

# Can VAT Cuts and Anti-Profiteering Measures Dampen the Effects of Food Price Inflation?

Youssef Benzarti  
UCSB & NBER

Santiago Garriga  
CEFIP-UNLP

Dario Tortarolo  
World Bank DECRG

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## 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

<b>0% on basic food</b>	<b>Partial VAT cuts</b>	<b>Considering cutting...</b>
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](http://www.vatcalc.com)

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

Kansas, Alabama, Virginia, Oklahoma, Illinois, Tennessee, South Dakota

- ▶ A surge in food prices has brought repealing grocery taxes back to debates

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



Note: Governor Kelly announcing the policy in a grocery store.

# This Paper

## *Can VAT Cuts Dampen the Effects of Food Price Inflation?*

We show that:

- ▶ VAT cuts lead to significant decreases in prices
- ▶ But, their repeal causes prices to increase above their pre-VAT cut
- ▶ Resulting in net household welfare losses

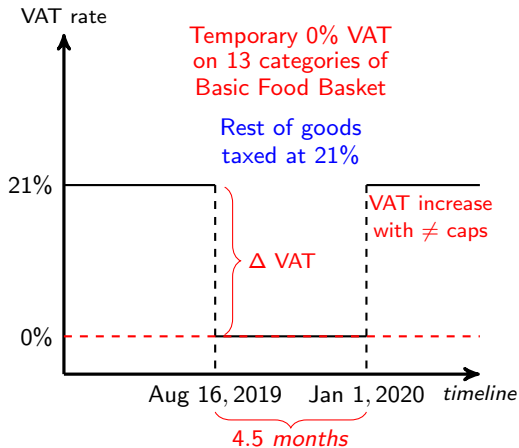
We also find that anti-profiteering measures

- ▶ Are successful at mitigating this asymmetry
- ▶ Result in net household welfare gains
- ▶ But have negative distributional consequences

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

► Timeline/Goal

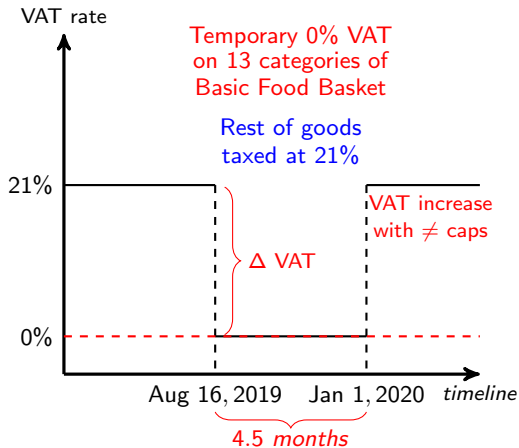
► Enforcement



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▶ Enforcement



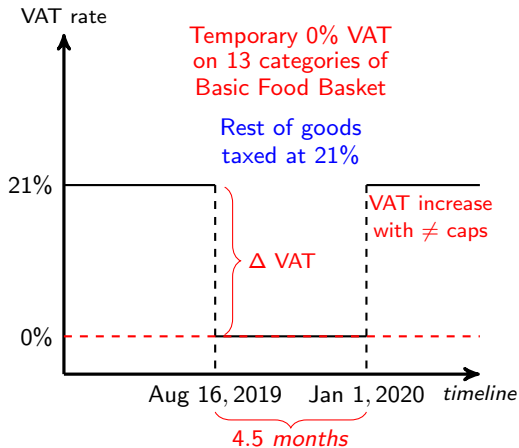
- **VAT cut:** unanticipated, large, salient, and temporary

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

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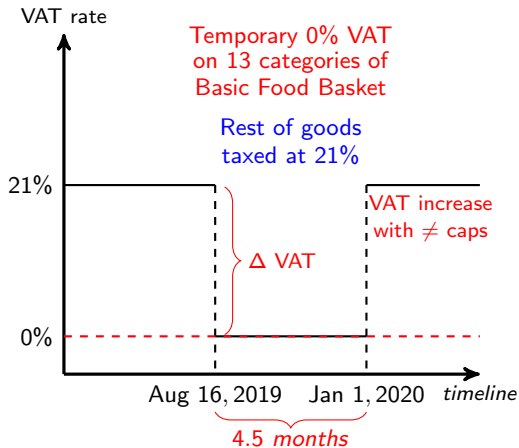
- **VAT increase:** back to 21%

→ 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! [\[link\]](#)



# 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)

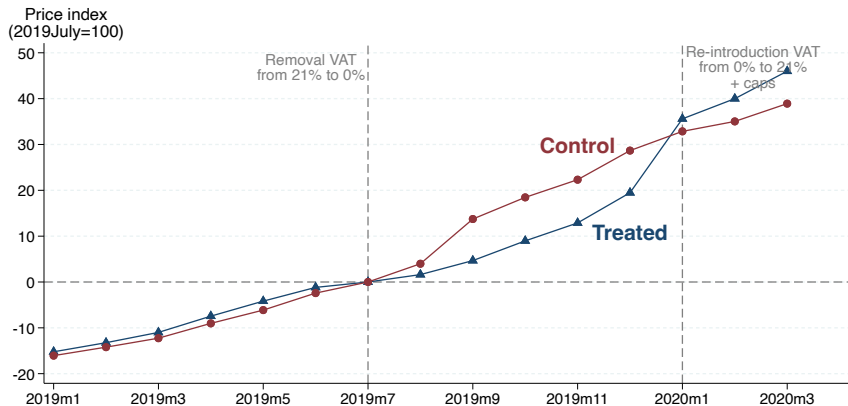
Categories	3.7k barcodes
Other cooking oils (olive, soy, canola)	
Rice-based meals	
Breakfast cereal	
Coffee	
Salt	
Herbs, Spices, & Seasonings	
Dulce de leche (caramel)	
Jam and Jelly	
Other flours	
Crackers, Biscuits, Toasts, Puddings	
Chocolate	
Mayonnaise	
Vinegar	
Dried legumes and beans	

**Data provider:** [Scentia LLC](#). Barcode-level scanner data from supermarkets with P and Q.

Price responses for uncapped  
varieties, pooling stores

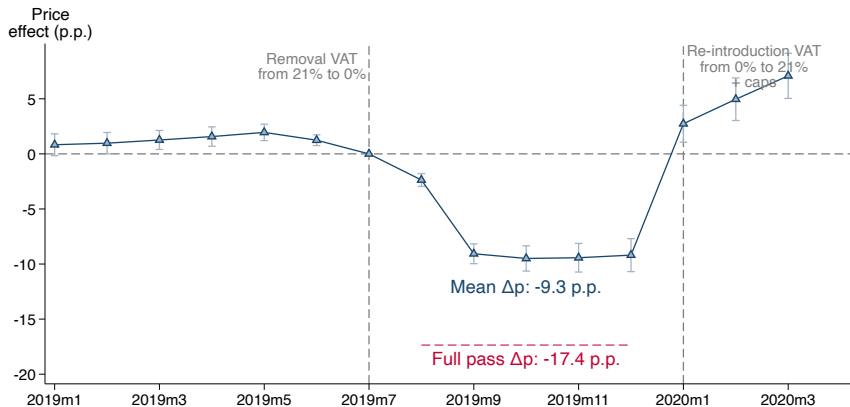
# VAT cut and increase without caps

Chains and Independent supermarkets



Notes: Uncapped varieties.

# Substantial pass-through of the VAT cut to prices ( $\sim 53\%$ )



► DiD with CPI data

Mitigating subsequent  
price increases using  
**pass-through caps**

# Anti-profiteering measures are common around the world

Governments use them to tackle the introduction of a VAT and/or its aftermath (see Tait (1988)):

- ▶ Price freeze or control (in Belgium, Netherlands and Korea)
- ▶ Price monitoring (in Germany, Ireland, India, Australia)
- ▶ Freeze on profit margins (in Netherlands and Ireland)

→ There is no empirical evidence on the effectiveness of these measures.

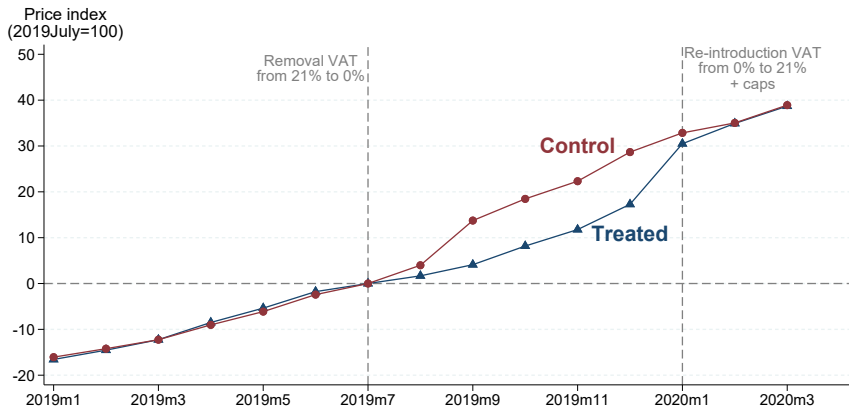
# VAT rate reinstated at 21% but pass-through was **capped**

- VAT rate ↑ back to pre-holiday level of 21%
  - But new govt limited the price increase with  $\neq$  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	$\Delta p$ 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%

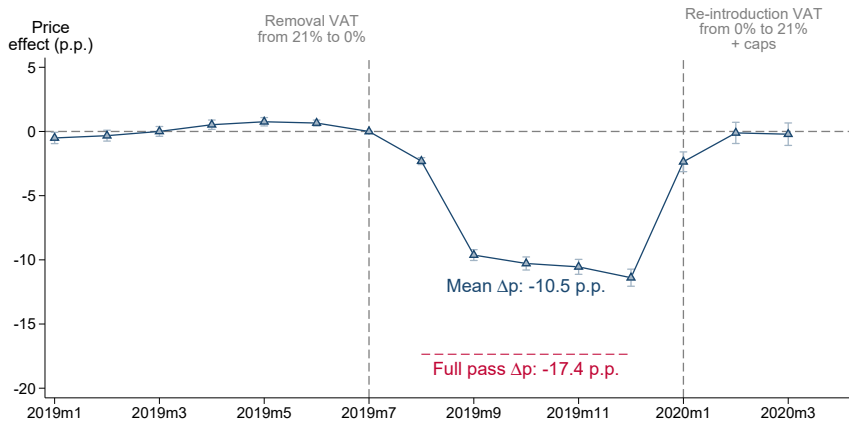
# Chains and Independent supermarkets pooled with Caps



► DiD with CPI data



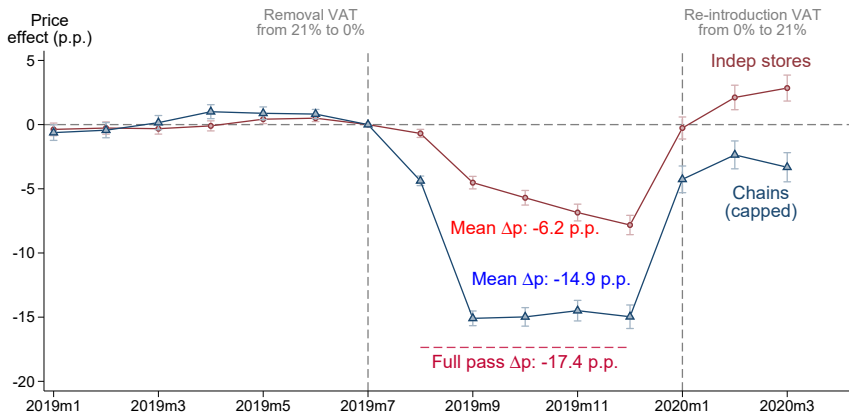
# No More Asymmetry



► DiD with CPI data

# Chains (with caps) vs Independent stores

Larger pass-through and binding caps in chains



► P Levels

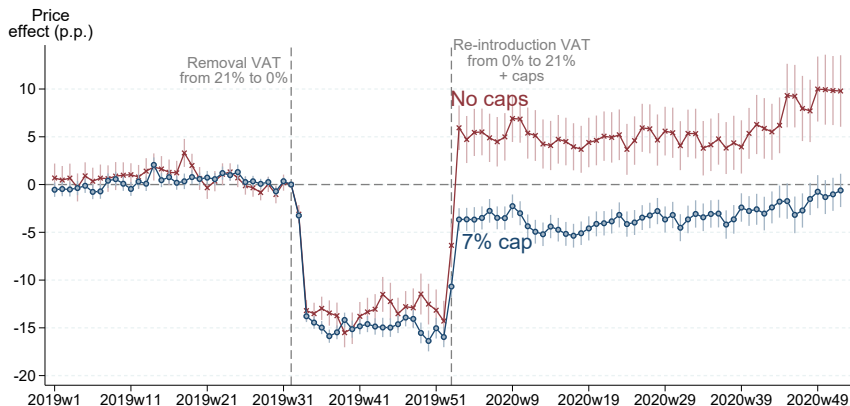
► Weekly data

► Distrib of P-T

► Series for T and C

► Small cheaper

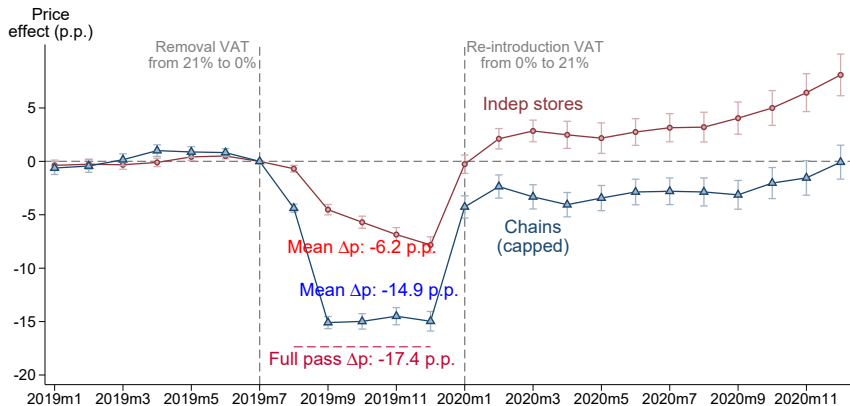
## VAT rate reinstated at 21% but pass-through was **capped** in chain supermarkets at $\sim 7\%$ for some goods



▶ DETAILS ▶ Rice ▶ Canned food ▶ Sliced bread ▶ Milk ▶ Yogurt ▶ Oil ▶ Caps: small

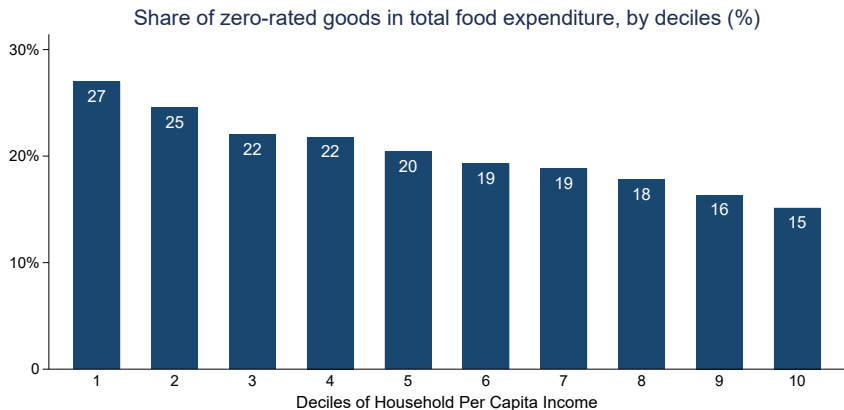
- ▶ Goods w/flexible prices exhibit an increase  $\sim 2x$  that of capped goods
- ▶ The gap is remarkably persistent  $\rightarrow$  hysteresis

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



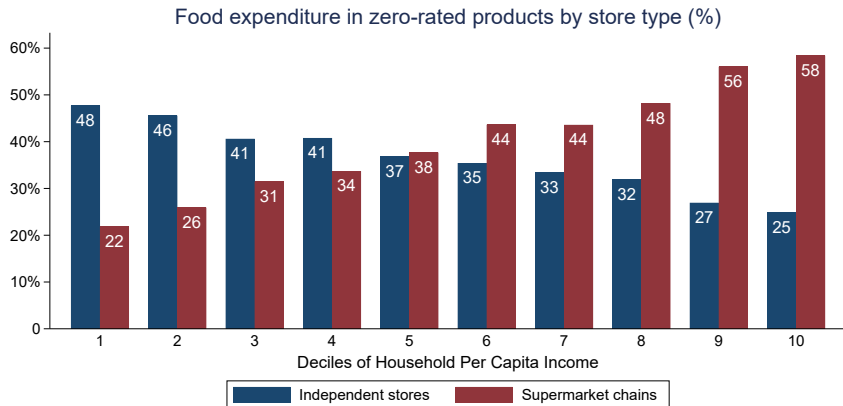
(Unintended) distributional  
consequences

