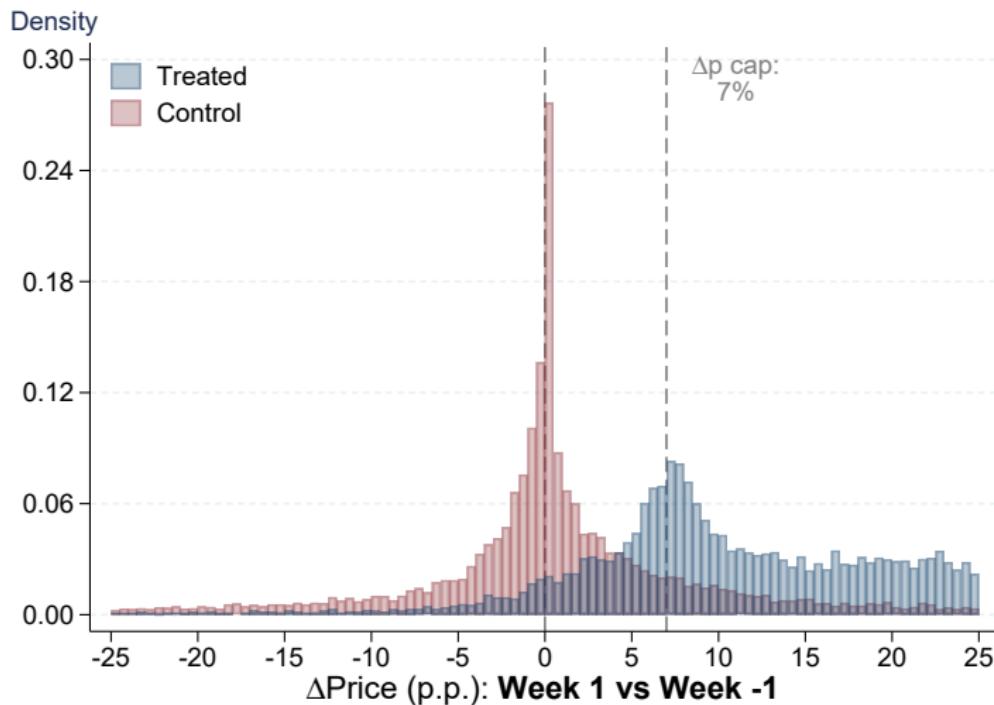
Distrib of price changes right after VAT reinstated

Large chains (prices are monitored)

► Zoom in

► Cap section

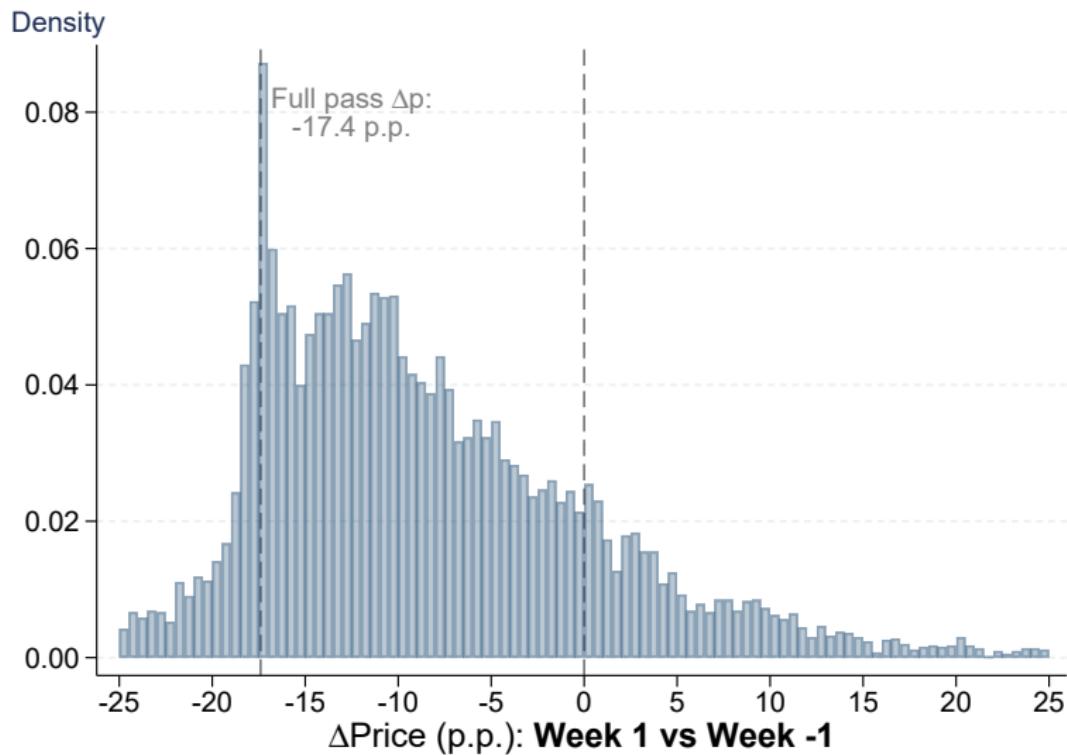
► Back



Distrib of price changes right after VAT removal

▶ Back

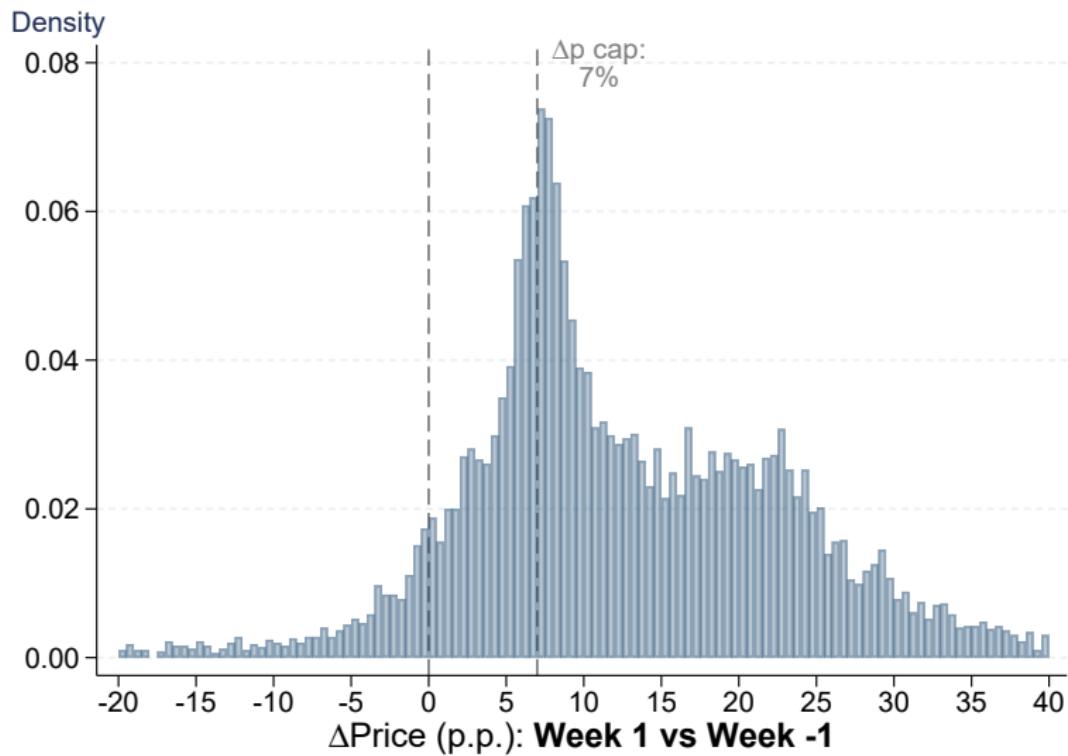
Large chains (treated goods)



Distrib of price changes: VAT reinstated

[Back](#)

Large chains

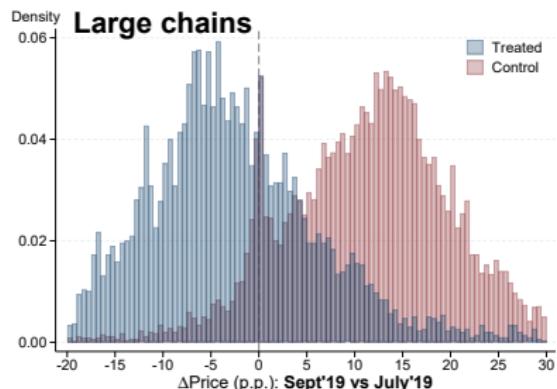
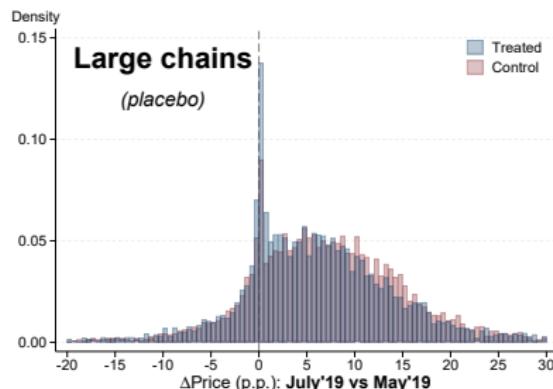
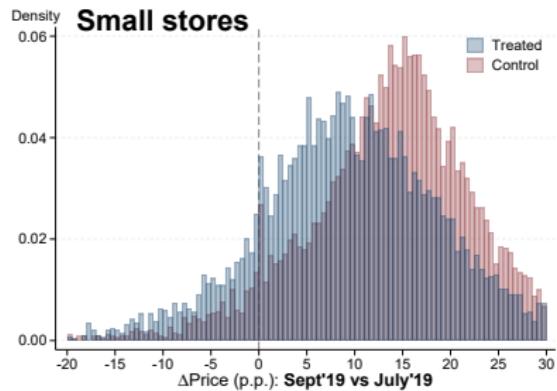
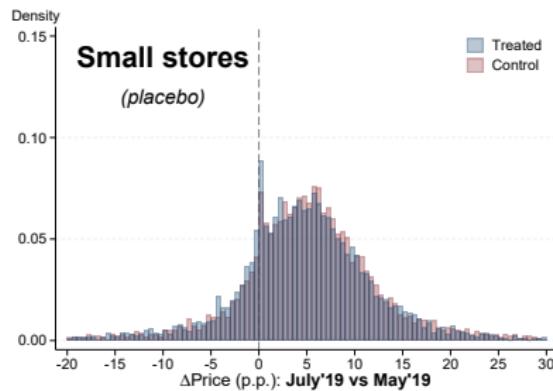


Distrib of price changes after VAT removal

Small stores vs Large chains

► Overlap T & C

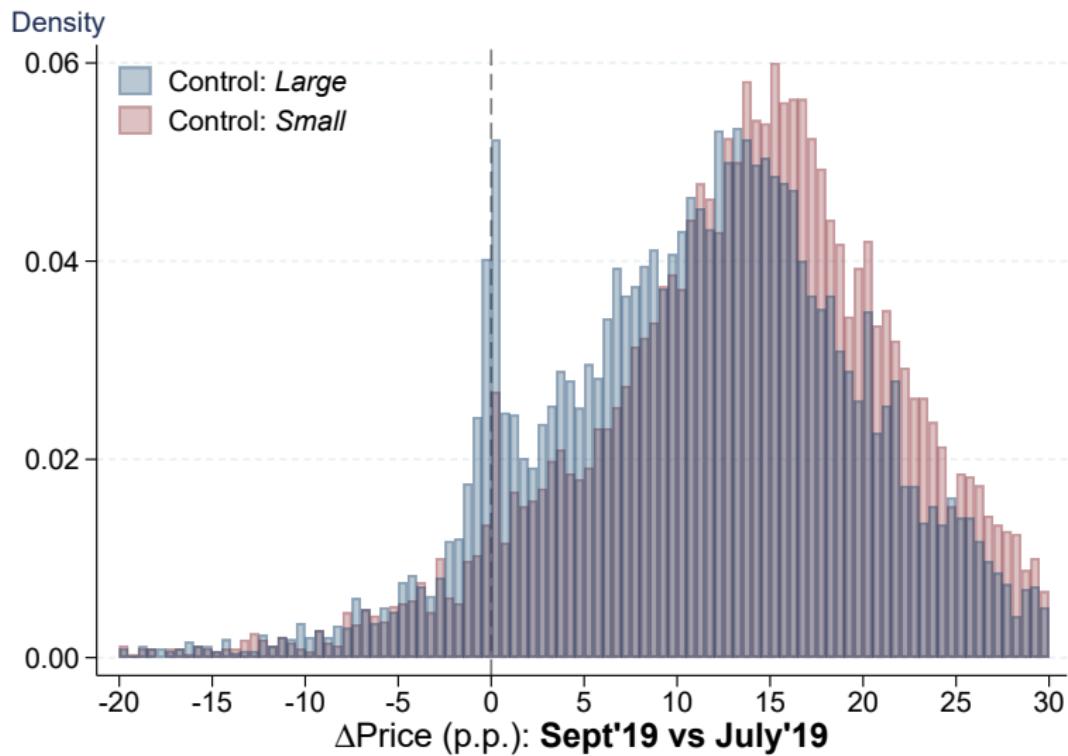
► Back



Distrib of price changes: VAT removal

▶ Back

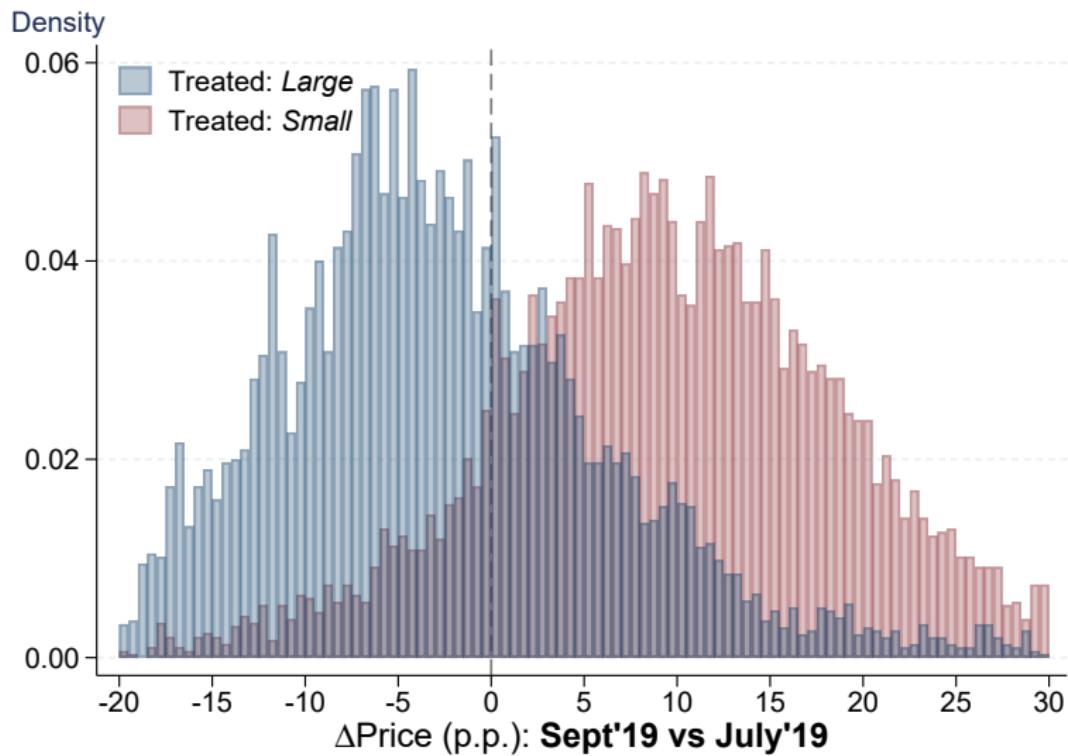
Small stores vs Large chains



Distrib of price changes: VAT removal

▶ Back

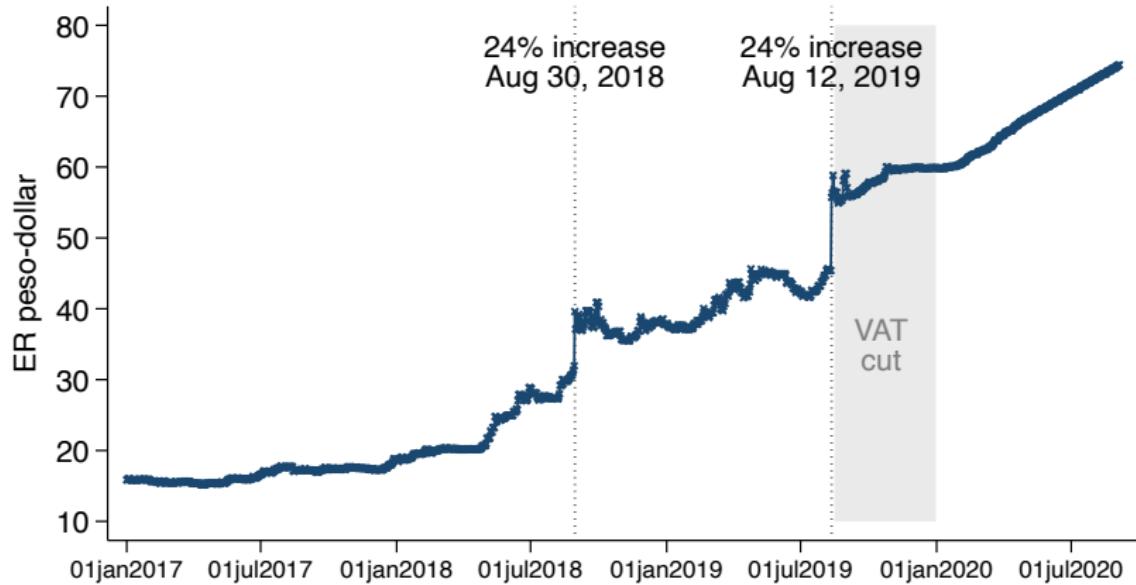
Small stores vs Large chains



Pass-through of the 2018 peso depreciation

▶ Back

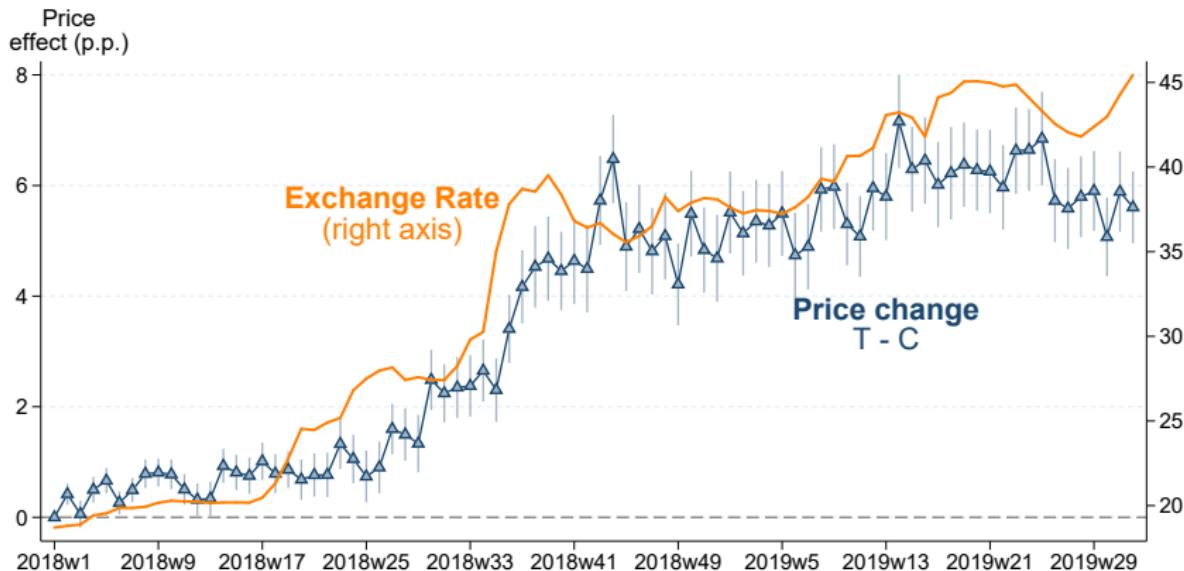
Exchange Rate (pesos per dollar)



