

# How Does the Elasticity of Taxable Income Affect Economic Efficiency and Tax Revenues?

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\* Views expressed are those of the author and should not be interpreted as those of the Congressional Budget Office.

# The Elasticity of Taxable Income

1. Background on the seminal research into the ETI
2. Recent developments in this research
3. Relevance for important tax issues facing the U.S
4. Case study of the Bush tax cuts
5. Depict Laffer curves under the range of ETI assumptions

# What is the elasticity of taxable income and why is it important?

- ◆ It measures the responsiveness of income to changes in tax rates
- ◆ For a proposed change in tax rates, the elasticity of taxable income can be used to calculate changes to:
  - deadweight loss and,
  - tax revenue

# Developments from Earlier Decades

- ◆ The ETI has risen to become one of the central parameters in public finance
  - Harberger (1964)
  - Lindsey (1987)
  - Feldstein (1995, 1999)
- ◆ Considerable uncertainty surrounds the size of the ETI

# The size of the ETI: Uncertainty & Disagreement

- ◆ “a proportional rise in all personal income tax rates involves a deadweight loss of two dollars per incremental dollar of revenue...The relative cost of incremental revenue is even greater when it is achieved by a tax change that increases the progressivity of the rate structure, as the analysis of the 1993 tax changes showed.”

(Feldstein, 1999)

- ◆ “The Clinton experience showed that raising taxes on the rich does not have the adverse effects that the critics claimed.”

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# The ETI & Tax Policy Moving Forward

1. The “Bush” tax cuts are set to expire  
Absent legislative action, a major tax change is set for 2011
  2. The AMT continues to grow in importance
  3. The U.S. faces a substantial long-run structural deficit
- ◆ Addressing (2) and (3) will require major tax policy changes.

# Ways in Which People Respond to Taxes

- ◆ Timing of income receipt
  - Intertemporal income shifting
- ◆ Circumvention
  - Avoidance
    - ◆ Reclassifying income, shifting income between jurisdictions, fringe benefits
  - Evasion
    - ◆ Under-reporting income, overstating deductions & credits
- ◆ Real Behavior
  - Work hours
  - Work effort

# Three Ways to Estimate the ETI

1. Repeated Cross-Sections
  - ◆ Lindsey (1987), Goolsbee (1999)
2. Panel Data
  - ◆ Feldstein (1995), Auten and Carroll (1999), Gruber and Saez (2002), Kopczuk (2005), Giertz (2007), Heim (2007), Auten, Carroll and Gee (2008), and many more
3. Aggregated Time-Series Data
  - ◆ Slemrod (1996), Saez (2004)

# ETI Estimates: Stylized Facts

1. Fallen with subsequent research
  - ◆ First estimates ranged from 1 to over 3
  - ◆ Estimates now range from 0 to over 1
2. Varies with income
  - ◆ High income filers generally appear more responsive to tax changes
3. Estimates vary across time periods
  - ◆ Goolsbee (1999), Saez (2004), Giertz (2007)

# Recent Theoretical Developments

- ◆ Slemrod and Kopczuk (2002)
  - The ETI is not a structural parameter
- ◆ Heim (2007)
  - When the definition of taxable income changes, ETI estimates assume that the cross price elasticities between goods/activities whose tax status changes and those that are always taxable are zero
- ◆ Chetty (2008)
  - Shifting of economic activity, “transfer” costs & efficiency

# Using the ETI to Assess the Efficiency & Revenue Implications from Allowing the “Bush” Tax Cuts to Expire

The analysis:

- ◆ Includes estimates for elasticities ranging from 0 to 1
- ◆ Uses aggregated taxable income and revenue data for 2005 (IRS, 2007)
- ◆ Uses effective marginal tax rates for labor income (CBO, 2005)

# Caveats

1. This is not a full microsimulation.
2. Some filers are near the bottom of their tax bracket.
3. Taxable income measures includes some income that faces marginal rates different from those for earned income.
4. Taxable income responses include changes to itemized deductions. The appropriate rate here is lower than the rate of earned income.
5. The AMT is ignored.

