THINKING ABOUT TAX ADMINISTRATION

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Views are mine alone

Until recently

Literature on tax administration had focused on:

- Measuring administration and compliance costs
- Embellishing/puzzling over Allingham-Sandmo

Recent explosion of empirical work

Many excellent papers using experiments, natural or other, to address aspects of compliance. E.g.:

- Compliance in VAT chains (Pomeranz, 2015)
- Lotteries (Naritomi, 2013)
- 'Nudges' (reviews in Alm (2014), Luttmer and Singhal (2014))

What do tax administrators learn?

- Implications for enforcing VAT chains
  - Pomeranz results seem to imply "Start at the end"
- Importance of withholding and third party information well-known
  - British land tax 1697; and Milton Friedman's regret!
- Are lotteries/nudges first order importance?

What do tax administrators think about? (IMF, 2015)

- Governance structures
  - Move to semi-autonomous revenue agencies
- Operational management
  - More later
- Information management
  - About much more than IT systems
- Stakeholder relationships
  - E.g. “cooperative compliance”

Two issues they (and now we) focus on

Key aspects of operational management:

- 'Tax gaps'
  - Understanding, measuring and integrating compliance and policy gaps

- Partitioning and segmentation of taxpayers
  - Differing treatment for different types (most obviously by size)

TAX GAPS

What and why?

Decomposing VAT revenue: C-efficiency'..

Can write VAT revenue (in percent GDP) as

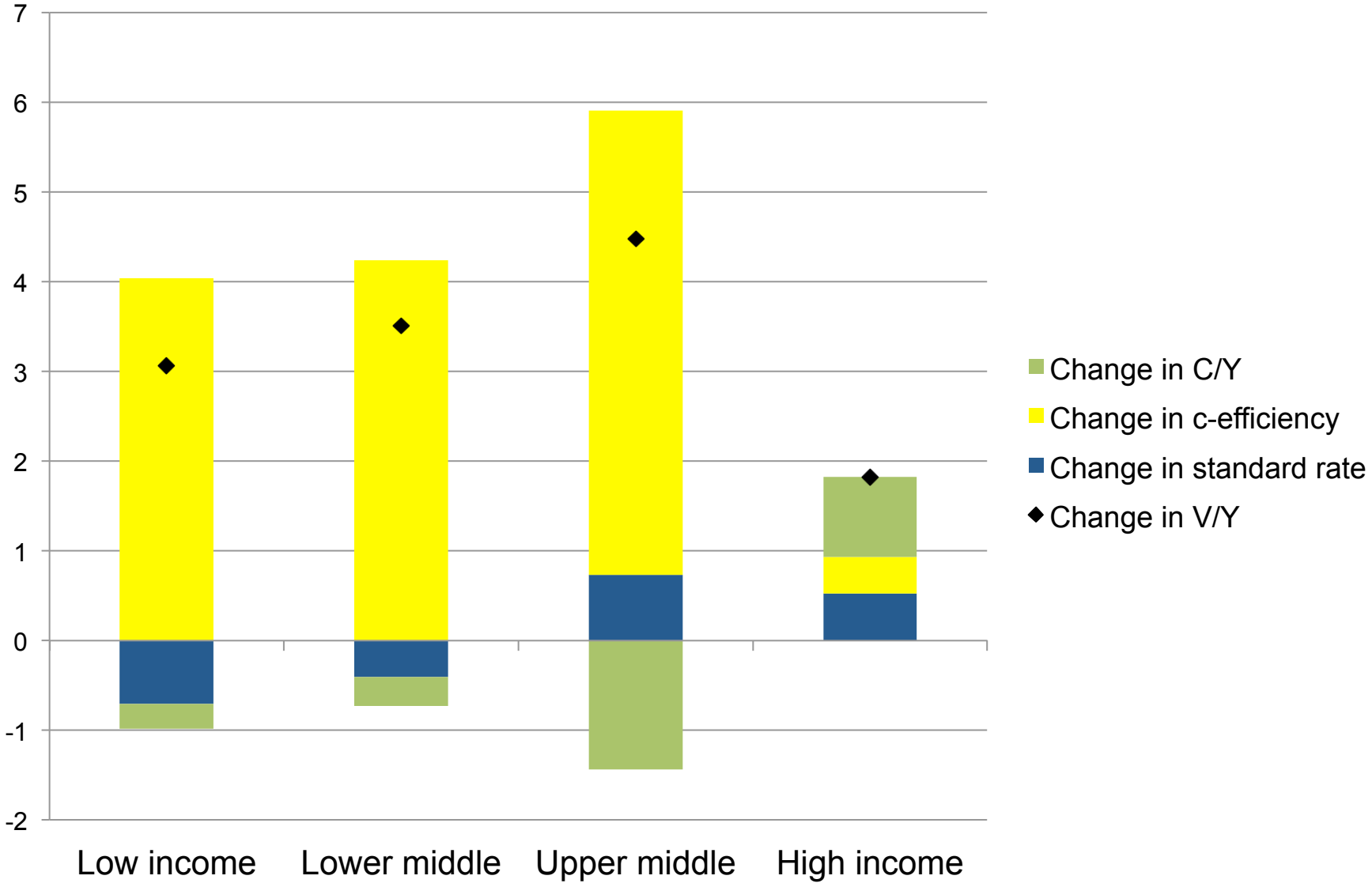
$$\frac{V}{Y} = \tau_s E^c \left(\frac{C}{Y} \right)$$

