Can VAT Cuts Dampen the Effects of Food Price Inflation?

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NBER Public Economics Program Meeting

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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

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

Source: VATCalc www.vatcalc.com

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

Kansas, Alabama, Virginia, Illinois, Tennessee

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



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

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

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

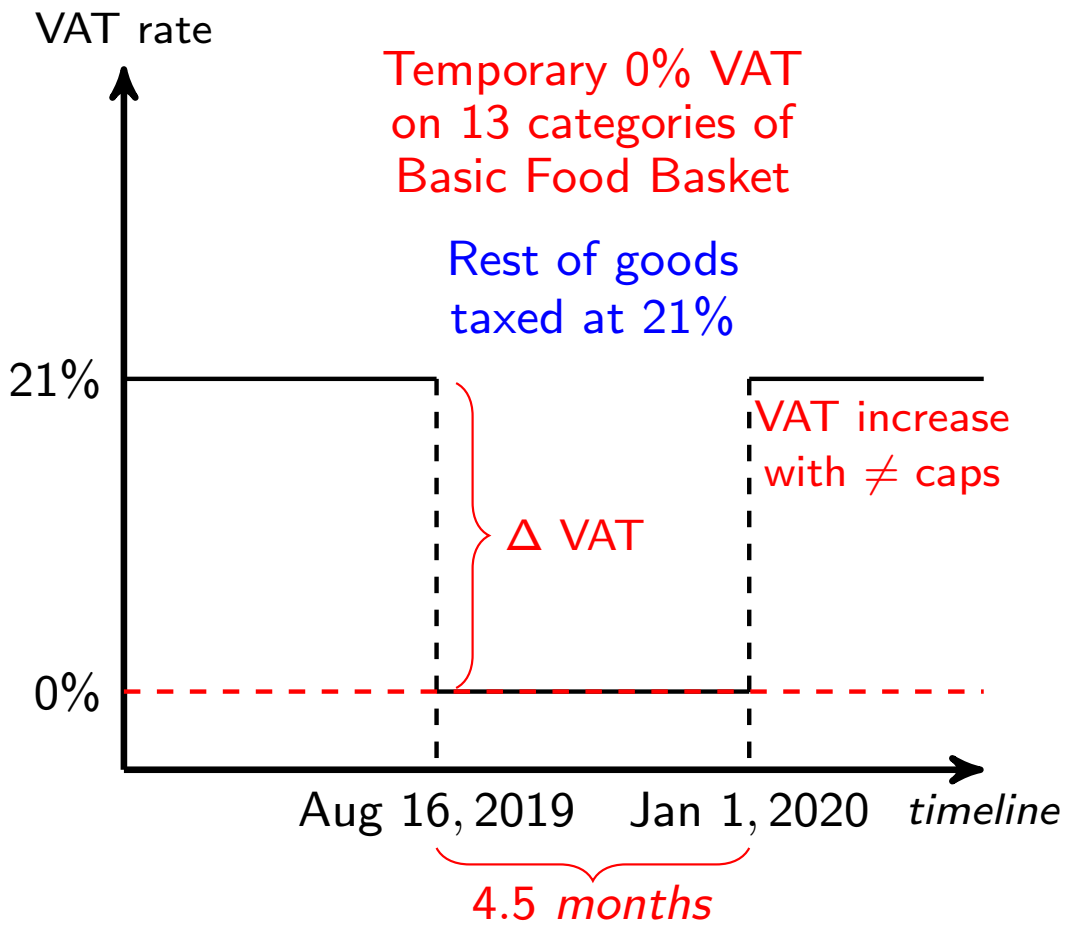
Can VAT Cuts Dampen the Effects of Food Price Inflation?

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

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

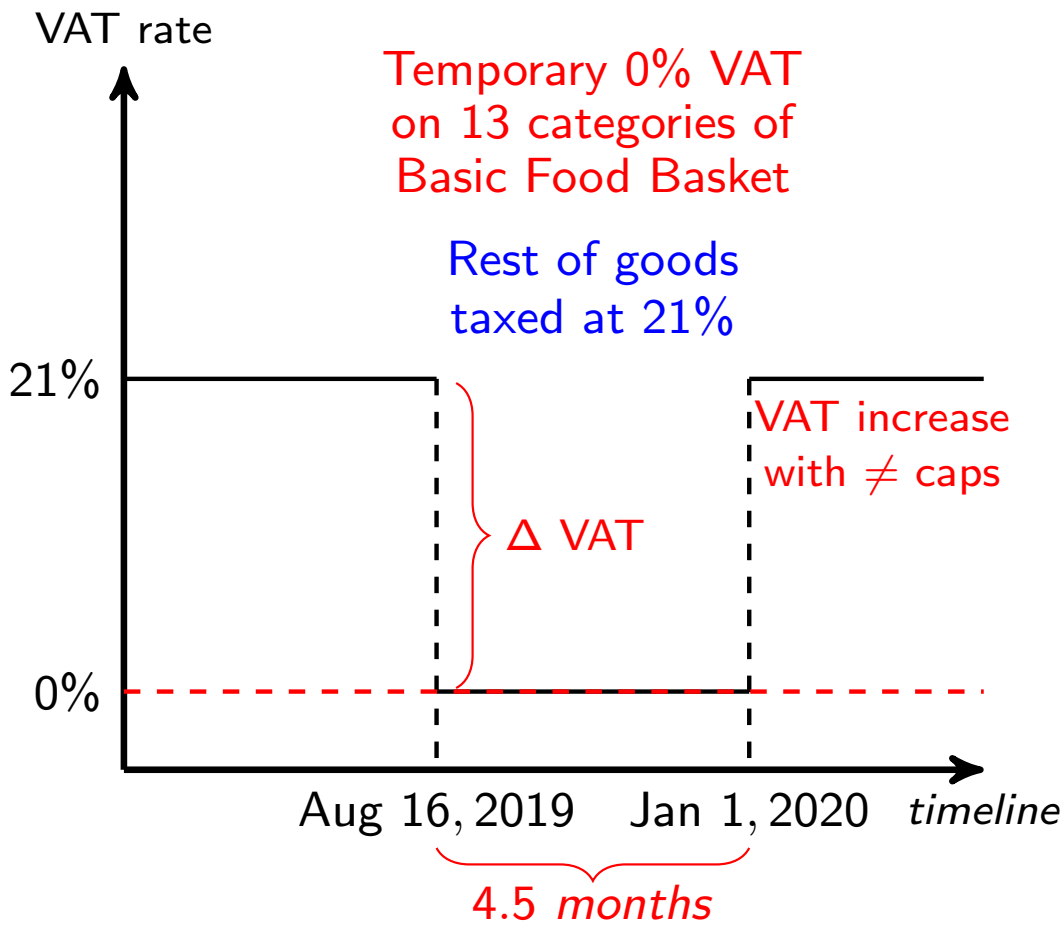
Setting: a 4.5-month long VAT holiday on basic food + a variety of gov't "mandates"

▸ Timeline and Goal ▸ Enforcement



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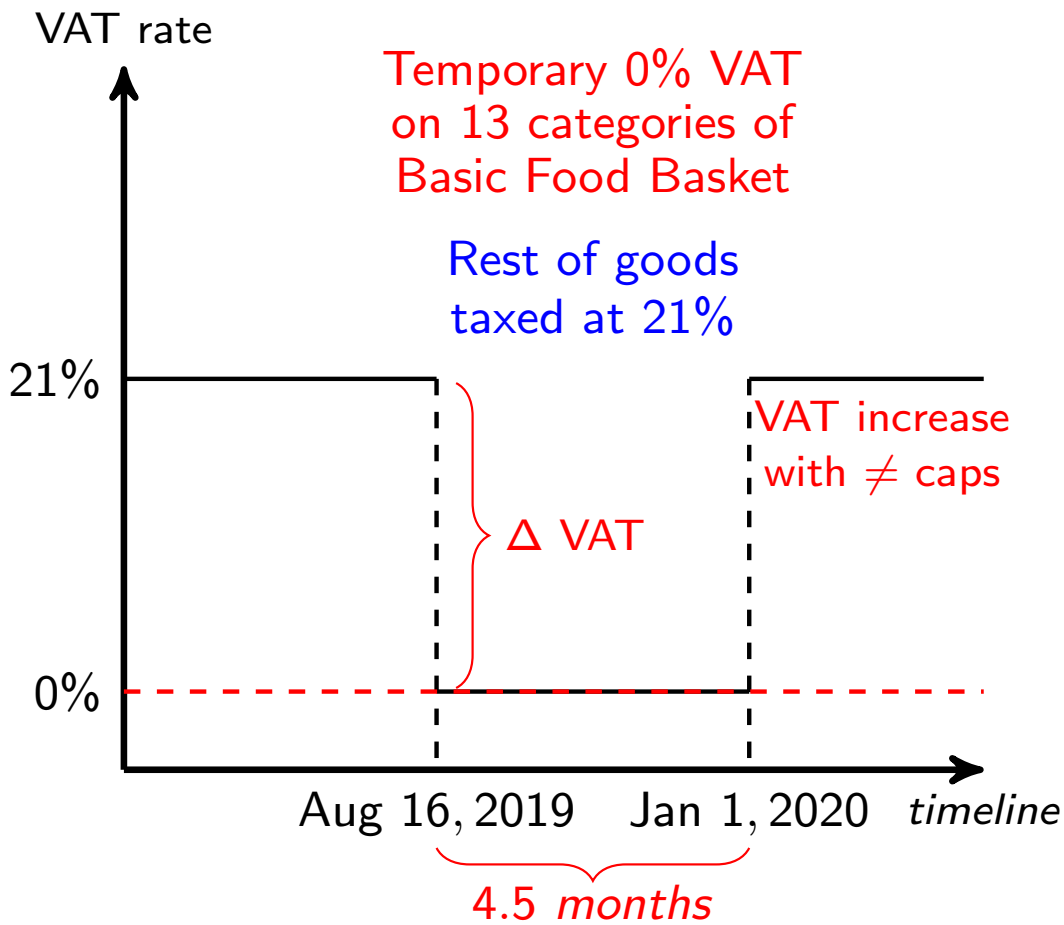


• **VAT cut**: unanticipated, large, salient, and temporary

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

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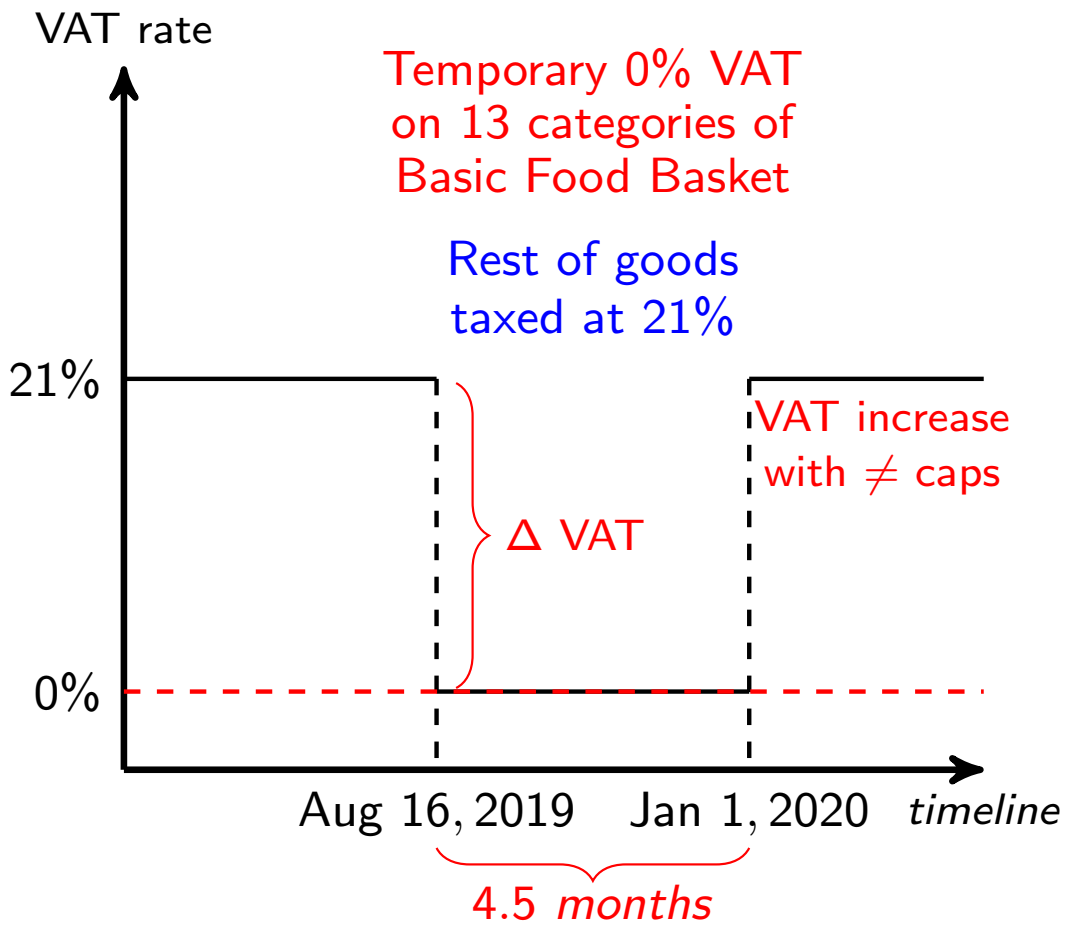
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• **VAT increase**: back to 21%

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- **Price monitoring system**:

→ In chain supermarkets only! [link]

Data (Scentia scanner data) & **Strategy** (DiD)

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

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 (*polenta*)	
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.

Takeaway...

Gov't was relatively **successful** at:

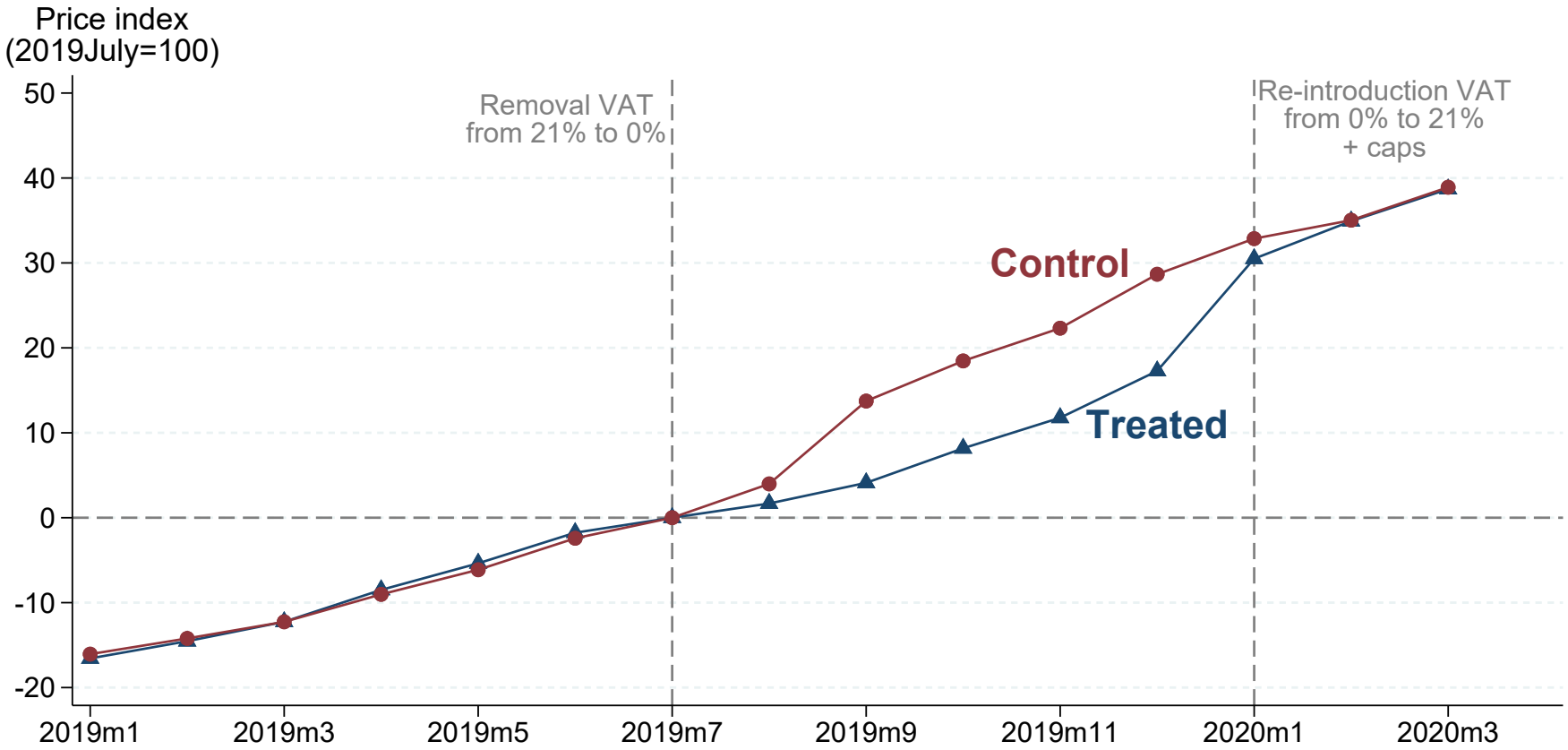
- Engineering instant price decreases in supermarkets using the VAT cut
- Mitigating the subsequent price increases using 'pass-through caps'

But it partially **failed** to reach the target population because:

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

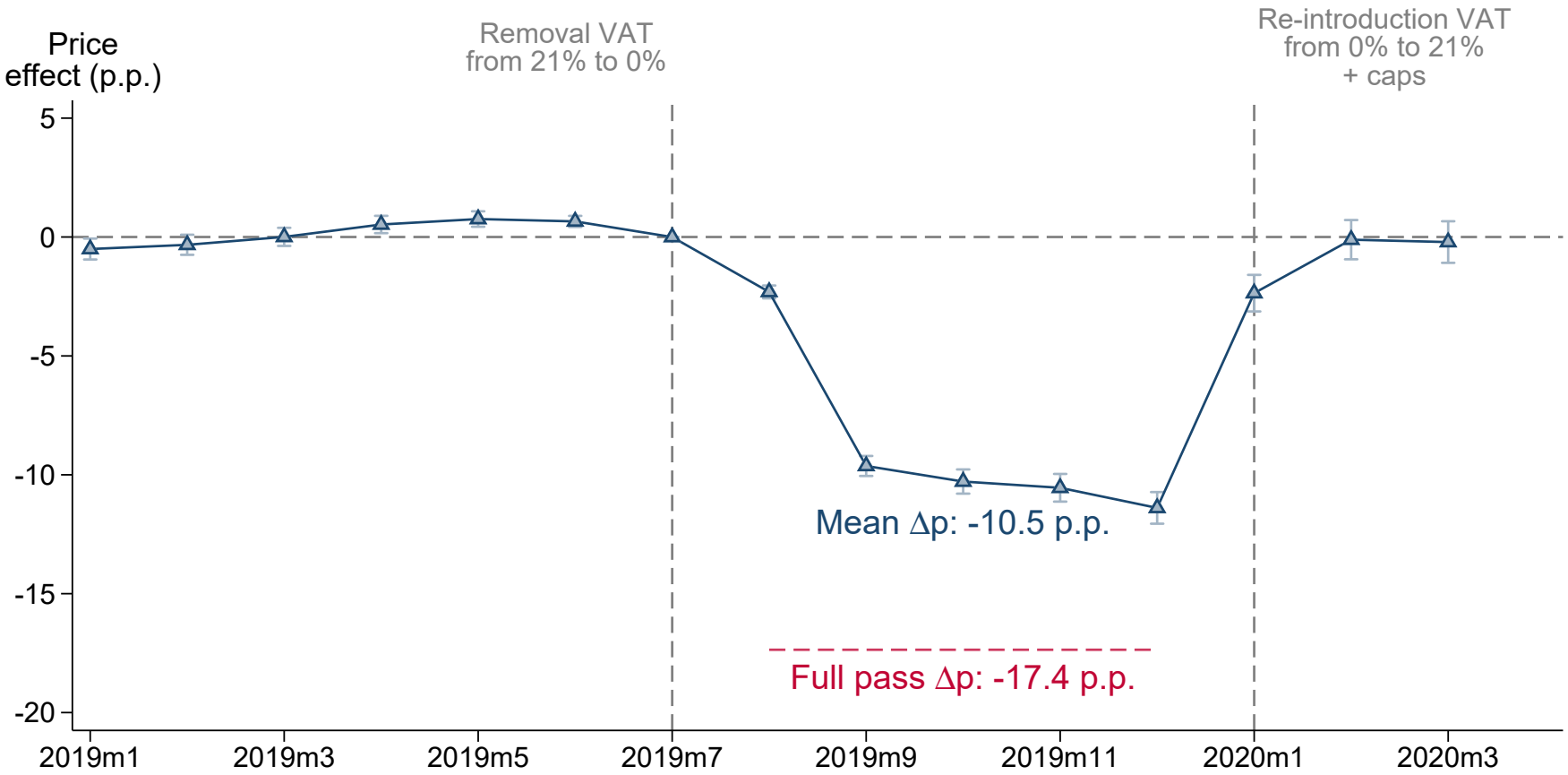
Price responses pooling chains and indep stores

Price *levels* in Chains + Independent supermarkets



▸ DiD with CPI data

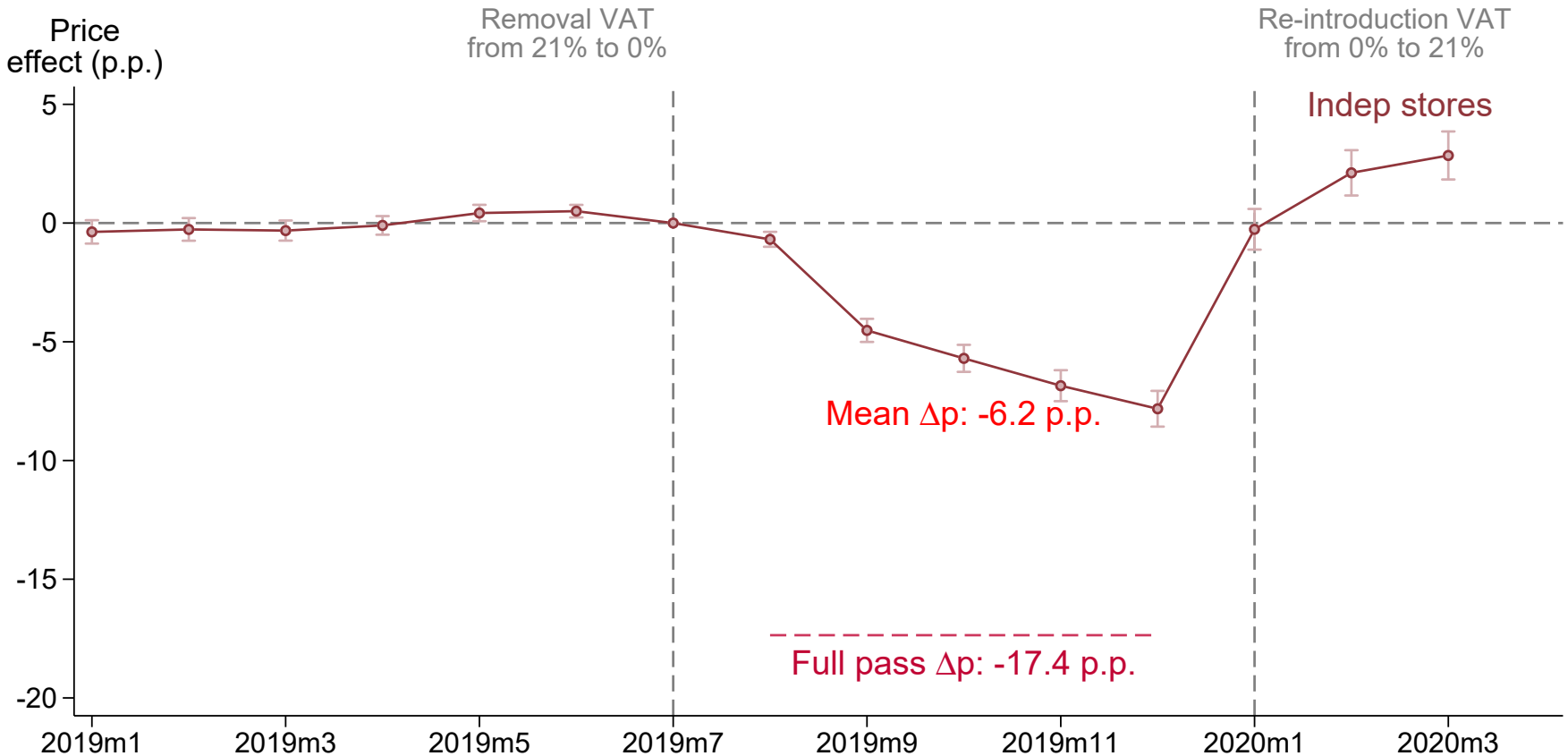
Substantial pass-through of the VAT cut to prices (∼60%)



▸ DiD with CPI data

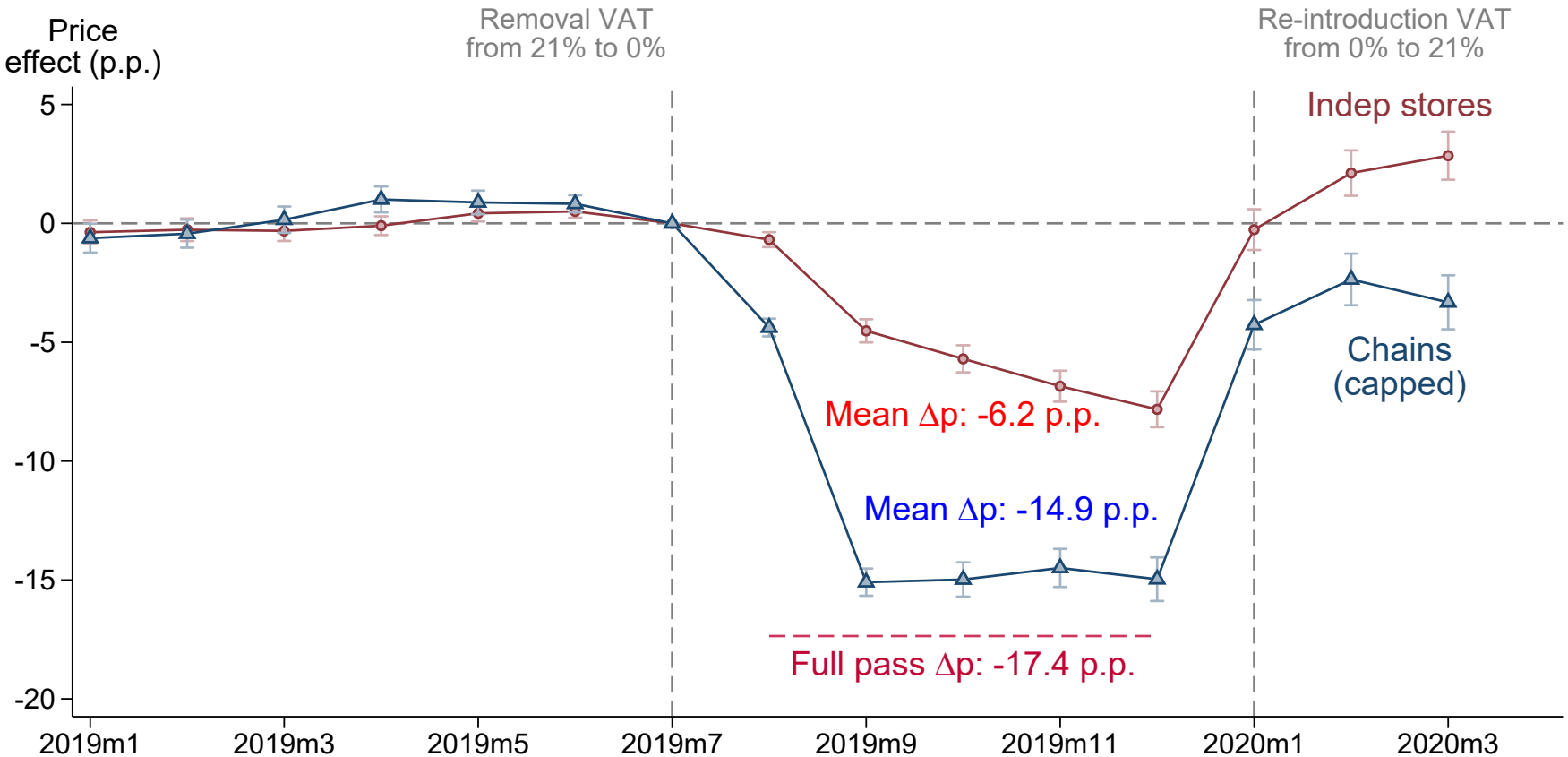
Chain vs Independent stores

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



▸ P Levels ▸ Weekly data ▸ Distrib of P-T ▸ Series for T and C ▸ Small cheaper

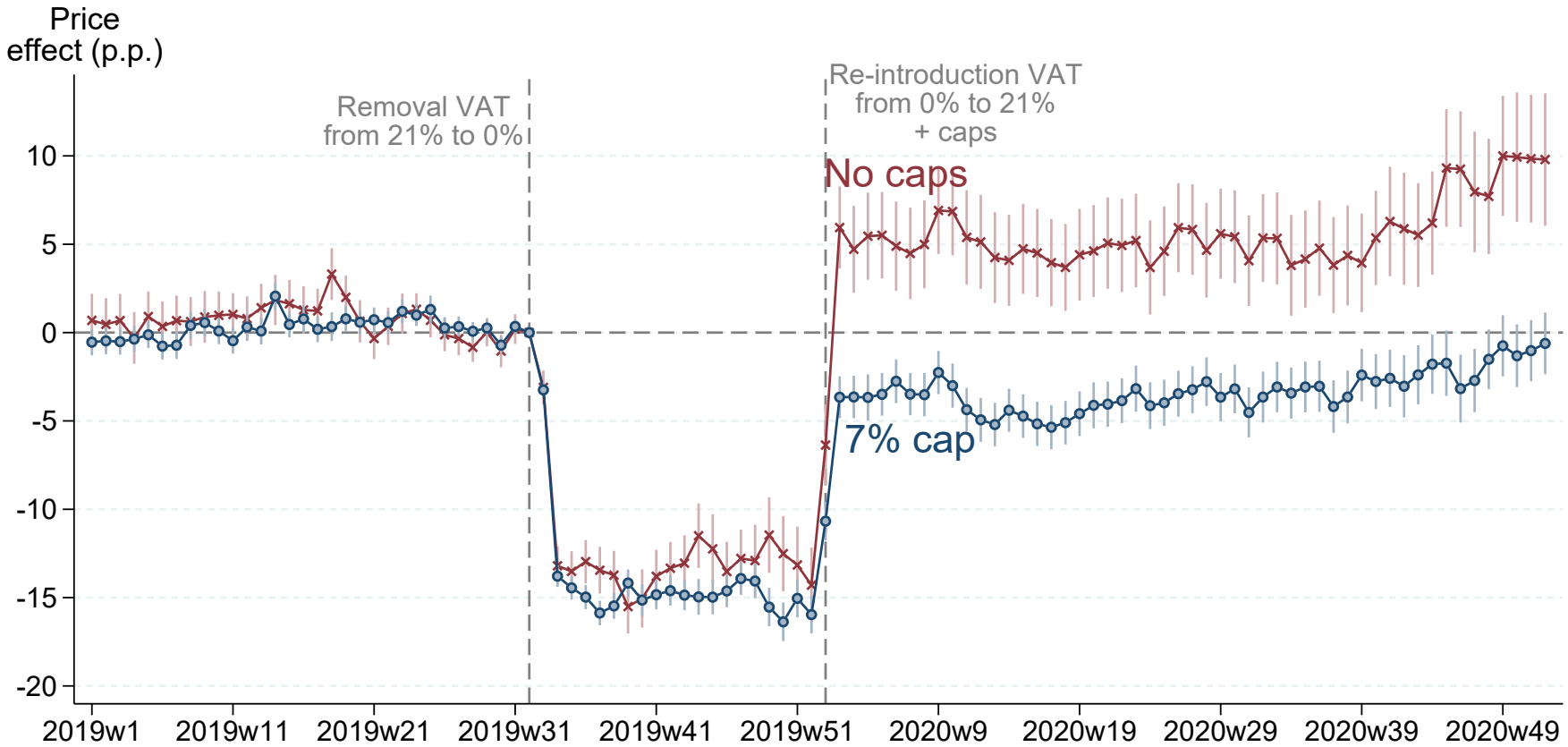
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Mitigating subsequent price increases using **pass-through caps**

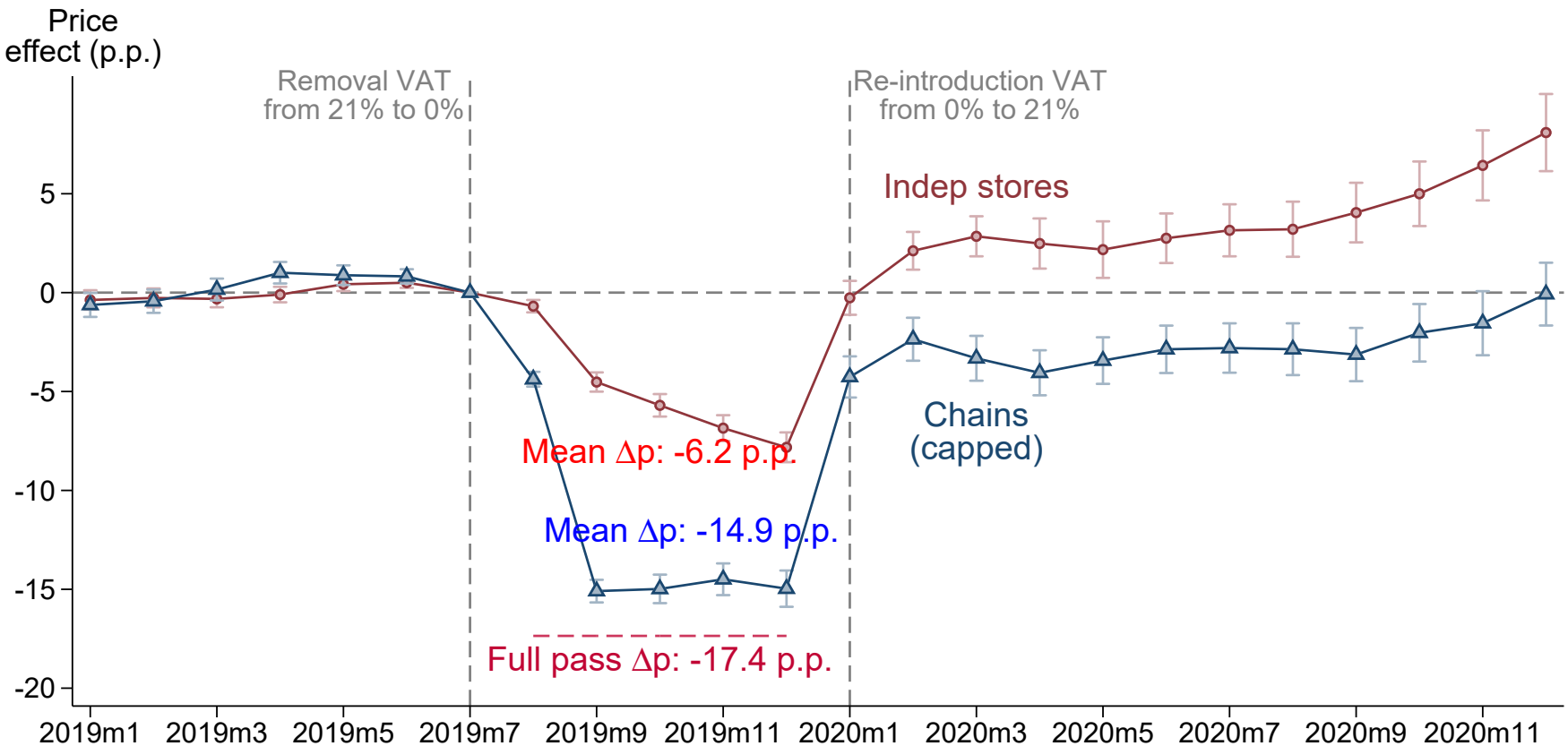
VAT rate reinstated at 21% but pass-through was **capped** in chain supermarkets at ∼7% for some goods



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

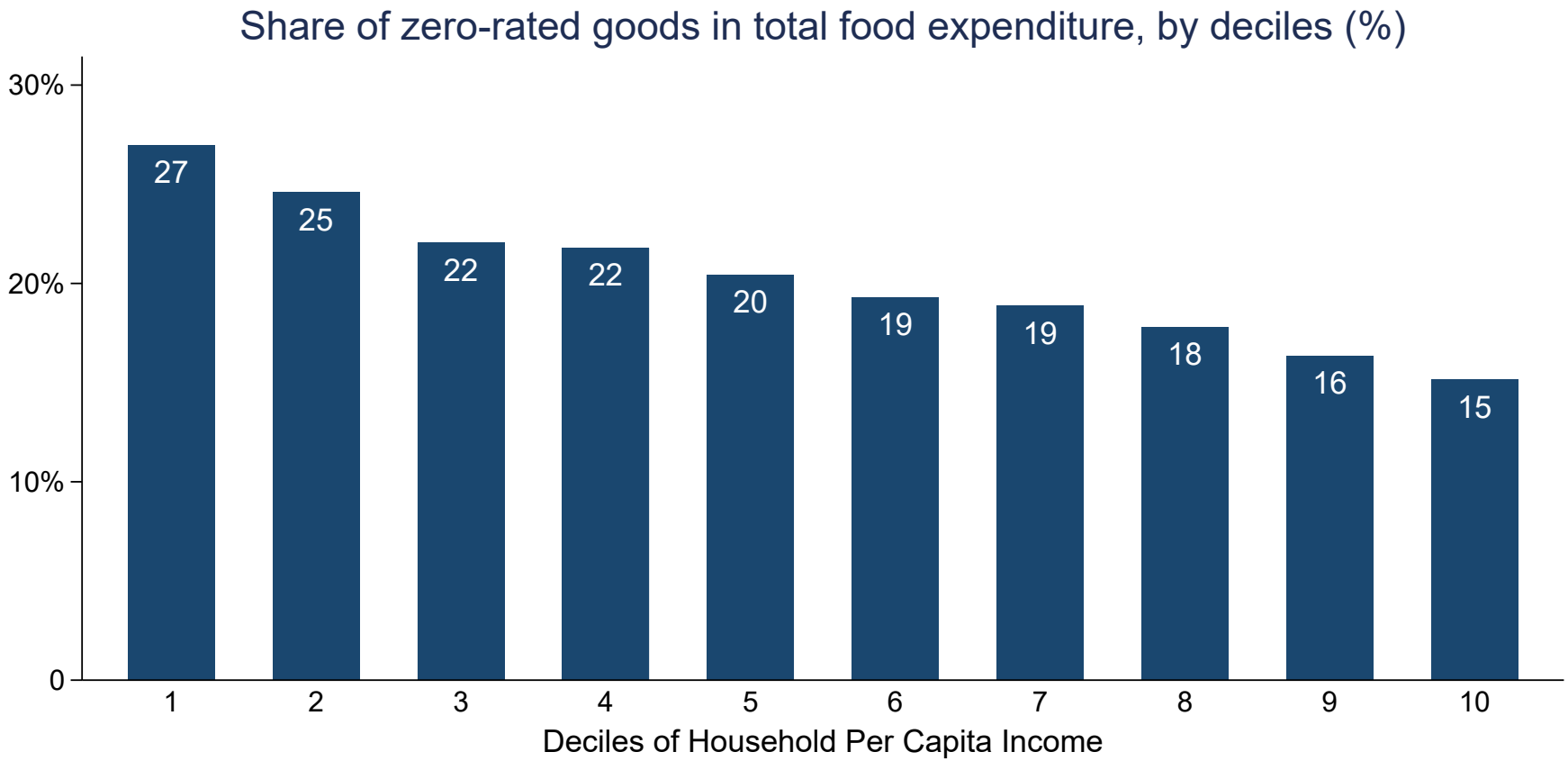
- Goods w/flexible prices exhibit an increase ∼2x that of capped goods
- The gap is remarkably persistent → hysteresis

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



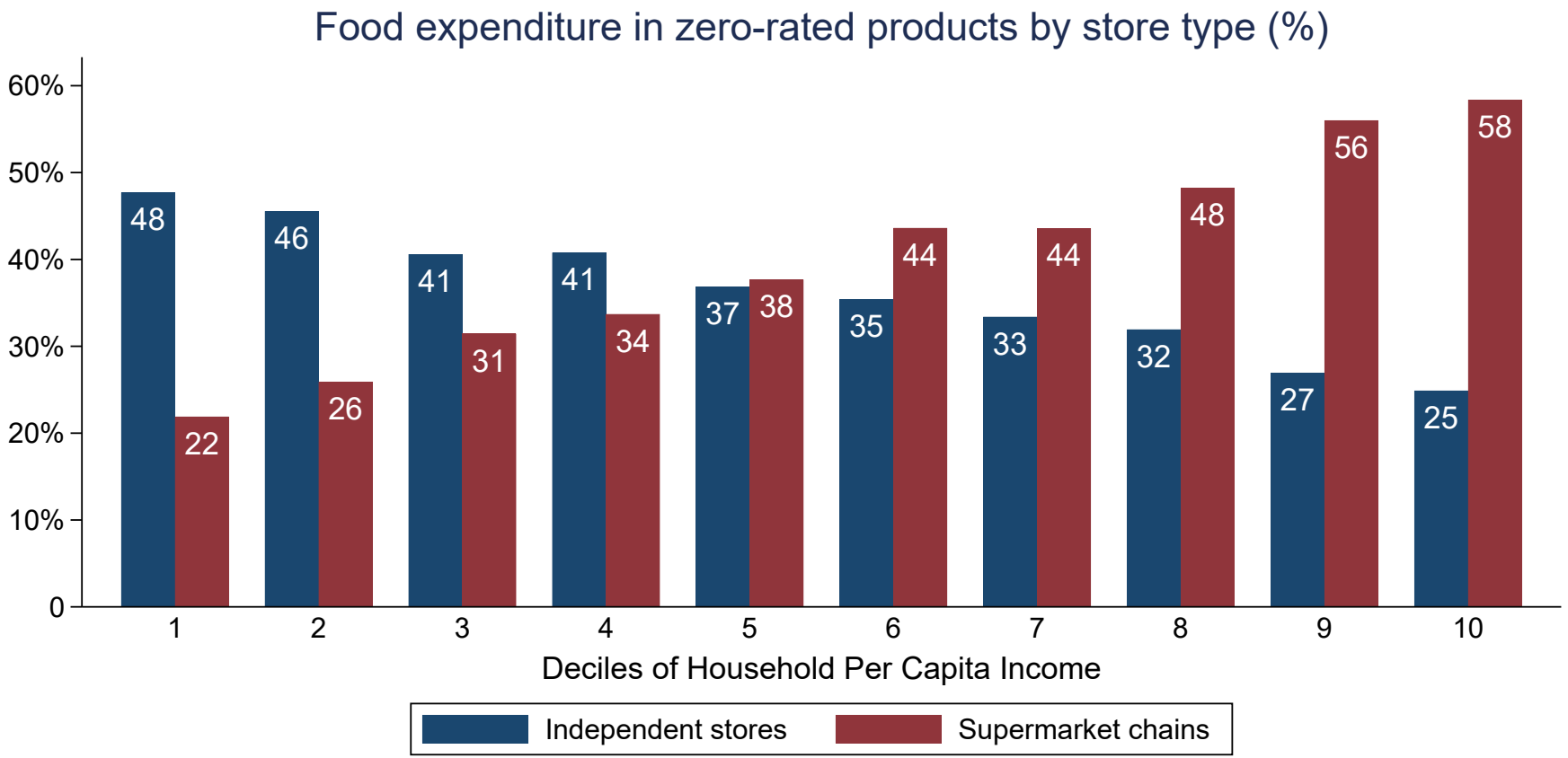
(Unintended) distributional consequences

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



- Targeted goods (T) more heavily consumed by the lowest deciles

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

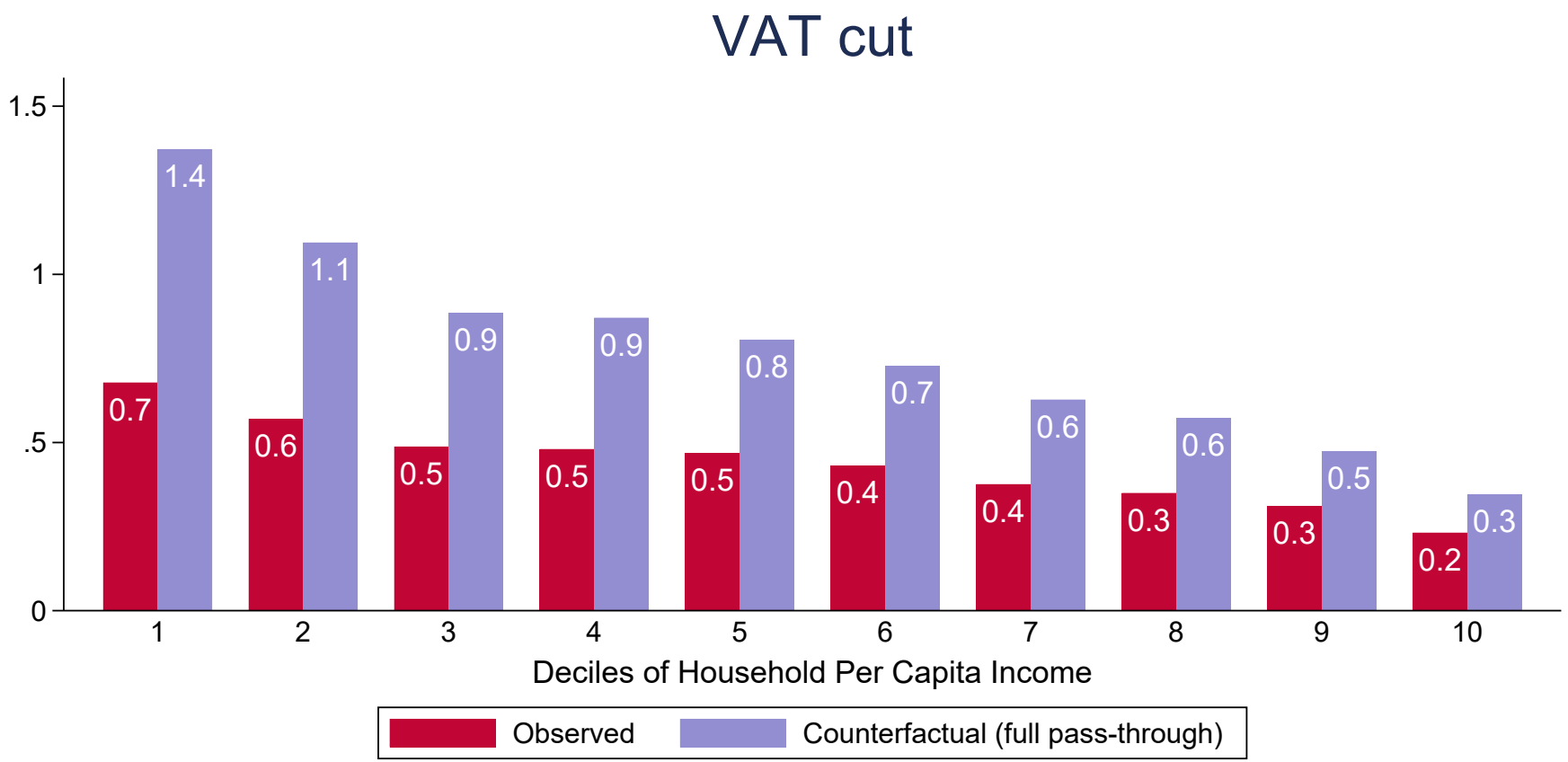


- Important policy implication when designing VAT cuts

Welfare implications

VAT cut benefits the poor (albeit w/leakages)

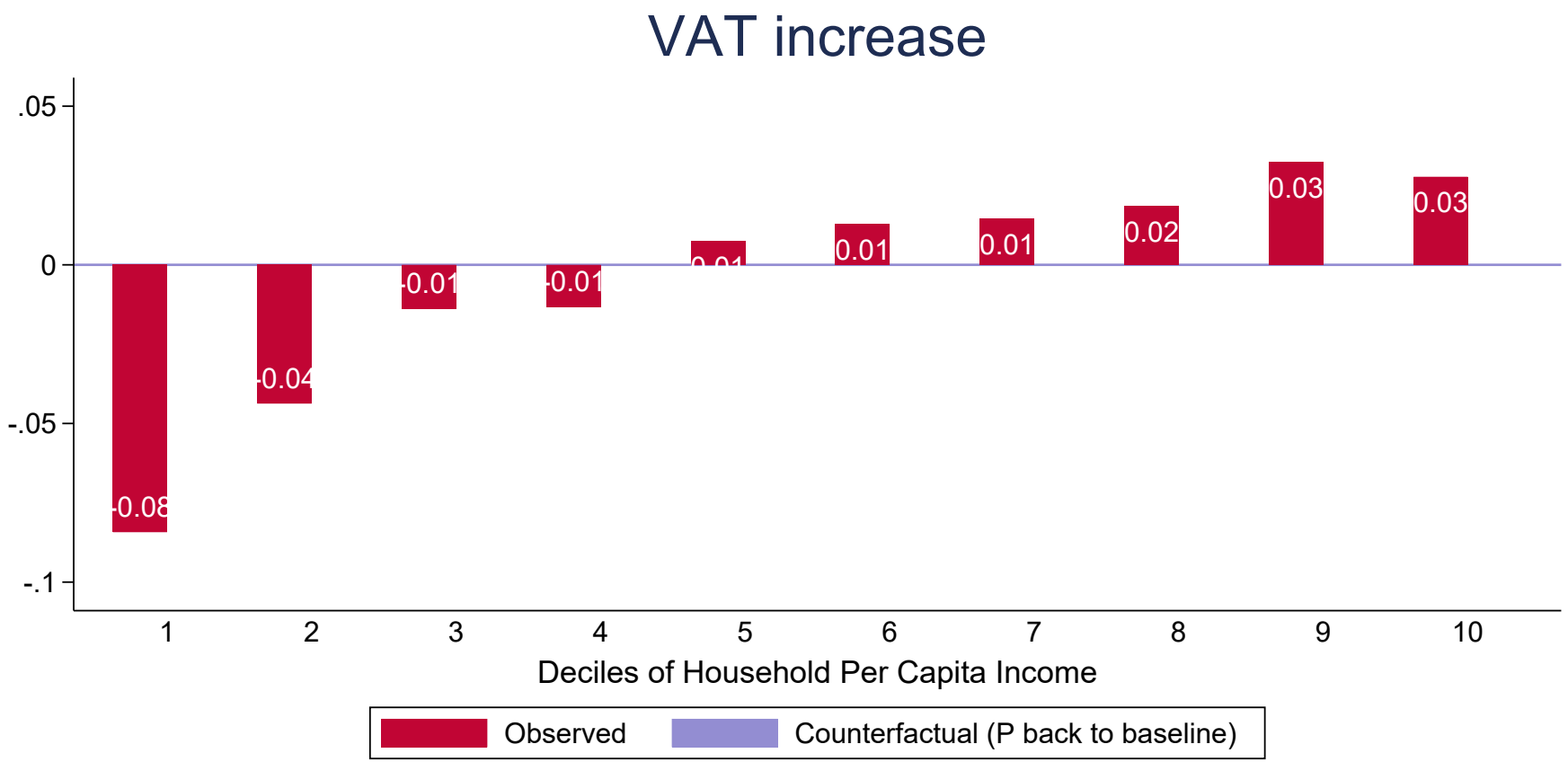
- CES model provides simple expression based on observable expenditure shares and price changes: $d \ln V_h = -\sum_g \alpha_{gh} \cdot d \ln p_{gh}$



Welfare implications

VAT increase hurts the poor

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



Possible mechanisms

Chains vs independent stores

- Enforcement (price monitoring in chains)
- Evasion (independent stores)

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

- Pricing strategies (rigidities and menu costs)

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

- Competition

  [Genakos & Pagliero, 2022]

Robustness and additional results

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

Concluding remarks

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

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

They can lead to

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

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

THANK YOU!