## 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 (!)



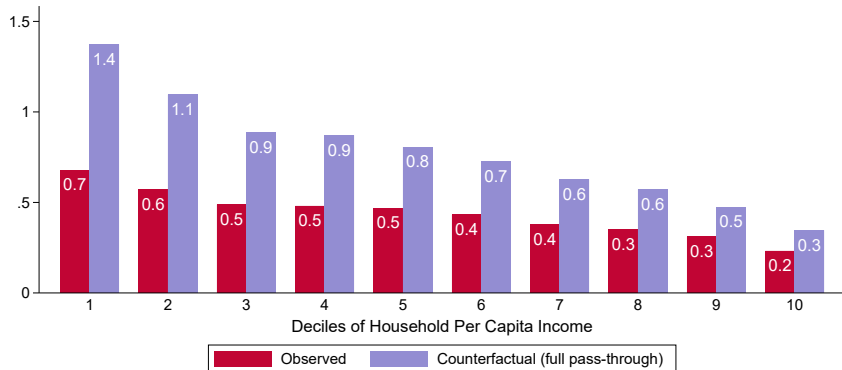
- Important policy implication when designing VAT cuts

# Welfare estimates

- **Nested CES household welfare model** provides simple expression based on observable expenditure shares and *tax-inclusive* price changes:

$$d \ln V_h = - \sum_{gsb} \underbrace{\alpha_{gh} \alpha_{gsh|g} \alpha_{gsb|s_b}}_{\alpha_{gsbh}} d \ln p_{gsbh}$$

## VAT cut

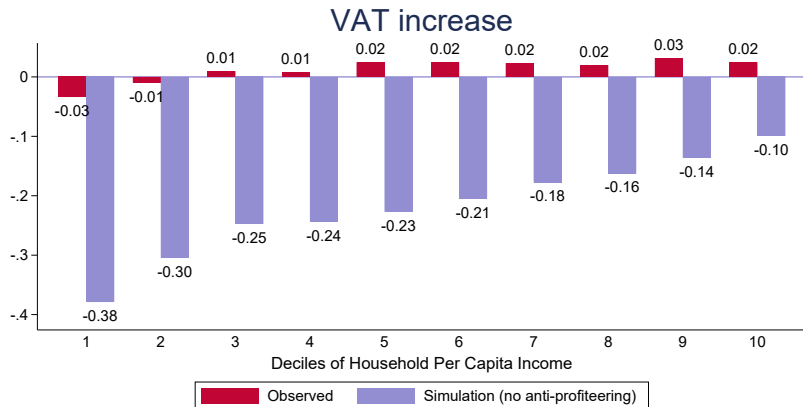




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## Welfare implications

1. **VAT cut** leads to progressive welfare effects, but substantially lower than full pass-through counterfactual (leaks)
2. **VAT increase**: absent the caps, welfare would be permanently lower because of asymmetric pass through and hysteresis

⇒ Caps improve welfare substantially, relative to VAT increase without caps. On net, richer households are better off because they tend to shop more at chain supermarkets where the caps are binding

Note: these estimates are 1-month policy impact, they do not account for longer term effects of the policy (need to introduce dynamics in welfare model)

# Why are chain and independent supermarkets responding differently to the VAT cut?

▶ 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) ▶

THANK YOU!

Dario Tortarolo  
dtortarolo@worldbank.org

## 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.

# 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)

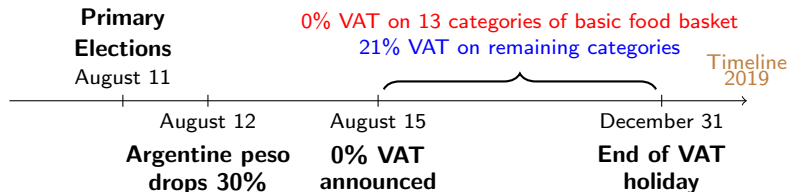
→ Govts can influence how much of a statutory tax change is passed on to consumers prices beyond relative magnitudes of S and D elasticities

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



# Elections, currency devaluation, and VAT cut/hike

▶ Back



**Context:** high inflation ( $\sim 55\%$ ), 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

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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 Muíño, precisó qué tipo de herramientas se emplearán para que los precios no sigan en alza

16 de Agosto de 2019

## 'Precios Claros' webpage

✓ PRECIOS CLAROS  
Número de producto o marca

Mostrar como:  
Cambiar ubicación  
58 ubicación almacenada

Ver productos de Almacén

- Aceltes
- Aceitunas y Encurtidos
- Aderezos y Especias
- Amoscs, Legumbres Y Semillas
- Conservas
- Desayunos y Merienda
- Frutas Secas
- Golosinas y Chocolates
- Harina y Pastas
- Panificados

Biscochos con Crema Salada Don Saturno 200 Gr 77987390000138 \$34,99 a \$48,00 30 comercios +	Galletas Vanilla con Relleno de Frambuesa Sorpresa 118 Gr 77900470011206 \$36,49 a \$60,00 30 comercios +	Biscochos Agrodulces 8 de Oro 250 Gr 77800000001138 \$26,99 a \$40,00 30 comercios +
Galletas Chocolate con Relleno de Vanille Vanille 138 Gr 77900404900001 \$38,99 a \$66,00 30 comercios +	Galletas con Relleno de Chocolate Tempestades Heladas 113,90 Gr 77900404900001 \$38,49 a \$70,00 30 comercios +	Galletas Chocolate con Relleno de Limón Vanille 132 Gr 78220000000118 \$30,00 a \$60,00 30 comercios +

Article translates to: *“What will be the effect of the VAT cut on basic food: there will controls and sanctions from the gov’t”*

VAT cut enforced by the Consumer Protection Agency:

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

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**

Viernes 16.8.2019

**Spot**  
En la piel de Carlos Tevez

Baházar Murillo, un chico de 15 años, interpreta al crack de Boca en la serie "Apache", que se estrena hoy...



**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 central anunció hoy las acciones para implementar el paquete de las medidas económicas. Dispone que las cuotas UVA del 2019 serán, además de las actuales, de 100 y 150 pesos. Además, se mantendrá el efecto del abate por reflexión de las cuotas...

tas de crédito hipotecario IVA, que alcanzará a más de 500 familias. Además, el Ministerio de Justicia y Derechos Humanos para garantizar la armonización. Entre ellas, la medida de congelación de las cuotas de Hacienda, México, Duprés...

**Deliberar**  
**Ricardo Kirschbaum**  
El diálogo y un atisbo de tregua...

BAJO UNO DE 8,2 Y CERCA A 10,1

### Para Alberto F. el dólar a \$ 60 está bien y no hay razón para que aumente

El candidato del Frente de Todos habló con el diario de la ciudad y dijo que le parece razonable. Pidió al Gobierno que no presione las reservas del Banco Central y pidió que se vaya a "algo que sea a partir de ahí lo que se pueda". Si es necesario, agregó, se reanuda el diálogo con el presidente Macri...

**Clarín**

Jueves 21.2.2020

**Series 2020**  
Lo que llega en enero

Las películas más esperadas, y las más nominadas, para ver en cine y en las distintas plataformas...



**Sin heridos por pirotecnia en el Instituto del Quemado**

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

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 con productores y comerciantes el aumento del consumo de los productos de 2% que se aplicará a partir de hoy en productos básicos. Serán los productos de consumo...

Bas, que llegan a 400 millones. El aumento en el consumo de productos de 2% se aplicará a partir de hoy en productos básicos. Serán los productos de consumo...

El paquete de medidas de ajuste de precios de enero. La Secretaría de Comercio controlará online que los comercios cumplan con el paquete. Se mantendrá además Precio Controlado...

A 5 AÑOS DE LA MUERTE DEL RECAL

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

El presidente cambió radicalmente la posición de Gobierno sobre el caso de Nisman. La Secretaría de Comercio controlará online que los comercios cumplan con el paquete. Se mantendrá además Precio Controlado...



## 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]

Clarín Economía Suscribite por \$40 Ir

## 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 IVA de los alimentos.

 Eduardo Paladini



01/01/2020 11:26 / Clarín.com Economía / Actualizado el 01/01/2020 11:04





# Collusion? Unlikely

▶ Back



**NesCafe Gold Blend 100 Gr**  
7633031754111

9 Cambiar ubicación  
Calle 24 618, La Plata, Province

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  
Tipos de comercio (7)  
Todos

Comercios (44)  
Todos

Puntos de venta (3)  
Todos

Comercio	Distancia	Precio de lista	Promo A	Promo B
DISCO Shaw Calle 30 Y Calle 47 777 LA PLATA	0,95 kilómetros	\$ 909,00		
DIA Supermercado DIA Calle 48 NINJA NINE BUENOS AIRES	107 kilómetros	\$ 714,00		
COTO DICA Calle 43 782 LA PLATA	1,86 kilómetros	\$ 964,90	\$ 670,07	
DIA Supermercado DIA Av 44 2099 BUENOS AIRES	1,95 kilómetros	\$ 714,00		
DIA Supermercado DIA Av 532 1031 BUENOS AIRES	2,07 kilómetros	\$ 714,00		
market Market Calle 12 2200 LA PLATA	2,07 kilómetros	\$ 650,00		
DIA Supermercado DIA Av 7 423 NINE BUENOS AIRES	2,39 kilómetros	\$ 714,00		
market Market Calle 7 782 LA PLATA	2,37 kilómetros	\$ 650,00		
SUPERMERCADOS EL BÚHO Calle 59 2086 LA PLATA	2,39 kilómetros	\$ 599,00		
DIA Supermercado DIA				



**Mate Cocido en Saquitos**  
Playdate 50 Un  
779704600768

9 Cambiar ubicación  
Calle 24 618, La Plata, Province

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COTO DICA Calle 43 782 LA PLATA	1,96 kilómetros	\$ 223,40	\$ 189,69	
DIA Supermercado DIA Av 44 2099 BUENOS AIRES	1,95 kilómetros	\$ 970,00		
DIA Supermercado DIA Av 532 1031 BUENOS AIRES	2,07 kilómetros	\$ 970,00		
DIA Supermercado DIA Av 7 423 NINE BUENOS AIRES	2,39 kilómetros	\$ 970,00		
SUPERMERCADOS EL BÚHO Calle 59 2086 LA PLATA	2,39 kilómetros	\$ 469,00		
DIA Supermercado DIA Av 44 568 BUENOS AIRES	2,46 kilómetros	\$ 970,00		
DIA Supermercado DIA Calle 51 824 BUENOS AIRES	2,88 kilómetros	\$ 970,00		
Comercio Público Obesa Luján Calle de Comercio y Vitaliano Avenida 7 3224 LA PLATA	2,88 kilómetros	\$ 259,00		

# Collusion? Unlikely ▶ Back

📍 Cambiar ubicación

Calle 24 686, 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

Tipos de cobranza (7)











Todos












Categorías (46)

Todos

Puntos de venta (30)

Todos

Comercio	Distancia	Precio de lista	Promo A	Promo B
 <b>Supermercados DIA</b> Calle 48 N°144 Nore BUENOS AIRES	101 kilómetros	\$225,50		
 <b>Supermercados DIA</b> Av 44 2099 BUENOS AIRES	130 kilómetros	\$225,50		
 <b>Supermercados DIA</b> Av 532 1101 BUENOS AIRES	208 kilómetros	\$225,50		
 <b>Market</b> Calle 12 1000 La Plata	207 kilómetros	\$297,50		
 <b>Supermercados DIA</b> Av. 7 423 Nore BUENOS AIRES	238 kilómetros	\$279,36		
 <b>Market</b> Calle 7 767 La Plata	237 kilómetros	\$297,50		
 <b>SUPERMERCADOS EL RINCÓN</b> Calle 50 2086 LA PLATA	239 kilómetros	\$322,50		
 <b>Supermercados DIA</b> Av 44 686 BUENOS AIRES	244 kilómetros	\$225,50		
 <b>Supermercados DIA</b> Calle 12 686 BUENOS AIRES	258 kilómetros	\$225,50		
 <b>Comercio Público de Consumo y Vitalidad</b> Avenida 7 1234 La Plata	269 kilómetros	\$362,00		

Comercio	Distancia	Precio de lista	Promo A	Promo B
 <b>Disco</b> Calle 80 Y Calle 47 777 LA PLATA	036 kilómetros	\$270,00		
 <b>Supermercados DIA</b> Calle 48 N°144 Nore BUENOS AIRES	101 kilómetros	\$204,35		
 <b>COTO CIMA</b> Calle 43 702 La Plata	106 kilómetros	\$212,52		\$186,64
 <b>Supermercados DIA</b> Av 44 2099 BUENOS AIRES	130 kilómetros	\$204,35		
 <b>Supermercados DIA</b> Av 532 1101 BUENOS AIRES	208 kilómetros	\$204,35		
 <b>Market</b> Calle 12 1200 La Plata	207 kilómetros	\$203,00		
 <b>Supermercados DIA</b> Av 7 423 Nore BUENOS AIRES	238 kilómetros	\$204,35		
 <b>Market</b> Calle 7 767 La Plata	237 kilómetros	\$203,00		
 <b>SUPERMERCADOS EL RINCÓN</b> Calle 50 2086 LA PLATA	239 kilómetros	\$195,00		
 <b>Supermercados DIA</b> Av 44 561 BUENOS AIRES	244 kilómetros	\$204,35		
 <b>Supermercados DIA</b> Calle 12 686 BUENOS AIRES	258 kilómetros	\$204,35		

📍 Cambiar ubicación

Calle 24 686, 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

Tipos de cobranza (7)

Todos

Categorías (46)

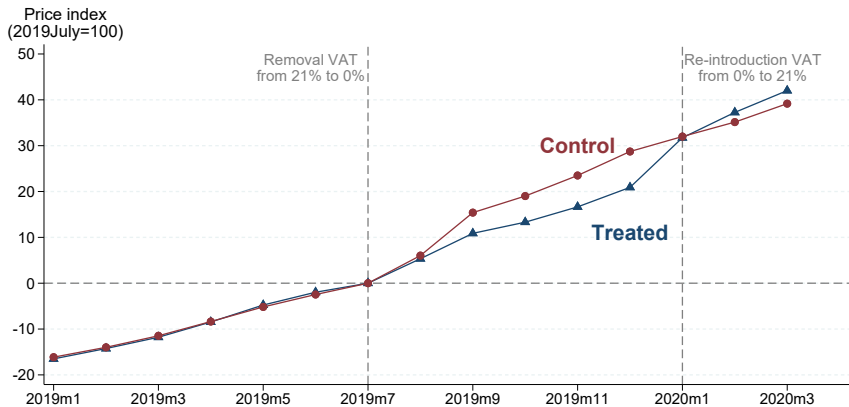
Todos

Puntos de venta (30)

Todos

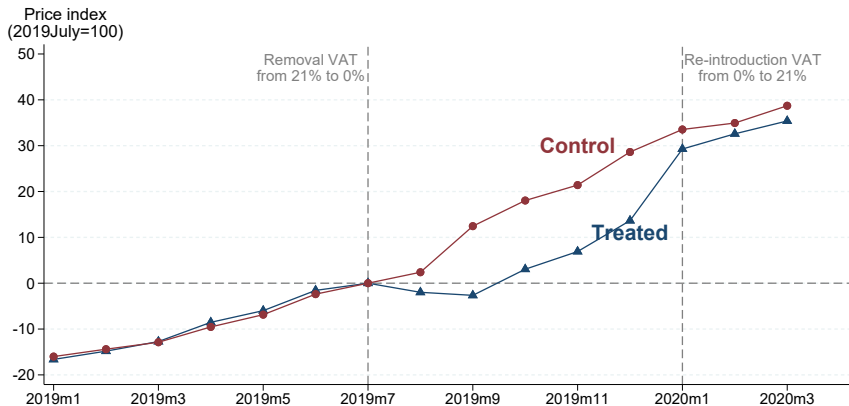
# Price levels in small independent stores

▶ Back



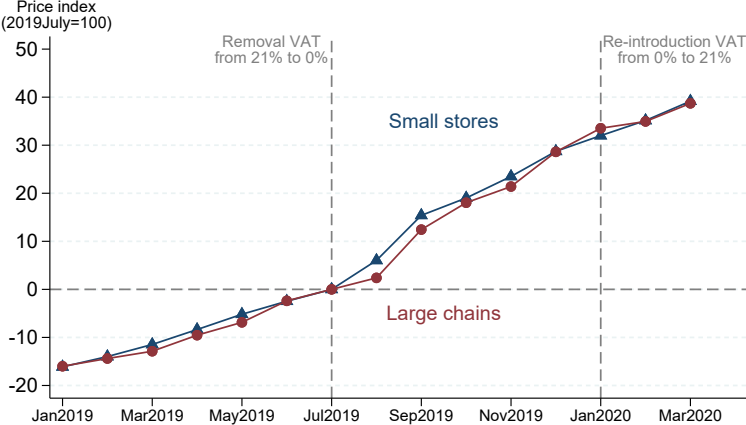
# Price levels in **supermarket chains** (prices are monitored)

