

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

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February 6, 2023

## VAT cuts have gained ground amidst rising inflation

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

## VAT 'inflation' cuts are on the rise

Many countries ↓ VAT rates on a scale not seen before

E.g., for food:

1. **Peru, Poland, Bulgaria, Lithuania, North Macedonia, Spain, Uruguay:** 0% on basic food
2. **Romania:** considers cutting foodstuff VAT to 0%
3. **Bosnia:** 17% to 5% on foodstuff
4. **Croatia:** 13% to 5% on foodstuff
5. **Latvia:** 21% to 5% on foodstuff
6. **Turkey:** 8% to 1% on foodstuff
7. **Greece:** 24% to 13% on foodstuff
8. **Others:** Belgium, Italy, Germany, Ireland, Austria, Slovakia, Estonia

... and is even debated in the U.S.

## ***States Turn to Tax Cuts as Inflation Stays Hot***

Tax reductions and rebates that are being proposed to help people cope could have the unintended effect of pushing prices higher.



Give this article



By [Alan Rappeport](#)

May 10, 2022

WASHINGTON — In Kansas, the Democratic governor has been pushing to slash the state's grocery sales tax. Last month, New Mexico lawmakers provided [\\$1,000 tax rebates](#) to households hobbled by high gas prices. Legislatures in [Iowa](#), [Indiana](#) and [Idaho](#) have all cut state income taxes this year.

**Source: The New York Times**

... and is even debated in the U.S.



Governor Laura Kelly @GovLauraKelly · Apr 29

...

Tonight's action was a win for every single Kansan -- we **#AxedtheFoodTax**. I'm ready to sign this bipartisan bill into law. We're going to save Kansans money and get them much-needed financial relief.



13

66

290



- Govts often state **specific goals** when cutting VAT rates:  
(i)  $\downarrow P$  and  $\uparrow \text{demand}$ , (ii)  $\uparrow \text{cash flow/profits}$ , (iii)  $\uparrow \text{wages}$
- EU Parliament: “*the deal struck by the Council (...) maintains the flexibility for Member States to lower VAT on essential products to benefit low-income households and, as such, tackle the regressiveness of the VAT system*”

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- ▶ Lack of (relevant) evidence → inflation rare since late 1980's

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- Engineering instant price decreases in supermarkets using the VAT cut
- Mitigating the subsequent price increases using ‘pass-through caps’

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But it partially failed to reach the target population because:

- Low-income people tend to shop at small independent stores...
- where we find that the owners pocket most of the VAT cut

# Contribution

## 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)

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## 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

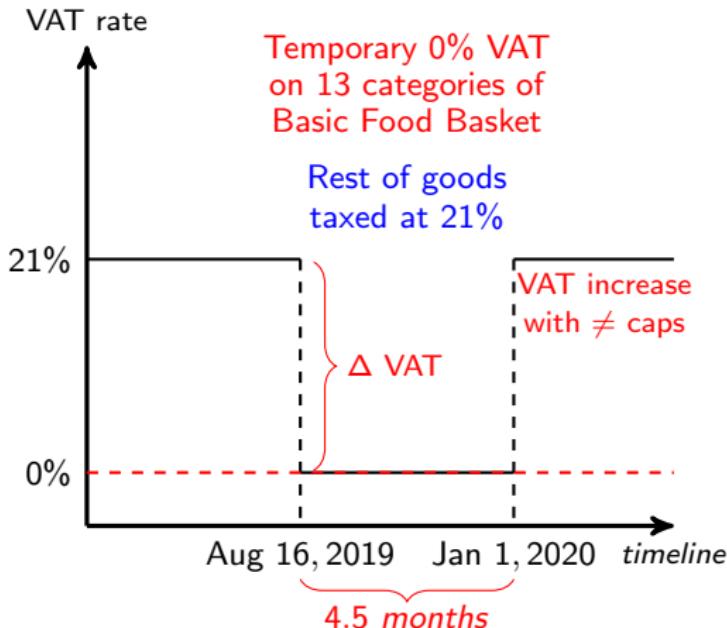
# Outline

1. Setting: A temporary VAT cut on basic food
2. Scanner data & Empirical strategy (DiD)
3. Results
  - 3.1. Price responses pooling all stores
  - 3.2. Large vs small stores
  - 3.3. VAT increase with capped pass-through rates
  - 3.4. Quantity responses (inter-temporal substitution)
  - 3.5. (Unintended) distributional effects
- ★ My research agenda

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

► Timeline and Goal

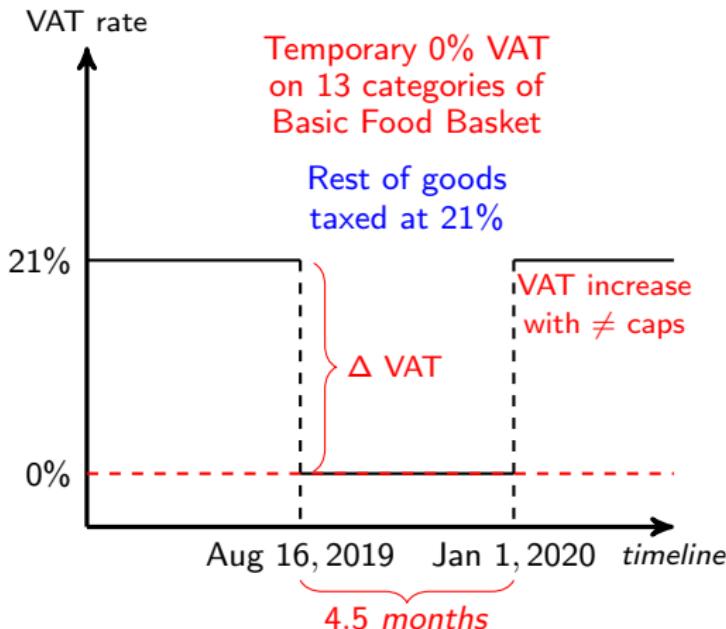
► Enforcement



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

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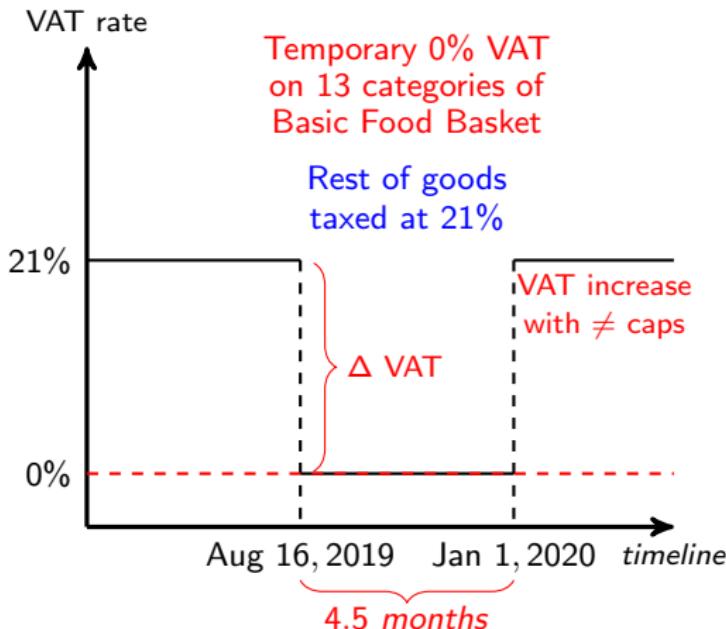


- **VAT cut:** unanticipated, large, salient, and temporary  
→ Govt urged *full* pass-through to P ( $0.21/1.21=17.4\%$ ) [\[link\]](#)

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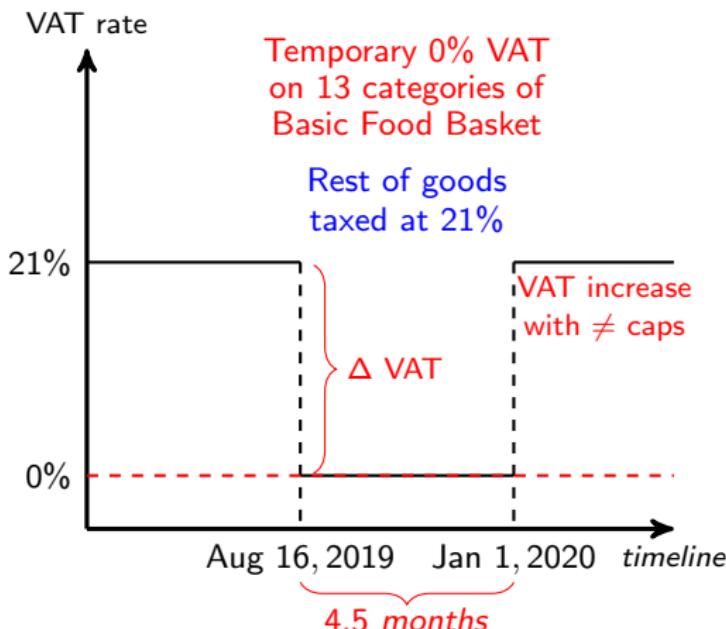
- **VAT increase:** back to 21%

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- **Price monitoring system:**

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

# Barcode-level scanner data with P and Q

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

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

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

## Data: Grocery Stores

### 1. Supermarket scanner data ([Scentia](#))

- (1) Large chains (e.g., Walmart)
- (2) Small independent stores

- Period: Jan'2018 – Jun'2021 (182 weeks, 42 months)
  - Vars: barcode, description, price, quantity, total sales, 10 regions
- E.g., *Twinings English Breakfast Tea – 25 Bags*

### 2. Panel of shoppers & Household Expenditure Survey

- ▶ To assess the distributional effects (8 income groups, monthly freq)

### 3. Price control data (2014-2020)

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

## Empirical strategy: Diff-in-Diffs

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

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

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

The VAT abolition was very salient

August 16, 2019  
(1 day post announcement)

# Clarín

Viernes 16.8.2019  
ALBERTO GARCÍA / AGUSTIN T. / MARIO J. BONET

## Spot

En la piel de Carlos Tevez

Bahar Muñiz, un chico de 15 años, interpreta al crack de Boca en la serie "Túpac", que viene 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 continúa con las anuncias para contener el despegue de la inflación. Ayer se eliminó el IVA en los alimentos y bebidas (excepto alcohol), se fijaron precios máximos para proteger las materias primas y se establecieron cuotas para la cosecha de la uva destinada a la producción de vinos.

En el interior, se eliminó el IVA en los servicios de agua, electricidad, gas, y se frenó el aumento de los precios de los combustibles. Hoy se anunciará el efecto de alivio para inflación de las cuotas

de jubilación. Reprograman la UVA y alianza con el sector para controlar el desabastecimiento. Anunciaron que se restringirán las importaciones de carne bovina y se establecerán cuotas para proteger la producción local. Se anuncia la creación de una comisión para evaluar el manejo de las flotas pesqueras. Mañana se dispondrá una

**Detrás de la silla**  
**Ricardo Kirschner**  
El diálogo y un atípico  
dileto de tregua

**Teatro Colón**  
Yolanda Cervi, con  
el tenor Luciano  
Montero, en el estreno  
de "Vozca", musical de  
Jesús López-Córdova

### En busca de la mística perdida

Autorretrato en la catedral de la Provincia Ciudad. Marat rememora lo que le demandó el destino y su "un poco" de amor. "Por más que nos esforcemos a vivir como queríamos, no es así". El obispo hoy tratará para la historia, sus

### DOCUMENTOS SILENTIOS

#### Nuevo ataque del hacker que filtró datos de la Federal

Políticos y empresas de minería, como BHP y Vale, se unieron ayer a la demanda contra el gobierno. "Están siendo sistemáticamente atacados", denunció el político Luis Otero González, presidente de la Asociación de Empresarios Mineros (AEM).

Baja. Hacienda ingresó en la noche a las oficinas de la Policía Federal y decomisó documentos en la sede social, donde permaneció hasta las 22. Los agentes también se quedaron con una computadora informática. Además, se secuestraron 10 celulares y se realizó una perquisición en la vivienda del ministro.

### La otra cara de la inflación

El organismo que dirige el economista Martín Guzmán presentó ayer su informe trimestral. La inflación anual se ubicó en 4,2% en julio, la cifra más baja en 12 meses. La tasa mensual fue de 0,7%, la menor en 15 meses.

### Almafuerte

El presidente Alberto Fernández se reunió ayer con el gobernador de la provincia de Buenos Aires, Axel Kicillof, y el intendente de la capital porteña, Horacio Rodríguez Larreta, para tratar la situación de la salud en la ciudad. El jefe de Estado pidió que se intensifiquen las medidas de aislamiento y se reavive la estrategia de vacunación.

### MUÍN MÁS DE 800 Y CORRIÓ A 100%

Para Alberto F. el dolar a \$ 500 está bien y no hay razón para que aumente

El presidente del Fondo de Inversión Social (FIS) de la Caja de Pensiones, Pedro Muín, consideró que el dólar a \$ 500 es "muy bueno" y que no hay "razón alguna" para que aumente. "Tenemos que seguir trabajando para que la inflación sea menor", sostuvo.

### ASISTENCIA A ALGODÓN

#### Diseñado Cabellero:

**"Que no vaya a creer que lo están eligiendo porque es él"**

Consejero delegado del Ministerio de Infraestructura y Desarrollo de las Tierras (MIDT), el ingeniero Juan Ignacio Cabellero, se mostró convencido de que el candidato a la presidencia, Alberto Fernández, no va a elegirlo para su gabinete. "No me iba a sorprender si él me nombrara, pero no voy a aceptar", declaró.

**De espaldas.** Francisco acuerda la felicidad

### Lavagna suspendió la campaña y pidió que lo imiten

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**LA NACION**  
Viernes 16 de agosto de 2019

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

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

El presidente Mauricio Macri anticipó ayer la implementación transitoria del IVA para 10 productos de la economía boliviana y los mercados locales, el anuncio se realizó por teléfono con los gobernadores de Jujuy, Salta, La Rioja, Catamarca, Tucumán y Chaco. Los cinco gobernadores mencionados se reunieron con el presidente para establecer un acuerdo sobre el establecimiento de estos cuatro impuestos que afectarían directamente a los precios de los bienes y servicios.

Impacto que tendría en la inversión en la Börse sobre el destino de inversiones de tres años en el mundo. Los resultados presentados en los \$400 mil en su encuesta a la clase dirigente y alta. Inversión destinada a las estrategias de Macroeconomía en 2017, que para el año que viene se proyecta que sea de 1.000 millones de pesos por cada uno de los tres años del informe. En la Encuesta de la Cámara de Comercio, se observó que

Dólar: cayó por primera vez desde las PASO

**Infografía** | **Cámaras de comercio del Centro, para el presidente, SEDO era un principio lógico**

## Presión militar china a Hong Kong



Permitirán estacionar junto a algunas bicicletas

**CRIMENES.** Hacienda pone en la pista para que sea legal dejar el asilo en calles anchas

**Ejecutaron a tres hombres**

**Los cultores de la heroína** argumentan que son más respetuosos con las experiencias y las percepciones de estos asentamientos y problemáticas. Buscan una integración en el desarrollo social y cultural de su entorno. La mayoría de los instituciones tienen poco control sobre sus adictos, ya que éstos no se consideran una amenaza, y por lo tanto se creen en riesgosas situaciones que no interfieren en sus costumbres. Sin embargo, los asentamientos son considerados en general, los asentamientos más peligrosos para el desarrollo del futuro regional.

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

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

Clarín

Series 2020

Lo que llega en enero

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

A partir de hoy, con la excepción de la leche

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

El Gobierno aumentó con un procedimiento y sorprendió al mundo al trasladar al consumo las alzas de la IVA que se retrasó a principios de año. Se acuerda que el grupo de consumidores

que, que llegaron a 400 al mes, dispara un aumento de consumo de 200 pesos. La Secretaría de Comercio continúa creando que las empresas no tengan que pagar de más. Se informó que el aumento se extiende a los servicios. "Dicho lo anterior, se ha sacificado". El comunicado

Por Ignacio Alzaga. El autor tiene licencia para el ejercicio de periodismo



Con mal clima y buen panorama la Costa arrancó su temporada

REPROBADO. Los precios de los boletos de avión para la vuelta del IVA se incrementaron entre 10 y 20%, dependiendo de la distancia y la aerolínea. Los pasajeros que viajaron a Brasil y Uruguay, en Mar del Plata, los pasajes se incrementaron entre 10 y 20%. Los pasajes nacionales se incrementaron entre 5 y 10%.

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Sin heridos por pirotecnia en el Instituto del Quemado

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

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

El Procurador General de la Justicia de Gendarmería, que ya presentó la memoria de la figura, fallecida el 12 de diciembre de 2015, en su despacho, en la sede de la fuerza, en Buenos Aires. Nisman había fallecido en su apartamento en la ciudad de Neuquén. "Dicho lo anterior, se ha sacificado". El comunicado

El periódico CARLOS DÍAZ

El efectivo que se fugó adentro de un estuche

Accusado de robar una tienda francesa, el hombre se esconde dentro de un estuche de joyería y cae desarmado



LA PLATA

Matan a un jubilado frente a su mujer en un intento de robo

Jorge Peralta tenía 77 años. Los ladrones que lo asesinaron querían robarle

El optimismo nuestro de cada año nuevo

El autor

Pablo Vaca

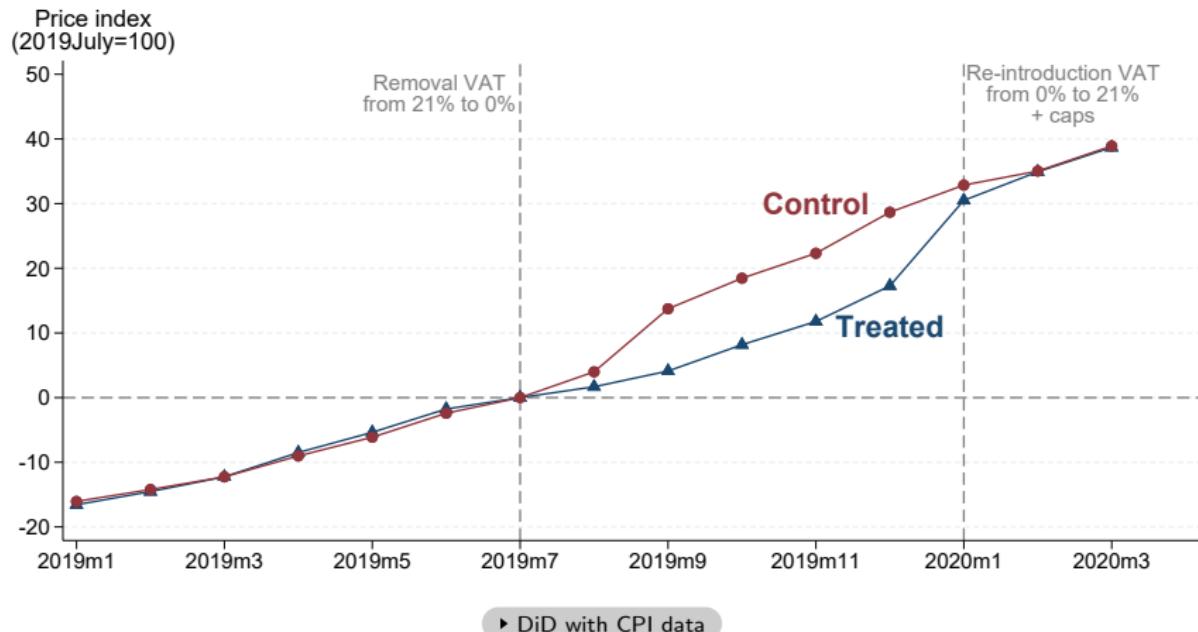
El optimismo nuestro de cada año nuevo

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

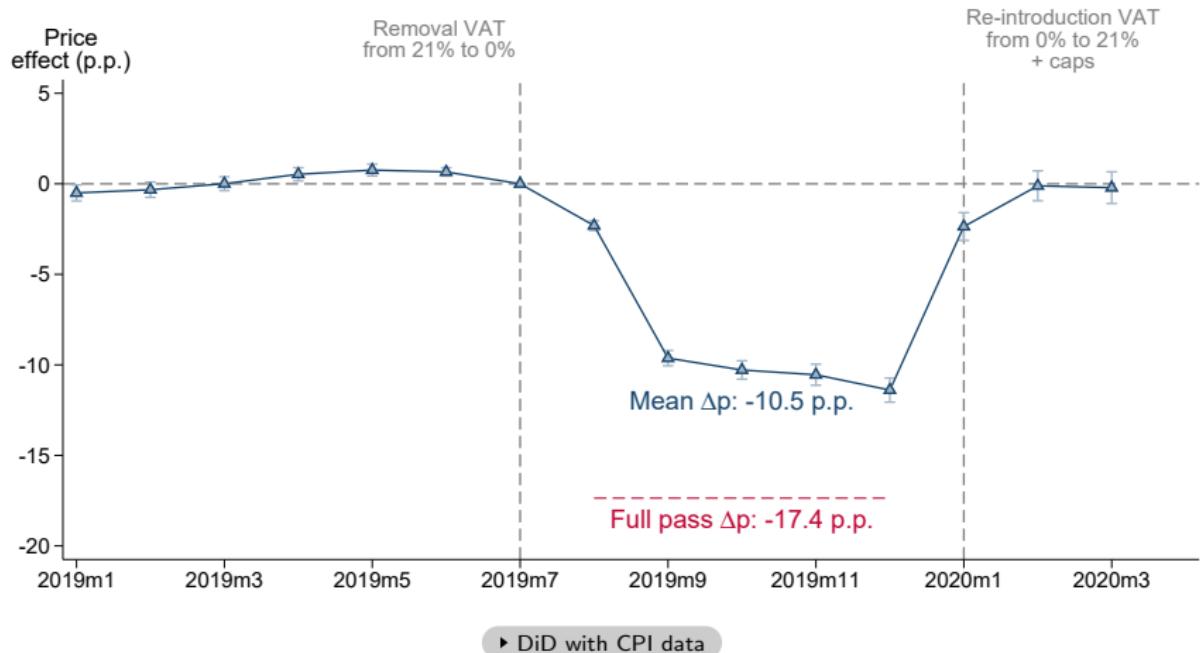


Price responses pooling  
large and small stores

# Price levels in Large + Small supermarkets

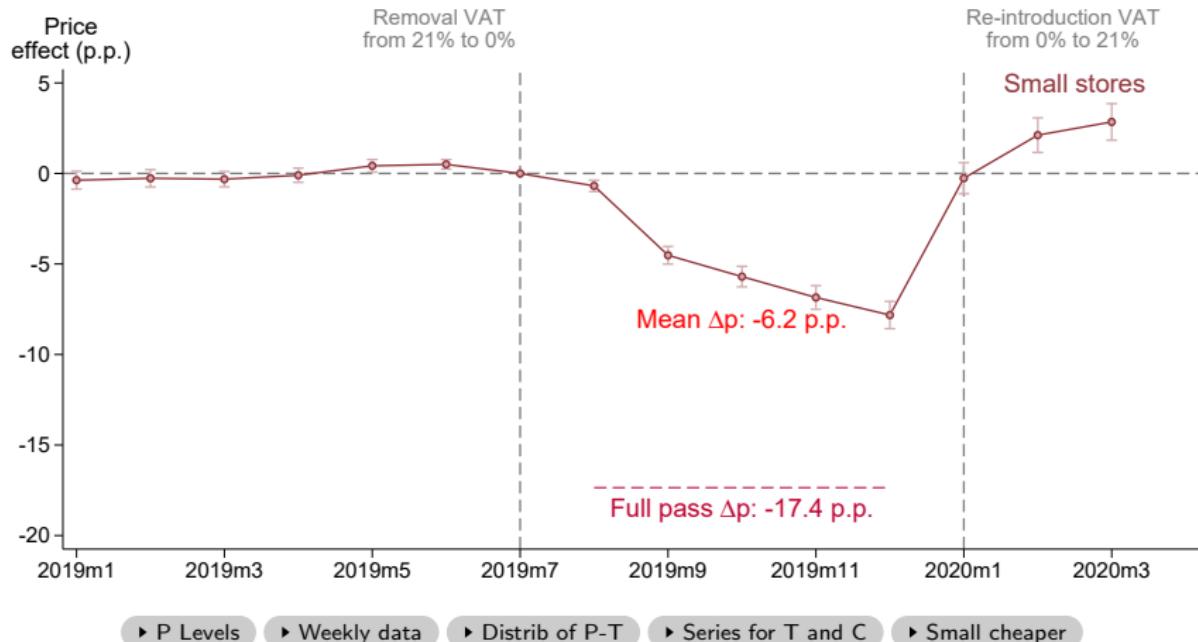


# Substantial pass-through of the VAT cut to prices (~60%)

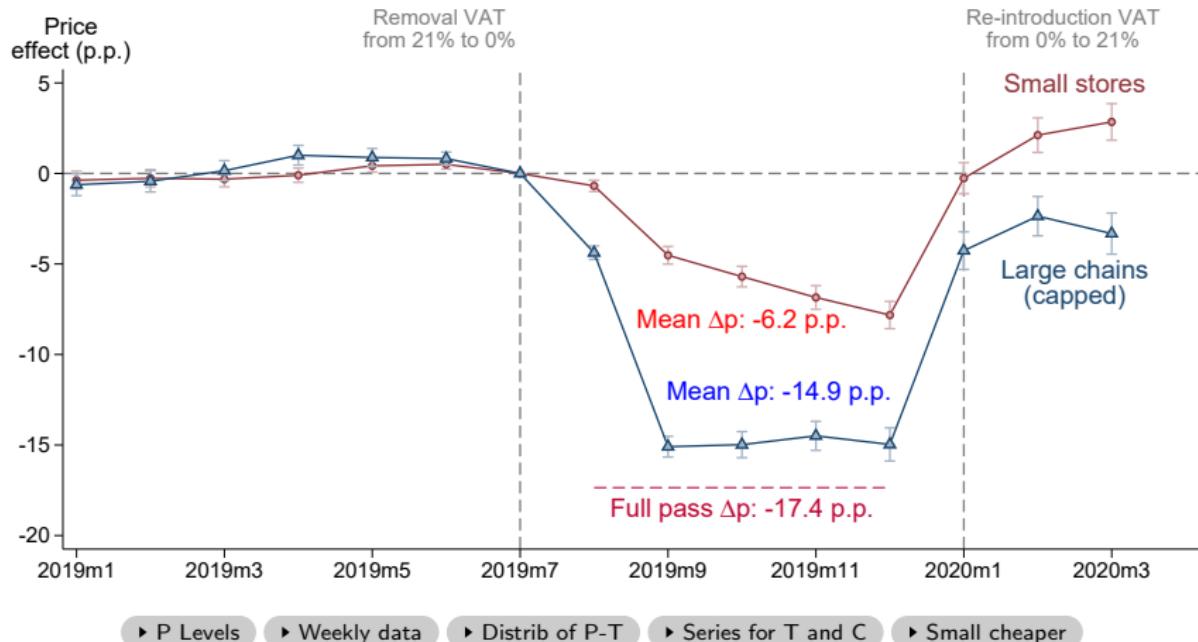


Large vs small  
stores separately

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



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# Monitoring App/Platform (for large stores only!)



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

16 de Agosto de 2019

A continuación se detallan las principales medidas que el Gobierno tiene en marcha para controlar los precios de los alimentos básicos:

- Alquiler de góndolas.** Se establecerá un sistema de alquiler de góndolas para que las empresas que no cumplen con los precios establecidos paguen una multa.
- Controles y sanciones.** El director nacional de Defensa del Consumidor, Fernando Blanco Muñio, precisó qué tipo de herramientas se emplearán para que los precios no sigan en alza.
- Monitoreo constante.** El Gobierno monitoreará los precios en los supermercados y aplicará controles y sanciones a quienes no cumplen con los precios establecidos.

**Imagen:** Un teléfono móvil muestra la aplicación 'Precios Claros' en un supermercado.



**Clarín**

Martes 9.02.2016

**Pablo Trapero Llegó a Hollywood**  
El director argentino dirigirá en EE.UU. un filme sobre un impostor que se hace pasar por un Rockefeller. [P.45](#)

**Aquellos ojos**  
Amelia Bence, diva de la época de oro del cine argentino, murió a los 101 años. La recuerda Mirtha Legrand. [P.42](#)

**En Buenos Aires**  
**Macri: el aumento a docentes no debe llegar al 30%**  
"El número no tiene que emparecar", le pidió a la gobernadora Vidal. Es la primera vez que esa negociación en las previstas paritarias con estados y privados. [#A](#)

## Lanzan un sistema para vigilar los precios de los supermercados

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

**Imagen:** Captura de pantalla de la aplicación 'Precios Claros' mostrando resultados de búsqueda y precios de productos.