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

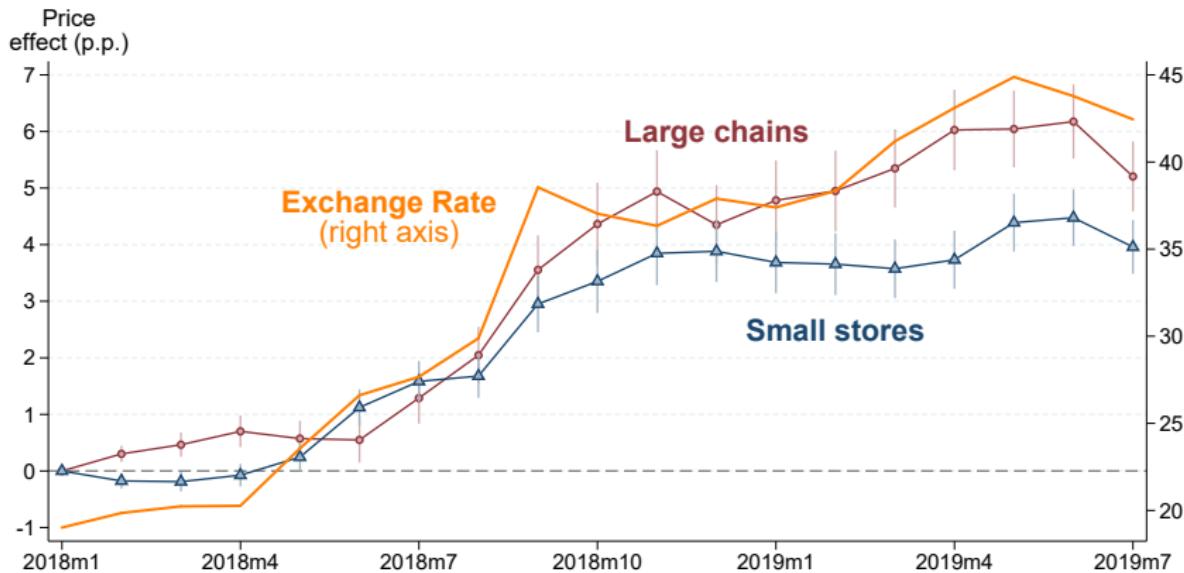
Are goods in **T** and **C** similarly affected by the 2018 peso depreciation?

▶ Back

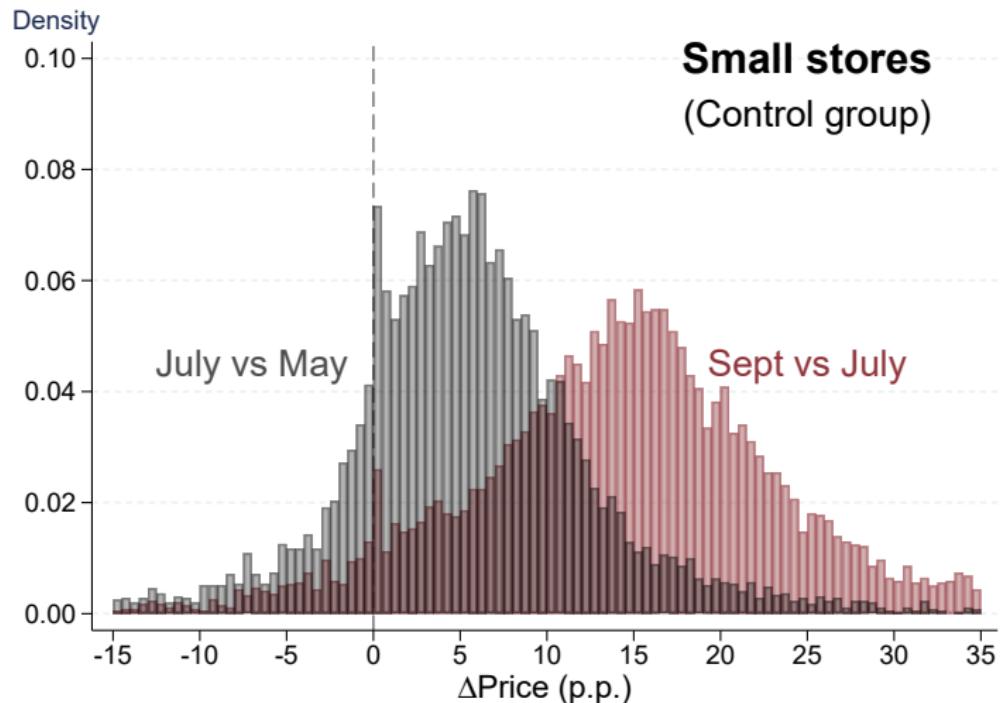


Do large and small stores respond *differently* to a large economic shock with no govt mandate?

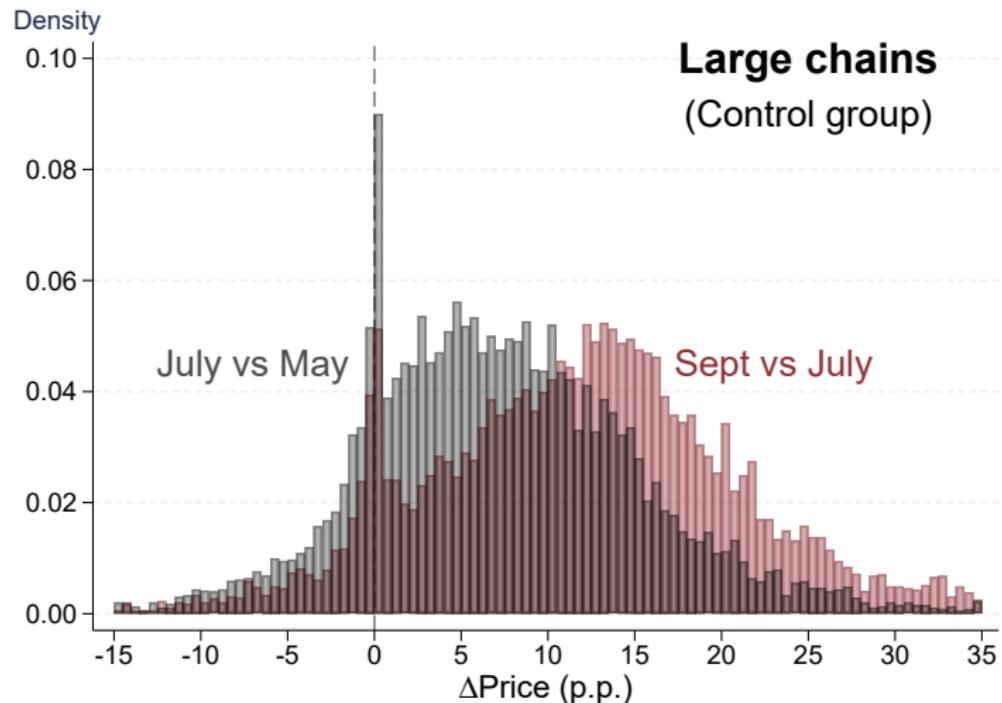
▶ Back



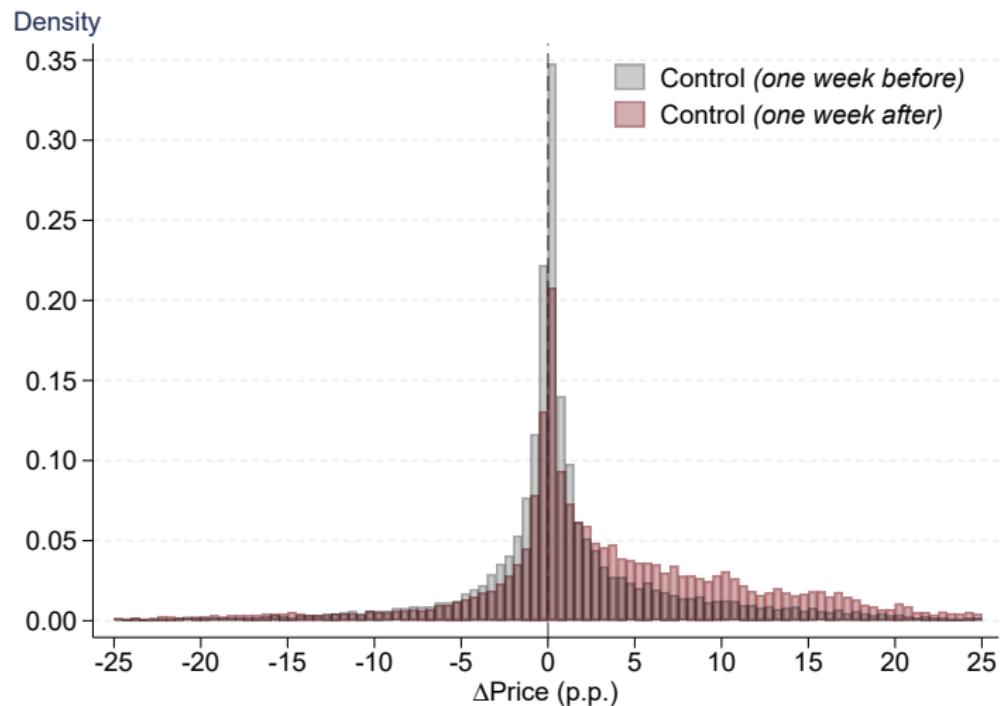
Pass-through of a 24% currency devaluation (no mandate)
is similar in small and large supermarkets



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)

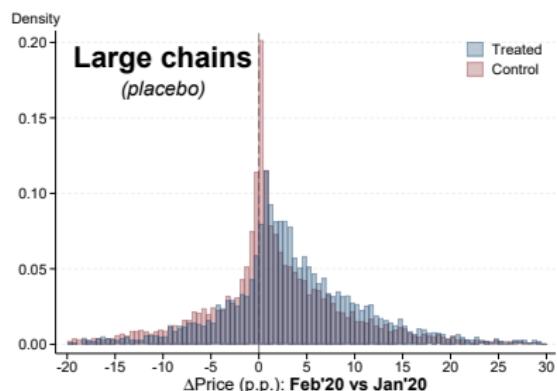
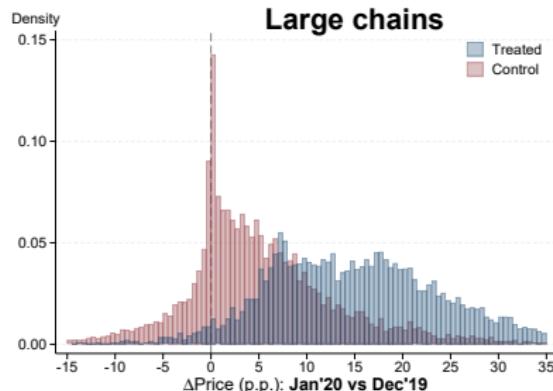
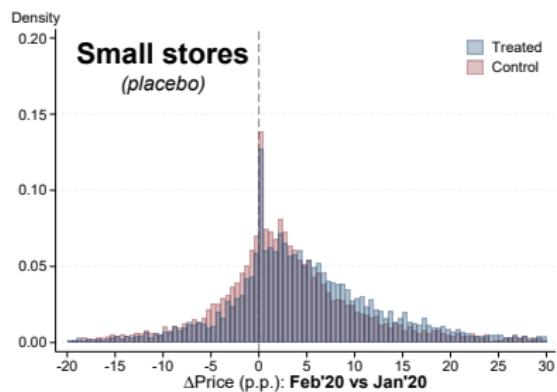
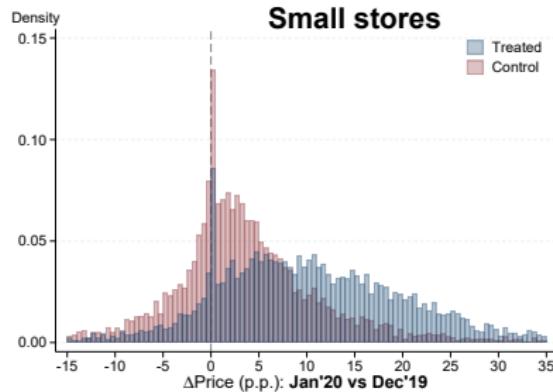


