



# The Economics of Tax Policy and How to Think About Tax Reform

## Tax Foundation University 2017, Part 4

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# TODAY'S KEY POINTS

Different tax changes have different economic effects that affect the federal budget and constituents' incomes.

Learning these outcomes is what dynamic scoring is for. (And it is not that hard!)

Past tax bills can reveal what works for growth and what does not.

Different models yield different results; some are more in tune with history than others.

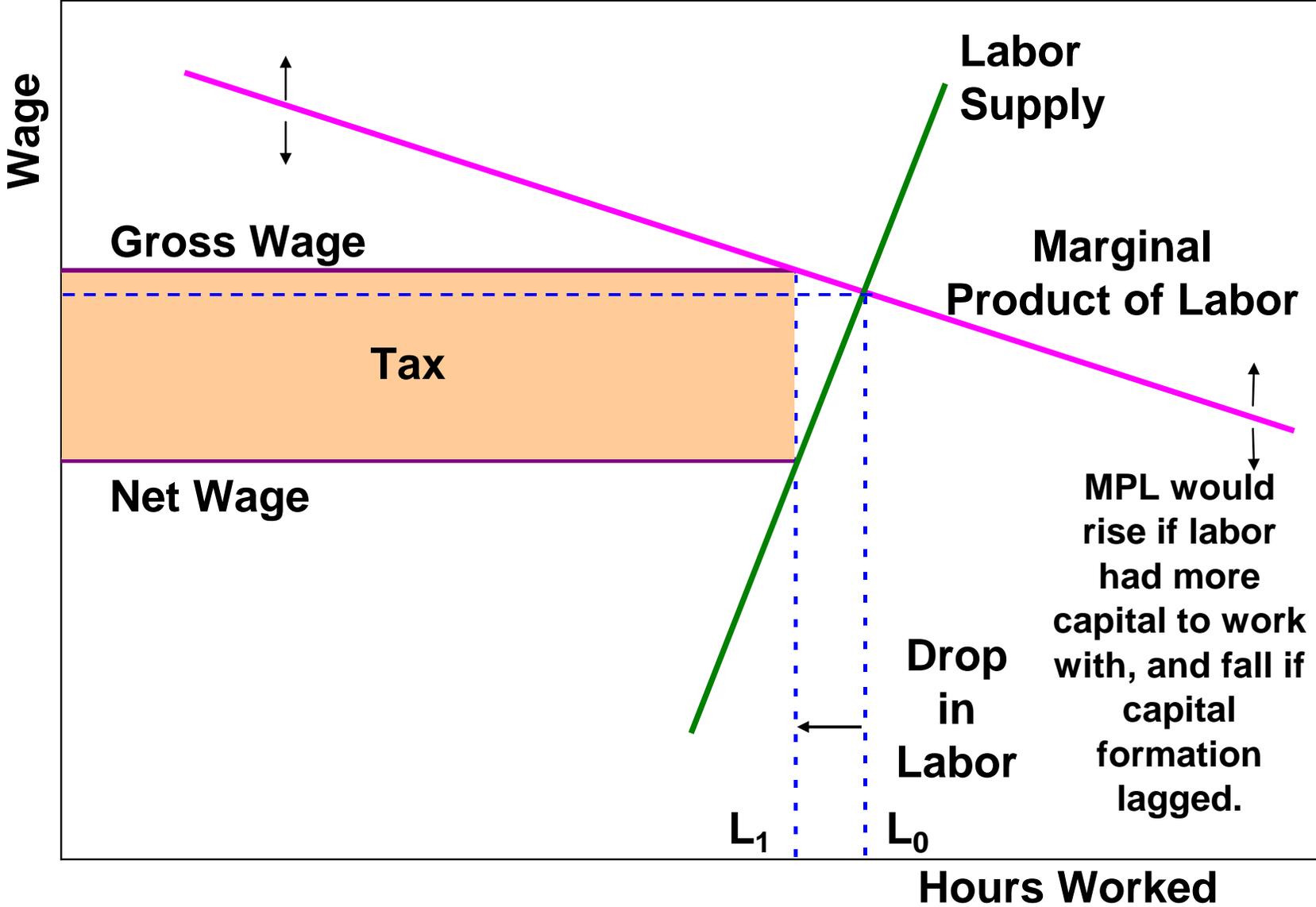
# Importance of Dynamic Analysis

- ☑ Dynamic analysis is critical to giving Members of Congress the three-dimensional information they need to make smarter tax policy before they vote, not after.
- ☑ No two tax changes affect the economy in the same way. Dynamic analysis provides this nuanced information—this is especially critical for comprehensive tax reform plans.
- ☑ All tax analysis requires assumptions and judgment calls. Conventional scoring is no more “exact” than dynamic scoring—actually less so because it fails to consider the effect of tax changes on the broader economy.

# Economic Background & Theory

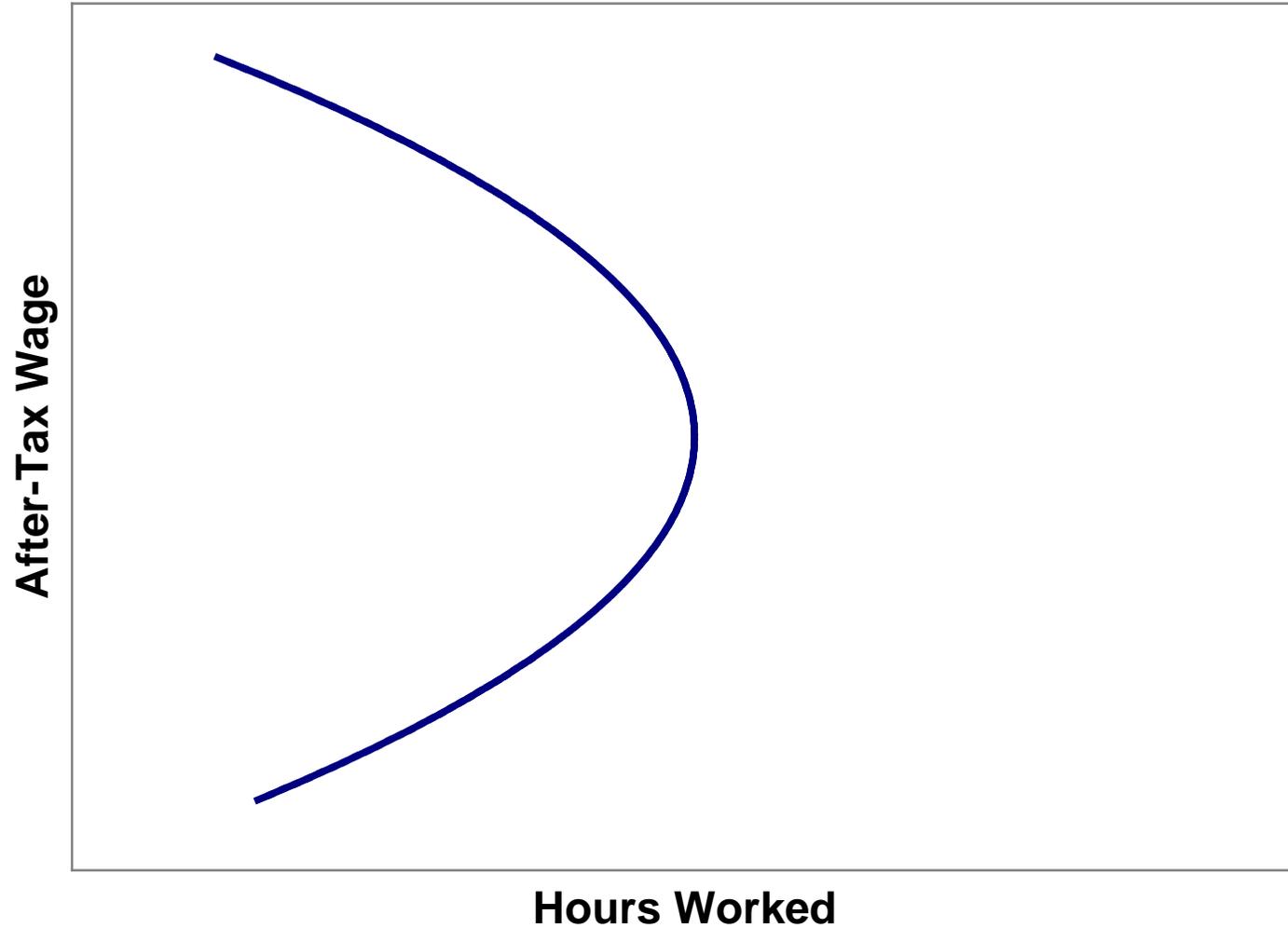
- Keynesian theory assumes changing Consumption, Investment, and Government spending directly or by changing interest rates can alter GDP. Out of favor.
- Classical theory states GDP depends on how much labor and capital are available and worth using, and what they can produce. Taxes and regulations can alter those quantities supplied.