Dario Tortarolo
dtortarolo@worldbank.org

Additional results

Contribution [REMOVE SLIDE?]

1. VAT as a tool to affect economic variables:

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

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

2. Economic incidence of consumption taxes and empirical anomalies:

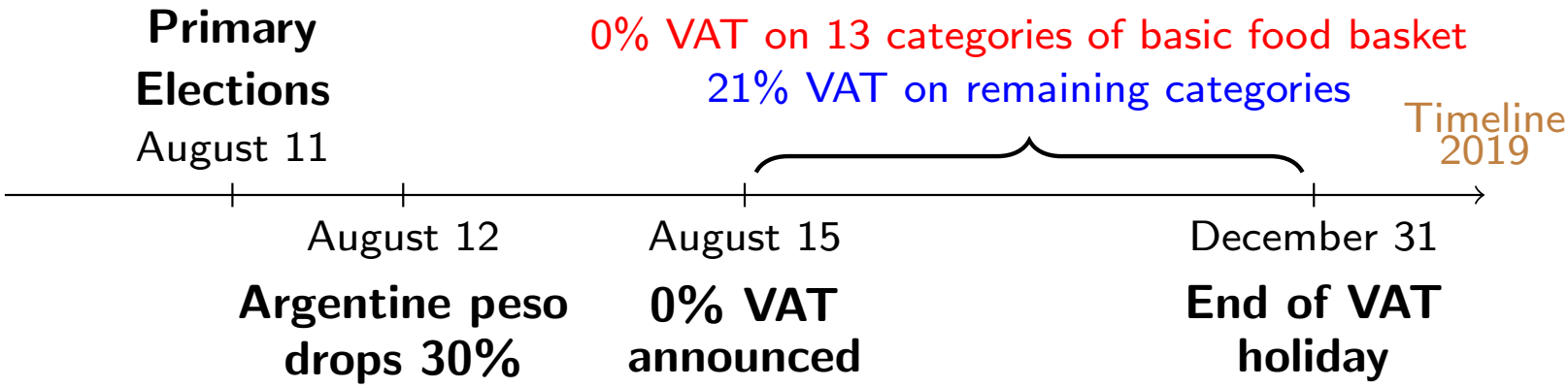
   ⋆ **Fullerton & Metcalf (2002)**; **Benzarti et al (2020)**; **Benzarti & Carloni (2019)**; **Kosonen (2015)**; **Kopczuk et al (2016)**; **Benedek et al (2019)**; **Carbonnier (2007)**; **Fuest et al (2021)**; **Buettner & Madzharova (2020)**; **Harju et al (2018)**; **Gaarder (2018)**; **Bachas et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

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

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

Elections, currency devaluation, and VAT cut/hike

▸ Back



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

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

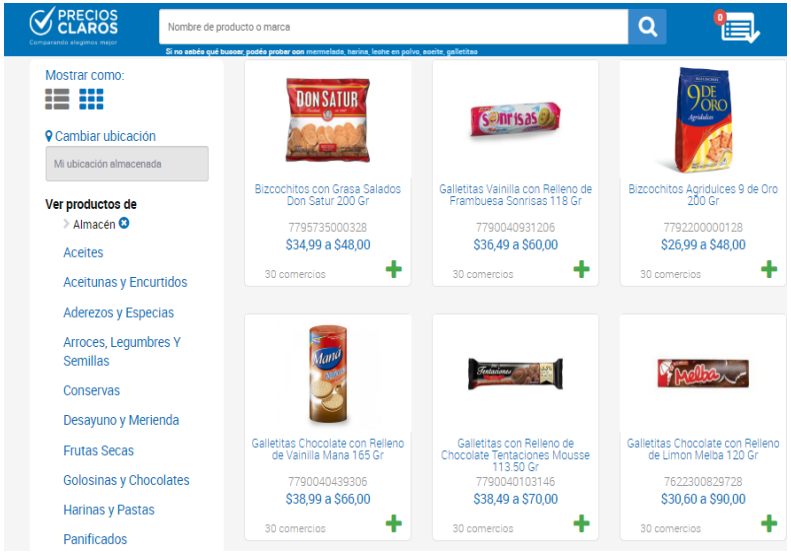
INFOBAE

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

16 de Agosto de 2019

'Precios Claros' webpage



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

VAT cut enforced by the Consumer Protection Agency:

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

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

Enforcement tools at hand

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

Un toque de atención para la solución argentina de los problemas argentinos

Viernes 16.8.2019

BUENOS AIRES, ARGENTINA - PRECIO: $ 55,00

Spot
En la piel de Carlos Tevez
Balthazar Murillo, un chico de 15 años, interpreta al crack de Boca en la serie "Apache", que se estrena hoy. P. 50

Soldano, la nueva apuesta de gol en Boca
"Mi desafío más grande", afirma. Debuta el domingo. P. 44

Tema del día • Nuevas medidas económicas

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

El Gobierno continuó con los anuncios para contener el impacto de la devaluación. Dispuso quitarles el impuesto del 21% a aceites, azúcar, leche, arroz y huevos, entre otros. Además quedará sin efecto el ajuste por inflación de las cuotas de créditos hipotecarios UVA, que alcanzará a unas 100 mil familias. Anoche Macri evaluaba cambios en el Gobierno para potenciar las nuevas medidas. Uno de ellos sería el reemplazo del ministro de Hacienda Nicolás Dujovne. P. 3

Del Editor
Ricardo Kirschbaum
El diálogo y un atisbo de tregua P. 2

BAJÓ MÁS DE $ 2 Y CERRÓ A $ 59,71

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

El candidato del Frente de Todos habló ayer del valor de la divisa y dijo que le parece razonable. Pidió al Gobierno que se preserven las reservas del Banco Central y retiró que va a ayudar "todo lo que pueda". Si es necesario, agregó, se reunirá con el presidente Macri. P. 7





Clarín

Un toque de atención para la solución argentina de los problemas argentinos

Jueves 2.1.2020

BUENOS AIRES, ARGENTINA - PRECIO: $ 60,00

Series 2020
Lo que llega en enero
Las ficciones más esperadas, y las más nominadas, para ver en cable y en las distintas plataformas. P. 38

Patrick Stewart. Protagoniza Star Trek: Picard

Sin heridos por pirotecnia en el Instituto del Quemado
En la noche de Fin de Año y por primera vez desde 1982. P. 24

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 proveedores y supermercados no trasladar al consumidor la alícuota de 21% que se volverá a aplicar desde hoy en productos básicos. Será en trece grupos de comestibles, que llegan a 400 alimentos. Experimentarán un aumento promedio de 7% en pan lactal, yerba, yogur, arroz, azúcar, huevos y polenta. Habrá picos de 9% en aceites y 10,5% en pan rallado. El pan artesanal y de panadería subirá 5 por ciento. La Secretaría de Comercio controlará online que las empresas cumplanlo pactado. Se relanzará además Precios Cuidados. P. 6

MAXI FAILLA

A 5 AÑOS DE LA MUERTE DEL FISCAL

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

El Presidente también criticó la pericia de Gendarmería, que ya propuso revisar la ministra de Seguridad. Fue al ser consultado por Clarín sobre lo que declaró en 2017, en un documental sobre el caso que estrenó ayer Netflix: "Dudo que se haya suicidado", dijo entonces. P. 14

El Personaje
CARLOS GHOSN



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 $60

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.

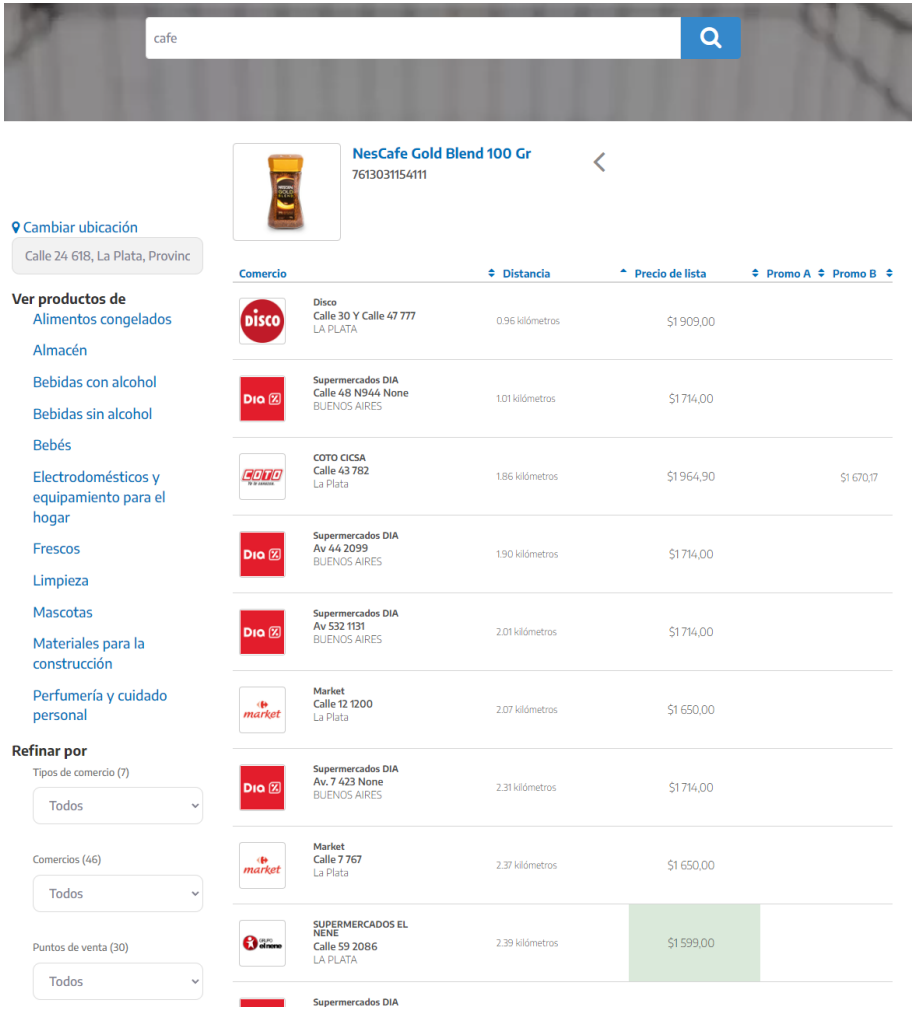
Eduardo Paladini

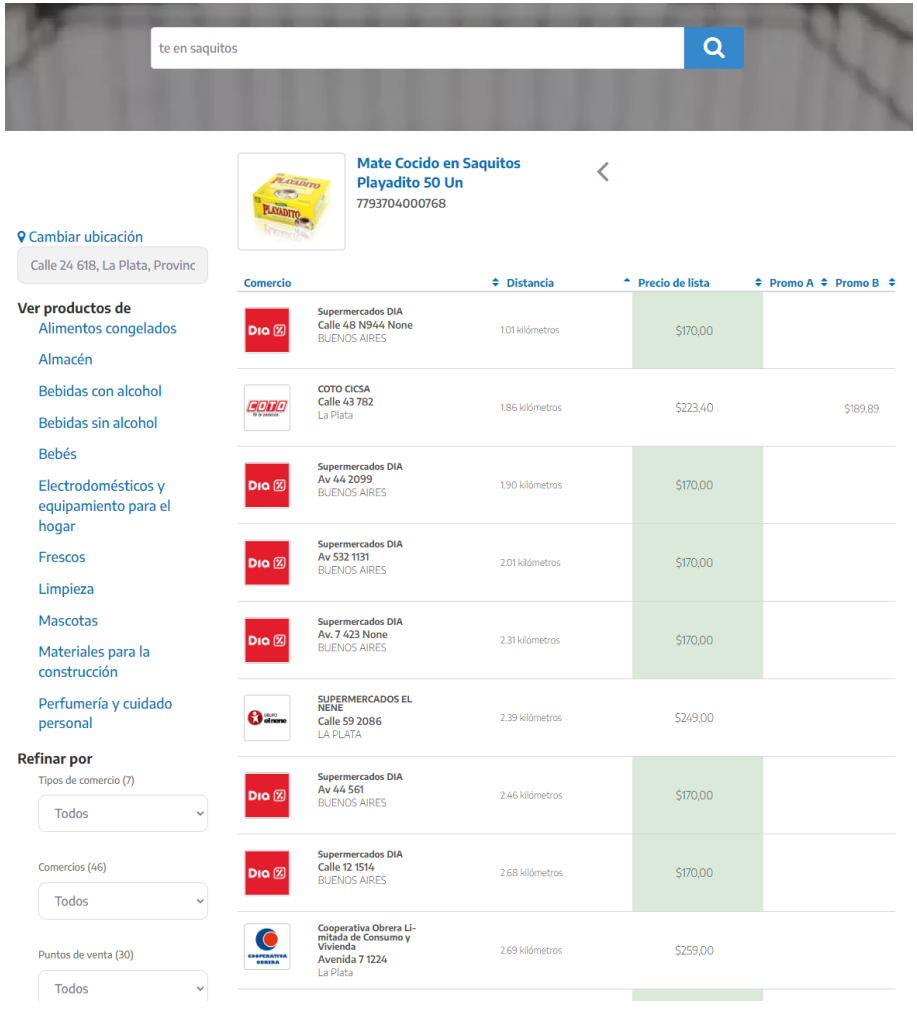
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01/01/2020 13:26 / Clarín.com Economía / Actualizado al 01/01/2020 14:06

Collusion? Unlikely

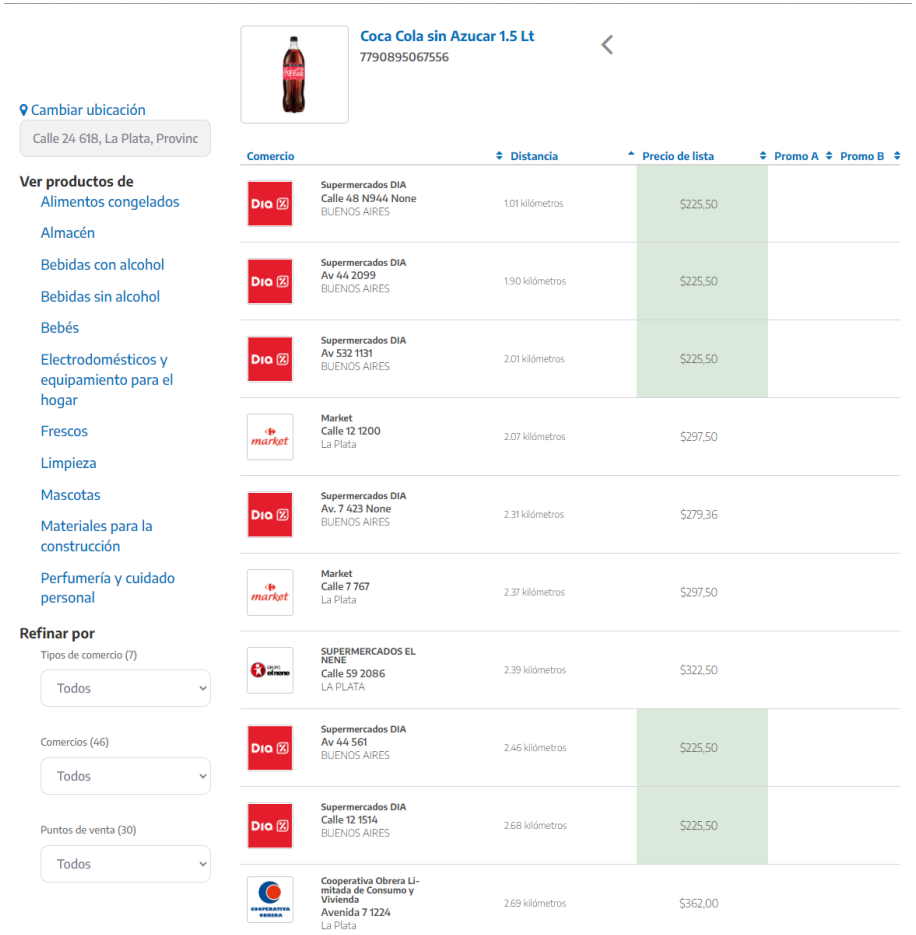
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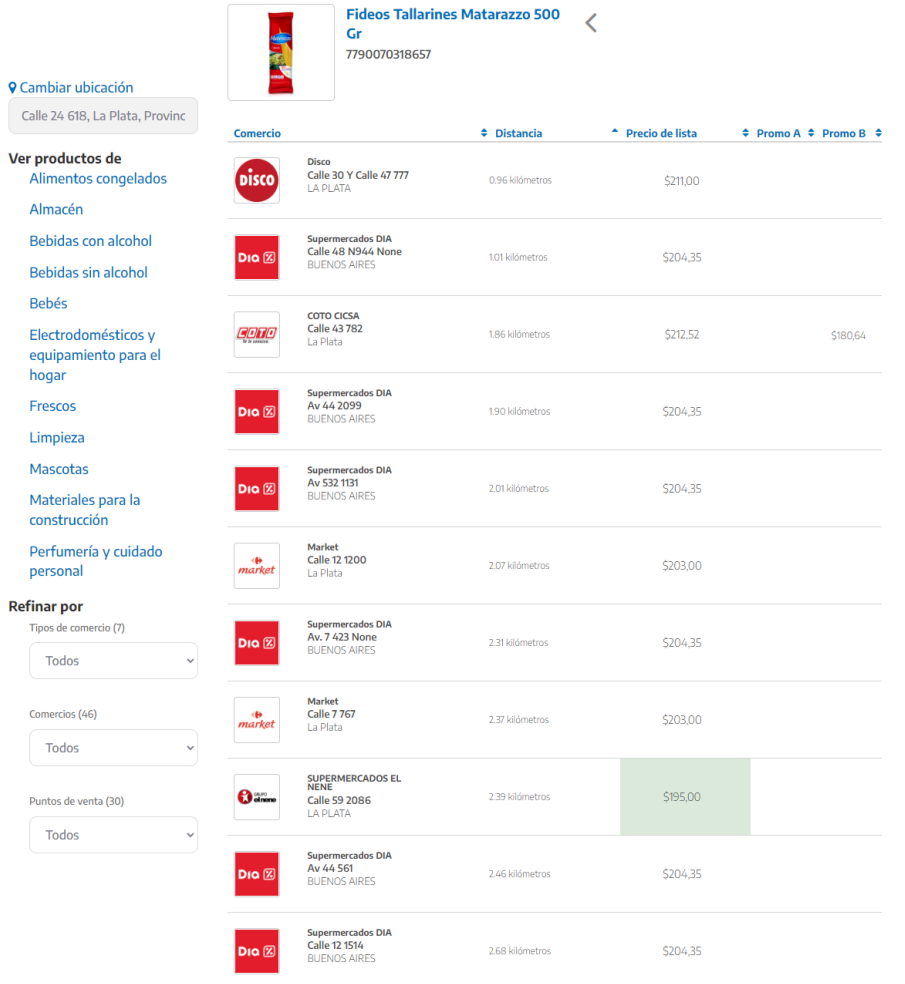




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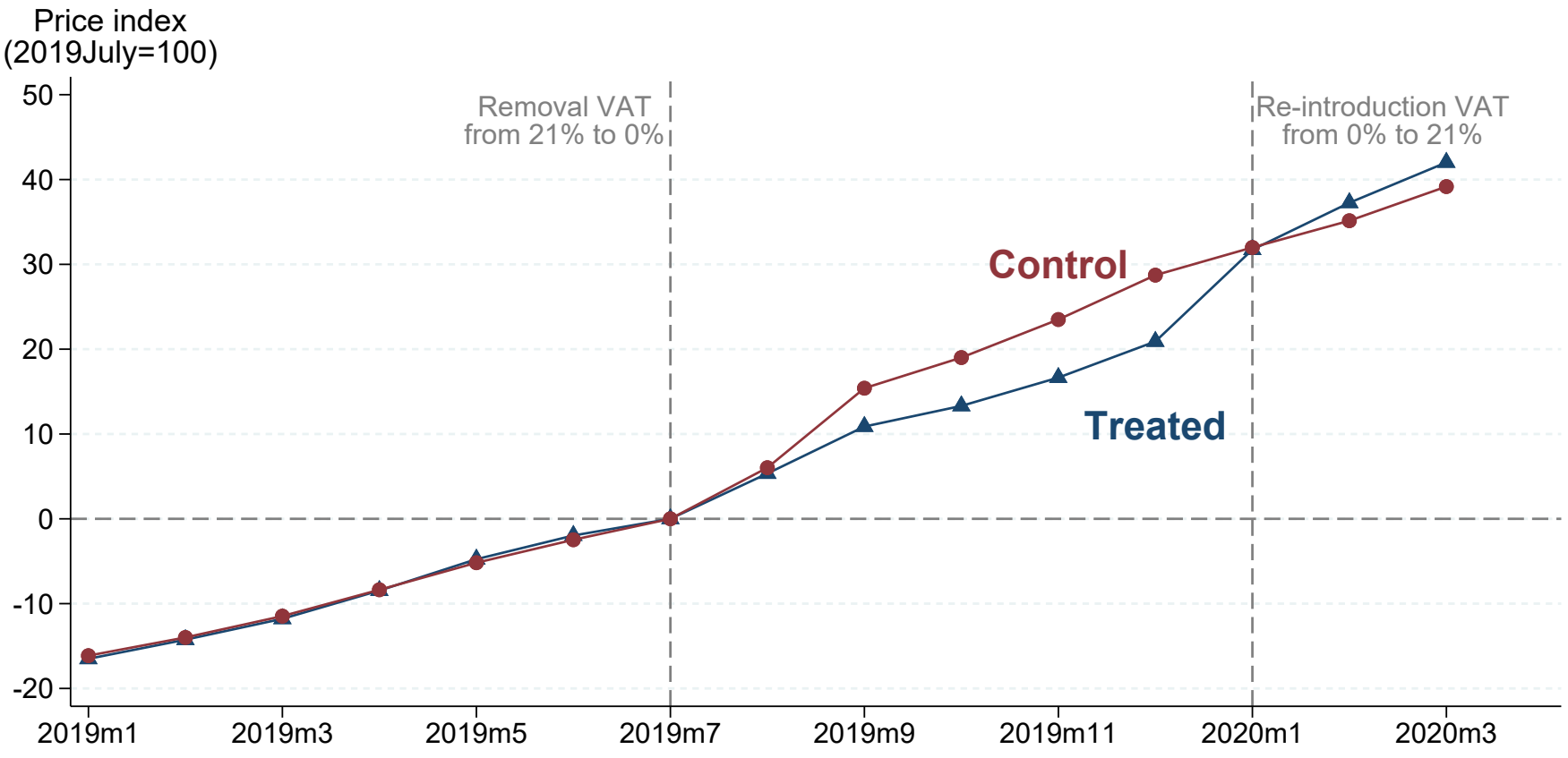
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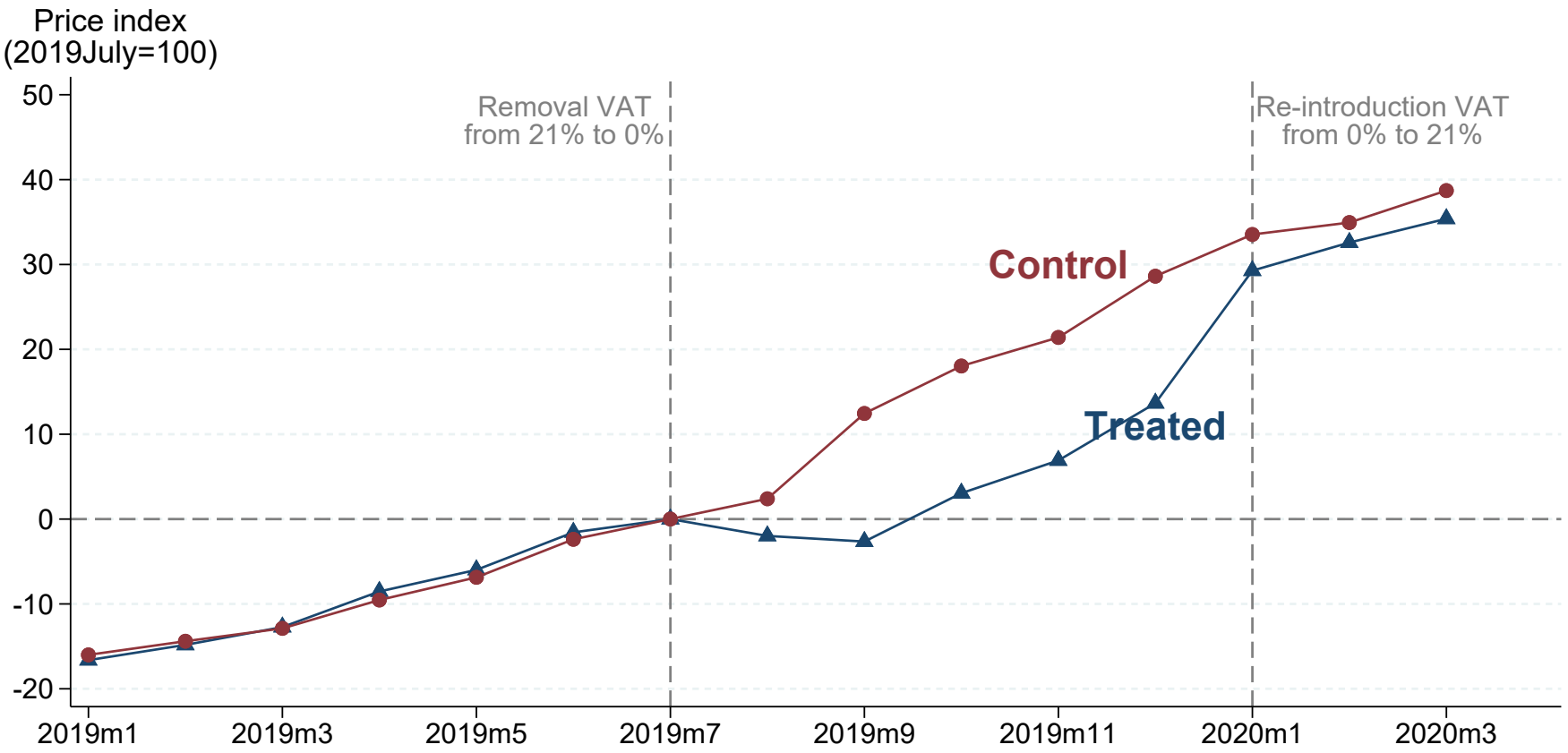
Price levels in **small independent stores**

▸ Back



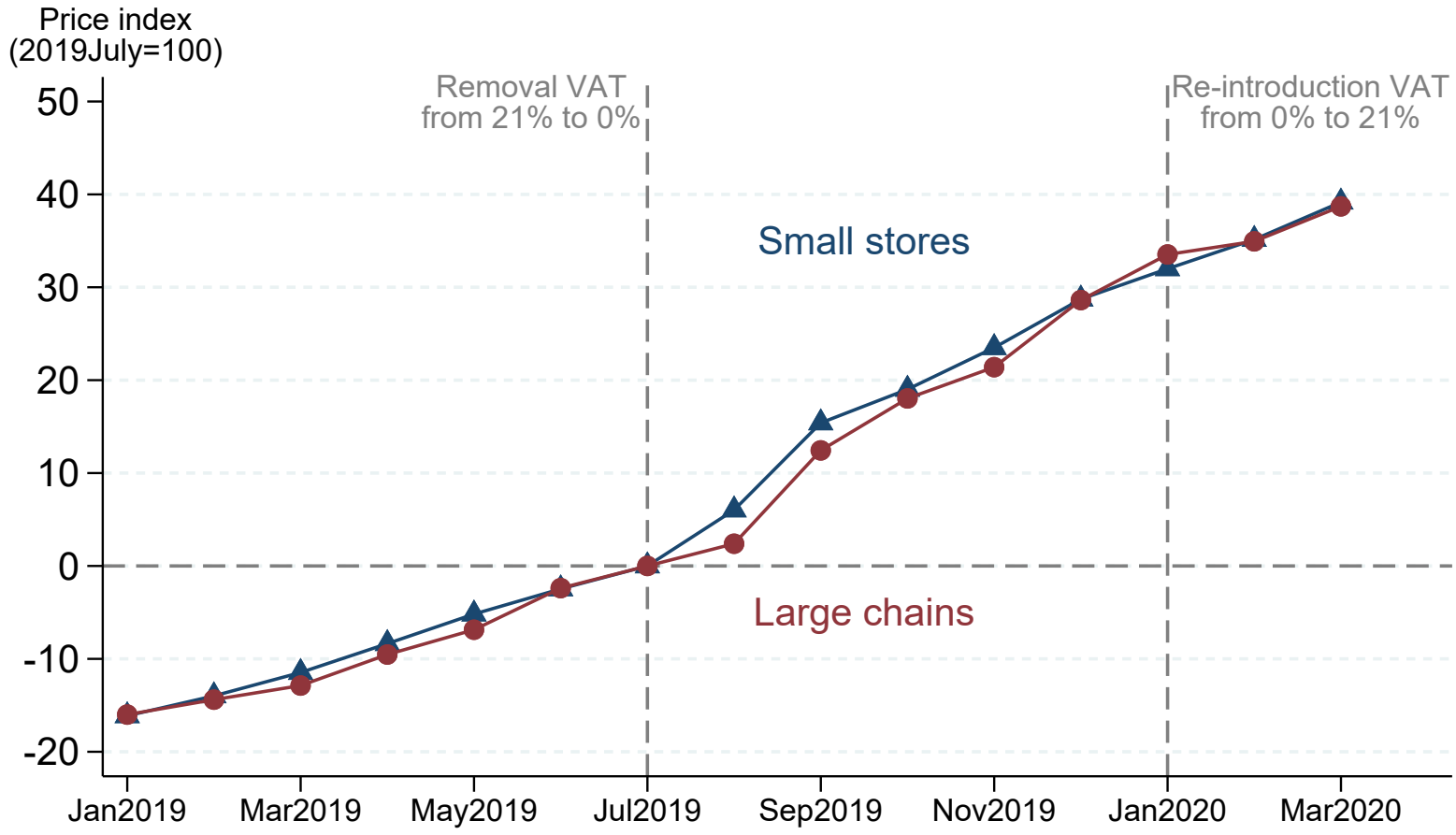
Price levels in **supermarket chains** (prices are monitored)

▸ Back



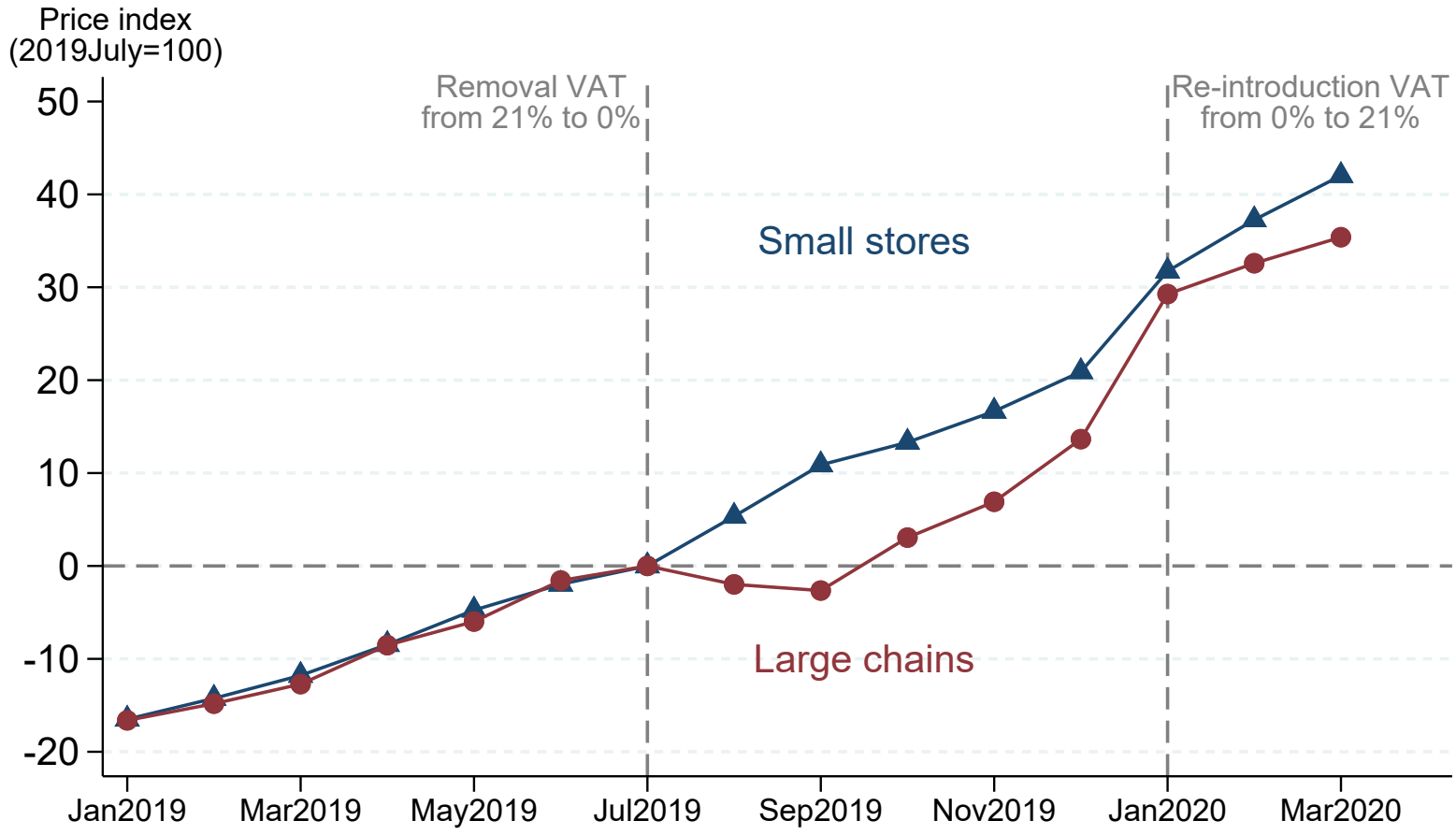
Control goods: Large chains vs Small stores

▸ Back



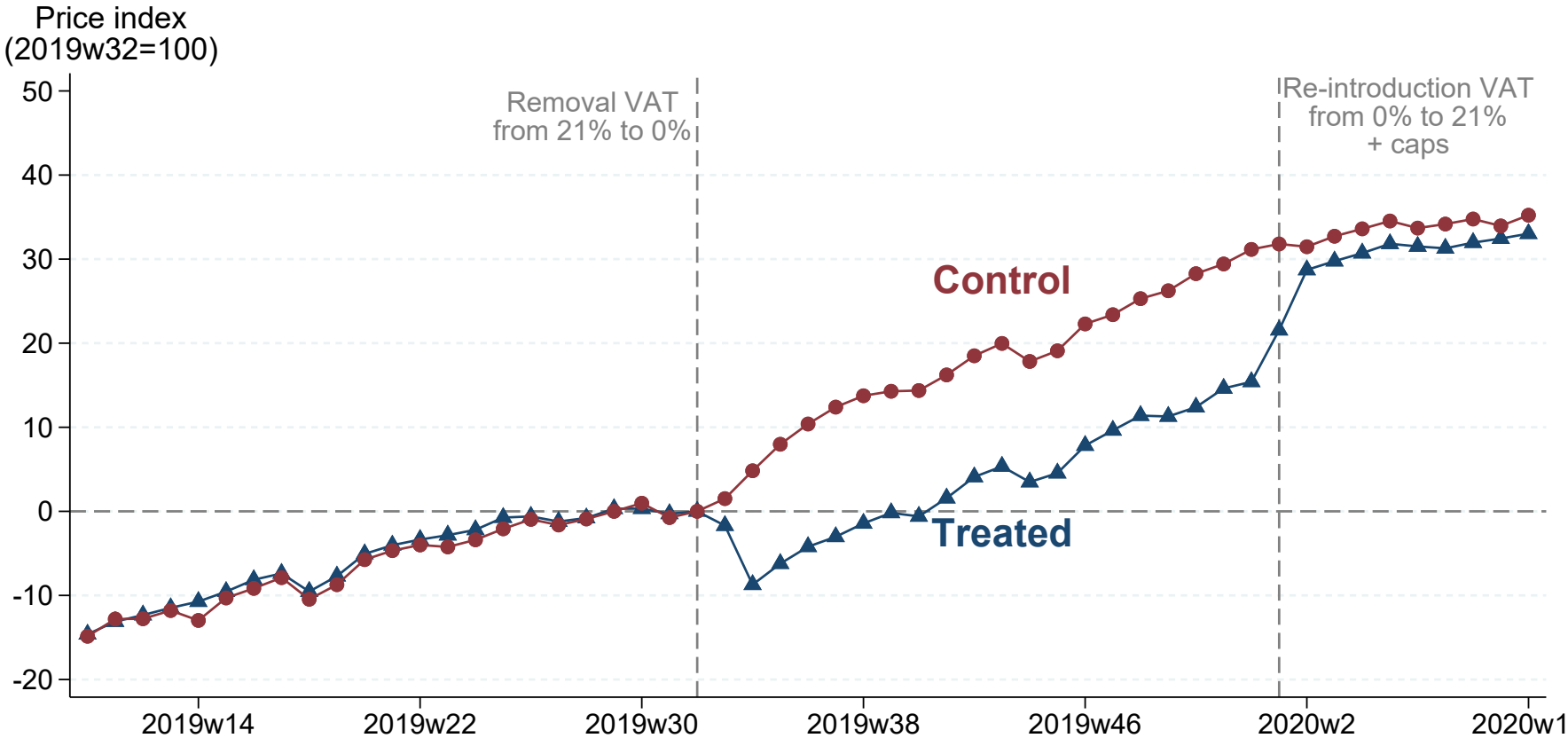
Treated goods: Large chains vs Small stores

▸ Back



Price levels in **supermarket chains** (weekly data)

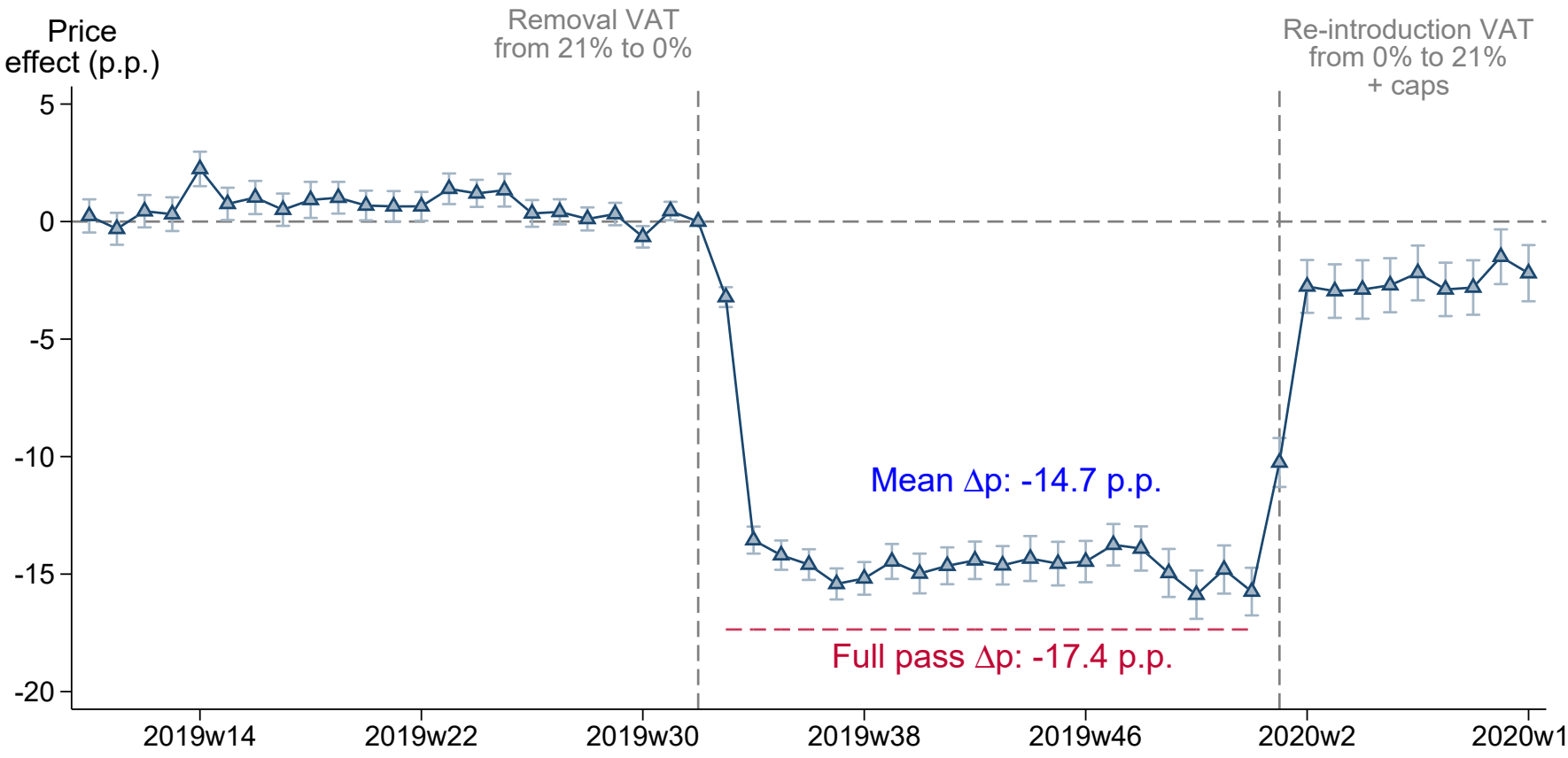
▸ Back



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

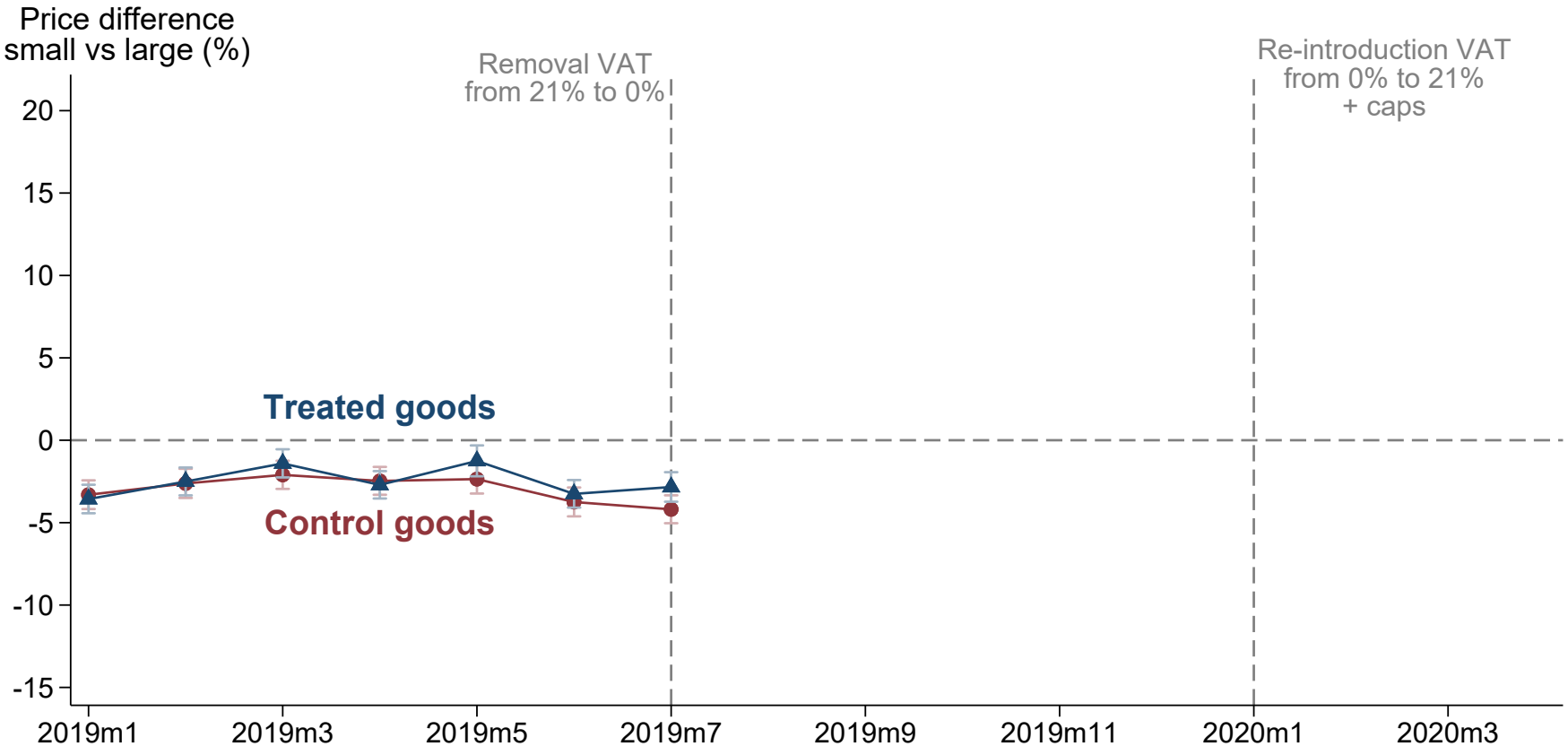
Average price pass-through of ∼85% in large chains

▸ Back



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

Indep stores cheaper (pre-reform) than chain supermarkets

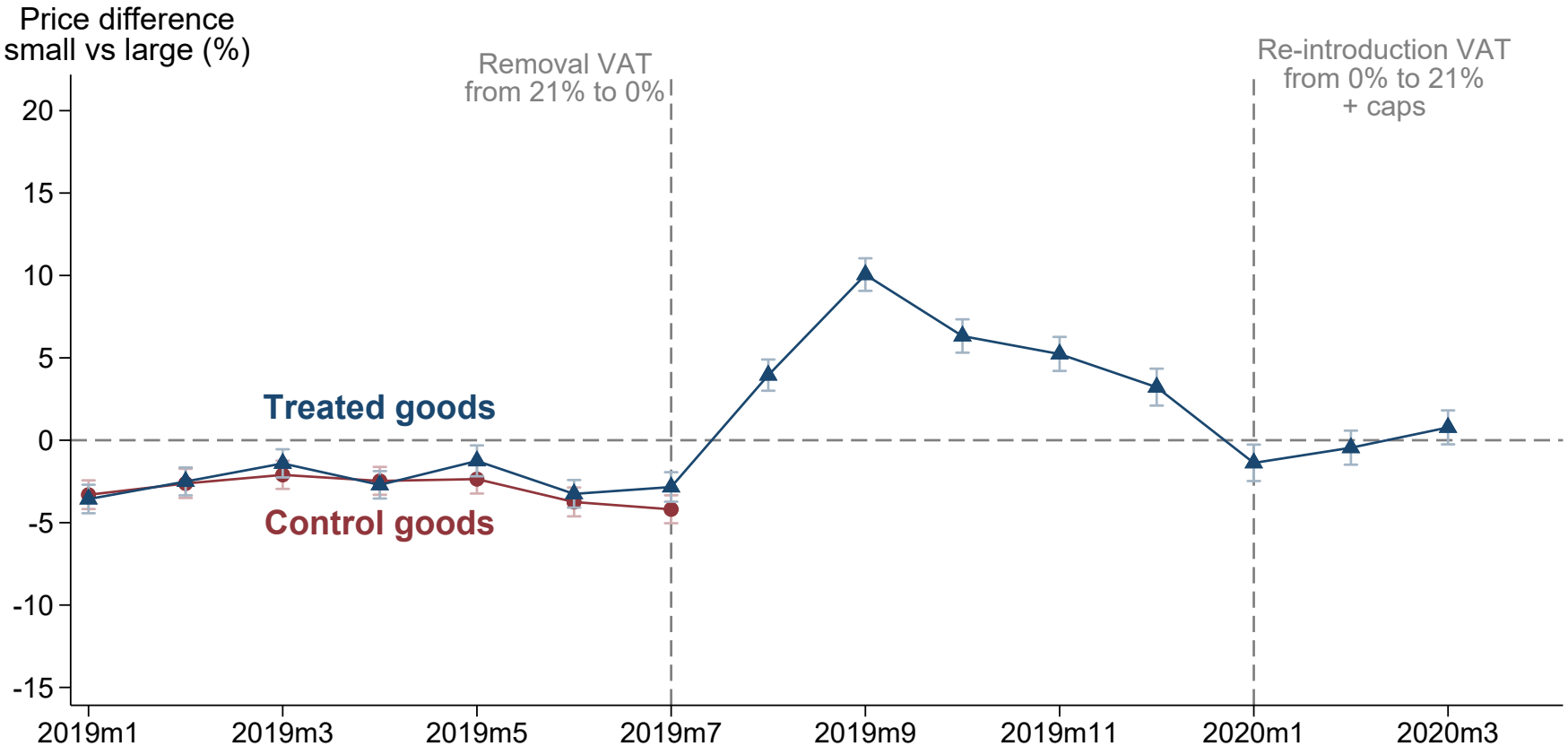


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{IndepStore}_{irt} + \epsilon_{irst}$$