# Effective Marginal Tax Rates

Statutory	Federal	Payroll	State	Total
0%	-1.6	13.5	0.9	12.7
15%	14.8	12.8	2.6	30.2
15%	16.3	12.5	6.1	34.9
28%	26.3	10.0	3.7	40.0
31%	30.1	5.3	3.7	39.0
36%	34.7	3.2	3.5	41.3
39.6%	34.7	2.5	3.4	40.7

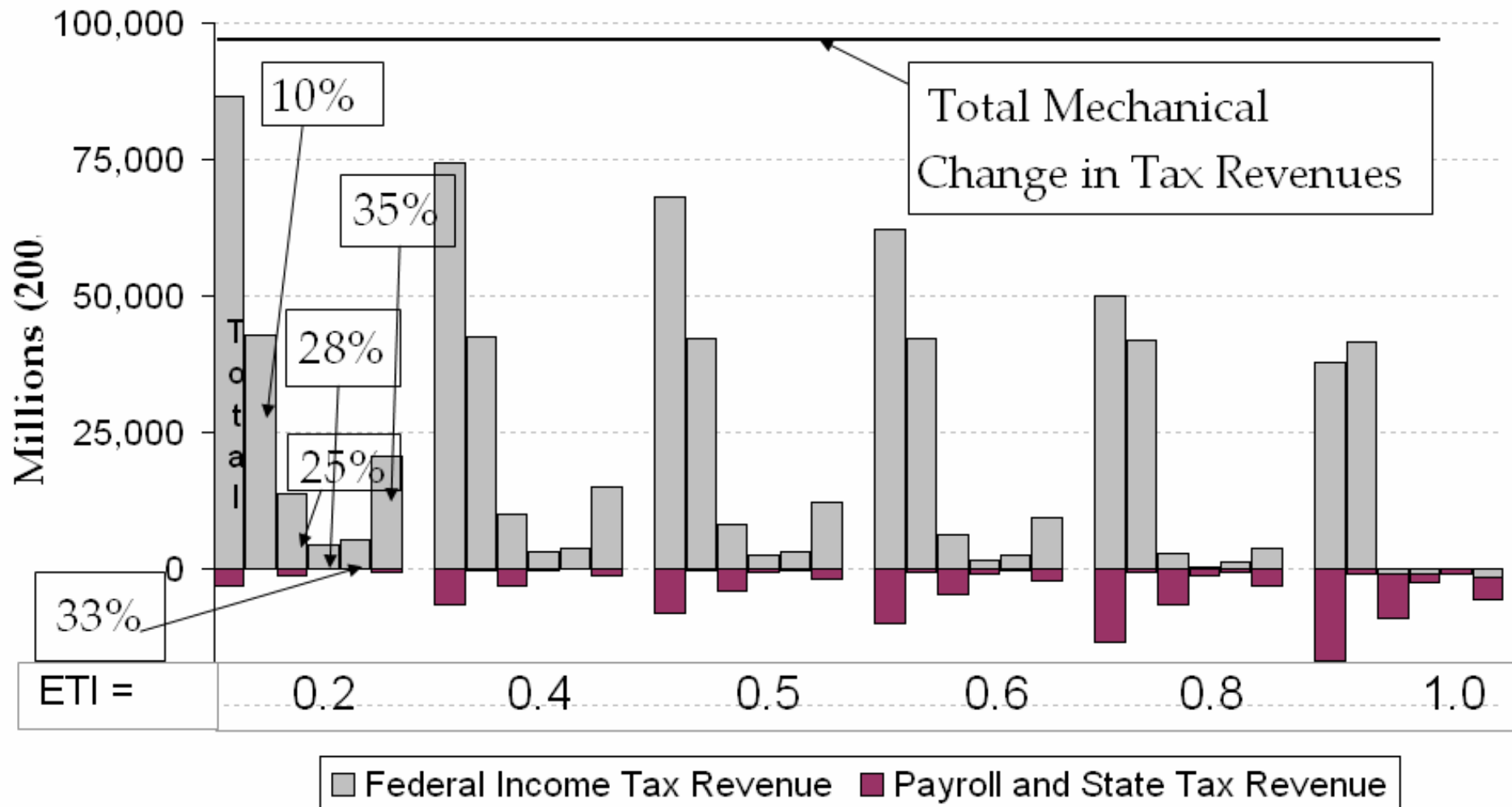
Source: CBO (2005)