# Effect of Tax On Labor



- How does labor respond to a tax cut?
- We assume a labor supply elasticity of 0.3.  
Some say the elasticity is zero.
- Some say the labor supply curve is backward bending.

# Backward Bending Supply Curve Of Labor? If Income Goes Up, Do Hours Go Down?



If a higher (after-tax) wage raises income, will people work less even if they are getting more net pay per hour of work?

Put another way, will people “buy” more leisure even though the cost of leisure (income foregone) has gone up?

Does the income effect exceed the substitution effect?

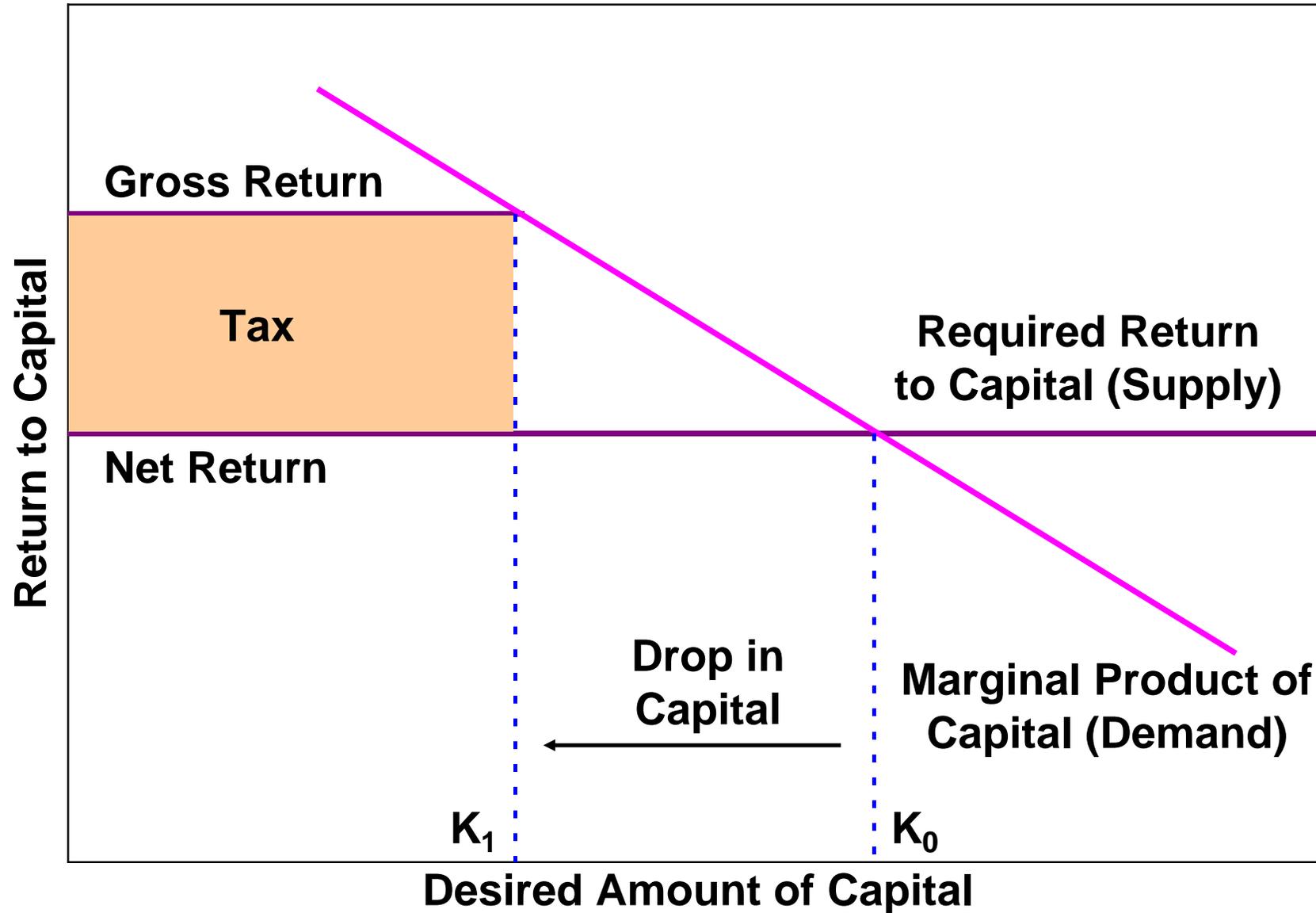
Can't. If you rob Peter to Pay Paul, income effects cancel.

If people work less when taxes are cut, output and income fall; there is no added income to buy more leisure.

