Does it matter who remits VAT?

The consequences of reverse charge in the retail sector.

Annalisa Tassi
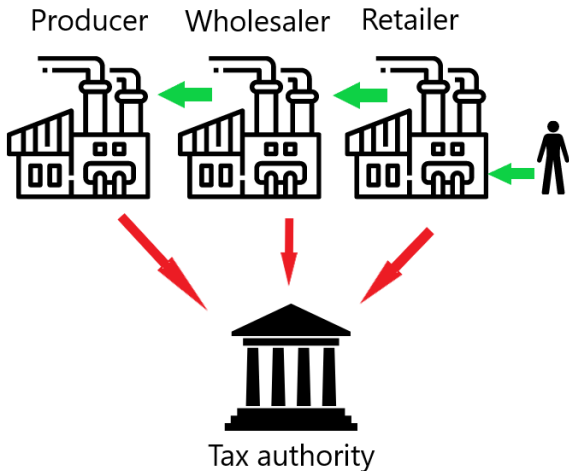
FAU Erlangen-Nuremberg

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VAT - What we know

- A third of tax revenues come from VAT (De Mooij and Swistak, 2022).

- Many developing countries have adopted VAT (Buettner and Madzharova, 2018).

VAT chain

Notes: Red indicates VAT remittance to tax authorities. Green indicates VAT payment (on inputs).
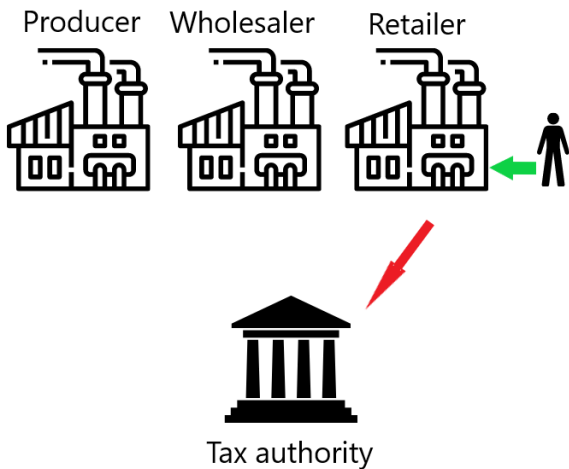
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VAT - What we know

- VAT is vulnerable to fraud and evasion.

- "Last-mile problem" of VAT: (Slemrod, 2007; Pomeranz, 2015; Naritomi, 2019; Waseem, 2019).

EUston, we have a problem - VAT fraud in the EU

- VAT fraud exploits the credit-invoice mechanism of VAT.

- To combat cross-border VAT fraud, the EU has implemented the Reverse Charge (RC) Mechanism.

Reverse charge: no withholding

Notes: Red indicates VAT remittance to tax authorities. Green indicates VAT payment (on inputs).

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The concerns related to RC

- With RC, VAT remittance liability is fully shifted from seller to buyer.

- Reverse charge transforms VAT into *de facto* retail sales tax.

- If everyone complies with the rules $\implies$ VAT revenues are the same under both regimes.

$\implies$ concern that "last-mile problem" is exacerbated (Keen and Smith, 2006; De La Feria, 2019).

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RC and evasion

- B2C tax evasion can become more profitable under RC!

- Max evasion under VAT = $X(p_R - p_{WS})t$

- Max evasion under RC = $Xp_R t$

  [...] the cost of evasion will be lower [...] because firm N is not faced by firm N+1 that would want a receipt (Pomeranz (2015), p. 2544).
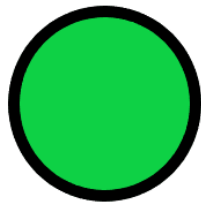
Research question & why we care

- Q: Does Reverse Charge cause a reduction in compliance at the B2C stage?

- RC as a temporary measure is being continuously extended.

- Czech Republic, Germany, and Austria have expressed interest in a General Reverse Charge (European Commission, 2006, 2019).

- Around $\sim$ 330 bill. Euros of sales are s.t. RC in Germany.

Related literature and contribution

- Literature on RC focuses on cross-border VAT fraud: Buettner and Tassi (2023), Bussy (2020).

$\rightarrow$ Evidence of one unintended consequence of RC, related to B2C VAT evasion.

- Literature on tax remittance liability: Slemrod (2008), Kopczuk et al. (2016), Pessina (2020), Garriga and Tortarolo (2022).

$\rightarrow$ Evidence on changes in tax remittance liability in VAT.

Reverse charge and VAT evasion

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Testable hypotheses

H1 If RC reduces VAT compliance $\implies$ reported sales decline.

H2 Evasion might be more likely for small firms (Kleven et al., 2016).

H3 Evasion might be more likely for partnerships.

Institutional background and data

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Introduction of reverse charge in Germany

- Germany introduced RC in 2002 (on services).
- Focus on goods.

Date of implementation	Reverse charge is applied to...
1 January 2011	supply of gold.
1 July 2011	supply of mobile phones.
1 October 2014	supply of tablets, games consoles, laptops, and metals.

Data

- Universe of German VAT files (*VAT Panel*), 2002-2017 (yearly).

- Firms whose supplies and services $\geq$ 17,500 Euros.

- Based on VAT advance notifications (*Voranmeldungen*).

- Reliable data as claims of input and VAT remittances are based on these forms.

Data processing

- Full data set contains about 50 mill. firm-year obs.

- Focus on firms in retail sectors (NACE classification).

- Drop firms that are not partnerships/ltd. companies or are in VAT groups.