# 2005 Individual Income and Tax Revenues

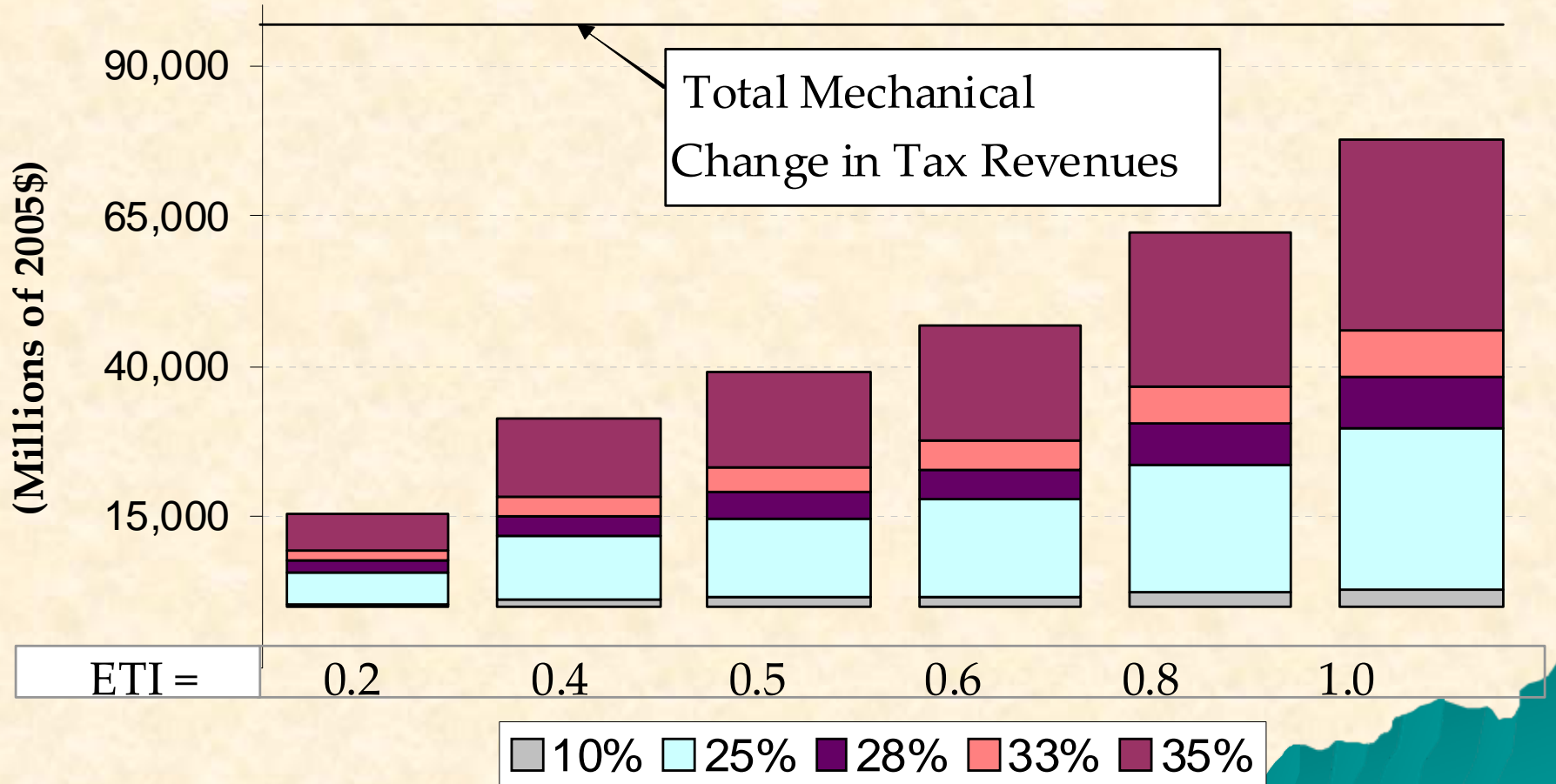
Statutory MTR	Income Total	Income at MTR	Tax Revenue Total	Tax Revenue at MTR
10	130,864	107,061	12,612	10,706
15	1,028,305	589,969	132,330	88,495
25	1,411,064	241,641	237,515	60,410
28	503,828	36,360	104,491	10,181
33	387,519	79,067	92,352	26,092
35	1,094,230	565,392	315,443	197,887
Total	4,555,810	1,619,489	894,743	393,772

Dollar values are in millions.