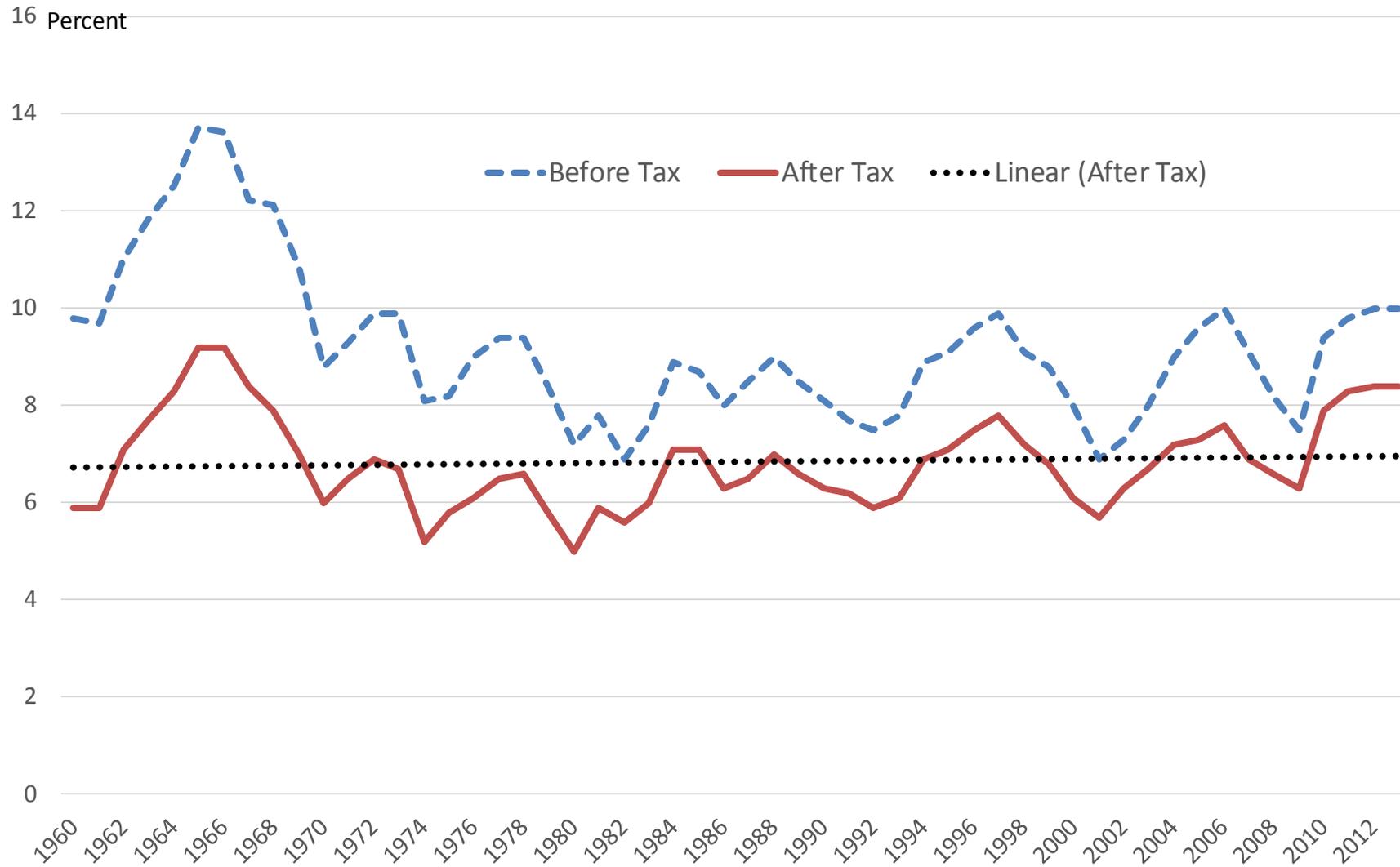
Similar claims crop up that lower tax rates on saving might depress saving rates, since we could reach a “target level” of savings sooner.

If the incentive to save goes up, might we save less? Not likely. When the reward is higher, the “target” moves up, and we save more.

# Effect of Tax On Desired Capital Stock



# Rates of Return for Nonfinancial Corporations, 1960--2013



Source: BEA

# Modeling tax changes in a neo-classical manner

- Measure the tax wedges on labor and capital
- Note the tendency of RATR to return to 3% over time (marginal rate of time preference)
- Select an elasticity for the supply of labor
- Select a production function
- Run output/income changes through tax calculator
- Converge to a new equilibrium

The basics of the Tax Foundation's  
**TAXES AND GROWTH (TAG) MODEL**

## Is a Neoclassical Growth Model

It isolates and measures the effects of tax changes on:

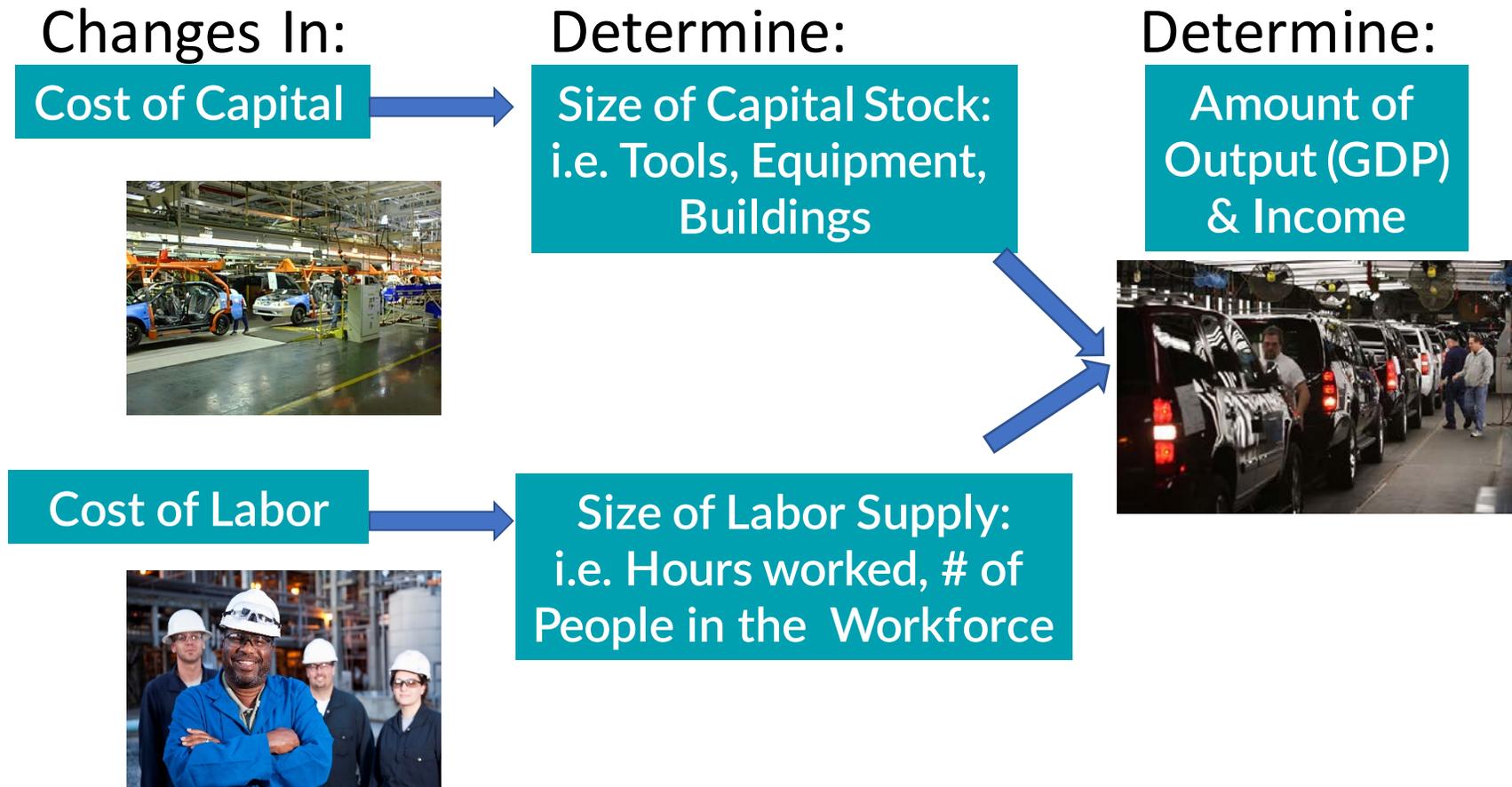
The cost of labor and

The cost of capital



# TAXES AND GROWTH (TAG) MODEL

It works like the economy:



# TAG Model

- Elements in the tax wedges:
- Marginal income tax rates on types of personal income from the IRS public use file.
- Payroll taxes on labor;
- Excise taxes on output (hitting labor and capital);
- Property taxes;
- Capital consumption allowances, investment credits, the corporate tax rate.

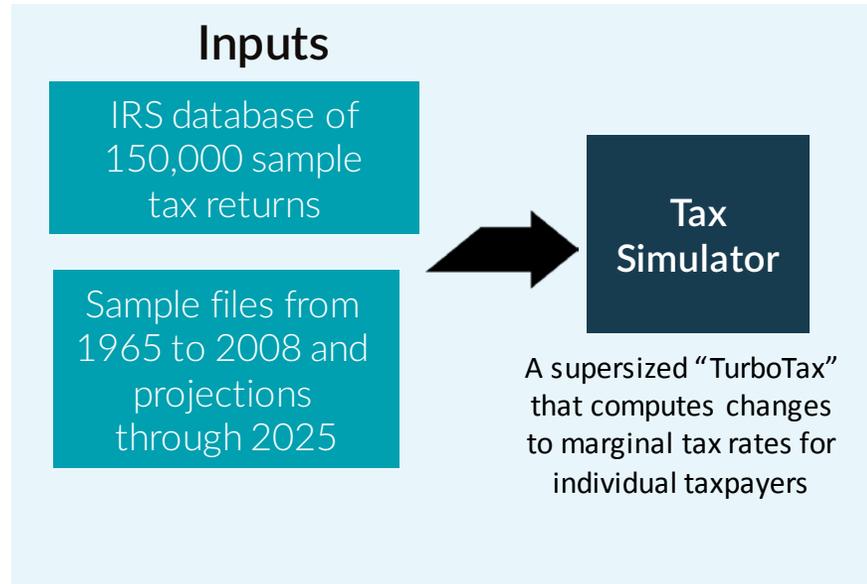
# TAG Model

- A 0.3 labor supply elasticity. In line with profession.
- Most of the impact of taxes on growth goes through the capital stock.
- Capital expands or contracts to yield a “normal” after-tax return.
- Cobb-Douglas production function. (One of many possible. Good forecaster for over 65 years.)

# Two Main Components of the **TAXES AND GROWTH MODEL**

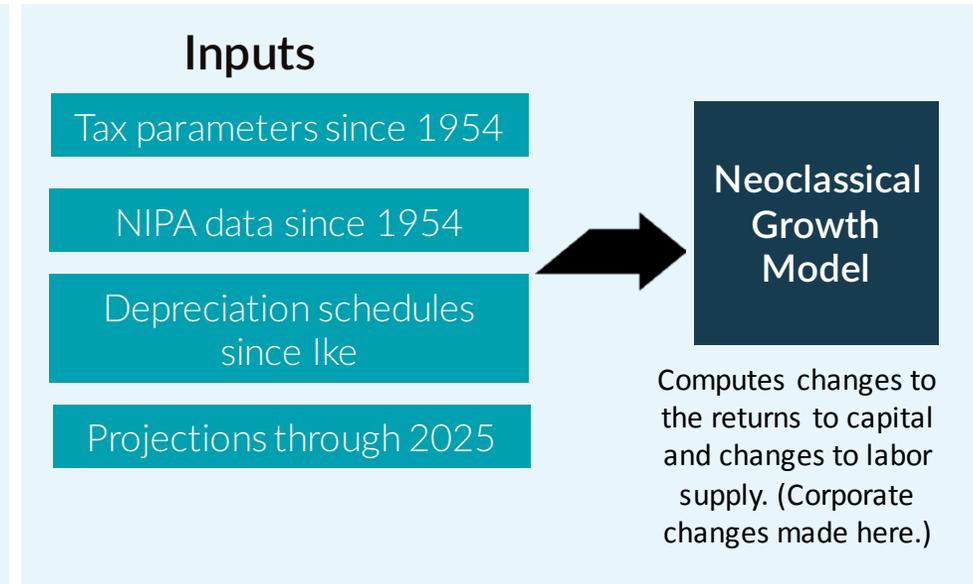
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## Tax Simulator



2

## Macro-Economic Model



The basics of the Tax Foundation's  
**TAXES AND GROWTH (TAG) MODEL**

The two sides of the model work together to generate estimates tax impact on:

**GDP**  
**Capital Stocks**  
**Wage Rate**  
**Hours Worked**

**Federal Revenues &  
Distributional Changes**  
**(both static & dynamic effects)**

# TAXES AND GROWTH (TAG) MODEL

Main similarities/differences with JCT models:

- ✓ TF model somewhat similar to MEG model, very different from OLG model;
- ✓ TF model provides quick turnaround—easily calculates effects of changes in basic tax parameters;
- ✓ TF model is an open economy model;
- ✓ Ours projects deficit impacts—solves without having to predict future Congressional action
- ✓ Ours assumes a steady Fed policy focused on price stability—does not attempt to predict interest rate effects of policy changes
- ✓ TF Model does not have any short-term Keynesian demand-side features

# TAG Model

- TAG is a long run model. We do not predict the exact path to final adjustment.
- Capital cannot be added instantly.
- But long run elasticities of supply are much higher than short run. Spreading investment over time solves the problem.