Distrib of price changes after VAT re-introduction

Small stores vs Large chains

► Overlap T & C

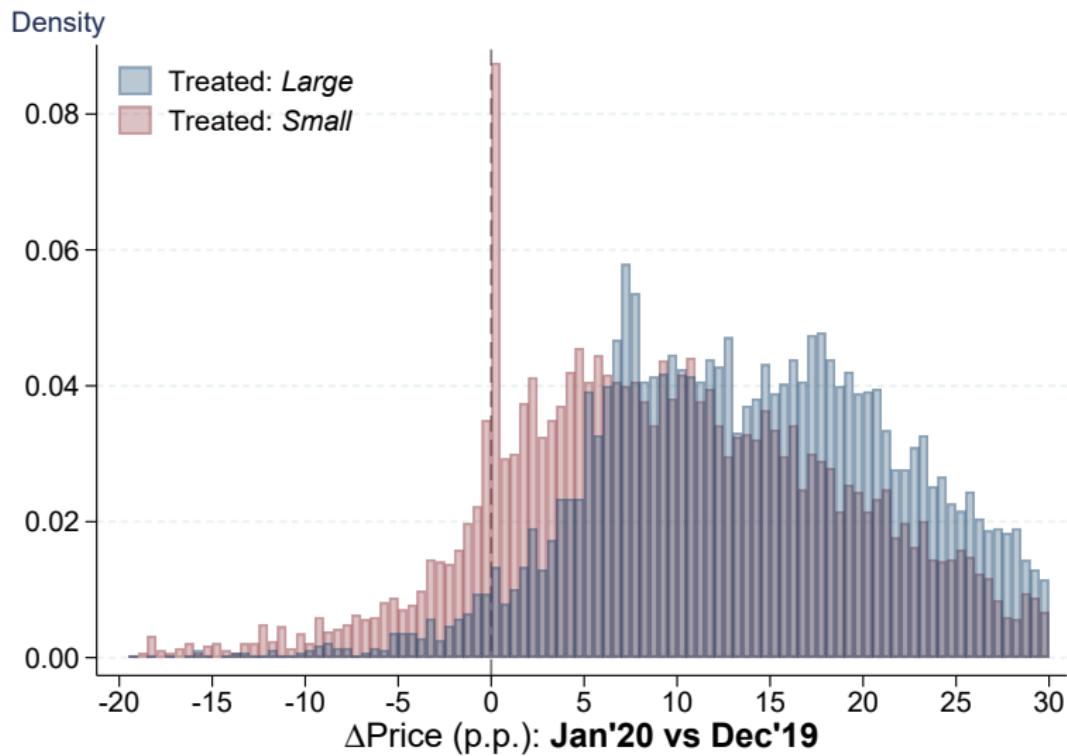
► Back



Distrib of price changes after VAT re-intro

▶ Back

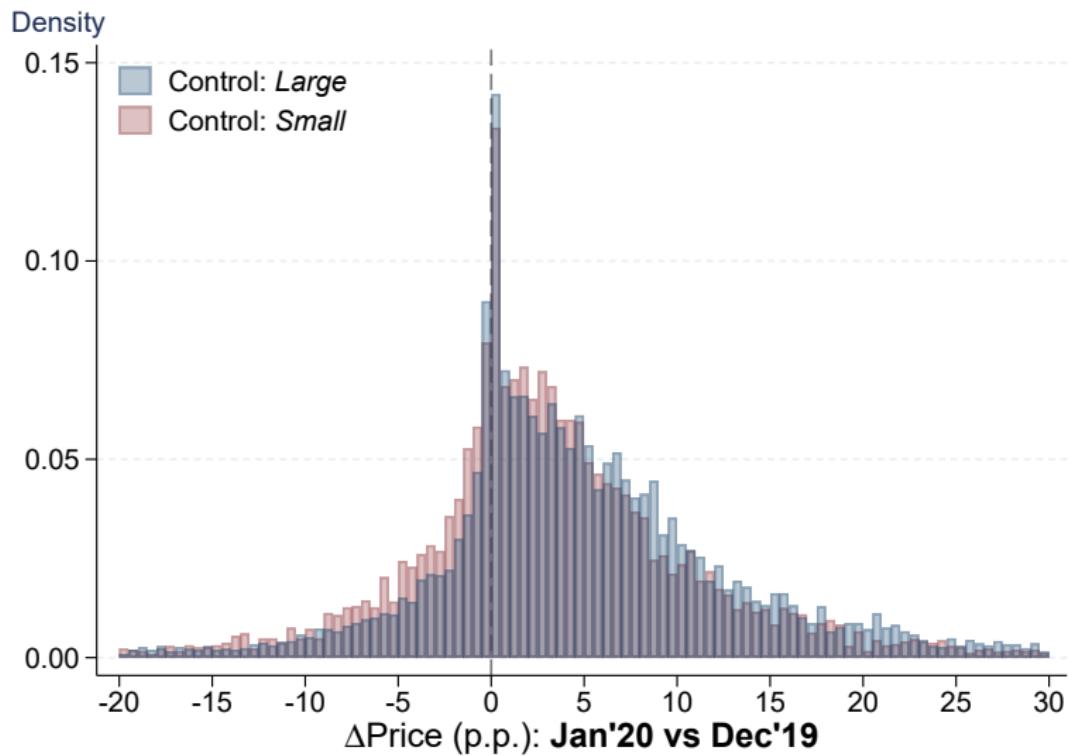
Small stores vs Large chains



Distrib of price changes after VAT re-intro

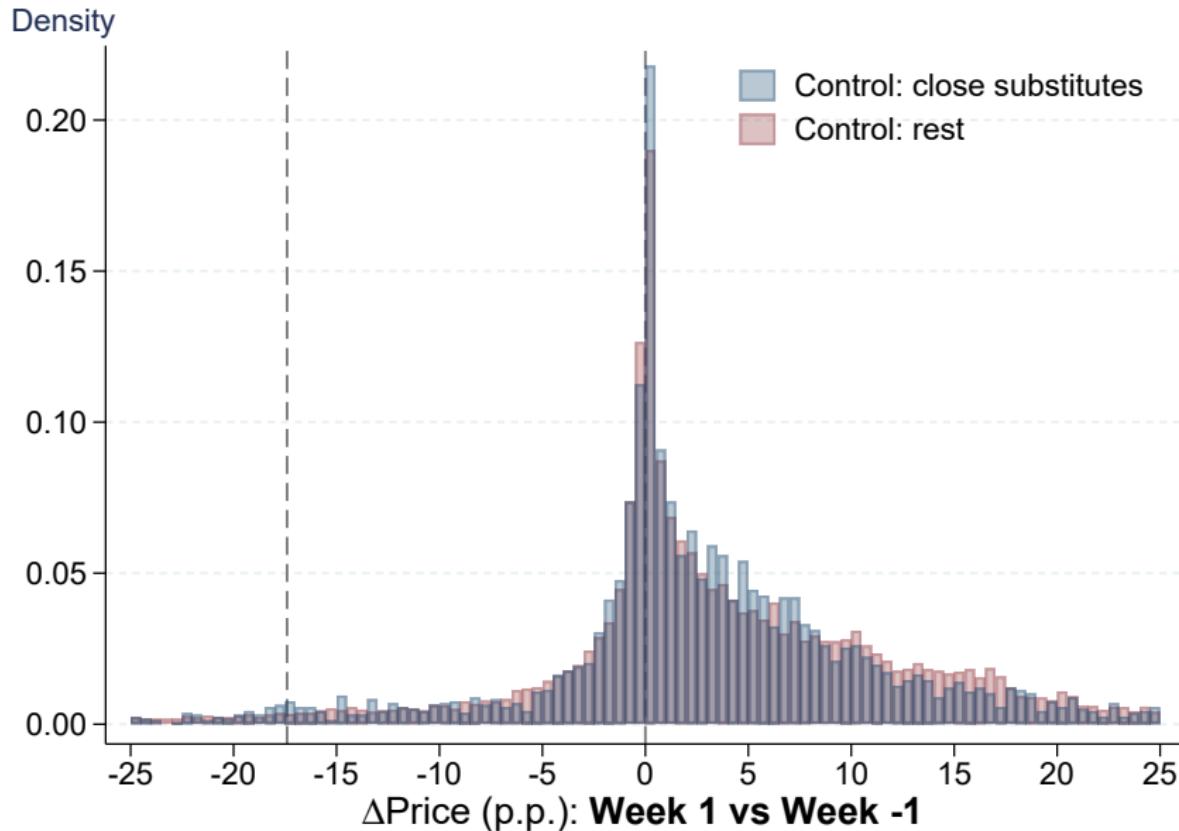
[Back](#)

Small stores vs Large chains



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

▶ Back

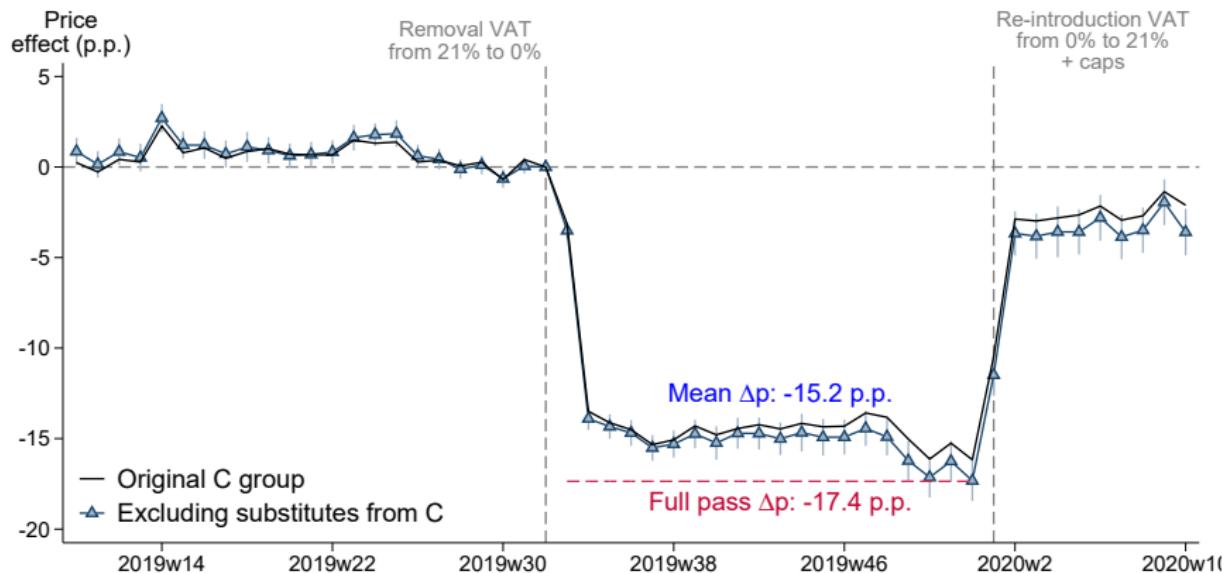


Does substitution across T and C bias our price effects?

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

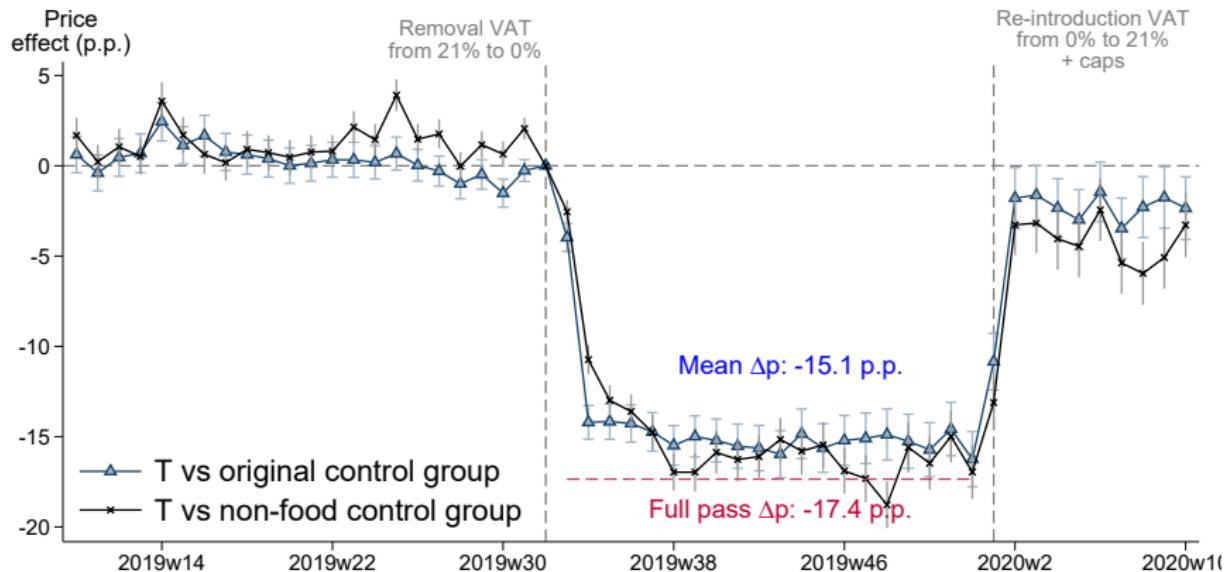


Does substitution across T and C bias our price effects?

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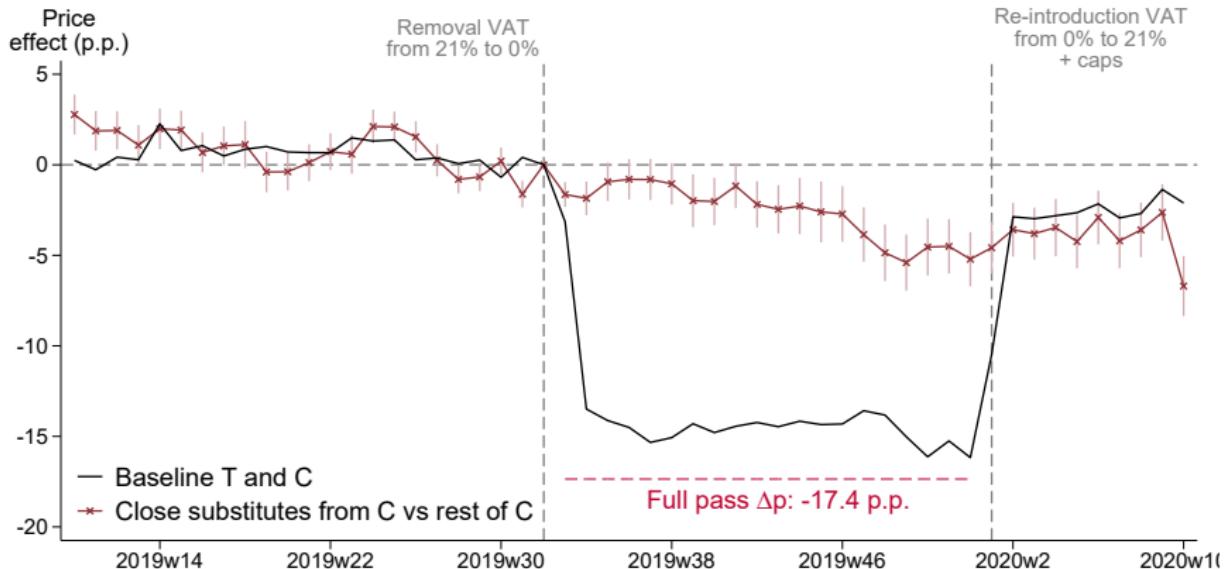
▶ Back

- 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



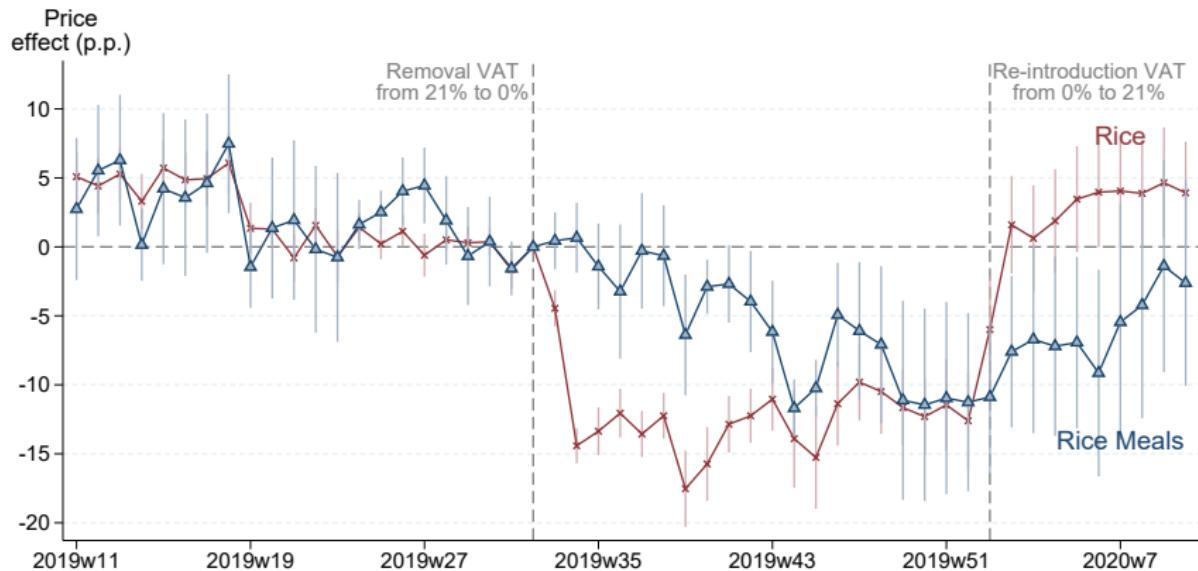
T vs Close substitutes in C (case studies)

▶ Back



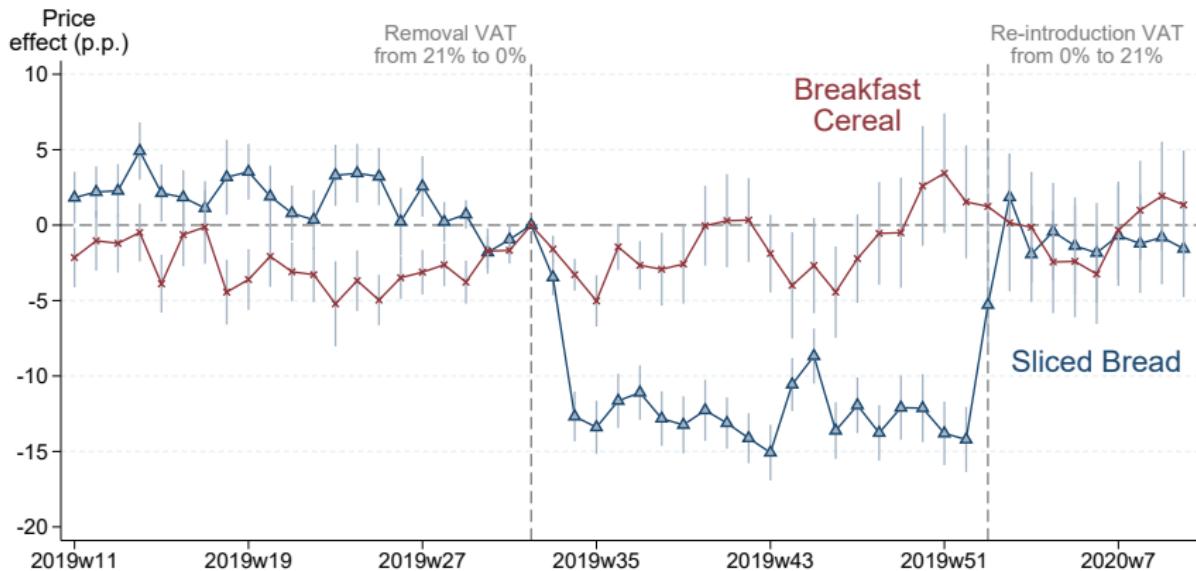
T vs Close substitutes in C (case studies)

▶ Back



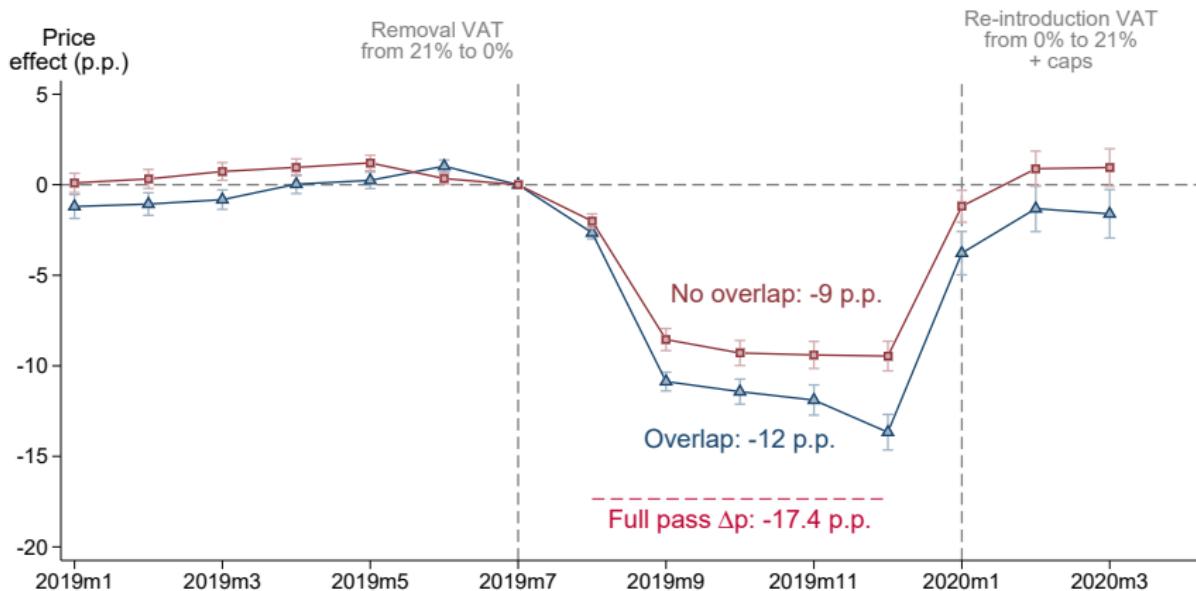
T vs Close substitutes in C (case studies)

▶ Back



Barcodes sold in either indep or chain stores (no overlap) vs sold in both types of stores (overlap)

▶ Back



- ▶ Pass-through is greater for varieties sold in both types of stores

VAT rate reinstated at 21% but pass-through was capped

- 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
 - NOT in independent stores
- ⇒ We show that gov'ts can successfully limit VAT pass-through

