Income Tax Incentives for Electronic Payments: Evidence from Greece's Electronic Consumption Tax Discount

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Self-Enforcement in VAT

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Aim: Generate third-party information to improve tax compliance

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Advantages using income tax features? Applies widely, implemented immediately

But how do taxpayers respond?

The Electronic Consumption Tax Discount (ECTD)

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Idea: Condition the annual personal tax allowance on electronic payments

Administrative Setup

1. Banks report monthly on aggregate volume of payments per taxpayer
2. Tax authority matches IBAN and tax ID
3. Annual payment amount is **pre-filled** in tax returns
4. Taxpayers can **report** a different amount during filing
5. Tax discount calculated: Immediate effect on tax bill

ΠΙΝΑΚΑΣ 7. ΠΟΣΑ ΔΑΠΑΝΩΝ ΠΟΥ ΑΦΑΙΡΟΥΝΤΑΙ ΑΠΟ ΤΟ ΣΥΝΟΛΙΚΟ ΕΙΣΟΔΗΜΑ Ή ΑΠΟ ΤΟ ΦΟΡΟ

1. Δαπάνη αγοράς αγαθών και παροχής υπηρεσιών	049	**5.773,99**				050				
2. Δωρεές χρημ. ποσών άρθρ19 ΚΦΕ κτλ: Στο εξωτερικό 031		032		αι συνολικά	059					060				
3. Δωρεές χρημ. ποσών στο λογ/σμό αλληλοβοήθειας για την απόσβεση του Δημόσιου χρέους	075					076				
4. Πολιτιστικές χορηγίες του ν.3525/2007	061					062				
5. Μισθώματα επιχειρήσεων τριτογενούς τομέα (παρ. Β2 άρθρ.43 και 44 ν.4030/2011)	077					078				
6. Ποσό επένδυσης για κινηματογραφικές ταινίες (παρ. 9 άρθρ. 73 ν. 3842/2010)	663					664				
7. Εμπίπτετε στις διατάξεις των περιπτώσεων α ή β της παρ. 9 του άρθρου 73 ν. 3842/2010;		033	α	035	β		034	α	036	β
8. Ποσό δαπάνης για την ιδιωτική χρηματ. πολιτικ. κόμματος ή συνασπ. κομμάτων (άρθρ. 8 ν.3023/2002)	055					056				
9. Ποσό δαπάνης για την ιδιωτ. χρηματ. υποψ, Βουλής Ελλήνων και Ευρωπ. Κοινοβ. (άρθρ. 8 ν.3023/2002)	057					058				

Incentive and Threshold

Incentive: € 0.22 tax discount per € 1 spent in electronic payments

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Determining the Threshold:

Income Bracket €	Marginal Rate %	Threshold Bracket €	ECTD €
0 - 10,000	10	0 - 1,000	0 - 220
10,001 - 30,000	15	1,000 - 4,000	220 - 880
30,001 - 160,000	20	4,000 - 30,000	880 - 6,600
160,000 <	0	30,000	6,600

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Example:

- Suppose € 10,000 income
- Threshold: 10% of income = € 1,000 in e-payments
- 0 tax discount for e-payments >€ 1,000
- Maximum tax discount: € 220

Taxpayer's Choice (Margin of Responses)

Increase (**pre-filled**) consumption, c_e, or **report additional**, c_r

Costs: electronic consumption $\xi(c_e)$ and reporting $\psi(c_r)$

Exogenous income z

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$$U(c_c, c_e, c_r, z) = c_c + c_e - \xi(c_e) - \psi(c_r) - z \tag{1}$$

$$s.t \;\; c_c + c_e = (1 - \widetilde{t})z - tF(z, a) + t(c_e + c_r) \tag{2}$$

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Predictions:

1. Threshold-targeting
2. Either increase electronic consumption on/above threshold
3. And/or report higher consumption amounts during tax filing