- Drop retailers with unclear specialization. Details

- Final sample: Balanced panel with 78,090 firms.

Empirical method

Basic specification

$$reported\ sales_{it} = \alpha_i + \delta_t + \beta RC\ inputs_{it} + \gamma X_{it} + u_{it},$$

- $RC\ inputs_{it}$ (i) value or (ii) $\dfrac{\text{Input VAT s.t. RC}}{\text{Input VAT}}$

- α_i, δ_t, are firm and year fixed effects

- X_{it} includes legal seat, legal form, two-digit-industry time trends.

- u_{it}: idiosyncratic error, two-way clustered at firm and industry level.

Empirical method: β

- Under certain assumptions, β captures an ATT.

  $\beta = 0$ if RC does not reduce VAT compliance.

- Domestic sales Def.

  $\beta < 0$ if RC reduces VAT compliance.

Empirical method: Instrumental variable

- *RC inputs$_{it}$* might be endogenous and s.t. measurement error.

  i.e., transactions above 5,000 Euro, construction, ...

- First-stage regression (FE)

$$RC\ inputs_{it} = \psi_i + \theta_t + \pi RC_{(i)j} \times Post_{jt} + \omega X_{it} + \epsilon_{it},$$

$\rightarrow$ Instrumental variable equal 1 if industry j is s.t. RC.

- Identify 4 industries. Details

- The instrument indicates the shift in the remittance liability. Ass.

Results

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Descriptive statistics

	Mean	SD	N.
Panel A - Retailers subject to RC			
Domestic sales	751,143.264	3,450,647.289	108,448
Taxable sales at 19%	691,590.321	3,051,695.811	108,356
$\widehat{RC\ sales}$	55,557.133	858,138.512	108,448
Input VAT s.t. RC	2,539.713	104,760.597	107,886
RC intensity	0.008	0.070	107,886
Employees	4.263	16.379	81,899
Panel B - Other retailers			
Domestic sales	1,293,042.815	11,668,617.809	1,140,992
Taxable sales at 19%	1,143,142.777	11,195,285.942	1,131,747
$\widehat{RC\ sales}$	21,951.311	486,393.123	1140992
Input VAT s.t. RC	1,355.898	81,040.855	1,131,297
RC intensity	0.003	0.030	1,131,297
Employees	7.287	78.917	905,846

Notes: amounts in € in prices of 2017.

Baseline results `1st stage` `DS components`

	Domestic sales		Sales at 19%		$\widehat{RC\ sales}$	
	FE	FE-IV	FE	FE-IV	FE	FE-IV
	(1)	(2)	(3)	(4)	(5)	(6)
RC input	0.032***	0.038	0.026***	-0.160***	0.209***	3.401**
	(0.002)	(0.057)	(0.003)	(0.053)	(0.020)	(1.450)
N	1239110	1239110	1229835	1229835	1239110	1239110
F-stat 1st		42.119		41.197		42.119

Notes: Robust standard errors clustered at the industry level and at the firm level in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Robustness tests and other results

Robustness

- Inclusion of covariates (Go)
- CEM (Go)
- Relax sample restrictions (Go)
- Remove possible outliers (Go)
- Time-invariant industry (Go)
- Input VAT (Go)
- Unbalanced panel (Go)
- Industry-level evidence for mobile phone retailers (Go)
- Evidence on prices (Go)

Heterogeneity

- Size (Go)
- Legal form (Go)

Conclusions

- No decline in domestic sales.

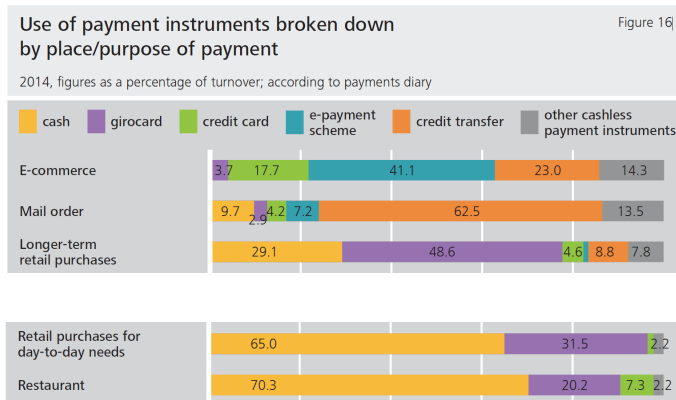- Decline in sales at 19% possibly related to B2B sales.

$\rightarrow$ Confirmed by increase in $\widehat{RC\ sales}$.

- Do not find conclusive evidence that RC leads to more B2C evasion.

Possible explanations

- Germany as a high enforcement setting.
  (Waseem, 2019; Buehn and Schneider, 2016)

- Cashless payments are prevalent in the RC sectors.
- Cashless payments might be more difficult to conceal.
  (Immordino and Russo, 2018)

Cashless payments in Germany

Use of payment instruments broken down by place/purpose of payment

Figure 16

2014, figures as a percentage of turnover; according to payments diary

Legend: cash | girocard | credit card | e-payment scheme | credit transfer | other cashless payment instruments

Place/purpose	cash	girocard	credit card	e-payment scheme	credit transfer	other cashless
E-commerce		3.7	17.7	41.1	23.0	14.3
Mail order	9.7	2.9	4.2	7.2	62.5	13.5
Longer-term retail purchases	29.1	48.6	4.6	8.8	7.8	
Retail purchases for day-to-day needs	65.0	31.5	2.2			
Restaurant	70.3	20.2	7.3	2.2		

Source: Deutsche Bundesbank (2015).