▸ Back

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

Indep stores cheaper (pre-reform) than chain supermarkets

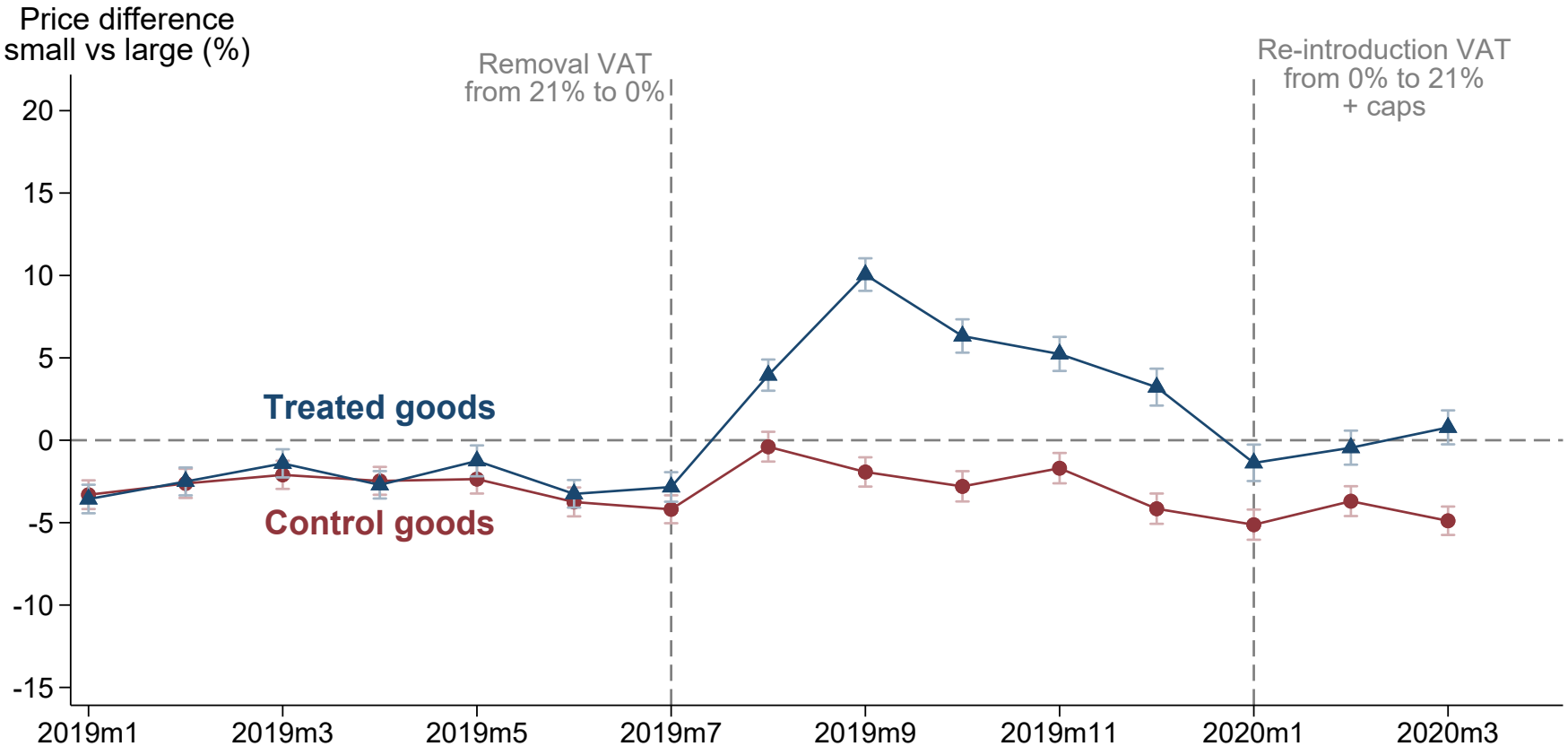


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{IndepStore}_{irt} + \epsilon_{irst}$$

▸ Back

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

Indep stores cheaper (pre-reform) than chain supermarkets



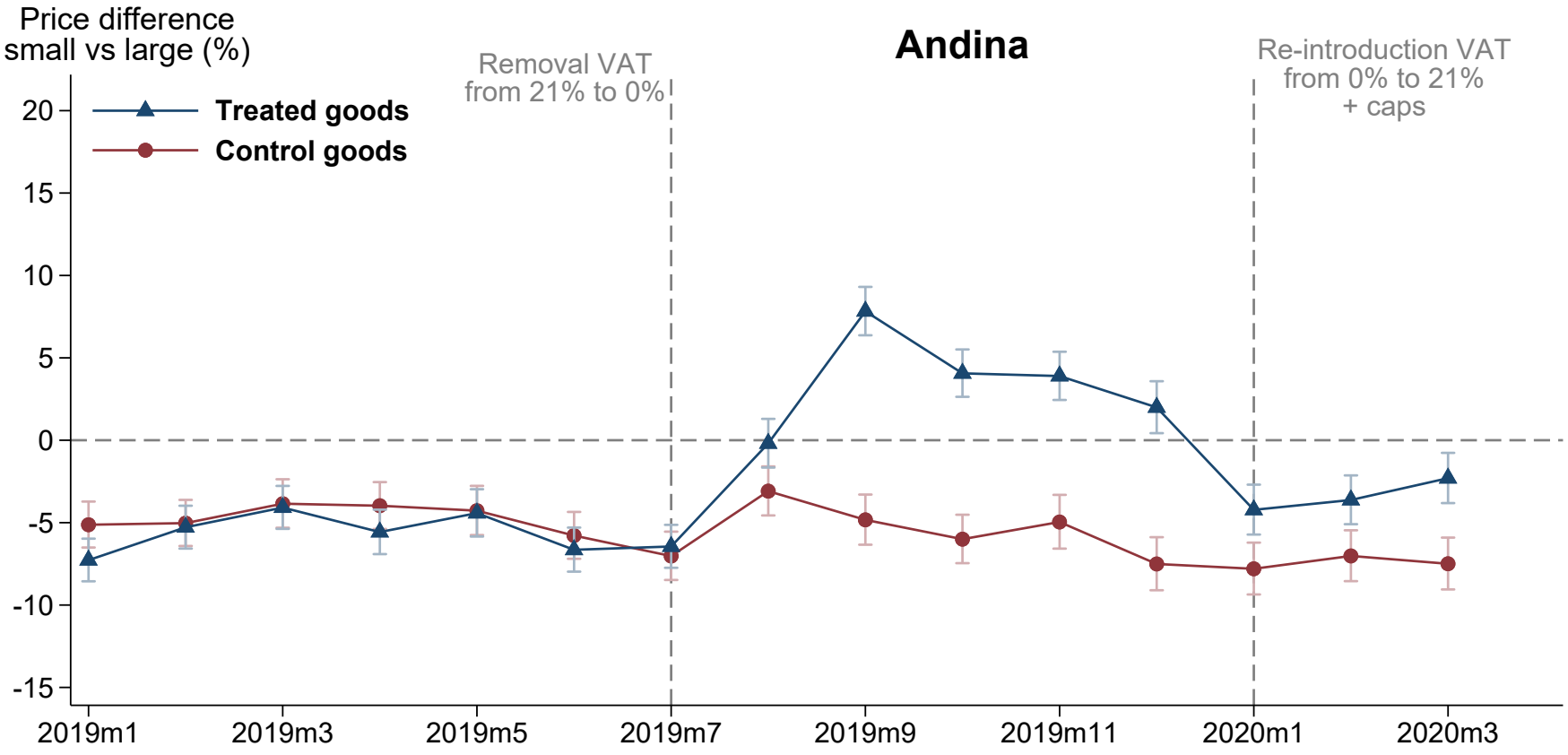
$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{IndepStore}_{irt} + \epsilon_{irst}$$

▸ Back

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

But largely heterogeneous across the 5 regions

▸ Back

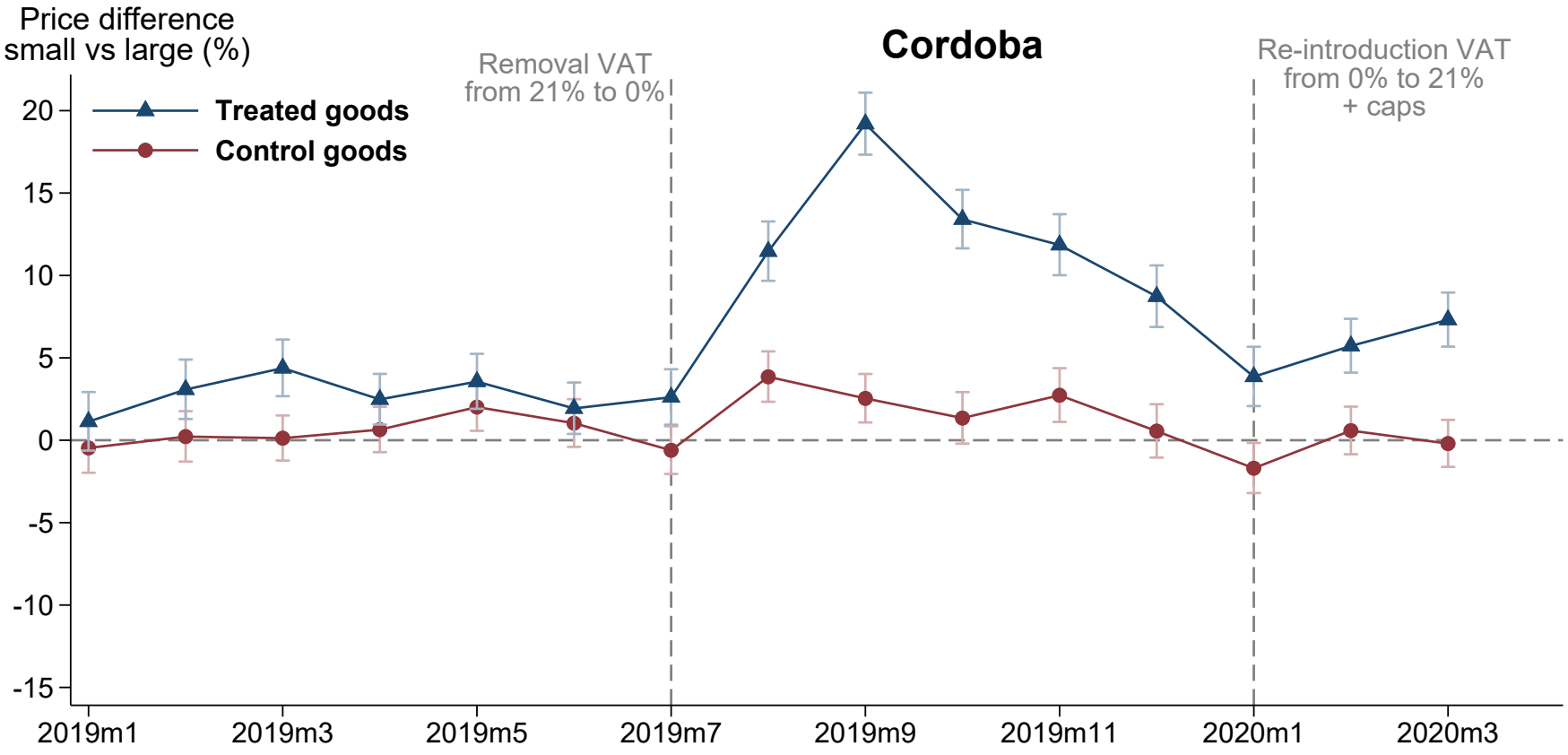


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

But largely heterogeneous across the 5 regions

▸ Back

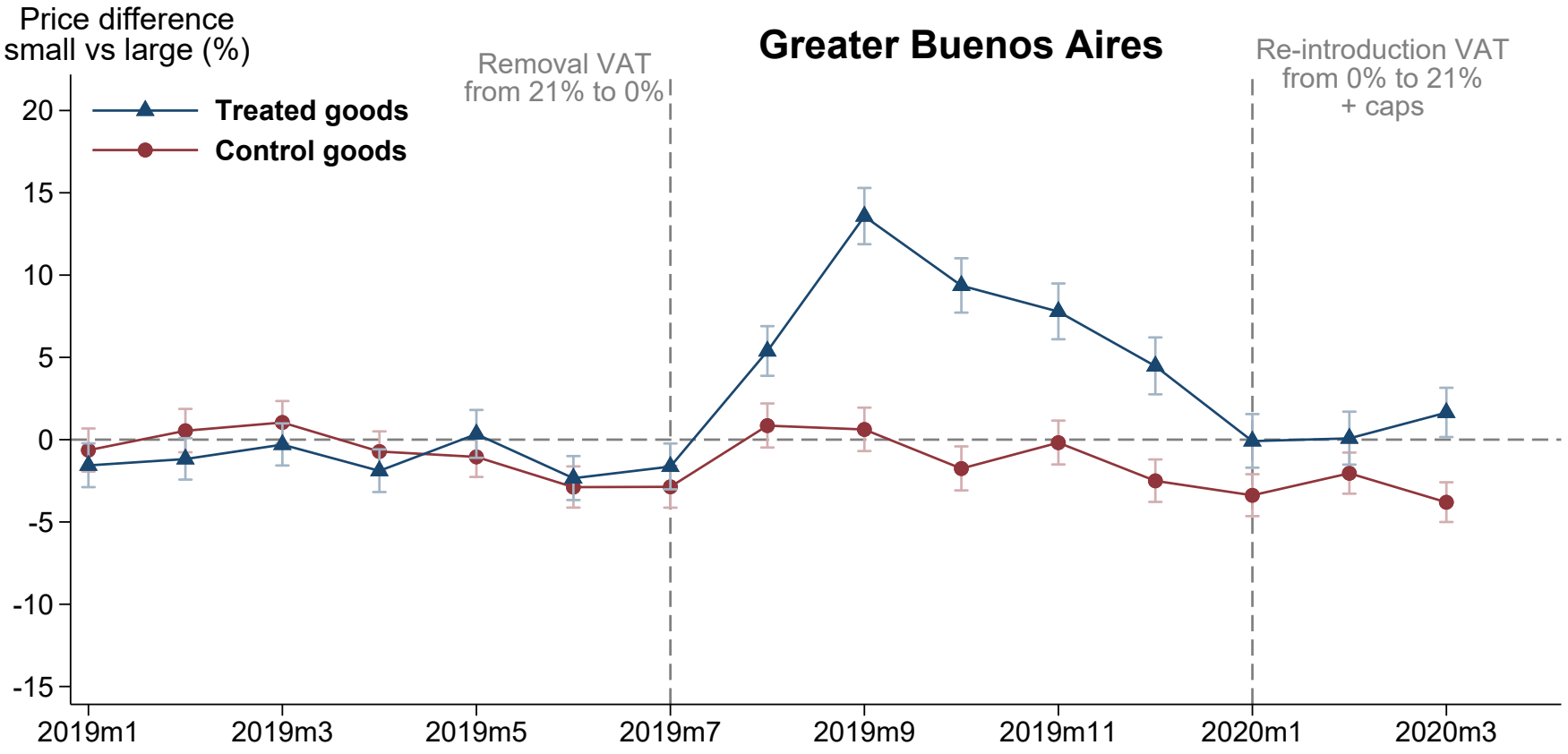


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

But largely heterogeneous across the 5 regions

Back

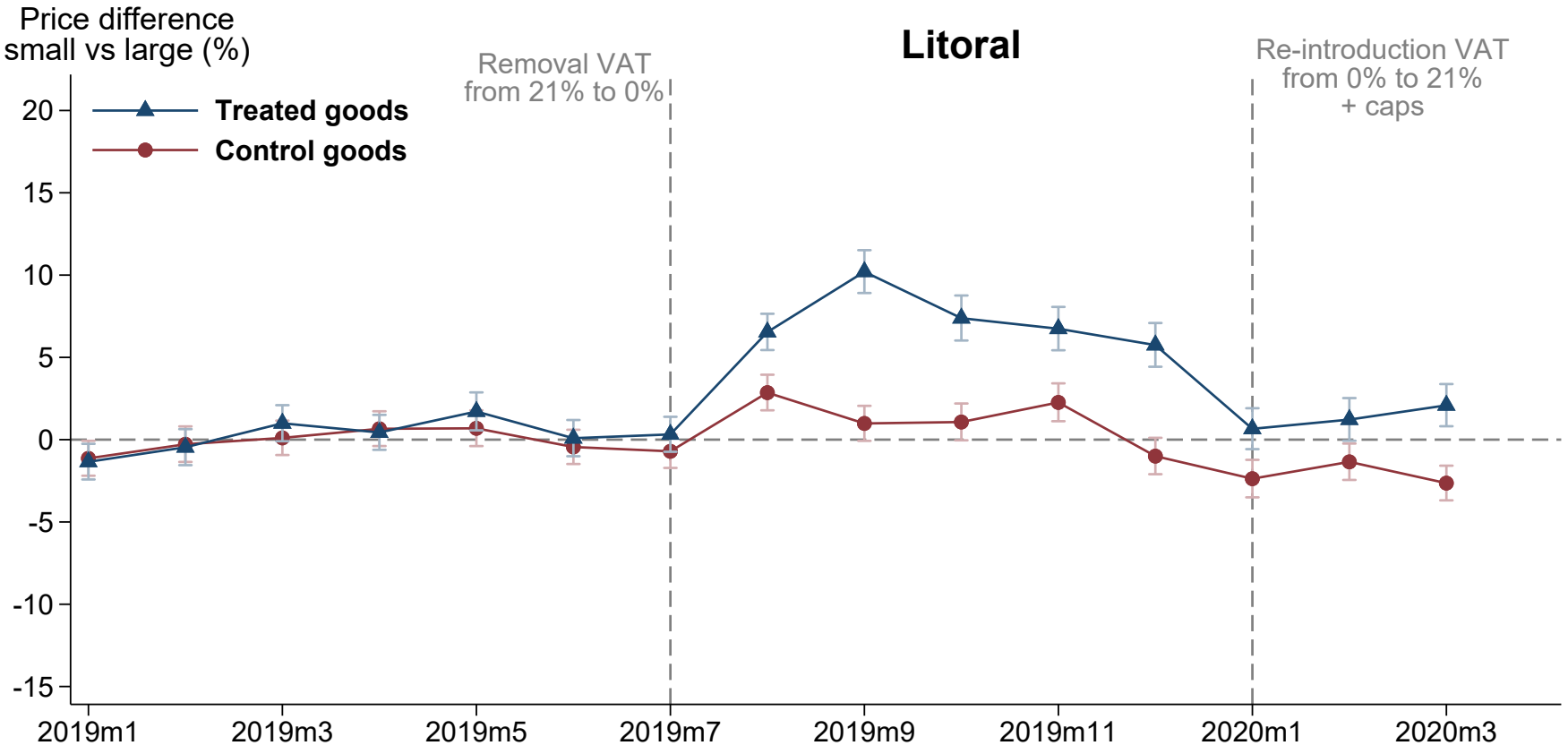


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

But largely heterogeneous across the 5 regions

Back

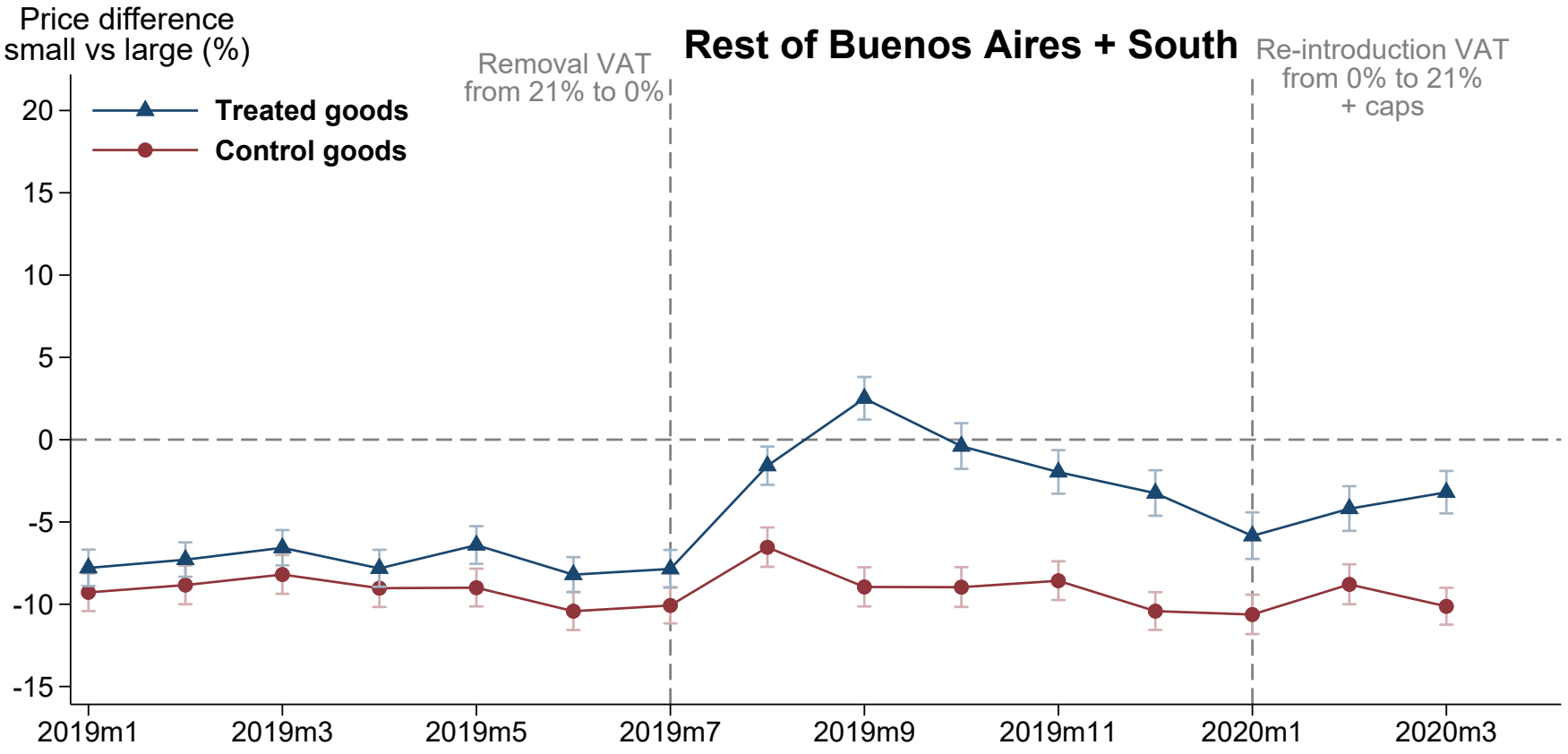


$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

But largely heterogeneous across the 5 regions

▸ Back

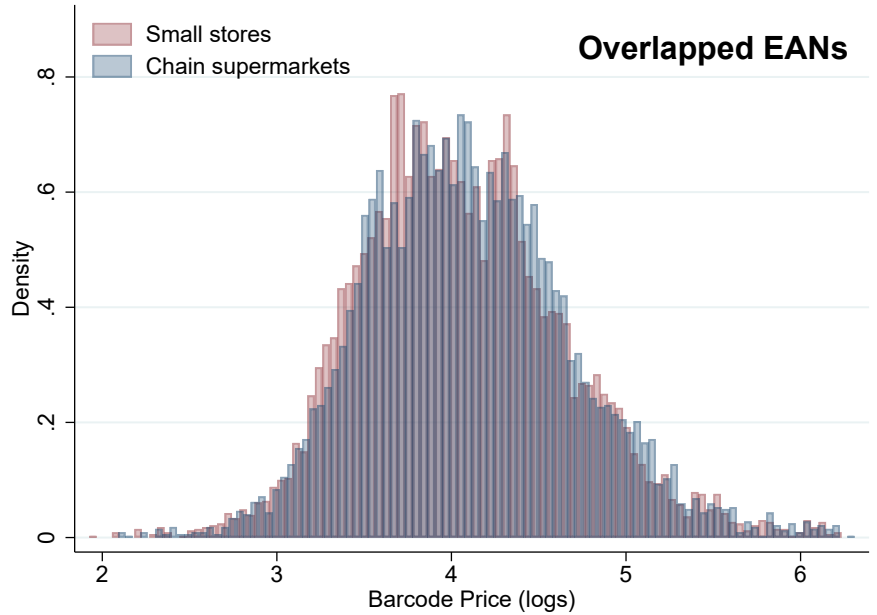


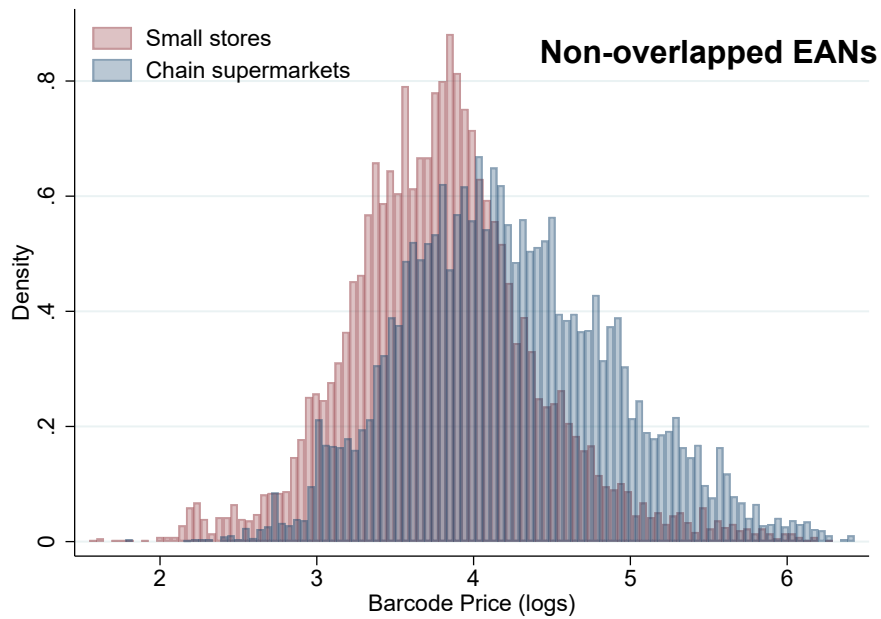
$$\log P_{irst} = \alpha_{irt} + \sum_{t \neq 2019m7}^{2020m3} \beta_t \text{SmallStore}_{irt} + \epsilon_{irst}$$

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

Price density for overlapped and non-overlapped barcodes

▸ Back

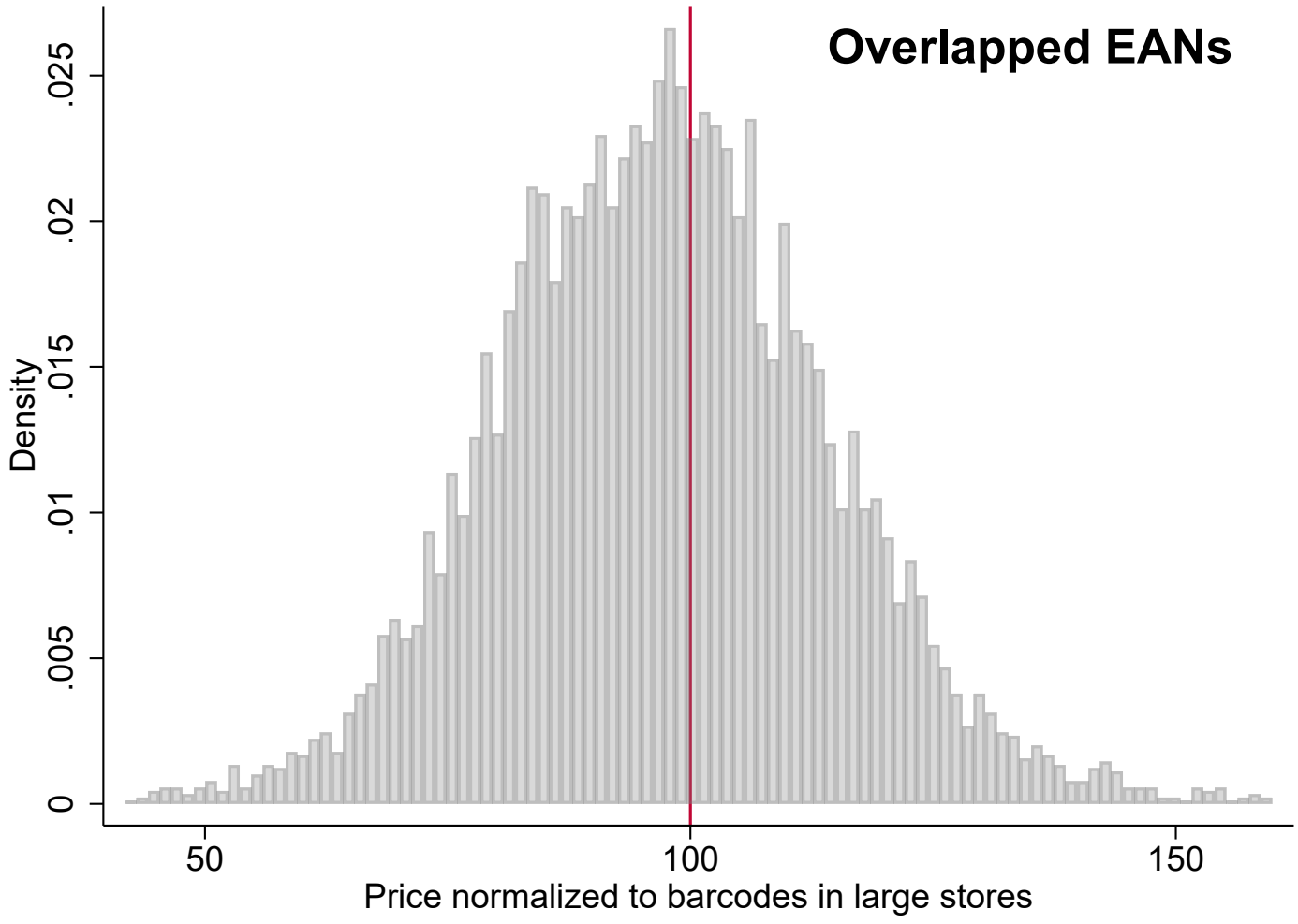




Price density for overlapped barcodes

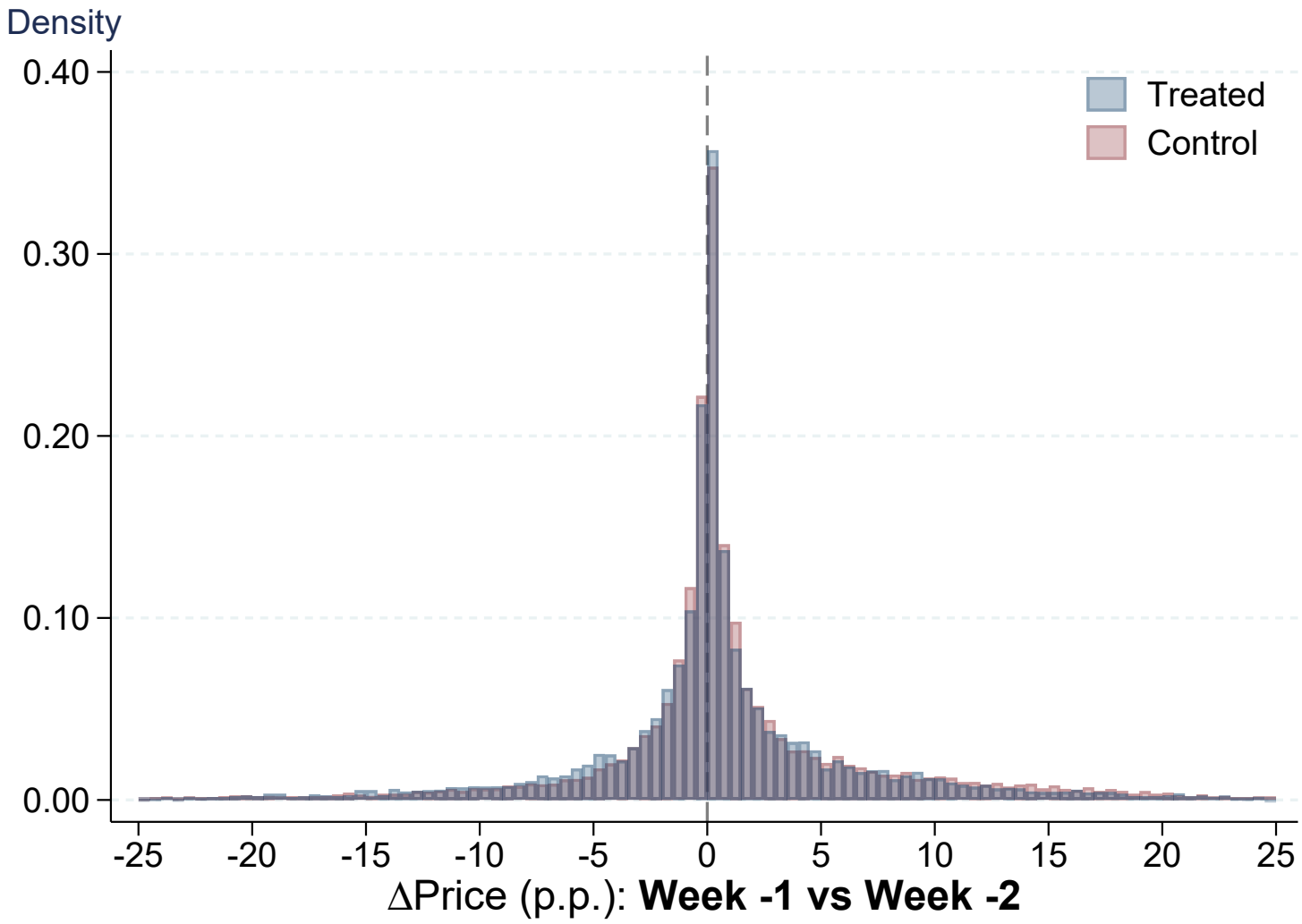
▸ Back

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



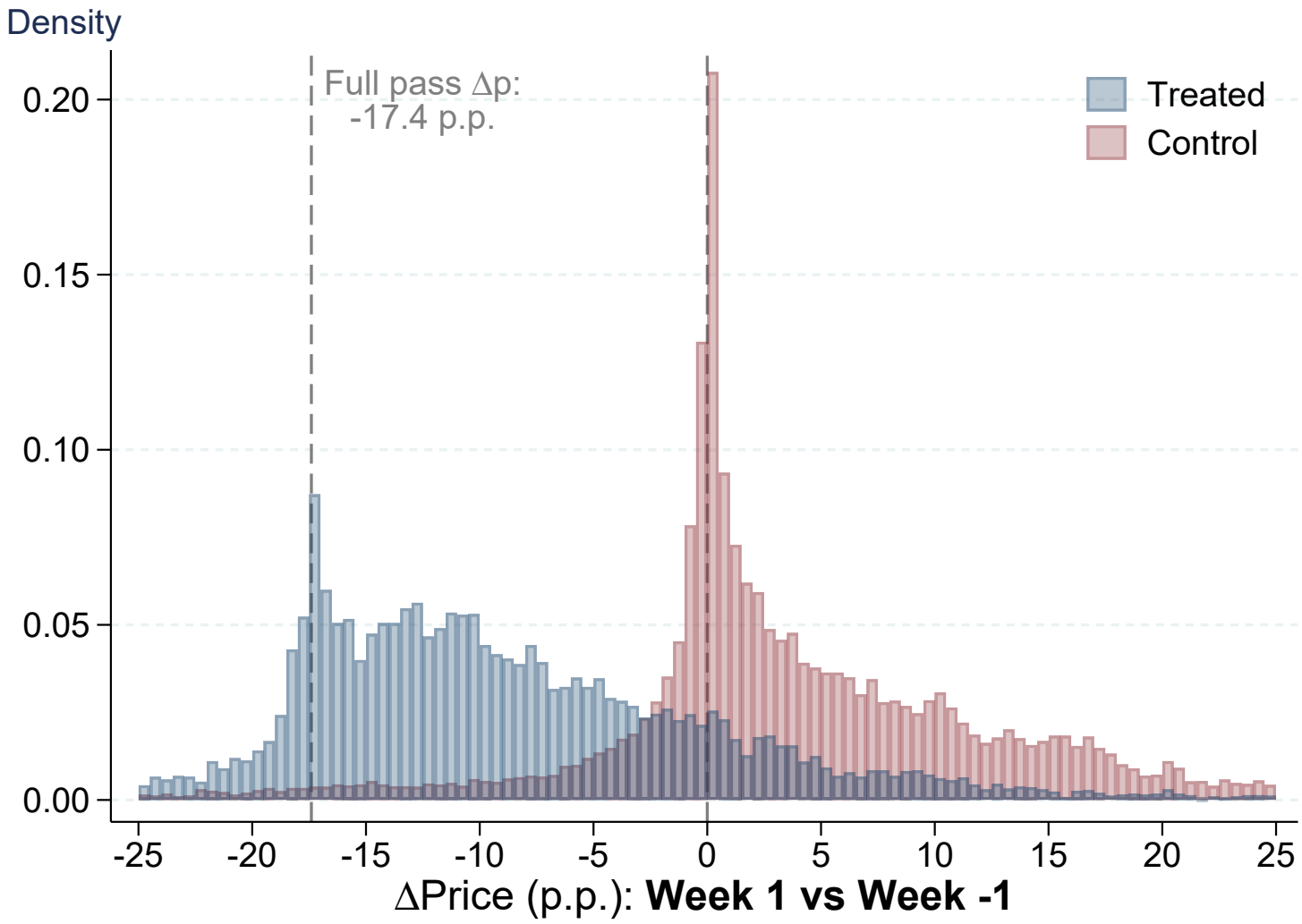
Distrib of *price changes* two weeks **before** VAT removal

Large chains (prices are monitored) ▸ Back



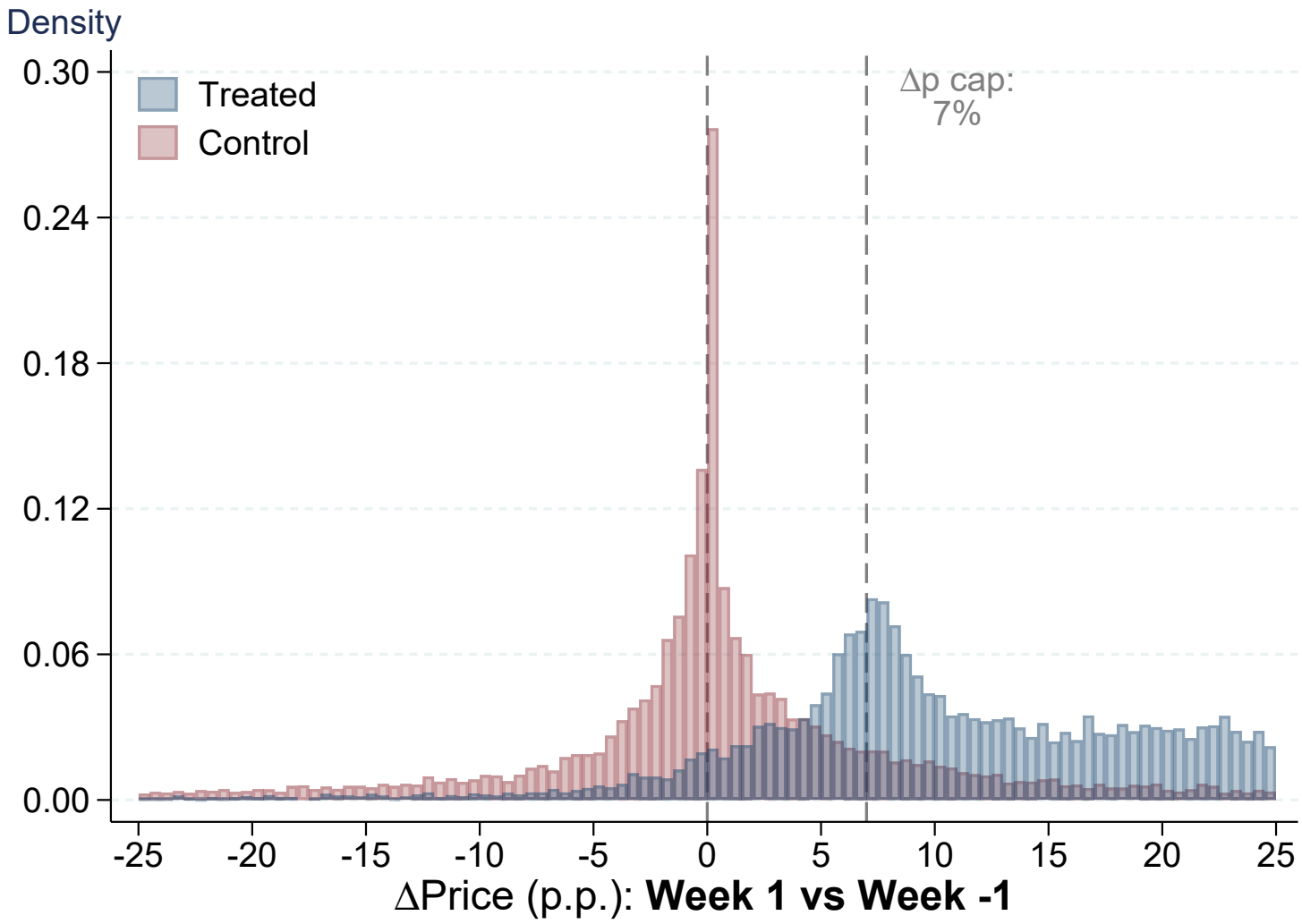
Distrib of *price changes* **right after** VAT removal

Large chains (prices are monitored) ▸ Zoom in ▸ Substitutes ▸ Back



Distrib of *price changes* **right after** VAT reinstated

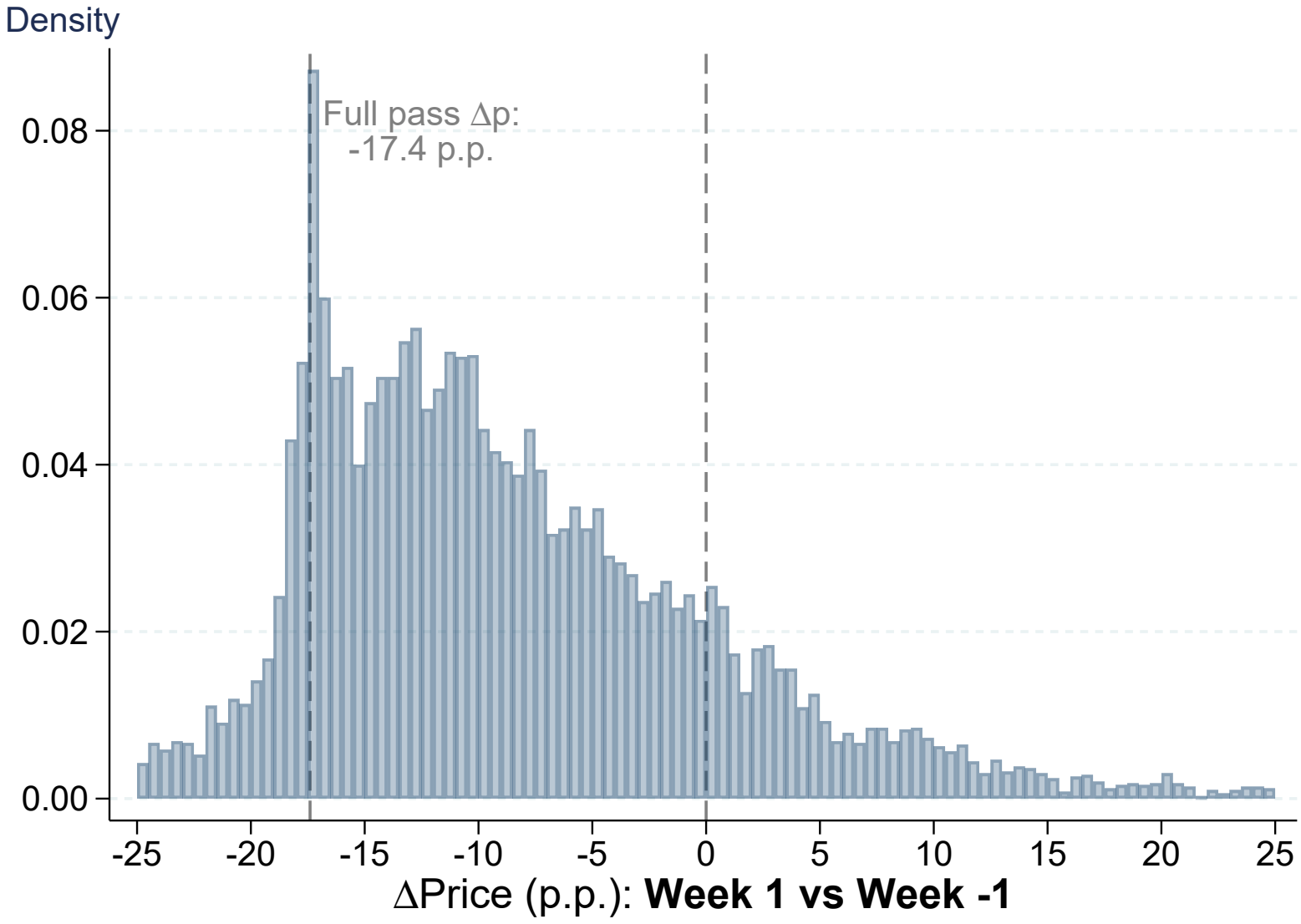
Large chains (prices are monitored) ▸ Zoom in ▸ Cap section ▸ Back



Distrib of price changes right after VAT removal

▸ Back

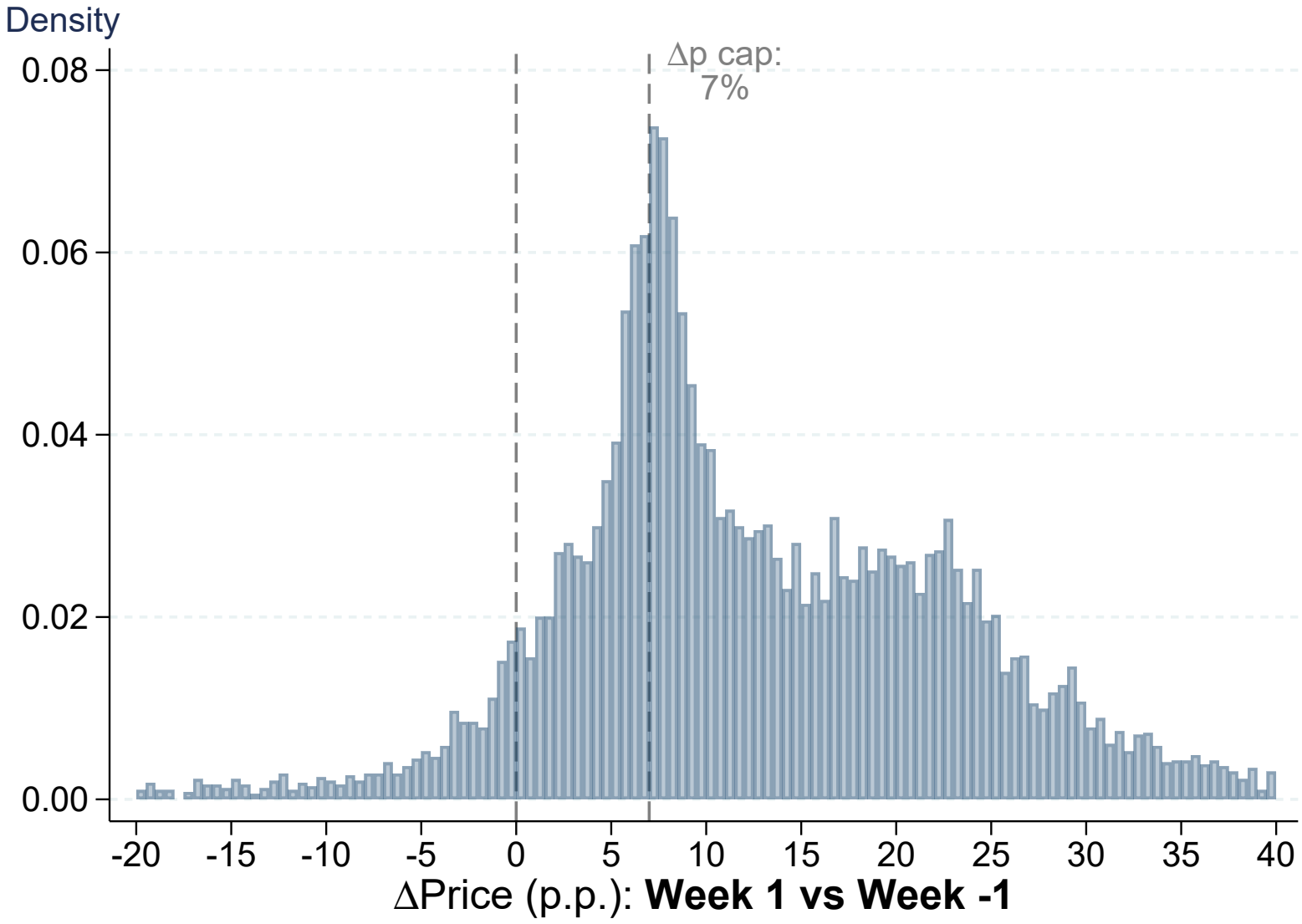
Large chains (treated goods)



