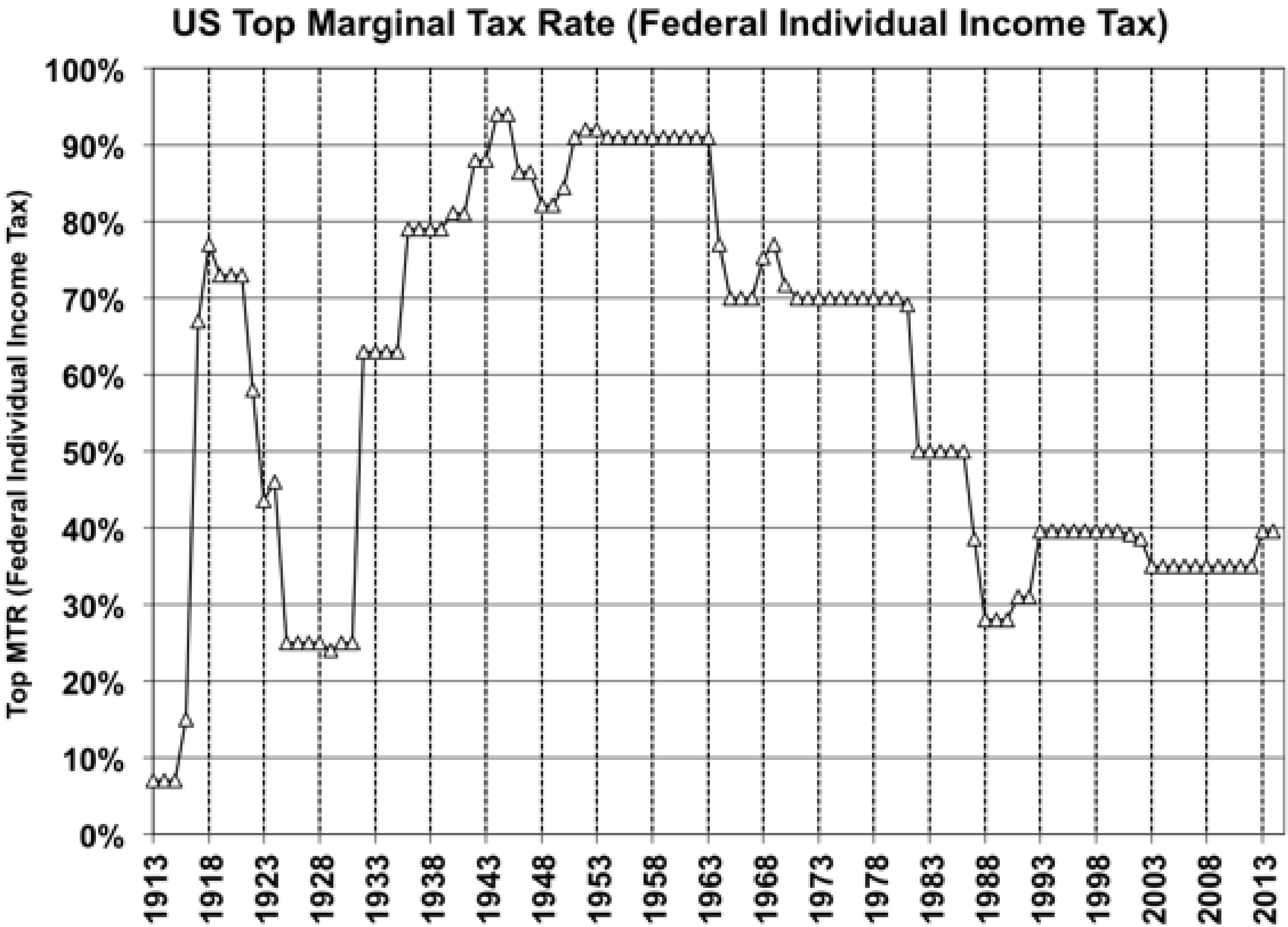
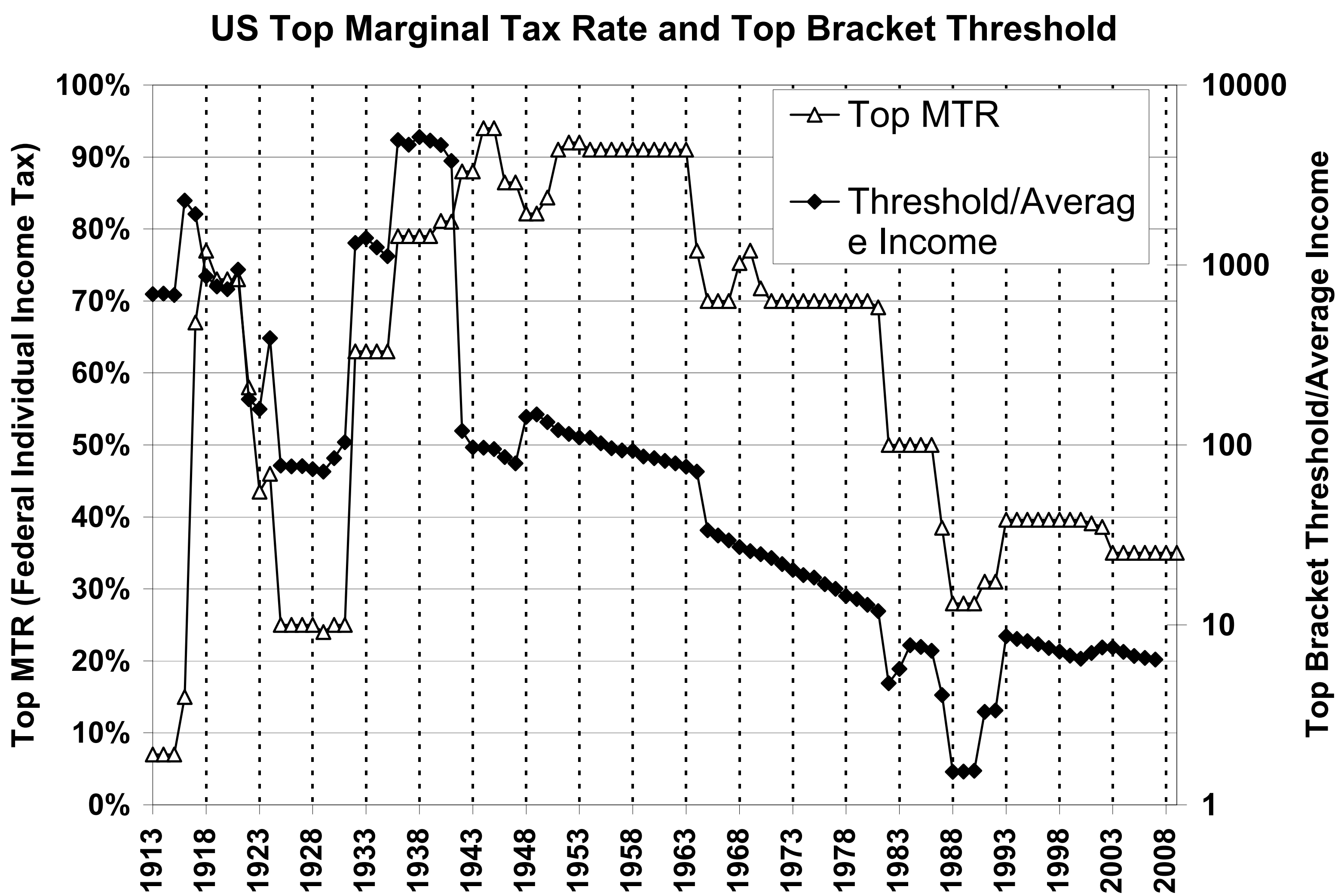
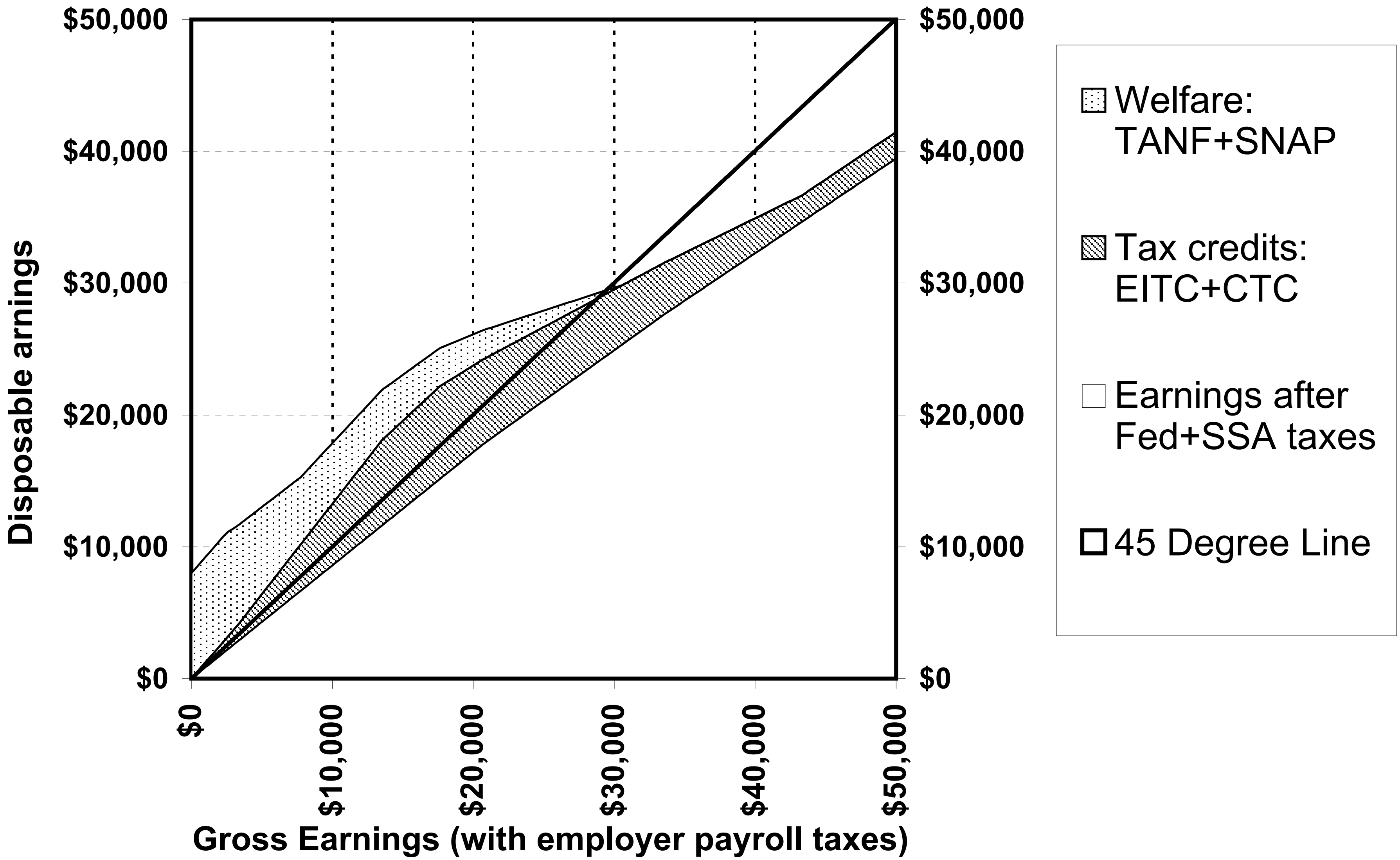


Source: IRS, Statistics of Income Division, Historical Table 23



Source: statistics computed by the author

US Tax/Transfer System, single parent with 2 children, 2009



Source: Federal Govt

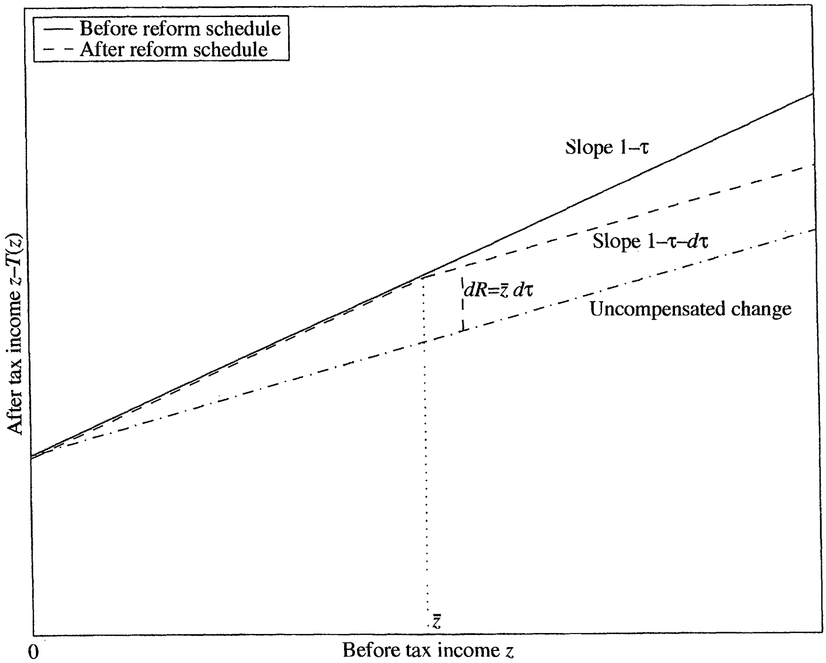
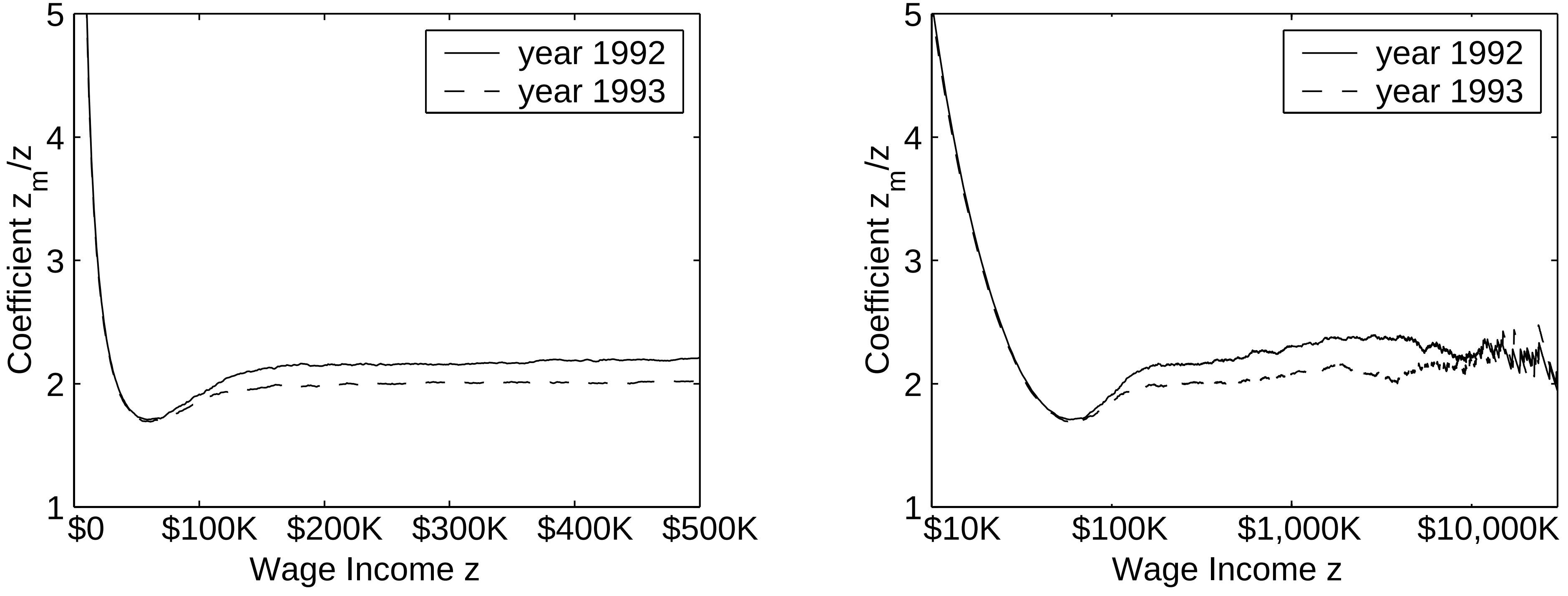


FIGURE 1

High income tax rate perturbation

Source: Saez (2001), p. 209

FIGURE 2 − Ratio mean income above z divided by z, z_m/z, years 1992 and 1993



Source: Saez (2001), p. 211

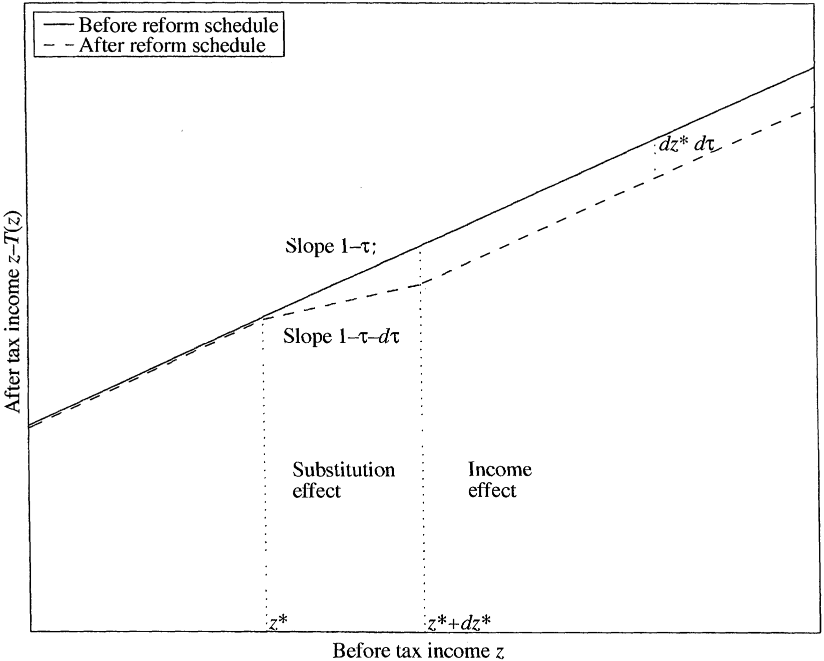
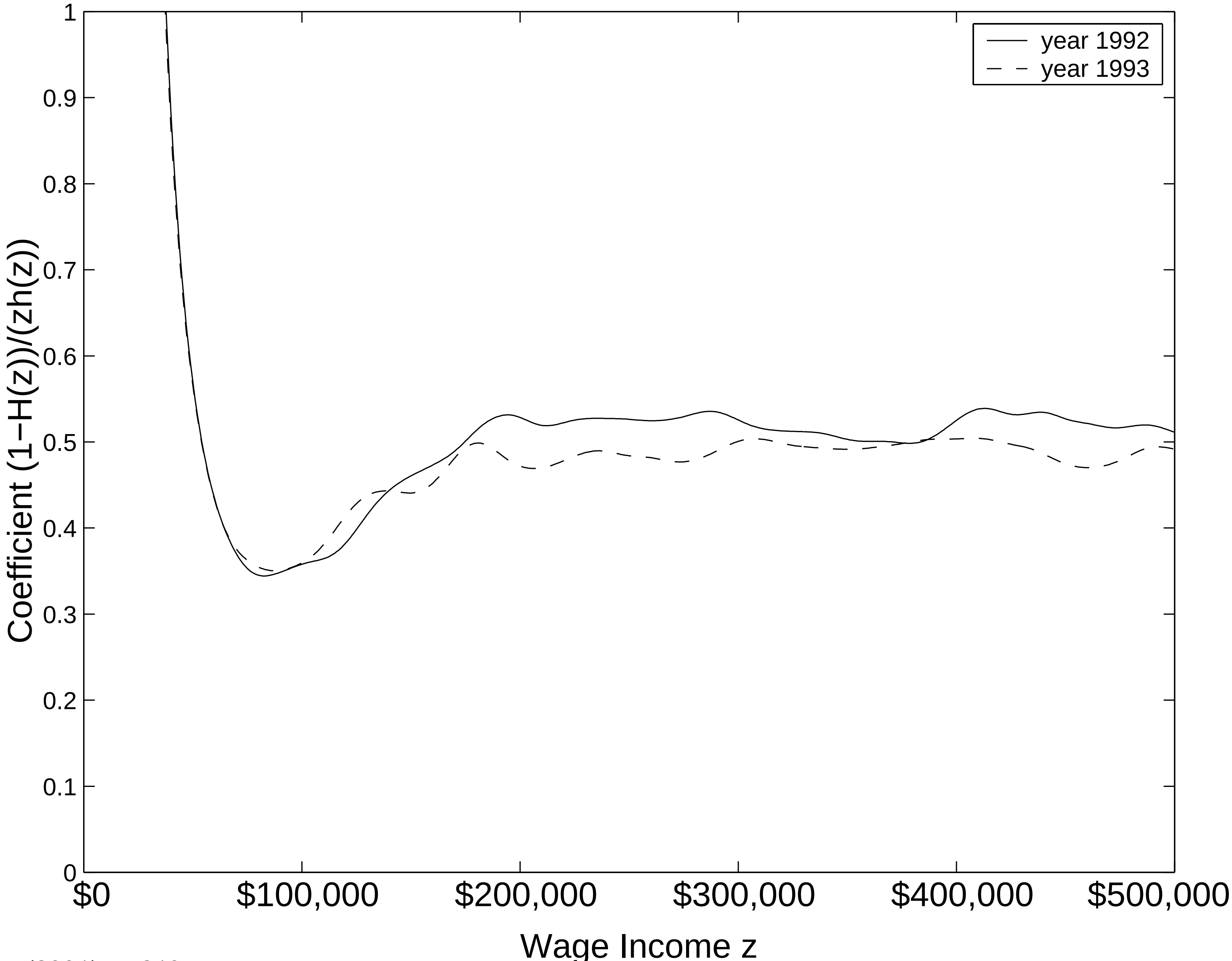


FIGURE 3

Local marginal tax rate perturbation

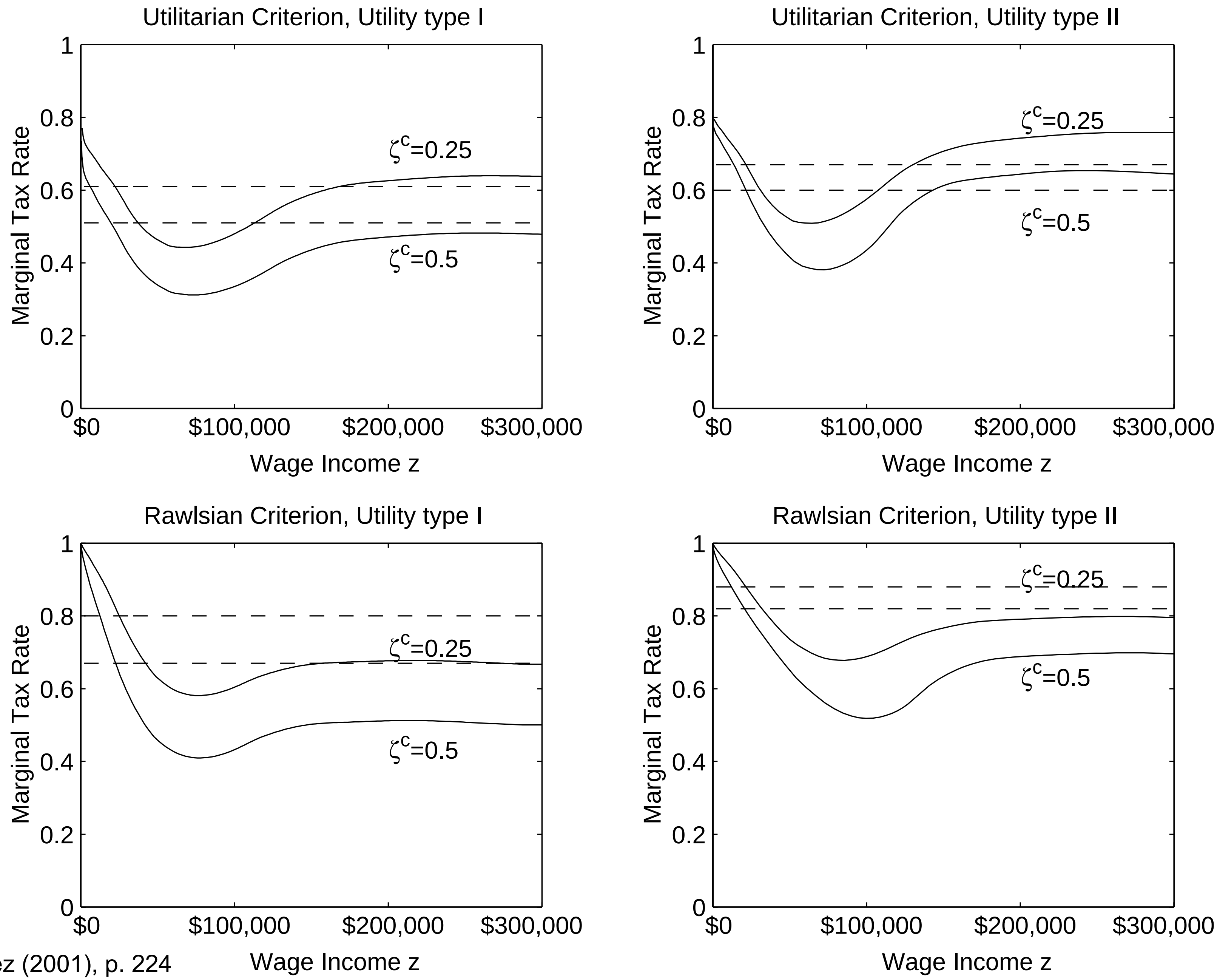
Source: Saez (2001), p. 216

FIGURE 4 − Hazard Ratio (1−H(z))/(zh(z)), years 1992 and 1993



Source: Saez (2001), p. 219

FIGURE 5 − Optimal Tax Simulations



Source: Saez (2001), p. 224

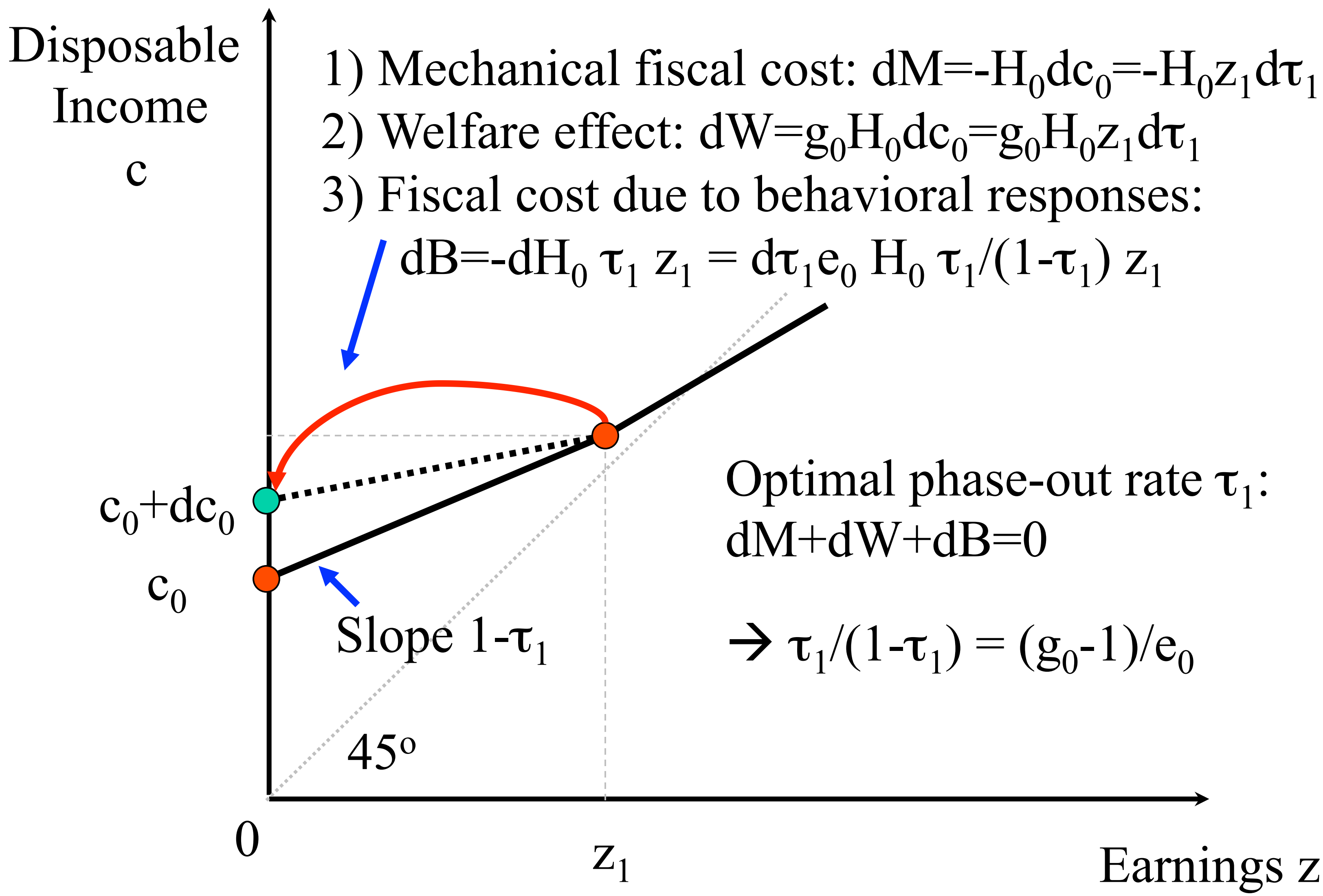
Reform: Increase τ_1 by $d\tau_1$ and c_0 by $dc_0=z_1 d\tau_1$

1) Mechanical fiscal cost: $dM=-H_0 dc_0=-H_0 z_1 d\tau_1$

2) Welfare effect: $dW=g_0 H_0 dc_0=g_0 H_0 z_1 d\tau_1$

3) Fiscal cost due to behavioral responses:

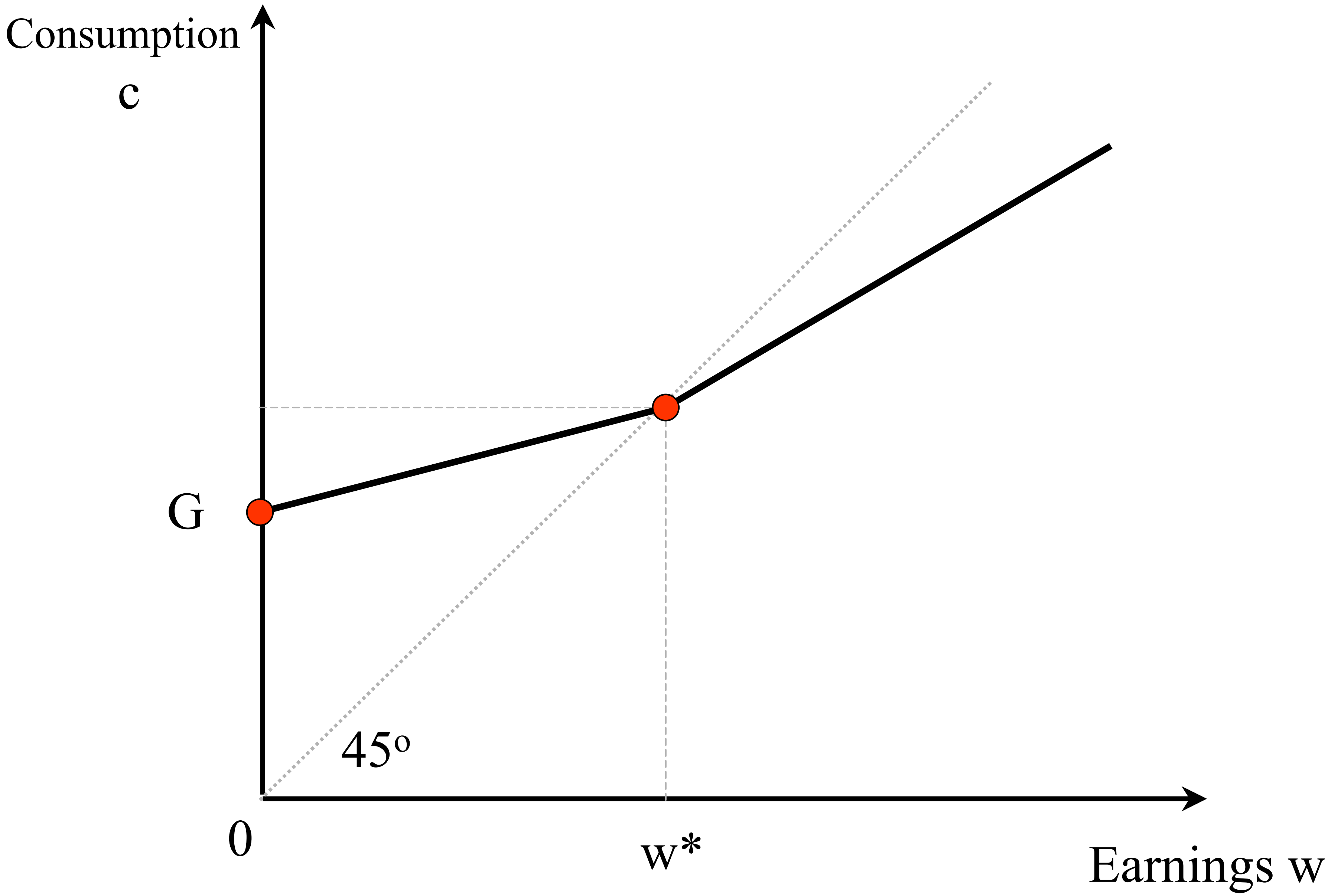
$dB=-dH_0\ \tau_1\ z_1 = d\tau_1 e_0\ H_0\ \tau_1/(1-\tau_1)\ z_1$