Further research and open questions

- RC effects on cross-border VAT fraud in Germany (w. T. Buettner).

- RC effects on VAT gaps in the EU (w. A. Bohne and A. Koumpias).

- Intentional misclassification of RC sales?

Thank you for your attention!

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References

Buehn, A. and Schneider, F. (2016). Size and development of tax evasion in 38 oecd countries: What do we (not) know? *Journal of Economics and Political Economy*, 3(1).

Buettner, T. and Madzharova, B. (2018). Wto membership and the shift to consumption taxes. *World Development*, 108:197–218.

Bussy, A. (2020). Cross-border value added tax fraud in the european union. *Working Paper available at SSRN 3569914*.

De La Feria, R. (2019). The new vat general reverse-charge mechanism. *EC Tax Review*, 28(4):172–175.

Destatis (2021). Metadatenreport. Technical report.

Deutsche Bundesbank (2015). Payment behaviour in germany in 2014. none.

Garriga, P. and Tortarolo, D. (2022). Firms as tax collectors. Job market paper.

Immordino, G. and Russo, F. F. (2018). Cashless payments and tax evasion. *European Journal of Political Economy*, 55:36–43.

Keen, M. and Smith, S. (2006). Vat fraud and evasion: What do we know and what can be done? *National Tax Journal*, pages 861–887.

Kleven, H. J., Kreiner, C. T., and Saez, E. (2016). Why can modern governments tax so much? an agency model of firms as fiscal intermediaries. *Economica*, 83(330):219–246.

References (cont.)

Kopczuk, W., Marion, J., Muehlegger, E., and Slemrod, J. (2016). Does tax-collection invariance hold? evasion and the pass-through of state diesel taxes. *American Economic Journal: Economic Policy*, 8(2):251–86.

Naritomi, J. (2019). Consumers as tax auditors. *American Economic Review*, 109(9):3031–72.

Pessina, L. (2020). Who writes the check to the government does matter: Evidence from firm-to-firm links. Job market paper.

Pomeranz, D. (2015). No taxation without information: Deterrence and self-enforcement in the value added tax. *American Economic Review*, 105(8):2539–69.

Slemrod, J. (2007). Cheating ourselves: The economics of tax evasion. *Journal of Economic perspectives*, 21(1):25–48.

Slemrod, J. (2008). Does it matter who writes the check to the government? the economics of tax remittance. *National Tax Journal*, 61(2):251–275.

Waseem, M. (2019). Overclaimed refunds, undeclared sales, and invoice mills. In *Proceedings. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association*, volume 112, pages 1–56. JSTOR.

Additional slides

Definitions I

- *Domestic Sales* is a variable that I construct starting from firm's *Total Sales* (the variable is called *ef* 7 in Destatis (2021)). From *Total Sales*, I remove exports to EU countries (items 41 and 44; the variable is called *ef* 13 in Destatis (2021)). *Domestic Sales* thus includes items 35, 42 (included only until 2006), 43, 48, 81, 76, 77 (from 2011), 86, 60, and 68.

- *Sales at 19% VAT* is used as given in the data set (the variable is called *ef* 9 in Destatis (2021)). It correspond to item 81 from the VAT advance returns. Note that this variable corresponds to sales at 16% until 2006, since VAT was increased to 19% in 2007, but it applies to the same tax base.

- *Input VAT* is used as given in the data set (the variable is called *ef* 19 in Destatis (2021)). It includes items 61, 62, 63, 64, 66, and 67 from the VAT advance returns.

Definitions II

- *Taxable Sales* is another variable I construct from *Total Sales*. I subtract taxable sales at 7% VAT (item 86) and tax-free sales (variable *ef11* or items 41, 42, 43, 44, and 48) from *Total Sales*. This variable thus includes items 35, 76, 77 (from 2011), 81, 60, and 68. As reported in Destatis (2021), item 42 is not included in *Total Sales* since 2006, but is included in tax-free sales until 2011, which implies that between 2006 and 2010 item 42 is not included in *Total Sales*, but it gets subtracted nonetheless. Variable *ef8* in the data set Destatis (2021) is also referred to as taxable sales, but it contains sales subject to reverse charge (items 60 and 68) only between 2011 and 2015.
- *Input VAT s.t. RC* is constructed by subtracting deductible input VAT for deliveries and services (items 62, 63, 64, 66) and input VAT on EU imports (61) from *Input VAT*. Thus, it corresponds to item 67.
- *RC intensity* is constructed as the share of inputs s.t. RC with respect to all inputs ($\frac{\text{Input VAT s.t. RC}}{\text{Input VAT}}$).
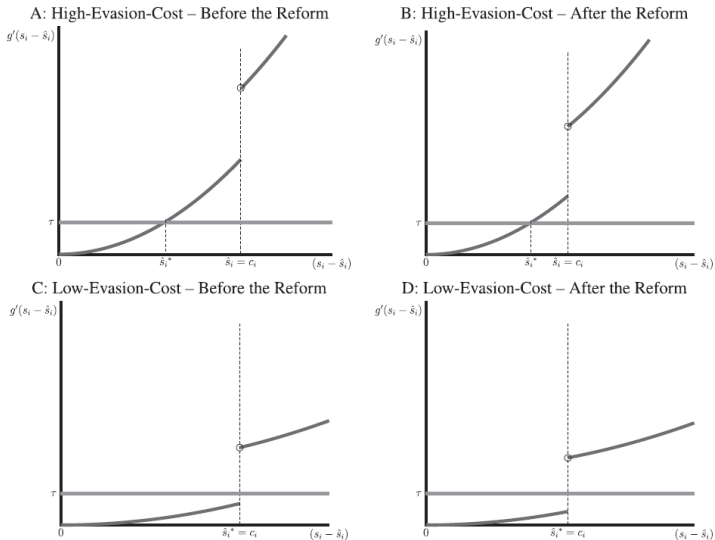
Components of domestic sales back

- Taxable sales at 19% Details

  $\beta < 0$ could also reflect B2B sales.

