Pecuniary and Non-Pecuniary Motivations for Tax Compliance: Evidence from Pakistan

Joel Slemrod, Obeid Ur Rehman & Mazhar Waseem

UNU-WIDER, Helsinki

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Introduction

- Tax evasion is a pervasive problem, especially in developing economies
- In the standard tax compliance model evasion is deterred by the threat of fine and penalty (Allingham & Sandmo, 1972)
- But evasion may also be deterred by social and psychological factors. Individuals may
  - feel guilt or shame from evading (Andreoni et al., 1998)
  - value how they are seen by peers (Luttmer & Singhal, 2014)
  - have intrinsic motivation to pay taxes (Dwenger et al. 2016)

Introduction

- The existence of such non-pecuniary motivations is increasingly being recognized
- Yet, limited evidence on
  - how important they are, and
  - if governments can prime them for resource mobilization
- This paper uses two Pakistani programs to study these questions

First Program – Public Disclosure

- The government began revealing income tax liability reported by every taxpayer in the country from 2012
- Two tax directories are published each year; one for MPs and one for all taxpayers
- The directories are available online in a searchable PDF format and can be downloaded by anyone
- They list the name, tax identifier, and income tax liability of taxpayers
- The MPs' directory also lists their constituency number

First Program – Public Disclosure

Declan Walsh ✓
@declanwalsh

Follow

Only one-third of Pakistani parliamentarians file tax returns, report says - nyti.ms/UiwW1q (But they do pay some income tax)

5:16 AM - 12 Dec 2012

The Guardian ✓
@guardian

Follow

Half of Pakistani MPs pay no tax, study suggests gu.com/p/3ydp6/tw @guardianworld

7:48 AM - 23 Dec 2013

IMF Pakistan ✓
@imf_pakistan

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Replying to @Masood_u

@Masood_u Agreed. Pakistani parliamentarians must pay taxes if they expect the international community to support the country!

8:59 AM - 23 Dec 2013

Sky News ✓
@SkyNews

Follow

TIMES FRONT PAGE: 'Pay Tax Or Aid Stops, MPs Tell Pakistanis' #skypapers

Guardian World
@guardianworld

Follow

Damning report from UK MPs says no aid increase to Pakistan until Pakistani elite start paying income tax

Mehreen Zahra-Malik ✓
@mehreenzahra

Follow

Asia Society ranks @UmarCheema1 tax report on Pakistani politicians as 2nd best piece of investigative journalism produced in Asia in 2012

1:23 AM - 12 Apr 2013

Second Program – Privileges & Honor Cards (TPHC)

- Acknowledges and honors the top-100 tax paying corporations, partnerships, employees and self-employed
- Holders of the Honor Card receive automatic invitation to State Dinners. They are also eligible for fast-track immigration and other benefits
- Privileges are conferred on the CEO in case of a corporation and the partner with maximum capital in case of a partnership

Likely Responses

- The programs can raise compliance through both pecuniary and non-pecuniary channels
- Public disclosure can encourage whistleblowing and exacerbate any feelings of guilt, shame, and pride
- Honor Card can evoke pride and sense of accomplishment. Agents may derive utility from being exposed as extremely affluent (Akerlof & Kranton, 2000). And businesses may monetize the goodwill into higher revenues and profits

Findings

- Both programs induce strong compliance response
- Public disclosure causes a 9 log-point increase in the tax remitted by individuals exposed to the program
- The effect is far stronger on MPs (40 log-points) for whom the program was more salient and low tax payments more damaging
- TPHC program causes a 17 log-point increase in the tax remitted
- The two programs also cause a shift of social norms toward tax compliance

Outline

Introduction

Institutional Background

Conceptual Framework

Results – Public Disclosure

Results – Public Disclosure (MPs)

Results – TPHC Program

Results – Social Norms

Conclusions

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Institutional Background

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Results – Public Disclosure

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Results – Social Norms

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Public Disclosure

- In the second half of 2012 very damaging press reports alleging noncompliance by Pakistani MPs begin appearing
- The reports claim
  - Two-thirds of the MPs have not filed their latest tax return
  - Nonfilers include 34 out of 55 federal ministers
  - Roughly 20% of the MPs do not even have the National Tax Number – the first requirement for tax filing
- The reports generate strong reaction
  - Federal Tax Ombudsman orders the government to begin disclosing the tax paid by every public office holder in the country
  - The leading opposition party at the time pledges full disclosure of tax payments
- The party won the election in May 2013 and began publishing tax payments for the tax year 2012 (July 2012 to June 2013) onward

Public Disclosure

- Each year two tax directories are published online
- Directory for all taxpayers lists name, tax identifier and tax liability
- MPs' directory also lists their constituency number
- Directories are in searchable PDF format and can be downloaded
- They are sorted alphabetically on the name variable
- Tax identifier is either the nine-digit National Tax Number or the 13-digit Computerized National Identity Card Number

Public Disclosure

- Tax identifiers are private information, known primarily to the taxpayer and tax administration
- Only publicly known identifier in the directory is the name
- The effectiveness of disclosure varies across taxpayers depending upon how conspicuous or obscure their name is

Pakistani Naming Conventions

- Pakistani names do not follow the standard syntax of first name + middle name + surname
- A typical Pakistani name is a combination of two or more given names. One of these names is the *most-called* given name
- Usually the most-called given name of father (husband) is adapted as surname of the child (married woman) $\rightarrow$ surname varies even within the nuclear family
- Even when the surname is fixed, it is rarely unique

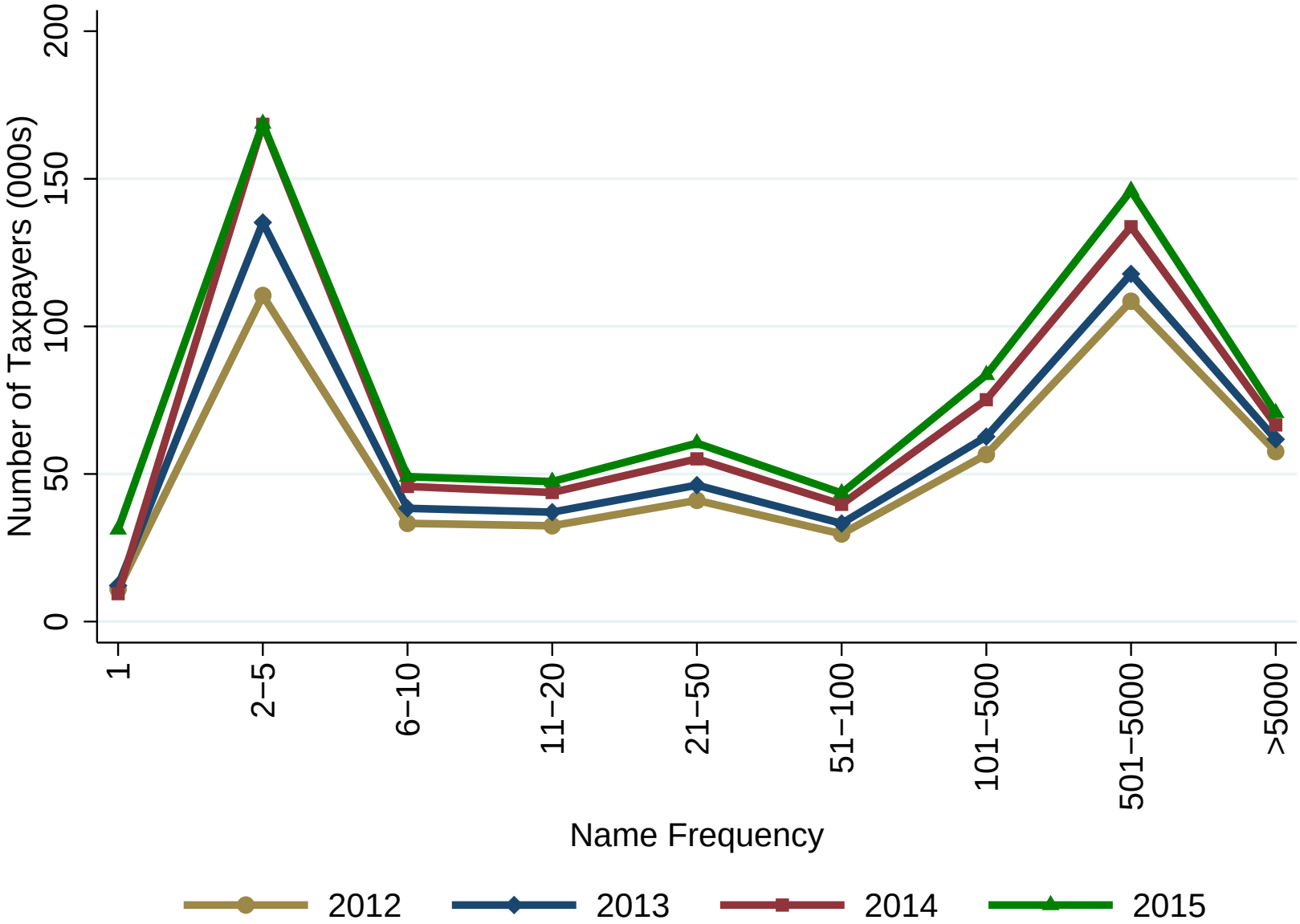
Pakistani Naming Conventions

- Because of these naming conventions it is quite common for people to have the same full name
- The most frequent name in our data – Muhammad Aslam – appears 15,598 times in four years
- A typical year's directory contains 60 pages listing the name Muhammad Aslam alone
- Such individuals enjoy virtual anonymity in the disclosure
- There are many such individuals – nearly one-third of taxpayers share their full name with at least 500 others

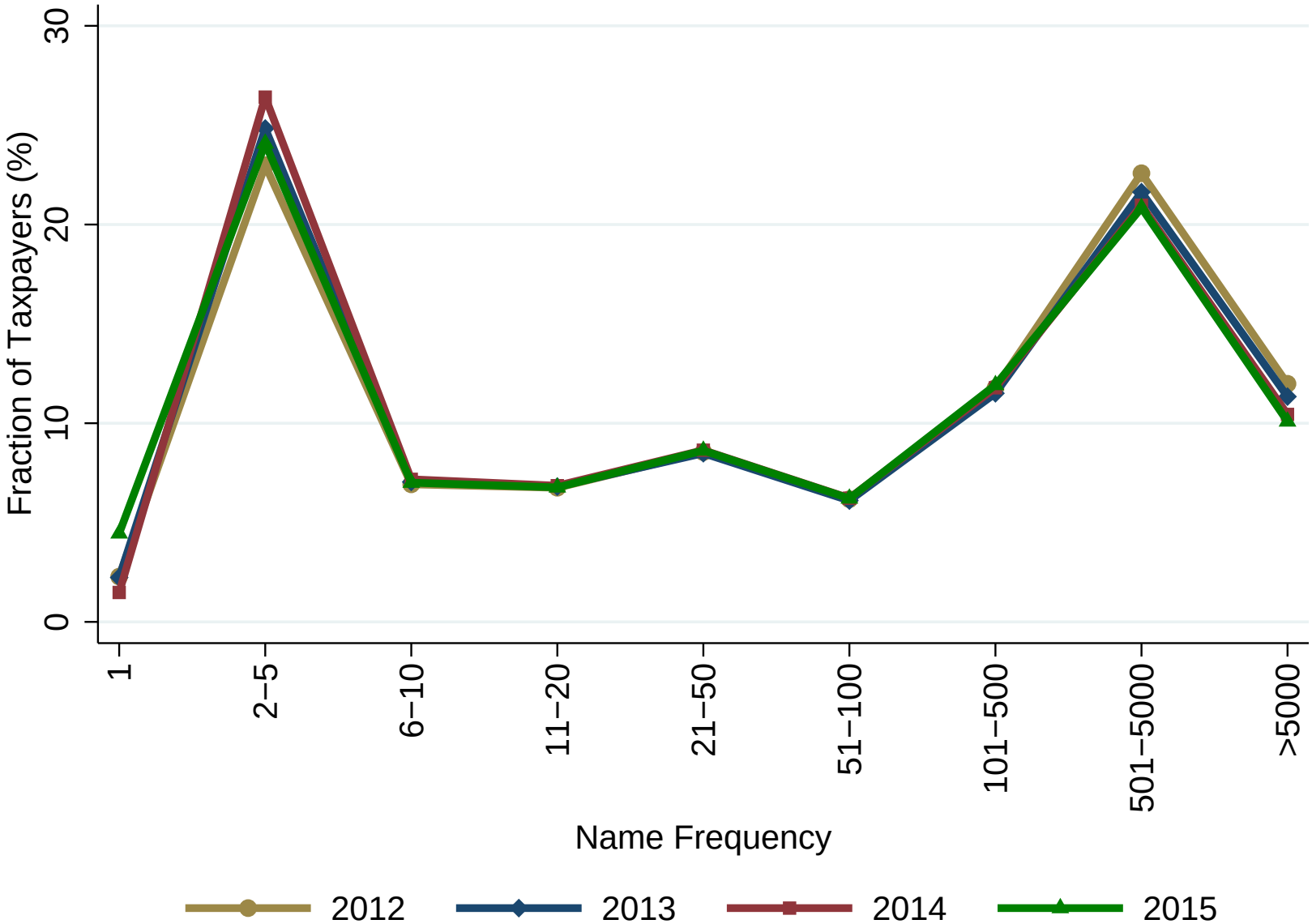
Pakistani Naming Conventions

- Distribution has a thick tail at the other end too
- Approximately 35% of taxpayers have names that appear fewer than ten times in four years
- About 4% names appear only once, while 24% appear between 2-5 times.
- Such individuals are almost perfectly identified in the disclosure
- Wide variation in the name frequency translates into wide variation in program exposure