Optimal phase-out rate τ_1:
$dM+dW+dB=0$

$\rightarrow \tau_1/(1-\tau_1) = (g_0-1)/e_0$

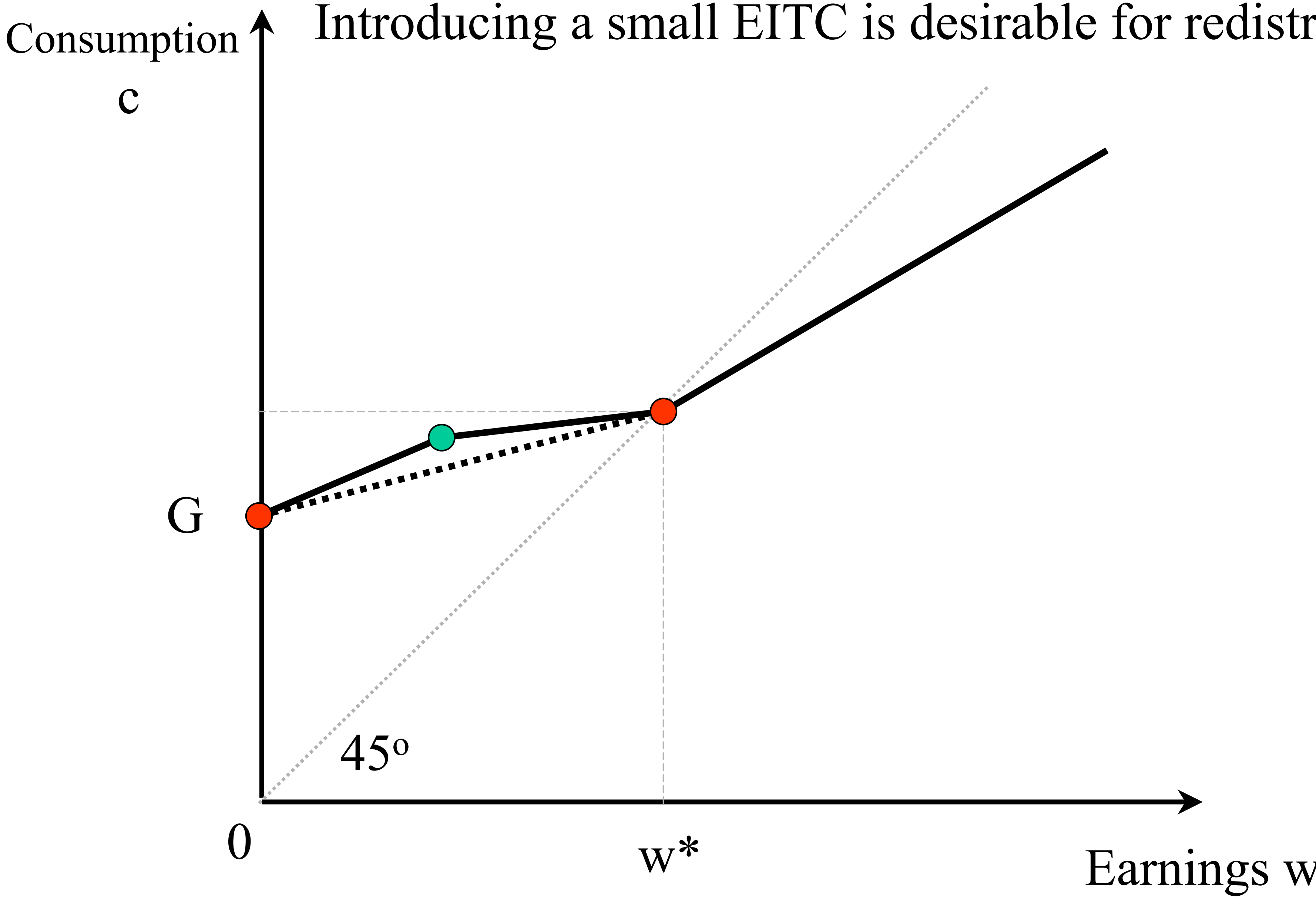
Starting from a Means-Tested Program



Source: revised version of Saez (2002), p. 1050

Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

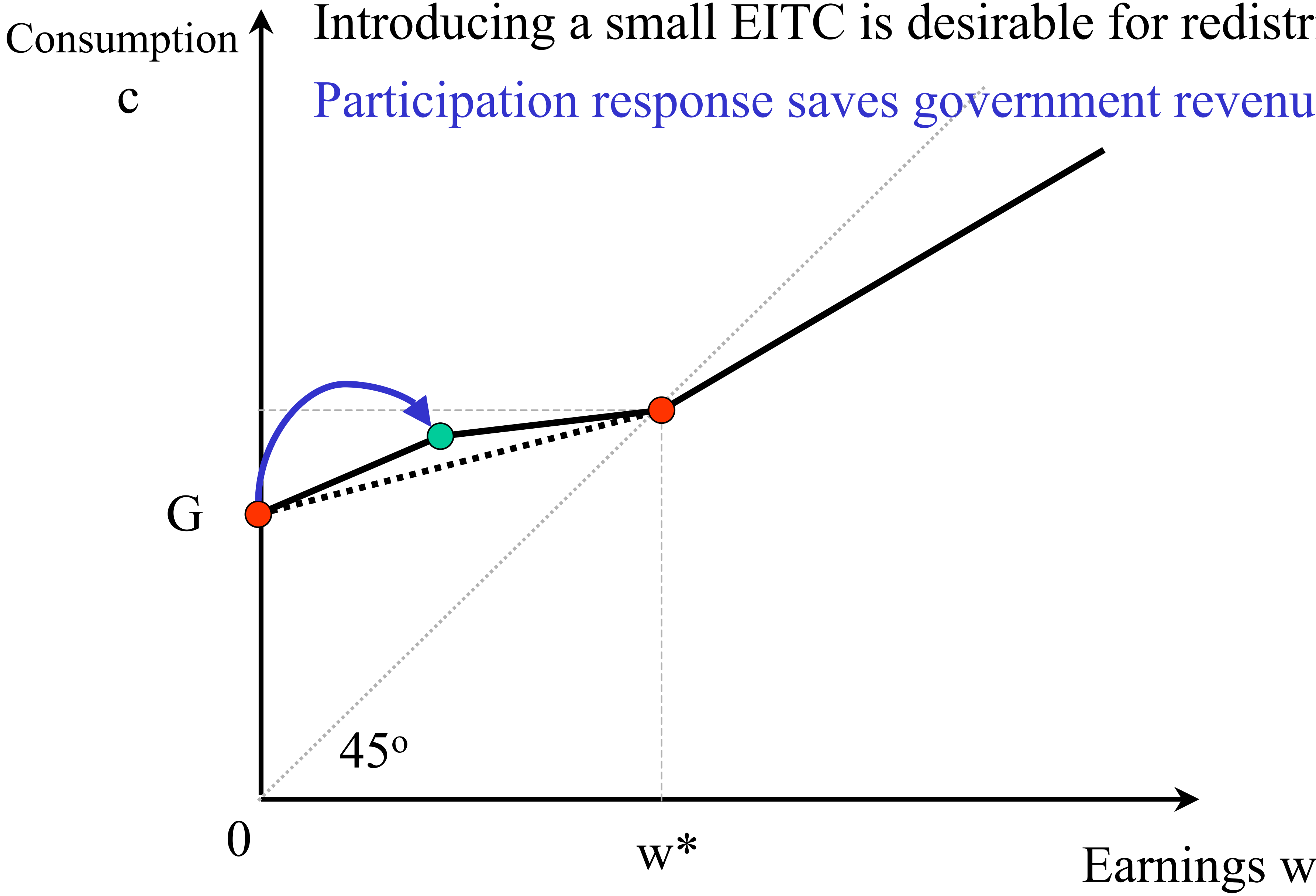


Source: revised version of Saez (2002), p. 1050

Starting from a Means-Tested Program

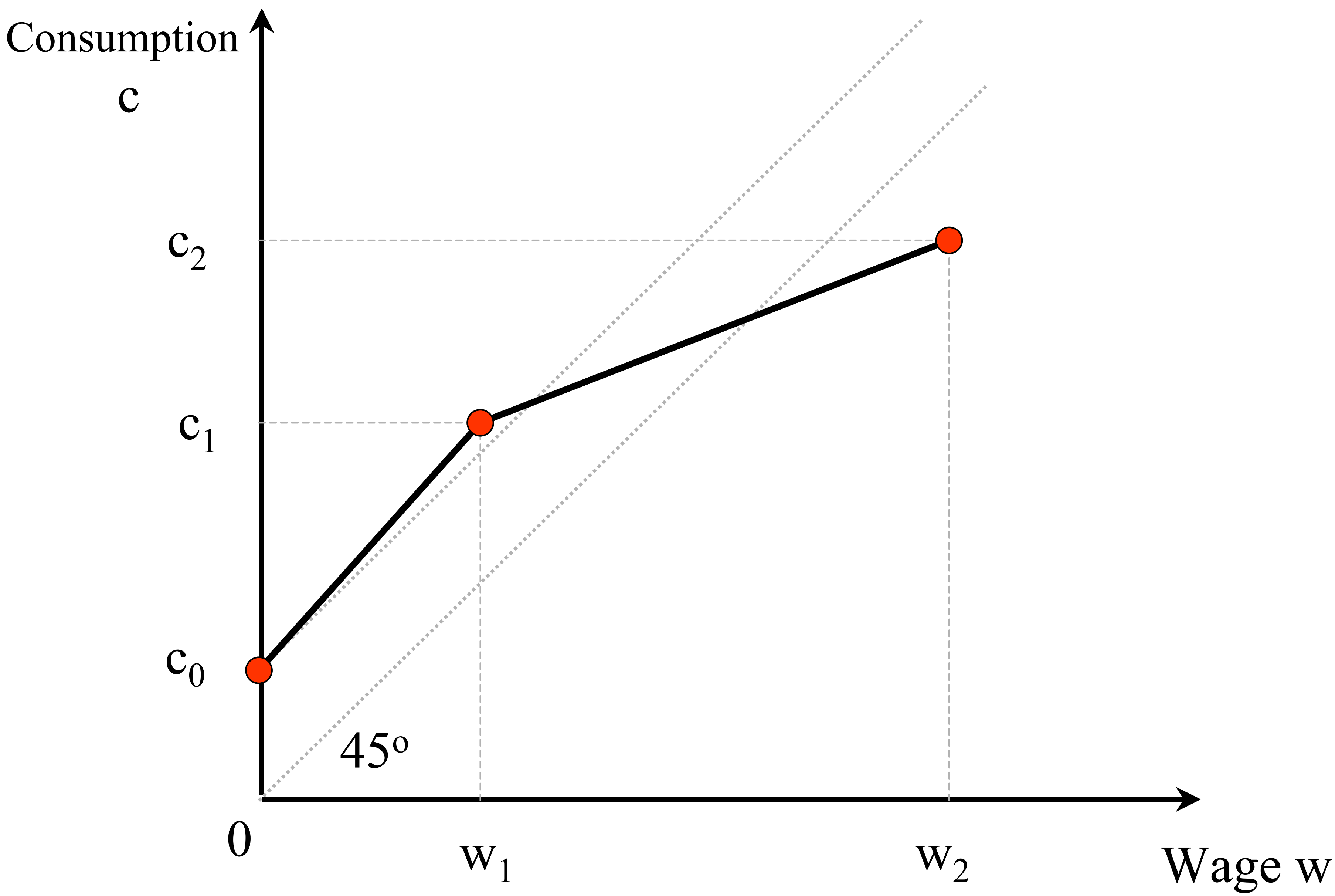
Introducing a small EITC is desirable for redistribution

Participation response saves government revenue



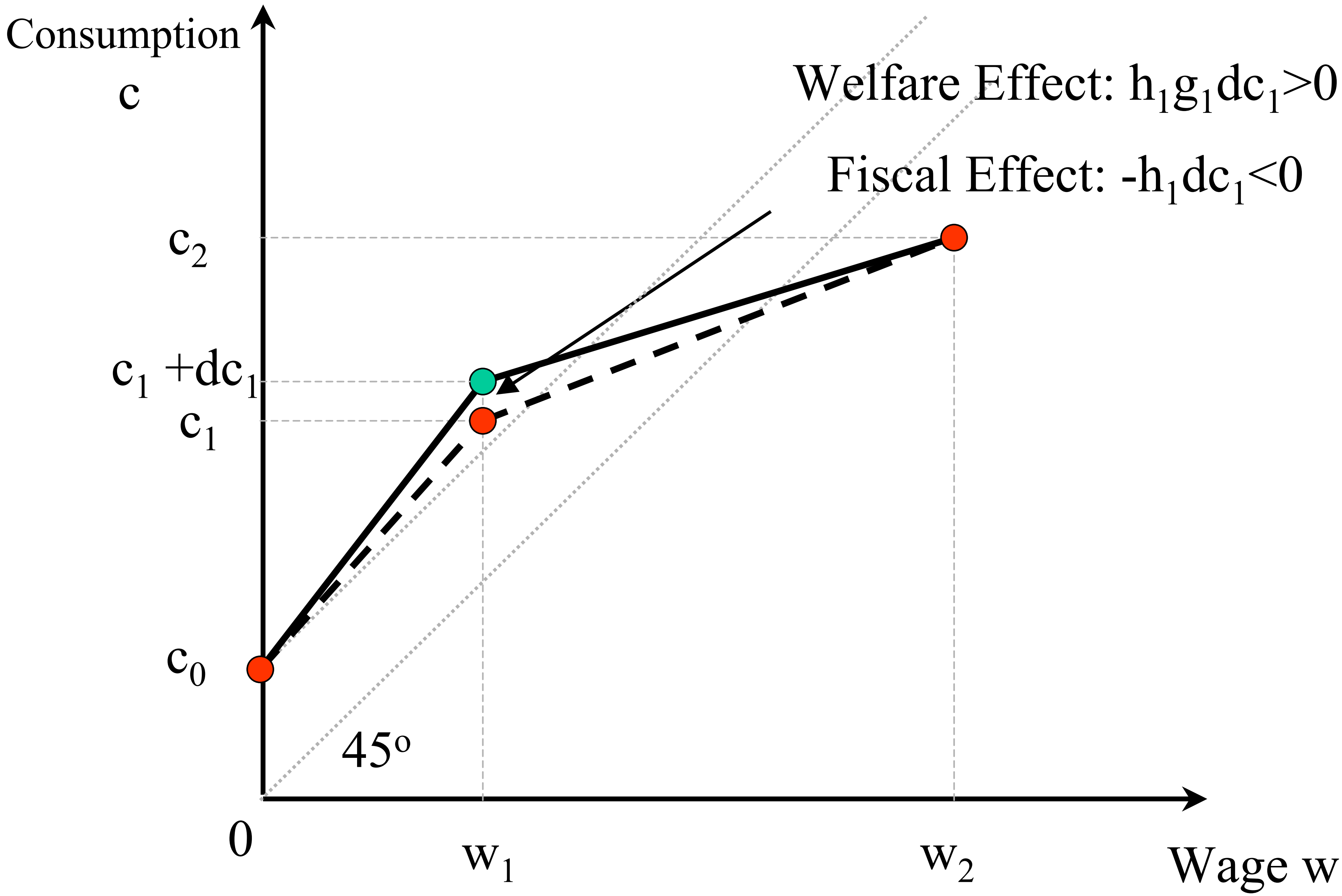
Source: revised version of Saez (2002), p. 1050

Figure 3a: Optimal Tax/Transfer Derivation



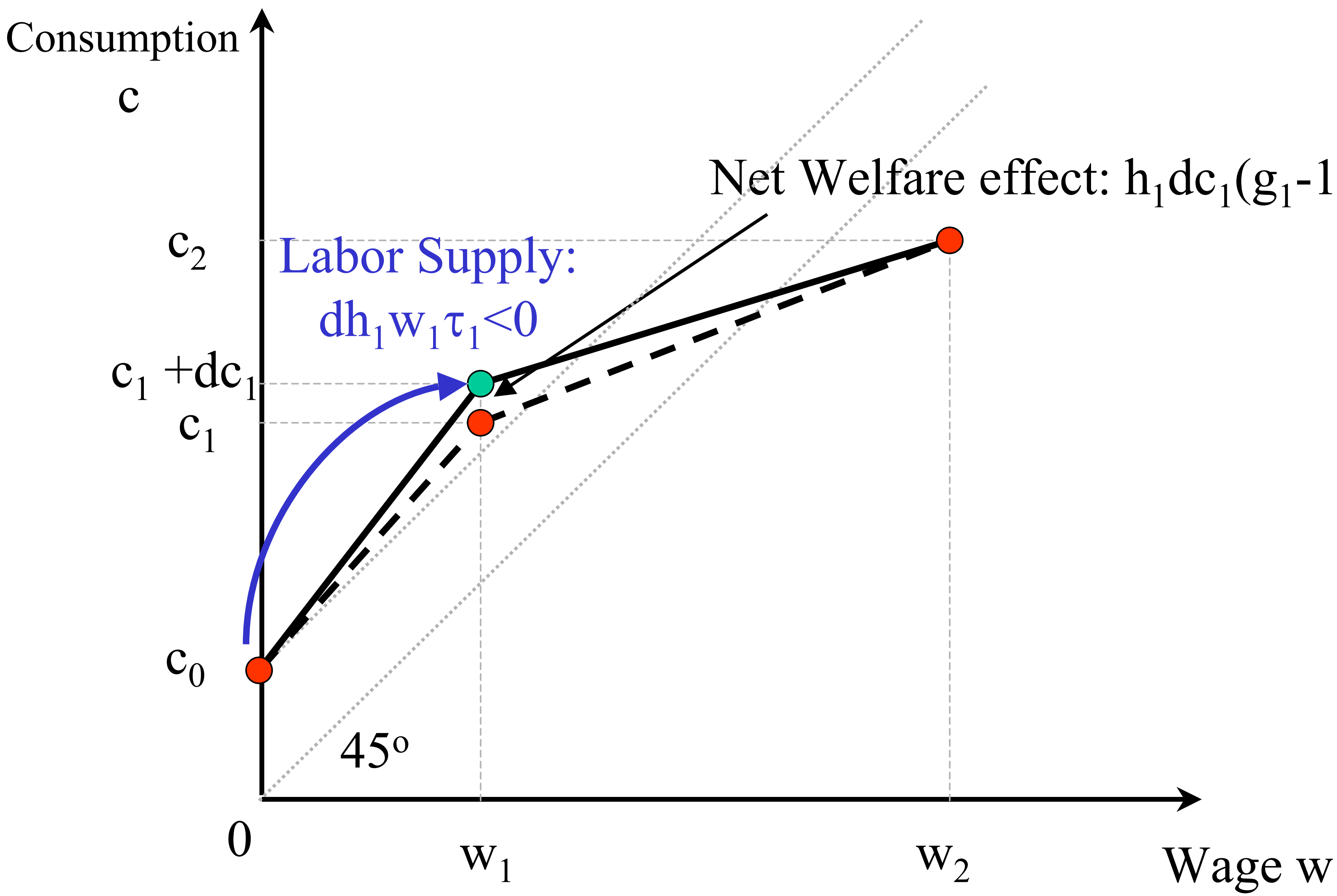
Source: revised version of Saez (2002), p. 1052

Figure 3a: Optimal Tax/Transfer Derivation (assuming $g_1 > 1$)



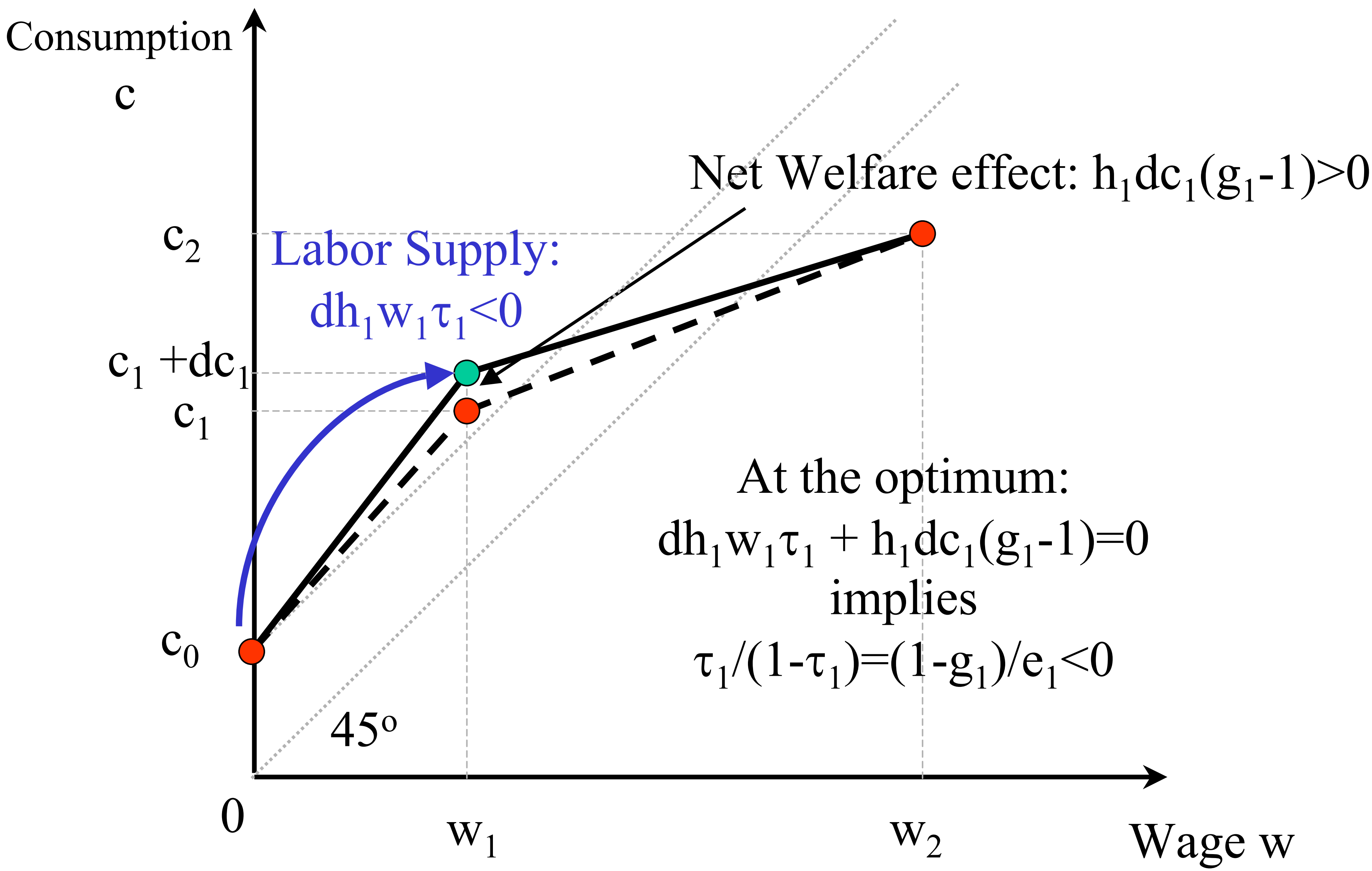
Source: revised version of Saez (2002), p. 1052

Figure 3a: Optimal Tax/Transfer Derivation (assuming $g_1>1$)



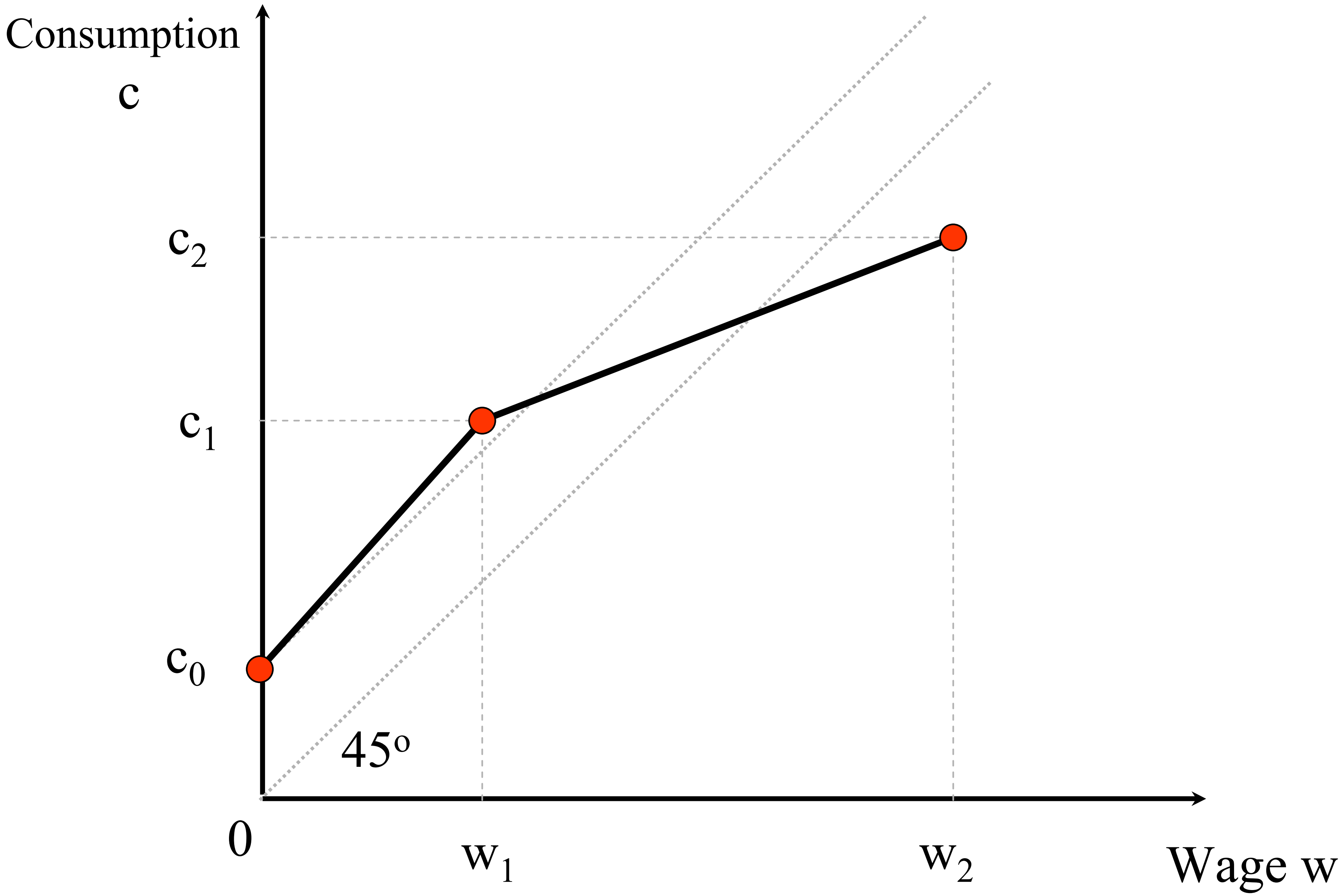
Source: revised version of Saez (2002), p. 1052

Figure 3a: Optimal Tax/Transfer Derivation (assuming $g_1>1$)



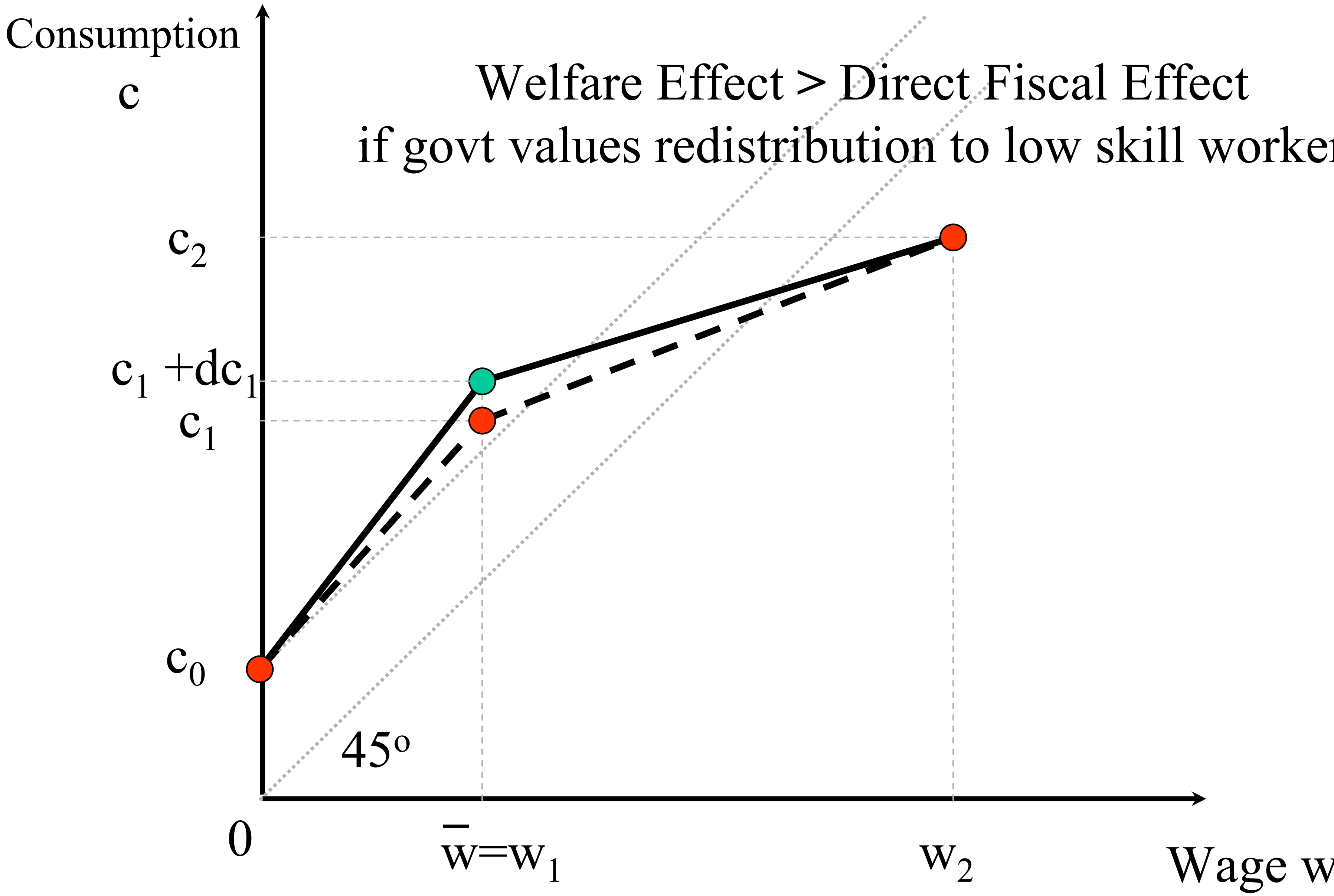
Source: revised version of Saez (2002), p. 1052

2. Optimal Tax/Transfer System (no min wage)



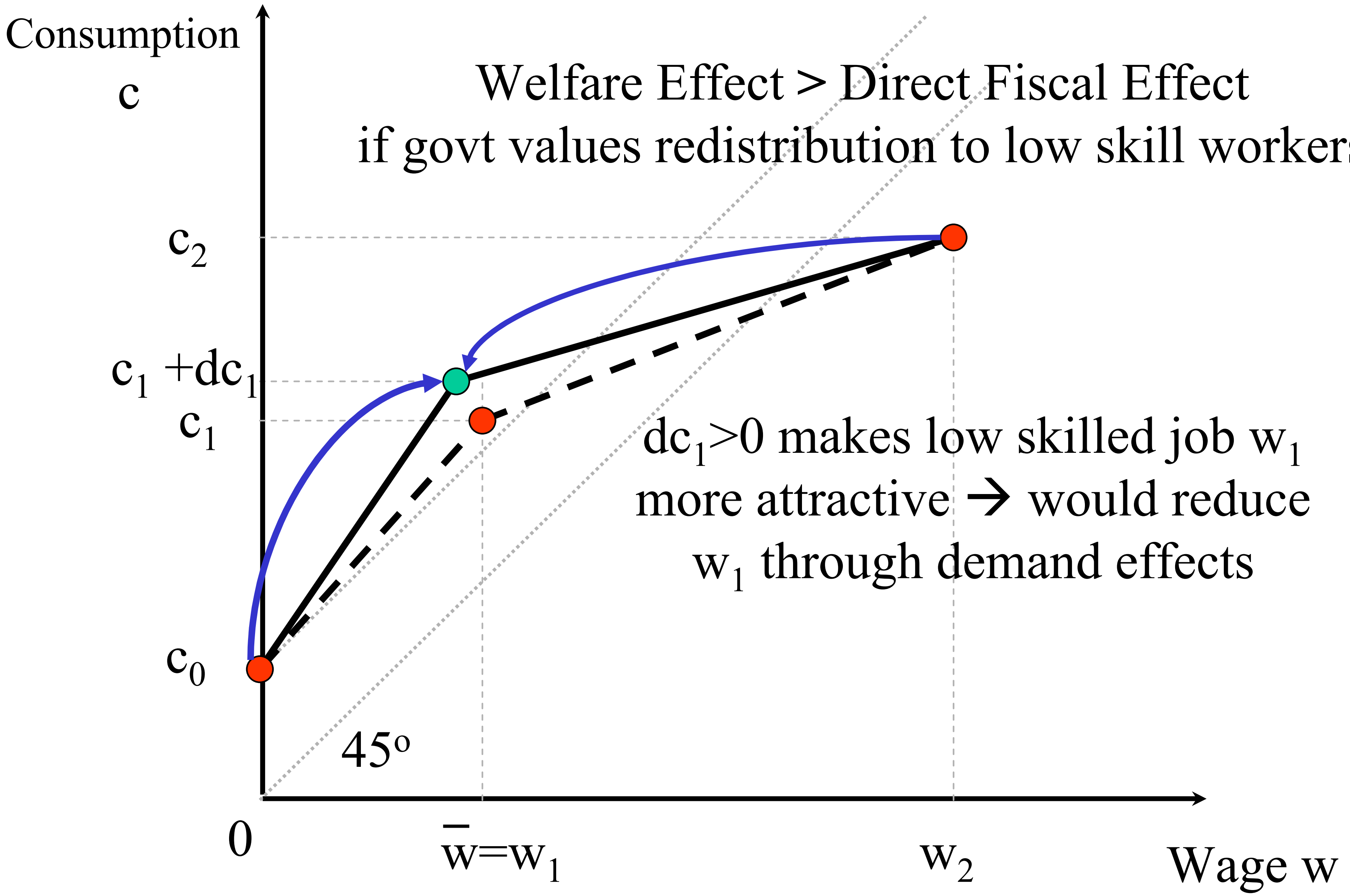
Source: Lee and Saez (2008)

2. Set Min wage $\bar{w}=w_1$ and increase c_1 by dc_1



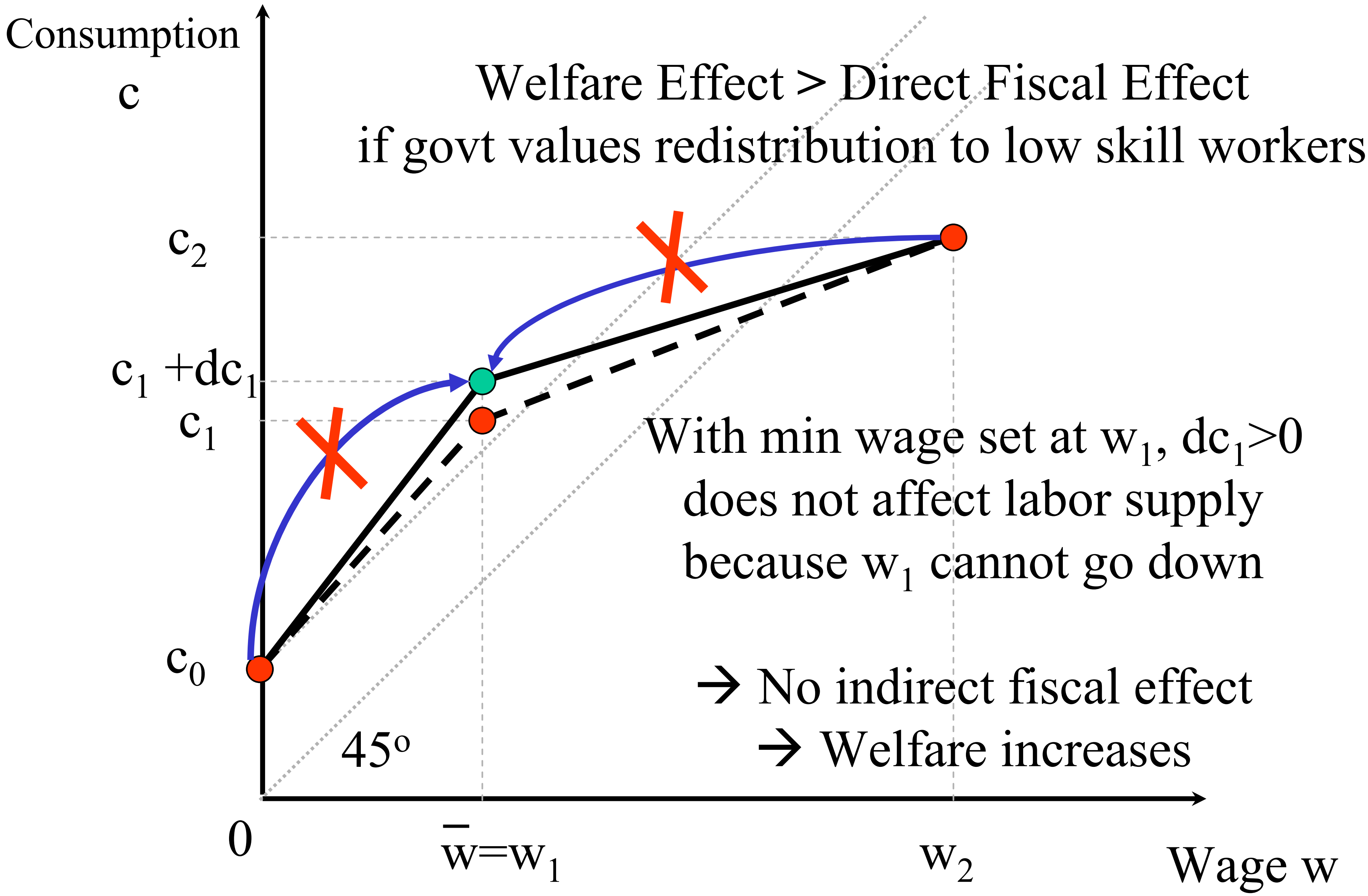
Source: Lee and Saez (2008)

2. Desirability of Min Wage with Optimal Taxes



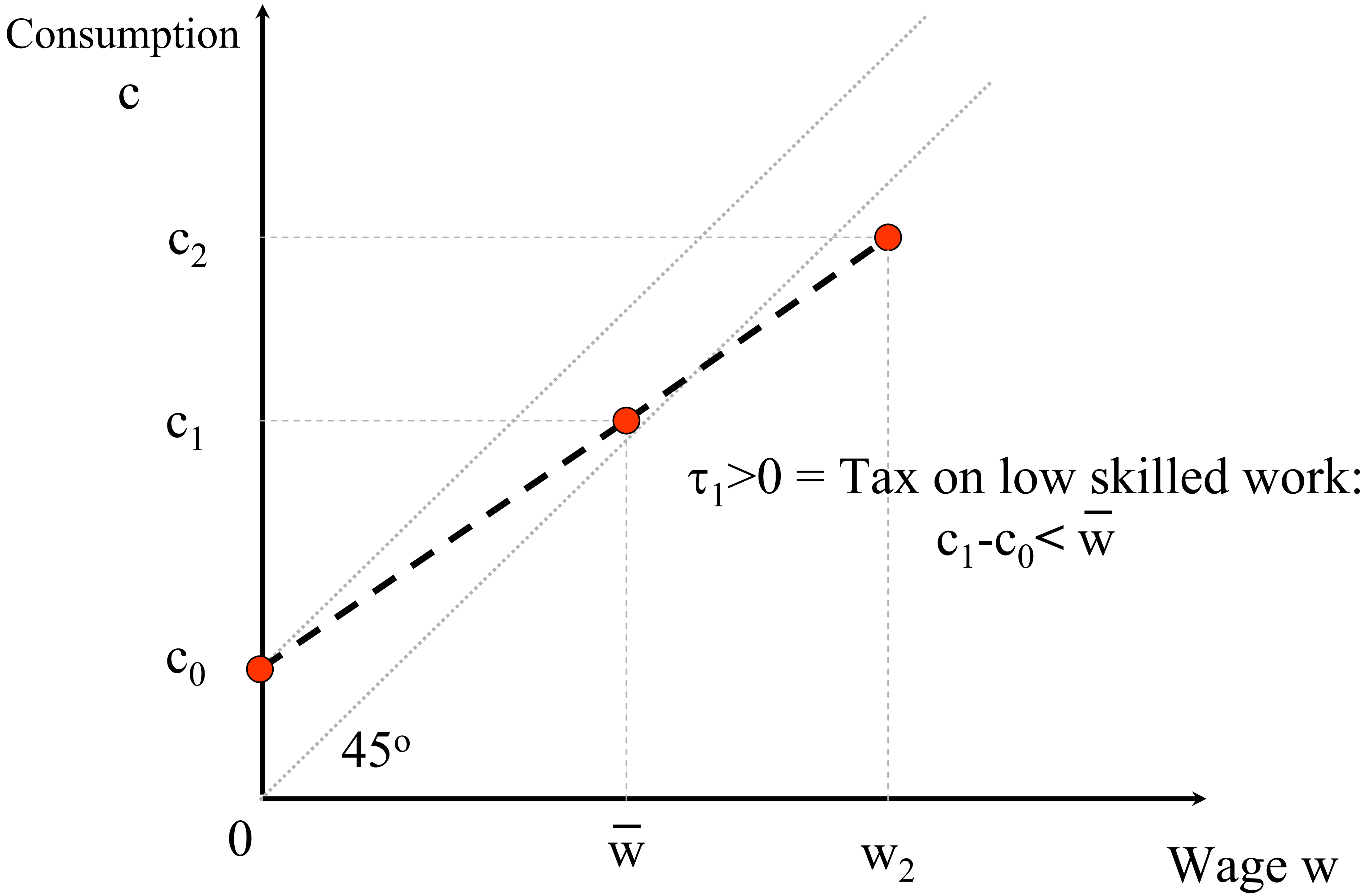
Source: Lee and Saez (2008)

