Session 2. Realizing the Potential of Tax Enforcement

Moderator:	*Ron Hodge* *IRS, RAAS*
How Do IRS Resources Affect the Tax Enforcement Process?	*Erin Towery* *University of Georgia*
Tax Audits and Tax Compliance – Evidence from Italy	*Alessandro Modica- Ministero dell'Economia e delle Finanze, Government of Italy*
Valuing Unpaid Tax Assessments – Estimating Long-Run Collectability Using an Econometric Approach	*Alex Turk* *IRS, RAAS*
Discussant:	*Michael Udell* *District Economics Group*

How do IRS resources affect the tax enforcement process?

Erin Towery, University of Georgia

(with Michelle Nessa, Casey Schwab & Bridget Stomberg)

2017 IRS-TPC Research Conference

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Disclaimer

The views expressed in this presentation do not reflect the positions of the Internal Revenue Service.

IRS Funding Has Fallen Sharply

IRS appropriated funding in 2015 dollars, billions

Bar chart values: 2010: $13.4, 2011: $13.2, 2012: $12.6, 2013: $11.6, 2014: $11.5, 2015: $10.9
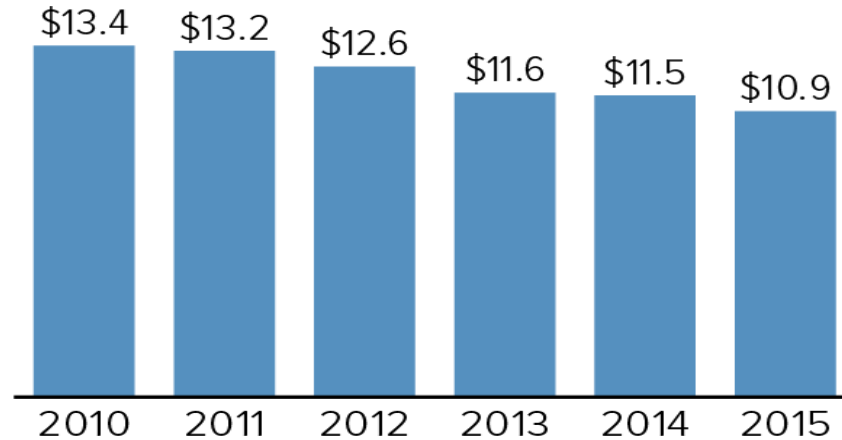
Source: CBPP calculations based on Congressional Budget Office, Office of Management and Budget, and Bureau of Labor Statistics data

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IRS Enforcement Process

Research Question: How do IRS resources affect the corporate tax enforcement process?

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IRS Enforcement Process
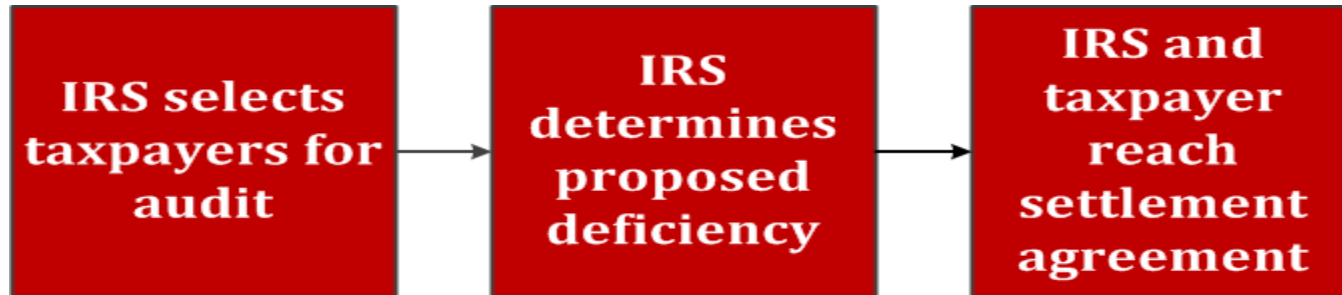
Audit Selection	Proposed Deficiencies	Settlement Outcomes	Associations with IRS Resources
Reduction in IRS resources → **Maintain rate of audit**	Maintain scope and depth of audit	Decrease settlement resources	Audit probability: n.s. Proposed Def: n.s Settlement Ratio: +
	Reduce scope and depth of audit	Maintain settlement resources	Audit probability: n.s. Proposed Def: + Settlement Ratio: -
Decrease rate of audit	Maintain scope and depth of audit	Maintain settlement resources	Audit probability: + Proposed Def: n.s Settlement Ratio: n.s.
	Reduce scope and depth of audit	Maintain settlement resources	Audit probability: + Proposed Def: + Settlement Ratio: -

Hypotheses

IRS resources are not associated with the:

H1a: probability of audit.

H1b: incidence of proposed deficiencies.

H1c: magnitude of proposed deficiencies.

H1d: proportion of deficiencies collected.

Research Design (H1a)

$$IRSAudit_{i,t} = \alpha_0 + \alpha_1 IRSResources_{t+k} + \sum Controls_{i,t} + \varepsilon$$

➢ *IRSAudit* = Indicator equal to 1 if IRS audits return year (H1a)
- Linear probability model (LPM)

➢ IRS Resources: (measured in year after return is filed)
- Enforcement expenditures
- Number of revenue agents
- Both scaled by total number of returns filed

➢ Control variables:
- Based on Mills (1998), Wilson (2009), and Lisowsky (2010)

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Research Design (H1b/c)

$$Deficiency_{i,t} = \alpha_0 + \alpha_1 IRSResources_{t+k} + \sum Controls_{i,t} + \varepsilon$$

➤ *Deficiency*:
- Indicator equal to 1 if IRS proposes a deficiency (H1b) - LPM
- Proposed deficiency scaled by Tax Savings (H1c) – OLS

➤ IRS Resources measured in year audit begins
- Scaled by total number of returns examined

➤ Sample: All audited returns

Research Design (H1d)

$$Settlement_{i,t} = \alpha_0 + \alpha_1 IRSResources_{t+k} + \sum Controls_{i,t} + \varepsilon$$

➢ *Settlement* = Total settlements scaled by the proposed deficiency (H1d) – OLS
  ▪ Higher (lower) values more favorable to the IRS (taxpayer)
➢ IRS Resources measured in year audit begins
  ▪ Scaled by total number of returns examined
➢ Control for level of proposed deficiency
➢ Sample: Returns with *PropDef* > 0

Sample

➢ Merged Compustat with IRS tax return, audit and settlement data using EINs

➢ Includes tax-return years from 2000 to 2010
  ▪ To allow for sufficient time for returns to be selected for audit and move through the audit and appeals process

➢ Includes IRS audits conducted from 2002 to 2014

Probability of audit (H1a)

IRSResources =		Enforce_Filed		RevAgents_Filed	
		Coef.		Coef.	
Variable		t-statistic		t-statistic	
IRSResources	H1a	4.9839	***	2.7185	***
		2.63		3.05	
Controls		Included		Included	
Adjusted R^2		0.1402		0.1403	
N		31,549		31,549	

One standard deviation decrease is associated with a 2.3 percentage point decrease in audit probability relative to the base probability.

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Incidence of proposed deficiencies (H1b)

IRSResources =		Enforce_Audited	RevAgents_Audited
		Coef.	Coef.
Variable		t-statistic	t-statistic
IRSResources	H1b	0.0201 ***	0.0088 ***
		3.00	2.99
Controls		Included	Included
Adjusted R^2		0.1170	0.1170
N		11,899	11,899

One standard deviation decrease is associated with a 3.2 percentage point decrease in the probability of a proposed deficiency relative to the base probability.

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Magnitude of proposed deficiencies (H1c)

IRSResources =		Enforce_Audited	RevAgents_Audited
		Coef.	Coef.
Variable		t-statistic	t-statistic
IRSResources	H1c	0.0098 ***	0.0042 ***
		3.13	3.07
Controls		Included	Included
Adjusted R^2		0.1170	0.1170
N		11,899	11,899

One standard deviation decrease is associated with a $497,000 decrease in proposed deficiencies per audited return.

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Proportion of Deficiencies Collected (H1d)

IRSResources =		Enforce_Audited	RevAgents_Audited
Variable		Coef. t-statistic	Coef. t-statistic
IRSResources	H1d	-0.0218 ** -2.32	-0.0087 ** -2.13
Controls		Included	Included
Adjusted R^2		0.0638	0.0635
N		5,840	5,840

One standard deviation decrease is associated with a $179,000 increase in settlements per return with a deficiency.

Aggregate effect

➢ One standard deviation ↓ in the enforcement budget = **$14.2 billion** from 2002-2014

➢ Net effect: A one standard deviation ↓ in IRS resources associated with a loss in collections of **$3.3 billion** *for our sample returns* from 2002-2014

➢ Extrapolating estimates to *all* large corporations, a one standard deviation ↓ in IRS resources associated with a loss in collections of **$28.7 billion**

➢ Estimates do not include small corporations or individual taxpayers

Conclusion

➢ Resource reductions compel the IRS to be strategic during the corporate tax enforcement process

- IRS decreases the rate of audit

- IRS proposes fewer and smaller deficiencies

- IRS collects more of the deficiencies proposed

➢ Taxpayer and tax authority interaction

- Identify level of IRS resources as an important determinant of audit probability and proposed deficiencies

- Examine the negotiation process that follows the completion of an IRS exam

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TAX AUDITS AND TAX COMPLIANCE – EVIDENCE FROM ITALY

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Marco Manzo
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IRS – TPS Research conference

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Outline

- Motivation and related literature

- The dataset

- The empirical model
  - The indirect effect of tax audits
  - Tax audit effect by type of tax audit
  - The general deterrence effect

- Conclusions

Motivation and Related Literature

- Tax audits:
  - directly detect tax evasion;
  - promote voluntary compliance (indirect effect).

- Gemmell and Ratto (2012): Indirect effect implies a behavioral response of audited taxpayers ("corrective effect") and non-audited taxpayers ("deterrent effect").

Motivation and Related Literature

- Many studies using **aggregate data** find that the effect on tax compliance is positive and that the indirect effect prevails over the direct effect (e.g. Plumley, 1996 and Dubin, 2007).
- Others, using **individual data, find contrasting results:**
  - DeBacker et al. on U.S. tax data find that compliance of corporations **decreases** after an audit.
  - Advani et al. (2015) on UK data find that compliance of self-employed **increases** after an audit.

Motivation and Related Literature

- Innovating on a companion paper (D'Agosto et al, 2017), we use a panel of Italian firms to estimate the impact of tax audits on tax compliance.

- We consider different types of taxes and different categories of audit programs.

- We extend the analysis to estimate the effect of tax audits on non-audited taxpayers (general deterrence effect).

- Particularly relevant in Italy, where tax evasion has been estimated in about the 7% of the GDP.

The dataset

- Balanced panel with micro level data on small business over the period 2006-2011.

- Among small businesses, the propensity to underreport income is higher than the national average.

Table- Audits by category and year

	Desk Audit		Field Audit		Audited Taxpayers	% audited	Taxpayers
	full	partial	deep	soft			
2006	1,339	5,425	844	6,919	11,392	9.0%	126,401
2007	1,424	6,078	977	6,036	11,253	8.9%	126,401
2008	1,938	6,456	1,103	4,732	10,950	8.7%	126,401
2009	2,826	5,083	1,054	4,385	10,127	8.0%	126,401
2010	2,679	4,671	996	4,162	9,503	7.5%	126,401
2011	2,339	4,135	1,079	4,175	8,846	7.0%	126,401

The dataset

Table- SDS program

	Audited	Non-Audited	Total
% of SDS coherent	47%	58%	57%
% of SDS congruent	56%	67%	62%

- SdS is an audit program for small and medium sized firms, introduced in Italy in 1998.
- "non-congruent" = sales below the estimated level.
- "non-coherent" = value of some indicators different from the computed benchmark.
- If non-congruent and/or non-coherent, probability of being audited increases.

The empirical model

- Using a fixed effect estimator that accounts for individual time-invariant heterogeneity, we estimate the following equation:

$$y_{it} = a_i + d_t + \beta A_{it} + X'_{it}\gamma + \varepsilon_{it}$$

- a_i is a time-invariant fixed effect;
- A_{it} is a the audit dummy;
- X'_{it} is a vector of control variables.

Results– indirect effect

	Regional Business Tax	VAT	PIT
Audit	0.018	0.053	0.052
	(0.009)**	(0.016)***	(0.013)***
Audit$_{t-1}$	0.031	0.011	0.035
	(0.009)***	(0.016)	(0.012)***
SDS congruence	0.304	0.281	0.433
	(0.007)***	(0.012)***	(0.009)***
SDS coherence	0.390	0.132	0.768
	(0.007)***	(0.011)***	(0.009)***
Number of Observation	633,745	650,780	644,555

Time dummies and controls (sales, total revenue, total costs, labor costs) included. Robust standard errors in parenthesis.

- Following a tax audit, taxpayers increase the regional business tax paid by 1.8% and by 3.1% in the subsequent year.

- The effect of the audit looks stronger for the personal income tax paid and the VAT.

- The effect of the audit is less persistent on VAT compliance.

Results– robustness

	Regional Business Tax	VAT	PIT	Regional Business Tax	VAT	PIT
Audit	0.030	0.053	0.061	0.044	0.068	0.096
	(0.011)***	(0.019)***	(0.015)***	(0.027)	(0.051)	(0.037)***
$Audit_{t-1}$	0.043	0.009	0.046	0.080	0.035	0.086
	(0.011)***	(0.019)	(0.014)***	(0.025)***	(0.048)	(0.034)**
$Audit_{t-2}$				0.035	-0.005	0.006
				(0.020)*	(0.039)	(0.027)
$Audit_{t+1}$	0.006	-0.003	0.023	0.017	-0.042	0.068
	(0.011)	(0.020)	(0.015)	(0.027)	(0.050)	(0.036)*
$Audit_{t+2}$				0.001	-0.042	0.070
				(0.022)	(0.043)	(0.031)**
SDS congruence	0.280	0.286	0.412	0.222	0.264	0.354
	(0.008)***	(0.014)***	(0.011)***	(0.014)***	(0.026)***	(0.019)***
SDS coherence	0.447	0.118	0.775	0.529	0.178	0.918
	(0.008)***	(0.013)***	(0.010)***	(0.013)***	(0.025)***	(0.018)***
Number of Observation	505,604	520,624	515,644	252,802	260,312	257,822

Time dummies and controls (sales, total revenue, total costs, labor costs) included. Robust standard errors in parenthesis.

- Future audits do not have any statistically significant explanatory power on the tax paid;
- Using two leads and two lags of the audit variable, the consistency of the estimates is confirmed for the Regional Business Tax and for the VAT model but not for the PIT model.

Results– parallel trend
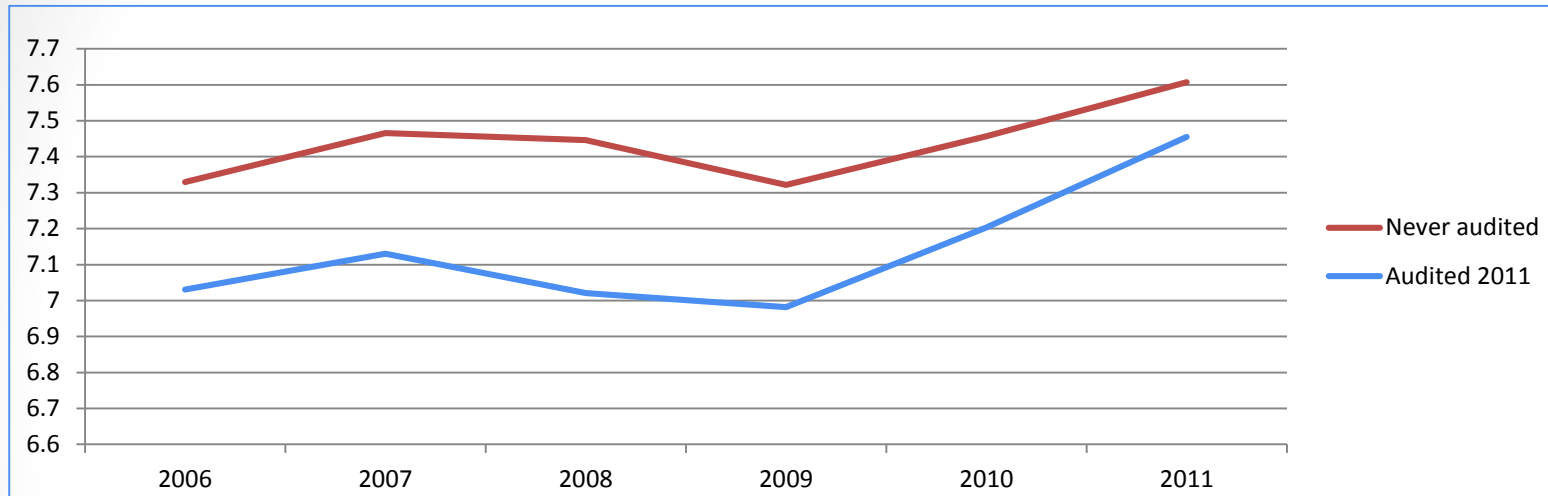
- The pre-treatment trend of the PIT (in logs) is similar across the two groups.

- The same analysis, considering shorter pre-treatment periods, leads to similar result.

Results– by type of Audit

	Regional Business Tax	Regional Business Tax	VAT	PIT
	(1)	(2)		
Full Desk Audit $_t$	0.190	0.189	0.181	0.147
	(0.019)***	(0.019)***	(0.032)***	(0.026)***
Partial Desk Audits $_t$	-0.009	-0.007	-0.019	0.013
	(0.014)	(0.014)	(0.024)	(0.018)
Field Audit Deep $_t$	0.008	0.008	0.022	0.037
	(0.025)	(0.025)	(0.047)	(0.039)
Field Audit Soft $_t$	-0.032	-0.079	0.046	0.013
	(0.014)**	(0.022)***	(0.025)*	(0.020)
Full Desk Audit $_{t-1}$	0.176	0.175	0.109	0.119
	(0.019)***	(0.019)***	(0.034)***	(0.027)***
Partial Desk Audits $_{t-1}$	0.023	0.024	0.011	0.029
	(0.013)*	(0.013)*	(0.023)	(0.018)*
Field Audit Deep $_{t-1}$	0.047	0.047	-0.020	-0.026
	(0.025)*	(0.025)*	(0.047)	(0.040)
Field Audit Soft $_{t-1}$	-0.048	-0.098	-0.029	0.017
	(0.013)***	(0.019)***	(0.024)	(0.018)
SDS congruence	0.302	0.299	0.280	0.433
	(0.007)***	(0.007)***	(0.012)***	(0.009)***
SDS coherence	0.389	0.388	0.132	0.768
	(0.007)***	(0.007)***	(0.011)***	(0.009)***
Field Audit Soft and SDS congruence $_t$		0.081		
		(0.025)***		
Field Audit Soft and SDS congruence $_{t-1}$		0.091		
		(0.022)***		
Number of Observation	632,005	632,005	650,780	644,555

Time dummies and controls (sales, total revenue, total costs, labor costs) included. Robust standard errors in parenthesis.

- Full desk audits are the most effective in increasing tax compliance.
- The effect of soft field audit is positive on the sample of congruent taxpayers.

Results– spillovers

	Regional Business Tax	Regional Business Tax	Regional Business Tax
Full Desk Audit $_t$	0.135	0.138	0.135
	(0.023)***	(0.023)***	(0.023)***
Partial Desk Audits $_t$	-0.012	-0.011	-0.011
	(0.018)	(0.018)	(0.018)
Field Audit Deep $_t$	-0.007	-0.007	-0.007
	(0.032)	(0.032)	(0.032)
Field Audit Soft $_t$	-0.022	-0.022	-0.022
	(0.018)	(0.018)	(0.018)
Full Desk Audit $_{t-1}$	0.130	0.129	0.129
	(0.023)***	(0.023)***	(0.023)***
Partial Desk Audits $_{t-1}$	-0.005	-0.004	-0.004
	(0.016)	(0.016)	(0.016)
Field Audit Deep $_{t-1}$	0.026	0.026	0.026
	(0.031)	(0.031)	(0.031)
Field Audit Soft $_{t-1}$	-0.013	-0.012	-0.012
	(0.016)	(0.016)	(0.016)
% additional Reg. Bus. tax evaded and detected by province		0.033	0.032
		(0.004)***	(0.004)***
Audit rate by province	0.017		0.011
	(0.005)***		(0.005)**
SDS congruence	0.275	0.274	0.274
	(0.009)***	(0.009)***	(0.009)***
SDS coherence	0.479	0.479	0.479
	(0.009)***	(0.009)***	(0.009)***
Number of Observations	419,072	419,072	419,072

Time dummies and controls (sales, total revenue, total costs, labor costs) included. Robust standard errors in parenthesis.

- Increasing the regional audit rate by 1%, tax compliance increases by a percentage between 1.1% and 1.7%.
- The percentage of tax evasion detected has a positive effect on compliance.

Conclusions

- Tax audits exert a significant and positive effect on tax compliance.

- The magnitude and the persistence of the effect are different across taxes.

- The full desk audits turn out to be the most effective in increasing tax compliance.

- The analysis provides preliminary evidence of the existence of a general deterrent effect of tax audits on non-audited taxpayers.

Valuing Unpaid Tax Assessments: Estimating Long Run Collectability Using an Econometric Approach

Alex Turk, Eric Henry, Dan Howar, Maryamm Muzikir
Internal Revenue Service
IRS/TPC Research Conference
June 2017

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Overview

- Background and Objective

- Data and Methodology

- Form 1040 and Form 941 Results
  - Recovery Rate
  - Unpaid Assessments Inventory Value

- Conclusions

Financial Statement Reporting of UA

- As of Fiscal Year 2016 there were 400 billion dollars in unpaid assessments the IRS has the authority to collect.
  - 10 year collection statute
- The current method for estimating the collectable value of unpaid assessments involves conducting intensive reviews of a sample
  - Resource and time consuming
  - Accuracy risk

Unpaid Assessments Financial Classes
- Taxes Receivables
  - Voluntarily reported assessments and IRS enforcement assessments where the taxpayer has agreed.
  - IRS reports on its financial statements an estimated dollar amount it is likely to collect from the taxes receivable portion of the unpaid assessments inventory.
- Compliance Assessments
  - Un-agreed enforcement assessments.
- Write-offs
  - Amounts deemed to have little collection potential, but by statute must remain on the books for ten years.

Composition of the Total Gross Unpaid Assessments
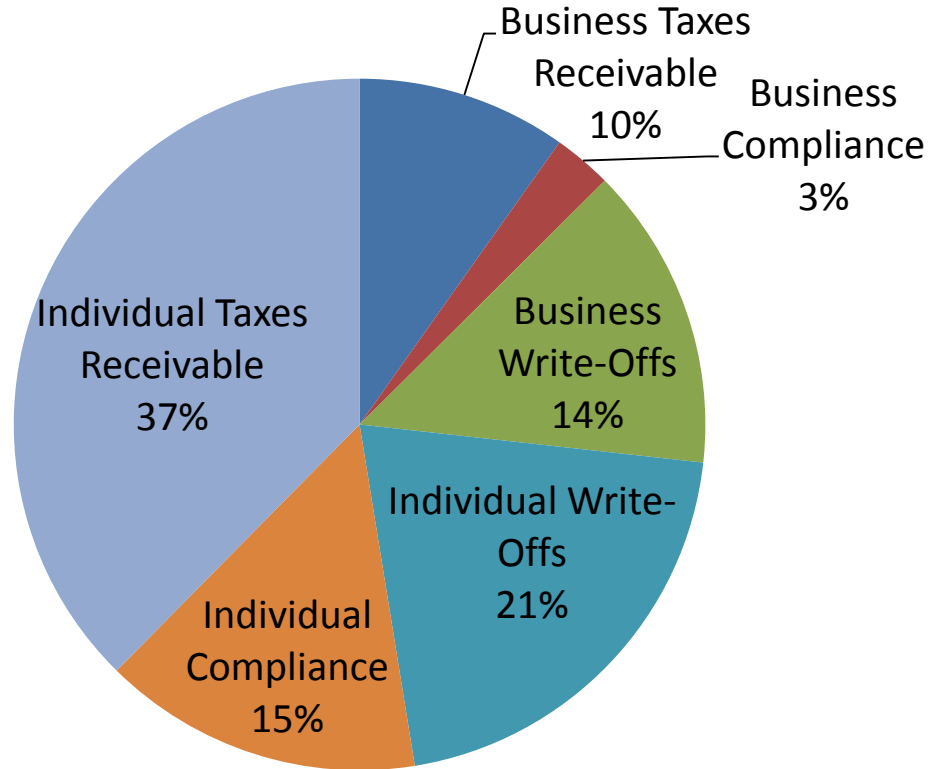
Source: Custodial Detail Database (CDDB) as of September 30, 2016, individual Master File and Business Master File extract cycles 201637.

Objective

- Develop a predictive model to determine the net realizable value of each unpaid assessment at each point in time

    - Estimate the proportion of the current balance that will be recovered over the remaining life of the unpaid assessment

    - Recovery Rate: total net payments in the future as a percentage of the current unpaid balance

- Discount the current balance of each assessment based on the estimated proportion that will be recovered

Example of Collection Rates

- Older debt is less collectible and
- Less collectible debt gets older

Recovery Rate for 2005 IMF Form 1040 Unpaid Assessments

Recovery Rate for 2005 BMF Form 941 Unpaid Assessments
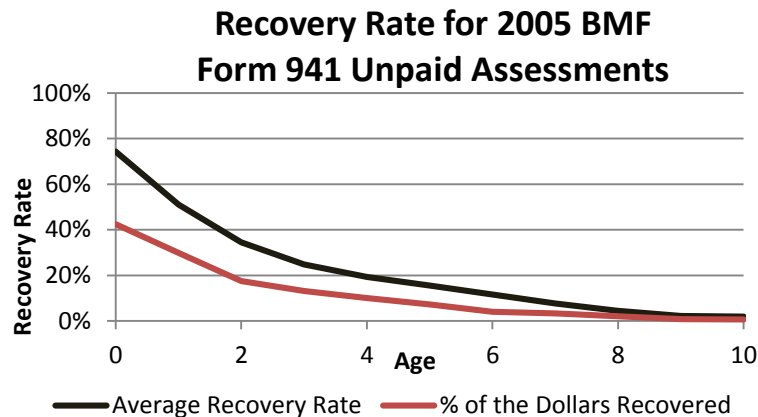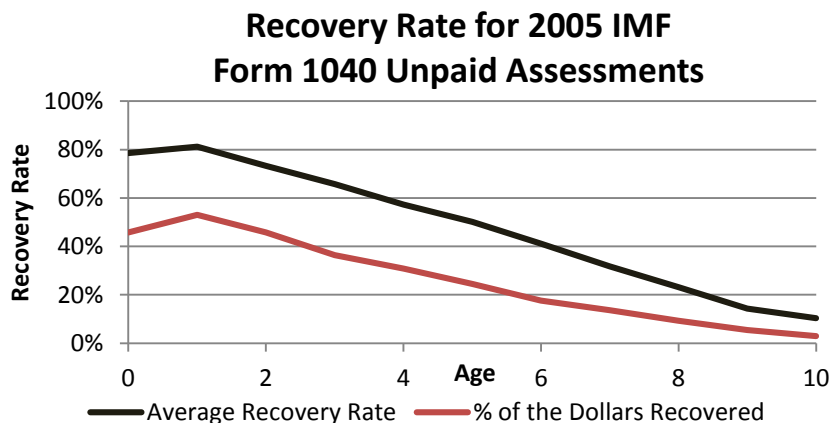
Source: Compliance Data Warehouse, Unpaid Assessment Entity and Module Information, Unpaid Assessment Inventory as of January, 2005, net payments on the associated modules 2005-2015

Data

- **Data for Model Development**
  - 11 Years of Unpaid Assessment Inventory
    - Repeated cross section of UA 2004-2014 in January of each year
  - Annual net payment amounts
    - 2002 to 2016(June) for each module
  - Data comes from Compliance Data Warehouse Unpaid Assessments

- **Data Dilemma**
  - Cases from recent years may be more relevant in terms of IRS resources and policy.
  - Older years have more cases where the full payment stream is observed.

- **Methodology to Control for Unobserved Payments**
  - Models approximate the potential payments not observed by the end of sample period of the data (Calendar year 2016)
  - Controlling for truncation allows for a "full statute" estimate of the value

Model Methodology

- Define recovery as total net payments in the future as a percentage of the current balance
  - Payments are NOT discounted based on when they are received
  - Recovery is defined as 100 percent when the future payments exceed the current balance

- Model generates an estimated recovery percentage (ranges from 0 to 100 percent)

- Estimated value = expected percent recovered multiplied by current balance

- Separate models/calculations for individual and business tax classes

- Models all cases regardless of financial classification

Overview of the Model

Let
- P_t be the net payments made during a year on an unpaid assessment module and
- B_n be the current total module balance, then

$$Y = \frac{\sum_{t=n}^{10} P_t}{B_n}$$

Then let

R = Max (Y,1)

We can then model recovery, R, as

Estimated Recovery = E(R) = F (Xβ) = $\dfrac{e^{X\beta}}{1+e^{X\beta}}$

Where F () is a cumulative logistic distribution function.
- The non-linear logistic regression model will provide the expected recovery, ranging between zero and one, on each module given the module characteristics X.

