Optimal Labor Income Taxation

(follows loosely Chapters 20-21 of Gruber)

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TAXATION AND REDISTRIBUTION

Question: How much should government reduce inequality?

1) Governments use **taxes** to raise revenue

2) This revenue funds **public goods** and **social state**. Social state has 2 components:

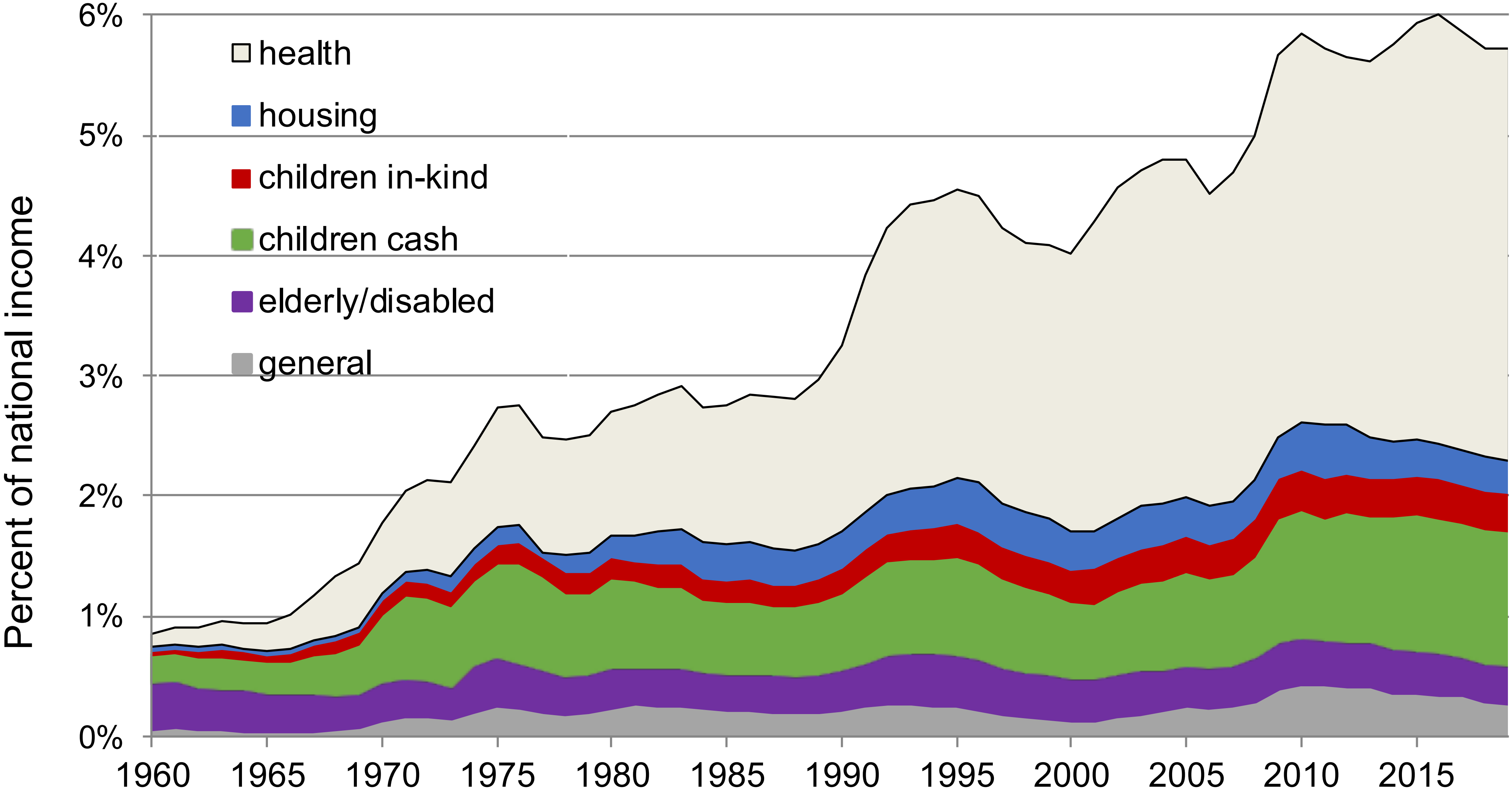
a) Universal programs: Education, Health Care (only 65+ in the US), Retirement and Disability

b) Means-tested programs: In-kind (e.g., public housing, nutrition, Medicaid in the US) and cash (direct welfare and refundable tax credits)

In rich countries, means-tested transfers relatively small relative to universal transfers

US is an exception with large means-tested transfers for health and children

Means-tested Transfers in the US, 1960-2019



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.