where V is VAT revenue, Y is GDP, τ_S is the standard VAT rate, C is consumption, and

$$E^C \equiv \frac{V}{\tau_s C}$$

is 'C-efficiency'

C-efficiency drove changes in VAT Revenue, 2003-2010



So what drives C-efficiency?

With V^* the revenue that would be raised if implementation of current system were perfect:

$$E^C = \frac{V}{\tau_S C} = \left(\frac{V^*}{\tau_S C}\right)\left(\frac{V}{V^*}\right) = (1-P)(1-\Gamma)$$

where P is a 'policy gap' and Γ a 'compliance gap'

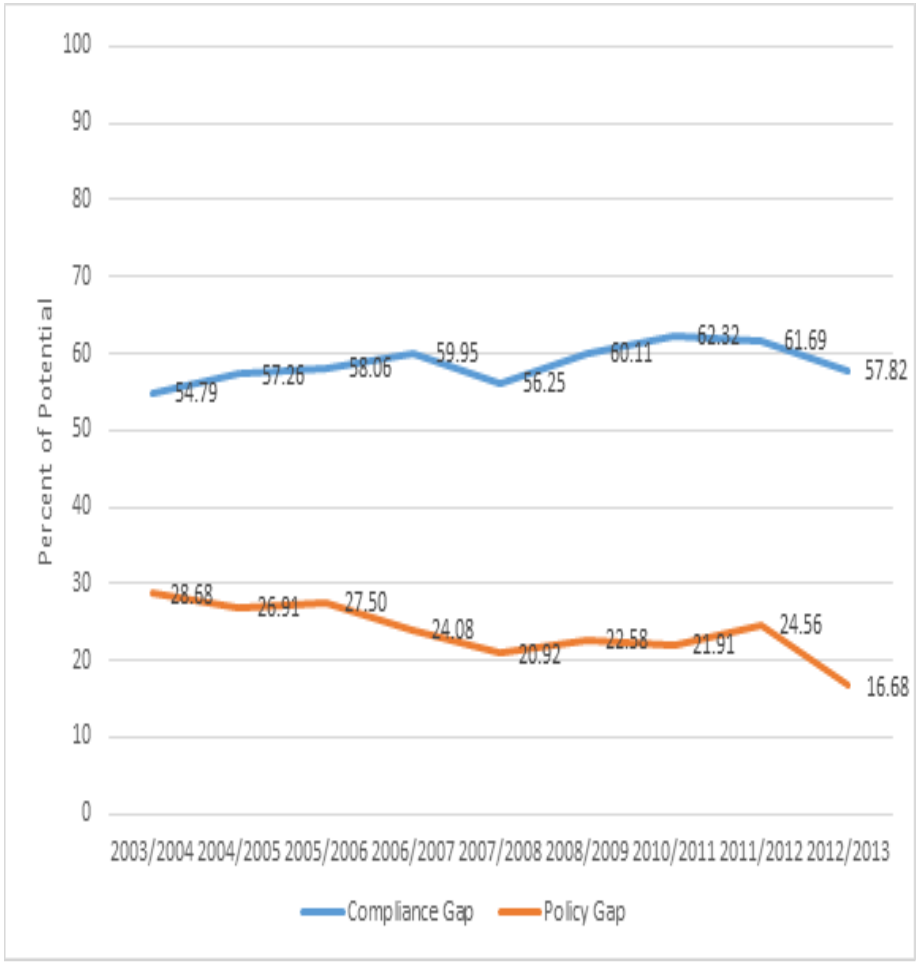
Compliance gap

= Excess of tax (e.g. VAT) theoretically due over that actually collected, as percent of former