Distrib of price changes: VAT reinstated

▸ Back

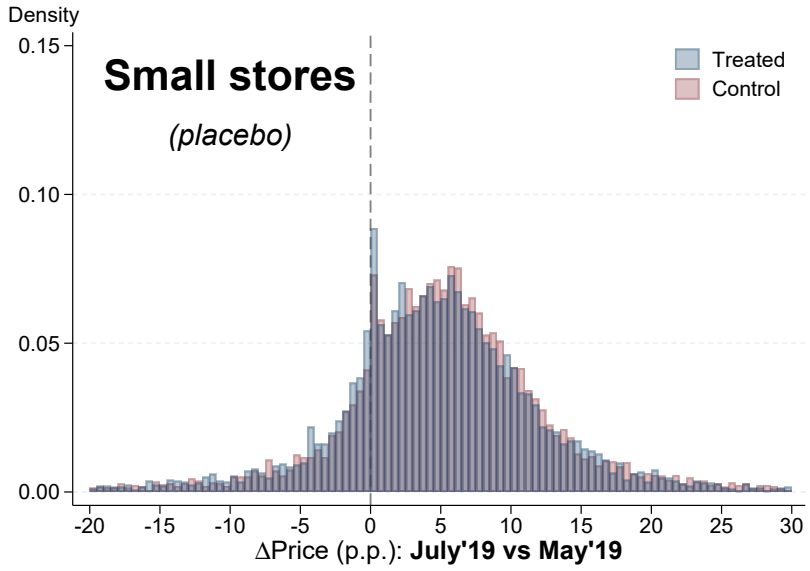
Large chains

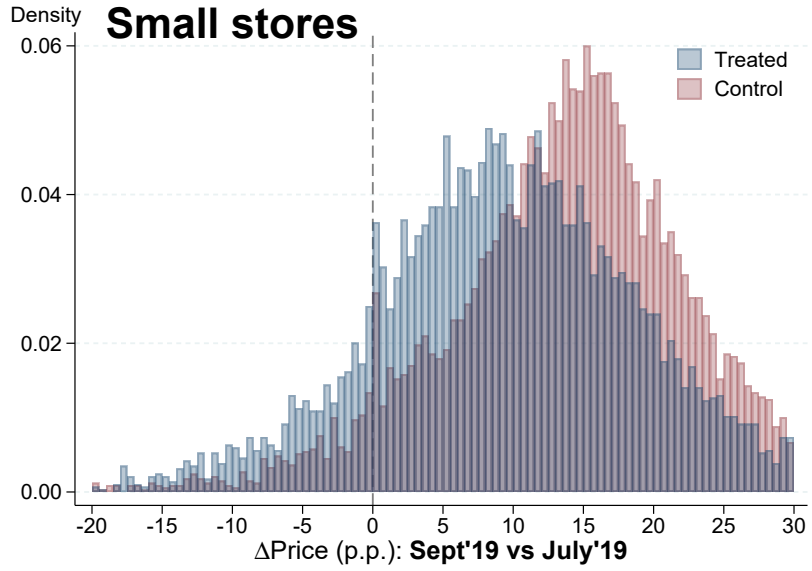


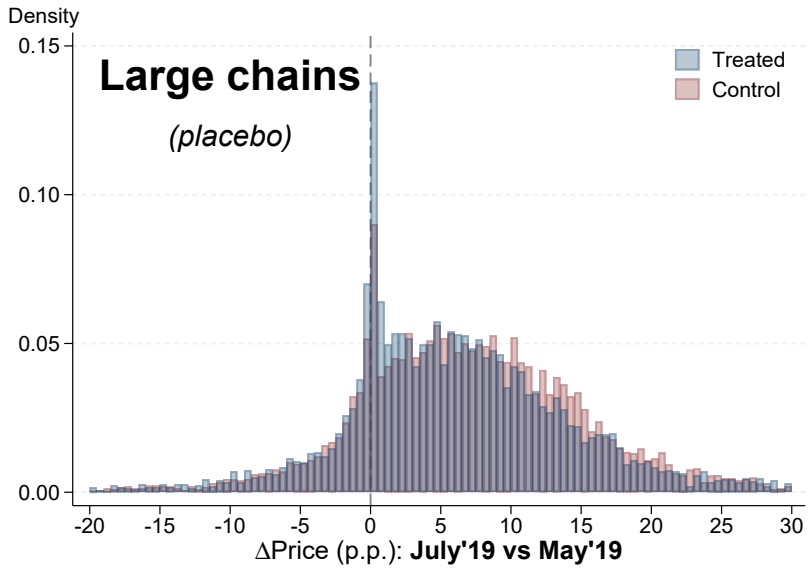
Distrib of price changes after VAT removal

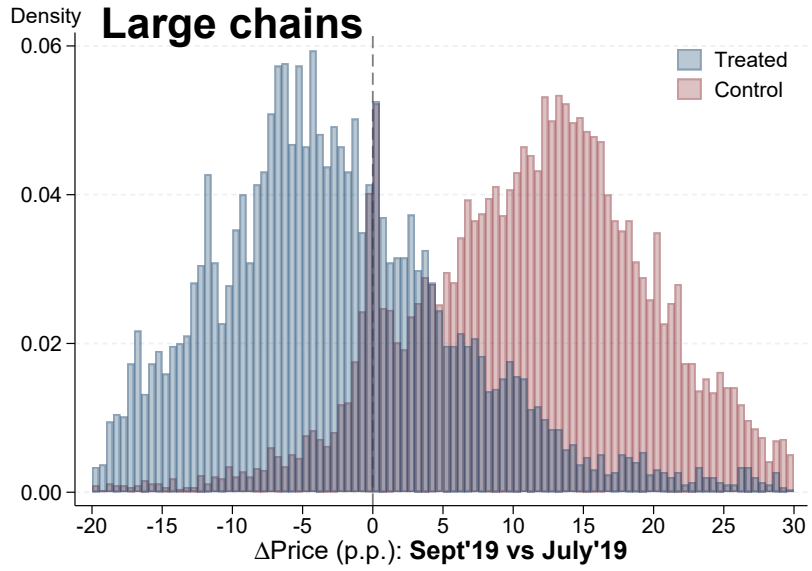
Small stores vs Large chains

▸ Overlap T & C ▸ Back





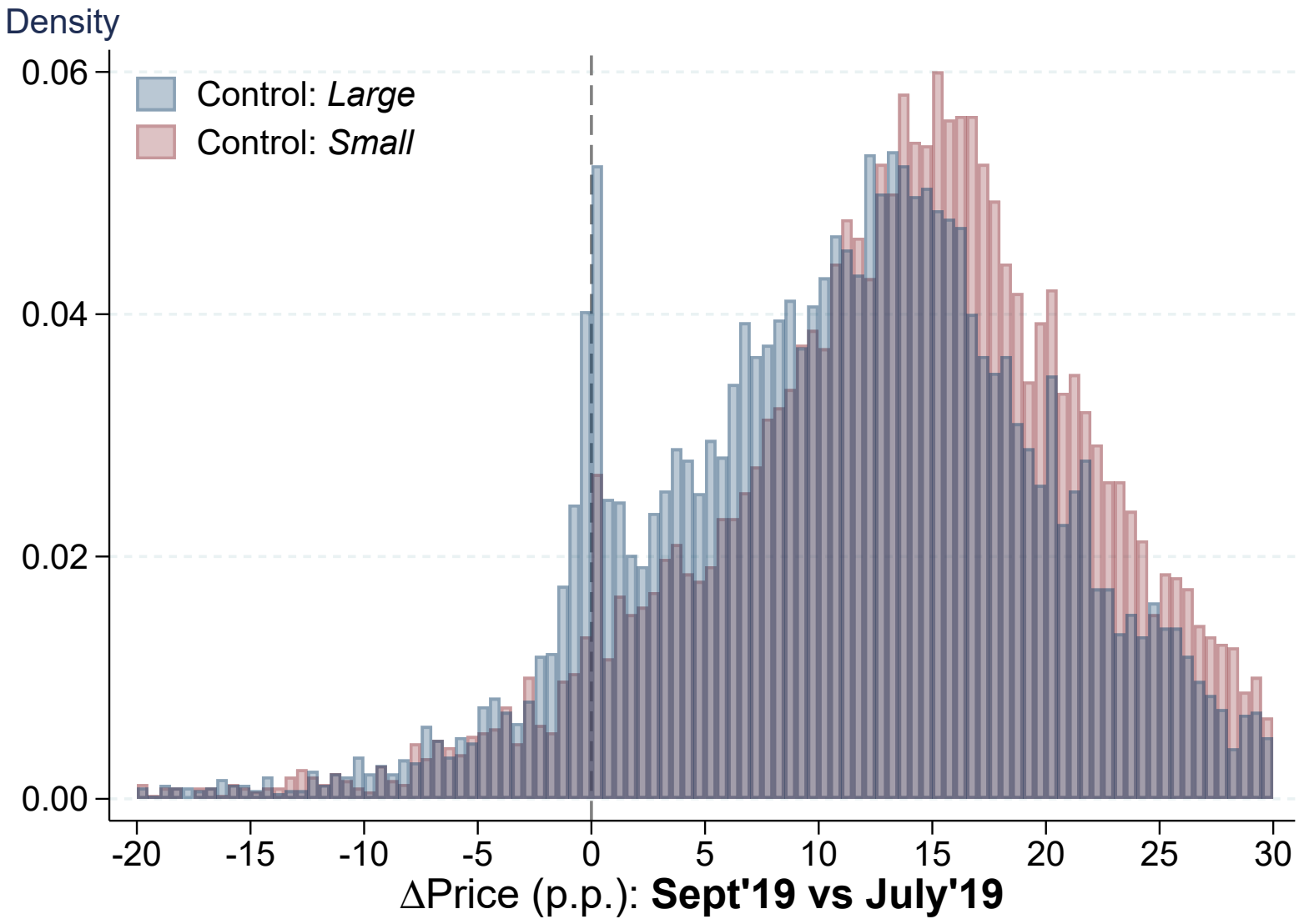




Distrib of price changes: VAT removal

▸ Back

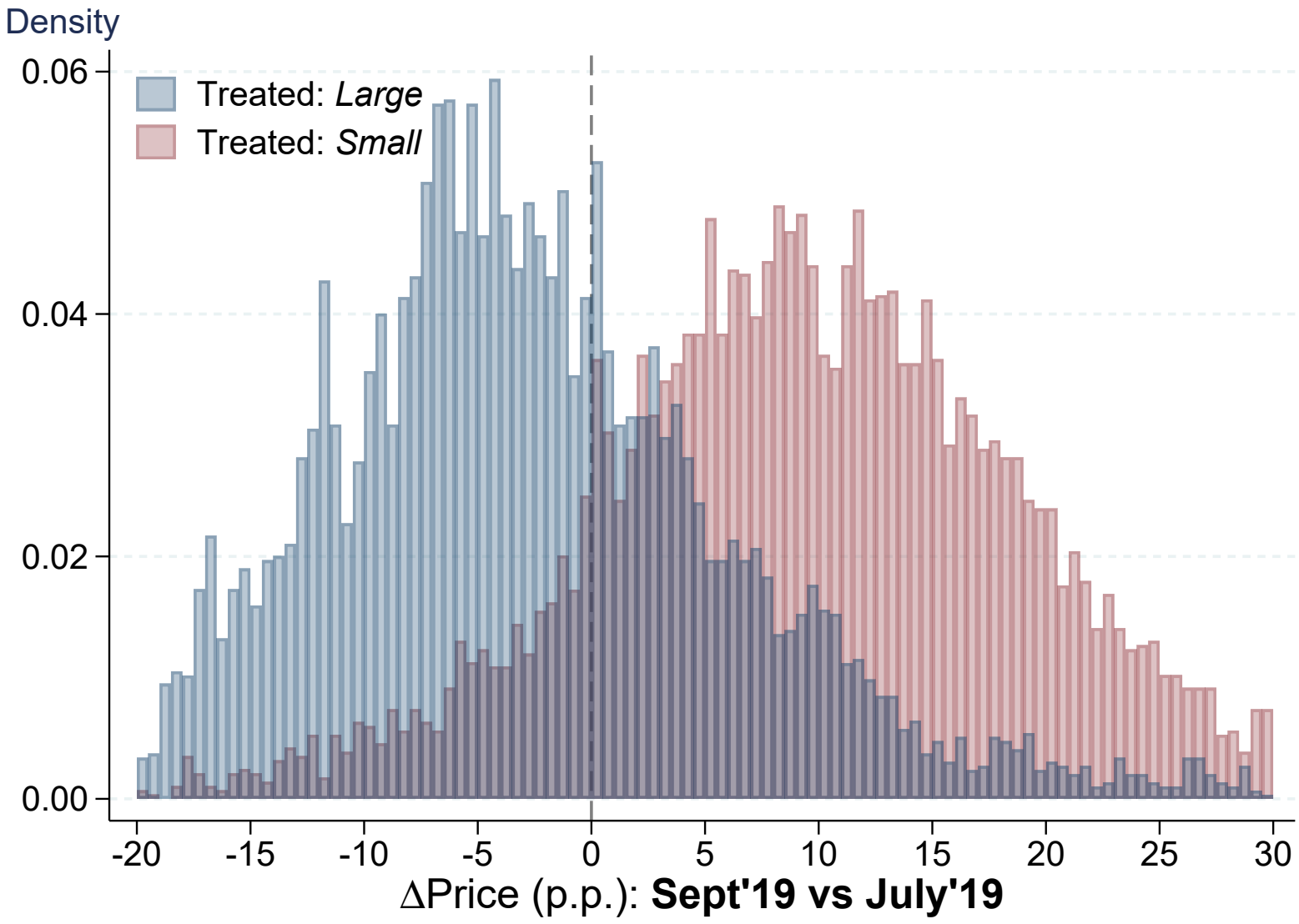
Small stores vs Large chains



Distrib of price changes: VAT removal

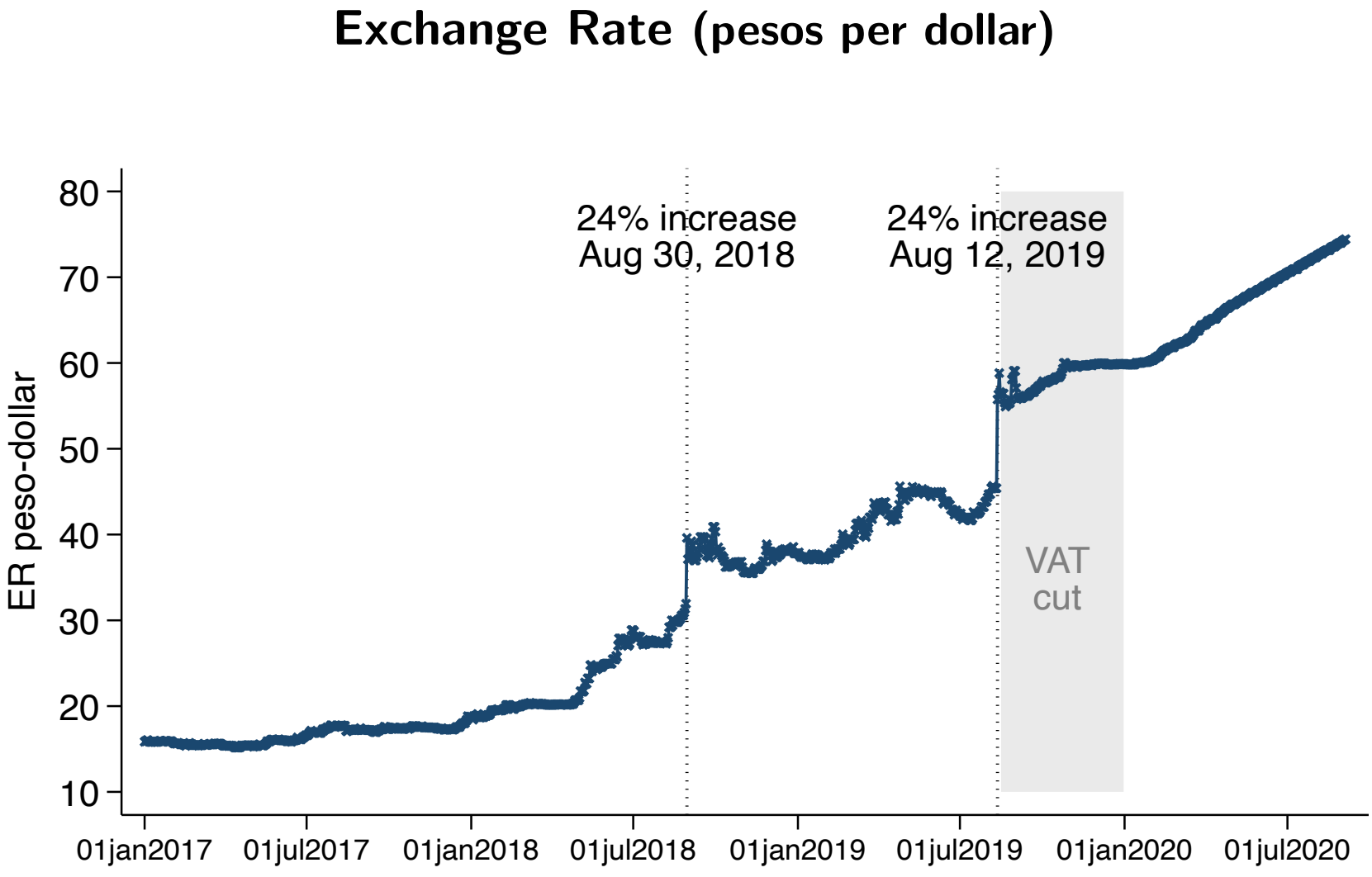
Back

Small stores vs Large chains



Pass-through of the 2018 peso depreciation

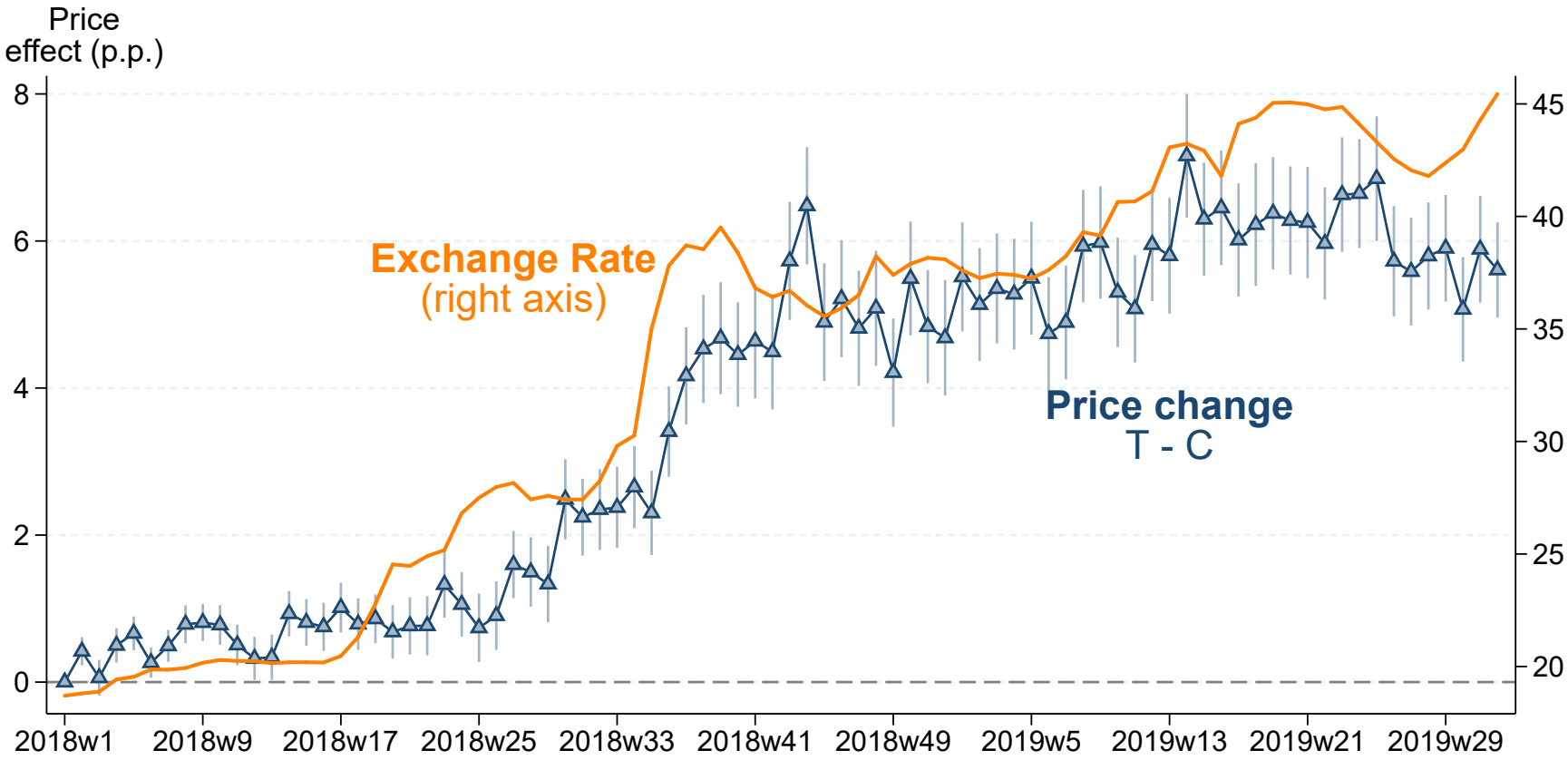
▸ Back



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

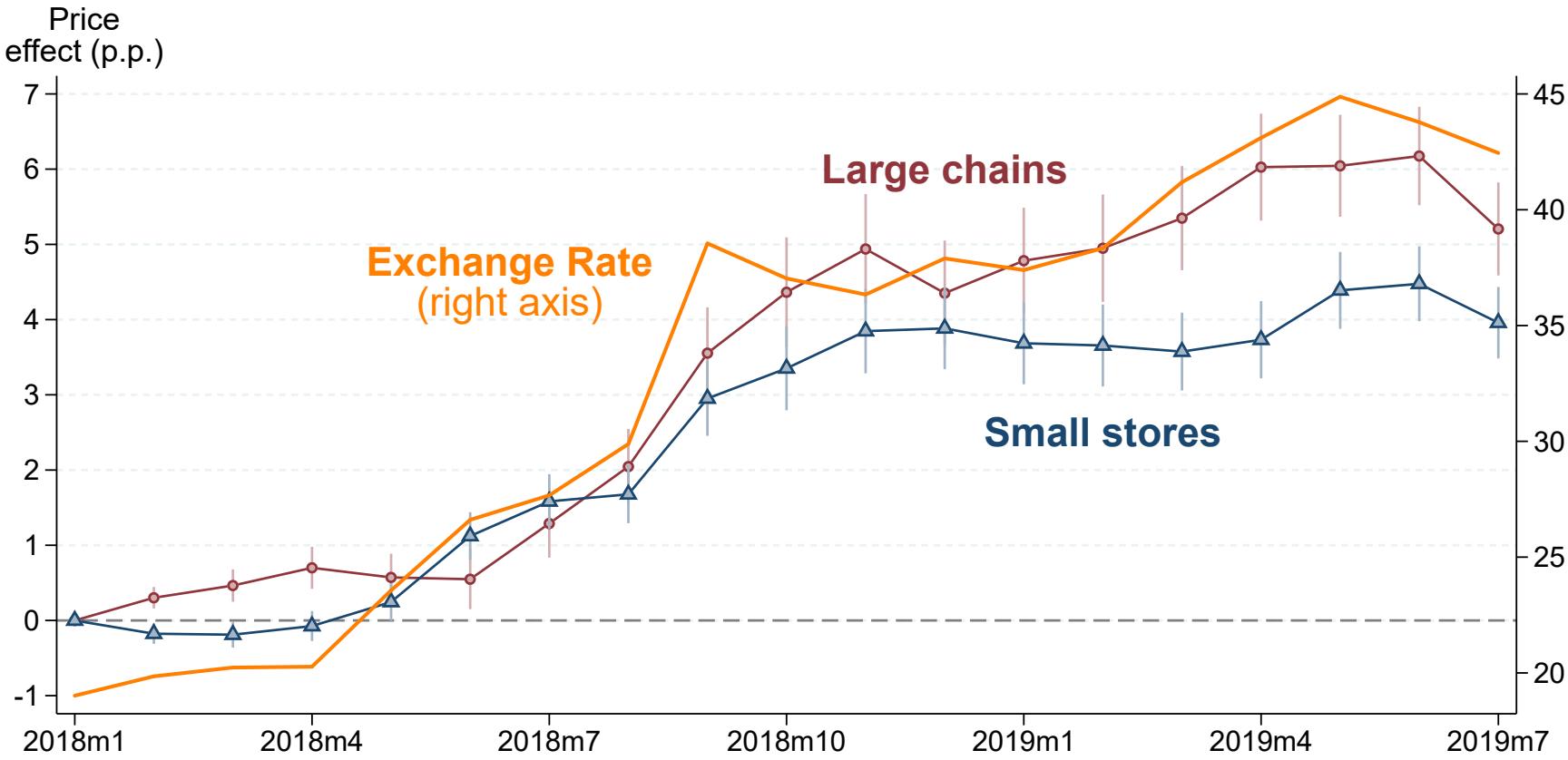
Are goods in **T** and **C** similarly affected by the 2018 peso depreciation?

▸ Back

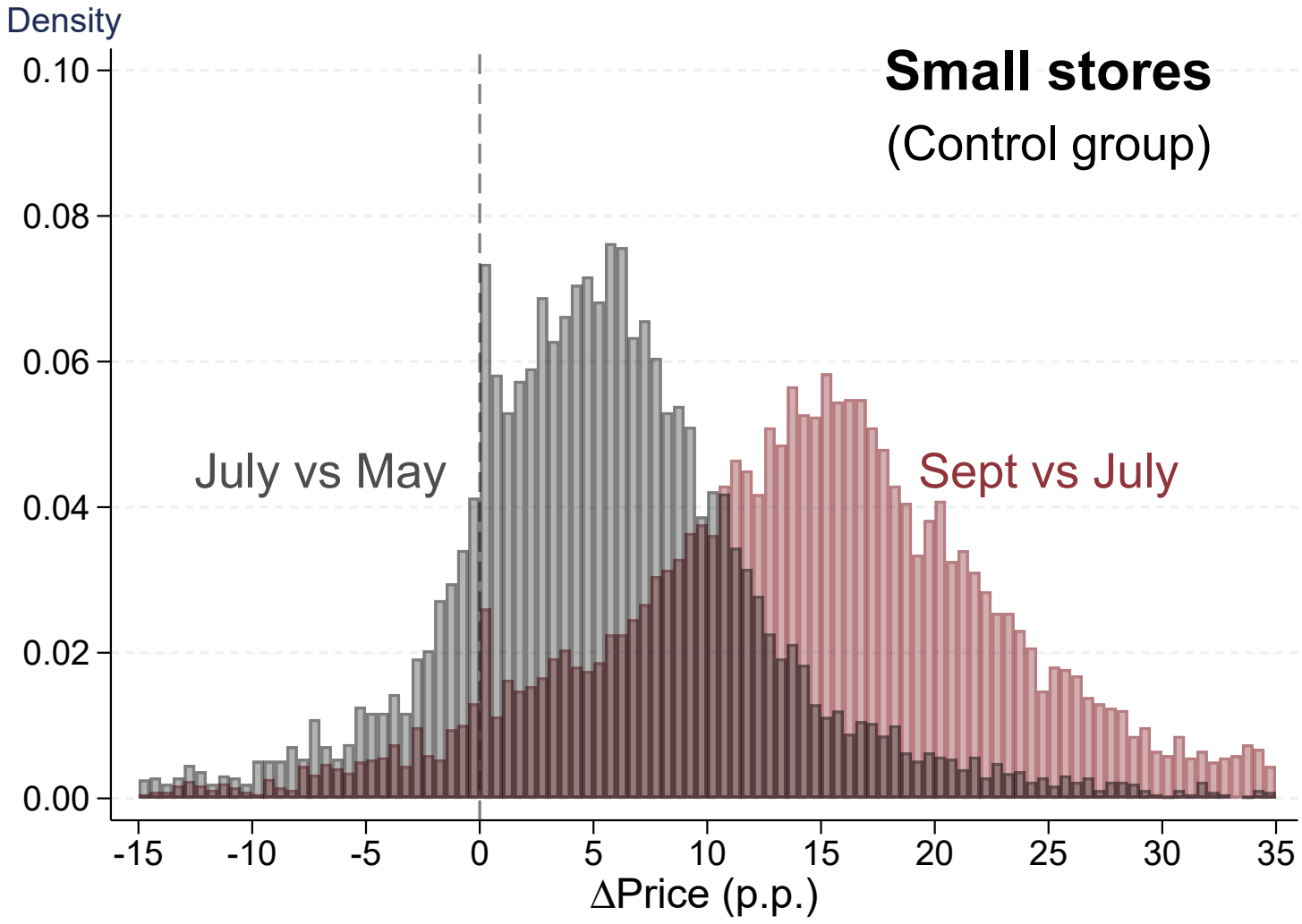


Do **large** and **small** stores respond *differently* to a large economic shock with no govt mandate?

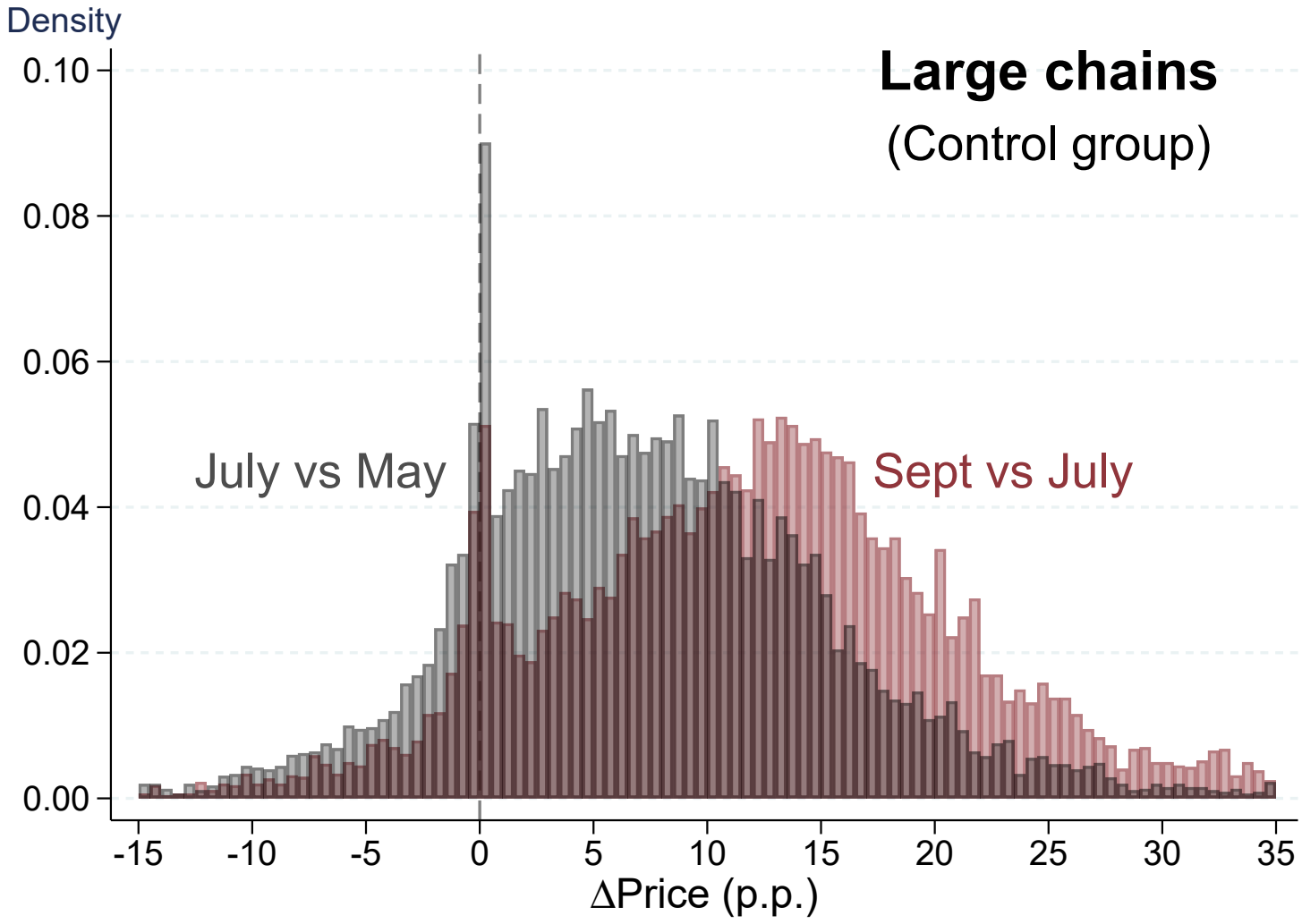
▸ Back



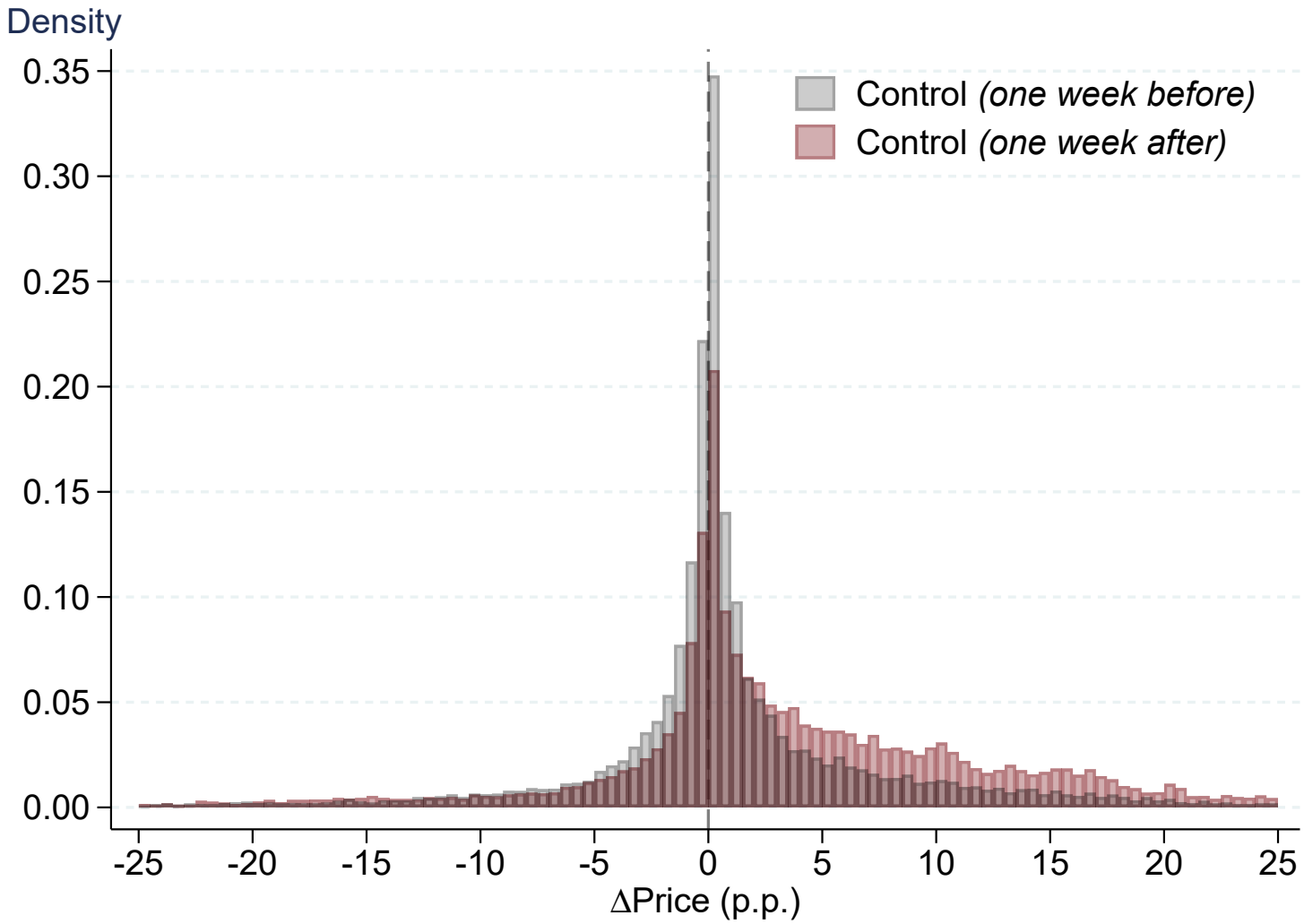
Pass-through of a 24% currency devaluation (no mandate) is similar in small and large supermarkets



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



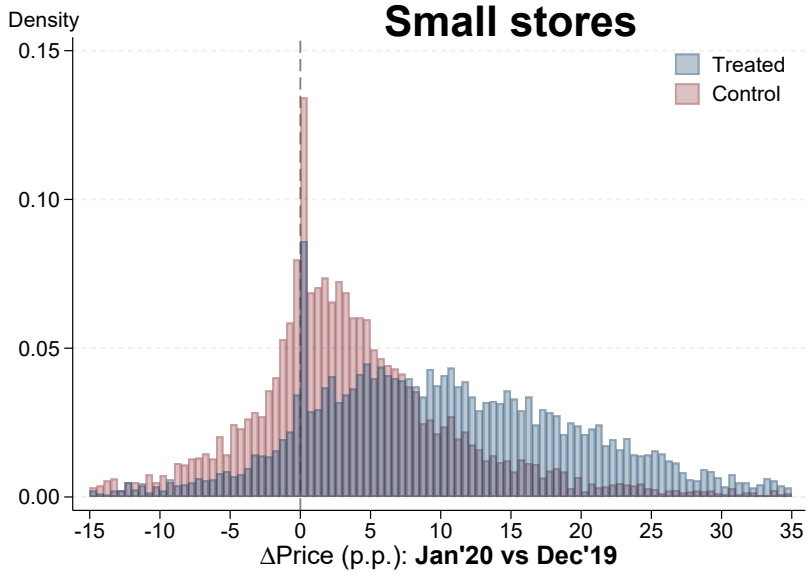
Pass-through of currency devaluation: short run (Large chains)

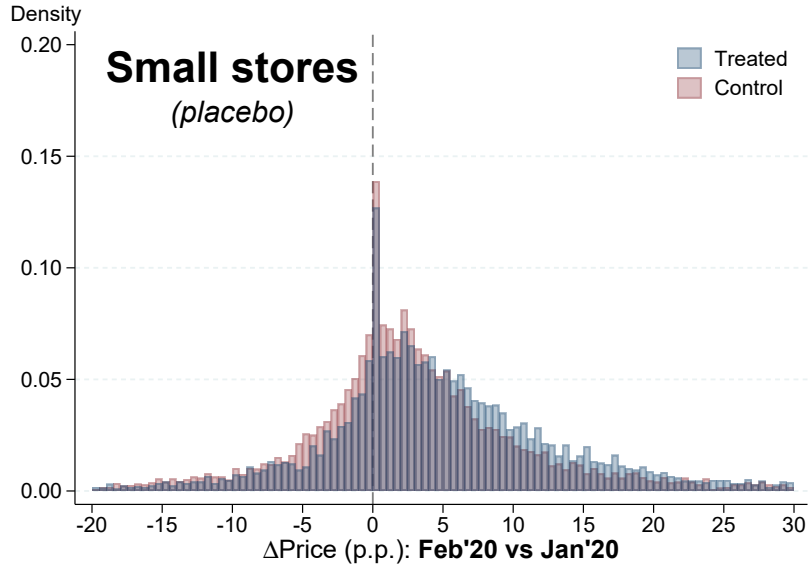


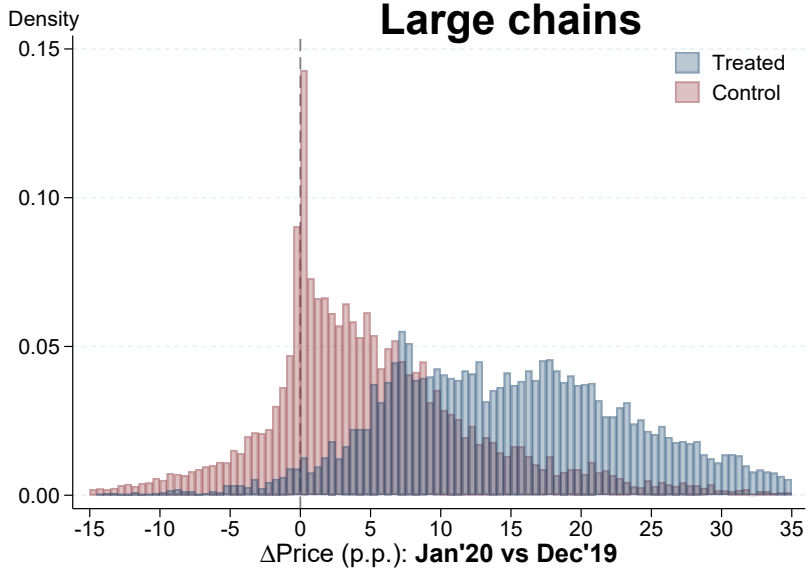
Distrib of price changes after VAT re-introduction