FACTS ON US TAXES AND TRANSFERS

References: Comprehensive description in Gruber undergrad textbook (taxes/transfers) and Slemrod-Bakija (taxes)

http://www.taxpolicycenter.org/taxfacts/

A) Taxes: (1) individual income tax (fed+state), (2) payroll taxes on earnings (fed, funds Social Security+Medicare), (3) corporate income tax (fed+state), (4) sales taxes (state)+excise taxes (state+fed), (5) property taxes (state)

B) Means-tested Transfers: (1) refundable tax credits (fed), (2) in-kind transfers (fed+state): Medicaid, public housing, nutrition (SNAP), education (3) cash welfare: TANF for single parents (fed+state), SSI for old/disabled (fed)

FEDERAL US INCOME TAX

US income tax assessed on **annual family** income (not individual) [most other OECD countries have shifted to individual assessment]

Sum all cash income sources from family members (both from labor and capital income sources) = called **Adjusted Gross Income (AGI)**

Main exclusions: fringe benefits (health insurance, pension contributions and returns), imputed rent of homeowners, undistributed corporate profits, unrealized capital gains

$\Rightarrow$ AGI base is only 70% of national income

FEDERAL US INCOME TAX

Taxable income = AGI - deductions

deduction is max of standard deduction or itemized deductions

Standard deduction is a fixed amount ($15K for singles, $30K for married couple in 2025)

Itemized deductions: (a) state and local taxes paid (up to $10K), (b) mortgage interest payments, (c) charitable giving, various small other items

About 10% of AGI lost through itemized deductions, called **tax expenditures**

FEDERAL US INCOME TAX: TAX BRACKETS

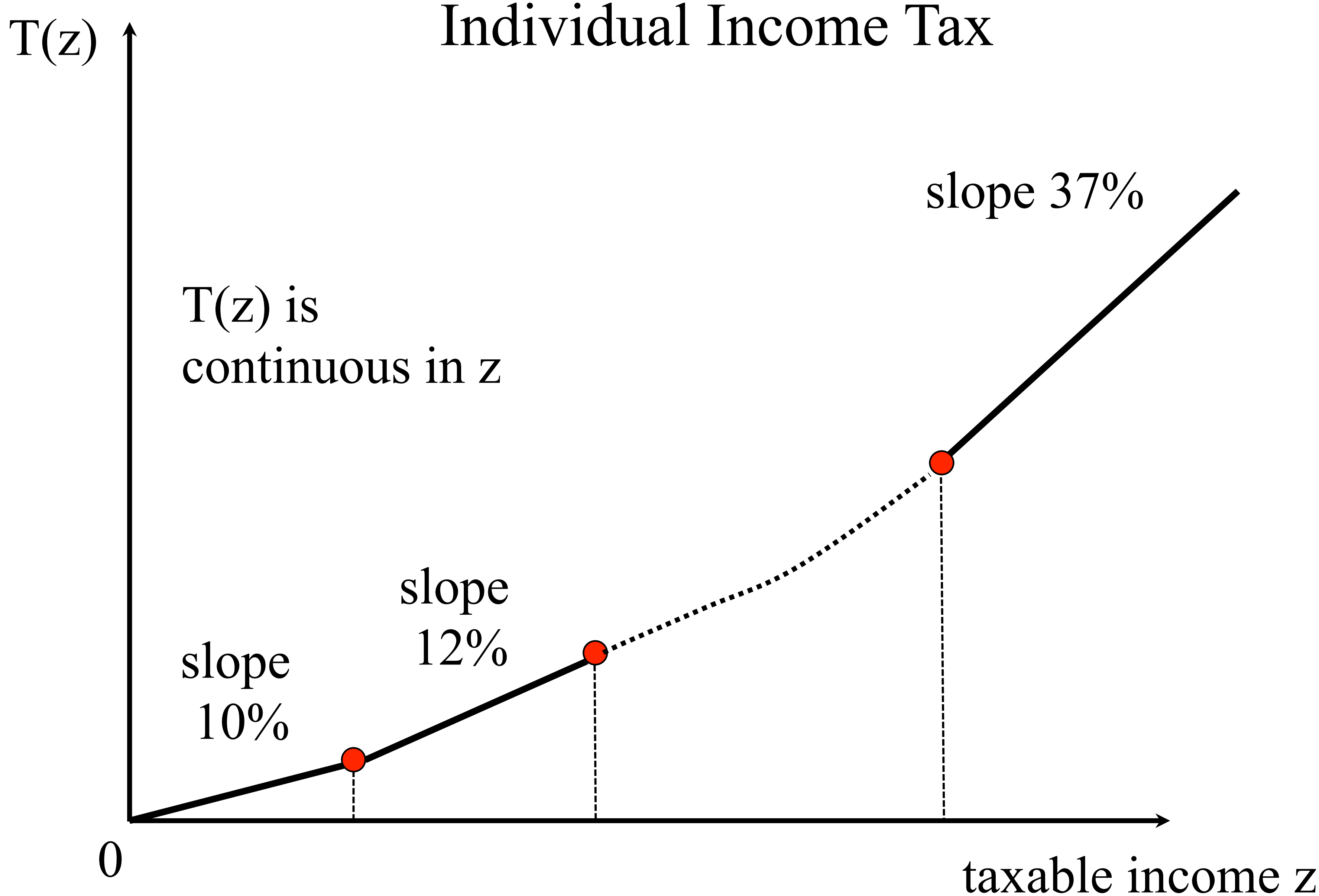
Tax $T(z)$ is piecewise linear and continuous function of taxable income z with constant marginal tax rates (MTR) $T'(z)$ by brackets