- $\widehat{RC\ sales}$

  $\beta > 0$ if retailers have B2B sales.

Excluded Retail industries Back

- Retail sale in non-specialized stores.
- Other retail sale of new goods in specialized stores.
- Retail sale of other second-hand goods in stores.
- Retail sale via stalls and markets of other goods.
- Retail sale via mail order houses or via Internet.
- Other retail sale not in stores, stalls or markets.

Waseem (2022)– Withholding

FIGURE 1.—WITHHOLDING AND FIRM BEHAVIOR

A: High-Evasion-Cost – Before the Reform

B: High-Evasion-Cost – After the Reform

C: Low-Evasion-Cost – Before the Reform

D: Low-Evasion-Cost – After the Reform

Empirical method: IV assumptions

- the independence assumption: the instrument is as good as random;

- the exclusion restriction assumption: any effect of the policy change on y_{ijt} occurs via input VAT s.t. RC;

- the monotonicity assumption;

- the stable unit treatment value assumption (SUTVA).

- the relevance assumption: the instrument is correlated with the endogenous variable;
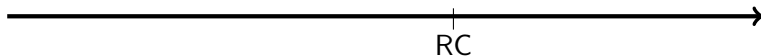
Identified industries Back
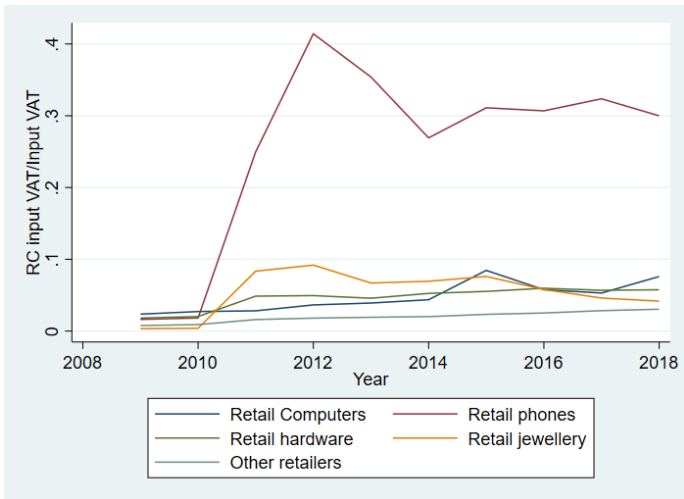
Intra-community trade
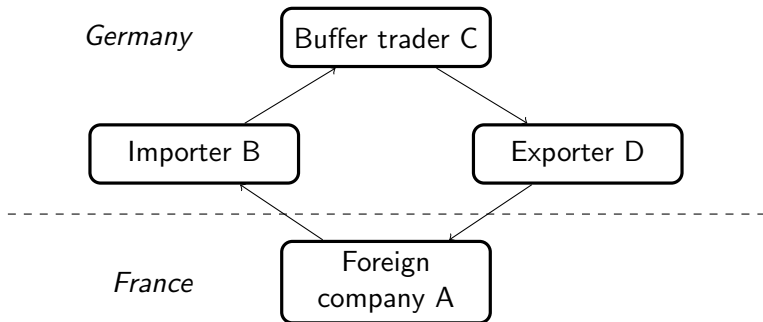
Intra-community trade with MT fraud
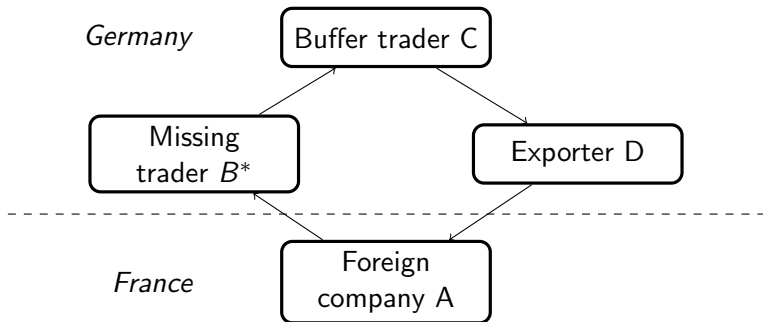
$$\text{Taxable sales at 19\%} \begin{cases} \text{Taxable sales} & \text{at 19\%} \\ \text{Sales under} & \text{RC} \end{cases}$$

RC

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Industries affected by RC Back

Industry	NACE Rev. 2	NACE Rev. 1.1	Identification through...
Retail sale of computers, peripheral units and software in specialised stores	47.41.0	52.49.5	NACE Rev. 2
Retail sale of telecommunications equipment in specialised stores	47.42.0	52.49.6	NACE Rev. 2 or NACE Rev. 1.1
Retail sale of hardware, paints and glass in specialised stores	47.52.1	52.46.1	NACE Rev. 2 or NACE Rev. 1.1
Retail sale of watches and jewellery	47.77.0	52.48.5	NACE Rev. 2 or NACE Rev. 1.1

Notes: NACE Rev. 2 refers to the industry classification implemented from 2009. NACE Rev. 1.1 refers to the industry classification in place between 2002 and 2008. The column "Identification through..." specifies which industry classification I use to identify firms affected by reverse charge. I only use NACE Rev 2. when the corresponding NACE Rev. 1.1 code, though unique, contains multiple industries among which some are not affected by reverse charge. For example, (NACE Rev. 1.1) industry "Retail sale of computers, peripheral units and software in specialised stores" also includes "Assembling of computers for private clients (configuration according to client's wishes)," which corresponds to the NACE Rev. 2 code 26.20.0. I use NACE Rev. 2 or NACE Rev. 1.1 for identification, when both codes refer to exactly the same industry, without including any other industries.