Distribution of Names in Pakistan



Distribution of Names in Pakistan



Public Disclosure

- MPs' directory also lists their constituency number
- Pakistan has a total of 1174 MPs $\rightarrow$ they are well known, especially in their election districts
- Their exposure to the program therefore must be independent of the uniqueness of their name

Public Disclosure

Mr. Prime Minister [redacted] we standyby every document reported about [redacted]

Now please practice what you preach.
#Pakistan

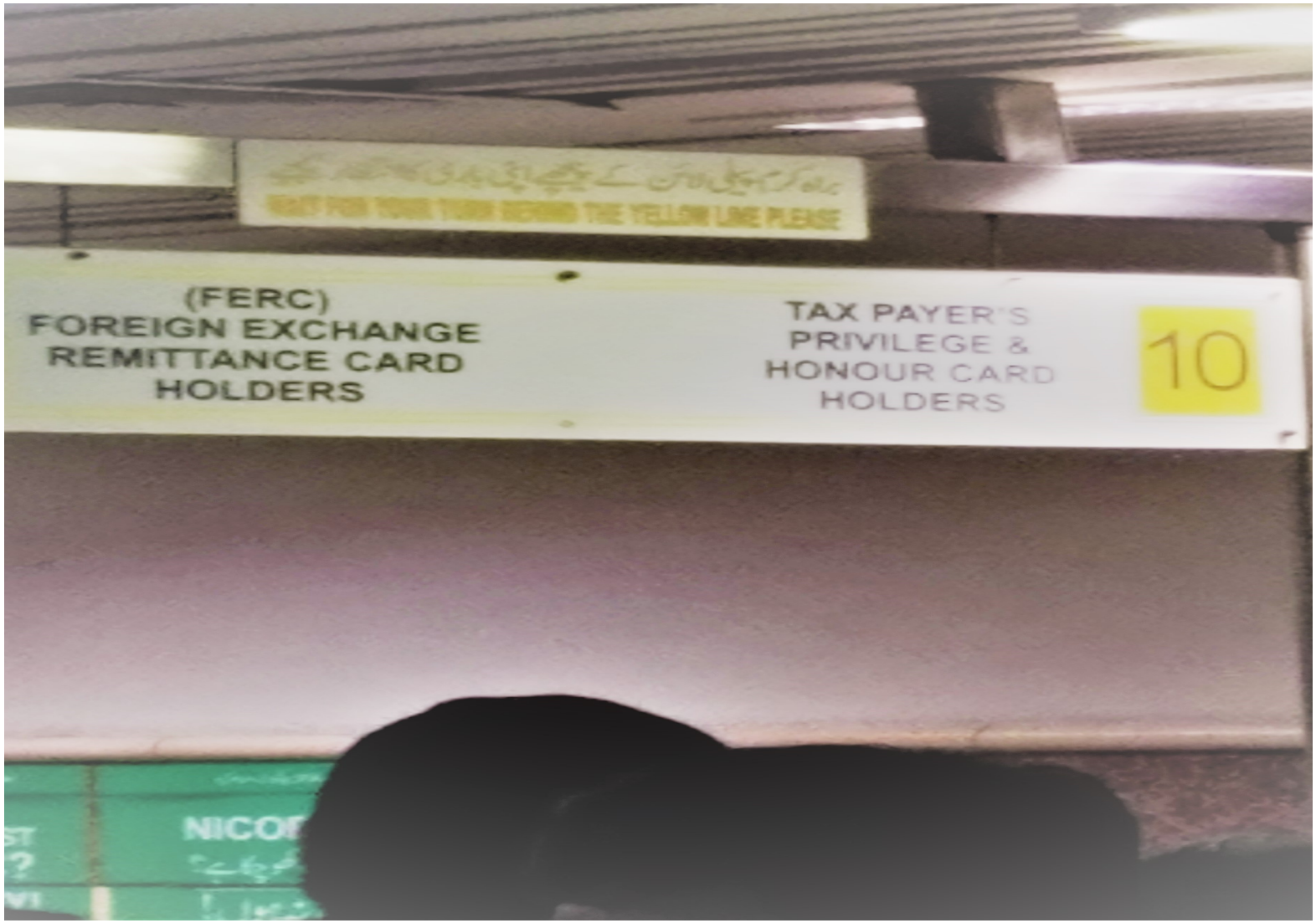
TPHC Program

- The program acknowledges and honors the top-100 tax paying corporations, partnerships, wage-earners, and self-employed

- Also began from 2012. Offers the following privileges
  - automatic invitation to State Dinners
  - fast-track immigration through special counters
  - issuance of gratis passports
  - access to VIP lounges at Pakistani airports
  - increased baggage allowance

- The benefits are conferred on the CEO of a corporation and the partner with maximum capital of a partnership

Special Immigration Counter



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Motivations for Tax Compliance

- Standard model

$$\frac{u'(c_A)}{u'(c_{NA})} = \frac{(1-p)\,\tau}{p\theta}$$

- Evasion is deterred by the fear of consumption loss in the detected state

- Extended model

$$\frac{u'(c_A)}{u'(c_{NA})} = \frac{(1-\varphi\rho)\,(\tau-g)}{\varphi\rho(\theta+g+s)}$$

- Social and psychological factors also matter. Factors like guilt g reduce utility in both states; others like shame s only in the detected state

Comparative Statics

- Public disclosure intensifies guilt and shame from tax cheating and facilitates whistleblowing
- Potentially pushes moral costs g and s, behavioral bias φ, and detection probability p all up
- Pecuniary channel $\rightarrow p \uparrow$; Nonpecuniary channels $\rightarrow g;\ s;\ \varphi \uparrow$
- All effects reduce evasion under plausible assumptions on preferences

Empirical Strategy – Public Disclosure Program

- Exploit variation in exposure to the program based on name uniqueness $\rightarrow Name\ Frequency$: number of times a full name appears in four years of publicly disclosed data

- **Research Design** $\rightarrow$ compare outcomes across taxpayers with $Name\ Frequency$ below and above a given cutoff

- **Principle Identification Concern** $\rightarrow$ names potentially correlated with parental traits such as income, education, and ethnicity

- **Remedy** $\rightarrow$ always use individual fixed effects. Rule out differential trends using event study analysis and placebo falsification checks

Summary Statistics – I

	2011		2010	
	Treatment	Control	Treatment	Control
	(1)	(2)	(3)	(4)
1. Taxable Income:				
25th percentile	12.281	12.255	12.044	12.017
Median	12.560	12.516	12.304	12.255
Mean	12.505	12.459	12.306	12.248
75th percentile	12.723	12.680	12.554	12.497
90th percentile	12.899	12.766	12.766	12.612
2. Tax on taxable income:				
25th percentile	10.271	10.244	10.091	10.070
Median	10.521	10.494	10.337	10.264
Mean	11.064	11.015	10.737	10.567
75th percentile	11.845	11.884	11.081	10.531
90th percentile	12.848	12.613	12.520	12.155
3. Tax at source:				
25th percentile	9.502	9.517	9.287	9.259
Median	10.917	10.943	10.625	10.540
Mean	10.915	10.984	10.678	10.687
75th percentile	12.411	12.475	12.132	12.162
90th percentile	13.699	13.804	13.450	13.526

Summary Statistics – II

	2011		2010	
	Treatment	Control	Treatment	Control
	(1)	(2)	(3)	(4)
4. Major city	0.462	0.336	0.458	0.334
	(0.001)	(0.001)	(0.001)	(0.001)
5. Business in other city	0.123	0.123	0.123	0.123
	(0.001)	(0.001)	(0.001)	(0.001)
6. More than one businesses	0.158	0.131	0.157	0.129
	(0.001)	(0.001)	(0.001)	(0.001)
7. Male	0.919	0.986	0.924	0.986
	(0.001)	(0.000)	(0.001)	(0.000)
8. Early filer	0.615	0.642	0.554	0.543
	(0.001)	(0.001)	(0.001)	(0.001)
9. Young	0.545	0.507	0.521	0.485
	(0.002)	(0.002)	(0.002)	(0.002)
10. Buncher	0.049	0.054	0.044	0.046
	(0.000)	(0.000)	(0.000)	(0.000)
11. Strictly dominated choice	0.018	0.016	0.022	0.019
	(0.000)	(0.000)	(0.000)	(0.000)
12. Revised return	0.002	0.002	0.003	0.003
	(0.000)	(0.000)	(0.000)	(0.000)

Treatment Control Balance

	Major City	Business in Other City	Multiple Businesses	Male	Early Filer	Young	Buncher	Dominated	Revised Return
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A: Complete Panel (2006-2011)									
treat × after	0.002	0.001	0.010	0.012	-0.000	-0.016	0.002	0.014	0.014
	(0.008)	(0.009)	(0.007)	(0.006)	(0.009)	(0.014)	(0.008)	(0.006)	(0.006)
treat × trait × after	0.003	-0.011	-0.012	-0.001	0.021	-0.017	0.025	-0.001	0.070
	(0.013)	(0.026)	(0.019)	(0.044)	(0.013)	(0.021)	(0.013)	(0.030)	(0.058)
Observations	1,484,133	917,213	1,484,174	1,482,108	1,430,873	574,137	1,496,374	1,496,374	1,496,374
B: Balanced Panel (2006-2011)									
treat × after	-0.007	-0.004	0.007	0.007	-0.001	-0.010	0.004	0.009	0.009
	(0.010)	(0.011)	(0.008)	(0.008)	(0.011)	(0.017)	(0.011)	(0.008)	(0.008)
treat × trait × after	0.023	-0.020	-0.016	-0.028	0.016	-0.038	0.010	0.027	0.060
	(0.016)	(0.034)	(0.024)	(0.058)	(0.016)	(0.026)	(0.015)	(0.034)	(0.064)
Observations	837,536	486,993	837,550	837,147	807,171	288,788	840,469	840,469	840,469
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Empirical Strategy – TPHC Program

- Focus on behavior around the eligibility cutoff of the program
- Agents just below the cutoff in year t will attempt to become eligible in year $t+1$. Eligible taxpayers in year t will attempt to remain eligible in year $t+1$
- The growth in tax paid will peak around the eligibility cutoff . Test this using both visual and regression-based evidence