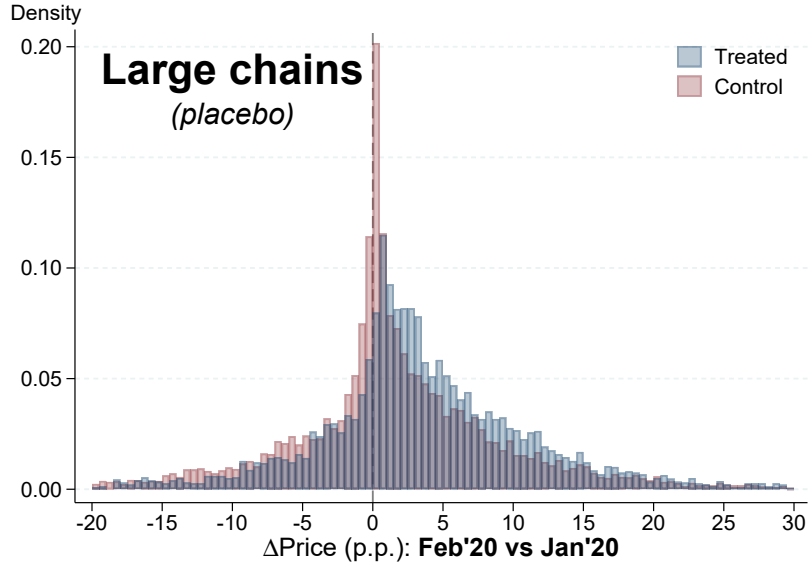
Small stores vs Large chains

▸ Overlap T & C ▸ Back





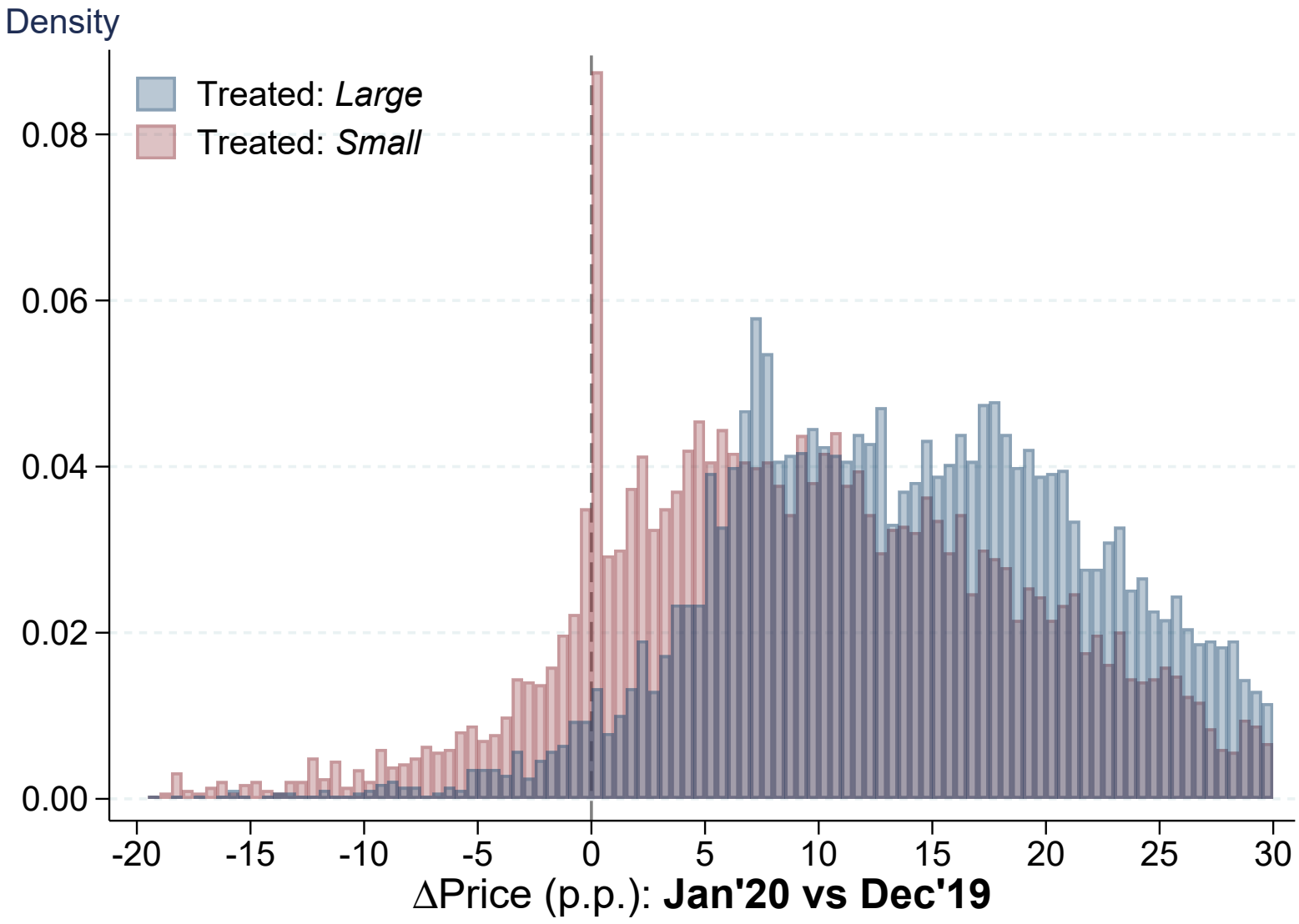




Distrib of price changes after VAT re-intro

▸ Back

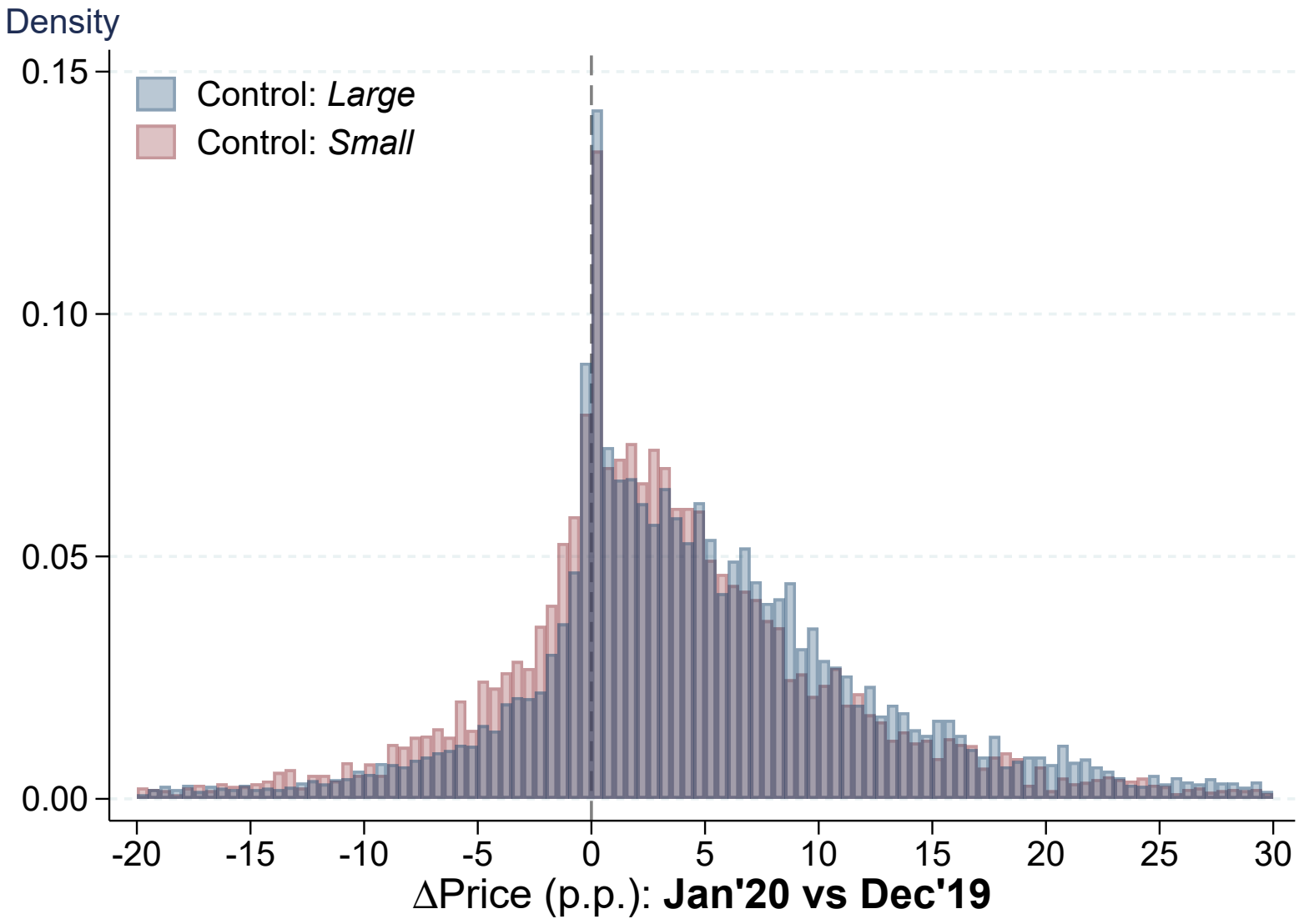
Small stores vs Large chains



Distrib of price changes after VAT re-intro

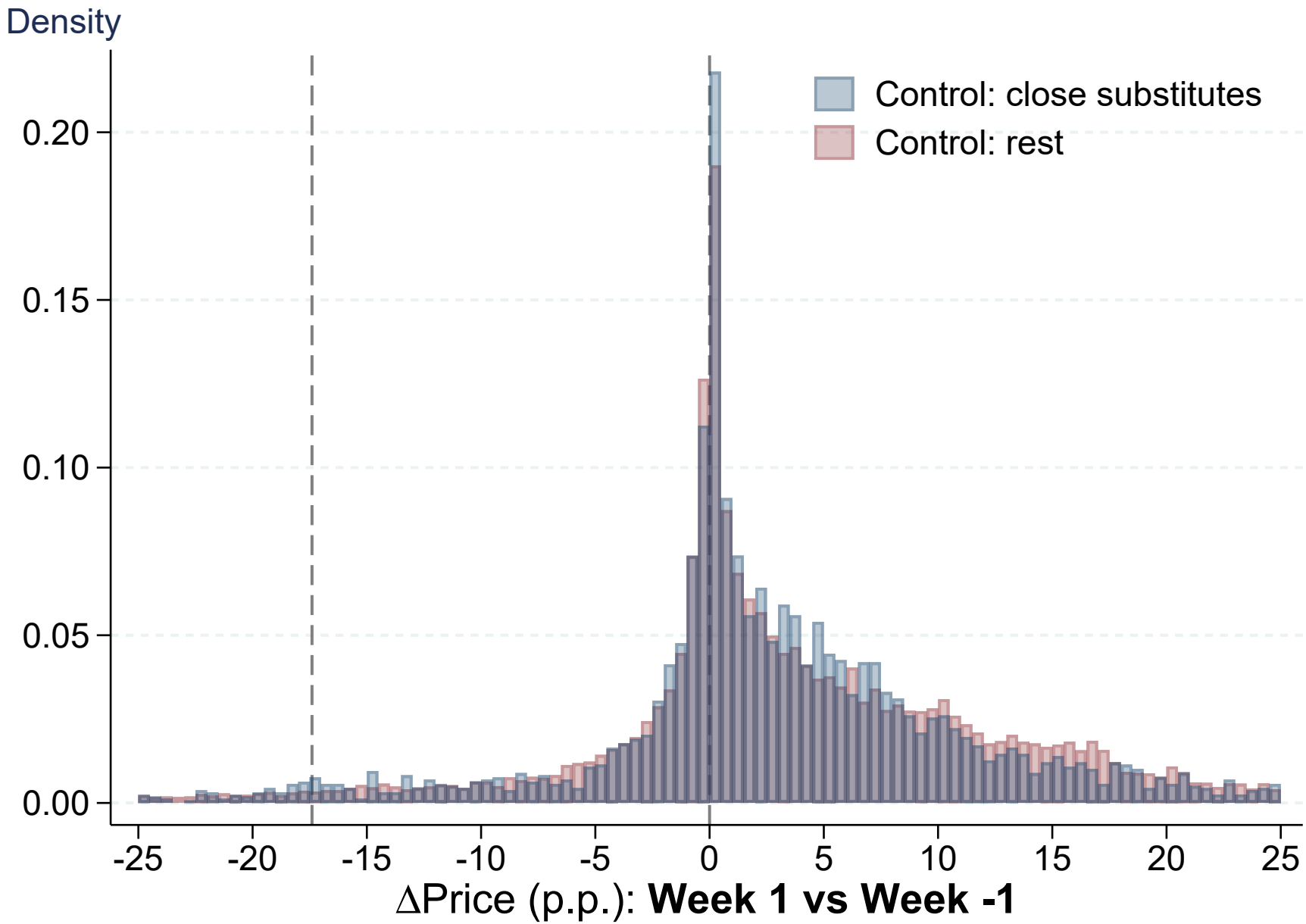
▸ Back

Small stores vs Large chains



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

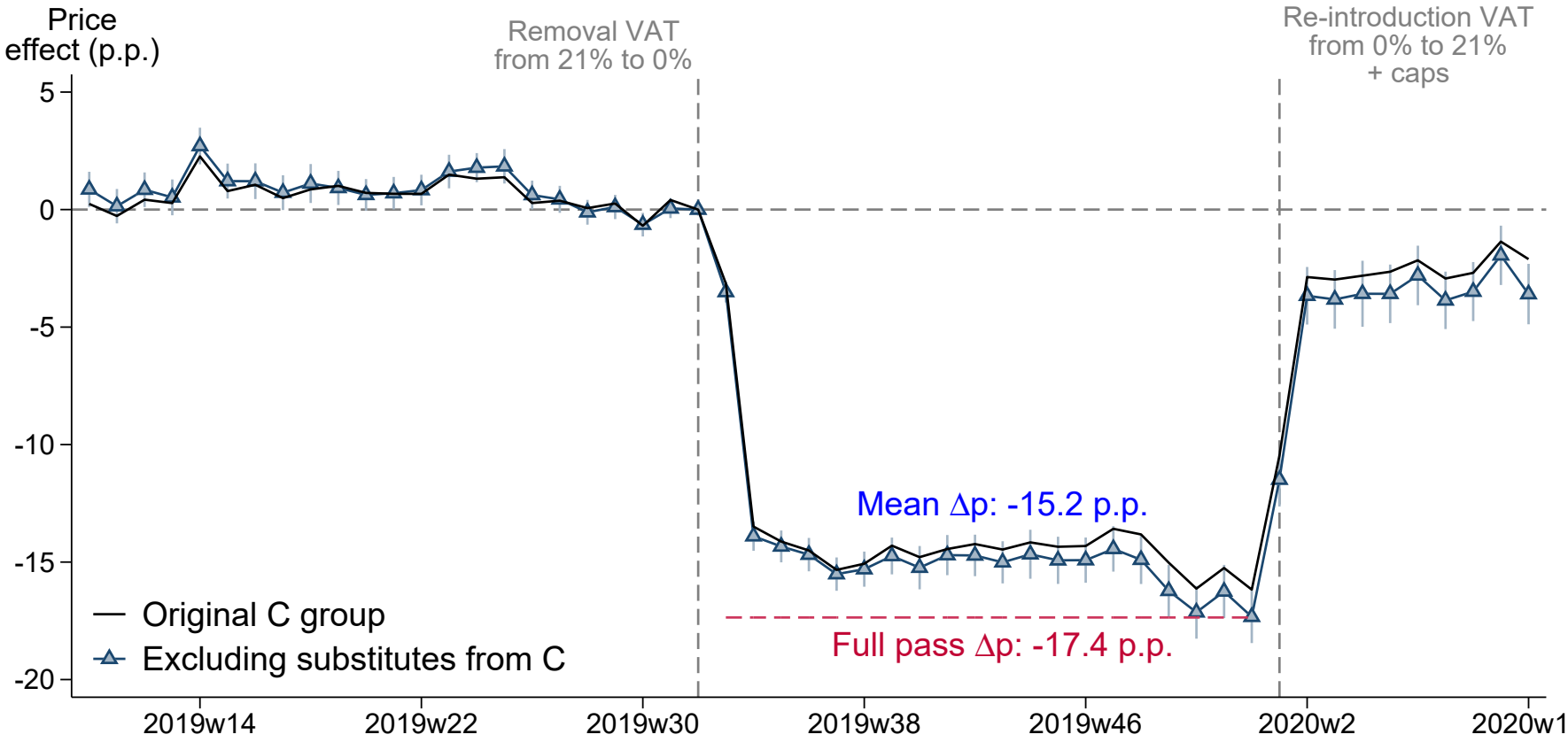
▸ Back



Does substitution across T and C bias our price effects?

The results barely change when: ▸ Back

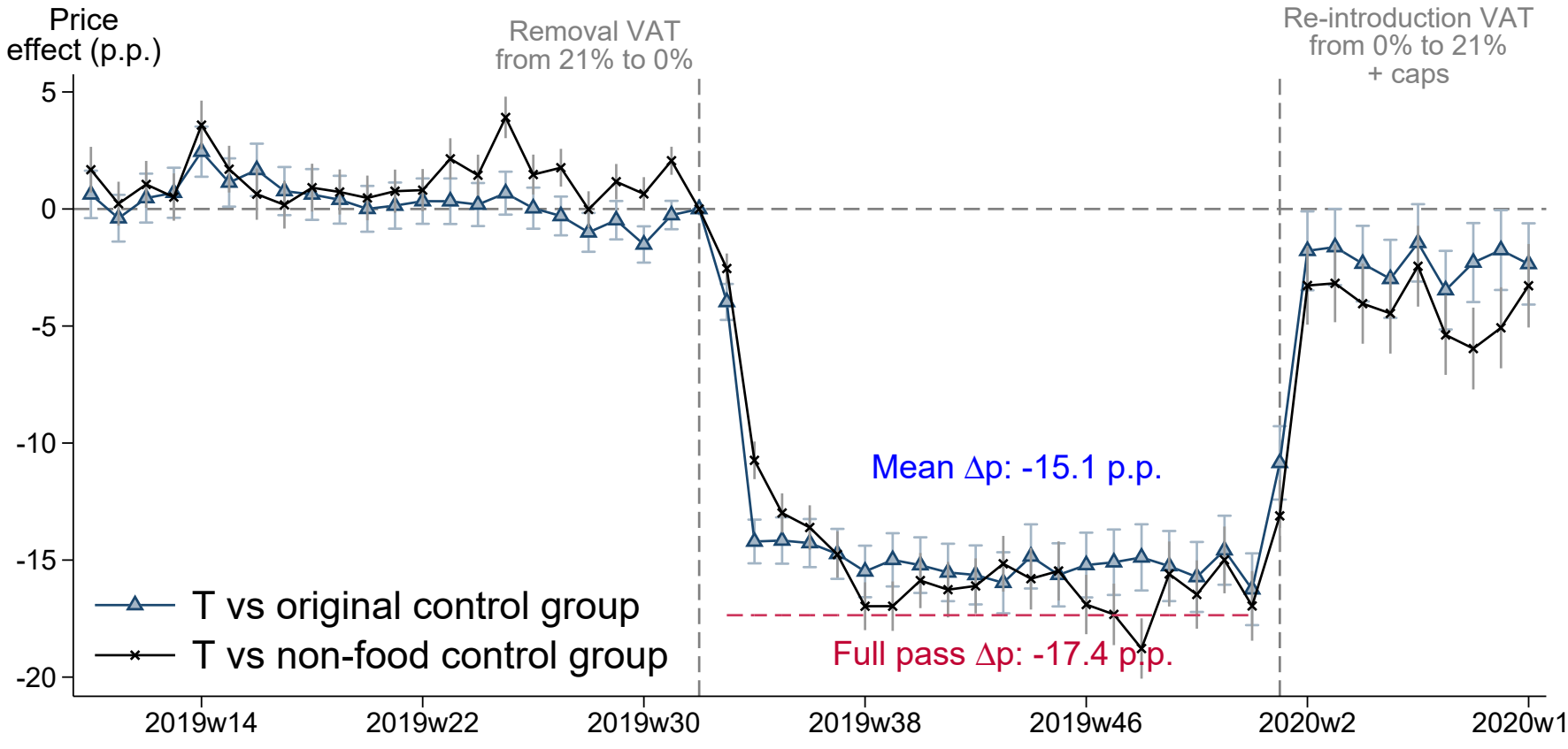
- Including and excluding close substitutes in the control group
- Using food and non-food products in the control group



Does substitution across T and C bias our price effects?

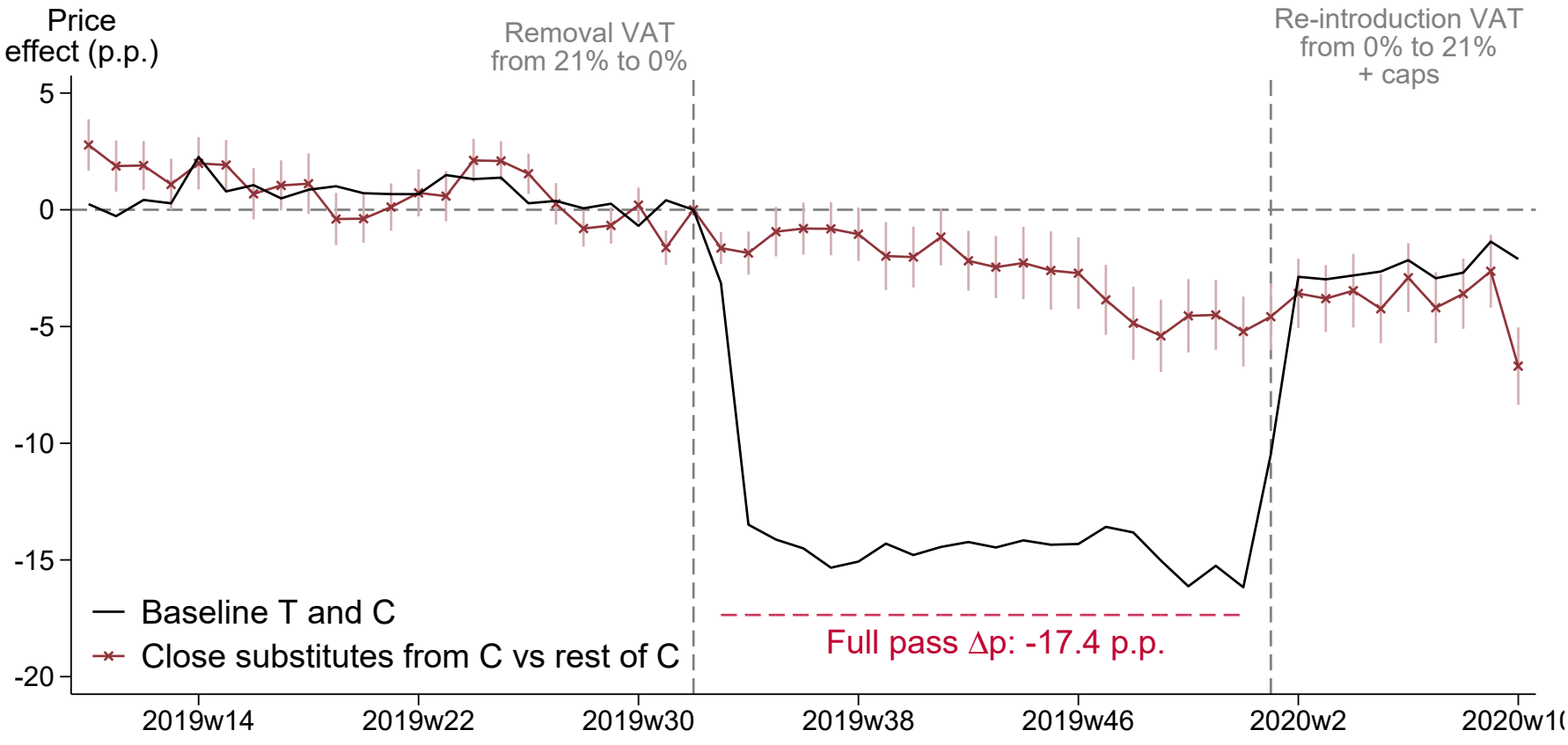
The results barely change when: ▸ Back

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



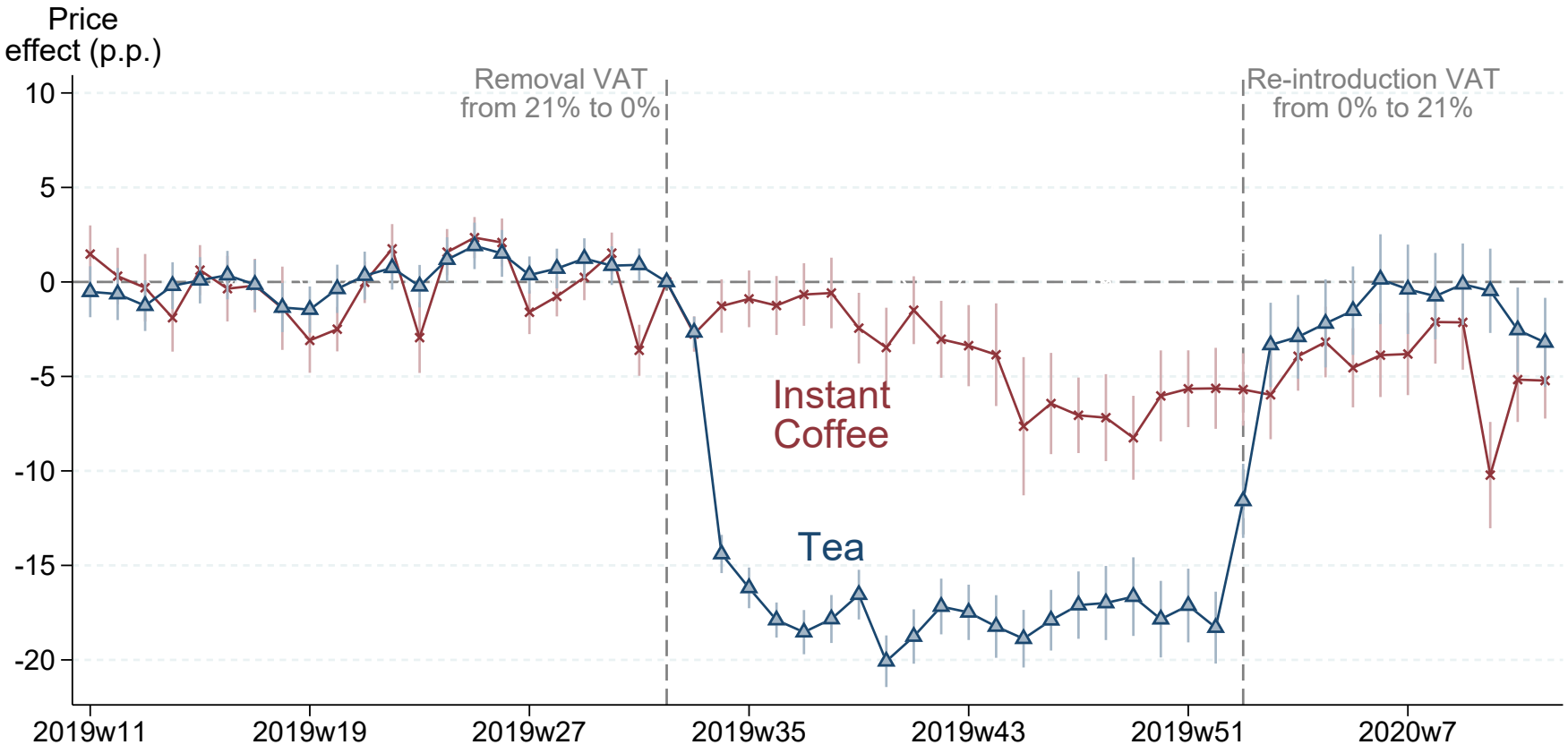
DiD of close substitutes in C vs rest of C

Back



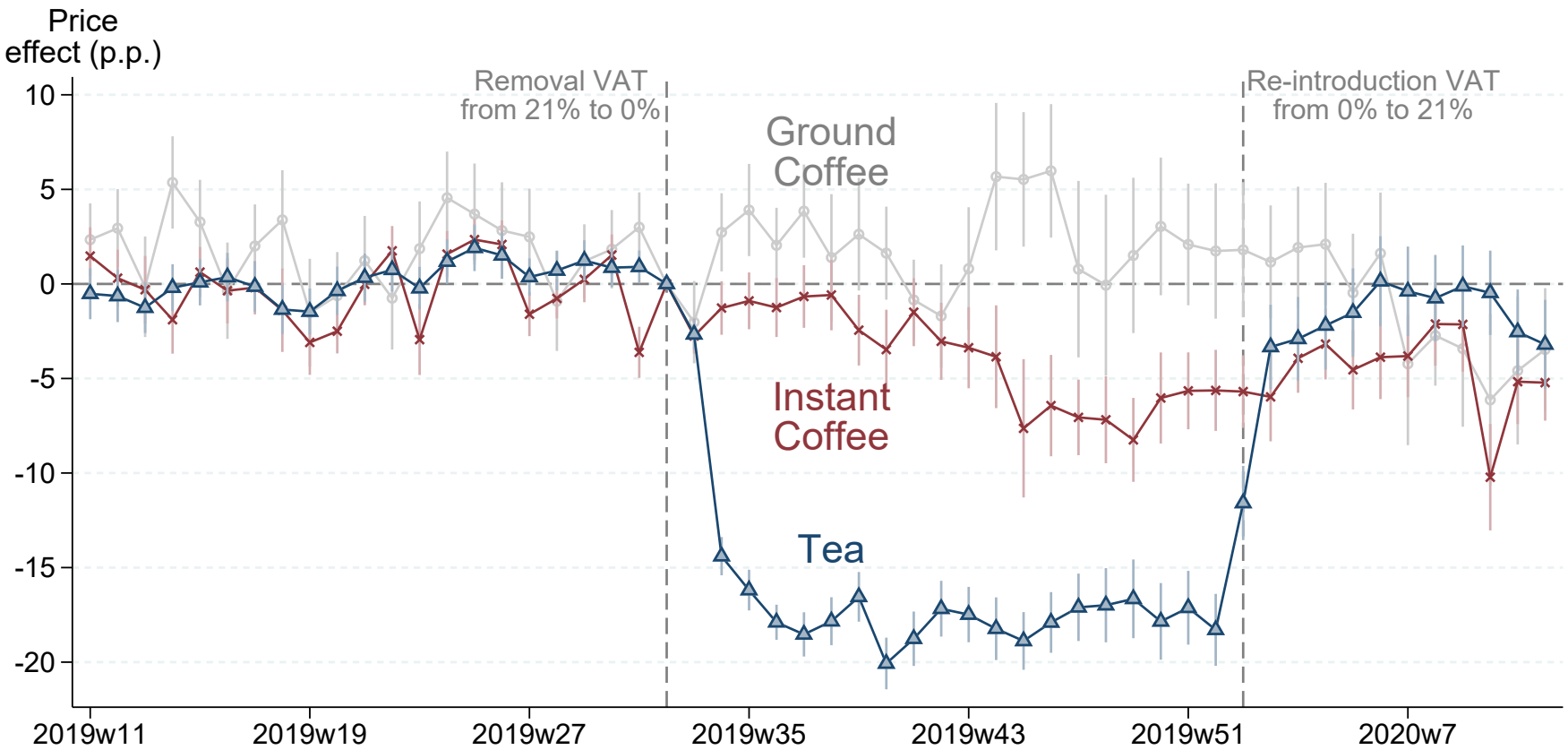
T vs Close substitutes in C (case studies)

▸ Back



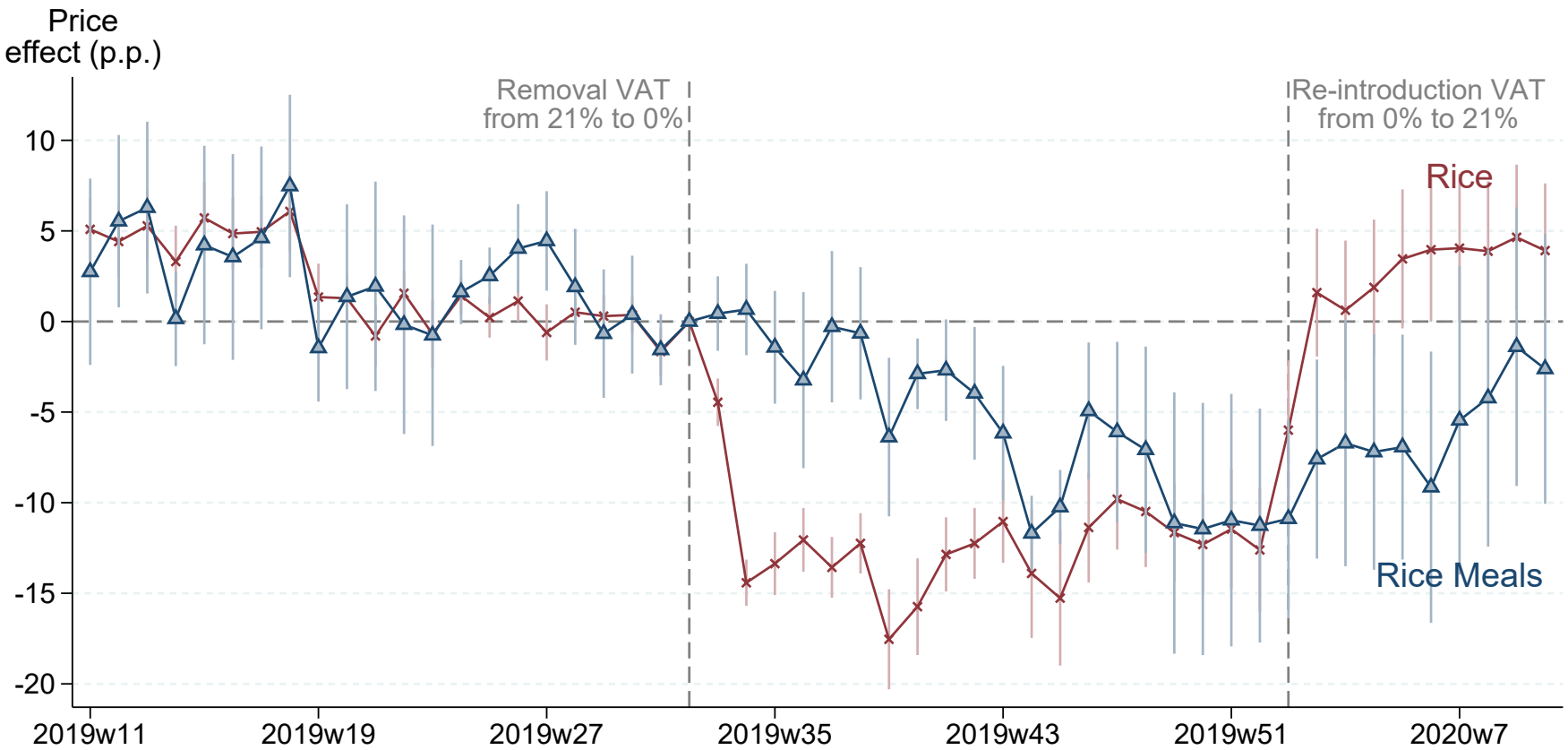
T vs Close substitutes in C (case studies)

▸ Back



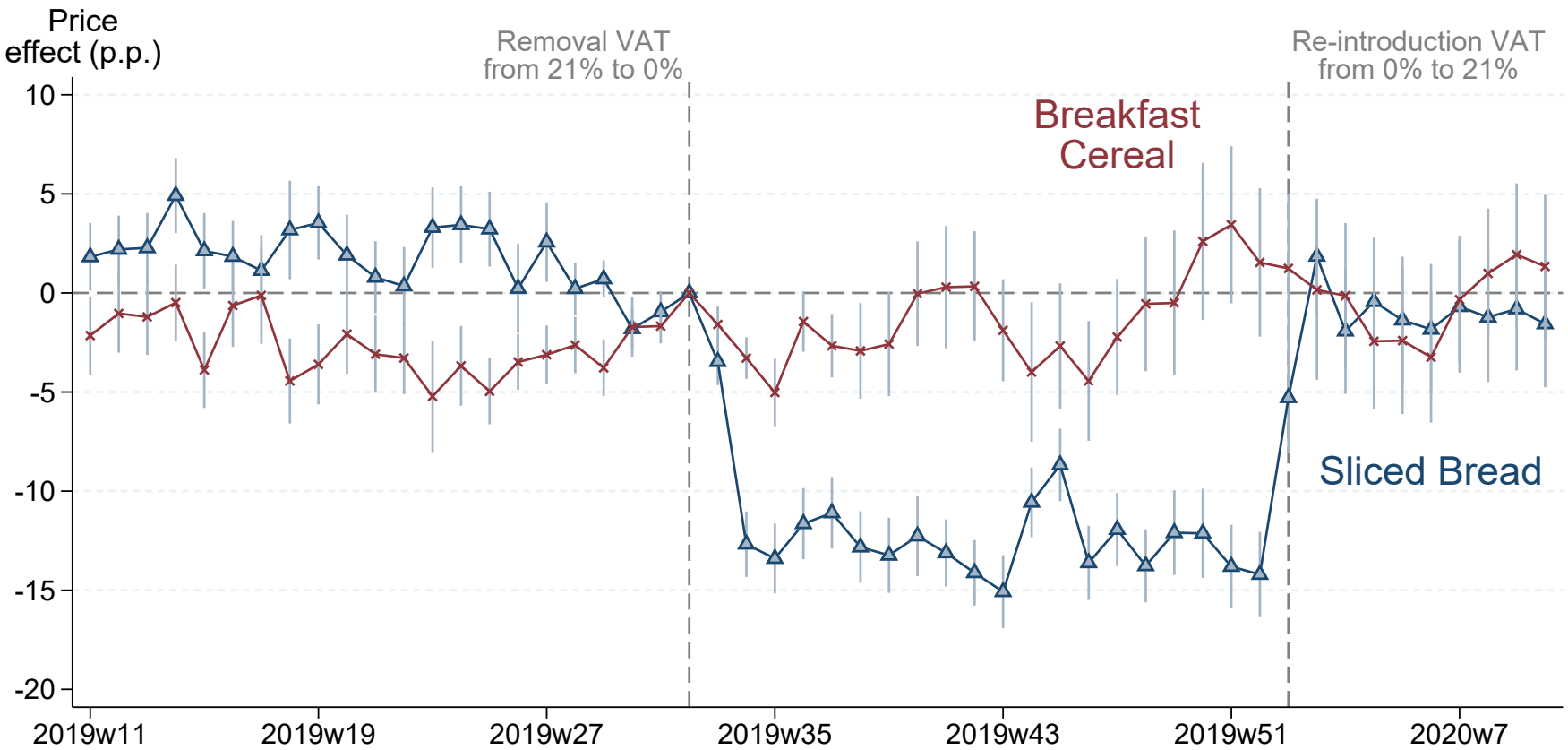
T vs Close substitutes in C (case studies)

▸ Back



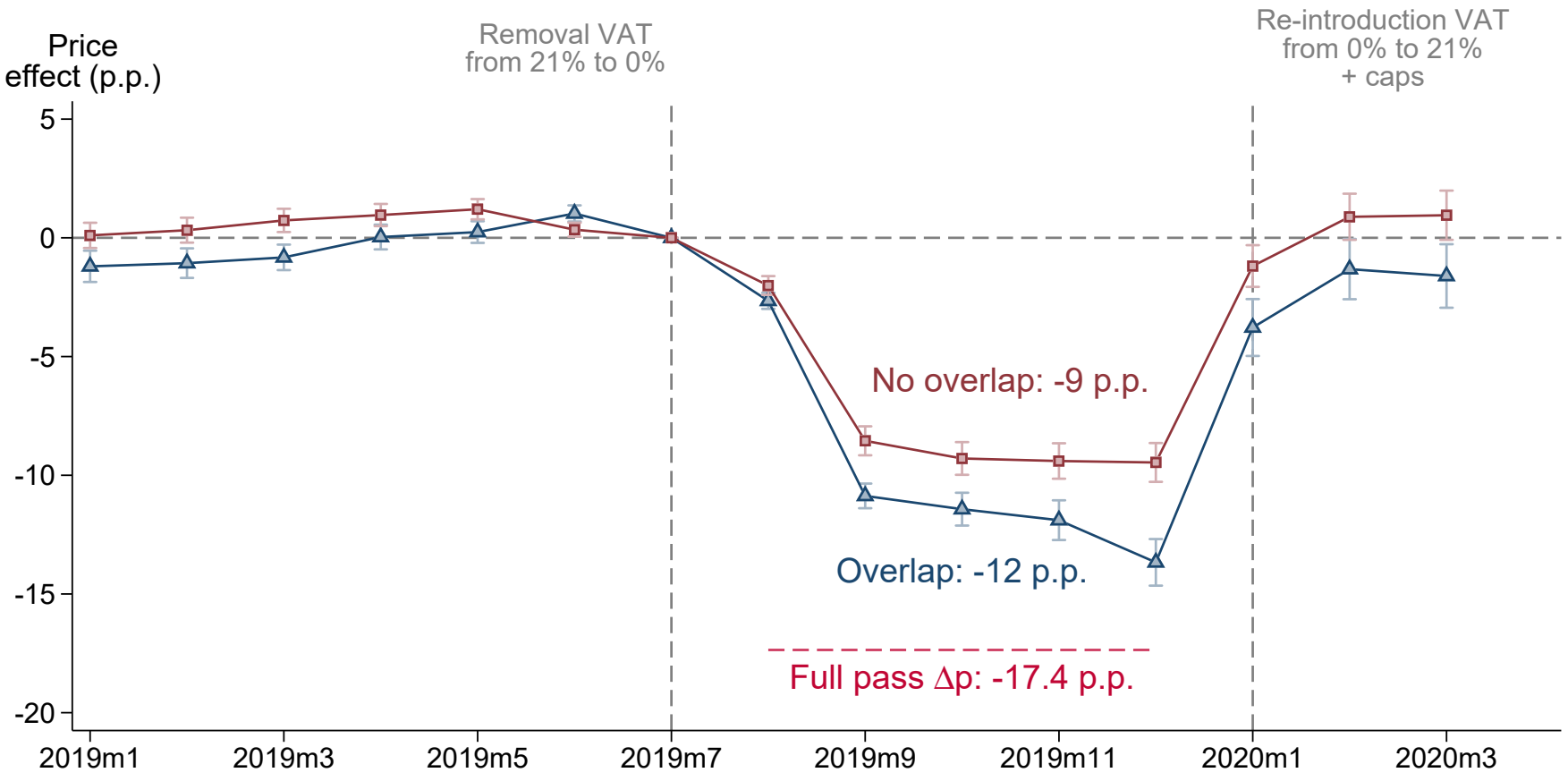
T vs Close substitutes in C (case studies)

▸ 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 ↑ back to pre-holiday level of 21%

- But new govt limited the price increase with ≠ caps

⋆ **No caps**: Prices could ↑ up to 21%

⋆ **Caps**: Force incidence sharing

- NOT in independent stores

⇒ We show that gov'ts can successfully limit VAT pass-through ▸ Back

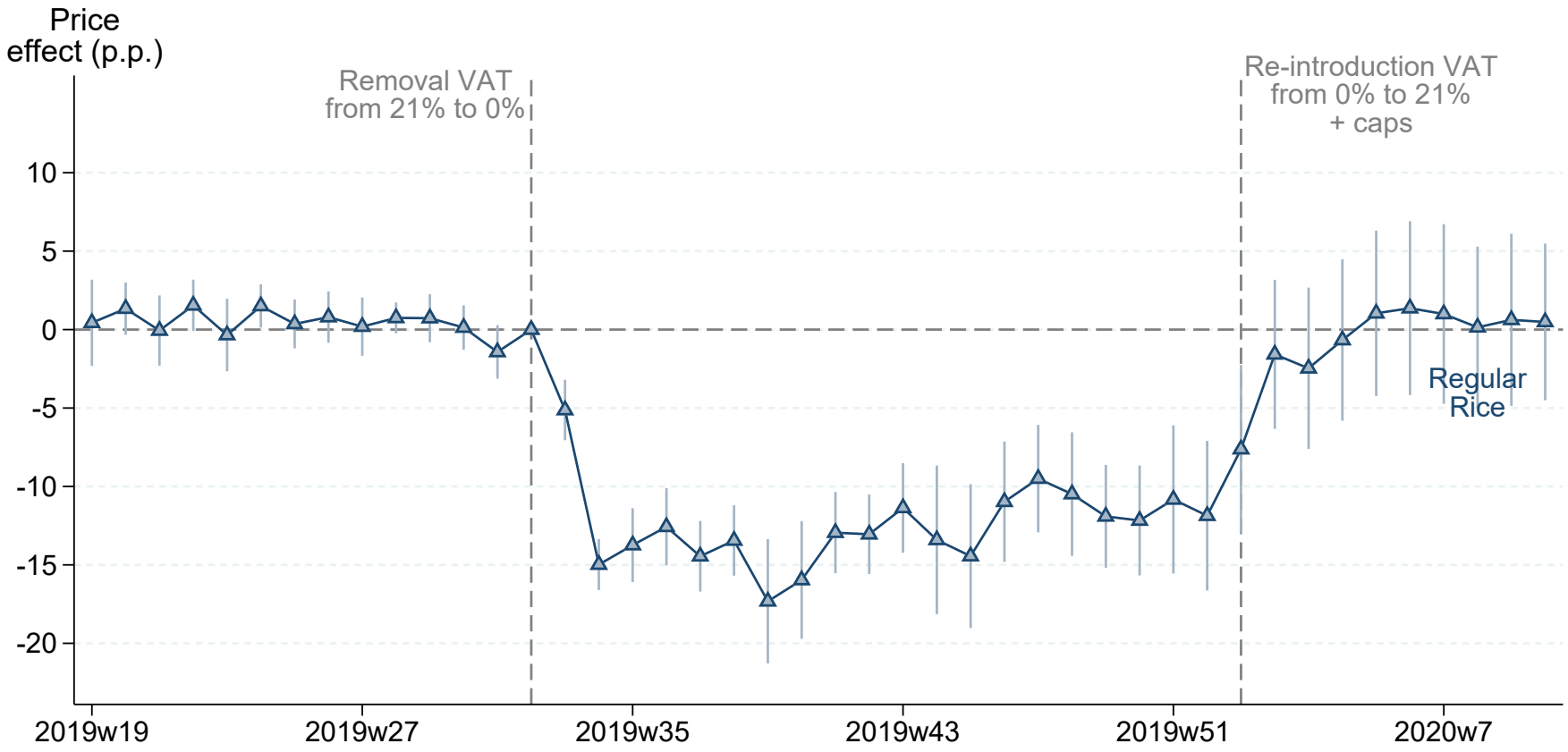
Treated: VAT back to 21%

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

Capped VAT increase: Rice

▸ Back

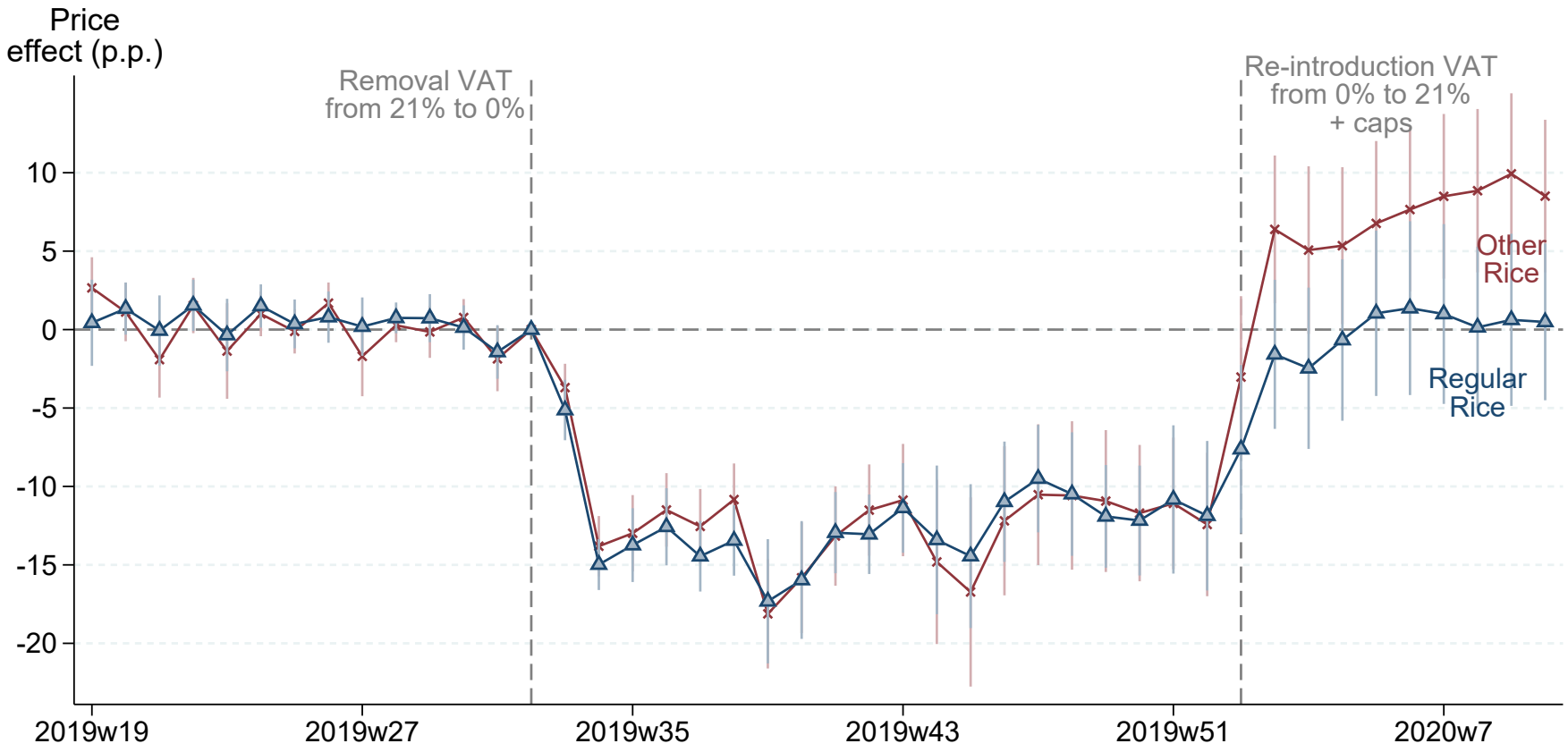
Regular Rice (7% cap) vs **Other Rice** (no cap)



Capped VAT increase: Rice

▸ Back

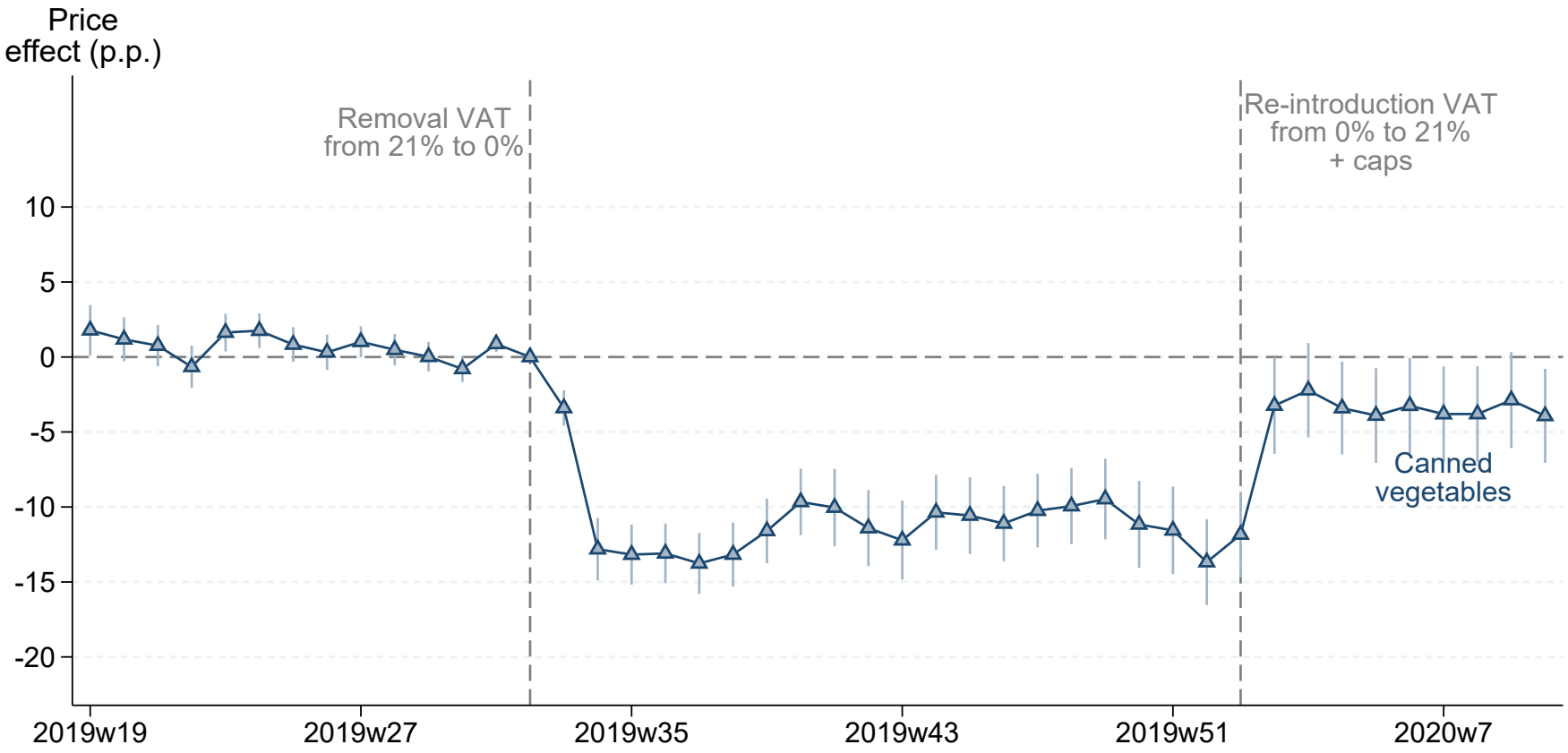
Regular Rice (7% cap) vs **Other Rice** (no cap)



Capped VAT increase: Canned food

▸ Back

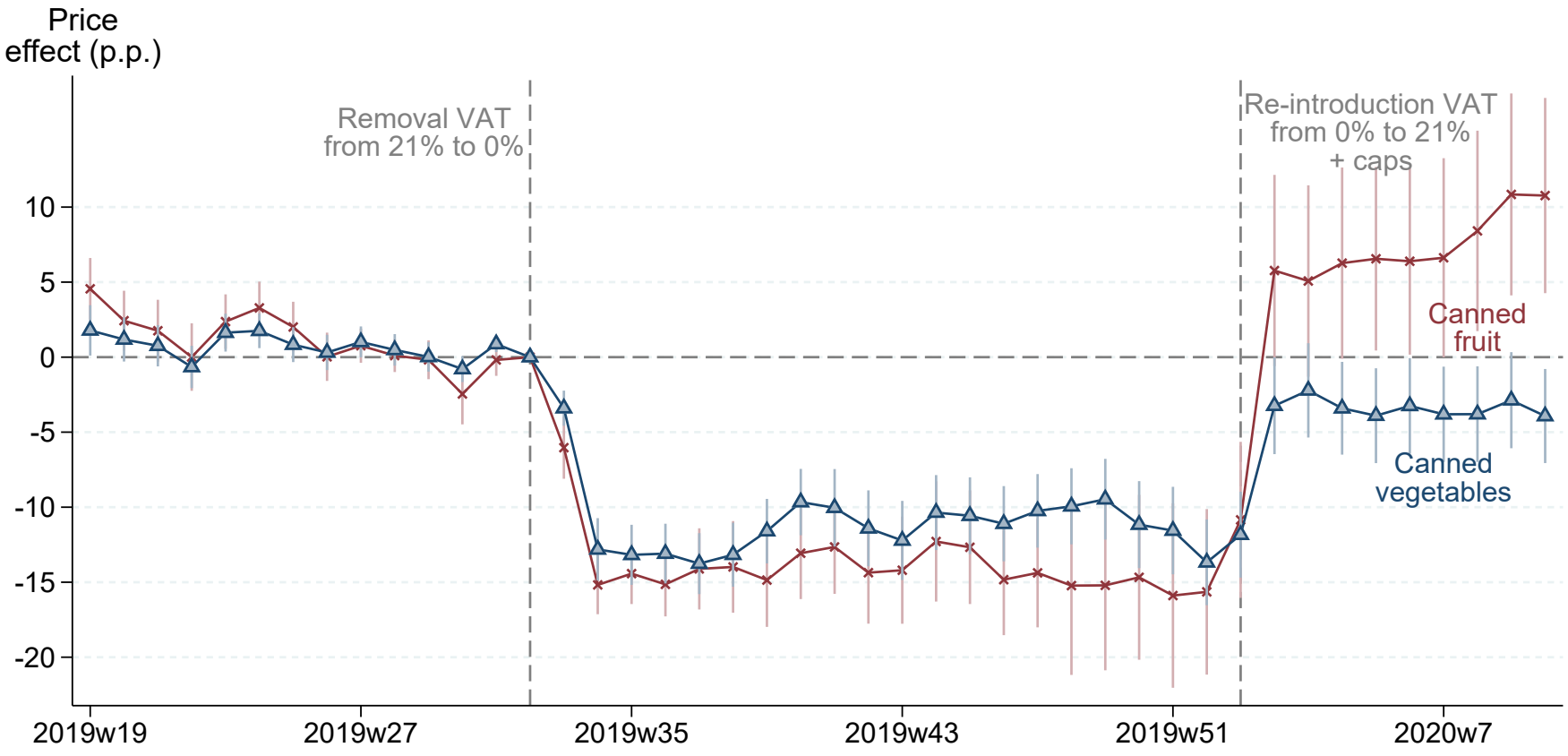
Canned vegetables (7% cap) vs **Canned fruit** (no cap)