# Point estimates and pass-through rates

Table 3: Average price change between treated and untreated goods (monthly scanner data)

	Removal VAT (1)	Re-introduction VAT (2)
<b>(a) Large and small supermarkets (pool)</b>		
Average price change (p.p.)	-10.5*** (0.26)	-0.9* (0.42)
Observations	661,264	661,264
Pass-through rate	60%	59%
<b>(b) Large chains</b>		
Average price change	-14.9*** (0.40)	-3.3*** (0.55)
Observations	353,497	353,497
Pass-through rate	85%	81.7%
<b>(c) Small stores</b>		
Average price change	-6.2*** (0.32)	1.6*** (0.47)
Observations	307,767	307,767
Pass-through rate	36%	38%

## Robustness and additional results

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

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

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

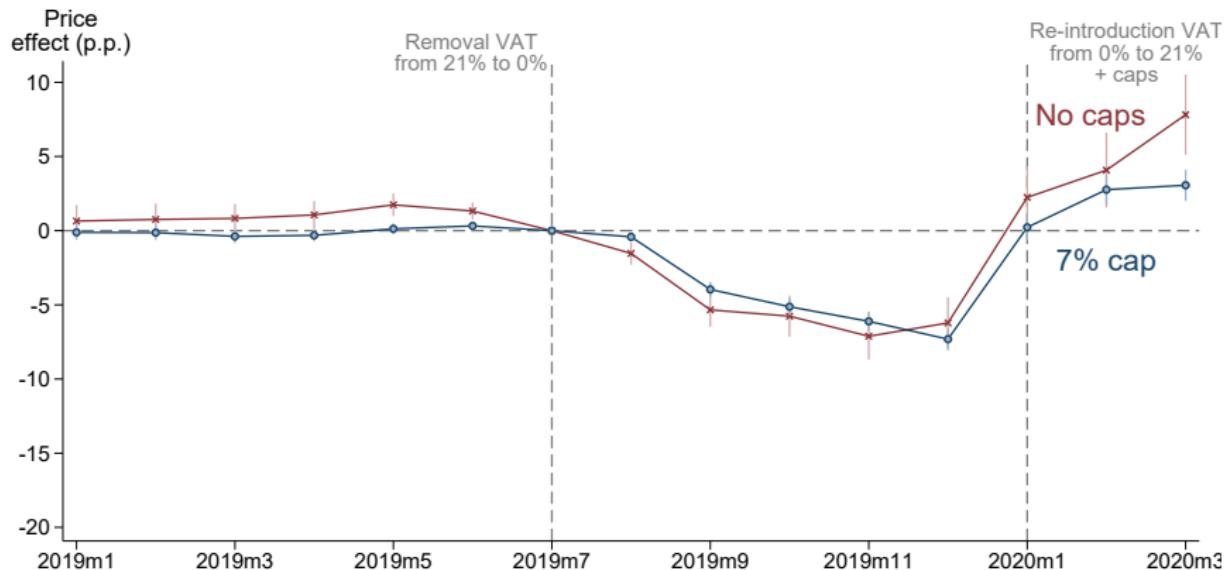
- VAT rate ↑ back to pre-holiday level of 21%
- But new govt limited the price increase with ≠ caps
  - ★ **No caps:** Prices could ↑ up to 21%
  - ★ **Caps:** Force incidence sharing
- We show that govts can successfully limit VAT pass-through

**Treated:** VAT back to 21%

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

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

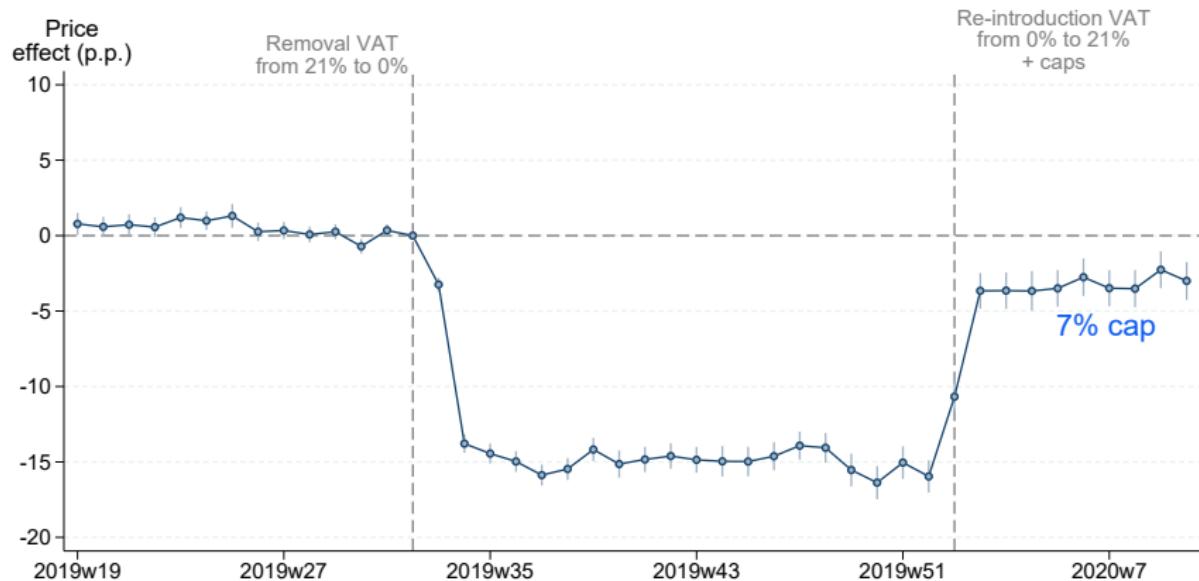
### 7% cap vs No cap



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

► Recall density

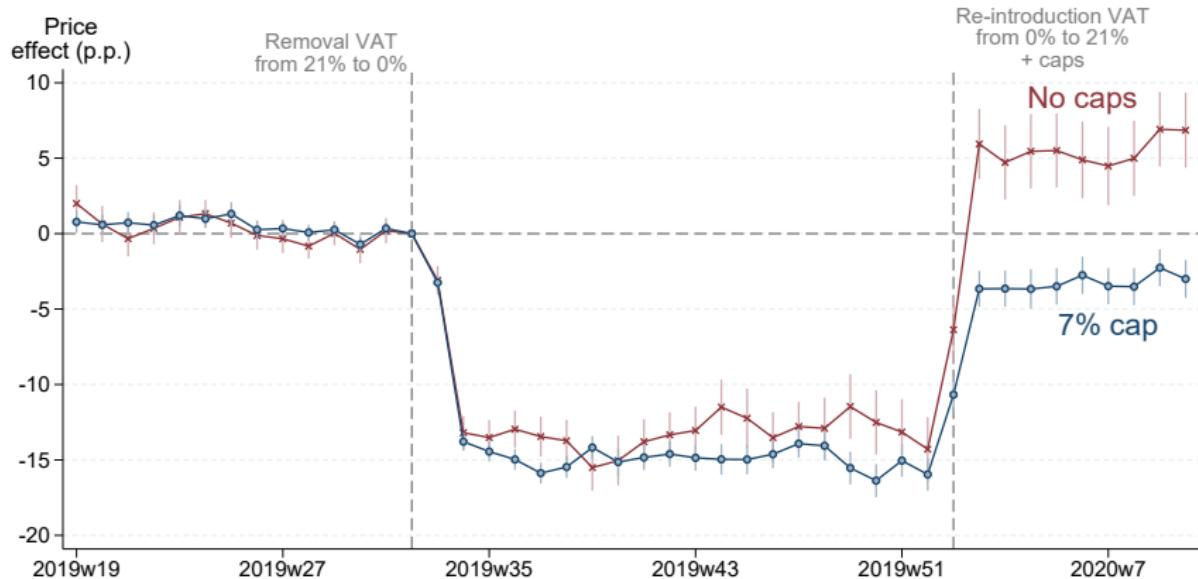
## 7% cap vs No cap



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

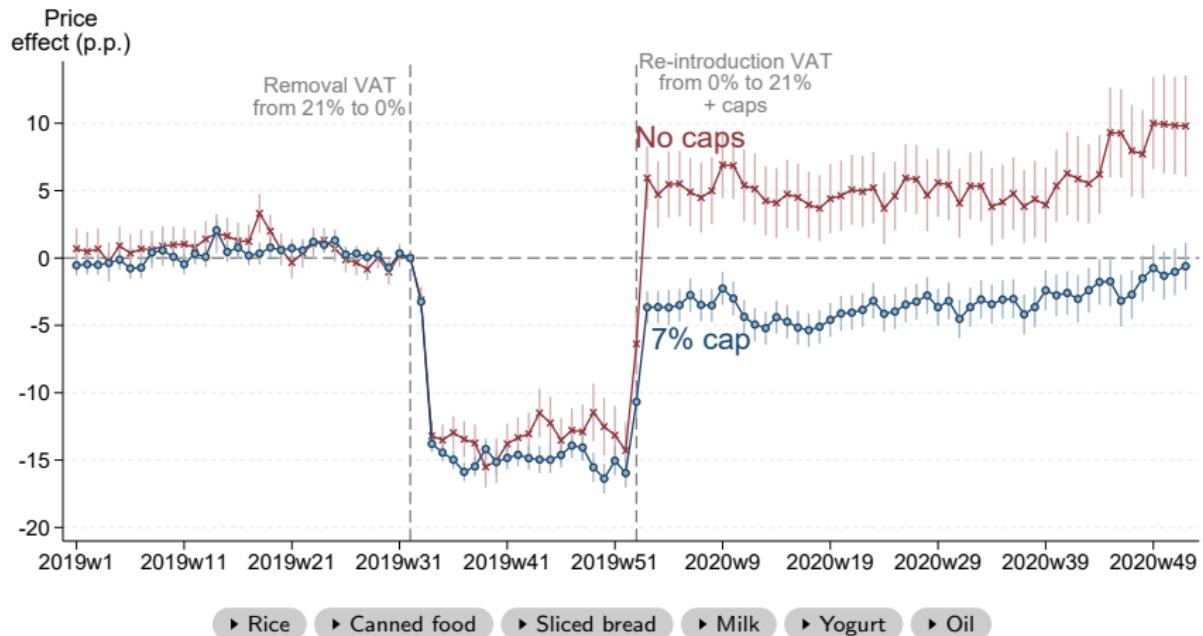
► Recall density

## 7% cap vs No cap

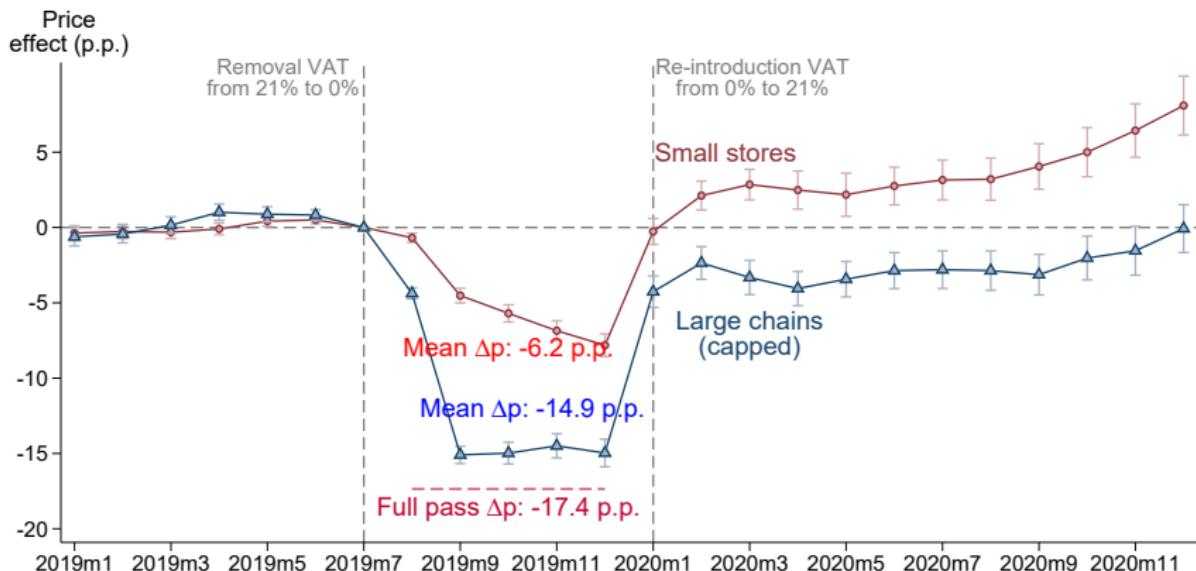


# The gap is remarkably persistent (hysteresis)

## 7% cap vs No cap



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



## Pass-through caps and *online* monitoring

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

# The government assures that it will control “online” that the new food price agreement is fulfilled

 Clarín  Economía Suscríbete por \$60 Iniciar sesión

## 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



01/03/2020 03:26 / Clarín.com / Economía / Actualizado al 01/03/2020 16:04



# Purchase responses

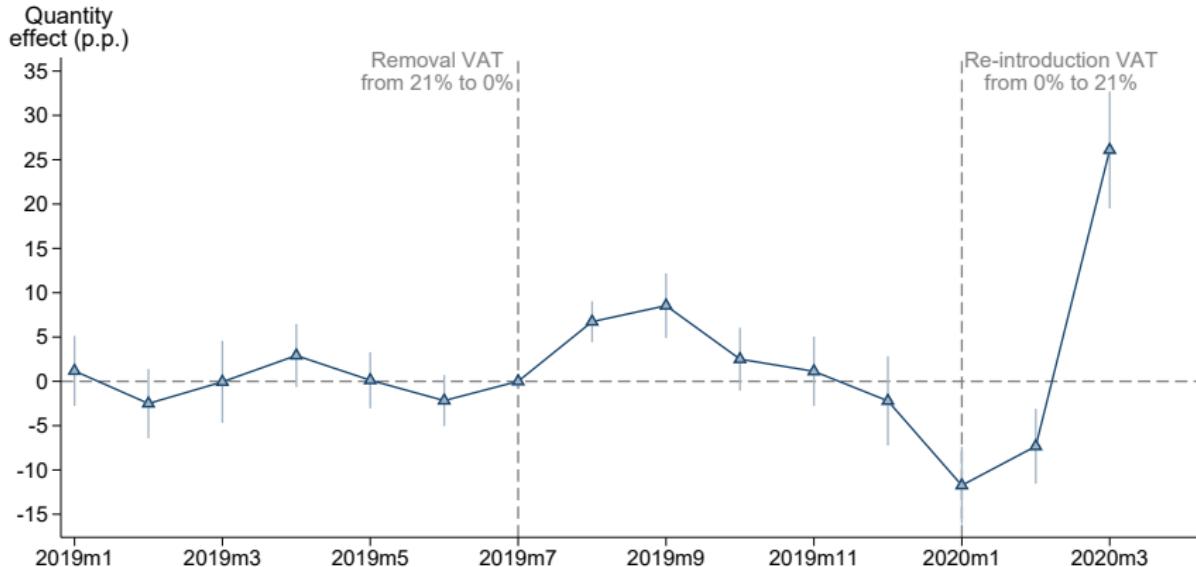
## Quantity effects

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

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

# An increase in units sold in supermarkets chains

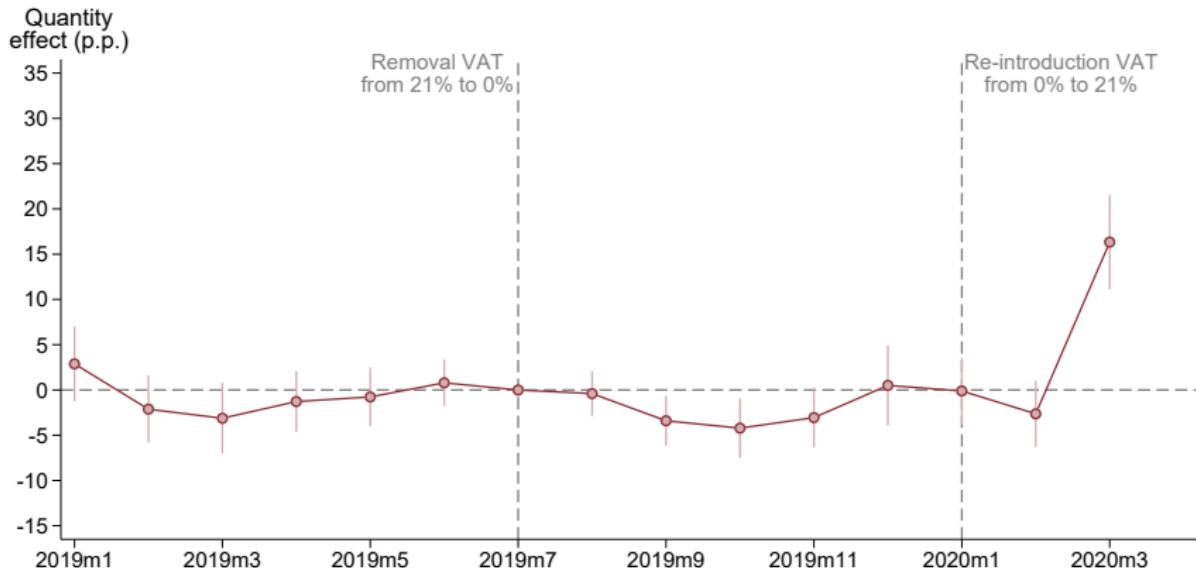
► COVID-19



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

# Quantity effect is more muted in small stores

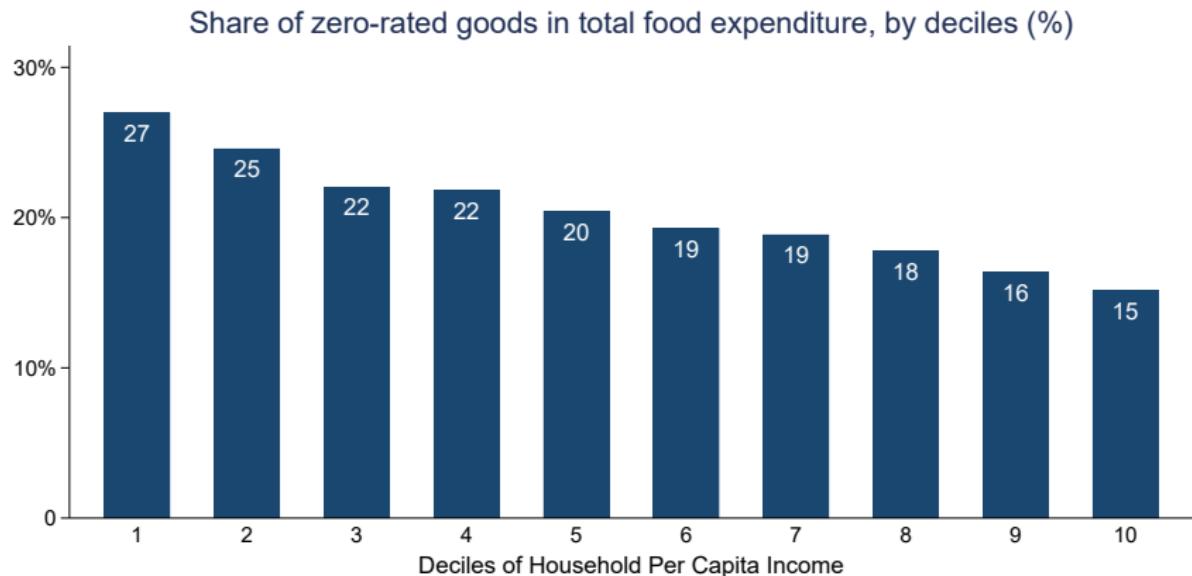
► COVID-19



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

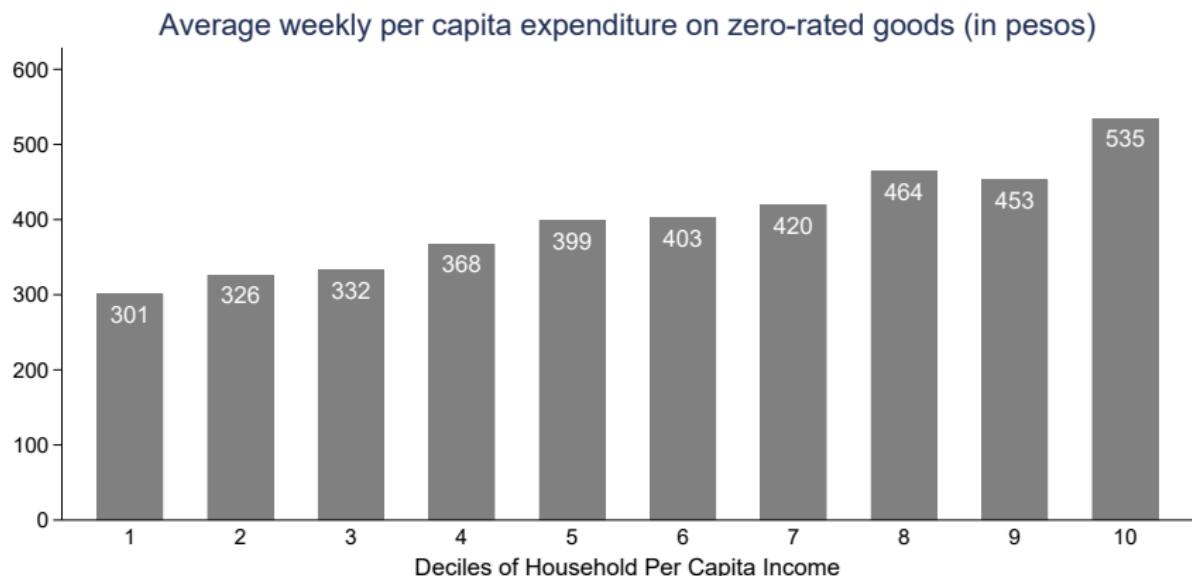
(Unintended) distributional  
consequences

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



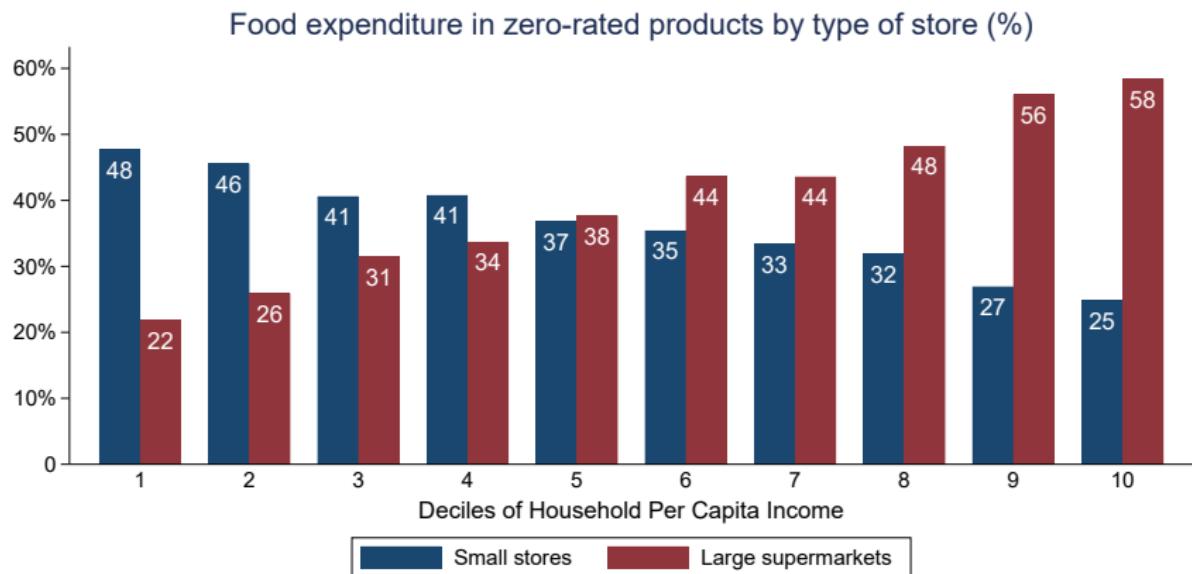
- Targeted goods (T) more heavily consumed by the lowest deciles
- But average expenditure on T increases with income

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

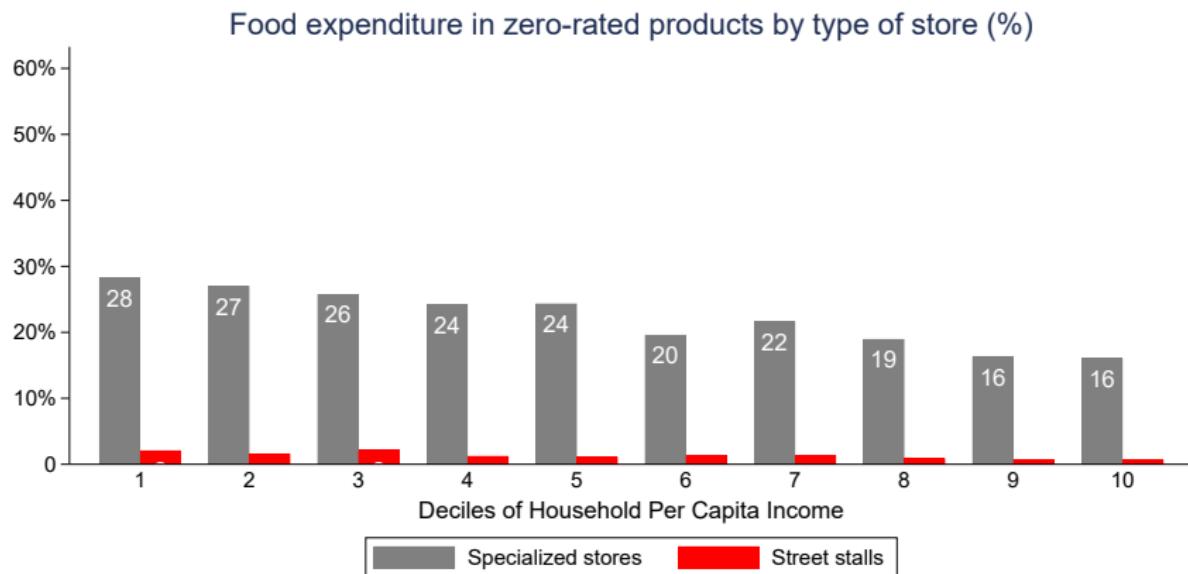


- Targeted goods (T) more heavily consumed by the lowest deciles
- But average expenditure on T increases with income

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



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



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

## Concluding remarks

While VAT cuts and other govt '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 large and small supermarkets,
- ↖ hysteresis effects in the medium-run,
- ↖ unintended distributional/incidence effects

⇒ In all, the Arg experience helps us advance knowledge and sheds light on how tax incidence might operate in practice in grocery stores

THANK YOU :)

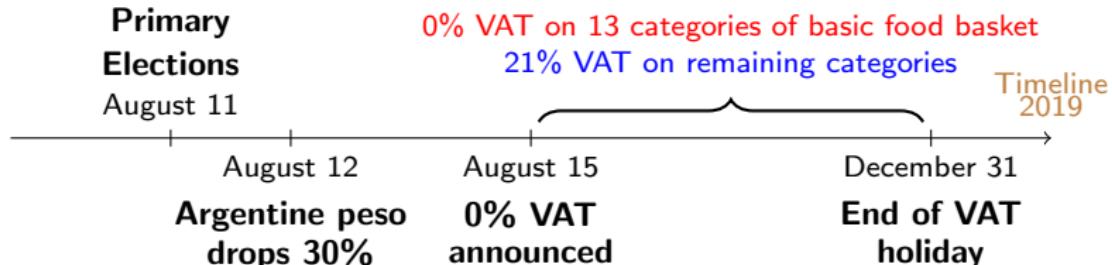
# Research Agenda

1. Price/quantity/distributional effects of ≠ policies in grocery stores
  - ▶ Today's paper
  - ▶ Price controls in supermarkets
  - ▶ The detaxation of women's period products ('tampon tax')
2. Offshore tax evasion and domestic property tax compliance
  - ▶ Tax amnesty paper (revealing 21% of GDP in hidden assets)
  - ▶ RCT 1 to measure spillover effects in property tax compliance
  - ▶ RCT 2 to analyze taxpayers responses to progressive tax reforms
3. Effect of transfer and tax collection systems
  - ▶ Firms as tax collectors (withholding systems)
  - ▶ Wage effects of means-tested transfers (e.g., EITC)
4. Labor supply and demand responses to income taxation
  - ▶ Real LS responses to an income tax holiday
  - ▶ Supply/demand effects of taxing/de-taxing overtime work in France

# Additional results

# 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

infobae

Enforced by the Consumer Protection Agency:

- Precios Claros: Online price monitoring system since Feb'16
  - Ley de Lealtad Comercial: Fair Retail Trade Law passed in Apr'19

## Enforcement tools at hand

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.*”

# 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

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Bebidas con alcohol

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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, Cervecería y  
Viñedos  
Av 44 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

130 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

\$986,61



Supermercados DIA  
Av 44 2099  
BUENOS AIRES

130 kilómetros

\$204,35



Supermercados DIA  
Av 532 101  
BUENOS AIRES

241 kilómetros

\$204,35



Market  
Calle 12 1000  
La Plata

237 kilómetros

\$203,00



Supermercados DIA  
Av 7 423 Norte  
BUENOS AIRES

239 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



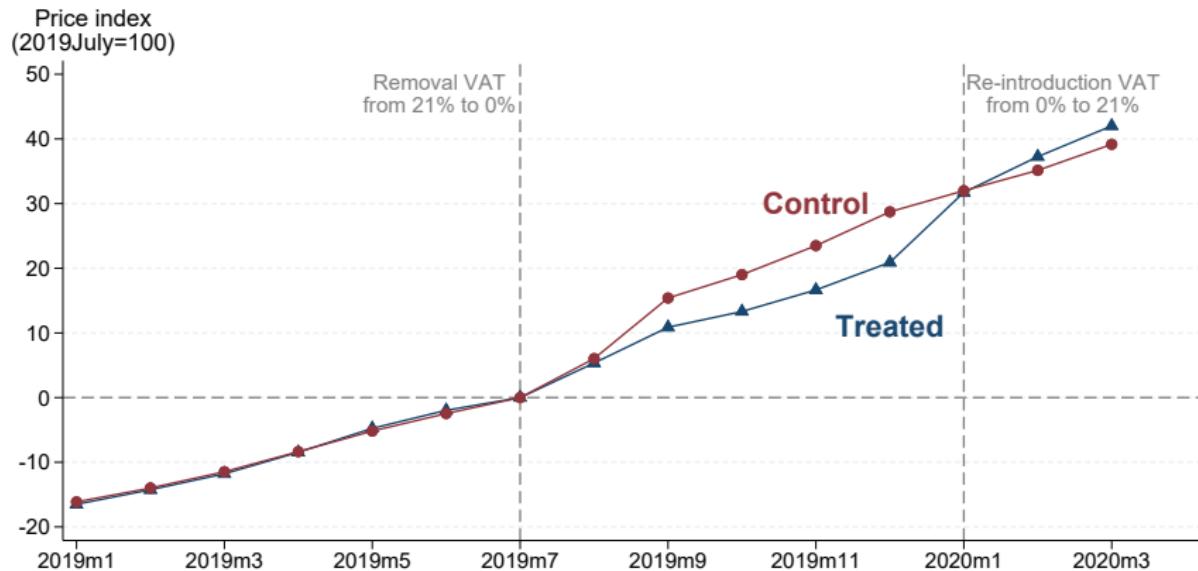
Supermercados DIA  
Calle 12 1514  
BUENOS AIRES