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Introduction

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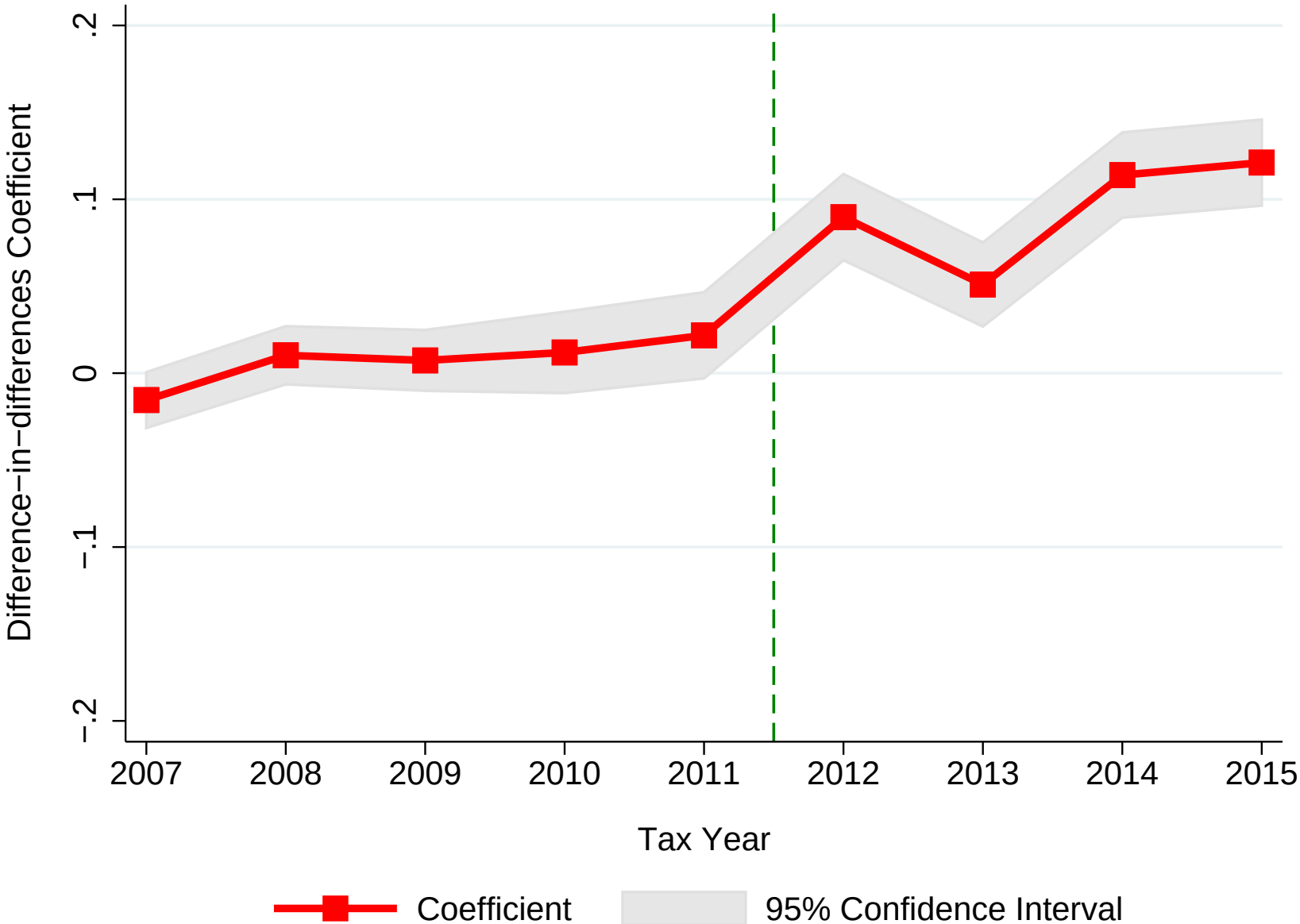
Results – TPHC Program

Results – Social Norms

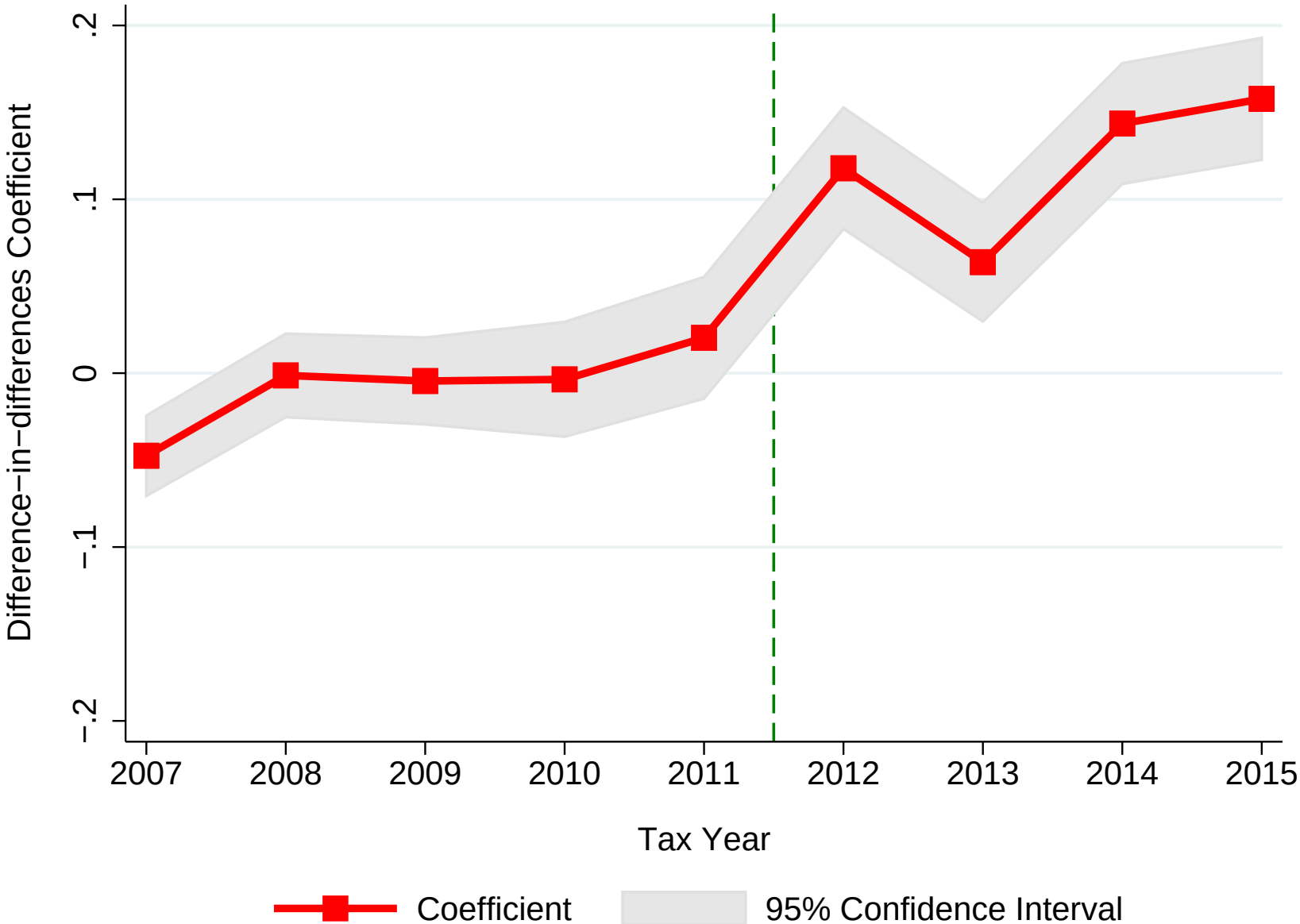
Conclusions

Name Frequency $\leq$ 10 Vs. Others

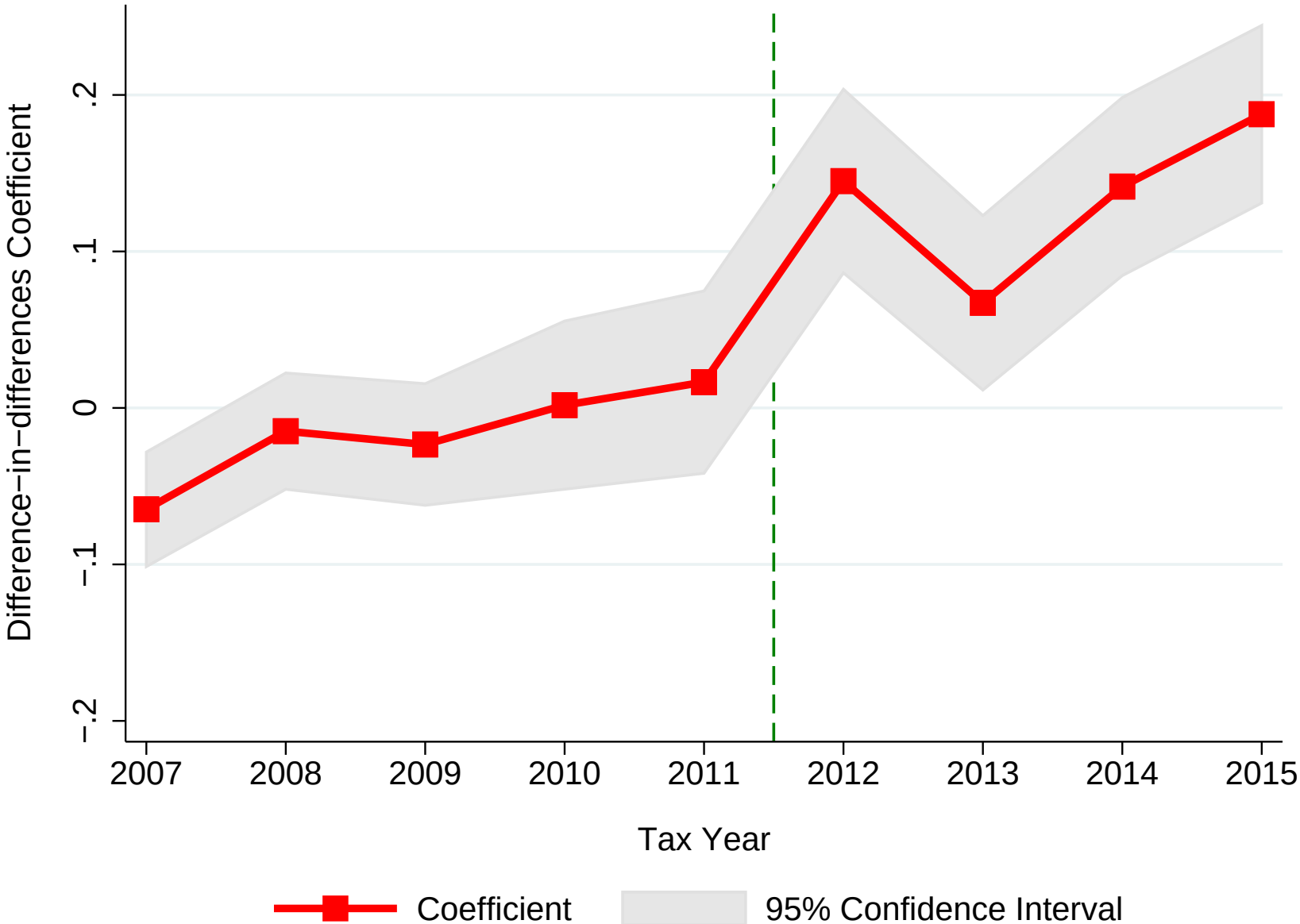
Name Frequency Below Vs. Above Median



Name Frequency First Vs. Top Quartile



Name Frequency First Vs. Top Decile



Intensive Margin Response to the Public Disclosure Program

	Treat: Name Frequency							
	≤ 10		≤ 20		≤ 30		≤ 40	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A: Main Regression (2006-2015)								
treat × after	0.094	0.093	0.090	0.089	0.089	0.086	0.088	0.086
	(0.006)	(0.009)	(0.005)	(0.008)	(0.005)	(0.008)	(0.005)	(0.008)
Observations	2,430,002	773,038	2,614,754	833,675	2,720,267	868,250	2,792,270	891,420
B: Placebo Regression (2006-2011)								
treat × after	0.009	0.005	0.013	0.009	0.013	0.010	0.014	0.010
	(0.007)	(0.008)	(0.006)	(0.008)	(0.006)	(0.008)	(0.006)	(0.008)
Observations	1,307,541	734,269	1,403,240	787,845	1,458,457	818,942	1,496,374	840,469
Sample:								
Banlanced Panel	No	Yes	No	Yes	No	Yes	No	Yes
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Response Across the Name Distribution