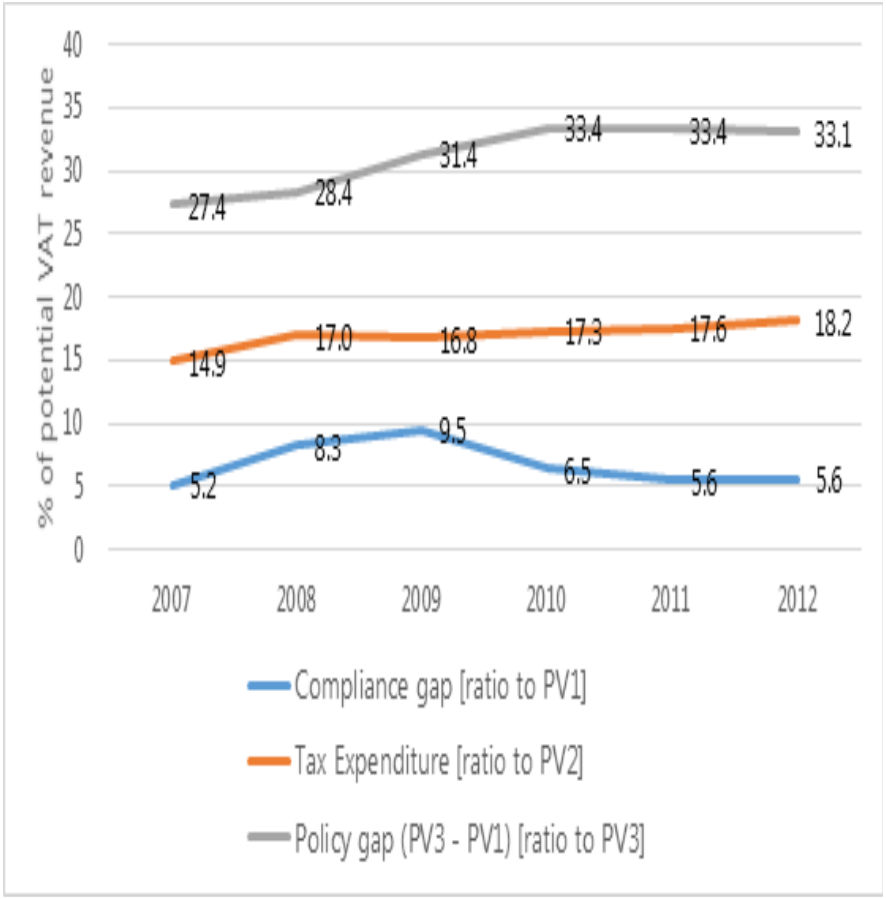
- An increasing focus in many countries. E.g.:
  - UK has produced 'VAT gaps' for several years
  - Reckon (2009) and CASE (2013) for EU
  - RA-GAP project at IMF, including some developing countries
- Ideally, combine with analysis of 'policy gaps'
  - Similar to tax expenditures

For example (from RA-GAP)