▶ Back



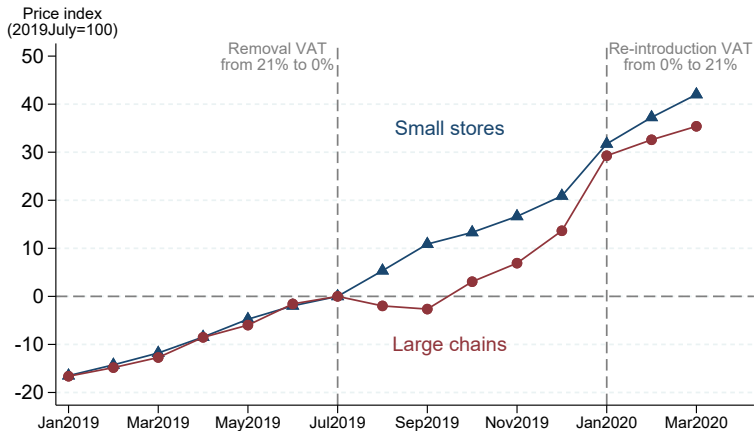
# Control goods: Large chains vs Small stores

▶ Back



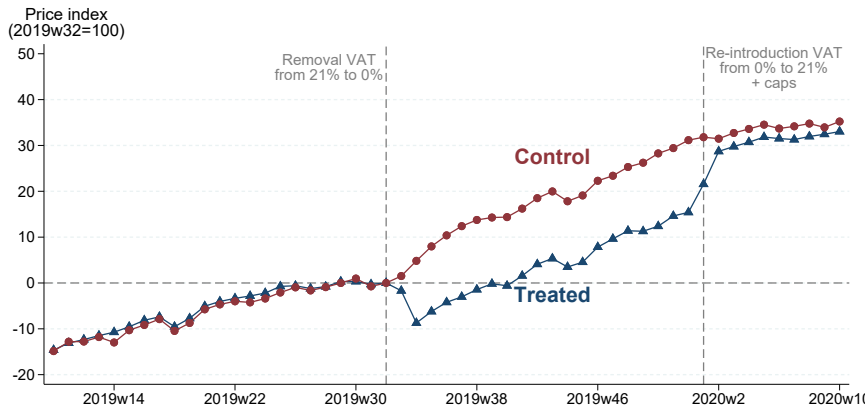
# Treated goods: Large chains vs Small stores

► Back



# Price levels in supermarket chains (weekly data)

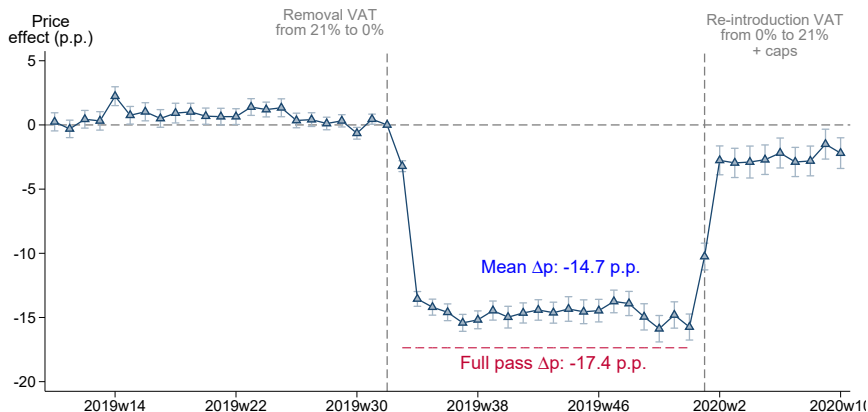
[▶ Back](#)



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

# Average price pass-through of $\sim 85\%$ in large chains

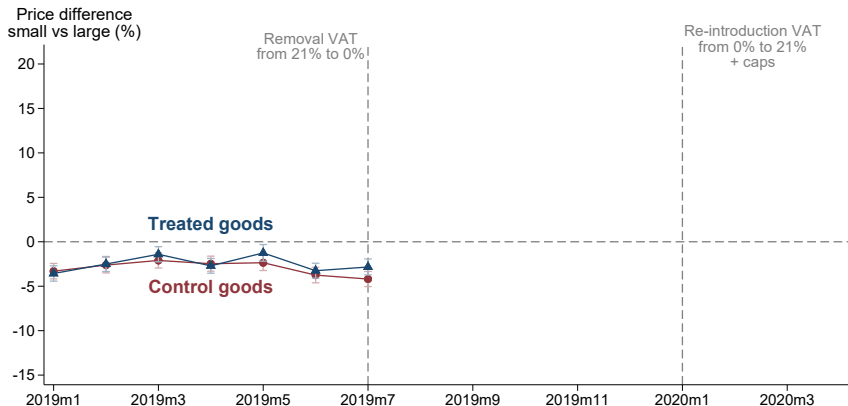
▶ Back



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



# Indep stores cheaper (pre-reform) than chain supermarkets

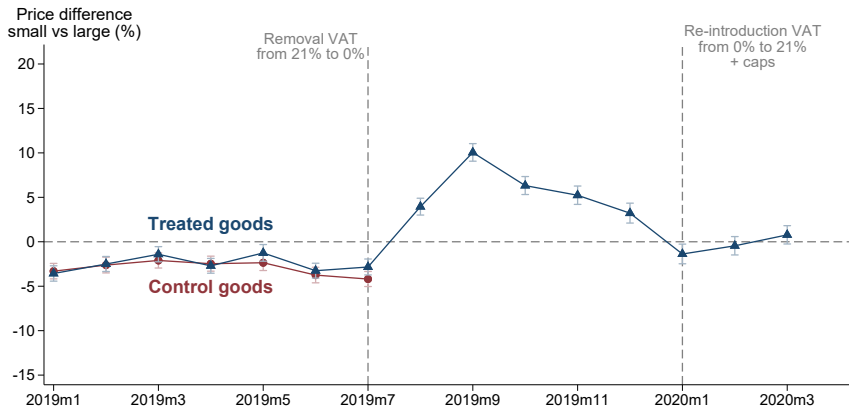


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{IndepStore}_{irt} + \epsilon_{irst}$$

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

► Back

# Indep stores cheaper (pre-reform) than chain supermarkets

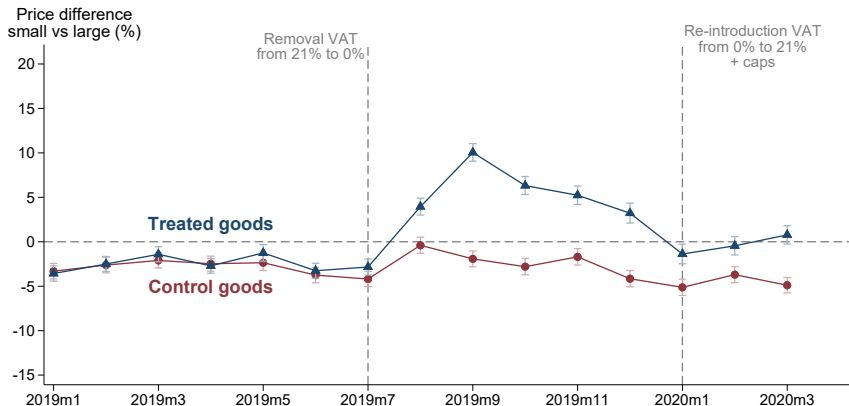


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{IndepStore}_{irt} + \epsilon_{irst}$$

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

► Back

# Indep stores cheaper (pre-reform) than chain supermarkets



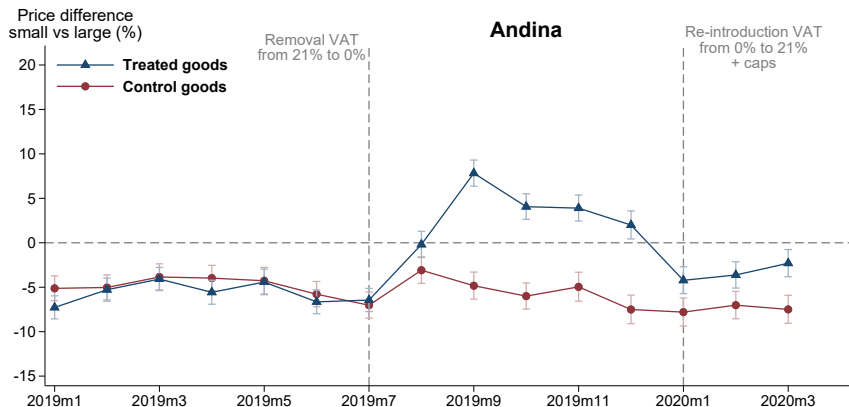
$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{IndepStore}_{irt} + \epsilon_{irst}$$

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

► Back

# But largely heterogeneous across the 5 regions

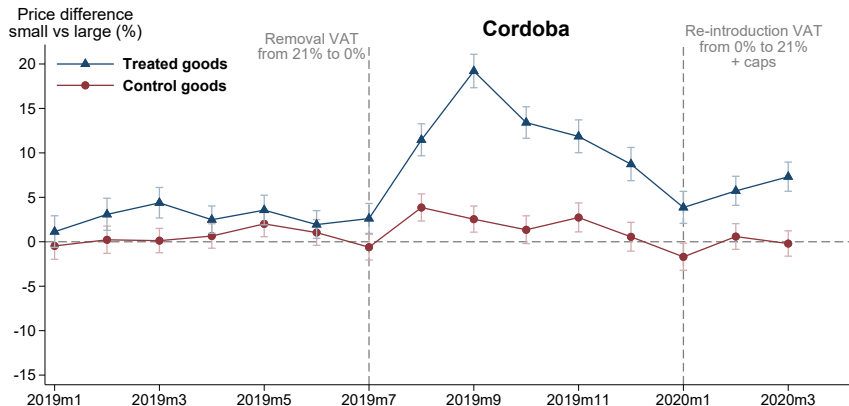
▶ Back



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

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

## But largely heterogeneous across the 5 regions ▶ Back

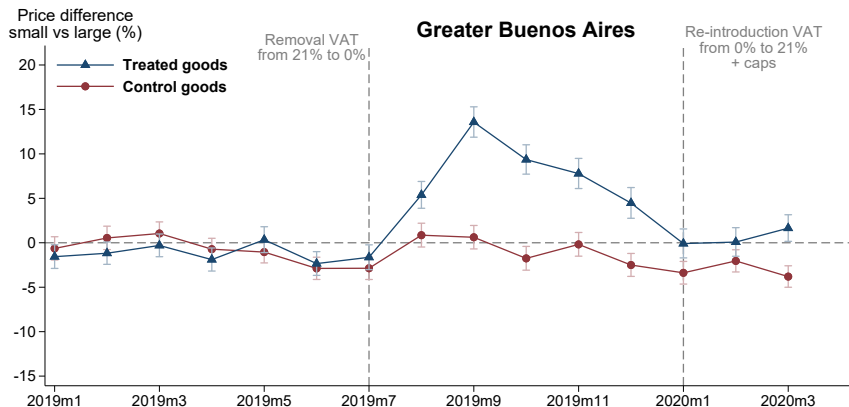


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

# But largely heterogeneous across the 5 regions

▶ Back

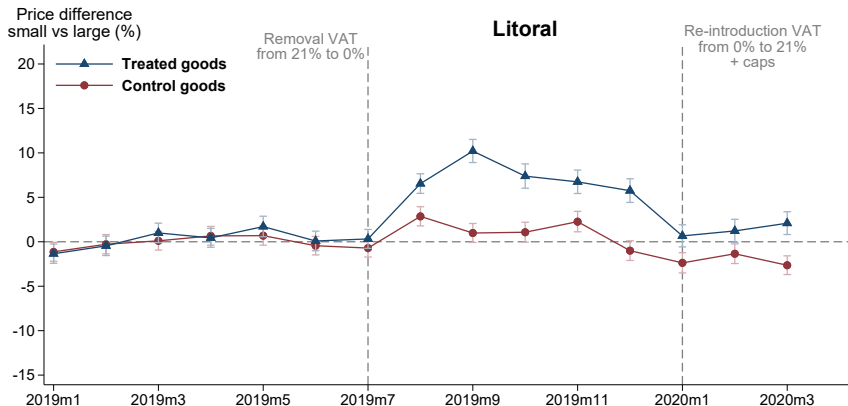


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

# But largely heterogeneous across the 5 regions

▶ Back

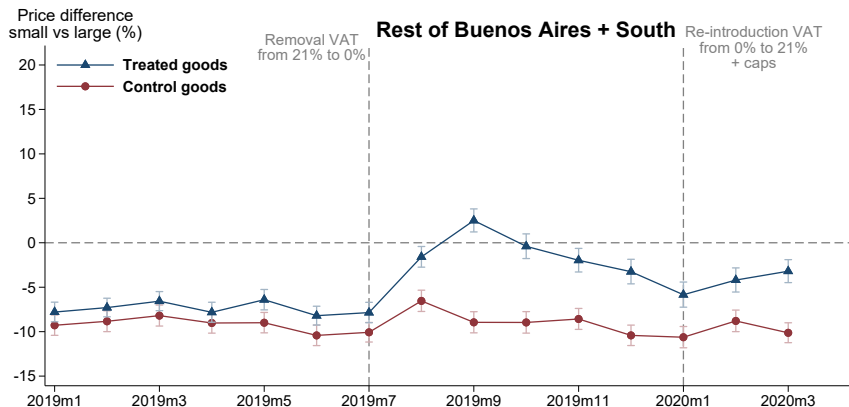


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

# But largely heterogeneous across the 5 regions

▶ Back



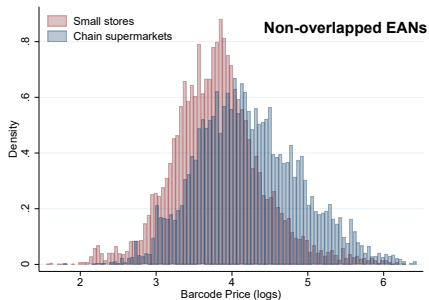
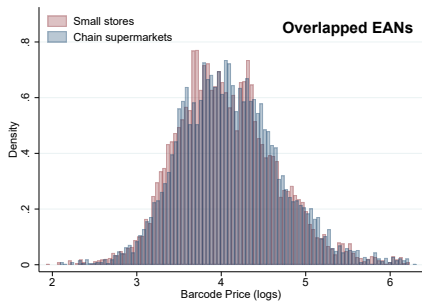
$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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



# Price density for overlapped and non-overlapped barcodes

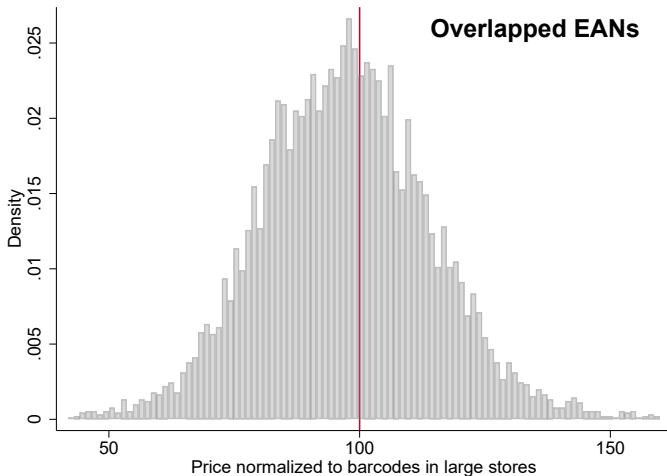
▶ Back



# Price density for overlapped barcodes

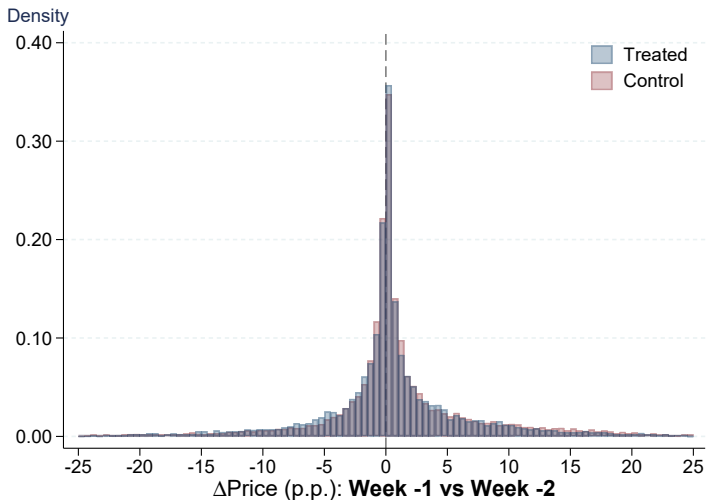
▶ Back

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



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

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



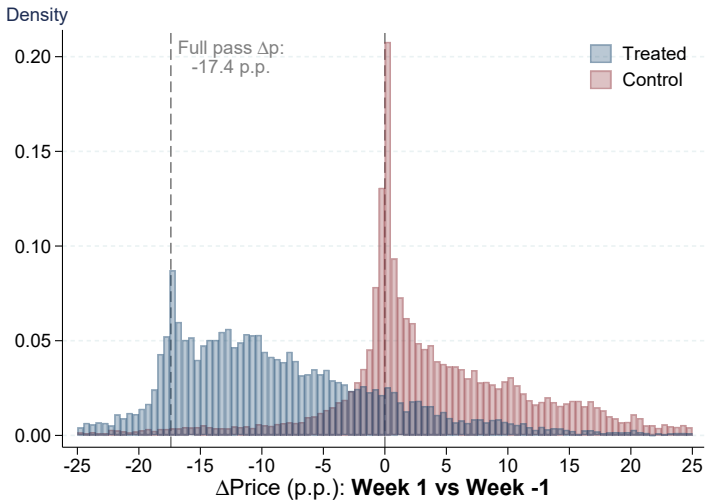
# Distrib of *price changes* **right** after VAT removal