	Baseline Specification (2006-2015)		Placebo Specification (2006-2011)	
	(1)	(2)	(3)	(4)
Name Freq $\in (0,\ 50] \times$ after	0.107	0.105	0.020	0.013
	(0.005)	(0.008)	(0.007)	(0.008)
Name Freq $\in (50,\ 100] \times$ after	0.067	0.069	0.014	0.003
	(0.011)	(0.016)	(0.014)	(0.016)
Name Freq $\in (100,\ 150] \times$ after	0.061	0.080	0.027	0.036
	(0.015)	(0.023)	(0.019)	(0.023)
Name Freq $\in (150,\ 200] \times$ after	0.050	0.046	0.029	0.034
	(0.019)	(0.029)	(0.025)	(0.030)
Name Freq $\in (200,\ 250] \times$ after	0.043	0.011	0.014	-0.005
	(0.021)	(0.031)	(0.026)	(0.032)
Name Freq $\in (250,\ 300] \times$ after	0.045	0.022	-0.014	-0.027
	(0.022)	(0.033)	(0.028)	(0.036)
Name Freq $\in (300,\ 350] \times$ after	0.047	0.086	0.032	0.042
	(0.025)	(0.038)	(0.032)	(0.039)
Name Freq $\in (350,\ 400] \times$ after	0.037	0.039	0.028	0.021
	(0.027)	(0.041)	(0.037)	(0.043)
Name Freq $\in (400,\ 450] \times$ after	0.035	0.017	0.017	0.029
	(0.026)	(0.039)	(0.033)	(0.041)
Observations	2,792,270	891,420	1,496,374	840,469
Sample:				
Banlanced Panel	No	Yes	No	Yes
Individual Fixed Effects	Yes	Yes	Yes	Yes

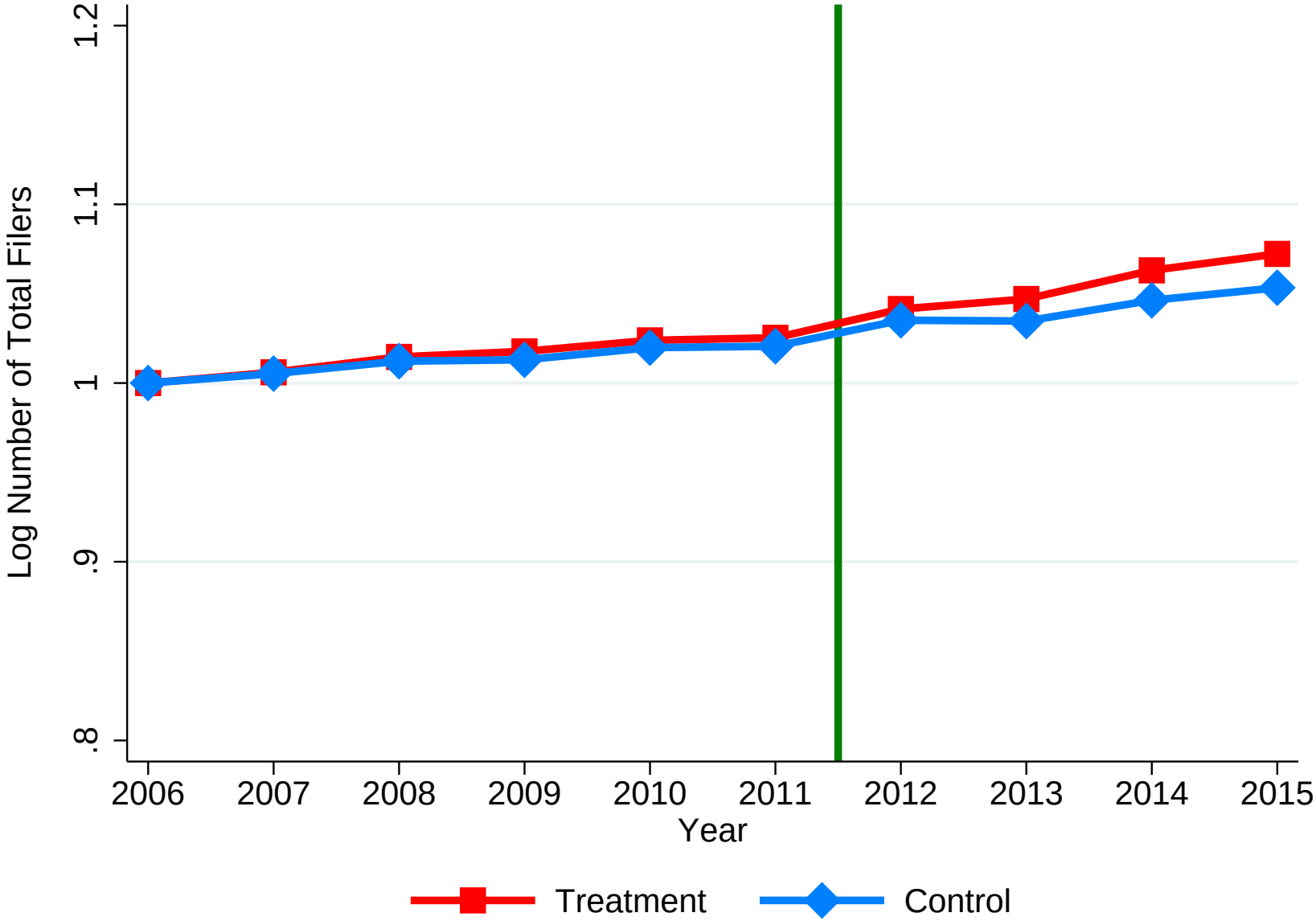
Falsification Exercise

	Treat: Name Frequency							
	≤ 10		≤ 20		≤ 30		≤ 40	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A: 2006-2015								
treat × after	-0.240	-0.349	-0.166	-0.159	-0.225	-0.293	-0.226	-0.235
	(0.151)	(0.196)	(0.166)	(0.212)	(0.170)	(0.218)	(0.178)	(0.227)
Observations	5,452	1,544	5,452	1,544	5,452	1,544	5,452	1,544
B: 2006-2011								
treat × after	-0.190	-0.268	-0.048	0.024	-0.134	-0.089	-0.148	-0.121
	(0.173)	(0.240)	(0.169)	(0.233)	(0.178)	(0.240)	(0.179)	(0.242)
Observations	1,713	883	1,713	883	1,713	883	1,713	883
Sample:								
Banlanced Panel	No	Yes	No	Yes	No	Yes	No	Yes
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

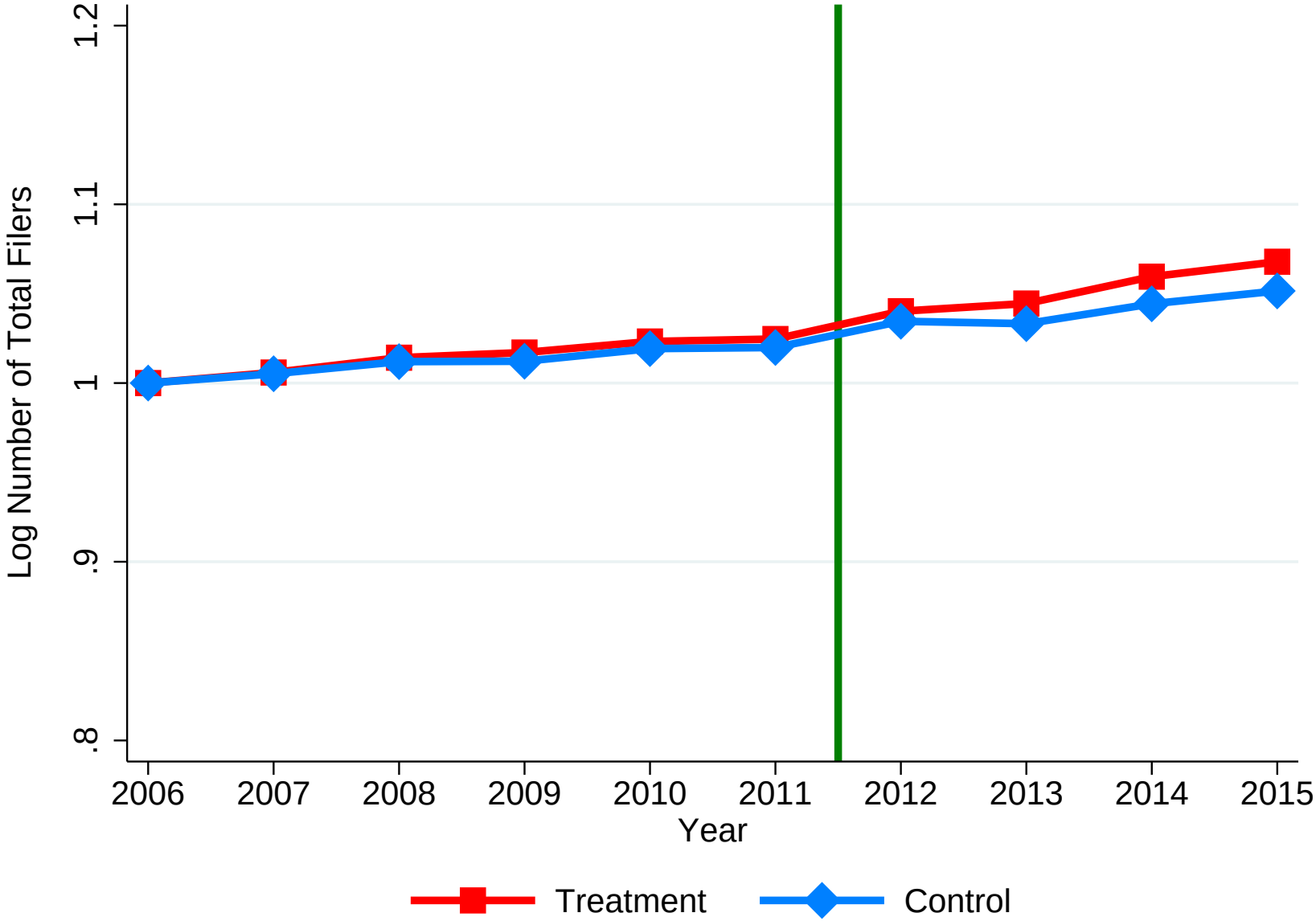
Response By Baseline Taxable Income

	Baseline Taxable Income:					
	$\in (0,\ 100k]$	$\in (100k,\ 200k]$	$\in (200k,\ 300k]$	$\in (300k,\ 400k]$	$\in (400k,\ 500k]$	$\in (500k,\ 600k]$
	(1)	(2)	(3)	(4)	(5)	(6)
A: Main Regression (2006-2015)						
treat × after	0.075	0.083	0.061	0.058	0.014	-0.026
	(0.059)	(0.018)	(0.009)	(0.010)	(0.028)	(0.056)
Observations	26,071	197,583	575,312	447,856	60,784	14,442
B: Placebo Regression (2006-2011)						
treat × after	0.058	0.019	0.005	-0.029	-0.072	-0.069
	(0.046)	(0.010)	(0.021)	(0.024)	(0.036)	(0.078)
Observations	44,234	760,496	104,403	38,149	21,214	5,214
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