In 2018+, 6 brackets with MTR 10%,12%,22%,24%,32%,35%, 37% (top bracket for z above $600K), indexed on price inflation

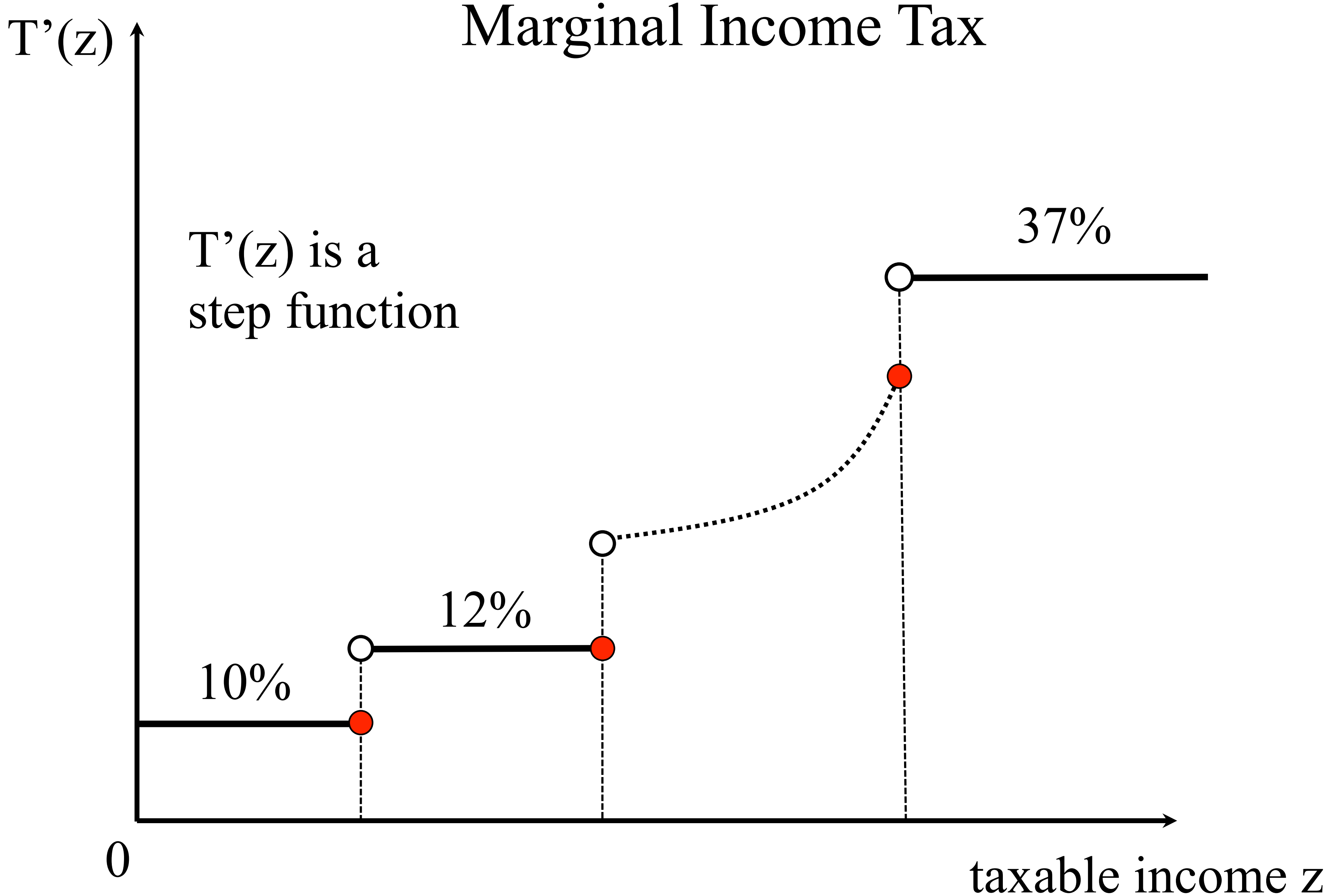
Lower preferential rates (up to a max of 20%) apply to dividends (since 2003), realized capital gains [in part to offset double taxation of corporate profits].