2. Desirability of Min Wage with Optimal Taxes



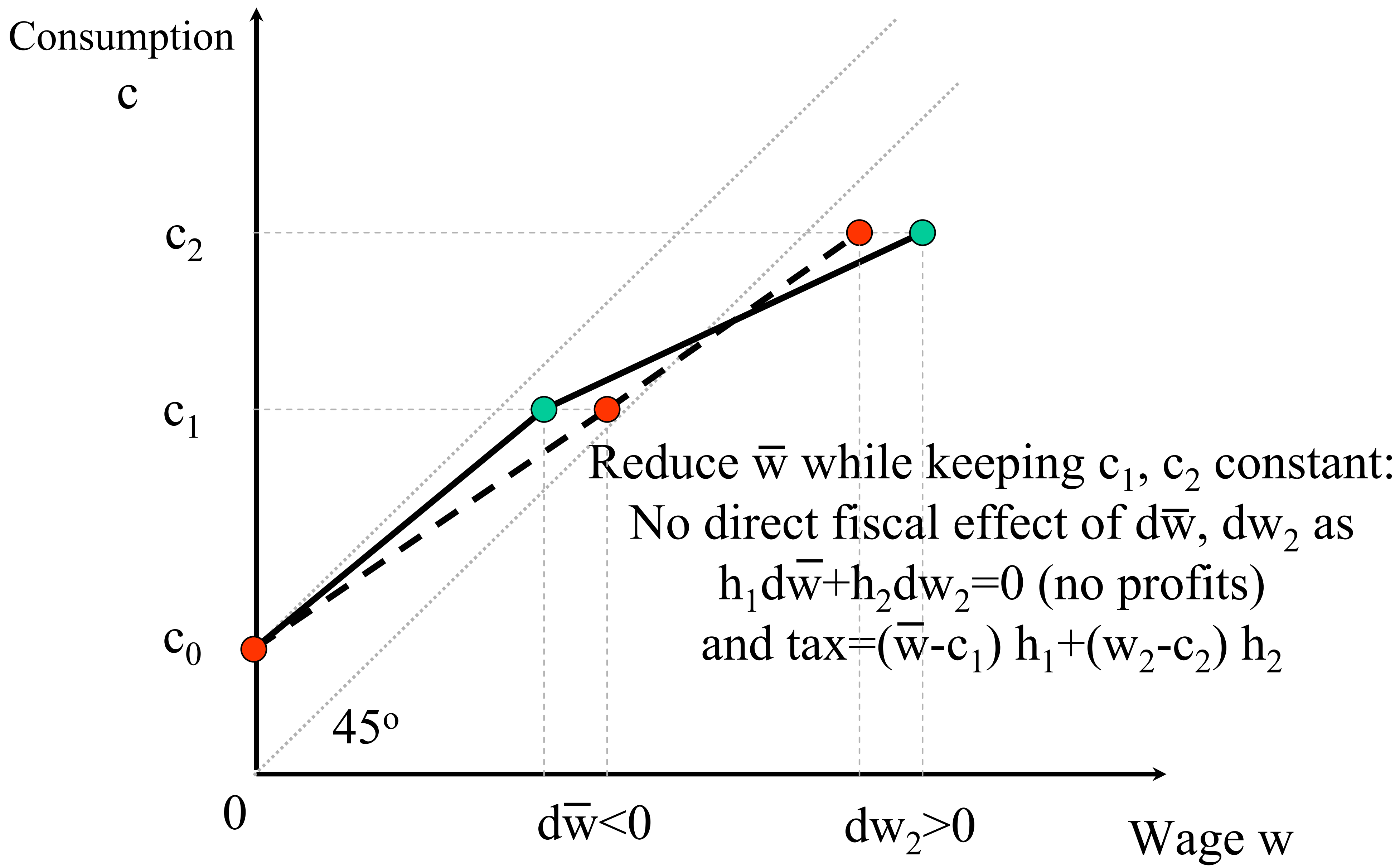
Source: Lee and Saez (2008)

3. Pareto Improving Policy when τ_1>0 and min wage binds



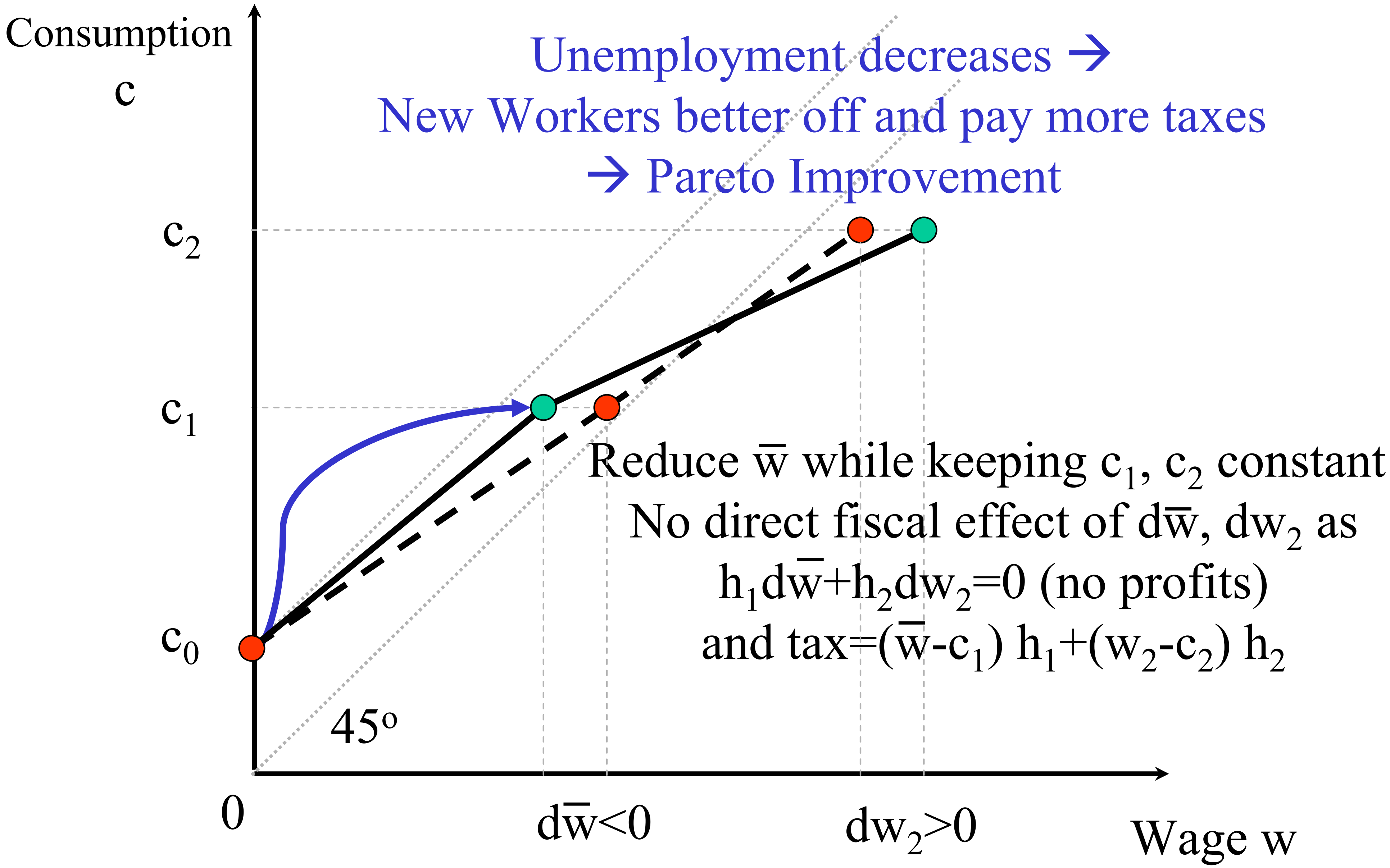
Source: Lee and Saez (2008)

3.Pareto Improving Policy when τ_1>0 and min wage binds



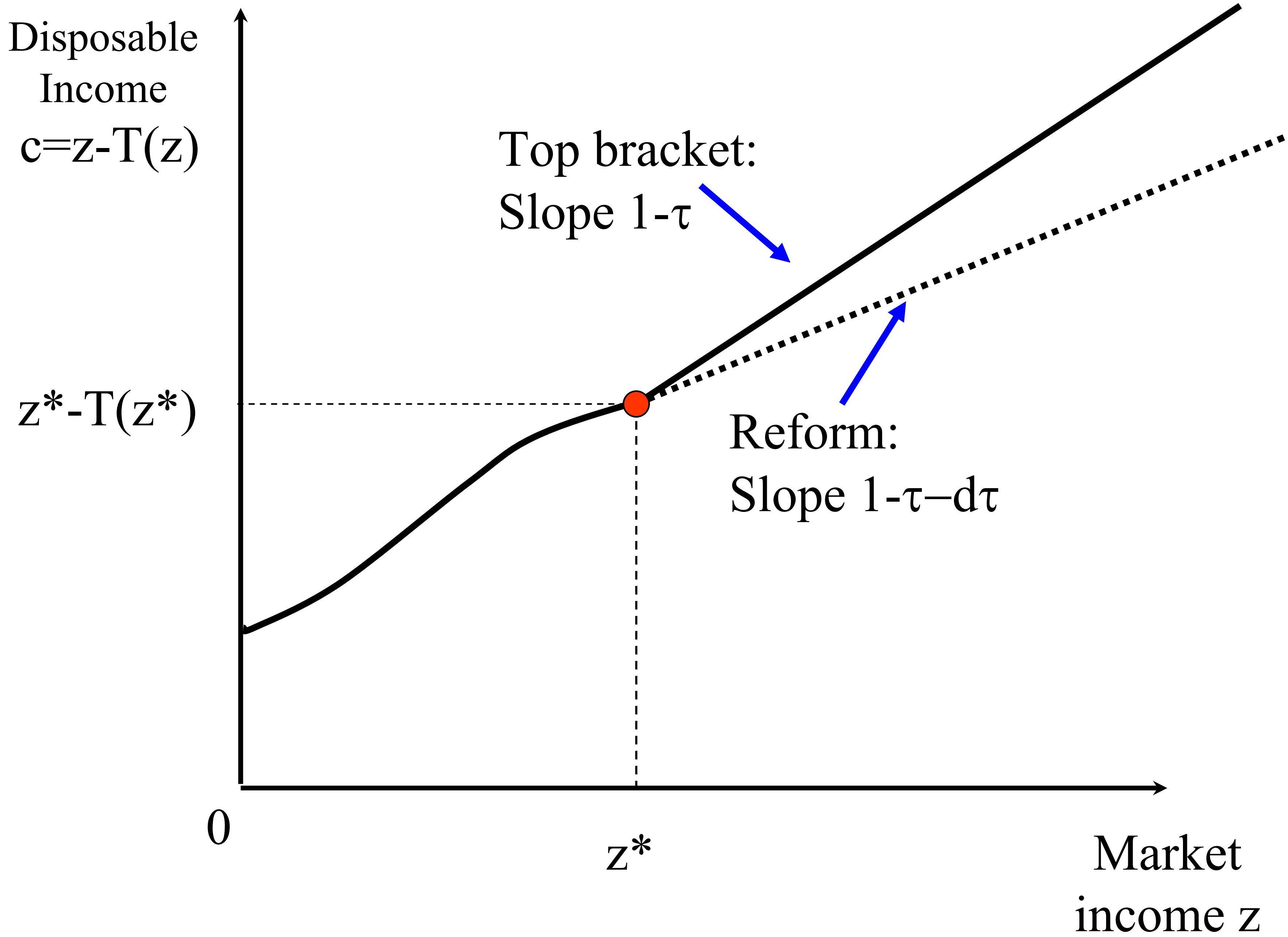
Source: Lee and Saez (2008)

3. Pareto Improving Policy when $\tau_1>0$ and min wage binds



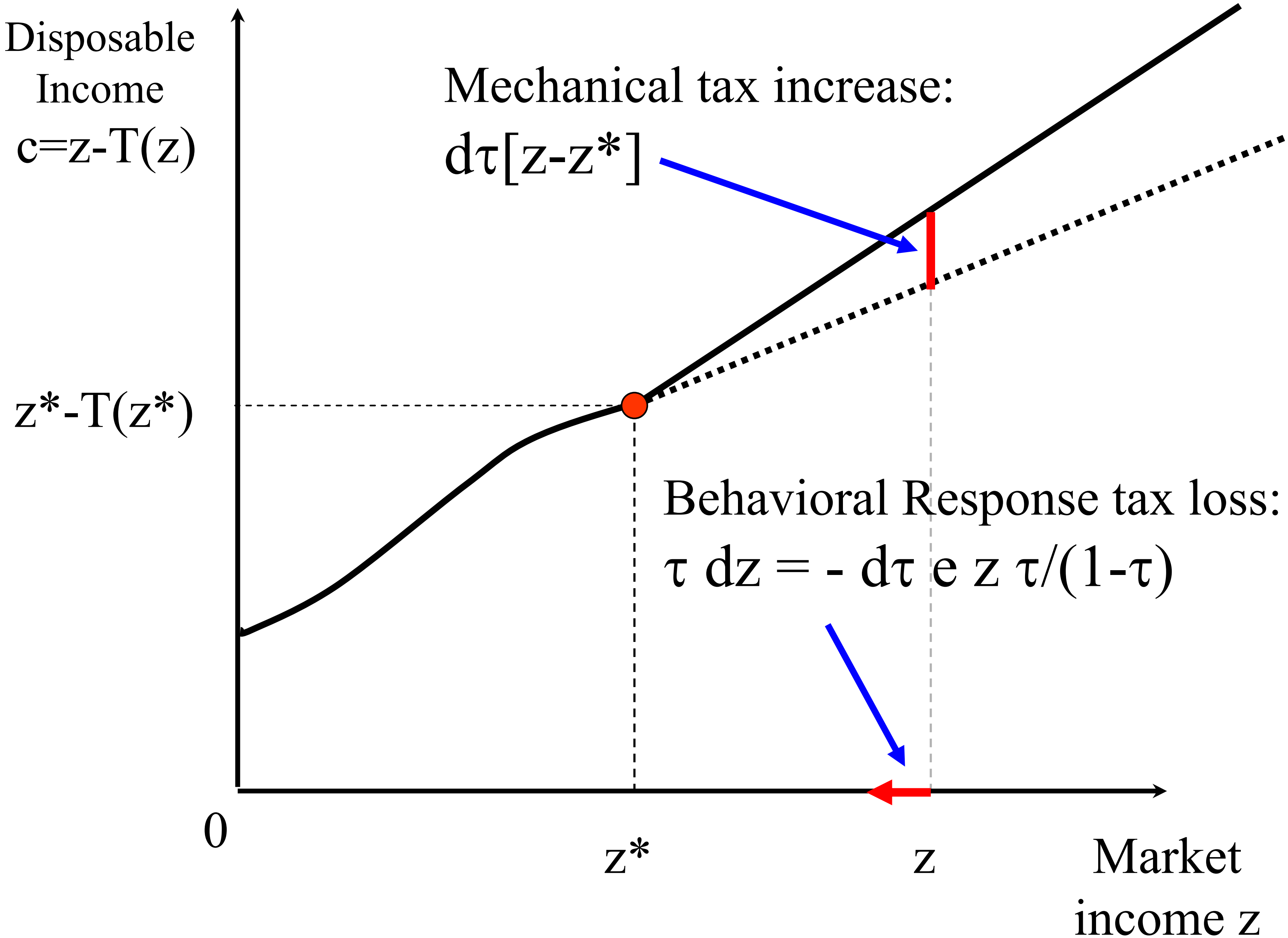
Source: Lee and Saez (2008)

Optimal Top Income Tax Rate (Mirrlees '71 model)

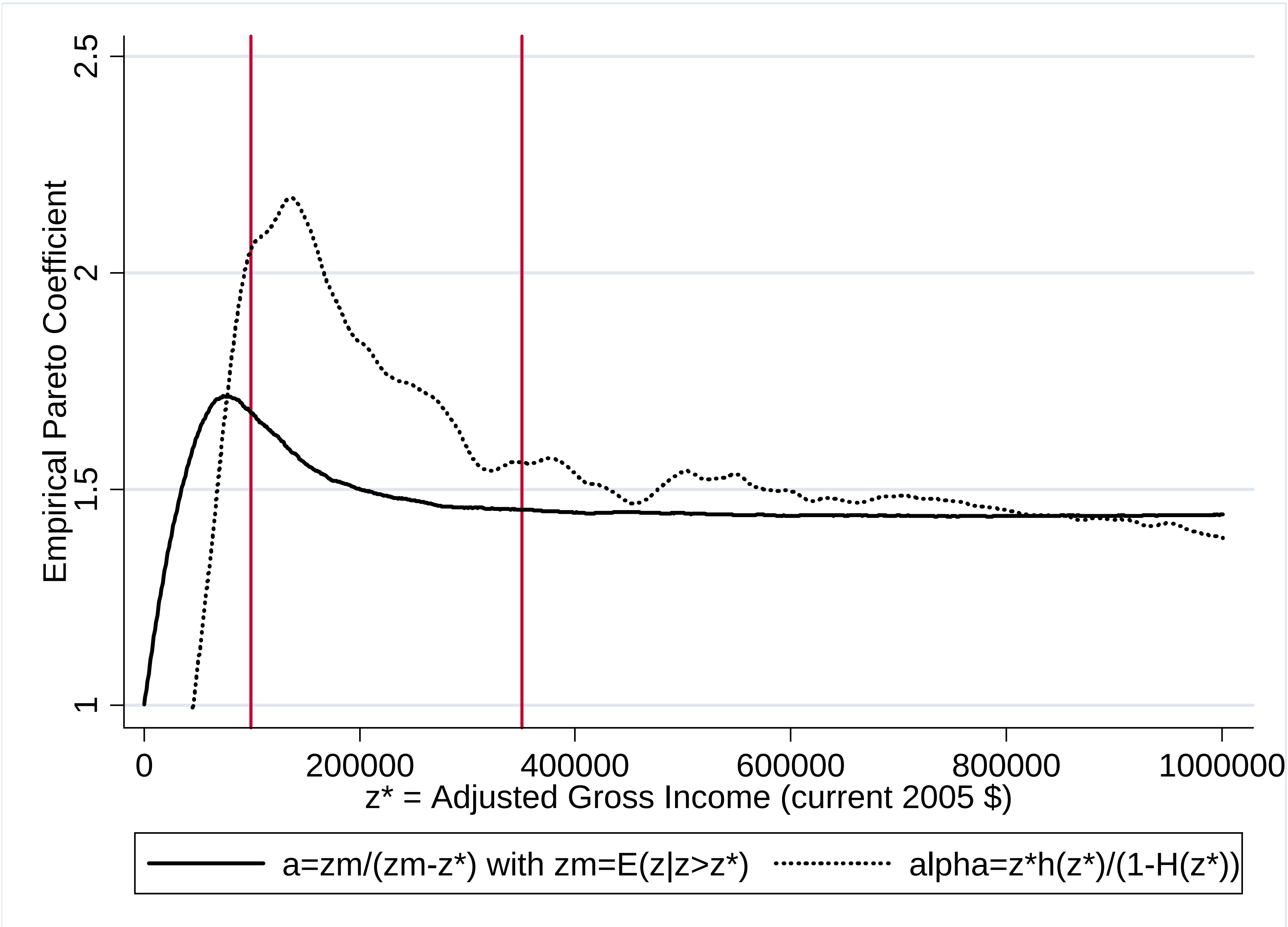


Source: Diamond and Saez JEP'11

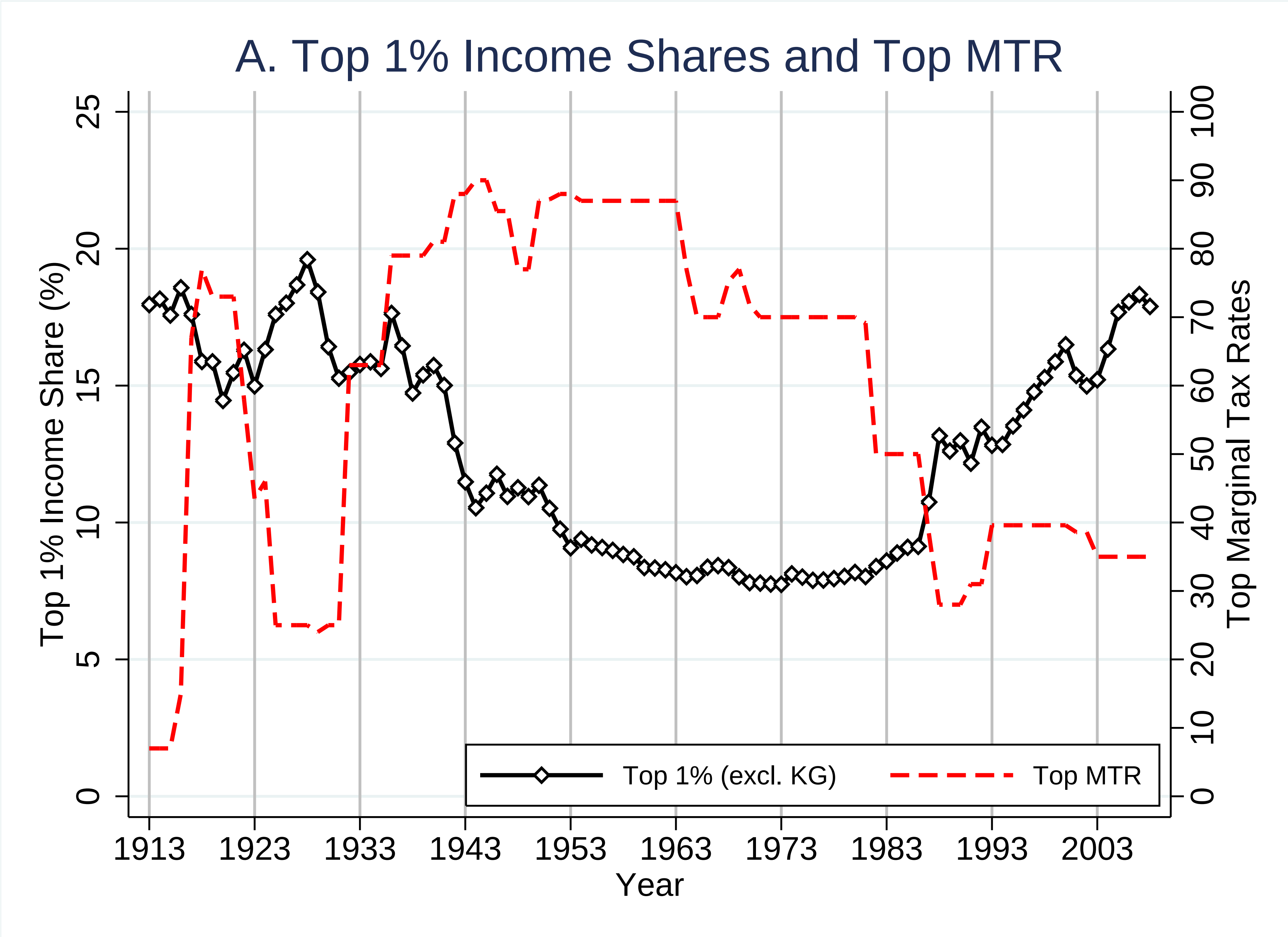
Optimal Top Income Tax Rate (Mirrlees '71 model)



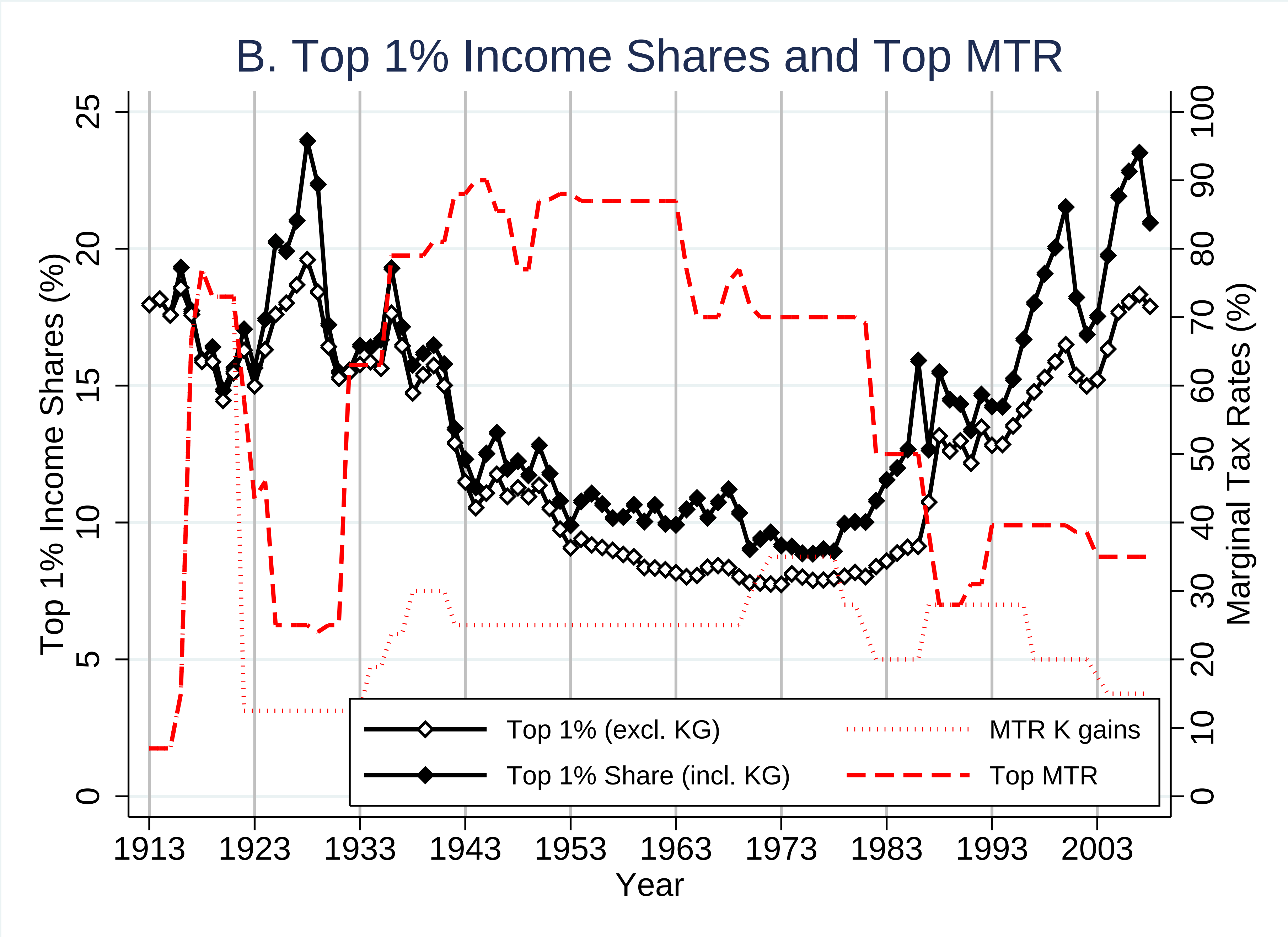
Source: Diamond and Saez JEP'11



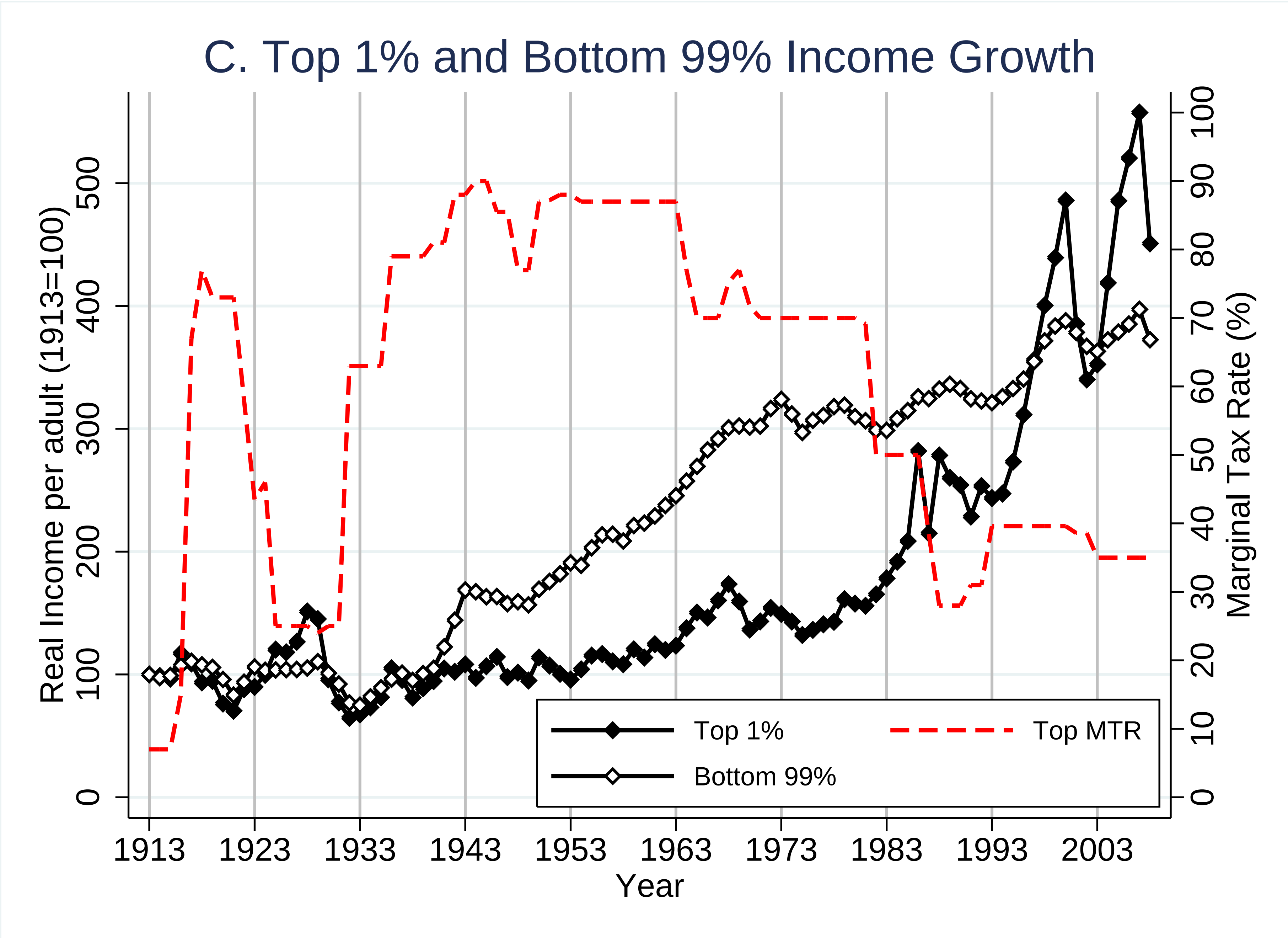
Source: Diamond and Saez JEP'11



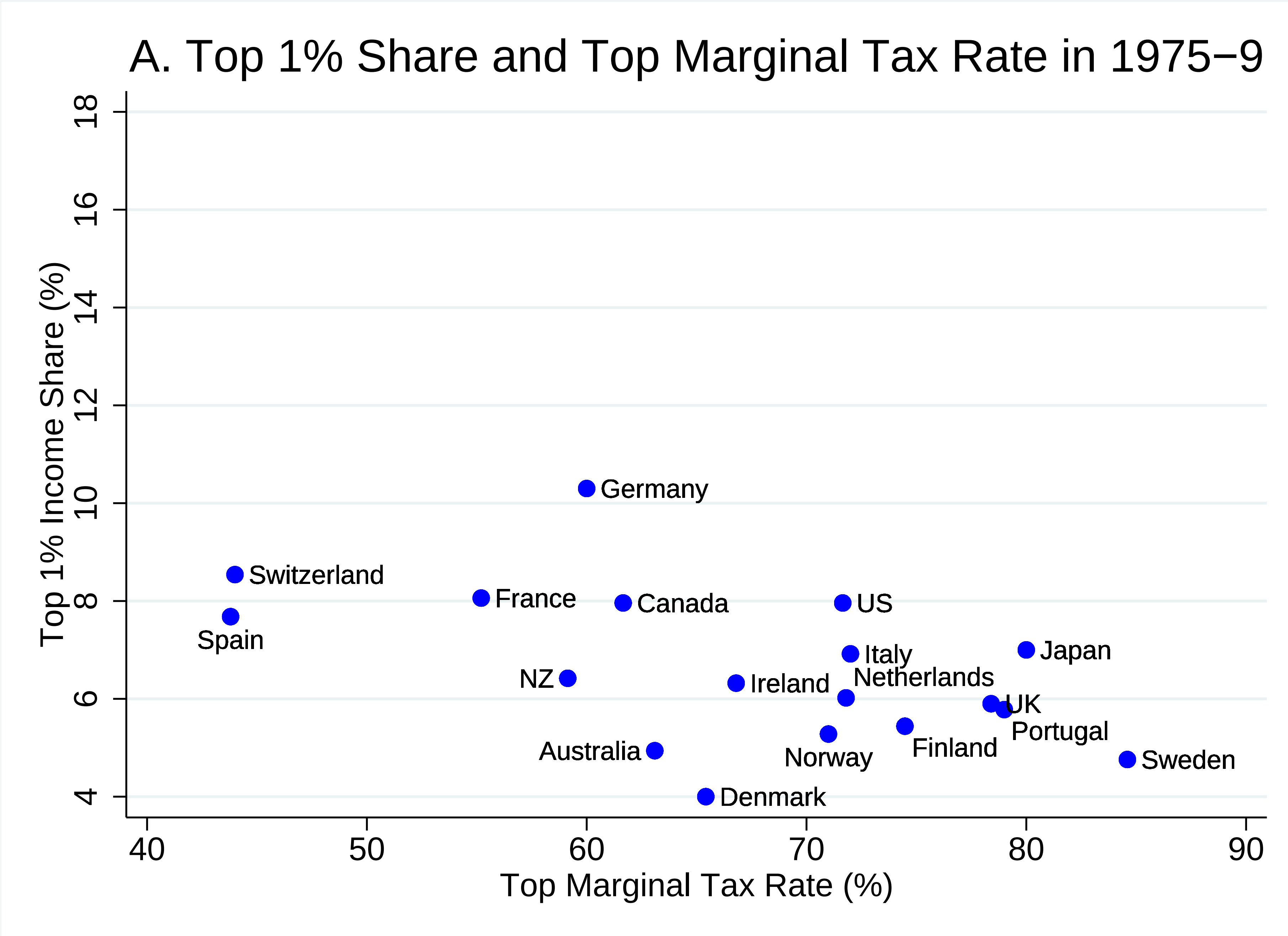
Source: Piketty, Saez, and Stantcheva NBER'11