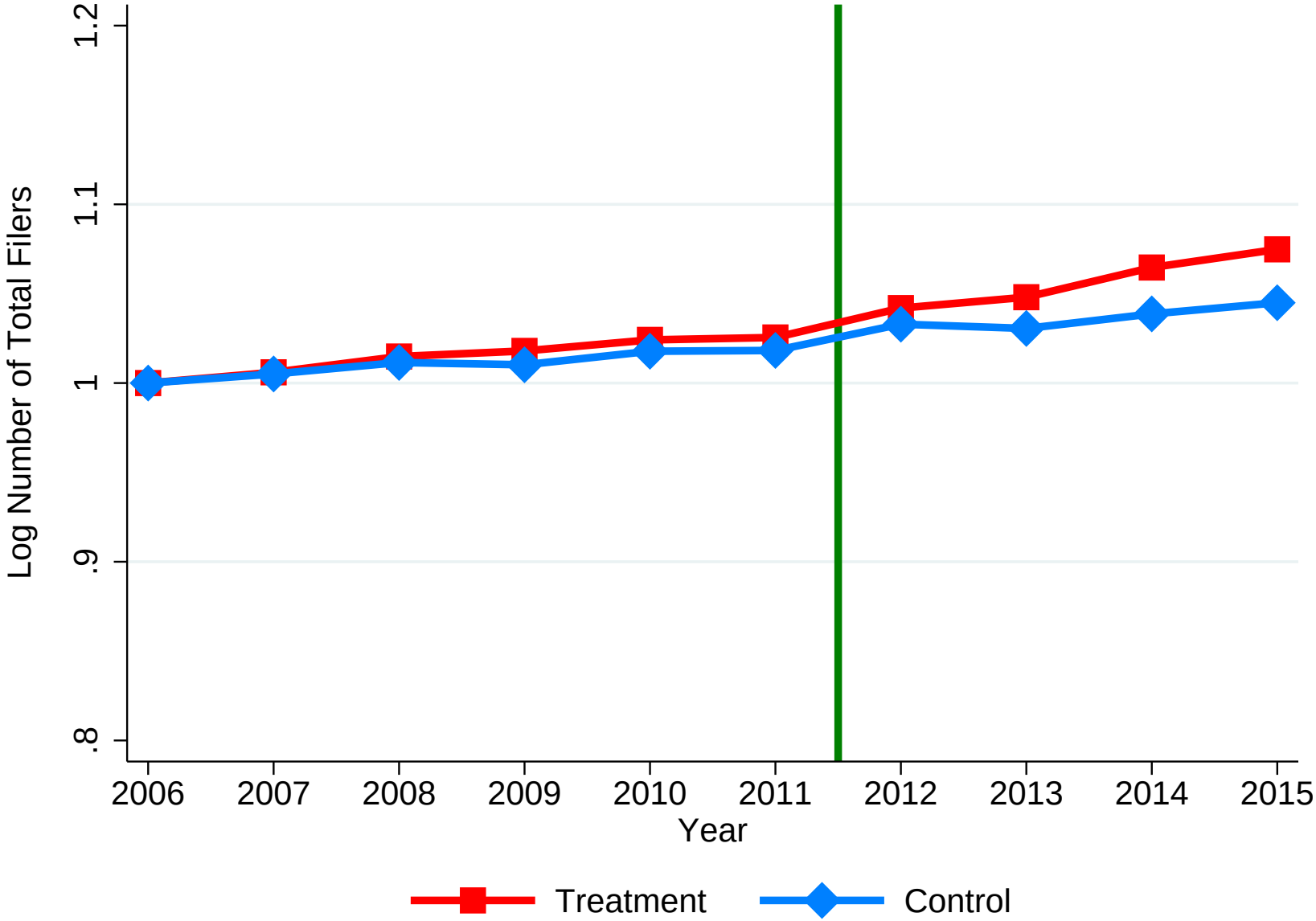
Name Frequency $\leq$ 10 Vs. Others



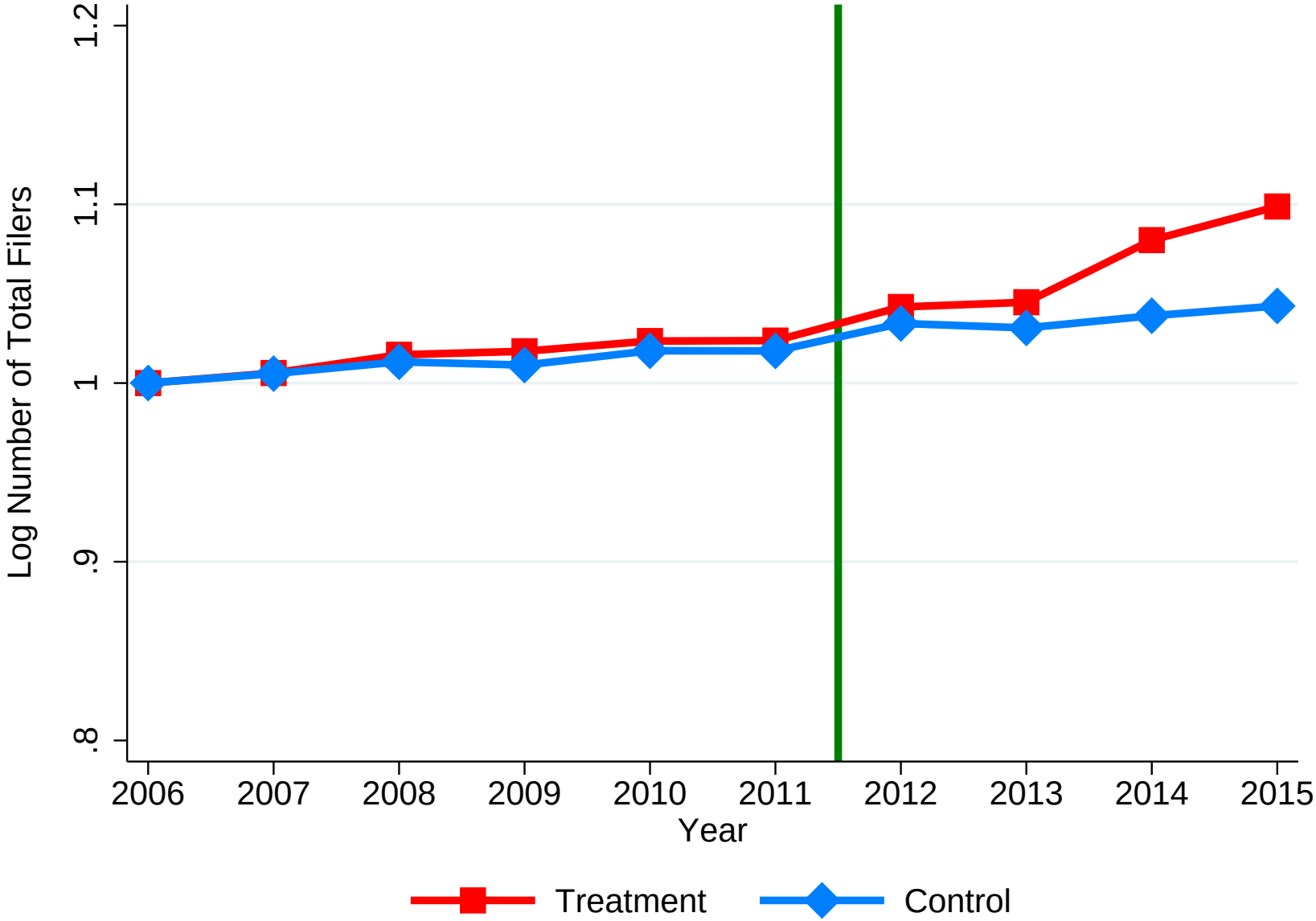
Name Frequency Below Vs. Above Median



Name Frequency First Vs. Top Quartile



Name Frequency First Vs. Top Decile



Extensive Margin Response to the Public Disclosure

	Treat: Name Frequency						
	≤ 10	≤ 20	≤ 30	≤ 40	$\leq$ Median	$\leq$ 1st Quartile	$\leq$ 1st Decile
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A: Main Regression (2006-2015)							
treat × after	0.0117	0.0106	0.0101	0.0097	0.0094	0.0163	0.0265
	(0.0027)	(0.0024)	(0.0023)	(0.0022)	(0.0022)	(0.0041)	(0.0089)
B: Placebo Regression (2006-2011)							
treat × after	0.0027	0.0027	0.0026	0.0025	0.0024	0.0038	0.0026
	(0.0018)	(0.0017)	(0.0017)	(0.0016)	(0.0016)	(0.0026)	(0.0027)

Outline

Introduction

Institutional Background

Conceptual Framework

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Conclusions

Structure of Pakistani Legislature

House	Total Seats	Directly Elected	Reserved		
			Women	Minorities	Technocrats
(1)	(2)	(3)	(4)	(5)	(6)
National Assembly	342	272	60	10	-
Senate	104	66	17	4	17
Punjab Assembly	371	297	66	8	-
Sind Assembly	168	130	29	9	-
KP Assembly	124	99	22	3	-
Balochistan Assembly	65	51	11	3	-
Total	1174	915	205	37	17

MPs – Intensive Margin

After Dropping Less-Common Names

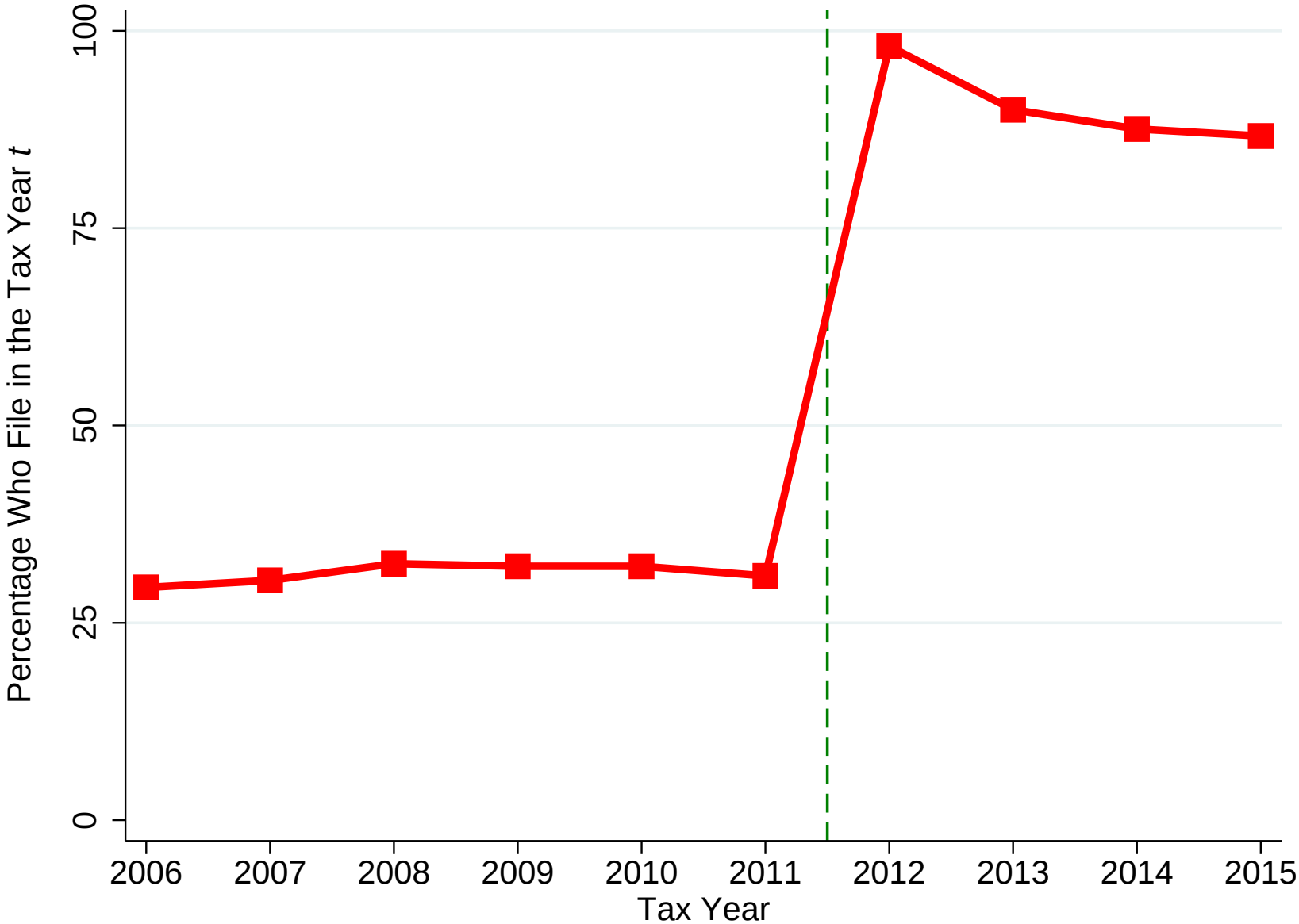
MPs – Intensive Margin Response

	Complete Panel				Balanced Panel			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A: Main Regression (2006-2015)								
treat × after	0.407	0.900	0.519	0.966	0.651	0.906	0.756	0.965
	(0.069)	(0.117)	(0.070)	(0.115)	(0.097)	(0.165)	(0.097)	(0.165)
Observations	5,832,527	2,968,236	1,747,719	1,105,038	1,304,247	971,216	454,364	379,390
B: Placebo Regression (2006-2011)								
treat × after	0.033	0.374	0.089	0.385	0.173	0.368	0.243	0.384
	(0.082)	(0.151)	(0.082)	(0.148)	(0.114)	(0.203)	(0.114)	(0.202)
Observations	3,098,528	1,670,694	963,113	646,461	800,475	610,799	286,013	243,515
Sample:								
Wage-earners Dropped	No	Yes	No	Yes	No	Yes	No	Yes
Control Group:								
Less-Common Names Dropped	No	No	Yes	Yes	No	No	Yes	Yes
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