Data

Random sample of 50,000 taxpayers in 2017

Data

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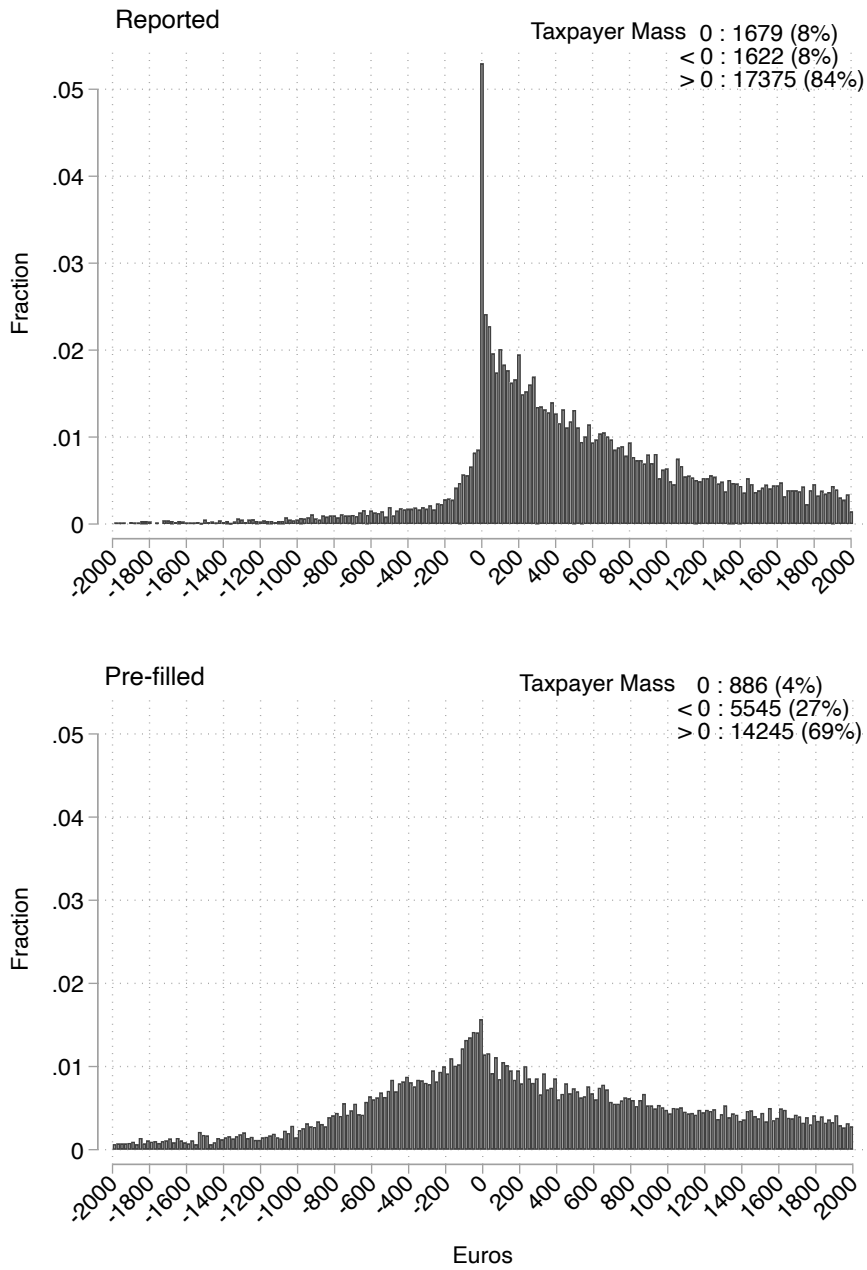
Monthly electronic consumption (Calculate the **pre-filled** consumption)