# TAG Model

- Assumes enough saving to fund expansion post-tax cut.
- Most business investment is financed internally—depreciation, retained earnings, lower taxes.
- New stock issue, borrowing, smaller dividends.
- Business owners may work/save more to add to capital.
- Several trillion dollars a year in global saving is on tap. Some can be redirected toward the U.S. just by keeping more U.S. saving at home. TAG assumes open economy.

# MEG Model

- Has short run Keynesian effects, where deficits stimulate economy; Neo-classical long-run.
- Partly “open” to global saving; partly saving-constrained.
- Predicts deficits raise interest rates and higher interest rates harm investment long run (crowding out).
- Alters its forecast as Federal Reserve eases or tightens.
- Sets own baseline, and moves forward with assumed impacts of tax changes year-to-year. No necessary return to a long run observed rate of return to capital.
- Assumes a lower elasticity of labor (including income effect offsetting incentives to work longer).

# OLG Model

- Highly saving-constrained, with little room to increase investment, capital formation.
- Each age cohort sets its saving/consumption path over its remaining life. Aims to spend down before death. Limits desire to add to saving if returns rise.
- Closed economy. No access to global capital.
- Requires specification of policy offsets to maintain balanced budget in order to solve.

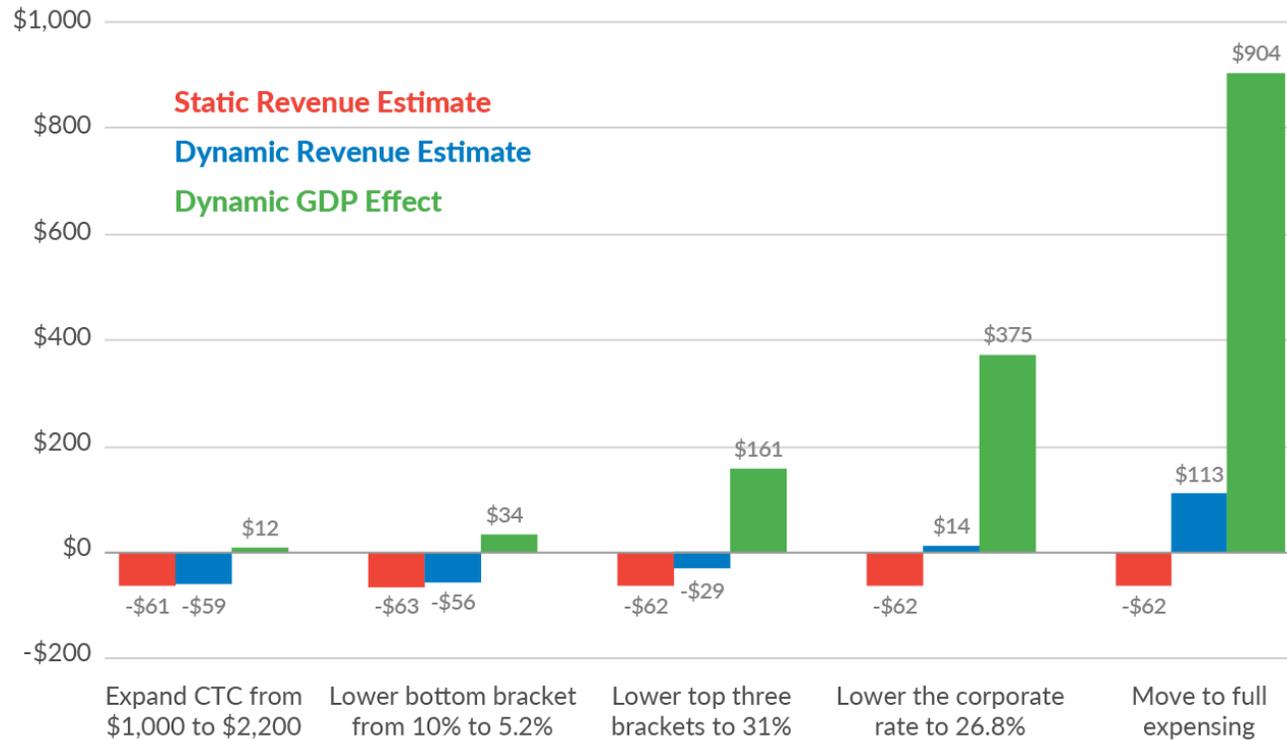
# Let's Test our Intuition

## COMPARE FIVE \$62 BILLION STATIC TAX CUTS

- Adding \$1,200 to the per-child tax credit with no upper income cap;
- Cutting the tax rate in the 10 percent tax bracket to 5.2 percent;
- Cutting the rates in the top three individual income tax brackets (33, 35, and 39.6 percent) to 31 percent;
- Cutting the corporate income tax rate from 35 percent to 26.8 percent; and
- Moving from the current “accelerated” depreciation system (MACRS) to full expensing for all capital investments, including machinery and structures.

# Different Tax Cuts Deliver Different “Bang for Your Buck”

Dynamic Revenues and GDP Under Different Tax Policy Changes, Billions of 2013 Dollars



Source: Tax Foundation *Taxes and Growth Model* (Oct. 2016)

## Expensing Versus Depreciation: Depreciation Overstates Taxable Income and Depresses Return on Capital

Expensing (Full Cost Recovery)		Depreciation	
Revenues from machine, present value	<b>\$115</b>	Revenues from machine, present value	<b>\$115</b>
Full cost of machine	<b>\$100</b>	Full cost of machine	<b>\$100</b>
Full cost write-off for tax purposes (expensing)	<b>\$100</b>	Allowable depreciation write-off, present value	<b>\$85</b>
Real profit = Taxable profit	<b>\$15</b>	Taxable "profit" (exceeds real profit)	<b>\$30</b>
Tax	<b>\$5</b>	Tax	<b>\$10</b>
After-tax income	<b>\$10</b>	After-tax income	<b>\$5</b>
Rate of return	<b>10%</b>	Rate of return	<b>5%</b>

# Multiple Taxation of Saving

## One Tax on Consumption, Four Taxes on Saving

### Layer 1 – Tax on Earnings

Income is taxed when earned. If it is used for consumption, there is usually no further federal tax.

### Layer 2 – Personal Income Tax on Returns

If the income is saved, the returns are taxed as interest, dividends, capital gains, or non-corporate business profits.

### Layer 3 – Corporate Income Tax

If the saving is in corporate stock, the corporate tax hits the income before it is either paid out to shareholders or reinvested to boost future earnings.

### Layer 4 – Transfer (Estate and Gift) Tax

Another tax on already taxed assets.

