Measuring the Revenue Productivity of Auditors and Agents

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Introduction

- Field Auditors and Collection Agents are revenue producing positions.
- How do we identify the expected revenue yield of hiring additional Auditors and Agents?

Collection Agents

- The traditional way to describe the revenue yield of Agents is with averages.

Average Collections per Agent			
FY	Field Unit	Central Unit	Both Units
01	958,109	1,490,910	1,040,501
02	1,131,139	1,837,542	1,237,479
03	1,047,871	1,781,296	1,158,737
3 year average	1,044,528	1,696,335	1,143,716

Collection Agents

- The revenue yield of agents shows some variance but no significant increase with year of experience.

Annual Collections by Years of Experience- Field Unit			
Years of Experience	Mean	Minimum	Maximum
0 to 3	728,139	292,663	994,285
4 to 5	1,141,470	600,763	1,712,347
5 to 10	850,268	390,893	1,750,103
10 to 15	1,042,296	326,596	2,033,263
15 to 20	1,049,748	113,191	2,949,259
20 to 25	1,197,574	488,614	2,202,360
25 to 30	1,050,089	263,191	1,971,162
over 30	657,251	525,002	789,500
all field compliance agents	1,044,528	113,191	2,949,259

Collection Agents

- Will an additional agent produce an average yield; or does diminishing marginal productivity apply?
- To test this hypothesis we regressed “real collections per agent on the number of agents and “real” Wisconsin total personal income.