Controlling for Unobserved Payments

- A case has unobserved payments when
    1. At the end of our sample, the case is sill in UA and
    2. The observed recovery rate is less than 1

- Let T=1 if the above conditions are met, zero otherwise, then model T as

$$\textbf{\textit{Prob(T=1)}} = \frac{e^{Z\propto}}{1+e^{Z\propto}}$$

      Where Z Contains
- Variables in X
- Year dummy variables

- Provides a probability of the payment stream being truncated
    – Included in the recovery model

Controlling for Unobserved Payments

- $X_t \beta = \beta_0 + \beta_1 \ln(\text{Module Balance}) + \ldots$

  $+\beta_p(\text{Probability of not observing all payments})$

  $+\beta_T(\text{Time Remaining on the statute at the end of the sample})$

  - This equals zero if recovery is 100 percent or more and there is time left on the statute

- For a "full statute" estimate of recovery, set to zero:

  - Probability of not observing all payments and,

  - Time remaining on the statute at the end of the sample

Dealing with Payment Truncation

Table 1: Recovery Model Payment Truncation Controls*		
	Probability of Truncated Payments	Time Remaining at the end of the Sample
Form 940	2.732	-1.916
	(0.022)	(0.013)
Form 941	2.232	-1.125
	(0.011)	(0.003)
Form 1040	0.791	-0.776
	(0.009)	(0.002)
Form 1065	1.350	-1.327
	(0.025)	(0.012)
Form 1120x	1.770	-0.999
	(0.035)	(0.007)
TFRP	-0.456	-0.601
	(0.015)	(0.003)
Business Other	1.330	-1.214
	(0.014)	(0.006)
Individual Other	0.198	-0.616
	(0.084)	(0.019)
* All estimates are significant the 5% level		

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Form 1040 Results

All Form 1040 UA Inventory– Average % of Modules and Dollars Recovered

131
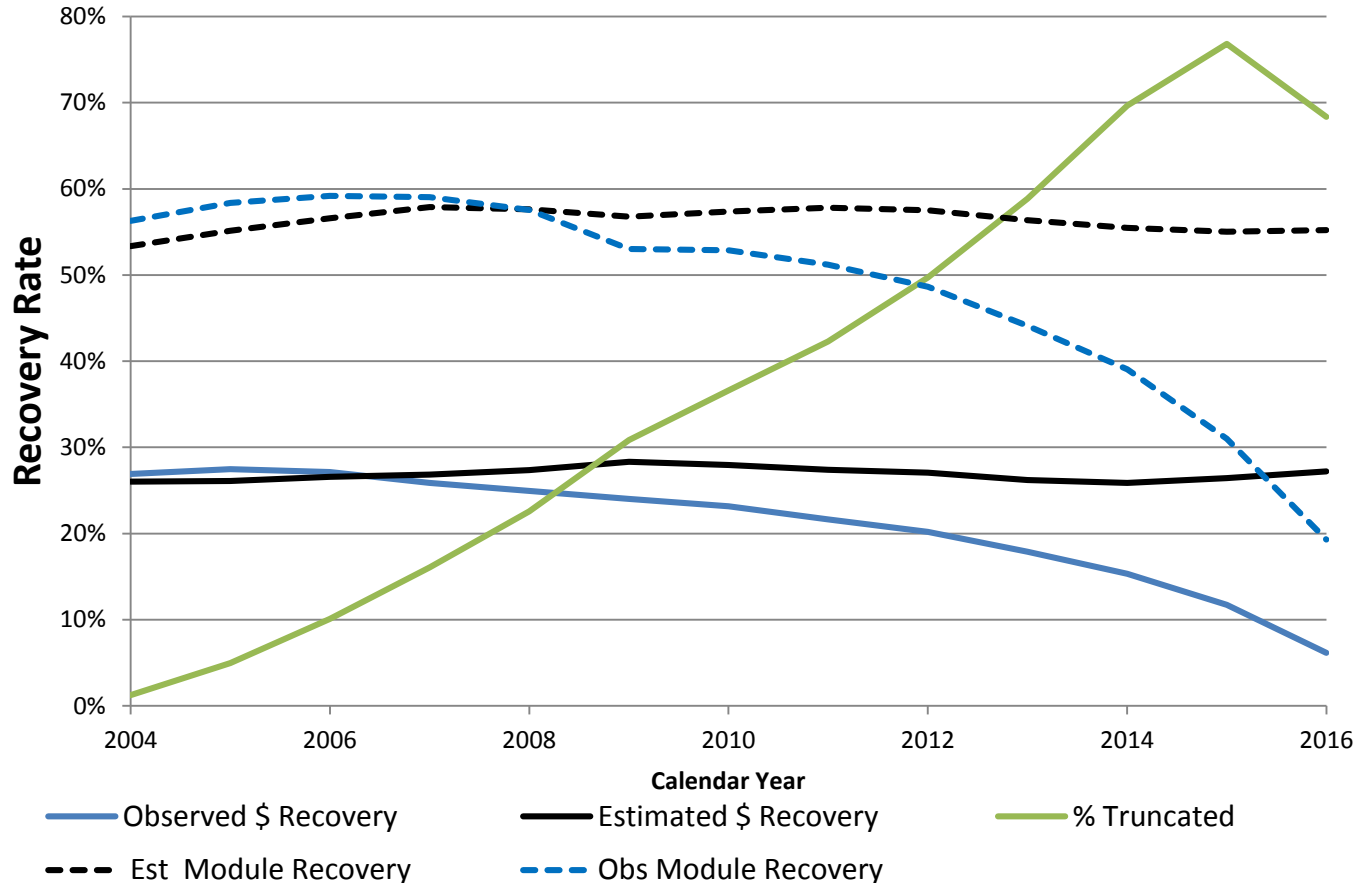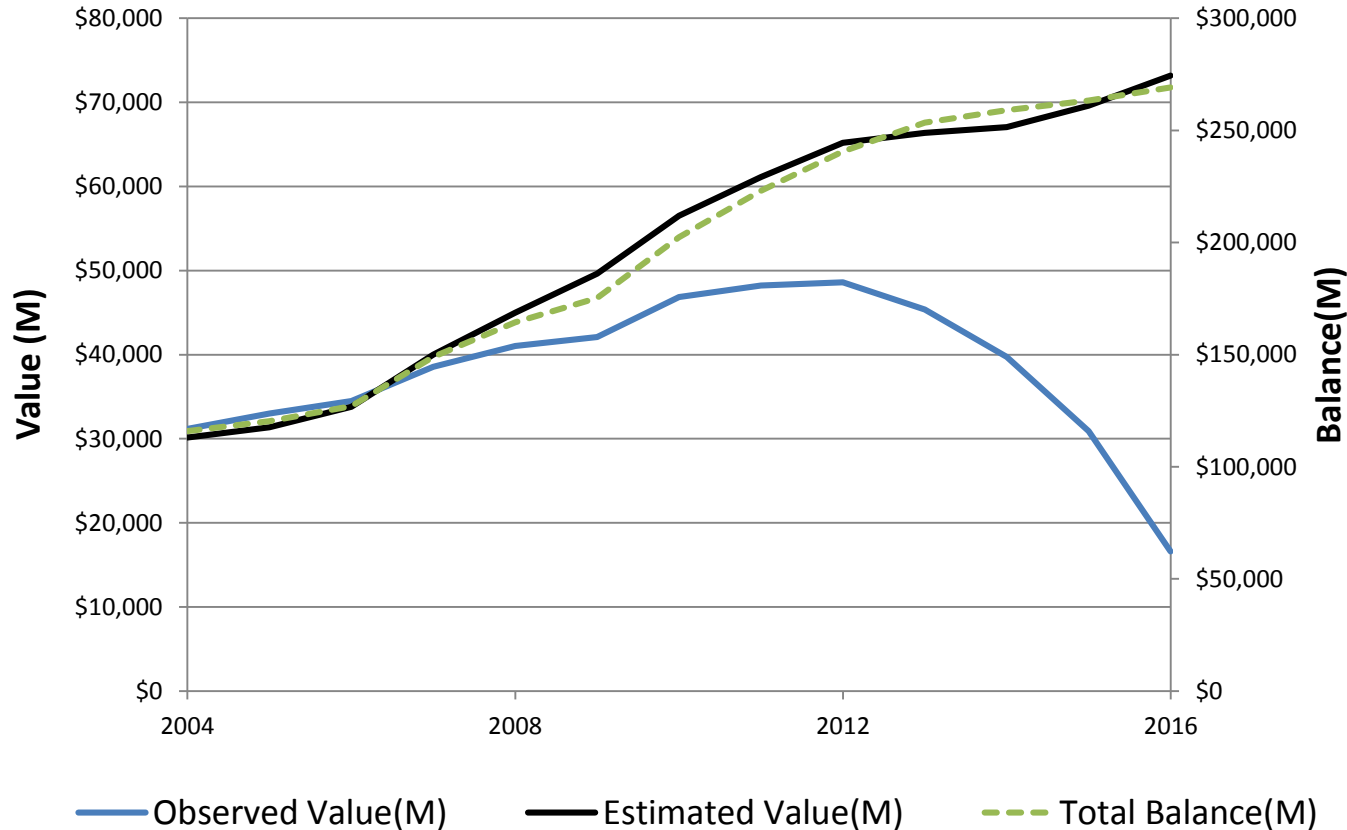
Form 1040 Results
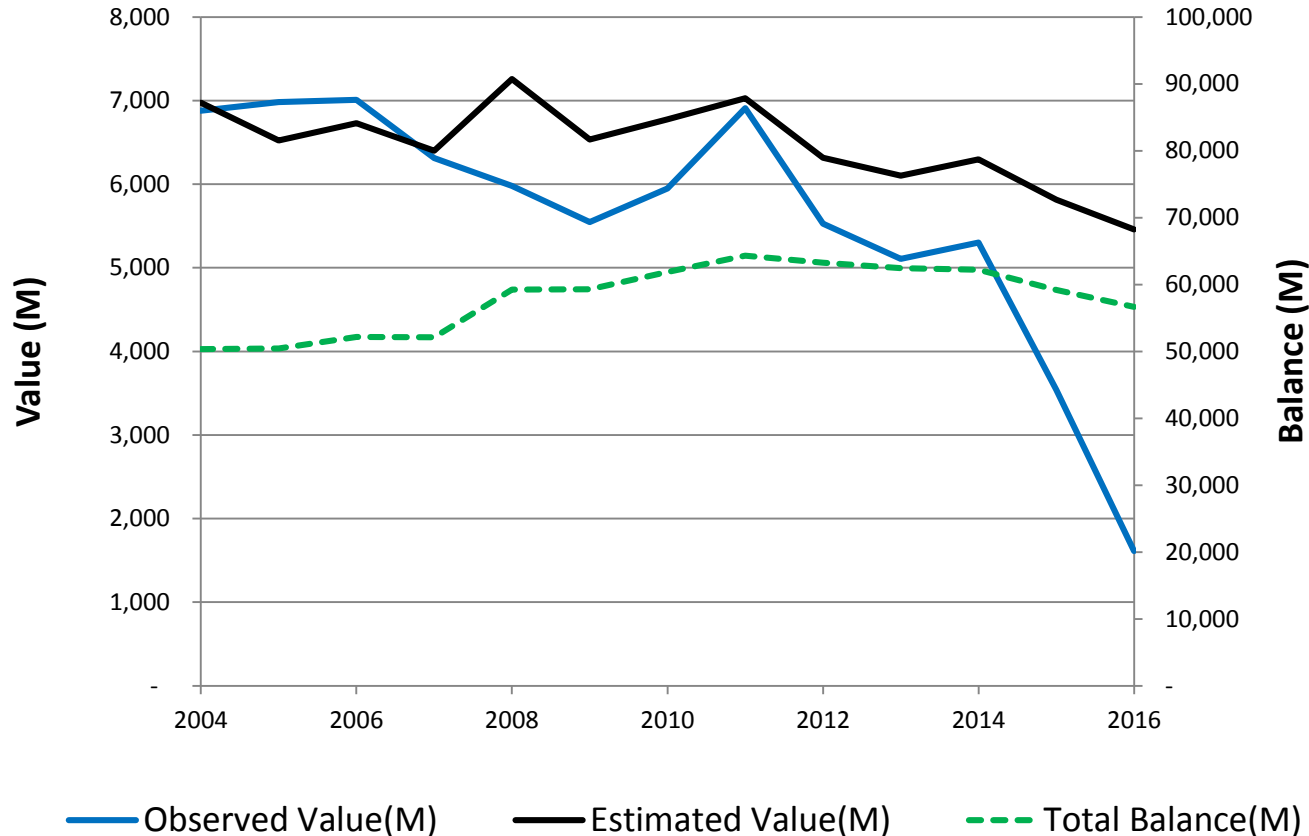

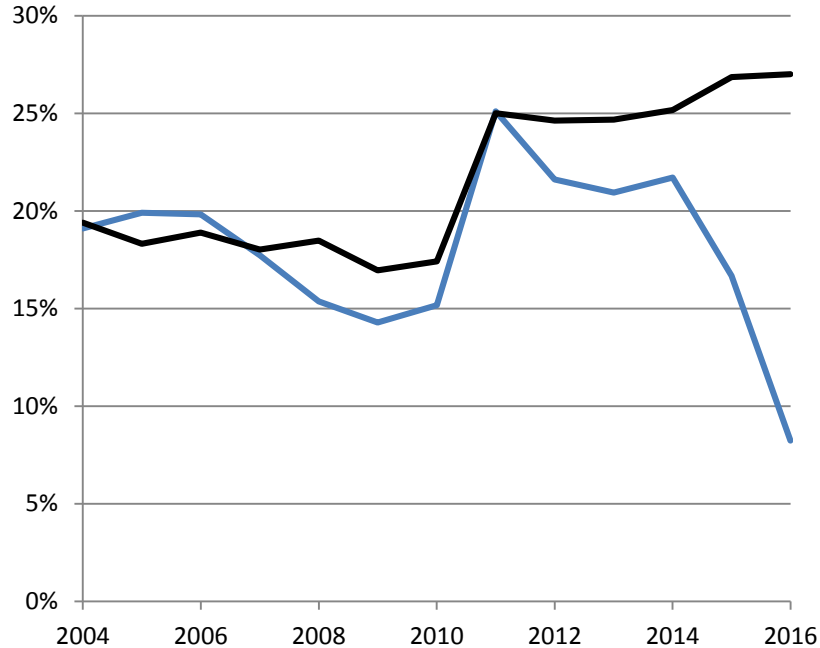All Form 1040 – Aggregate Value and Module Balance

Form 941 Results
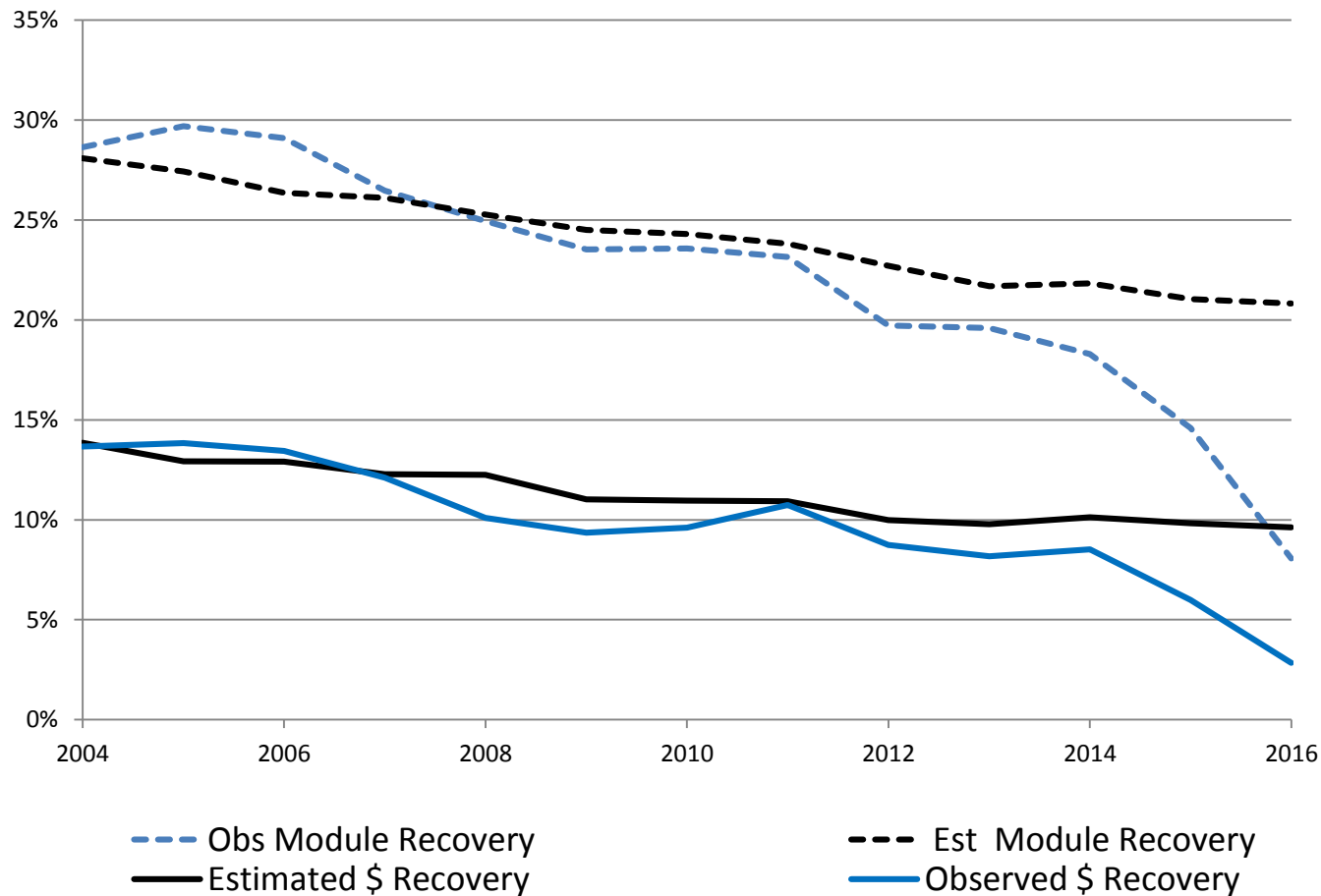
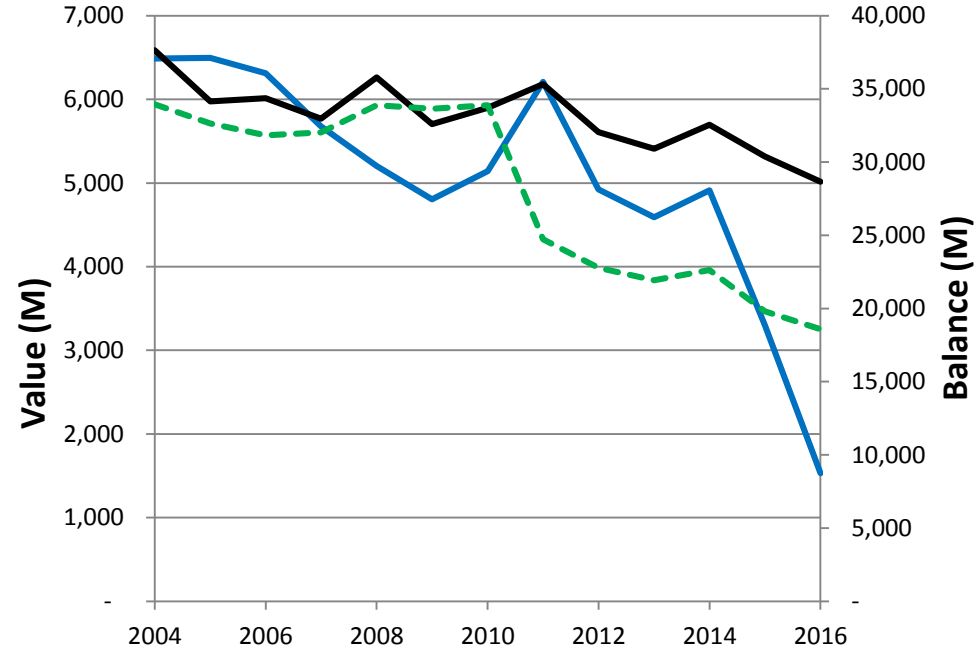All Form 941– Average % of Modules and Dollars Recovered

Legend:
- - - - Obs Module Recovery
- - - - Est Module Recovery
──── Estimated $ Recovery
──── Observed $ Recovery

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Form 941 Results

All Form 941–
Aggregate
Value and
Module
Balance

Legend: Observed Value(M) — Estimated Value(M) — Total Balance(M)

Form 941 Taxes Receivable

Conclusions

- Estimates derived from historical collectability observed over an extensive timeframe

- Transparent explanations for changes in the estimated value

- UA value can be continuously updated as newer information is acquired

- Estimates value for the entire UA Inventory

- Helps ensure clean audit opinions on the IRS custodial financial statements

Realizing the Potential of Tax Enforcement

Washington, D.C.   21 June, 2017
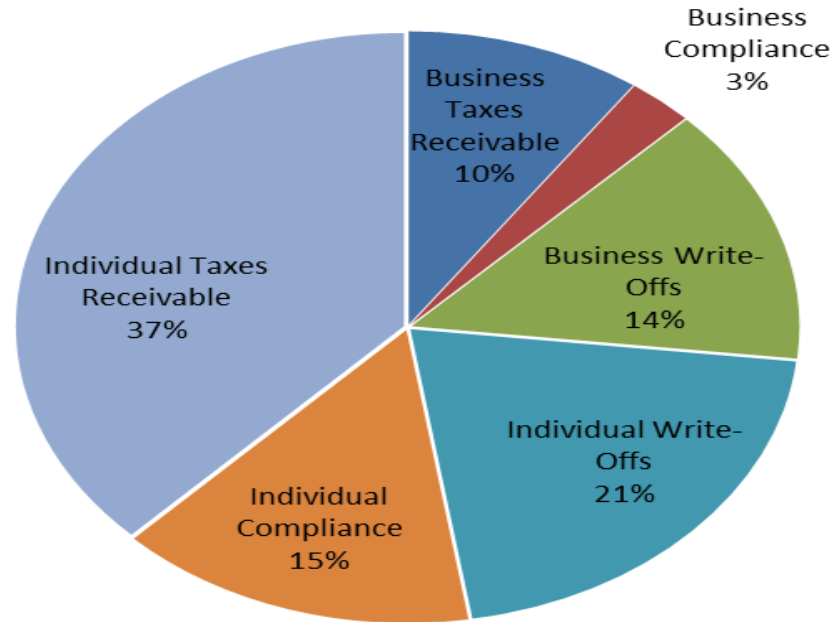
Introduction

- If you were to consider purchasing the IRS or the IRA how would you determine how much to pay?

- First, a metric such as revenue per person might be useful from which a variety of measures of IRS/IRA performance could then be calculated to determine the contributions of the functions of the organization.

- For example, at the end of FY 2016 the net collections of the IRS per person in the U.S. was $8,979 as roughly $2.907 trillion in net revenues divided by 323.8 million persons. (IRS 2016 Data Book and U.S. Bureau of the Census)

Introduction

- The three papers in this session can be thought of as examples of the analysis that a buyer would want to perform to determine the value of two of hundreds of functions that the IRS and the IRA perform as revenue collectors:

  - One paper examines the efficacy of audits – Do audits increase overall tax compliance? This paper provides some rather strong support for the view that the rate of audit can impact population wide tax compliance.

  - One paper examines the efficiency of audits – Does providing more resources to audits and increasing the intensity of audits result in increasing yields? Here the results are less convincing, not because of the analysis, but because we don't observe post-audit tax compliance for the sample.

  - The third paper addresses how the value of delinquent tax debts should be calculated. This paper was motivated by a real-world need to improve the IRS CFO's valuations of delinquent tax debt for the IRS financial statements which are audited by the GAO.

  - Each paper utilizes unique micro-data sets constructed for the purpose of addressing these issues.

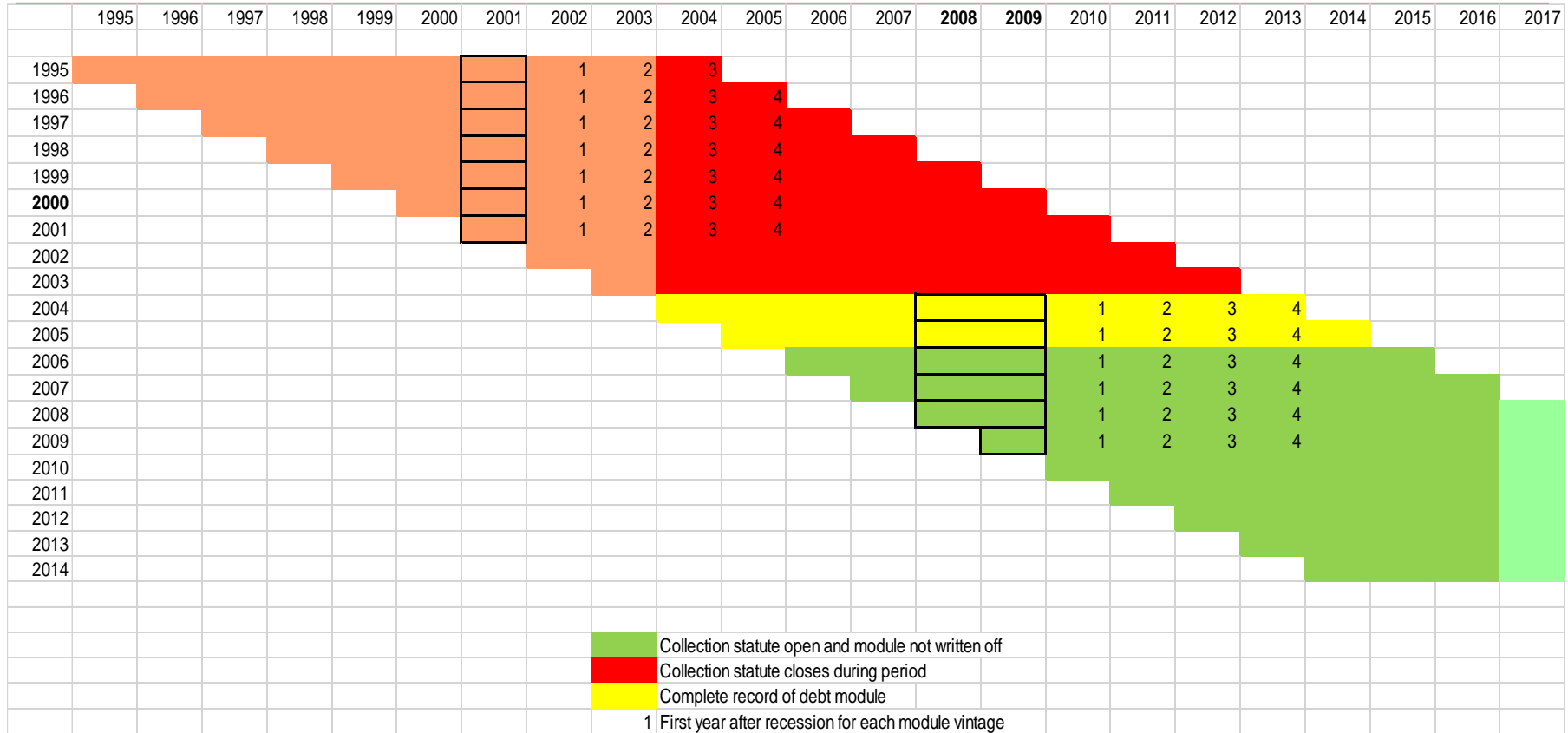# Valuing Unpaid Tax Assessments – FY 2016

Composition of $400 Billion Total Gross Unpaid Assessments

- Business Taxes Receivable 10%
- Business Compliance 3%
- Business Write-Offs 14%
- Individual Write-Offs 21%
- Individual Compliance 15%
- Individual Taxes Receivable 37%

Valuing Unpaid Tax Assessments

- How to measure collection potential?

- Age of debt – old debt is less valuable because it is more difficult to collect.

- Resources available and intensity of effort:
  - IRS enforcement resources declined from 47,950 average positions realized in 2004 to 33,426 in 2016 – a decline of 30%.

- The importance of valuing uncollected debt.
  - The effect of economic conditions on valuation. The role of the business cycle.
  - Are there effects –direct, indirect, or general - on post collection compliance?

Valuing Unpaid Tax Assessments

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	**2008**	**2009**	2010	2011	2012	2013	2014	2015	2016	2017
1995								1	2	3													
1996								1	2	3	4												
1997								1	2	3	4												
1998								1	2	3	4												
1999								1	2	3	4												
2000								1	2	3	4												
2001								1	2	3	4												
2002																							
2003																							
2004																	1	2	3	4			
2005																1	2	3	4			
2006																1	2	3	4			
2007																1	2	3	4			
2008																1	2	3	4			
2009																1	2	3	4			
2010																							
2011																							
2012																							
2013																							
2014																							

Collection statute open and module not written off
Collection statute closes during period
Complete record of debt module
1 First year after recession for each module vintage

DISTRICT
ECONOMICS
GROUP

Tax Audits and Tax Compliance

Table 3.1 – Tax Audit by year

	Desk Audit		Field Audit		Audited Taxpayers	% audited	Taxpayers
	Full	partial	deep	soft			
2006	1,339	5,425	844	6,919	11,392	9.0%	126,401
2007	1,424	6,078	977	6,036	11,253	8.9%	126,401
2008	1,938	6,456	1,103	4,732	10,950	8.7%	126,401
2009	2,826	5,083	1,054	4,385	10,127	8.0%	126,401
2010	2,679	4,671	996	4,162	9,503	7.5%	126,401
2011	**2,339**	4,135	1,079	4,175	**8,846**	**7.0%**	**126,401**

Tax Audits and Tax Compliance

- There are (at least) two really big things going on in this paper:

- First, the IRA provides small business taxpayers with an estimate of the expected amount of sales for their type of business prior to filing tax returns. The authors call this SDS congruence.

- Second, the IRA provides small business taxpayers with an estimate of a variety of small business economic indicators prior to filing tax returns. The authors call this SDS coherence.

- What is the impact on reporting compliance, and how does this approach compare with the Minnesota Department of Revenue experiments described in a 2011 NTJ article by Blumenthal, Christian, Slemrod, and Smith: "Do Normative Appeals Affect Tax Compliance? Evidence From a Controlled Experiment in Minnesota"?

- What is the impact of CAP and Pre-filing Technical Guidance on compliance?

Tax Audits and Tax Compliance

- There is one less important issue – Are the slopes the same?