▶ Back

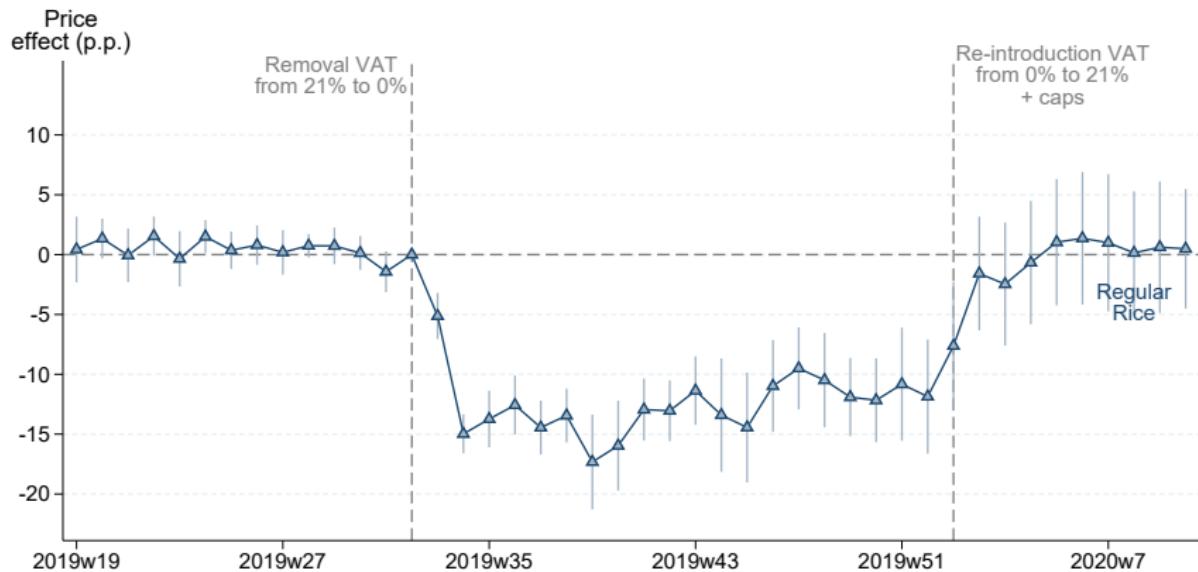
Treated: VAT back to 21%

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%

Capped VAT increase: Rice

Back

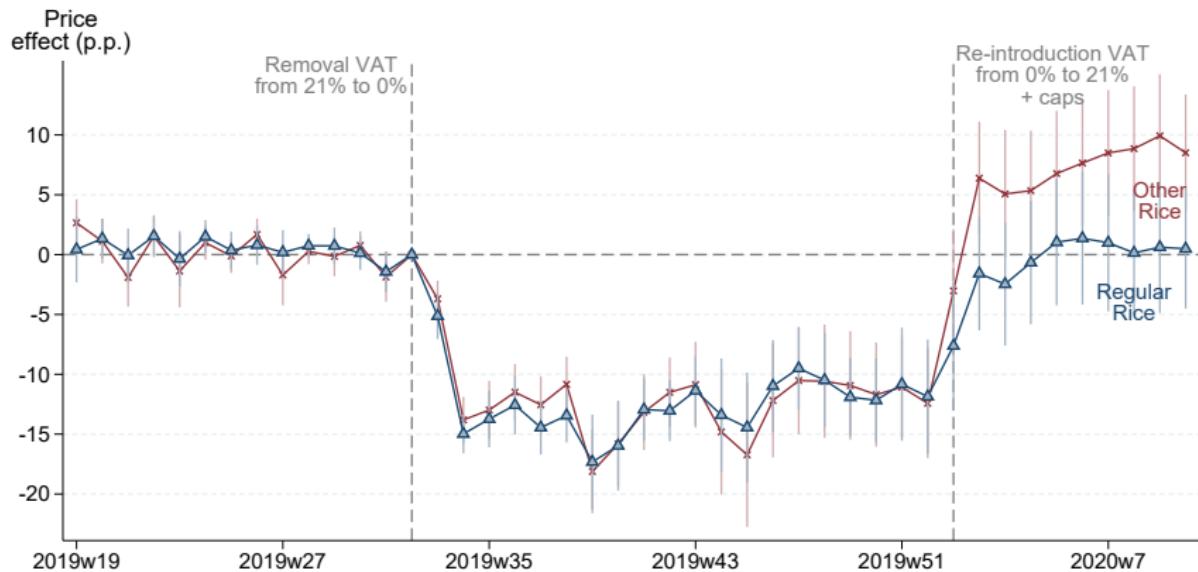
Regular Rice (7% cap) vs Other Rice (no cap)



Capped VAT increase: Rice

Back

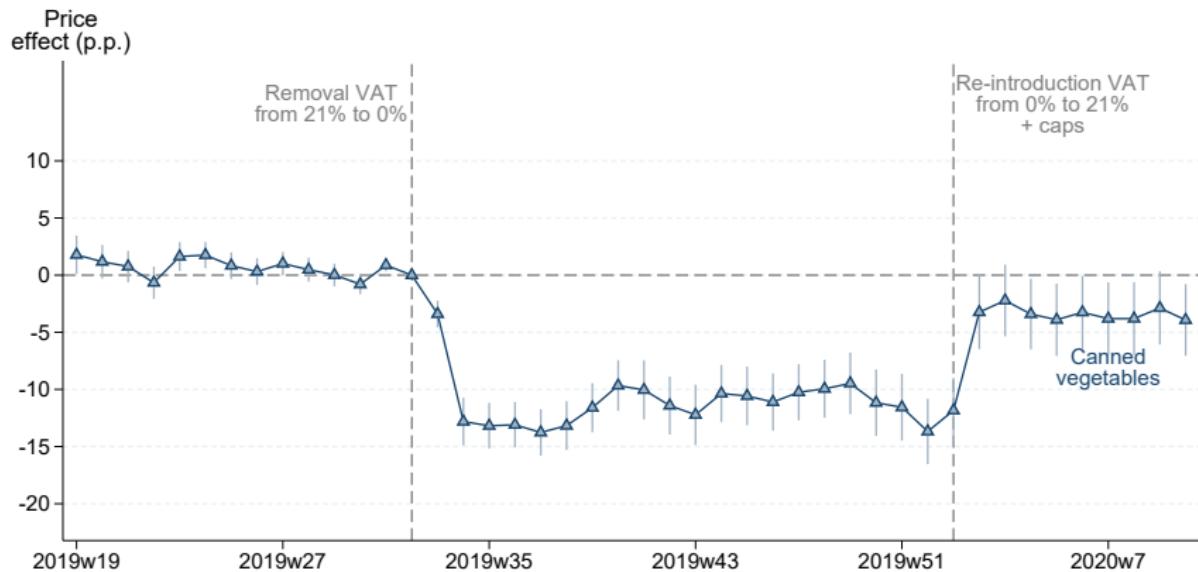
Regular Rice (7% cap) vs Other Rice (no cap)



Capped VAT increase: Canned food

▶ Back

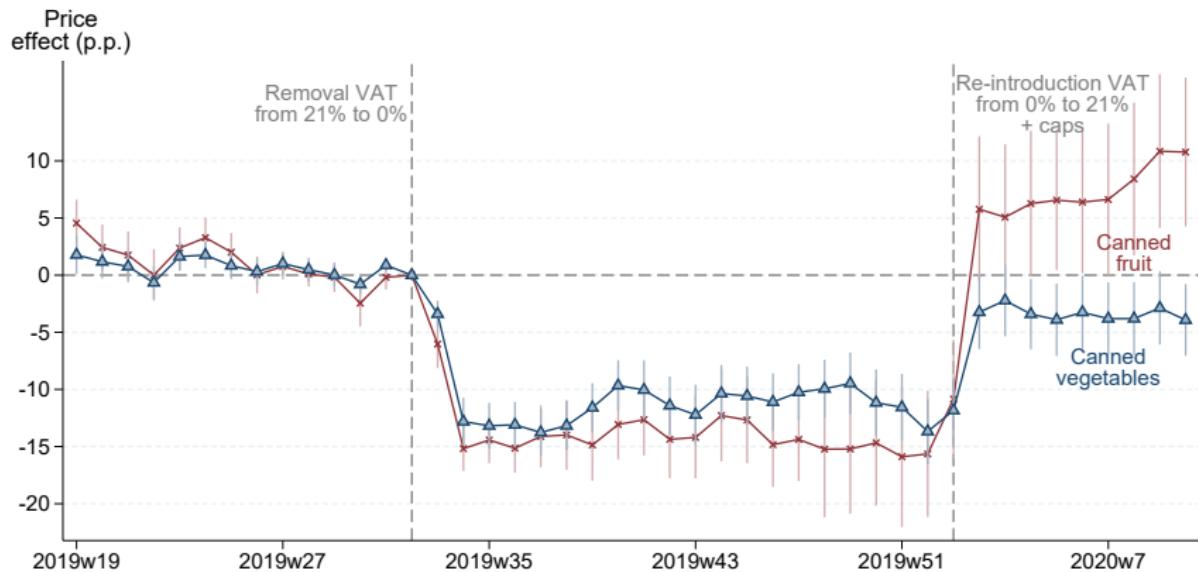
Canned vegetables (7% cap) vs Canned fruit (no cap)



Capped VAT increase: Canned food

▶ Back

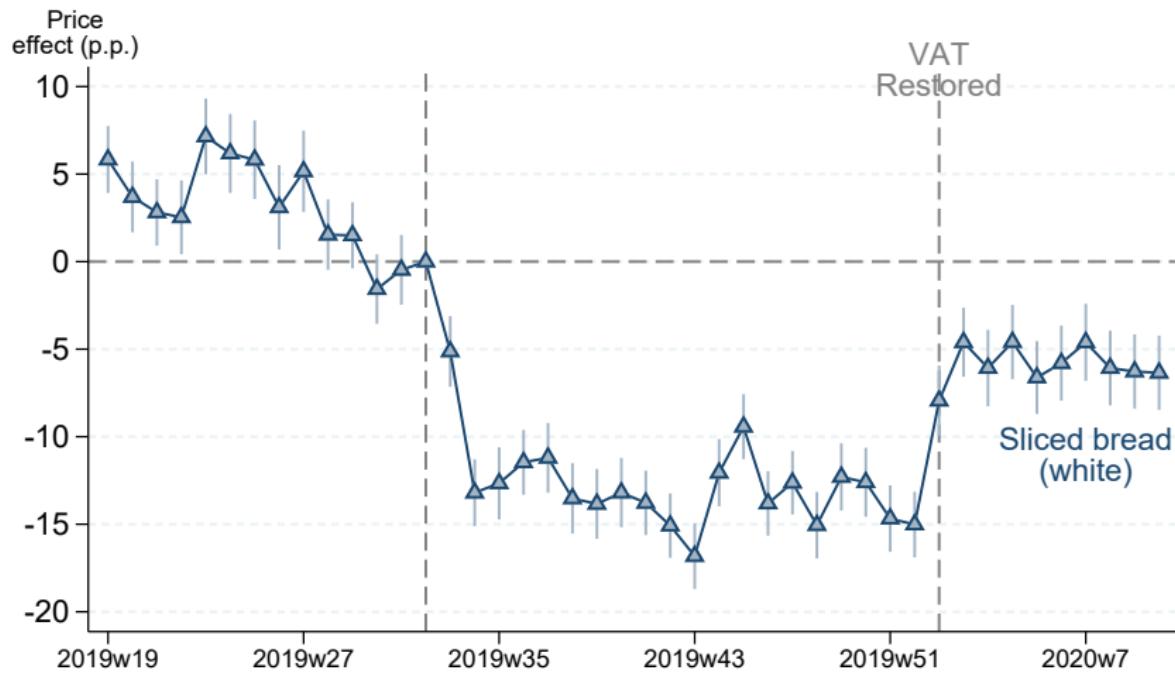
Canned vegetables (7% cap) vs Canned fruit (no cap)



Capped VAT increase: Sliced bread

▶ Back

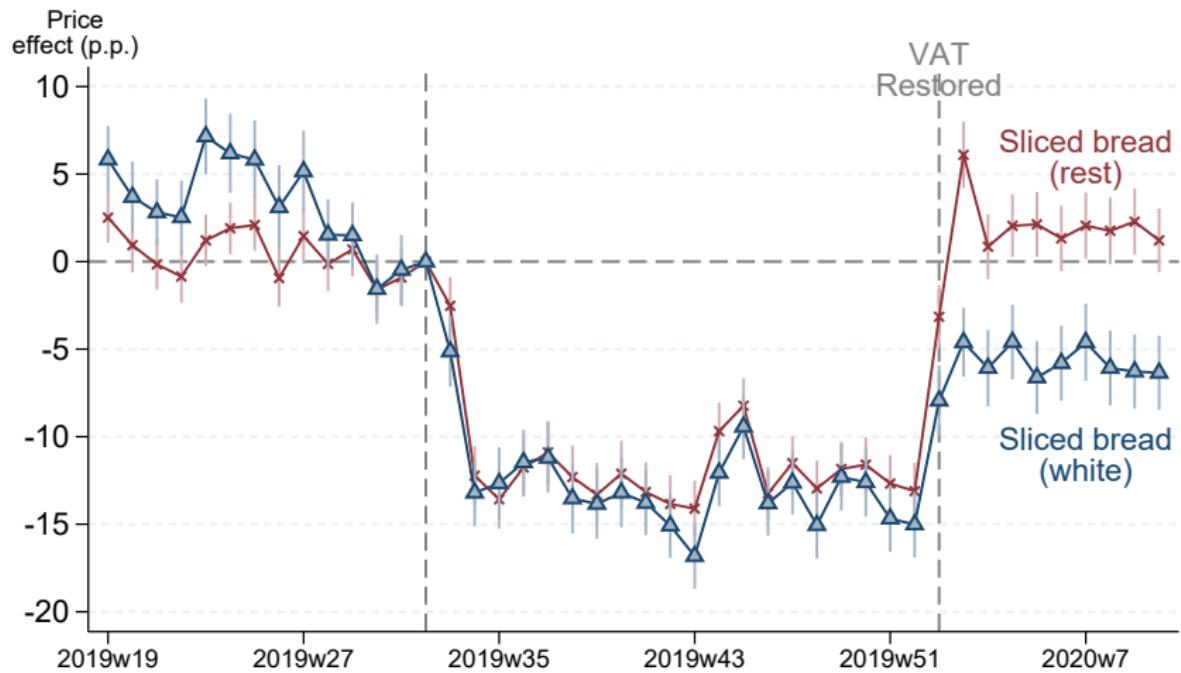
Slide bread (white) (7% cap) vs Sliced bread (rest) (no cap)



Capped VAT increase: Sliced bread

▶ Back

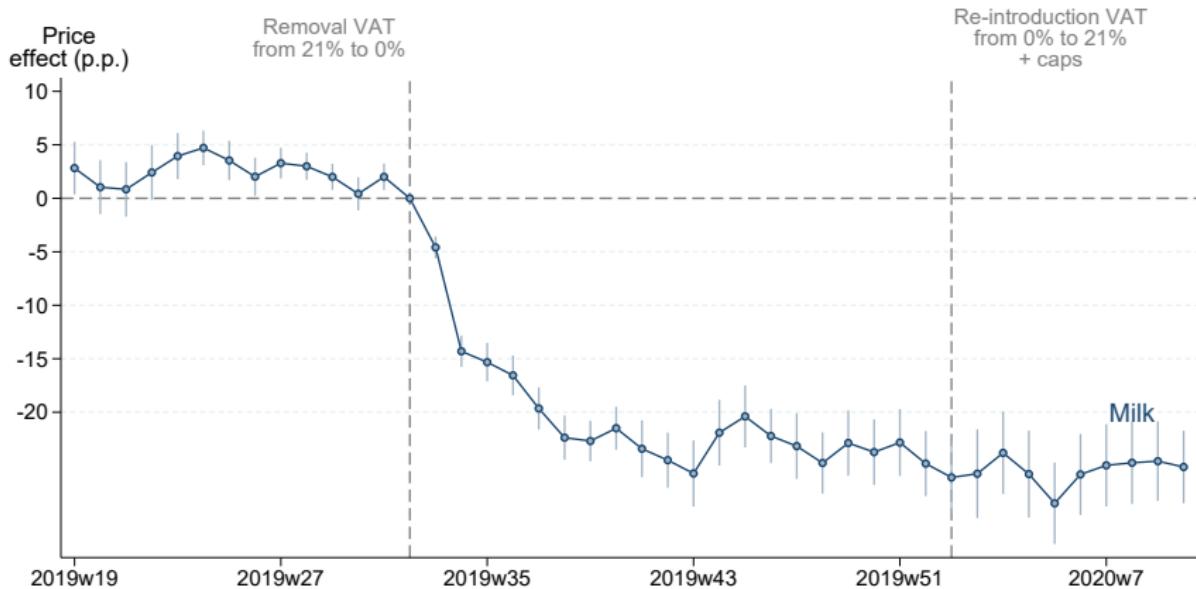
Slide bread (white) (7% cap) vs Sliced bread (rest) (no cap)



Capped VAT increase: Milk

▶ Back

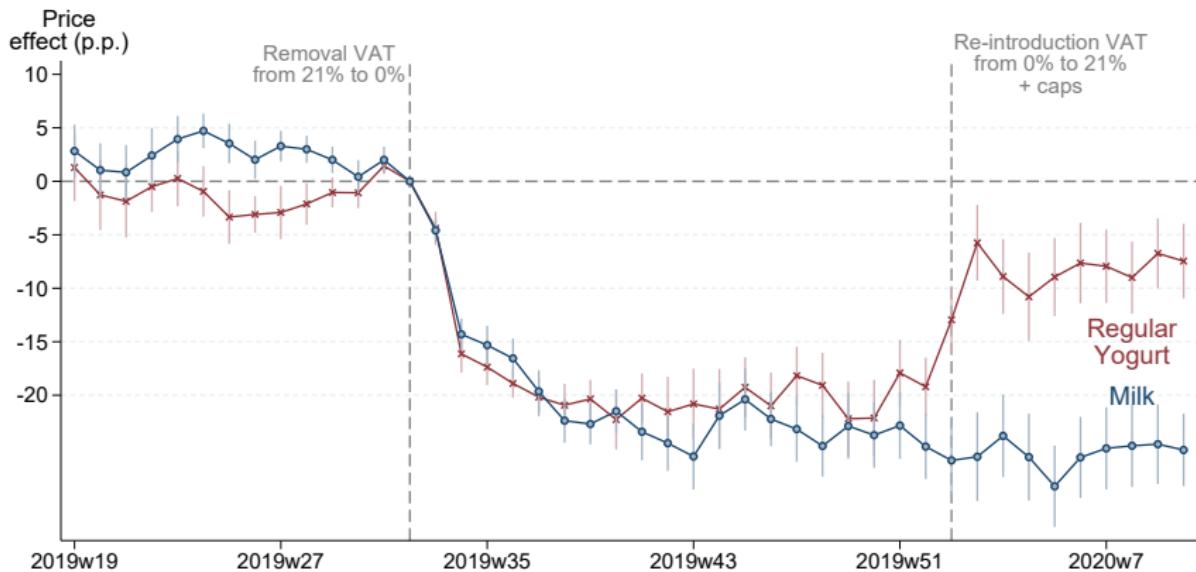
Milk (0% cap): Full incidence on the supply