Large chains (prices are monitored)

► Zoom in

► Substitutes

► Back



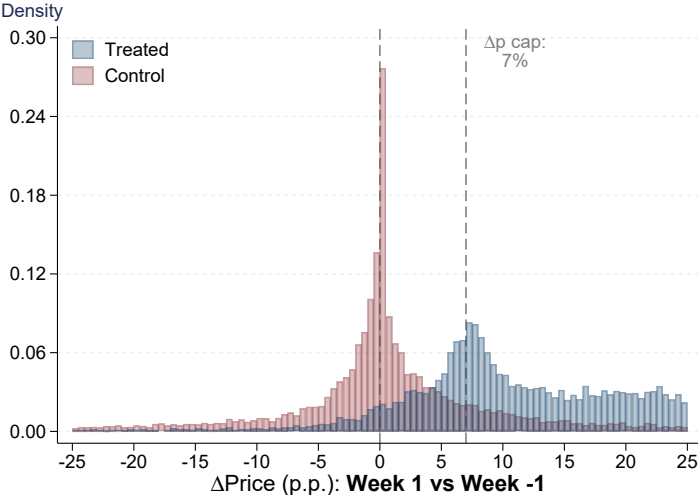
# Distrib of *price changes* right after VAT reinstated

Large chains (prices are monitored)

▶ Zoom in

▶ Cap section

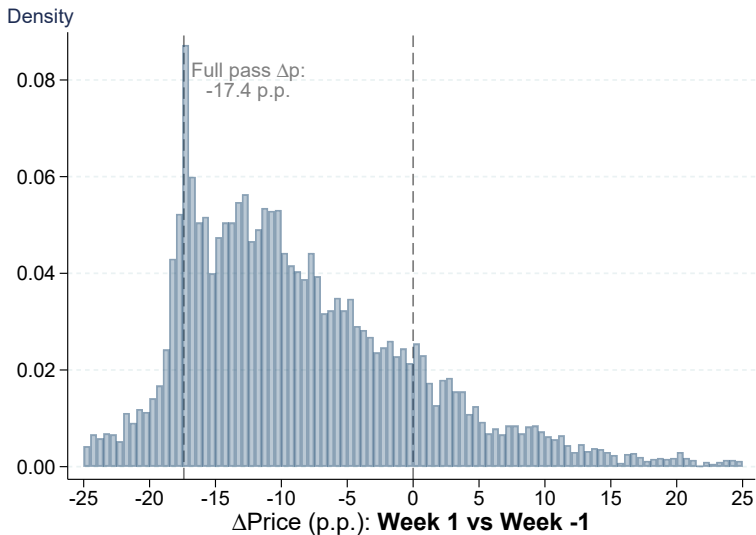
▶ Back



# Distrib of price changes right after VAT removal

[▶ Back](#)

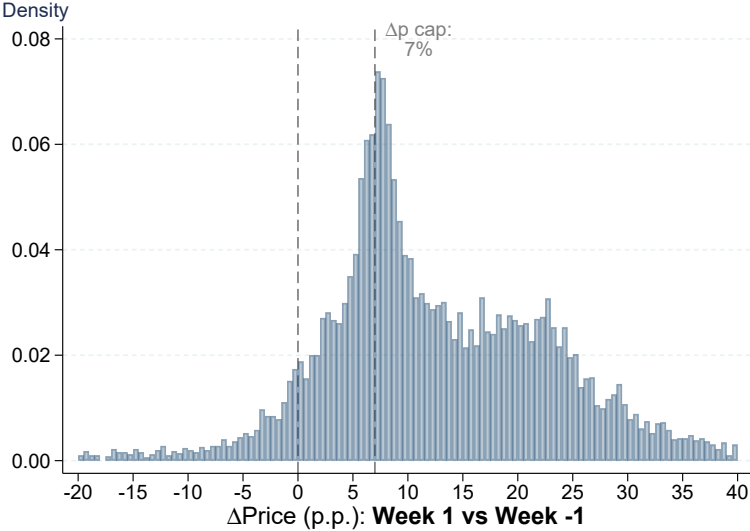
Large chains (treated goods)



# Distrib of price changes: VAT reinstated

[▶ Back](#)

Large chains

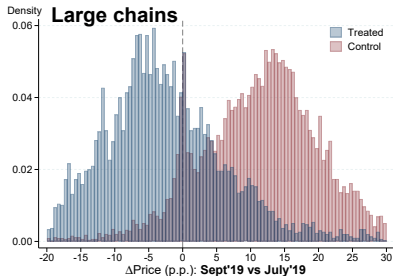
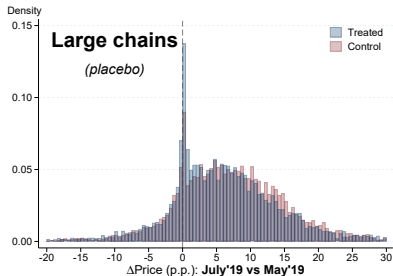
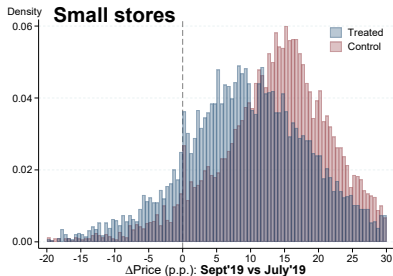
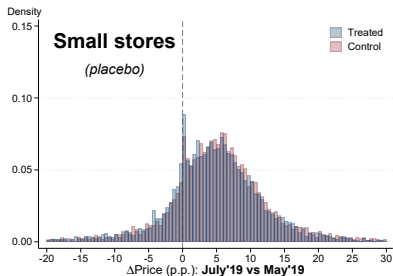


# Distrib of price changes after VAT removal

Small stores vs Large chains

► Overlap T & C

► Back

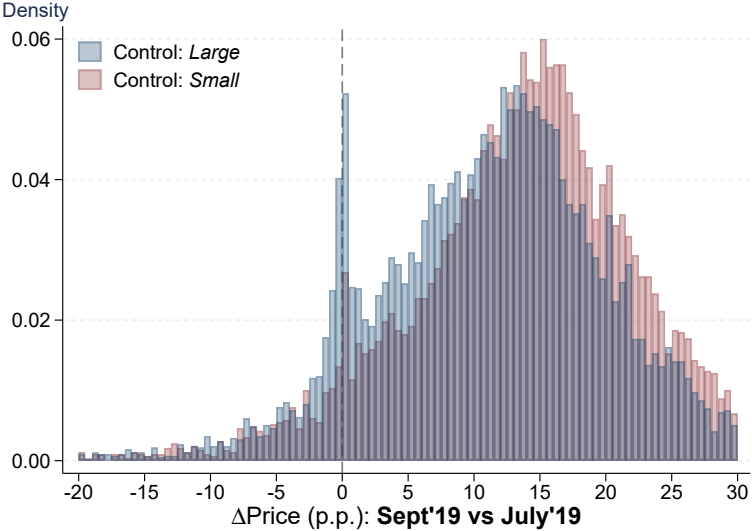




# Distrib of price changes: VAT removal

▶ Back

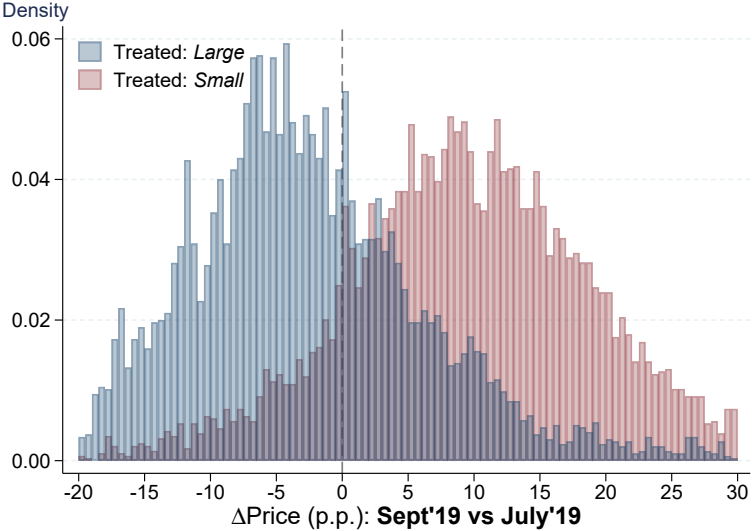
## Small stores vs Large chains



# Distrib of price changes: VAT removal

▶ Back

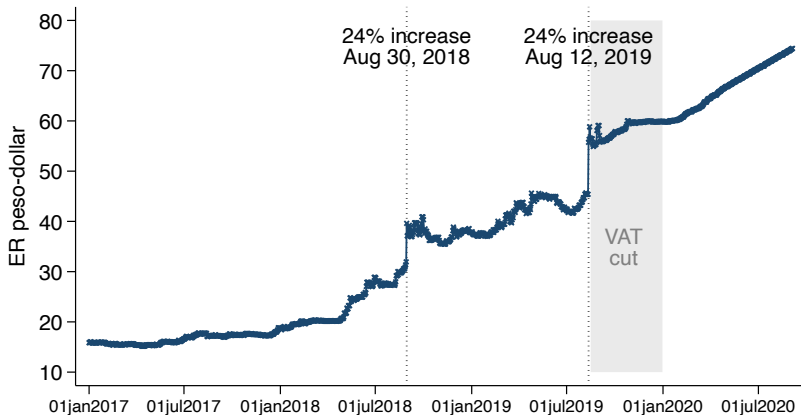
## Small stores vs Large chains



# Pass-through of the 2018 peso depreciation

► Back

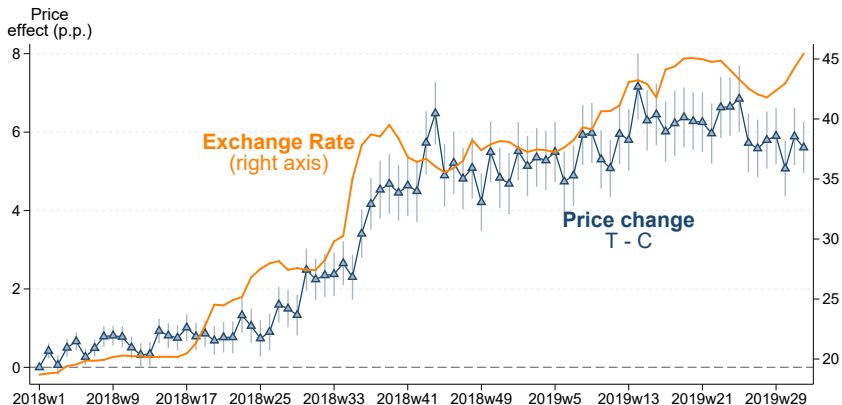
## Exchange Rate (pesos per dollar)



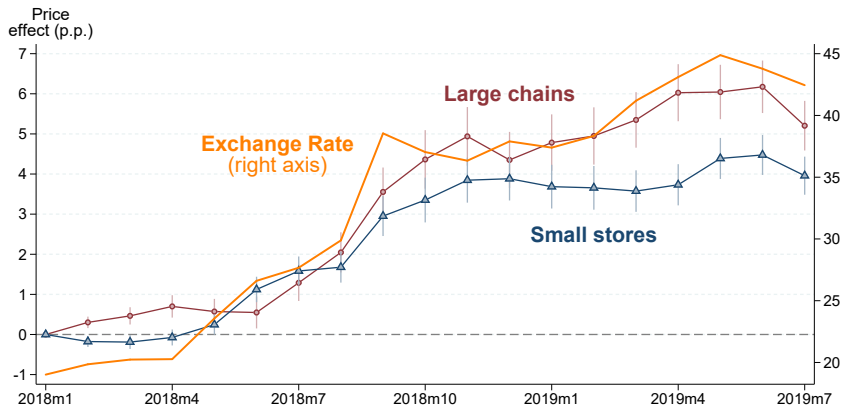
Source: BCRA, Tipo de Cambio de Referencia - Comunicación "A" 3500 (Mayorista).

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

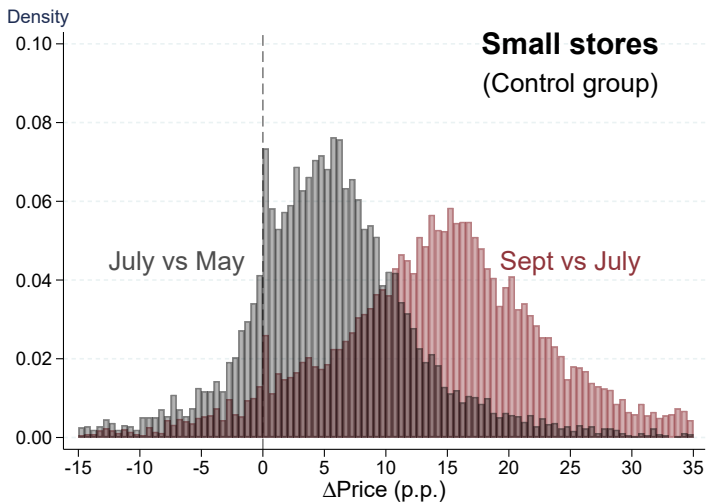
► Back



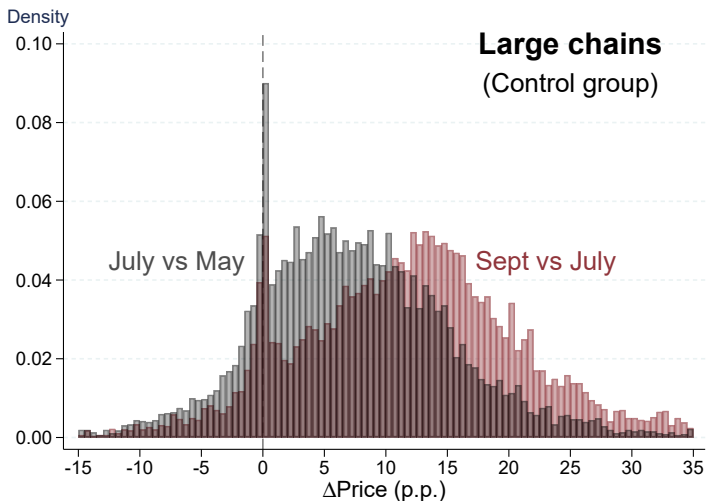
# Do **large** and **small** stores respond *differently* to a large economic shock with no govt mandate? [▶ Back](#)



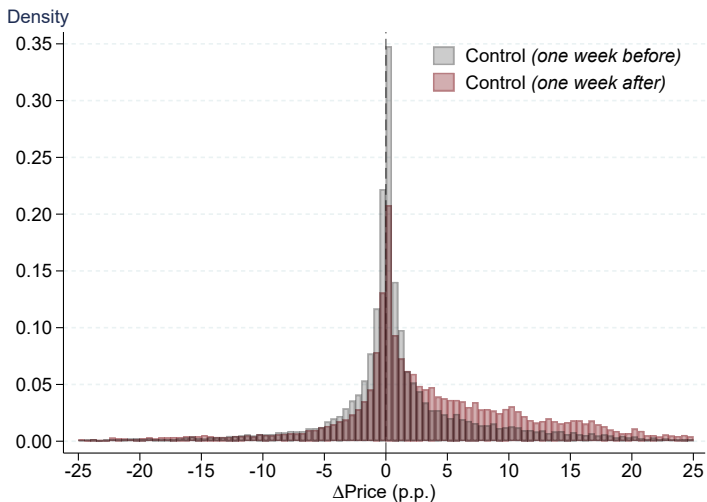
# Pass-through of a 24% currency devaluation (no mandate) is similar in small and large supermarkets