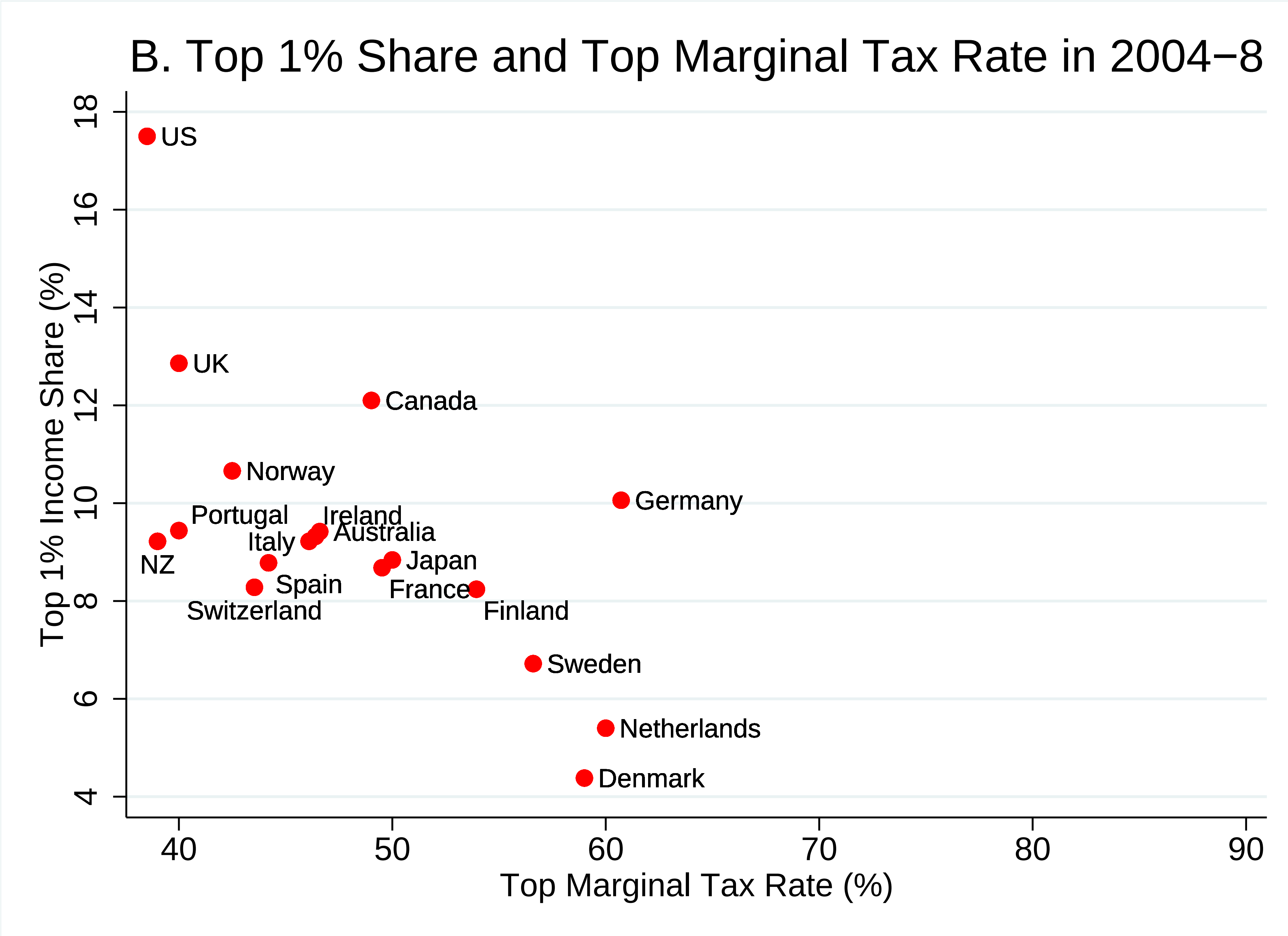
Source: Piketty, Saez, and Stantcheva NBER'11



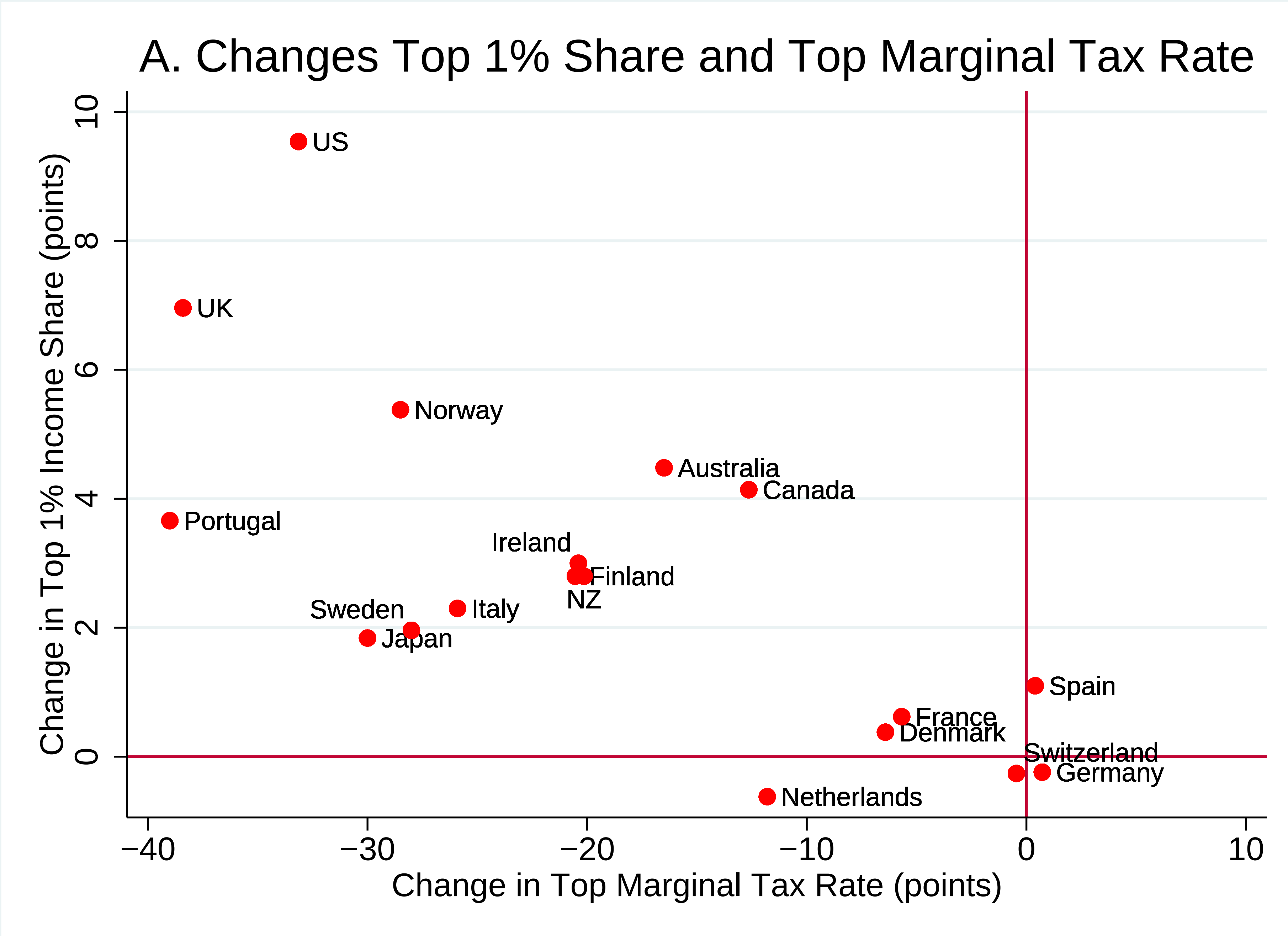
Source: Piketty, Saez, and Stantcheva NBER'11



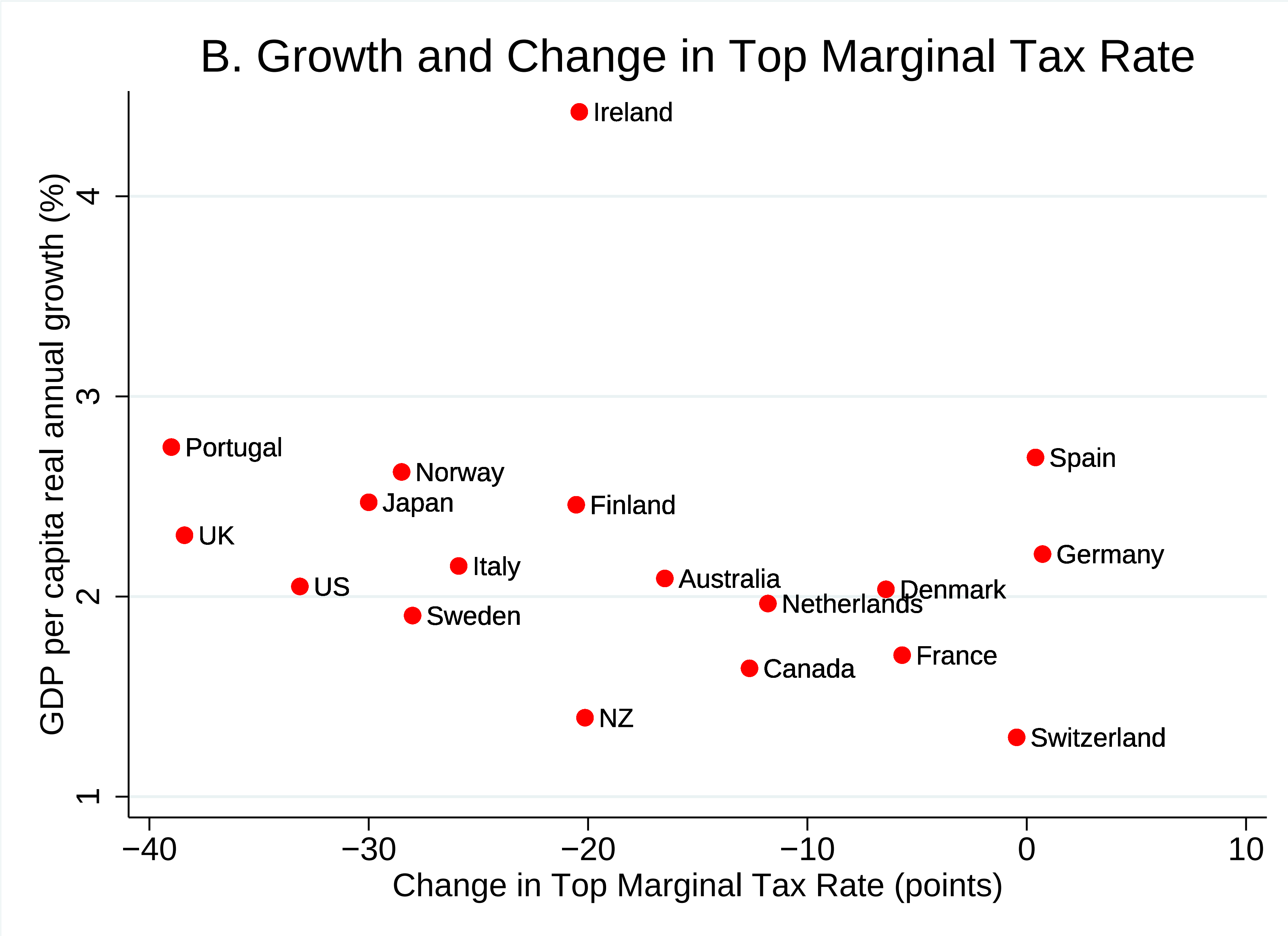
Source: Piketty, Saez, and Stantcheva NBER'11



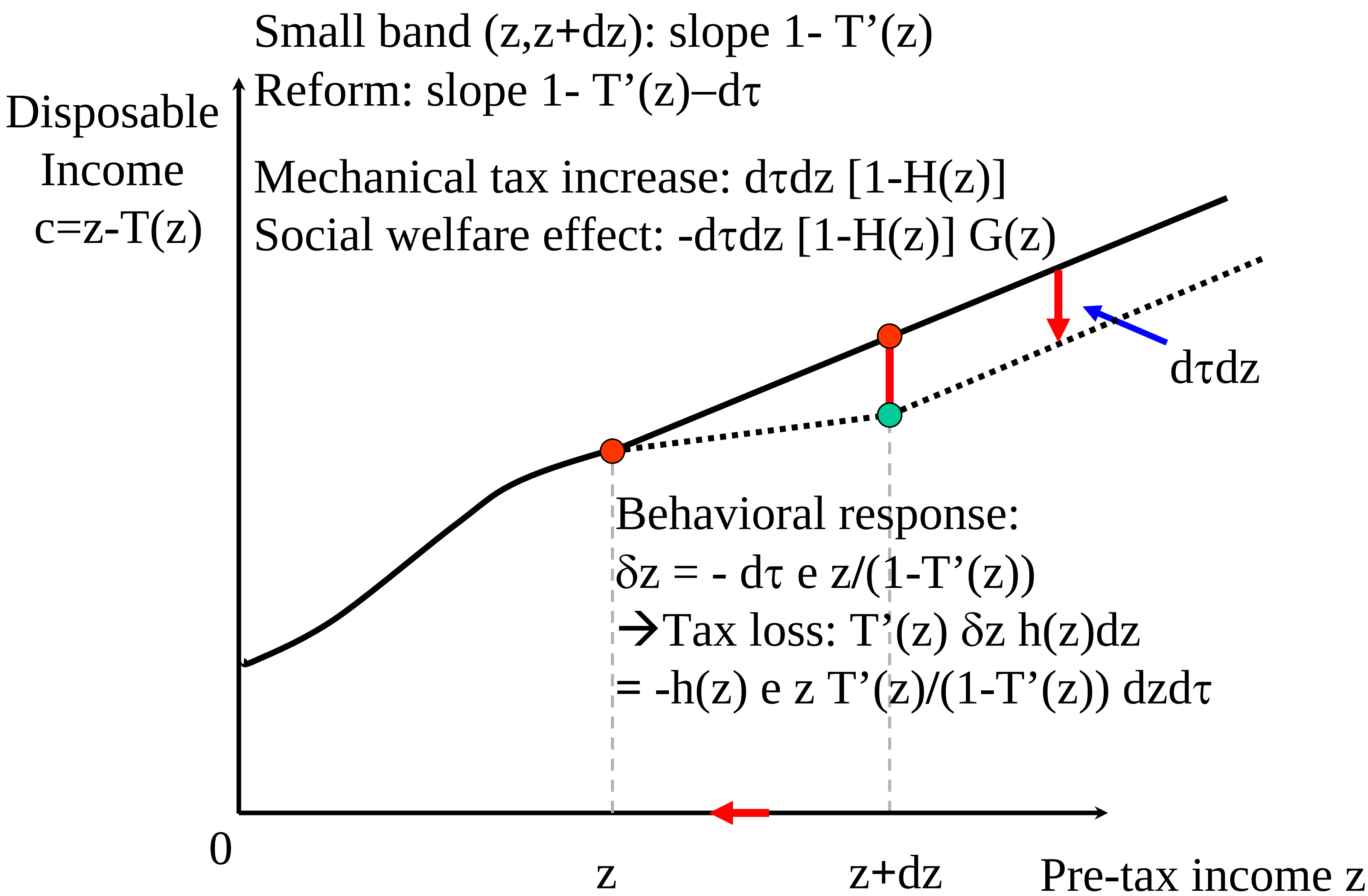
Source: Piketty, Saez, and Stantcheva NBER'11



Source: Piketty, Saez, and Stantcheva NBER'11

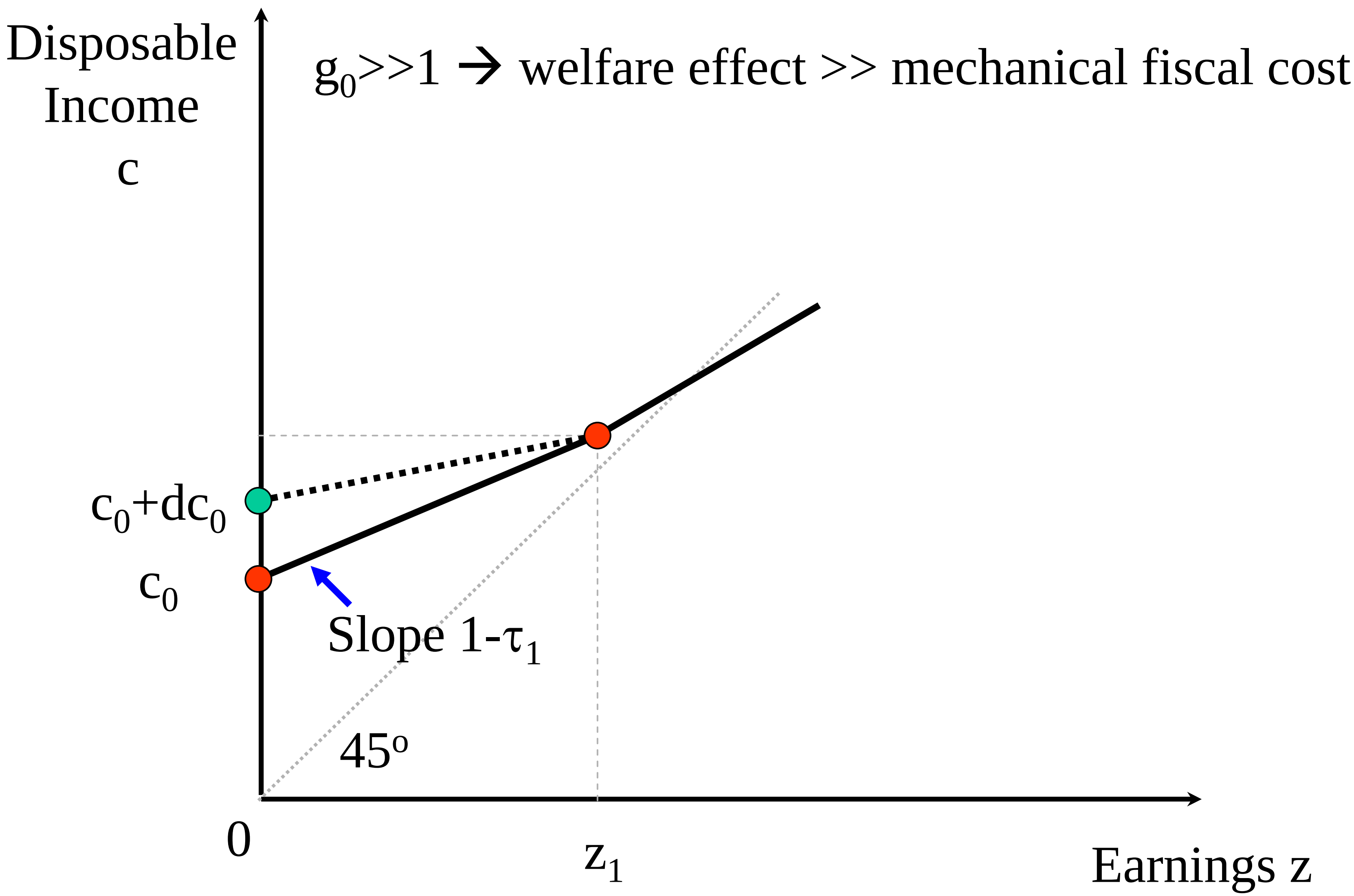


Source: Piketty, Saez, and Stantcheva NBER'11



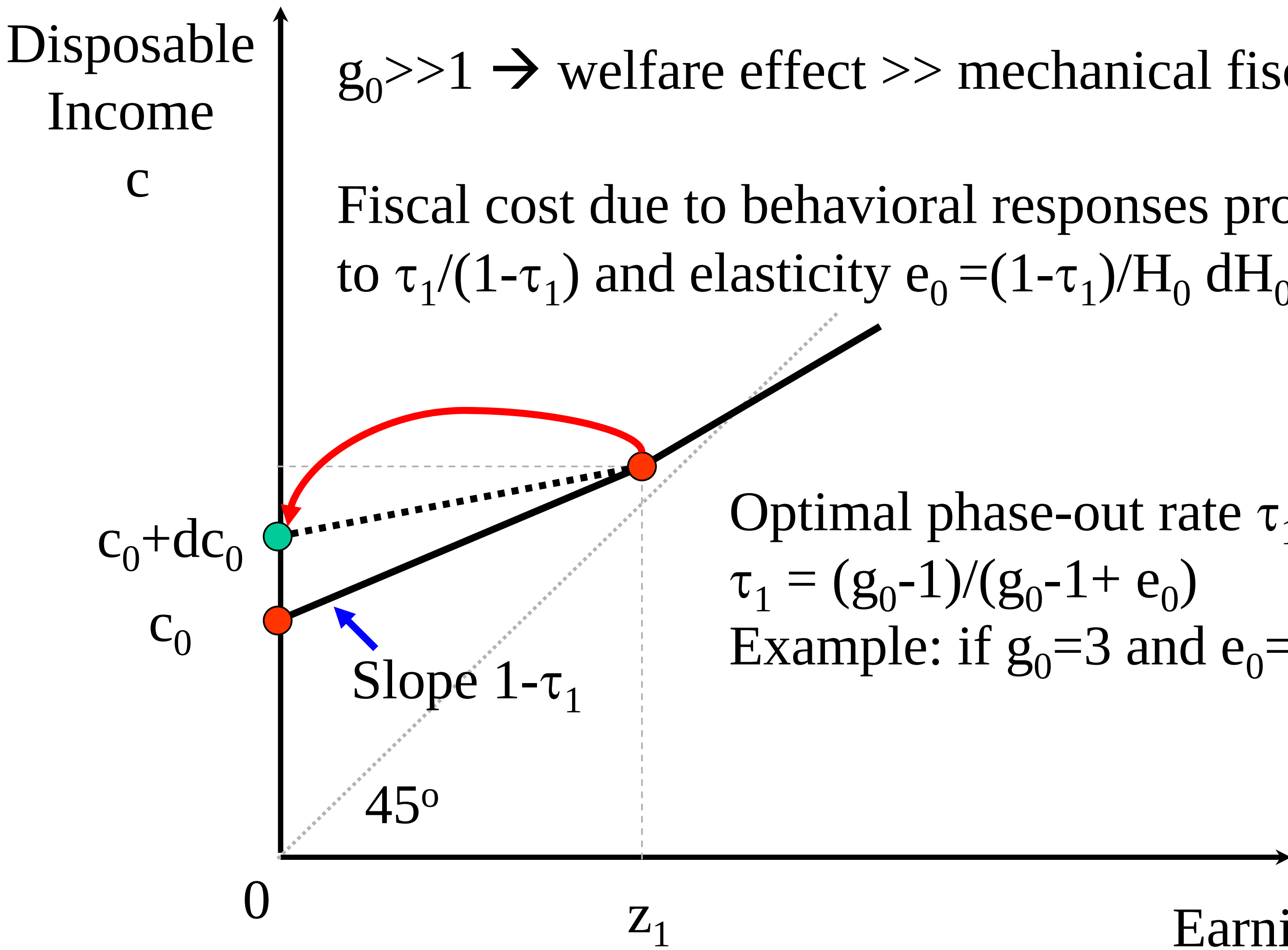
Source: Diamond and Saez JEP'11

Reform: Increase τ_1 by $d\tau_1$ and c_0 by $dc_0=z_1 d\tau_1$



Source: Diamond and Saez JEP'11

Reform: Increase τ_1 by $d\tau_1$ and c_0 by $dc_0 = z_1 d\tau_1$



$g_0 >> 1 \rightarrow$ welfare effect >> mechanical fiscal cost

Fiscal cost due to behavioral responses proportional to $\tau_1/(1-\tau_1)$ and elasticity $e_0 = (1-\tau_1)/H_0 \, dH_0/d(1-\tau_1)$

Optimal phase-out rate τ_1:
$\tau_1 = (g_0-1)/(g_0-1+e_0)$
Example: if $g_0=3$ and $e_0=0.5$, $\tau_1=80\%$

Source: Diamond and Saez JEP'11

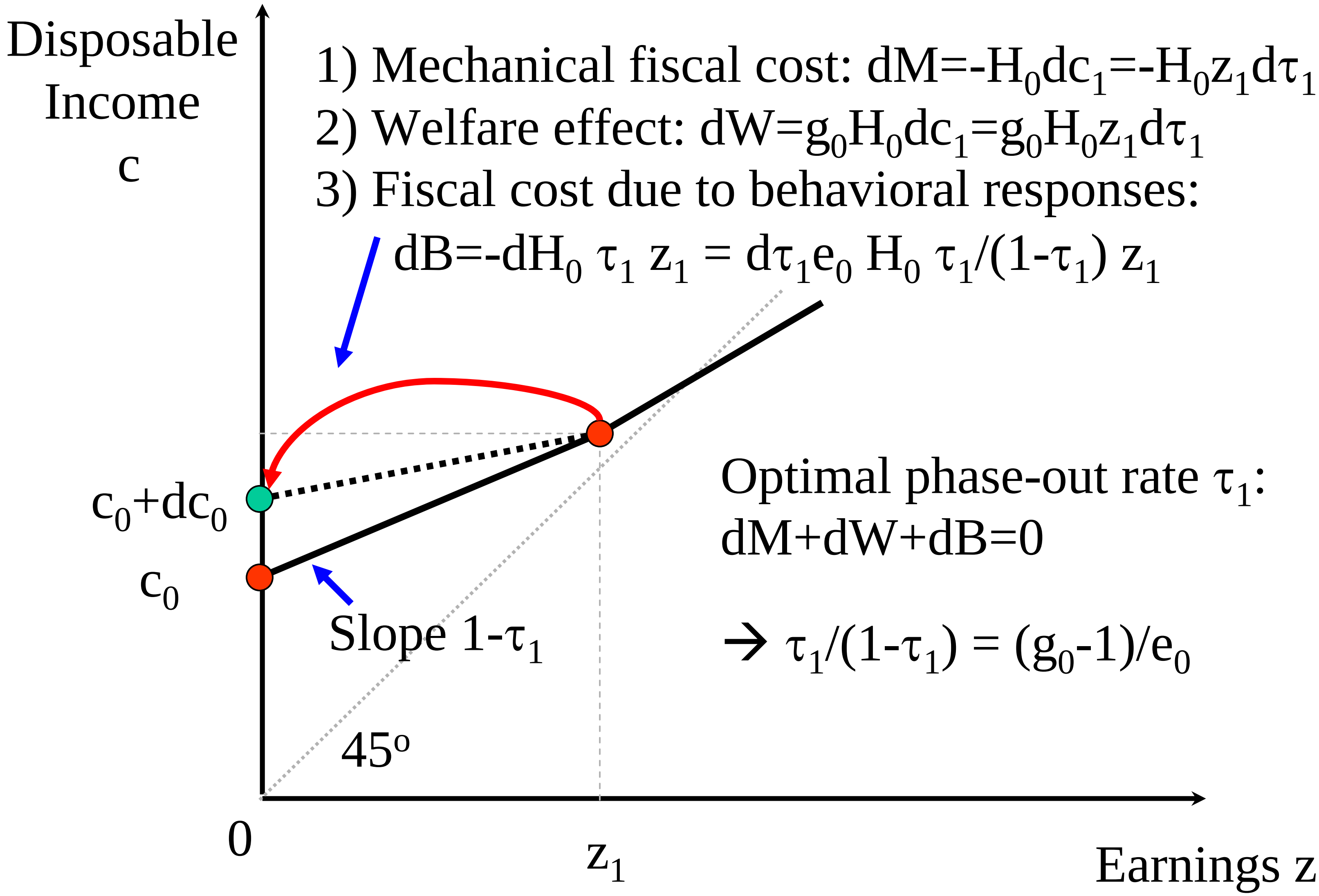
Reform: Increase τ_1 by $d\tau_1$ and c_0 by $dc_0=z_1 d\tau_1$

1) Mechanical fiscal cost: $dM=-H_0 dc_1=-H_0 z_1 d\tau_1$

2) Welfare effect: $dW=g_0 H_0 dc_1=g_0 H_0 z_1 d\tau_1$

3) Fiscal cost due to behavioral responses:

$dB=-dH_0\ \tau_1\ z_1 = d\tau_1 e_0\ H_0\ \tau_1/(1-\tau_1)\ z_1$



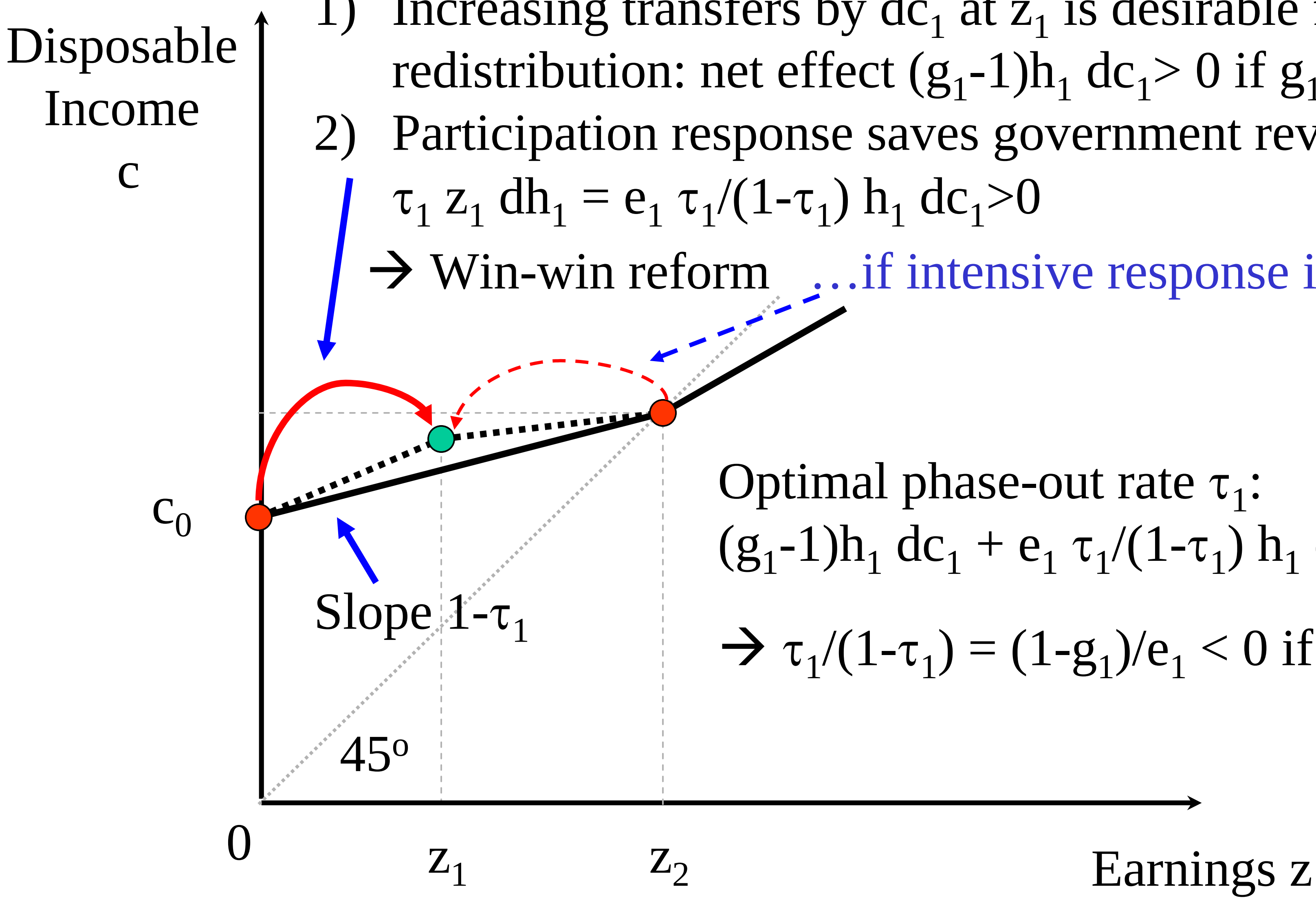
Optimal phase-out rate τ_1:
$dM+dW+dB=0$

$\rightarrow \tau_1/(1-\tau_1) = (g_0-1)/e_0$

Starting from a positive phasing-out rate $\tau_1>0$:

1) Increasing transfers by dc_1 at z_1 is desirable for redistribution: net effect $(g_1-1)h_1\, dc_1 > 0$ if $g_1>1$
2) Participation response saves government revenue $\tau_1 z_1\, dh_1 = e_1\, \tau_1/(1-\tau_1)\, h_1\, dc_1>0$

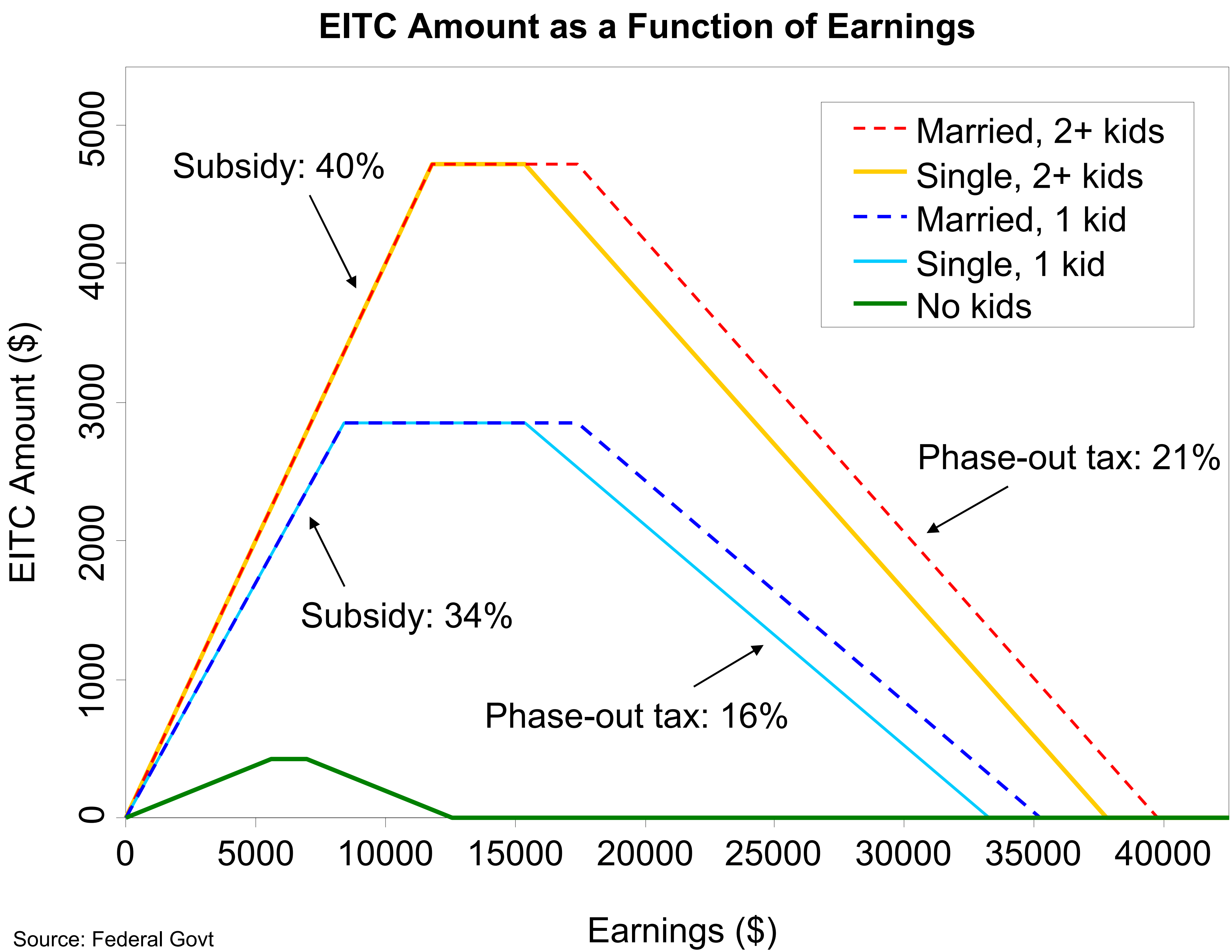
→ Win-win reform …if intensive response is small



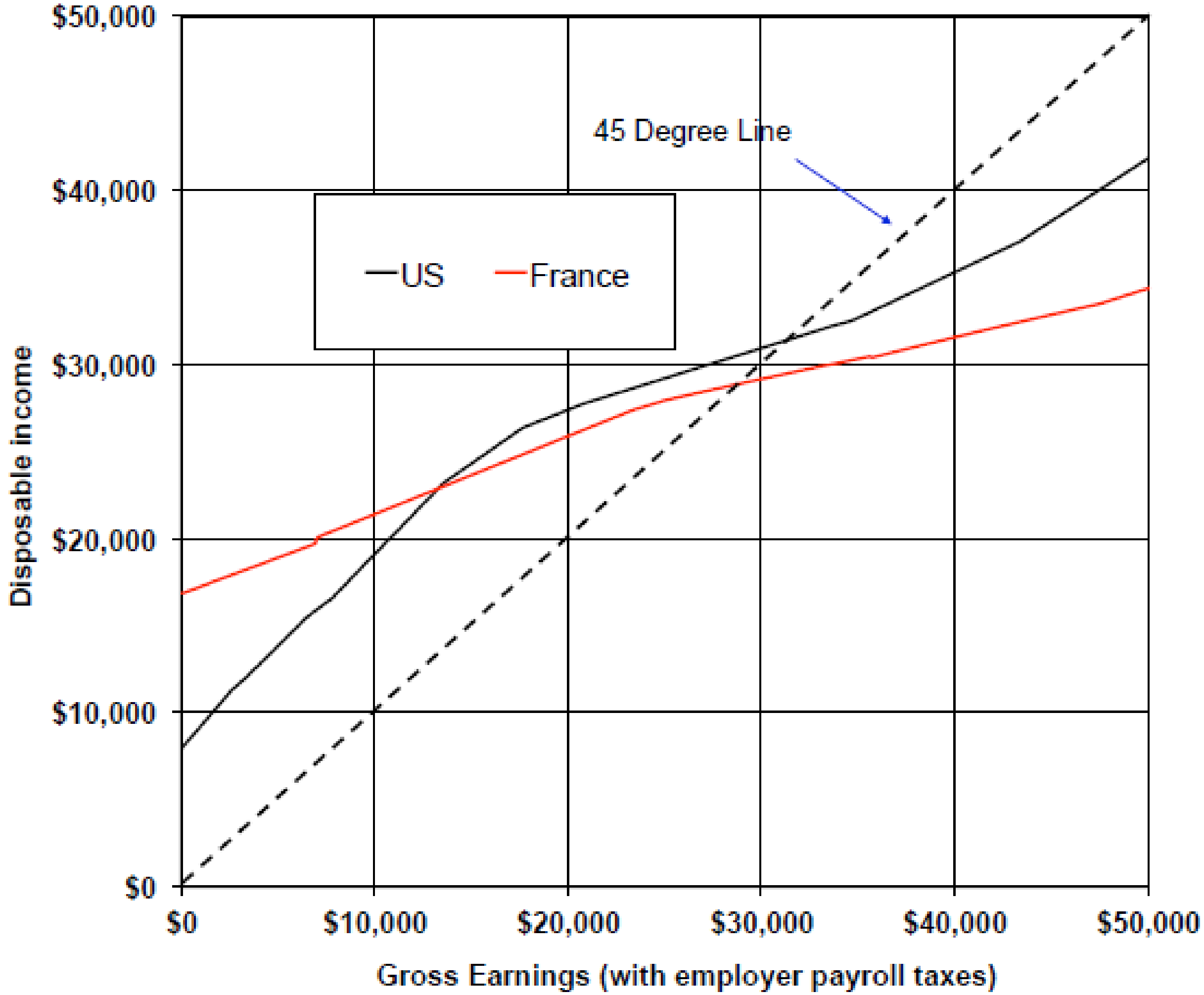
Optimal phase-out rate τ_1:

$(g_1-1)h_1\, dc_1 + e_1\, \tau_1/(1-\tau_1)\, h_1\, dc_1 = 0$

→ $\tau_1/(1-\tau_1) = (1-g_1)/e_1 < 0$ if $g_1>1$



EITC Amount as a Function of Earnings
EITC Amount ($)
Earnings ($)
0
1000
2000
3000
4000
5000
0
5000
10000
15000
20000
25000
30000
35000
40000
Married, 2+ kids
Single, 2+ kids
Married, 1 kid
Single, 1 kid
No kids
Subsidy: 40%
Subsidy: 34%
Phase-out tax: 21%
Phase-out tax: 16%
Source: Federal Govt



Source: Piketty, Thomas, and Emmanuel Saez (2012)

Table 2: Equality of Opportunity vs. Utilitarian Optimal Tax Rates

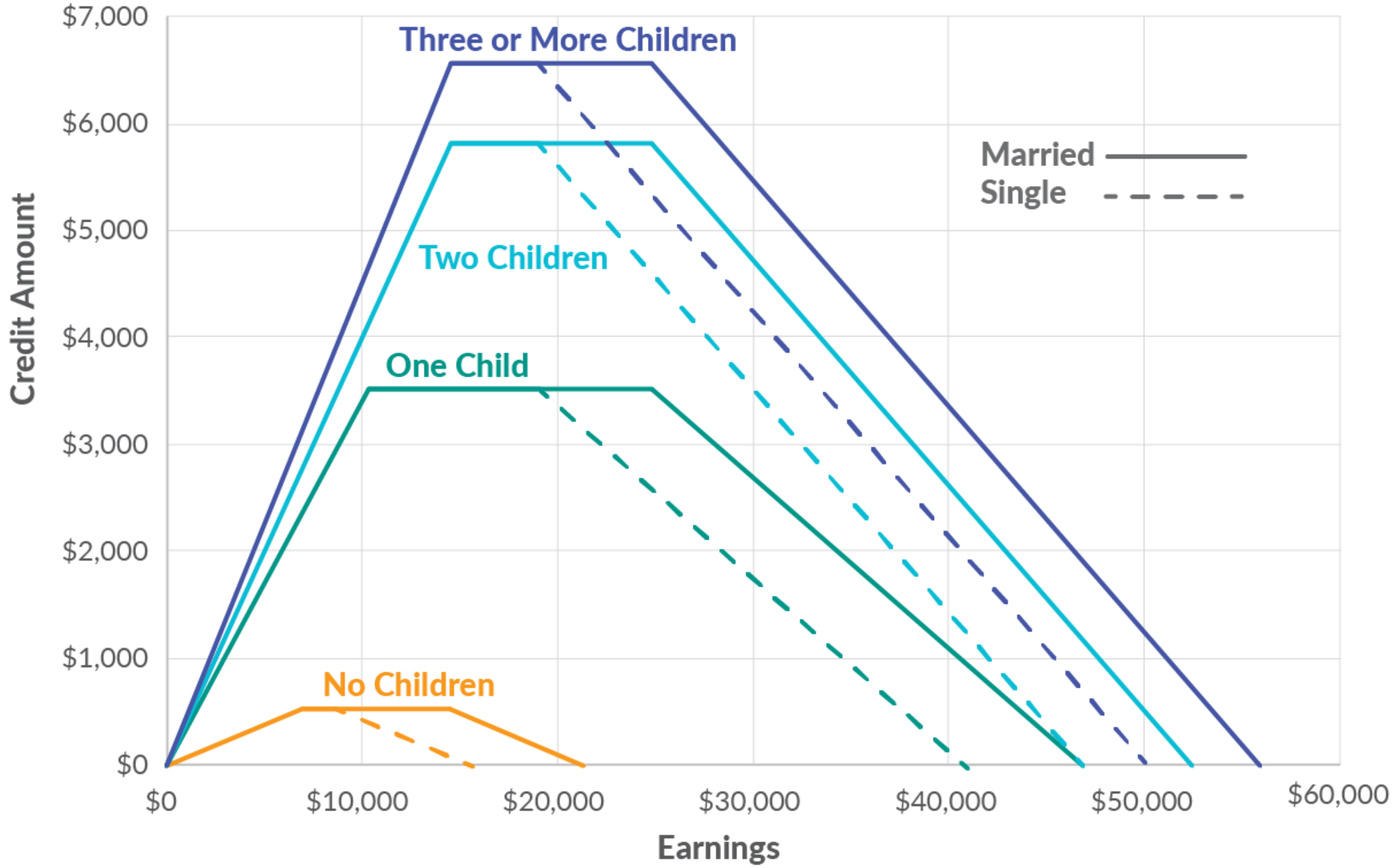
	Equality of Opportunity			Utilitarian (log-utility)	
	Fraction from low background (=parents below median) above each percentile	Implied social welfare weight G(z) above each percentile	Implied optimal marginal tax rate at each percentile	Utilitarian social welfare weight G(z) above each percentile	Utilitarian optimal marginal tax rate at each percentile
	(1)	(2)	(3)	(4)	(5)
Income percentile					
z= 25th percentile	44.3%	0.886	53%	0.793	67%
z= 50th percentile	37.3%	0.746	45%	0.574	58%
z= 75th percentile	30.3%	0.606	40%	0.385	51%
z= 90th percentile	23.6%	0.472	34%	0.255	42%
z= 99th percentile	17.0%	0.340	46%	0.077	54%
z= 99.9th percentile	16.5%	0.330	47%	0.016	56%

Notes: This table compares optimal marginal tax rates at various percentiles of the distribution (listed by row) using an equality of opportunity criterion (in column (3)) and a standard utilitarian criterion (in column (5)). Both columns use the optimal tax formula $T'(z)=[1-G(z)]/[1-G(z)+\alpha(z)*e]$ discussed in the text where G(z) is the average social marginal welfare weight above income level z, $\alpha(z)=(zh(z))/(1-H(z))$ is the local Pareto parameter (with h(z) the density of income at z, and H(z) the cumulative distribution), and e the elasticity of reported income with respect to 1-T'(z). We assume e=0.5. We calibrate $\alpha(z)$ using the actual distribution of income based on 2008 income tax return data. For the equality of opportunity criterion, G(z) is the representation index of individuals with income above z who come from a disadvantaged background (defined as having a parent with income below the median). This representation index is estimated using the national intergenerational mobility statistics of Chetty et al. (2013) based on all US individuals born in 1980-1 with their income measured at age 30-31. For the utilitarian criterion, we assume a log-utility so that the social welfare weight g(z) at income level z is proportional to 1/(z-T(z)).

Source: Saez and Stantcheva (2014)

The Phase-In and Phaseout of the EITC

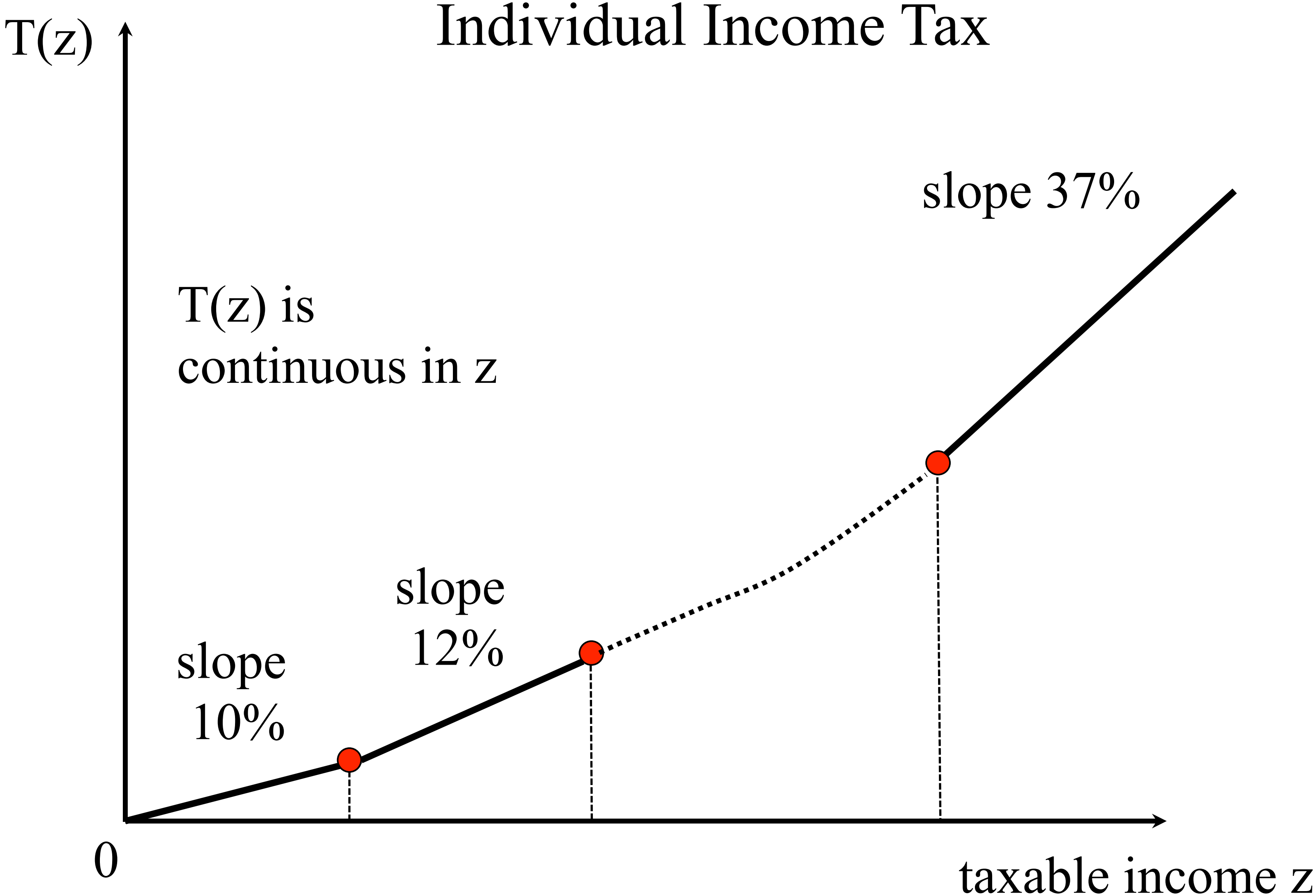
Credit Amount by Marital Status and Number of Children



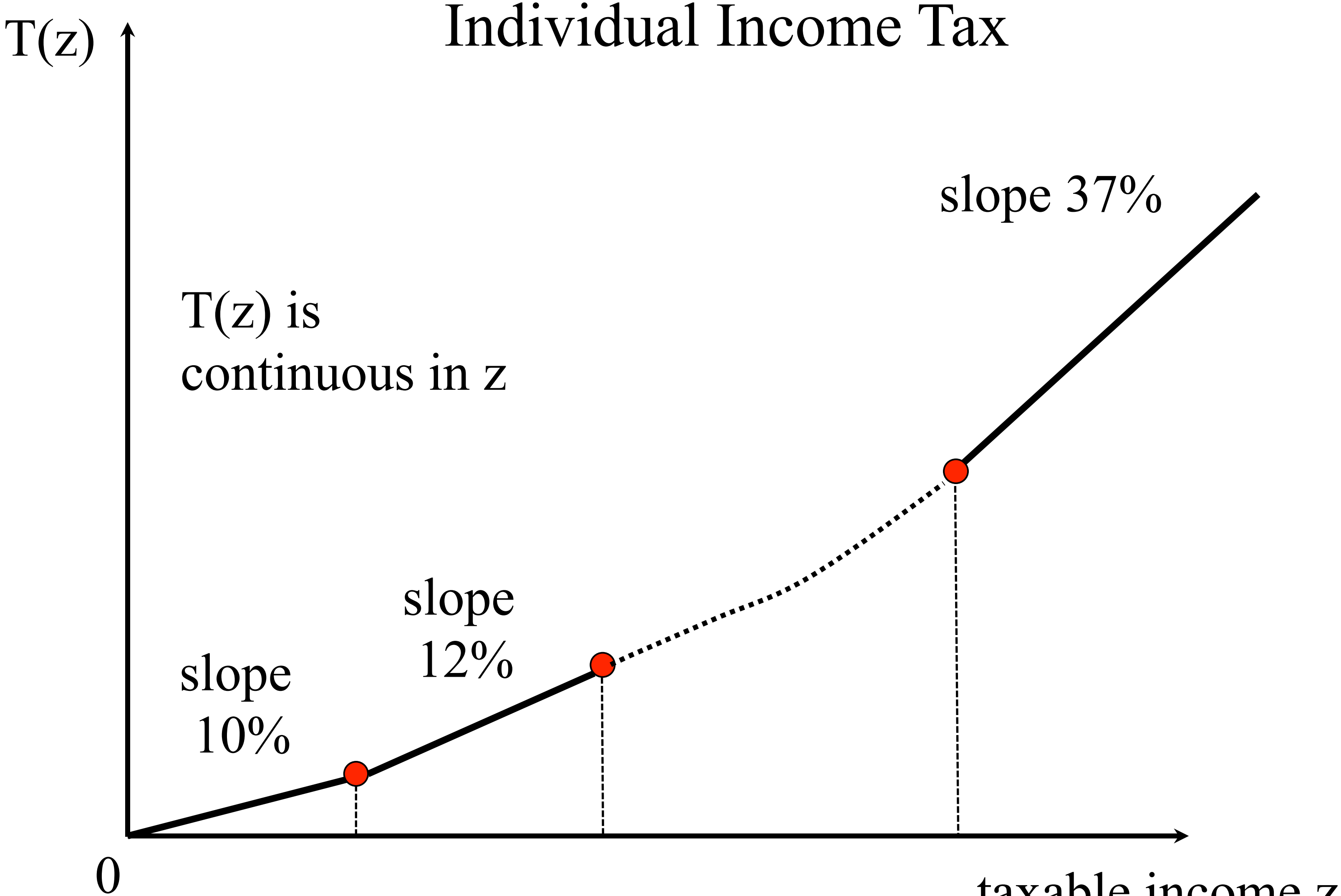
Source: Amir El-Sibaie, "2019 Tax Brackets," Tax Foundation, Nov. 28, 2018.

TAX FOUNDATION @TaxFoundation

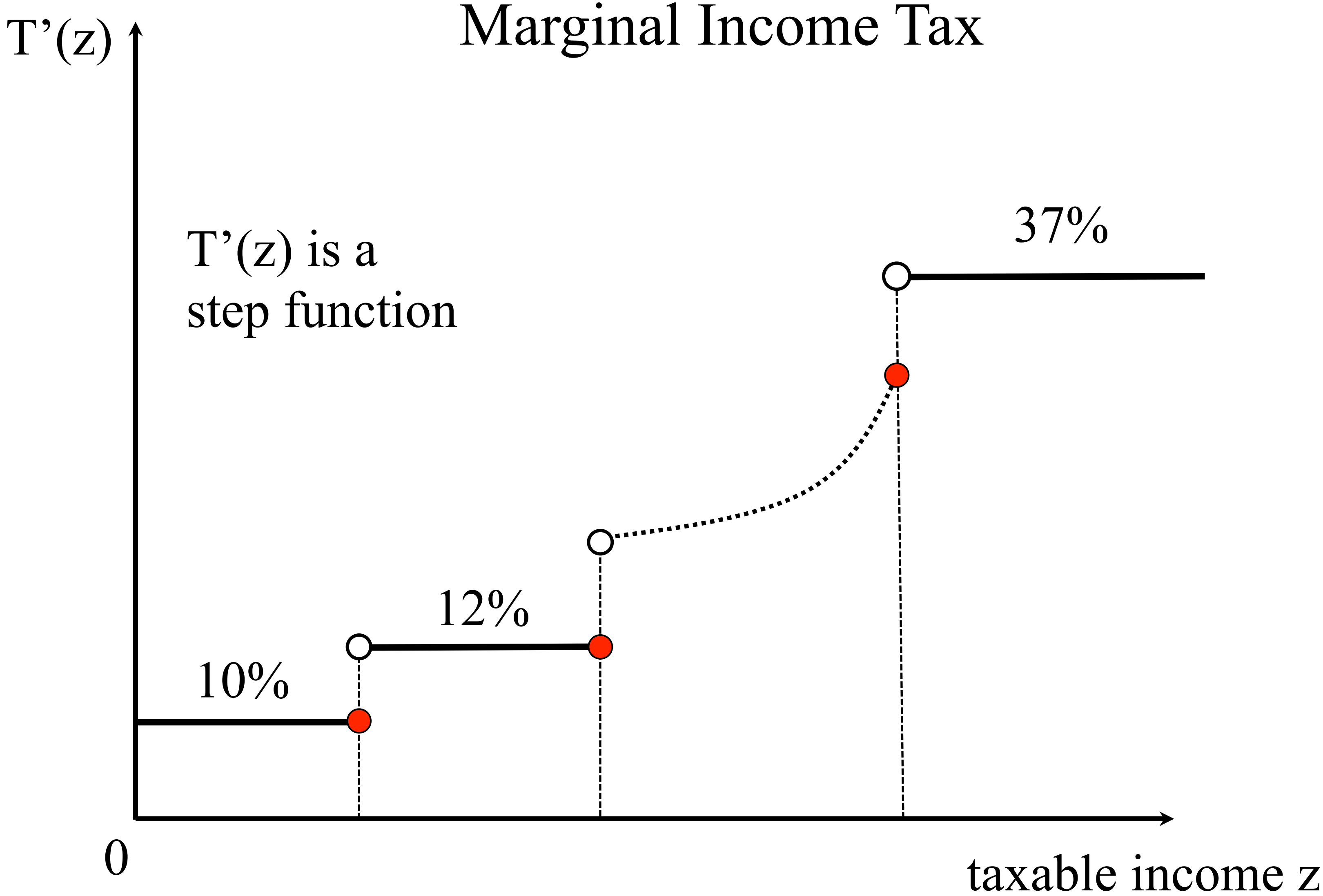
Individual Income Tax



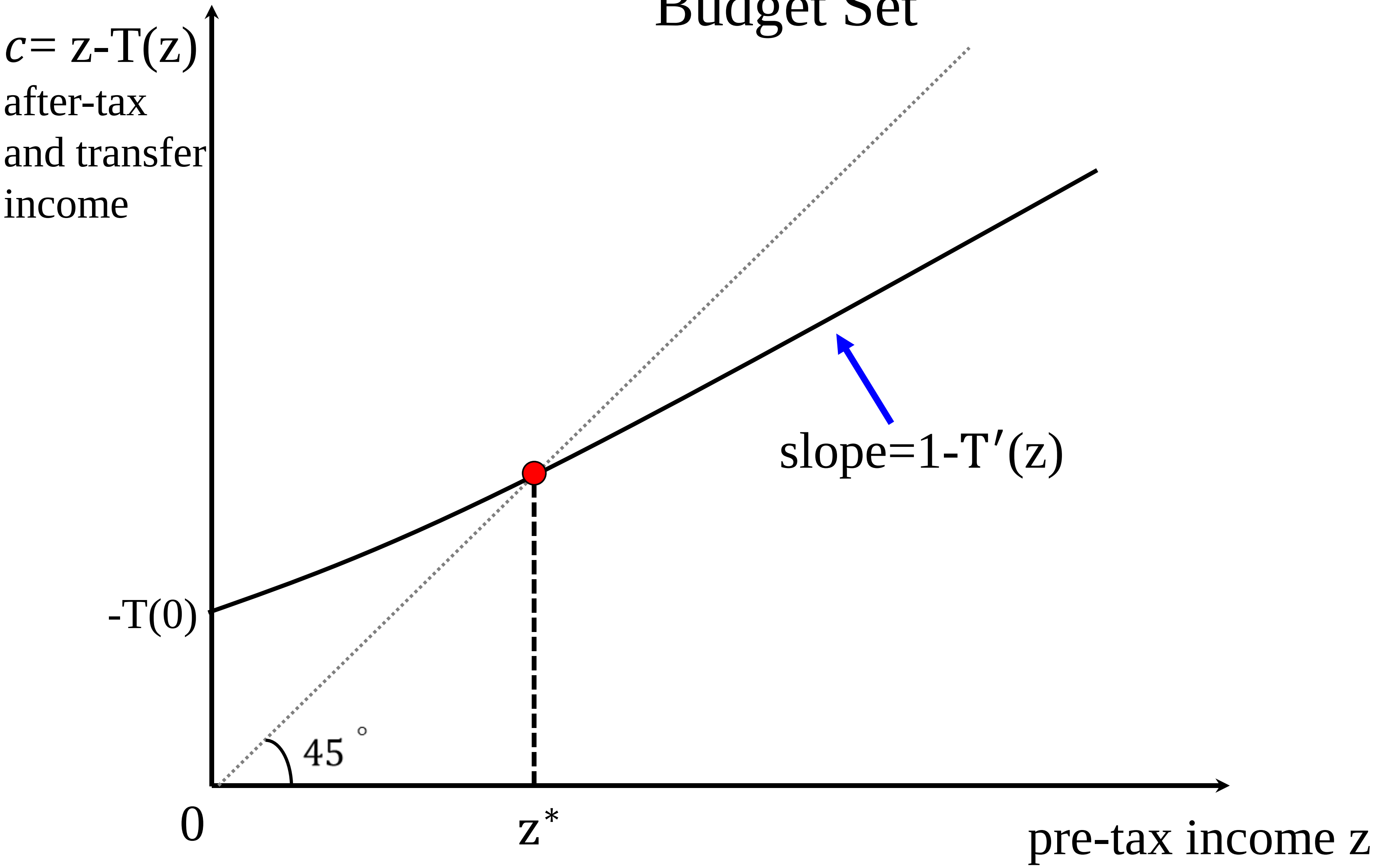
Individual Income Tax



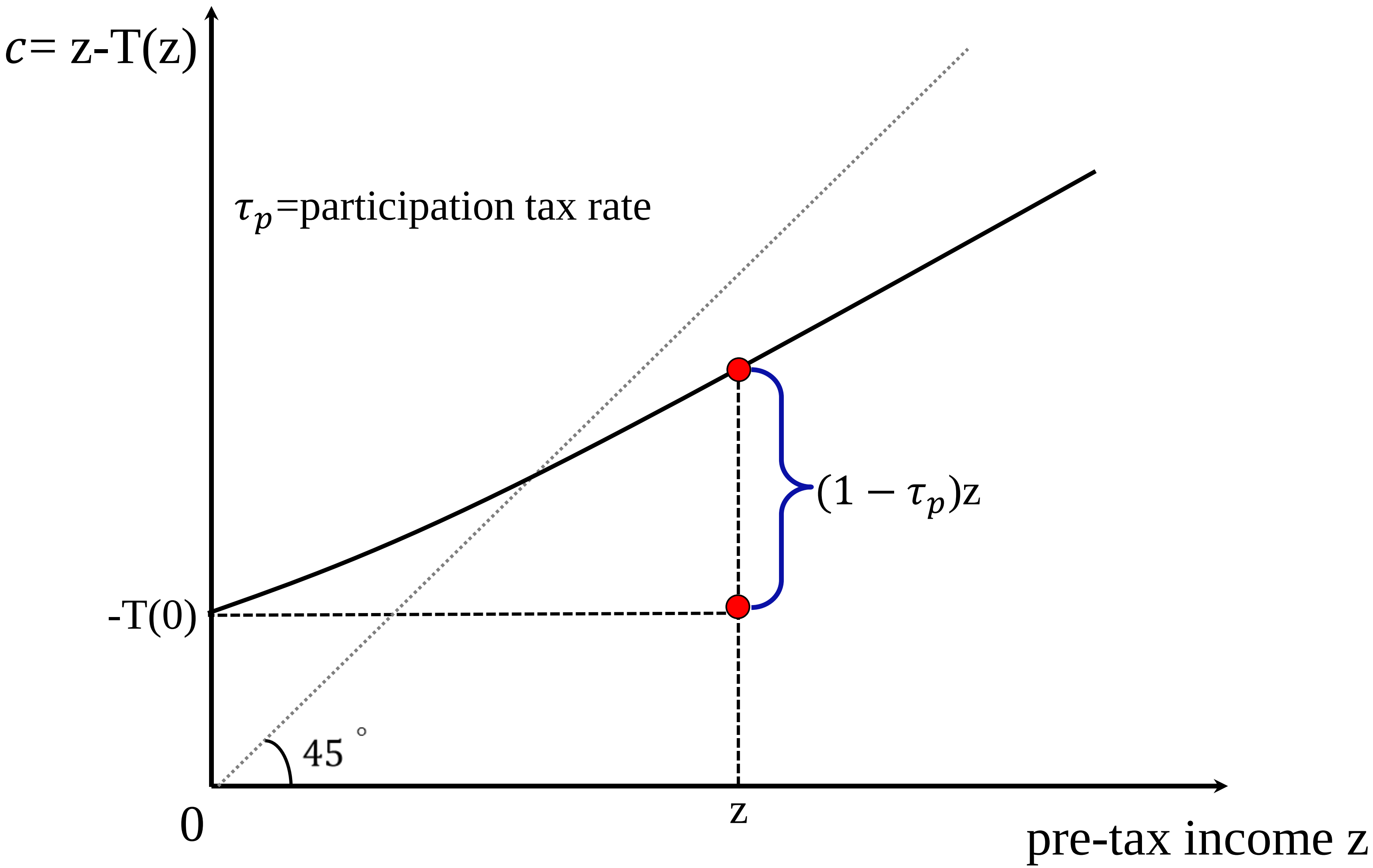
Marginal Income Tax



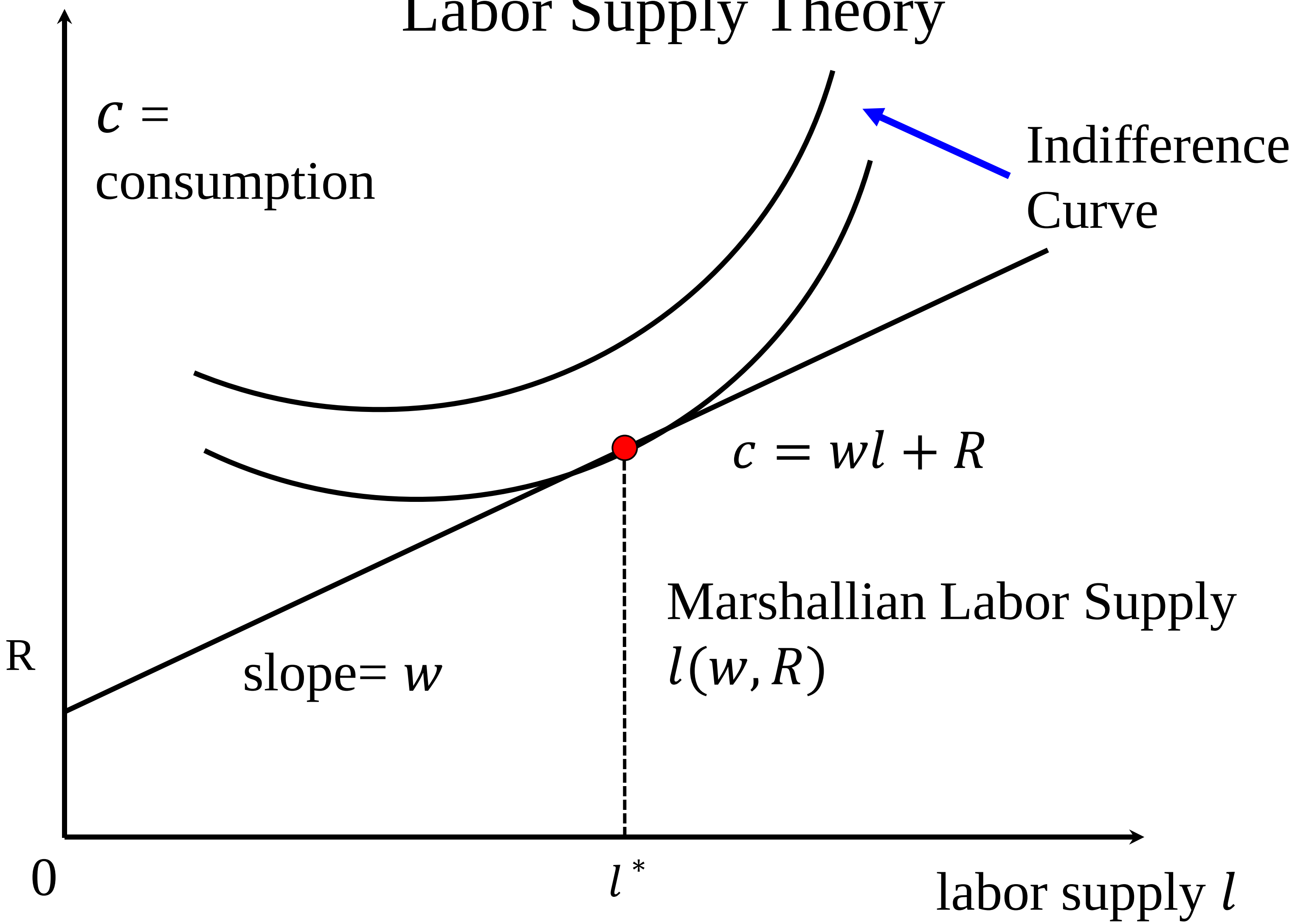
Budget Set



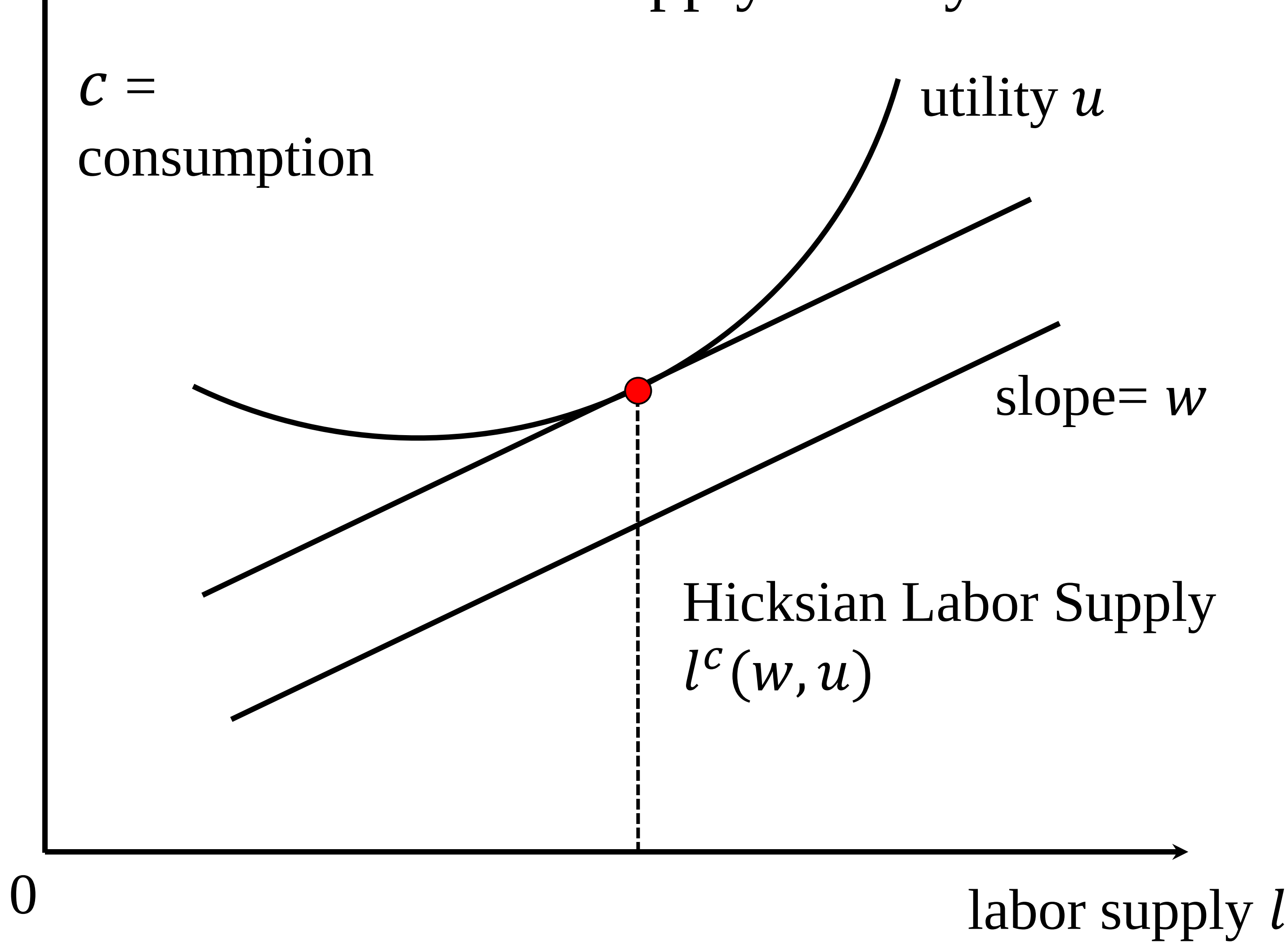
c= z-T(z)
after-tax
and transfer
income
slope=1-T′(z)
-T(0)
45 °
0
z*
pre-tax income z


c= z-T(z)
τ_p=participation tax rate
$(1-\tau_p)$z
-T(0)
45 °
0
z
pre-tax income z