Uganda



South Africa

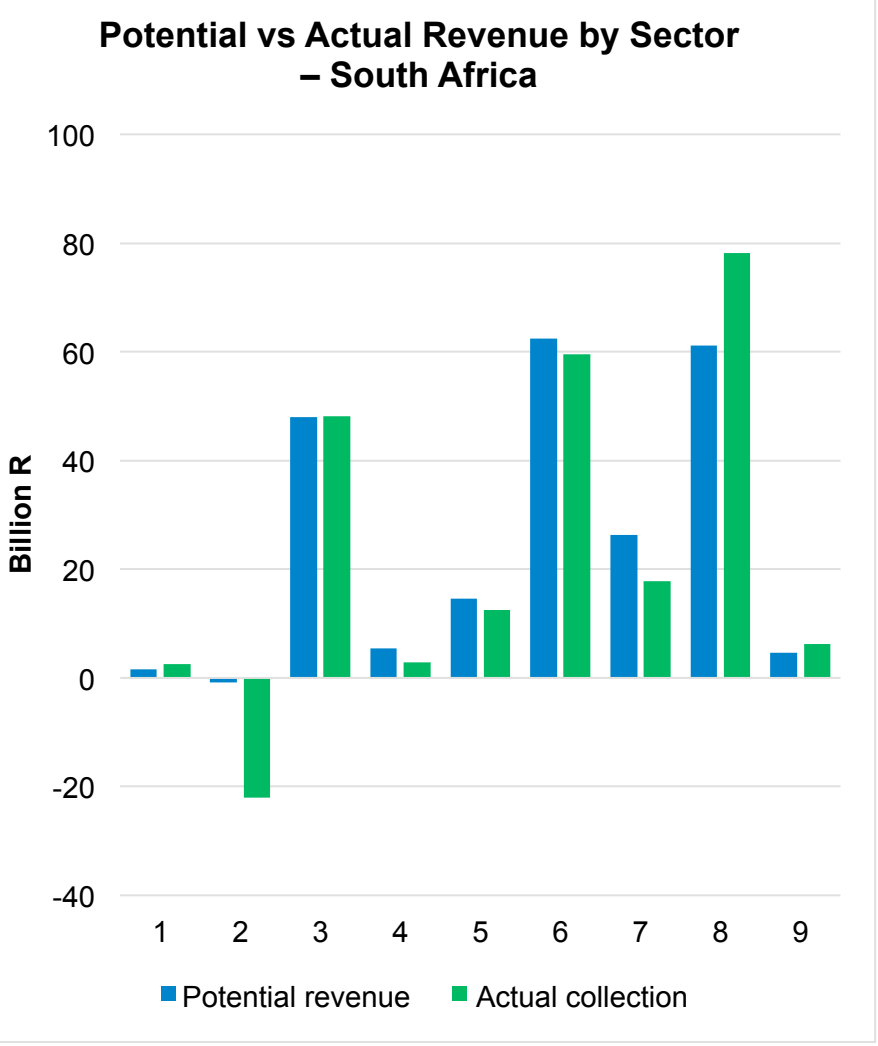


Uses of gap analysis

Can identify:

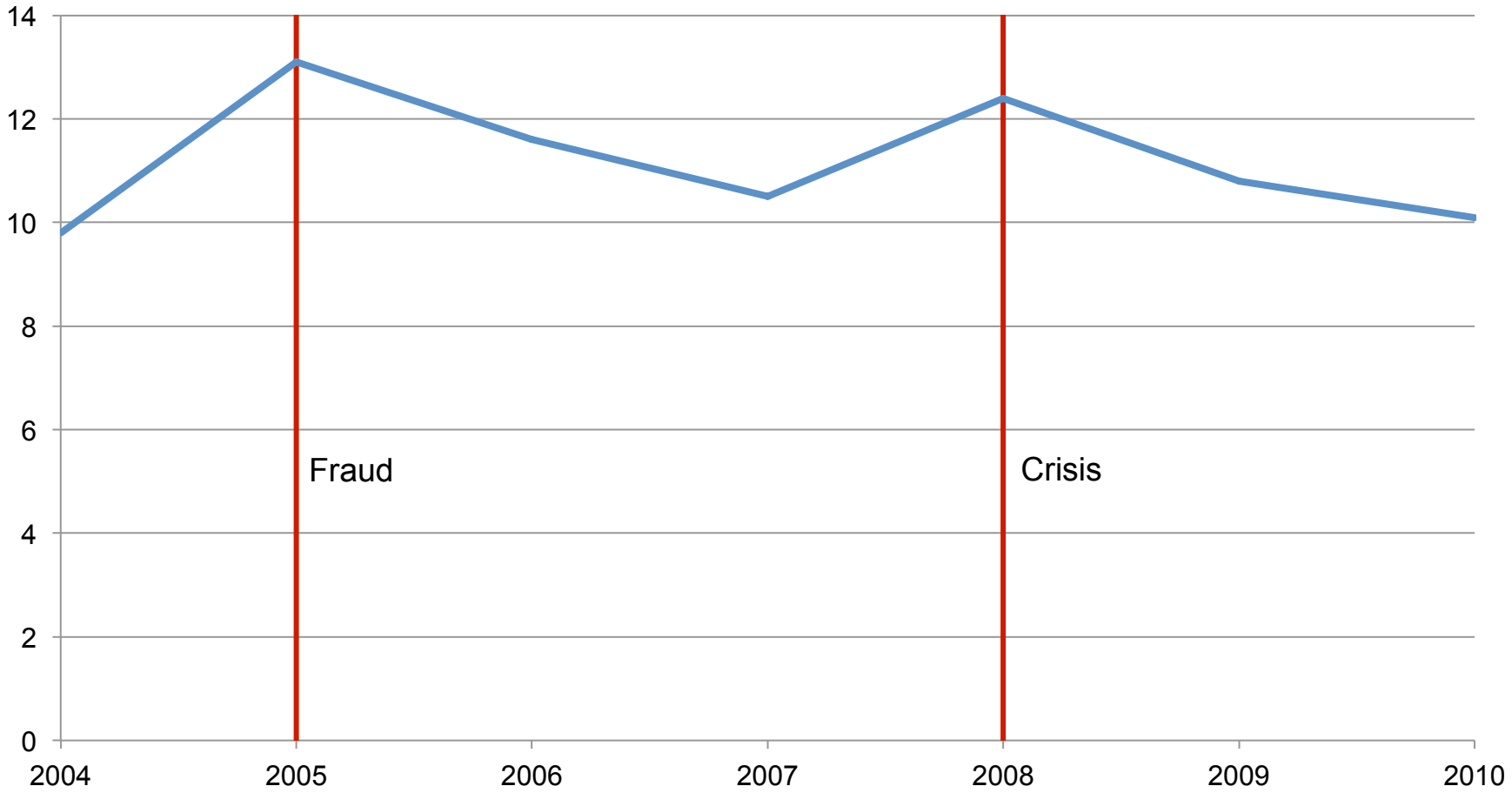
- Priorities for reform: e.g.:
  - In Uganda, key issue is compliance gap, halving it would raise 3% of GDP
  - For South Africa, policy gap seems the larger concern
- Areas in which to improve compliance
  - Not just total gap that matters