Figure 4.1- Parallel trend – log of personal income tax declared
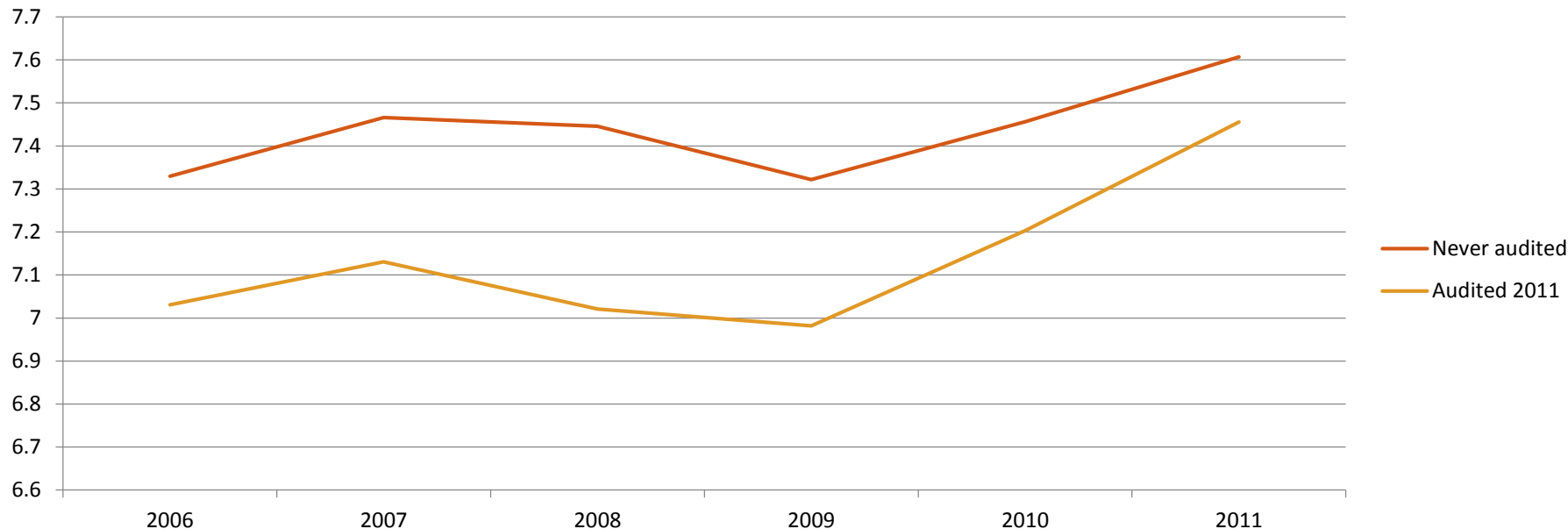
How do IRS Resources affect the tax enforcement process?

- An audit is an adversarial process with two general outcomes – agreed or unagreed.

Table 3. Tax Compliance of Three- and Two-party Information Reporting Systems for Federal Taxes, 2010 in $ billions

	Reported tax liability after credits	Additional tax and penalties recommended during 2010	Additional tax and penalties unagreed by taxpayer	Additional tax and penalties unagreed as a percentage of reported tax liability
Three-party wage based individual system*	**$1,531**	**$7.3**	**$1.6**	**0.1%**
Two-party corporate income tax	**$223**	**$26.2**	**$17.9**	**8.0%**

Note: The wage based individual system is the sum of $860 billion of employment tax liability plus $671 billion of individual income tax liability associated with wage income determined using SOI Individual Income Tax Table 1.4 for Tax Year 2010. Additional tax and penalties and unagreed amounts are from Tables 9a and 10 of the IRS 2010 Data Book. Audit recommended and unagreed amounts pertain to multiple tax years prior to 2010 that were under audit during 2010.

Sources: Internal Revenue Service Data Book, 2010, DEG calculations of wage based system from Statistics of Income Individual Income Tax Returns for Tax Year 2010 Table 1.4 and Corporate Income Tax Returns for Tax Year 2010 Corporate Source Book.

How do IRS Resources affect the tax enforcement process?

- Should audits be fewer and more intensive, or more common and less intensive?
  - More audits more friendly.
  - For the IRS this would mean focus on the low-hanging fruit, but this seems to be an unsatisfying result.
  - Does this mean "let the bad persons get away"?
  - Why were no indirect or general compliance effects found?
  - Is this because the taxpayers are large corporations and not individuals?

- The IRA paper – on table 4.3 - tells us fewer and more intensive audits if the purpose is to impact compliance.
  - However this analysis focused on small-businesses and individuals,
  - And showed very strong *ex-ante* compliance effects, both from taxpayers of interest in the analysis and in general.

Session 2. Realizing the Potential of Tax Enforcement

Moderator:	*Ron Hodge* *IRS, RAAS*
How Do IRS Resources Affect the Tax Enforcement Process?	*Erin Towery* *University of Georgia*
Tax Audits and Tax Compliance – Evidence from Italy	*Alessandro Modica- Ministero dell'Economia e delle Finanze, Government of Italy*
Valuing Unpaid Tax Assessments – Estimating Long-Run Collectability Using an Econometric Approach	*Alex Turk* *IRS, RAAS*
Discussant:	*Michael Udell* *District Economics Group*

Preemptive Correspondence Pilots

*Impact of Filing Reminder Outreach on Voluntary Filing Compliance
for Taxpayers with a Prior Filing Delinquency*

June 21, 2017
IRS-TPC Research Conference

Internal Revenue Service

Stacy Orlett, Supervisory Tax Analyst
Alex Turk, Supervisory Economist
Maryamm Muzikir, Economist
Vicki Koranda, Revenue Officer
Rizwan Javaid, Operations Research Analyst

Presentation Outline

▸ Background

▸ Pilots

▸ Results

▸ Conclusions and Direction for Future Research

**Special thank you to John Guyton, Day Manoli, Brenda Schafer, Steven Ferris, Susan Haskell, Lisa Gilmore, and John Iuranich.

Background

▸ Collaboration
  ▸ Collection
    ▸ Strategic Analysis and Modeling
    ▸ Nonfiler Inventory and Analysis
  ▸ Research, Applied Analytics, and Statistics

▸ Two individual populations with prior filing delinquencies
  ▸ Automated Substitute for Return (ASFR)
  ▸ Potential Nonfilers in a previous Tax Year

▸ Promote voluntary filing compliance
  ▸ Taxpayers "at risk" for not filing through low cost outreach
  ▸ Taxpayers were sent a reminder letter or at least one postcard

▸ Pilot conducted during Tax Year 2015 Filing Season

Return Delinquency Process
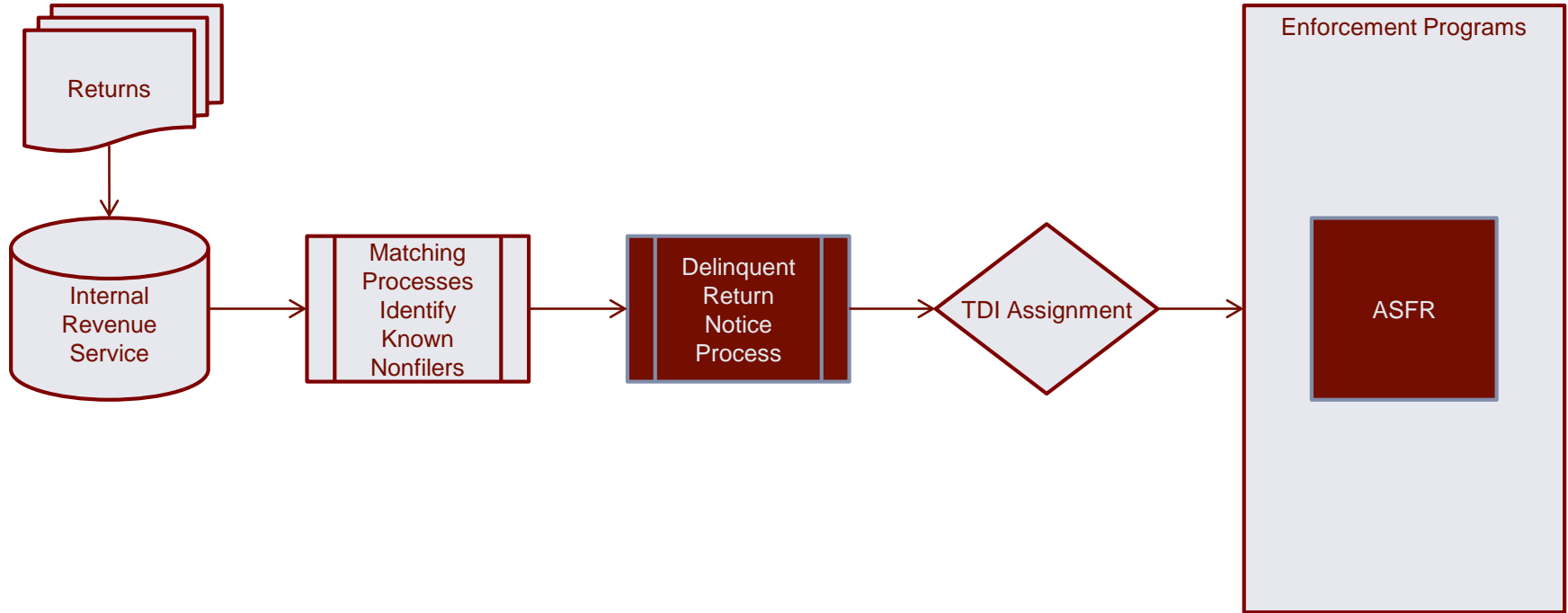
Overview of the Populations

Pilot	Pilot 1: ASFR Treated Cases	Pilot 2: Untreated Nonfiler Cases
Population	ASFR cases where a delinquent return was secured during Calendar Year 2015	Potential Tax Year 2013 Nonfilers
Division of Cases	Refund Hold vs non-Refund Hold	Primary Code B (PCB) designation
Population Size	~80,000 Taxpayers	~1.9 million Taxpayers
Population Proportions	Refund Hold, 33% — Non-Refund Hold, 67%	PCB, 16% — non-PCB, 84%

Design

Treatment Group	Information Included	Mailing Date(s)	Pilot 1: Samples *ASFR Treated Taxpayers*		Pilot 2: Samples *TY13 Potential Nonfilers*	
			Refund Hold	Non-Refund Hold	PCB	Non-PCB
Control	• No Treatment		8,142	7,946	7,041	6,550
Letter	• IRS website • Toll free customer service number	March 1, 2016	8,142	7,946		
Postcard 1	• IRS website	March 1, 2016	8,142	7,946	7,041	6,549
		March 1, 2016 April 1, 2016			7,041	6,549
Postcard 2	• IRS website • Information to file prior year returns • Link to the Form 4506T that the taxpayer can submit to request tax documents for prior years	March 1, 2016			7,041	6,549
		March 1, 2016 April 1, 2016			7,041	6,549
Total Sample Size			**24,426**	**23,838**	**35,205**	**32,746**

Letter

Department of the Treasury
Internal Revenue Service
[Address Line 1   ]
[Address Line 2   ]
[Address Line 3   ]

Letter   5665
Date
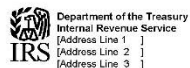
[Taxpayer Name   ]
[Address Line 1   ]
[Address Line 2   ]
[Address Line 3   ]
[Address Line 4   ]

REMINDER

This is a reminder to file your 2015 tax return.

What you should know

If you are required to file this tax return:

- Please file by April 15, 2016.
- For more information on filing electronically, mailing your return, or getting an extension, go online to www.irs.gov/filing.

Please disregard this reminder if you have already filed this return:

- Thank you for filing.

If you don't file your return:

- The Internal Revenue Code sets strict time limits for claiming tax refunds.
- We may file the return for you and not allow credits or exemptions you could claim if you filed yourself.

Additional information

For tax forms, instructions, and publications, visit www.irs.gov or call 1-800-TAX-FORM (1-800-829-3676).

Letter 5665 (1-2016)
Catalog Number 67591A

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If you are required to file this tax return:

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Additional information

For tax forms, instructions, and publications, visit www.irs.gov or call 1-800-TAX-FORM (1-800-829-3676).

Postcards

Postcard 1: No 4506T Reference

If you have not already done so, remember to file your 2015 tax return by April 15, 2016.

- Did you know the average tax refund in 2014 was approximately $2,800?

- You could be eligible for valuable tax benefits, but you must file to receive them.

- For more information about filing, or getting an extension to file, go online to www.irs.gov/filing.

Postcard 2: 4506T Reference

If you have not already done so, remember to file your 2015 tax return by April 15, 2016.

- Did you know the average tax refund in 2014 was approximately $2,800?

- You could be eligible for valuable tax benefits, but you must file to receive them.

- For more information about filing, or getting an extension to file, go online to www.irs.gov/filing.

It's not too late to file returns for prior tax years.

- You can file late tax returns and claim tax refunds up to 3 calendar years after the April filing deadline. For example, you can claim a tax refund for 2012, if you file your tax return by April 15, 2016.

- To request transcripts of prior year W-2s and other tax documents, submit Form 4506T (from http://www.irs.gov/uac/About-Form-4506T).

Modeling Data

▶ **Targeted Outcome/Dependent Variable**
  ▶ Timely filed Tax Year 2015 income tax return, or
  ▶ Extension to file

▶ **Available Taxpayer Control Variables:**
  ▶ Recent income tax filing information
  ▶ Case Creation Nonfiler Identification Process data
  ▶ Accounts receivable activity
  ▶ Filing compliance

▶ **Undeliverable Treatments**
  ▶ Identified taxpayers in the treatments groups that had their mailing returned as undeliverable

▶ **Treatment Dummy**
  ▶ If treatment delivered, then the taxpayer received a "1" for applicable treatment
  ▶ If undeliverable, then the taxpayer is assumed to be "untreated"

Two-Step Modeling Approach

▸ **Data Issues resulting from mailing the correspondence**
  ▸ Undeliverable mail identified for taxpayers in treatment groups but not the control group
  ▸ May be a relationship between the IRS having a "good address" and the likelihood that the taxpayer files

▸ **Step 1: Likelihood of Undeliverable**
  ▸ Logistic Regression using cases identified for treatment
  ▸ Create an Instrumental Variable
  ▸ Calculate probability of being "undeliverable" for all cases – including control group

▸ **Step 2: Likelihood of Timely Filing TY15 Return or Extension**
  ▸ Logistic Regression
  ▸ Treatment Dummies, Instrumental Variable, and other controls
  ▸ Measure the impact of the treatments on taxpayers timely filing TY15 returns or extensions

Pilot 1: Tax Year 2015 Filing Rates

Taxpayer Groups	Pilot 1: ASFR Treated Cases			
	Refund Hold		Non-Refund Hold	
	Number of Taxpayers	% Timely Filed TY15 or Extension	Number of Taxpayers	% Timely Filed TY15 or Extension
Untreated	8,982	77.7%	8,775	58.6%
Control Group	*8,142*	*78.4%*	*7,946*	*59.9%*
Undeliverable	*840*	*71.1%*	*829*	*46.0%*
Letter	7,752	81.4%	7,511	64.2%
Postcard 1 (one mailing)	7,692	79.6%	7,552	61.0%

Source: IRS. Compliance Data Warehouse. Individual Return Transaction File, Individual Master File Status and Transaction History, Individual Accounts Receivable Dollar Inventory, and Case Creation Nonfiler Identification Process. Data Extracted September 2016.

Pilot 2: Tax Year 2015 Filing Rates

Taxpayer Groups	Pilot 2: TY13 Potential Nonfilers			
	PCB		Non-PCB	
	Number of Taxpayers	% Timely Filed TY15 or Extension	Number of Taxpayers	% Timely Filed TY15 or Extension
Untreated	9,614	42.6%	8757	45.9%
Control Group	*7,041*	*46.5%*	*6,550*	*49.7%*
Undeliverable	*2,573*	*32.2%*	*2,207*	*34.9%*
Postcard 1 (one mailing)	6,404	49.0%	5,973	52.0%
Postcard 1 (two mailings)	6,429	49.3%	6,041	53.0%
Postcard 2 (one mailing)	6,396	49.2%	5,979	51.9%
Postcard 2 (two mailings)	6,362	49.5%	5,996	51.9%

Source: IRS. Compliance Data Warehouse. Individual Return Transaction File, Individual Master File Status and Transaction History, Individual Accounts Receivable Dollar Inventory, and Case Creation Nonfiler Identification Process. Data Extracted September 2016.

Pilot 1: Treatment Effects

Dependent Variable: Taxpayer Timely Filed TY15 or Filed for an Extension	Refund Hold			Non-Refund Hold		
Results Summary	• Postcard results in 1.3 percentage points increase in the propensity to file • Letter results were two times larger			• Postcard results in 1.1 percentage point increase in the propensity to file • Letter results were three times larger		
Model Results	**Parameter Estimate**	**Marginal Effect of Treatment**	**Marginal Effect of Intent to Treat**	**Parameter Estimate**	**Marginal Effect of Treatment**	**Marginal Effect of Intent to Treat**
Postcard Treatment	0.099* (0.040)	0.013	0.013	0.083* (0.035)	0.011	0.010
Letter Treatment	0.198* (0.041)	0.027	0.025	0.244* (0.035)	0.033	0.031
Probability: Undeliverable Mail	-2.519* (1.088)			-4.878* (0.754)		

Source: IRS. Compliance Data Warehouse. Individual Return Transaction File, Individual Master File Status and Transaction History, Individual Accounts Receivable Dollar Inventory, and Case Creation Nonfiler Identification Process. Data Extracted September 2016.
Note: Not all explanatory variables are shown.
Standard errors are reported in parentheses.
*, indicates significance at the 95% level

Pilot 2: Treatment Effects

Dependent Variable: Taxpayer Timely Filed TY15 or Filed for an Extension	Primary Code B			Non-Primary Code B		
Results Summary	• Multiple mailings may be needed for the lower priority cases • Two postcards have a larger impact			• Multiple mailings appear to have less of an impact • Postcard 1 appears to be more effective		
Model Results	Parameter Estimate	Marginal Effect of Treatment	Marginal Effect of Intent to Treat	Parameter Estimate	Marginal Effect of Treatment	Marginal Effect of Intent to Treat
Postcard 1 (one mailing)	0.0589 (0.041)	0.010	0.009	0.110* (0.042)	0.017	0.016
Postcard 1 (two mailings)	0.1447* (0.041)	0.024	0.021	0.140* (0.041)	0.022	0.020
Postcard 2 (one mailing)	0.1038* (0.041)	0.017	0.015	0.087* (0.042)	0.014	0.013
Postcard 2 (two mailings)	0.1293* (0.041)	0.021	0.019	0.084* (0.042)	0.013	0.012
Probability Undeliverable Mail	1.878* (0.422)			-2.086* (0.494)		

Filing Prior Year Tax Returns

Taxpayer Groups[a]	Pilot 1: ASFR Treated Taxpayers	Pilot 2: TY13 Potential Nonfilers
Results Summary	• Significant increase in filing a prior return for the non-Refund Hold ASFR group receiving a postcard	• Significant increase exists across all treatments • A slightly larger percentage point difference for the PCB group

Groups Splits	Refund Hold	Non-Refund Hold	PCB	Non-PCB
Letter	-0.2	0.5		
Postcard 1 (one mailing)	-0.2	1.1*	2.4*	2.5*
Postcard 1 (two mailings)			2.3*	1.4*
Postcard 2 (one mailing)			2.4*	1.7*
Postcard 2 (two mailings)			2.3*	2.5*

Source: IRS. Compliance Data Warehouse. Individual Return Transaction File, Individual Master File Status and Transaction History, Individual Accounts Receivable Dollar Inventory, and Case Creation Nonfiler Identification Process. Data Extracted September 2016.
a Taxpayers with undeliverable treatments were moved to the Control group.
* Denotes a significant difference from the control group at the 95% level.

Conclusions

▸ **Positive voluntary filing effects from preemptive contacts with taxpayers who had previous filing compliance issues**
- ▸ The impacts are modest, but impacts come at a very low cost

▸ **Type of Treatment:**
- ▸ Our results suggest that a <u>letter may be more effective</u> than a postcard, at least for some taxpayers
- ▸ Our results also support the notion that a <u>simpler message</u> may be more effective in increasing the taxpayer response, at least in terms of voluntary filing
  - ▸ Potential to extend the analysis of the impact of outreach on past compliance

▸ **Frequency of Treatment:**
- ▸ When using postcards to nudge taxpayers, <u>lower risk taxpayers may need multiple nudges</u> in order for the treatment to be effective

Direction for Further Research

▸ Understand the differing results from letters vs. postcards
  ▸ Is "opening" the letter a barrier or does just receiving the letter, even in unopened, have an impact on behavior?

▸ Understand the differing results from varying messages in postcards
  ▸ Is a simpler message more effective?
  ▸ Framing Effect - Does alluding to past potential noncompliance make the taxpayer more hesitant to file their current return?

▸ Does attempting to address past noncompliance act as an impediment to fostering future compliance?
  ▸ If the tax authority does not have the resources to go back and enforce compliance, is it better for them to focus only on the taxpayer's future filing behavior?

▸ Explore Network Effects

Thank You

Conservation Easements are voluntary agreements that permanently limit the development or use of a property

Qualified easement donations to charitable organizations may qualify for a charitable deduction

Tax break is popular and widely credited for encouraging conservation

This working farm...

Protected Forever

SONOMA COUNTY
AGRICULTURAL PRESERVATION
AND OPEN SPACE DISTRICT

707-565-7360 www.sonomaopenspace.org
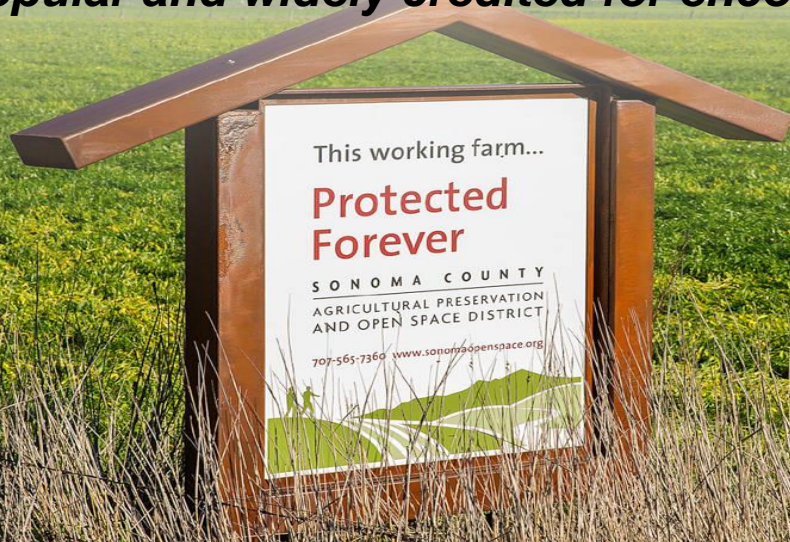
ALSO A SOURCE OF LITIGATION AND ABUSE

- Recurrent item on the IRS's annual "Dirty Dozen" tax scams.

- Among most litigated tax issues according to the National Taxpayer Advocate

  - Certain easement transactions now "listed transactions"

  - Surprising given affects only 2,000 taxpayers each year

- Many anecdotes of abusive practices
  - golf courses, façade easements, backyards

- But little data or evidence on their use

Total deductions for conservation easement contributions by taxpayers

billions of dollars

| | 2012 | 2013 | 2014 |
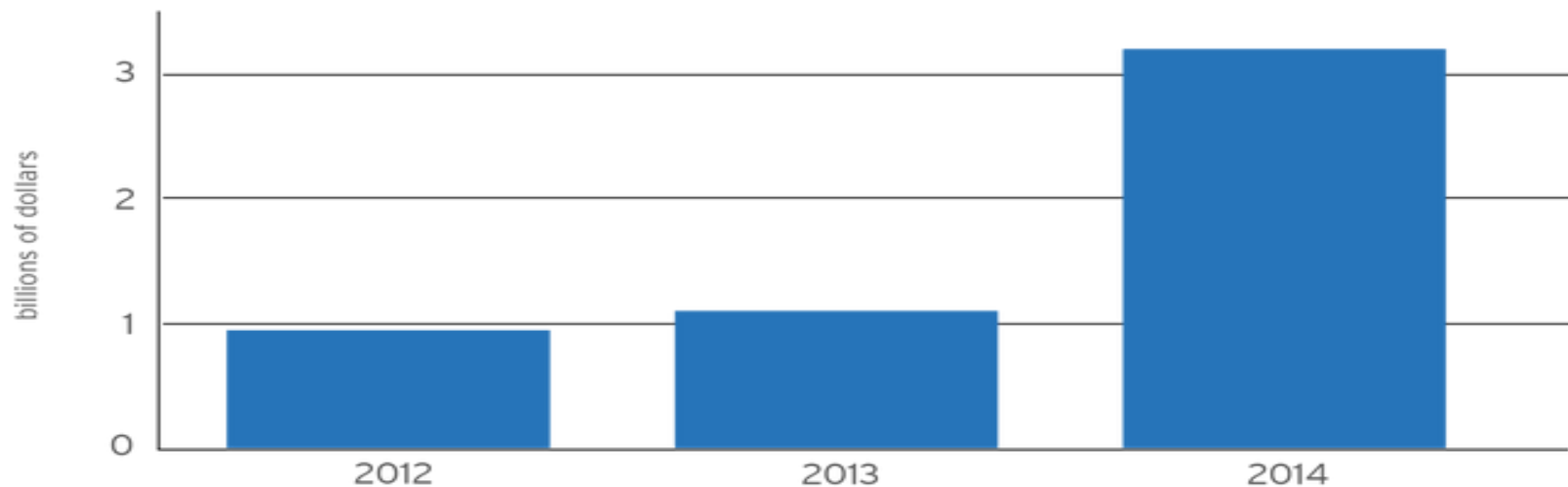
How are they used?

New data sources:
- Form 8283
- IRS SOI Form 990 Microdata files
    - Plus pdf of returns (Guidestar.org)

Summary of evidence

- **Donations are concentrated** in transactions that seem unrelated to conservation benefits.
    - Deductions concentrated in certain transactions, acreage, geographic areas, and donee organizations.

- **A small handful of donee organizations** are responsible for a disproportionate share of donations.

- **Many organizations that receive donations of easements do not report them as gifts or revenues** on their public tax returns.

Table 1: Annual Statistics on Easements (2010-2012)

	(annual average)
Total Deductions	$ 1,052,103,000
Number of Individual Easement Deductions	2,461
Average Deduction	$ 427,500
Median Deduction	$ 101,250
25th Percentile Deduction	$ 43,750
75th Percentile Deduction	$ 242,000
95th Percentile Deduction	$ 1,340,000
Reported Acreage?	34%
Average Acreage Reported	245
Median Acreage	80
Mean Deduction/Acre	$ 14,750
Median Deduction/Acre	$ 1,600
Sample N (unweighted)	863

Note: Real 2016 dolars; Source: Office of Tax Analysis, Department of Treasury

Form 8283 sample

- Almost all report donee organization

- 34% of deductions reported acreage
  - Some did not include descriptions of property
  - Some easements are on properties where acreage is not relevant (e.g. historical buildings)

- Median deduction about $100,000
  - Median deduction only about $1,600 per acre

- Average is skewed by large transactions

Table 2: The Concentration of Contributions of Conservation Easements in a Small Number of Transactions and Acreage

CUMULATIVE DEDUCTIONS BY DONATION		CUMULATIVE DEDUCTIONS BY ACREAGE	
Fraction of Total Donations	Fraction of Total Deductions	Fraction of Total Acres	Fraction of Total Deductions
Top 2%	43%	Top 2%	26%
Top 5%	55%	Top 5%	56%
Top 10%	70%	Top 10%	69%
Top 25%	86%	Top 25%	89%
Top 50%	95%	Top 50%	96%
Top 75%	99%	Top 75%	99%

Source: Office of Tax Analysis

Concentration by transaction and acreage

- A small number of large donations and "expensive" acreage account for most of the tax expenditure

- **Top 2% of transactions account for about 43%** of the total aggregate value of donations claimed by taxpayers
  - Top 10% account for about 70%

- Properties that include the acreage:
  - Top 2%: about 26%
  - Top 10%: about 69%
    - Valuation of easements in top range exceed $10,000 per acre and some rise over $100,000 per acre.

Table 3: Geographic Concentration of Easement Deductions by Residence of Taxpayers (2010-2012)

		EASEMENT DEDUCTIONS (OTA)	LAND TRUST CENSUS (LTA)		
Rank	State	Percent of National Total	Share of Land Trusts	Shares of Acres under Easement	Total Acres Conserved
1	GA	36%	1.3%	2.5%	1.5%
2	CA	11%	11.6%	7.4%	14.3%
3	CT	7%	8.1%	0.4%	0.6%
4	NY	6%	5.7%	3.2%	6.1%
5	PA	6%	6.1%	2.1%	3.1%
6	VA	4%	2.1%	7.3%	7.0%
7	NC	3%	2.1%	1.7%	2.1%
8	MD	3%	3.3%	1.9%	1.2%
9	TX	2%	2.1%	3.4%	2.3%
10	SC	2%	1.4%	2.4%	1.5%
11	MA	2%	9.4%	0.9%	2.1%
12	FL	2%	1.9%	0.5%	1.1%
13	WI	2%	3.4%	0.8%	0.7%
14	CO	2%	2.2%	12.9%	7.6%
15	TN	1%	1.2%	0.7%	0.9%
16	DC	1%	0.2%	0.0%	0.0%
17	RI	1%	2.8%	0.1%	0.2%
18	AL	1%	0.5%	1.1%	1.0%
19	NV	1%	0.3%	0.0%	0.3%
20	VT	1%	2.1%	5.2%	3.8%
Total (Top 20 States)		94%	67.6%	54.7%	57.5%

Source: Office of Tax Analysis, Land Trust Alliance 2010.

Three states account for a majority of tax deductions for conservation easements

54 percent of tax deductions go to states that comprise only 26 percent of conserved land

Legend:
- **% of total easement deductions (dollars)** (blue)
- **% of total acres conserved** (gray)

Y-axis: percent (0, 25, 50)
X-axis: Georgia, California, Connecticut

BROOKINGS

Geographic Concentration

- **Georgia, California and Connecticut** are the largest beneficiaries of deductions for contributions of easements.

- The **number** of land trusts, the **number** of acres under easement, and total **number** of acres conserved by land trusts (through any means) **unrelated to contribution amounts**.