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)



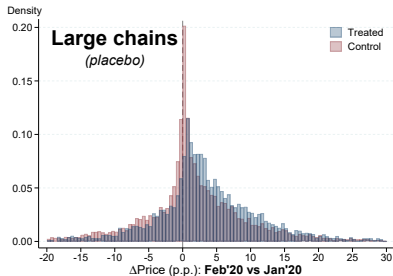
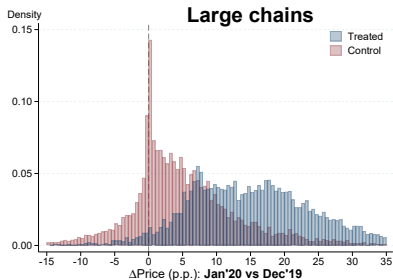
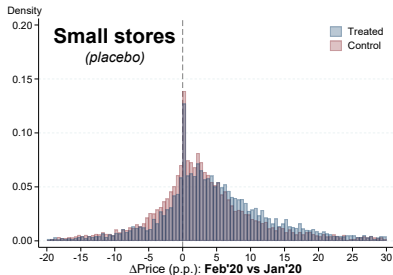
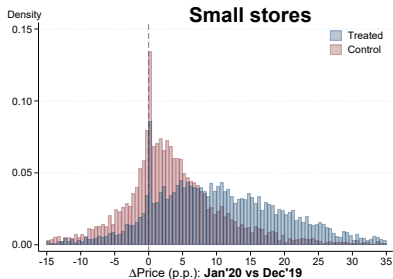


# Distrib of price changes after VAT re-introduction

Small stores vs Large chains

► Overlap T & C

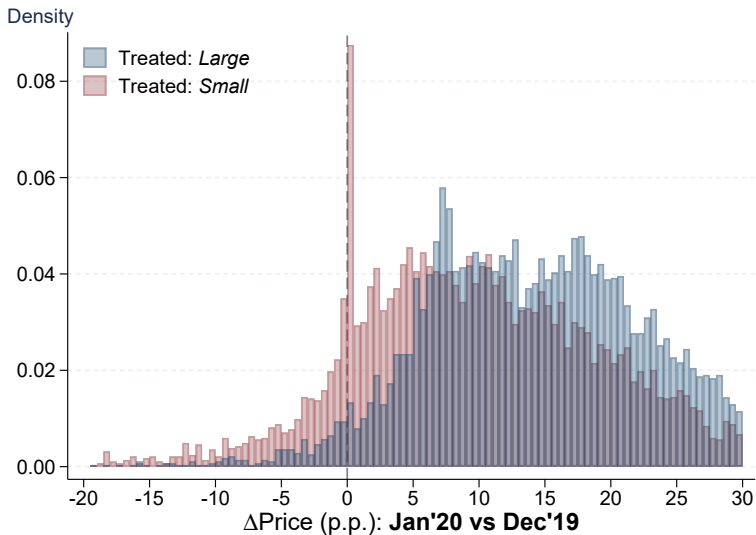
► Back



# Distrib of price changes after VAT re-intro

▶ Back

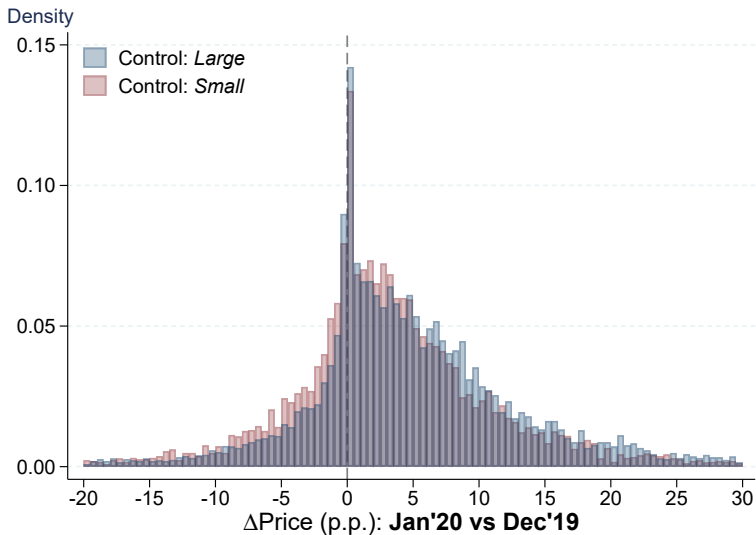
Small stores vs Large chains



# Distrib of price changes after VAT re-intro

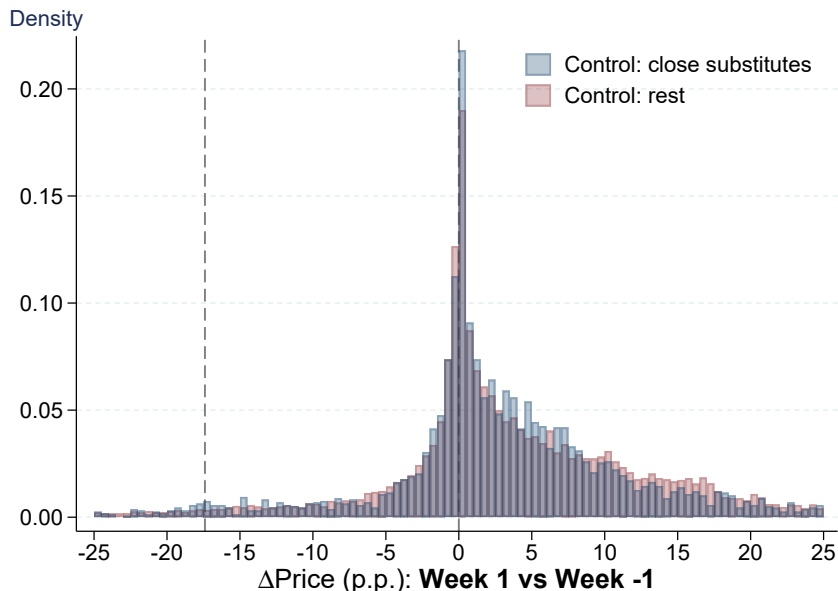
► Back

## Small stores vs Large chains



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

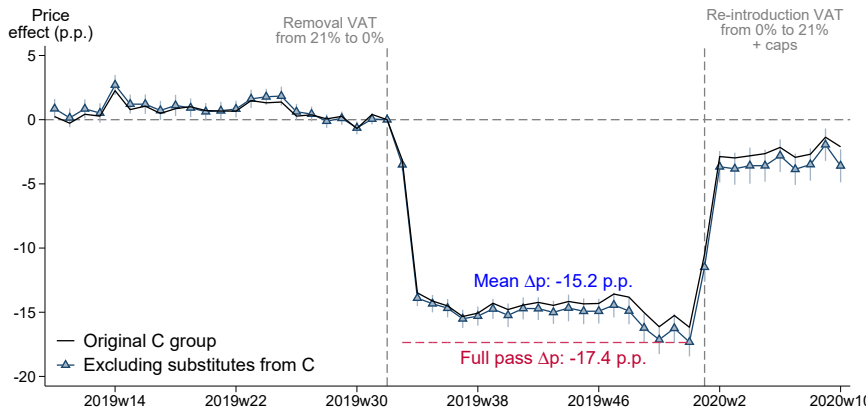
► Back



# Does substitution across T and C bias our price effects?

The results barely change when: [▶ Back](#)

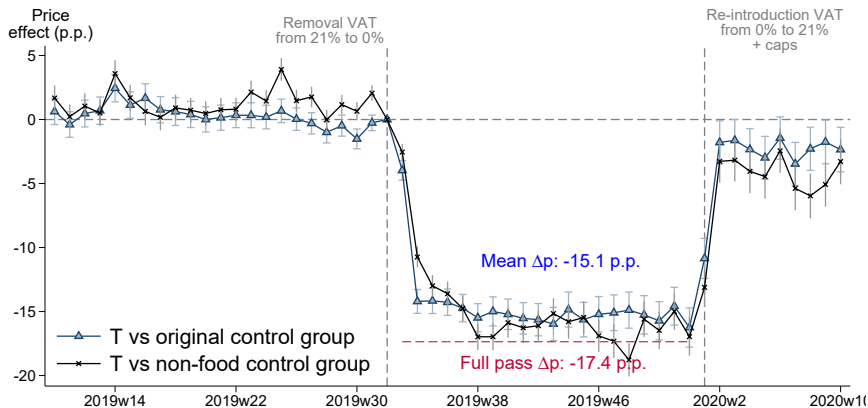
- Including and excluding close substitutes in the control group
- Using food and non-food products in the control group



# Does substitution across T and C bias our price effects?

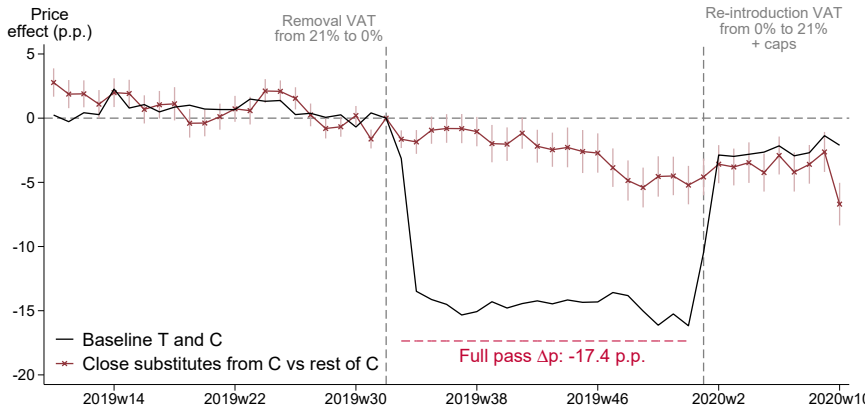
The results barely change when: [▶ Back](#)

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



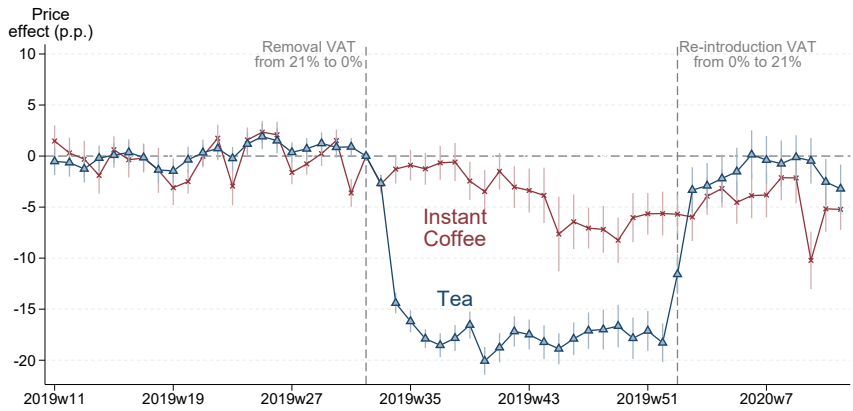
# DiD of close substitutes in C vs rest of C

▶ Back



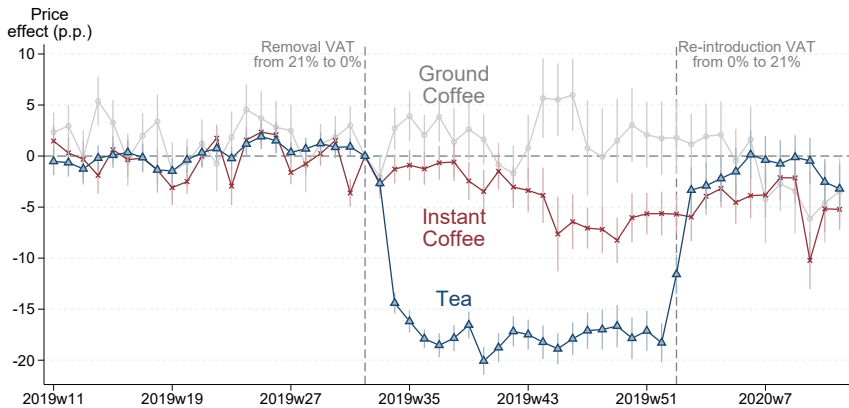
# T vs Close substitutes in C (case studies)

▶ Back

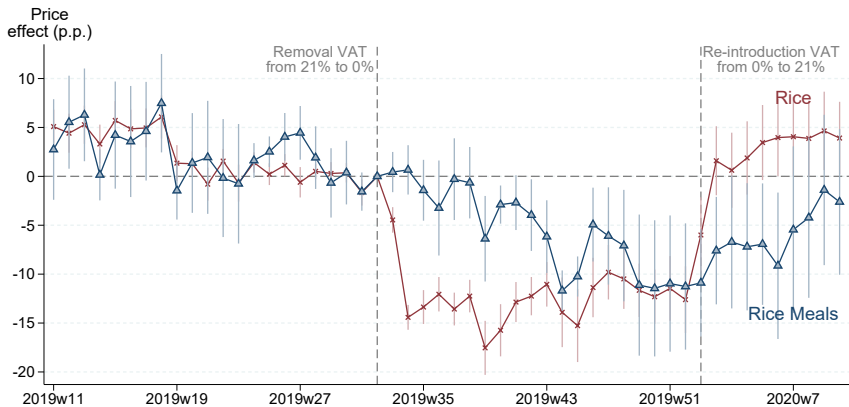




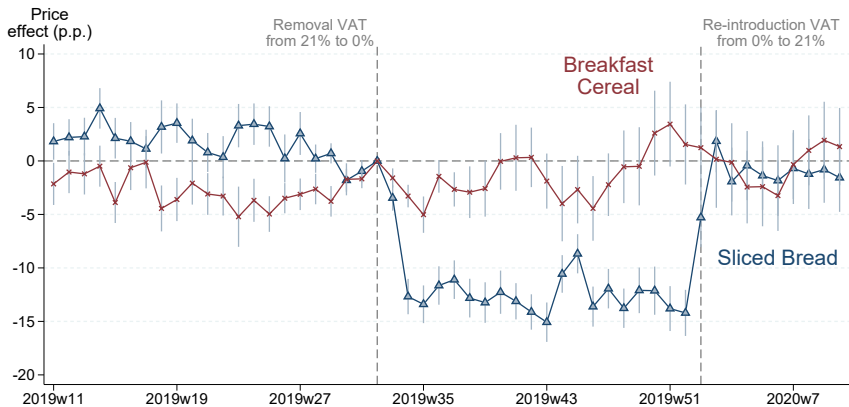
# T vs Close substitutes in C (case studies) ▶ Back



# T vs Close substitutes in C (case studies) ▶ Back

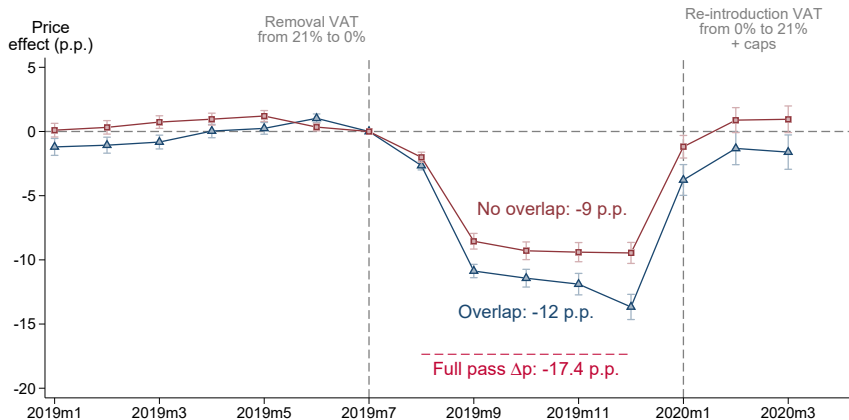


# T vs Close substitutes in C (case studies) [▶ Back](#)



# Barcodes sold in 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

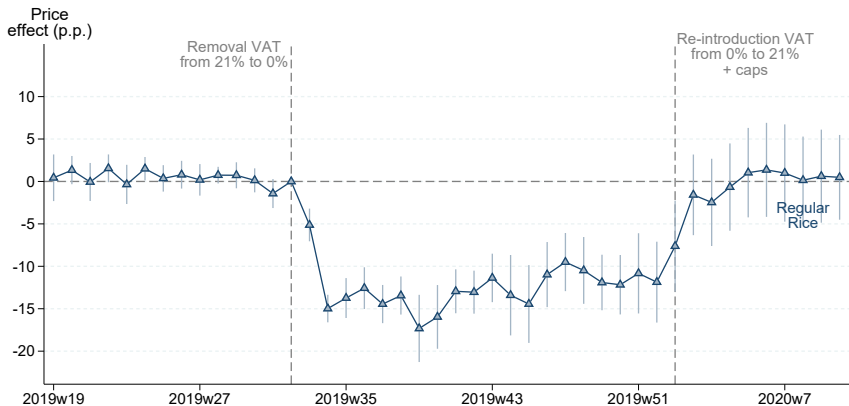
- VAT rate  $\uparrow$  back to pre-holiday level of 21%
- But new govt limited the price increase with  $\neq$  caps
  - ★ **No caps:** Prices could  $\uparrow$  up to 21%
  - ★ **Caps:** Force incidence sharing
- NOT in independent stores