VAT gaps by sector



Sectors:	
1. Agriculture, forestry and fishery	6. Wholesale and retail trade, catering and accommodations
2. Mining and quarrying	7. Transport, storage and communications
3. Manufacturing	8. Financial intermediation, insurance, real estate and business services
4. Electricity, gas and water	9. Community and social services
5. Construction	

And UK compliance gap



Some analytical aspects

Gemmell-Hasseldine critique:

Compliance gap may not be recoverable

- Because raising effective rate though enforcement may reduce the base

More fundamentally though….

Is the compliance gap too big or too small?

Pure efficiency: Extending a standard model to allow (non-)compliance and administration costs

$$U = wl - T(wl - e) - C(e, \alpha) + V(r)$$

where

$$r = T(wl - e) - A(\alpha)$$

Optimal choice of tax rate, T

- Well-known: A sufficient statistic for behavioral responses to tax rate changes is "elasticity of taxable income" = elasticity of reported tax base to (one minus) tax rate
  - Higher this is, the lower is the optimal tax rate
- Large empirical literature seeks to estimate this
  - Almost all for advanced countries

Optimal choice of 'enforcement', α…

Less noted, necessary condition on α gives

$$\lambda = E\downarrow Z,\alpha$$

where Z denotes taxable income,

$$\lambda \equiv \frac{\alpha(C_\alpha / V') + A_\alpha}{TZ}$$

is (modified) ratio of implementation costs to revenue, and $E\downarrow Z,\alpha$ is the 'enforcement elasticity of taxable income'

—which is sufficient on the administration side

…implies an optimal compliance gap

of, denoting $g \equiv e/wl$:

$$\frac{g}{1-g} = \frac{\lambda}{\lambda + E_{Z,\alpha}}.$$

So e.g. if $E \downarrow Z,\alpha$ =0.2, λ = 5%, optimal gap is 25%

If $1 more is needed, should it come from higher rate or stronger enforcement?

Answer is more likely to be enforcement:

- Higher is the elasticity of taxable income
  - Because that means high inefficiency
- Higher is the tax rate
- Higher is enforcement elasticity
- Lower are administration and compliance costs
  - Former especially damaging to case for implementation

What we know about the enforcement elasticit(ies) of taxable income?

- Evidence from panel of EU compliance gaps suggests $E\downarrow Z = 0.17$
- Experimental evidence
  - For audit, $E\downarrow Z = 0.1\text{-}0.2$
- Empirically, some IRS work (Plumley)…
  - Mainly concerned with choice between administrative instruments

  …suggests $E\downarrow Z$ for audit of 0.6-0.85 (?)

PARTITIONING AND SEGMENTATION

A simple notch example (Kanbur and Keen, 2014)

- Individuals/firms differ in potential income Y, distributed $F(Y)$
- Proportional tax at rate T payable above threshold Z