248 kilómetros

\$204,35

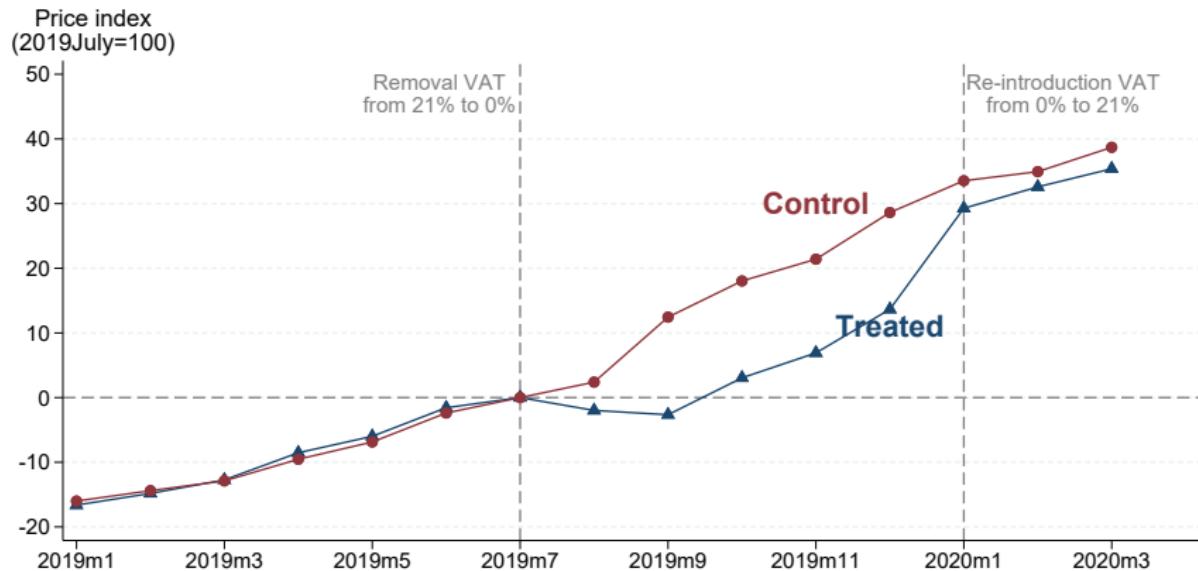
# Price levels in small independent stores

▶ Back



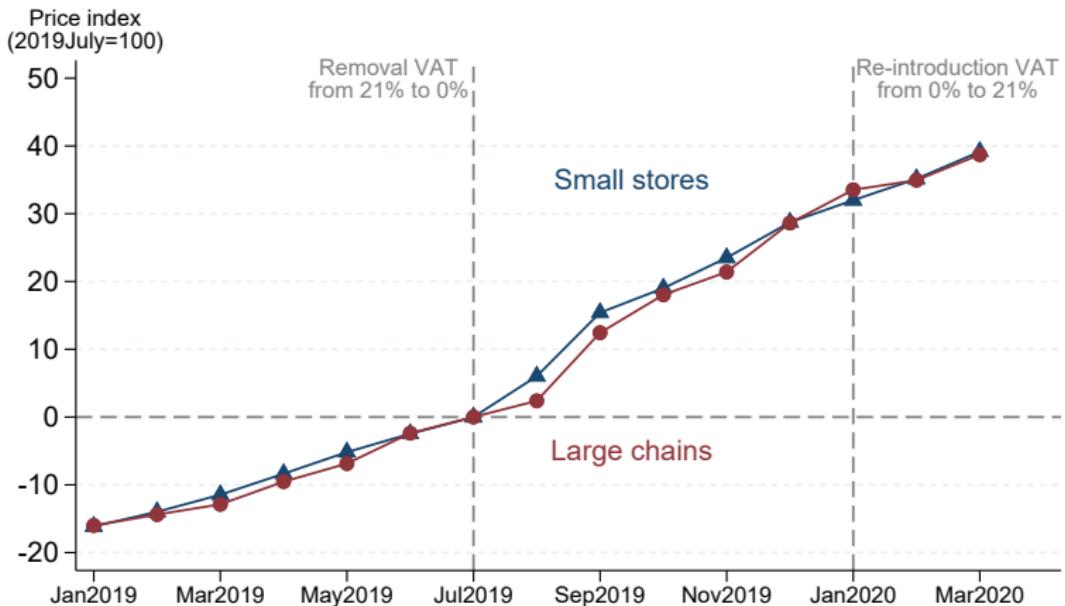
# Price levels in supermarket chains (prices are monitored)

Back



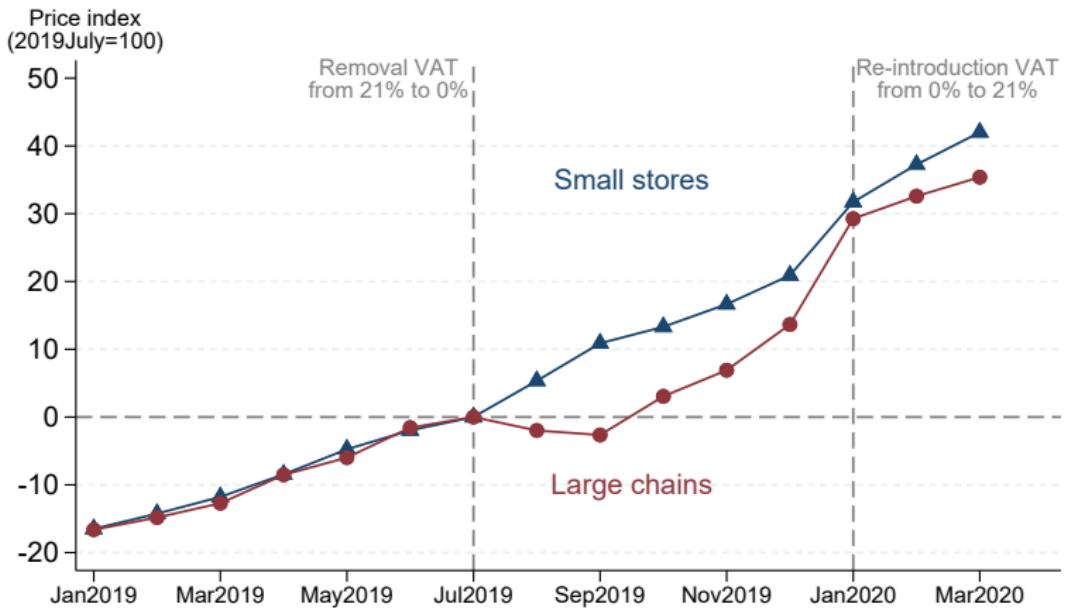
# Control goods: Large chains vs Small stores

[Back](#)



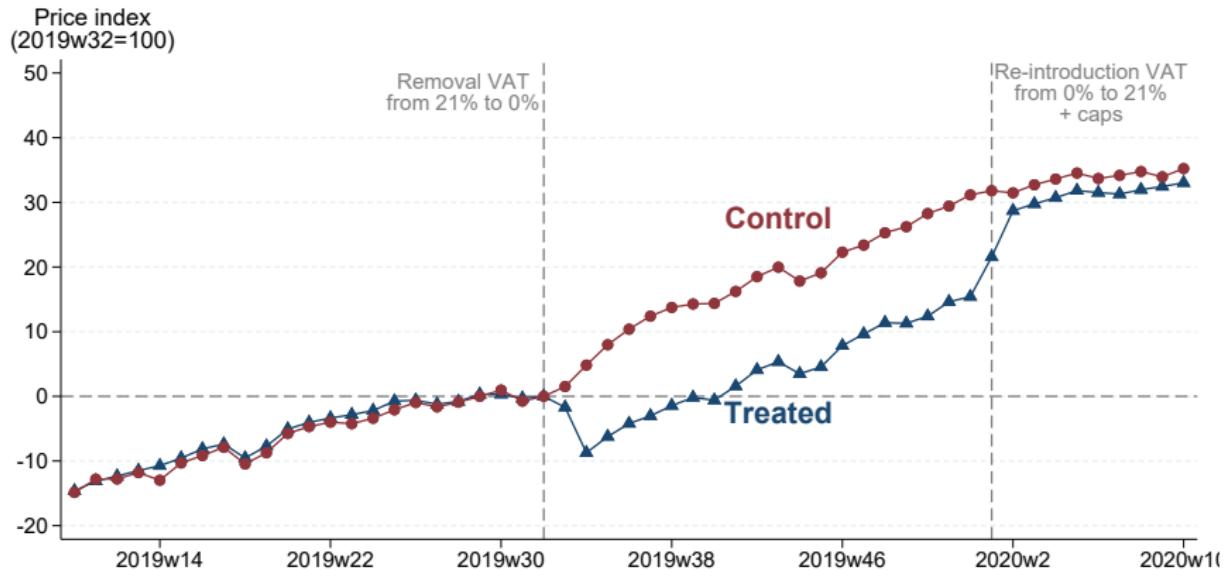
# Treated goods: Large chains vs Small stores

▶ Back



# Price levels in supermarket chains (weekly data)

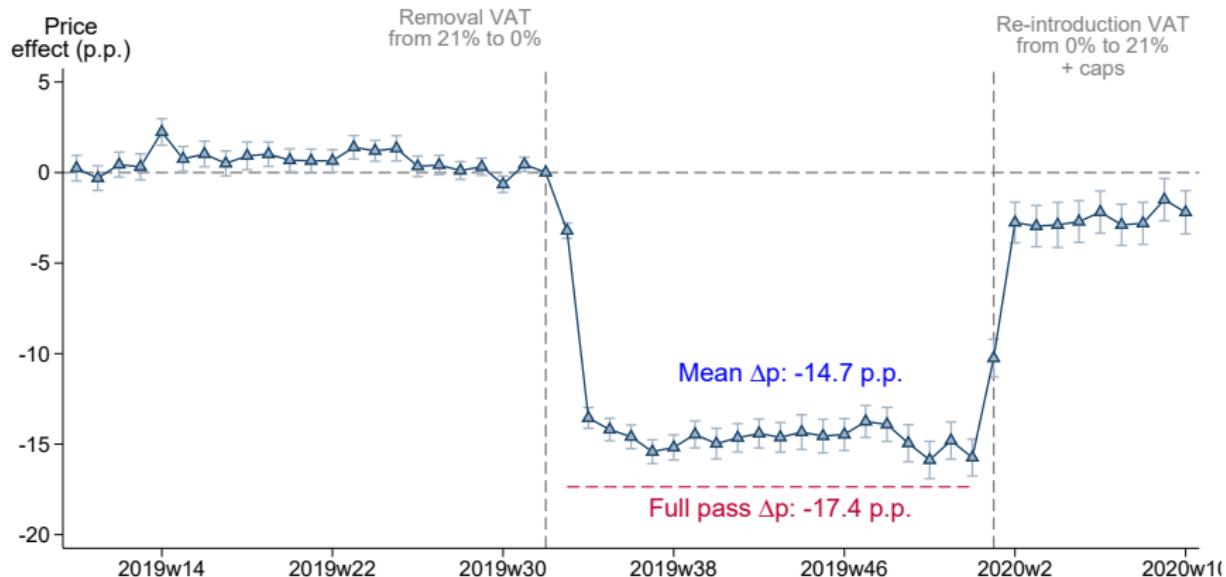
▶ Back



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

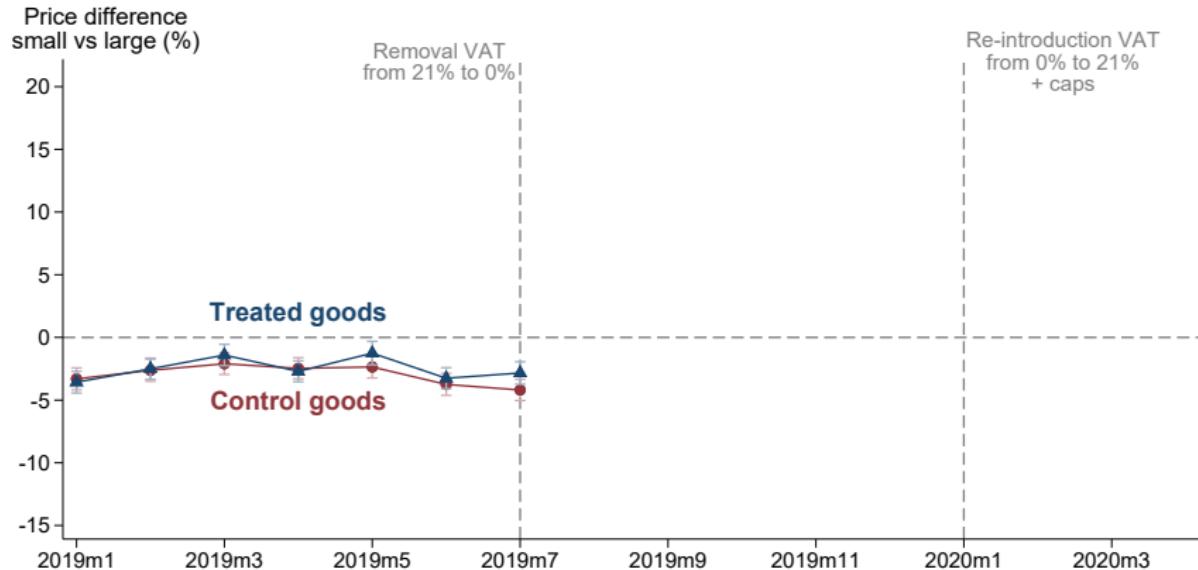
# Average price pass-through of ~85% in large chains

▶ Back



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

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

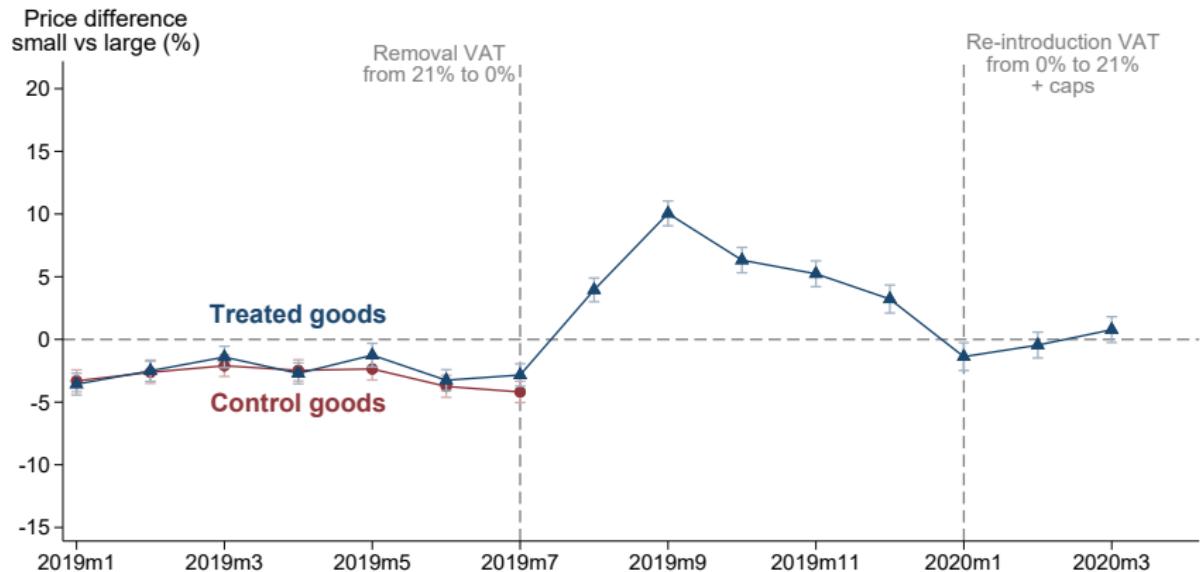


$$\log P_{irst} = \alpha_{irt} + \sum_{t=2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

▶ Back

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

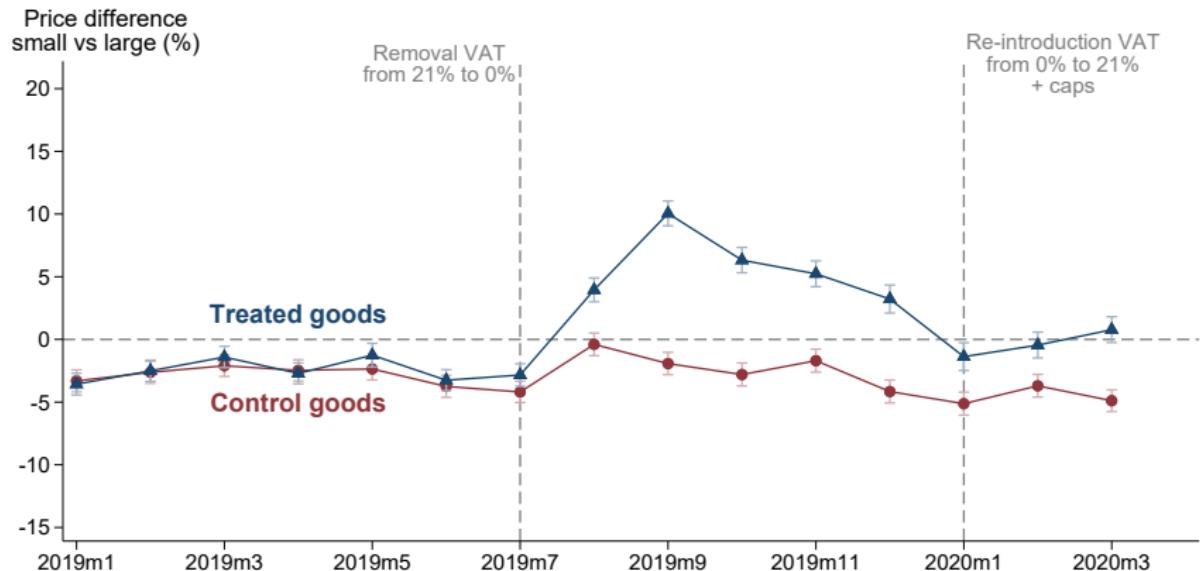


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▶ Back

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



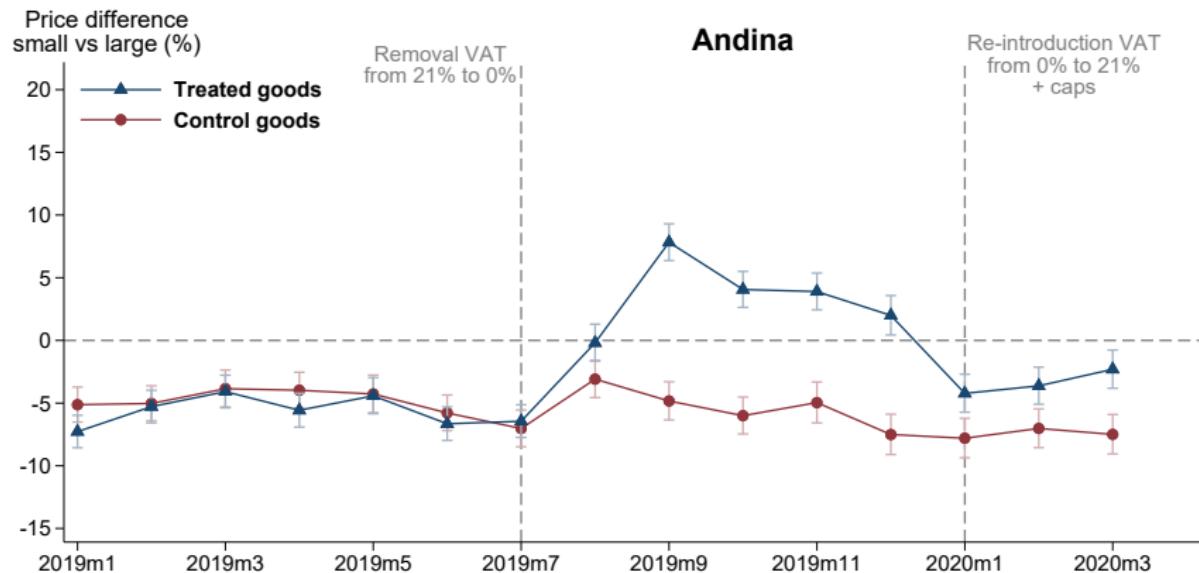
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▶ Back

# But largely heterogeneous across the 5 regions

▶ Back

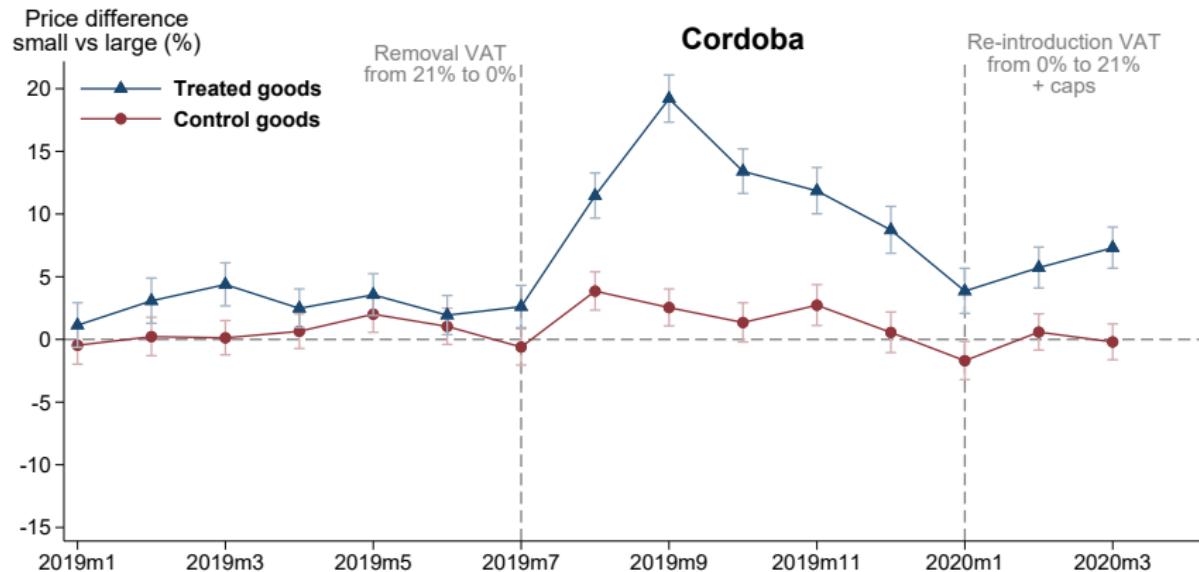


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# But largely heterogeneous across the 5 regions

▶ Back

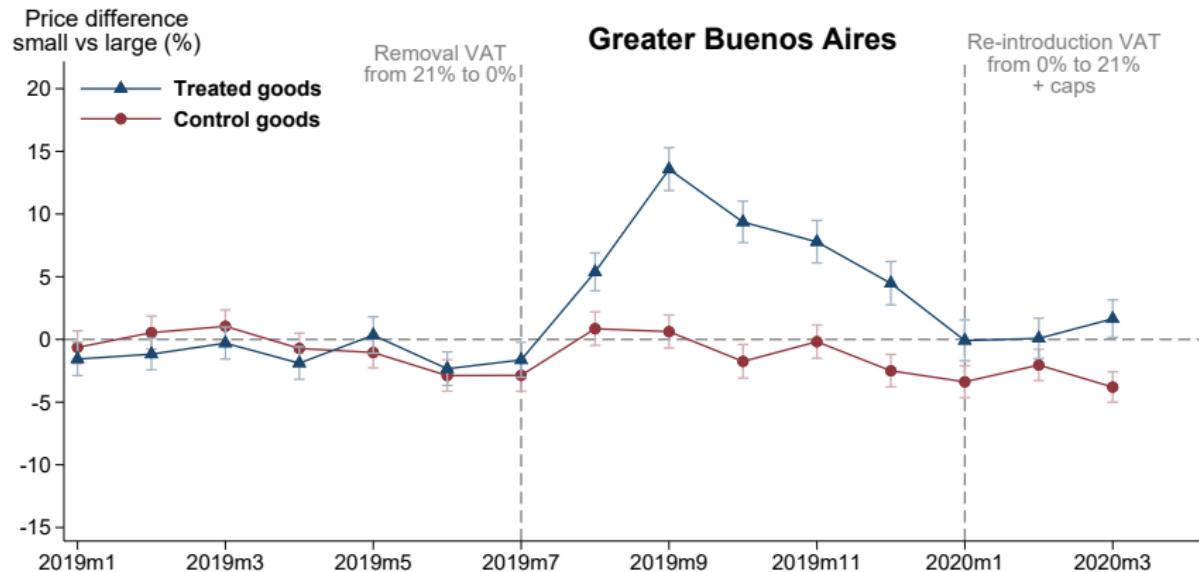


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$i$  : barcodes,  $r$  : 5 regions,  $t$  : month-year,  $s$  : store type

# But largely heterogeneous across the 5 regions

▶ Back

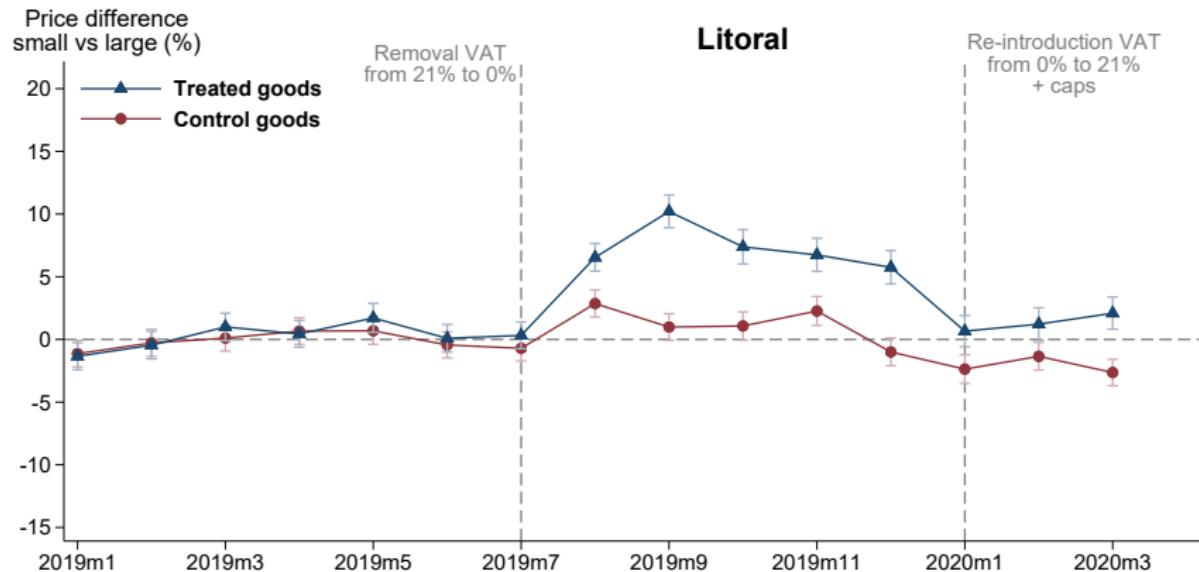


$$\log P_{irst} = \alpha_{irt} + \sum_{t=2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

# But largely heterogeneous across the 5 regions

▶ Back

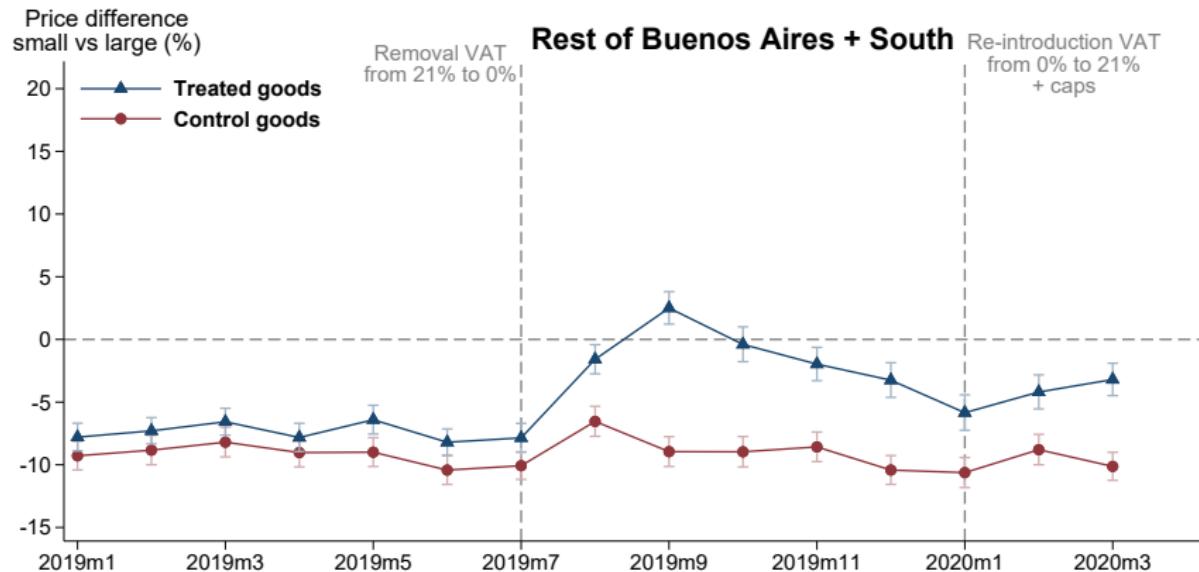


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# But largely heterogeneous across the 5 regions

▶ Back

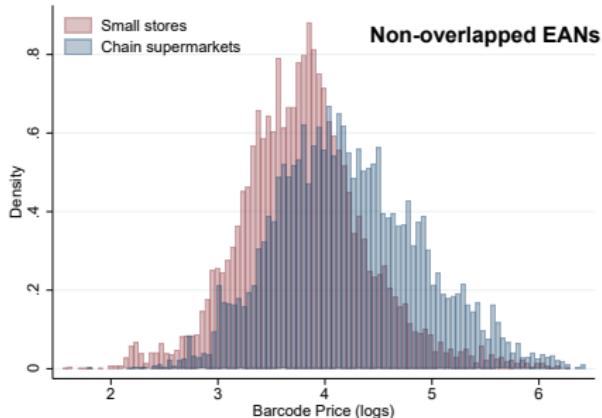
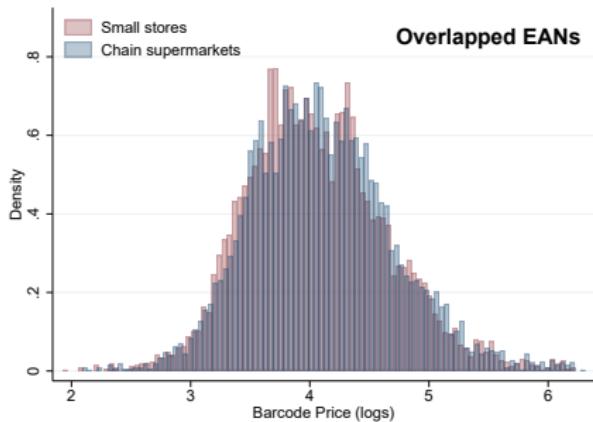


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*i* : barcodes, *r* : 5 regions, *t* : month-year, *s* : store type