Capped VAT increase: Canned food

▸ Back

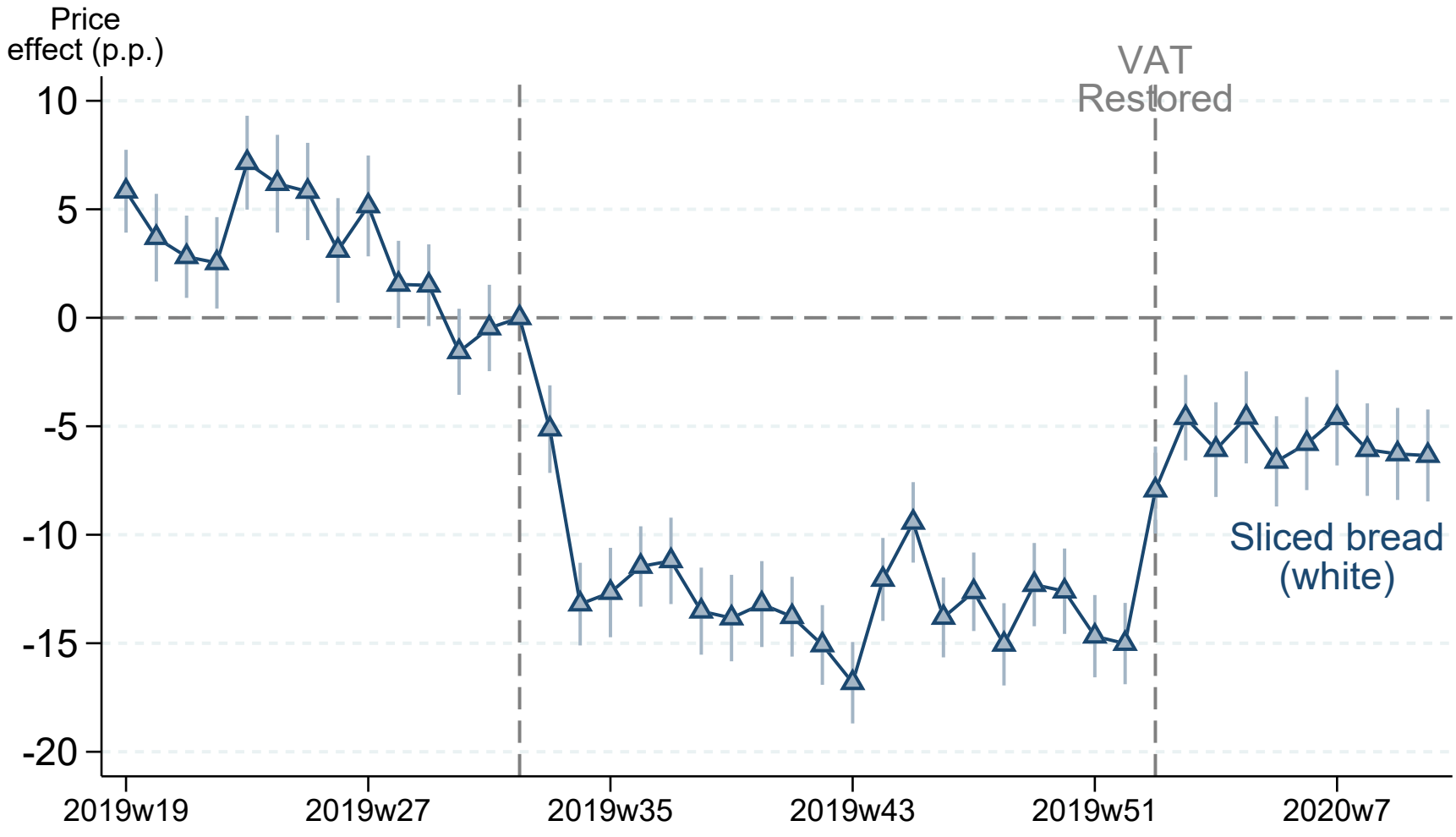
Canned vegetables (7% cap) vs **Canned fruit** (no cap)



Capped VAT increase: Sliced bread

▸ Back

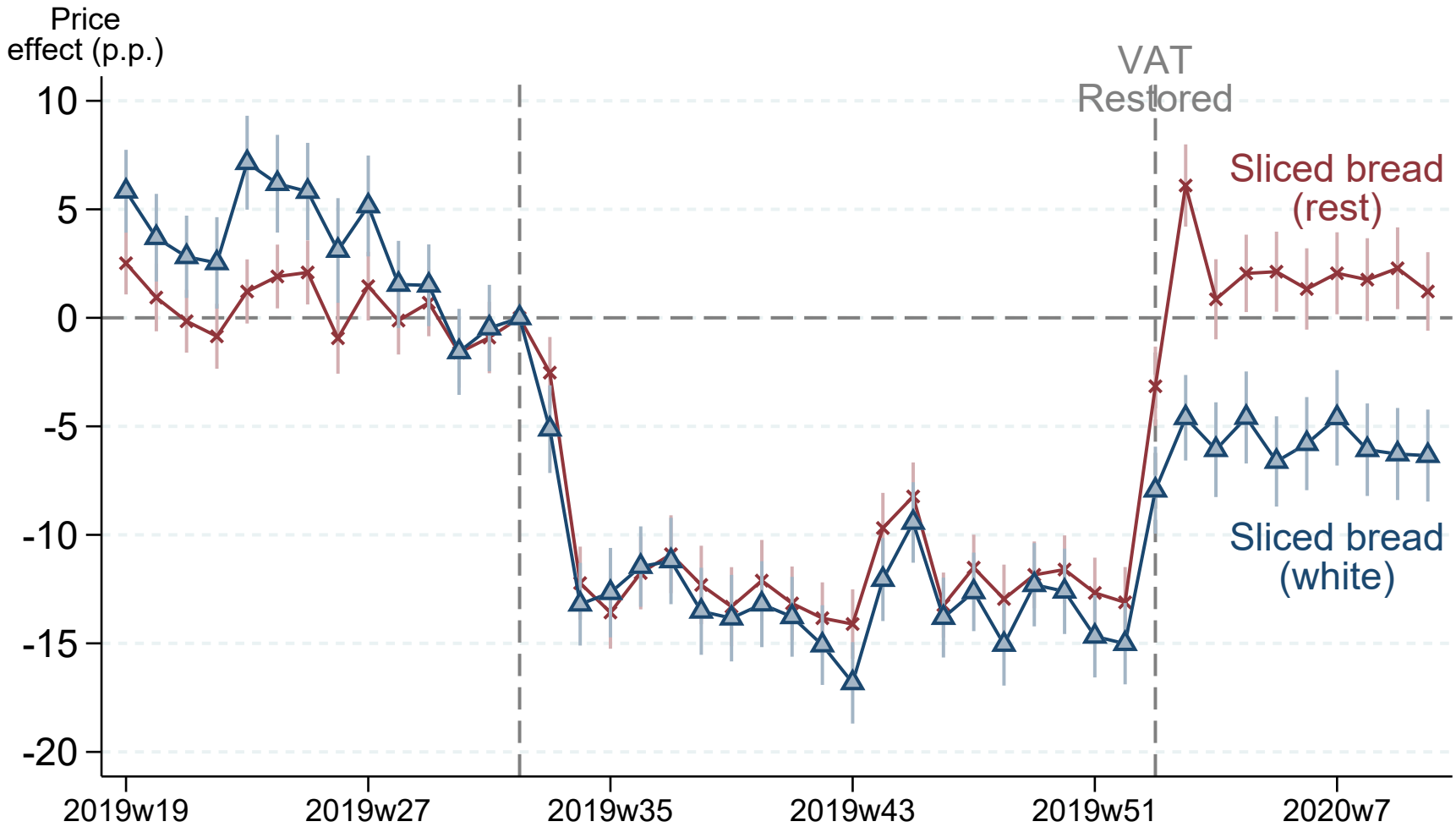
Slide bread (white) (7% cap) vs **Sliced bread (rest)** (no cap)



Capped VAT increase: Sliced bread

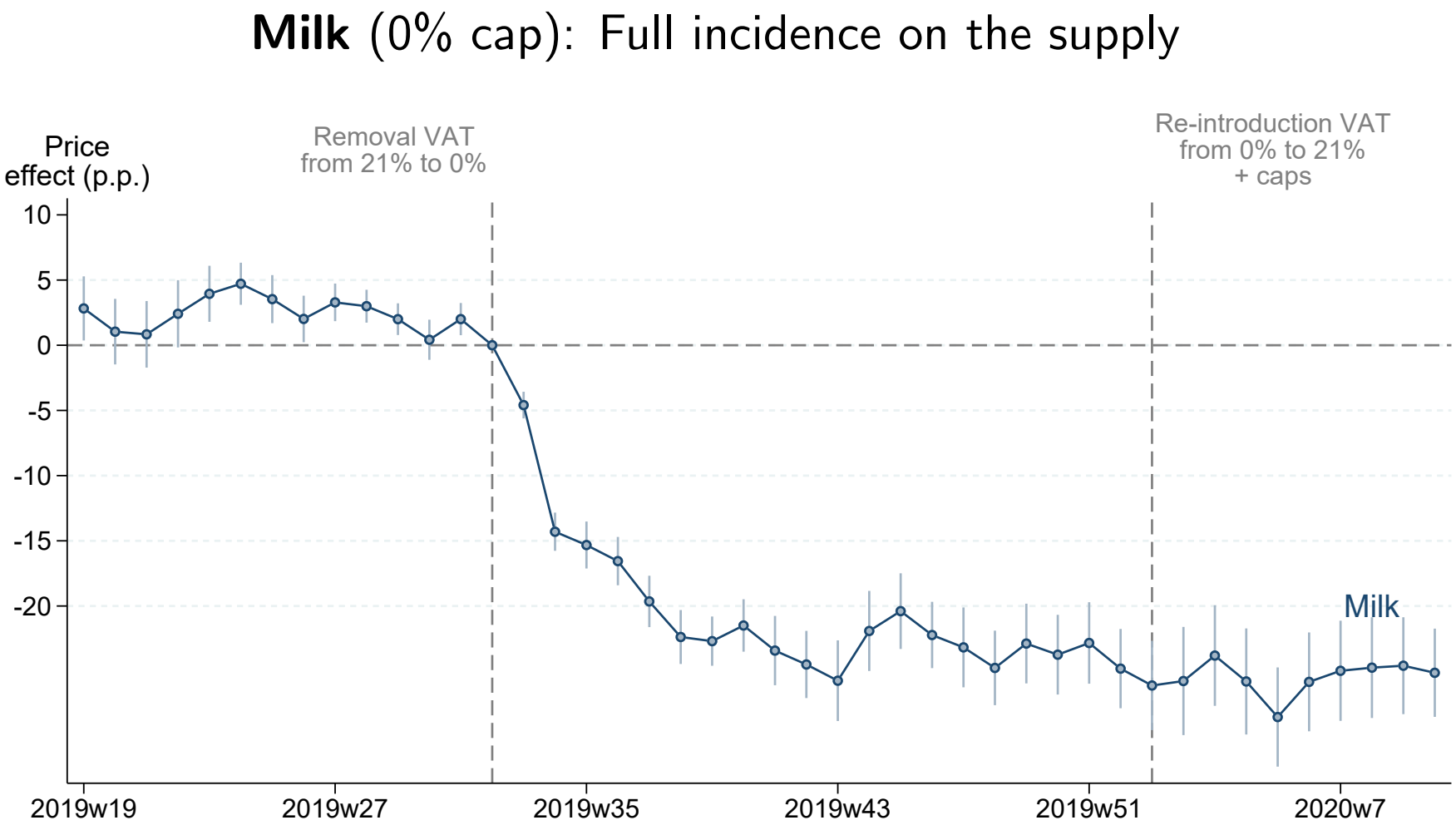
▸ Back

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



Capped VAT increase: Milk

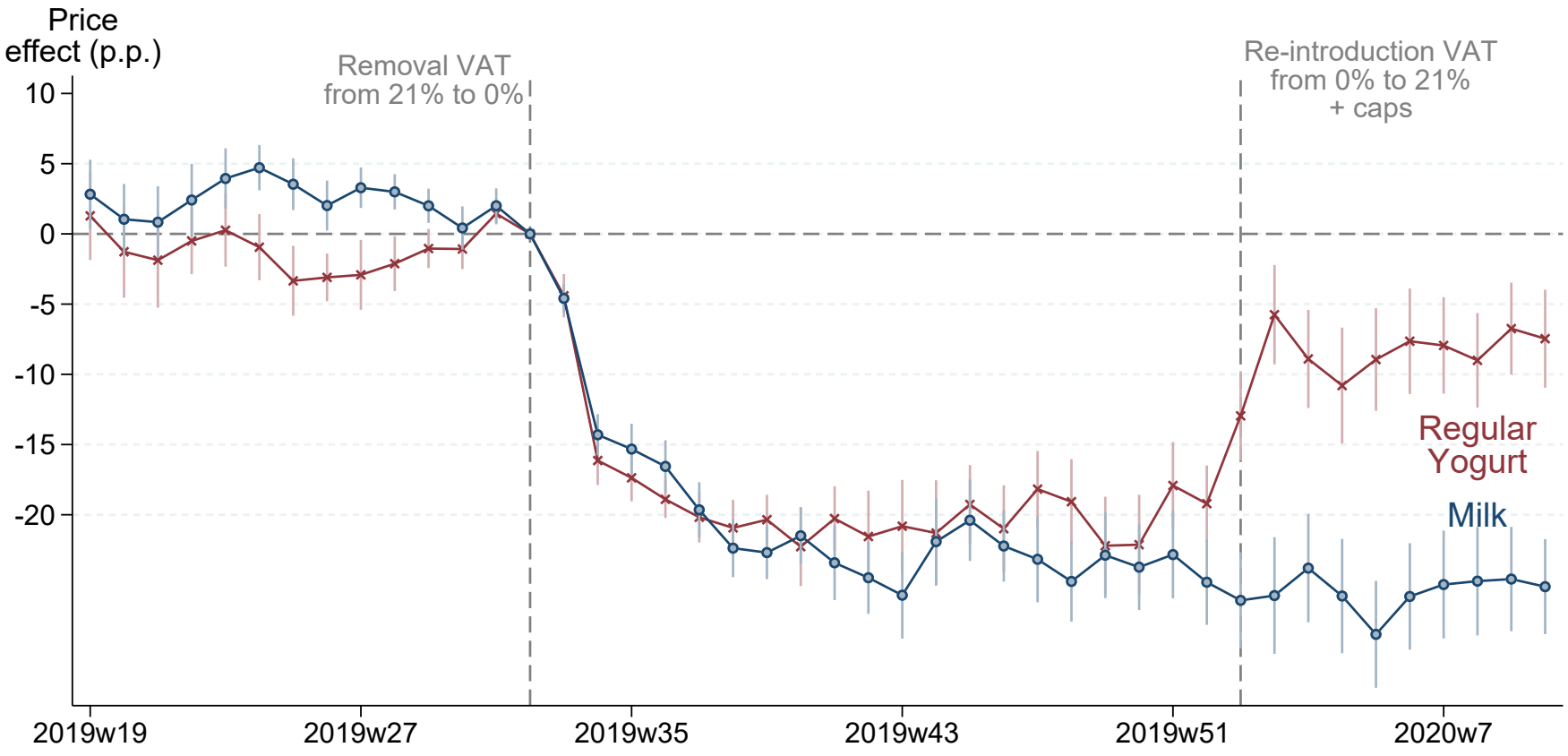
▸ Back



Capped VAT increase: Milk

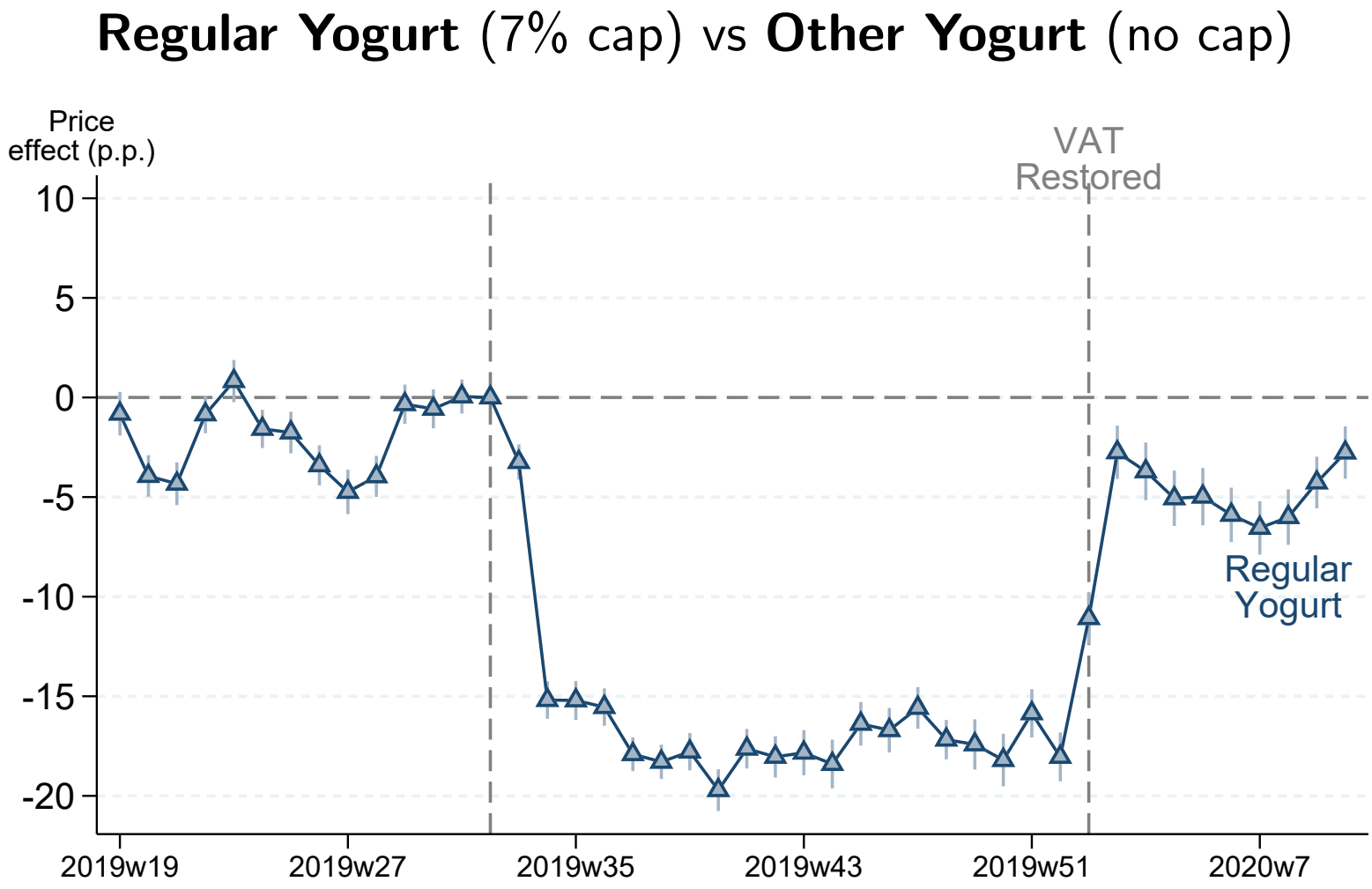
▸ Back

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



Capped VAT increase

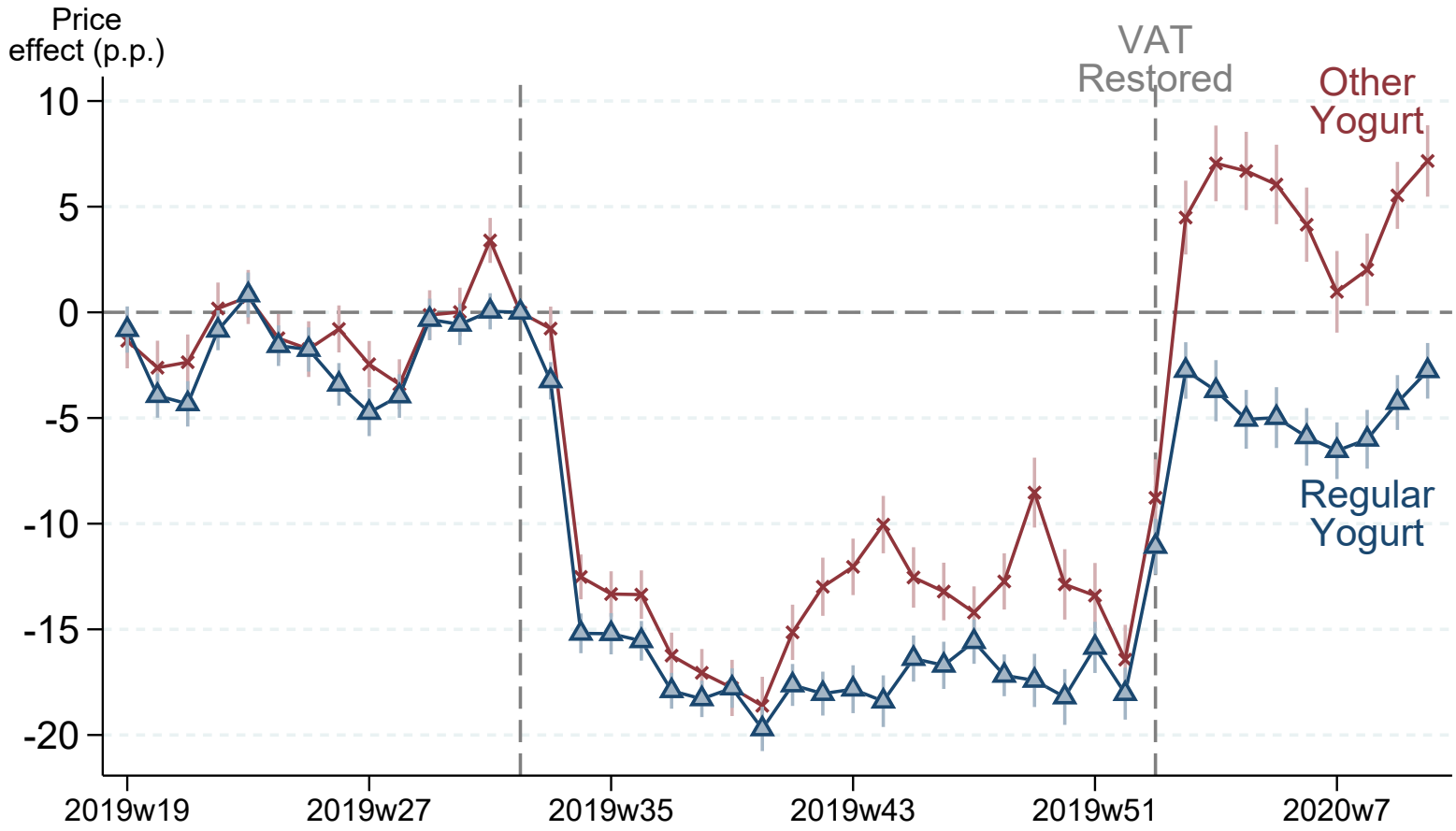
▸ Back



Capped VAT increase

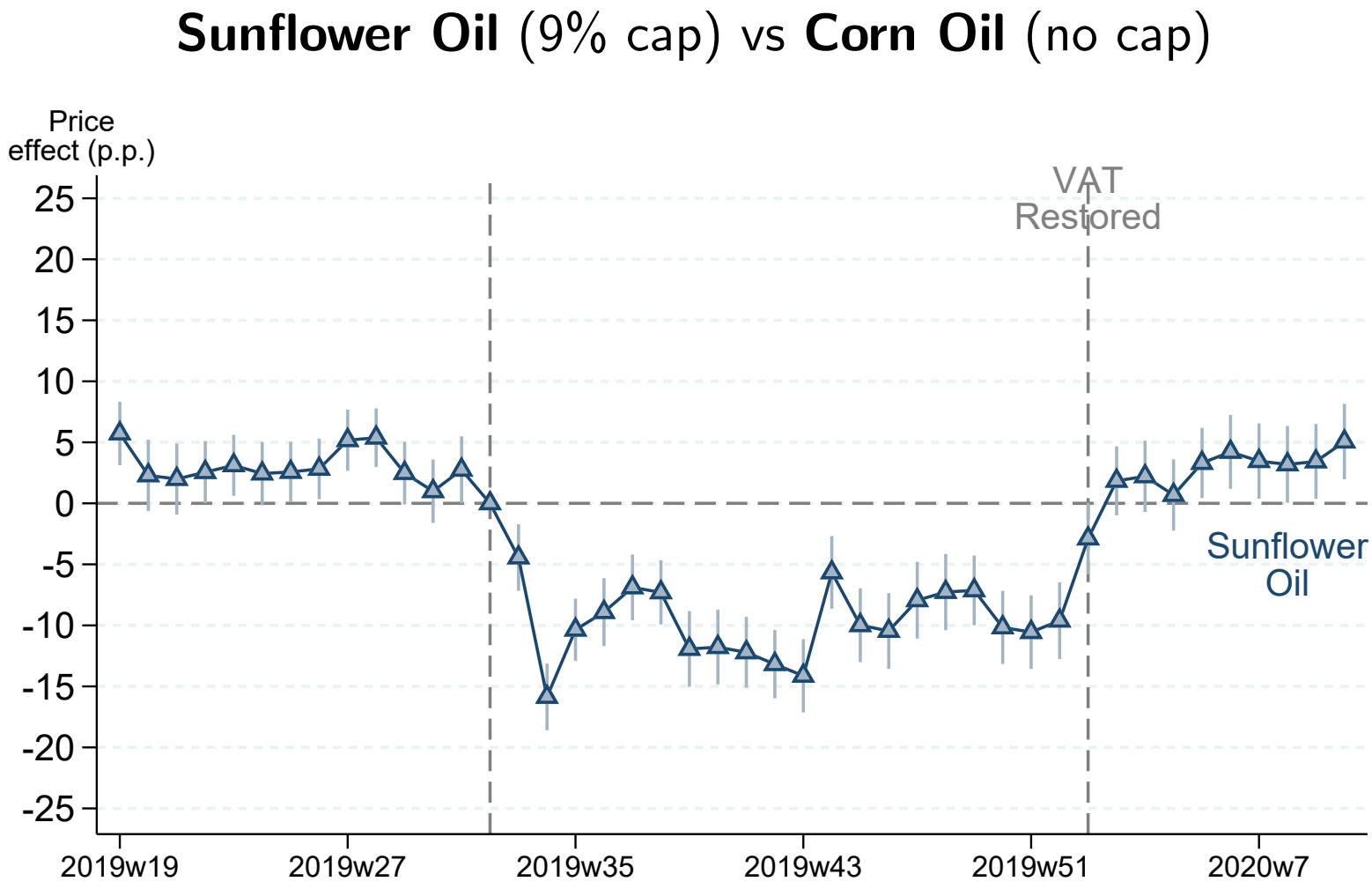
▸ Back

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



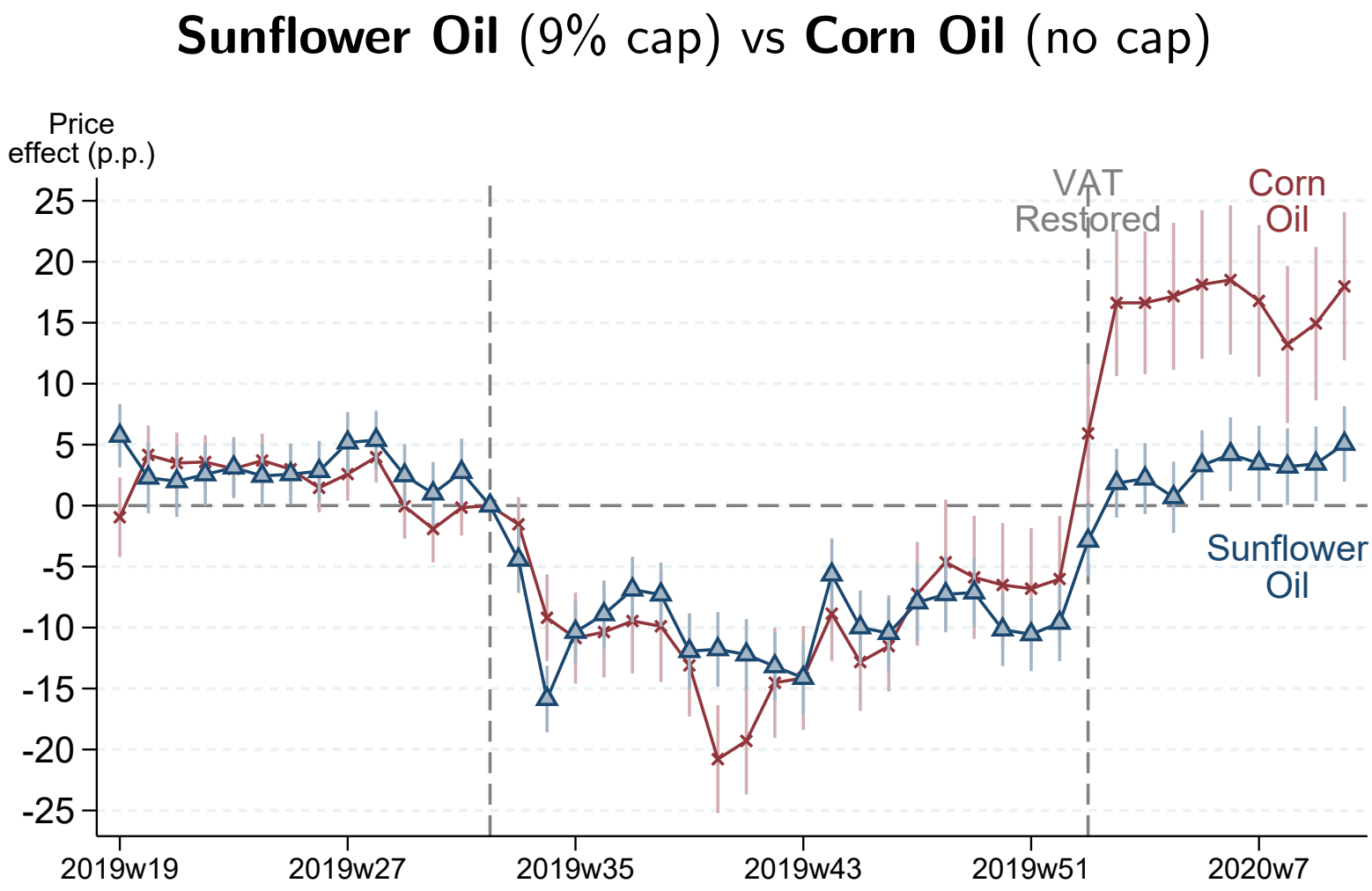
Capped VAT increase

▸ Back



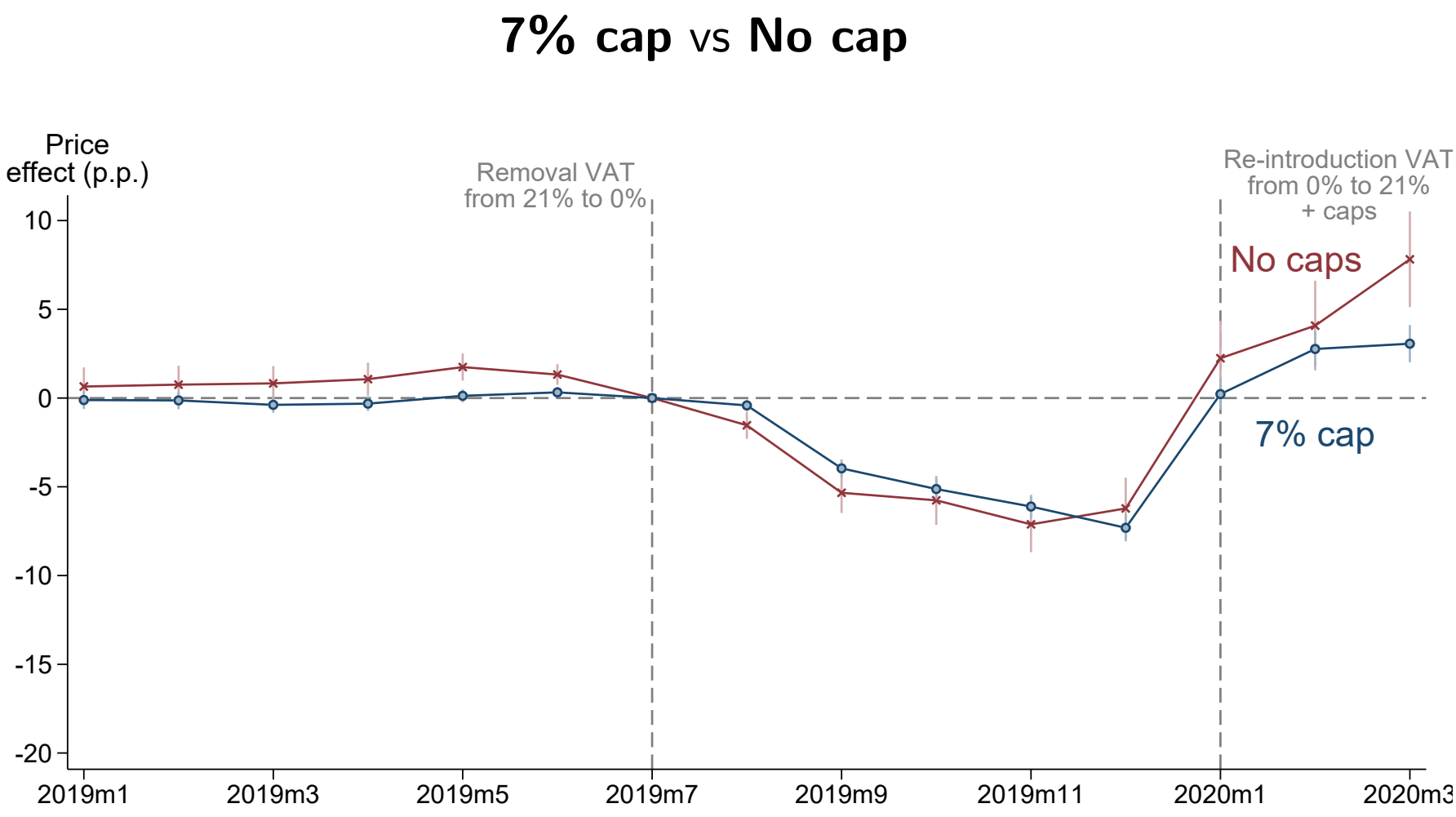
Capped VAT increase

▸ Back



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

▸ Back



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 $\Longrightarrow$ 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

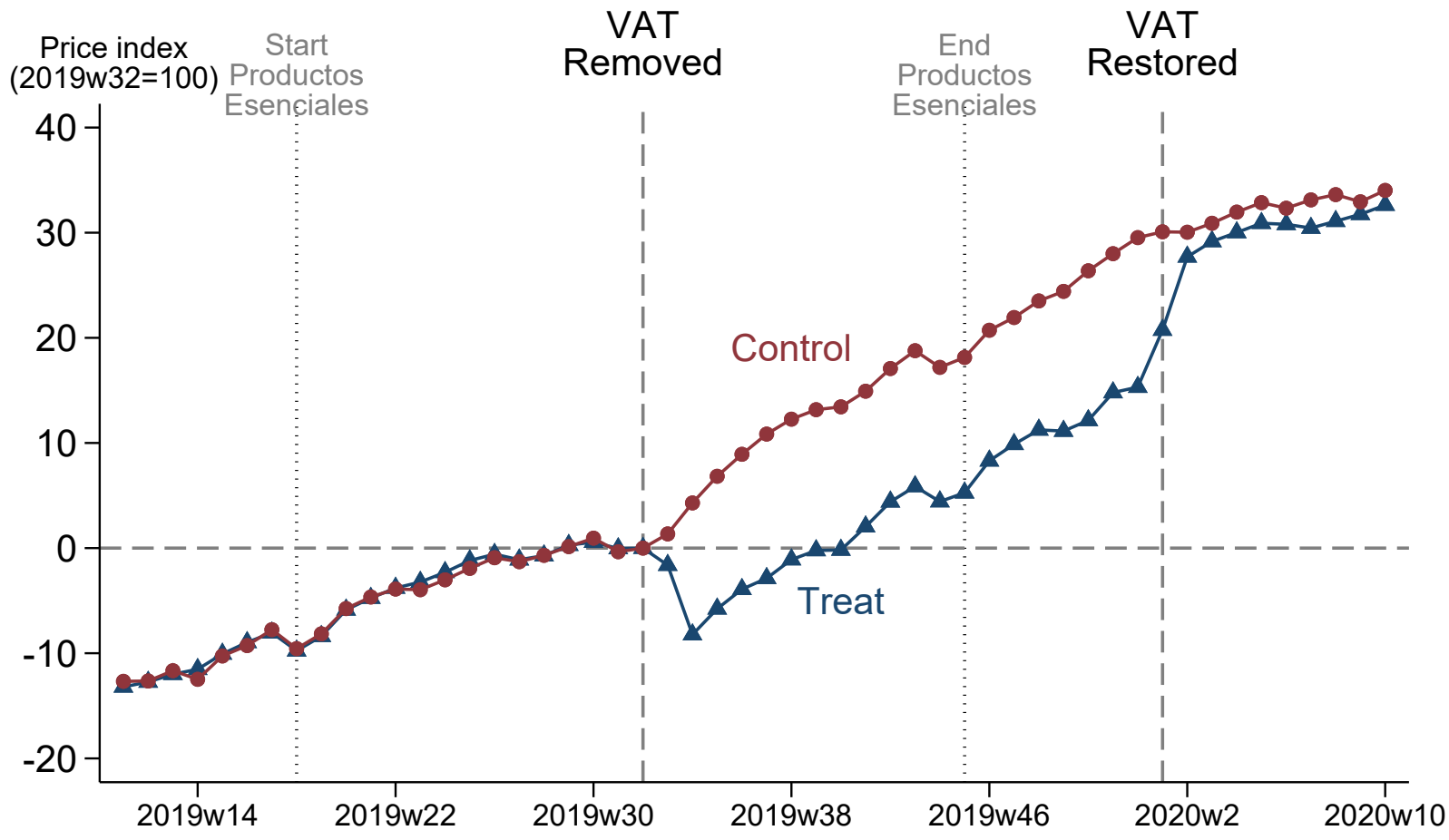




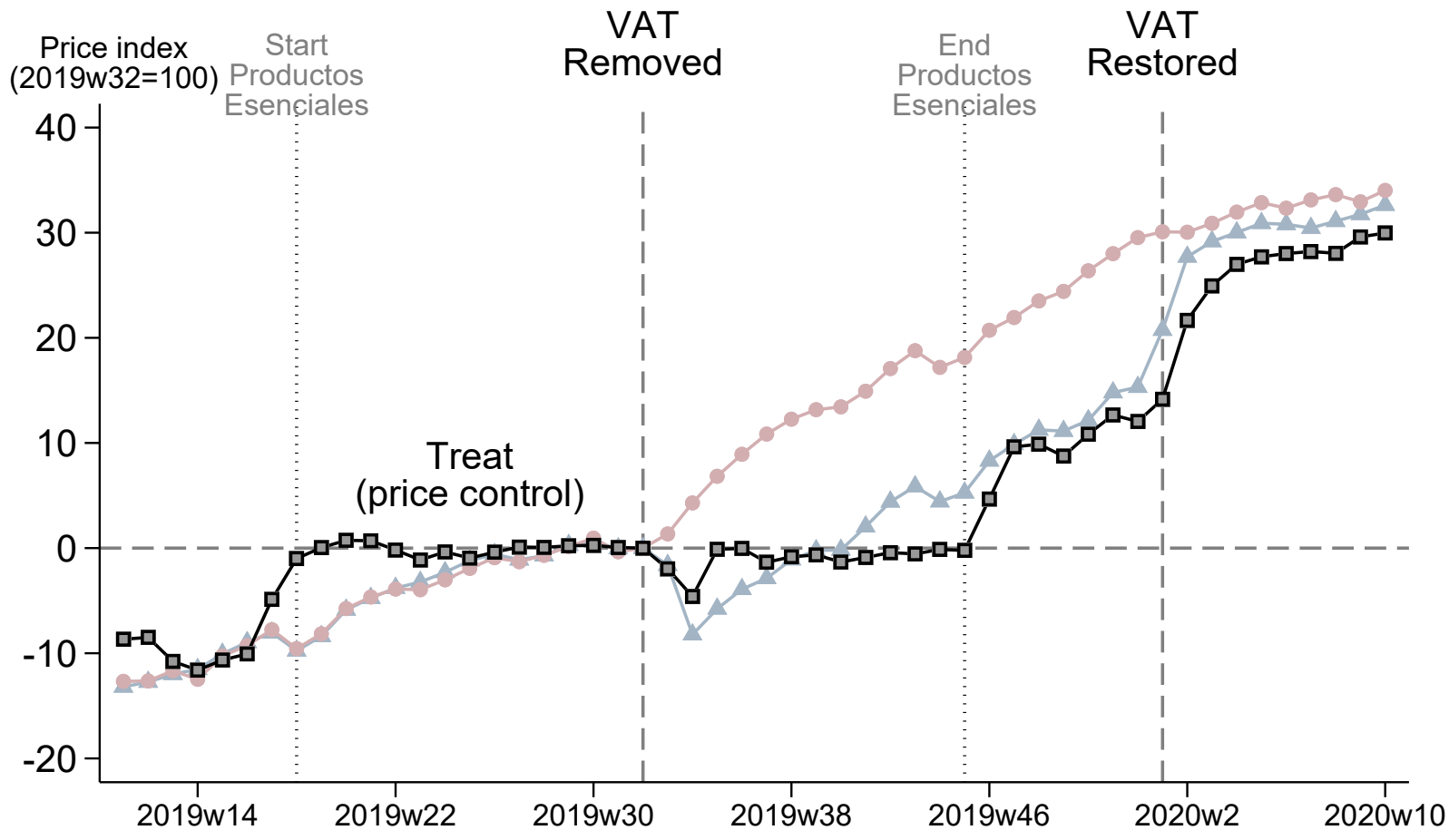




[1] Productos Esenciales (in T) vs Rest (T and C)

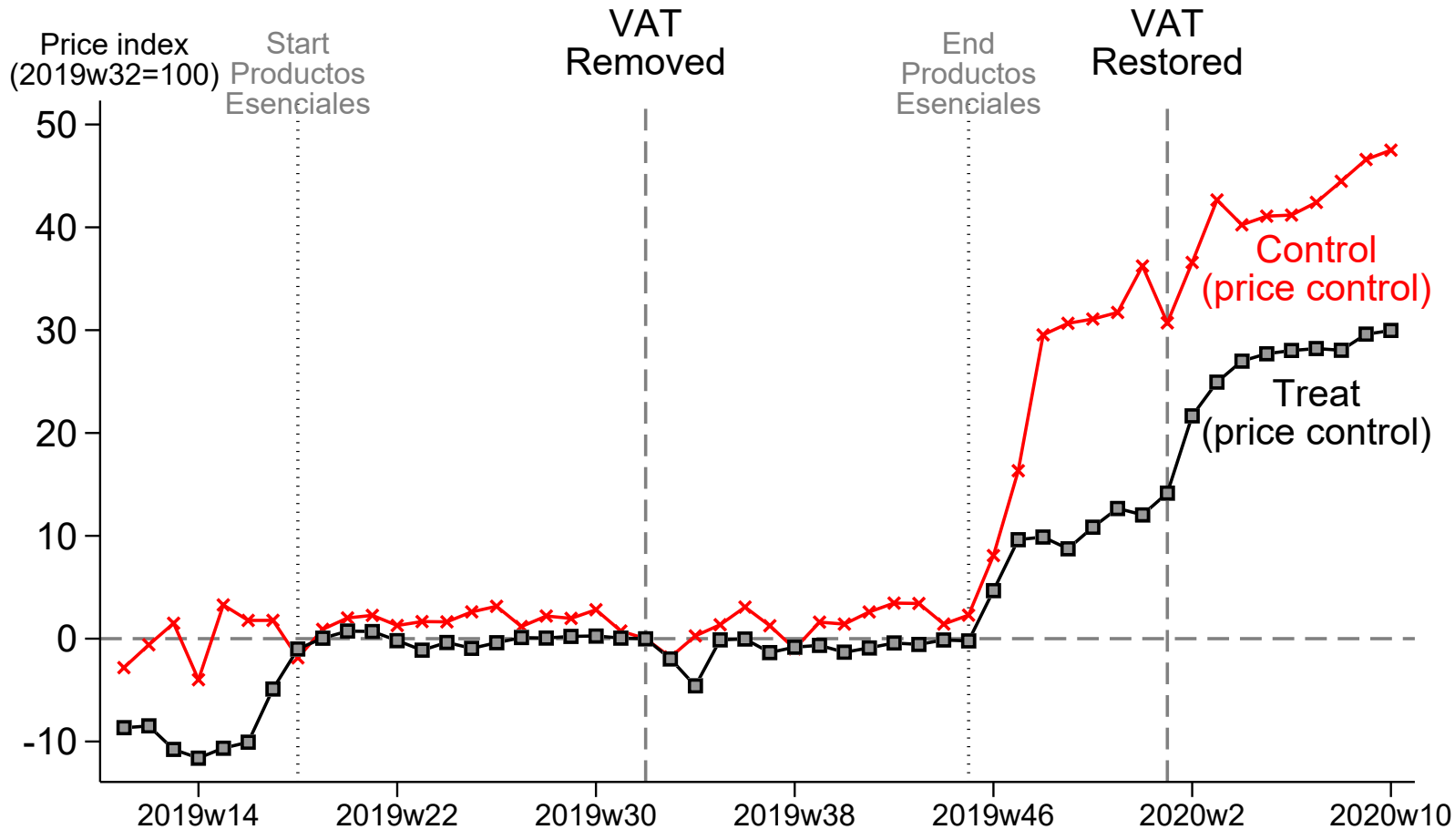


[1] Productos Esenciales (in T) vs Rest (T and C)



[2] Productos Esenciales: in T and C

▸ DiD



Two complementary policy tools

Back

Monitoring App:

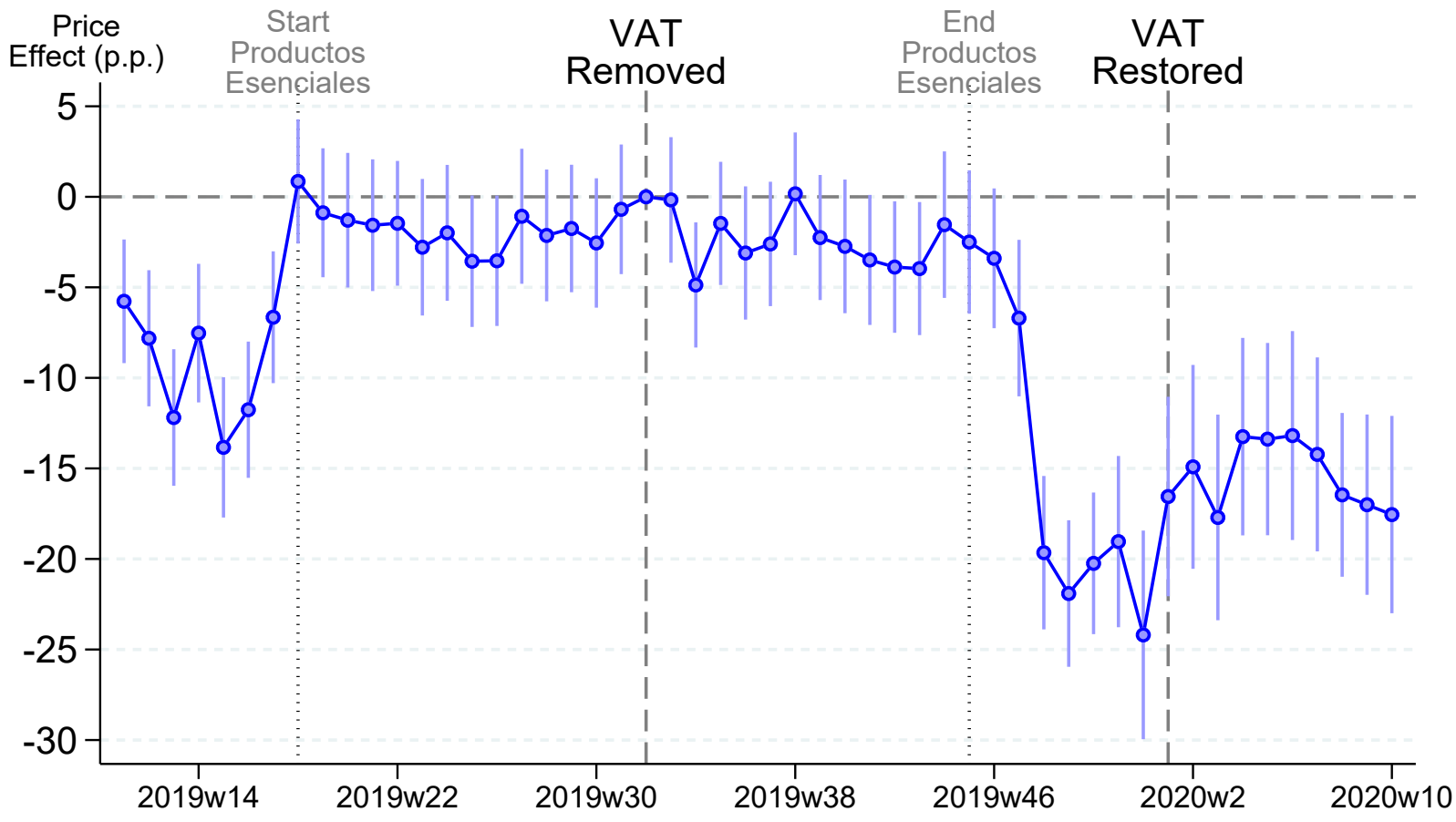
- **Precios Claros**: an Electronic Price Advertising System (SEPA) launched in 2016. Goal: ↑ price visibility
  - Large grocery stores must report daily price data (Art 4: except SMEs)
  - Consumers can search prices/location from web-page or app
  - Administered/enforced by the Consumer Protection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

Price Controls:

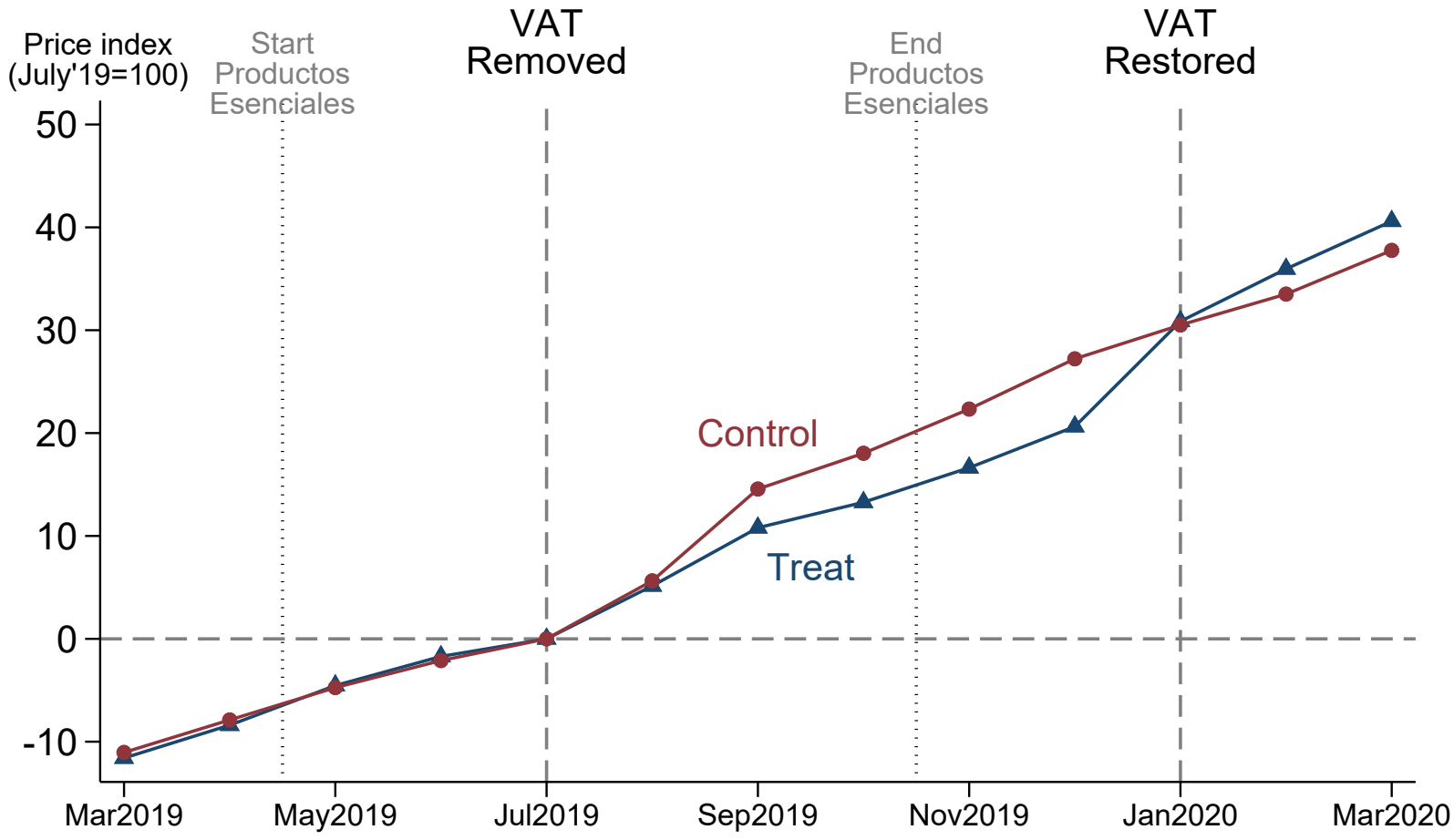
- **Precios Cuidados**: A list of mass consumption goods with controlled prices (≈500 barcodes, e.g., Coke 1.5L). Since 2014
  - Updated every 4 months; Mandatory tags; Audits; High penalties
- **Productos Esenciales**: Govt froze the price of 64 barcodes in the Basic Food Basket for 6 months (Apr 29–Oct 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

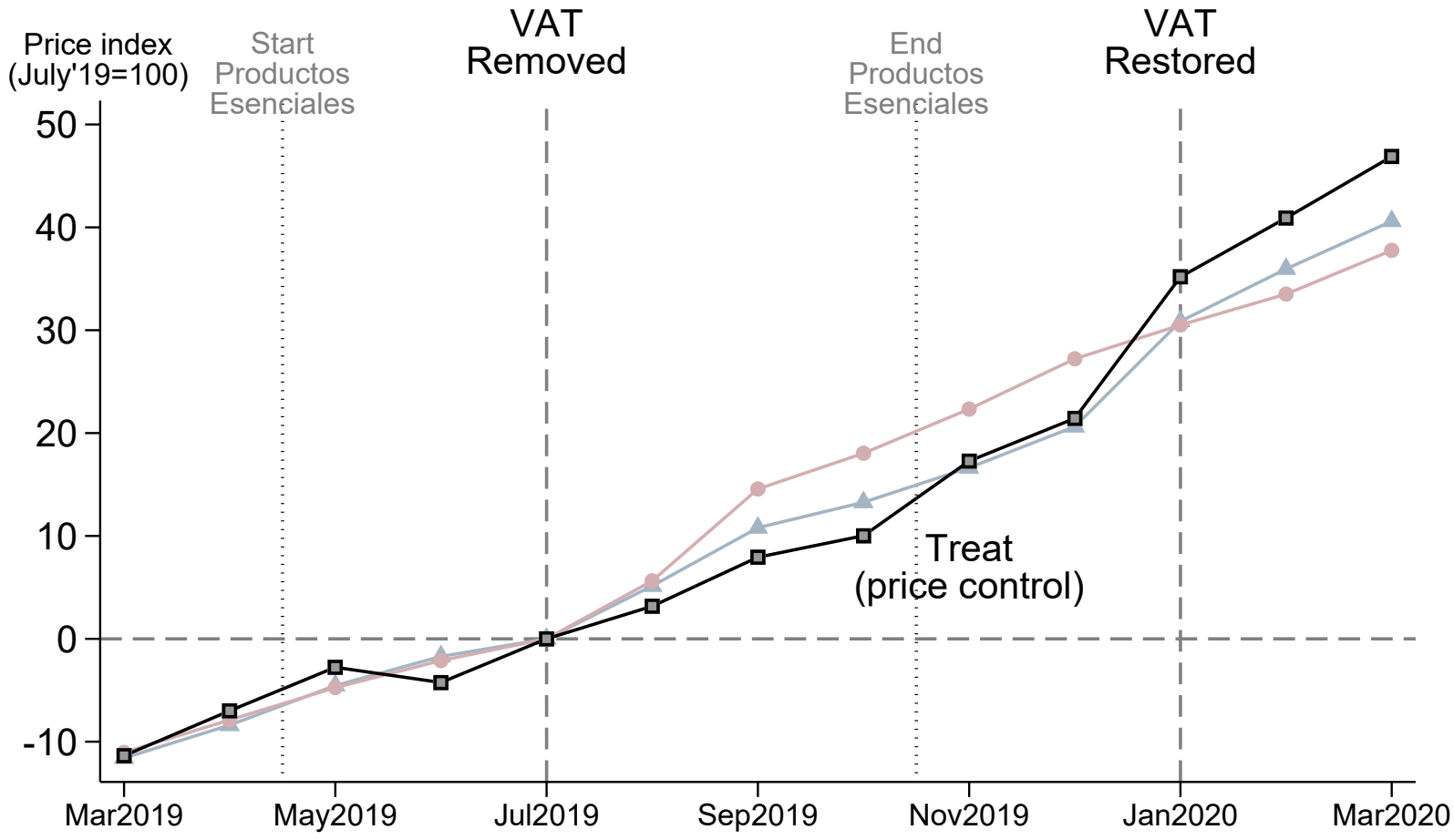


[1] Productos Esenciales (in T) vs Rest (T and C)

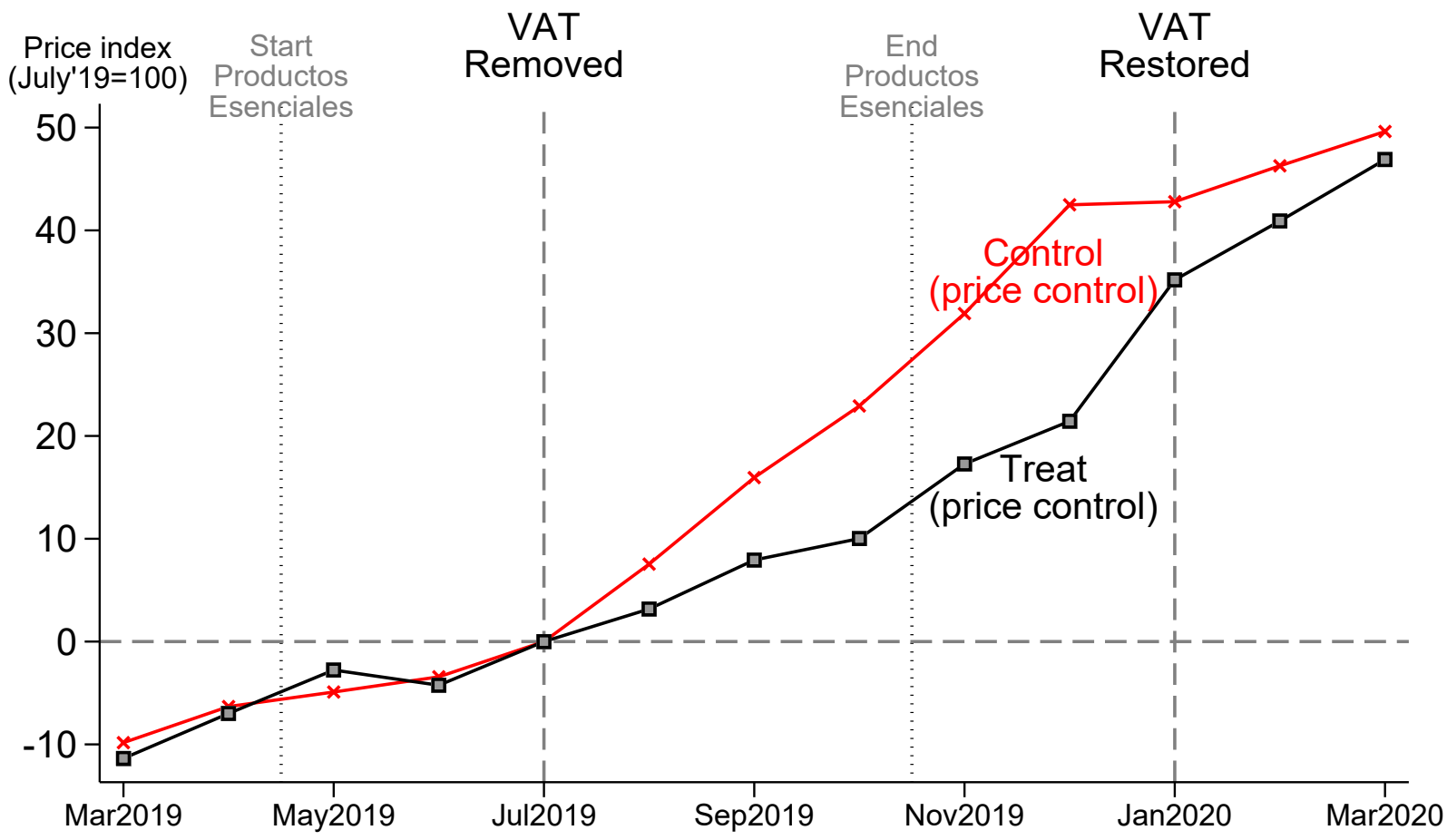


[1] Productos Esenciales (in T) vs Rest (T and C)

Back

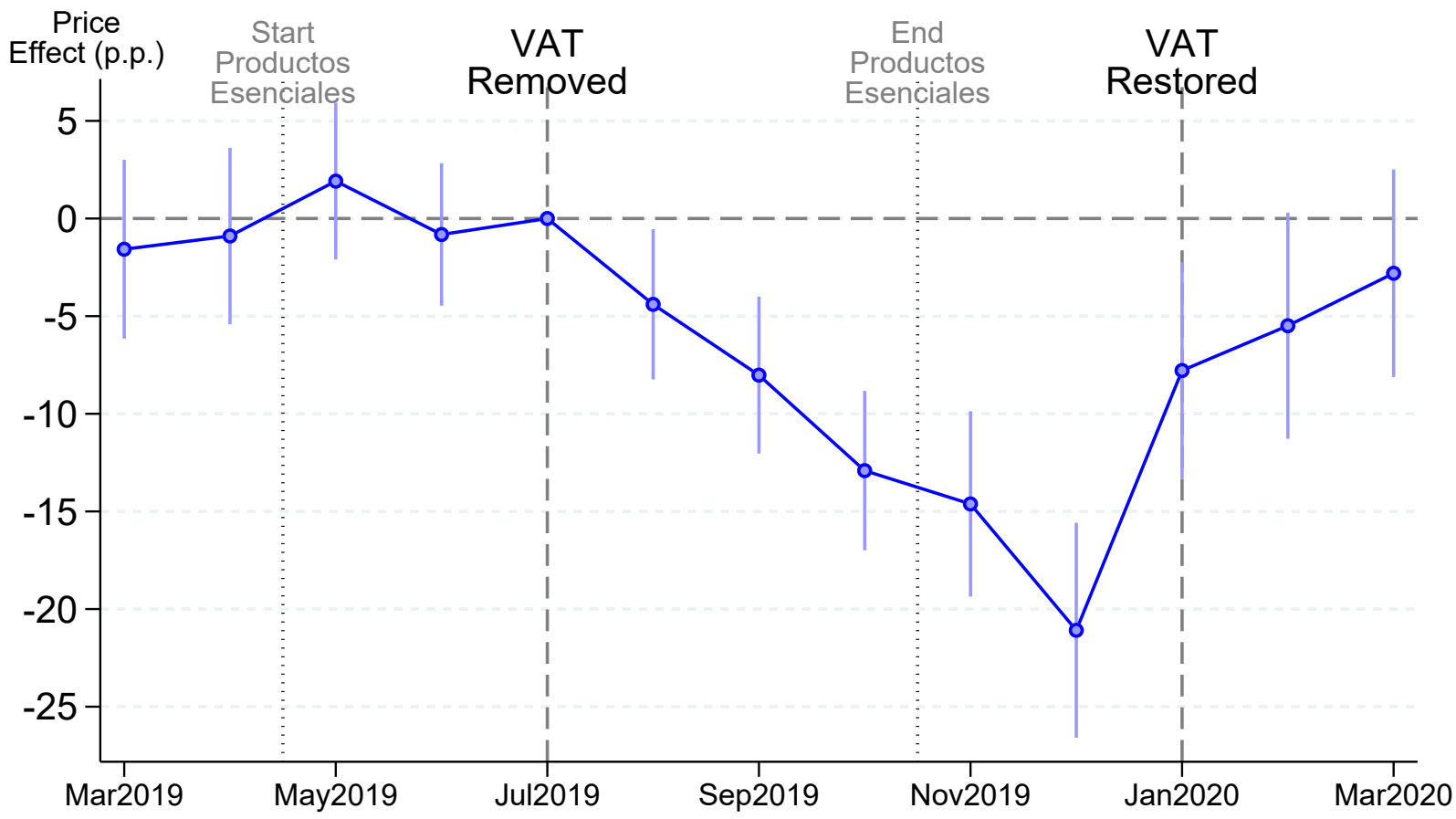


[2] Productos Esenciales: in T and C



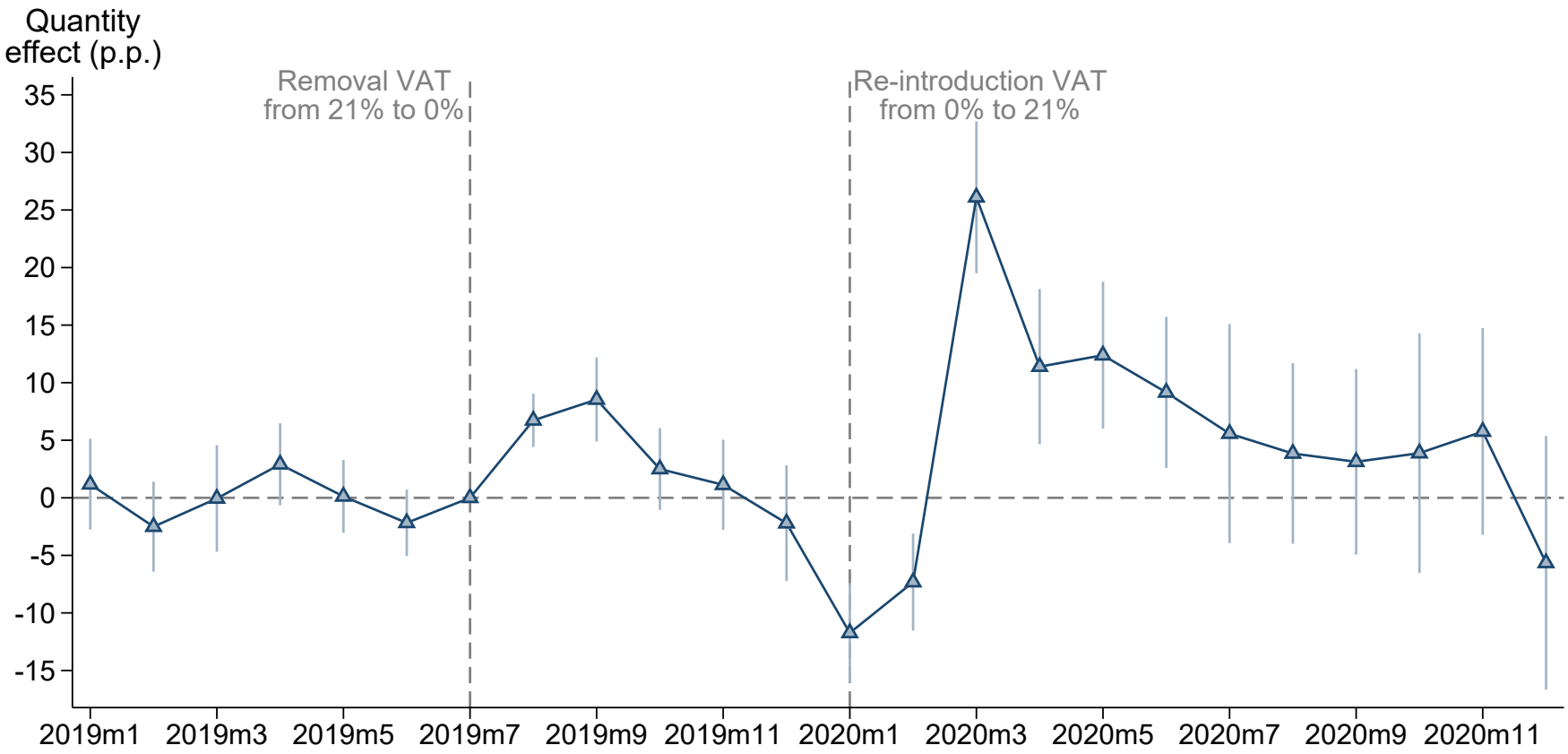
[2] Productos Esenciales: Dynamic DiD

▸ Back



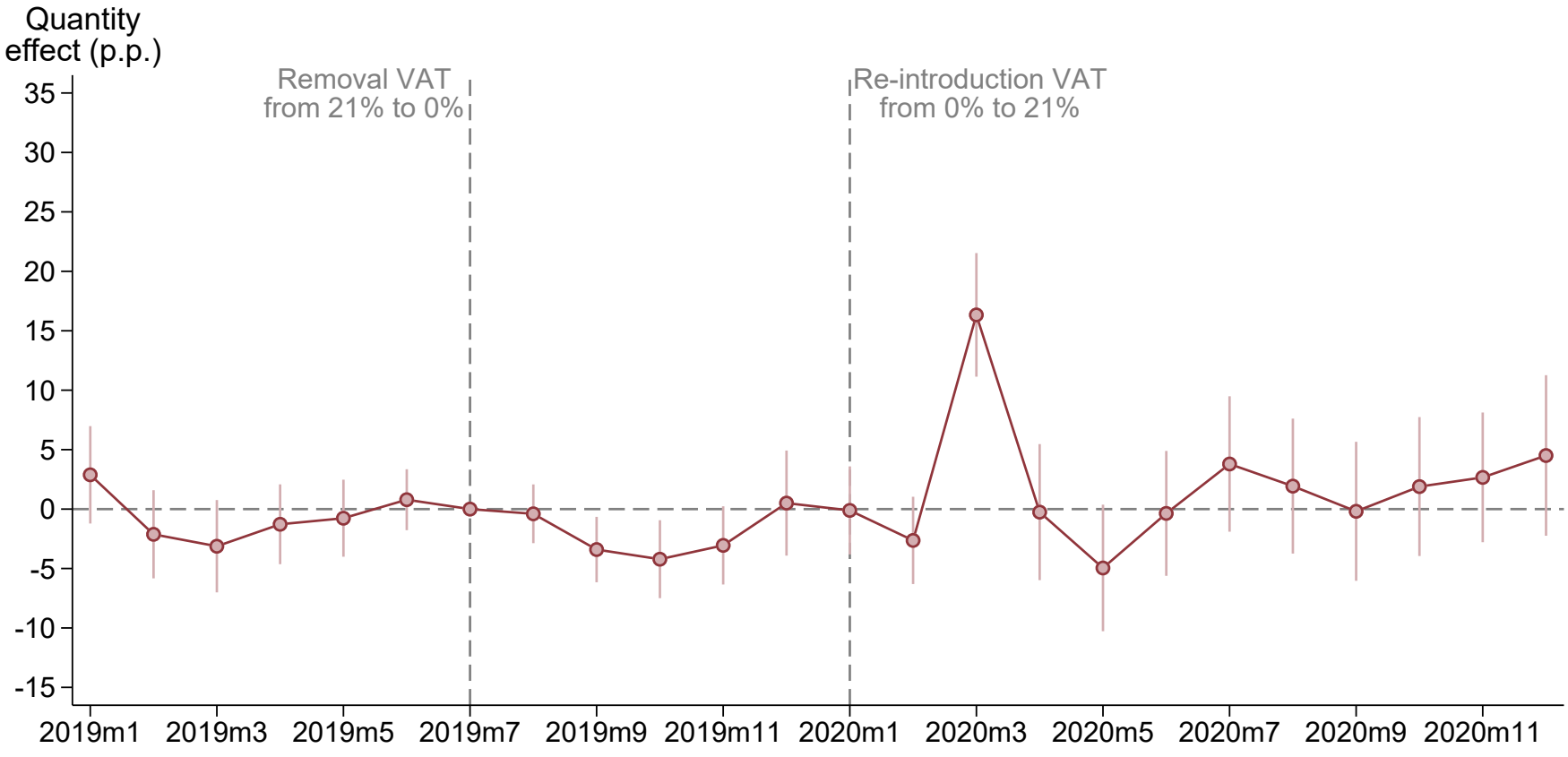
Quantity effects in the longer run

Back



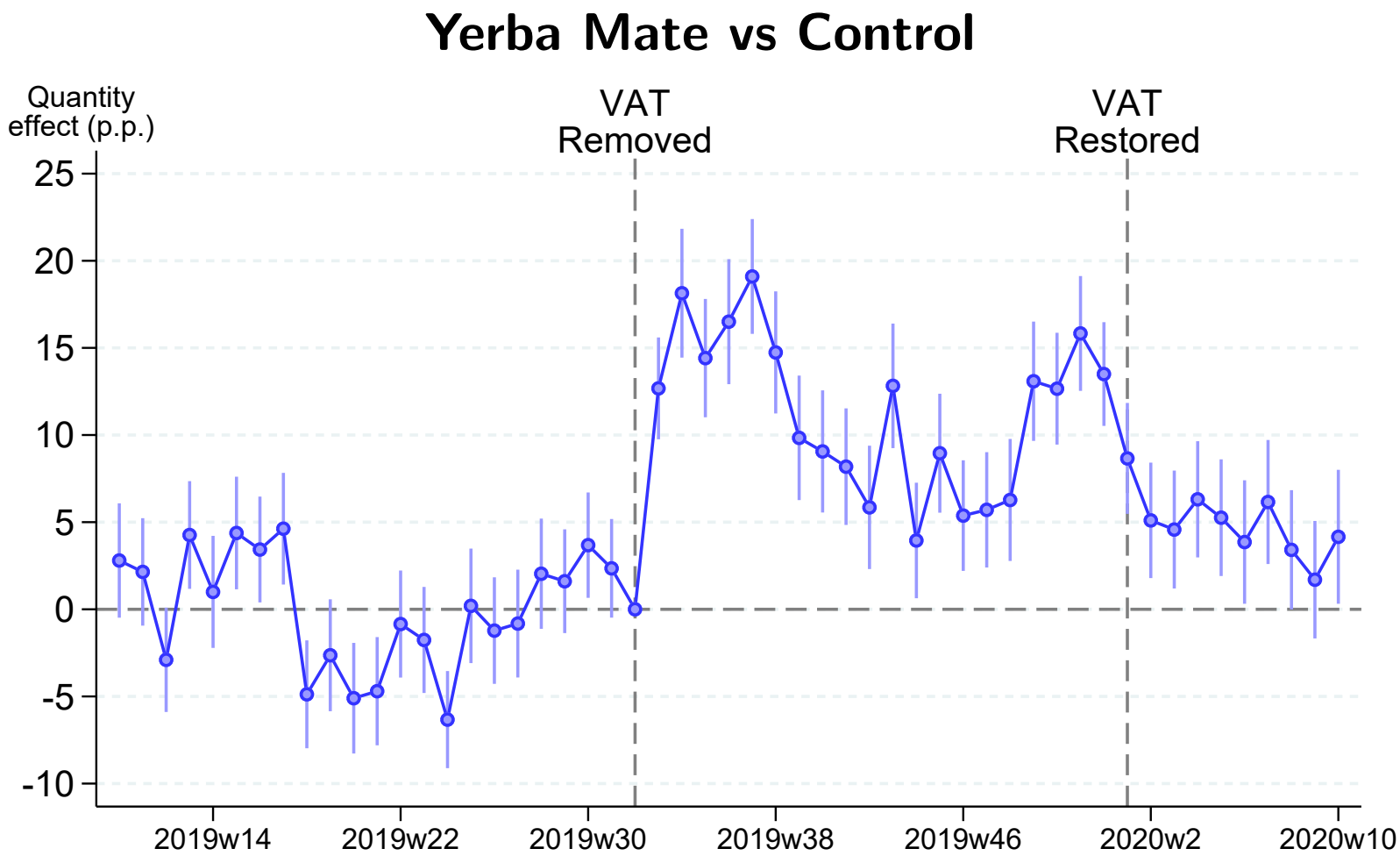
Quantity effects in the longer run

▸ Back



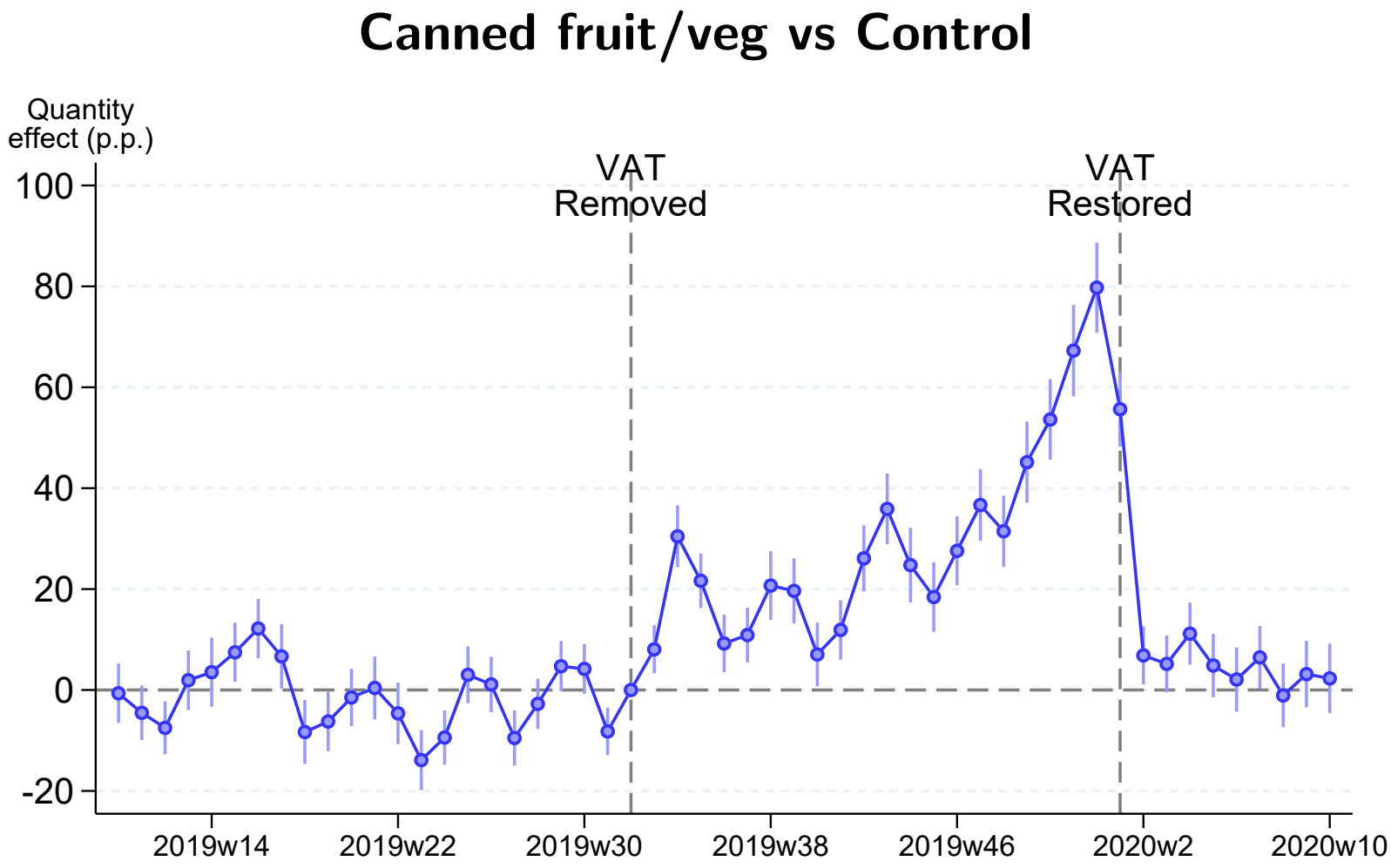
Quantity effect (Dynamic DiD): Large chains

▸ Back



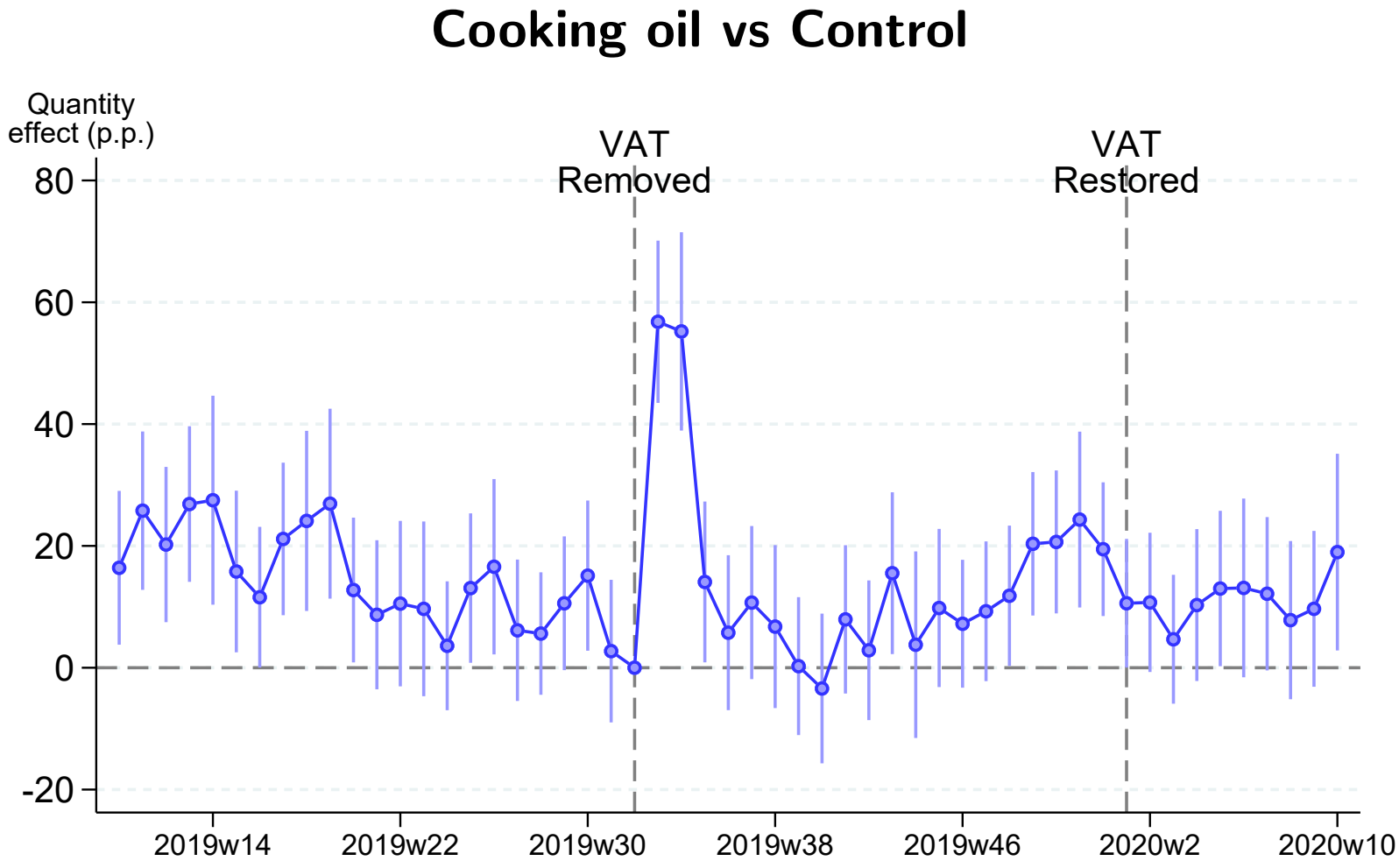
Quantity effect (Dynamic DiD): Large chains

▸ Back



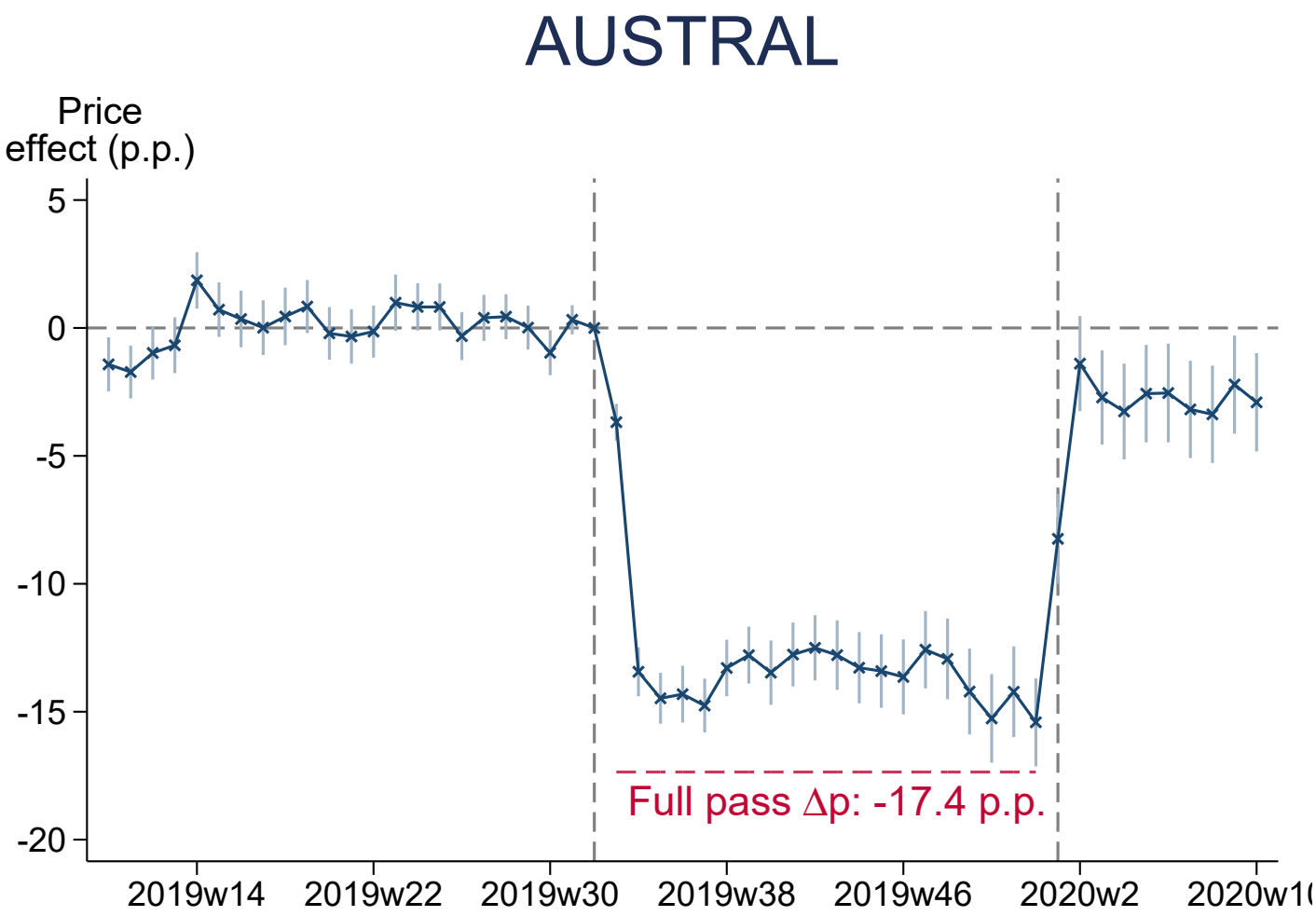
Quantity effect (Dynamic DiD): Large chains