- States that are national leaders in the number of acres under easement or acres conserved receive only a de minimis share of the tax expenditure
  - Maine, Montana, New Mexico, New Hampshire, Wyoming, Arizona, or Washington…

Table 4: Organizations Receiving Conservation Easements in IRS Public Use Microdata Sample 2011 and Form 990

Name of Organization	Avg. Annual Value of Conservation Easements Received (last 3 990s filed by 2015)	Number of Employees (2011)	Total Acreage of Eeasements (2011)
Foothills Land Conservancy	$125,374,000	4	19,638
Nature Conservancy	$79,353,000	3,725	2,888,283
The Trust For Public Land	$38,117,000	378	1,448
The Conservation Fund: A Nonprofit Corporation	$30,631,000	157	118,362
Rocky Mountain Elk Foundation Inc	$18,774,000	151	24
Peconic Land Trust Inc	$17,734,000	38	2,607
Natural Lands Trust Inc	$13,403,000	82	18,001
Wetlands America Trust Inc	$13,376,000	0	366,705
Triangle Land Conservancy Inc	$4,719,000	15	5,906
Little Traverse Conservancy Inc	$4,247,000	14	20,735
Puerto Rico Conservation Trust Fund	$1,317,000	132	74
Save The Redwoods League	$1,118,000	39	14,240
Upper Savannah Land Trust	$866,000	0	30,571
Sheriff's Meadow Foundation	$789,000	9	858
Iowa Natural Heritage Foundation	$748,000	40	14,874
Columbia Land Trust	$542,000	29	1,055
National Audobon Society Inc	$401,000	1,059	383,516
Open Space Conservancy Inc	$334,000	0	22,761
Mississippi Land Trust	$283,000	0	86,156
Society For Protection Of Nh Forests	$280,000	90	130,189
Legacy Land Conservancy	$47,000	7	2,596
Freshwater Land Trust	$8,000	8	1,862
Brandywine Conservancy Inc	not reported	156	34,180
The Trustees of Reservations	not reported	695	20,001
Aspen Valley Land Trust	not reported	3	34,379
Maine Coast Heritage Trust	not reported	70	16,725
Essex County Greenbelt Association	not reported	15	6,084
Western Pennsylvania Conservancy	not reported	255	32,507
New England Forestry Foundation Inc	not reported	10	1,144,653
The Scenic Hudson Land Trust Inc	not reported	0	12,263
Napa County Land Trust	not reported	15	21
Historic Landmarks Fdn of Indiana Inc	not reported	51	477
American Farmland Trust	not reported	75	44,188

Donee organizations

- **First 10 organizations** report about $346 million in donations of easements, on average, over the prior three years.
    - Total amount of conservation easements claimed by taxpayers in 2010 was $766 million and in 2011, $695 million
    - These organizations represent a large share of contributions of all easements
- **Substantial variation** between the total value of easement donations received— the tax expenditure—and the size and conservation effort provided by the entity.
    - Small organizations operate among nation's largest charities.
- **Information available on Form 990** is intended to be comprehensive and to allow the general public to understand which organizations are benefiting from public subsidies for charitable donations.

Table 5: Characteristics of Donee Organizations, 2010-2012

Rank (by Donations Received)	Avg. Annual gifts Received per Donee	Fraction of Aggregate Deductions	Cumulative Aggregate Deductions	# Reporting Gifts on 990	Avg. per Donation	Donations per Year
1-5	$61,462	29%	29%	2	$1,770	35
6-10	$20,799	10%	39%	1	$639	33
11-15	$10,115	5%	44%	1	$1,445	7
16-25	$4,434	4%	48%	2	$174	26
26-50	$1,156	3%	51%	na	$118	10
51-100	$974	5%	55%	na	$228	4

Source: Office of Tax Analysis; Note: Dollar amounts in $1,000 of 2016 dollars. Estimates from individual samples 2010-2012.

Donee characteristics from Form 8283

- Only 6 of the top 25 organizations report easements as gifts
  - Of the 21 public charities that receive the most gifts of donations of easements, 15 do not report those gifts

- Organizations that receive non-cash contributions avoid public oversight that the disclosure of Form 990 is intended to provide

- Allows organizations to sidestep an important legal test required to qualify as a public charity
  - Non-cash contributions are excluded from gifts reported on Schedule A
  - Given the size and concentration of certain non-cash contributions, this could affect whether certain organizations are qualified to be public charities or private foundations

Why are donations so concentrated?

- Many large donations seem associated with large real estate development
  - Recreational community surrounding a golf course/tennis club
  - Suburban residential development with multiple homes
    - The average deduction claimed for golf course easements currently under audit is about $19 million; can exceed $50 million.
    - A single such transaction can be 5 to 7 percent of annual total

- Many high-value donations occur in high-cost areas
  - Affluent suburbs: Westchester, Santa Monica, Atlanta.
  - Resort destinations: Jackson Hole, Nantucket, the Hamptons.

- "Highest and best" private use means development often increases the value of adjacent land or open space
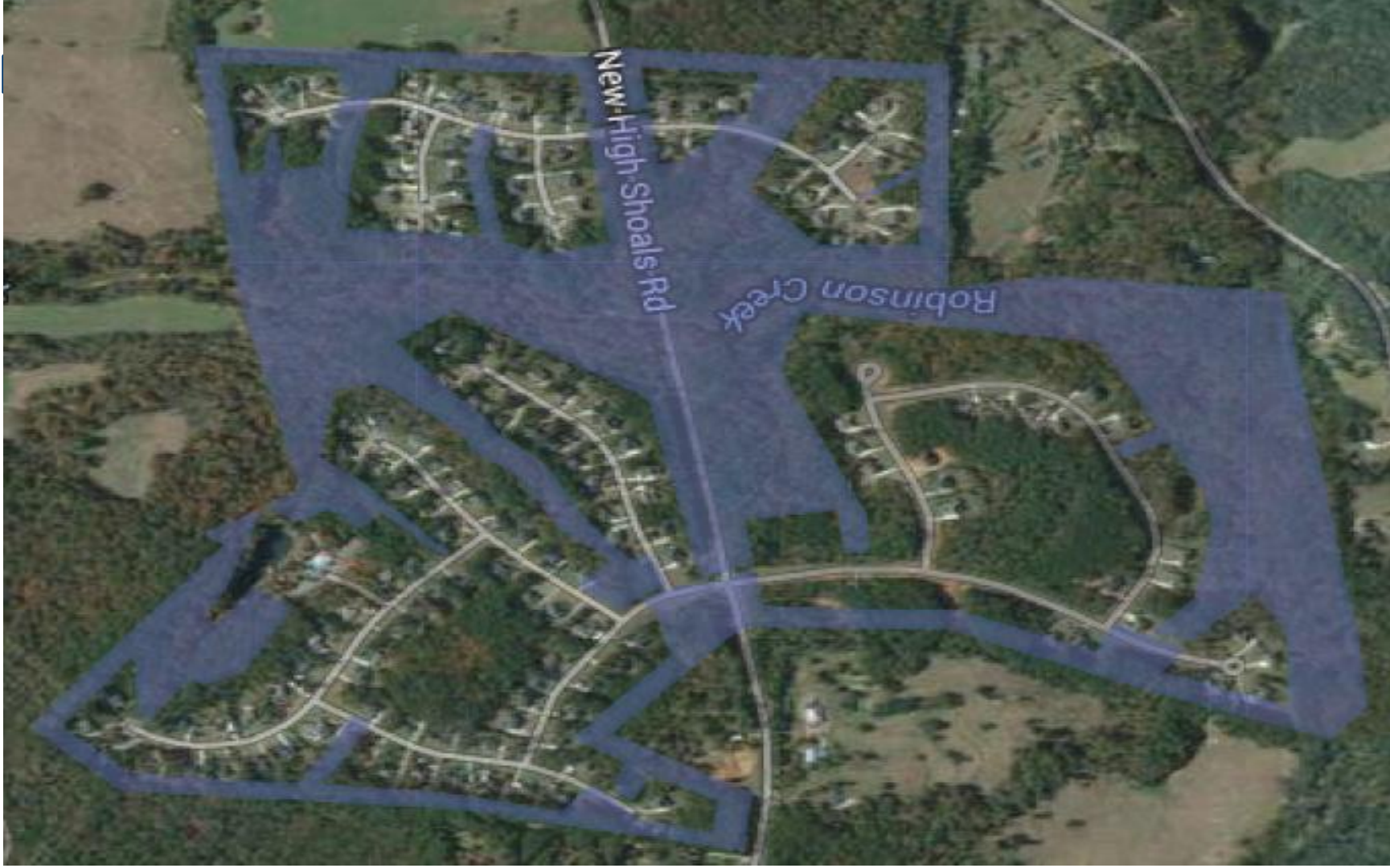
Some Options

- Make promoted, syndicated easement transactions a "listed transaction"

- Use an allocated credit instead of a deduction

- Strengthen the definition of conservation purpose and standards for organizations

Increase Transparency

- Revise Schedule D reporting/Require Form 990 filing

- Revise Schedule B reporting

- Revise Schedule M reporting

- Require reporting of contributions of conservation easements at FMV in Form 990 and Form 990EZ core forms

- Revise Schedule A reporting and calculation of public support

- Improve Donor Reporting

Tax preparers, refund anticipation products, and EITC noncompliance

7th Annual IRS-TPC Joint Research Conference

June 21, 2017

Maggie R. Jones, U.S. Census Bureau

United States™ Census Bureau

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU

Overview

- Tax preparers offer expensive products to customers that speed up refund time and/or pay tax-prep fee

- Products are targeted to low-income taxpayers who often are
  - poor credit risks
  - non-banked
  - meet many eligibility requirements for large tax credits

- Tax refunds (made up mainly of EITC) constitute a large portion of U.S. safety net
  - substantial incorrect payment rate
  - some safety net moneys go to preparers rather than to recipients in need
  - burden and repercussions of audit fall on taxpayer

Refund anticipation products I

- Refund anticipation loans
  - a loan of the full refund, where the refund secures the loan
  - taxpayers pay substantial fees and interest (three-digit APR)
  - preparer arranges, but loan is made through consumer finance co.
- History of RALs
  - first available 1980s—provided "same-day" refund
  - arose in tandem with electronic filing
  - between 2000 and 2010, IRS provided debt indicator
    - made product very profitable due to low risk of default
    - cessation of debt indicator in August 2010 led to massive withdrawal of product offering beginning in the next tax season
    - all major players withdrawn by 2012

RAL rates per taxpayer count by zip

2008

Refund Anticipation Loans, 2008

RAL rate by taxpayers
- 0.000-0.039
- 0.040-0.069
- 0.070-0.129
- 0.130-0.249
- 0.250+

2014

Refund Anticipation Loans, 2014

RAL rate by taxpayers
- 0.000-0.039
- 0.040-0.069
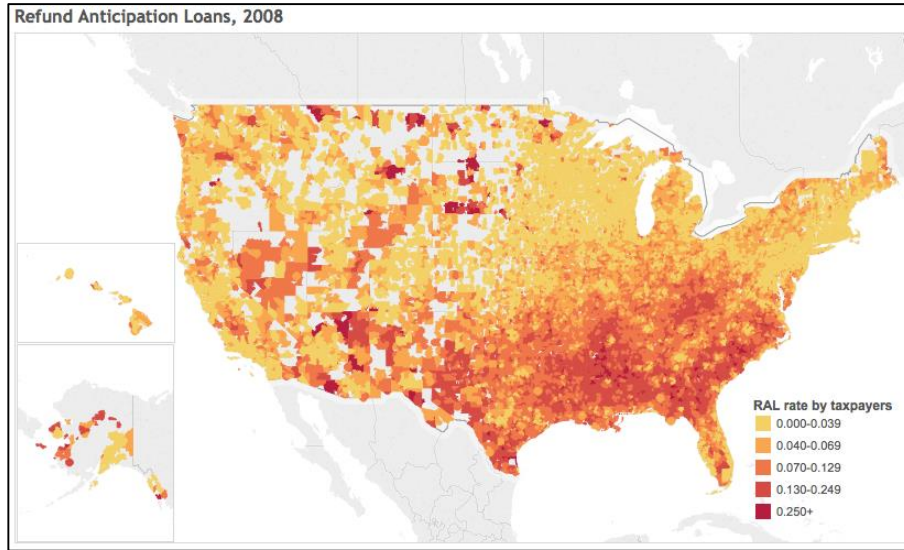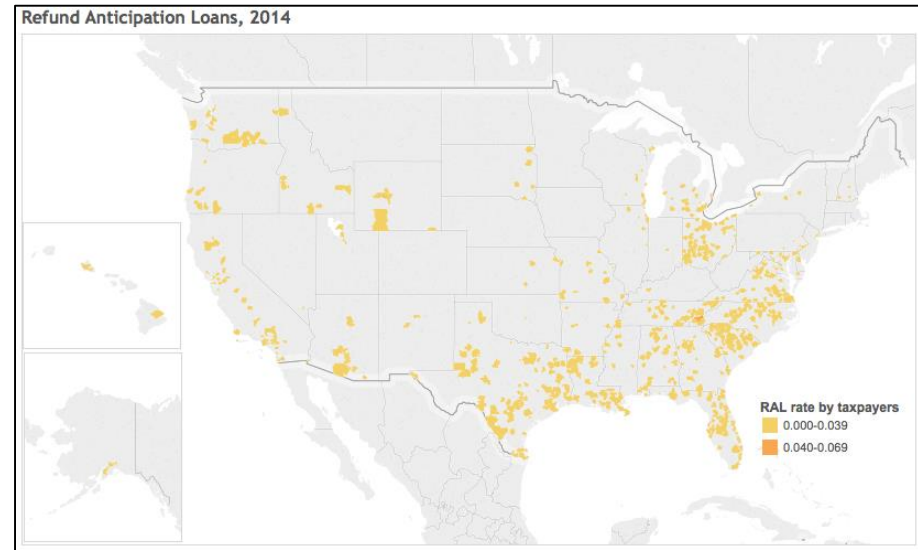
Source: IRS Form 1040 data. 2008 and 2014, aggregated to zipcode

Refund anticipation products II

- Refund anticipation checks
    - preparer sets up a temp checking account, into which refund is deposited
    - prep and other fees taken from refund, balance to taxpayer in a check or prepaid debit card
    - product is essentially a lending of the prep fee, with APR often >100
- History of RACs
    - originally much cheaper than RALs, but recently price ↑
        - add-on fees, check cashing fees, debit card use fees
        - increasing prep fees
    - higher-cost RACs associated with higher refunds, esp. EITCs with children
    - overlapped with RAL provision; taxpayers could buy online

RAC rates per taxpayer count by zip
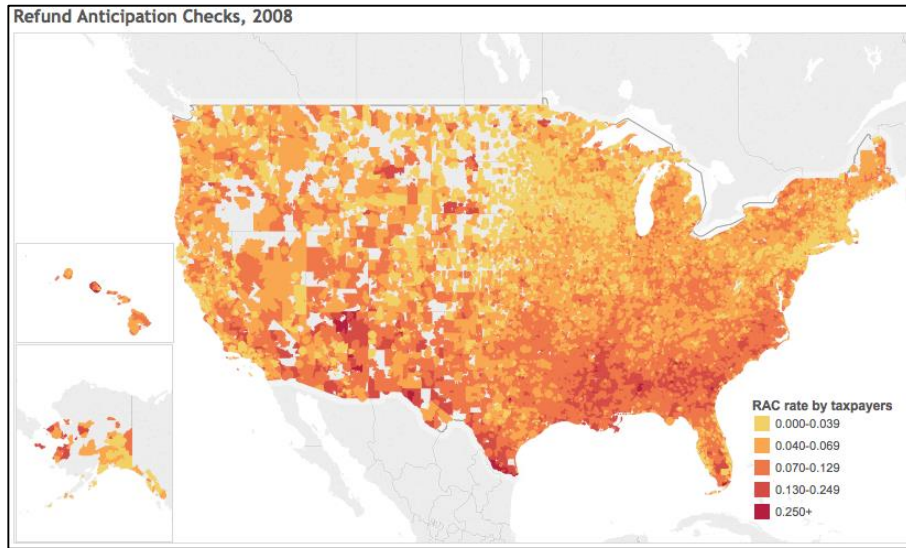
2008   **2014**
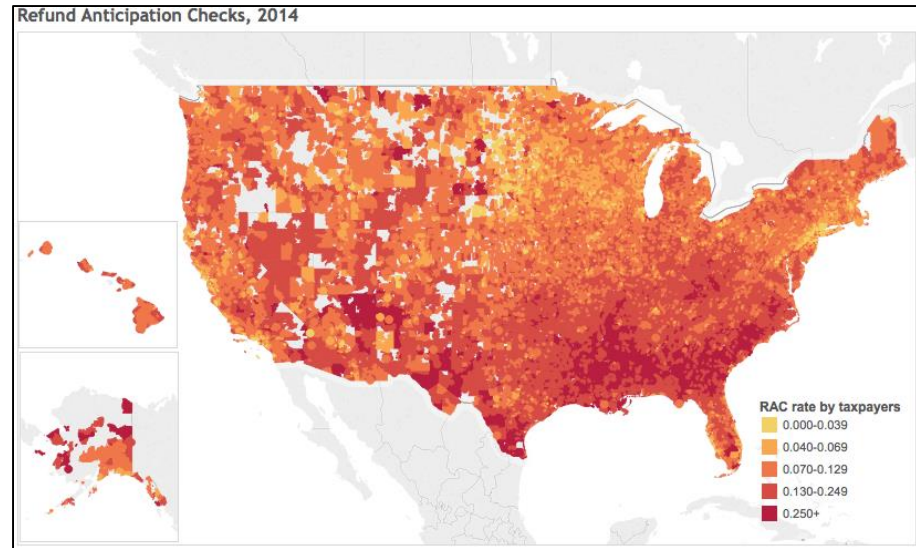
Source: IRS Form 1040 data. 2008 and 2014, aggregated to zipcode

Motivation and research questions

- Taxpayers have perverse incentives to claim EITC
  - price tag of incorrect payment in tens of billions of $ each year
  - between 22 and 25 percent of EITC receivers are paid erroneously

- Tax preparers have perverse incentives to make erroneous EITC filings
  - EITC filing requires further worksheets and higher prep cost
  - the higher the refund, the more lucrative the loan
  - higher-priced RACs associated with EITC filings and higher refunds

- Question: Is overpayment of EITC associated with paid preparer filings and refund anticipation products? (YES!)

- Question: Is the relationship between paid preparer/product use and incorrect payment of EITC causal? (MIXED)

Details on perverse incentives

- A filer buying a product may
  - want immediate cash to pay off more pressing bills (Barr & Dokko, 2008; Theodos, 2010)
  - lack access to any other forms of credit (Elliehausen, 2005)
  - believe that going to a preparer may help avoid an audit (Book, 2009)
- Preparers
  - are encouraged to sell products through bonuses and job performance review
  - often are not licensed in any way
  - often face no repercussions for erroneous filings
- No price data on products, but according to mystery shoppers (NCLC)
  - final price often much higher than quoted
  - highest RAC/prep total price for returns with EITC-qual child ($330 to $540, 20 percent of average HH EITC)
  - low-ball total estimate of $848 mil in 2014

IRS data, 2008-2010 and 2012 to 2014

- Files related to EITC receipt, for use in EITC take-up rates
  - Form 1040 individual income tax files
  - Form W-2 return records
  - EITC recipient files
  - each file arrives with SSNs, the vast majority of which are swapped for a unique, in-house identifier (99.6%)
- Records of tax filers who purchased a RAL or a RAC (coded separately)
- Combined data allow for identifying preparer filings, online filings, and paper filings
- Only preparer filings and online filings allow for product purchase

CPS ASEC data, 2009-2011 and 2013-2015

- Unique, in-house identifier placed by using probabilistic matching to a master reference file (match rate is about 90% for each year)

- Tax records and survey files linked together

- Eligibility and ineligibility determination based on combined survey and tax record values

- Sample selection bias-corrected using inverse-probability weights
  - calculate probability that a CPS ASEC person is found in 1040 data (equivalent to calculating probability of identifier placement)
  - reweight the CPS ASEC persons weights and replicate weights using inverse
  - resulting data compares favorably with Statistics of Income numbers and distribution of demographic characteristics of tax filers matched to 2010 decennial
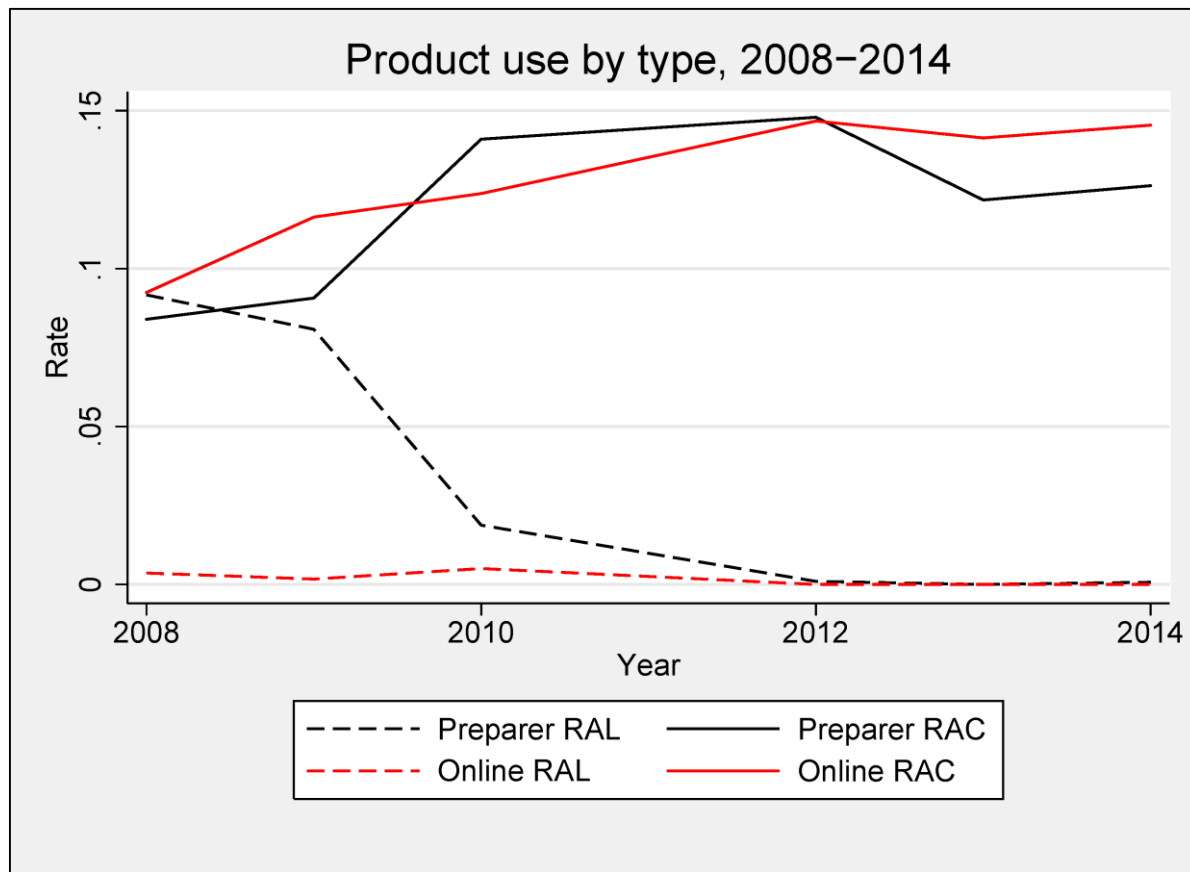
Product use by type, 2008−2014

Source: Linked CPS ASEC-Form 1040 data, 2008–2010, 2012–2014.

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Incorrect payment rate by filing type

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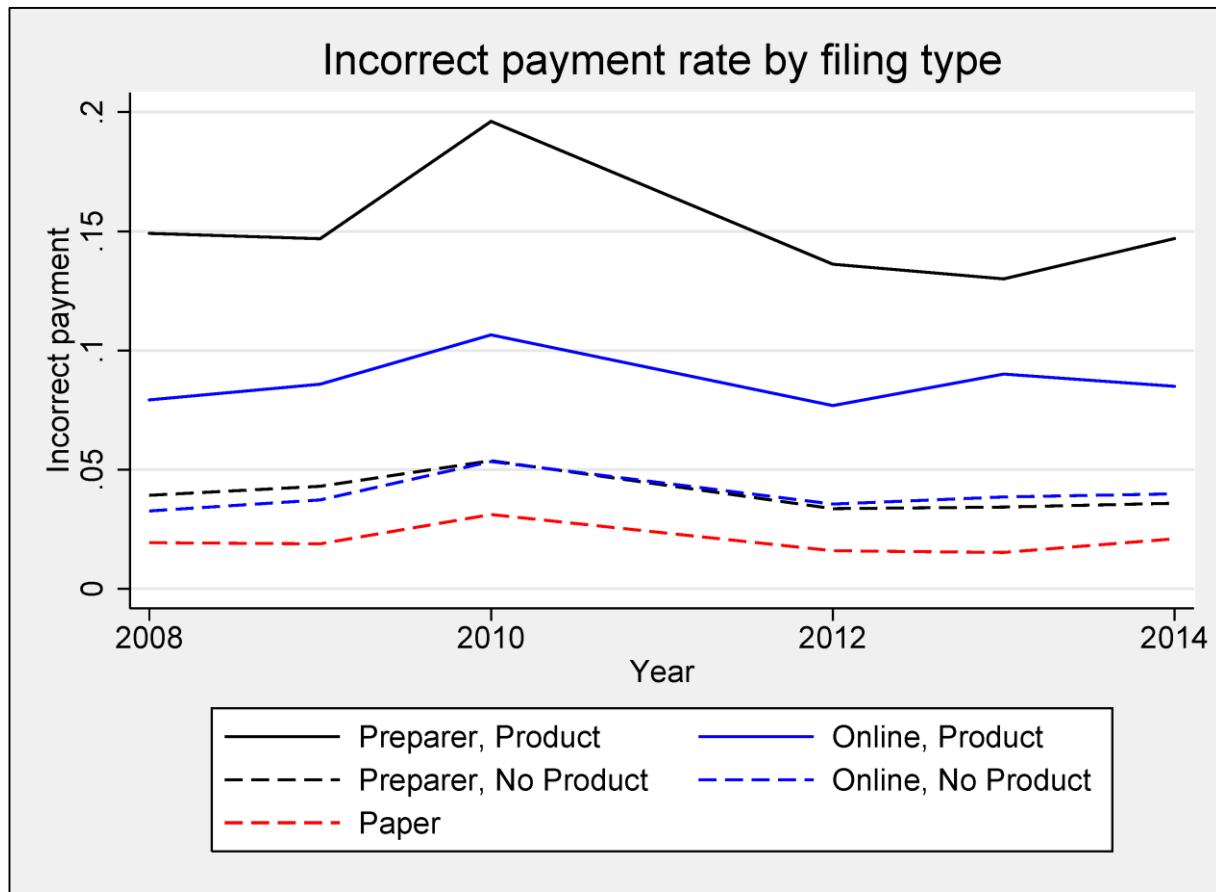
Econometric model

- Triple-difference approaches to examine the impact of the removal of debt indicator on probability of incorrect payment (y)

$$y_{its} = \alpha + \beta_1 \text{prepXproductXyear}_{2009} + \ldots + \beta_5 \text{prepXproductXyear}_{2014}$$
$$+ \gamma_1 \text{onlineXproductXyear}_{2009} + \ldots + \gamma_5 \text{onlineXproductXyear}_{2014} + \delta \text{prepXproduct} +$$
$$\varphi \text{onlineXproduct} + \theta \text{prep} + \rho \text{online} + \tau_1 \text{year}_{2009} + \ldots + \tau_5 \text{year}_{2014} + \sigma_s + X_{its}'\beta + \epsilon_{its}$$

- Base group is paper filers, for whom product=0 at all times
- Comparison of this group with online filers and those using a preparer give picture of incorrect payment induced by preparer and product use
- Triple interaction with year=2010 estimates the impact of the debt indicator removal on the supply side
- Mechanism: Preparers forced to sell RACs vs RALs; sold higher-priced RACs based on higher refunds via EITC

|	(1) Baseline	(2) With covariates	(3) Online as comparison	(4) Low income
Preparer	0.019***	0.018***	0.006*	0.026***
	(0.003)	(0.003)	(0.003)	(0.004)
Online	0.012***	0.012***		0.019***
	(0.002)	(0.002)		(0.004)
Preparer X Product	0.119***	0.078***	0.047***	0.079***
	(0.011)	(0.009)	(0.012)	(0.009)
Online X Product	0.049***	0.030***		0.035***
	(0.009)	(0.009)		(0.011)
Preparer X Product X 2010	0.028**	0.033**	0.026	0.022***
	(0.010)	(0.010)	(0.016)	(0.010)
Online X Product X 2010	0.002	0.007		0.003
	(0.010)	(0.010)		(0.012)
Preparer X 2010	0.002	0.001	-0.005	0.005
	(0.004)	(0.004)	(0.004)	(0.006)
Online X 2010	0.009*	0.006		0.009
	(0.003)	(0.003)		(0.006)
Year = 2010	0.012***	0.013***	0.020***	0.016***
	(0.003)	(0.003)	(0.003)	(0.004)
Product			0.030***	
			(0.009)	
Product X 2010			0.007	
			(0.010)	
Test of $\beta_2=\gamma_2$; Prob > F	2.45; 0.124	2.57; 0.115		1.04; 0.313
Obs.	336,166	336,166	308,723	207,622
* p<0.05, ** p<0.01), *** p<0.001. Source: Linked CPS ASEC-Form 1040 data, 2008–2010, 2012–2014.				

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Marginal effects

Triple interaction marginal effects, prep versus online
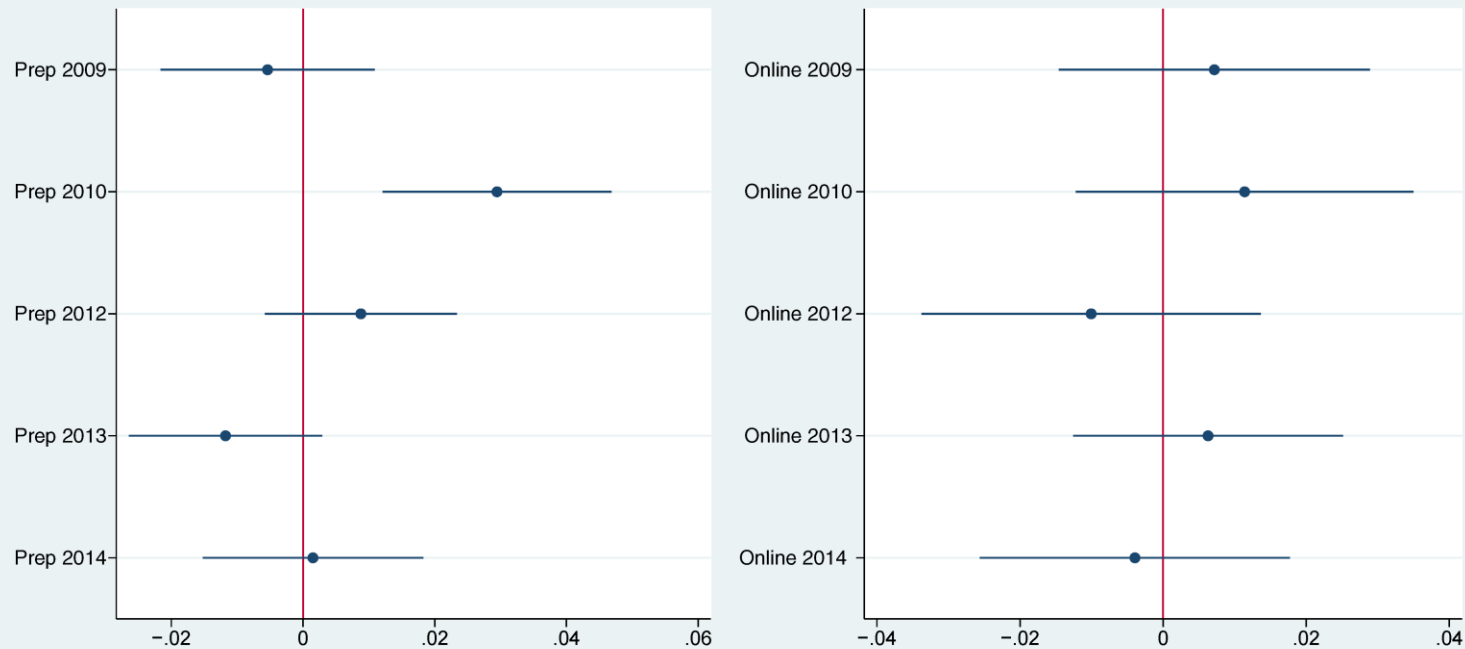
Source: Linked CPS ASEC-Form 1040 data, 2008–2010, 2012–2014.