# Price density for overlapped and non-overlapped barcodes

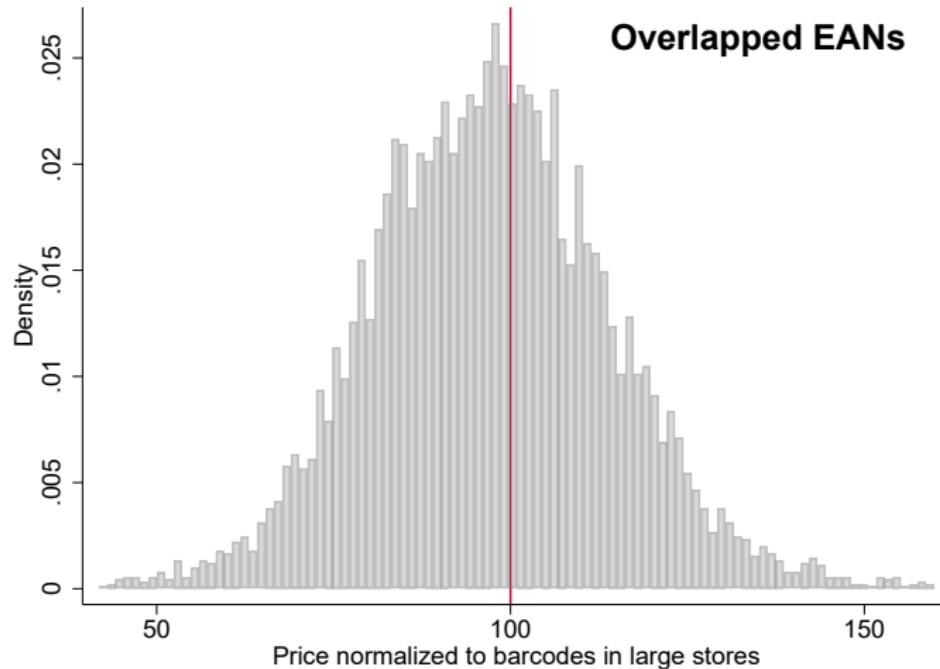
▶ Back



# Price density for overlapped barcodes

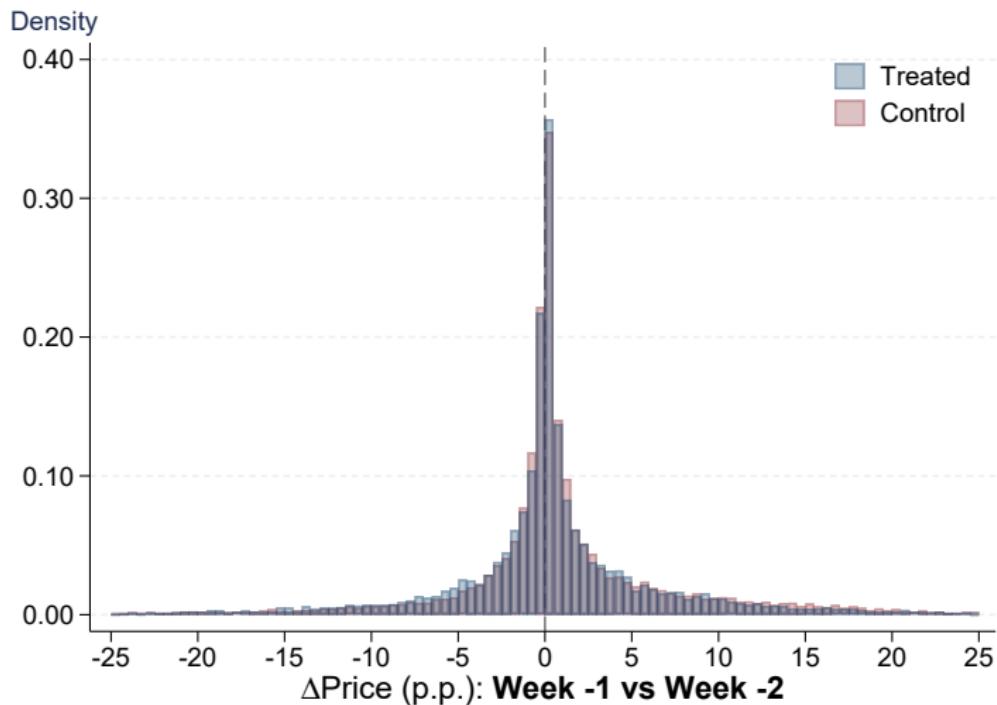
▶ Back

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](#)



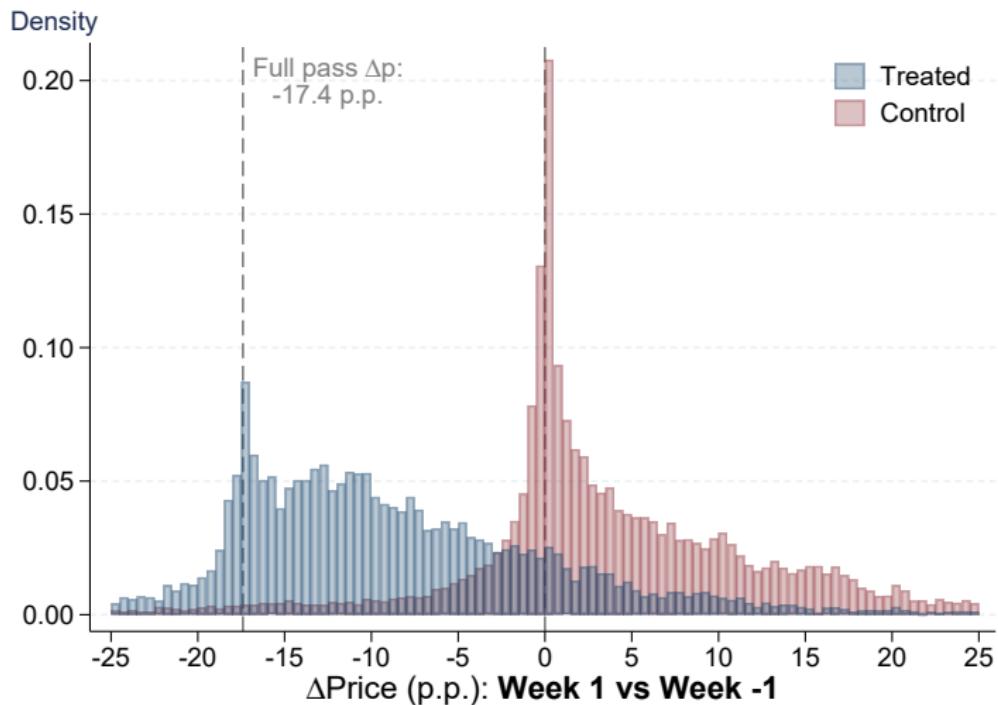
# Distrib of price changes right after VAT removal

Large chains (prices are monitored)

▶ Zoom in

▶ Substitutes

▶ Back



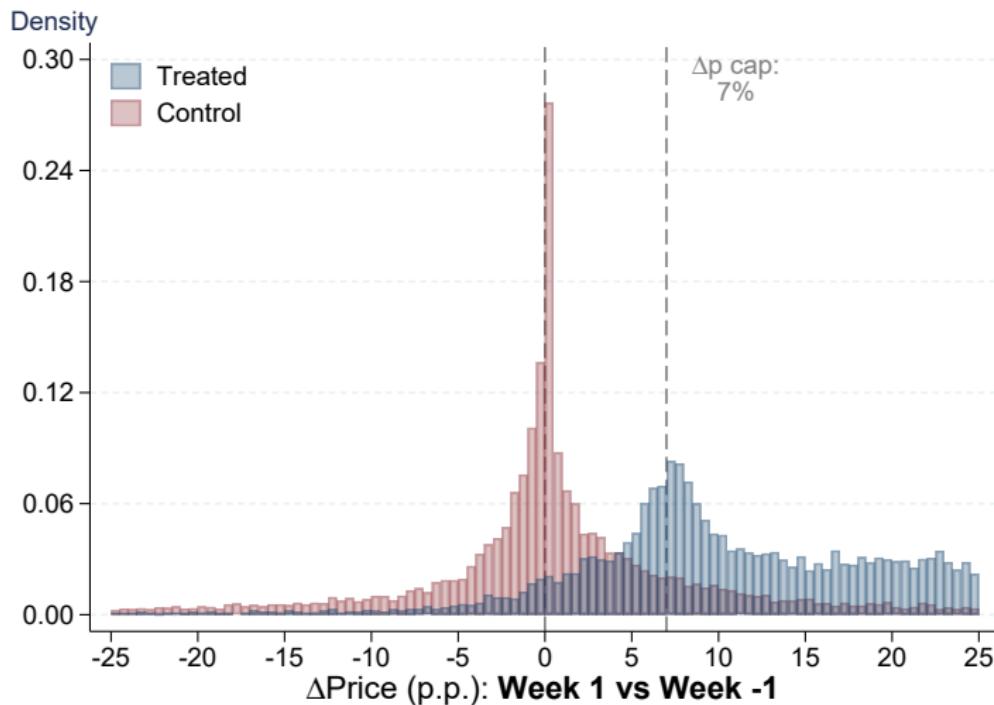
# Distrib of price changes right after VAT reinstated

Large chains (prices are monitored)

► Zoom in

► Cap section

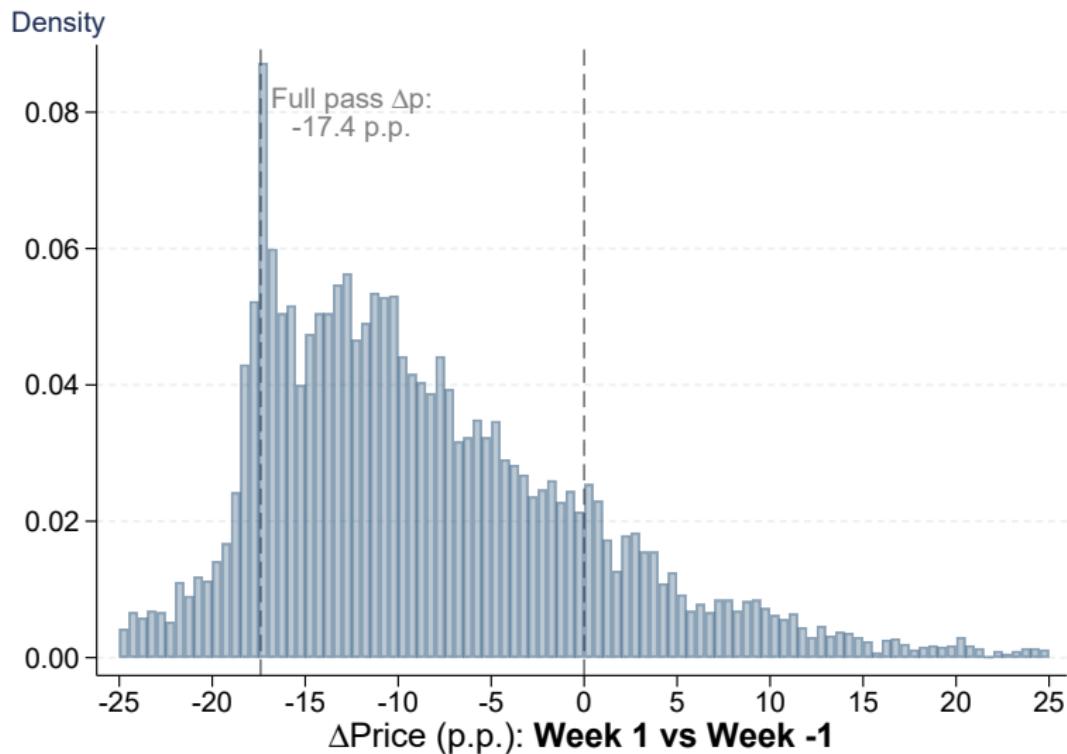
► Back



# Distrib of price changes right after VAT removal

▶ Back

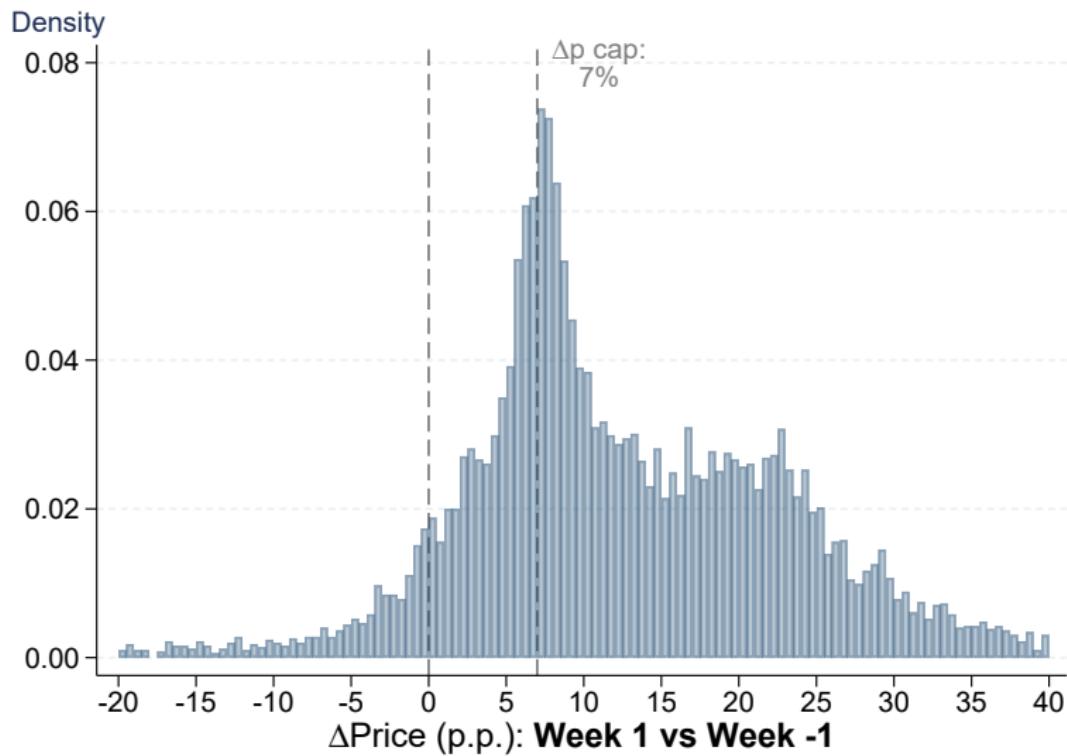
Large chains (treated goods)



# Distrib of price changes: VAT reinstated

[Back](#)

Large chains

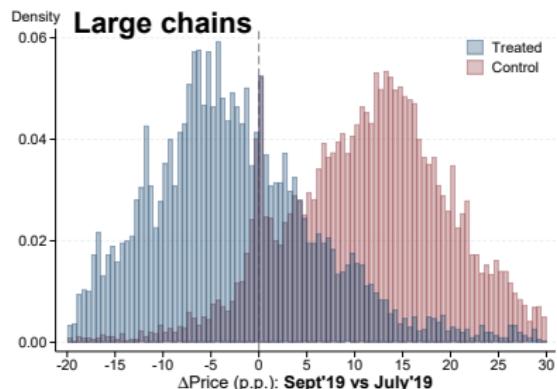
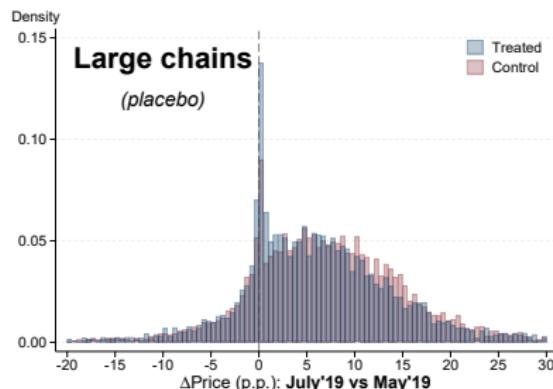
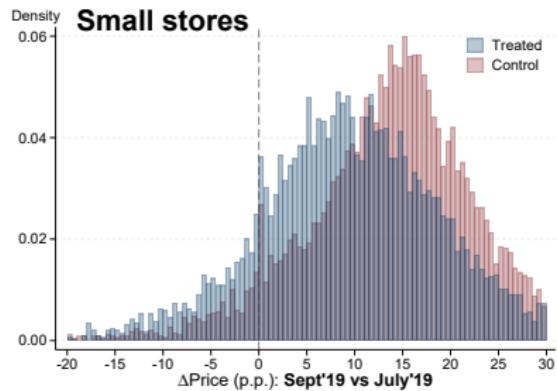
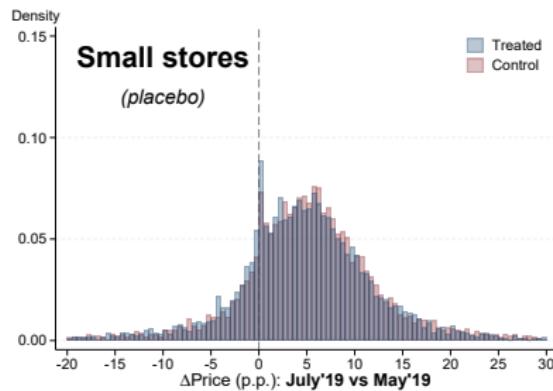


# Distrib of price changes after VAT removal

Small stores vs Large chains

► Overlap T & C

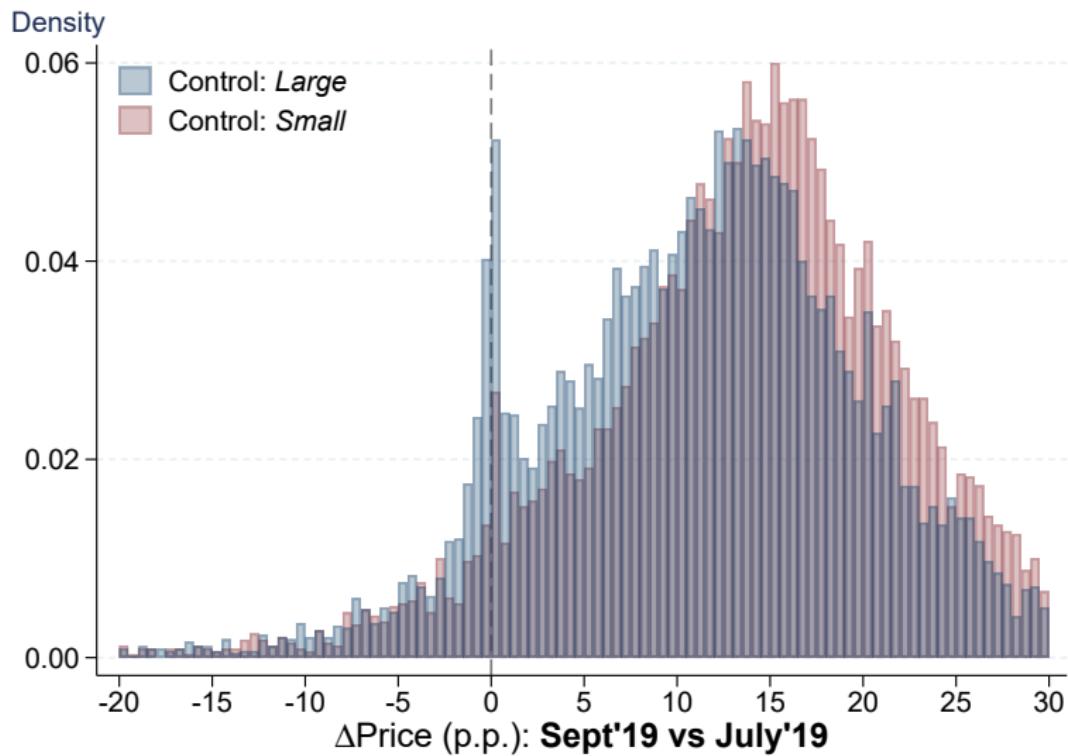
► Back



# Distrib of price changes: VAT removal

▶ Back

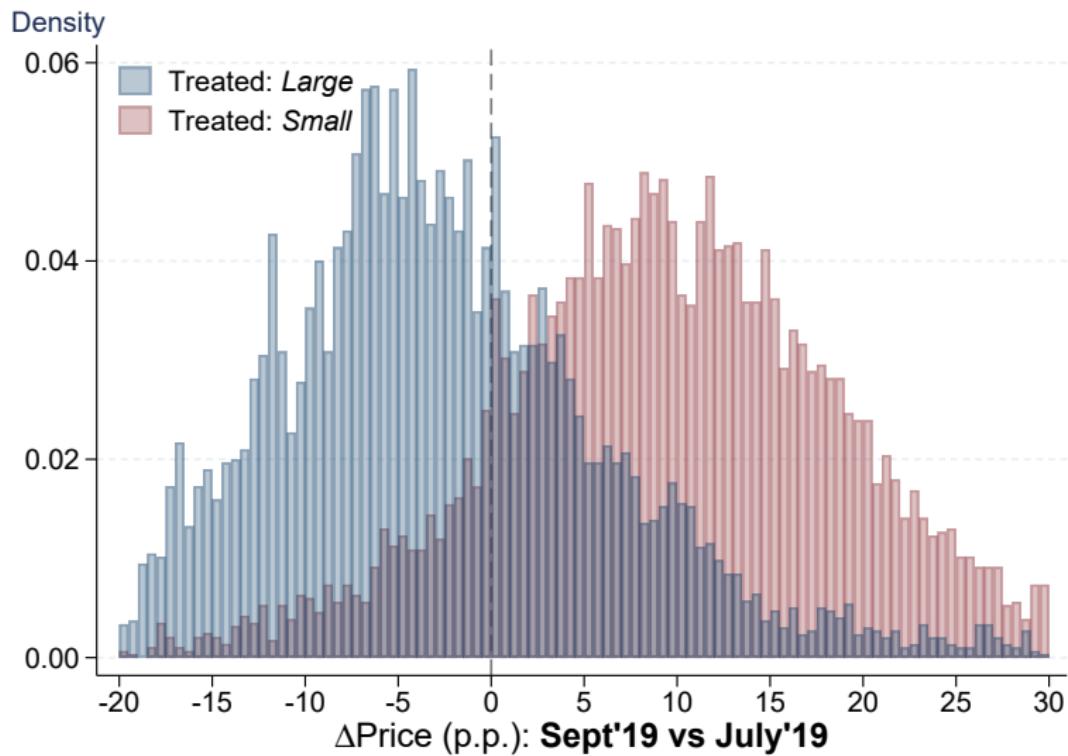
Small stores vs Large chains



# Distrib of price changes: VAT removal

▶ Back

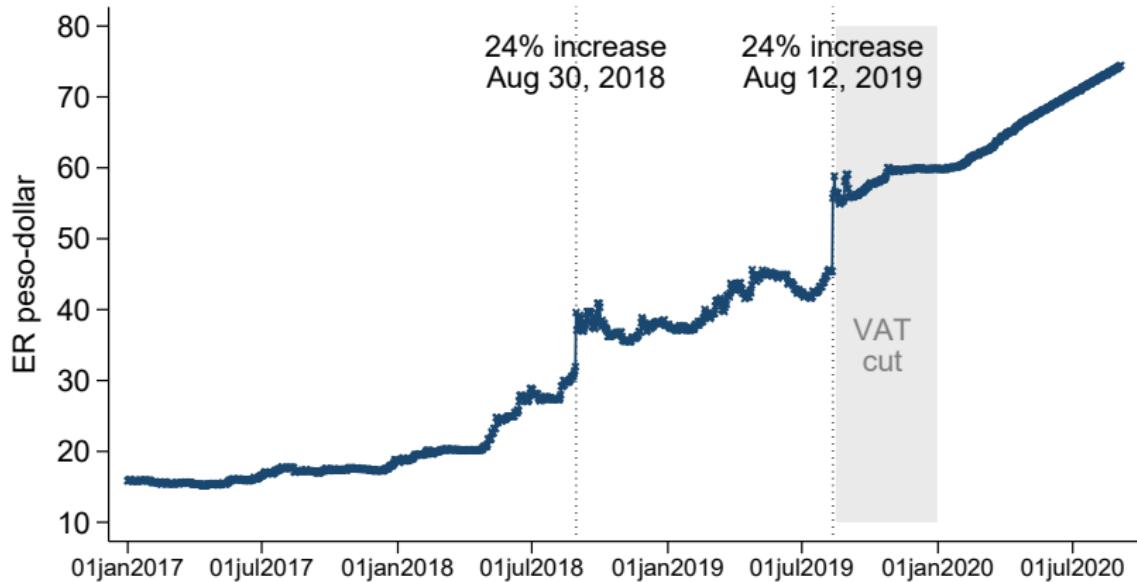
Small stores vs Large chains



# Pass-through of the 2018 peso depreciation

▶ Back

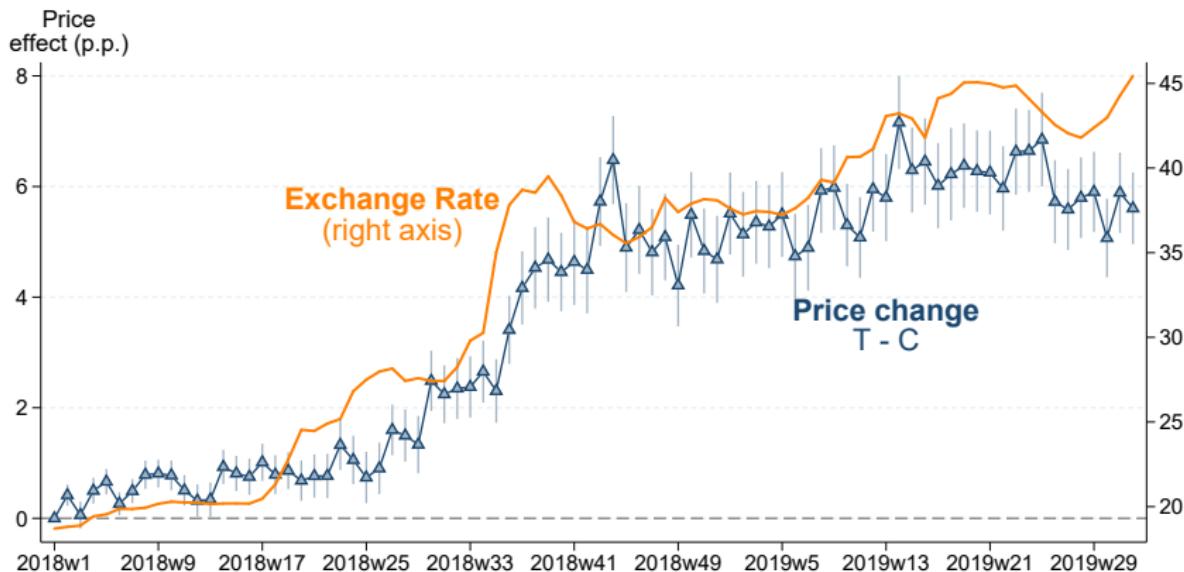
## Exchange Rate (pesos per dollar)



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

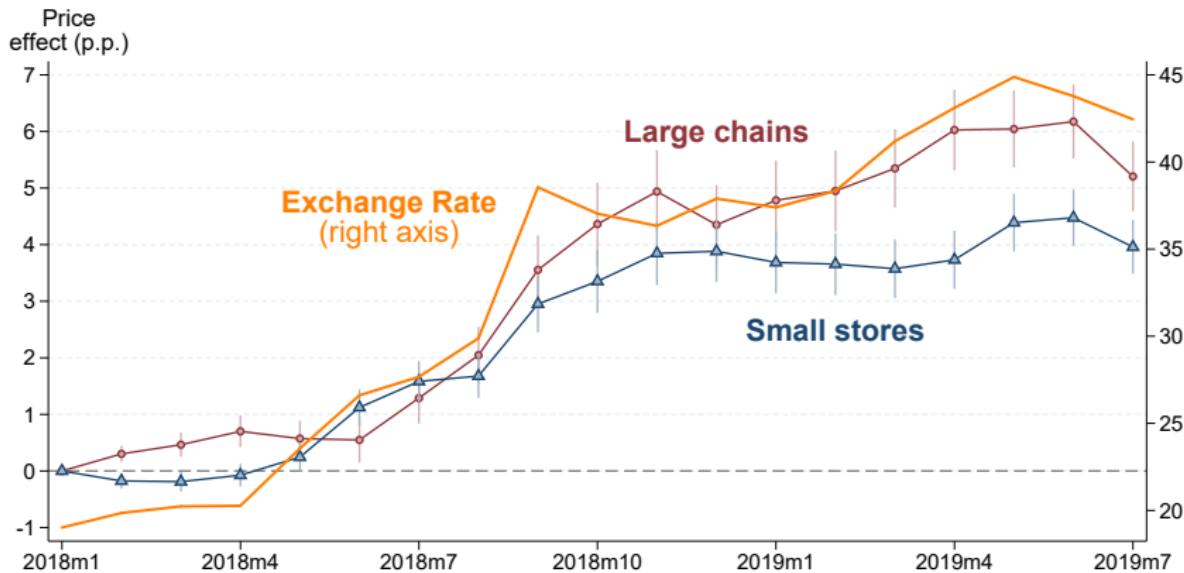
# Are goods in **T** and **C** similarly affected by the 2018 peso depreciation?