Capped VAT increase: Milk

▶ Back

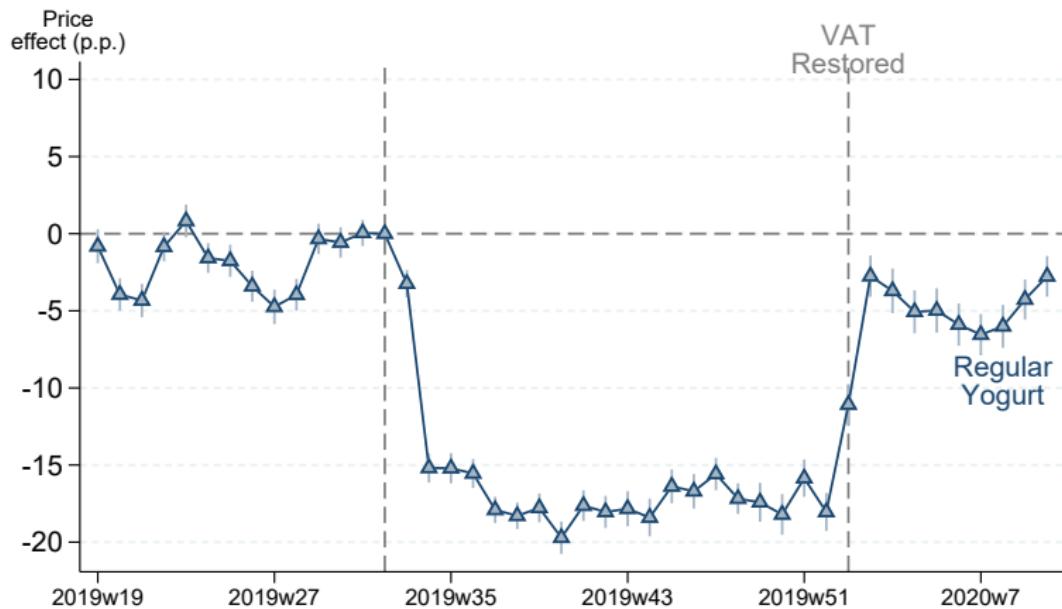
Milk (0% cap): Full incidence on the supply



Capped VAT increase

▶ Back

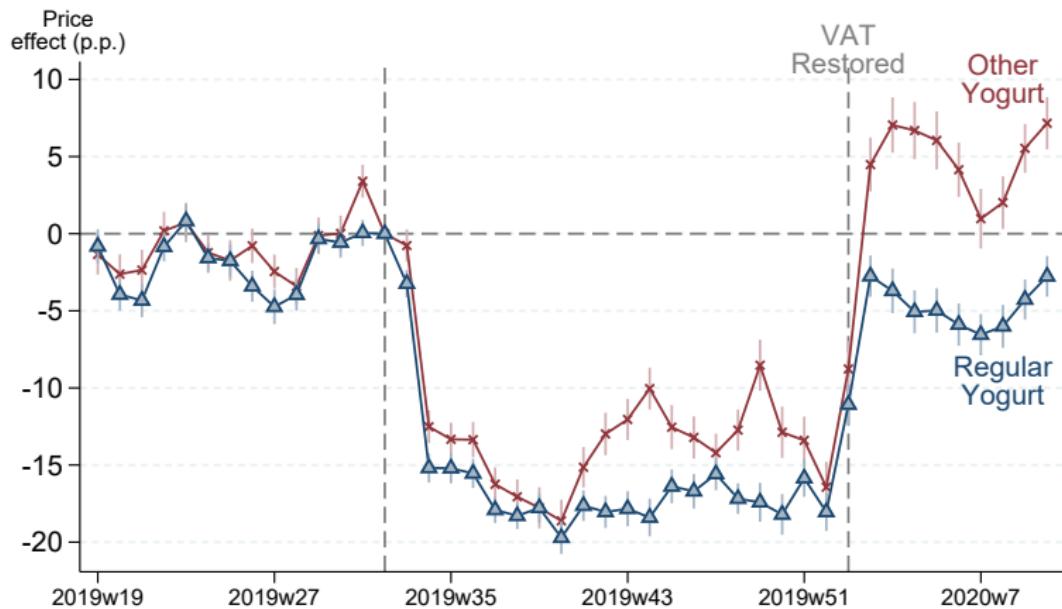
Regular Yogurt (7% cap) vs Other Yogurt (no cap)



Capped VAT increase

▶ Back

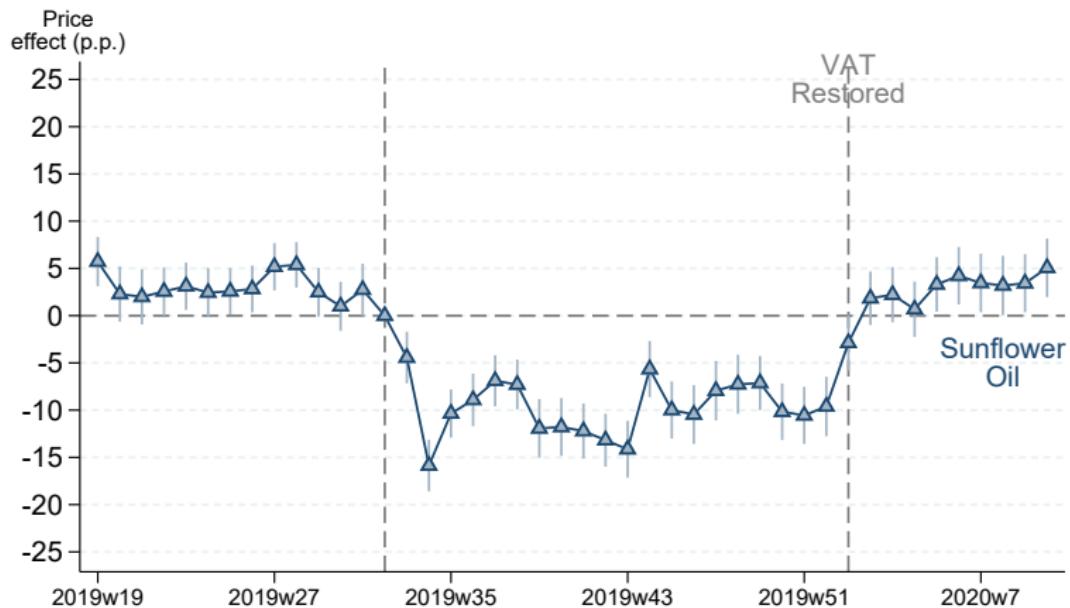
Regular Yogurt (7% cap) vs Other Yogurt (no cap)



Capped VAT increase

▶ Back

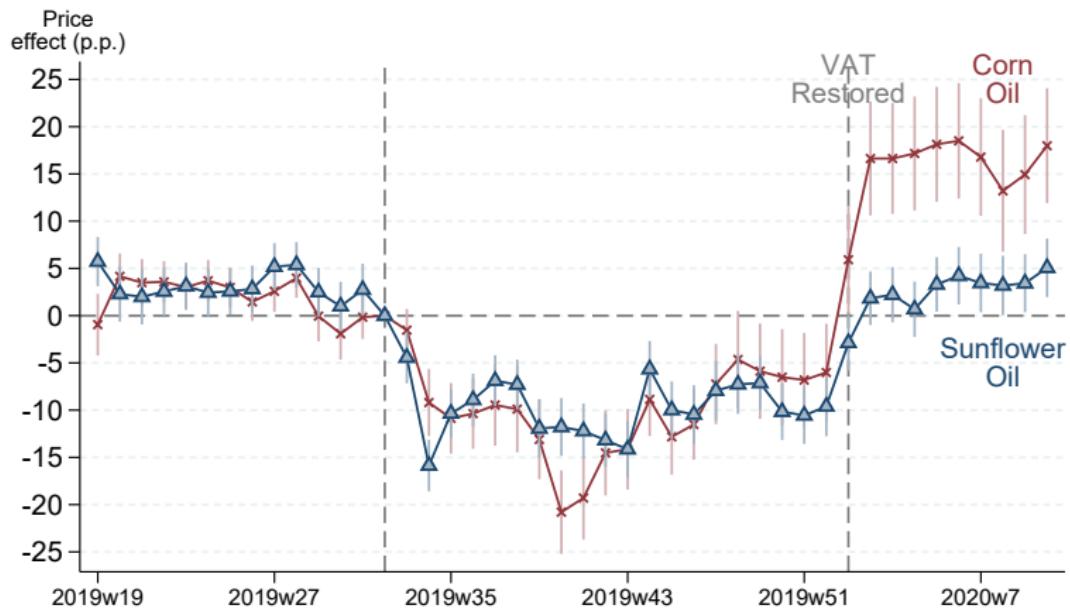
Sunflower Oil (9% cap) vs Corn Oil (no cap)



Capped VAT increase

▶ Back

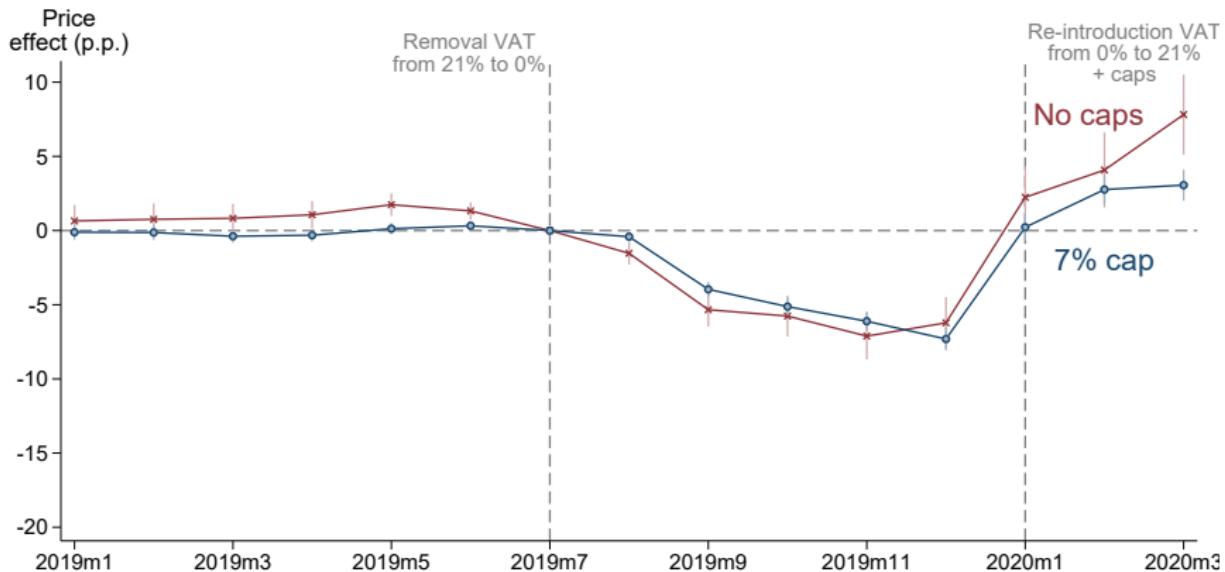
Sunflower Oil (9% cap) vs Corn Oil (no cap)



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

▶ Back

7% cap vs 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

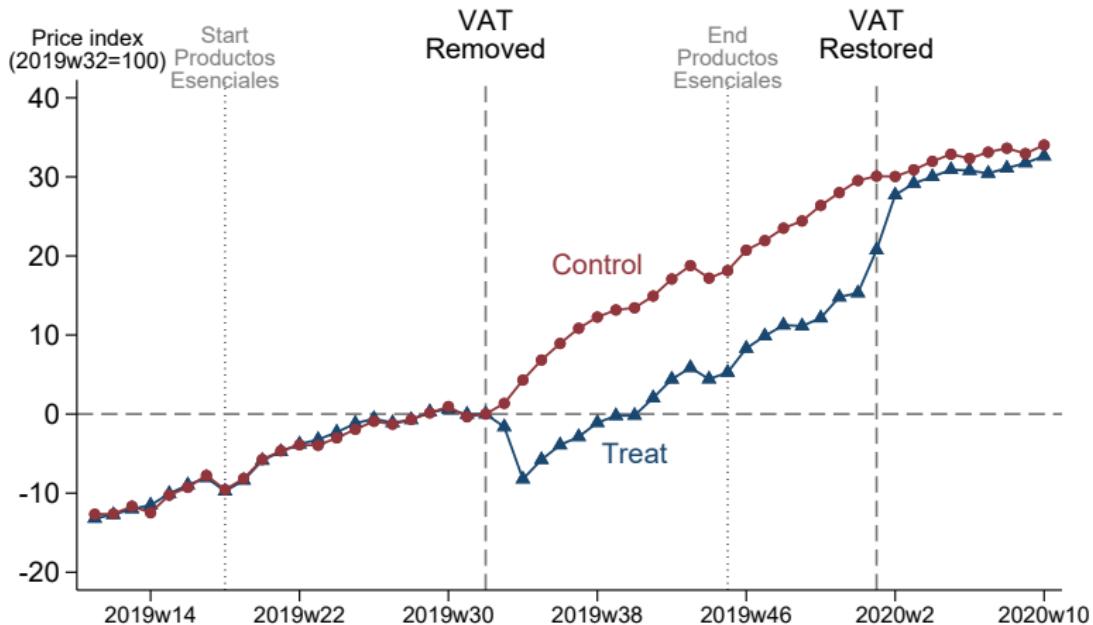
- Treated: 38 EANs (N=34,795)
- Control: 10 EANs (N=11,863); 16 missing (no data)

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

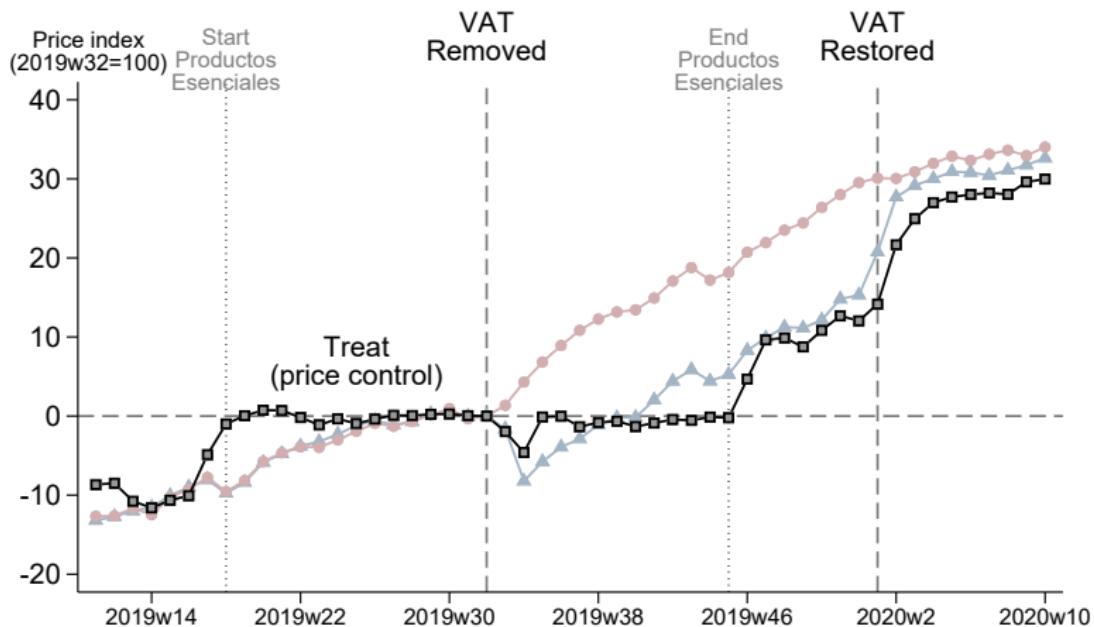
Price Controls: mandatory tags, banners, and App



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

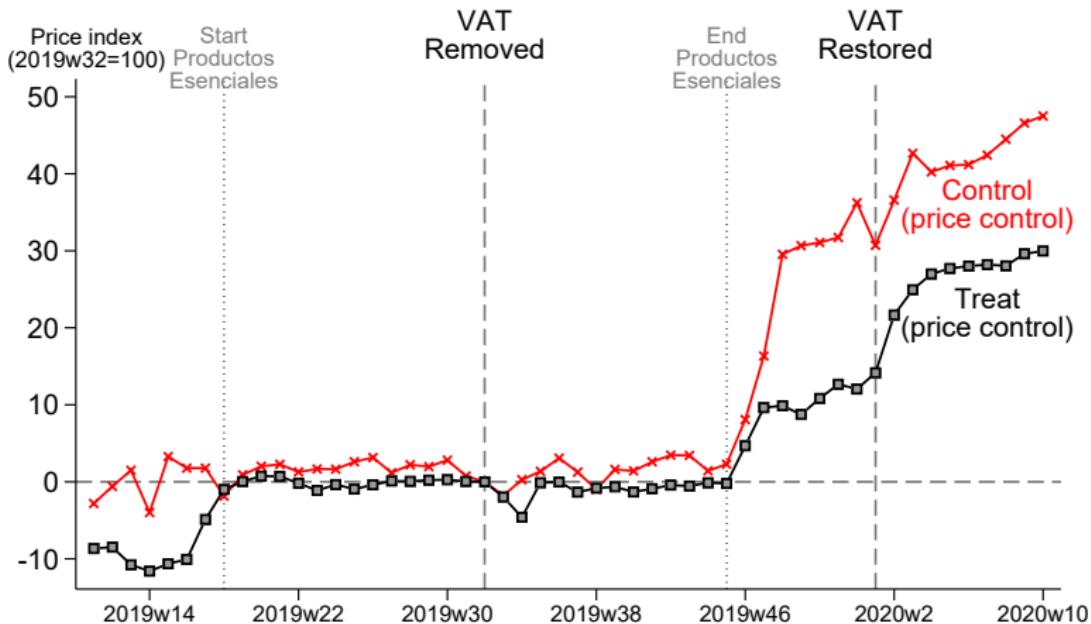


[1] Productos Esenciales (in T) vs Rest (T and C)