  —the focus of interest
- Fixed compliance costs C, administration cost A

Benchmark—Fixed, observed Y

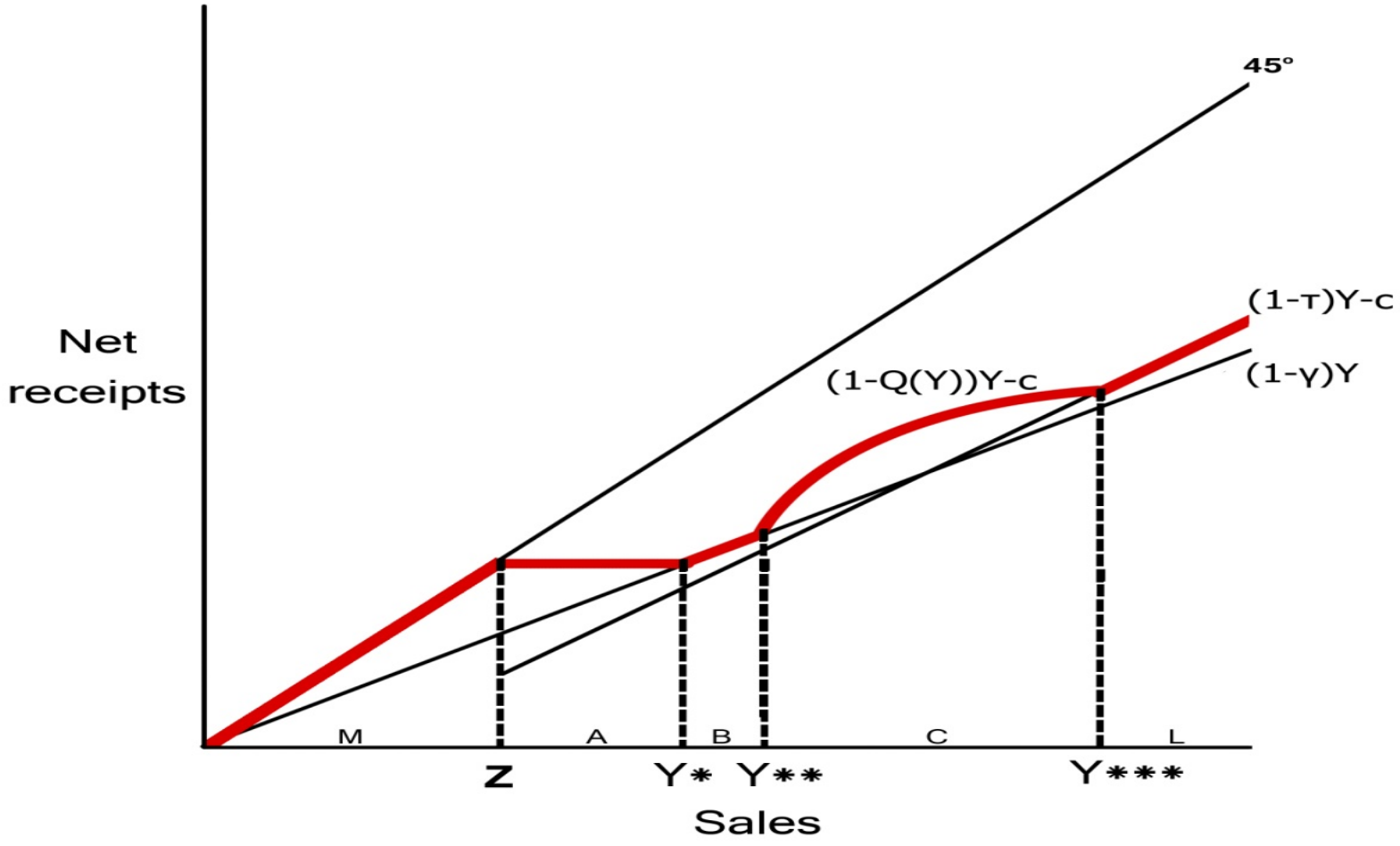
Balancing private gain from a marginal increase in threshold, $(TZ+C)f(Z)$ against net public loss, $\delta(TZ-A)f(Z)$, gives simple rule for optimal threshold

$$Z^{KM} = \frac{\delta A + C}{(\delta - 1)T}$$

Now allow taxpayers to:

- Declare truthfully above threshold—type L
- Adjust, legally, to below *Z*—Adjusters
- Become ghosts/falsely declare under *Z*—Bounders
  - Net income (1-γ)Y
- Conceal a fraction of their income—Cads
  - Net income (1-*Q(Y))Y*

For appropriate parameters:



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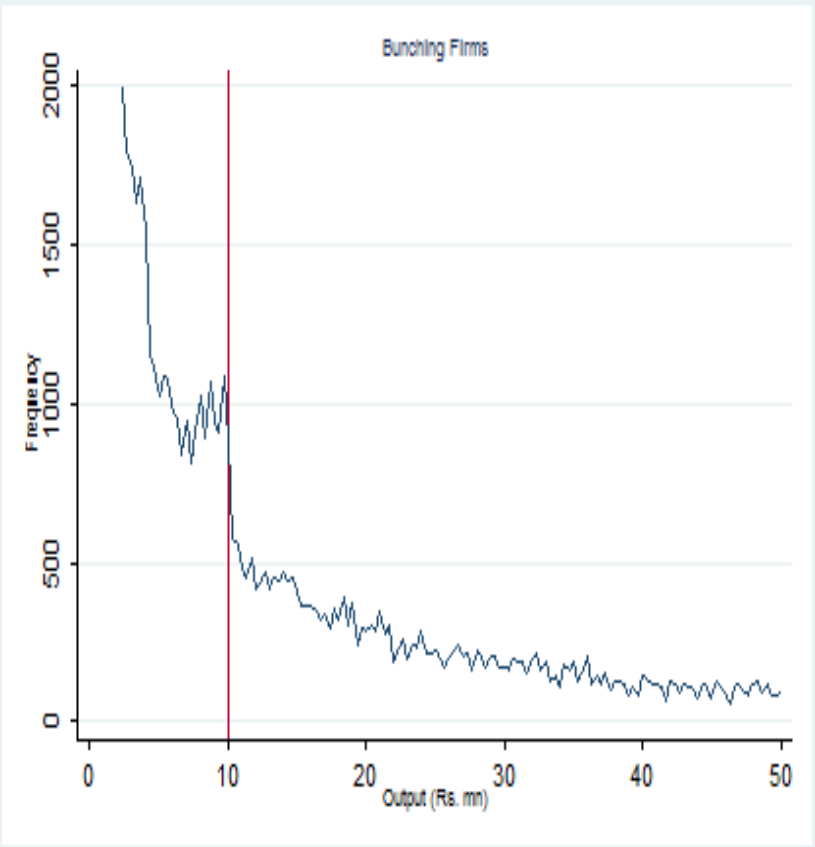
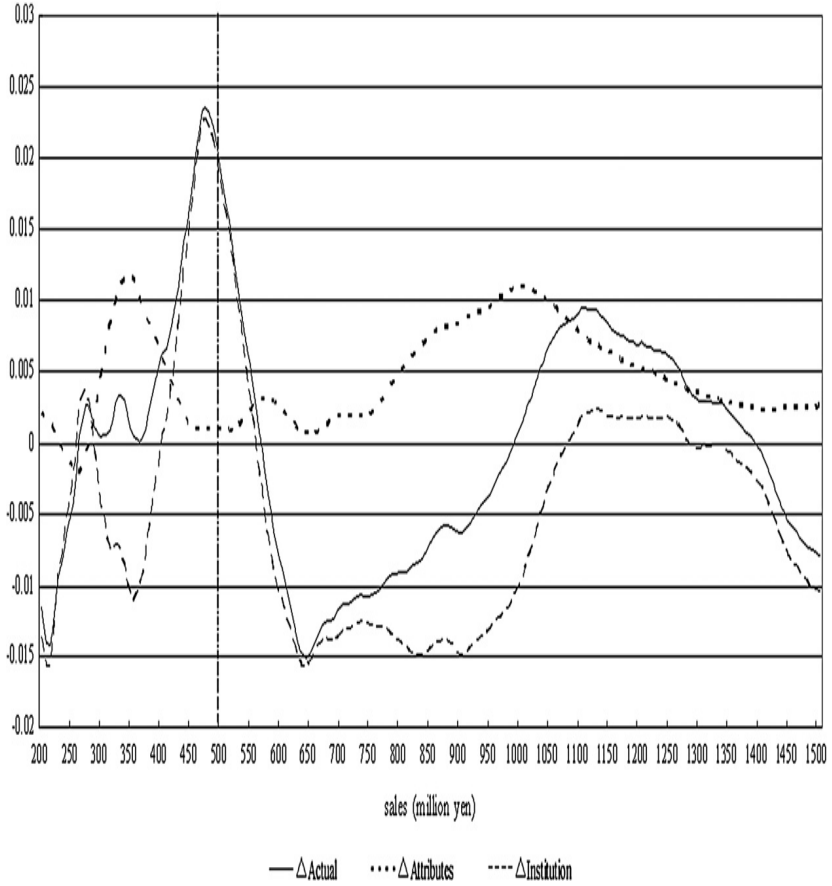
Adjusters (and bounders?) in practice



Source: Chatterjee and Wingender (2012)



Source: Onji (2009)

Ghosts? Non-filers 7% all potential US taxpayers

Towards a theory of optimal segmentation…

Optimal threshold:

- Set high enough to eliminate 'bounders': Increasing threshold gives:
  - No output or revenue loss from B's who become A's
  - Increased output of A's
- More generally, likely higher than Z^{KM}

…with compliance patterns suggesting:

Administrative challenges are related to size:

- For top: compliance likely to be good (!?)—in practice, control avoidance and ensure timely payment
- Middle segment: Concealment
- Bottom segment: Concealment and ghosts

This looks much like LTO, MTOs and STOs….