▶ Back

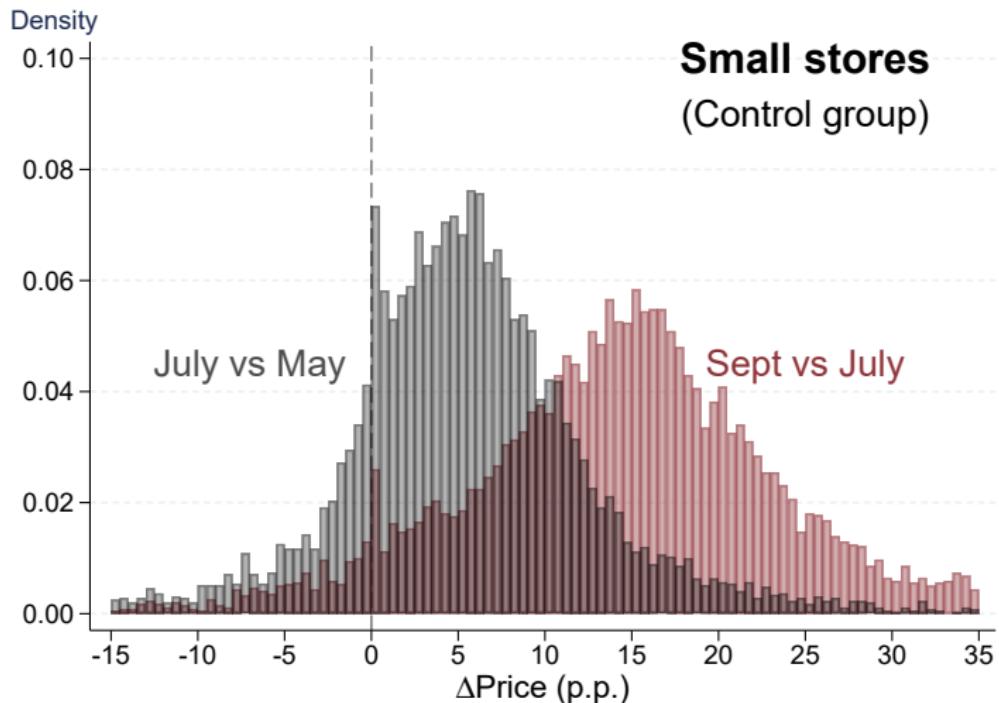


# Do large and small stores respond *differently* to a large economic shock with no govt mandate?

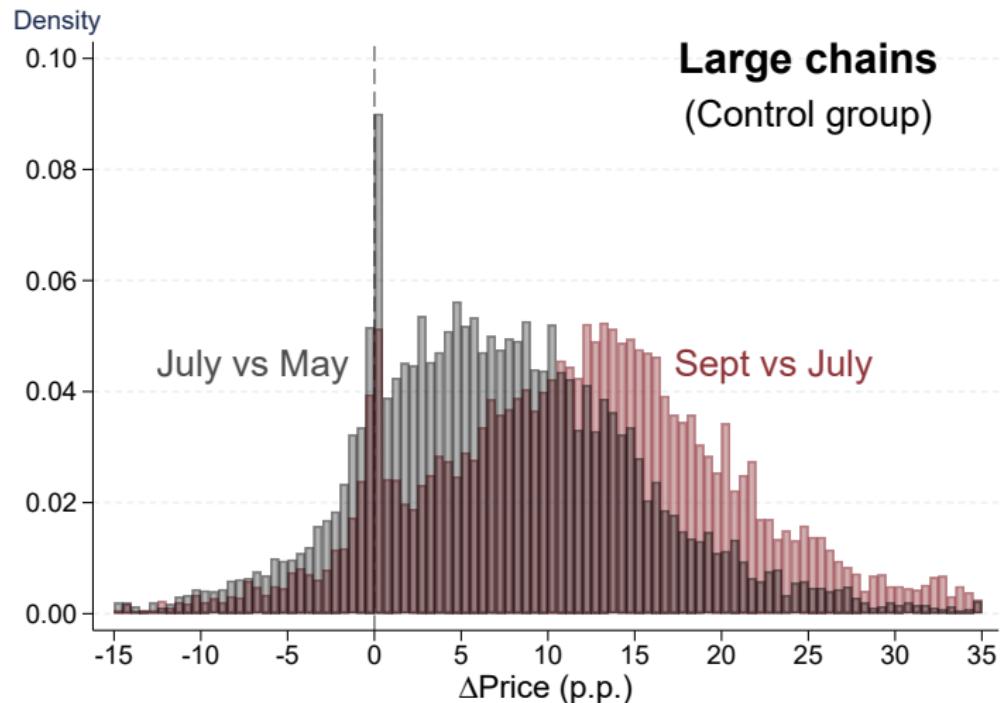
▶ Back



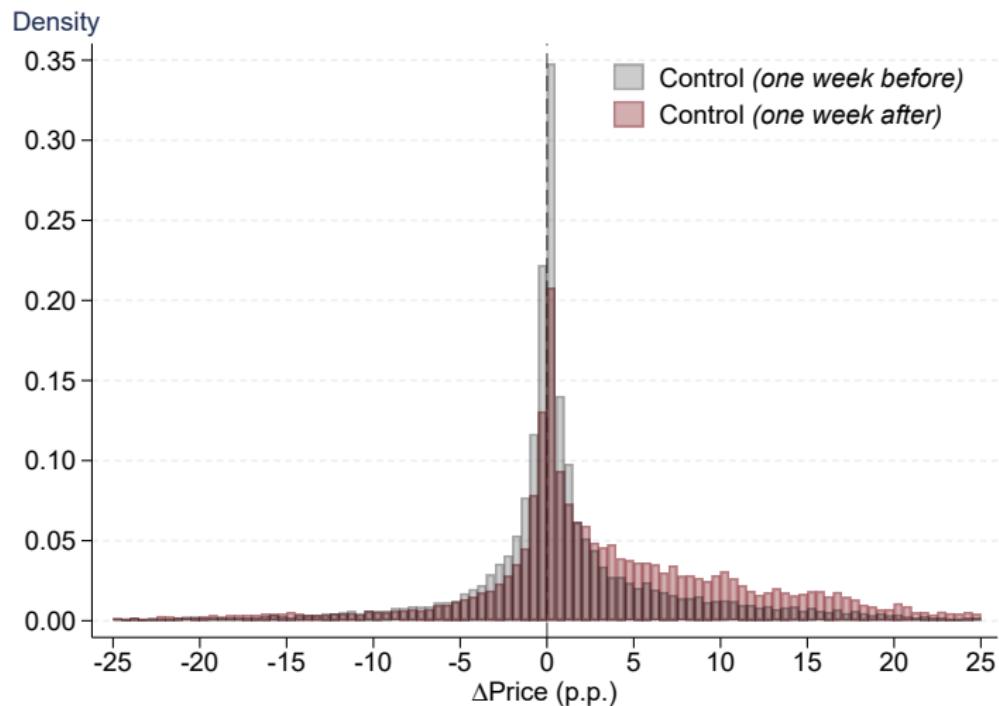
Pass-through of a 24% currency devaluation (no mandate)  
is similar in small and large supermarkets



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)

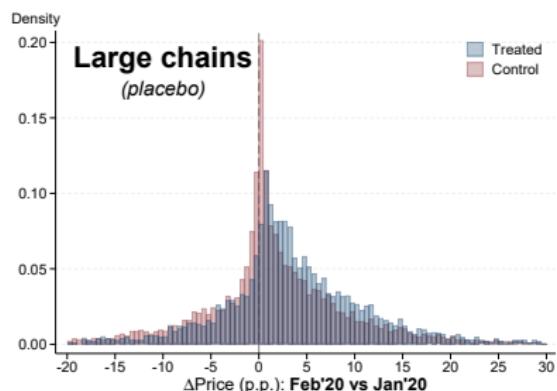
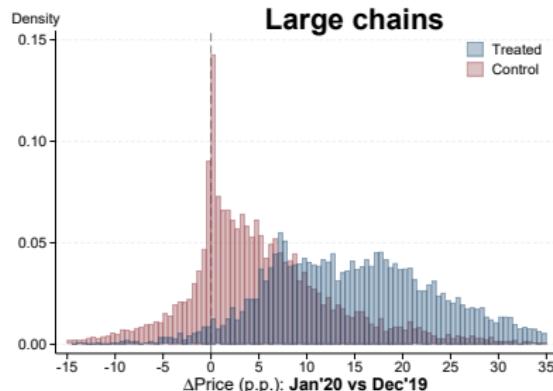
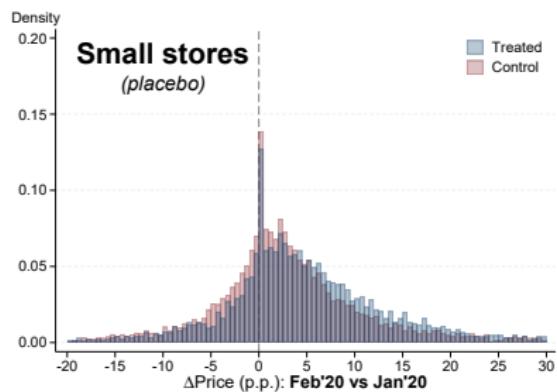
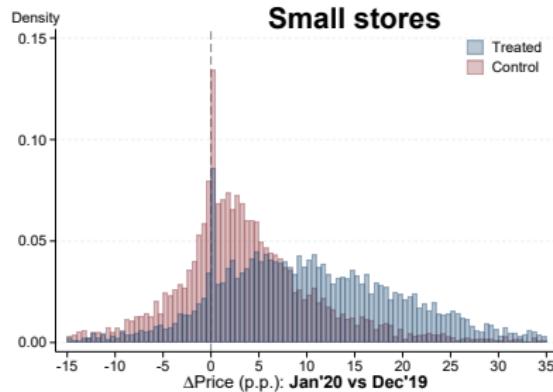


# Distrib of price changes after VAT re-introduction

Small stores vs Large chains

► Overlap T & C

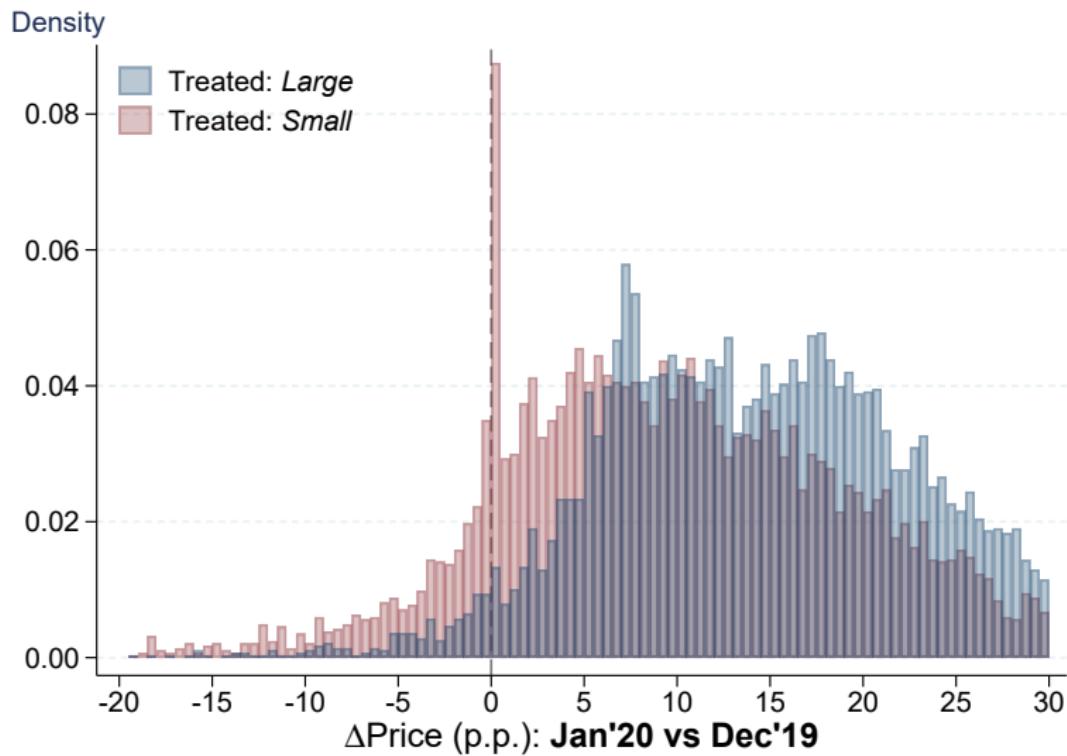
► Back



# Distrib of price changes after VAT re-intro

▶ Back

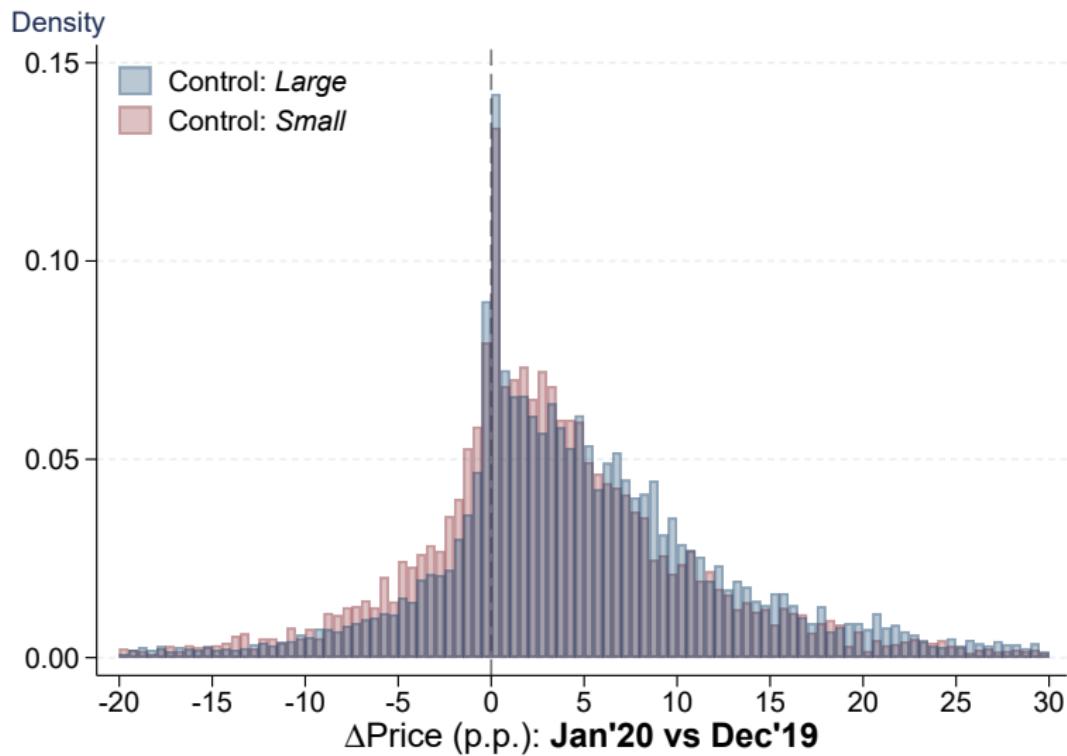
Small stores vs Large chains



# Distrib of price changes after VAT re-intro

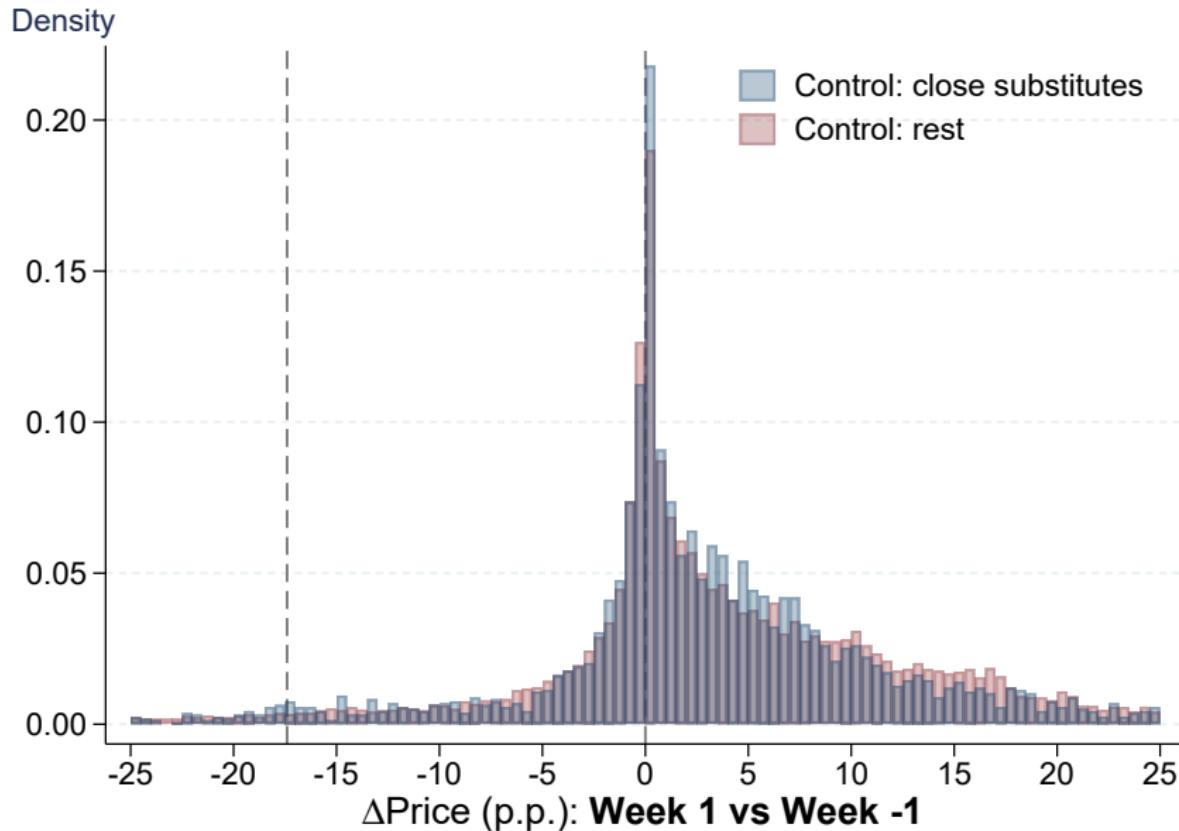
[Back](#)

Small stores vs Large chains



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

▶ Back

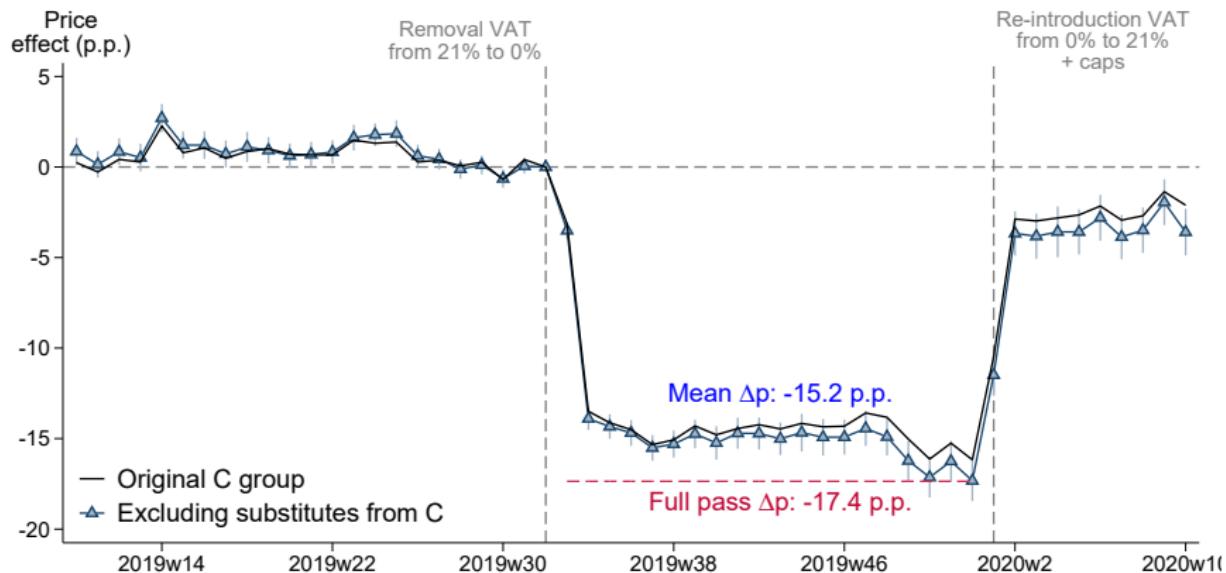


# Does substitution across T and C bias our price effects?

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

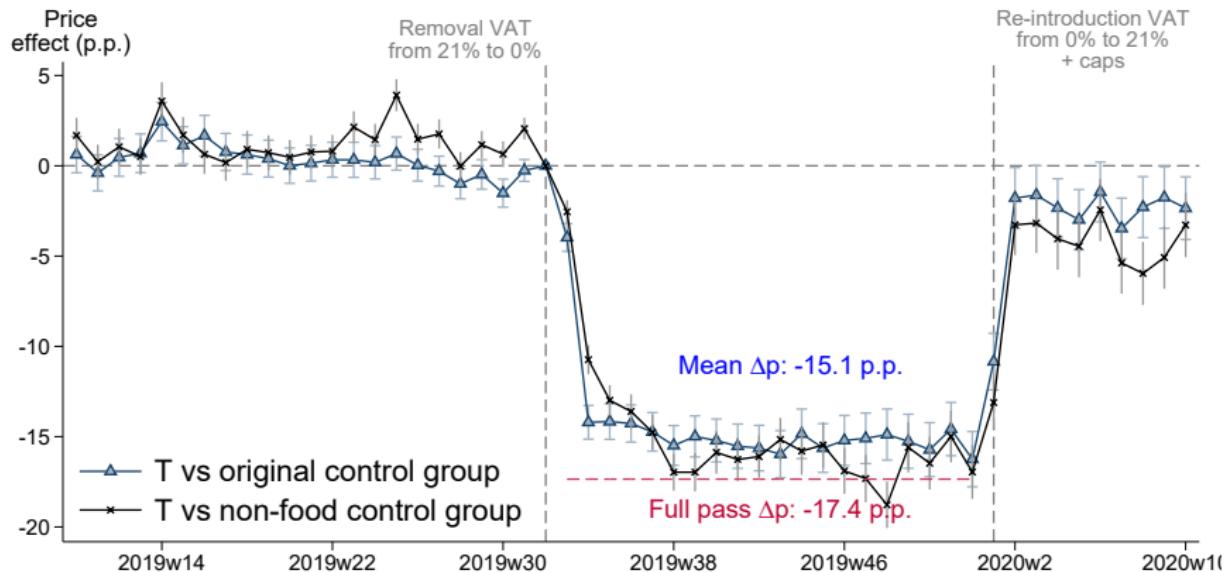


# Does substitution across T and C bias our price effects?

The results barely change when:

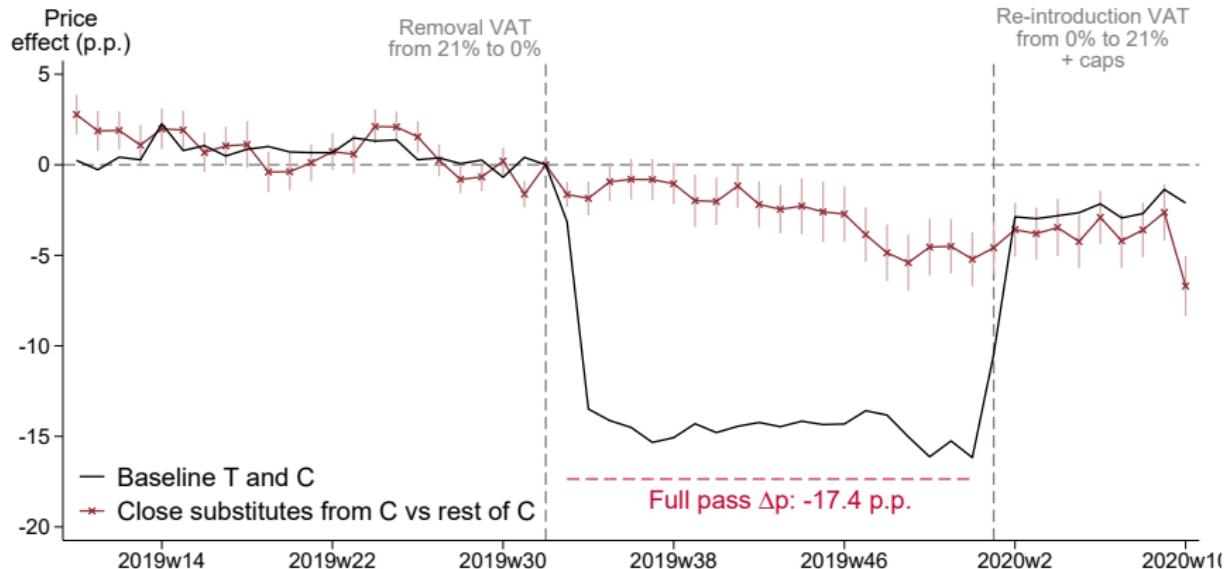
▶ Back

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



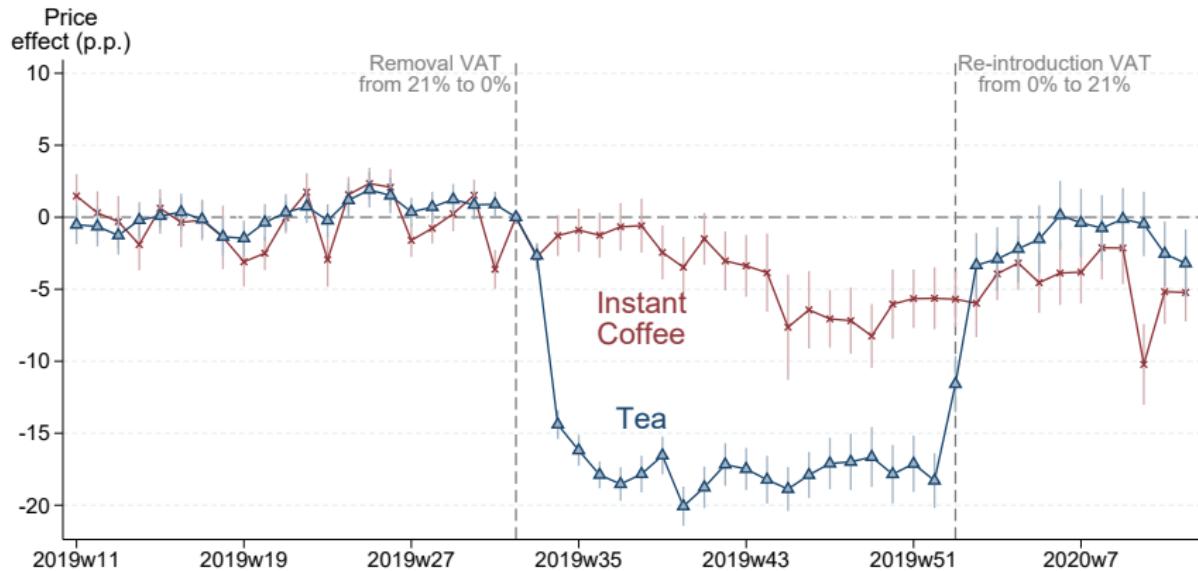
# DiD of close substitutes in C vs rest of C

▶ Back



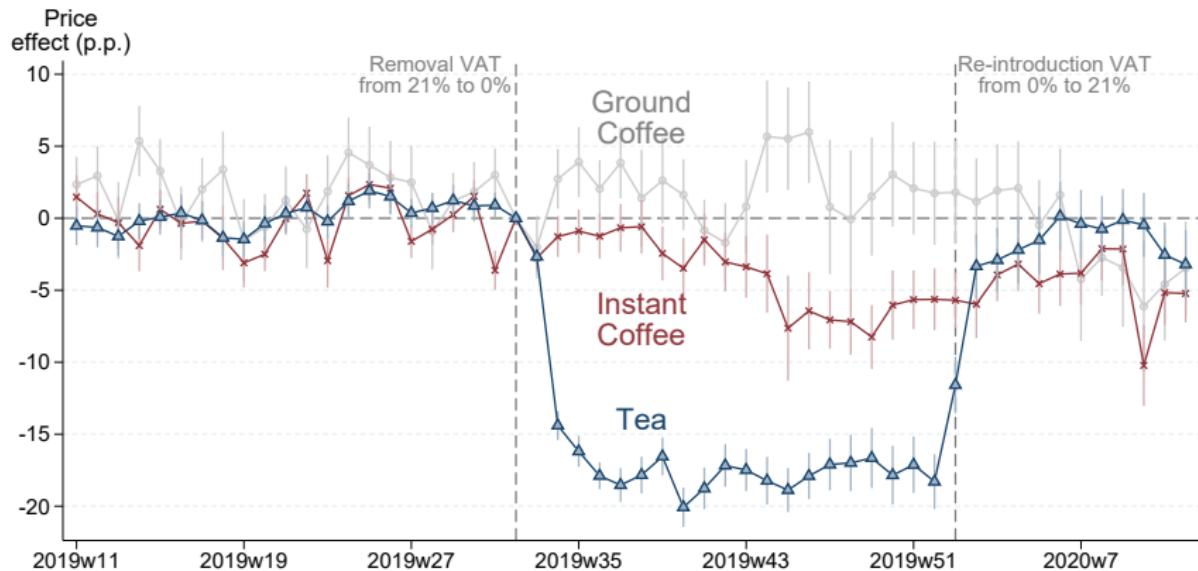
# T vs Close substitutes in C (case studies)

▶ Back



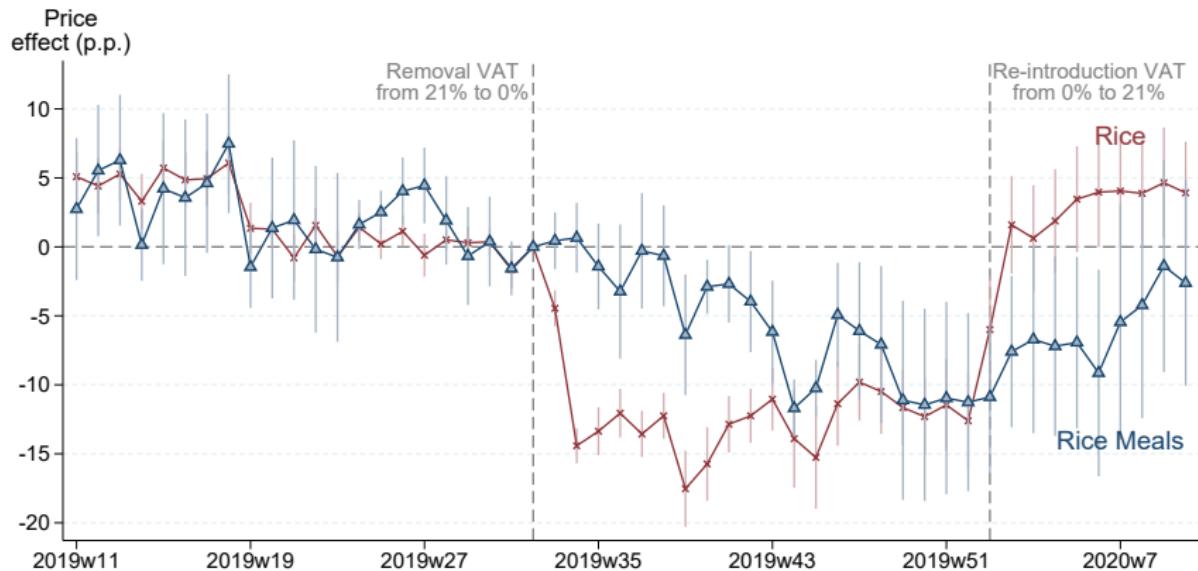
# T vs Close substitutes in C (case studies)