First stage

	(1)	(2)	(3)
Dep. variable (2nd stage)	Domestic Sales	Sales at 19%	$\widehat{RC\ sales}$
RCPI	0.522***	0.519***	0.522***
	(0.080)	(0.081)	(0.080)
Observations	1239110	1229835	1239110

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Baseline results

	Taxable sales		Tax-free sales	
	FE	IV	FE	IV
	(1)	(2)	(3)	(4)
RC input	0.031***	-0.079	0.033***	-0.006
	(0.002)	(0.053)	(0.006)	(0.214)
N	1239110	1239110	295285	295285
F-stat (1st)		42.119		31.014

Notes: Robust standard errors clustered at the industry level and at the firm level in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

	Domestic sales			Sales at 19%		
	<10	10-50	>50	<10	10-50	>50
	(1)	(2)	(3)	(4)	(5)	(6)
RC intensity	4.398	3.763	6.444	-11.690**	-1.744	-14.868***
	(4.926)	(4.464)	(4.650)	(4.762)	(4.876)	(5.646)
N	757357	11987	361811	752991	119716	356821
F-stat (1st)	41.296	6.812	8.884	42.023	6.913	9.313

Notes: The first stage regressor in the IV regressions is RCPI. The dependent variables are in logs. Robust standard errors clustered at the industry level and at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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	Sales at 19%		Domestic sales		$\widehat{RC\ sales}$	
	INC	PAR	INC	PAR	INC	PAR
	(1)	(2)	(3)	(4)	(5)	(6)
RC input	0.079	0.030	-0.061	-0.215***	1.402	4.505***
	(0.048)	(0.071)	(0.046)	(0.058)	(0.996)	(1.296)
N	169996	1069114	169573	1060262	169996	1069114
F-stat 1st	15.771	35.028	15.386	34.173	15.771	35.028

Notes: Robust standard errors clustered at the industry level and at the firm level in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Development domestic sales for phone retailers
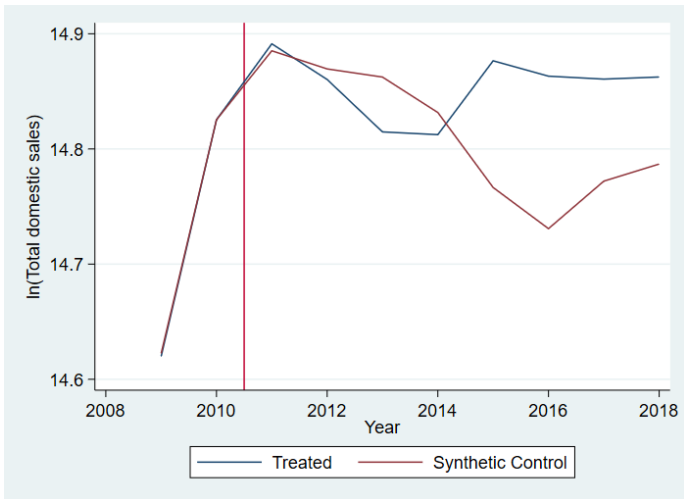
Effects: domestic sales for phone retailers `back`
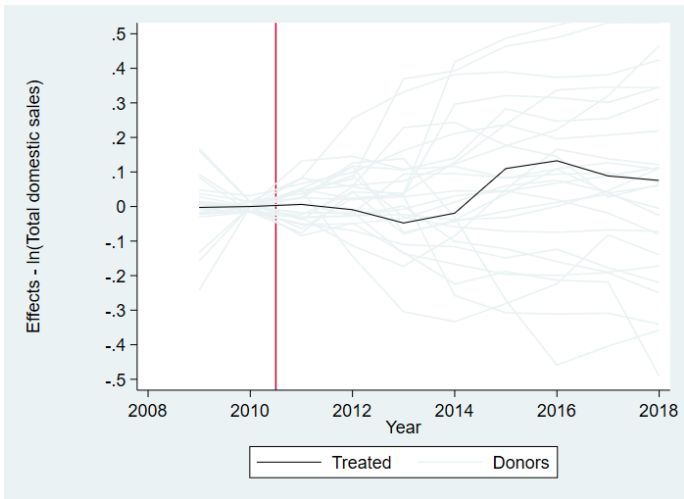
Effects: RC sales for phone retailers back

Effects: RC inputs for phone retailers back

FAU

Effects: Sales at 19% for phone retailers back
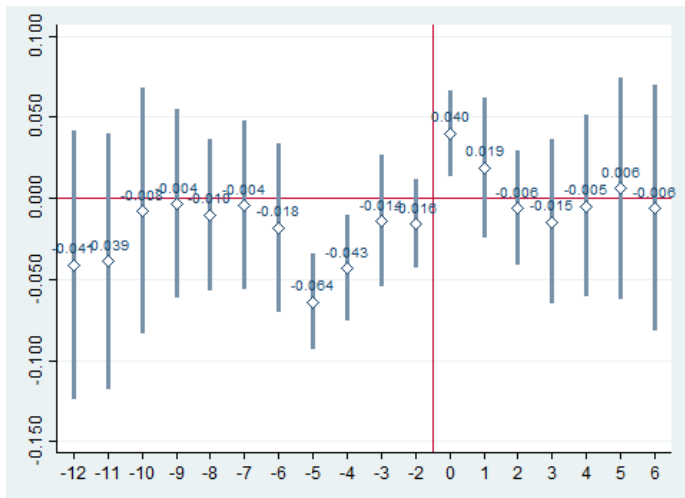
Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.