Conclusion

- Preparer use and product use are each separately associated with incorrect payment of EITC
  - Filers using a preparer and buying a product have the highest rates of incorrect payment, followed by filers who file online and use a product
  - Prepared and online filers who don't buy a product do not differ in incorrect payment, but both rates are slightly higher than for paper filers
- Suggestive evidence exists of a "preparer effect," with incorrect payment increasing in 2010 for those using a preparer and buying a product
  - Added another 3 percentage points, approximately, to the incorrect payment rate in that year
  - The triple interaction for online filers + product in 2010 was not statistically different from prepared filings

Thank you!

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Session 3

The Role of Incentives in Individual Compliance

Discussion of

- **Impact of Filing Reminder Outreach (Stacy Orlett)**

- **Charitable Contributions of Conservation Easements (Adam Looney)**

- **Tax Preparers, Refund Anticipation Products, and EITC Compliance (Maggie Jones)**

Janet Holtzblatt
(Congressional Budget Office)

IRS-TPC Research Conference
June 21, 2017

Session 3. The Role of Incentives in Individual Compliance

Moderator:	*Saima Mehmood* *IRS, Wage & Investment Division Research*
Impact of Filing Reminder Outreach on Voluntary Filing Compliance for Taxpayers with a Prior Filing Delinquency	*Stacy Orlett* *IRS, SB/SE*
Charitable Contributions of Conservation Easements	*Adam Looney* *The Brookings Institution*
Tax Preparers, Refund Anticipation Products, and EITC Compliance	*Maggie Jones* *U.S. Census Bureau*
Discussant:	*Janet Holtzblatt* *Congressional Budget Office*

External Data Set Secured by RAAS

- ➢ Over 275,000 Businesses
- ➢ 32 Strata
- ➢ 8 Prior Quarters Data
- ➢ 3 Credit Scores (Overall, Finance & Collection)
- ➢ 19 Credit Risk Factors (UCC, Legal, Payment Records . . .)

Matching IRS Data

- ➢ Prior Filing and Payment Information
- ➢ Dependent Variable: Balance Due Of At Least $5,000 in 4Q 2012

Both Data Sets

➢ After Validation, Prepared Data

- Added Transformed Versions
  - Dollar & Count Variables
  - Square Root, Log, and Percent of Total Compensation
- Binned Data
  - Credit Agency Defined Bins
- Created Indicators
  - Specific Conditions
  - Changes Across Quarters

Credit Score Range	Credit Score Risk Class	Percent with an Unpaid Balance > $1,000				
		1Q2012	**2Q2012**	**3Q2012**	**4Q2012**	**Average**
1 - 10	High	28.7%	28.7%	28.9%	28.7%	28.8%
11 - 25	High-Medium	29.2%	29.1%	28.6%	28.8%	28.9%
26 - 50	Medium	28.9%	28.9%	29.1%	29.2%	29.0%
51 - 75	Low-Medium	28.8%	29.0%	29.0%	28.9%	28.9%
76 -100	Low	28.9%	28.7%	28.8%	29.0%	28.9%

Each Data Set (Separately)

➤ Factor Analysis

- Selected Most Correlated Variable From Each Factor
- Internal Data: 60 Factors
- External Data: 30 Factors

➤ Initial Regressions

➤ Phase 1: Stepwise With 60 Internal Variables
➤ Phase 2: Stepwise From Stage 1 & 30 External Variables

➤ Tested Dozens Of Additional Models Adding Additional Variables

Model	AIC	SC	Somers' D	AUC	Deviance	Top Decile Percent
IRS Data Only	101,618	102,353	0.72	0.86	0.36	56.5%

An additional 11 employers owing at least $5,000 have scores in the top decile.

Model	AIC	SC	Somers' D	AUC	Deviance	Top Decile Percent
IRS Data Only	101,618	102,353	0.72	0.86	0.36	56.5%
Combined Data	101,608	102,383	0.72	0.86	0.37	56.5%

An additional 11 employers owing at least $5,000 have scores in the top decile.

Model	AIC	SC	Somers' D	AUC	Deviance	Top Decile Percent
Worsening Credit Risk Class	113,706	113,840	0.34	0.67	0.50	22.8%
Worsening Finance Risk Class	172,586	172,752	0.32	0.66	0.77	17.3%

Used the 3rd Quarter 2012 Risk Class with IRS information to predict the 4th Quarter.

Using This Data	To Predict	Chi-Square	Prob > Chi-Square
Credit Score	Payment Compliance	0.60	0.44
Financial Risk	Payment Compliance	2.17	0.14
Collection Prediction	Payment Compliance	0.72	0.40

From This Project We Conclude:

➤ Available IRS Data Are Robust

- We Can Build Strong Models From Internal Data

➤ External Credit Scores Add Little To These Models

➤ Reminder: This Applies Only To Employment Tax Prediction

June 21, 2017

BETTER IDENTIFICATION OF POTENTIAL EMPLOYMENT TAX NONCOMPLIANCE USING CREDIT BUREAU DATA

IRS Research Conference

Internal Revenue Service

RAAS Taxpayer Behavior Lab

Saurabh Datta, Patrick Langetieg and Brenda Schafer

IRS Research, Applied Analytics & Statistics

Research Objectives

- Demonstrate that matching a homogenous sample of employers with third-party short- and long-term credit bureau credit scores may proactively identify potential noncompliant employers

- Identify past behavior patterns and trends that may impact future behavior

- Show that the concurrent application of both the scores may inform risk policies

Research, Applied Analytics & Statistics

Sample Design

Phase I

■ Detected cases ■ Other cases

7%

93%
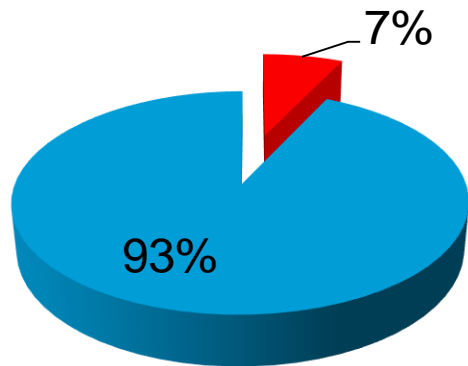
- Detected cases were a rare event with realization rate of ~7%
- 32 Strata
- Analyzing employment tax noncompliance was not the sole purpose of this sample
- Sample Period: 2010Q4-2014Q4

Phase II

■ Detected cases ■ Other cases

33%

67%
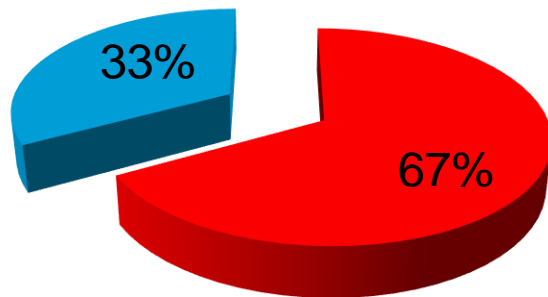
- Detected cases are over sampled to ~67% to understand and study potential noncompliance in greater detail
- 5 Strata
- Studying employment tax noncompliance is the sole objective of this sample
- Sample Period: 2012Q4-2016Q4

Data Structure

- Sample of 250,000 businesses

  - 160,627 matched with IRS's administrative data

  - Reference Quarter = 2014Q4 (December)

  - Reviewed data from 8 prior quarters

  - 2 Credit Risk Scores (Short- and Long-Term)

  - 200+ Credit Risk Variables (Total Outstanding Balance, Lien Balance, Number of Legal Outstanding Issues, Accounts in Collection, No. of employees, etc.)

Research, Applied Analytics & Statistics

Definitions

- **Detected Noncompliant Employer**
  - An employer who received a first notice regarding potentially unpaid payroll taxes at some point during the eight quarters prior to 2014Q4 and whose case ultimately resolved in an assessment of unpaid payroll taxes
  - 67% of sample

- **Other Employer**
  - An employer who were not subjected to enforcement action during the eight quarters prior to 2014Q4
  - 33% of sample

- **Short Term Credit Score**
  - Predicts the likelihood of defaulting in the next 12 months on a credit obligation that has been past due for more than 91 days

- **Long Term Credit Score**
  - Predicts the probability of bankruptcy or the prospect of defaulting on 75 percent of the credit obligations that are more than 91 days past due

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Identification Rate of Detected and Other Cases based on Short-Term Credit Score (2014Q4)
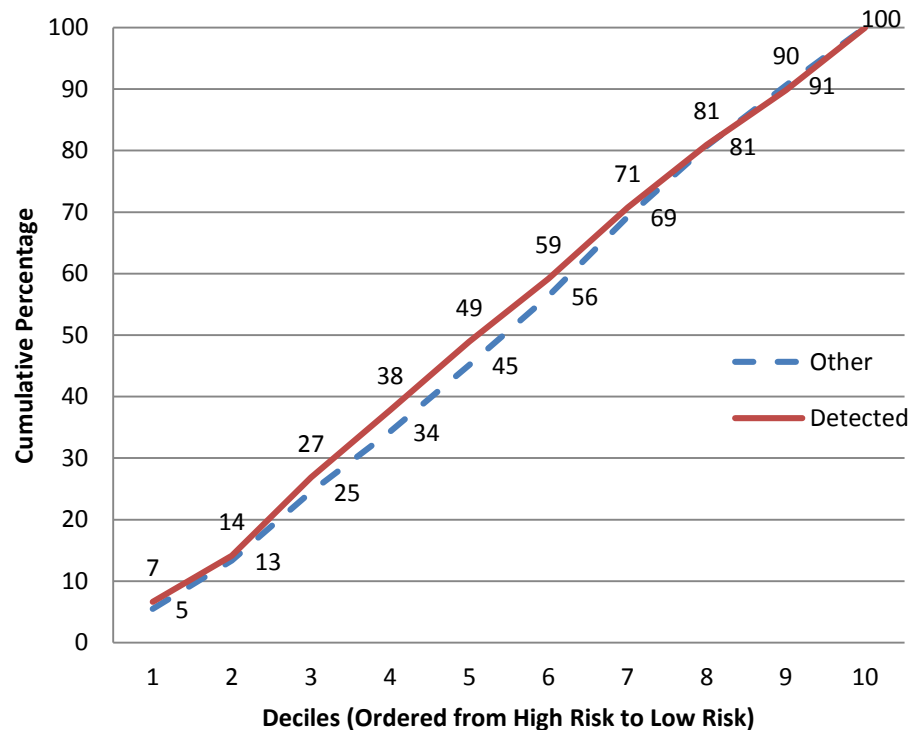
- Lower deciles are associated with higher risk

- Recognition rate of Detected cases is only slightly better than the Other
  - ❖ 14 percent of the Detected cases are within the top two deciles of highest risk
  - ❖ 13 percent of the Other cases are within the same range

Identification Rate of Detected and Other Cases based on Long-Term Credit Score (2014Q4)
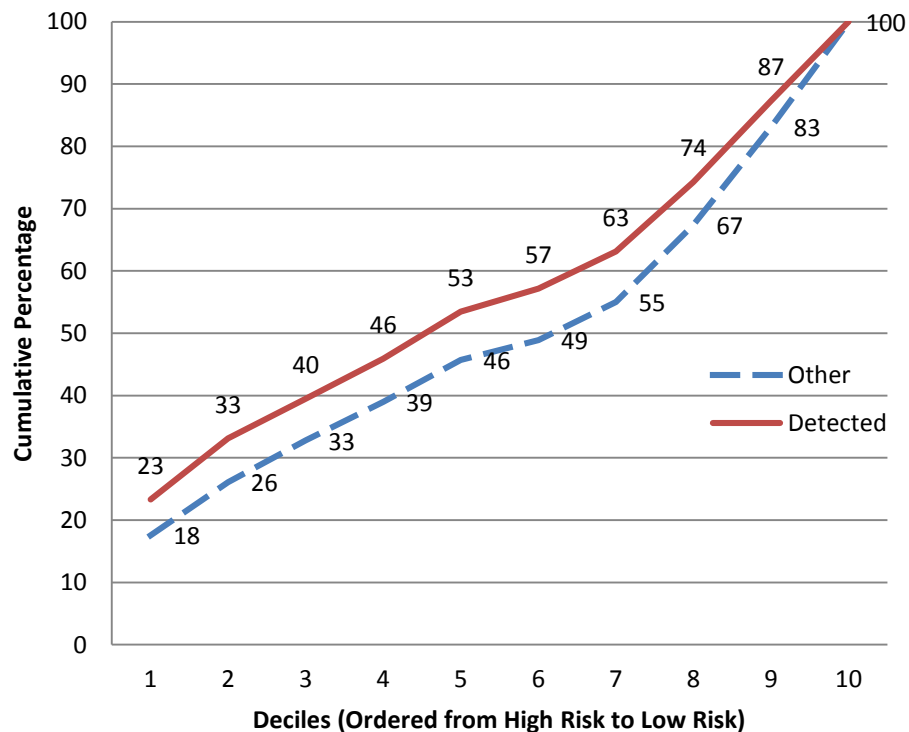
- Clear separation between the risk profiles of Detected and Other cases

  - ❖ 33 percent of the Detected cases are within the top two deciles of highest risk
  - ❖ 26 percent of the Other cases are within the same range

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Risk Classification Matrix

Short-Term Risk	Long-Term Risk	
	Low	High
Low	Stable Segment	Medium Risk
High	Slow Recovery	High Risk

Source: Experian, 2016; RAAS Taxpayer Behavior Lab, May 2017

Combination of Two Risk Scores

- **Medium Risk:**
  - ❖ Fulfilling Short-term credit obligations
  - ❖ Lagging long-term credit payments

- **Slow Recovery:**
  - ❖ Experiencing difficulties with short-term credit obligations
  - ❖ Meeting long-term credit responsibilities

- **High Risk:**
  - ❖ Facing high possibility of financial crisis

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Risk Classification Matrix

Detected Cases

Short-Term Risk	Long-Term Risk	
	Low	High
Low	Stable Segment (2014Q4:67.9%) (2013Q4:67.4%) (2012Q4:69.8%)	Medium Risk (2014Q4:13.5%) (2013Q4:14.4%) (2012Q4:12.0%)
High	Slow Recovery (2014Q4:8.8%) (2013Q4:8.3%) (2012Q4:9.5%)	High Risk (2014Q4:9.8%) (2013Q4:9.9%) (2012Q4:8.7%)

Other Cases

Short-Term Risk	Long-Term Risk	
	Low	High
Low	Stable Segment (2014Q4:72.4%) (2013Q4:71.9%) (2012Q4:69.8%)	Medium Risk (2014Q4:10.0%) (2013Q4:10.6%) (2012Q4:12.0%)
High	Slow Recovery (2014Q4:10.1%) (2013Q4:9.6%) (2012Q4:9.5%)	High Risk (2014Q4:7.5%) (2013Q4:7.9%) (2012Q4:8.7%)

- A larger percentage of the Detected cases are in the High Risk and Medium Risk segments
- The Detected category experienced decline in risk scores and Other cases an improvement in 2013 and 2014 compared to 2012
  - ❖ Biggest change in Detected cases is observed in the medium risk group
- Application of both scores simultaneously seems to provide better identification of potential payroll noncompliance

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Risk Classification Matrix

**Detected Cases Compared to Overall
Detected Rate of 66.7 Percent**

Short-Term Risk	Long-Term Risk	
	Low	High
Low	Stable Segment (2014Q4: -1.4%) (2013Q4: -1.5%) (2012Q4: -1.3%)	Medium Risk (2014Q4: 6.3%) (2013Q4: 6.3%) (2012Q4: 5.6%)
High	Slow Recovery (2014Q4: -3.0%) (2013Q4: -3.3%) (2012Q4: -4.3%)	High Risk (2014Q4: 5.5%) (2013Q4: 4.8%) (2012Q4: 3.9%)

Note: Net percentage of Detected cases compared to overall rate of 66.7% is reported in parentheses.

- Joint application of both the scores may be able to identify potential cases prior to the observation period

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IRS

Risk Classification Matrix

Detected Cases with Legal Issues

Short-Term Risk	Long-Term Risk	
	Low	High
Low	Stable Segment (2014Q4: -2.8%) (2013Q4: -5.6%) (2012Q4: -9.1%)	Medium Risk (2014Q4: -4.1%) (2013Q4: -5.8%) (2012Q4: -10.5%)
High	Slow Recovery (2014Q4: 8.3%) (2013Q4: 5.5%) (2012Q4: 1.2%)	High Risk (2014Q4: 20.4%) (2013Q4: 19.0%) (2012Q4: 15.5%)

Note: (1) Legal issues include tax liens at federal, state and local tax levels, bankruptcies, credit accounts in collection and UCC (Uniform Commercial Code) filings
(2)The percentages in the parentheses represents the net percentage of Detected cases with legal issues in excess to the overall rate of 24.5%

- When considering the presence of legal issues among Detected cases, the Slow Recovery and High Risk segments identify Detected cases better and earlier than the observation period

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Risk Classification Matrix

Detected Cases with Average Balance of $5,000 Across All Credit Lines

Short-Term Risk	Long-Term Risk	
	Low	High
Low	Stable Segment (2014Q4: 1.8%) (2013Q4: -0.7%) (2012Q4: -1.3%)	Medium Risk (2014Q4: -11.3%) (2013Q4: -11.3%) (2012Q4: -11.3%)
High	Slow Recovery (2014Q4: 14.8%) (2013Q4: 11.8%) (2012Q4: 10.9%)	High Risk (2014Q4: -3.4%) (2013Q4: -3.6%) (2012Q4: -3.8%)

Note: The percentages in the parentheses represents the net percentage of Detected cases with average balance of $5,000 in excess to the overall rate of 11.3%

- High credit balances my be indicative of risk among the Slow Recovery group

- Treatment Note:
  - ❖ Employers in the Slow Recovery category are attempting to improve their credit ratings. As a result, they may be more receptive to outreach and education on compliance and payment options than to default

Risk Classification Matrix

Detected Cases among Businesses that are Less than 3 Years Old in 2012Q4

Short-Term Risk	Long-Term Risk	
	Low	High
Low	Stable Segment (2014Q4: -1.7%) (2013Q4: 1.4%) (2012Q4: 4.2%)	Medium Risk (2014Q4: 7.5%) (2013Q4: 16.1%) (2012Q4: 21.5%)
High	Slow Recovery (2014Q4: -1.2%) (2013Q4: 0.2%) (2012Q4: 1.6%)	High Risk (2014Q4: 4.4%) (2013Q4: 9.4%) (2012Q4: 15.4%)

Note: The percentages in the parentheses represents the net percentage of Detected cases with age of the business being less than 3 years in excess to the overall rate of 11.7%

- Newer businesses might be more likely to have a lower credit score

- Undercapitalized and market variability may make younger businesses more vulnerable to noncompliance

- A new business in the medium or high risk category may be at higher risk of default

238   **Better Identification of Potential Employment Tax Non-compliance using Credit Bureau Data | RAAS Taxpayer Behavior Lab**

Research, Applied Analytics & Statistics IRS

Conclusions

- **Preliminary evidence indicates that the combined credit bureau score method may be useful**
  - ❖ Better identification and early detection of potential noncompliance
  - ❖ Improvements in detection rates for businesses in the Medium, High Risk and Slow recovery categories
  - ❖ Superior detection rates for different groupings within noncompliance categories

- **Future research:**
  - ❖ Study association between changes in credit score and Detected noncompliance
  - ❖ Further study the causality between the two credit scores and its impact on detecting future noncompliance
  - ❖ Development of a credit risk model (Markov Chain Transitional Matrix) to study the relationship between transition between credit categories and potential future noncompliance

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Thank You

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Analytics & Statistics

Session 4

Creative Use of Non-Tax Data Sources

Discussion of

- **Supplementing IRS Data with External Credit Report Data in Employment Tax Predictive Models (Curt Hopkins)**

- **Better Identification of Potential Employment Tax Noncompliance Using Credit Bureau Data (Saurabh Datta)**

Adam Isen
(U.S. Treasury, Office of Tax Analysis)

IRS-TPC Research Conference

June 21, 2017

Estimating the Effects of Tax Reform on Compliance Burden

June 22, 2017
Daniel L. Berger, Eric Toder, Victoria Bryant, John Guyton and Patrick Langetieg
IRS – TPC Conference

TPC TAX POLICY CENTER
URBAN INSTITUTE & BROOKINGS INSTITUTION

Introduction

- Compliance costs are one part of the resource cost of taxation, these costs reflect the social cost imposed by taxes
- Slemrod (2005)
  - Compliance costs are predominately time and out of pocket expenses
  - These costs include record keeping, preparation, learning about new forms / laws, lawyers, accountants, software etc.
- What can be done to lower compliance costs?

Model Overview

- TPC has recently built a version of the Individual Taxpayer Burden Model (ITBM) used by IRS RAAS into TPC's microsimulation model

- IRS developed an adapted version of the model to work specifically with the SOI Public Use File (PUF)

- This model allowed TPC to analyze baseline compliance costs and changes in compliance costs associated with reform plans

Compliance Cost Model

- Rational taxpayer cost-minimization framework
  - Decreasing marginal costs with income
  - Time / money trade off based on productivity

- Calibrated to observe behavior

- Used in conjunction with tax calculator

- Compliance Cost Factors
  - Economic Activity
  - Tax preparation method
  - Complexity of taxpayer's reporting requirements

- Capture the degree to which reporting requirements demand additional recordkeeping

- Examples of the categories of increasing difficulty
    - **Low**: wages, interest, dividends
    - **Medium**: EITC, itemized deductions, business income
    - **High**: AMT credits, AMT taxable income, rental depreciation,

Adapted Burden Model

- Coefficients include preparation method, complexity categories, tax return line counts and modified positive income (MPI)
- The TPC adapted model is stratified by filing status
- Complexity category coefficients are slightly higher in adapted model
- The model was calibrated to meet aggregate totals, which may have implications for distributional estimates

Allocation of IRS Model Individual Taxpayer Compliance Cost, 2010

Composition of Discretionary Spending
Percent of Total
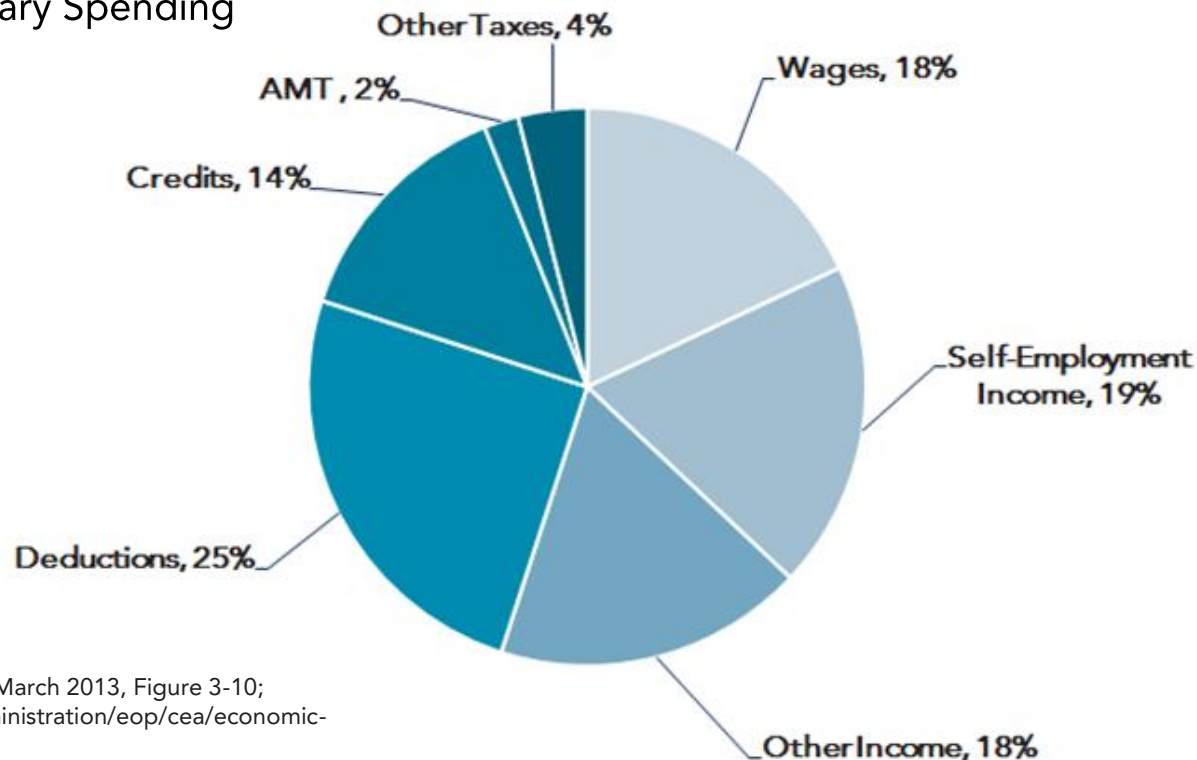
Source: Economic Report of the President, March 2013, Figure 3-10;
https://obamawhitehouse.archives.gov/administration/eop/cea/economic-report-of-the-President/2013

www.taxpolicyc

Allocation of TPC Model Individual Taxpayer Compliance Cost, 2017

FIGURE 2

Composition of Discretionary Spending
Percent of Total
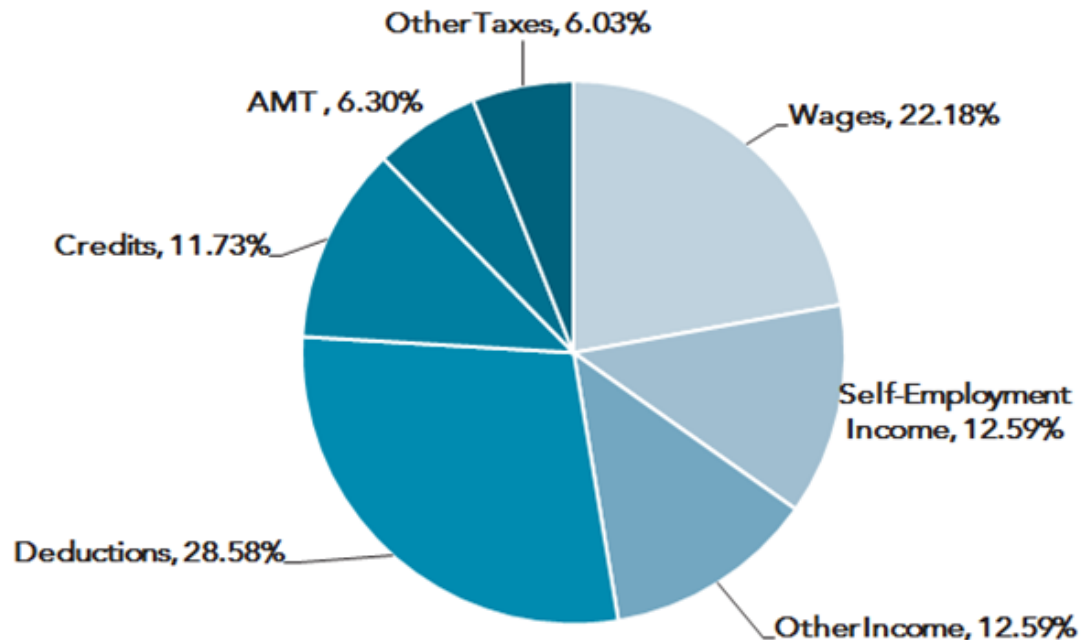
- Other Taxes, 6.03%
- AMT, 6.30%
- Wages, 22.18%
- Credits, 11.73%
- Self-Employment Income, 12.59%
- Deductions, 28.58%
- Other Income, 12.59%

Source: Urban Brookings Tax Policy Center Microsimulation Model (version 0217-1)

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Baseline Compliance Burden Estimates

TABLE 1

Distribution of Compliance Cost by Expanded Cash Income Percentile, 2017

Expanded Cash Income Percentile	Percent Change in After Tax Income	Share of Total Federal Tax Change	Average Federal Tax Change ($)	Average Federal Tax Rate[e]	
				Change (Percentage Points)	Under the Proposal
Lowest Quintile	-0.8	5.8	110	0.8	5.0
Middle Quintile	-0.7	14.8	410	0.6	14.6
Top Quintile	-0.8	49.4	1,910	0.6	26.3
Top 1 Percent	-0.6	10.7	8,780	0.4	33.3
All	-0.8	100.0	530	0.6	20.6

Source: Urban Brookings Tax Policy Center Microsimulation Model (version 0217-1)

Compliance Cost in Dollars, 2017

FIGURE 3

Average Dollar Value of Compliance Burden by ECI Quintile, 2017
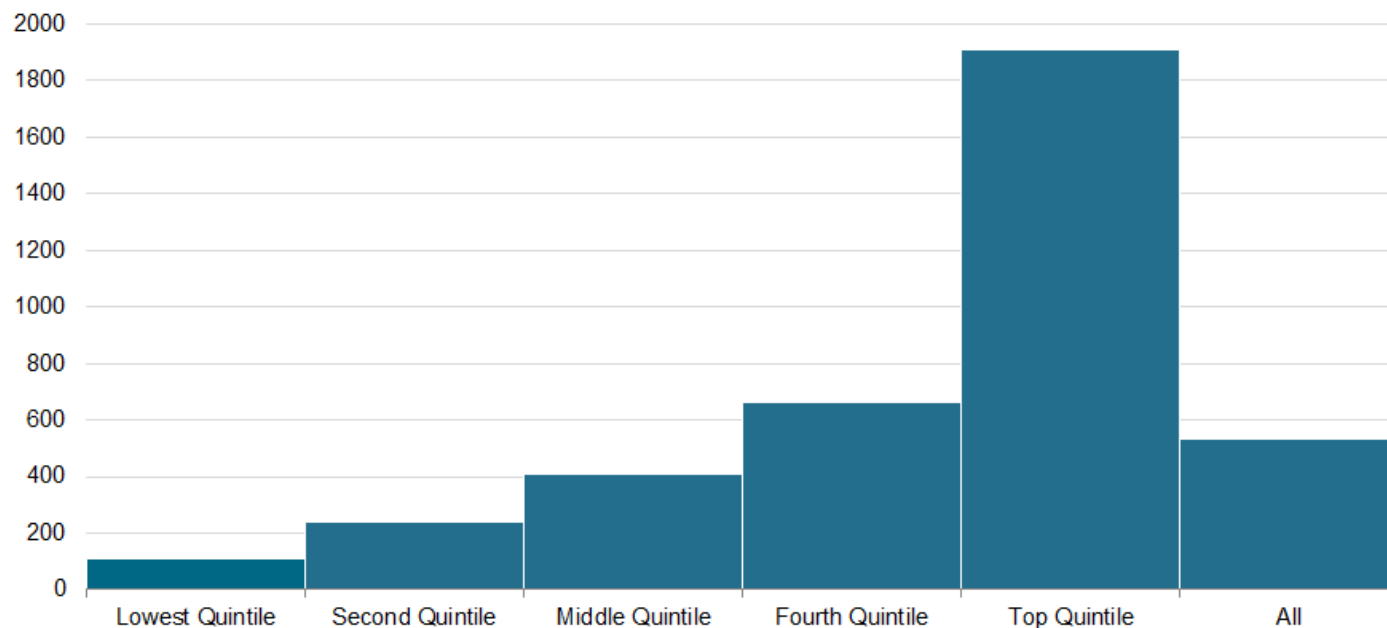
Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0217-1).