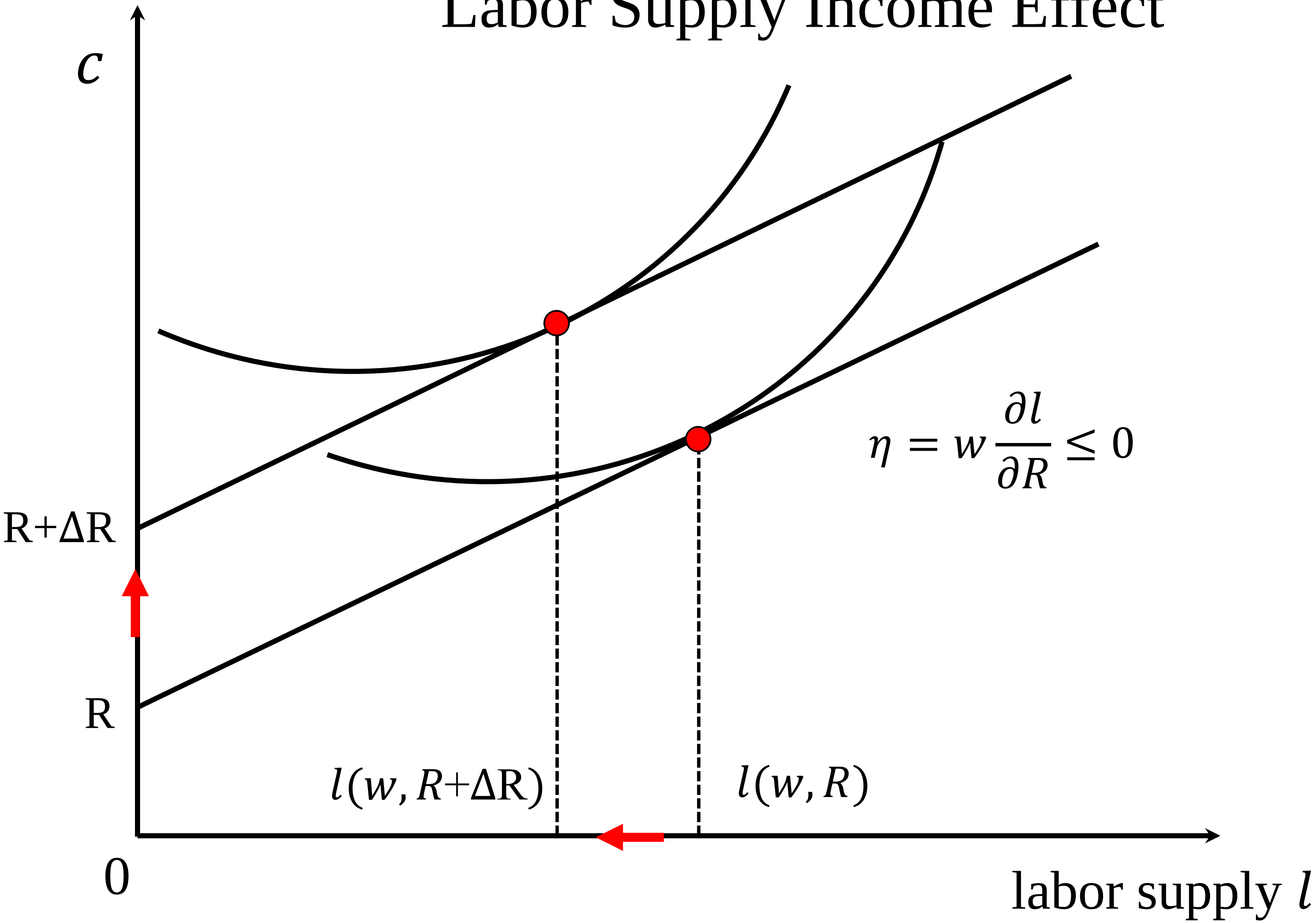
Labor Supply Theory



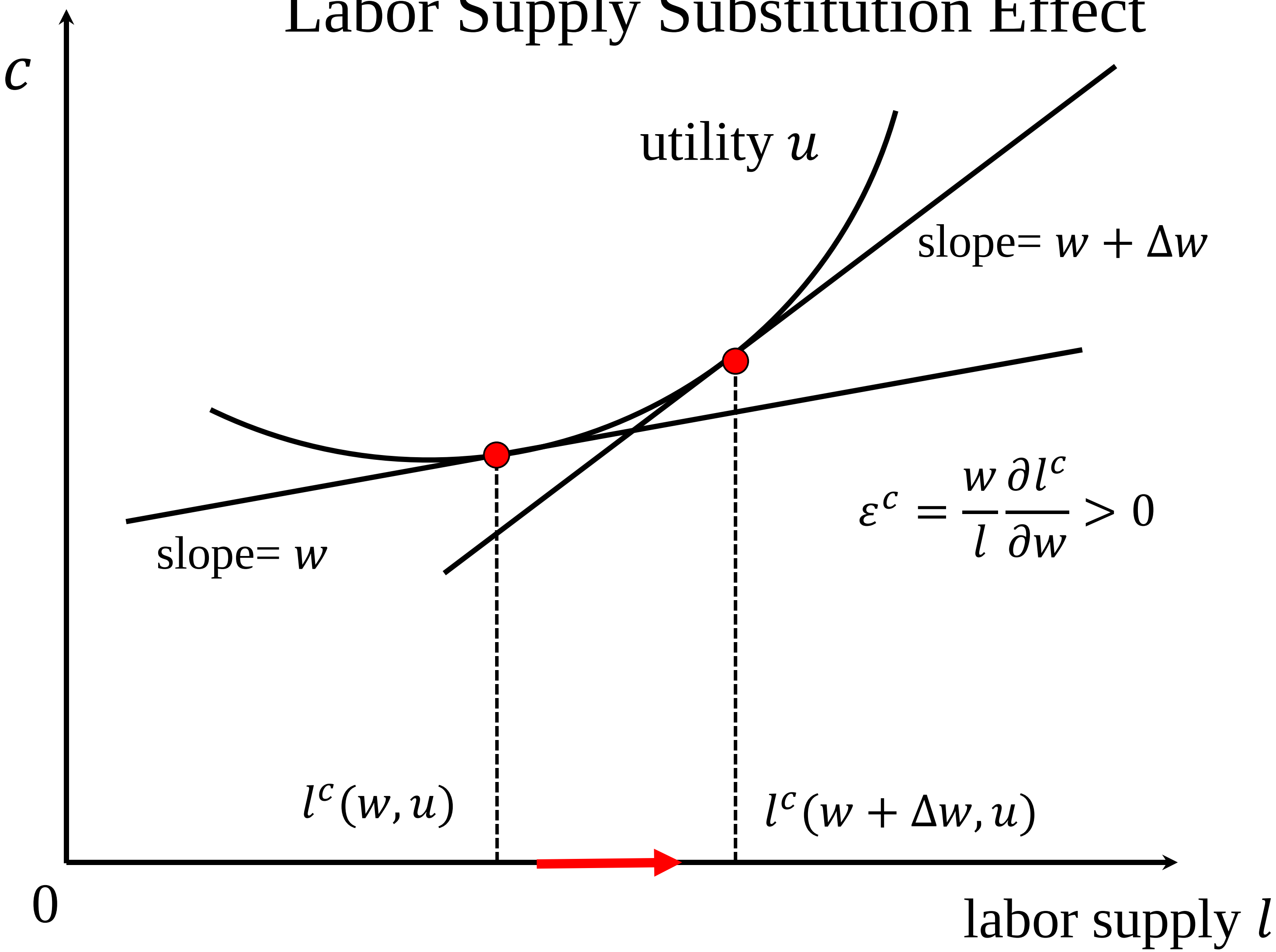
Labor Supply Theory



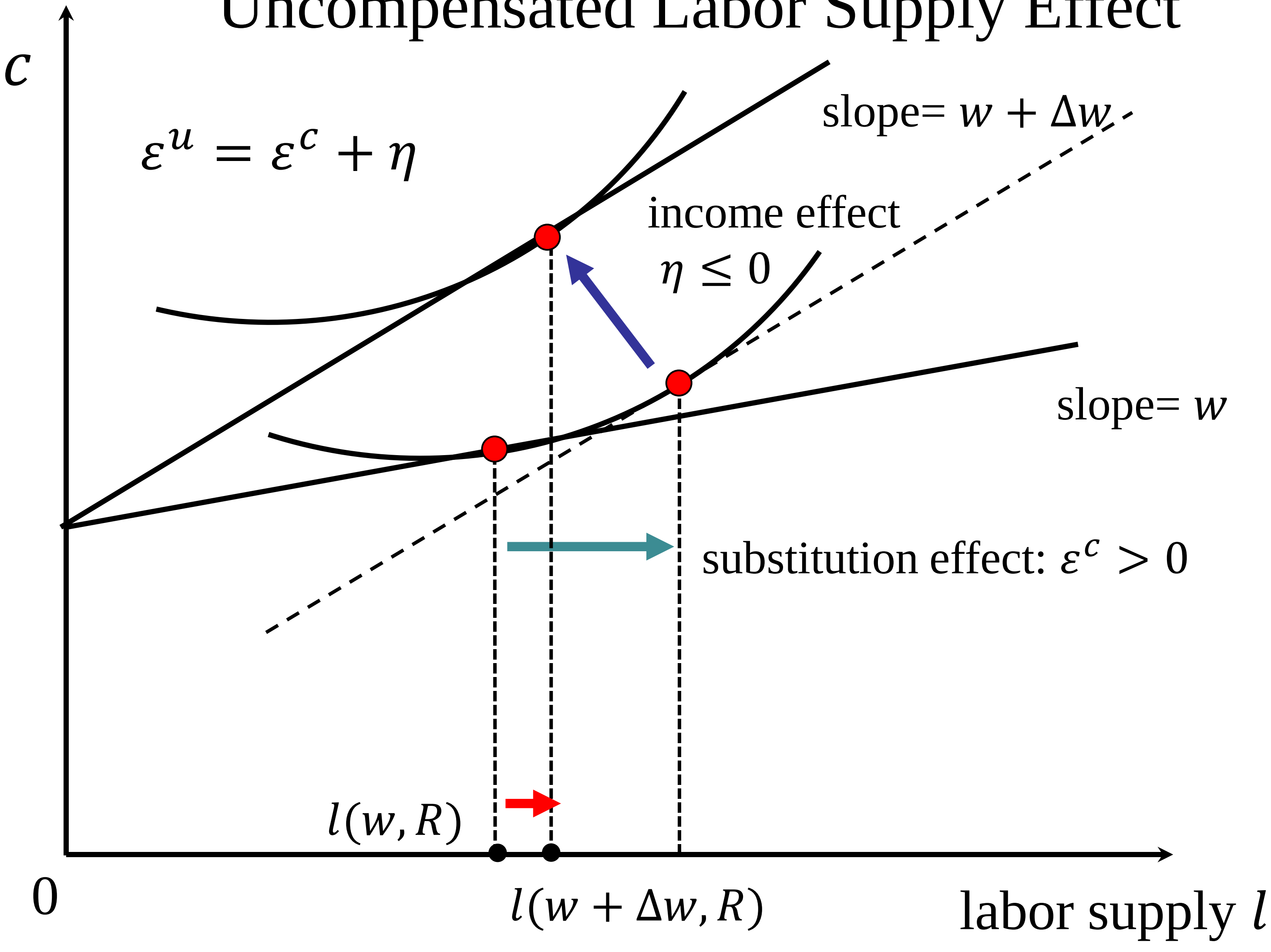
Labor Supply Income Effect



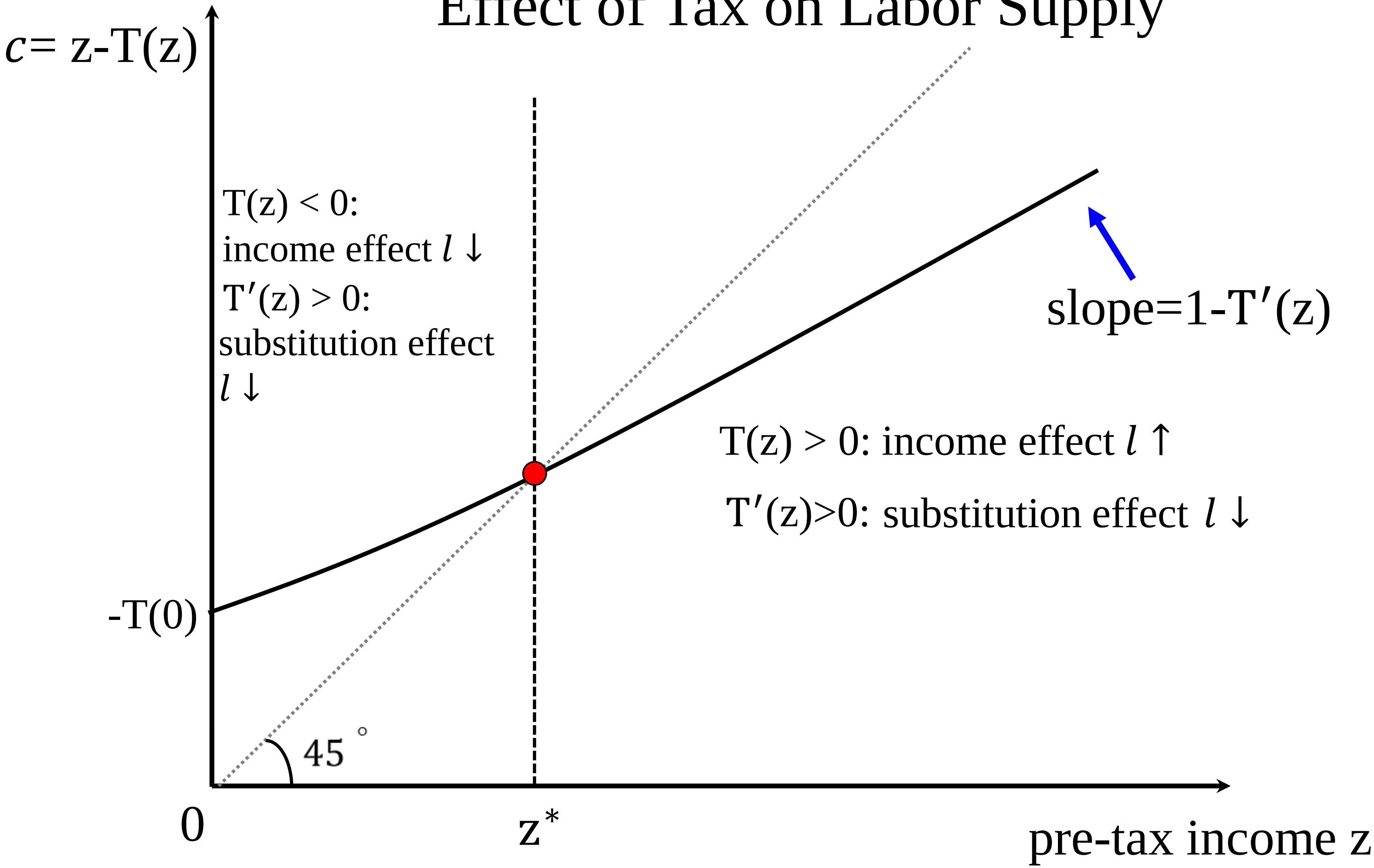
Labor Supply Substitution Effect



Uncompensated Labor Supply Effect



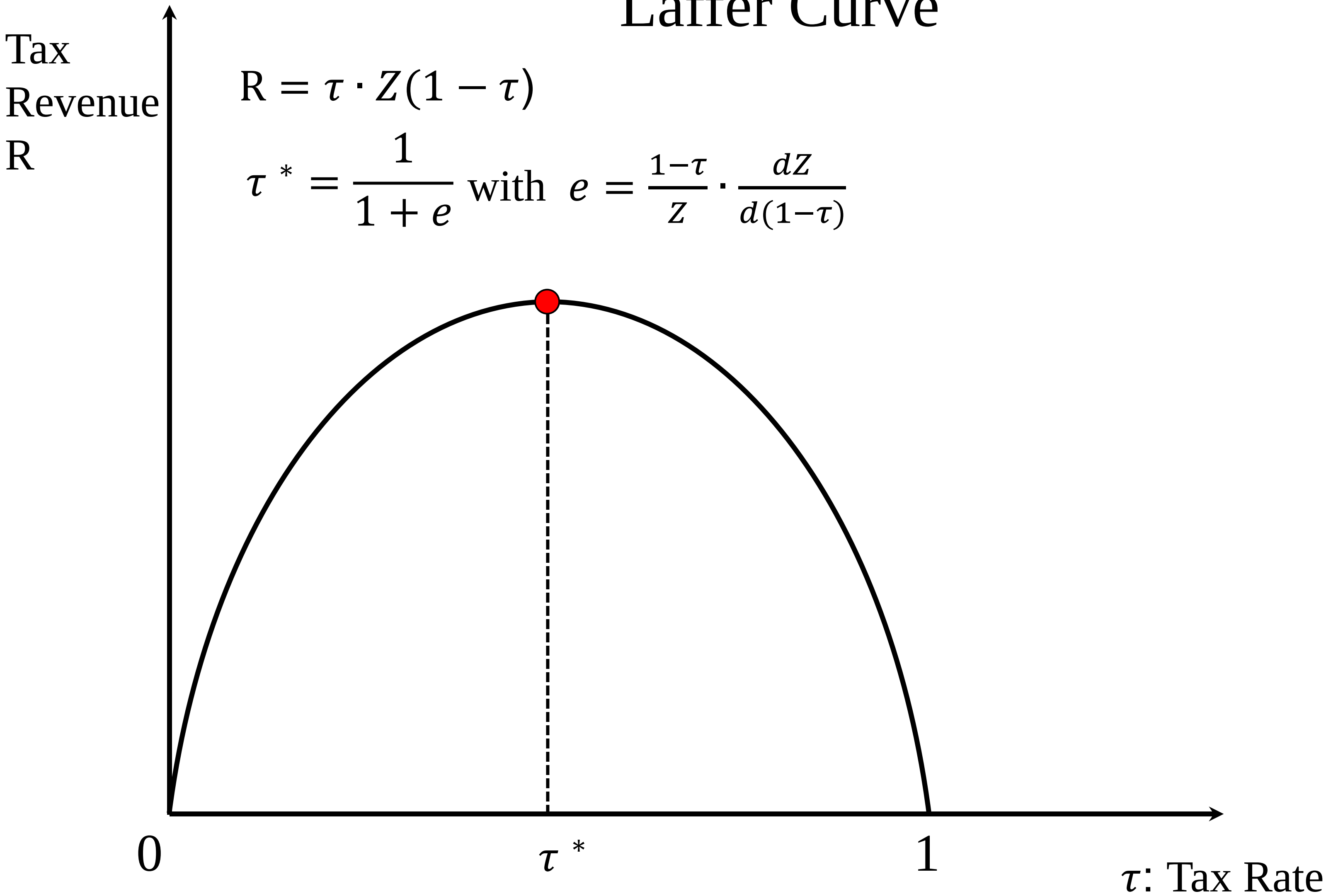
Effect of Tax on Labor Supply



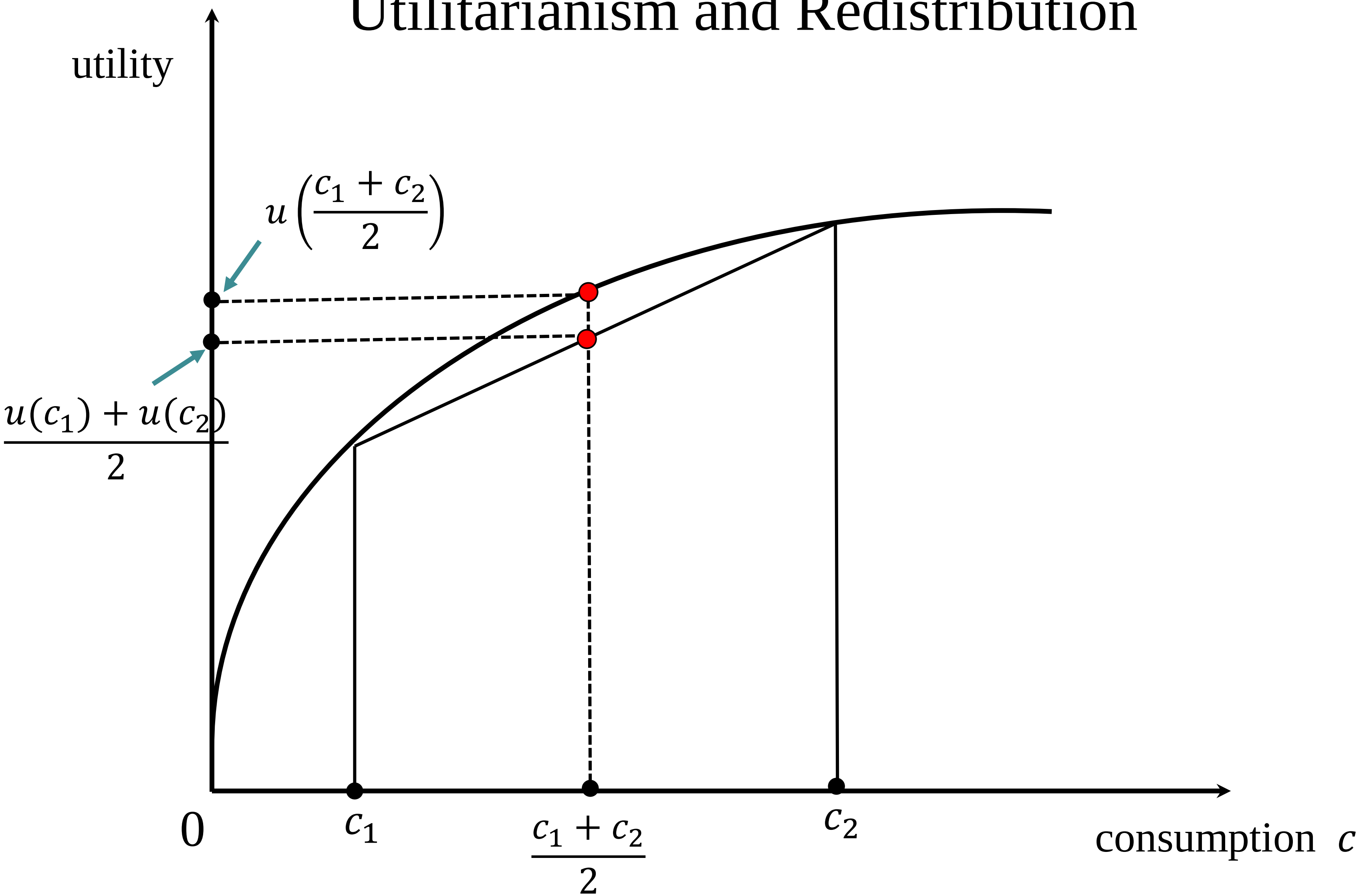
Laffer Curve

$$R = \tau \cdot Z(1 - \tau)$$

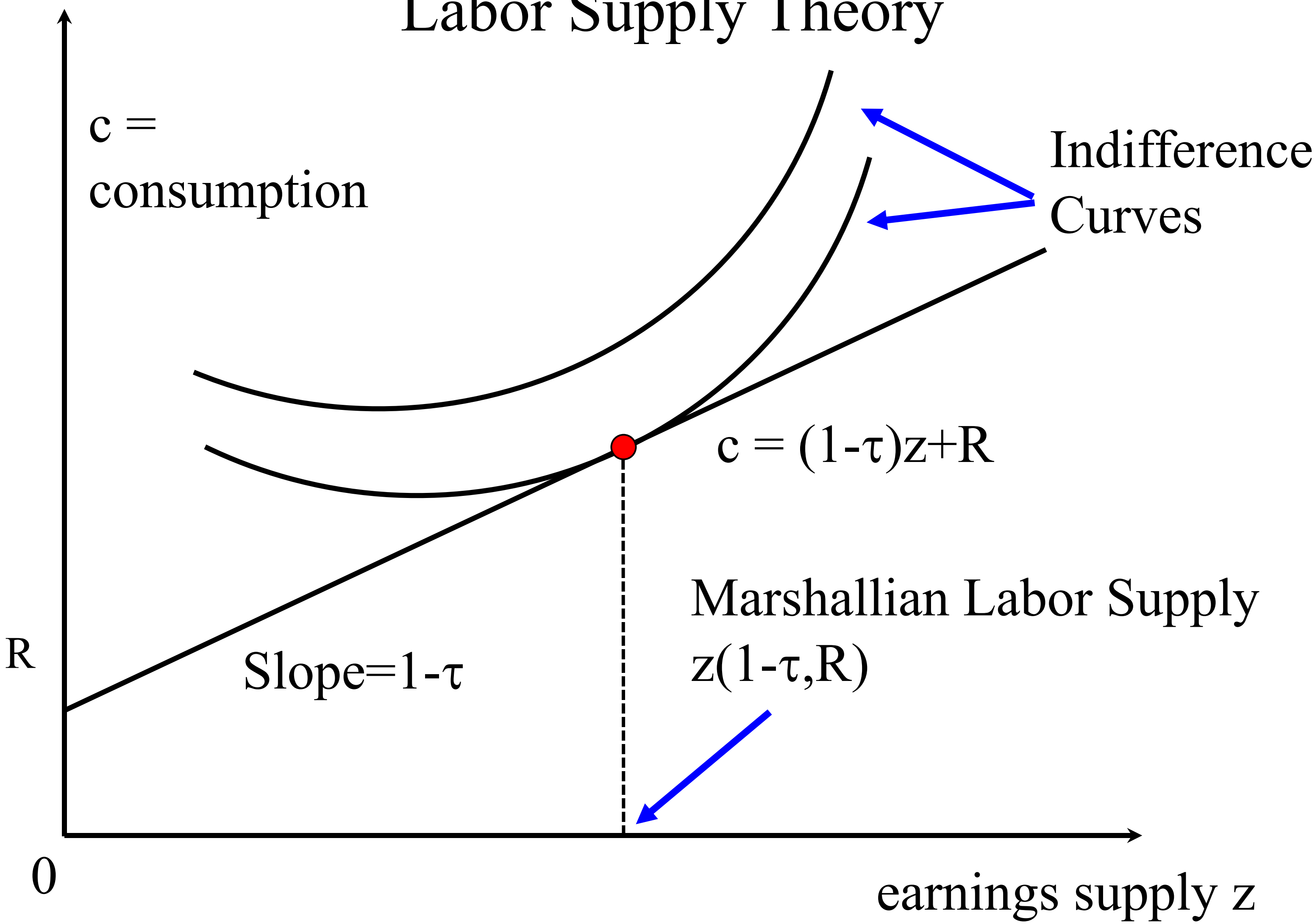
$$\tau^* = \frac{1}{1 + e} \text{ with } e = \frac{1-\tau}{Z} \cdot \frac{dZ}{d(1-\tau)}$$