# Change in Tax Revenues Due to the Expiration of Cuts in Individual Marginal Tax Rates



# Change in Deadweight Loss Resulting from the Expiration of Cuts in Individual Marginal Tax Rates



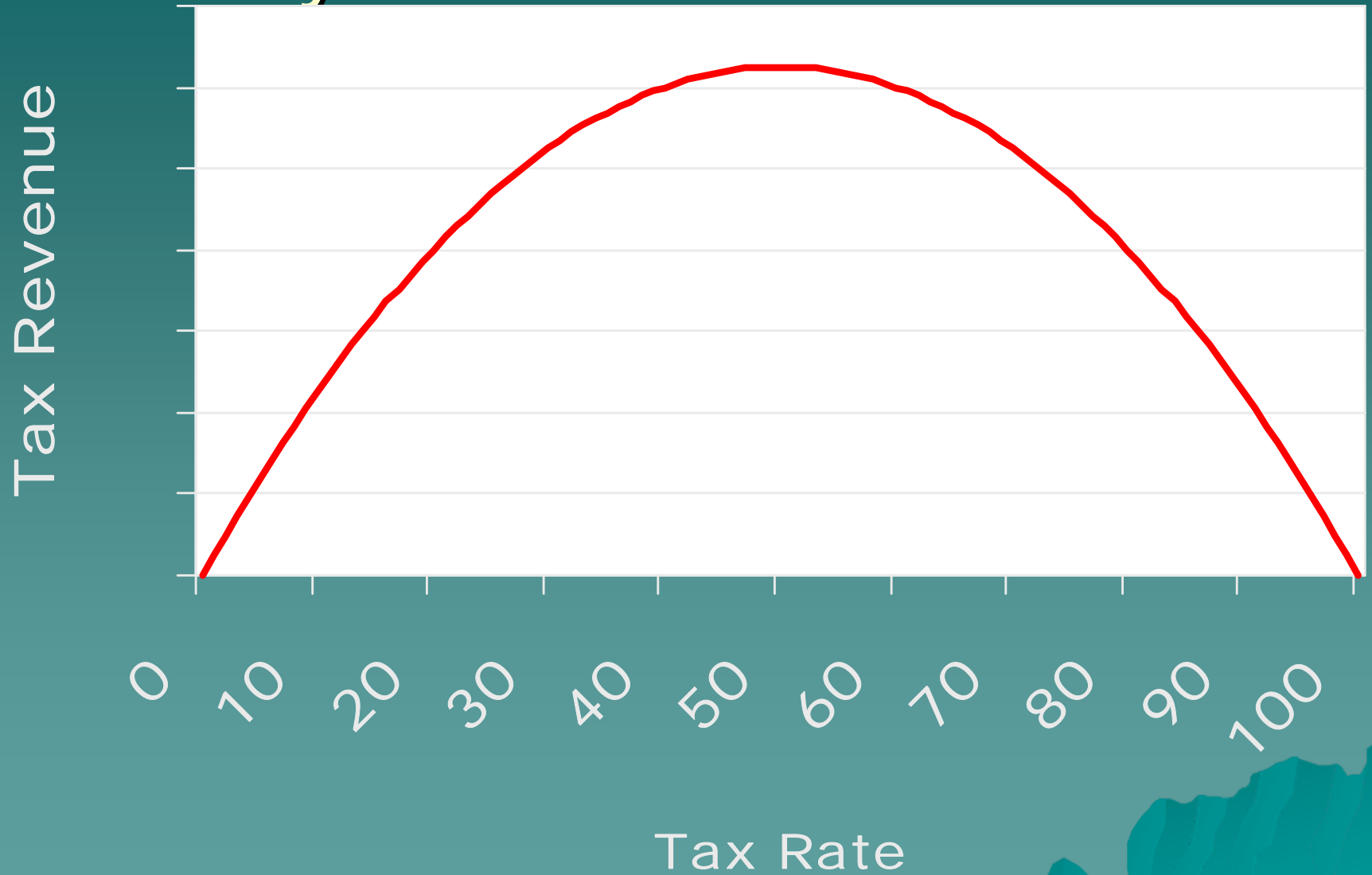
# Marginal Deadweight Loss (Per Additional Dollar of Federal Income Tax Revenue)

2005 MTR	ETI =	0.2	0.4	0.5	0.6	0.8	1.0
10%		0.01	0.03	0.03	0.04	0.05	0.07
25%		0.39	1.07	1.64	2.53	7.90	-
28%		0.39	1.13	1.81	3.04	20.09	-
33%		0.30	0.81	1.22	1.85	5.19	-
35%		0.31	0.86	1.31	2.03	6.57	-
totals		0.18	0.42	0.57	0.75	1.25	2.06

# Marginal Deadweight Loss (Per Additional Dollar of Revenue Including Revenue Offsets from Payroll and State Taxes)

2005 MTR	ETI =	0.2	0.4	0.5	0.6	0.8	1.0
10%		0.01	0.03	0.04	0.04	0.06	0.07
25%		0.45	1.63	3.41	12.95	-	-
28%		0.42	1.48	2.94	8.54	-	-
33%		0.32	0.92	1.49	2.56	22.65	-
35%		0.33	0.97	1.59	2.78	50.49	-
totals		0.19	0.46	0.65	0.90	1.72	3.75

# Stylized "Laffer" Curve



# Laffer Rates for the 35 Percent Federal Tax Bracket

Taxable Income Elasticity	"Laffer" Rate
0.20	77.5%
0.40	63.4%
0.50	58.1%
0.60	53.6%
0.80	46.4%
1.00	41.0%

The effective marginal tax rate for this bracket is **40.7** percent.

# The Relationship between Tax Rates & Tax Revenues Under Different Elasticity Assumptions (for the Top Tax Bracket)