Compliance Cost Share of Pretax Income,

FIGURE 4

Average Share of Pretax Income by ECI Quintle, 2017
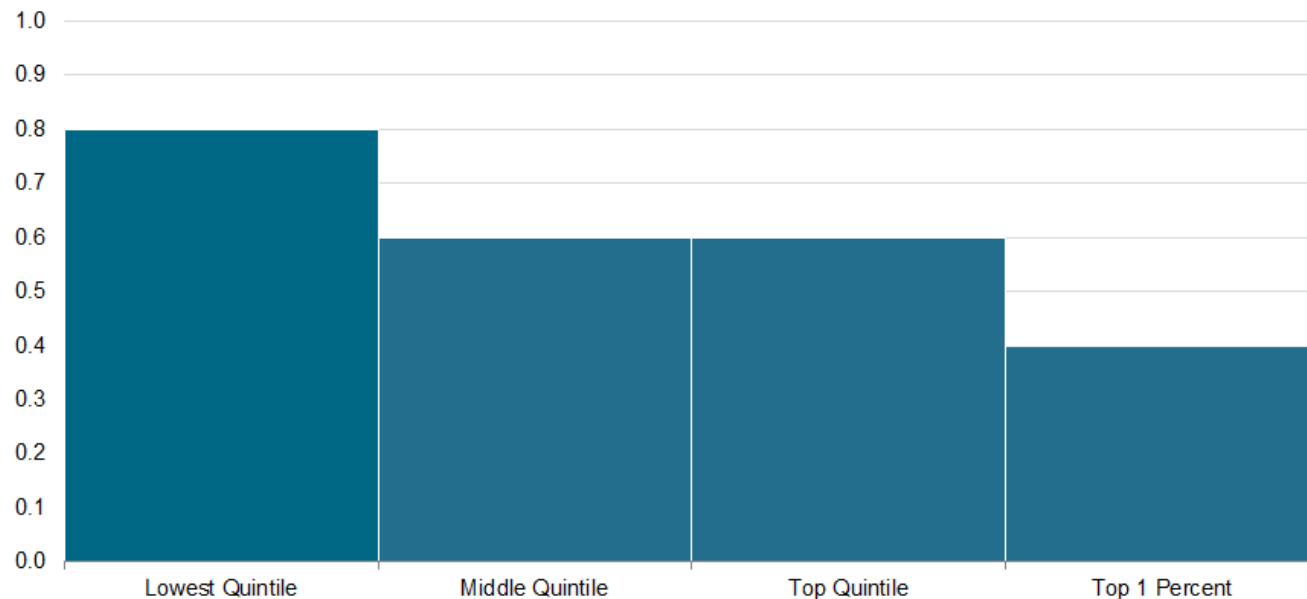
Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0217-1).

Reducing Compliance Costs

Marcus et al. 2013

- Ways to limit compliance costs
  - Minimize / Eliminate reporting where information of little use to tax policy or administration
  - Consider whether the policy outweighs the cost of compliance for taxpayers
  - Target Drivers of taxpayer compliance
- TPC's reform options focus on the third mechanism of lowering compliance costs

Reform Option 1

- Revenue neutral repeal of itemized deductions by proportionally increasing the standard

TABLE 2
Change in tax and compliance cost as a share of pretax income, 2017

Expanded cash income percentile	Compliance Cost	Tax & Compliance Cost
Lowest Quintile	-0.2	-0.7
Middle Quintile	-0.2	-1.7
Top Quintile	-0.2	1.0
Top 1 Percent	-0.2	2.3
All	-0.2	-0.2

Source: Urban Brookings Tax Policy Center Microsimulation Model (version 0217-1)

Reform Option 2

- Revenue neutral repeal of itemized deductions except the mortgage interest and charitable giving deductions by proportionally increasing the standard deduction

TABLE 3
Change in tax and compliance cost as a share of pretax income, 2017

Expanded cash income percentile	Compliance Cost	Tax & Compliance Cost
Lowest Quintile	-0.2	-0.7
Middle Quintile	-0.2	-1.3
Top Quintile	-0.2	0.7
Top 1 Percent	-0.2	1.5
All	-0.2	-0.2

Source: Urban Brookings Tax Policy Center Microsimulation Model (version 0217-1)

Reform Option 3

- Revenue neutral repeal of the Alternative Minimum Tax by pairing down the state and local tax deduction

TABLE 4
Change in tax and compliance cost as a share of pretax income, 2017

Expanded cash income percentile	Compliance Cost	Tax & Compliance Cost
Lowest Quintile	0.0	0.0
Second Quintile	0.0	0.0
Middle Quintile	0.0	0.1
Fourth Quintile	0.0	0.1
Top Quintile	-0.1	-0.2
All	0.0	-0.1
Addendum		
80-90	0.0	0.2
90-95	0.0	0.1
95-99	-0.2	-0.7
Top 1 Percent	-0.1	-0.2
Top 0.1 Percent	0.0	-0.2

Estimation Takeaways

- TPC estimates that individual taxpayer compliance costs for 2017 were $92 billion or an average of $530 per tax filer

- While compliance costs increase with Expanded Cash Income (ECI), the lowest ECI quintile's costs are the highest as a share of pre-tax income

- Simplifying the tax can lead to lower burden costs, and mitigate costs for taxpayers that might otherwise see tax increases

- IRS will continue to work with TPC to calibrate and test the PUF model to better align with the IRS full model results

- IRS will provide public documentation of the burden model to accompany the PUF

THANK YOU

For more information please contact:

Daniel Berger
dberger@urban.org

View other studies at
www.taxpolicycenter.org

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URBAN INSTITUTE & BROOKINGS INSTITUTION

Counting Elusive Nonfilers
Using IRS Rather Than Census Data

Pat Langetieg, Mark Payne, and Alan Plumley
IRS Research, Applied Analytics, and Statistics:
Knowledge Development & Application Division

Voluntary Filing Rate (VFR) Estimation

The VFR is defined as:

$$\text{VFR} = \frac{Number\ of\ Required\ Returns\ Filed\ on\ Time}{Total\ Number\ of\ Returns\ Required\ to\ be\ Filed}$$

Previous Census Method:

- Numerator estimated from IRS population data containing all filed returns.

- Denominator estimated from the Census Bureau's *Current Population Survey, Annual Social and Economic Supplement* (CPS-ASEC).

- Income imputed to CPS-ASEC to correct understatement of income in survey.

- But in work on the nonfiling tax gap we discovered that total number of required taxpayers in the population should be substantially higher (~11 million).

Limitations of Census Data for Estimating Required Returns

Thousands of Returns in VFR Components Estimated by Different Methods, TY 2010

	Old VFR	Nonfiler Tax Gap	
	$\dfrac{Admin}{Census}$	$\dfrac{Census\ Matched}{Census\ Matched}$	$\dfrac{Admin}{Admin}$
Numerator (required returns filed on time)	115,900		
Denominator (total required returns)	122,200		
Difference (implied number of nonfilers)	6,300		
Numerator/Denominator (implied VFR)	94.8%		

Limitations of Census Data for Estimating Required Returns

Thousands of Returns in VFR Components Estimated by Different Methods, TY 2010

	Old VFR	Nonfiler Tax Gap	
	Admin / *Census*	*Census Matched* / *Census Matched*	*Admin* / *Admin*
Numerator (required returns filed on time)	115,900	105,001	
Denominator (total required returns)	122,200	119,967	
Difference (implied number of nonfilers)	6,300	14,966	
Numerator/Denominator (implied VFR)	94.8%	87.5%	

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Limitations of Census Data for Estimating Required Returns

Thousands of Returns in VFR Components Estimated by Different Methods, TY 2010

	Old VFR	Nonfiler Tax Gap	
	$\dfrac{Admin}{Census}$	$\dfrac{Census\ Matched}{Census\ Matched}$	$\dfrac{Admin}{Admin}$
Numerator (required returns filed on time)	115,900	105,001	115,900
Denominator (total required returns)	122,200	119,967	130,787
Difference (implied number of nonfilers)	6,300	14,966	14,937
Numerator/Denominator (implied VFR)	94.8%	87.5%	88.6%

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Limitations of Census Data for Estimating Required Returns

Thousands of Returns in VFR Components Estimated by Different Methods, TY 2010

	Old VFR	Nonfiler Tax Gap	
	$\frac{Admin}{Census}$	$\frac{Census\ Matched}{Census\ Matched}$	$\frac{Admin}{Admin}$
Numerator (required returns filed on time)	115,900	105,001	115,900
Denominator (total required returns)	122,200	119,967	130,787
Difference (implied number of nonfilers)	6,300	14,966	14,937
Numerator/Denominator (implied VFR)	94.8%	87.5%	88.6%

Efforts to Correct CPS-Based Underestimates of Required Population

- Base total income on the 1040 amount when available; OR

- Backend imputation of gross income calibrated to totals in IRS data

Result not satisfactory. Significantly lower VFR estimates for Tax Year 2007 than subsequent years. This contradicts expectations and evidence from IRS administrative data that because of stimulus credits the VFR should be higher in this year.

IRS Administrative Method

- **Timely and late required filers:**
    - Determine whether timely or late and whether required or not based on gross income and net self employment thresholds.
    - For consistent series, taxpayers filing more than two years after the end of tax year are treated as not-filers.

- **Not-filers (all others):**
    - On information return but not on tax return (by two year cutoff)
    - Impute net self-employment income (based on $ reported among filers).
    - Gross up net self employment income < $433.
    - Randomly assign individuals to tax units based on CPS.
    - Determine whether required to file – same as timely and late filers.

IRS Administrative Population vs Census Population by Age, 2010
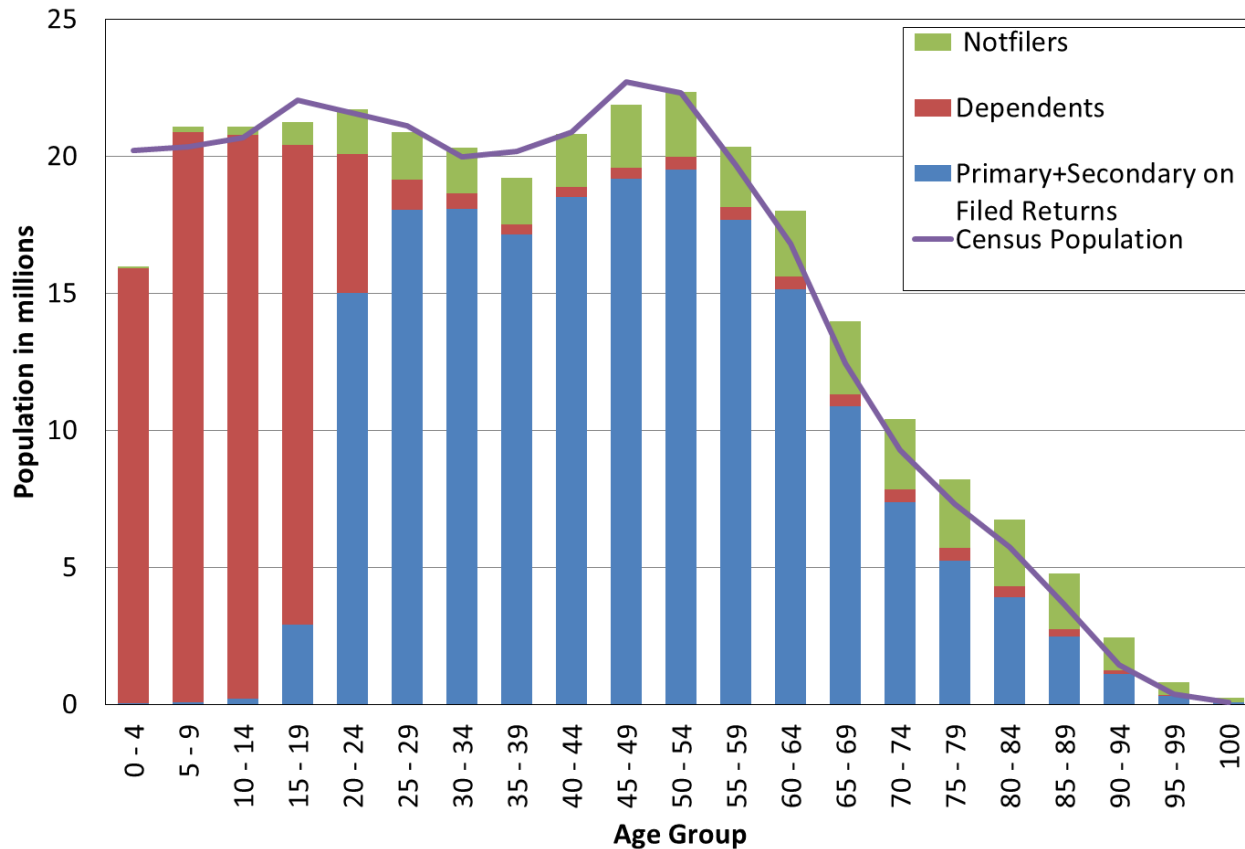
IRS population is fairly close to US Census population estimates

IRS Administrative vs. CPS-Based VFR, TY 2006 to TY 2015
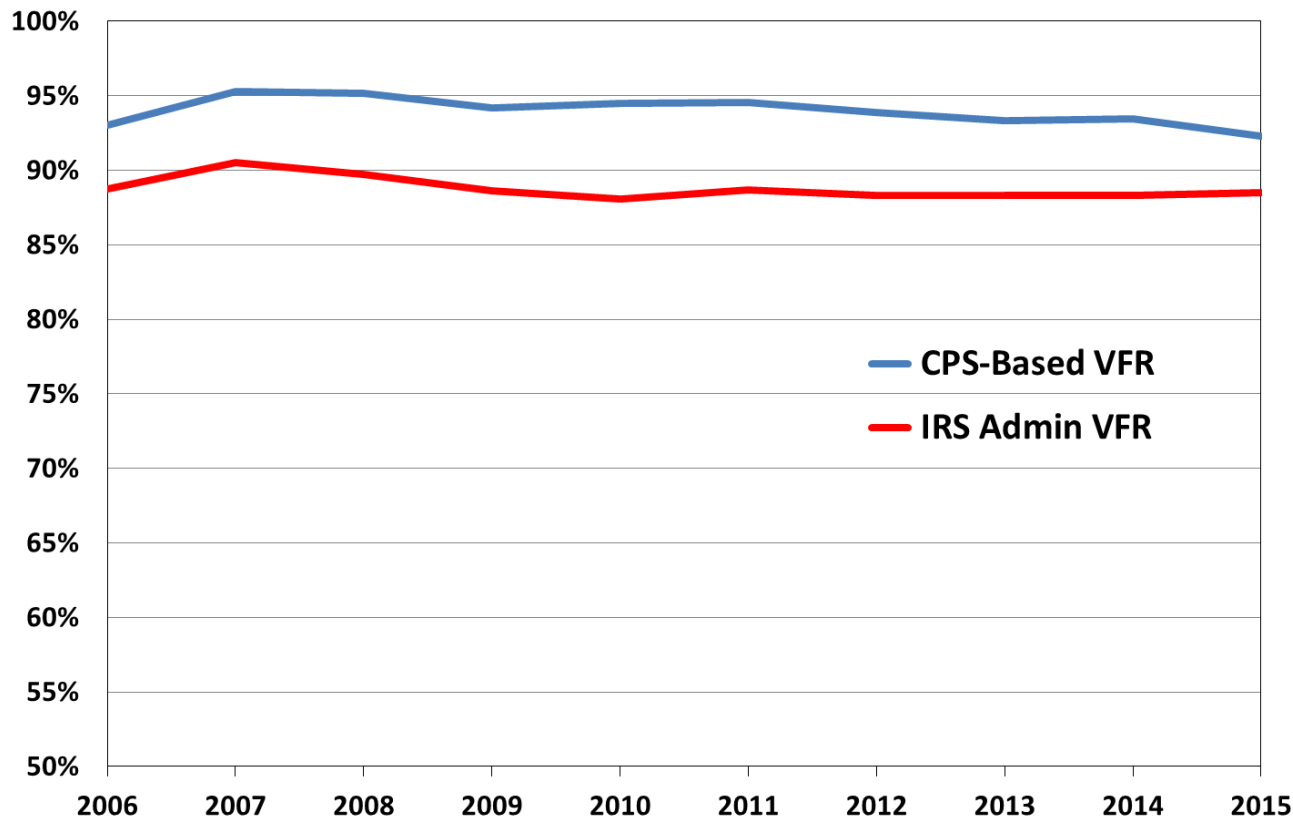
6.5% (~8 million) larger required population, results in VFR estimate that is about 5% lower than CPS method

Note: The 2015 IRS Administrative Data-based VFR is provisional.

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Nonfilers as a Percent of Total Required Population, TY 2006 to TY 2014
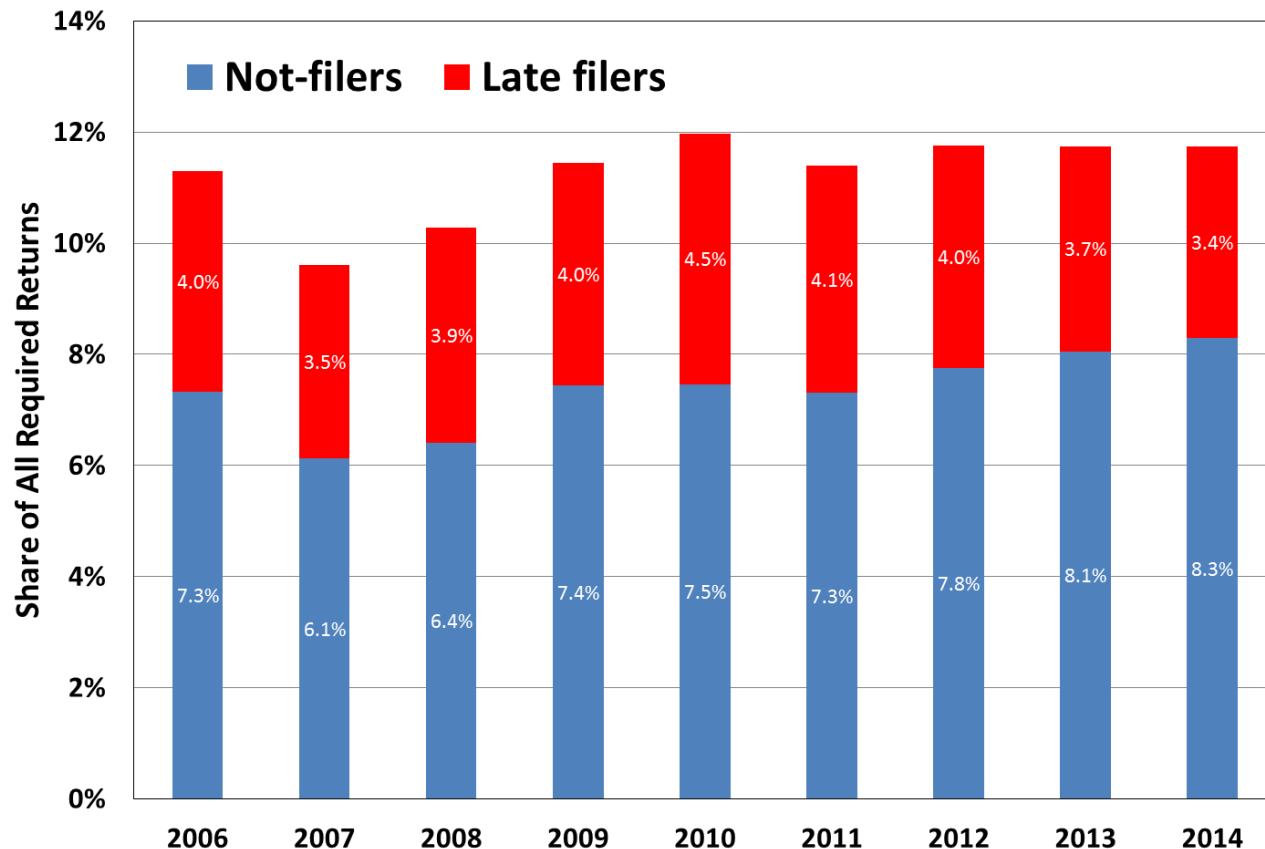
The late-filer portion of nonfilers has declined in last few years, presumably due in part due to reduced nonfiler enforcement

270   Counting Elusive Nonfilers   21 June 2017

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Count of Balance Due and Refund Late Returns by Degree of Lateness, TY 2012

Refund = 3.5 Million
Bal Due = 1.6 Million

Refund = 0.5 Million
Bal Due = 0.6 Million

Oct. 15, 2013: Filing extension deadline

Dec 31, 2014: Subsequent late filers treated as not-filers in VFR

Refund
Balance Due

Weeks from Original Filing Deadline
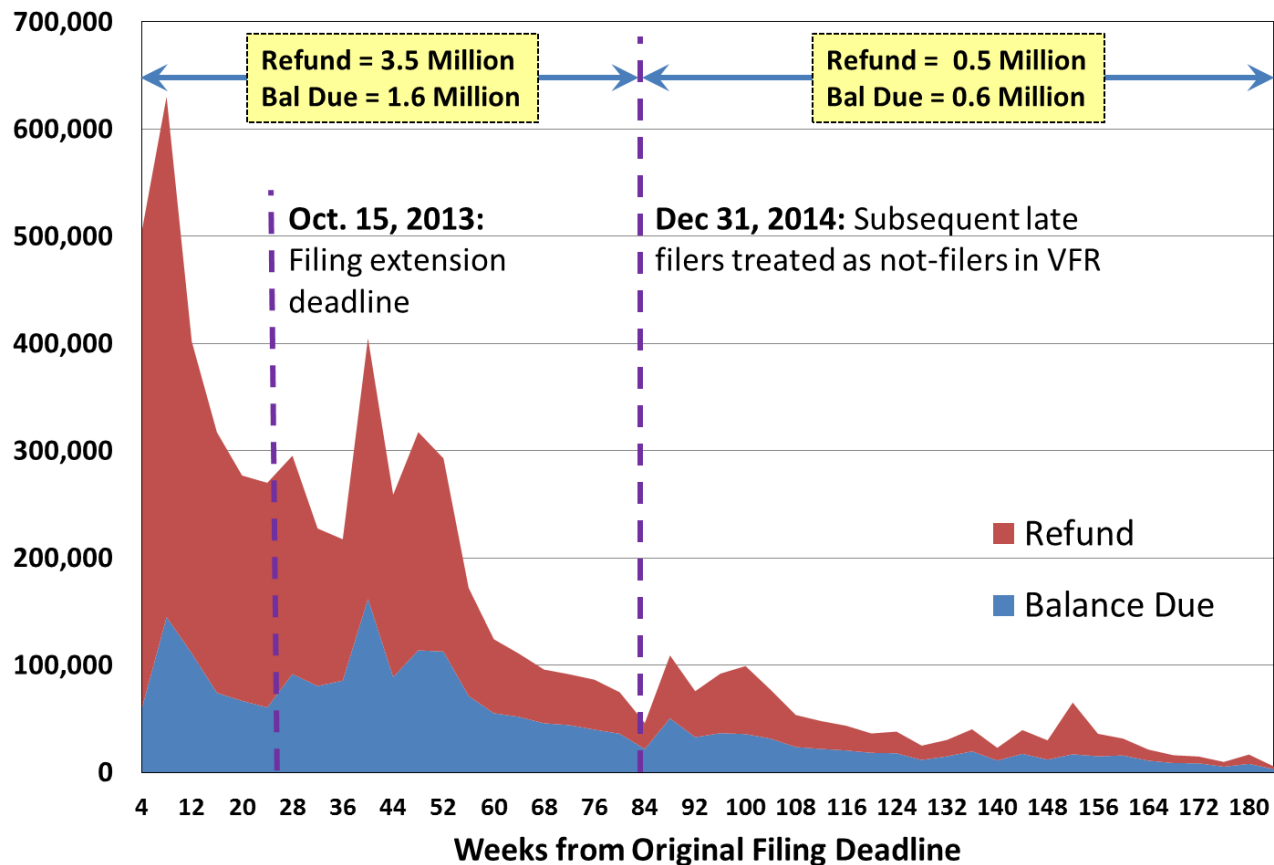
Returns with refunds make up large share of returns filed in the first months after deadline but smaller share later

Count of Late Returns by Weeks after Original Filing Deadline, TY 2012

Enforced = 0.4 Million
Non-Enforced = 4.8 Million

Enforced = 0.3 Million
Non-Enforced = 0.8 Million

Oct. 15, 2013: Filing extension deadline

Dec 31, 2014: Subsequent late filers treated as not-filers in VFR estimating process

■ Non-Enforcement
■ Enforcement

Weeks from Original Filing Deadline
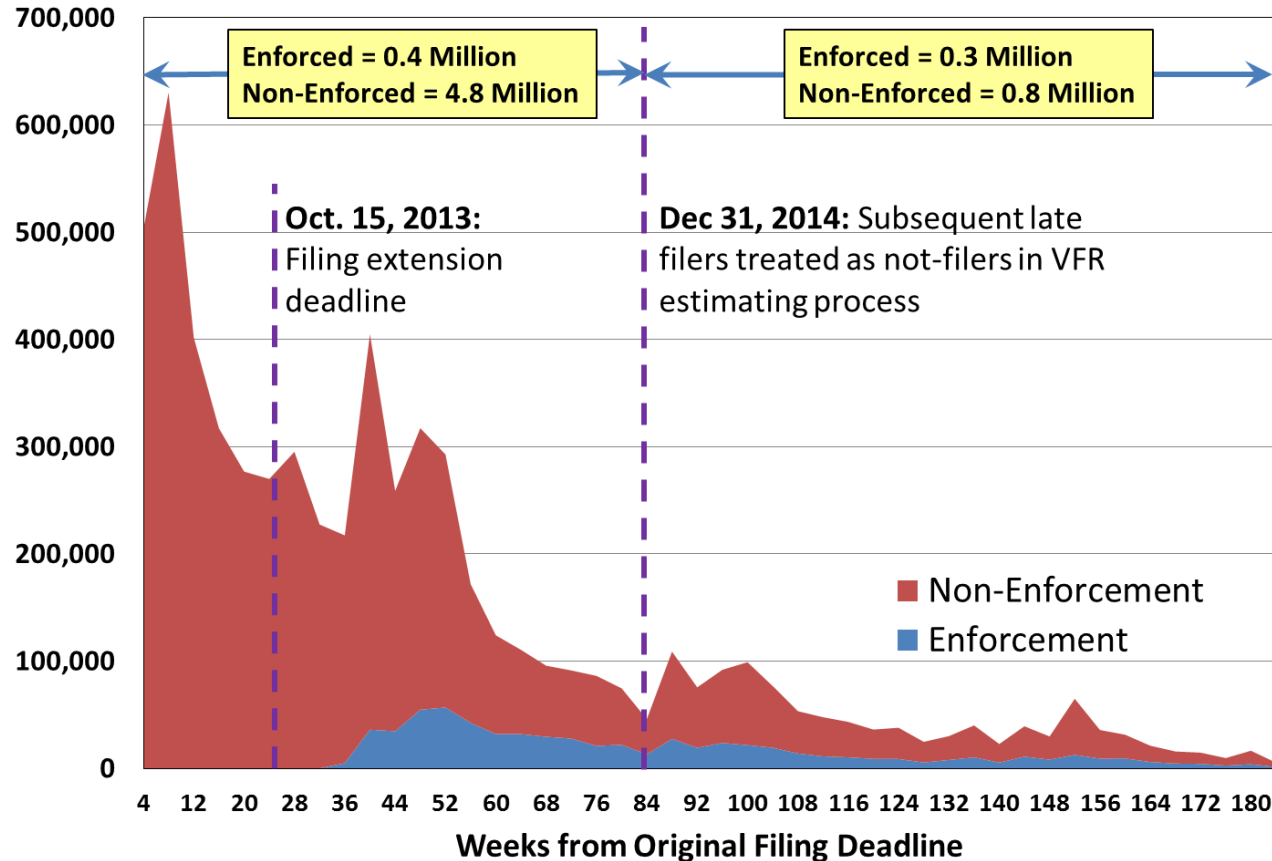
- **Most non-enforced late returns are filed within two years.**

- **Returns secured through enforcement peak about one year after the filing deadline**

- **Not a large number of returns in third and fourth years after end of tax year so no significant loss in accuracy**

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Characteristics of Nonfilers and Drivers of Nonfiling

- Since it uses the same data source for the numerator and denominator, the IRS administrative data method facilitates examination of the causes of VFR fluctuations.