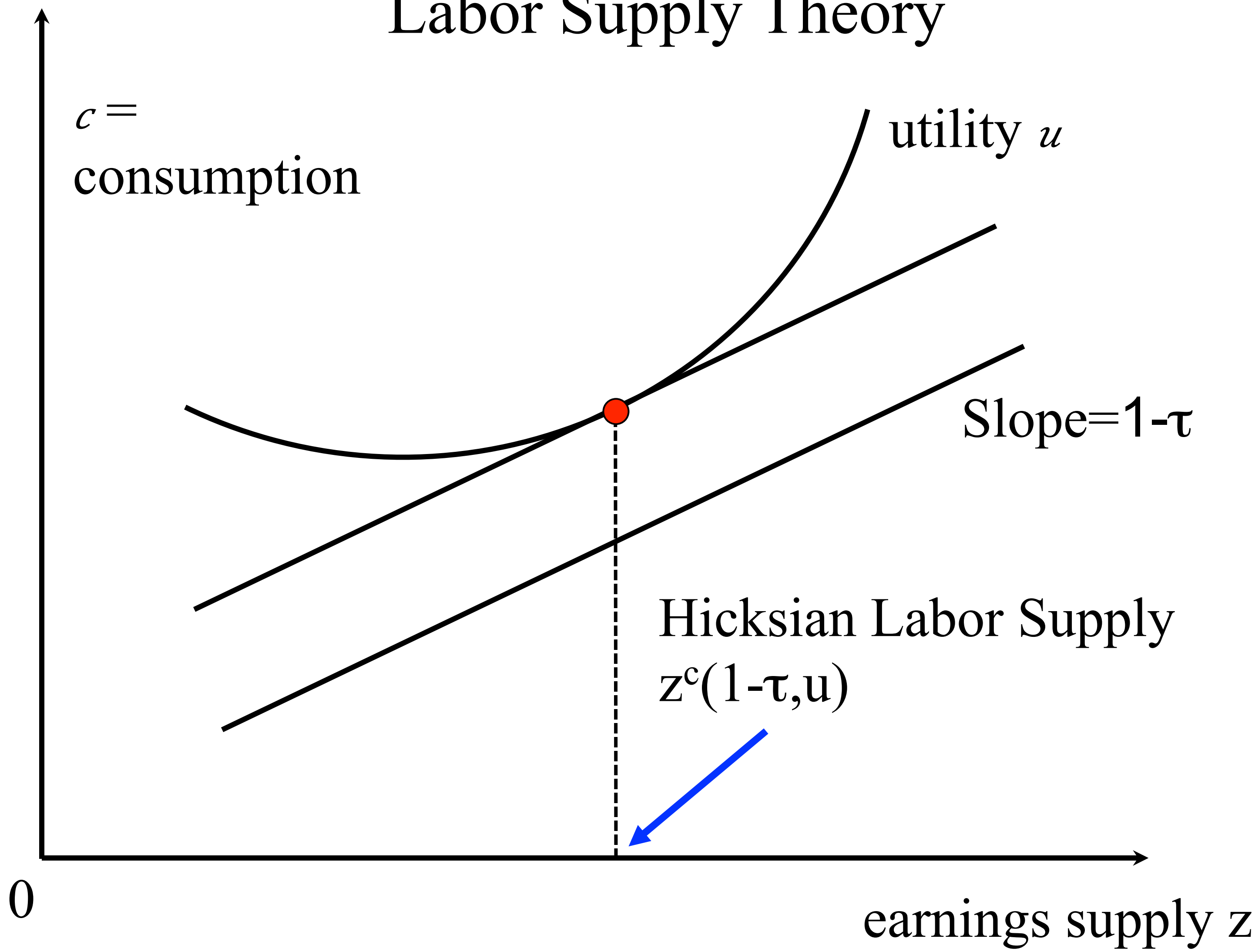
Utilitarianism and Redistribution



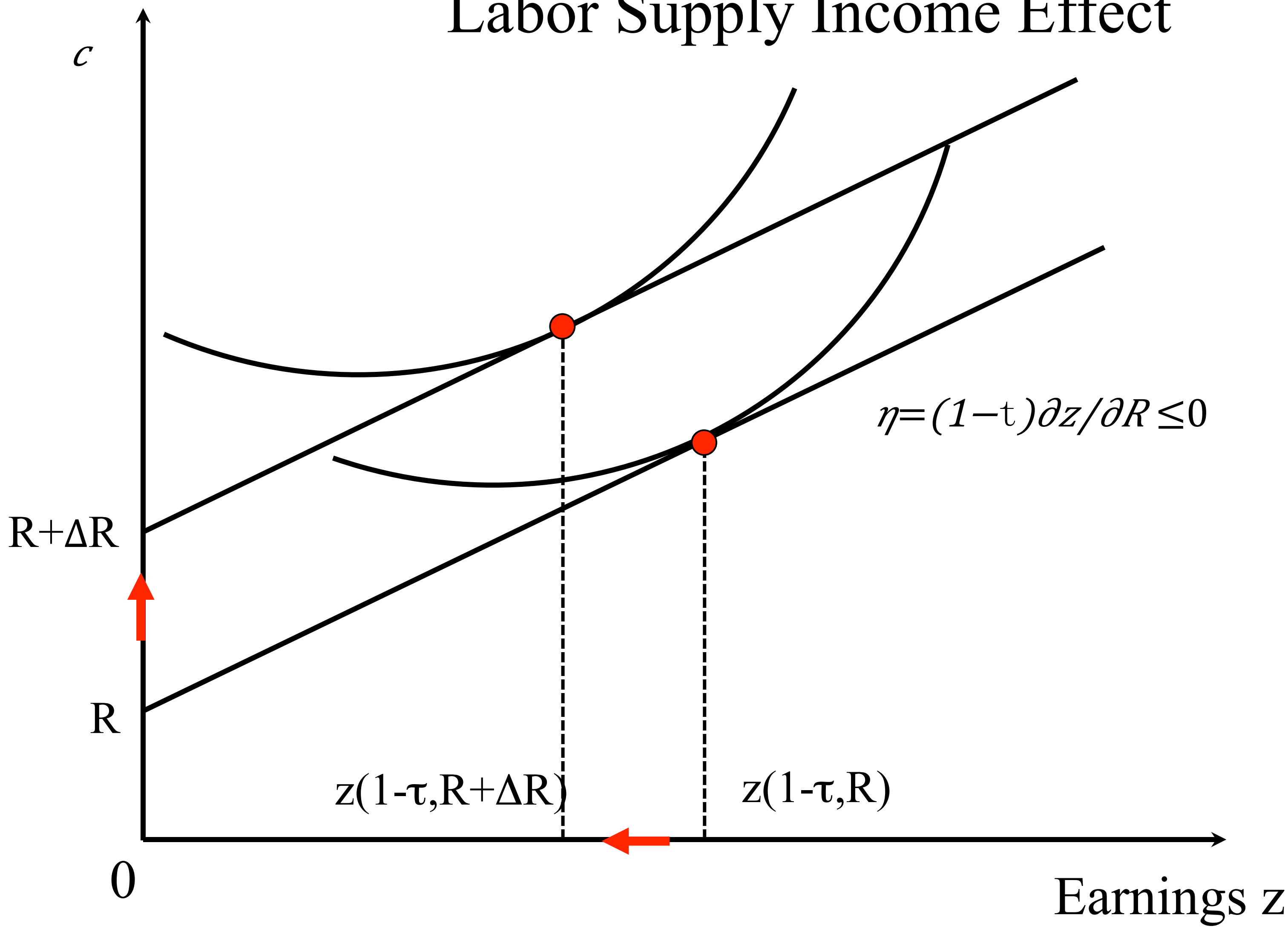
Labor Supply Theory



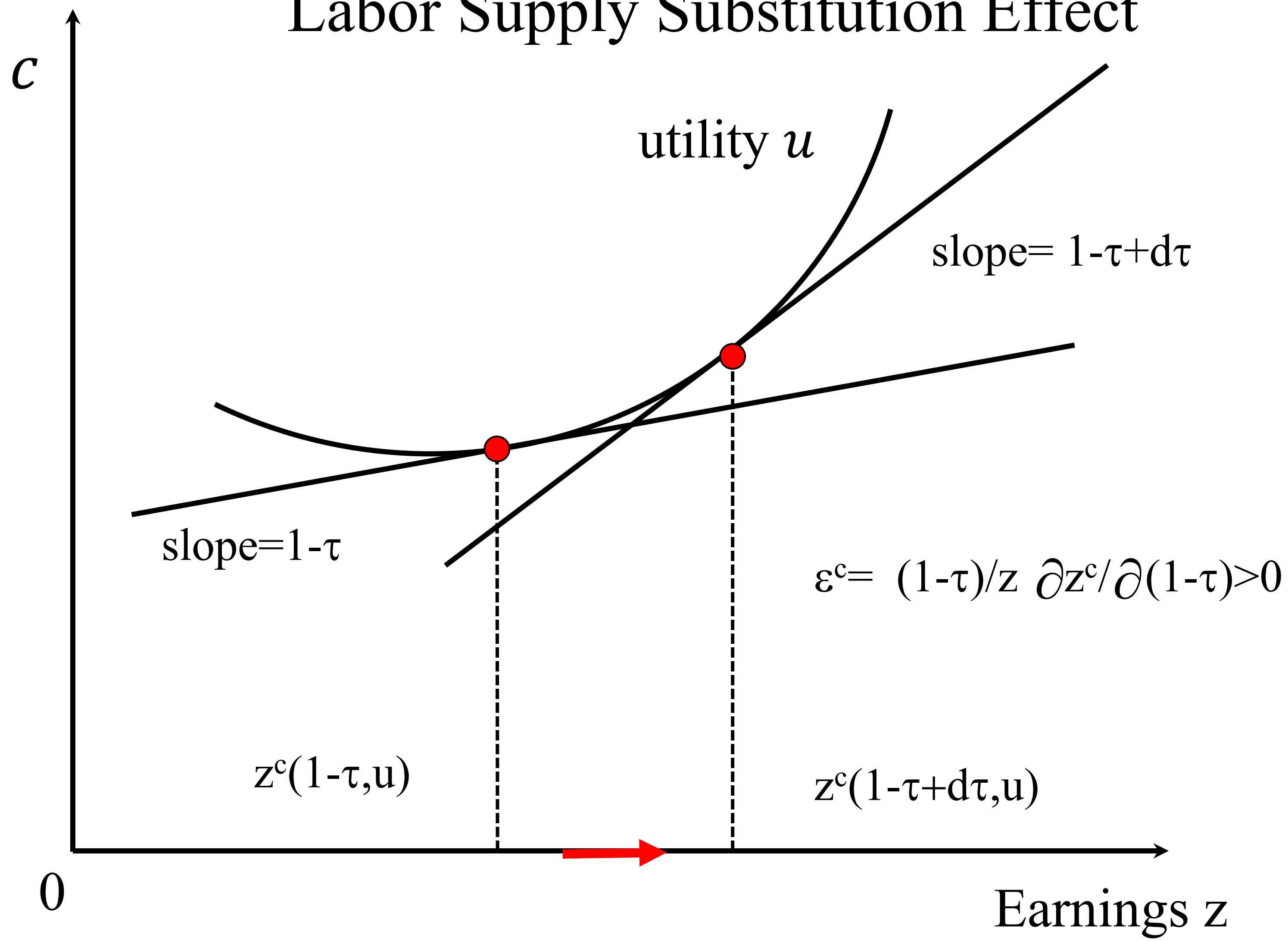
Labor Supply Theory



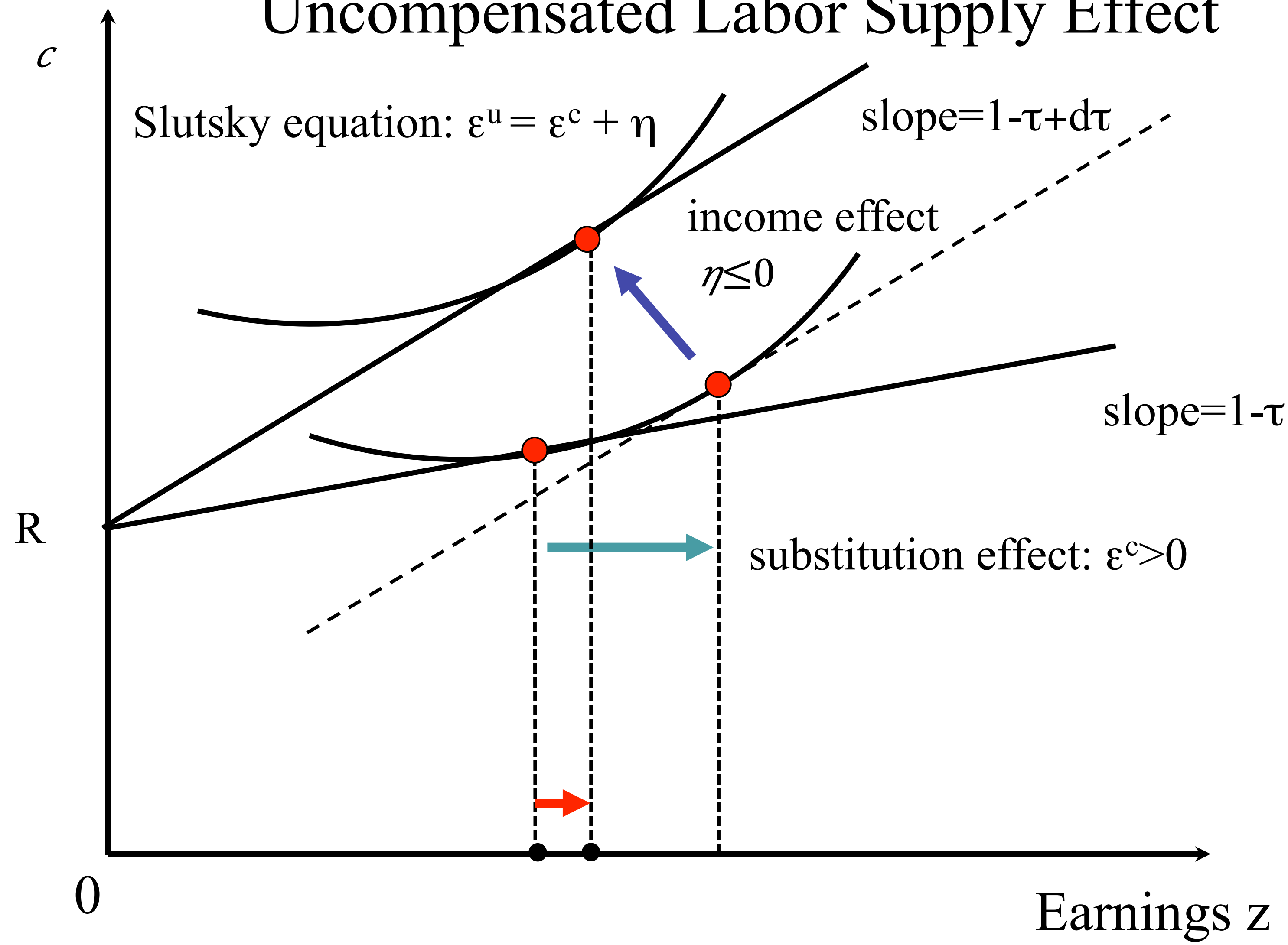
Labor Supply Income Effect



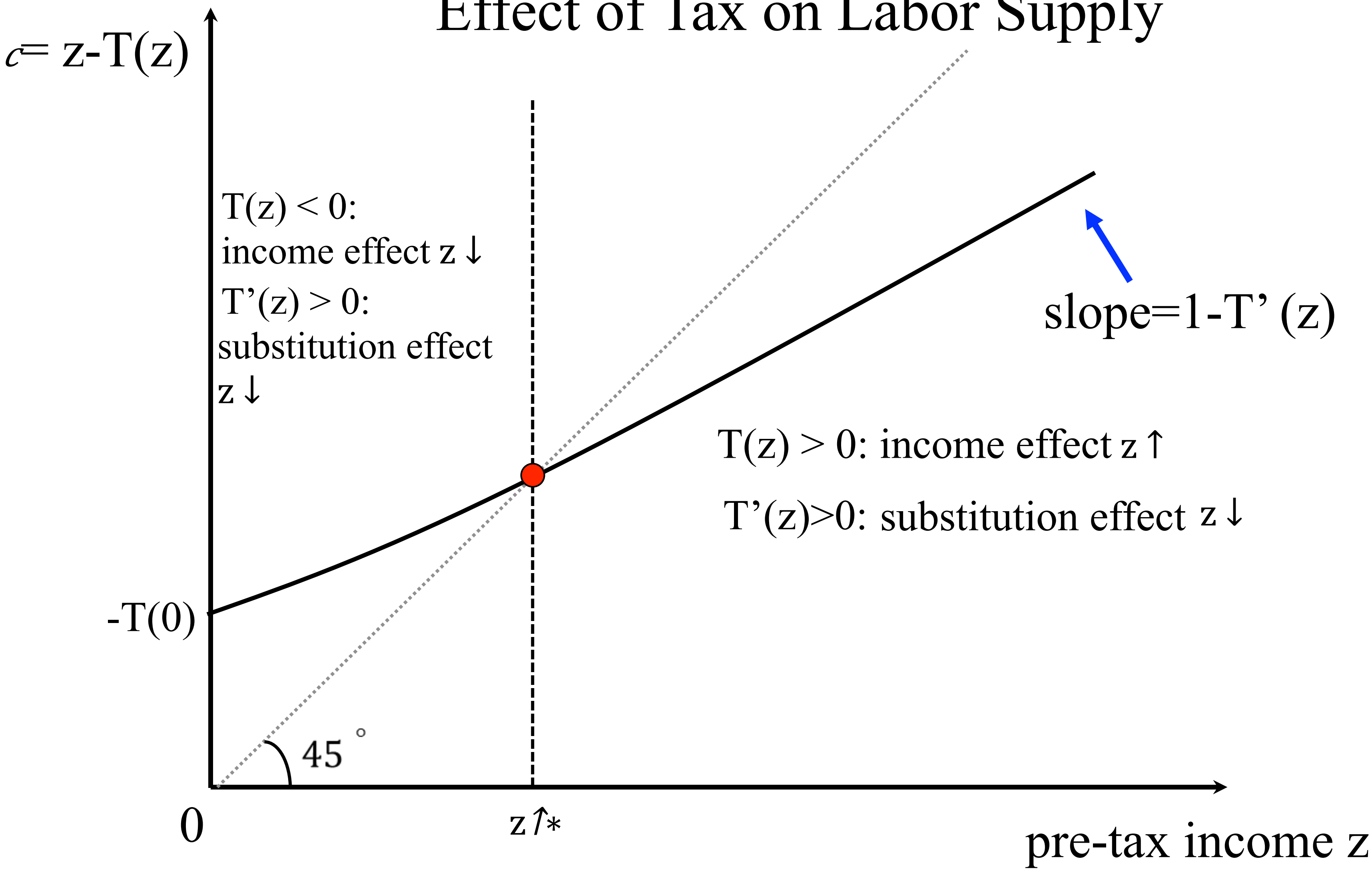
Labor Supply Substitution Effect



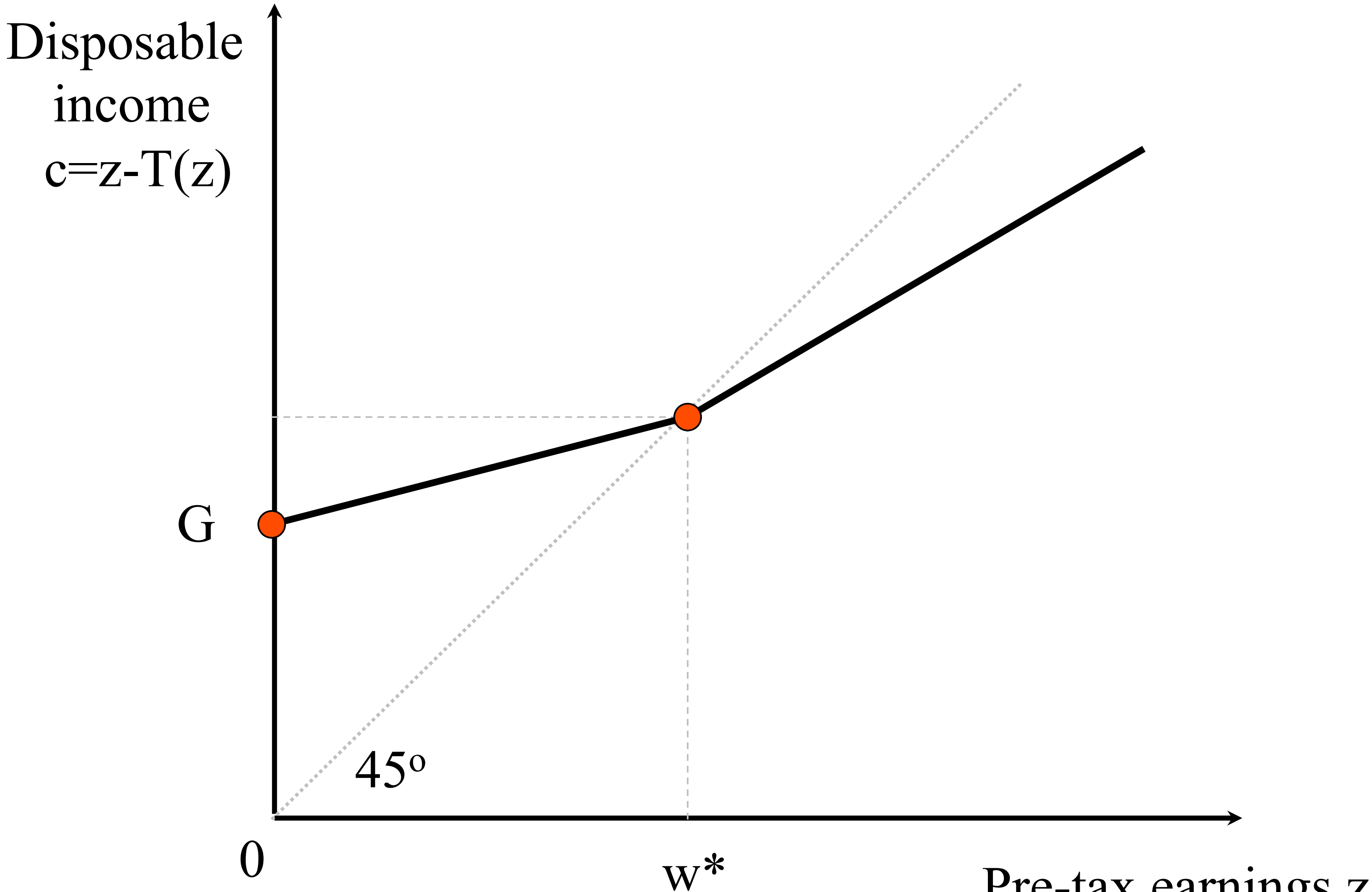
Uncompensated Labor Supply Effect



Effect of Tax on Labor Supply



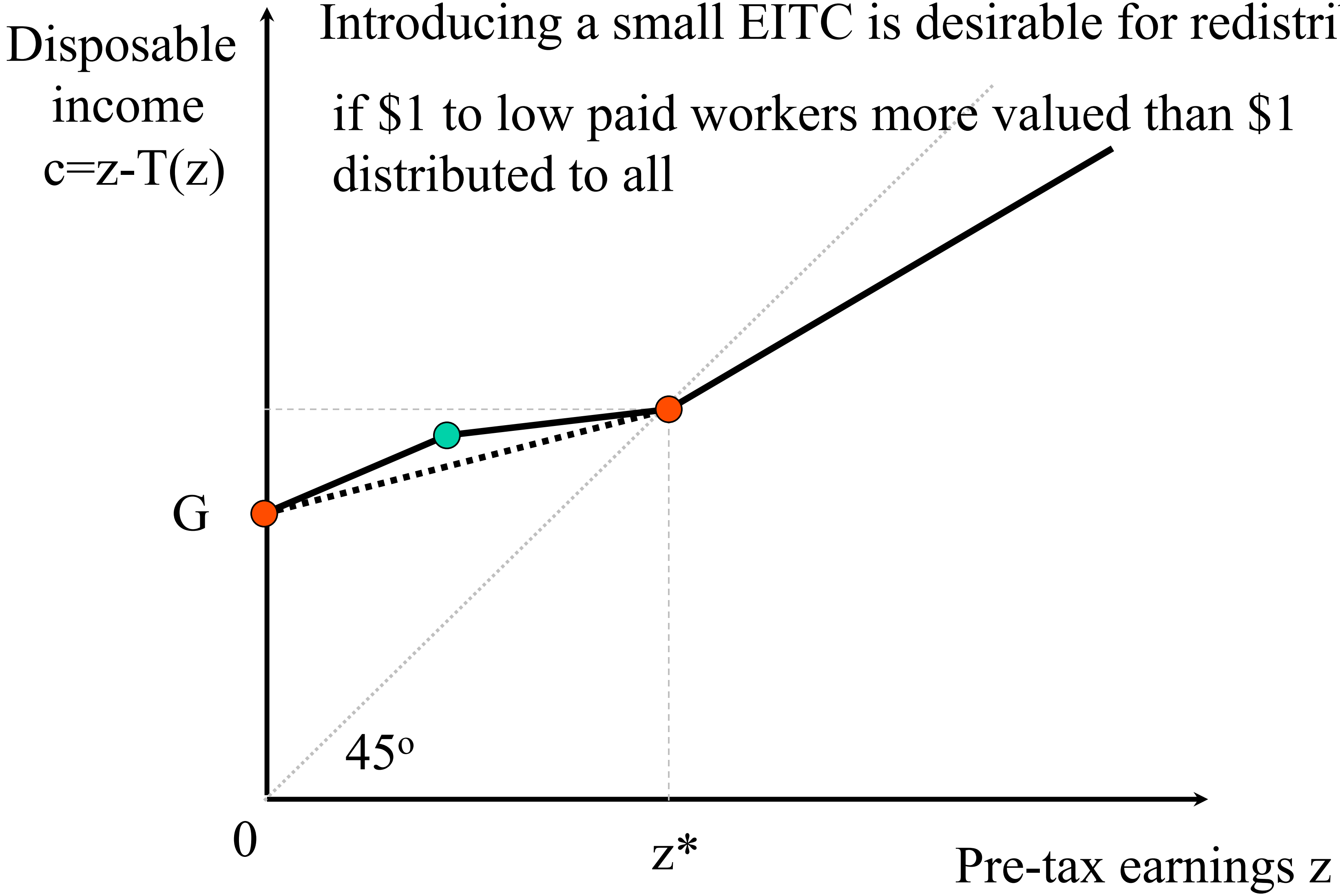
Starting from a Means-Tested Program



Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

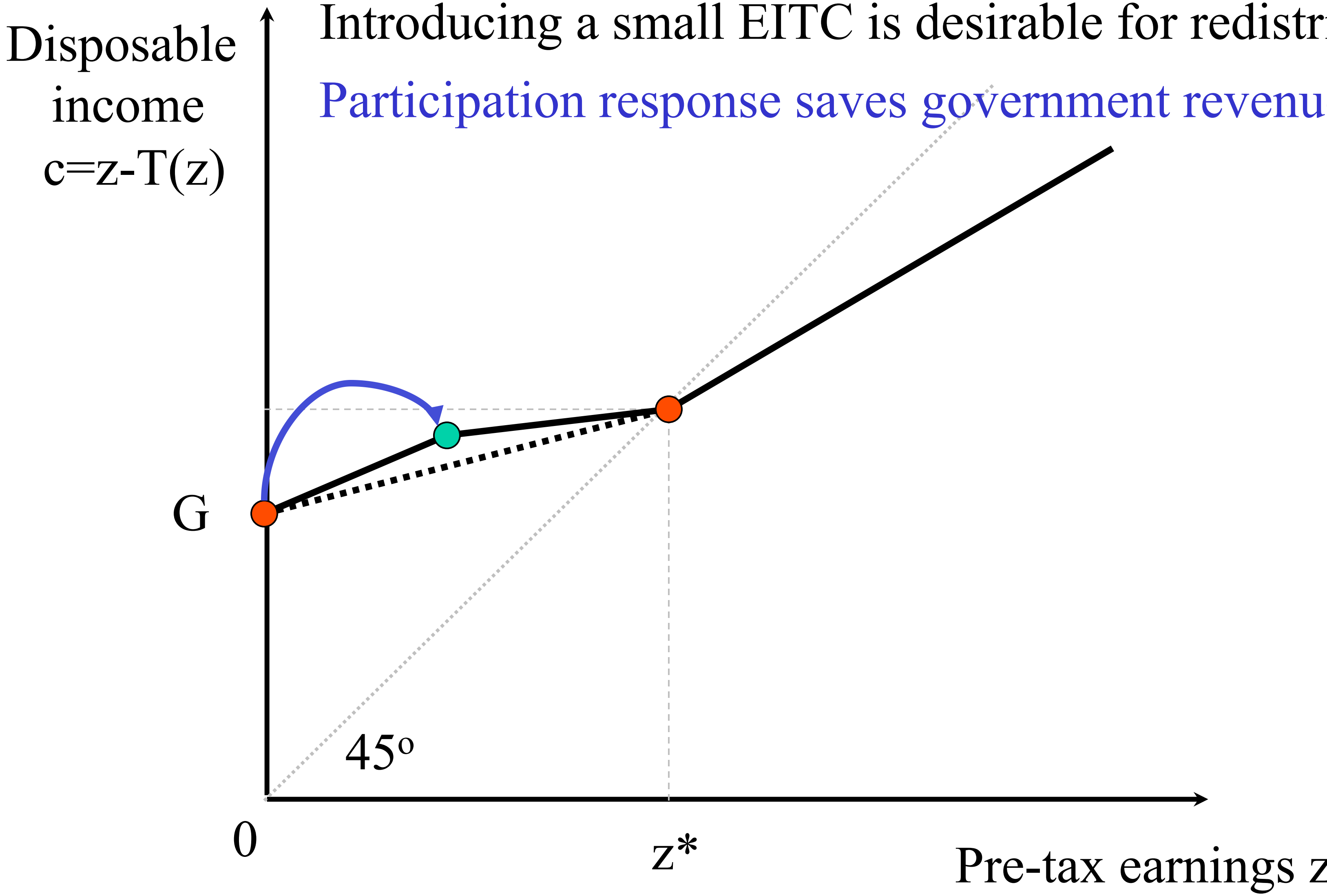
if \$1 to low paid workers more valued than \$1 distributed to all



Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

Participation response saves government revenue

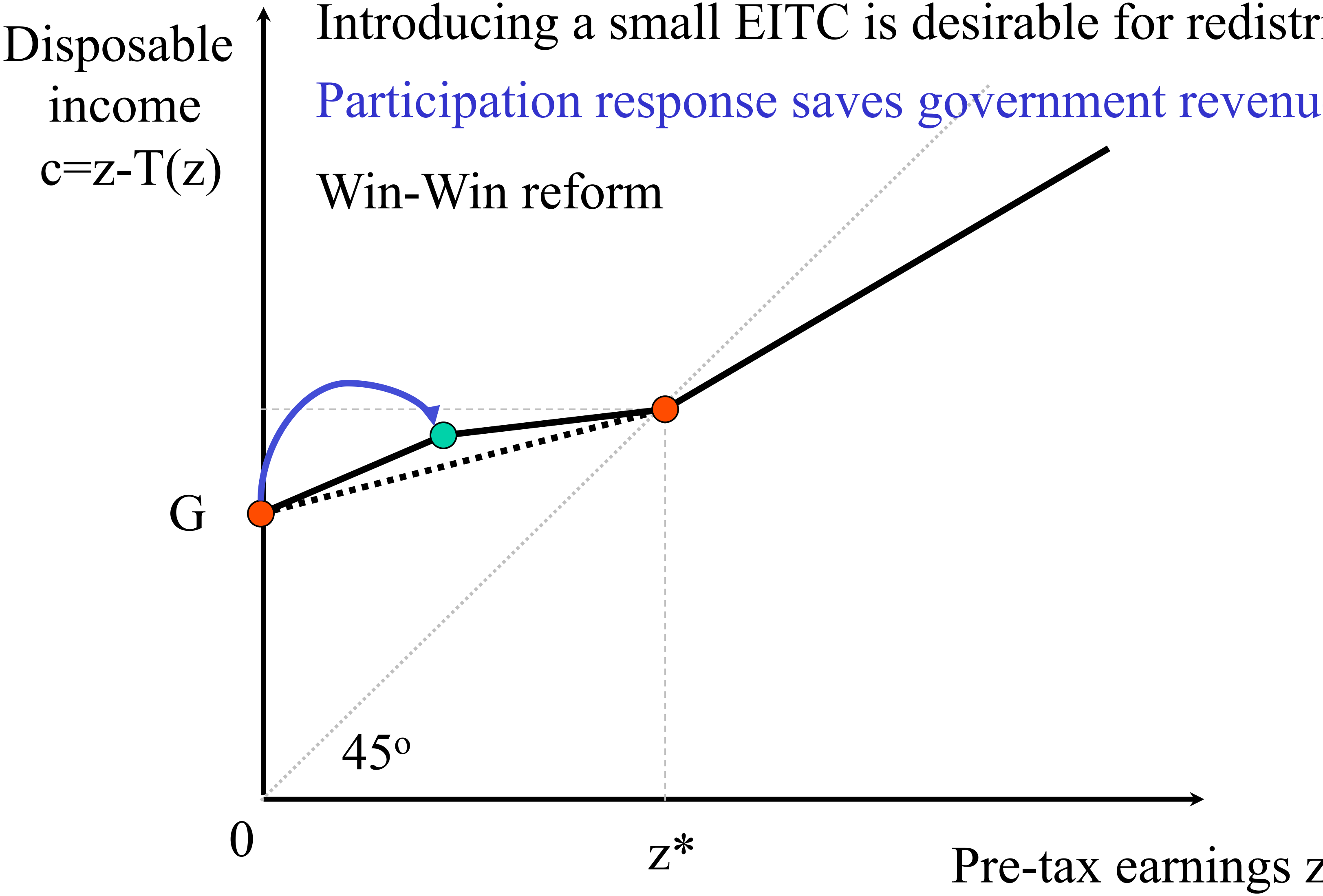


Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

Participation response saves government revenue

Win-Win reform

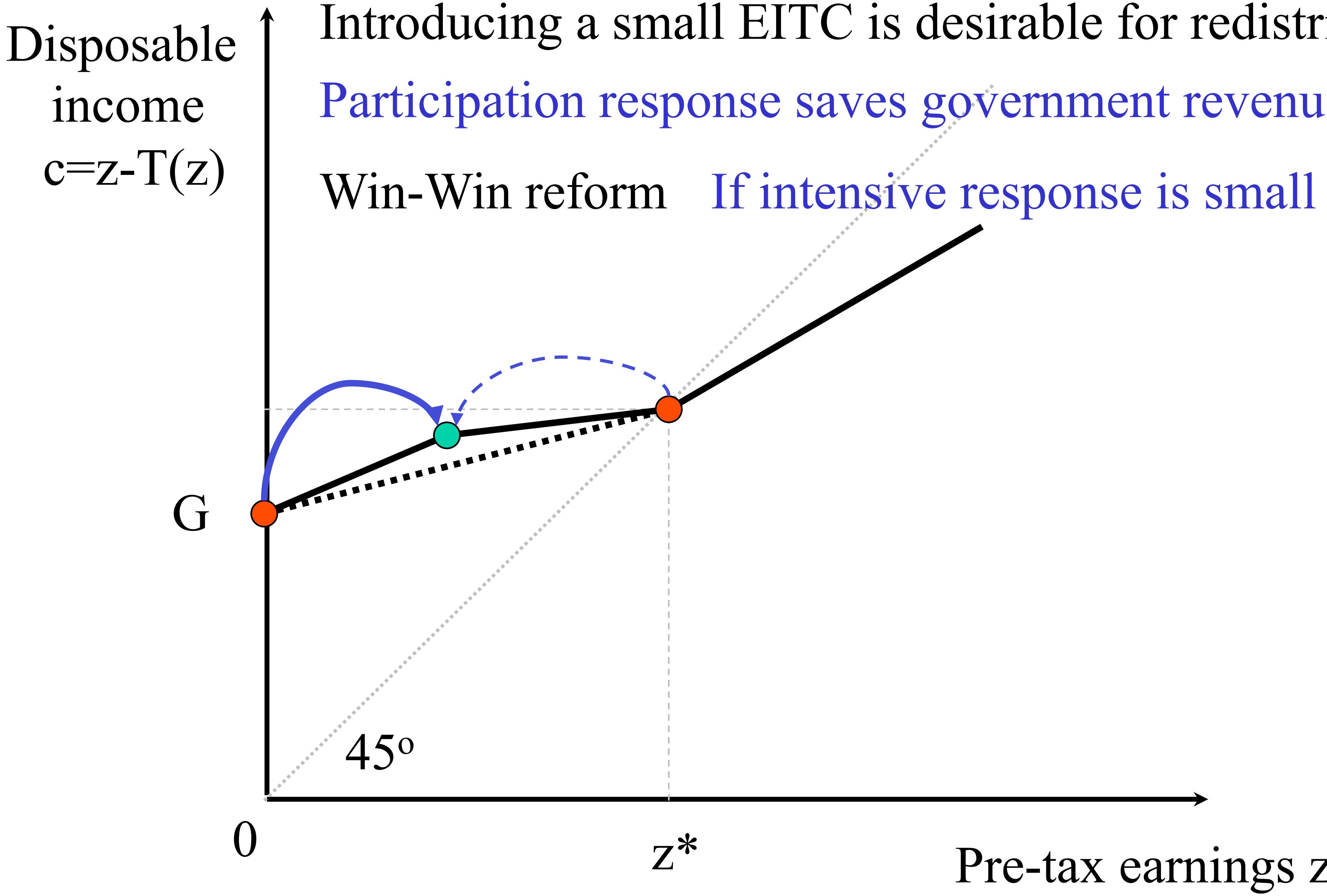


Starting from a Means-Tested Program

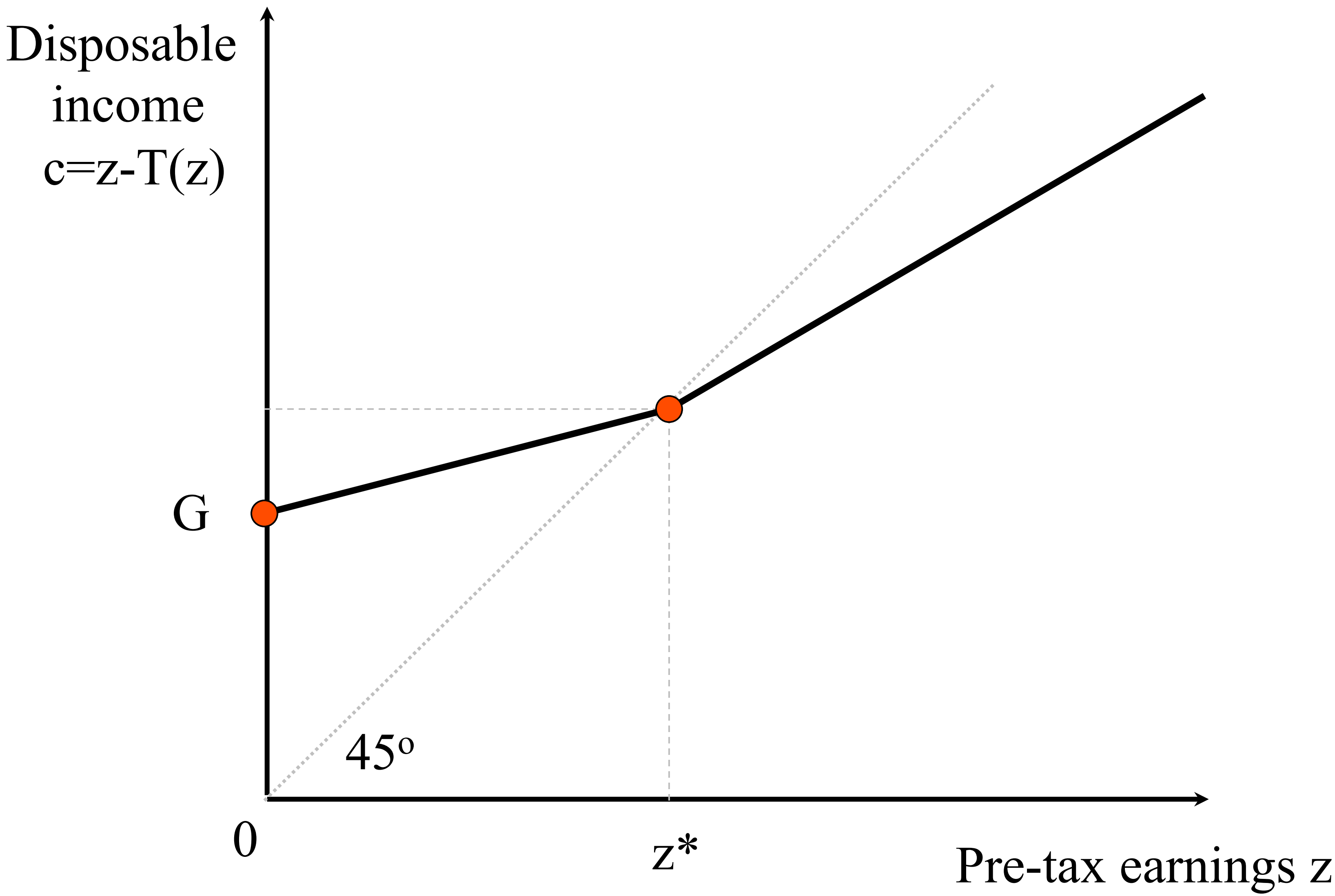
Introducing a small EITC is desirable for redistribution

Participation response saves government revenue

Win-Win reform If intensive response is small



Starting from a means-tested program

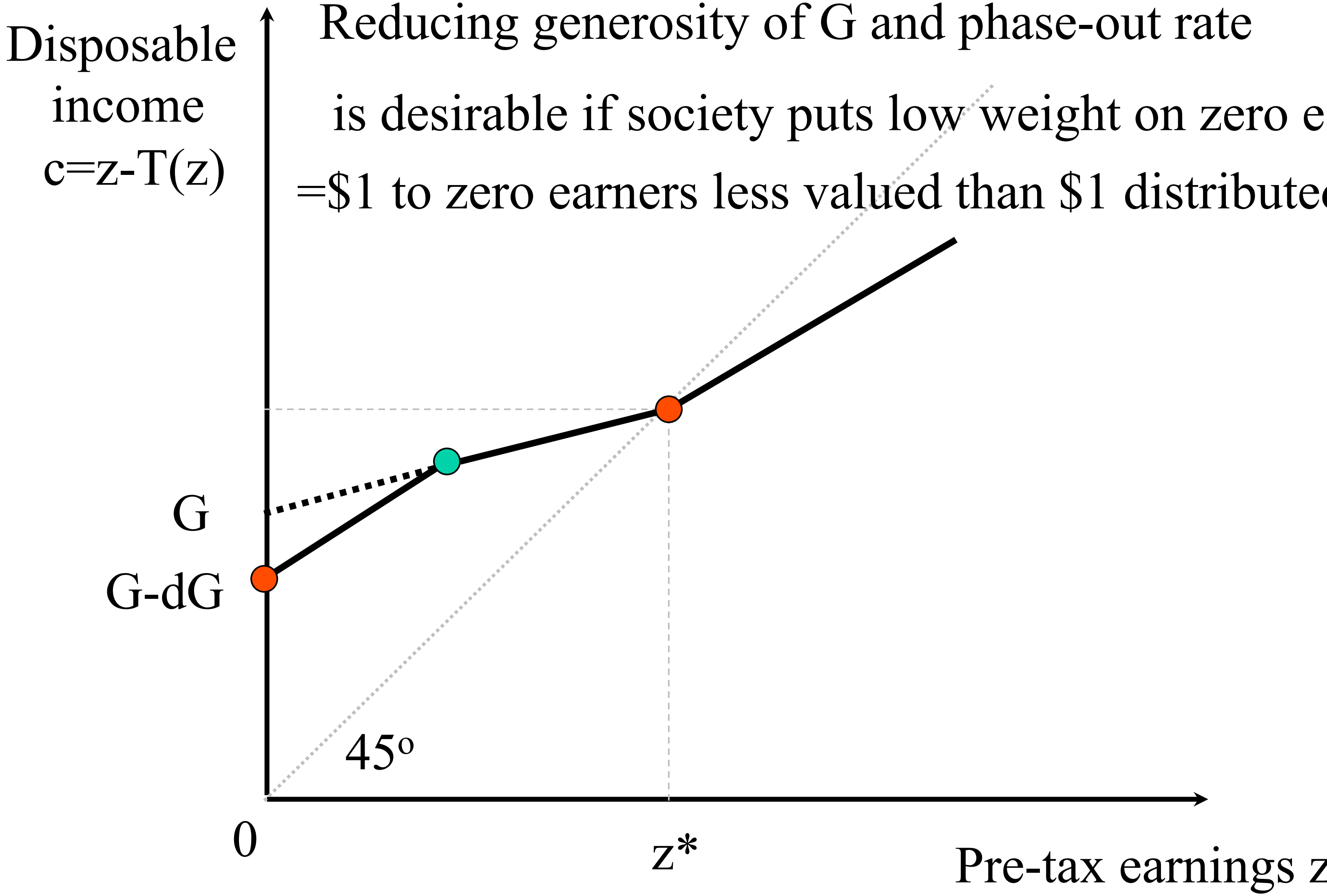


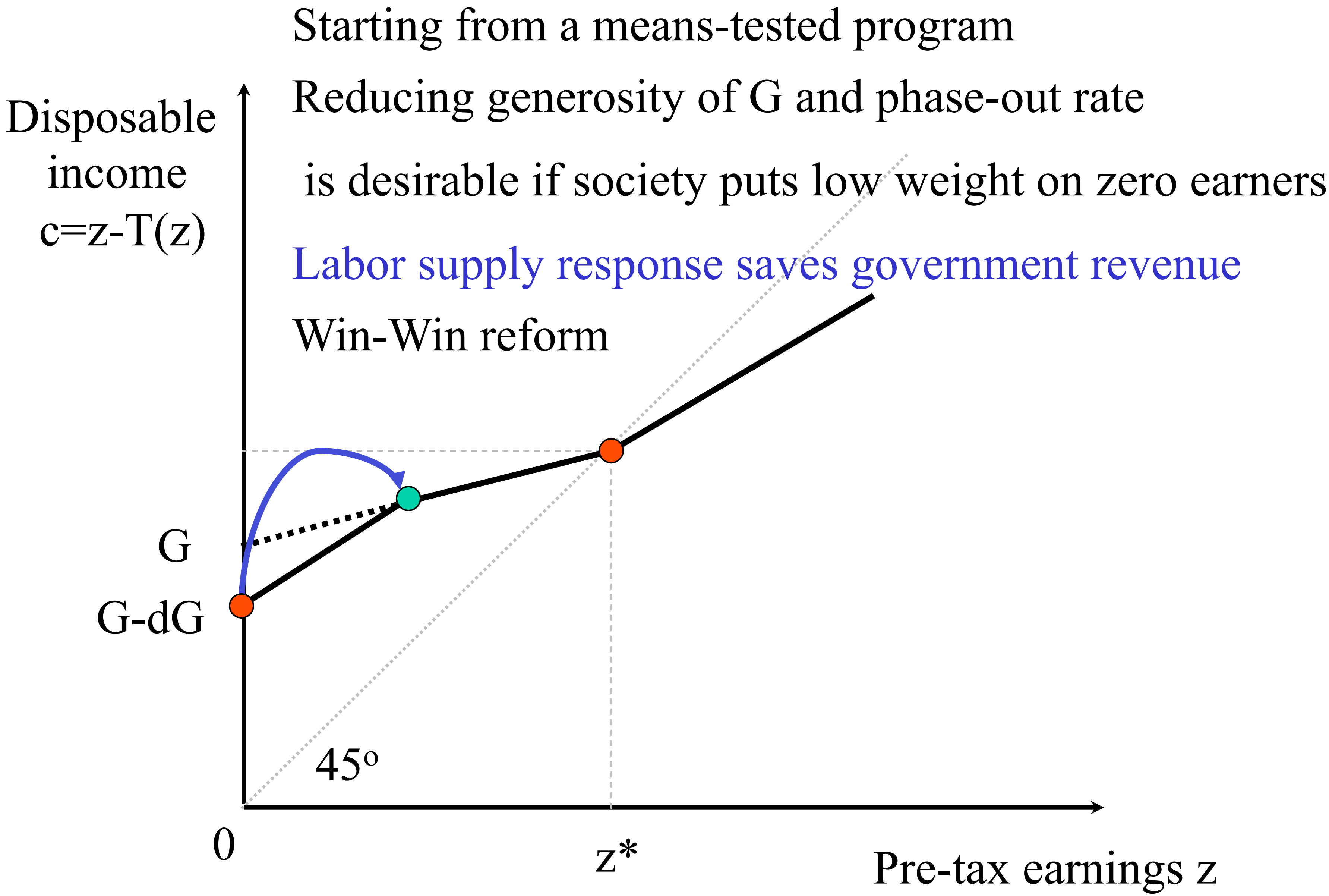
Starting from a means-tested program

Reducing generosity of G and phase-out rate

is desirable if society puts low weight on zero earners

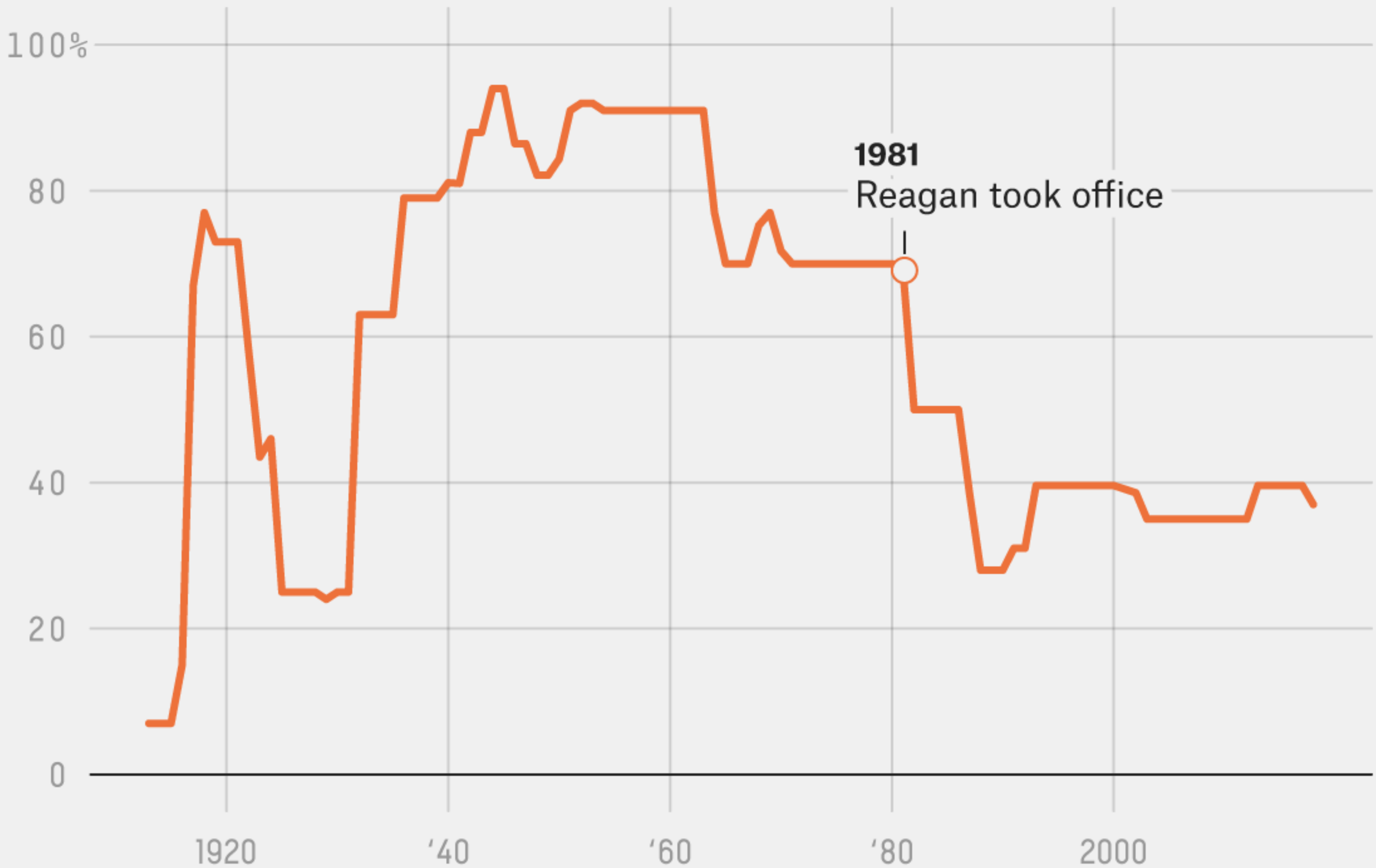
=$1 to zero earners less valued than $1 distributed to all




Starting from a means-tested program
Reducing generosity of G and phase-out rate
is desirable if society puts low weight on zero earners
Labor supply response saves government revenue
Win-Win reform
Disposable income c=z-T(z)
G
G-dG
45°
0
z*
Pre-tax earnings z

Historically, a 70 percent marginal tax rate is not unusual

The top marginal income tax rates from 1913 to 2018



FiveThirtyEight

SOURCE: TAX POLICY CENTER

Table 2: Revealed Social Preferences

	(1)	(2)	(3)	(4)
A. Consumption lover vs. Frugal				
	Consumption lover > Frugal	Consumption lover = Frugal	Consumption lover < Frugal	
# obs. = 1,125	4.1%	74.4%	21.5%	
B. Hardworking vs. leisure lover				
	Hardworking > Leisure lover	Hardworking = Leisure lover	Hardworking < Leisure lover	
# obs. = 1,121	42.7%	54.4%	2.9%	
C. Transfer Recipients and free loaders				
# obs. = 1,098	Disabled person unable to work	Unemployed looking for work	Unemployed not looking for work	Welfare recipient not looking for work
Average rank (1-4) assigned	1.4	1.6	3.0	3.5
% assigned first rank	57.5%	37.3%	2.7%	2.5%
% assigned last rank	2.3%	2.9%	25.0%	70.8%

Notes: This table reports preferences for giving a tax break and or a benefit increase across individuals in various scenarios. Panel A considers two individuals with the same earnings, same taxes, and same disposable income but high marginal utility of income (consumption lover) vs. low marginal utility of income (frugal). In contrast to utilitarianism, 74% of people report that consumption loving is irrelevant and 21.5% think the frugal person is most deserving. Panel B considers two individuals with the same earnings, same taxes, and same disposable income but different wage rates and hence different work hours. 54.4% think hours of work is irrelevant and 42.7% think the hardworking low wage person is more deserving. Panel C considers transfer recipients receiving the same benefit levels. Subjects find the disabled person unable to work and the unemployed person looking for work much more deserving than the abled bodied unemployed or welfare recipient not looking for work.