[2] Productos Esenciales: in T and C

► DiD



Monitoring App:

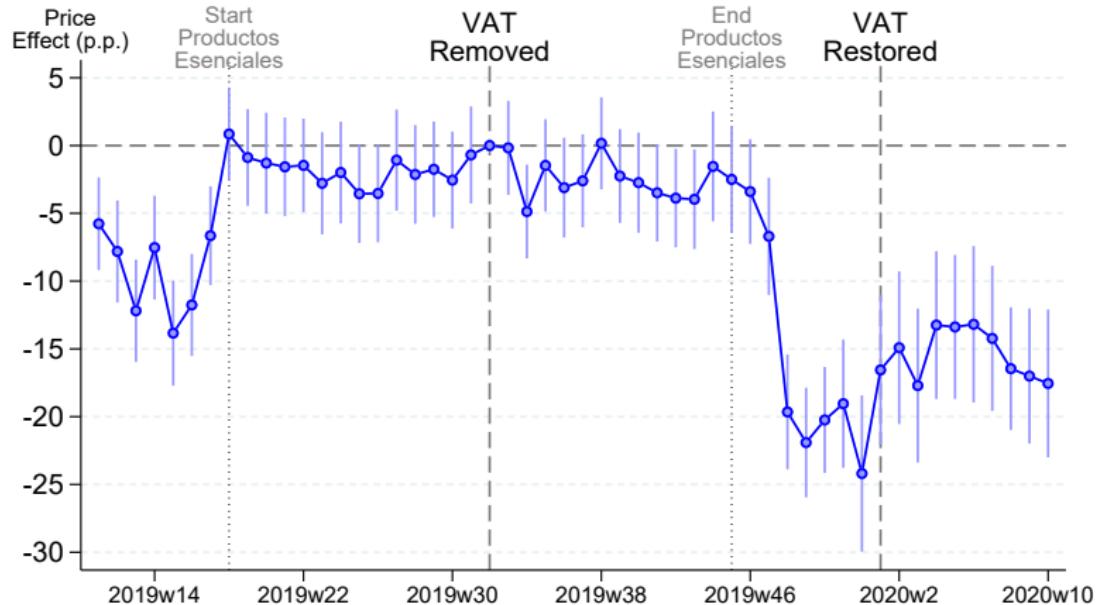
- ▶ **Precios Claros:** an Electronic Price Advertising System (SEPA) launched in 2016. Goal: ↑ price visibility
 - Large grocery stores must report daily price data ([Art 4: except SMEs](#))
 - Consumers can search prices/location from web-page or app
 - Administered/enforced by the Consumer Protection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

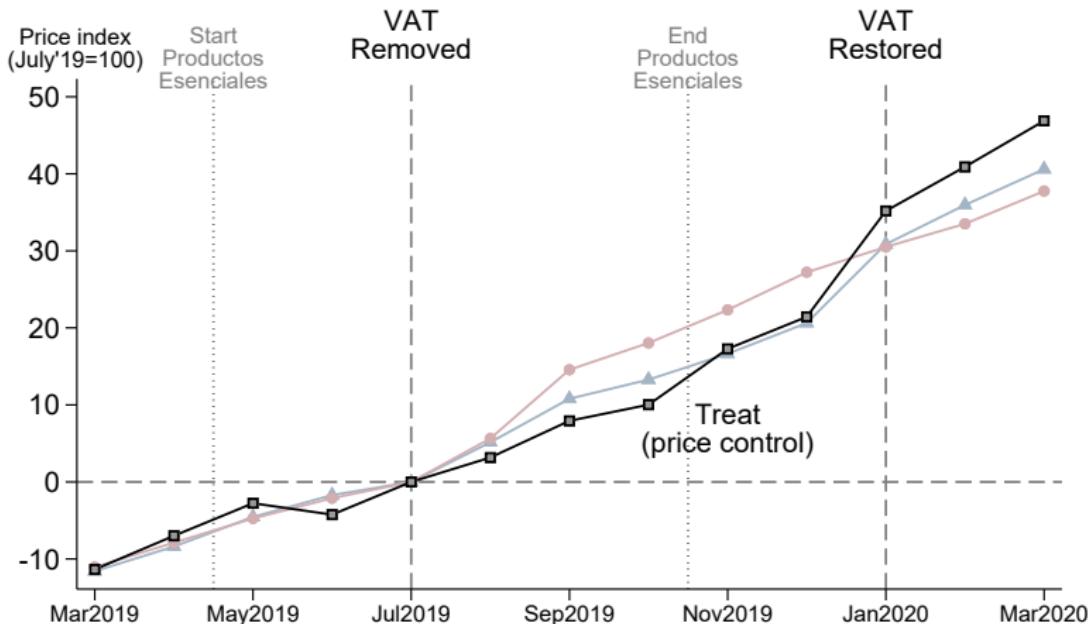


[1] Productos Esenciales (in T) vs Rest (T and C)

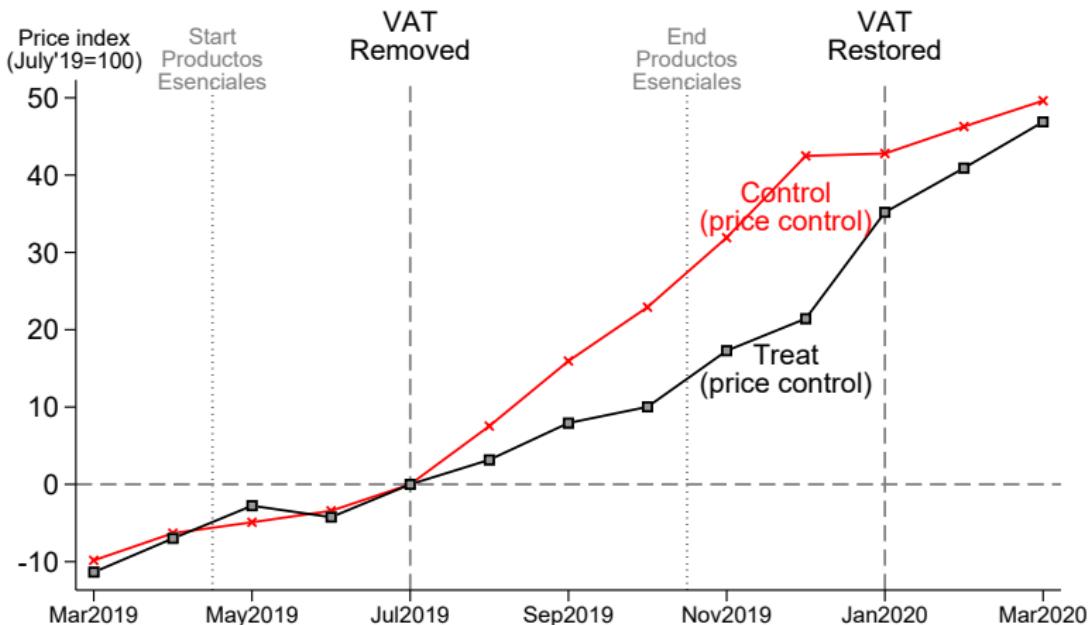


[1] Productos Esenciales (in T) vs Rest (T and C)

Back

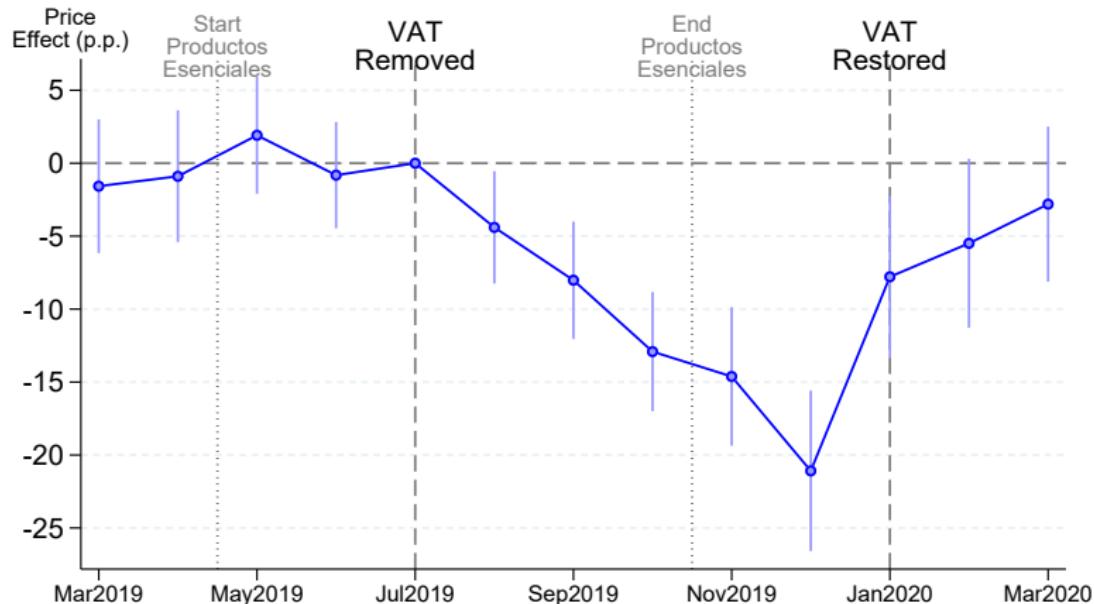


[2] Productos Esenciales: in T and C



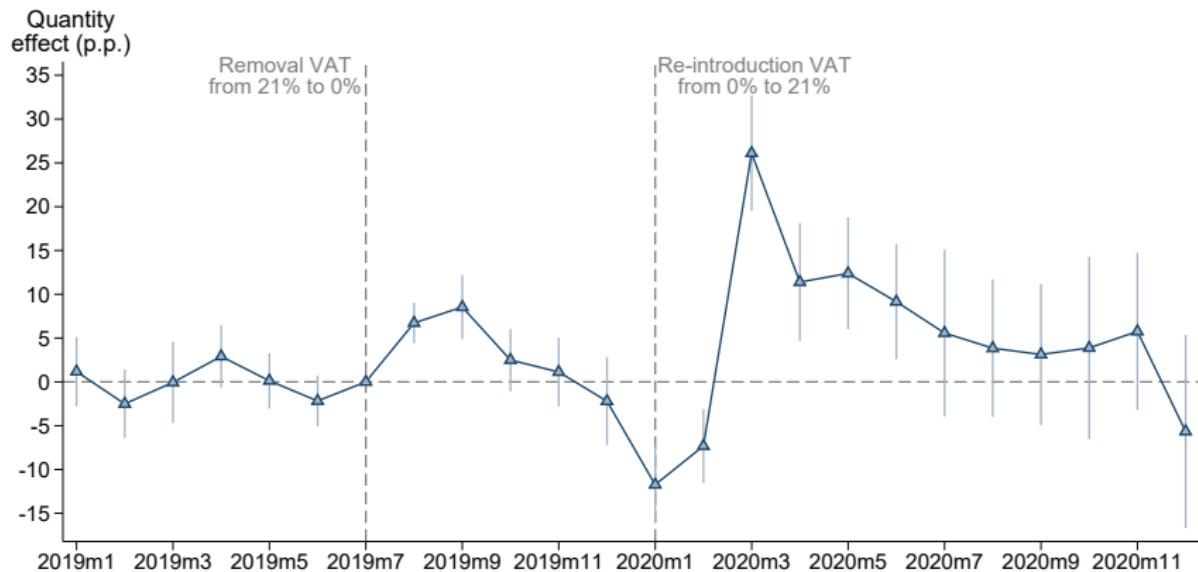
[2] Productos Esenciales: Dynamic DiD

▶ Back



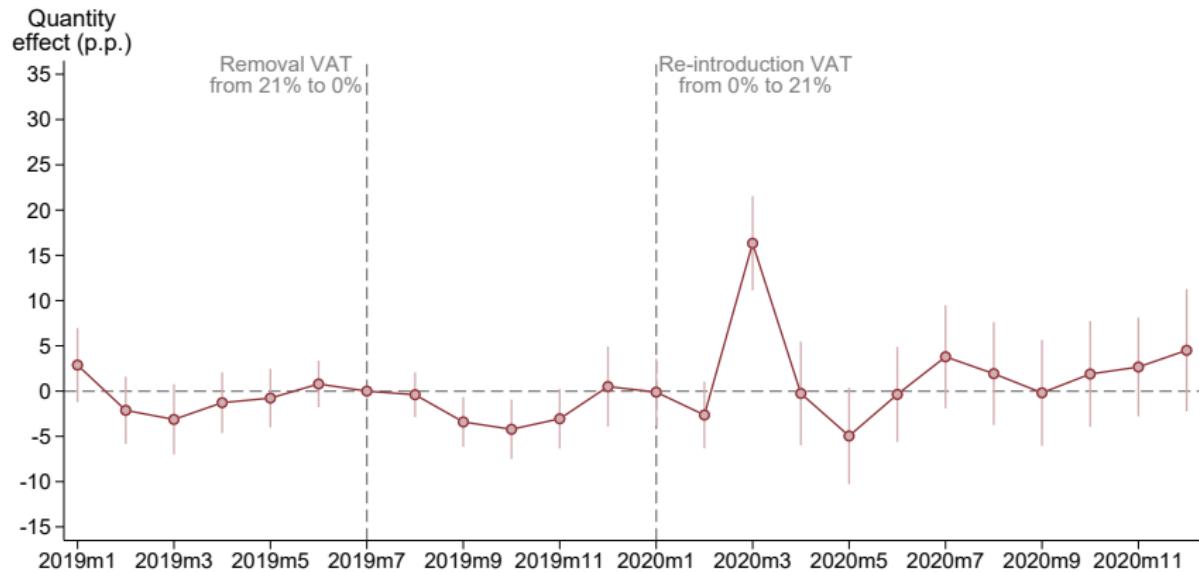
Quantity effects in the longer run

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Quantity effects in the longer run

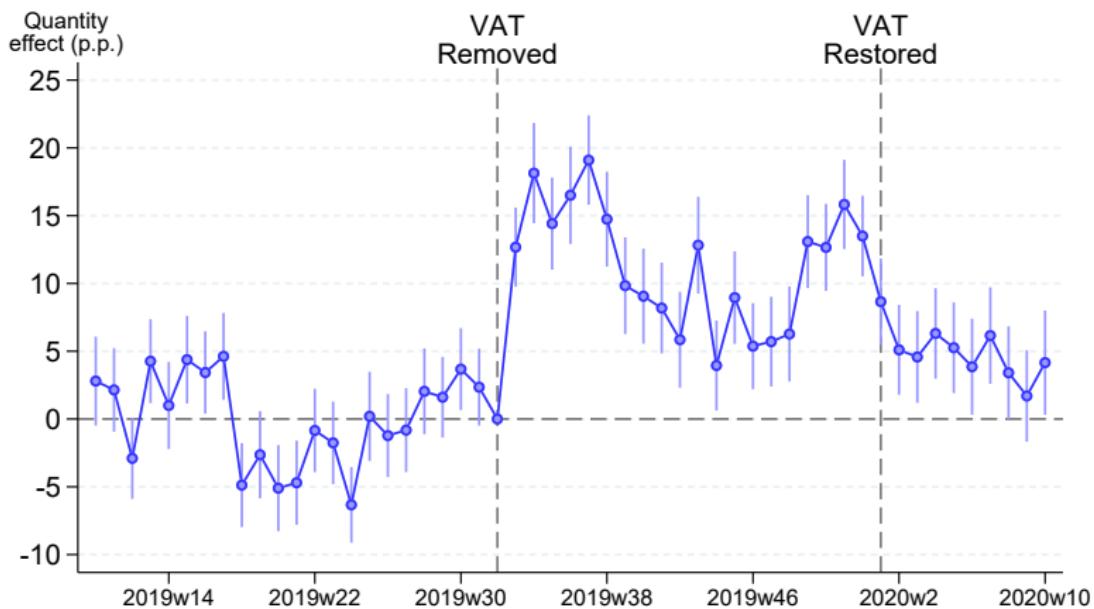
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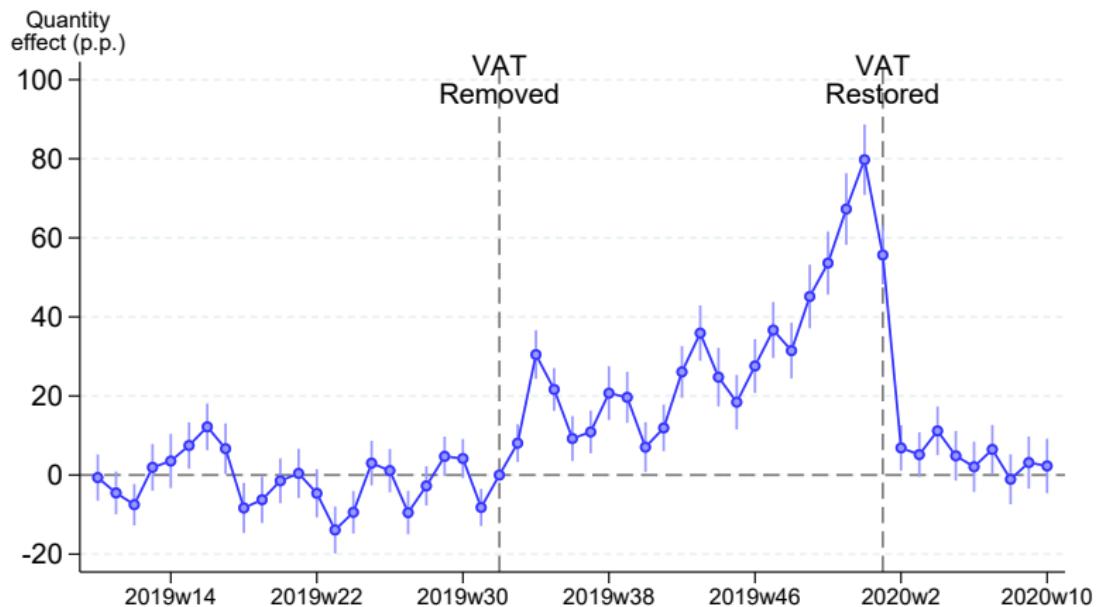
Quantity effect (Dynamic DiD): Large chains

[Back](#)