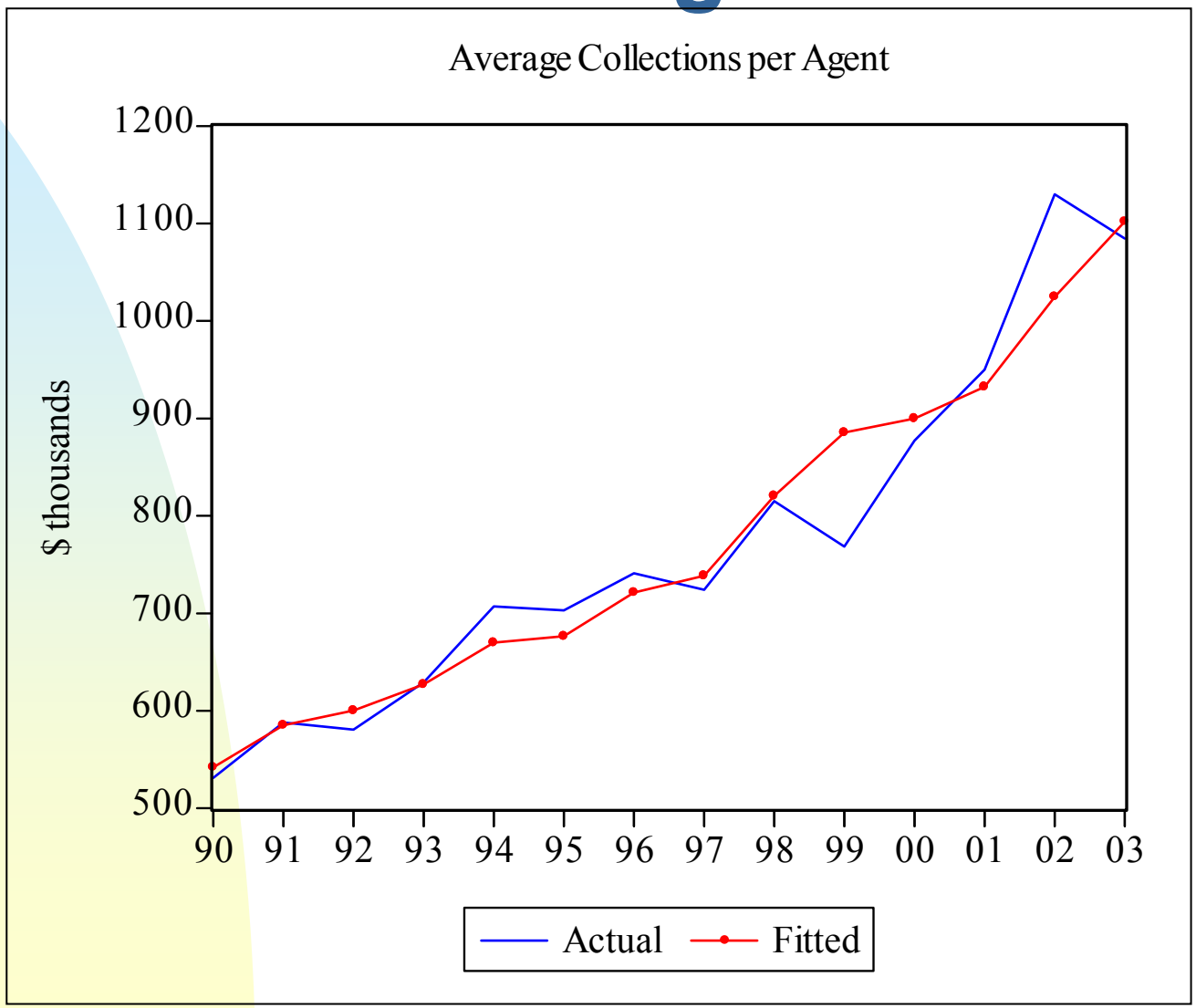
Collection Agents

Dependent Variable: Collections per agent ($1,000)/CPI
Method: Least Squares
Date: 06/24/04 Time: 14:19
Sample: 1990 2003
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AGENTS	**-3.872974**	1.820749	-2.127133	0.0569
Constant	335.5290	190.8104	1.758442	0.1064
YPW/CPI	7.531563	1.107952	6.797734	0.0000

R-squared	0.811237	Mean dependent var	483.9668
Adjusted R-squared	0.776917	S.D. dependent var	64.35642
S.E. of regression	30.39661	Akaike info criterion	9.853949
Sum squared resid	10163.49	Schwarz criterion	9.990890
Log likelihood	-65.97764	F-statistic	23.63713
Durbin-Watson stat	1.668251	Prob(F-statistic)	0.000104

Collection Agents



Collection Agents

- The regression show that average collections per agent decline by $3,873 for each additional agent hired (in 1983 dollars).
- This translates in $7,122 in 2003 dollars.
- In FY03 110 agents were employed.
- Hiring an additional agent will:
  - Reduce collections by $783,469 (110 * $7,122).
  - Increase collections by $1,143,716 (using the 3-year average for all agents in Table1).
  - For a net change of $360,247 ($1,143,716-$783,469).

Field Auditors

- The traditional way to describe the revenue yield of Field Auditors is with averages.

Average Assessments and Collections of Field Auditors		
FY	Assessments	Collections
01	$958,065	$411,919
02	$793,783	$391,802
03	$1,225,439	$721,419
3 year average	$993,238	$508,380

Field Auditors

- The revenue yield of field auditors shows both high variance but also a significant increase with years of experience.

Average Annual Assessments by Years of Experience					
Years of Experience	Mean	N	Median	Minimum	Maximum
1	14,454	14	0	0	193,079
2	114,336	21	81,000	6,842	580,810
3	325,390	23	160,351	14,555	1,384,652
4	339,083	23	216,596	55,796	1,749,517
5 to 9	1,343,426	45	275,513	8,418	35,182,915
10 to 14	897,679	92	381,997	33,333	11,354,510
15 to 19	526,732	47	286,860	24,759	4,126,113
20 to 24	2,556,733	30	978,709	12,548	15,510,100
25 to 29	2,216,042	21	628,306	95,039	9,718,412
30 and over	1,199,108	24	514,284	77,846	13,035,279
Total	993,238	340	295,648	0	35,182,915

Field Auditors

- Cross sectional regression using 3 years of data shows:
  - Assessments increase by $32,321 with each year of audit experience.
  - Assessments increase $1,921,155 when auditors are assigned to the “large case”.