CONCLUDING

Two views

"…it is time to put to rest the claim that [evasion, avoidance, and administration] is…understudied"

Slemrod and Yitzhaki, 2002

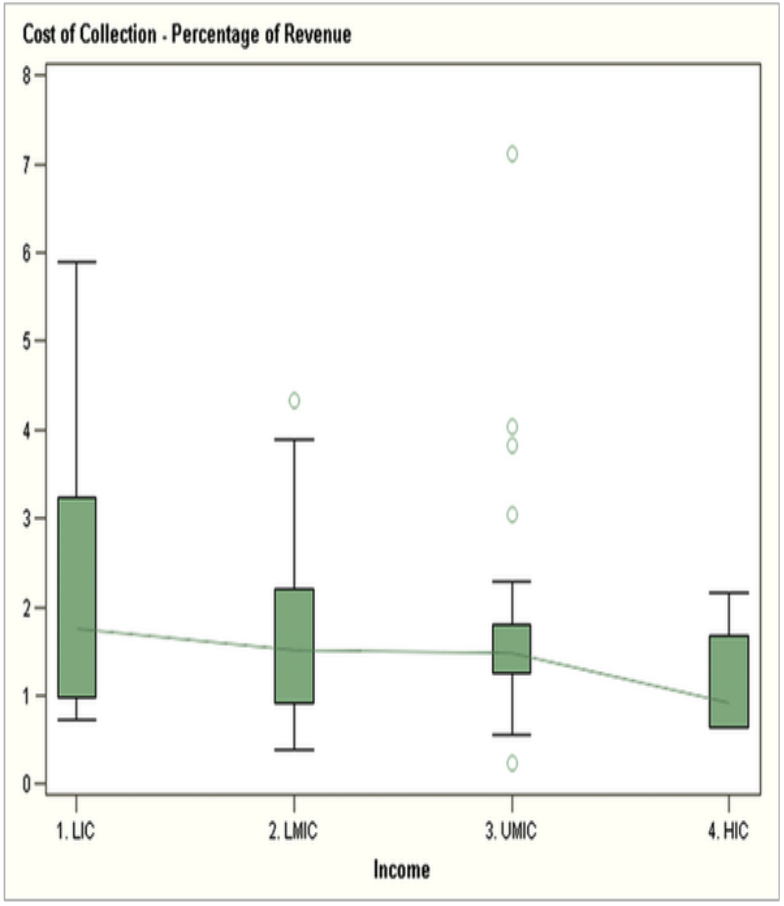
"…there is still only a relatively small scholarly literature [on] tax administration"

Hasseldine, 2011

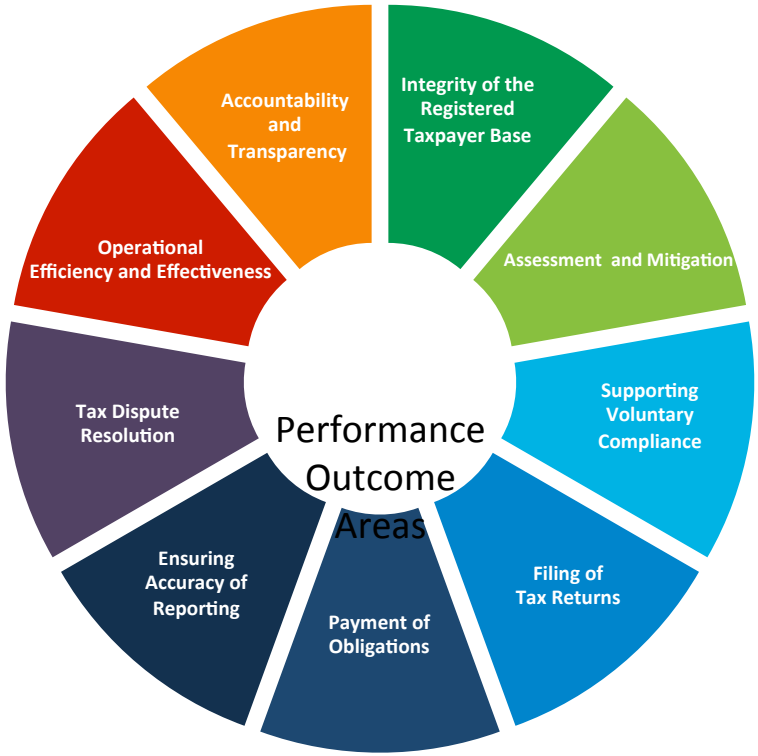
First view has become more persuasive—but much remains

Two other new analytical tools

RA-FIT: Collects RA data and establish baselines/benchmarks



TADAT: Assessment tool



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