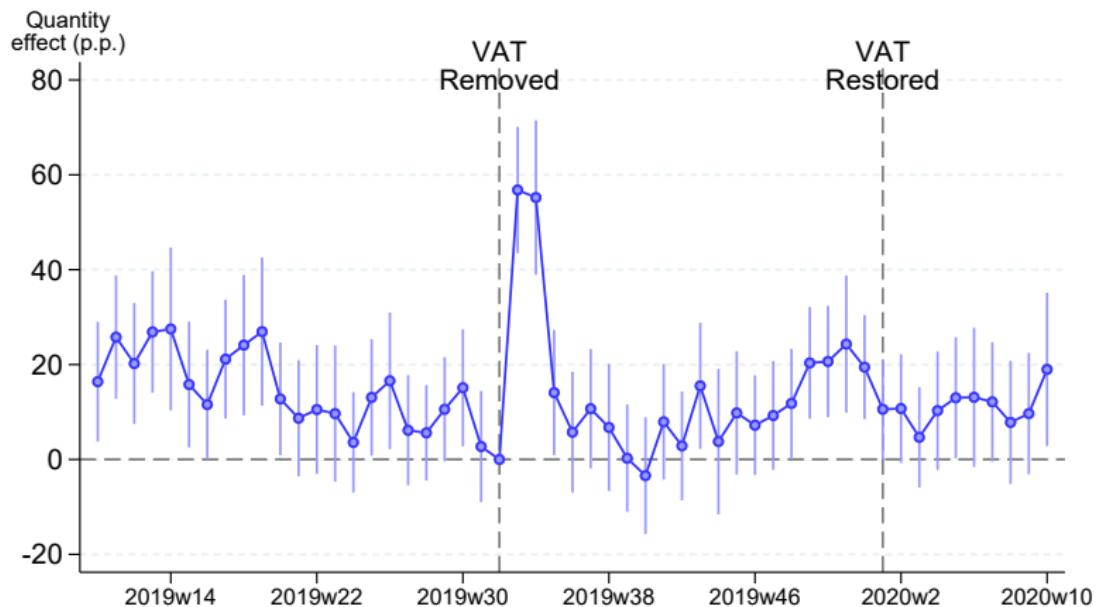
Yerba Mate vs Control



Canned fruit/veg vs Control



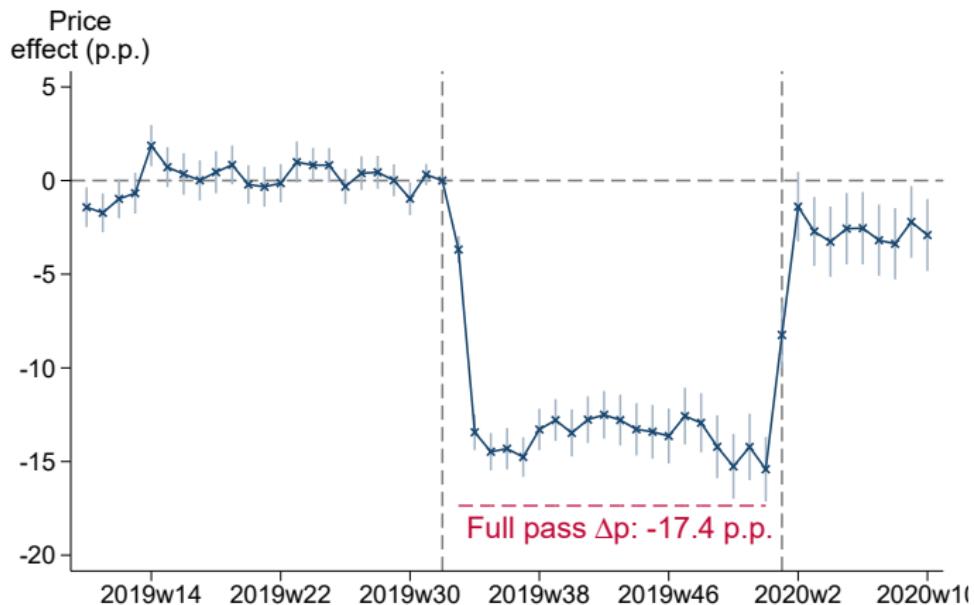
Cooking oil vs Control



Heterogeneities by region

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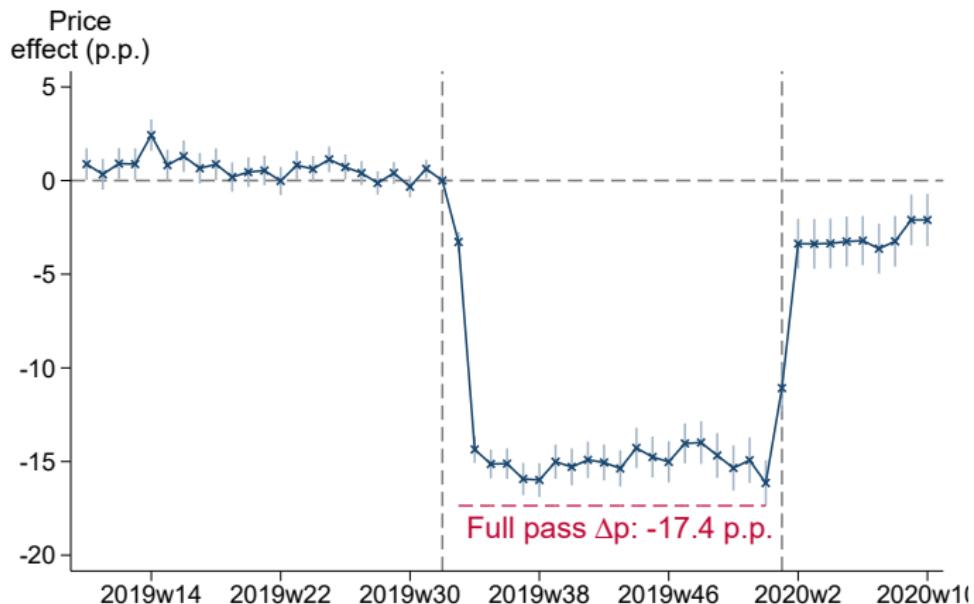
AUSTRAL



Heterogeneities by region

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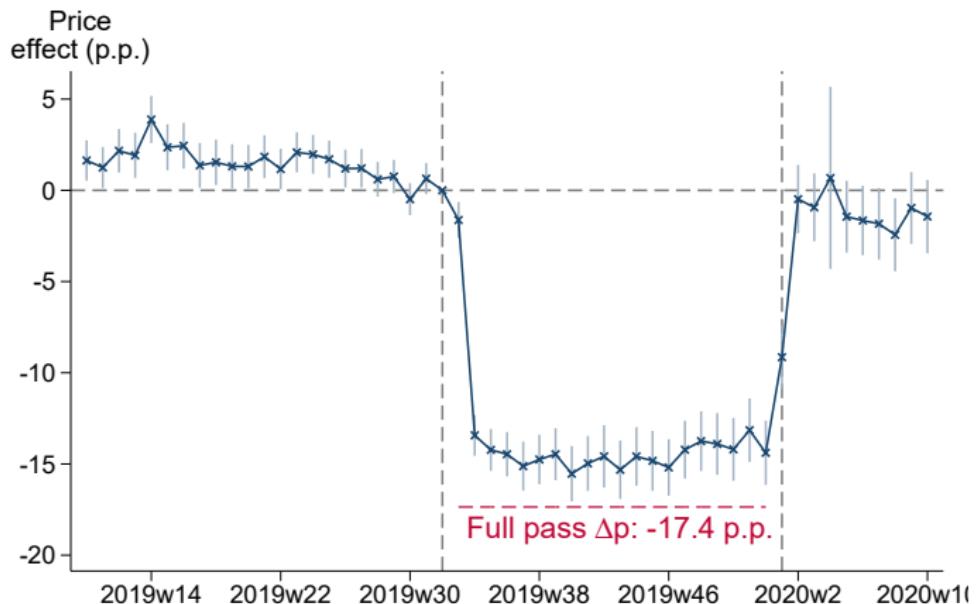
BS. AS. RESTO



Heterogeneities by region

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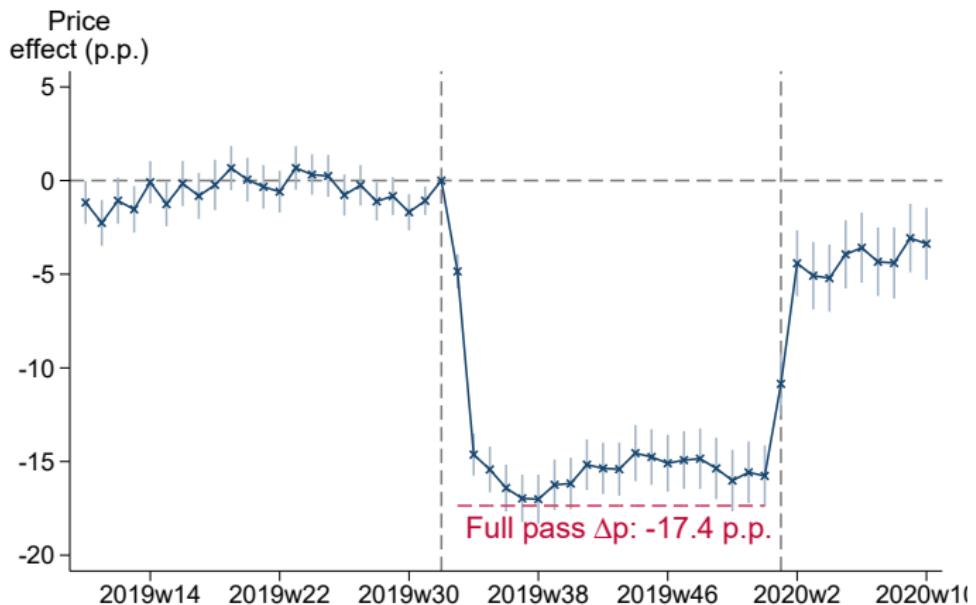
CAPITAL FEDERAL



Heterogeneities by region

▶ Back

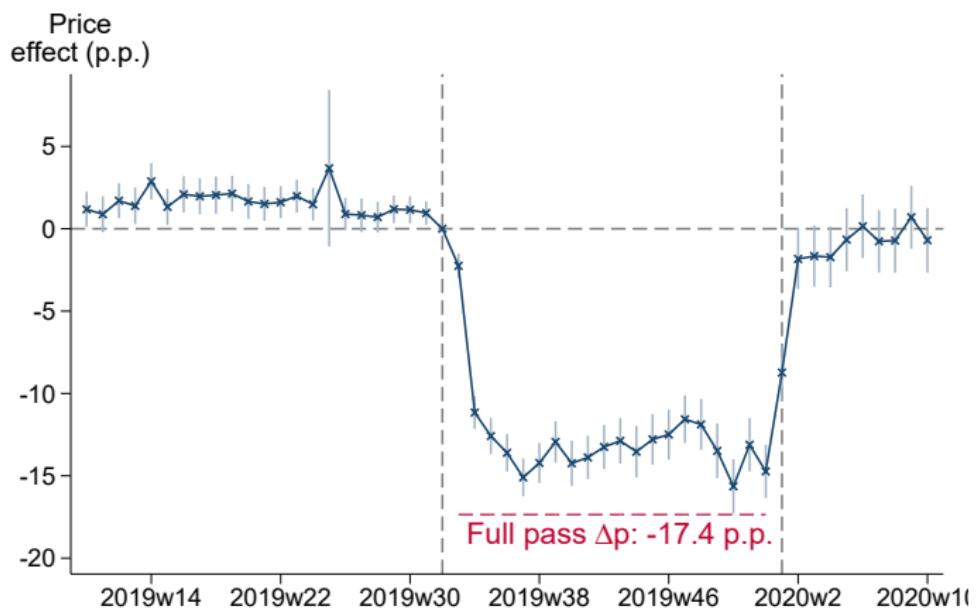
CORDOBA



Heterogeneities by region

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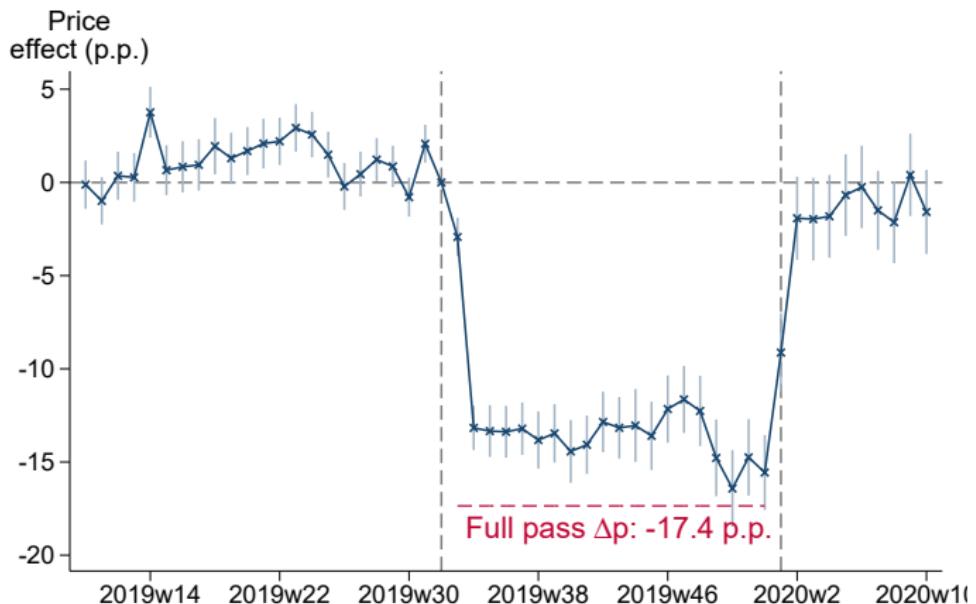
CUYO



Heterogeneities by region

▶ Back

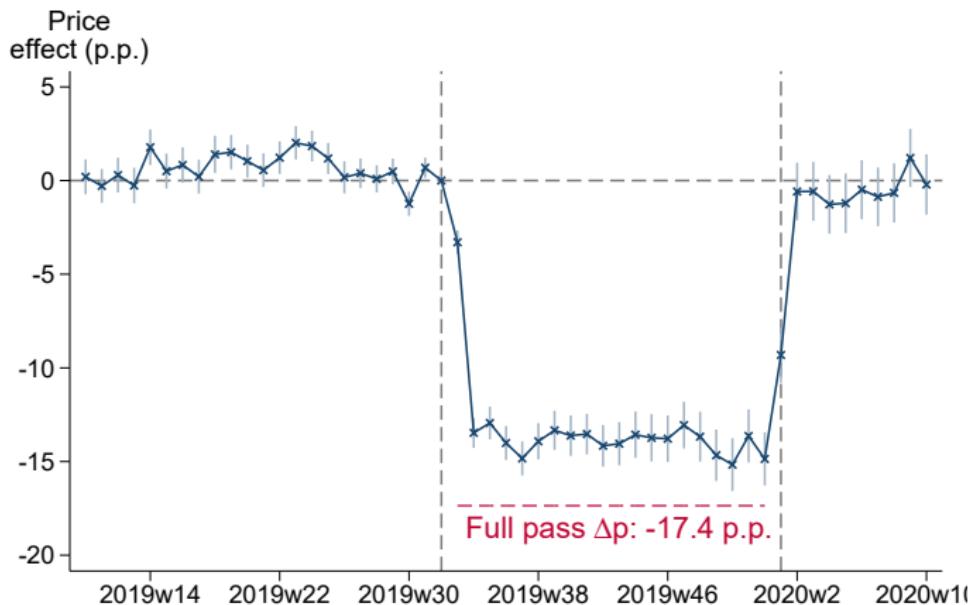
LITORAL NORTE



Heterogeneities by region

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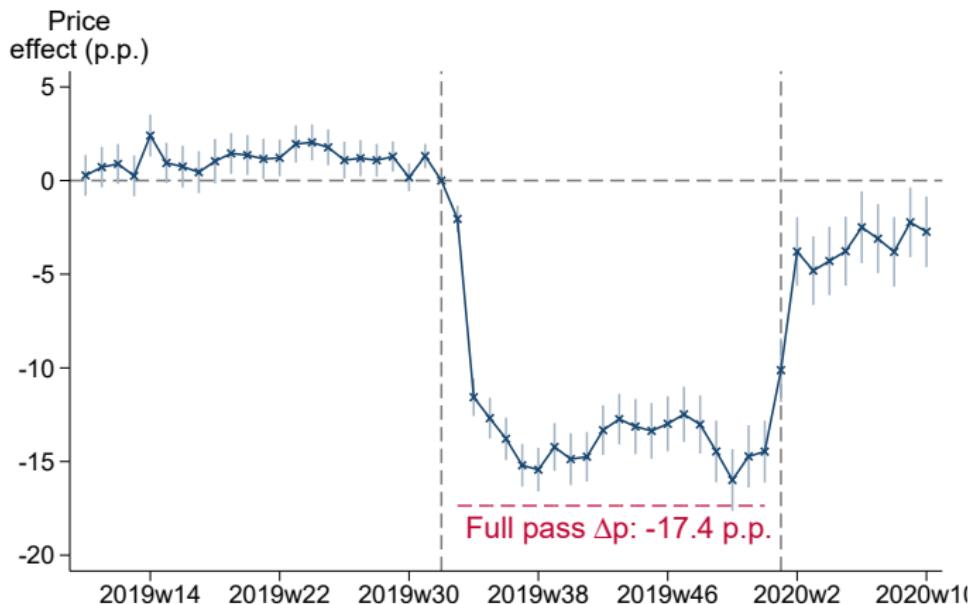
LITORAL SUR



Heterogeneities by region

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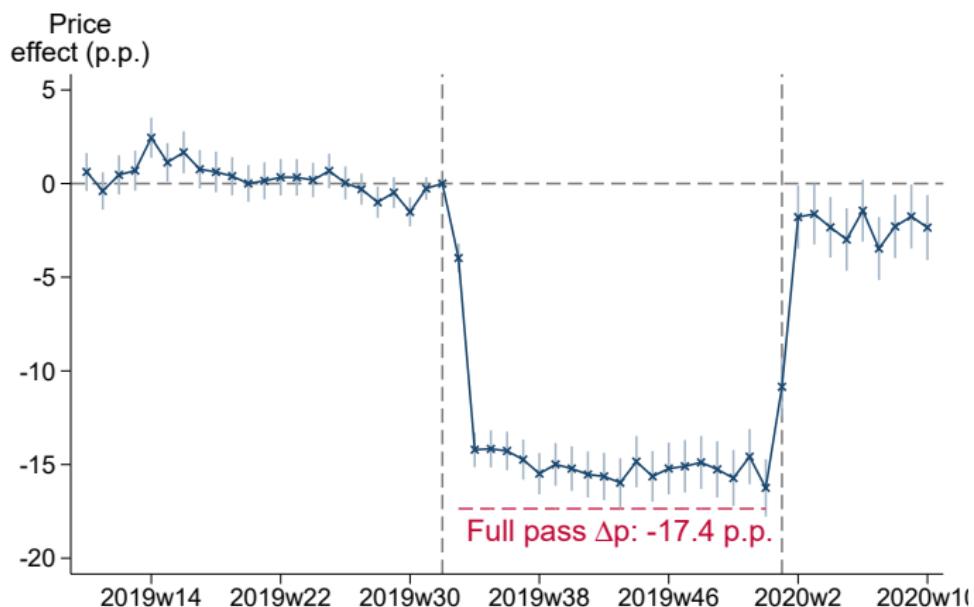
NOA