▶ Back



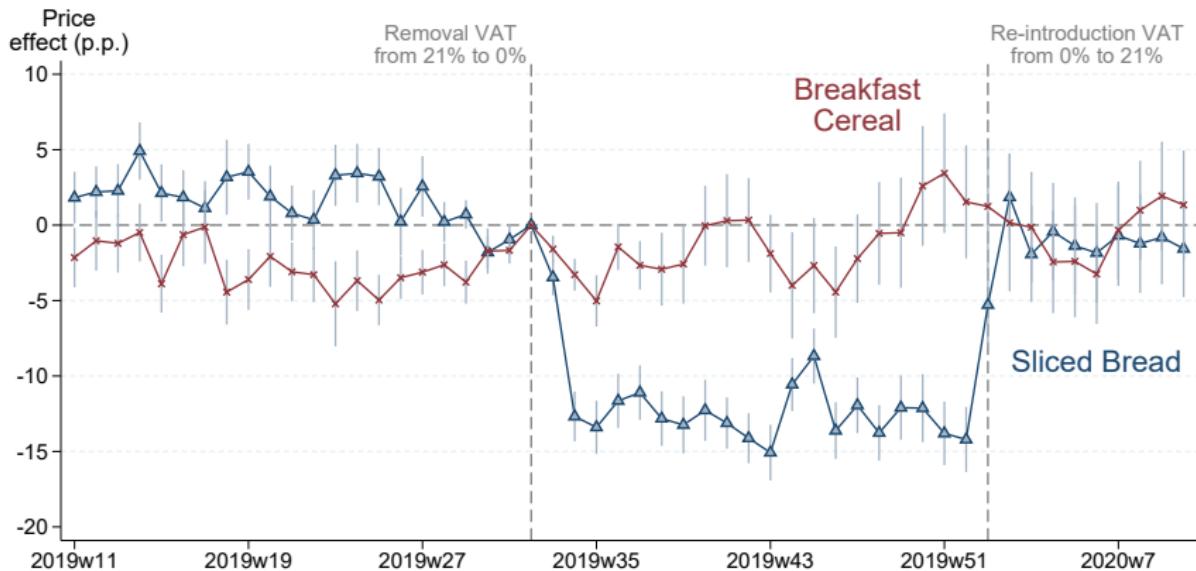
# T vs Close substitutes in C (case studies)

▶ Back



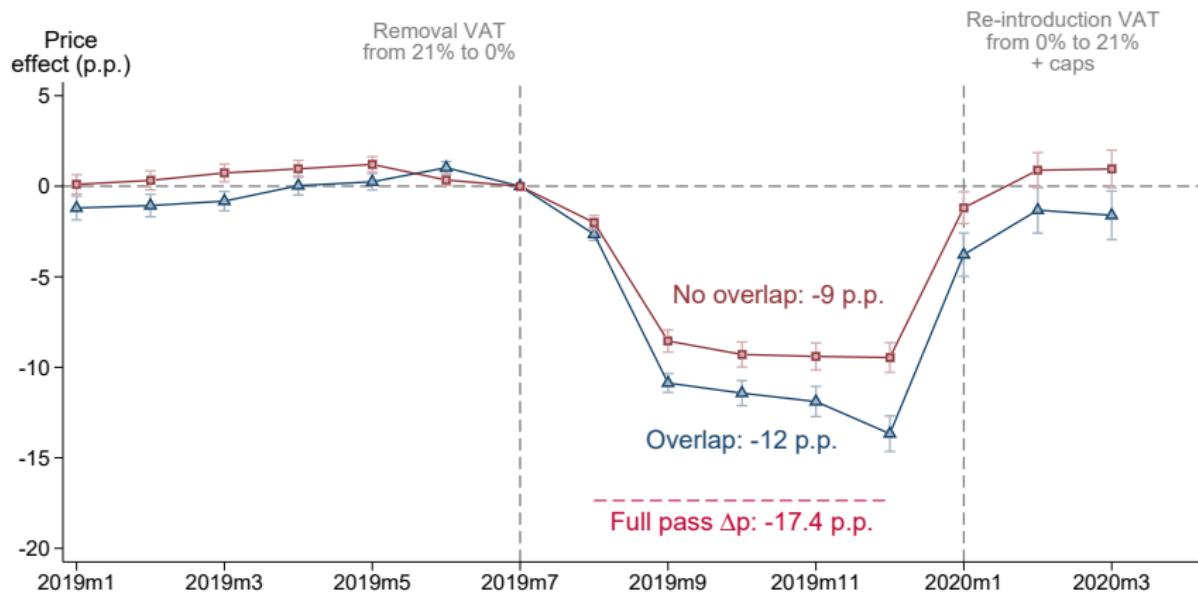
# T vs Close substitutes in C (case studies)

▶ Back



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

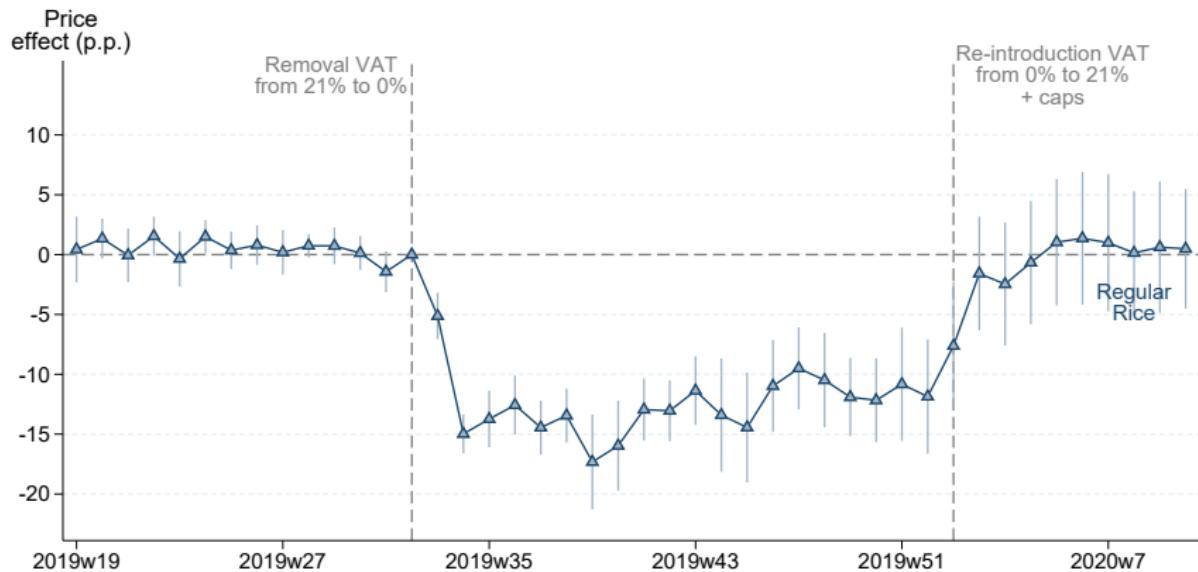
▶ Back



# Capped VAT increase: Rice

Back

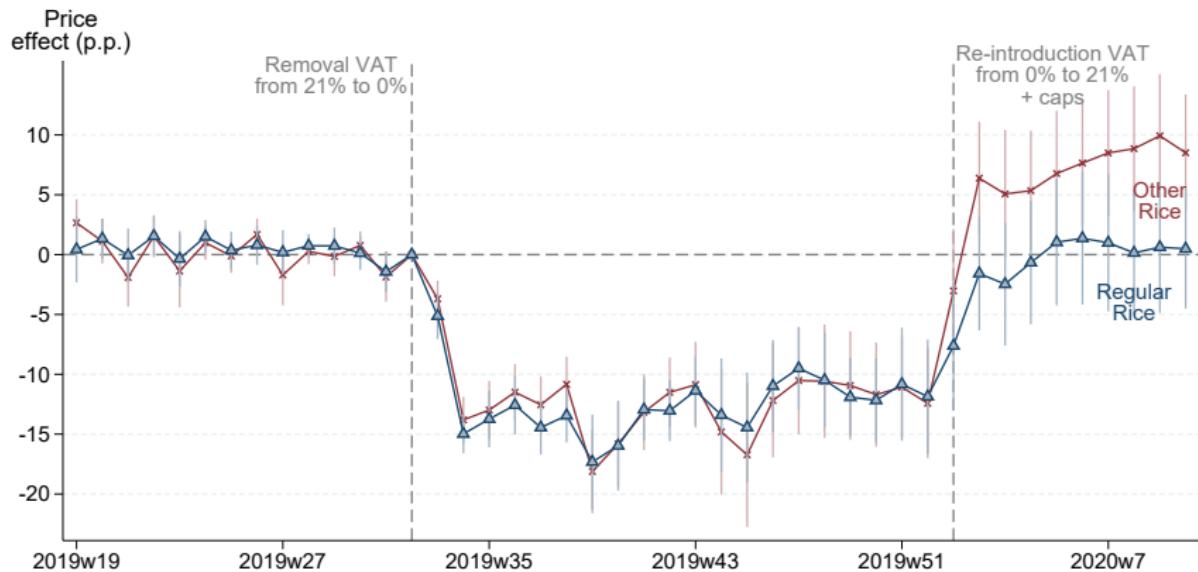
## Regular Rice (7% cap) vs Other Rice (no cap)



# Capped VAT increase: Rice

Back

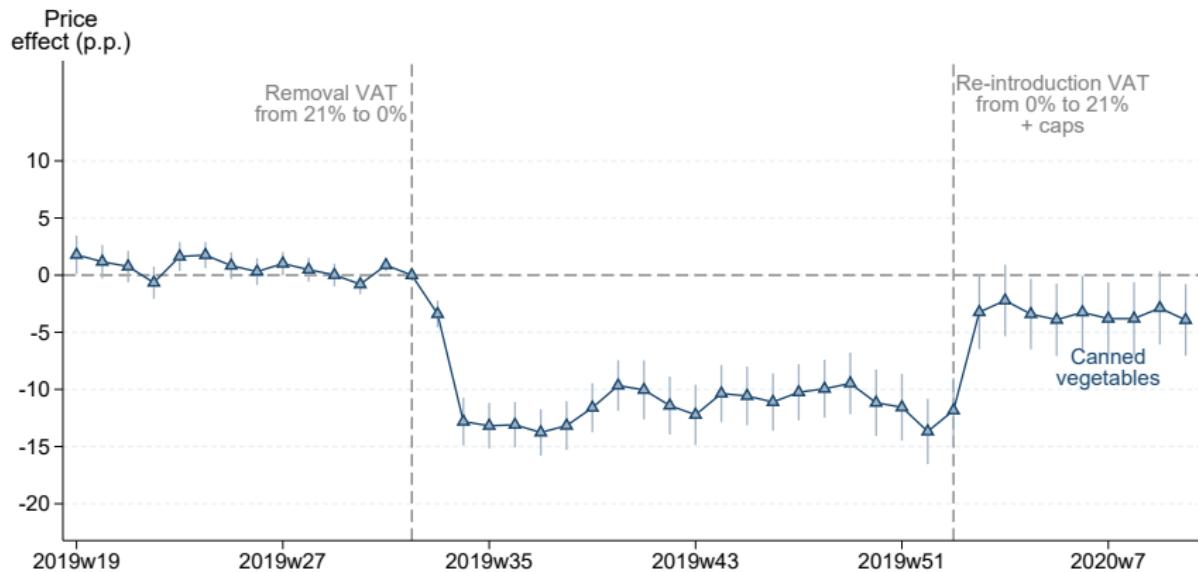
## Regular Rice (7% cap) vs Other Rice (no cap)



# Capped VAT increase: Canned food

▶ Back

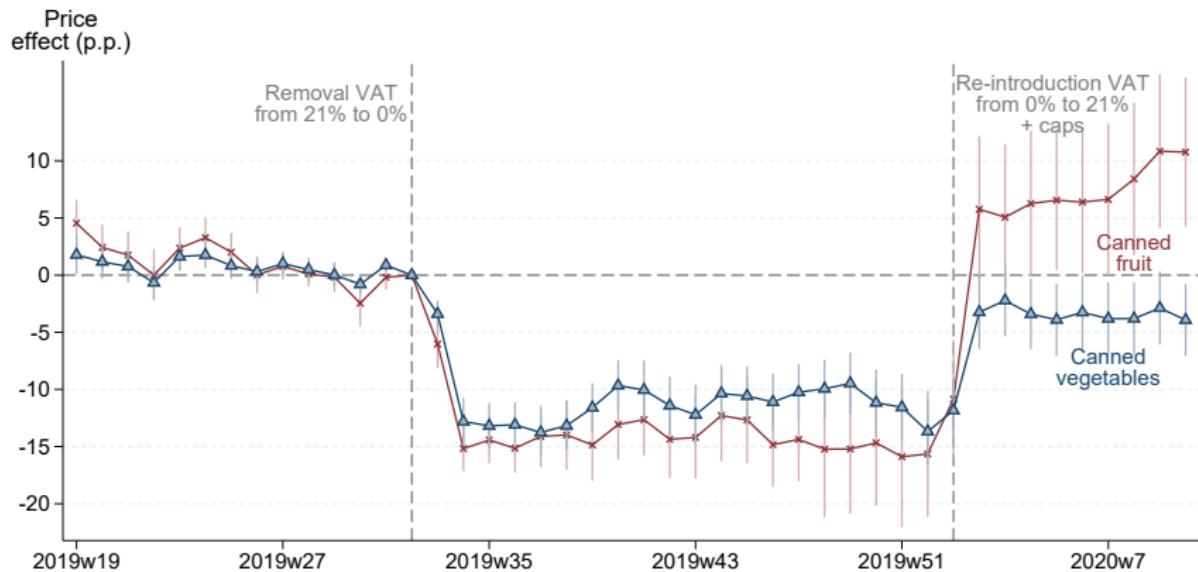
## Canned vegetables (7% cap) vs Canned fruit (no cap)



# Capped VAT increase: Canned food

▶ Back

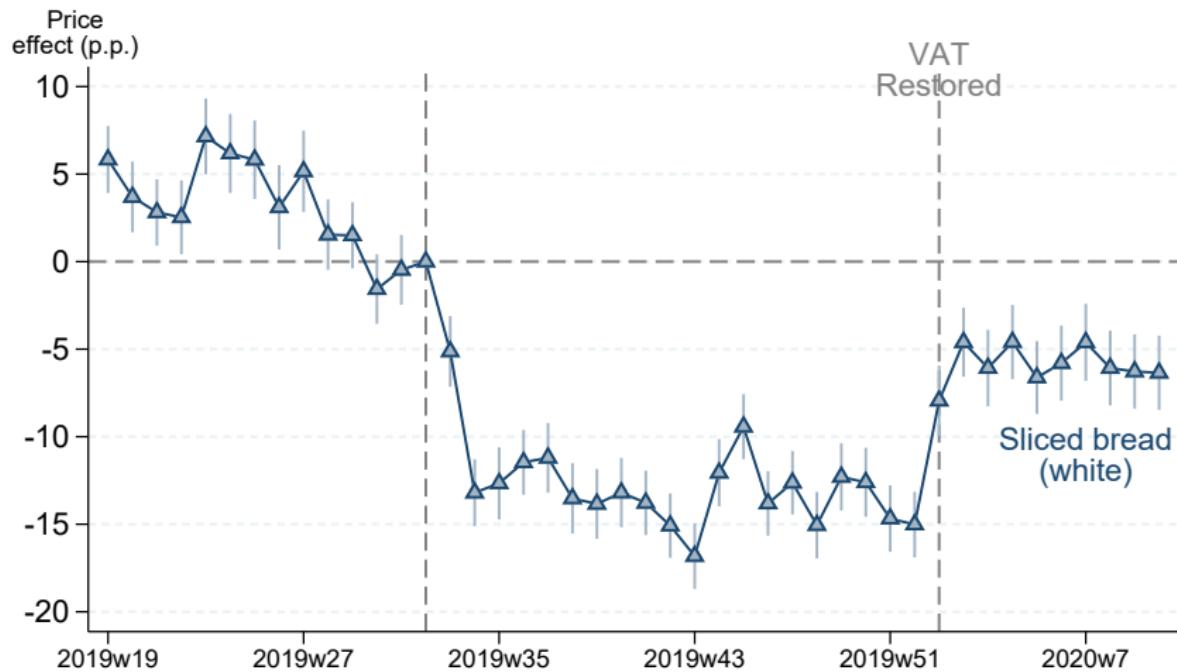
## Canned vegetables (7% cap) vs Canned fruit (no cap)



# Capped VAT increase: Sliced bread

▶ Back

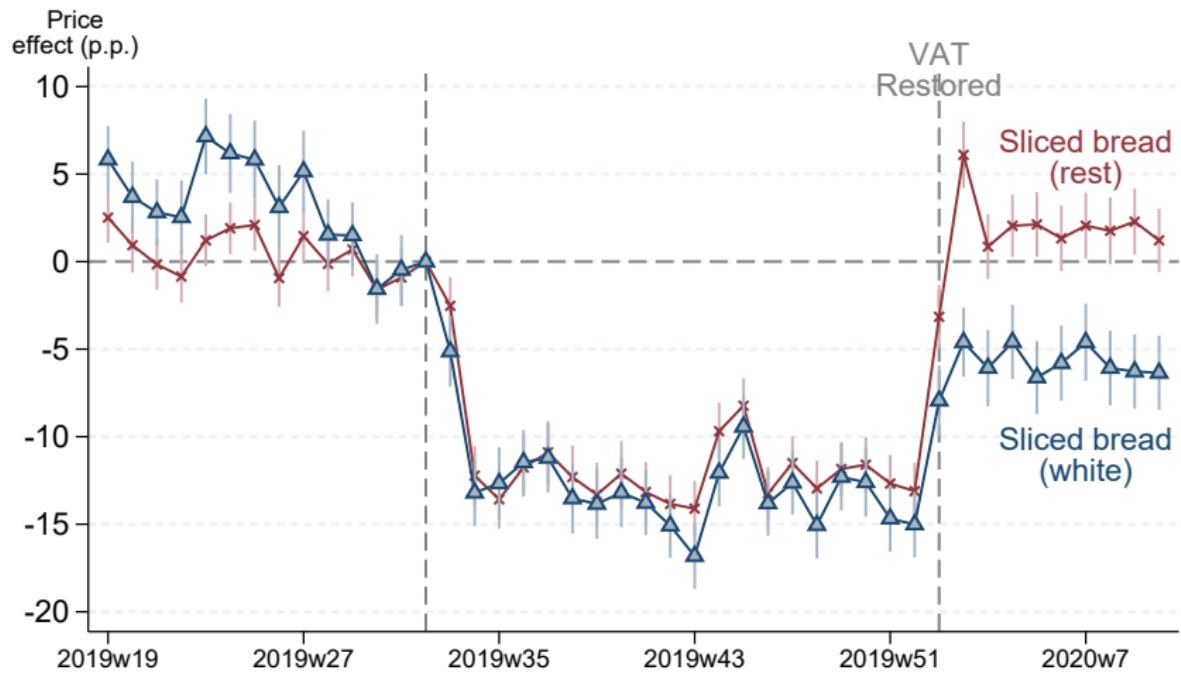
**Slide bread (white) (7% cap) vs Sliced bread (rest) (no cap)**



# Capped VAT increase: Sliced bread

▶ Back

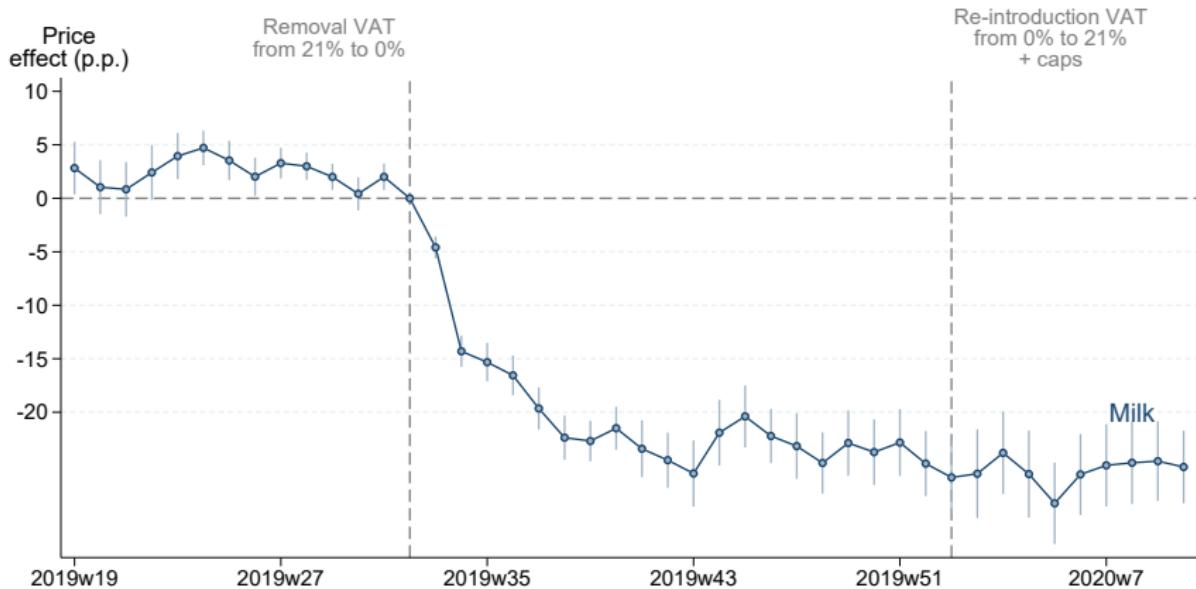
## Slide bread (white) (7% cap) vs Sliced bread (rest) (no cap)



# Capped VAT increase: Milk

▶ Back

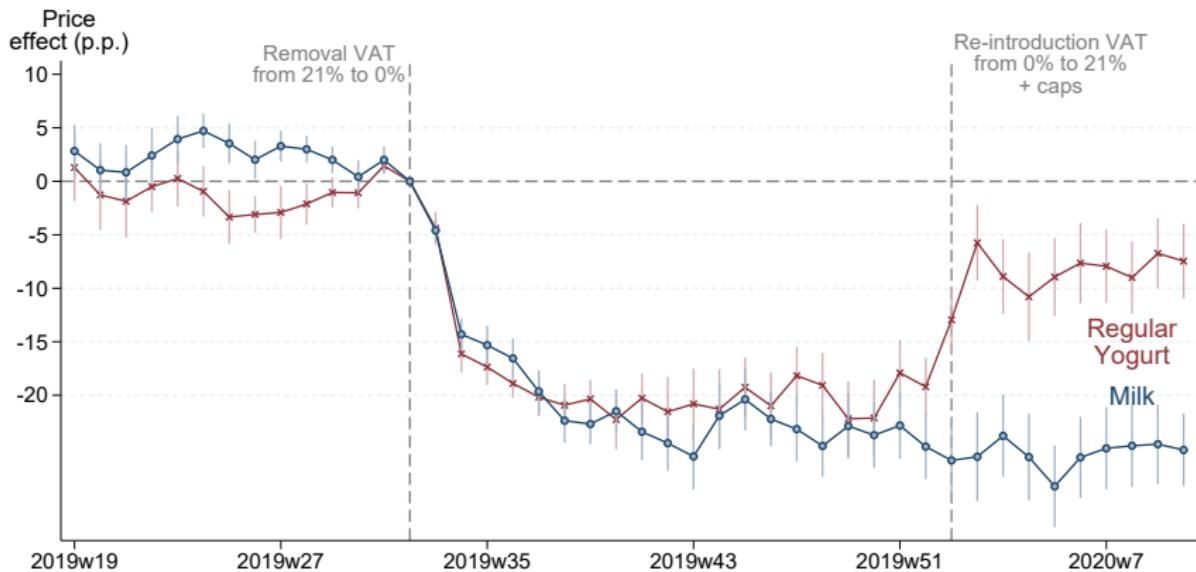
## Milk (0% cap): Full incidence on the supply



# Capped VAT increase: Milk

▶ Back

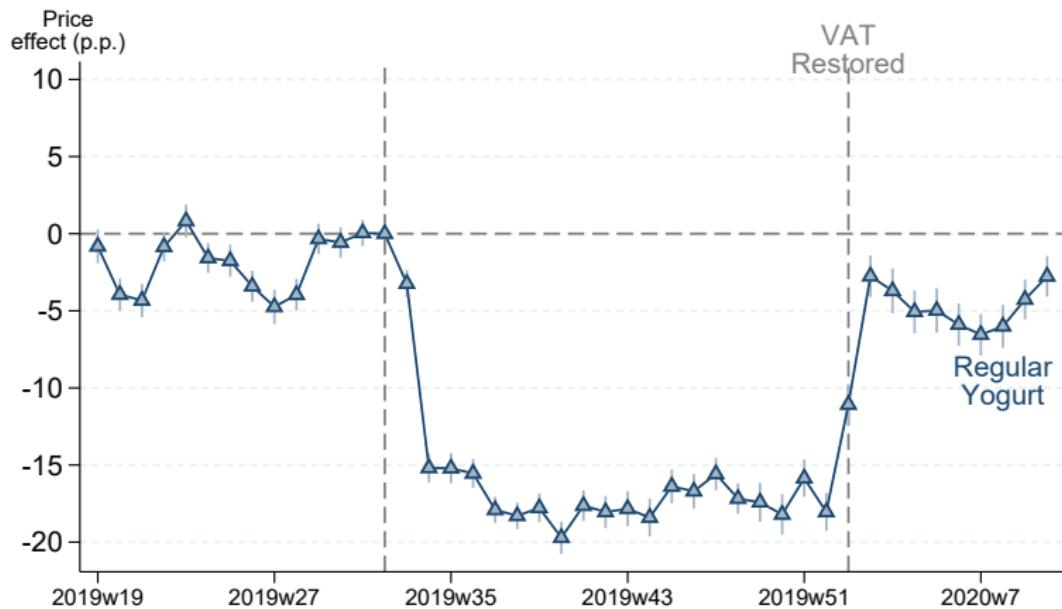
## Milk (0% cap): Full incidence on the supply



# Capped VAT increase

▶ Back

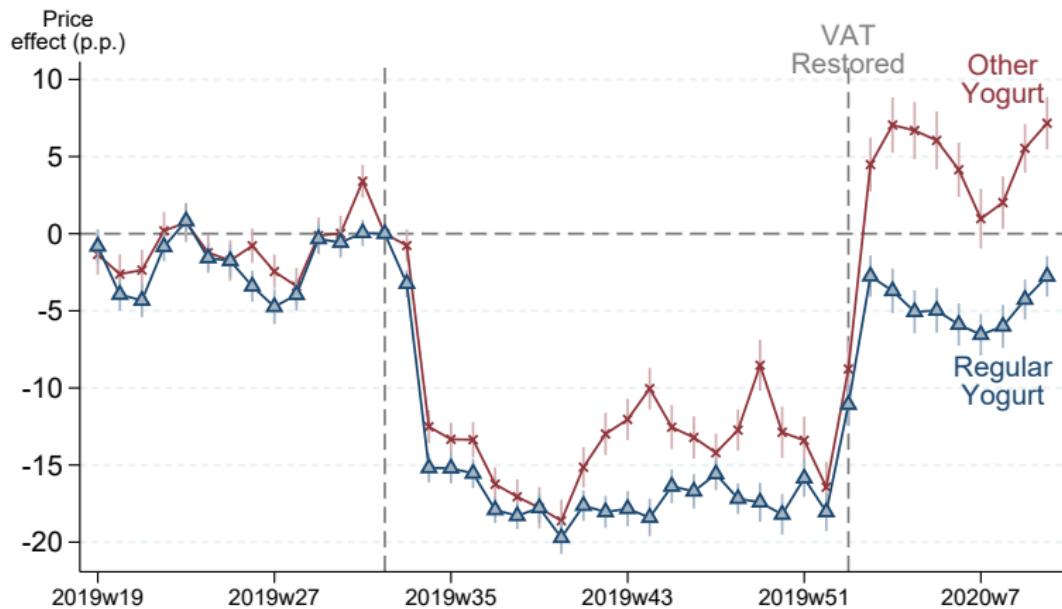
## Regular Yogurt (7% cap) vs Other Yogurt (no cap)



# Capped VAT increase

▶ Back

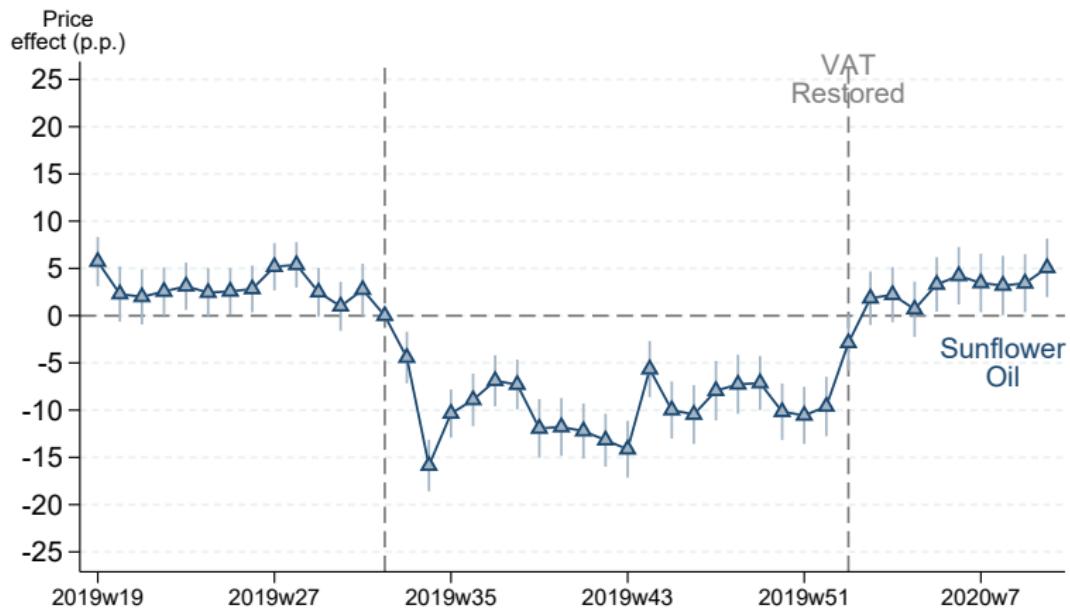
## Regular Yogurt (7% cap) vs Other Yogurt (no cap)



# Capped VAT increase

▶ Back

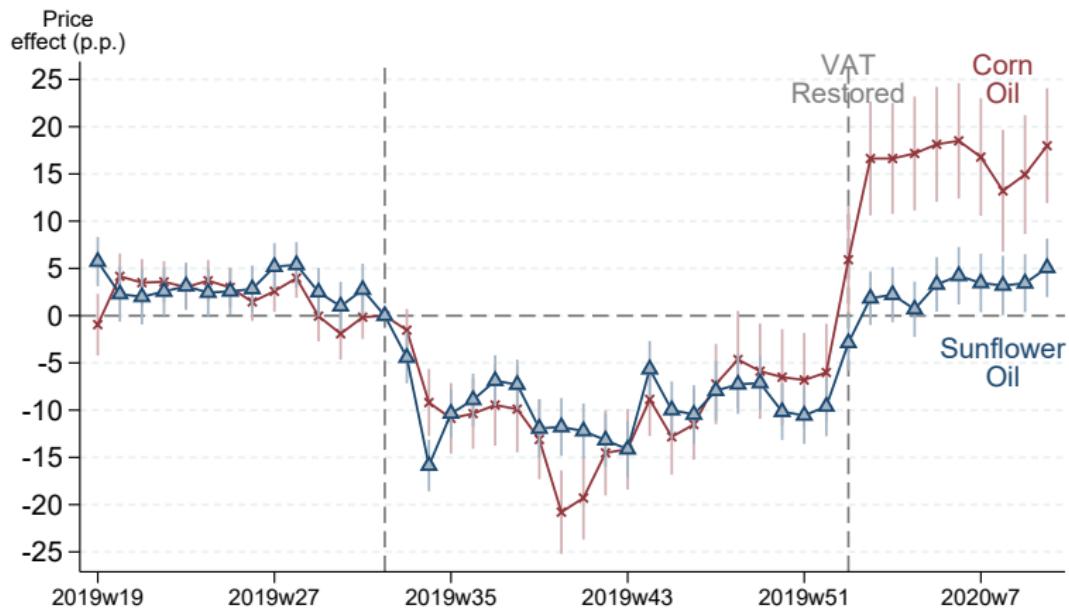
## Sunflower Oil (9% cap) vs Corn Oil (no cap)