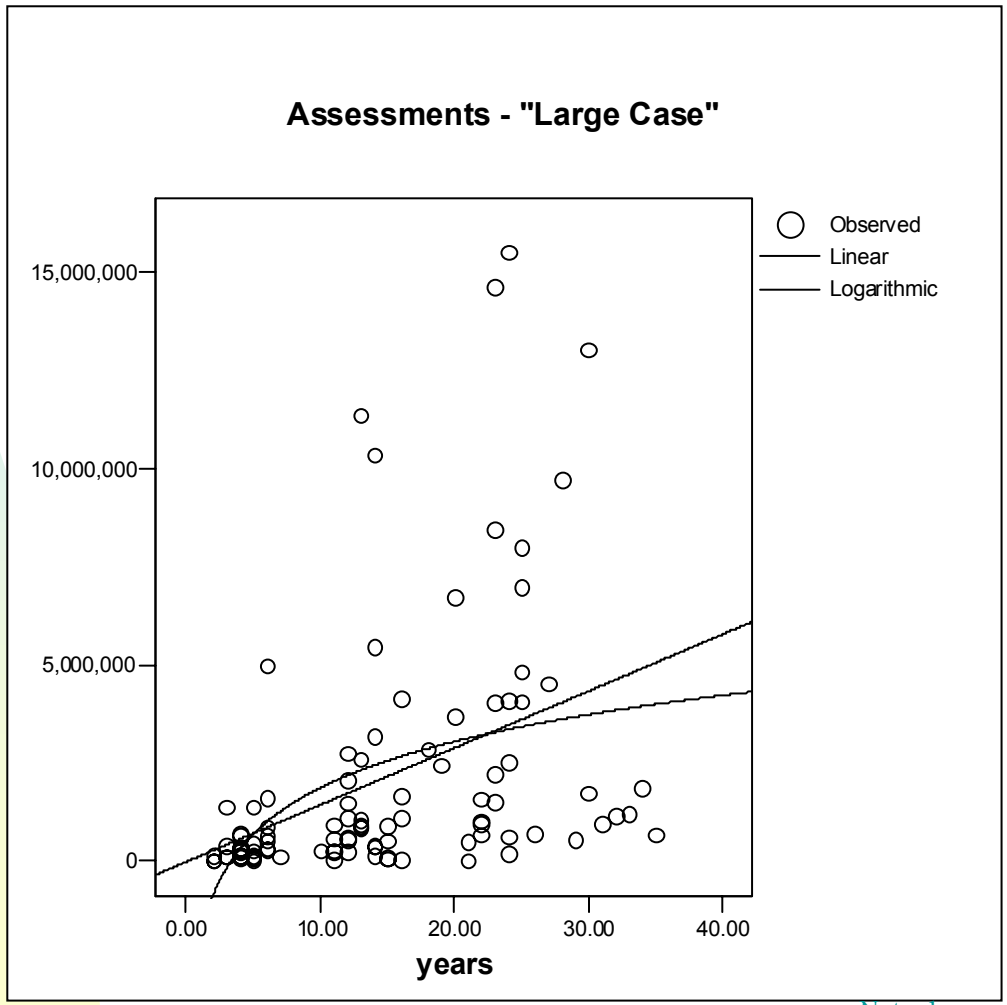
Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	years	32,321	13,803	.180	2.342	.020
	largecase	1,921,155	296,448	.363	6.481	.000
	fy	18,578	101,230	.014	.184	.854