Heterogeneities by region

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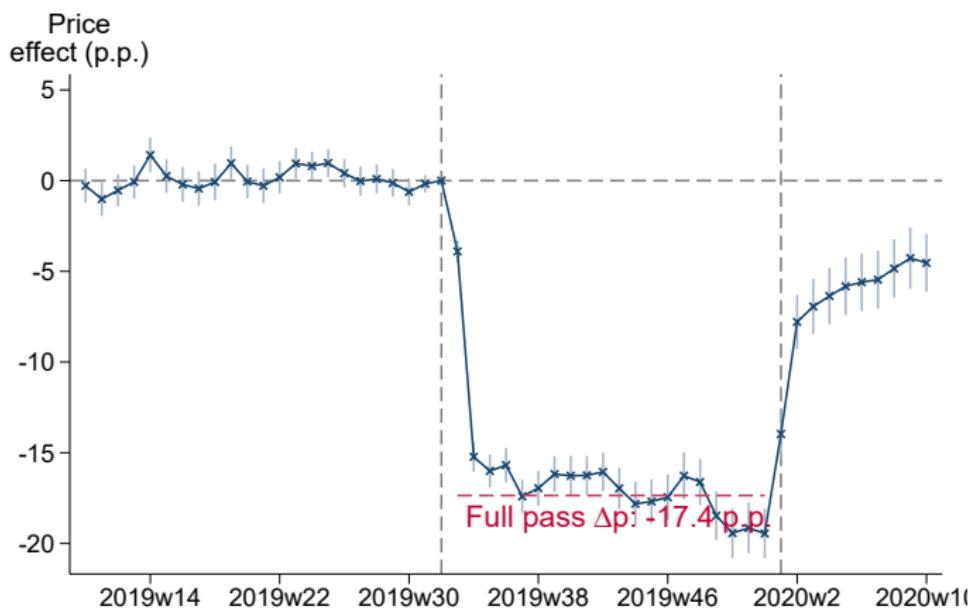
PERIFERIA



Heterogeneities by region

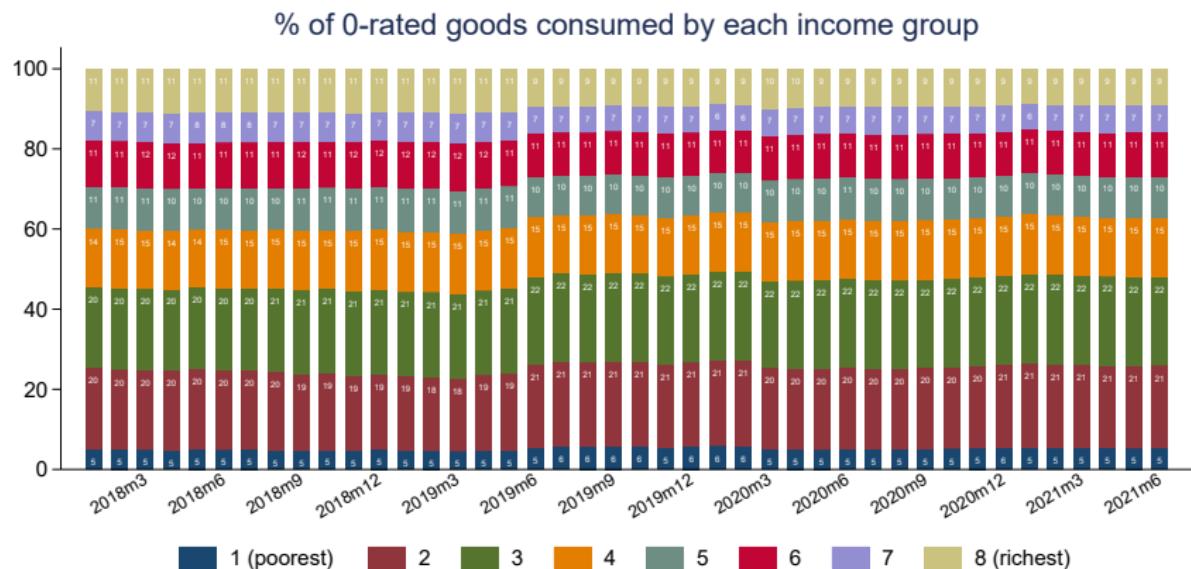
▶ Back

SUR



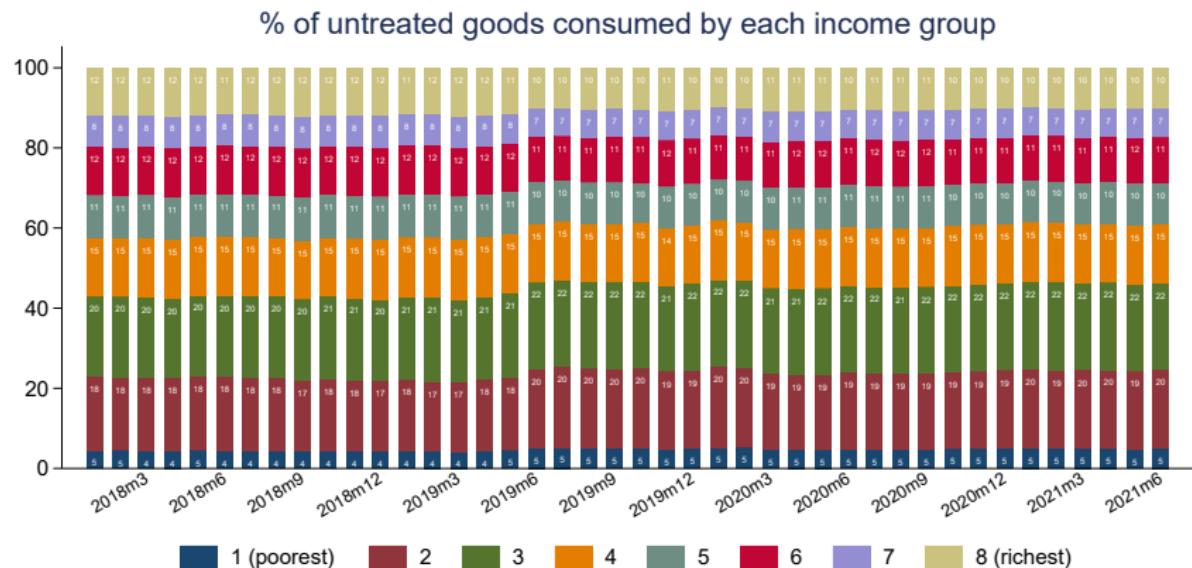
Low-income people do not seem to switch to chain supermarkets

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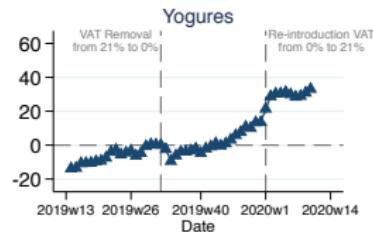
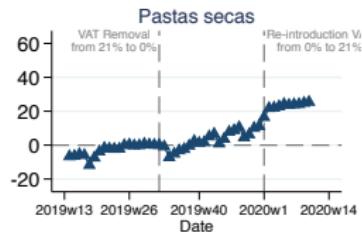
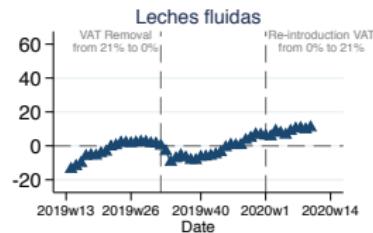
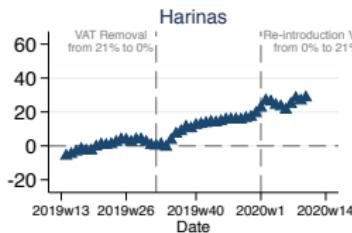
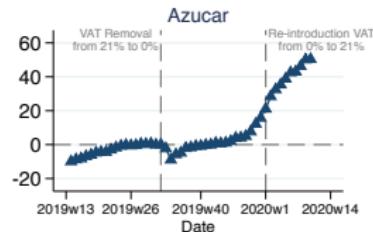
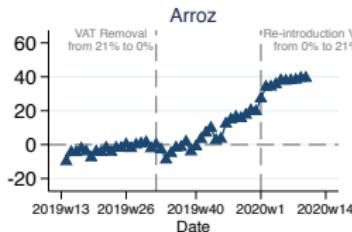
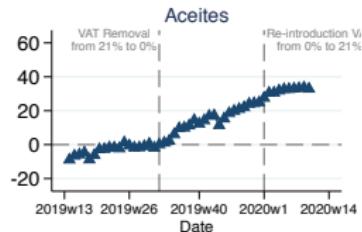


Low-income people do not seem to switch to chain supermarkets

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Heterogeneities by products



Robustness (aggregate price data)

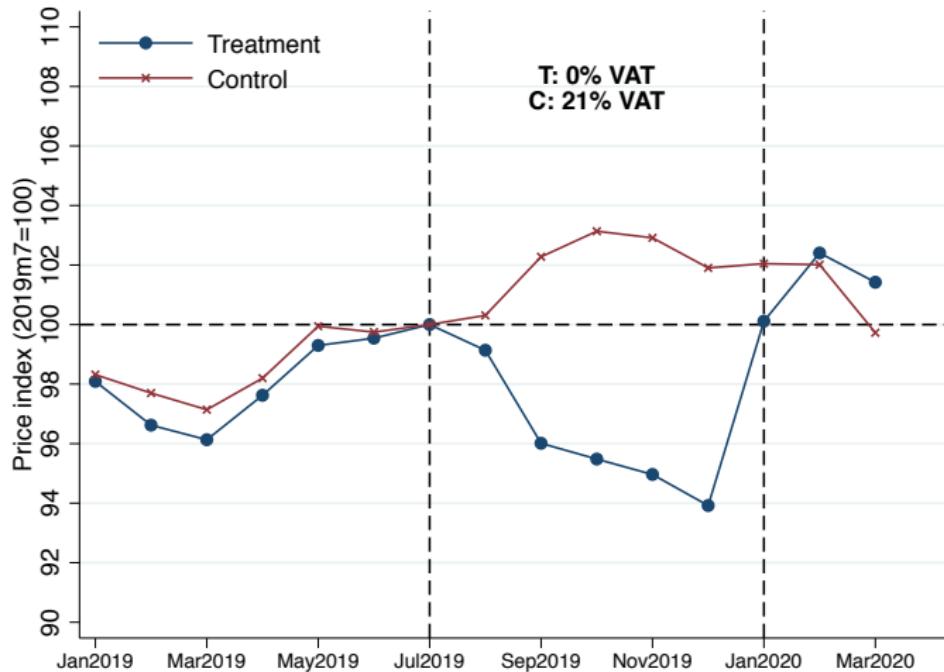
- ▶ Result is also present in aggregate price data!
- ▶ National Institute of Statistics (INDEC) publishes average monthly **prices** of some products ([link](#)) used in the CPI index (59 products in GBA; 14 products across 6 regions)
- ▶ We break the list into T (0% VAT) and C (21% VAT) and run:

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

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

Coefficients β_t test the effect relative to 2019m7

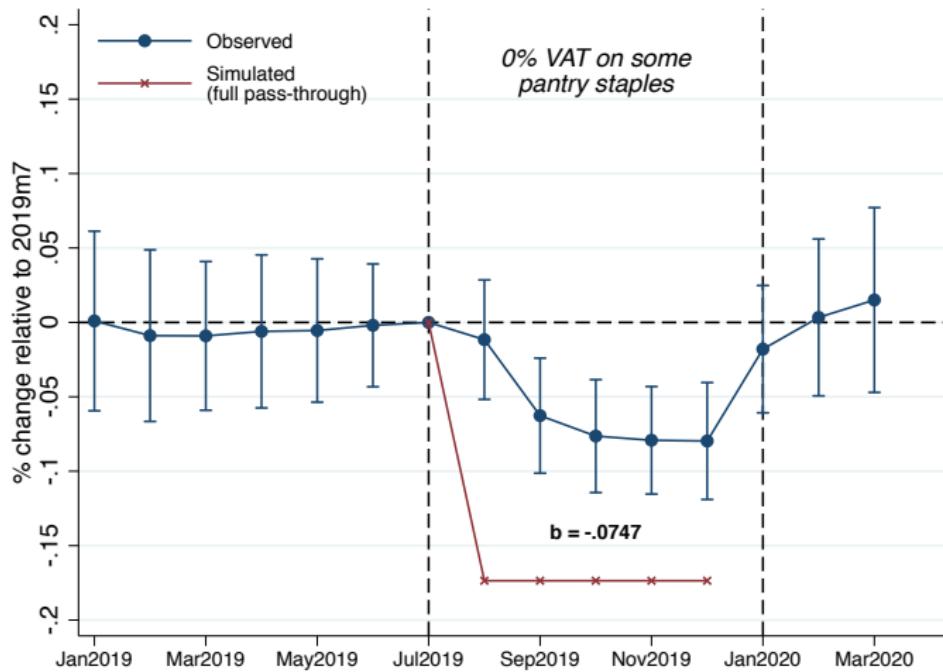
Pass-through to consumer prices [levels]



Partial pass-through [DiD]

► Back

► Robustness



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

Purchase responses

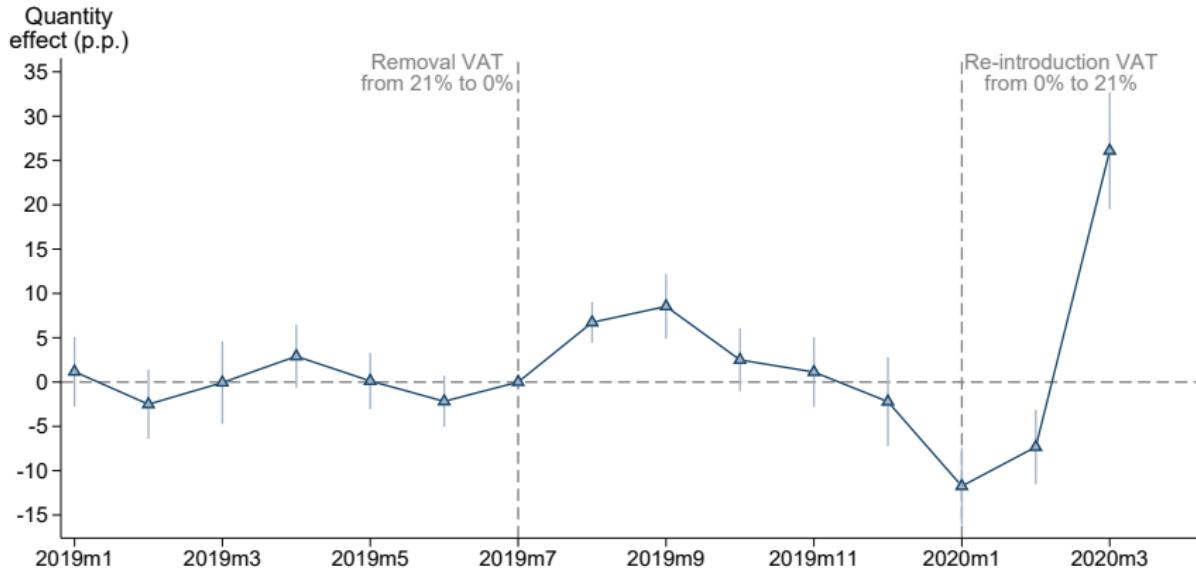
Quantity effects

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

Units sold increased in supermarkets chains

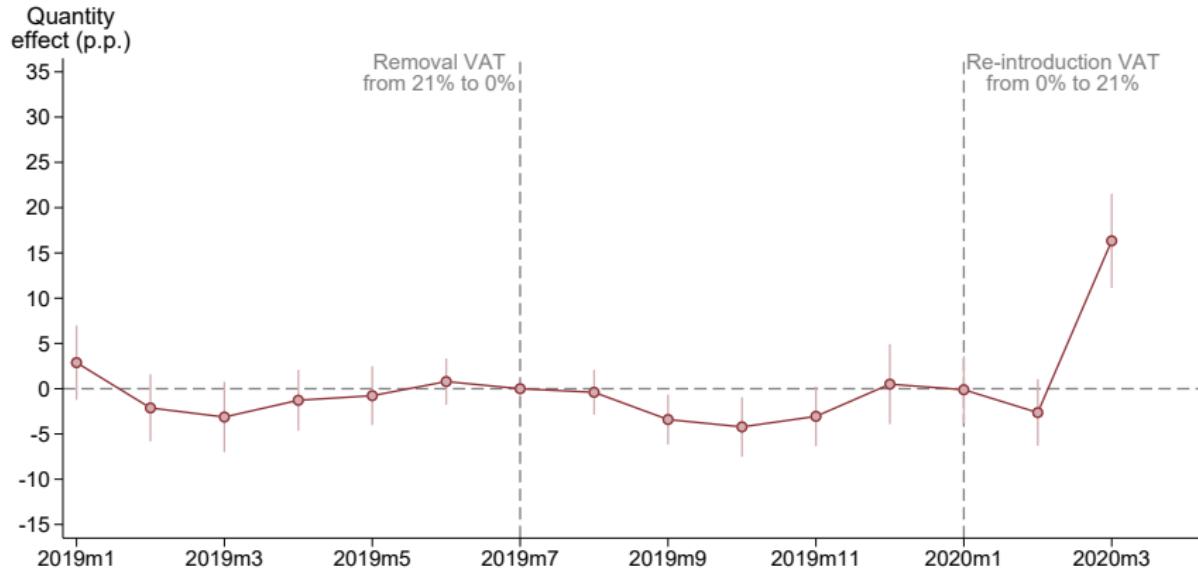
► COVID-19



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

Q effect is more muted in independent stores

► Robustness



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