$\Rightarrow$  We show that gov'ts can successfully limit VAT pass-through [▶ Back](#)

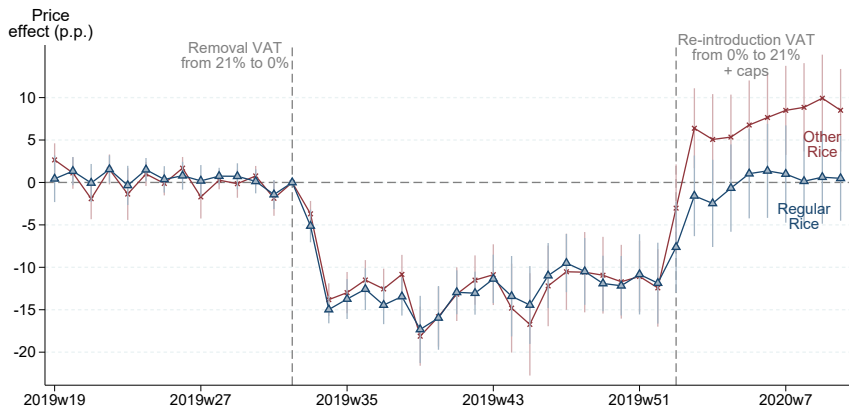
## Treated: VAT back to 21%

Categories	$\Delta p$ 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%

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



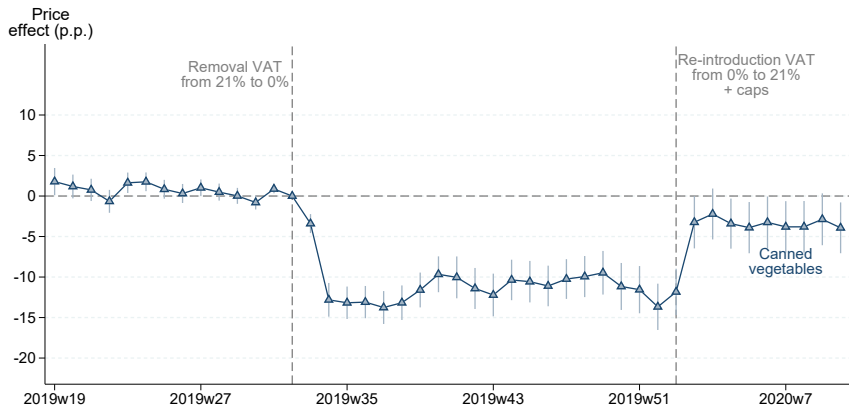
## Regular Rice (7% cap) vs Other Rice (no cap)



# Capped VAT increase: Canned food

▶ Back

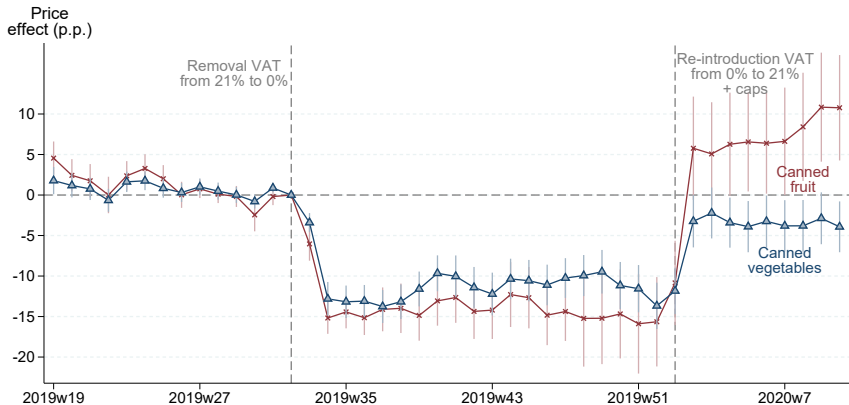
## Canned vegetables (7% cap) vs Canned fruit (no cap)





# Capped VAT increase: Canned food [▶ Back](#)

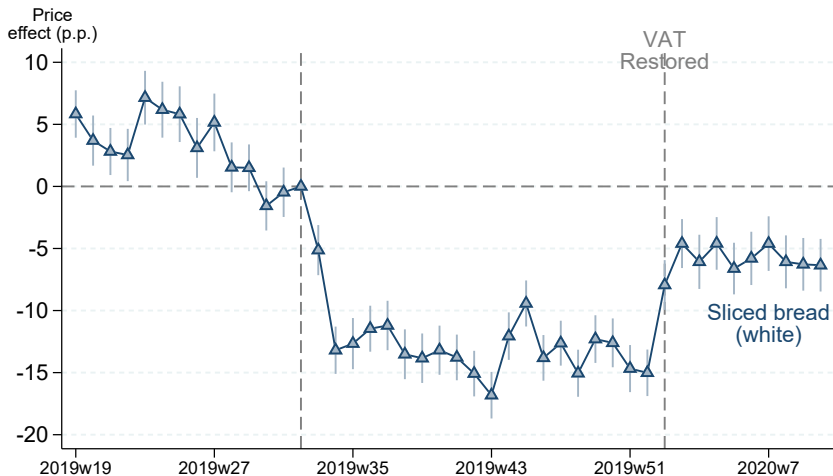
## Canned vegetables (7% cap) vs Canned fruit (no cap)



# Capped VAT increase: Sliced bread

[▶ Back](#)

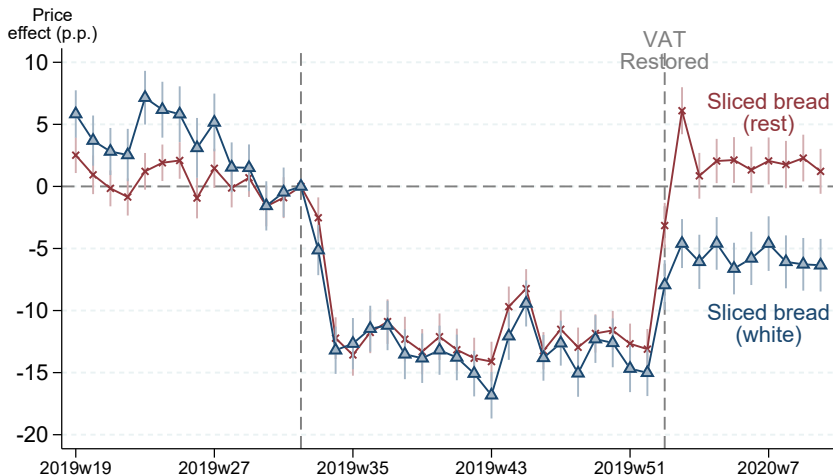
**Sliced bread (white)** (7% cap) vs **Sliced bread (rest)** (no cap)



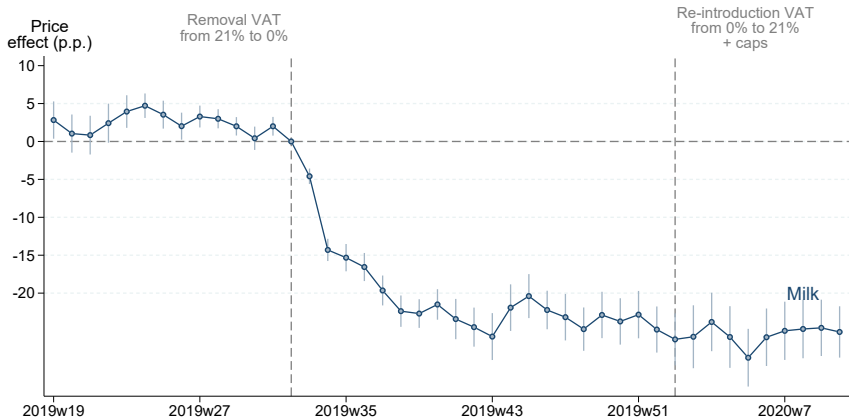
# Capped VAT increase: Sliced bread

▶ Back

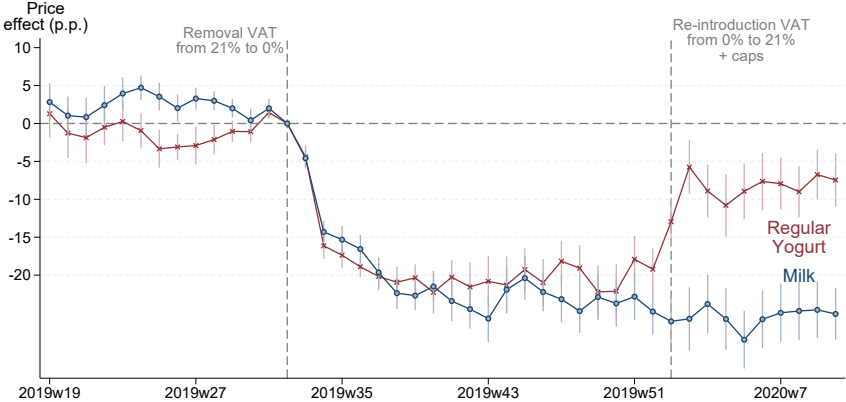
**Sliced bread (white)** (7% cap) vs **Sliced bread (rest)** (no cap)



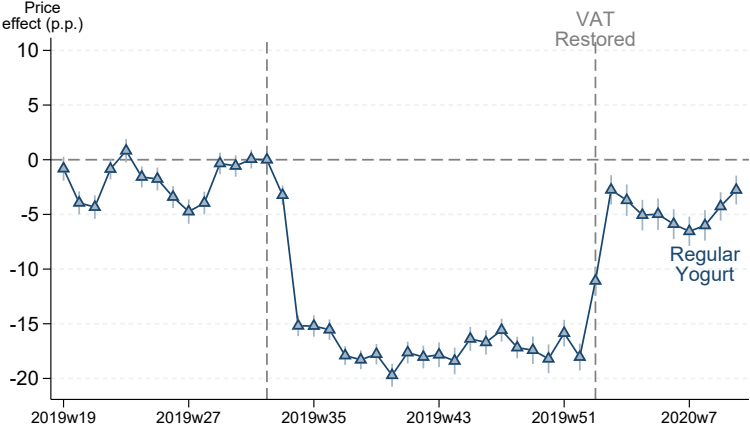
## Milk (0% cap): Full incidence on the supply



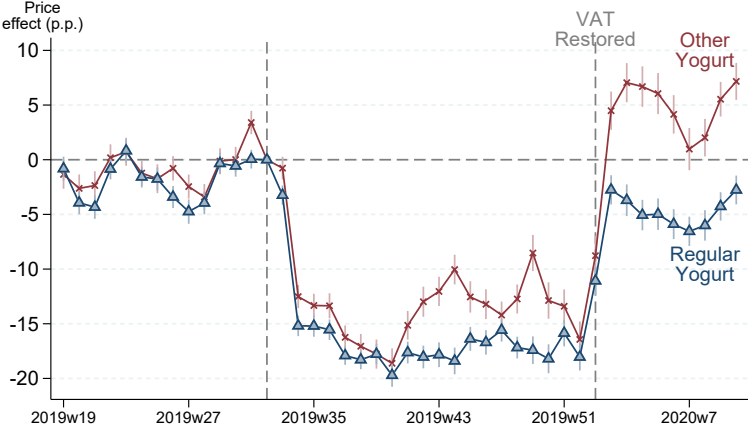
## Milk (0% cap): Full incidence on the supply



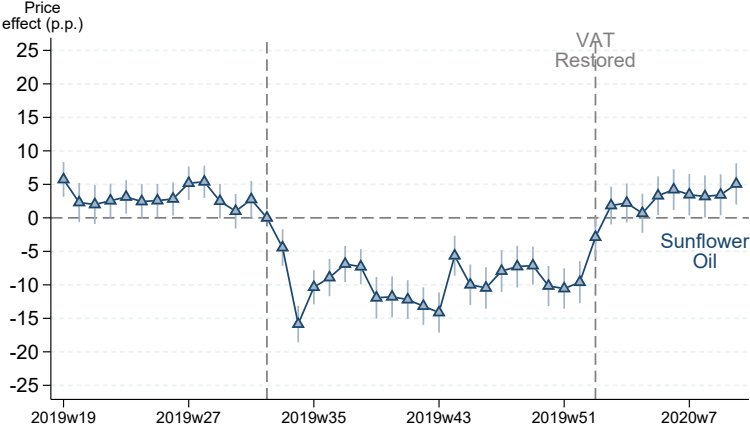
## Regular Yogurt (7% cap) vs Other Yogurt (no cap)



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

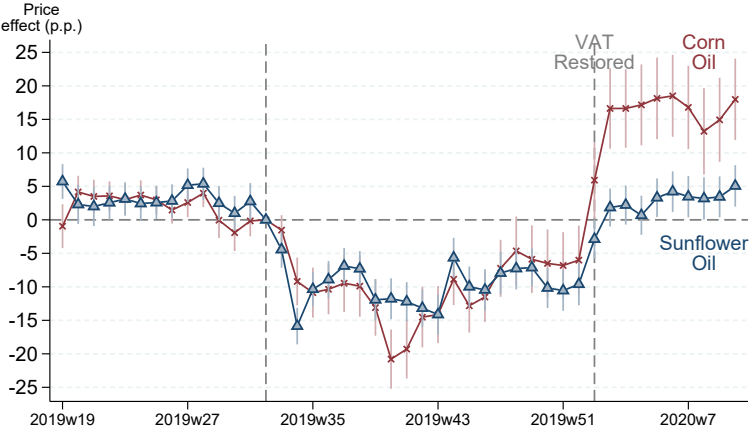


## Sunflower Oil (9% cap) vs Corn Oil (no cap)





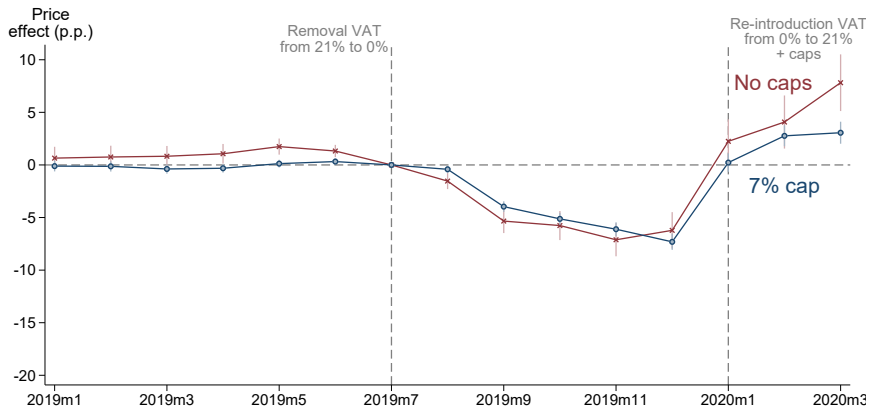
## Sunflower Oil (9% cap) vs Corn Oil (no cap)



# 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

## VAT changes + price controls [▶ Back](#)

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](#)

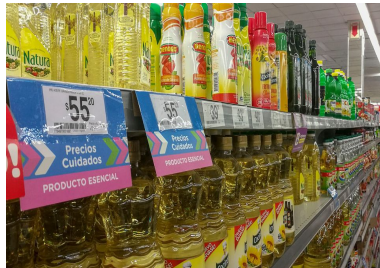
- ▶ **Logic:** Price caps limit the incidence of VAT cuts:  
Stores keep regulated price  $\implies$  pocket entire VAT reduction

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

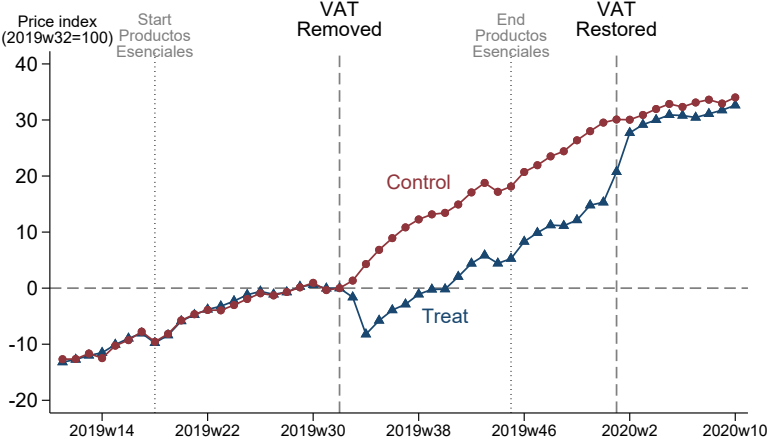
- Treated: 38 EANs (N=34,795)
- Control: 10 EANs (N=11,863); 16 missing (no data)