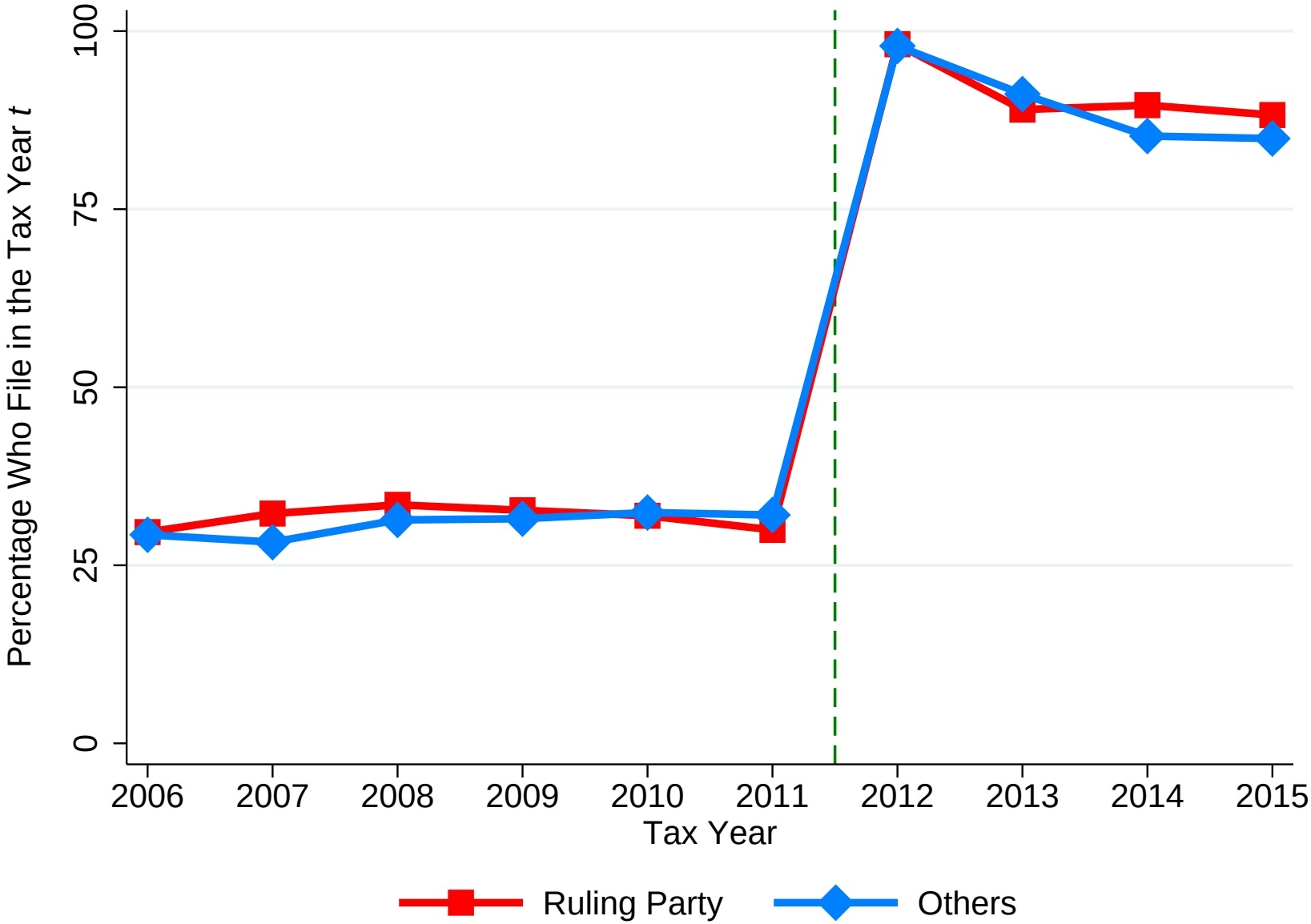
MPs – Intensive Margin Response

	(1)	(2)	(3)	(4)	(5)	(6)
treat × after	0.407	0.489	0.401	0.399	0.371	0.491
	(0.069)	(0.108)	(0.100)	(0.070)	(0.072)	(0.091)
treat × after × ruling party		-0.154				
		(0.140)				
treat × after × federal			0.012			
			(0.138)			
treat × after × tightly contested				0.181		
				(0.406)		
treat × after × federal minister					0.514	
					(0.220)	
treat × after × repeat MP						-0.197
						0.137
Observations	5,832,527	5,832,527	5,832,527	5,832,527	5,832,527	5,832,527
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