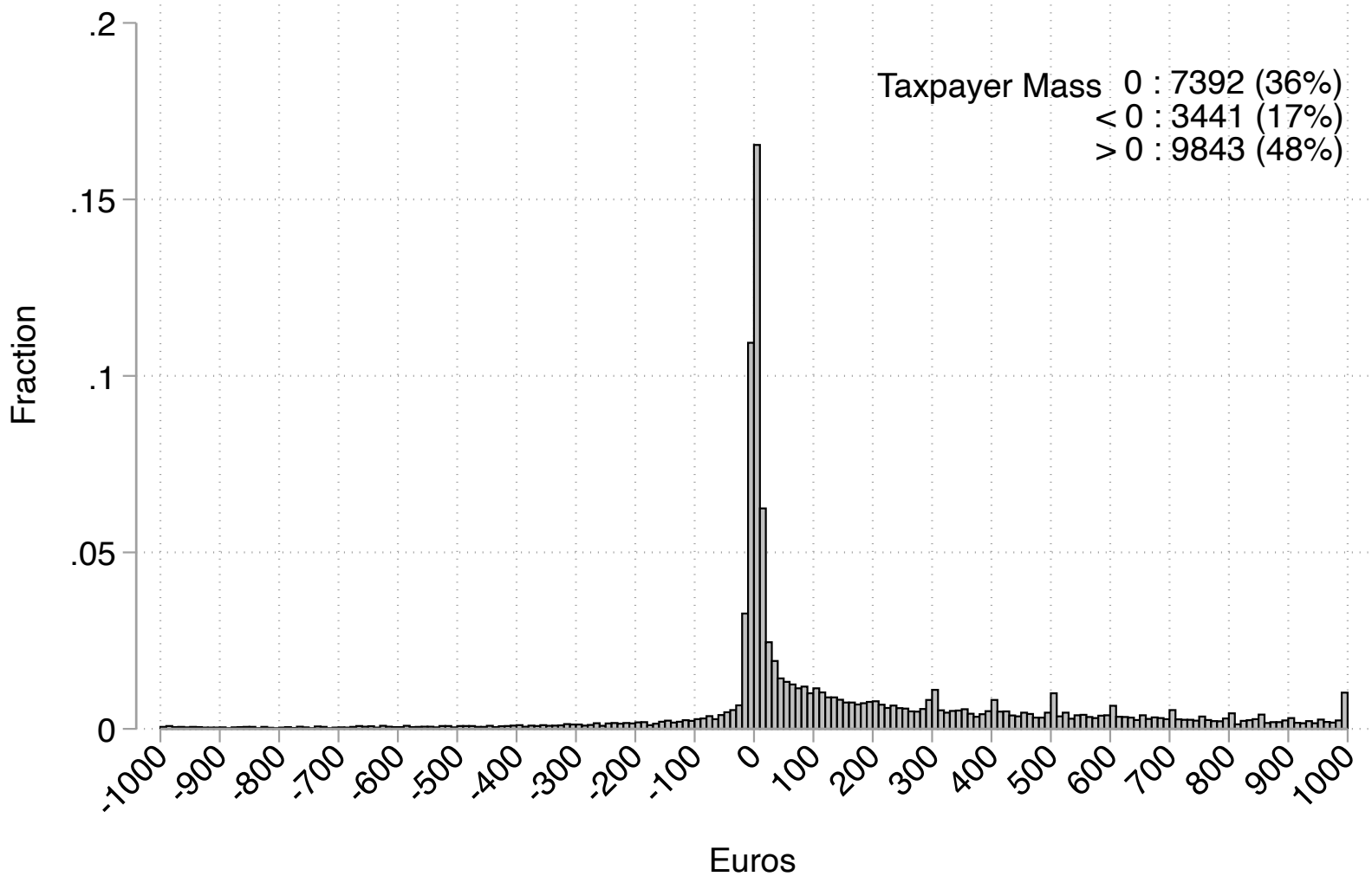
Declared income (Calculate **threshold**)

Reported electronic consumption (Assess pre-filled versus reported)