a. Dependent Variable: Assessments

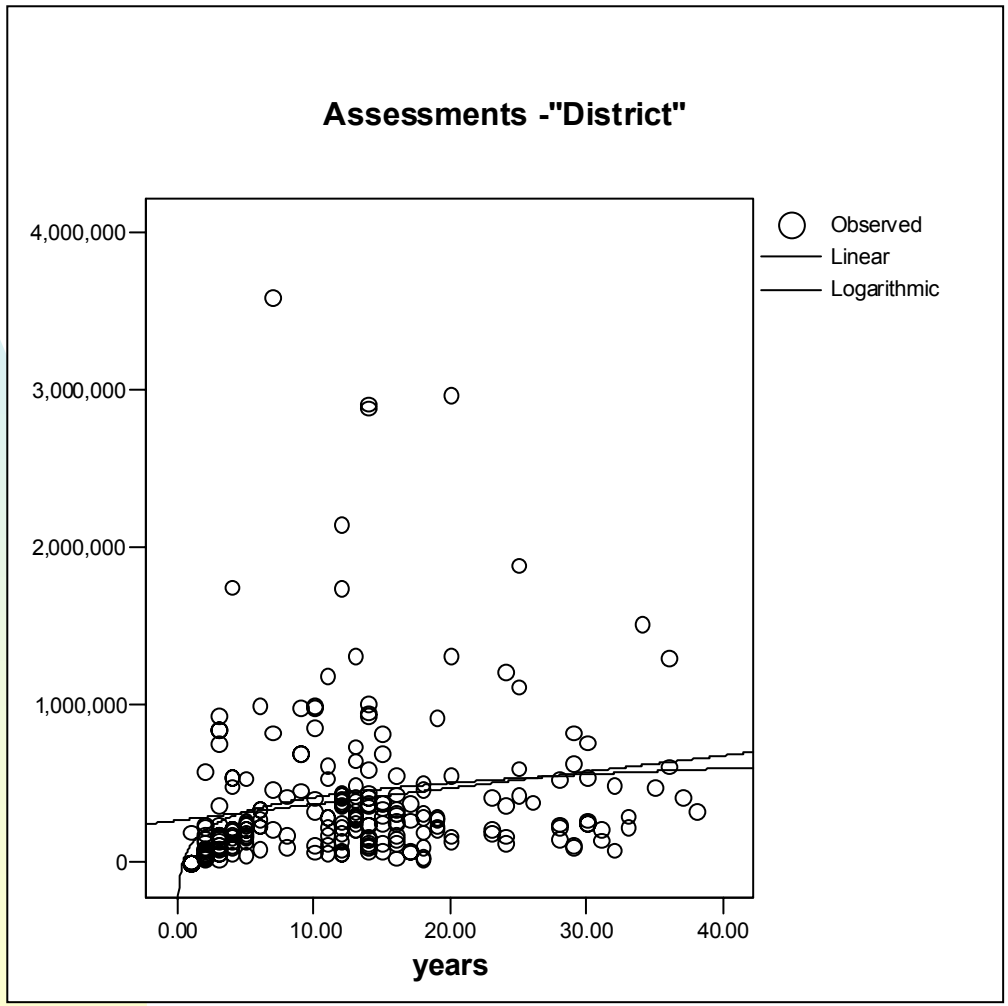
b. Linear Regression through the Origin

Field Auditors



Note: 1 case=$35million suppressed

Field Auditors



Field Auditors

- Implications of cross sectional regression:
  - Since years of audit experience have a powerful influence on assessments, optimal retention policy could logically consider large financial incentives for experienced auditors.
  - Since “Large case” audits yield such a large differential, allocation of additional resources to these types of audits appears to be indicated.

Field Auditors

- Marginal Productivity of Field Auditors
  - Since years of audit experience have a powerful influence on assessments, simple counts of the number of auditors are inadequate to explain average assessments.
  - Estimation of the marginal productivity of field auditors must await the availability of data on “experienced weighted” field audit staffing.

Political Realities

- Despite chronic complaining about the “inefficiency” of government, audit and collection functions are not always funded to yield the maximum revenue for a tax regime.
- Potentially productive audit targets, are often politically powerful.

Next Steps

- Quantitative studies of the type presented here have the potential to “raise the level” of discourse on optimal tax compliance strategies.
- Implementing these type of studies will help identify areas where consistently defined data is not currently available.