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

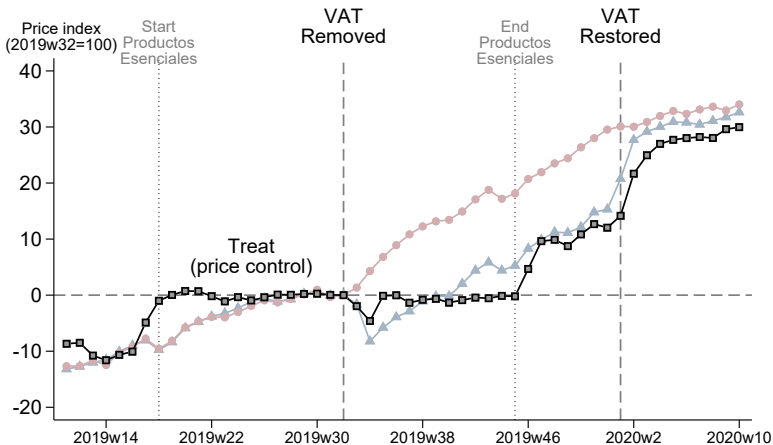
# Price Controls: mandatory tags, banners, and App



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

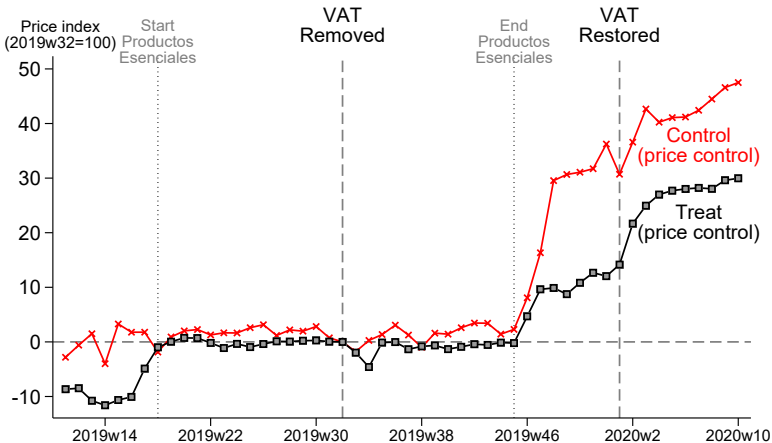


# [1] Productos Esenciales (in T) vs Rest (T and C)



## [2] Productos Esenciales: in T and C

► DiD





## Two complementary policy tools ▶ Back

### Monitoring App:

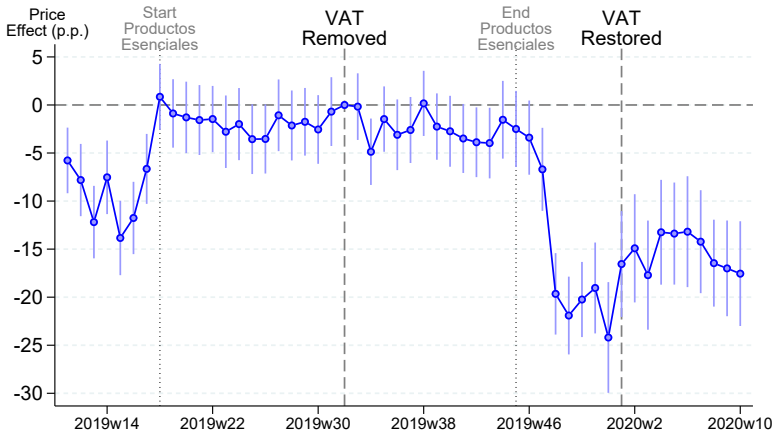
- ▶ **Precios Claros:** an Electronic Price Advertising System (SEPA) launched in 2016. Goal: ↑ price visibility
  - Large grocery stores must report daily price data ([Art 4: except SMEs](#))
  - Consumers can search prices/location from web-page or app
  - Administered/enforced by the Consumer Protection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

### Price Controls:

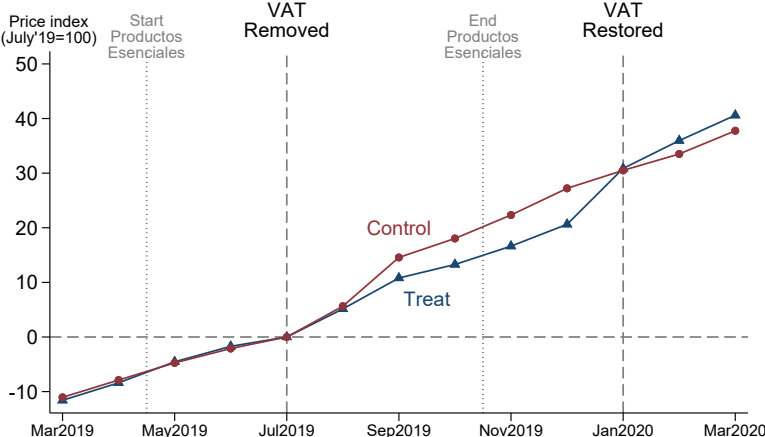
- ▶ **Precios Cuidados:** A list of mass consumption goods with controlled prices ( $\approx 500$  barcodes, e.g., Coke 1.5L). Since 2014
  - Updated every 4 months; Mandatory tags; Audits; High penalties
- ▶ **Productos Esenciales:** Govt froze the price of 64 barcodes in the Basic Food Basket for 6 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

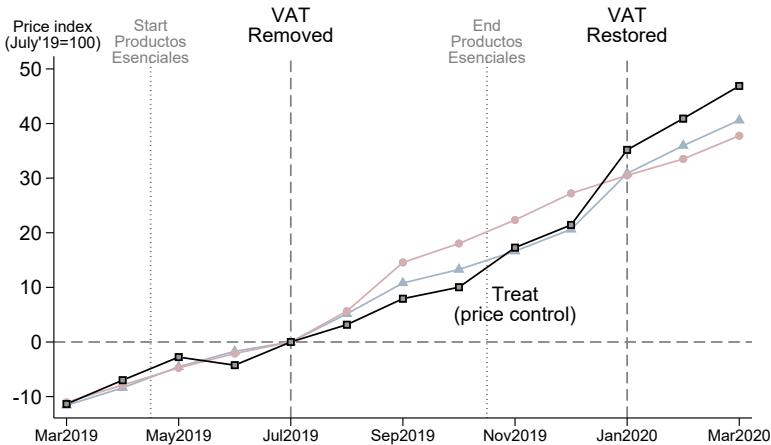
[▶ Back](#)



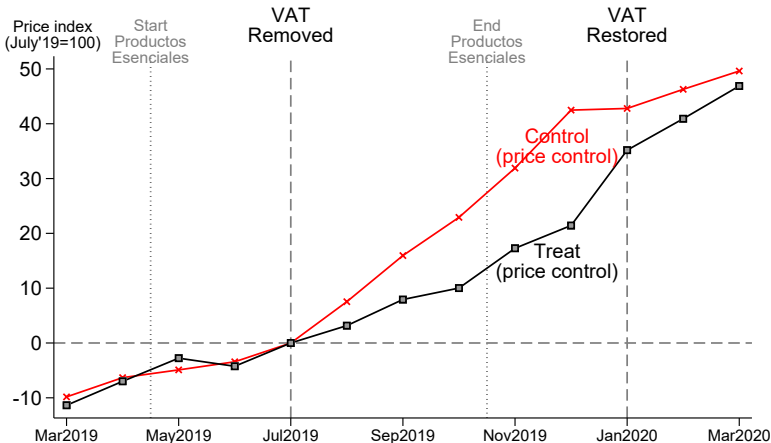
# [1] Productos Esenciales (in T) vs Rest (T and C)



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

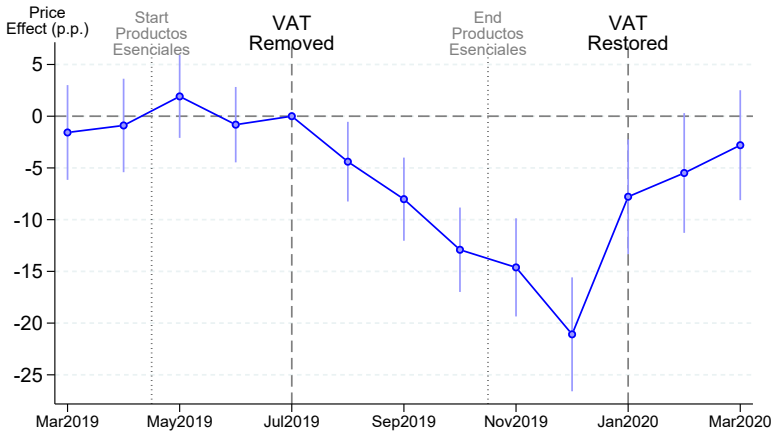


## [2] Productos Esenciales: in T and C



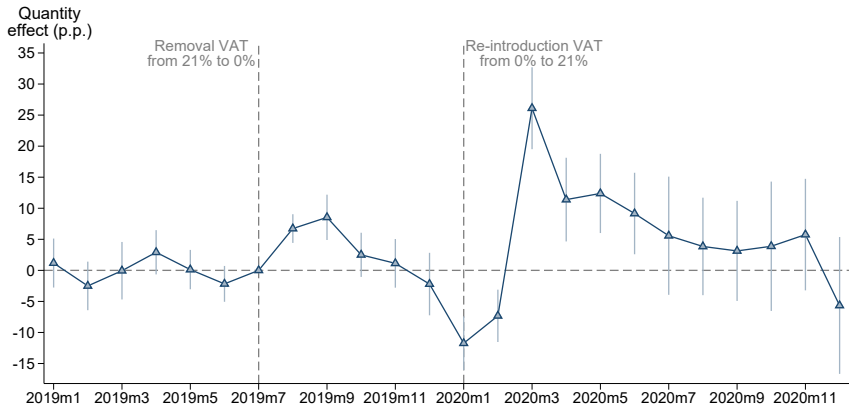
## [2] Productos Esenciales: Dynamic DiD