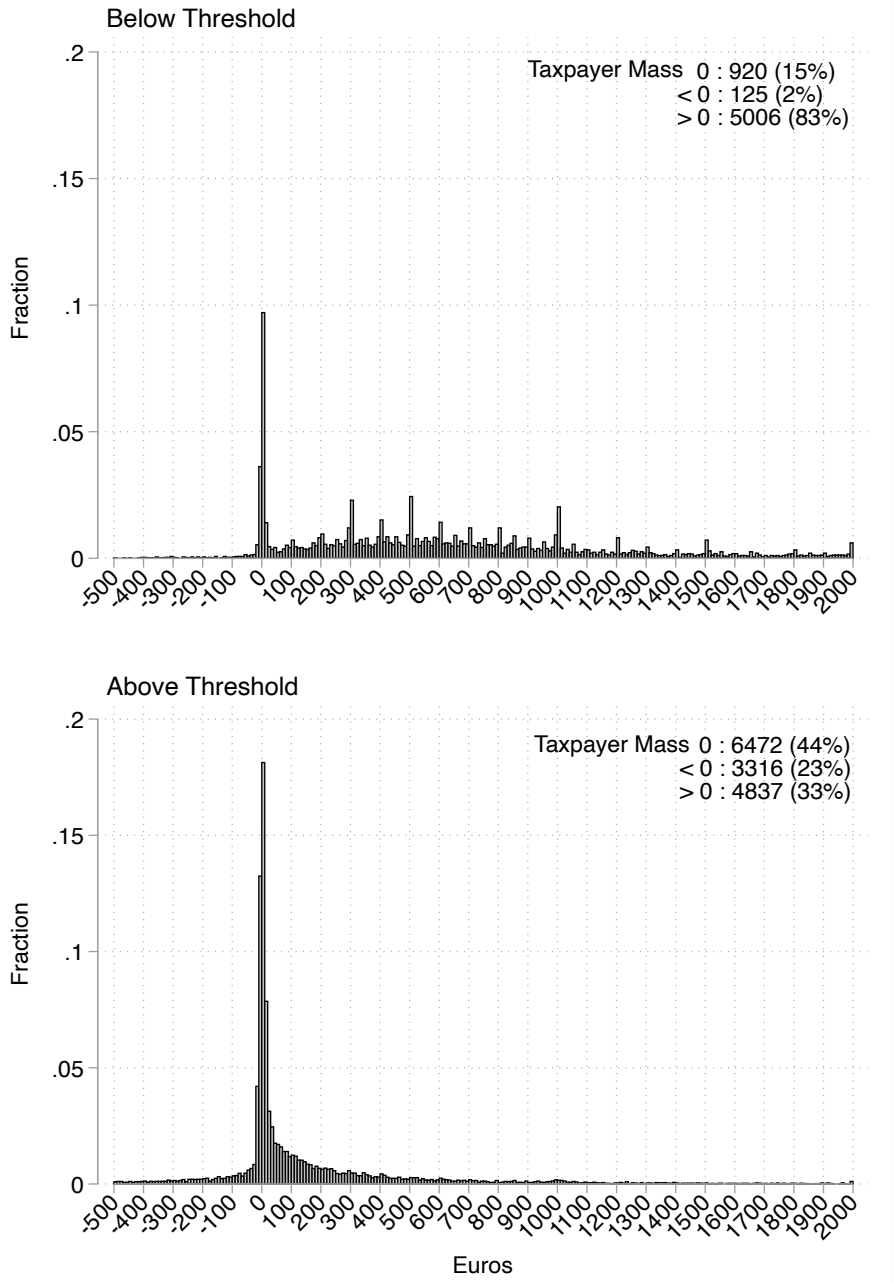
Result 1: Threshold Targeting



Result 2: Reporting Responses



Result 2: Reporting - Below Threshold



Responses in Electronic Consumption

Empirical Strategy:

Variation in individuals reaching their threshold in different months

Monthly event studies using **end-of-year deadline as a cut-off**

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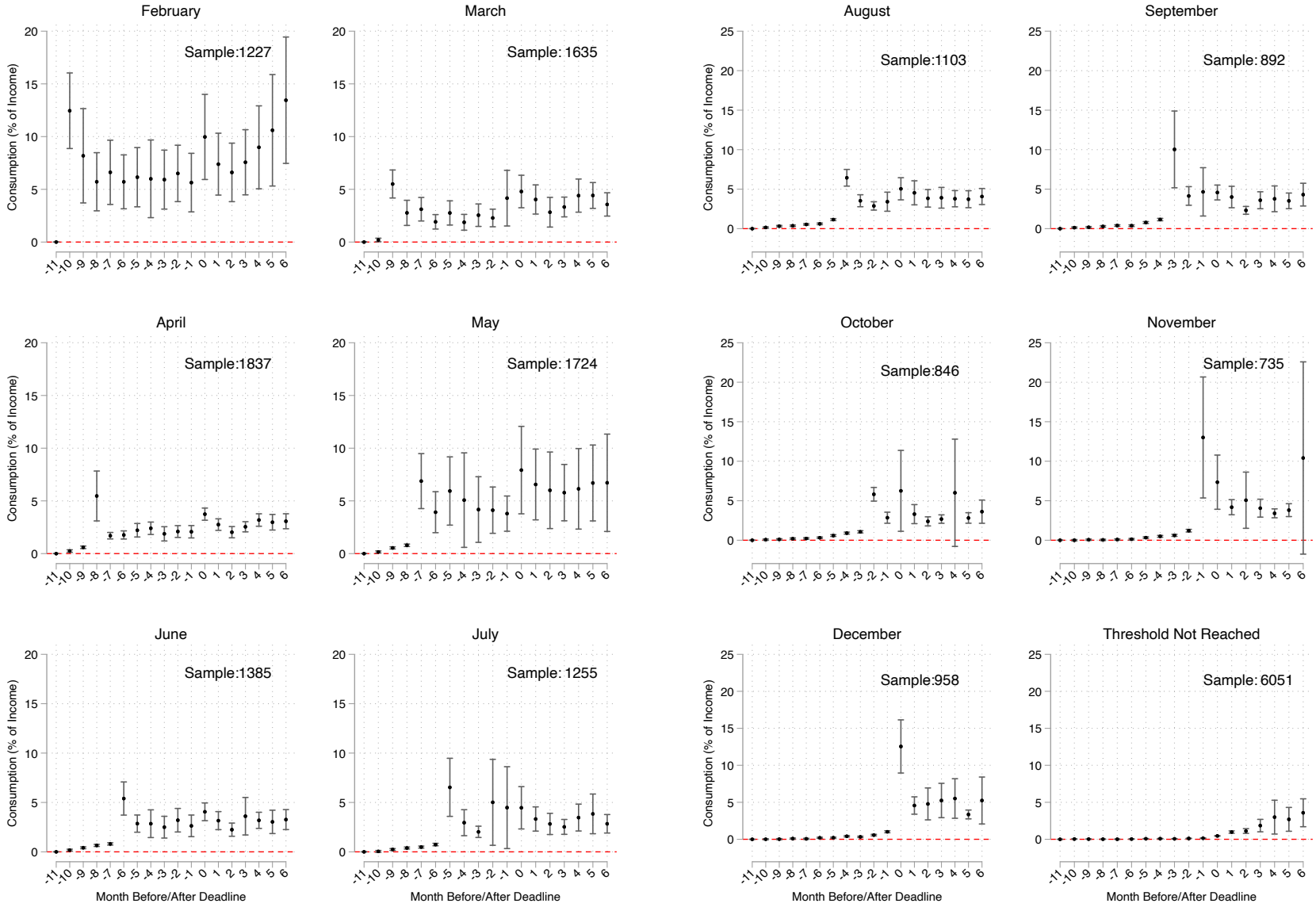
Specification:

$$\widetilde{C}_{i,m} = \alpha + \sum_{k=1}^{11} \beta_k (Lag\ k)_{i,m} + \sum_{j=1}^{7} \gamma_j (Lead\ j)_{i,m} + \varepsilon_{i,m} \qquad (3)$$

where $\widetilde{C}_{i,m} = \frac{C_{i,m}}{Y_i} \times 100$

Result 3: Responses in E-Consumption



Estimation Results

Threshold Reached in:	(1) Not Reached	(2) February	(3) March	(4) April	(5) May	(6) June	(7) July	(8) August	(9) September	(10) October	(11) November	(12) December
Month to Deadline:												
-10	0.037***	12.454***	0.197**	0.247***	0.162***	0.175***	0.043	0.149***	0.129***	0.070	-0.000	0.007
	(0.012)	(1.827)	(0.086)	(0.059)	(0.048)	(0.048)	(0.047)	(0.045)	(0.048)	(0.044)	(0.043)	(0.037)
-9	0.027**	8.181***	5.505***	0.598***	0.542***	0.412***	0.240***	0.315***	0.175***	0.101**	0.062	0.020
	(0.011)	(2.280)	(0.677)	(0.061)	(0.052)	(0.049)	(0.047)	(0.048)	(0.046)	(0.045)	(0.042)	(0.037)
-8	0.018	5.717***	2.768***	5.467***	0.792***	0.651***	0.389***	0.370***	0.281***	0.199***	0.043	0.097**
	(0.011)	(1.405)	(0.608)	(1.206)	(0.058)	(0.054)	(0.051)	(0.047)	(0.051)	(0.049)	(0.043)	(0.040)
-7	0.010	6.613***	3.113***	1.699***	6.878***	0.803***	0.484***	0.539***	0.394***	0.222***	0.086**	0.066*
	(0.011)	(1.553)	(0.569)	(0.157)	(1.330)	(0.058)	(0.052)	(0.051)	(0.050)	(0.050)	(0.043)	(0.038)
-6	0.036***	5.710***	1.919***	1.770***	3.928***	5.400***	0.739***	0.608***	0.375***	0.314***	0.129***	0.200***
	(0.012)	(1.302)	(0.350)	(0.197)	(0.991)	(0.855)	(0.063)	(0.053)	(0.053)	(0.050)	(0.049)	(0.041)
-5	0.076***	6.151***	2.759***	2.216***	5.939***	2.858***	6.532***	1.144***	0.777***	0.590***	0.331***	0.216***
	(0.012)	(1.433)	(0.586)	(0.327)	(1.651)	(0.444)	(1.499)	(0.064)	(0.061)	(0.058)	(0.052)	(0.041)
-4	0.088***	5.996***	1.873***	2.405***	5.074**	2.850***	2.952***	6.442***	1.151***	0.901***	0.495***	0.410***
	(0.013)	(1.877)	(0.382)	(0.301)	(2.284)	(0.715)	(0.670)	(0.538)	(0.077)	(0.064)	(0.059)	(0.047)
-3	0.067***	5.921***	2.546***	1.877***	4.181***	2.498***	2.024***	3.532***	10.031***	1.061***	0.617***	0.331***
	(0.012)	(1.425)	(0.543)	(0.344)	(1.587)	(0.562)	(0.291)	(0.387)	(2.477)	(0.072)	(0.066)	(0.046)
-2	0.117***	6.508***	2.283***	2.096***	4.120***	3.203***	5.015**	2.875***	4.139***	5.815***	1.209***	0.568***
	(0.014)	(1.363)	(0.426)	(0.285)	(1.120)	(0.608)	(2.219)	(0.269)	(0.600)	(0.441)	(0.085)	(0.053)
-1	0.151***	5.639***	4.163***	2.075***	3.794***	2.632***	4.477**	3.411***	4.659***	2.848***	13.008***	1.020***
	(0.014)	(1.416)	(1.346)	(0.299)	(0.852)	(0.557)	(2.113)	(0.615)	(1.559)	(0.357)	(3.901)	(0.069)
Deadline - Dec 2017	0.457***	9.967***	4.794***	3.743***	7.921***	4.054***	4.460***	5.048***	4.577***	6.251**	7.348***	12.546***
	(0.019)	(2.058)	(0.786)	(0.294)	(2.114)	(0.458)	(1.092)	(0.714)	(0.480)	(2.608)	(1.748)	(1.831)
+1	0.978***	7.387***	4.037***	2.753***	6.559***	3.161***	3.326***	4.536***	4.005***	3.304***	4.179***	4.565***
	(0.080)	(1.495)	(0.706)	(0.280)	(1.712)	(0.465)	(0.625)	(0.776)	(0.691)	(0.614)	(0.486)	(0.597)
+2	1.118***	6.605***	2.829***	2.032***	6.005***	2.244***	2.827***	3.839***	2.318***	2.385***	5.064***	4.781***
	(0.163)	(1.414)	(0.718)	(0.272)	(1.851)	(0.341)	(0.548)	(0.566)	(0.251)	(0.293)	(1.812)	(1.098)
+3	1.854***	7.565***	3.325***	2.546***	5.784***	3.608***	2.526***	3.909***	3.595***	2.679***	4.059***	5.244***
	(0.429)	(1.574)	(0.478)	(0.246)	(1.363)	(0.968)	(0.384)	(0.669)	(0.546)	(0.272)	(0.577)	(1.182)
+4	2.994**	8.983***	4.404***	3.187***	6.143***	3.189***	3.471***	3.791***	3.777***	6.006*	3.404***	5.516***
	(1.166)	(2.005)	(0.801)	(0.301)	(1.947)	(0.418)	(0.693)	(0.524)	(0.831)	(3.460)	(0.287)	(1.363)
+5	2.697***	10.598***	4.418***	2.976***	6.699***	3.034***	3.844***	3.727***	3.520***	2.816***	3.809***	3.357***
	(0.821)	(2.694)	(0.625)	(0.378)	(1.835)	(0.603)	(1.024)	(0.547)	(0.504)	(0.339)	(0.415)	(0.305)
+6	3.584***	13.451***	3.566***	3.069***	6.717***	3.266***	2.841***	4.068***	4.307***	3.617***	10.409*	5.242***
	(0.962)	(3.054)	(0.563)	(0.363)	(2.354)	(0.516)	(0.477)	(0.518)	(0.734)	(0.749)	(6.199)	(1.616)
Constant	0.220	5.380***	3.565***	2.484***	1.825*	1.408***	1.190***	0.795***	0.640**	0.561	0.515	0.423
	(0.185)	(1.349)	(0.385)	(0.169)	(1.021)	(0.340)	(0.390)	(0.246)	(0.299)	(0.448)	(0.559)	(0.290)
Observations ($N \times T$)	108,918	22,086	29,430	33,066	31,032	24,930	22,590	19,854	16,056	15,228	13,230	17,244
Taxpayers (N)	6,051	1,227	1,635	1,837	1,724	1,385	1,255	1,103	892	846	735	958