We assume now that the government can increase benefits by $1,000 for some recipients of government benefits.

Which of the following four individuals is most deserving of the $1,000 increase in benefits?

Please drag and drop the four individuals into the appropriate boxes on the left. The upper box, marked 1 should contain the individual you think is most deserving. The box labeled "2" should contain the second most-deserving individual, etc.. Please note that you can put two individuals in the same box if you think that they are equally deserving.

Individual A gets $15,000 per year in Disability Benefits because she cannot work due to a disability and has no other resources.

Individual B gets $15,000 per year in Unemployment Benefits and has no other resources. She lost her job and has not been able to find a new job even though she has been actively looking for one.

Individual C gets $15,000 pear year in Unemployment Benefits and has no other resources. She lost her job but has not been looking actively for a new job, because she prefers getting less but not having to work.

Individual D gets $15,000 per year in Welfare Benefits and Food Stamps and has no other resources. She is not looking for a job actively because she can get by living off those government provided benefits.

Source: survey in Saez and Stantcheva (2013)

Which of the following two individuals is most deserving of a $1,000 tax break?

Individual A earns $30,000 per year, by working in two different jobs, 60 hours per week at $10/hour. She pays $6,000 in taxes and nets out $24,000. She is very hard-working but she does not have high-paying jobs so that her wage is low.

Individual B also earns the same amount, $30,000 per year, by working part-time for 20 hours per week at $30/hour. She also pays $6,000 in taxes and hence nets out $24,000. She has a good wage rate per hour, but she prefers working less and earning less to enjoy other, non-work activities.

- ○ Individual A is most deserving of the $1,000 tax break
- ○ Individual B is most deserving of the $1,000 tax break
- ○ Both individuals are exactly equally deserving of the $1,000 tax break

>>

Source: survey in Saez and Stantcheva (2013)

Which of the following two individuals do you think is most deserving of a $1,000 tax break?

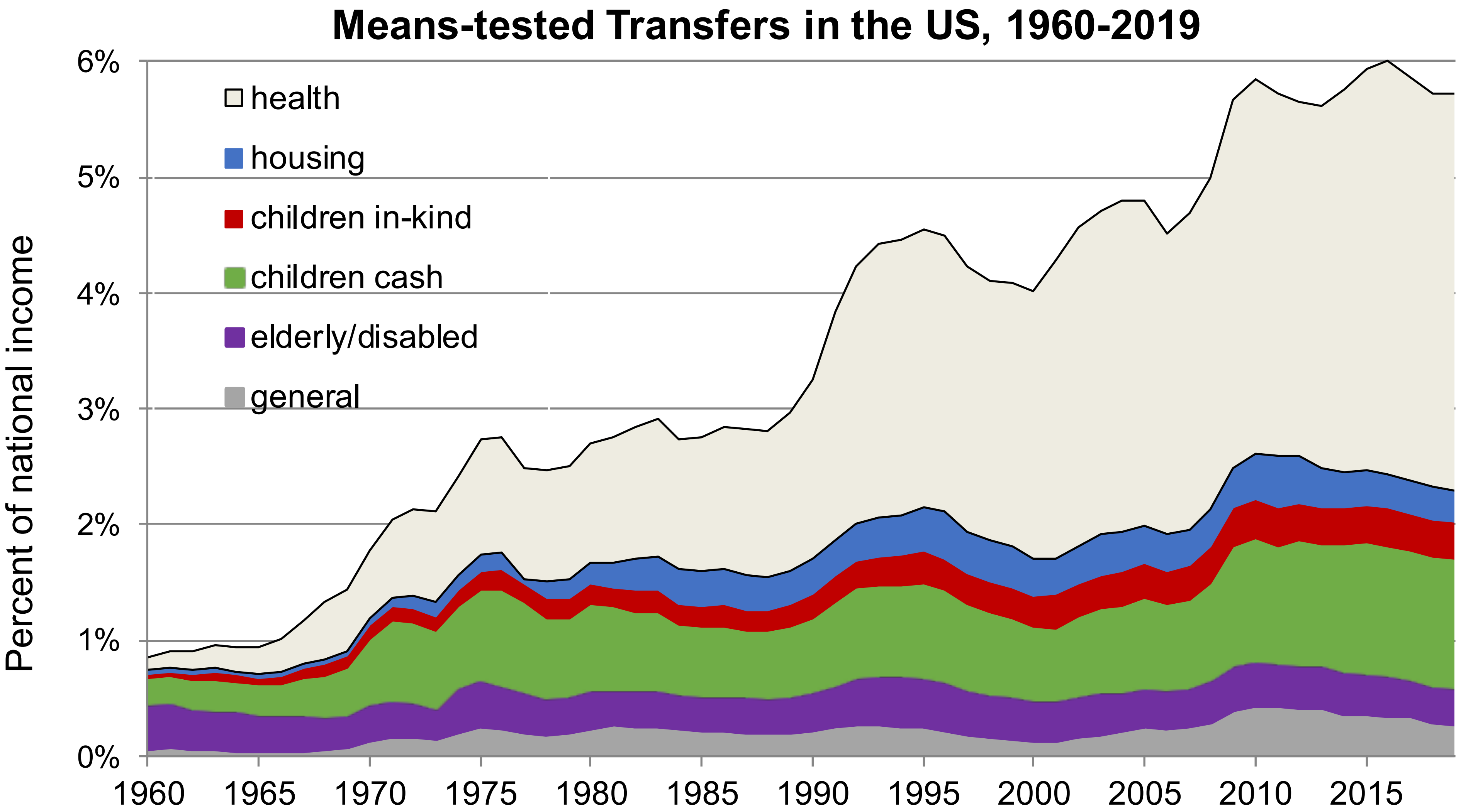
Individual A earns $50,000 per year, pays $10,000 in taxes and hence nets out $40,000. She greatly enjoys spending money, going out to expensive restaurants, or traveling to fancy destinations. She always feels that she has too little money to spend.

Individual B earns the same amount, $50,000 per year, also pays $10,000 in taxes and hence also nets out $40,000. However, she is a very frugal person who feels that her current income is sufficient to satisfy her needs.

- ○ Individual A is most deserving of the $1,000 tax break
- ○ Individual B is most deserving of the $1,000 tax break
- ○ Both individuals are exactly equally deserving of the tax $1,000 break

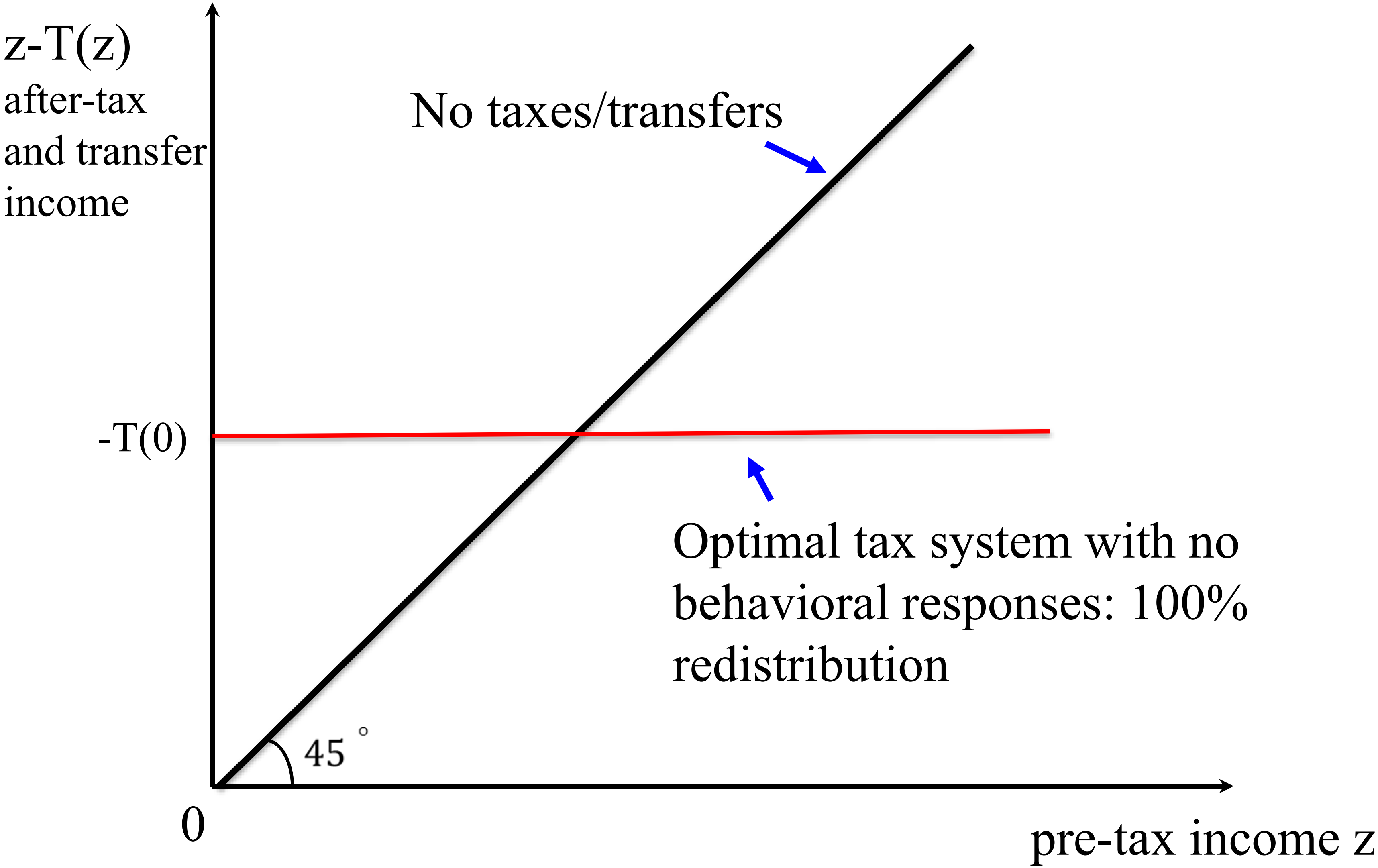
>>

Source: survey in Saez and Stantcheva (2013)

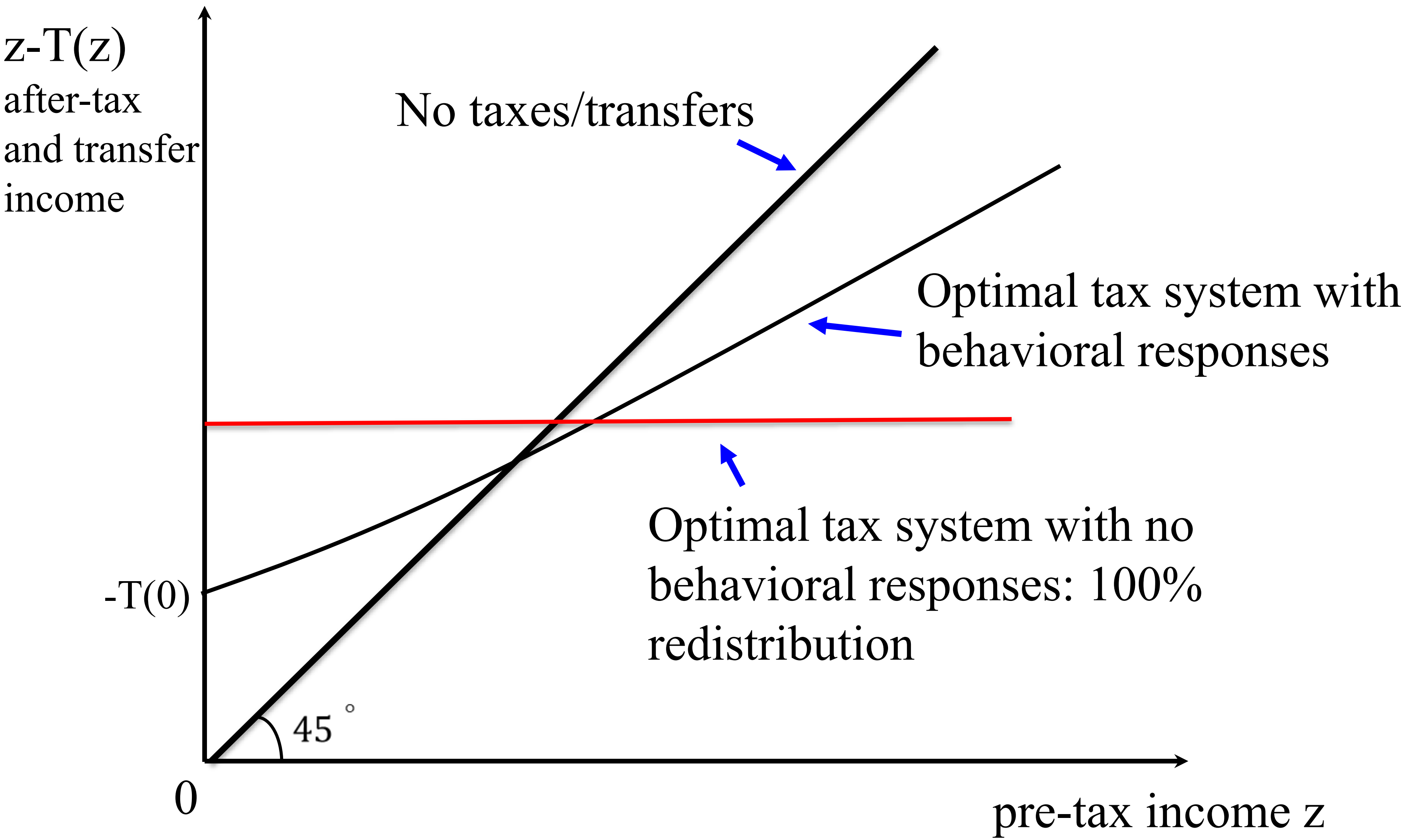


Source. National Accounts. Includes all individualized and means-tested transfers. General is untargetted (SNAP and general assistance for adults). Children cash includes refundable tax credits (EITC+CTC), TANF, and SNAP for children. Health is mostly Medicaid.

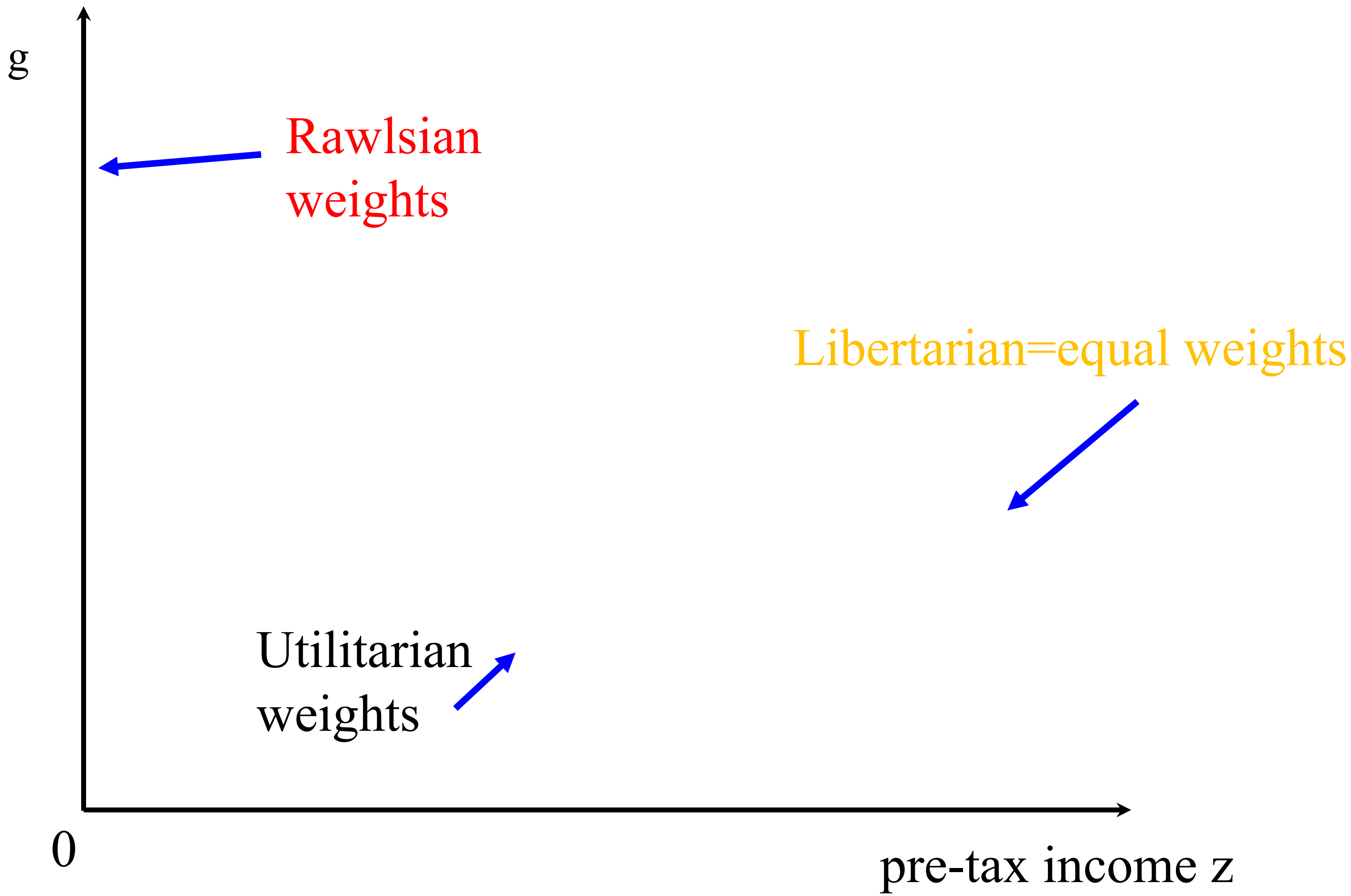
Optimal Tax/Transfer Systems



Optimal Tax/Transfer Systems



Social Marginal Welfare Weights



Social Marginal Welfare Weights

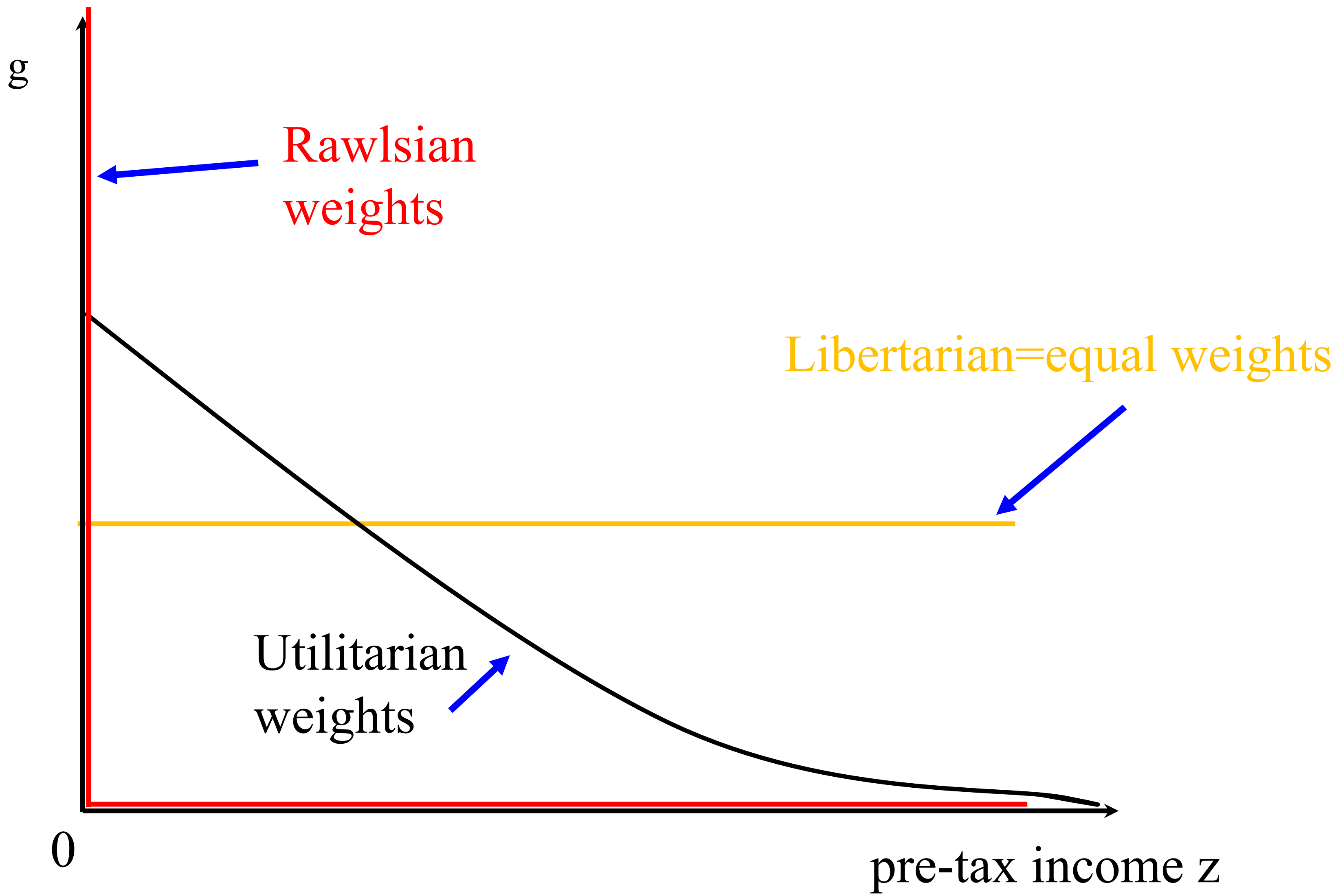
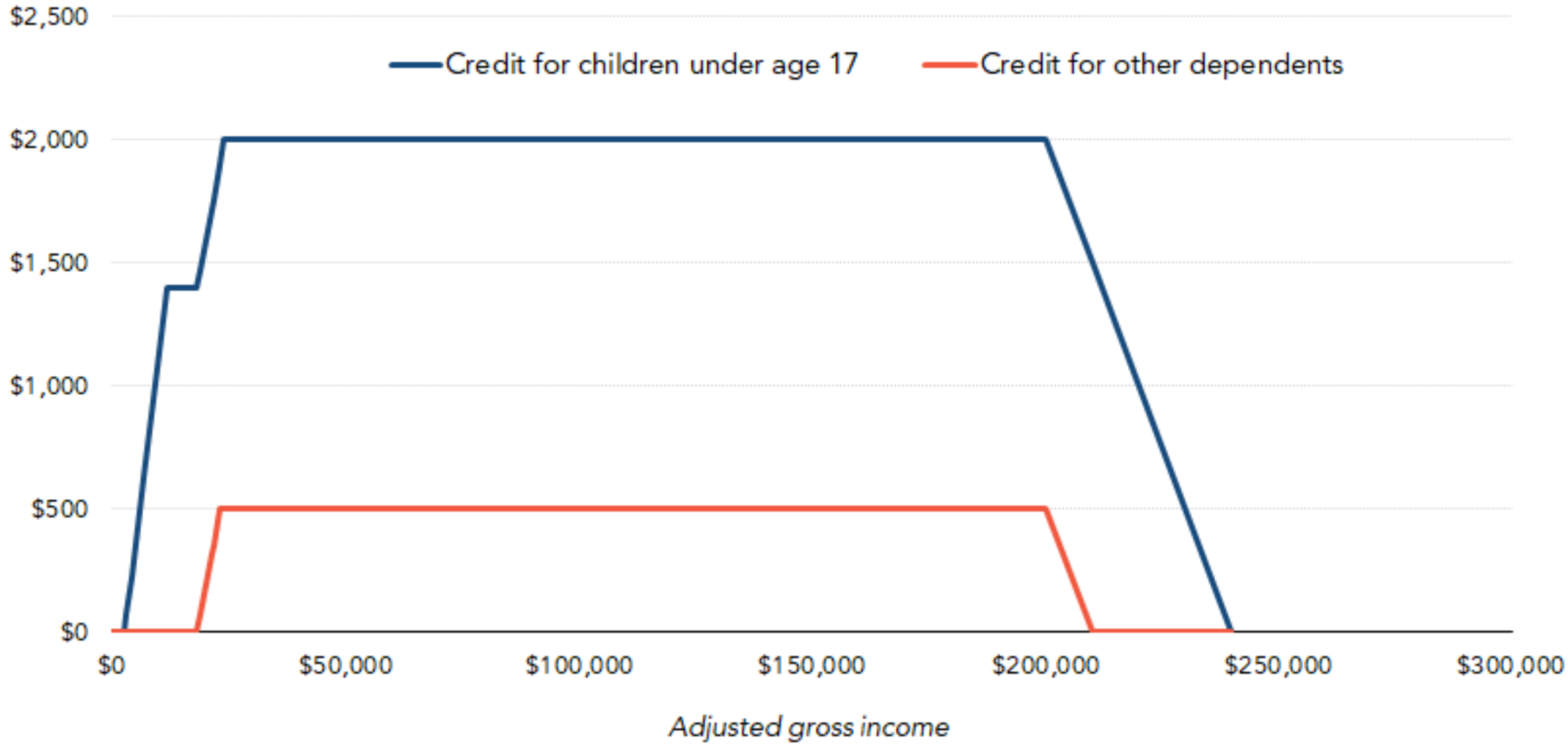


FIGURE 1

Child Tax Credit, Single Parent

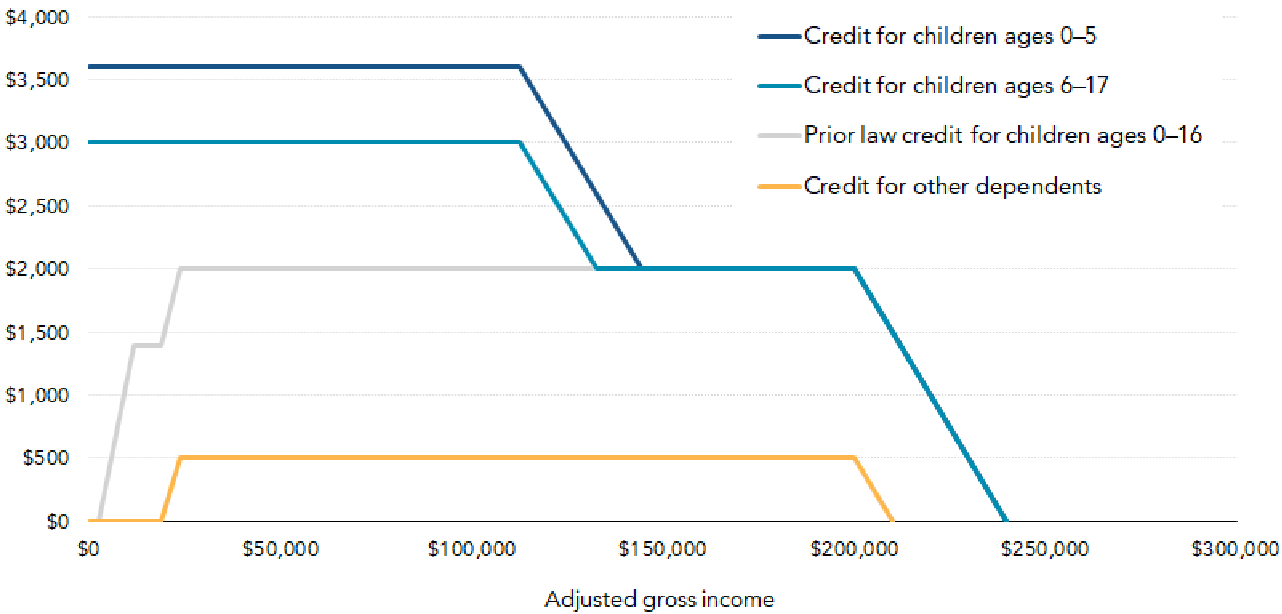
For one child, tax year 2020



Source: Urban-Brookings Tax Policy Center calculations.
Notes: Assumes all income comes from earnings, and child meets all tests to be a CTC-qualifying dependent. Credit for married parents begins to phase out at $400,000 of income. Only citizen children qualify for the $2,000 CTC for children under 17. Noncitizens under age 17 who meet the dependency tests of eligibility can qualify for the credit for dependents over age 17.

FIGURE 1

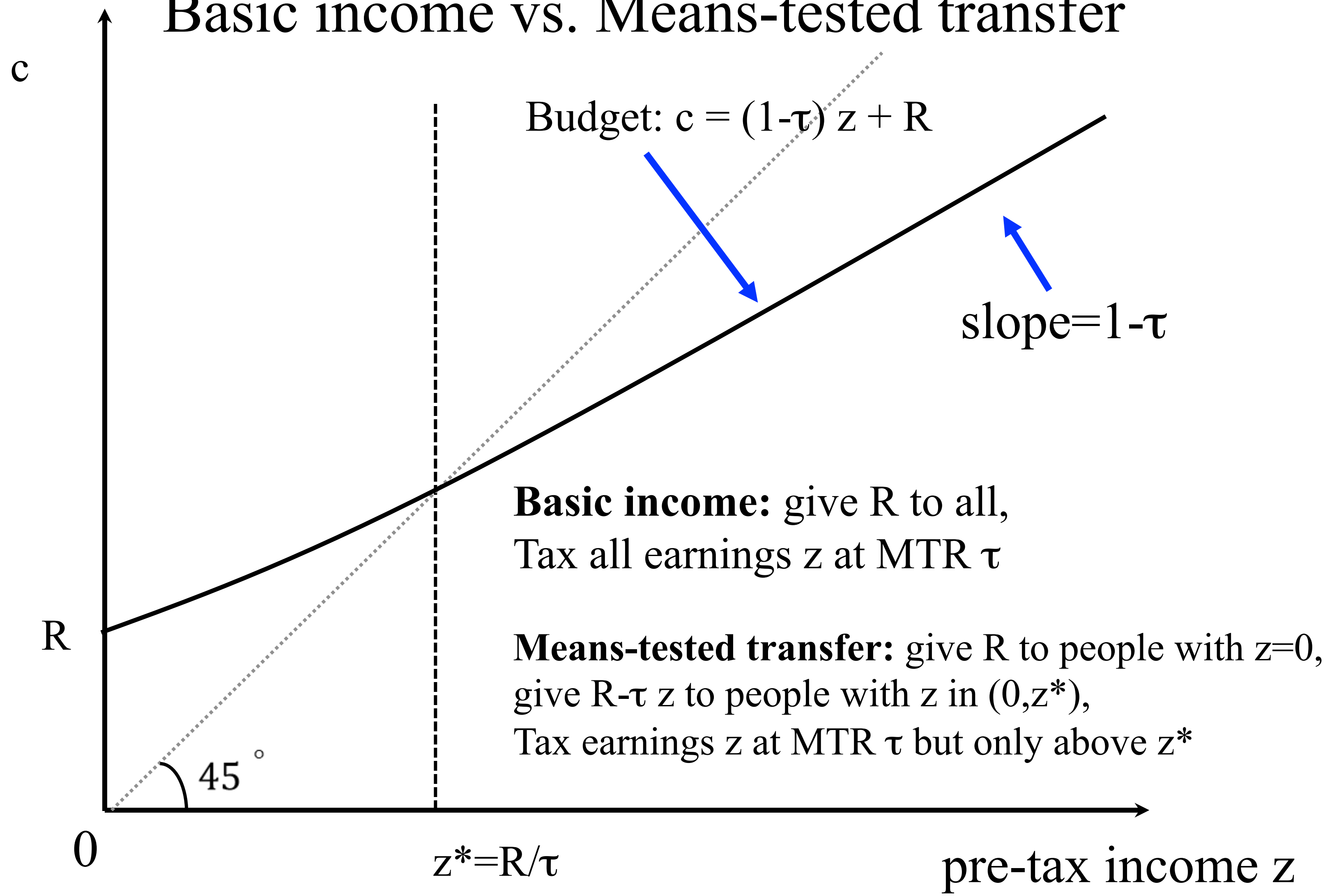
Child Tax Credit, Single Parent
For one child, tax year 2021



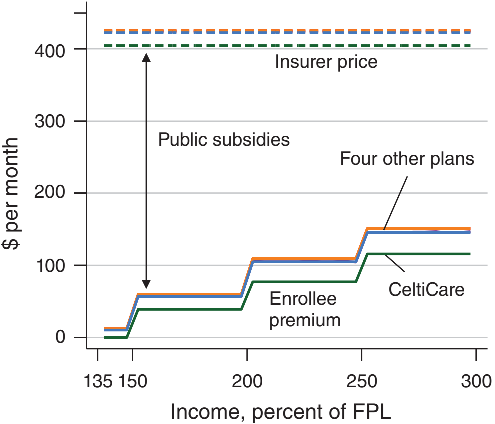
Source: Urban-Brookings Tax Policy Center calculations.

Notes: Assumes all income comes from earnings, and child meets all tests to be a CTC-qualifying dependent. $3,000 and $3,600 credits are fully refundable; prior law limited refunds to $1,400 out of the maximum $2,000 credit. Credit for married parents first phases out at $150,000 of income until credit reaches pre-2021 level; begins second phase out at $400,000 of income. Only citizen children qualify for the $3,000 and $3,600 credits for children under 18. Noncitizens under age 18 who meet the dependency tests of eligibility can qualify other dependent credit.

Basic income vs. Means-tested transfer



Panel B. Prices, subsidies, and premiums in 2011



Source: Finkelstein, Hendren, Shepard AER'19

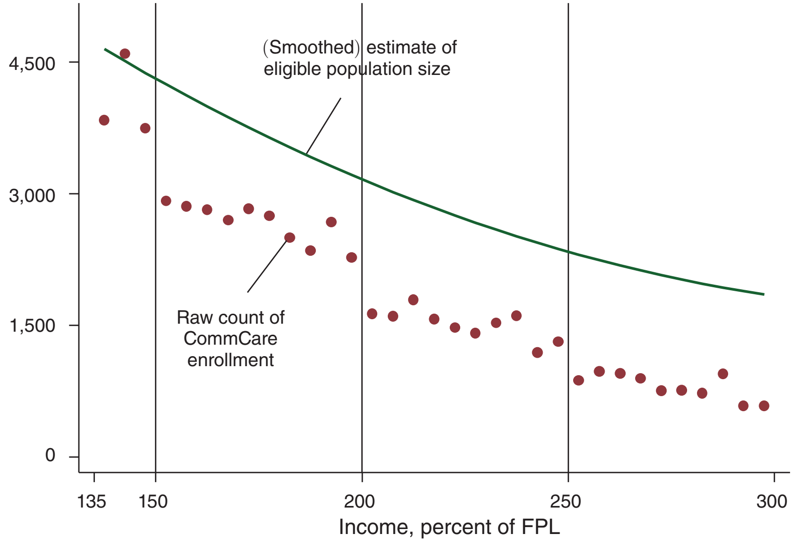


FIGURE 4. ELIGIBLE AND ENROLLED POPULATION, 2011

Notes: Figure shows our (smoothed) estimate of the CommCare-eligible population in 2011 (based on ACS data), and raw enrollment counts in CommCare in 2011 by bins of 5 percent of the FPL.