► Back



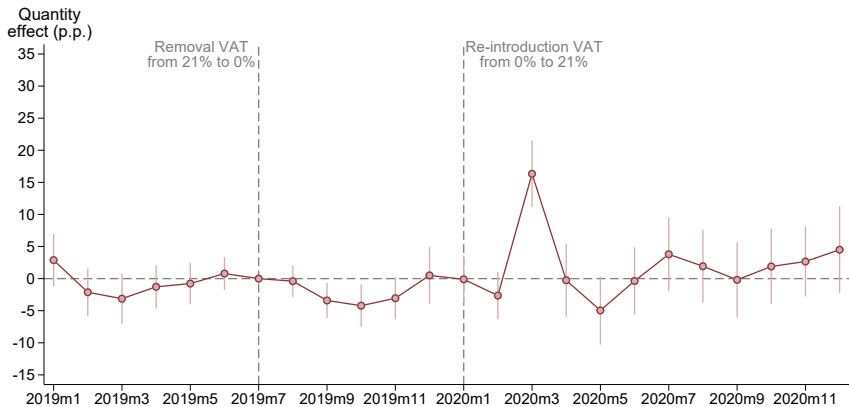
# Quantity effects in the longer run

▶ Back



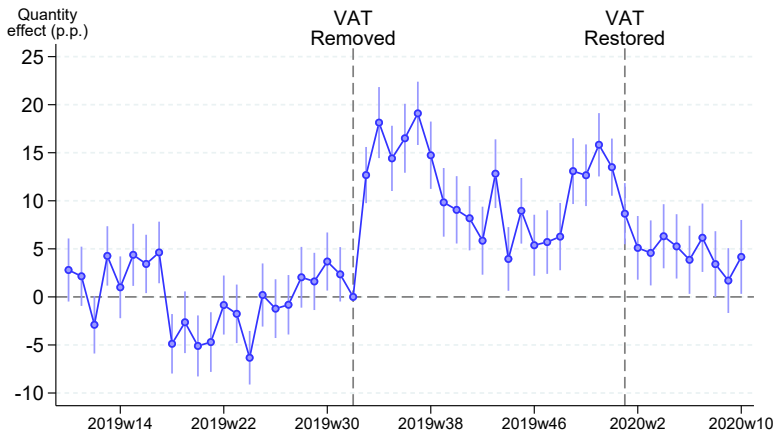
# Quantity effects in the longer run

▶ Back

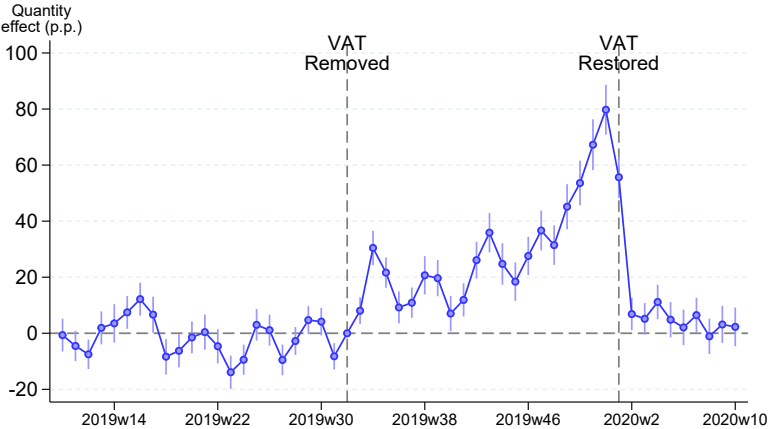




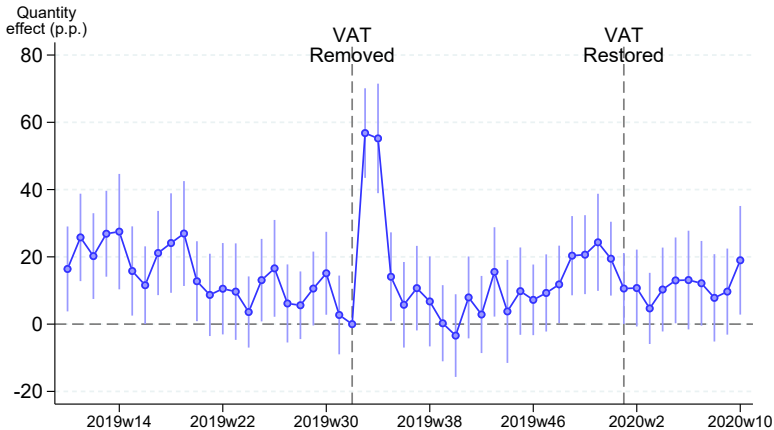
## Yerba Mate vs Control



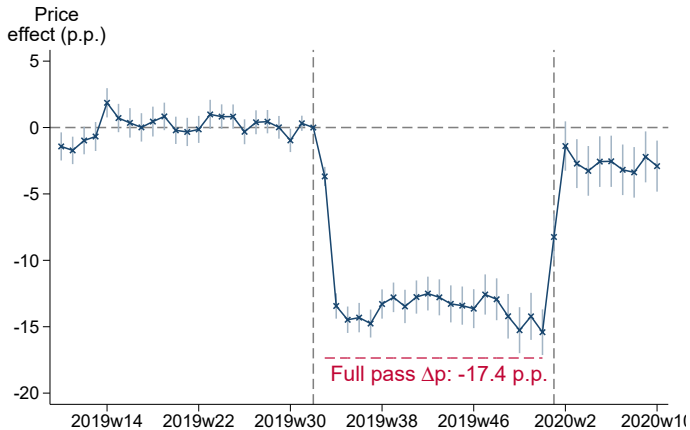
## Canned fruit/veg vs Control



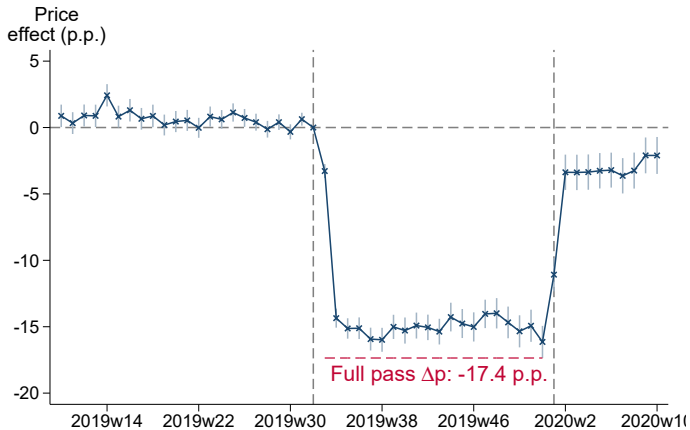
## Cooking oil vs Control



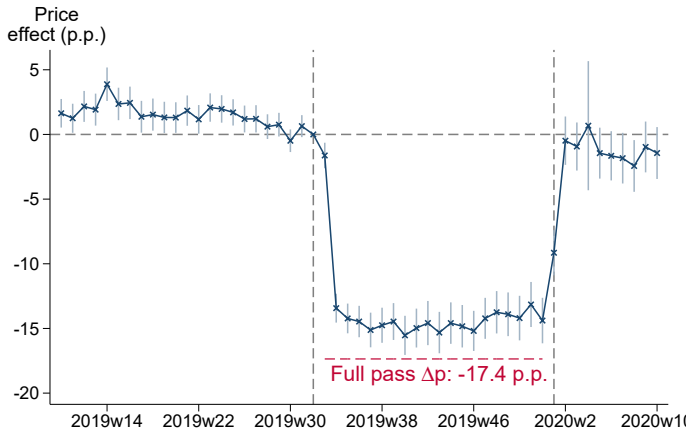
## AUSTRAL



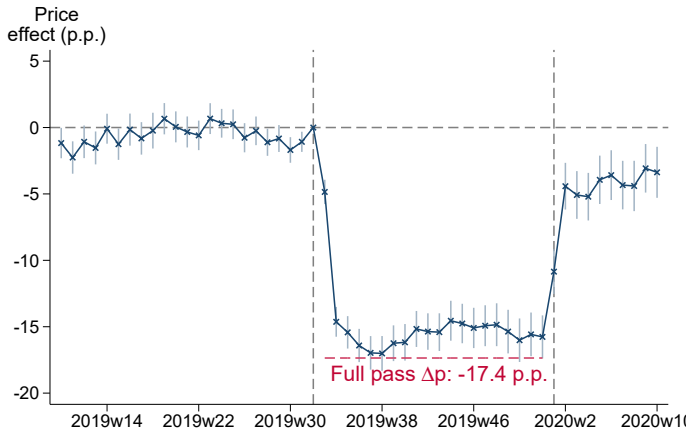
## BS. AS. RESTO



## CAPITAL FEDERAL

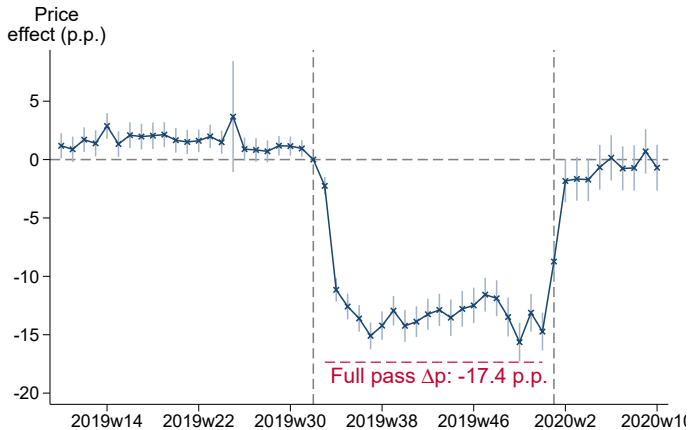


## CORDOBA



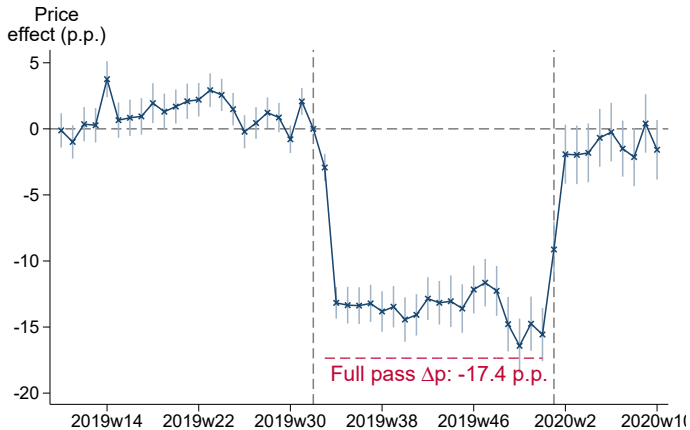
# Heterogeneities by region [▶ Back](#)

## CUYO

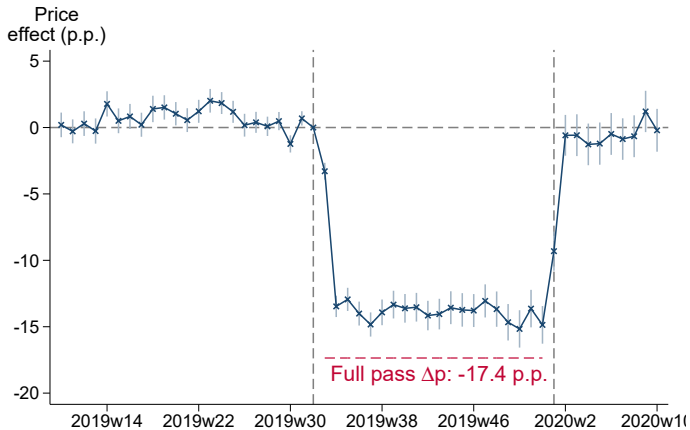




## LITORAL NORTE

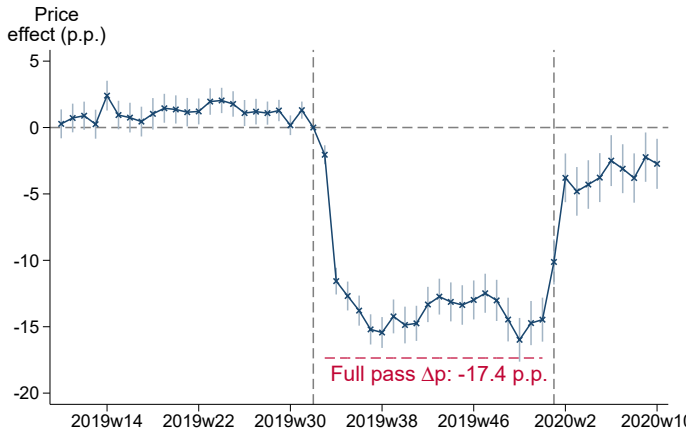


## LITORAL SUR

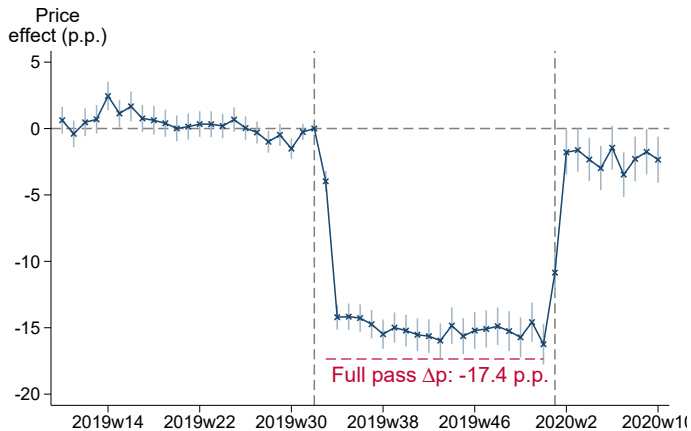


# Heterogeneities by region [▶ Back](#)

## NOA

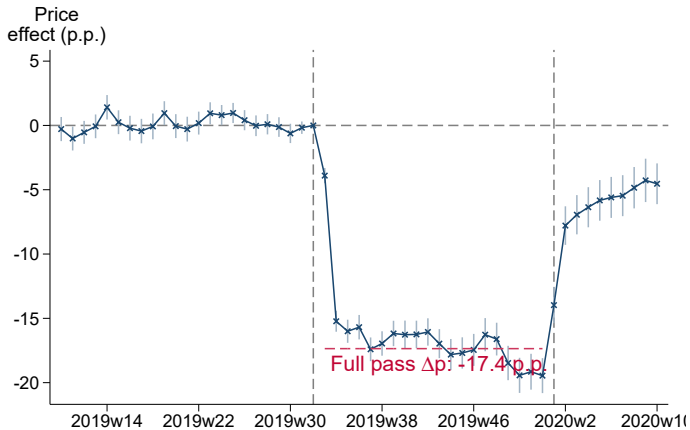


## PERIFERIA



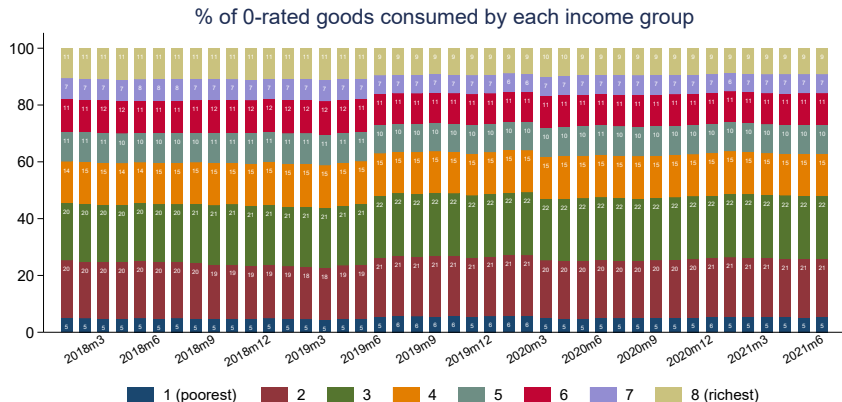
# Heterogeneities by region [▶ Back](#)

## SUR



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

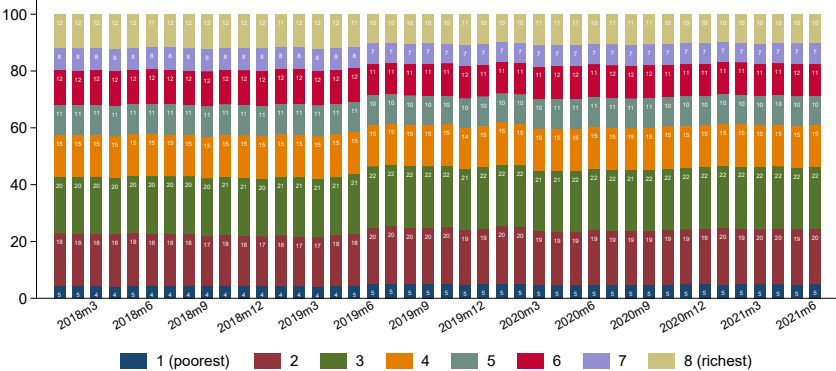
▶ Back



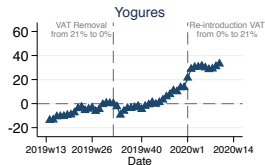
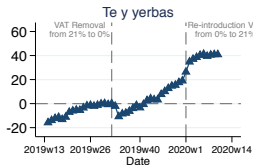
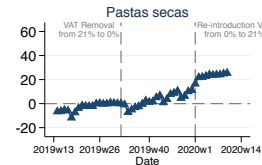
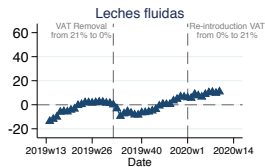
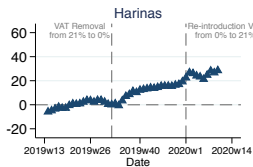
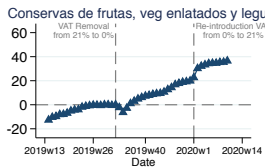
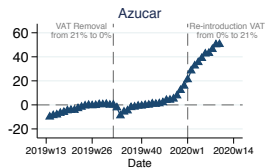
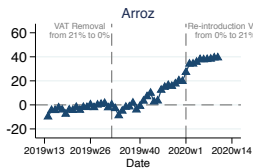
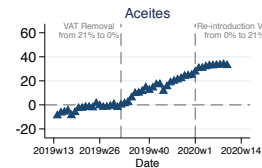
# Low-income people do not seem to switch to chain supermarkets

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% of untreated goods consumed by each income group



# Heterogeneities by products





## Robustness (aggregate price data)

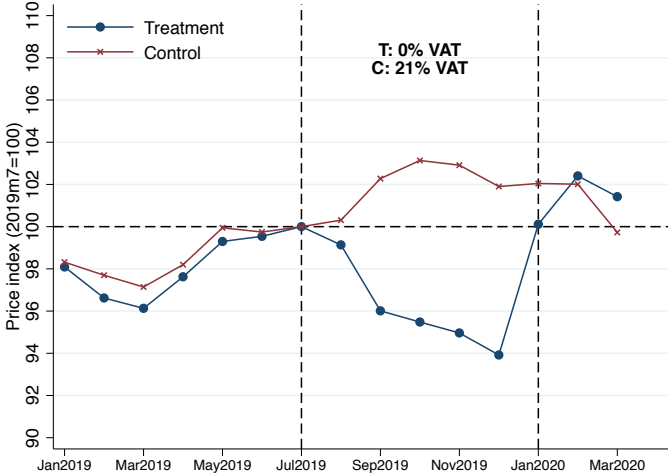
- ▶ Result is also present in aggregate price data!
- ▶ National Institute of Statistics (INDEC) publishes average monthly **prices** of some products ([link](#)) used in the CPI index (59 products in GBA; 14 products across 6 regions)
- ▶ We break the list into T (0% VAT) and C (21% VAT) and run:

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

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

Coefficients  $\beta_t$  test the effect relative to 2019m7

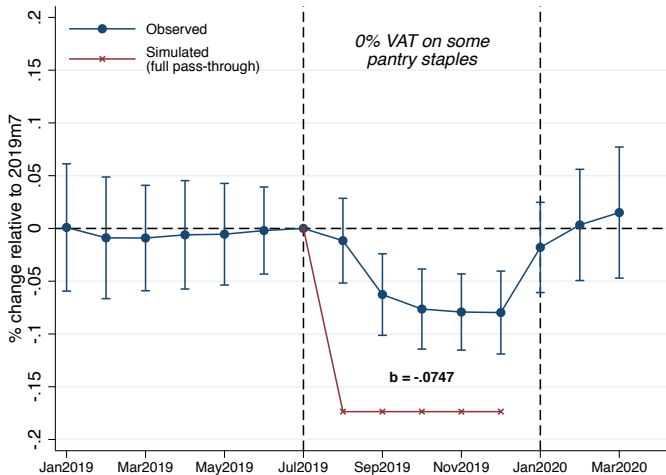
# Pass-through to consumer prices [levels]



# Partial pass-through [DiD]

▶ Back

▶ Robustness



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

# Purchase responses

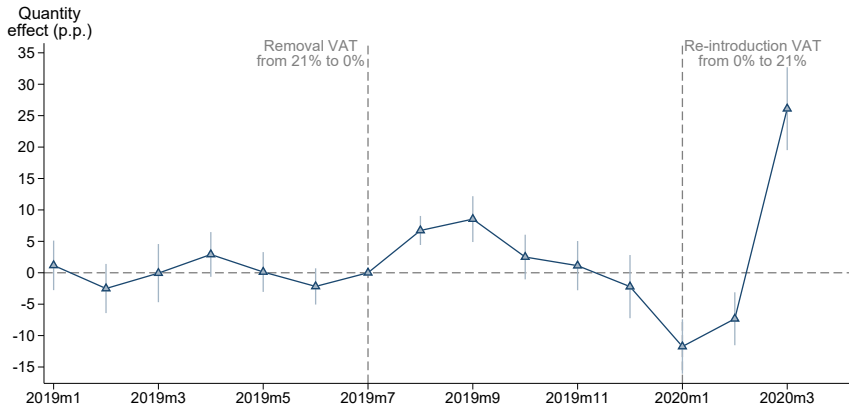
## Quantity effects

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

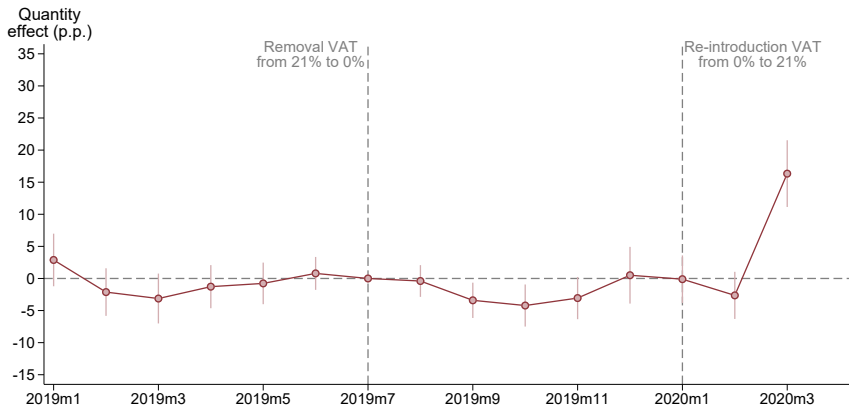
► COVID-19



- 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