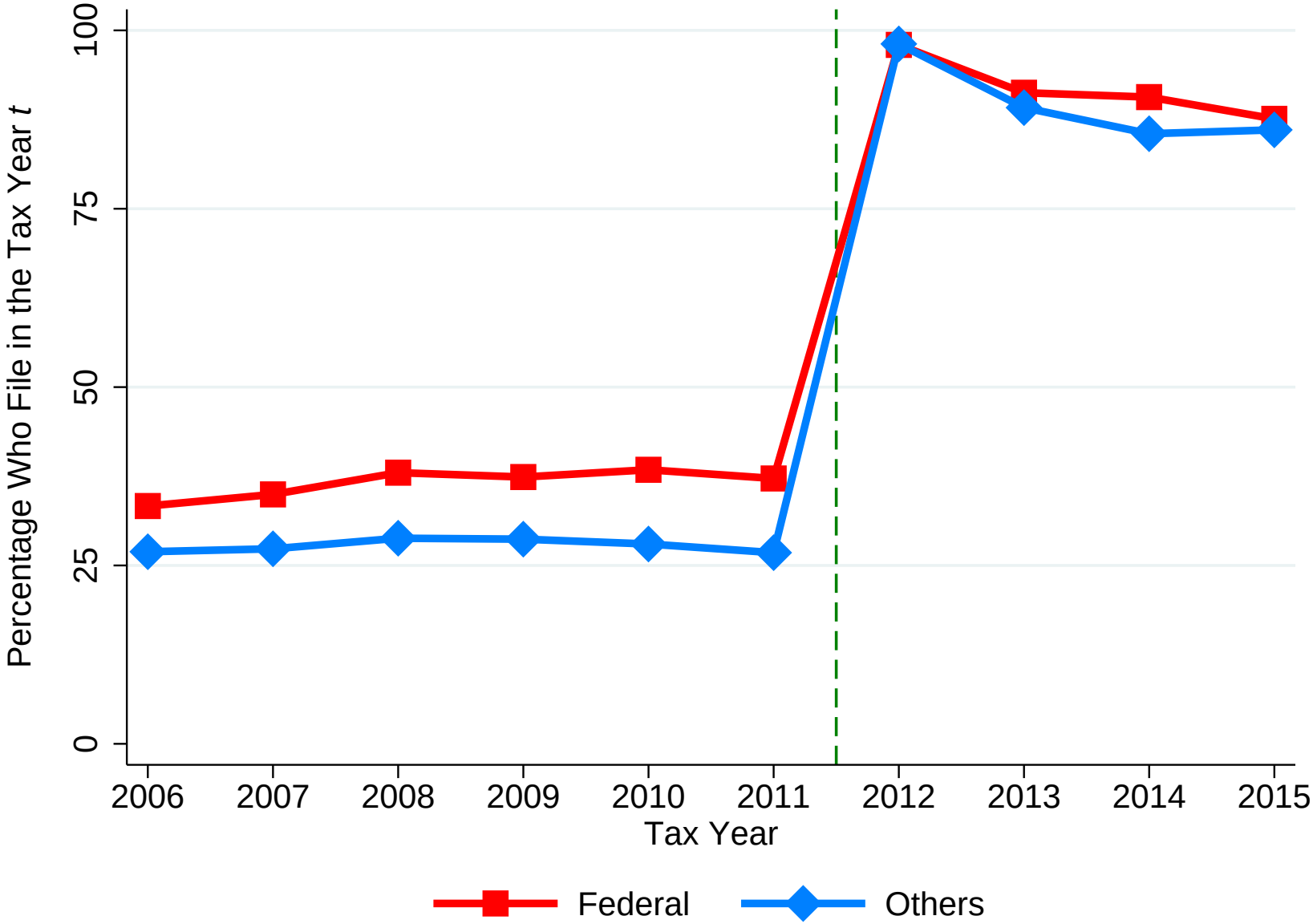
MPs – Extensive Margin



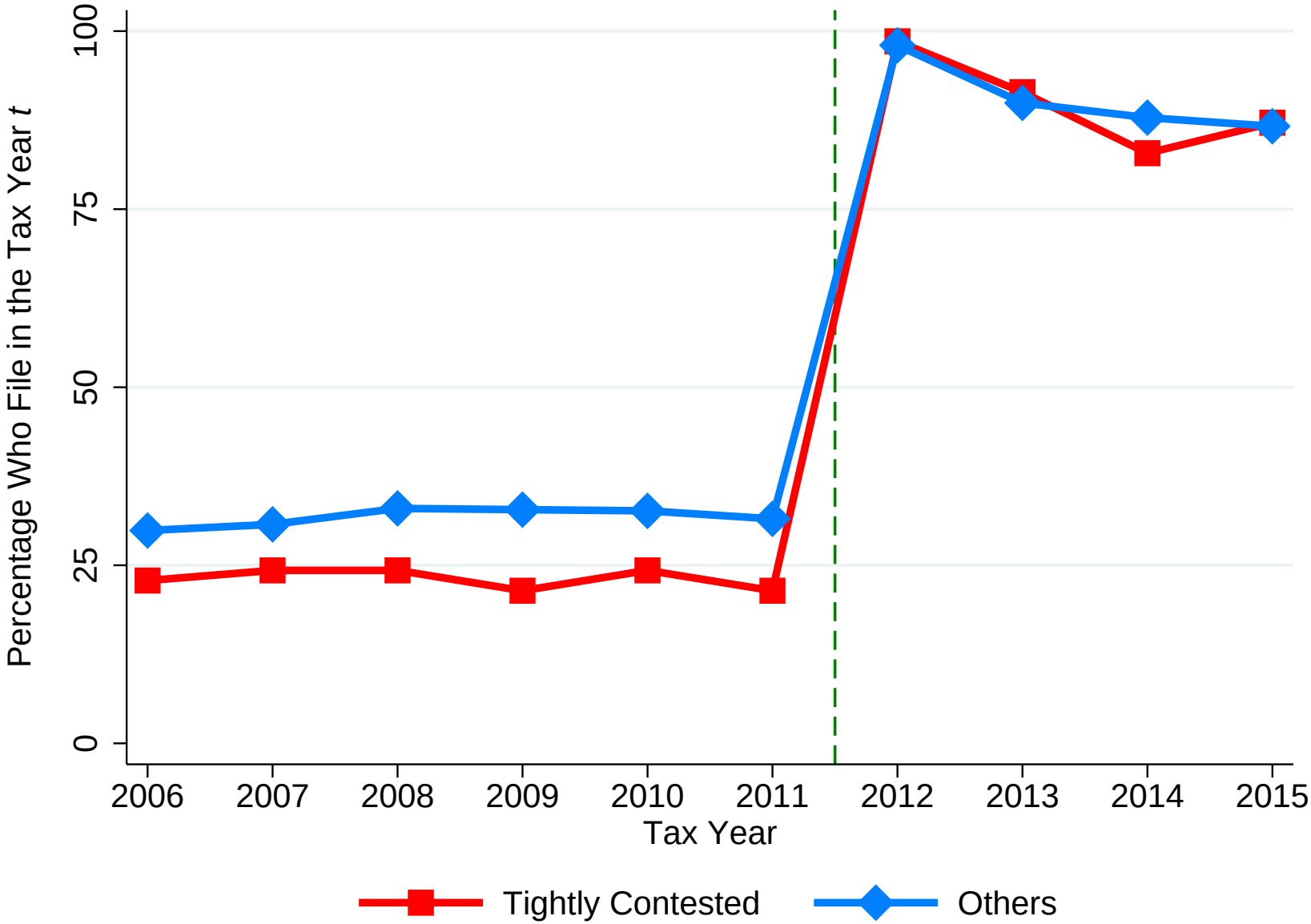
MPs – Extensive Margin



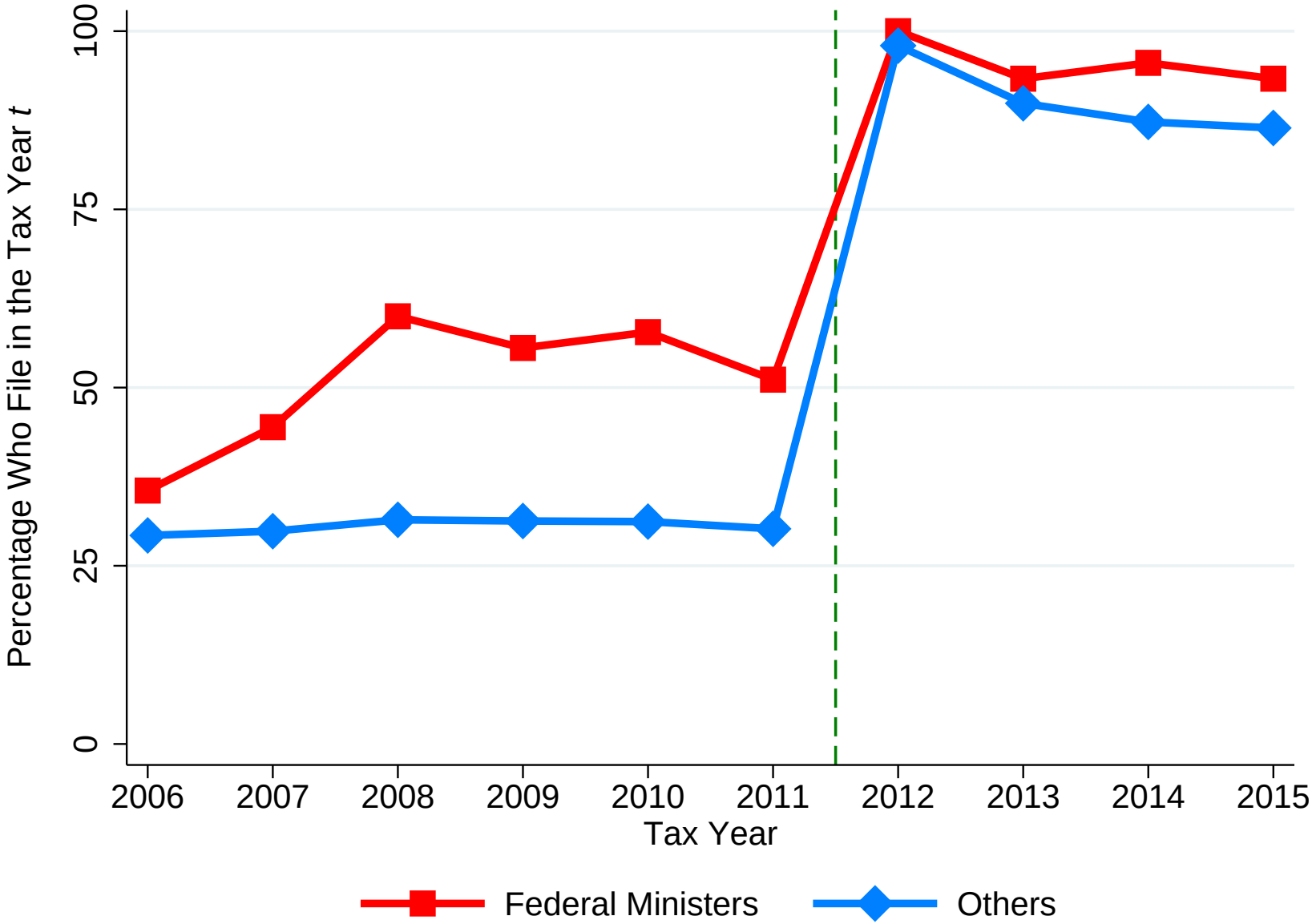
MPs – Extensive Margin



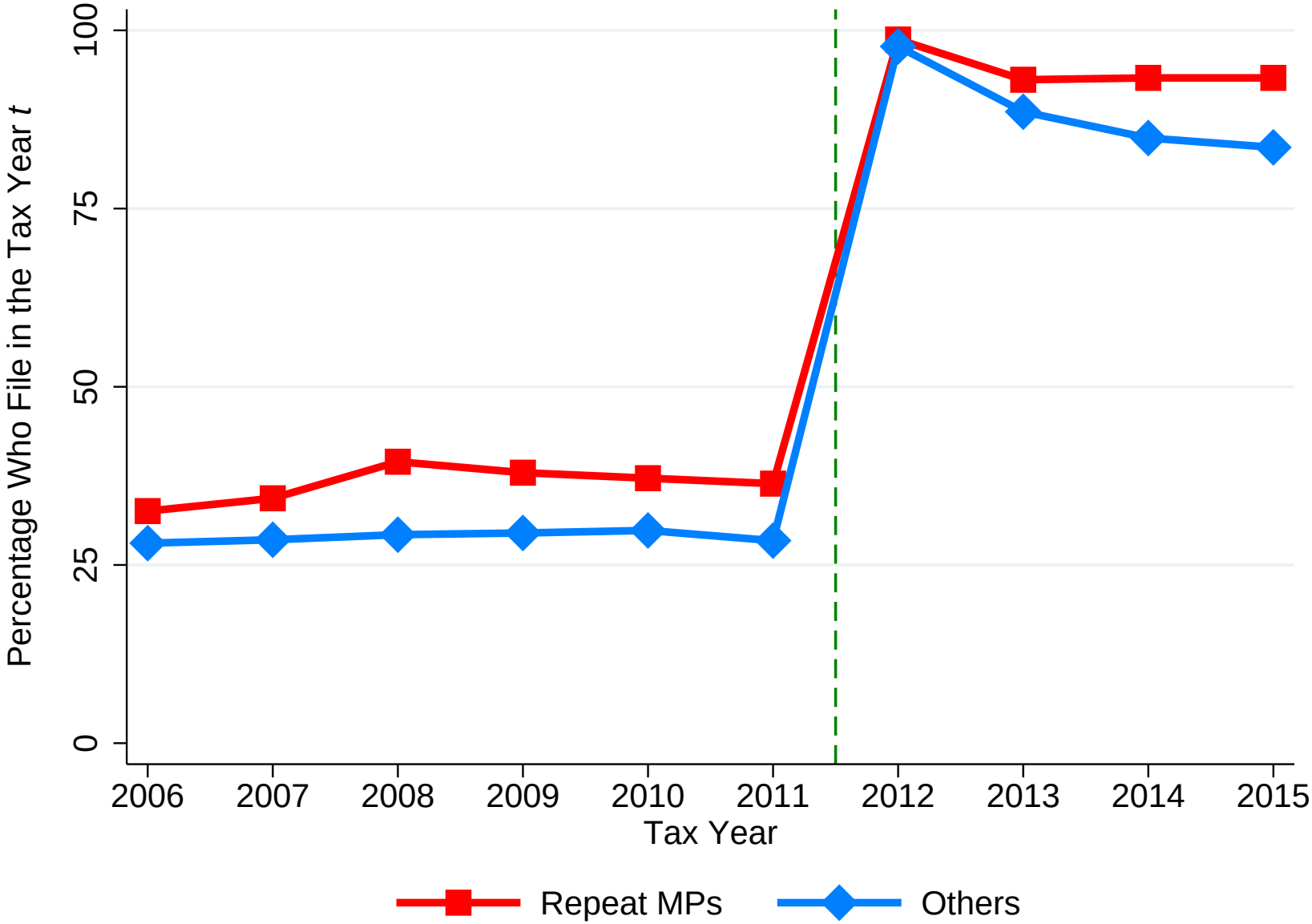
MPs – Extensive Margin



MPs – Extensive Margin



MPs – Extensive Margin



MPs – Extensive Margin

	Dependent Variable: Filed in year t					
	(1)	(2)	(3)	(4)	(5)	(6)
1.(year $\geq$ 2012)	0.592	0.588	0.618	0.587	0.598	0.596
	(0.007)	(0.010)	(0.009)	(0.007)	(0.007)	(0.008)
1.(year $\geq$ 2012) $\times$ ruling party		0.008				
		(0.014)				
1.(year $\geq$ 2012) $\times$ federal			-0.065			
			(0.014)			
1.(year $\geq$ 2012) $\times$ tightly contested				0.082		
				(0.028)		
1.(year $\geq$ 2012) $\times$ federal minister					-0.149	
					(0.035)	
1.(year $\geq$ 2012) $\times$ repeat MP						-0.013
						(0.014)
Constant	0.313	0.309	0.278	0.318	0.306	0.290
	(0.005)	(0.008)	(0.007)	(0.006)	(0.005)	(0.006)
Observations	12,300	12,300	12,300	12,300	12,300	12,300

Outline

Introduction

Institutional Background

Conceptual Framework

Results – Public Disclosure

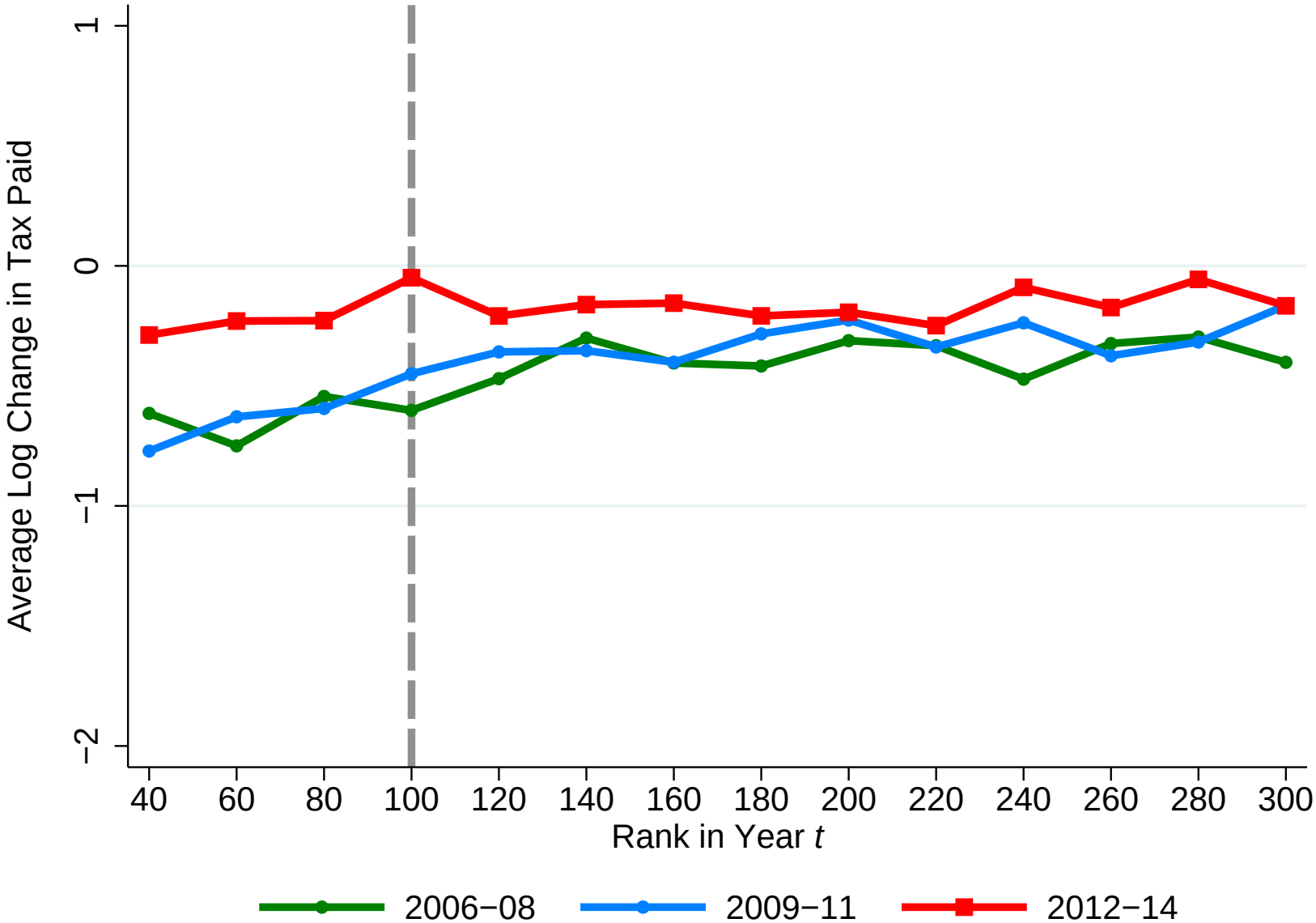
Results – Public Disclosure (MPs)