*(Similar taxes at the state and local levels increase the multiple taxation.)*

## **STEPS TOWARD NEUTRALITY:**

**ALL SAVING GETS DEFERRAL  
OR RETURNS EXEMPT EQUIVALENT;**

**EXPENSING OF INVESTMENT;**

**NO DOUBLE TAX OF CORPORATE  
INCOME;**

**NO ESTATE AND GIFT TAX.**

# Kennedy Tax Cuts

1962

Guidelines replace Bulletin F

7% ITC for equipment

1963

Corporate rate cut from 52% to 48%

Individual marginal tax rate cuts

Increased standard deduction

# 1962-1964 Kennedy Tax Cuts

## *Economic Effects*

GDP change	6.2%		Weighted Average service price	
GDP, long-run change in annual level (billions of 2016 \$)	\$225			
Private business stocks (equipment, structures, etc.)	17.3%		Corporate	-10.1%
Wage rate	3.9%		Noncorporate	-7.1%
Full-time Equivalent Jobs (thousands)	1,457		All business	-9.2%

# 1962-1964 Kennedy Tax Cuts

## *Revenue and Economic Impact, 2016 Dollars*

Provision	Change in Static Revenue (billions)	Change in GDP (percent)	Change in Dynamic Revenue (billions)
Create a minimum standard deduction	-\$1.87	0.09%	-\$1.08
Create a business investment tax credit	-\$7.63	1.35%	\$5.21
Move from Bulletin F to Guidelines depreciation schedules	-\$12.43	1.15%	-\$1.59
Lower marginal tax rates across the board	-\$52.37	2.51%	-\$32.64
Lower the corporate tax rate to 48% from 52%	-\$9.18	1.09%	-\$0.52
<b>TOTAL</b>	<b>-\$83.49</b>	<b>6.18%</b>	<b>-\$30.62</b>

**Bottom line, billions of 2016 dollars:**

**Static tax cuts (-\$83.49) plus revenue from growth (\$52.87) equals net revenue change (-\$30.62).**

# 1981 Tax Cuts

ACRS replaces Guidelines;  
10% ITC for equipment;  
Structures to 15 years;

Individual marginal tax rate cuts  
(14%-70% reduced to 11%-50%);  
Indexing effective 1985;  
Liberalized retirement arrangements.

# Economic Recovery Tax Act of 1981

## Economic Effects

GDP change	8.00%		Weighted Average service price	
GDP, long-run change in annual level (billions of 2016 \$)	\$572			
Private business stocks (equipment, structures, etc.)	19.9%		Corporate	-8.6%
Wage rate	4.1%		Noncorporate	-10.9%
Full-time Equivalent Jobs ( thousands)	3,250		All business	-9.4%

# Economic Recovery Tax Act of 1981

## Revenue and Economic Impact, 2016 Dollars

Provision	Change in Static (billions)	Change in GDP (percent)	Change in Dynamic (billions)
Deduction for lower-earning spouses	-\$1.06	0.17%	\$3.85
Move from ADR to ACRS for depreciation schedules	-\$23.64	2.69%	\$37.00
Increase investment tax credit	-\$6.29	0.52%	\$5.48
Cut marginal individual income tax rates across the board	-\$158.89	4.62%	-\$80.34
<b>TOTAL</b>	<b>-\$189.88</b>	<b>8.00%</b>	<b>-\$34.01</b>

**Bottom line, billions of 2016 dollars:**

**Static tax cuts (-\$189.88) plus revenue from growth (\$155.87) equals net revenue change (-\$34.01).**

## The Kennedy and Reagan '81 Tax Cuts

The Kennedy rate cuts were roughly the same percentage rate reductions across the board, but after-tax rewards at the margin rose most where rates were highest:

- **Top tax rate cut from 91% to 70%.**

After-tax reward rose from 9% to 30%, up 230%.

- **Bottom tax rate cut from 20% to 14%.**

After-tax reward rose from 80% to 86%, up 7.5%.

Similarly for the 1981 Reagan Tax cuts:

- **Top tax rate cut from 70% to 50%.**

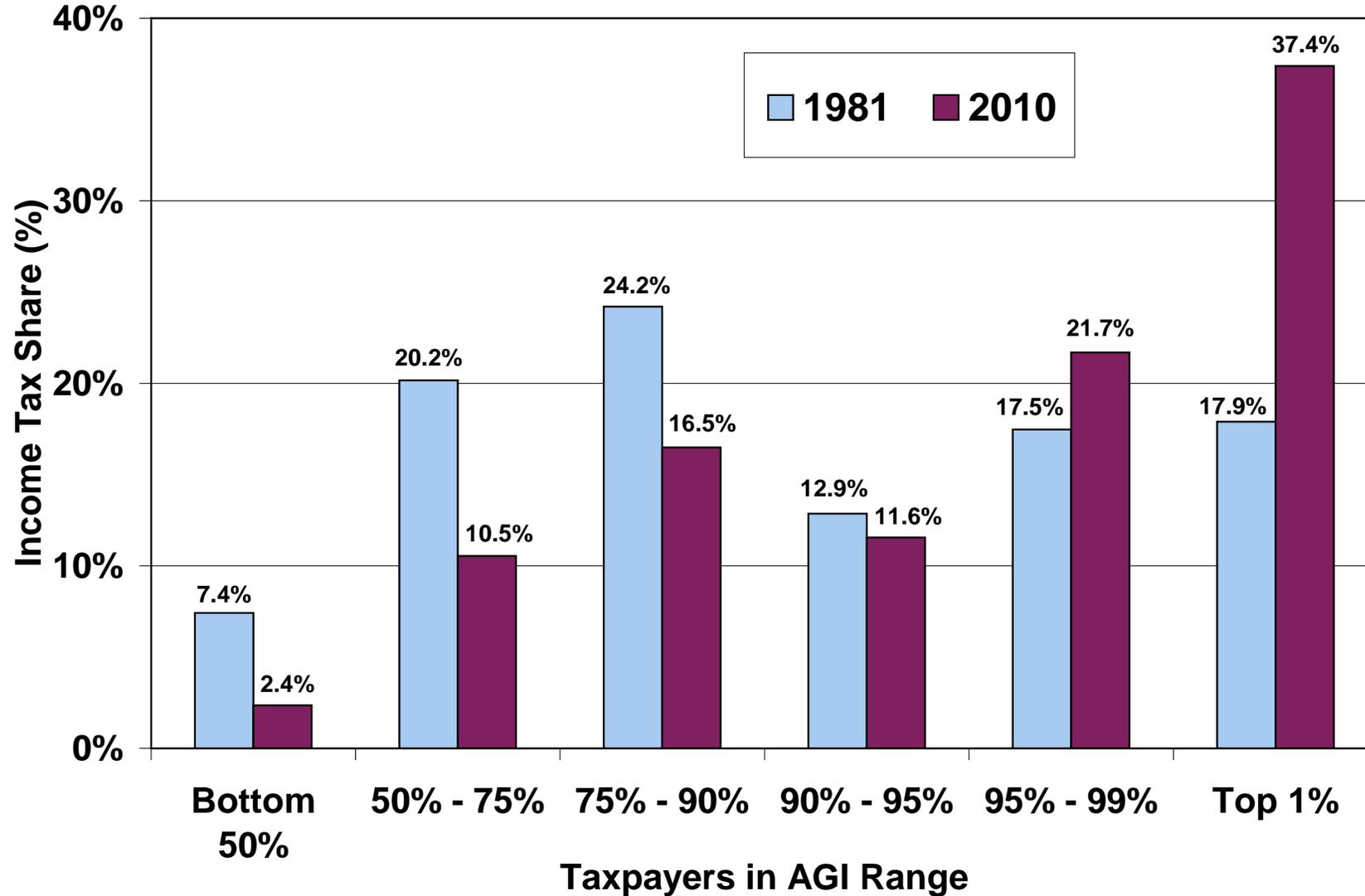
After-tax reward rose from 30% to 50%, up 67%.