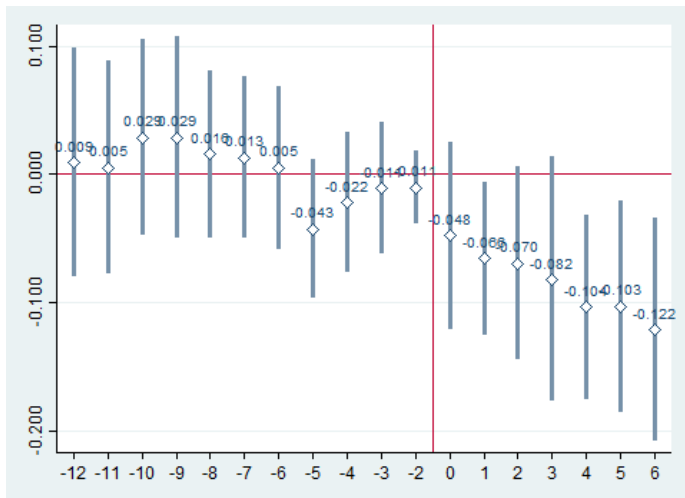# Anticipation effects of Reverse Charge: Taxable sales S&A

Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.
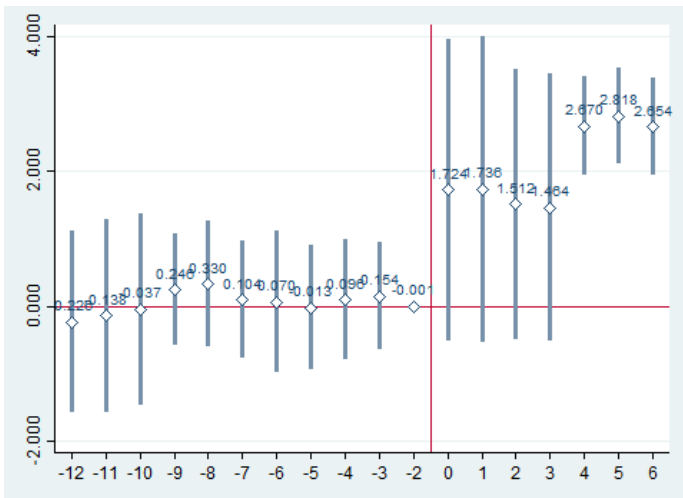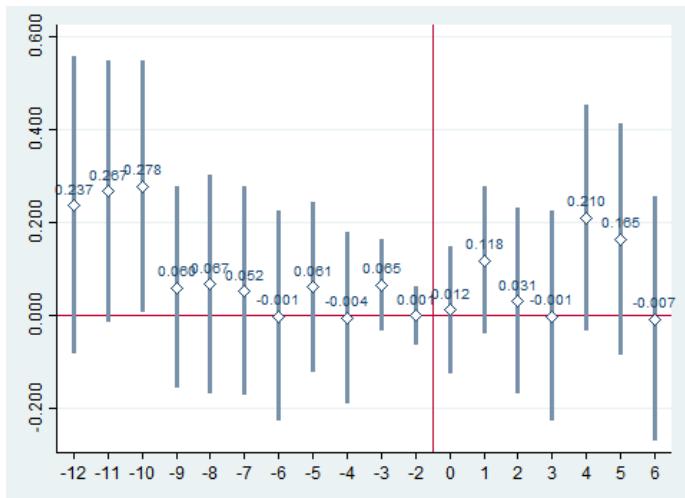
Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.

Anticipation effects of Reverse Charge: $\widehat{RC\ Sales}$ S&A

Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.
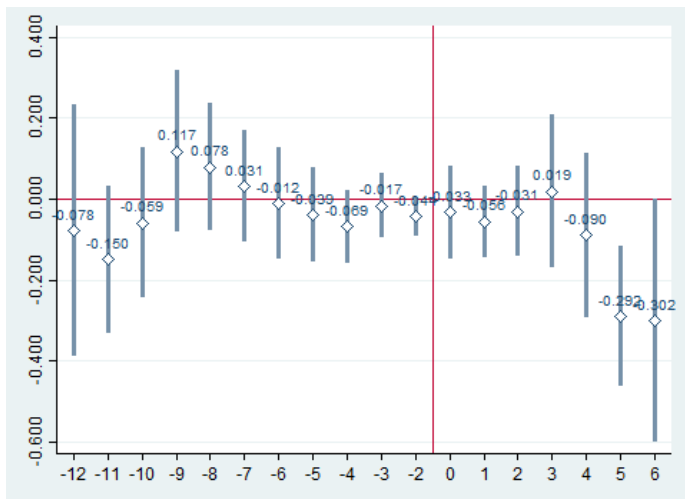
Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.

Anticipation effects of Reverse Charge: Exports

Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.