# Capped VAT increase

▶ Back

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



# Pass-through under nominal price controls

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

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

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

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

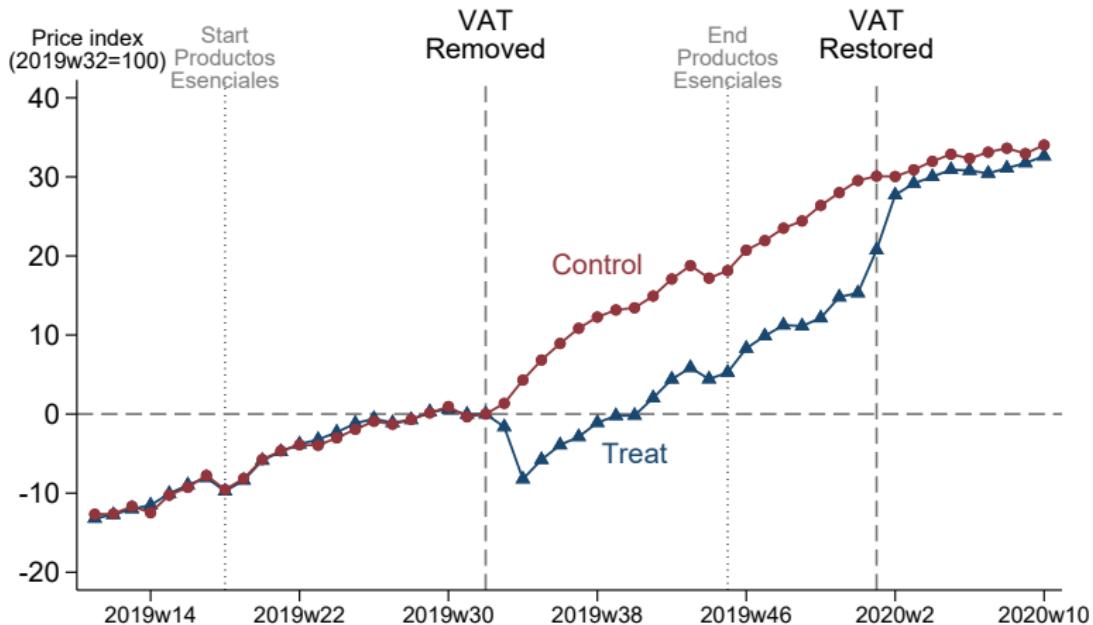
- Treated: 38 EANs (N=34,795)
- Control: 10 EANs (N=11,863); 16 missing (no data)

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

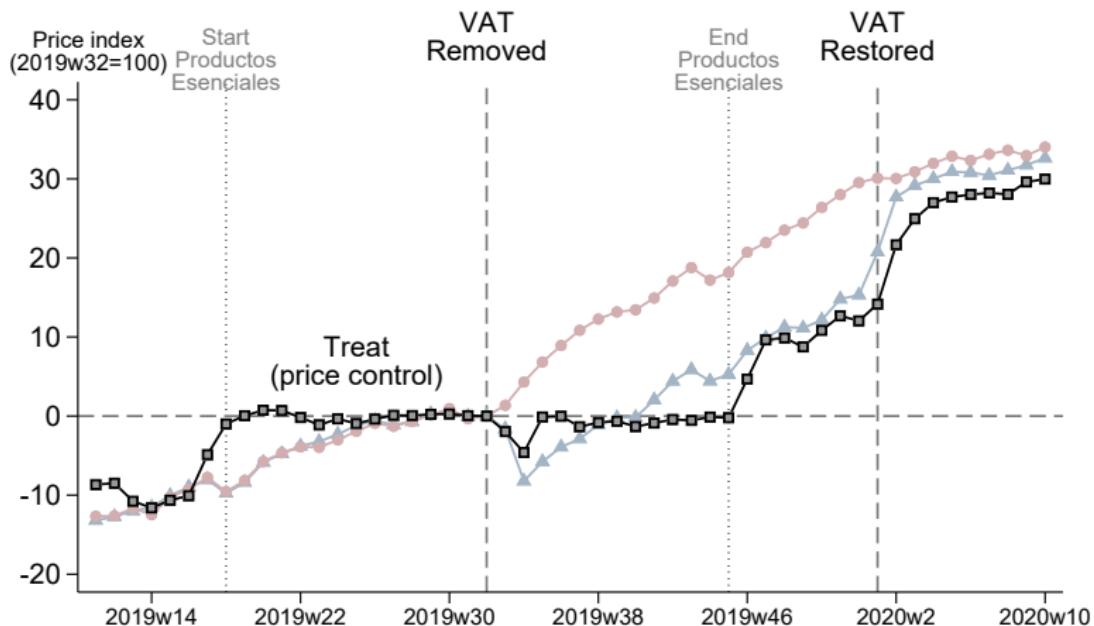
# Price Controls: mandatory tags, banners, and App



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

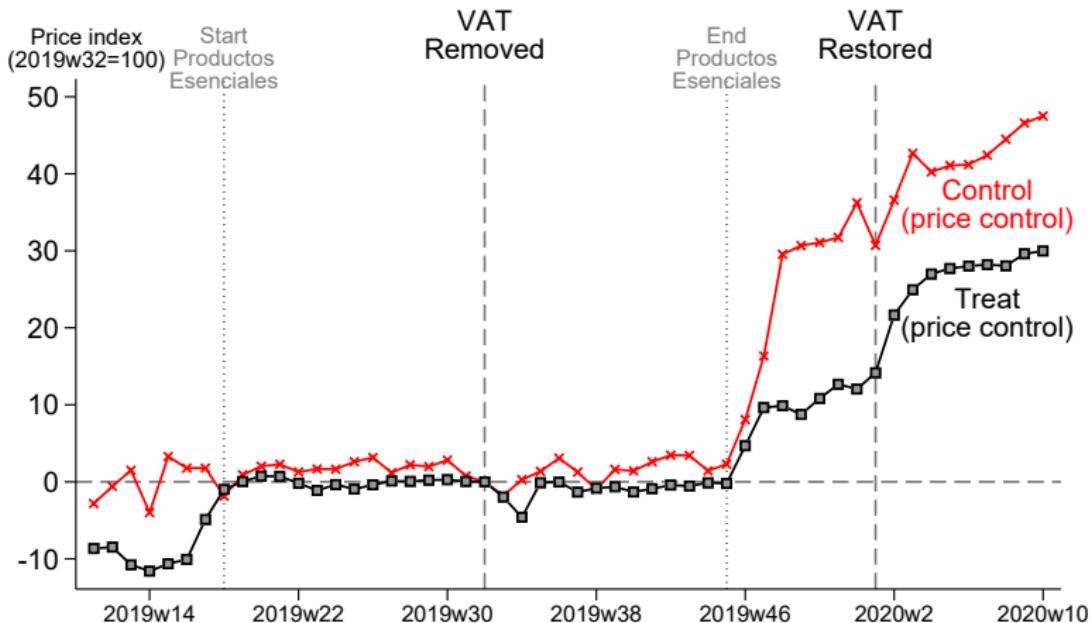


# [1] Productos Esenciales (in T) vs Rest (T and C)



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

► DiD



## Monitoring App:

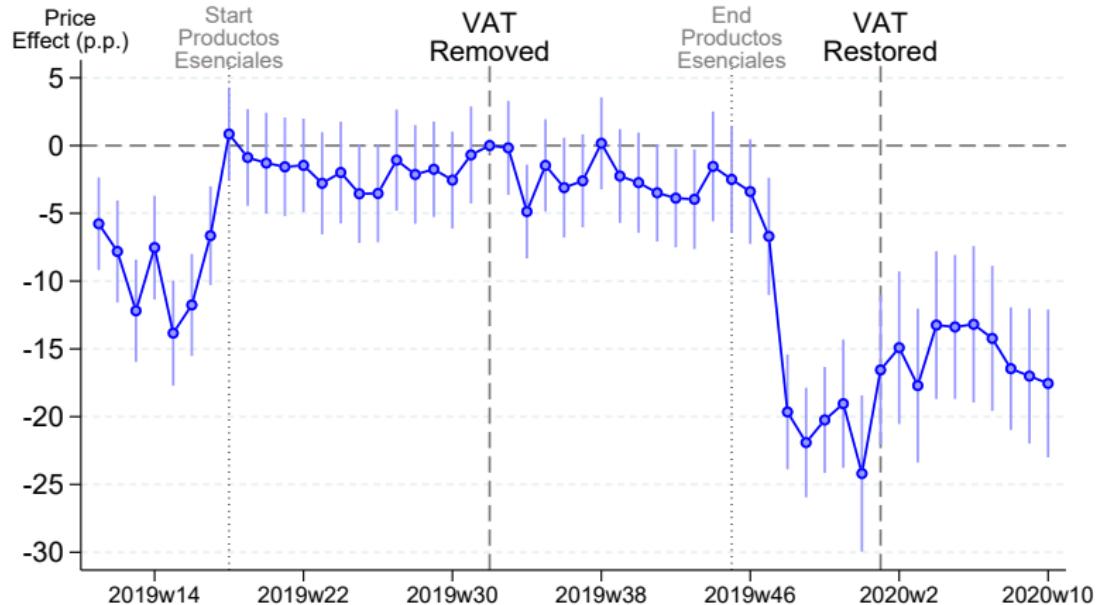
- ▶ **Precios Claros:** an Electronic Price Advertising System (SEPA) launched in 2016. Goal: ↑ price visibility
  - Large grocery stores must report daily price data ([Art 4: except SMEs](#))
  - Consumers can search prices/location from web-page or app
  - Administered/enforced by the Consumer Protection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

## Price Controls:

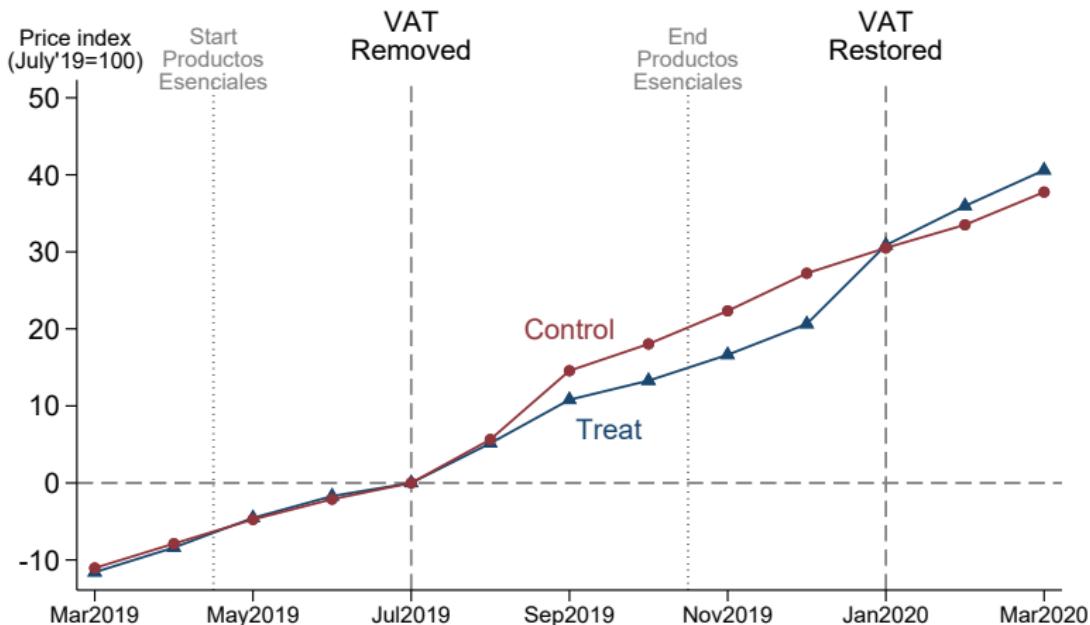
- ▶ **Precios Cuidados:** A list of mass consumption goods with controlled prices ( $\approx$ 500 barcodes, e.g., Coke 1.5L). Since 2014
  - Updated every 4 months; Mandatory tags; Audits; High penalties
- ▶ **Productos Esenciales:** Govt froze the price of 64 barcodes in the Basic Food Basket for 6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

## [2] Productos Esenciales: Dynamic DiD

▶ Back

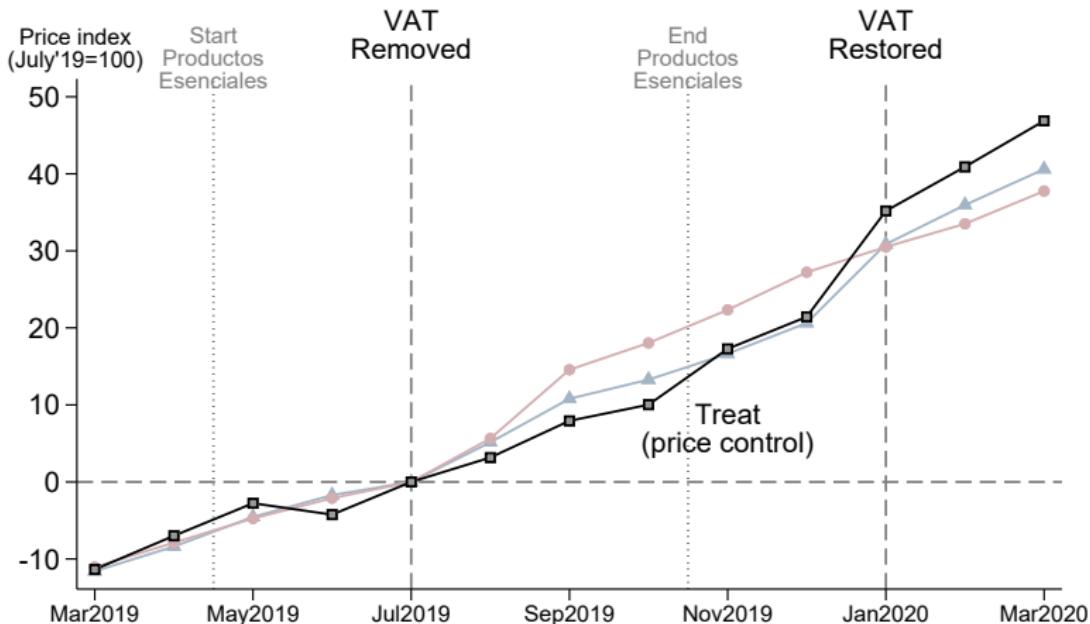


# [1] Productos Esenciales (in T) vs Rest (T and C)

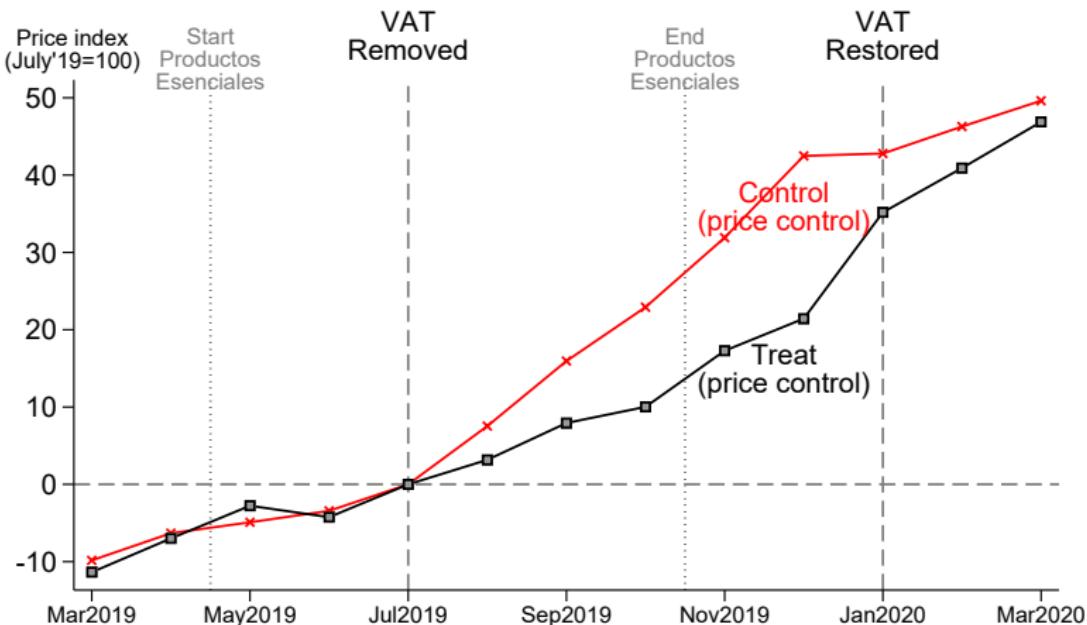


# [1] Productos Esenciales (in T) vs Rest (T and C)

Back

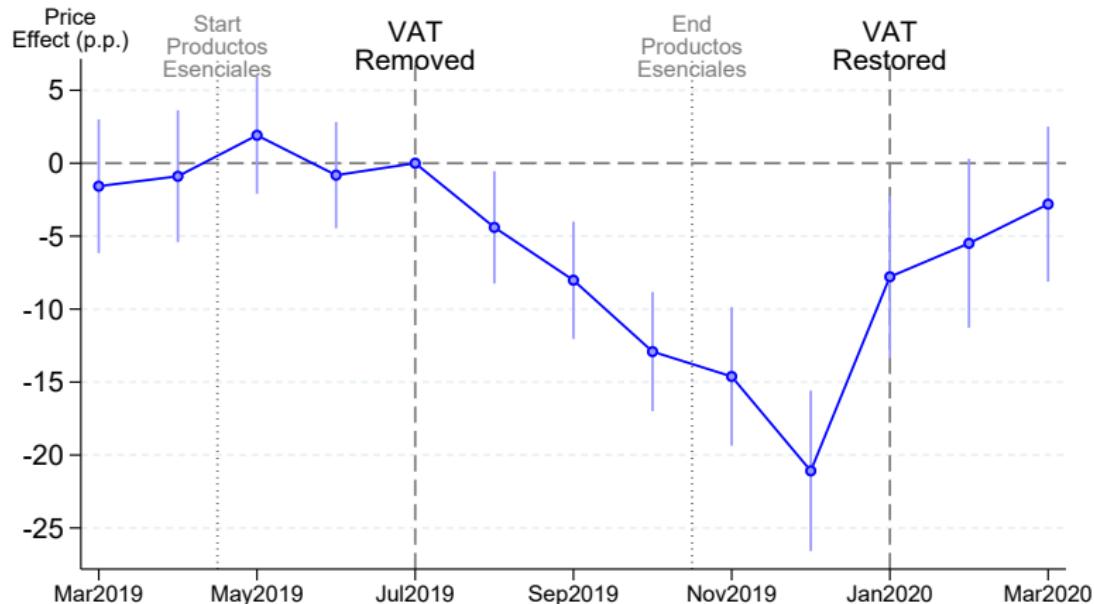


## [2] Productos Esenciales: in T and C



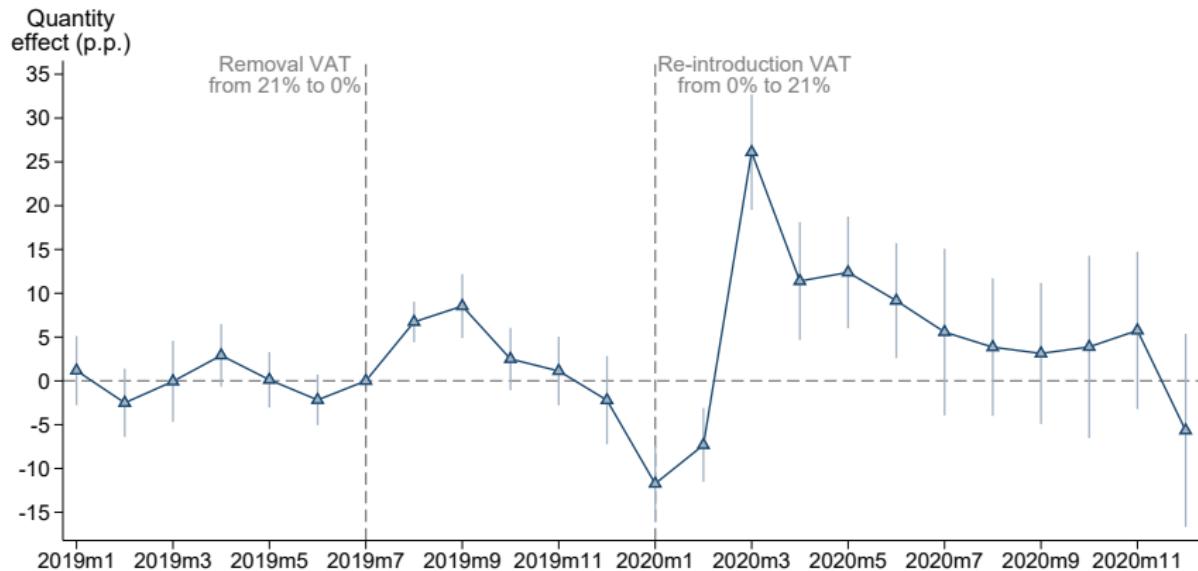
## [2] Productos Esenciales: Dynamic DiD

▶ Back



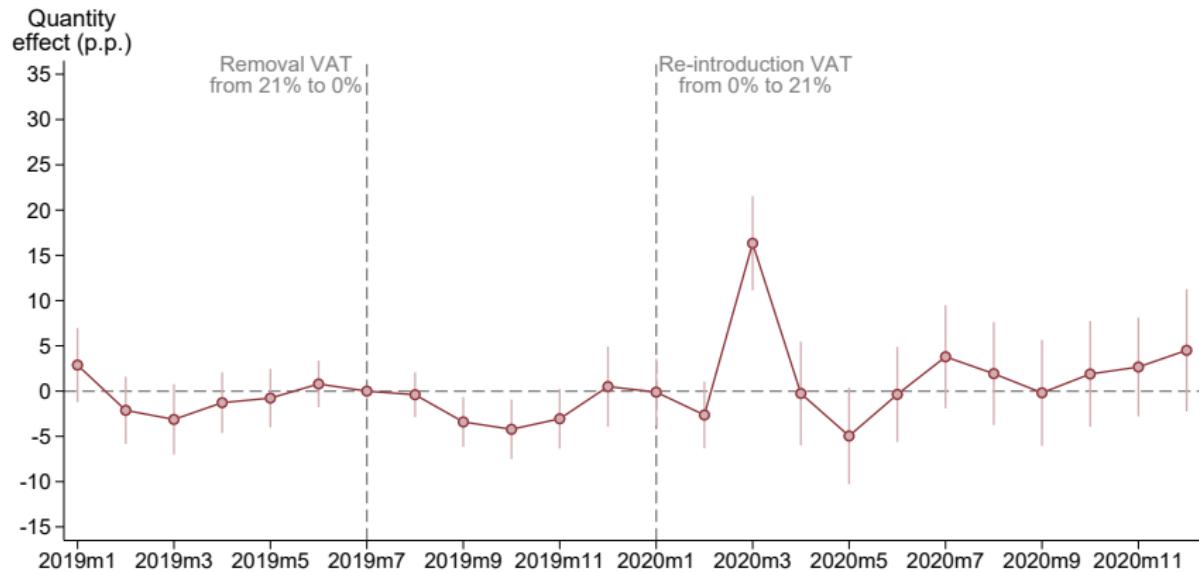
# Quantity effects in the longer run

▶ Back



# Quantity effects in the longer run

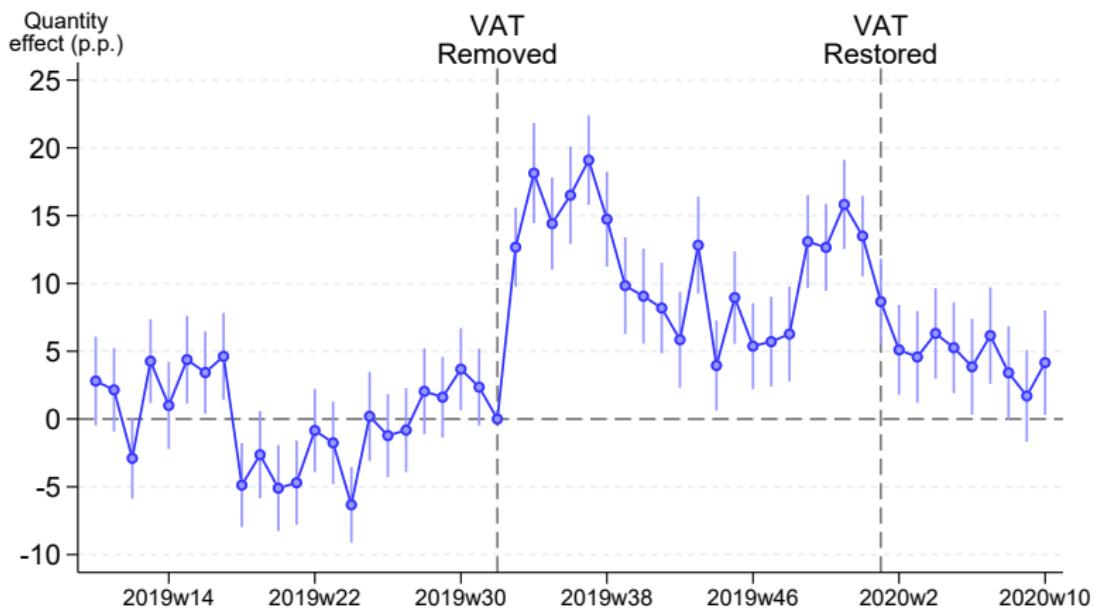
▶ Back



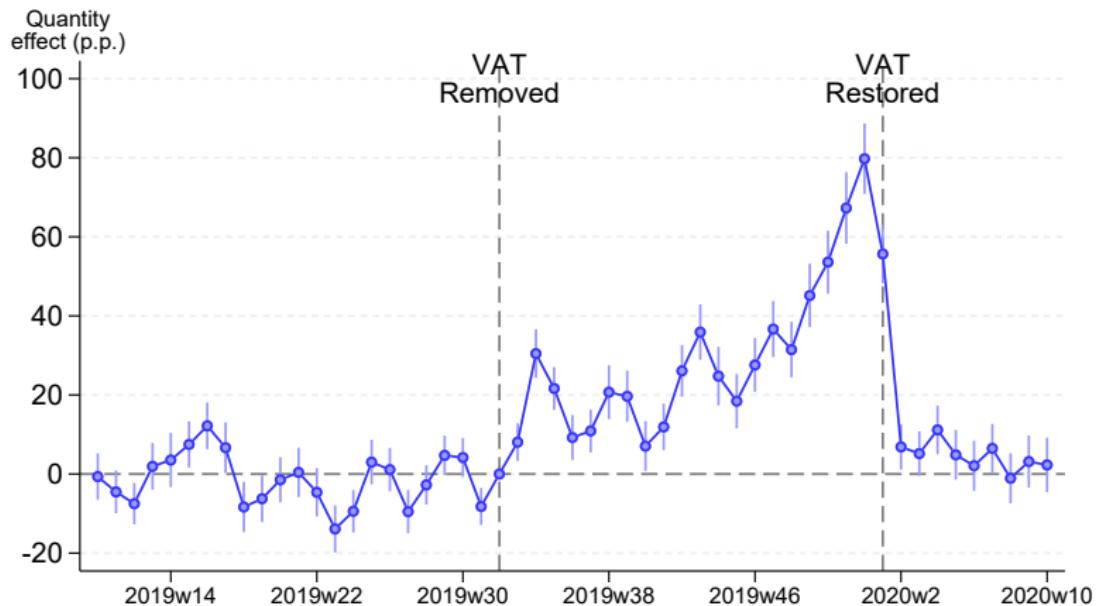
# Quantity effect (Dynamic DiD): Large chains

[Back](#)