- **Bottom tax rate cut from 14% to 11%.**

After-tax reward rose from 86% to 89%, up 3.5%.

In both cases, a greater response by upper-income taxpayers raised the total share of taxes they paid.

## While Marginal Tax Rates Have Fallen, High Earners' Income Tax Shares Have Risen



# 1986 Tax Reform

Cut corporate rate to 34%.

MACRS replaces ACRS, structures to 31.5 yrs.

End ITC.

Passive loss limit.

“Loopholes” closed.

Cut individual rates to 15%, 28% with 33% “bubble”.

Capital gains taxed at ordinary rates.

Limit IRAs.

# Tax Reform Act of 1986

## Economic Effects

GDP change	-0.23%		Weighted Average service price	
GDP, long-run change in annual level (billions of 2016 \$)	-\$19.2		price	
Private business stocks (equipment, structures, etc.)	-3.3%		Corporate	5.5%
Wage rate	-1.5%		Noncorporate	-1.1%
Full-time Equivalent Jobs ( thousands)	1,190		All business	3.3%

# Tax Reform Act of 1986

## Revenue and Economic Impact, 2016 Dollars

Provision	Change in Static Revenue (billions)	Change in GDP (percent)	Change in Dynamic Revenue (billions)
Treat capital gains as ordinary income	\$20.74	-2.59%	-\$39.26
Move from post-1984 ACRS to MACRS	\$15.67	-1.81%	-\$26.22
Repeal investment tax credit	\$45.13	-2.67%	-\$15.91
Expand personal exemption and standard deductions	-\$52.00	0.56%	-\$35.81
Collapse the 16-bracket structure to a 4-bracket structure	\$7.19	2.97%	\$79.28
Lower corporate tax rate: 46% to 34%	-\$46.11	3.31%	\$23.36
<b>TOTAL</b>	<b>-\$9.38</b>	<b>-0.23%</b>	<b>-\$14.57</b>

**Bottom line, billions of 2016 dollars:**

**Static tax cuts (-\$9.38) less revenue from contraction (-\$5.19) equals net revenue change (-\$14.57).**

# 2001 Tax Cuts

Individual tax reductions. Nothing for capital formation.  
Phased in too slowly to avert recession.

Expanded child credit;

Expanded EITC and standard deduction, joint filers;

New low income 10% bracket;

Lower tax rates in top 4 brackets;

Phase-out of Peps and Pease.

# Economic Growth and Tax Relief Reconciliation Tax Act of 2001

## Economic Effects

GDP change	2.3%		Weighted Average service price	
GDP, long-run change in annual level (billions of 2016 \$)	\$380			
Private business stocks (equipment, structures, etc.)	4.6%		Corporate	-1.5%
Wage rate	0.8%		Noncorporate	-3.5%
Full-time Equivalent Jobs (in thousands)	1,668		All business	-2.0%

# Economic Growth and Tax Relief Reconciliation Tax Act of 2001

## Revenue and Economic Impact, 2016 Dollars

Provision	Change in Static Revenue (billions)	Change in GDP (percent)	Change in Dynamic Revenue (billions)
Increase the AMT exempt amount	-\$1.07	-0.0009%	-\$1.32
Expand the child credit and EITC for joint filers	-\$27.49	0.0005%	-\$27.66
Expand the standard deduction for joint filers	-\$8.00	0.047%	-\$6.12
Introduce 10% bracket and lower rates on top 4 brackets	-\$136.75	1.703%	-\$83.79
Eliminate phase-out of exemptions and deductions	-\$40.85	0.519%	-\$26.27
<b>TOTAL</b>	<b>-\$214.16</b>	<b>2.265%</b>	<b>-\$145.16</b>

**Bottom line, billions of 2016 dollars: Static tax cuts (-\$214.16) plus revenue from growth (\$69.00) equals net revenue change (\$-145.16).**

# 2003 Tax Cuts

Accelerated pending rates cuts;

Dividend rate cut to match capital gains;

50% bonus expensing (up from 35% in 2002;

Estate tax phase-out.

# Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA)

## Economic Effects

GDP change	3.4%		Weighted Average service price	
GDP, long-run change in annual level (billions of 2016 \$)	\$483			
Private business stocks (equipment, structures, etc.)	10.3%		Corporate	-8.3%
Wage rate	2.8%		Noncorporate	-1.1%
Full-time Equivalent Jobs (in thousands)	637		All business	-6.1%