Results – TPHC Program

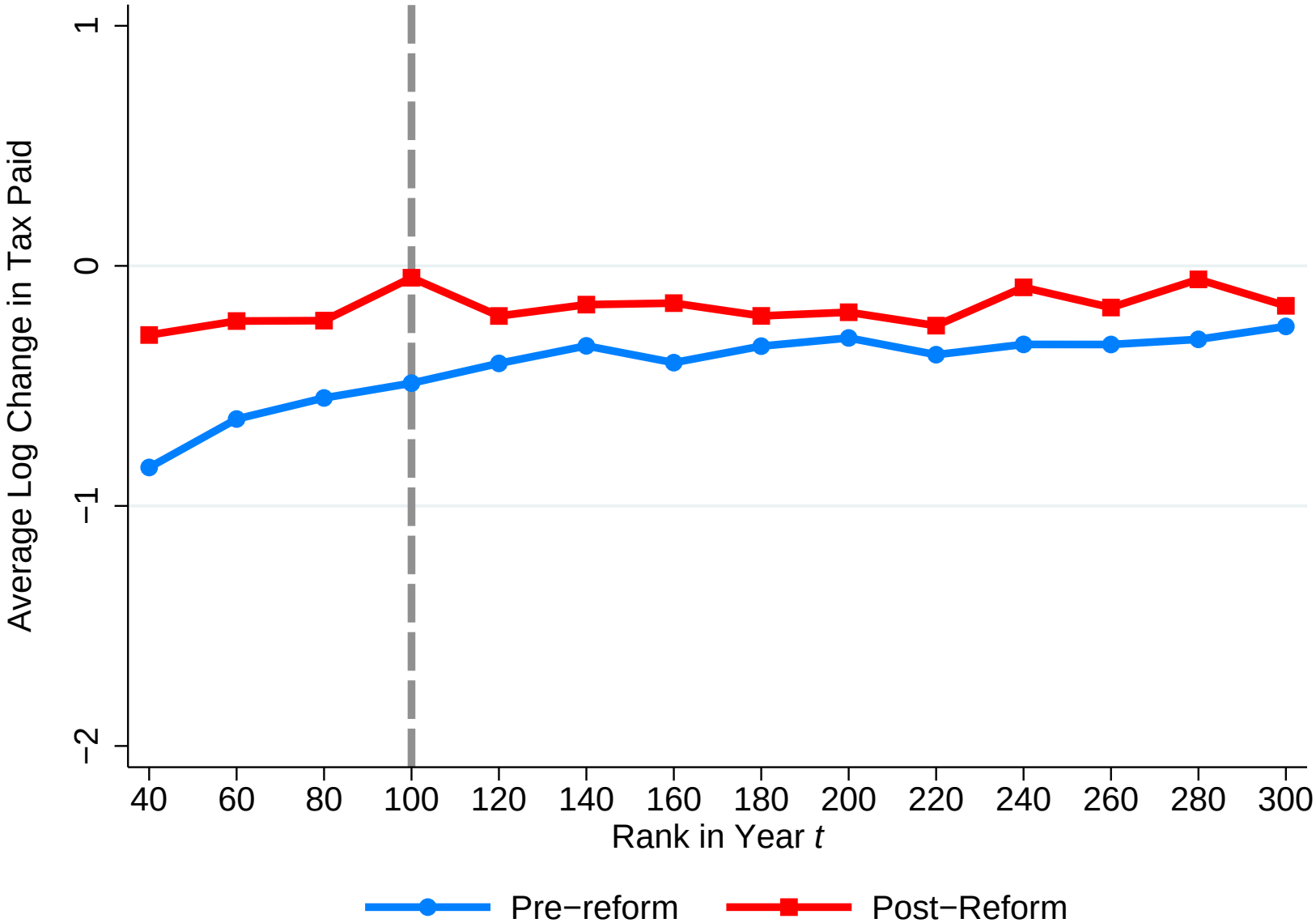
Results – Social Norms

Conclusions

Growth in Tax Remittance



Growth in Tax Remittance



Response to the TPHC Program

	Treat: Rank							
	$\in (80,\ 120]$		$\in (70,\ 130]$		$\in (60,\ 140]$		$\in (50,\ 150]$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A: Main Regression (2006-2014)								
treat × after	0.166	0.138	0.171	0.161	0.136	0.126	0.140	0.128
	(0.075)	(0.077)	(0.062)	(0.064)	(0.054)	(0.055)	(0.048)	(0.049)
treat × 1.(year ∈ {2010,2011})		-0.163		-0.060		-0.058		-0.070
		(0.151)		(0.126)		(0.115)		(0.105)
Observations	32,047	32,047	32,047	32,047	32,047	32,047	32,047	32,047
B: Placebo Regression (2006-2010)								
treat × after	0.019		0.010		-0.086		-0.090	
	(0.120)		(0.102)		(0.091)		(0.081)	
Observations	17,208		17,208		17,208		17,208	

Falsification Exercise

	Treat: Rank							
	$\in (150,\ 200]$		$\in (200,\ 250]$		$\in (250,\ 300]$		$\in (300,\ 350]$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A: Main Regression (2006-2014)								
treat × after	-0.029	-0.001	0.027	0.054	-0.004	0.019	-0.021	-0.003
	(0.068)	(0.076)	(0.065)	(0.072)	(0.058)	(0.065)	(0.066)	(0.071)
treat × 1.(year ∈ {2010,2011})		0.079		0.083		0.065		0.054
		(0.098)		(0.085)		(0.081)		(0.093)
Observations	32,047	32,047	32,047	32,047	32,047	32,047	32,047	32,047
B: Placebo Regression (2006-2010)								
treat × after	0.084		0.025		-0.040		0.058	
	(0.100)		(0.092)		(0.094)		(0.094)	
Observations	17,208		17,208		17,208		17,208	

Response By Taxpayer Category

	Treat: Rank $\in (80, 120]$							
	Self-Employed		Wage-Earners		Partnerships		Corporations	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A: Main Regression (2006-2014)								
treat × after	-0.033	0.013	0.215	0.276	0.036	0.089	0.412	0.267
	(0.205)	(0.241)	(0.143)	(0.172)	(0.105)	(0.114)	(0.115)	(0.129)
treat × 1.(year ∈ {2010,2011})		0.130		0.176		0.144		-0.444
		(0.221)		(0.254)		(0.102)		(0.206)
Observations	7,619	7,619	7,914	7,914	8,185	8,185	8,329	8,329
B: Placebo Regression (2006-2010)								
treat × after	0.231		0.173		0.120		-0.387	
	(0.278)		(0.258)		(0.116)		(0.225)	
Observations	3,993		4,241		4,420		4,554	

Outline

Introduction

Institutional Background

Conceptual Framework

Results – Public Disclosure

Results – Public Disclosure (MPs)

Results – TPHC Program

Results – Social Norms

Conclusions

Did the Two Programs Affect Social Norms?

- Arguably, one motivation of the government in introducing the two programs must have been to inculcate and strengthen a culture of tax compliance in the country

- We investigate if the programs cause a shift of social norms toward compliance using two measures

  - For general population, we explore if the dynamics of the response was heterogeneous across more and less compliant neighborhoods

  - For MPs, we explore if the disclosed tax payments were associated with a higher reelection probability

Public Disclosure and Social Norms

	Trait: Neighborhoods							
	With Proportion of Less-Common-Named Wage-earners Above the Median				With Proportion of Less-Common-Named Top Taxpayers Above the Median			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
treat × after	0.080	0.079	-0.013	0.030	0.069	0.069	-0.022	0.031
	(0.007)	(0.008)	(0.013)	(0.009)	(0.007)	(0.007)	(0.014)	(0.008)
treat × trait × 2012	-0.005	-0.025	-0.043	-0.155	0.010	-0.034	-0.031	-0.256
	(0.011)	(0.012)	(0.016)	(0.015)	(0.011)	(0.012)	(0.017)	(0.016)
treat × trait × 2013	-0.027	-0.022	-0.040	-0.008	-0.028	-0.016	-0.008	-0.026
	(0.011)	(0.012)	(0.018)	(0.014)	(0.012)	(0.012)	(0.019)	(0.015)
treat × trait × 2014	0.037	0.040	0.012	0.081	0.047	0.056	0.027	0.115
	(0.011)	(0.012)	(0.018)	(0.014)	(0.012)	(0.012)	(0.019)	(0.015)
treat × trait × 2015	0.038	0.044	-0.011	0.104	0.048	0.058	-0.006	0.158
	(0.012)	(0.012)	(0.019)	(0.014)	(0.012)	(0.013)	(0.020)	(0.016)
Included Taxpayers	All	All	Top	Bottom	All	All	Top	Bottom
Major Cities Dropped	No	Yes	No	No	No	Yes	No	No
Observations	2,131,611	2,043,533	657,201	1,474,410	2,045,955	1,962,510	649,939	1,396,016

Public Disclosure and Electoral Success

	Definition of Tax Paid:							
	Tax Paid in 2012	Tax Paid in 2013	Tax Paid in 2014	Tax Paid in 2015	Max Tax Paid	Min Tax Paid	Sum of Tax Paid	Diff of 2015 & 2012
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tax Paid	0.064	0.064	0.043	0.043	0.068	0.057	0.062	0.025
	(0.021)	(0.018)	(0.018)	(0.018)	(0.016)	(0.017)	(0.016)	(0.016)
Observations	478	702	734	738	838	838	863	863

Public Disclosure and Electoral Success

	Outcome: The MP Wins the Next Election Held in 2018					
	(1)	(2)	(3)	(4)	(5)	(6)
Tax Paid in 2012	0.064	0.061	0.058	0.051	0.053	0.050
	(0.021)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
Observations	478	478	478	477	475	475
Controls:						
Party Fixed Effects	No	Yes	Yes	Yes	Yes	Yes
House Fixed Effects	No	No	Yes	Yes	Yes	Yes
% Votes Obtained in 2013	No	No	No	Yes	Yes	Yes
Winning Margin in 2013	No	No	No	No	Yes	Yes
Federal Minister	No	No	No	No	No	Yes

Outline

Introduction

Institutional Background

Conceptual Framework

Results – Public Disclosure

Results – Public Disclosure (MPs)

Results – TPHC Program

Results – Social Norms

Conclusions

Conclusions

- Using two Pakistani programs, we explore the importance of pecuniary and nonpecuniary motivations for tax compliance
- We find that public disclosure of taxes and social recognition of top taxpayers leads to increased tax compliance. The programs also cause a shift of social norms toward compliance
- To the extent that factors such as guilt, shame, and pride matter, the governments can leverage them for resource mobilization.