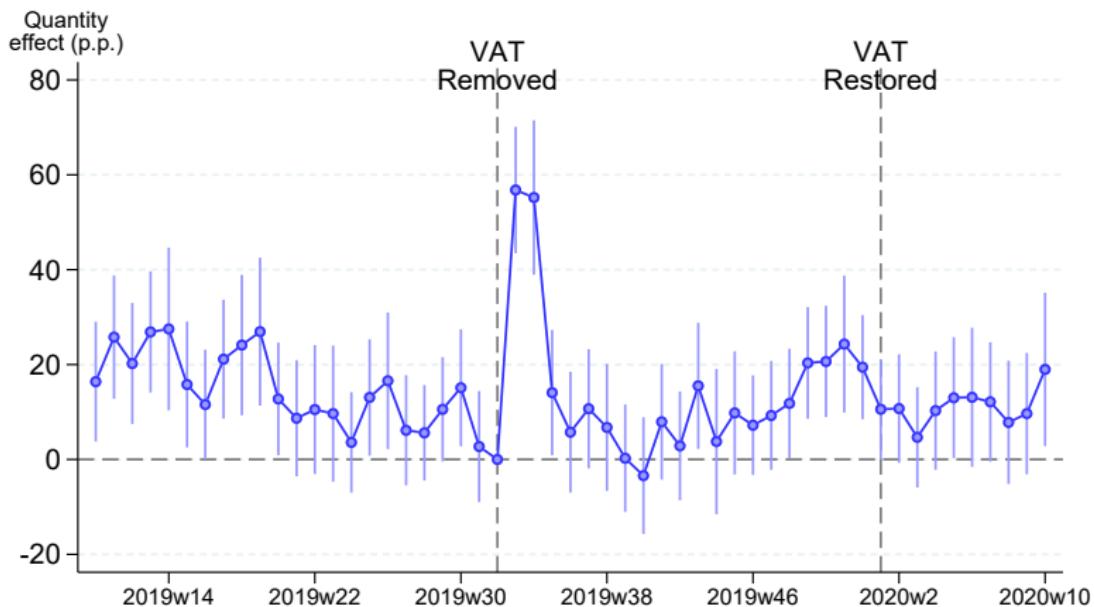
## Yerba Mate vs Control



## Canned fruit/veg vs Control



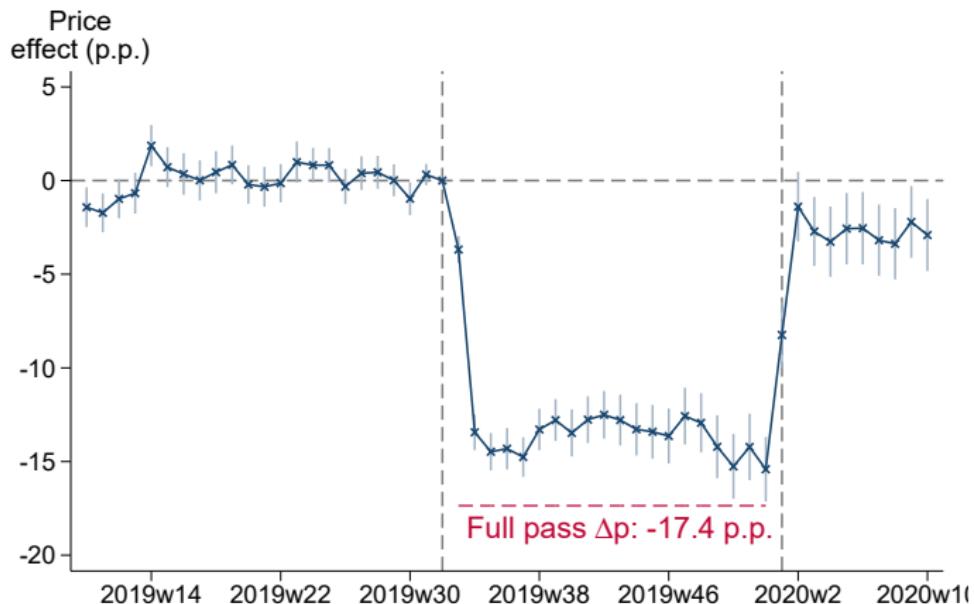
## Cooking oil vs Control



# Heterogeneities by region

▶ Back

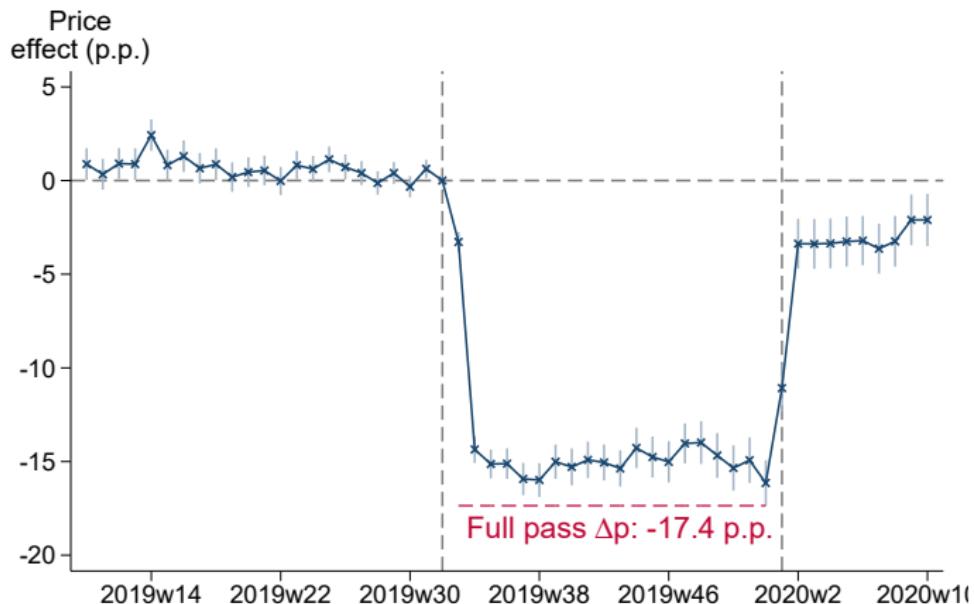
## AUSTRAL



# Heterogeneities by region

▶ Back

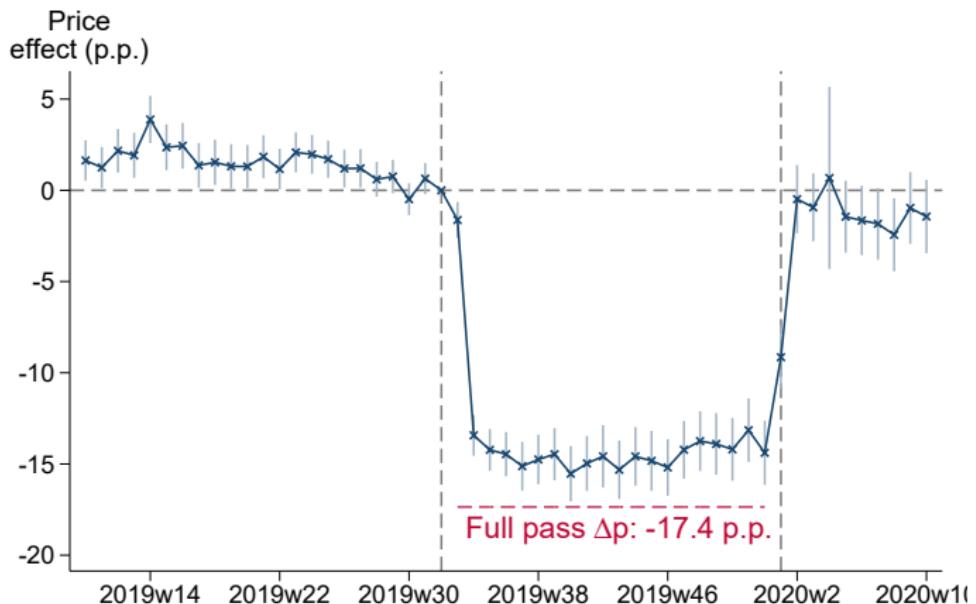
## BS. AS. RESTO



# Heterogeneities by region

▶ Back

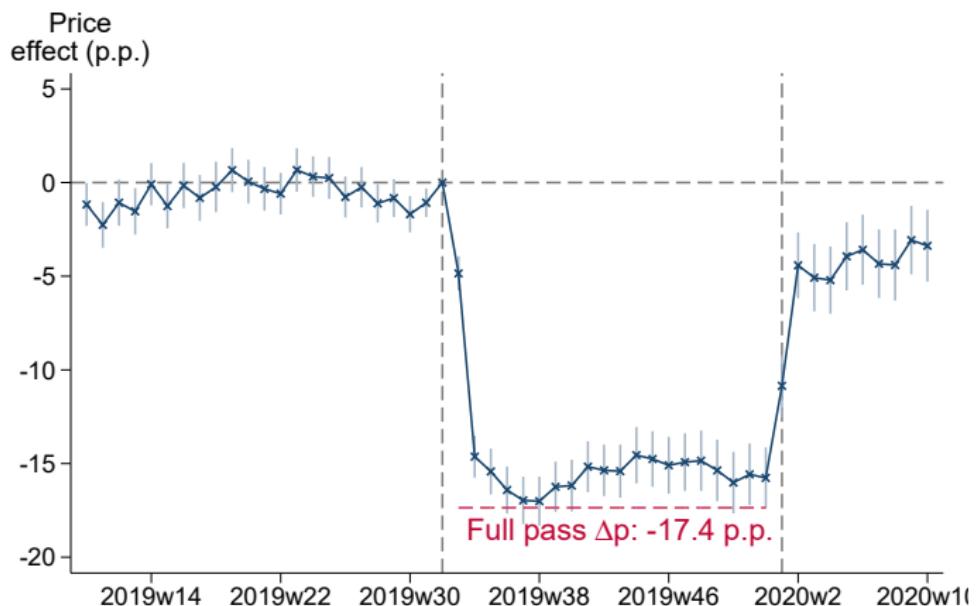
## CAPITAL FEDERAL



# Heterogeneities by region

▶ Back

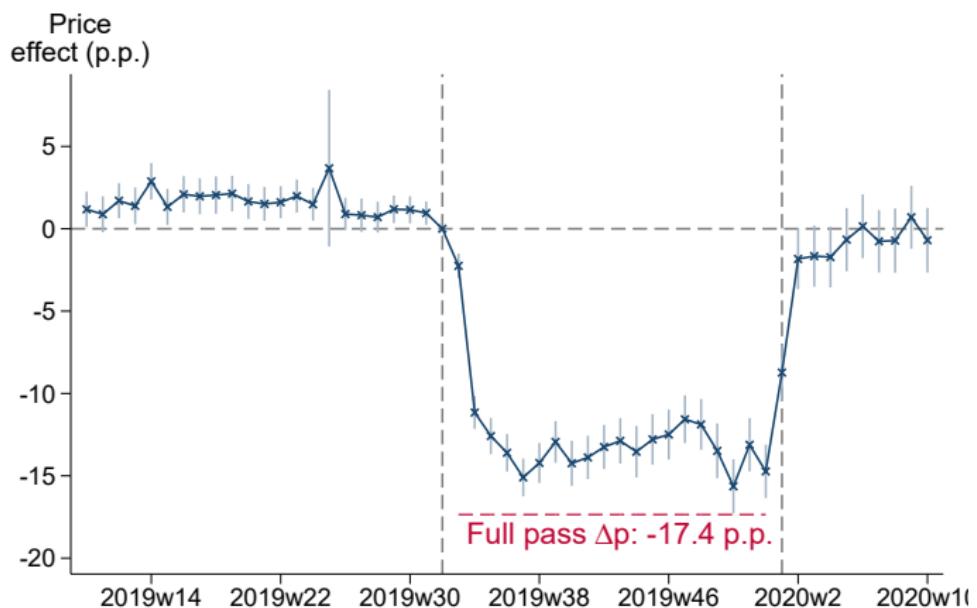
## CORDOBA



# Heterogeneities by region

▶ Back

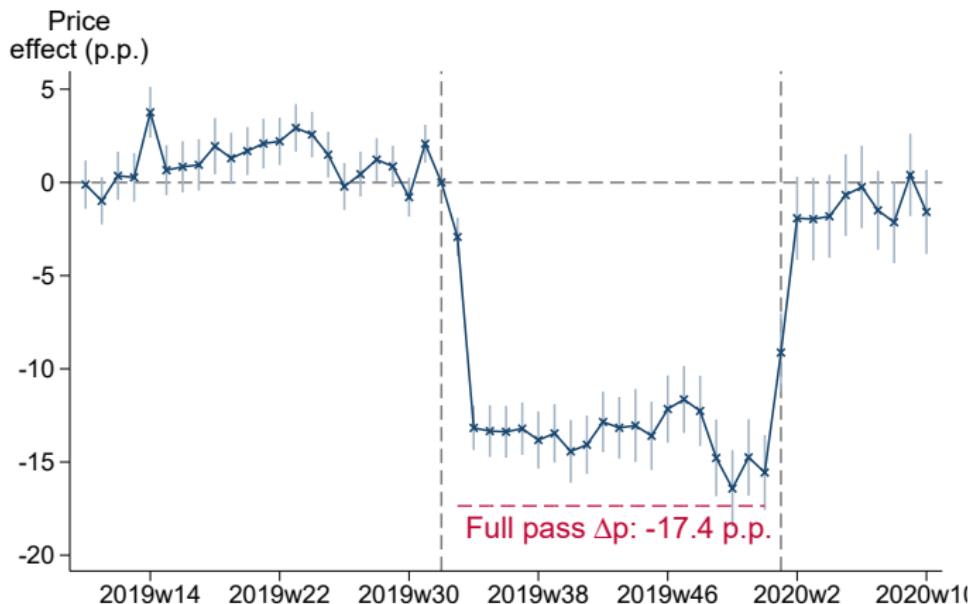
## CUYO



# Heterogeneities by region

▶ Back

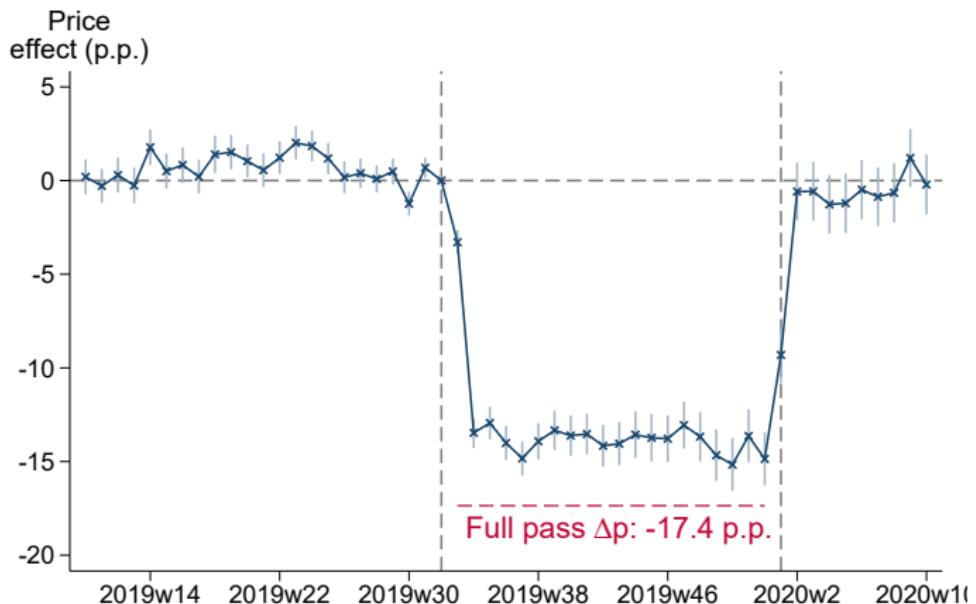
## LITORAL NORTE



# Heterogeneities by region

▶ Back

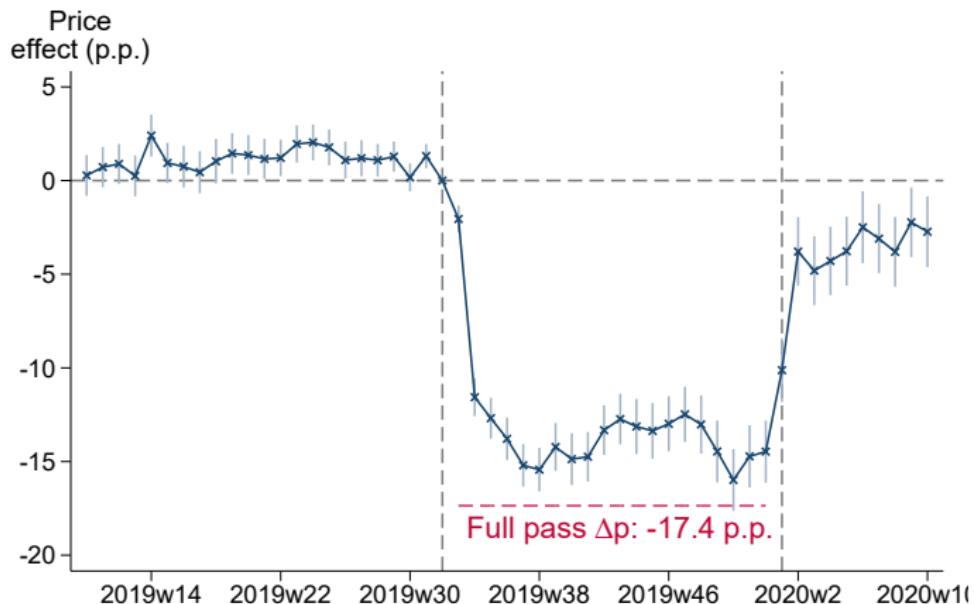
## LITORAL SUR



# Heterogeneities by region

▶ Back

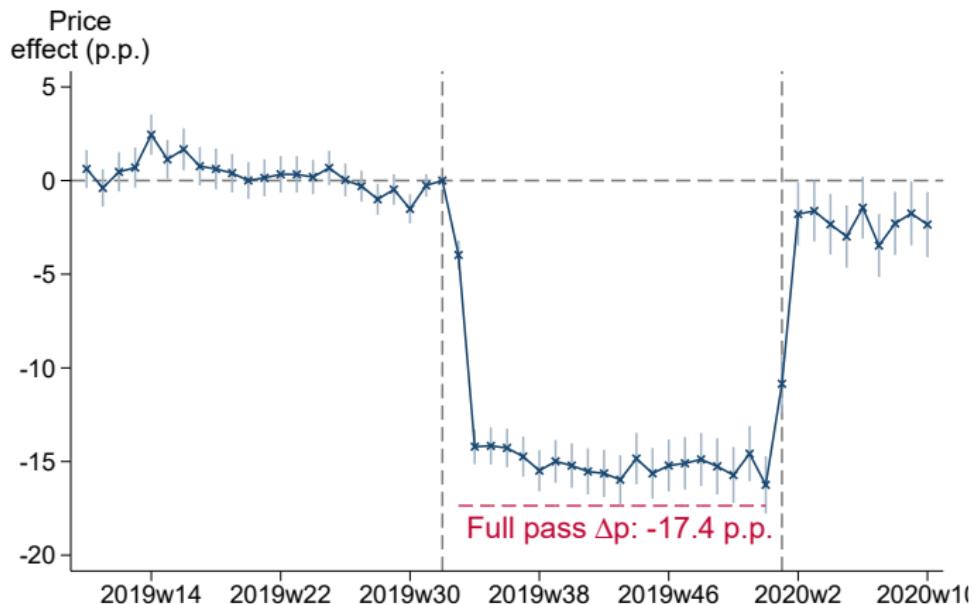
## NOA



# Heterogeneities by region

▶ Back

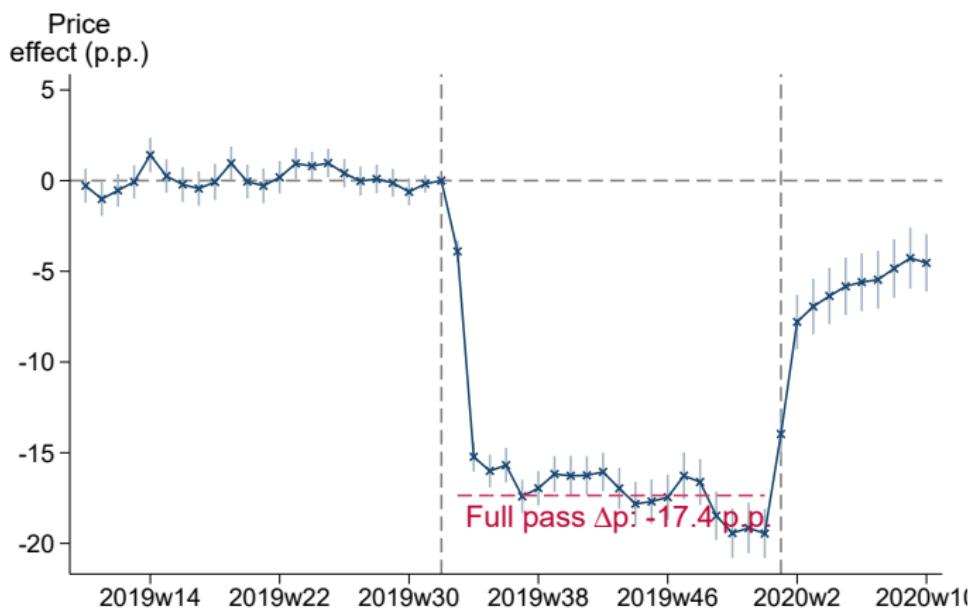
## PERIFERIA



# Heterogeneities by region

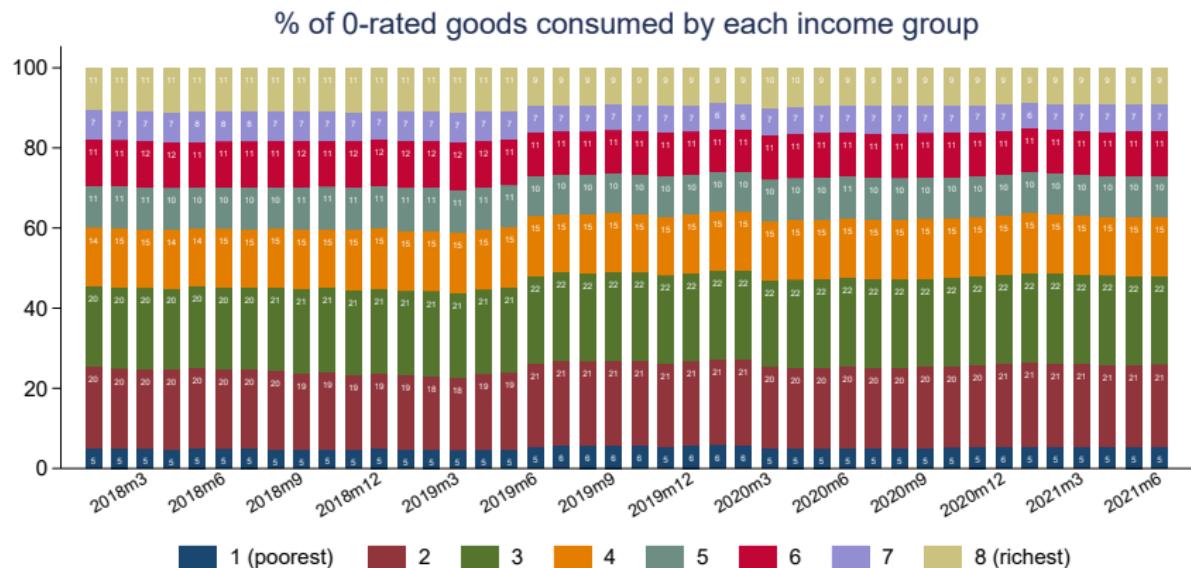
▶ Back

SUR



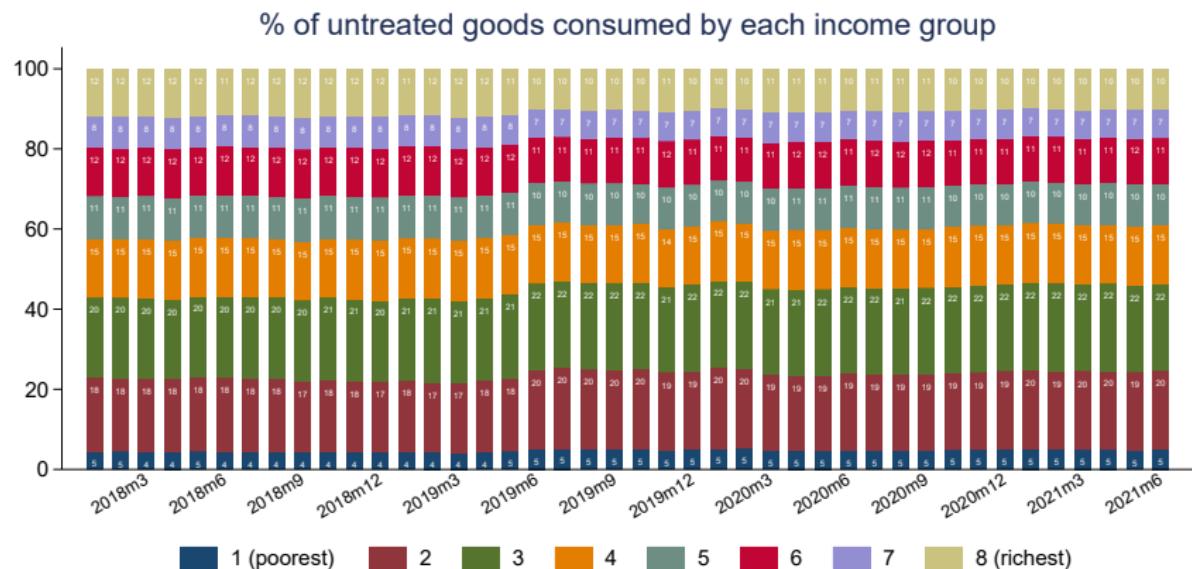
# Low-income people do not seem to switch to chain supermarkets

▶ Back

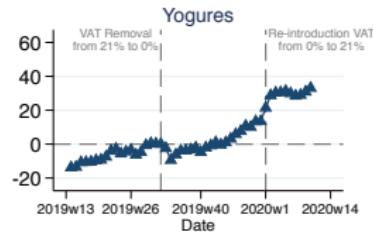
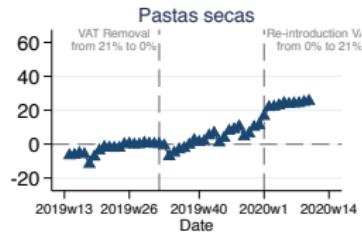
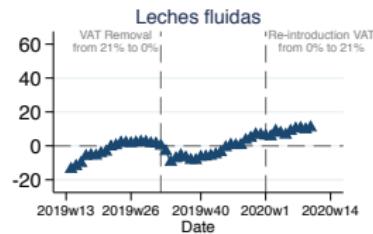
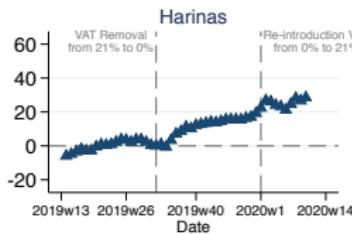
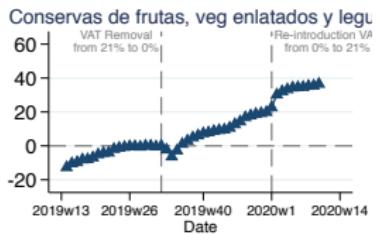
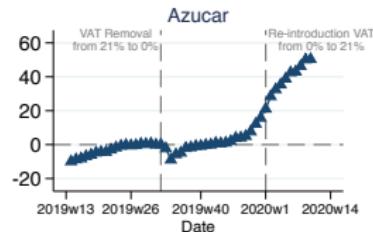
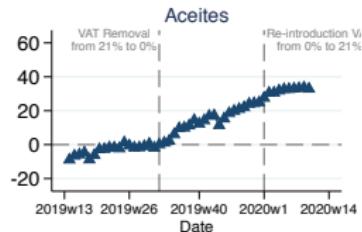


# Low-income people do not seem to switch to chain supermarkets

▶ Back



# Heterogeneities by products



## Robustness (aggregate price data)

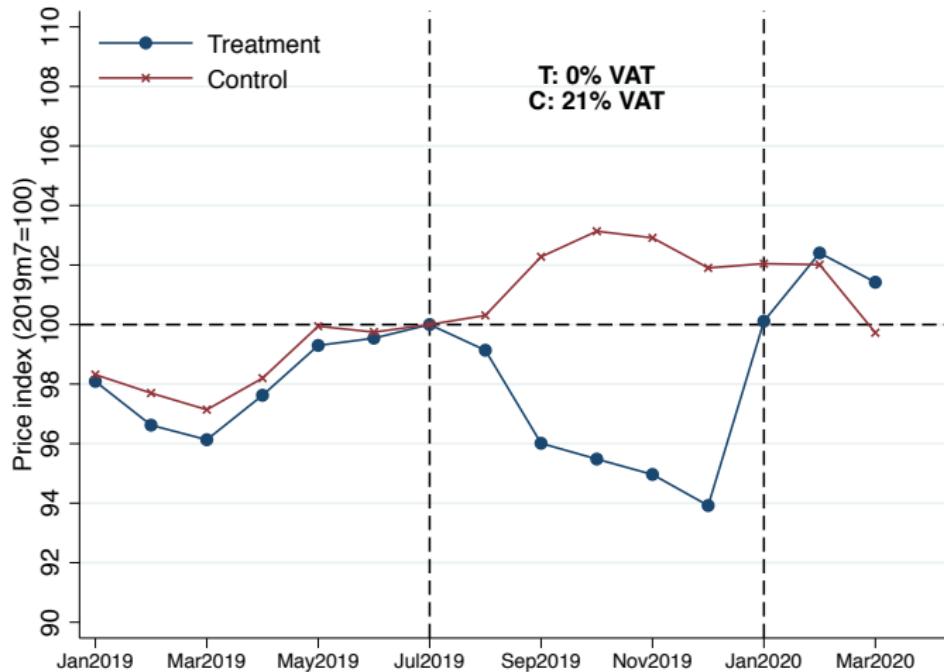
- ▶ Result is also present in aggregate price data!
- ▶ National Institute of Statistics (INDEC) publishes average monthly **prices** of some products ([link](#)) used in the CPI index (59 products in GBA; 14 products across 6 regions)
- ▶ We break the list into T (0% VAT) and C (21% VAT) and run:

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

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

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

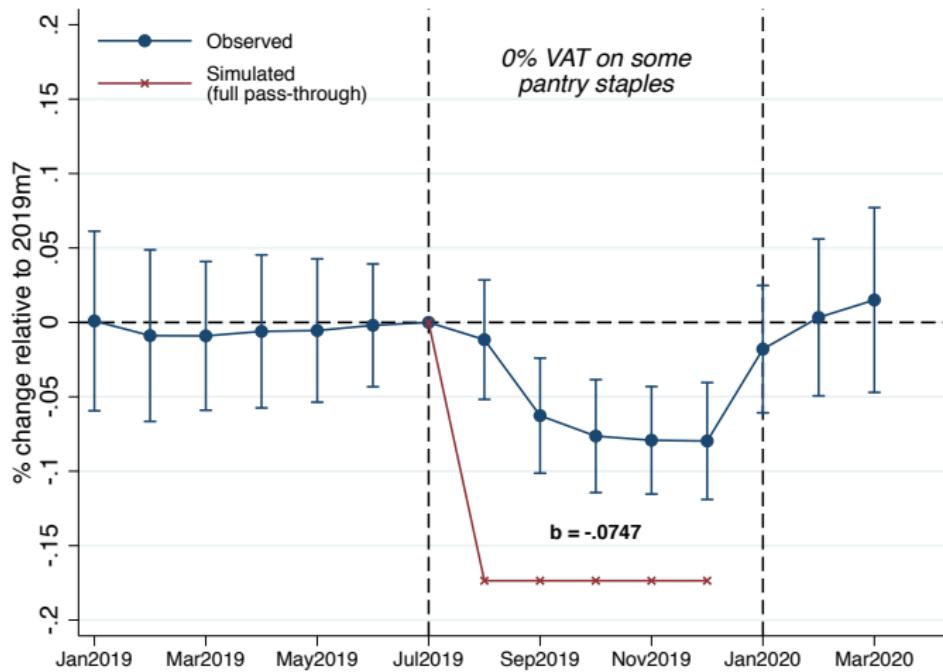
## Pass-through to consumer prices [levels]



# Partial pass-through [DiD]

► Back

► Robustness



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