- In addition, this method can facilitate learning about drivers of nonfiling.

- Imprecise at the micro level because of SE imputation and family unit imputations. But, limitations also exist with IRS-Census matched data.

- Could analyze filing behavior without SE imputations and without imputed tax units (i.e., assume all taxpayers are single) to test sensitivity of results to different assumptions

VFR with and without Imputation of Self Employment Income, TY 2006 to TY 2014
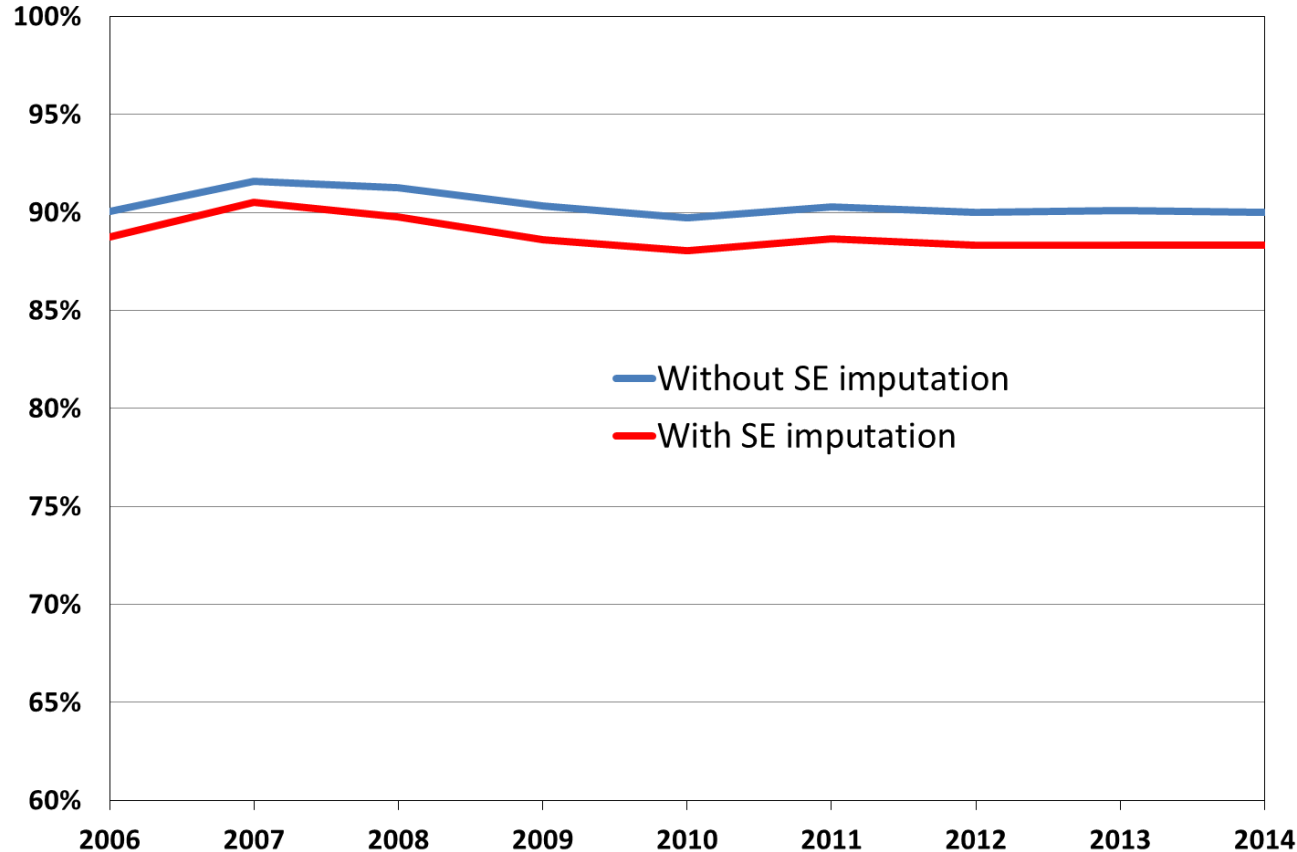
The VFR is about 1.6% lower with SE income imputation, but the trend with and without is similar

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VFR by Balance Due / Refund, TYs 2006 to 2014
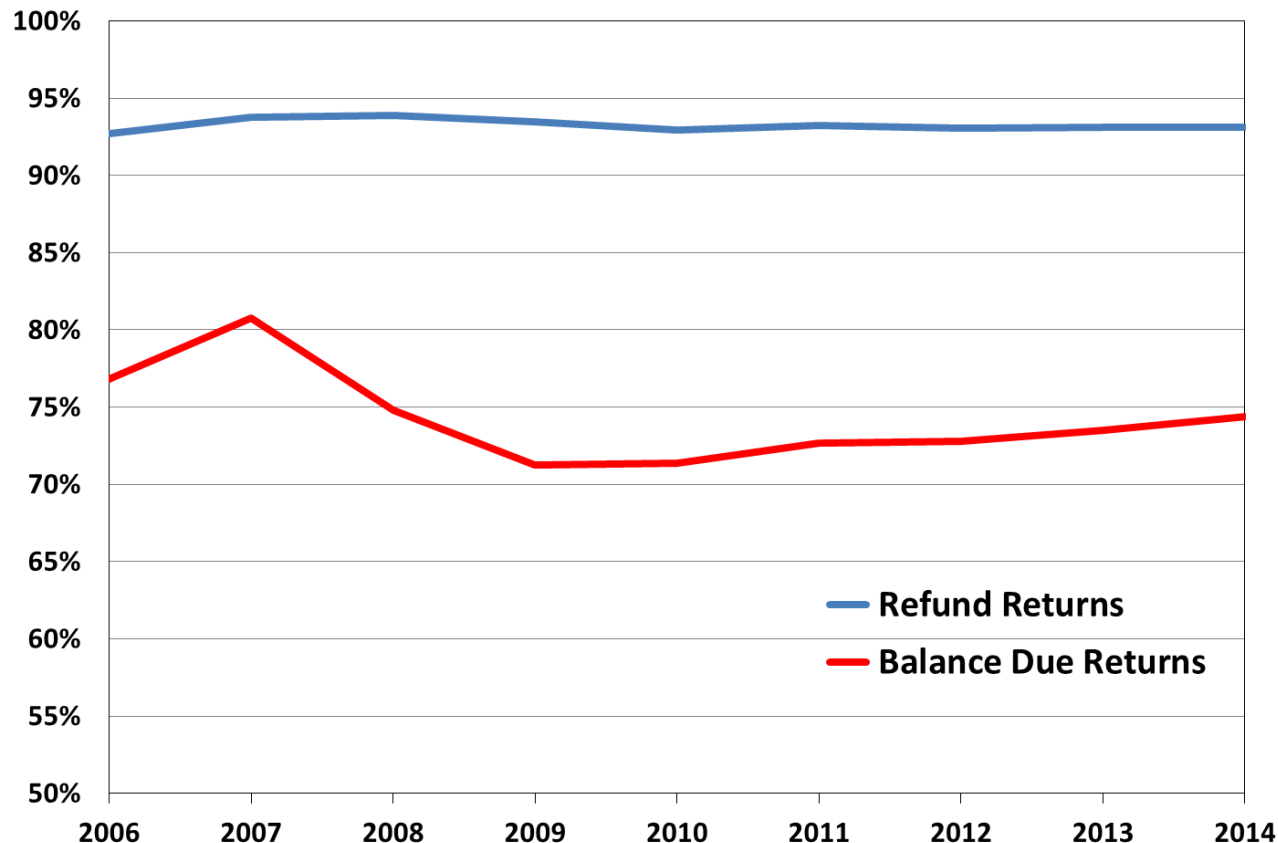
The VFR is stable and high for those owed a refund; much lower and less stable for those with a balance due

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VFR by Primary Income Types (with SE Imputation), TY 2006 to TY 2014
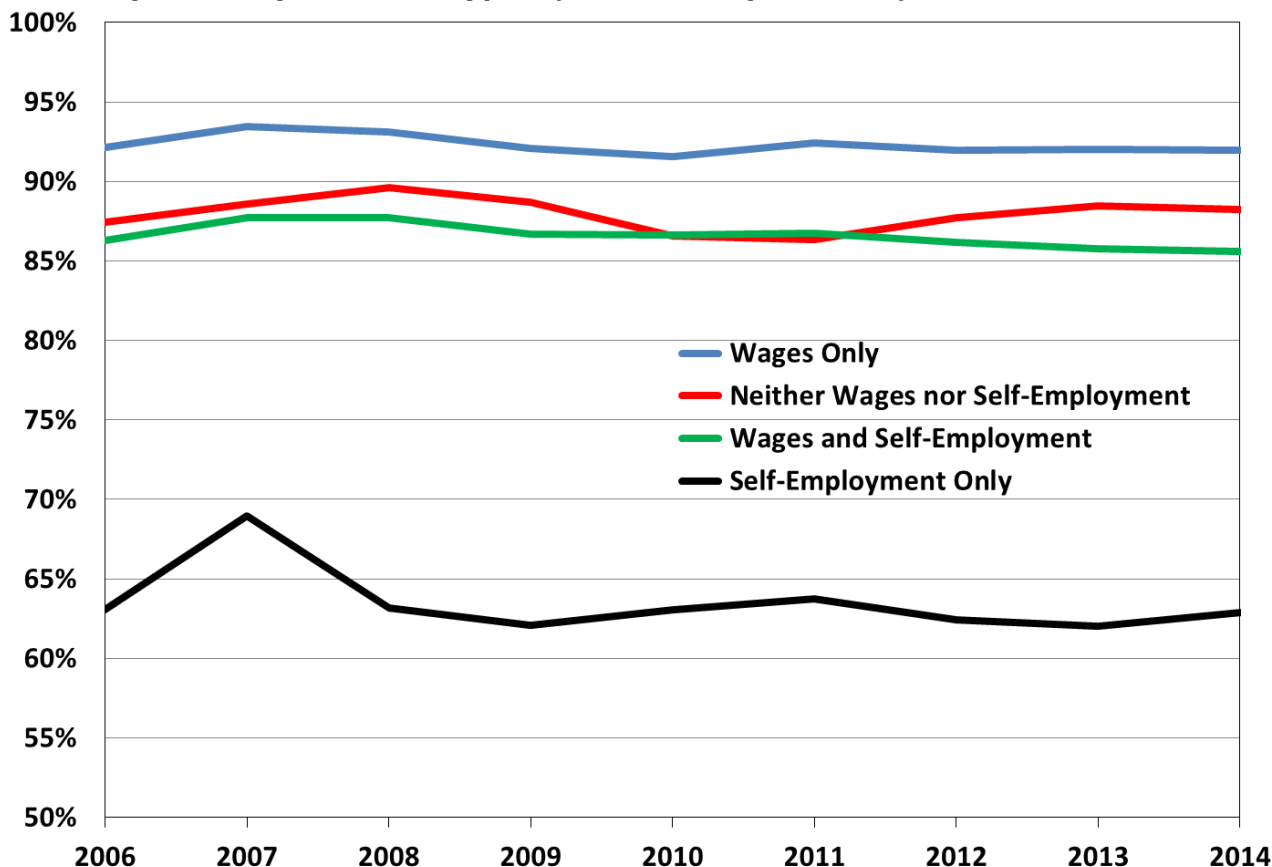
The VFR is much higher for those whose earned income is limited to wages and much lower for those with only SE income

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VFR by Primary Income Types (No SE Imputation), TY 2006 to TY 2014
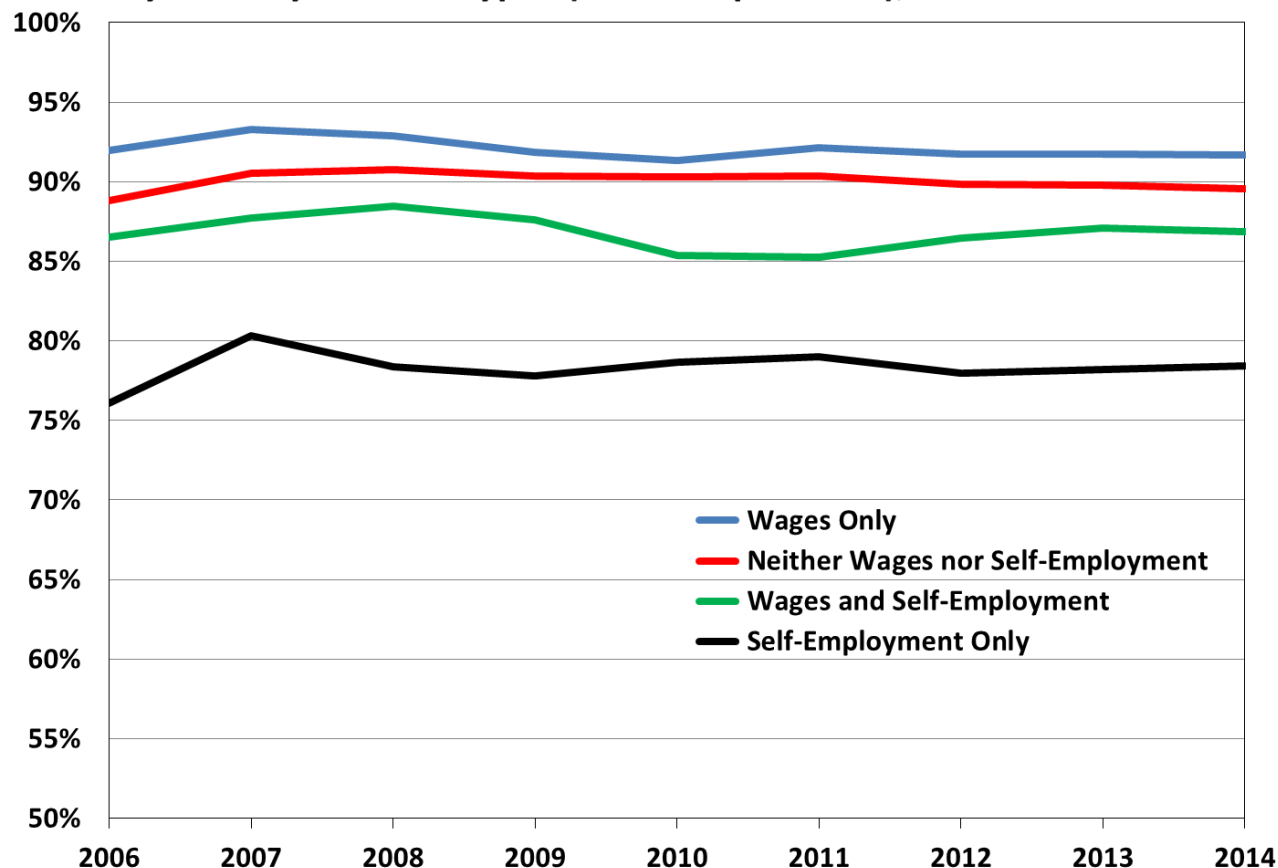
This is true even when SE imputation is removed, though difference in VFR is less

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VFR for Taxpayers Who Filed Timely in the Previous Year vs. Those Who Did Not
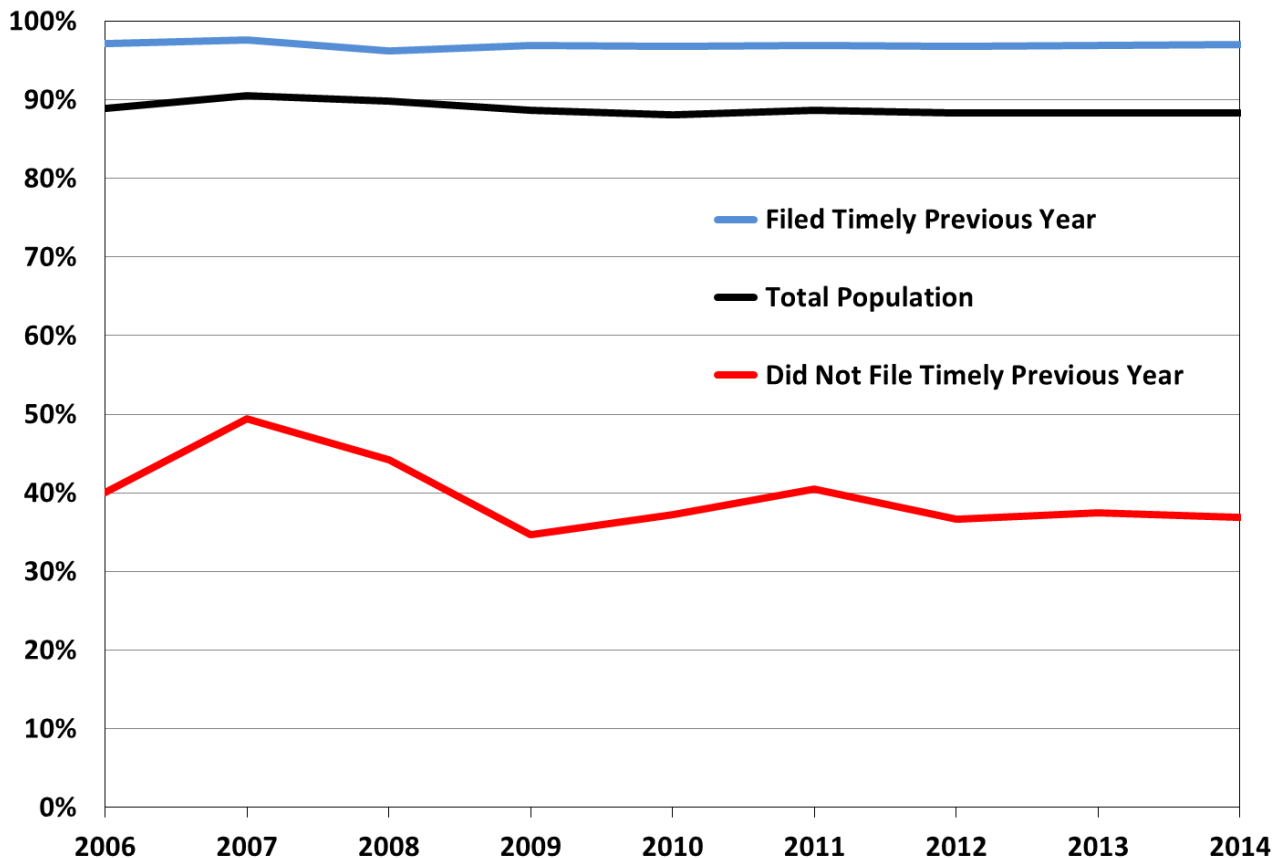
VFR is much higher for those who filed timely in the previous year

- Filed Timely Previous Year
- Total Population
- Did Not File Timely Previous Year

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VFR Single Taxpayers (>24 and <65 Years Old) by Gross Income, TY 2014

Single Threshold = $10,150

Self-Employment Only
Wages Only
Total

Gross Income ($ Thousands)
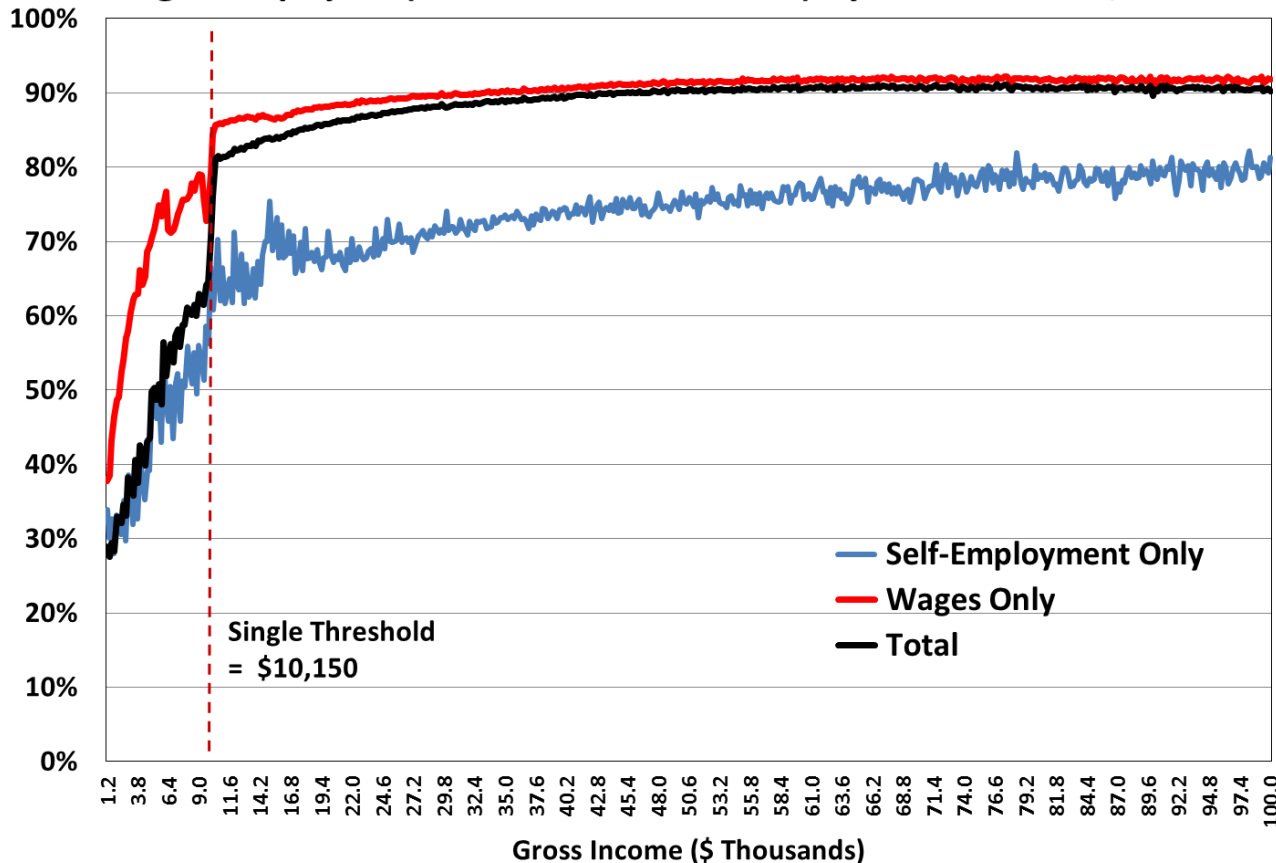
VFR (for given gross income bin) increases as gross income increases relative to the filing threshold

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IRS

VFR Married Taxpayers (<65 Years Old) by Gross Income, TY 2014
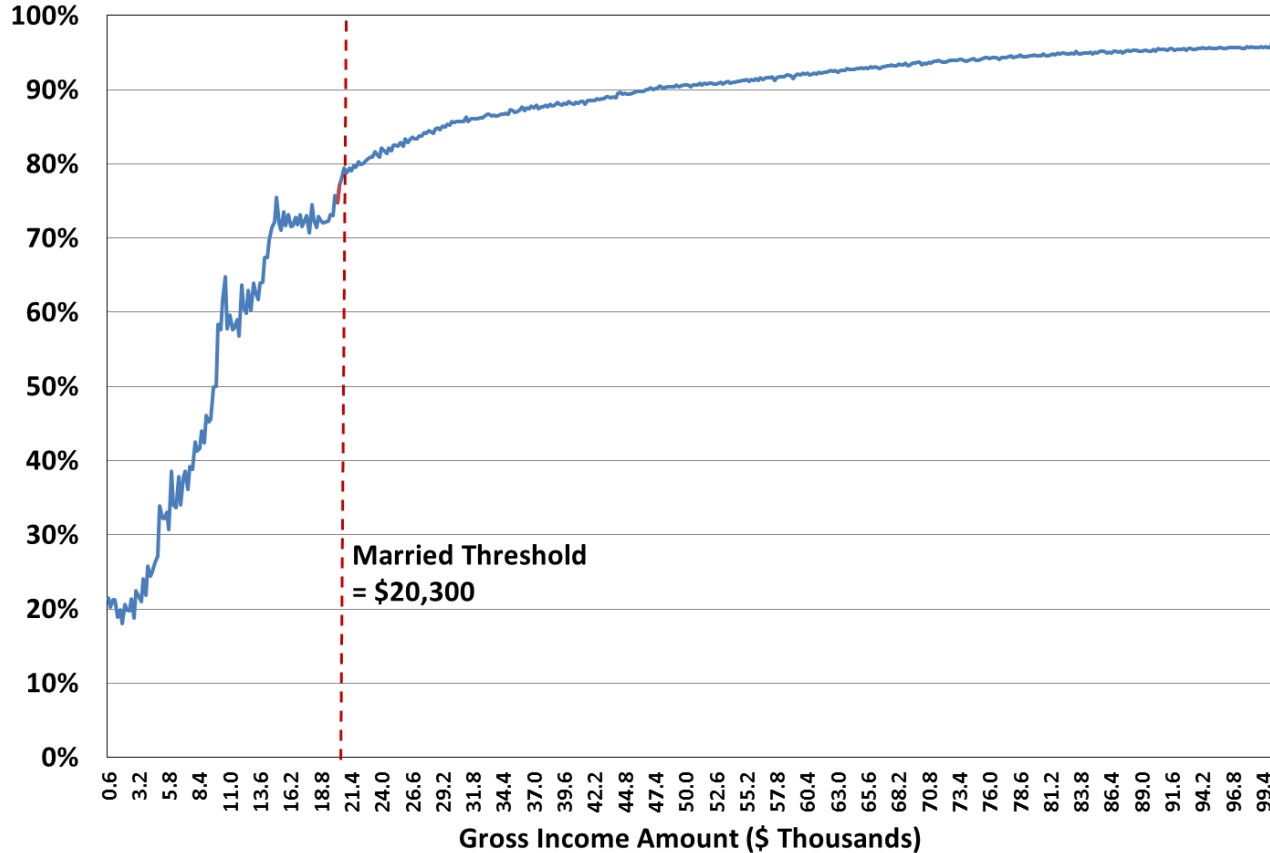
Similar pattern for married taxpayers

Married Threshold = $20,300

Gross Income Amount ($ Thousands)

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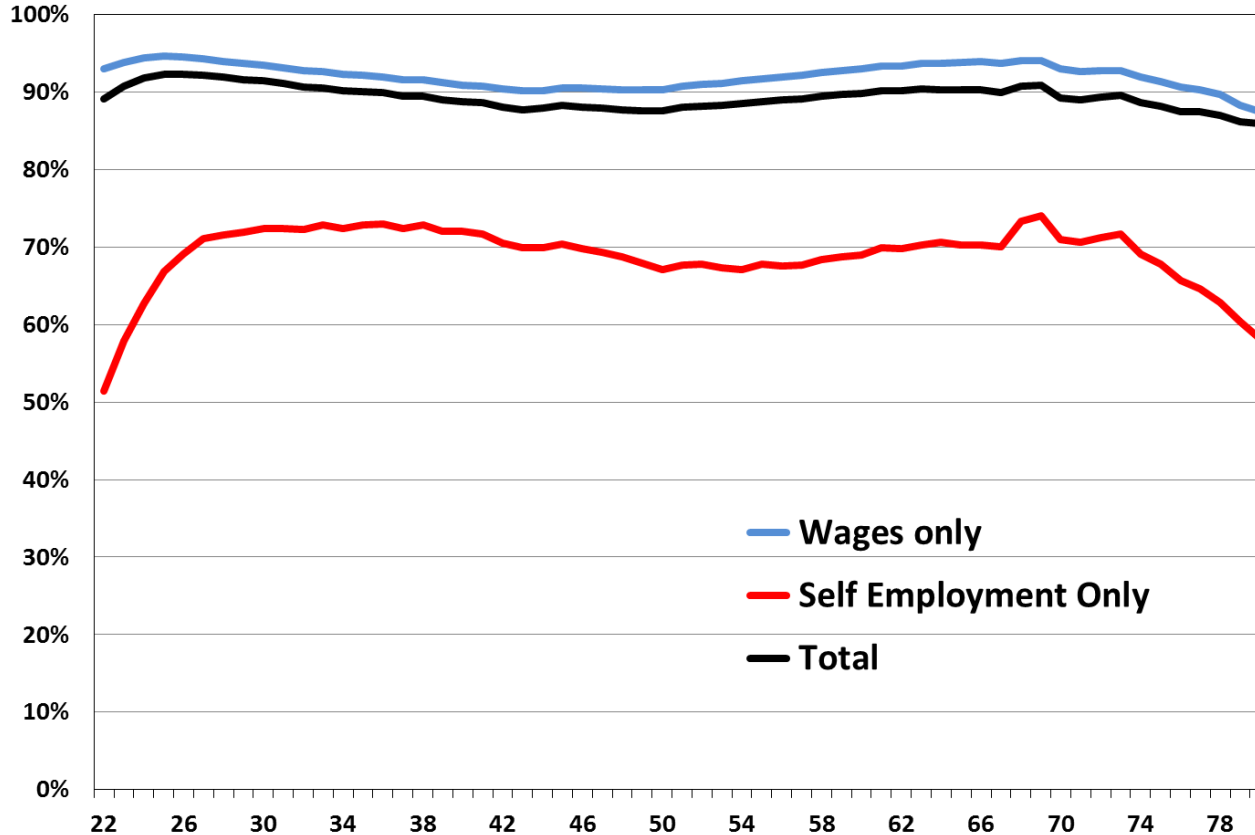
VFR by Age, TY 2014