Anticipation effects of Reverse Charge: Domestic sales

Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.
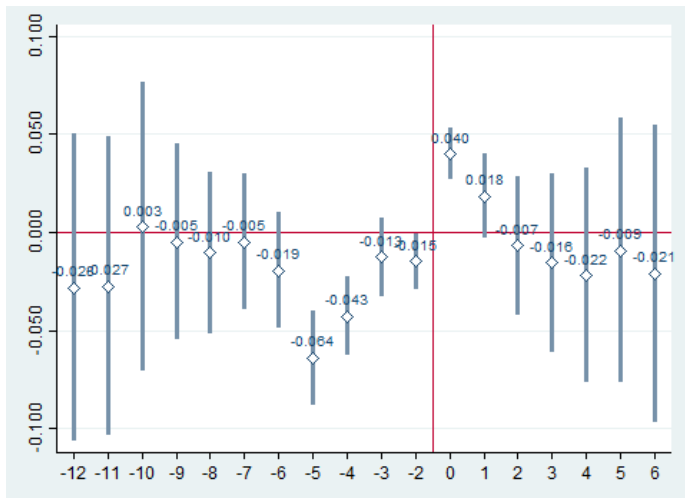
Anticipation effects of Reverse Charge: Taxable sales

Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.

Anticipation effects of Reverse Charge: Sales at 19% [back]
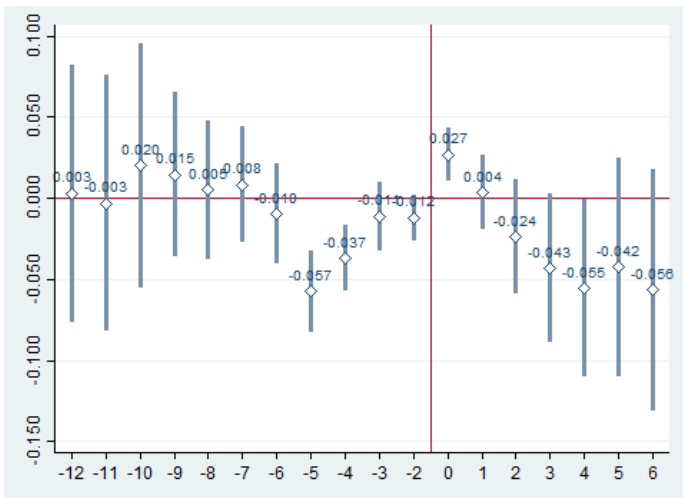

Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.

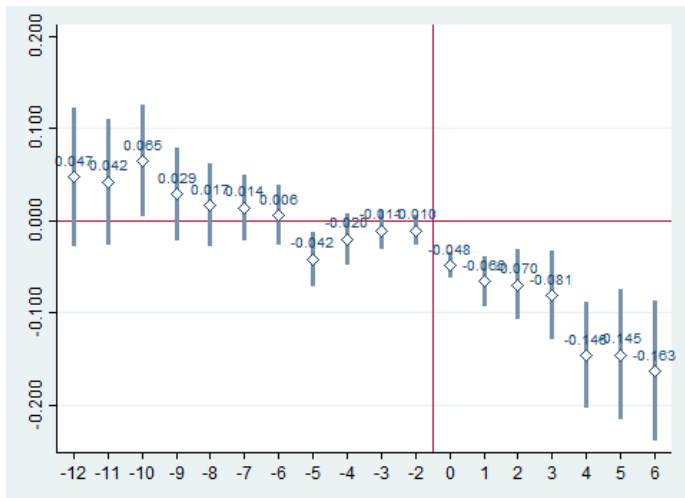# Anticipation effects of Reverse Charge: $\widehat{RC\ Sales}$ back
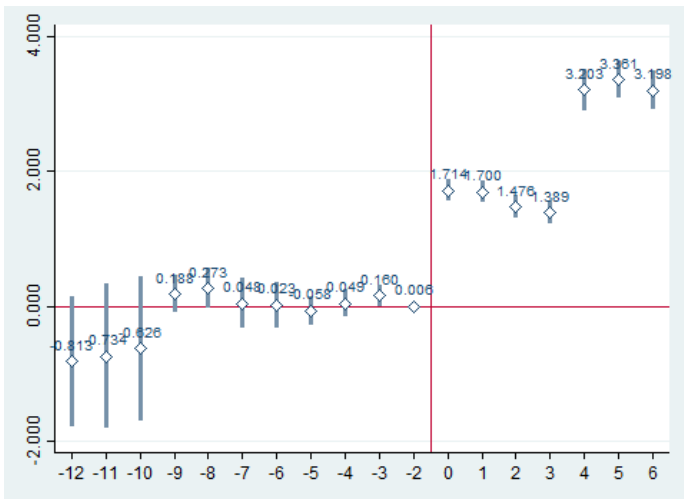
Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.