An Explanation using Adjustment Costs

Interplay of **adjustment costs** produce mixed policy outcome:

(a) Policy inattention (b) Liquidity constraints (c) Perceived audit costs

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Define marginal costs explicitly:

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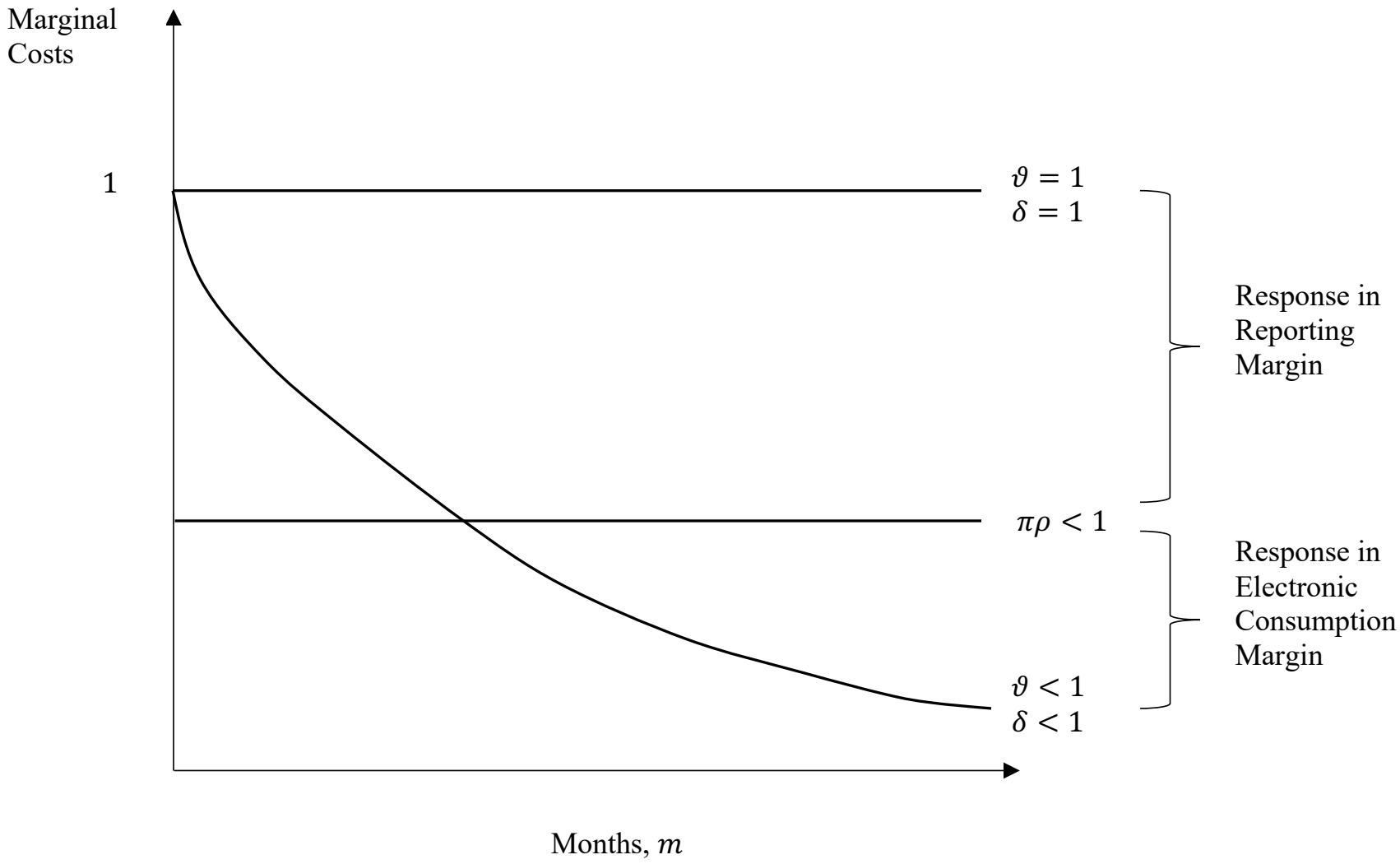
Increasing electronic consumption