Lower VFR for middle age taxpayers and later ages; unclear which underlying variables lead to dip in filing
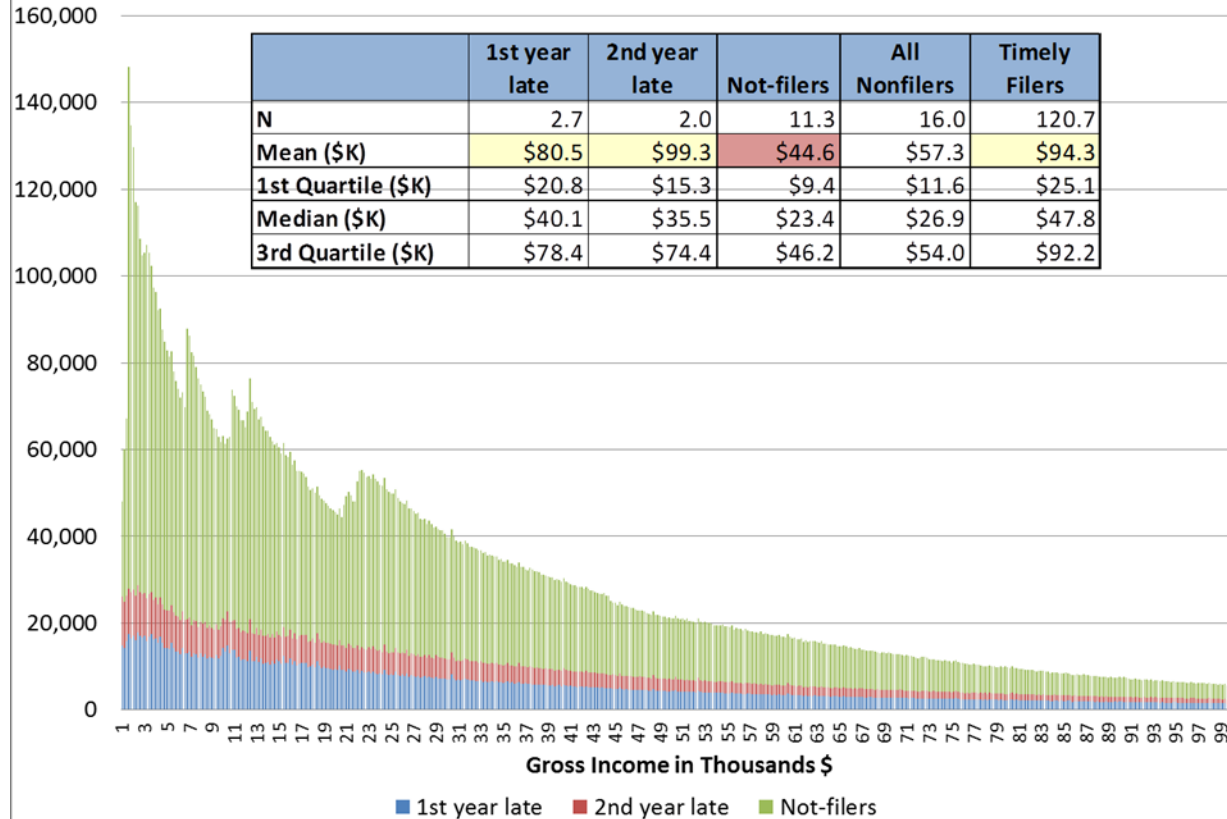
VFR by Age Single Taxpayers, TY 2014
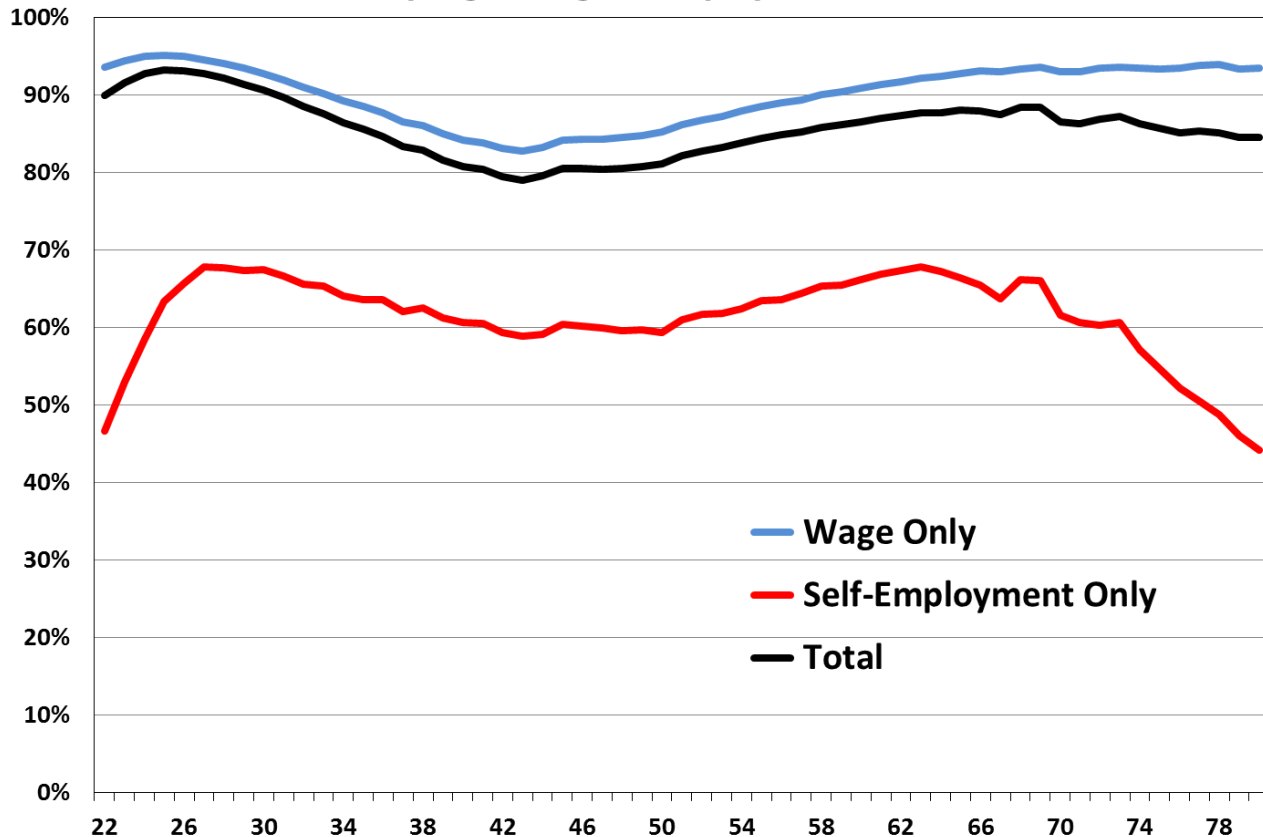
Pattern more pronounced for single taxpayers
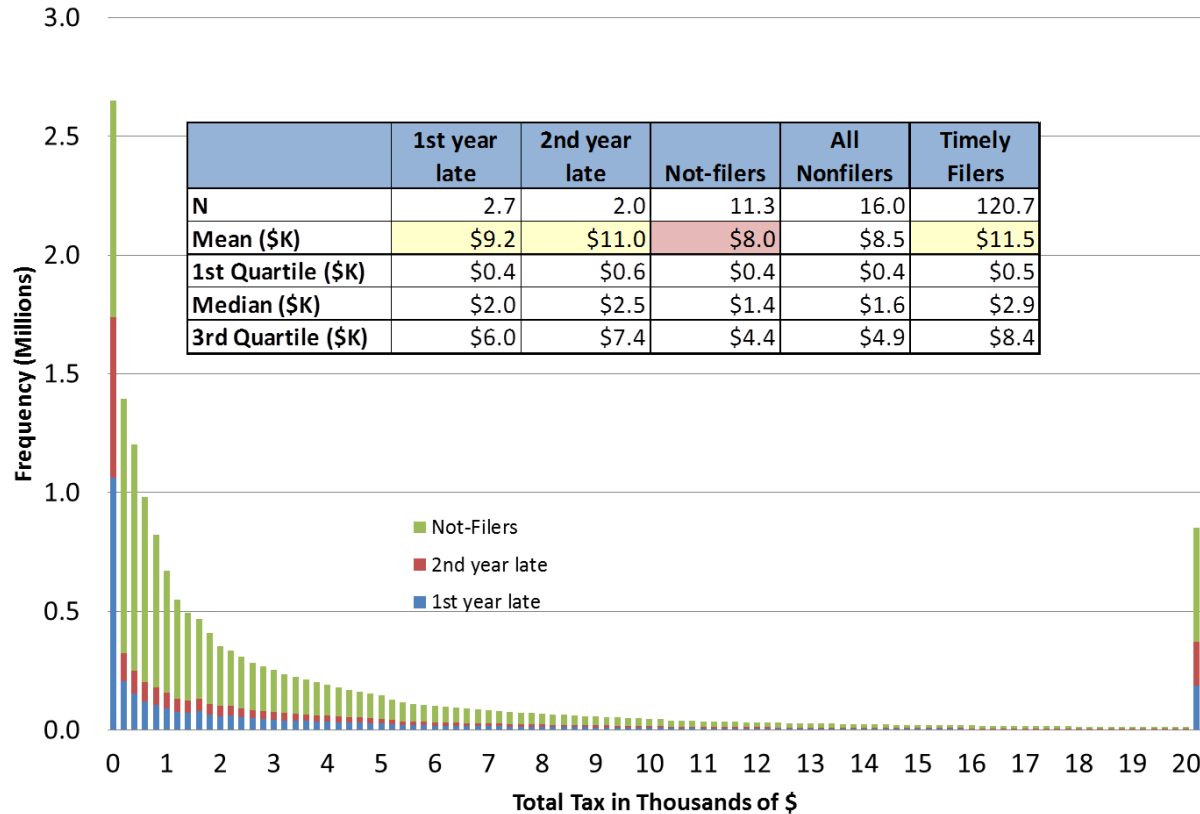
VFR by Age Married Taxpayers, TY 2014
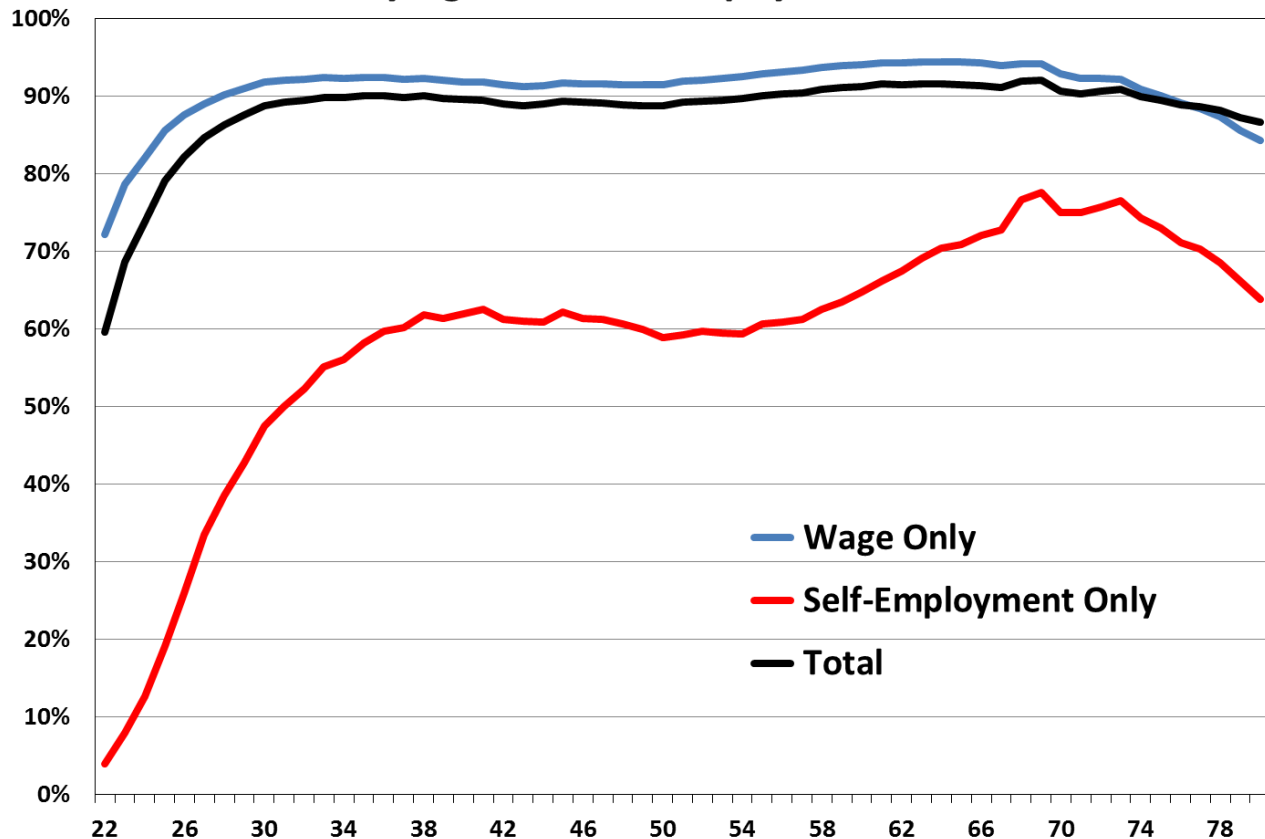
But, less pronounced for married taxpayers

Legend:
- Wage Only
- Self-Employment Only
- Total

Distribution of Gross Income, Late and Not-Filers, TY 2014

	1st year late	2nd year late	Not-filers	All Nonfilers	Timely Filers
N	2.7	2.0	11.3	16.0	120.7
Mean ($K)	$80.5	$99.3	$44.6	$57.3	$94.3
1st Quartile ($K)	$20.8	$15.3	$9.4	$11.6	$25.1
Median ($K)	$40.1	$35.5	$23.4	$26.9	$47.8
3rd Quartile ($K)	$78.4	$74.4	$46.2	$54.0	$92.2

- **Distribution of gross income among nonfilers has a long tail**

- **Late filer and timely filer average gross income higher than for not-filers**

Distribution of Total Tax, Late Filers and Not-Filers, TY 2014

	1st year late	2nd year late	Not-filers	All Nonfilers	Timely Filers
N	2.7	2.0	11.3	16.0	120.7
Mean ($K)	$9.2	$11.0	$8.0	$8.5	$11.5
1st Quartile ($K)	$0.4	$0.6	$0.4	$0.4	$0.5
Median ($K)	$2.0	$2.5	$1.4	$1.6	$2.9
3rd Quartile ($K)	$6.0	$7.4	$4.4	$4.9	$8.4

Late-filed and timely filed returns also have higher tax liability than returns that are not filed within two years of end of tax year

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IRS

Distribution of Refund / Balance Due Amount, 1st Year Late, 2nd Year Late and Not-Filer, TY 2014
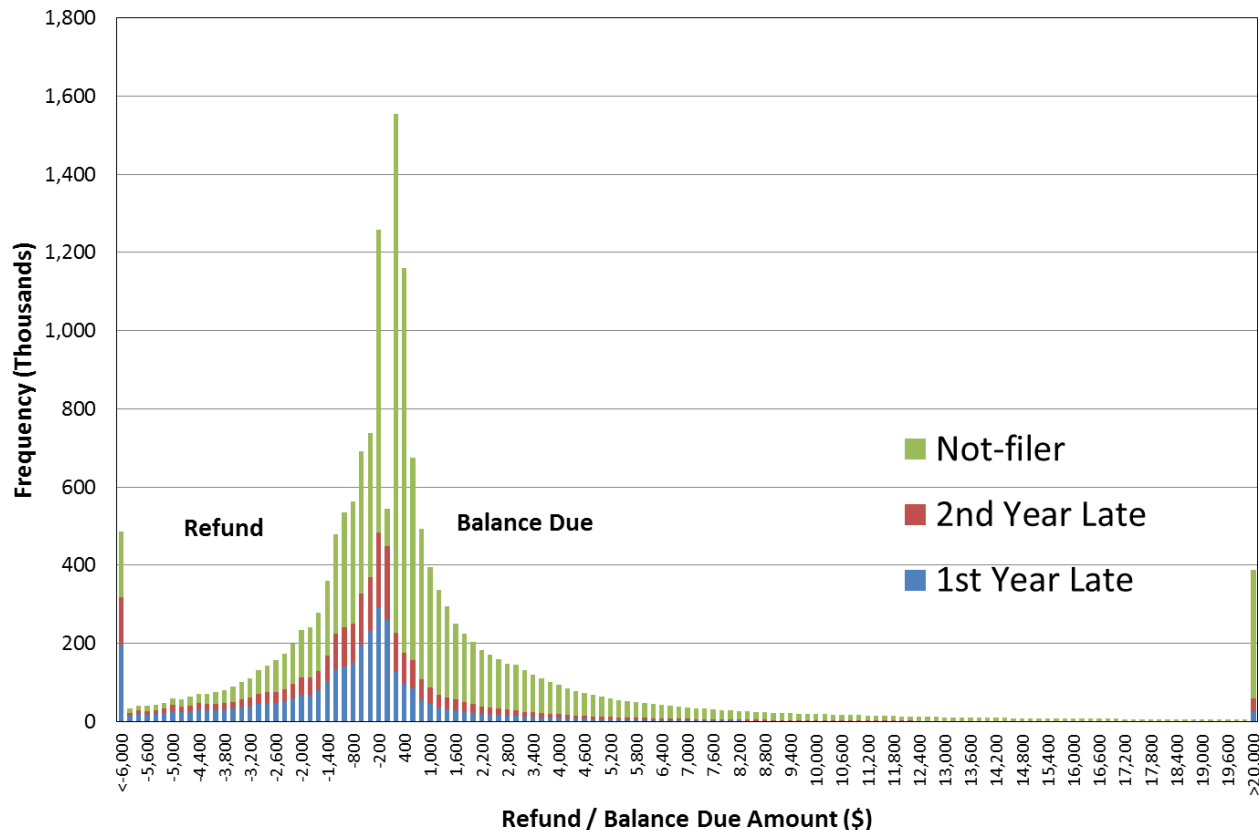
- **Larger share of refund nonfiler returns are late filers**
- **Larger share of balance due nonfiler returns are not-filers**

Benefits of This Research

- More accurate measure of the VFR

- Better understanding of the gaps in income reported in the CPS

- Technique developed to adjust for rounding of income responses in the CPS

- Improved ability to explore factors affecting fluctuations in the VFR and to gain insights on drivers of nonfiling

Future Work

- Impute corrected (single) filing status to some of those incorrectly claiming Head of Household status

- Improve imputation of tax units by drawing on information from prior year returns and SSA data

- Further explore the use of expanded Census-IRS matched data to develop alternative VFR measure and to examine drivers of nonfiling

- Explore use of IRS administrative data in multivariate analysis of drivers of nonfiling

Estimating the Effects of Tax Reform on Compliance Burdens
&
Counting Elusive Nonfilers

Discussant: Emily Y. Lin
Office of Tax Analysis
U.S. Department of the Treasury

7th Annual IRS-TPC Joint Research Conference on Tax Administration
June 21, 2017

Estimating the Effects of Tax Reform on Compliance Burdens

- Understanding the sources of compliance burdens and establishing method to evaluate taxpayer compliance costs provide important guidance on tax administration and simplification.

- IRS Individual Taxpayer Burden Model (ITBM) is built on survey data and simulated off internal tax return files while TPC has to rely on Public Use Files (PUFs).
  - PUFs do not contain the same level of accuracy and detail about certain types of returns or tax fields as those available on the administrative data.

- Restructure the burden analysis to base the cost estimates and equations on tax fields available on PUFs.

Distribution of Estimated Burden Cost
Total Burden Cost ($), 2007

$

IRS   TPC

3500
3000
2500
2000
1500
1000
500
0

1%   5%   10%   25%   50%   75%   90%   95%   99%

Percentile of the Burden Distribution

3252
3156
1290
830
404
182
80
36
22
0
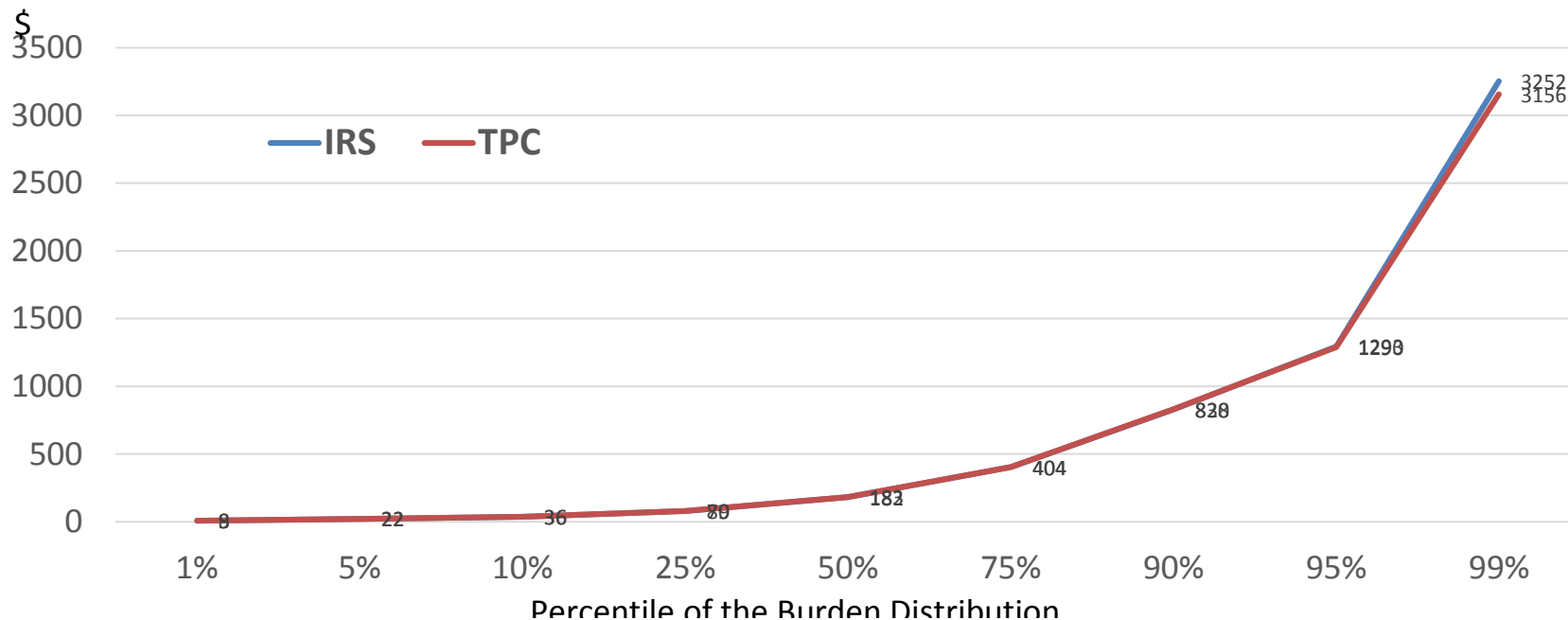
Composition of Burden Cost by Income and Tax Item
Percent of Total Burden Cost, 2017

	Other Income	AMT	Credits	Deductions	Self-Employment Income	All Other Non-Wage Income	Wages
TPC	6	6	12	29	13	13	22
IRS	4	2	14	25	19	18	18
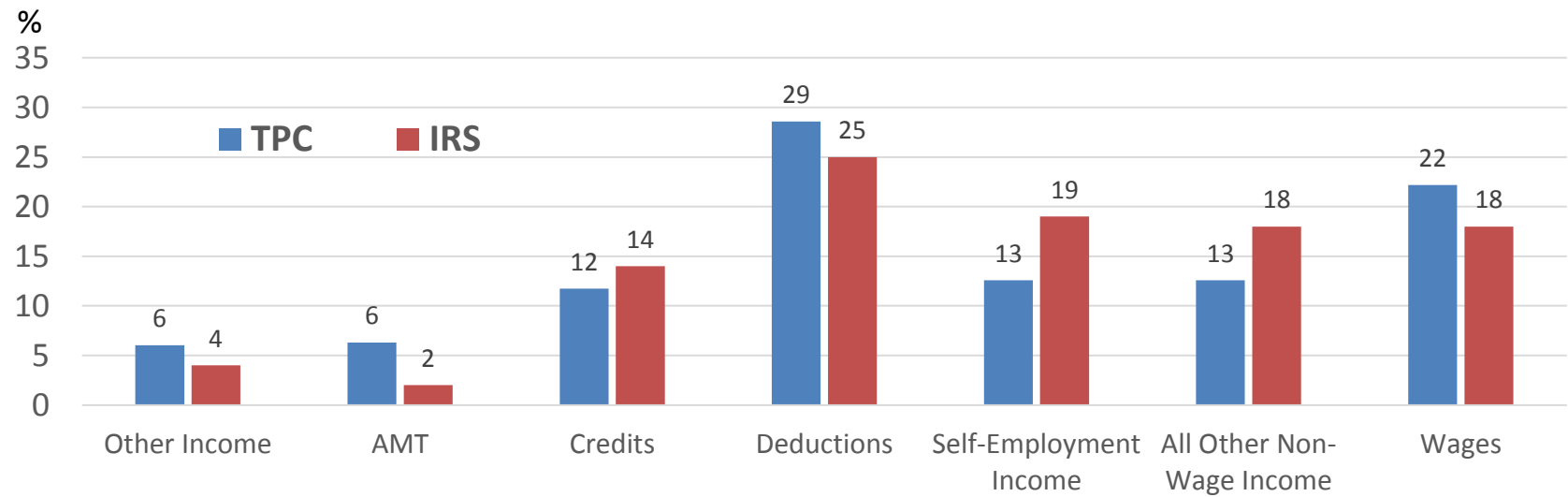
Issues to Consider

- **Restore the distribution of complexity categories**
  - Impute key missing fields to the model based on the known distribution of the tax variables in the IRS data.

- **Preparation methods: Endogenous?**

- **Change the pre-determined complexity level associated with each line item with proposals**
  - Proposals that do not involve eliminating a line item but greatly simplify the provision.

- **Compliance cost of filing; the cost of time vs. out-of-pocket expenses for each line item**
  - Distinguish the cost of record keeping from the cost associated with claiming a deduction/credit or filing a tax return.

Counting Nonfilers

- **Two components:**
  - (1)   How many returns are **required to be filed**?
  - (2)   How many of the required returns are **filed on time**?
    - **Difference** = Implied Nonfilers (including late filers and not-filers)
    - **Ratio**, (2)/(1) = Voluntary Filing Rate (VFR)

- **One can use either the CPS or IRS administrative data** to estimate these two components. Each data source has its own disadvantages and advantages.
  - Impute understated or missing income items.
  - Impute filing status, spouse income, number of dependents, and, to a lesser extent, underreported income.

- **Another approach:** Use CPS data for the first component and IRS for the second component.

Thousands of Returns in VFR Components Estimated by Different Methods, Tax Year 2010

	VFR Method	Census Method	Administrative Data Method
Numerator (required returns filed on time)	115,900	105,001	115,900
Denominator (total required returns)	122,200	119,967	130,787
Difference (implied number of nonfilers)	6,300	14,966	14,937
Numerator/Denominator (Implied VFR)	94.8%	87.5%	88.6%

Figure 1. IRS Administrative Data Population vs. Decennial Census Population by Age , TY2010

fewer working age individuals

fewer young children
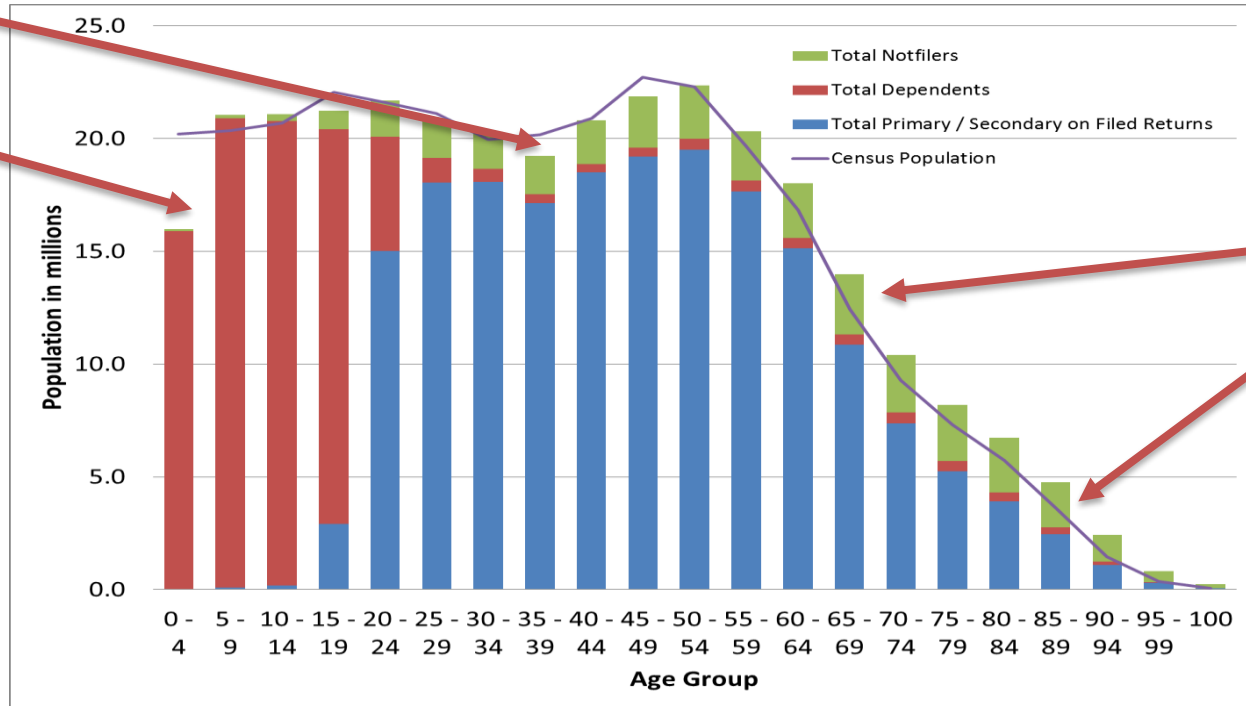
more elderly

Issues to Consider

- **Insufficient income imputation to the CPS?**
  - Population difference between the CPS and Administrative Data
    - CPS sample consists of U.S. households. Excludes people in institutions and Americans living abroad. May include non-residents who do not have a filing requirement.
  - May be problematic to draw required returns and timely filed returns from different data sources.
- **Assign spouses and dependents to not-filers in the Administrative Data**
  - Do spouses have income (i.e., are spouses drawn from the third-party information database)?
    - Overestimate the income of married not-filers?
    - Middle-age spouses who do not have third-party information returns?
  - Use additional information returns, e.g., Form 1095 of health insurance marketplace statement to identify dependents?
- **Low VFRs for middle age taxpayers, relative to the VFRs of younger and older taxpayers.**
  - Consider factors (e.g., income composition, spousal income imputation, SE income imputation, etc.) for the pattern.
  - Check the presence of SE income against survey data.
- **Estimate trend of the nonfiling tax gap based on consistent methodology.**