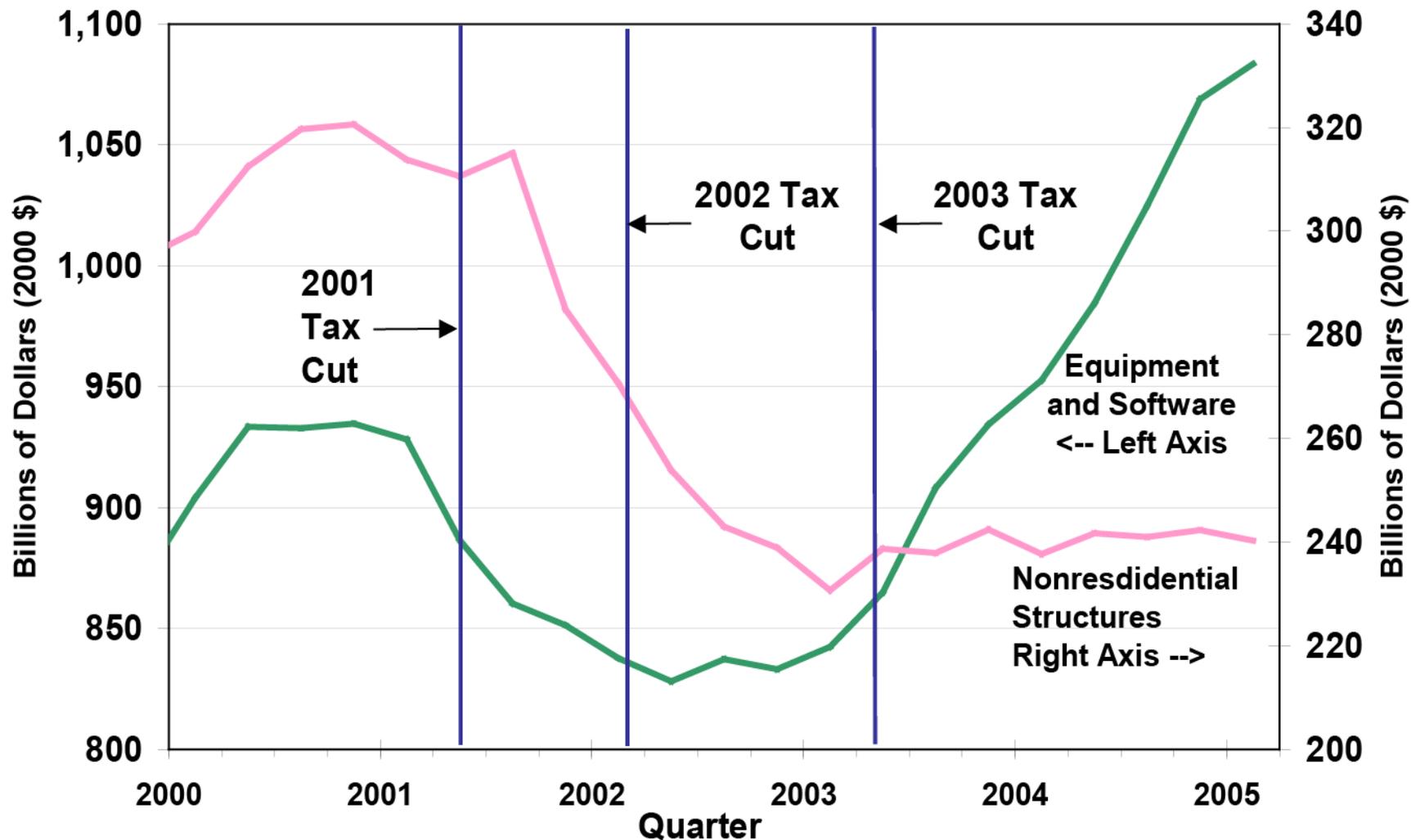
# Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA)

## Revenue and Economic Impact, 2016 Dollars

Provision	Change in Static Revenue (billions)	Change in GDP (percent)	Change in Dynamic Revenue (billions)
Lower long-term capital gains rates to 15% and 0%	-\$18.54	0.34%	-\$9.05
Extend reduced capital gains rates to qualified dividends	-\$12.66	1.95%	\$41.54
50% bonus expensing on capital investment	-\$13.05	1.10%	\$16.33
<b>TOTAL</b>	<b>-\$44.25</b>	<b>3.38%</b>	<b>\$48.82</b>

**Bottom line, billions of 2016 dollars: Static tax cuts (-\$44.25) plus revenue from growth (\$93.07) equals net revenue change (\$48.42).**

# Real Private Investment And 2001, 2002, and 2003 Tax Cuts



Data Source: BEA, National Income and Product Accounts, Table 5.3.6, accessed via [www.bea.gov](http://www.bea.gov).

# **Updated: Details and Analysis of the Nunes Plan to Reform Business Taxation**

**by Michael Schuyler; Tax Foundation Fiscal Fact No. 494**

**Representative Devin Nunes (R-CA) would reform business taxes. Major elements:**

- Corporate income tax rate: 25 percent;**
- Top non-corporate business tax rate: 25 percent;**
- Full expensing of investment (equipment, plant, structures);**
- Territorial tax system;**

## **Nunes Plan to Reform Business Taxation (cont'd.)**

- **Eliminate most business tax credits and many deductions;**
- **Eliminate interest deduction for nonfinancial businesses (and end tax on their interest receipts);**
- **Tax individuals' interest income at capital gains/dividend tax rates;**
- **Eliminate the individual and corporate AMTs.**

## Economic and Revenue Estimates, Nunes Business Tax Plan vs. Current Law

GDP	7.3%
\$GDP (annual gain relative to 2015 economy)	\$1,290
Private Business Stocks (equipment, structures, etc.)	22.1%
Wage Rate	6.0%
Full-Time Equivalent Jobs (in thousands)	1,401
10-Year Static Federal Revenue Estimate, 2015-2024 (\$ billions)	-\$1,638
10-Year Dynamic Federal Revenue Estimate after GDP Gain or Loss, 2015-2024 (\$ billions)	\$631

Source: Tax Foundation Taxes and Growth Model (October 2015 version)

## Distributional Effects of Nunes Tax Plan: Static & Dynamic Analysis

All Returns (AGI>0) by Decile Class	Changes in Static After-tax AGI	Changes in Dynamic After-tax AGI
0% to 10%	0.6%	6.8%
10% to 20%	0.2%	6.4%
20% to 30%	0.1%	6.4%
30% to 40%	0.2%	6.8%
40% to 50%	0.2%	7.2%
50% to 60%	0.3%	7.4%
60% to 70%	0.3%	7.2%
70% to 80%	0.2%	6.7%
80% to 90%	0.2%	6.5%
90% to 100%	1.9%	7.2%
99% to 100%	4.3%	8.5%
<b>TOTAL FOR ALL</b>	<b>0.9%</b>	<b>7.0%</b>

Source: Tax Foundation, Taxes and Growth Model (October 2015 version).

# **An Analysis of Senator Cardin's Progressive Consumption Tax**

**by Michael Schuyler; Tax Foundation Fiscal Fact No. 473**

Senator Ben Cardin (D-MD) proposes lower individual and business income taxes, replacing revenue with a VAT. Major elements:

- **Large family allowance (\$100K joint, \$50K single)** replaces Personal Exemption, Standard Deduction. Most people would not owe tax.
- **3 brackets: 15% (\$0-\$100K); 25% (\$100K-\$500K); 28% over \$500K** for joint filers, half those amounts for single filers.
- **3 deductions: charitable gifts, state/local taxes, mortgage interest.**
- **Replace EITC, other credits with rebates for earned income, children.**

## Senator Cardin's Progressive Consumption Tax (cont'd.)

- Treat capital gains, dividends as ordinary income but end 3.8% surtax.
- Lower corporate rate to 17%.
- VAT at 10%, subtraction method tax on sales less purchases from other firms. (Must be 14.2% for revenue neutral version.)

## Economic and Revenue Estimates, Cardin Tax Plan vs. Current Law

	VAT @ 10%	VAT @ 14.2%
GDP	4.4%	2.6%
\$GDP (annual gain relative to 2015 economy)	\$778	\$459
Private Business Stocks (equipment, structures)	15.2%	13.2%
Wage Rate	6.5%	3.7%
Full-Time Equivalent Jobs (in thousands)	1,053	-187
10-Year Static Federal Revenue, 2015-2024 (\$ billions)	-\$306	-\$2
10-Year Dynamic Federal Revenue after GDP Gain or Loss, 2015-2024 (\$ billions)	-\$163	\$80

Source: Tax Foundation Taxes and Growth Model