$$\xi(c_e) = \sum_{m=1}^{12} \theta_m \delta^m c_{e,m} \tag{5}$$

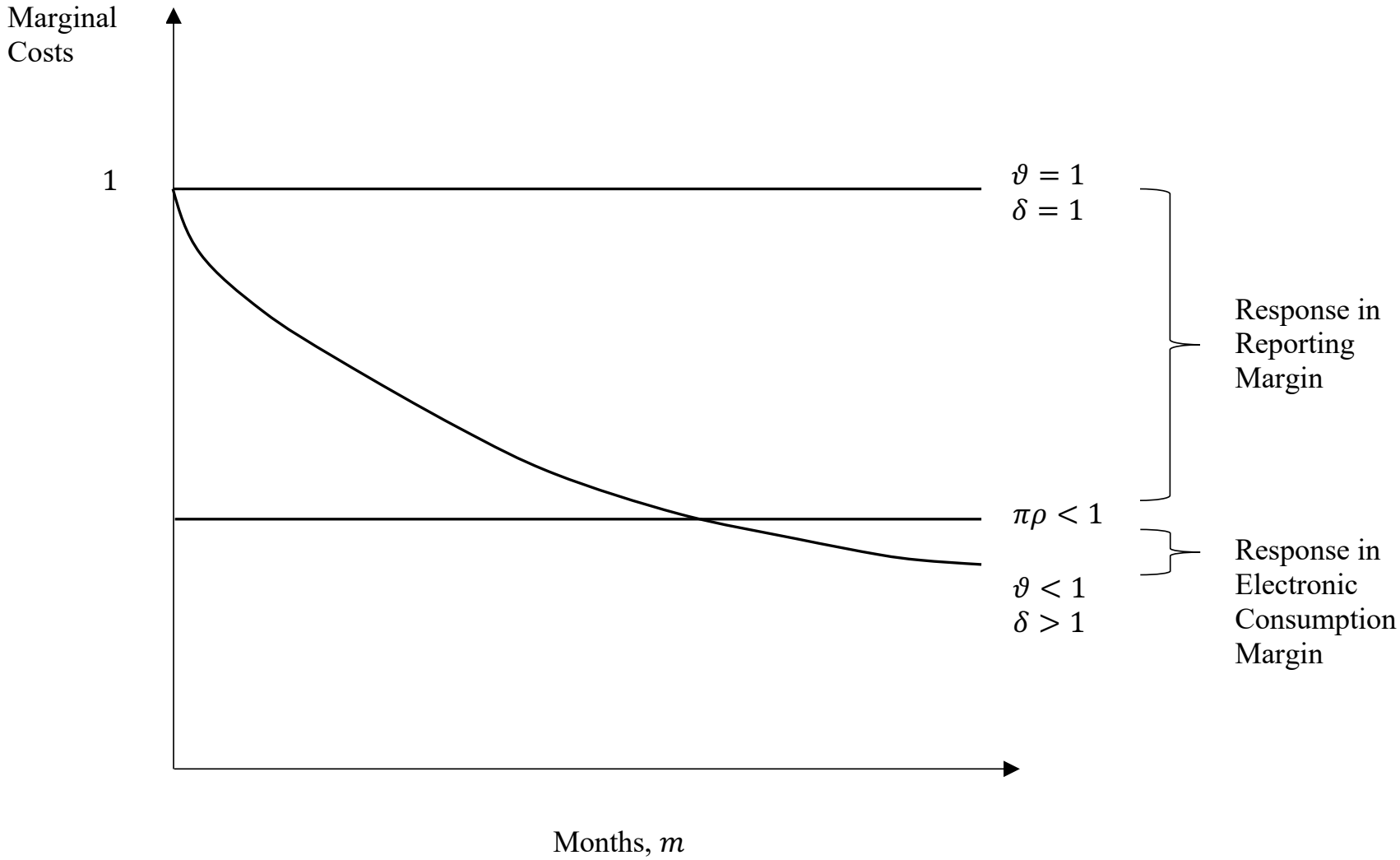
Policy inattention ($\theta_m > 1$) and excess attention ($\theta_m < 1$)

Liquidity constraints ($\delta^m > 1$) and excess liquidity ($\delta^m < 1$)

Policy attention - Excess liquidity



Policy attention - Constraint Liquidity



Conclusion

1. Third-party reporting incentives **through the income tax system** generates strong responses

2. Evidence of **higher amounts reported** to gain the full tax discount
   - Unintended consequence of the policy
   - Effectiveness implications

3. **Variety of responses** in electronic consumption

4. Mixed policy outcome can be explained through **adjustment costs**

Results suggest that linking incentives to existing features of the income tax system can trigger large responses, but the overall effect depends on adjustment costs in the taxpayer population.