Anticipation effects of Reverse Charge: Tax-free Sales back

Notes: The figure shows the estimated event-study coefficients of the reduced form. The dependent variable is reported in the subtitle and the main regressor is *RCPI*. The dependent variables are in logs. The omitted period is the first lead. 95% confidence intervals are reported.
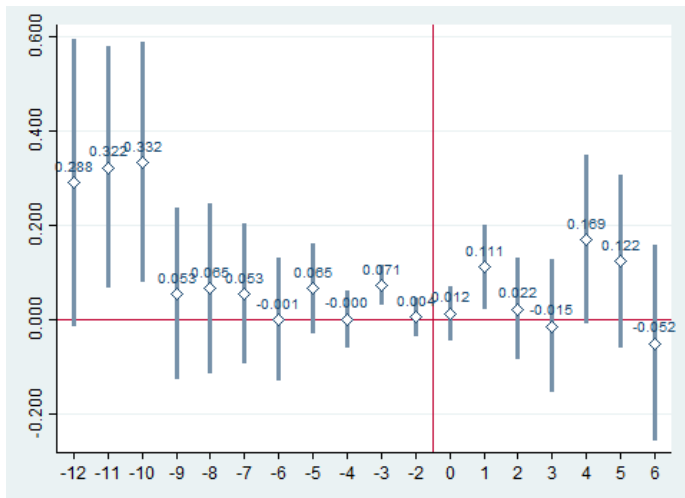
Raw plot: Sales at 19% back
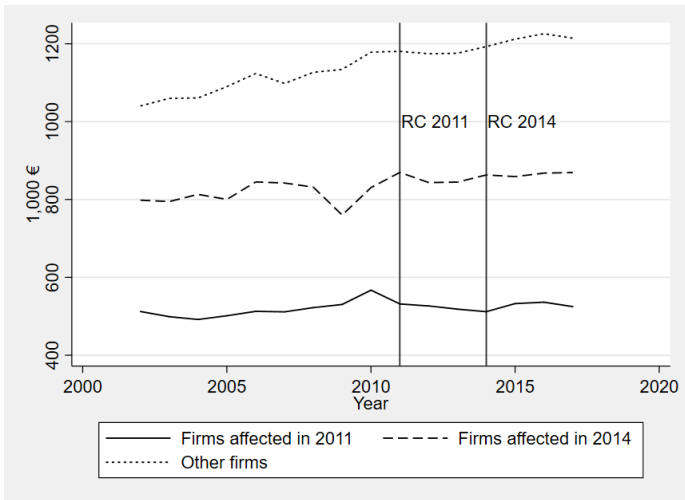
IV Results incl. covariates (back)

	(1)	(2)	(3)
	Domestic sales	Sales at 19%	$\widehat{RC\ sales}$
RC input	0.019	-0.184***	3.687**
	(0.055)	(0.050)	(1.431)
Incorporated	0.170***	0.256***	-1.098
	(0.047)	(0.056)	(0.757)
N	1238994	1229719	1238994
F-stat 1st	40.913	39.970	40.913

*Notes: The first stage regressor in the IV regressions is RCPI. Robust standard errors clustered at the industry level and at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$*

IV Results - CEM `back`

	(1)	(2)	(3)	(4)	(5)
	Dom. sales	Sales 19%	$\widehat{RC\ sales}$	Taxable sales	Tax-free sales
RC input	0.040	-0.148***	3.305**	-0.075	0.015
	(0.051)	(0.050)	(1.372)	(0.050)	(0.192)
N	1233066	1223806	1233066	1233066	292160
F-stat 1st	46.472	45.522	46.472	46.472	36.060

Notes: The first stage regressor in the IV regressions is RCPI. Robust standard errors clustered at the industry level and at the firm level in parentheses. $^{*}\ p < 0.10$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$

IV Results - "Self-Selection" _{back}

	(1)	(2)	(3)	(4)	(5)
	Dom. sales	Sales 19%	$\widehat{RC\ sales}$	Taxable sales	Tax-free sales
RC input	0.038	-0.162***	3.328**	-0.078	0.015
	(0.055)	(0.051)	(1.387)	(0.052)	(0.204)
N	1244868	1235588	1244868	1244868	296847
F-stat 1st	39.917	39.114	39.917	39.917	32.361

*Notes: The first stage regressor in the IV regressions is RCPI. Robust standard errors clustered at the industry level and at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$*

FAU

IV Results - Excluding Outliers (RC intensity) `back`

	(1)	(2)	(3)
	Sales at 19%	Domestic sales	$\widehat{RC\ sales}$
RC intensity	-12.496**	2.964	278.470**
	(5.983)	(5.426)	(141.245)
Observations	1228183	1237702	1237765
First-stage	36.418	34.157	42.826

Notes: The first stage regressor in the IV regressions is RCPI. The dependent variables are in logs. Robust standard errors clustered at the industry level and at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

FAU

	(1)	(2)	(3)
	Domestic sales	Sales at 19%	$\widehat{RC\ sales}$
RC input	0.038	-0.160**	3.552*
	(0.068)	(0.062)	(1.971)
N	1239110	1229835	1239110
First-stage F-statistic	47.151	44.785	47.151

*Notes: The first stage regressor in the IV regressions is RCPI. Robust standard errors clustered at the industry level and at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$*

IV Results - Input VAT

	(1)	(2)
RC input	-0.052	
	(0.068)	
RC intensity		-4.445
		(6.098)
Observations	1239110	1238927
F-stat 1st	42.119	21.891

*Notes: The first stage regressor in the IV regressions is RCPI. Robust standard errors clustered at the industry level and at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$*

IV Results - Unbalanced Panel [back]

	(1)	(2)
	P(exit)	P(entry)
RC input	-0.007	-0.033
	(0.036)	(0.035)
Observations	3718377	3718377
F-stat 1st	29.454	29.454

*Notes: The first stage regressor in the IV regressions is RCPI. Robust standard errors clustered at the industry level and at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$*

IV Results - Unbalanced Panel

	(1)	(2)	(3)
	Domestic sales	Sales at 19%	$\widehat{RC\ sales}$
RC input	0.116*	-0.107	2.833*
	(0.067)	(0.103)	(1.568)
N	3718377	3640960	3718377
F-stat 1st	25.978	25.770	25.978

Notes: The first stage regressor in the IV regressions is RCPI. Robust standard errors clustered at the industry level and at the firm level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$