▸ Back



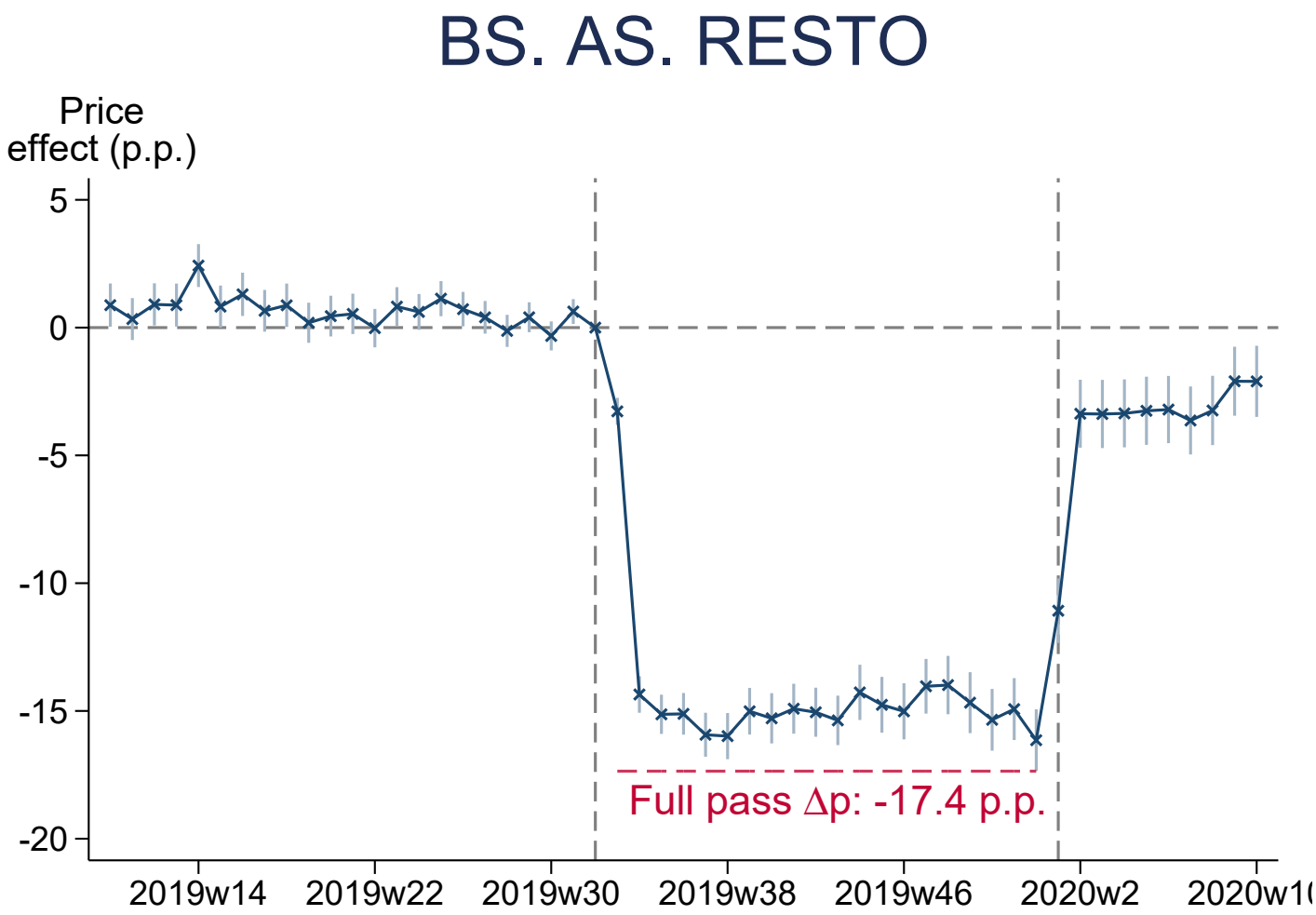
Heterogeneities by region

▸ Back



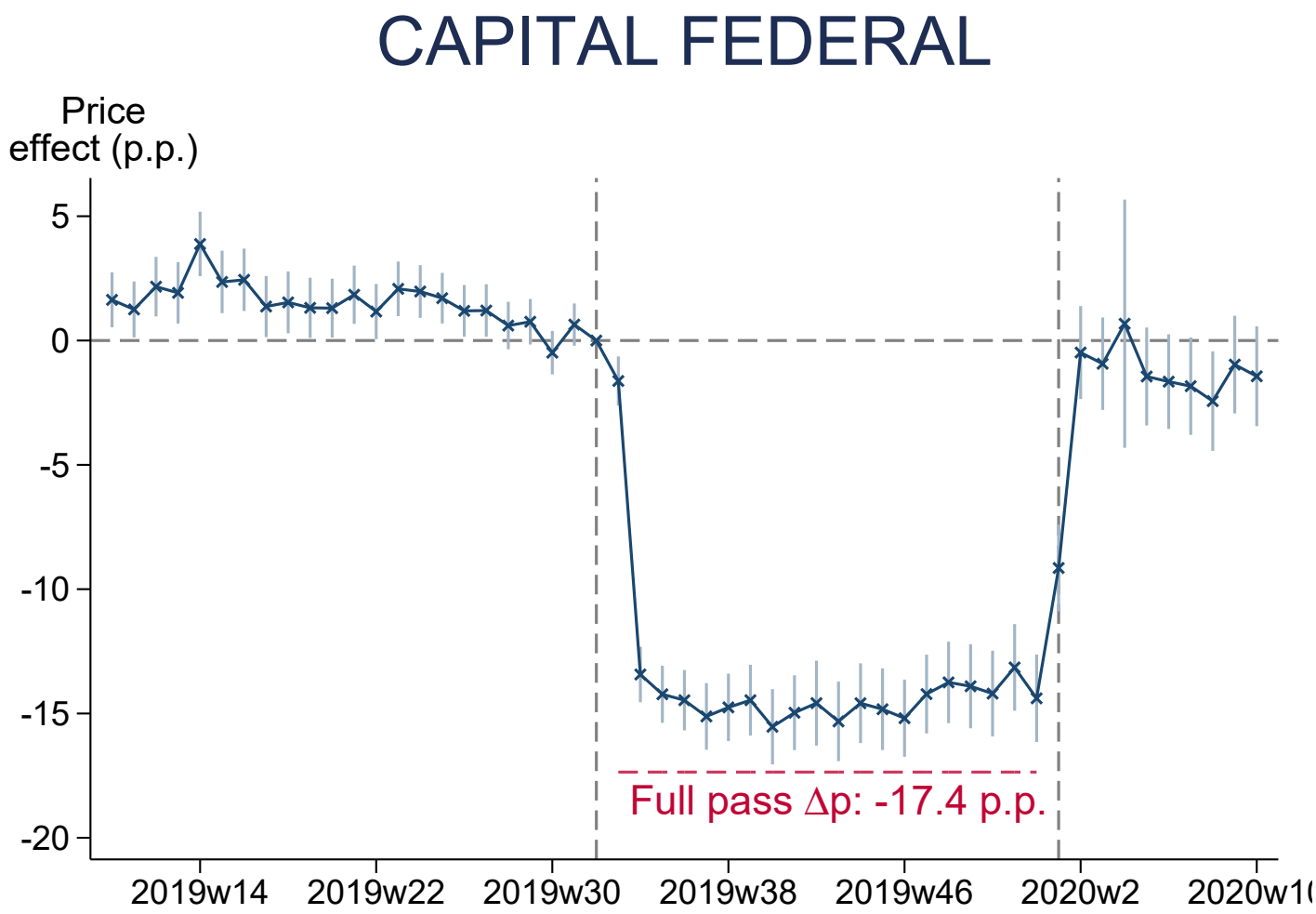
Heterogeneities by region

▸ Back



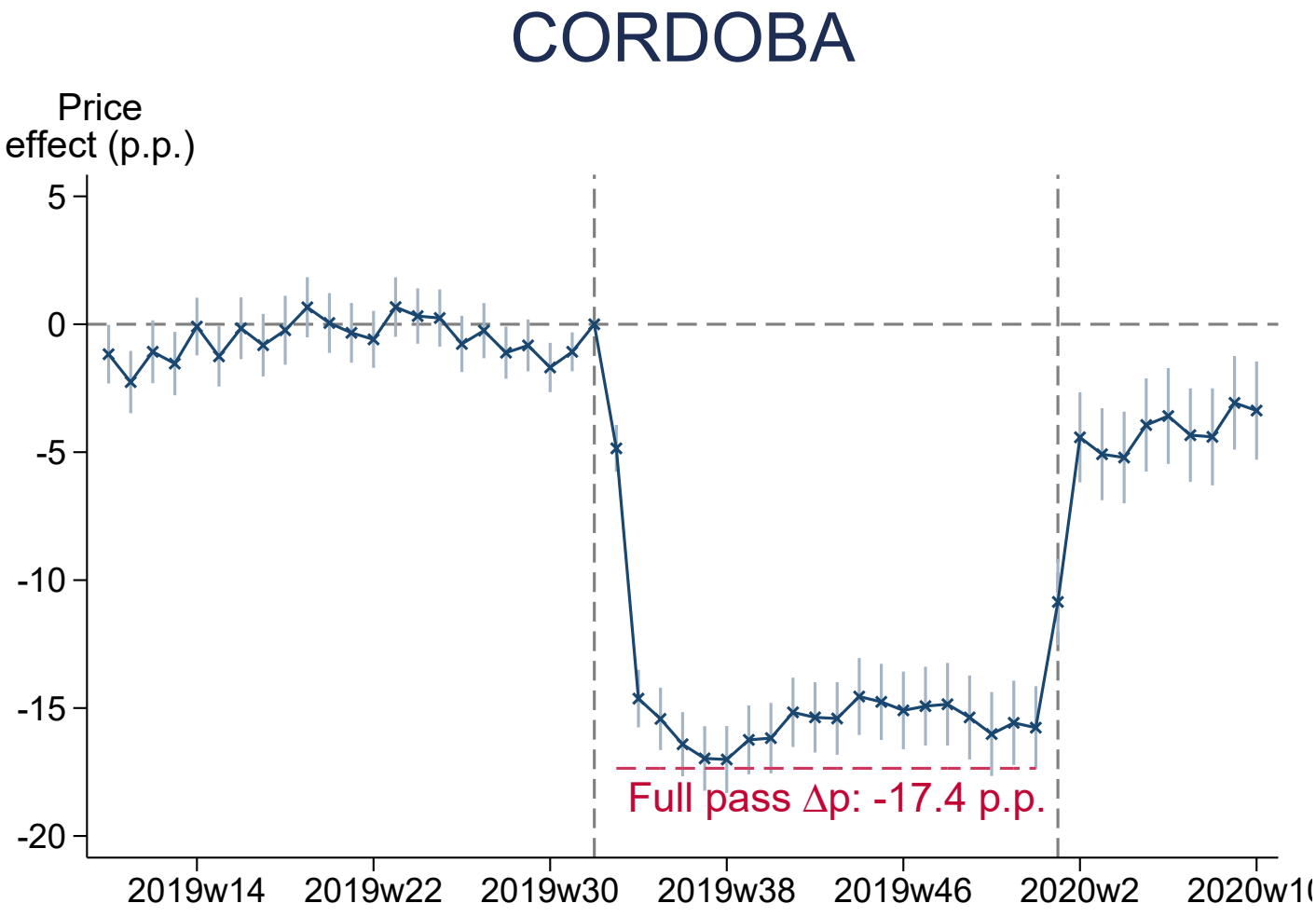
Heterogeneities by region

▸ Back



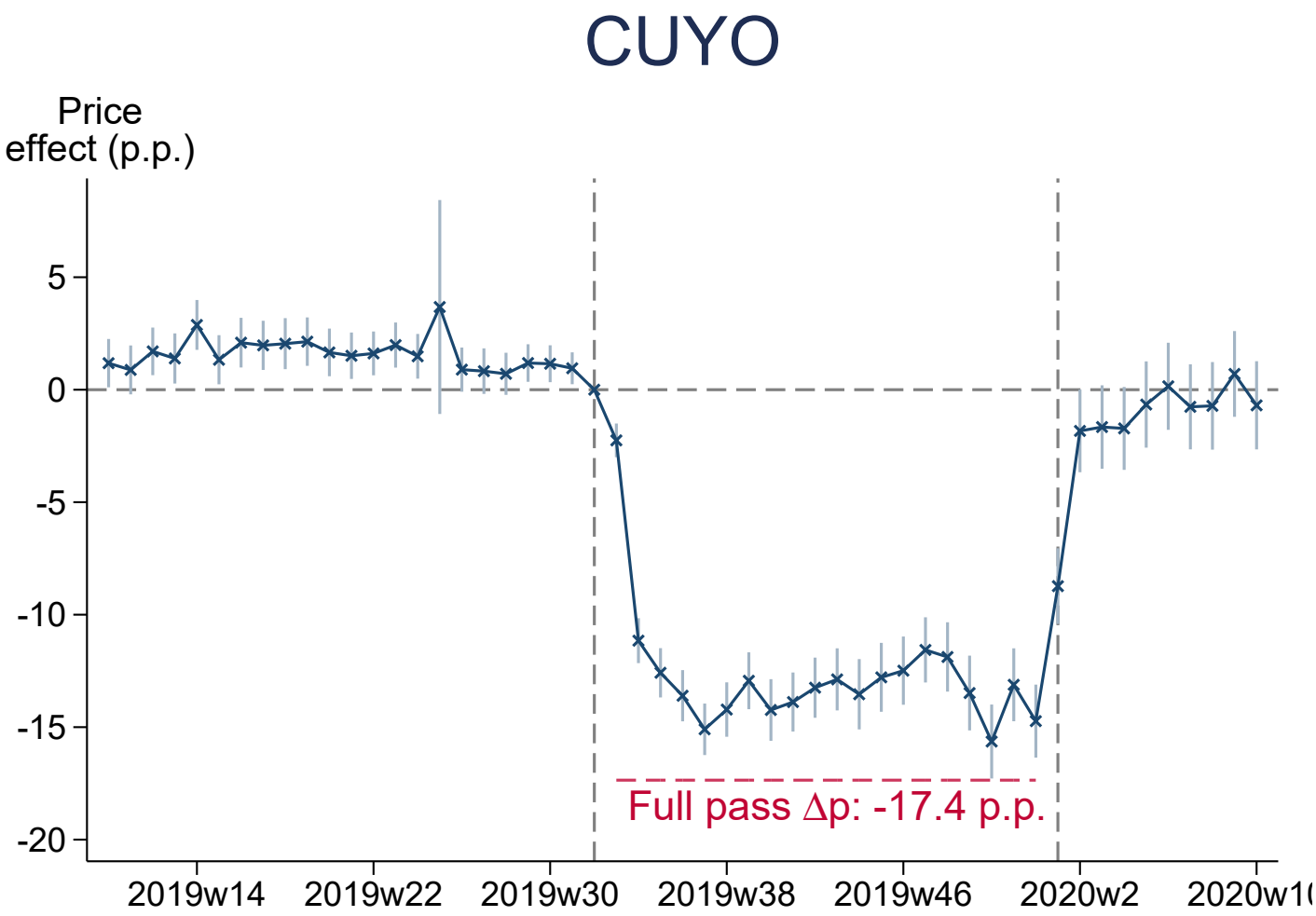
Heterogeneities by region

▸ Back



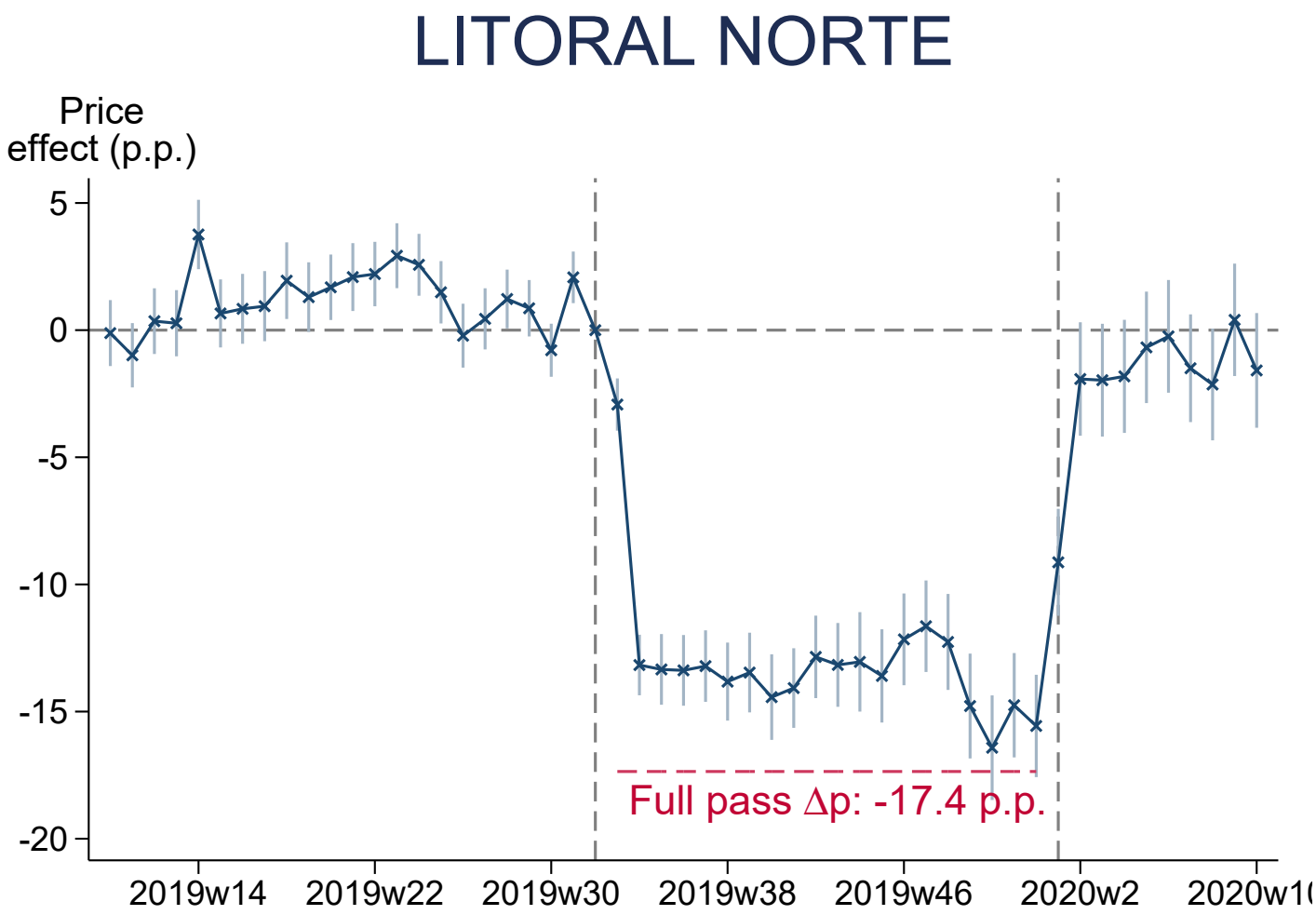
Heterogeneities by region

▸ Back



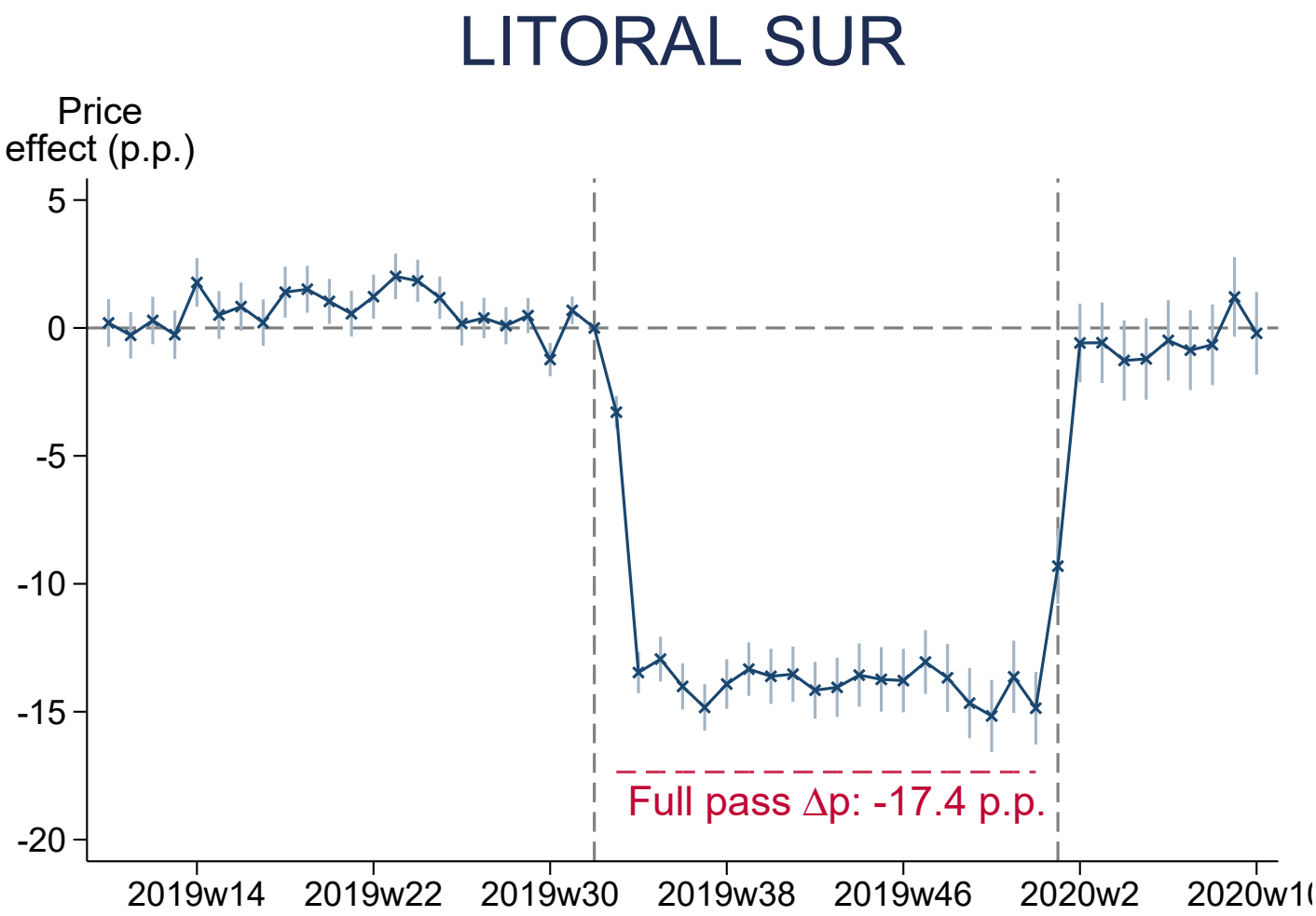
Heterogeneities by region

▸ Back



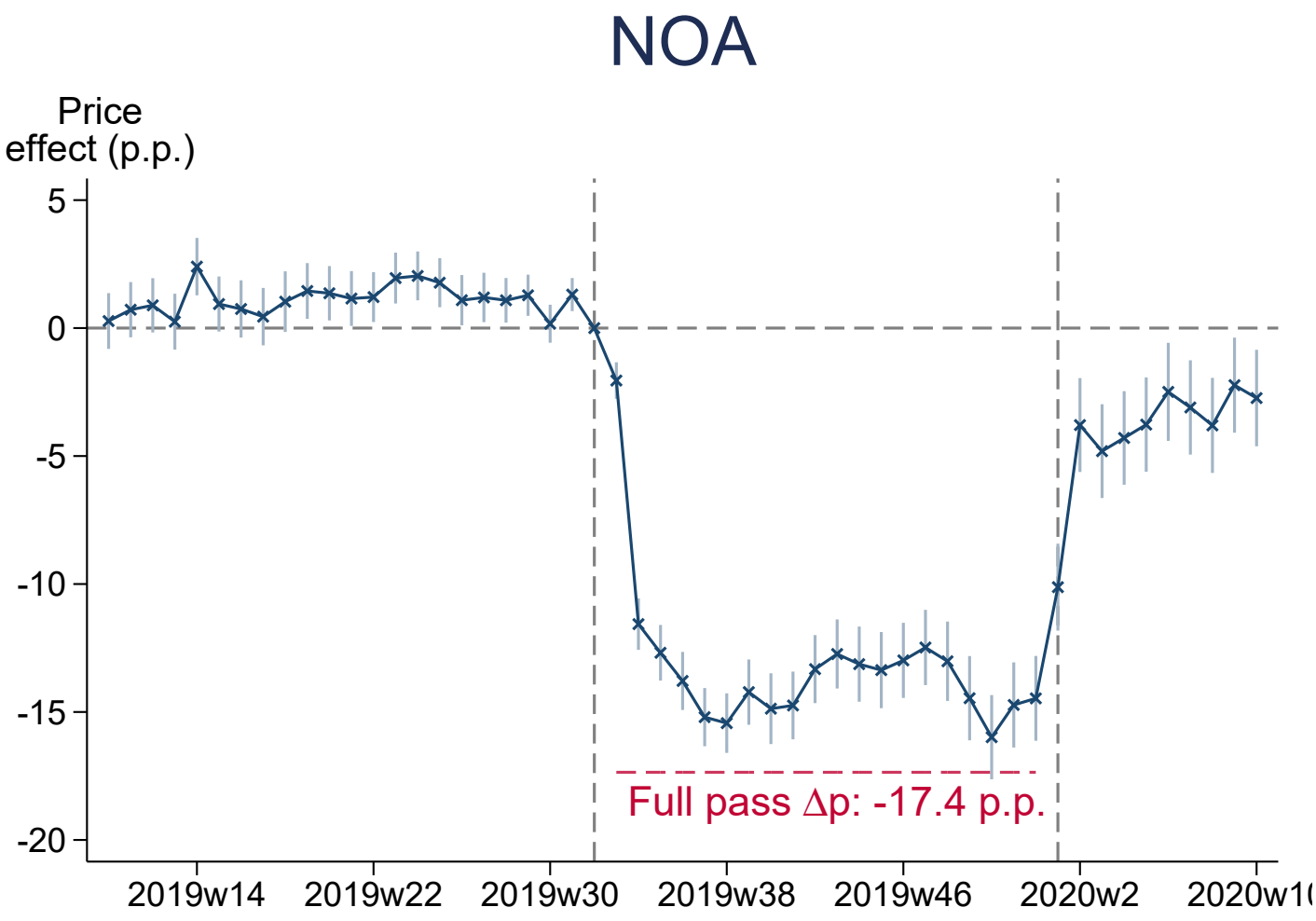
Heterogeneities by region

▸ Back



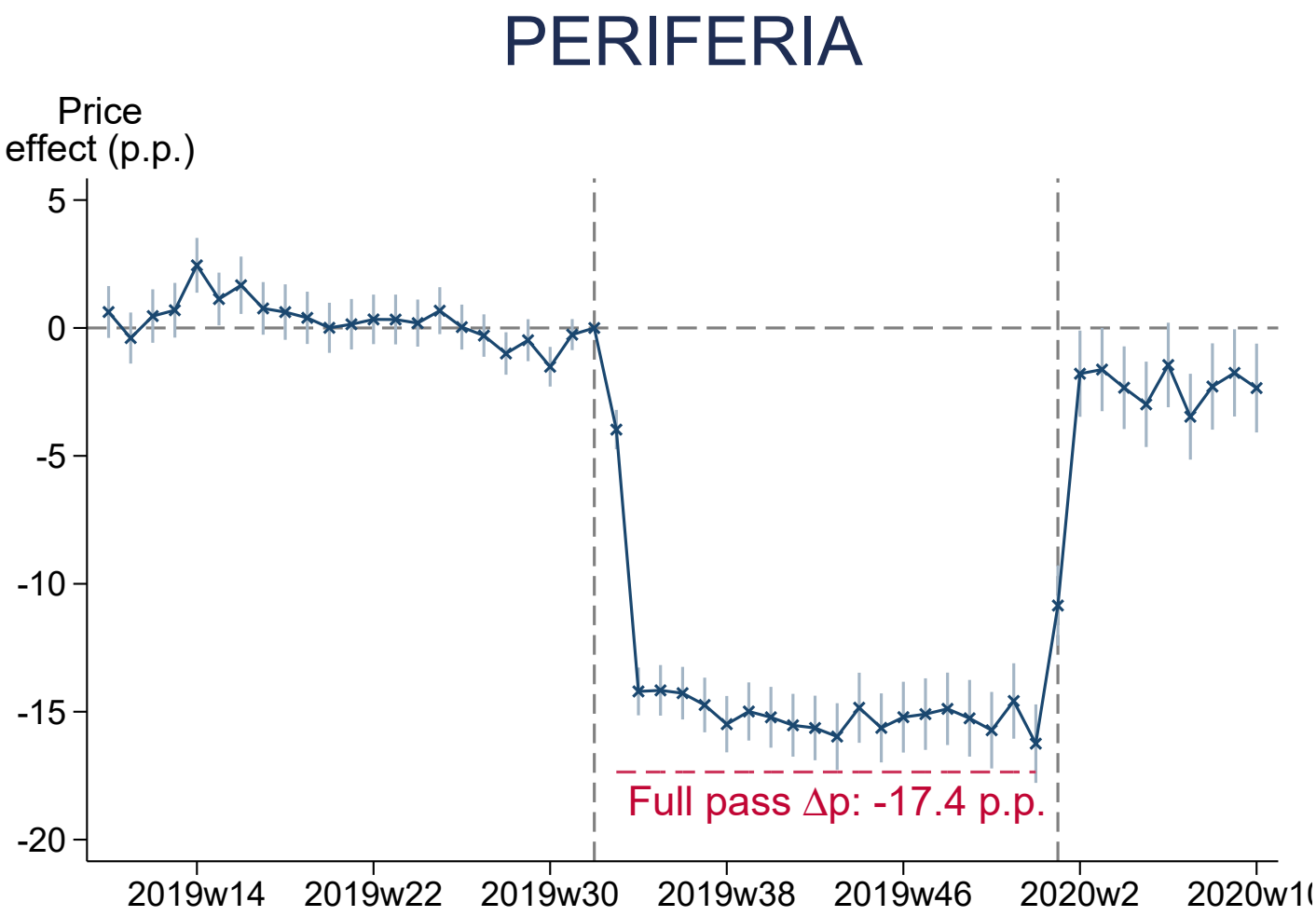
Heterogeneities by region

▸ Back



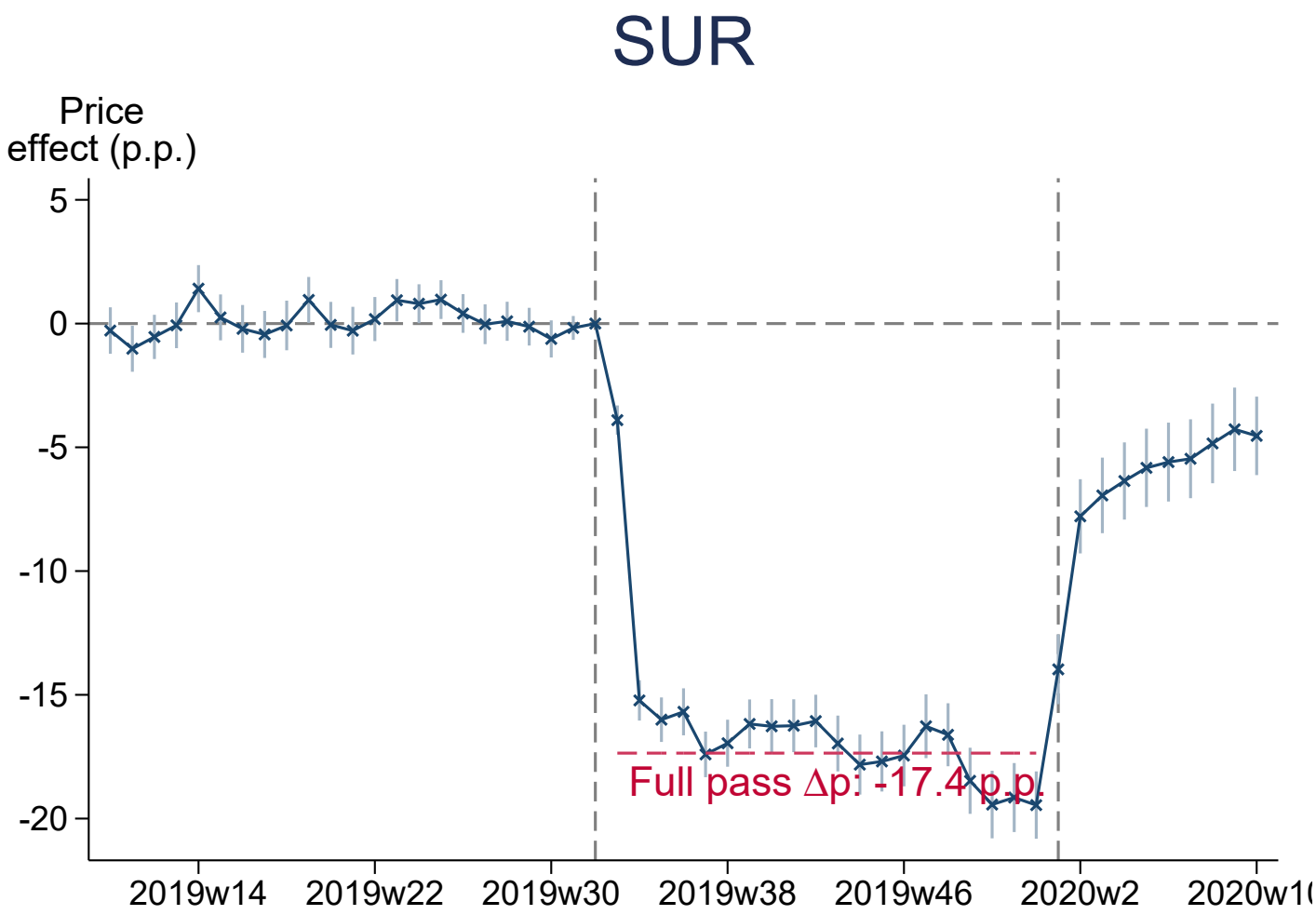
Heterogeneities by region

▸ Back



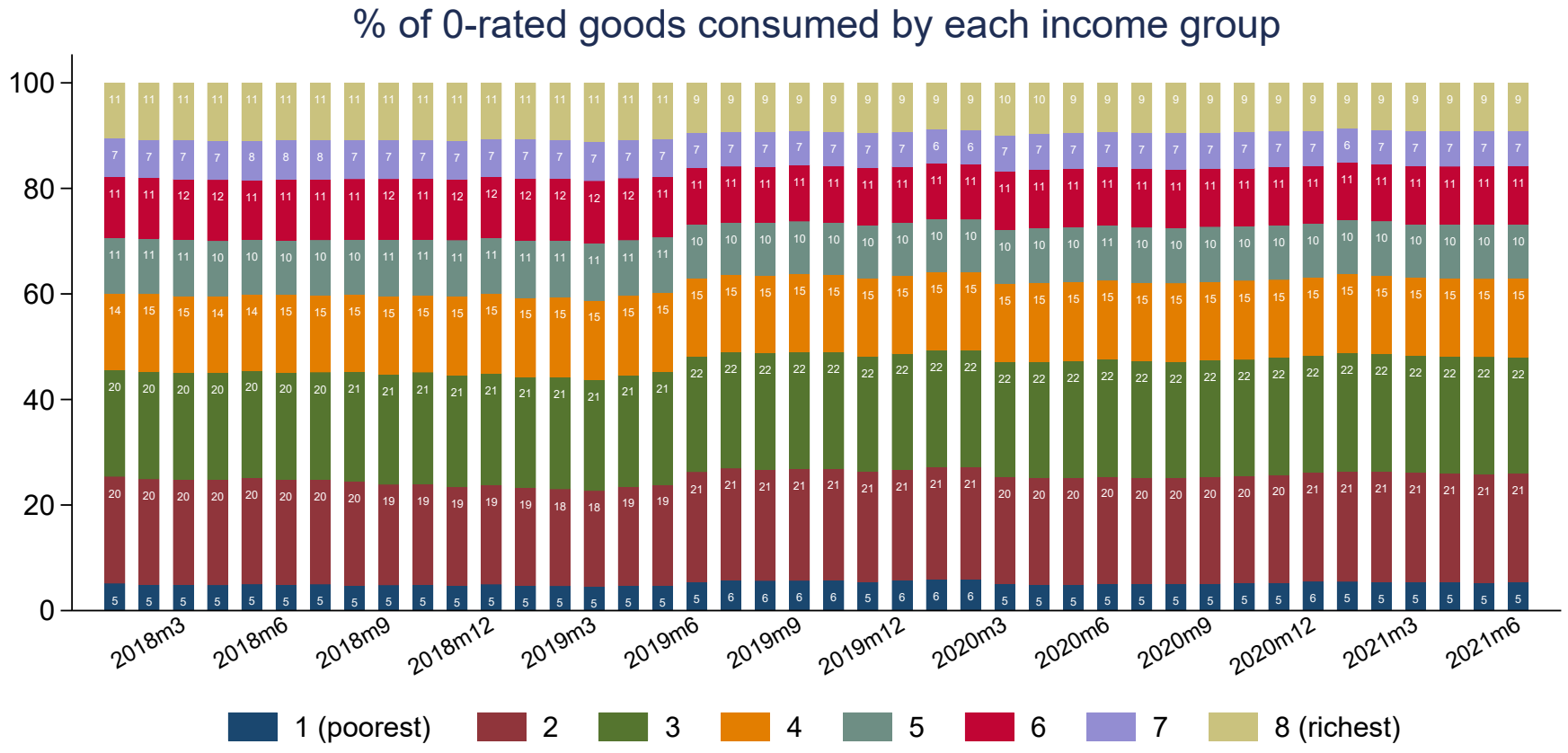
Heterogeneities by region

▸ Back



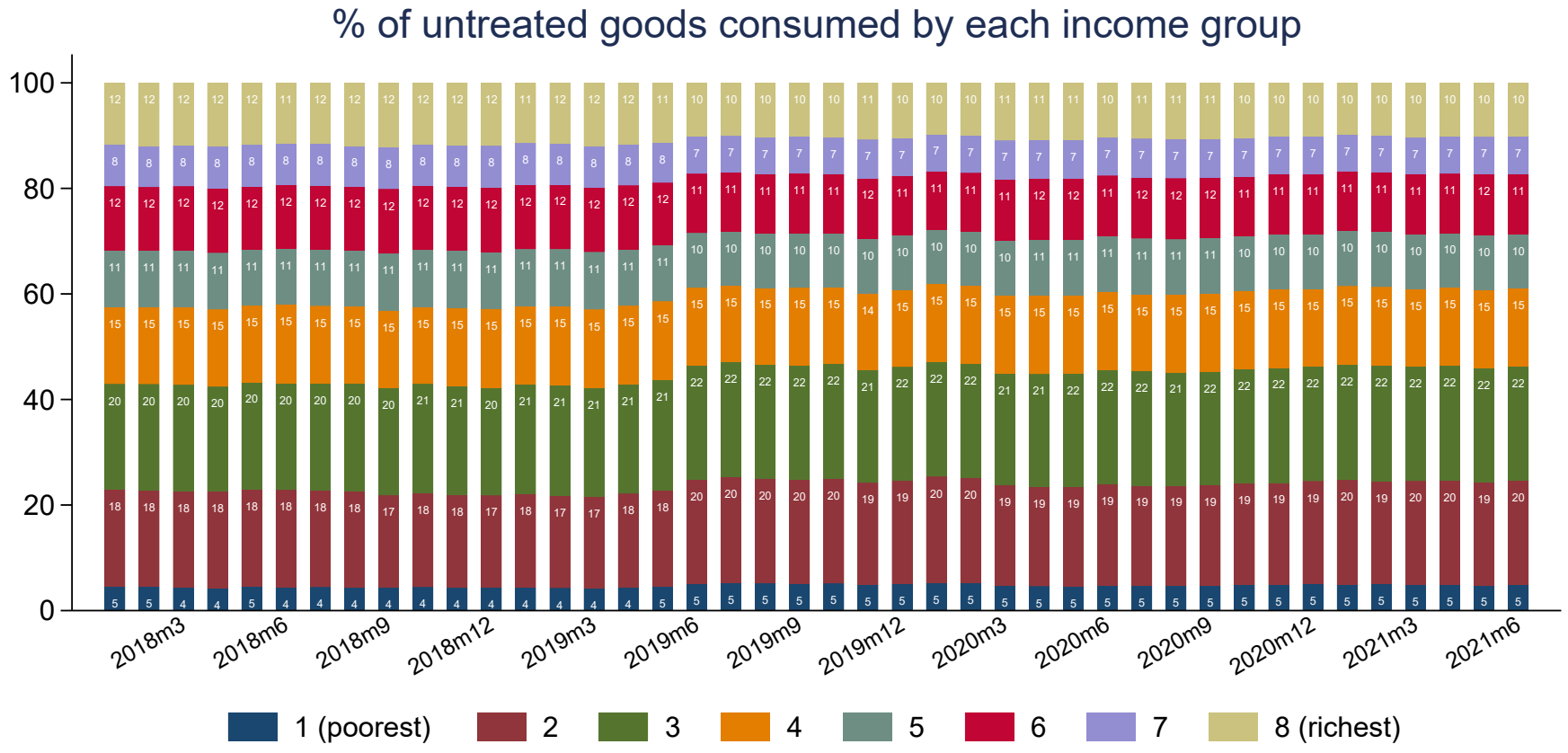
Low-income people do not seem to switch to chain supermarkets

▸ Back

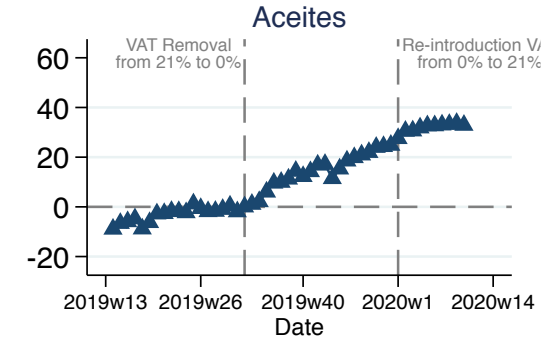


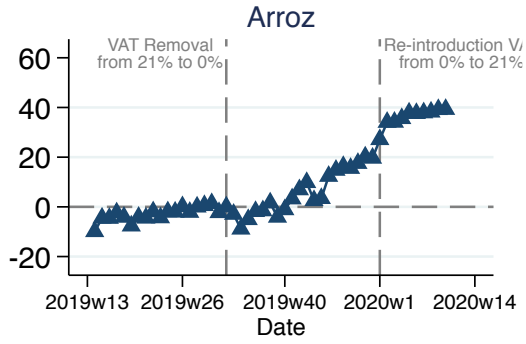
Low-income people do not seem to switch to chain supermarkets

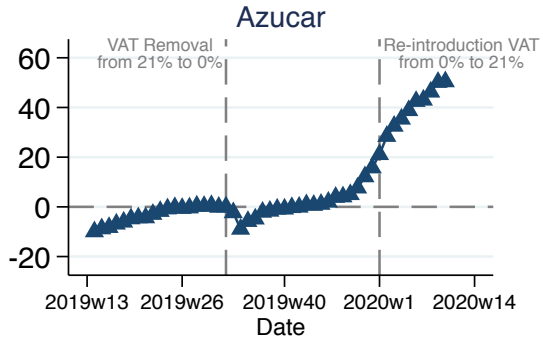
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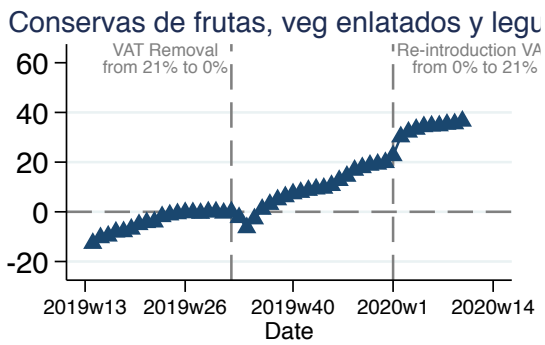


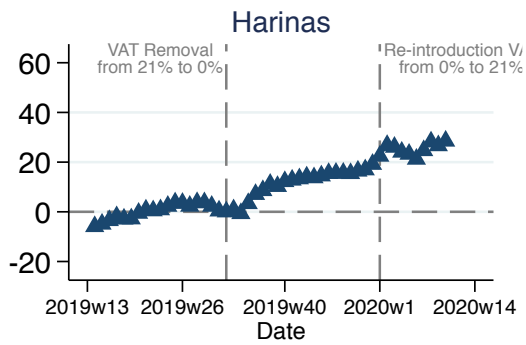
Heterogeneities by products

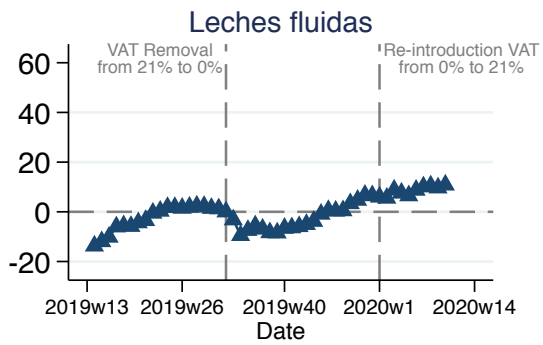


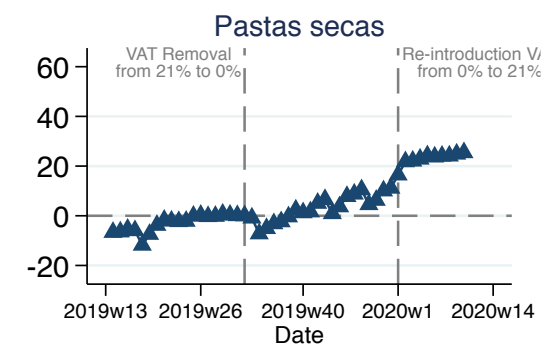


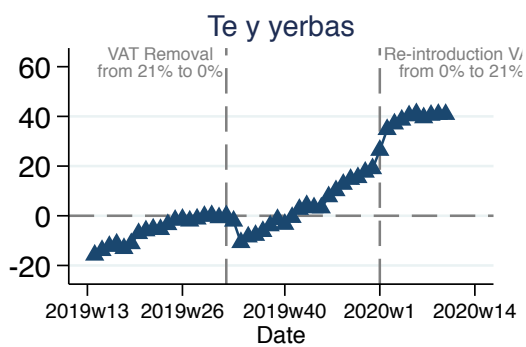


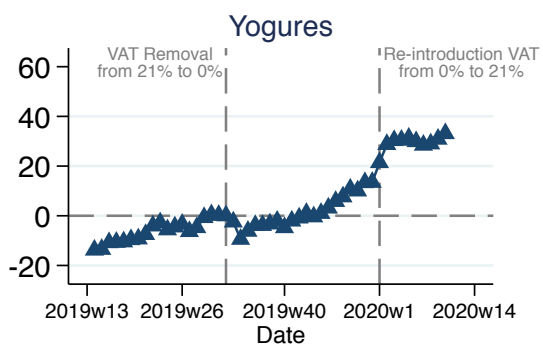












Robustness (aggregate price data)

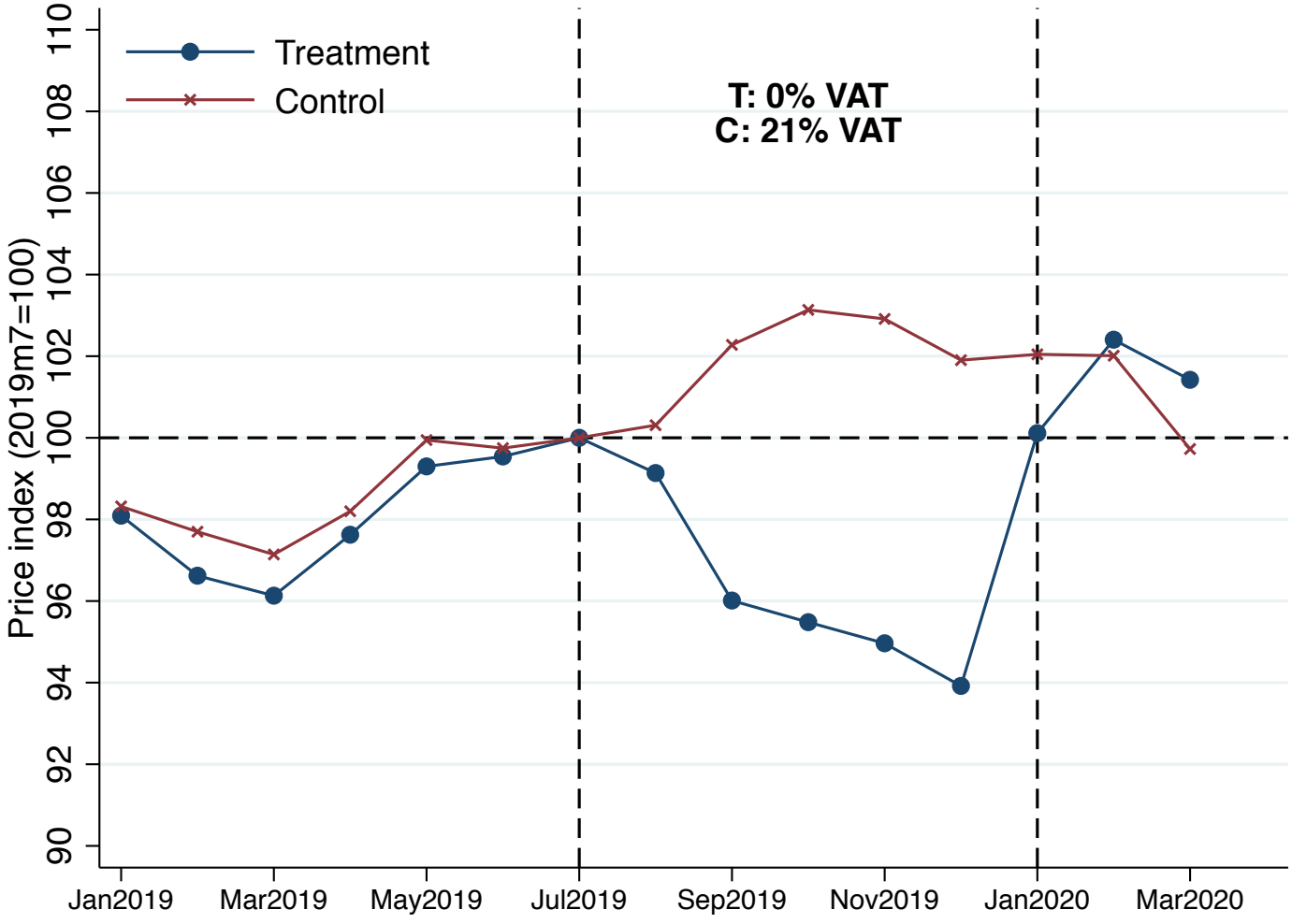
- Result is also present in aggregate price data!
- National Institute of Statistics (INDEC) publishes average monthly **prices** of some products (link) used in the CPI index (59 products in GBA; 14 products across 6 regions)
- We break the list into T (0% VAT) and C (21% VAT) and run:

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

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

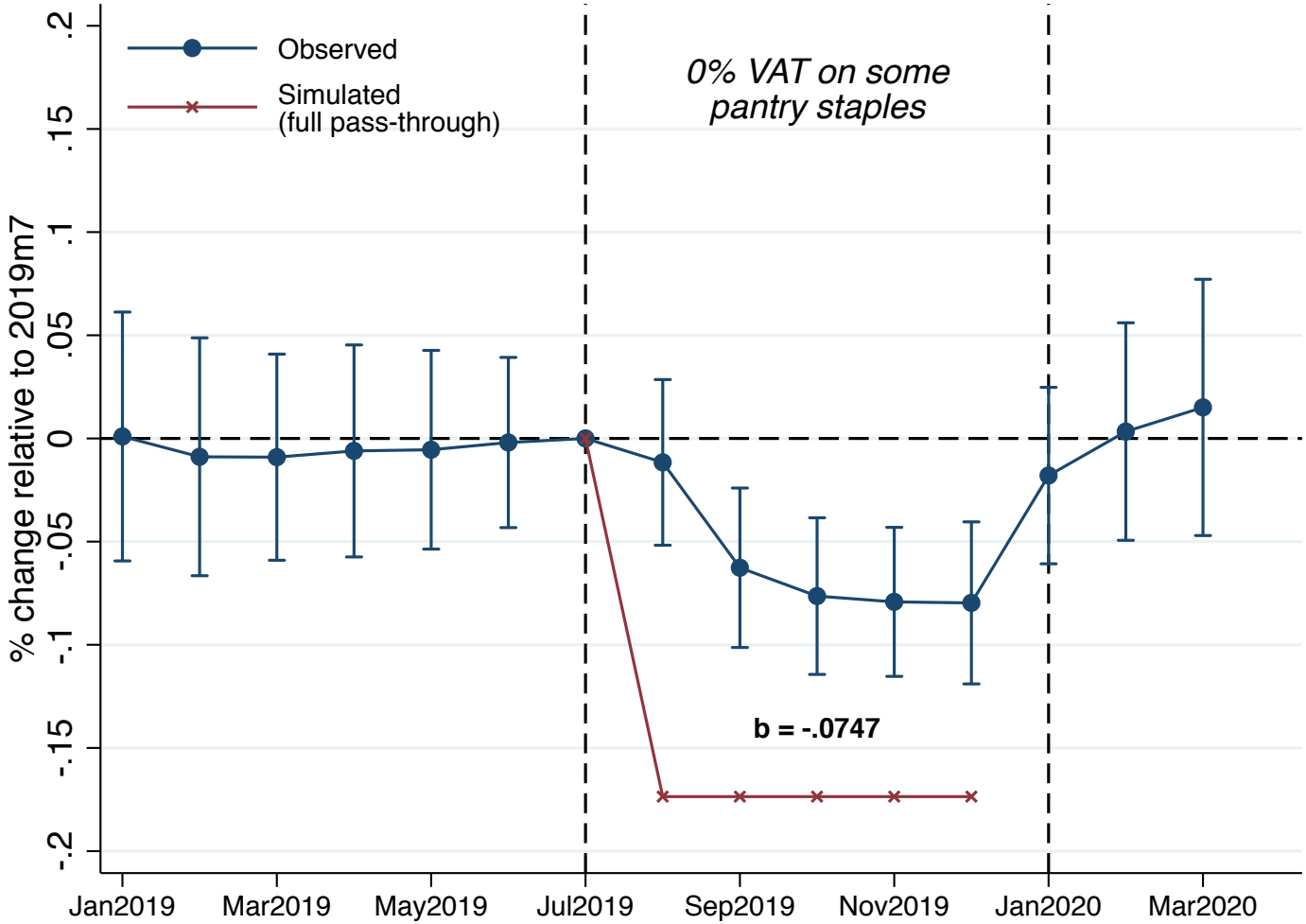
Coefficients β_t test the effect relative to 2019m7

Pass-through to consumer prices [levels]



Partial pass-through [DiD]

▸ Back ▸ Robustness



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

Purchase responses

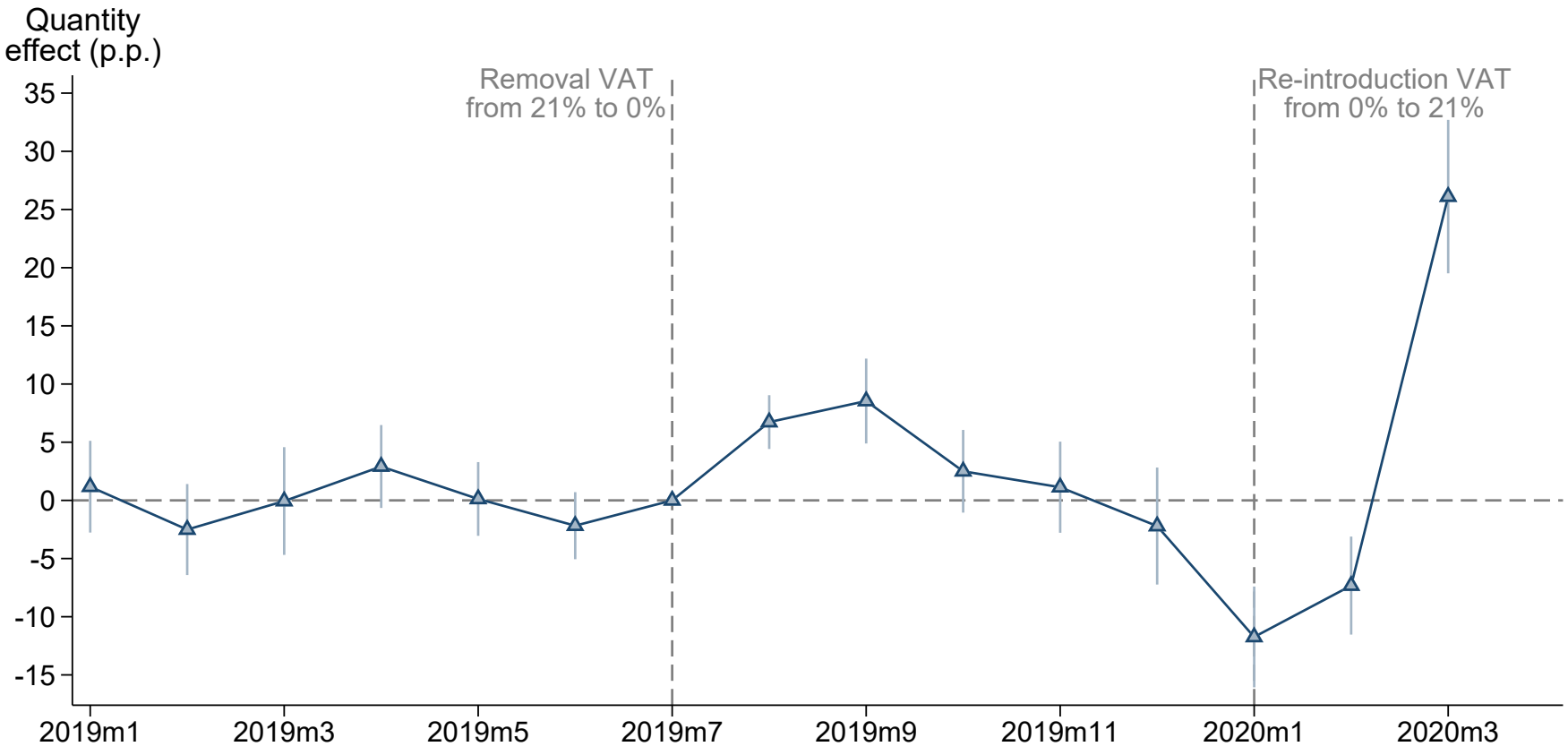
Quantity effects

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

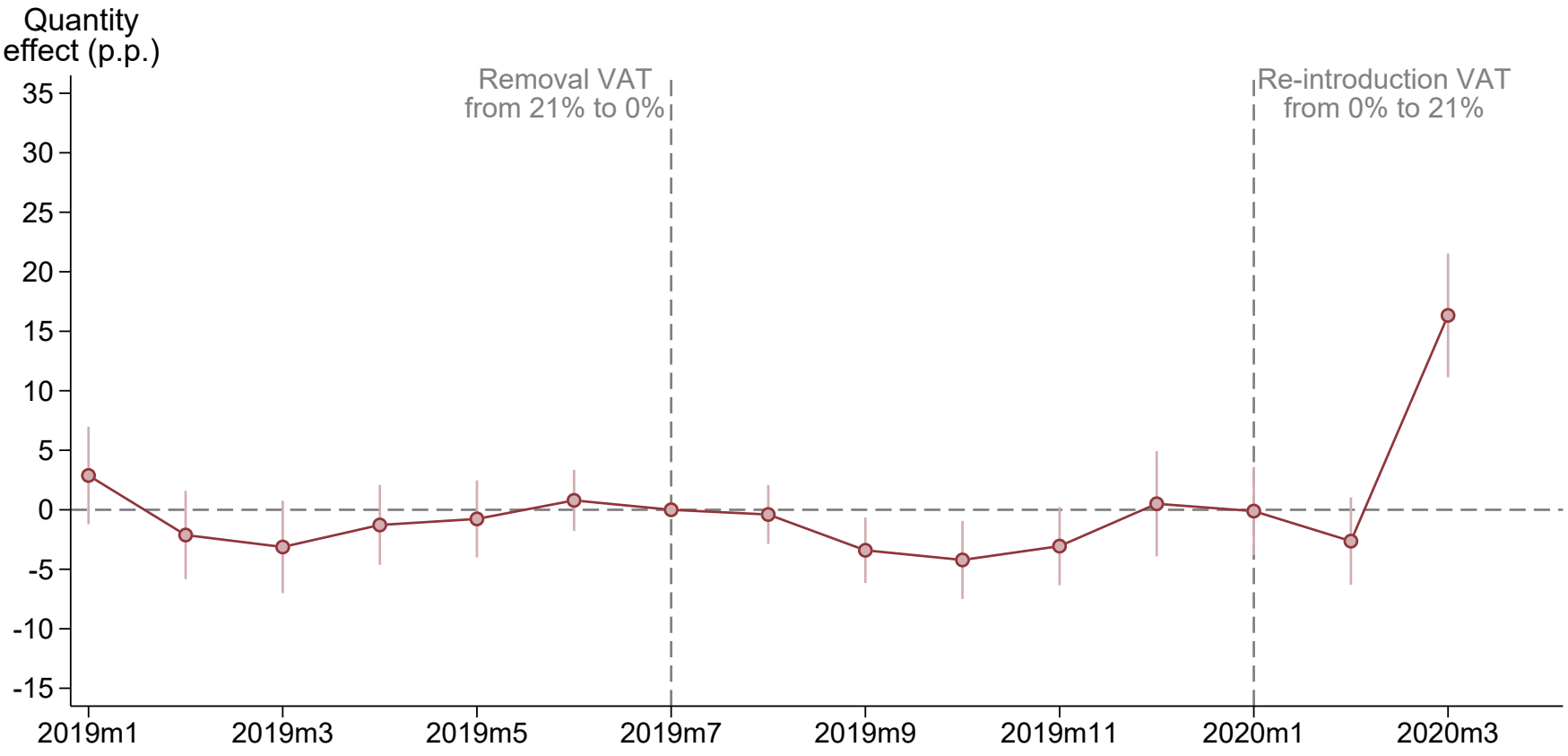
▸ COVID-19



- 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