Tax rates change frequently over time. Top MTRs have declined drastically since 1960s (as in many OECD countries)

Individual Income Tax

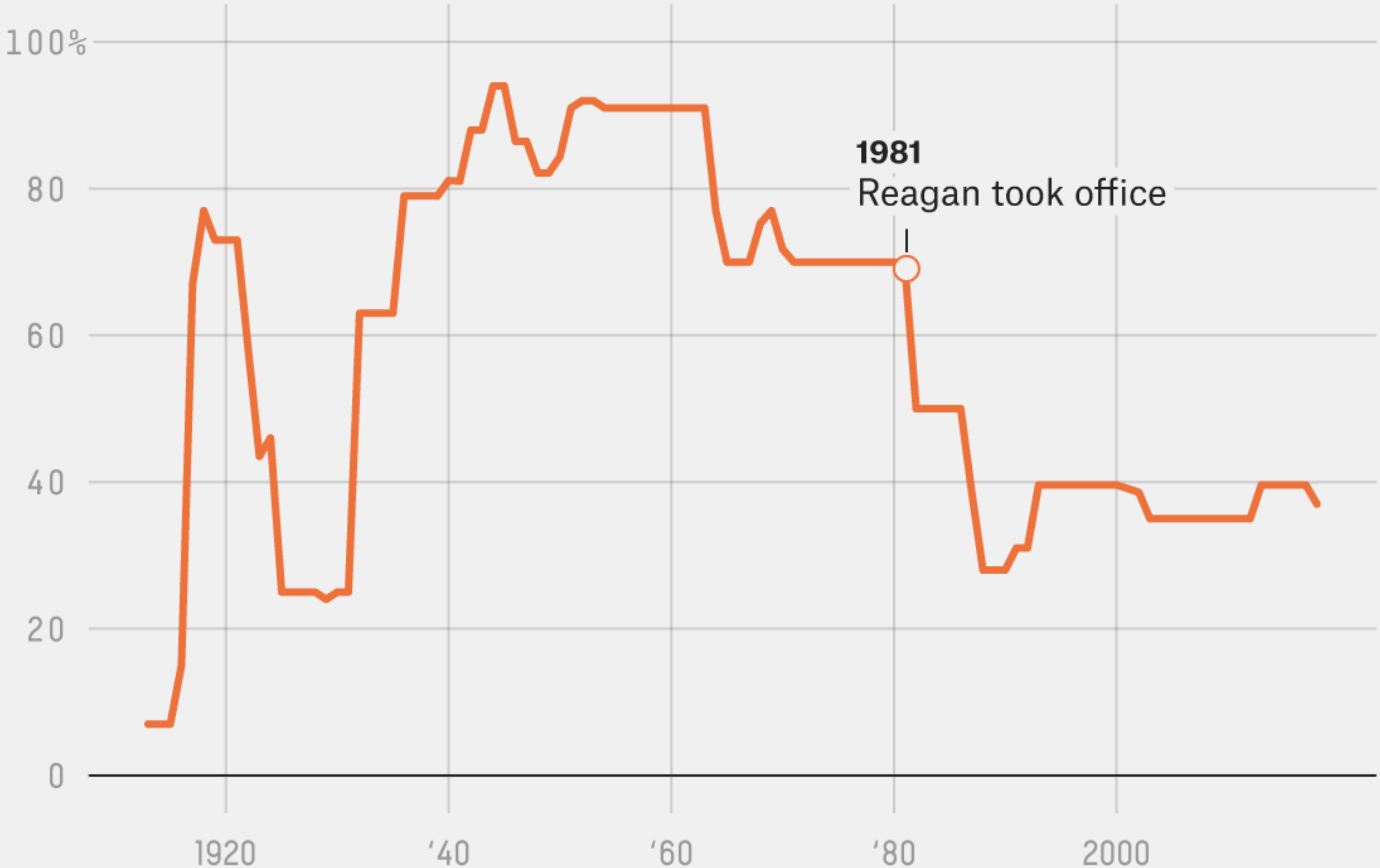


Marginal Income Tax



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

FEDERAL US INCOME TAX: TAX CREDITS

Tax credits: Additional reduction in taxes

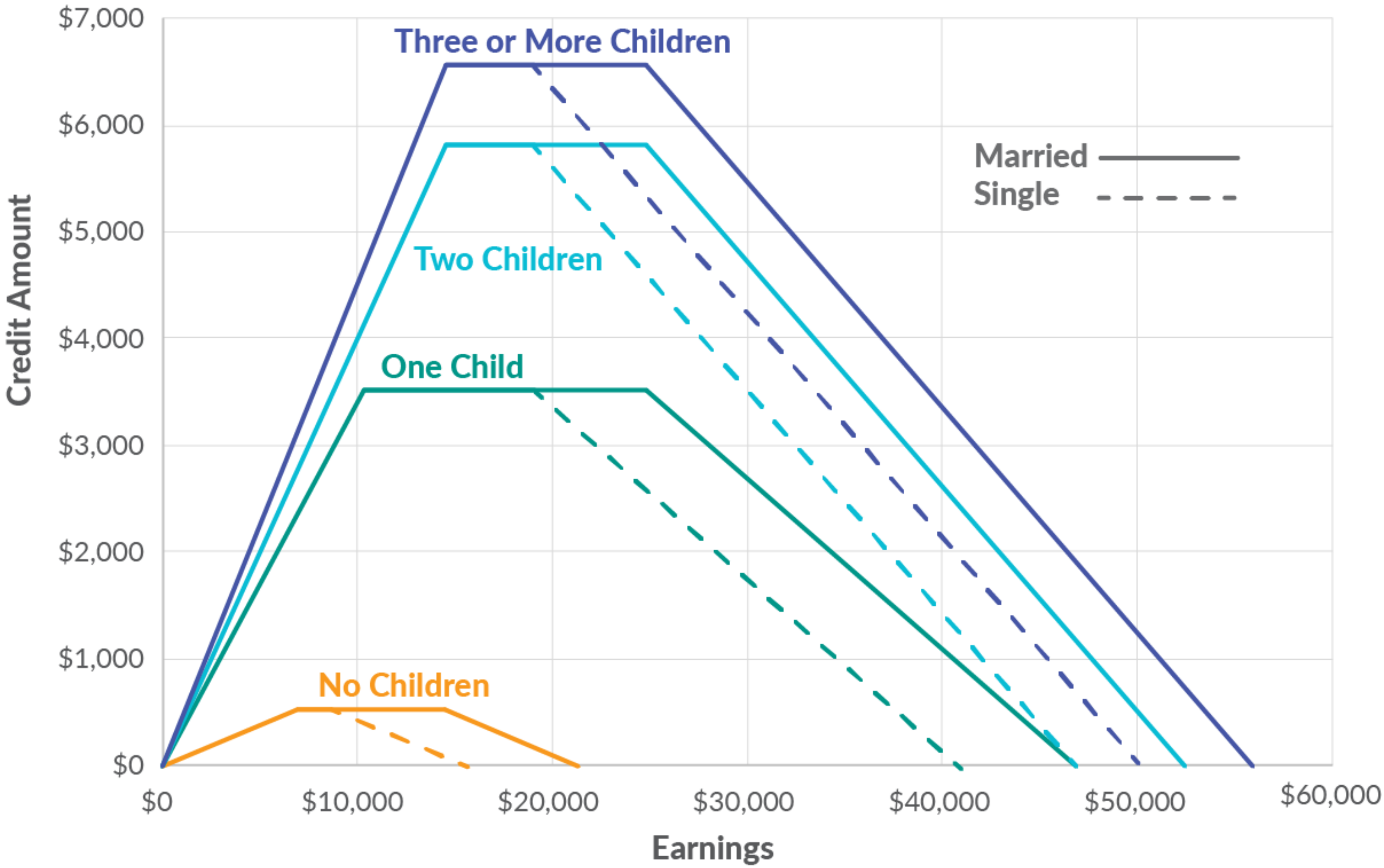
(1) **Non refundable** (cannot reduce taxes below zero): energy credits, foreign tax credit, child care expenses, education credits, and many others

(2) **Refundable** (can reduce taxes below zero, i.e., be net transfers): EITC (earned income tax credit, up to $4.3K, $7.1K, $8.0K for working families with 1, 2, 3+ kids, indexed), Child Tax Credit ($2K per kid, partly refundable)

Refundable tax credits are now the largest means-tested cash transfer for low income families

The Phase-In and Phaseout of the EITC

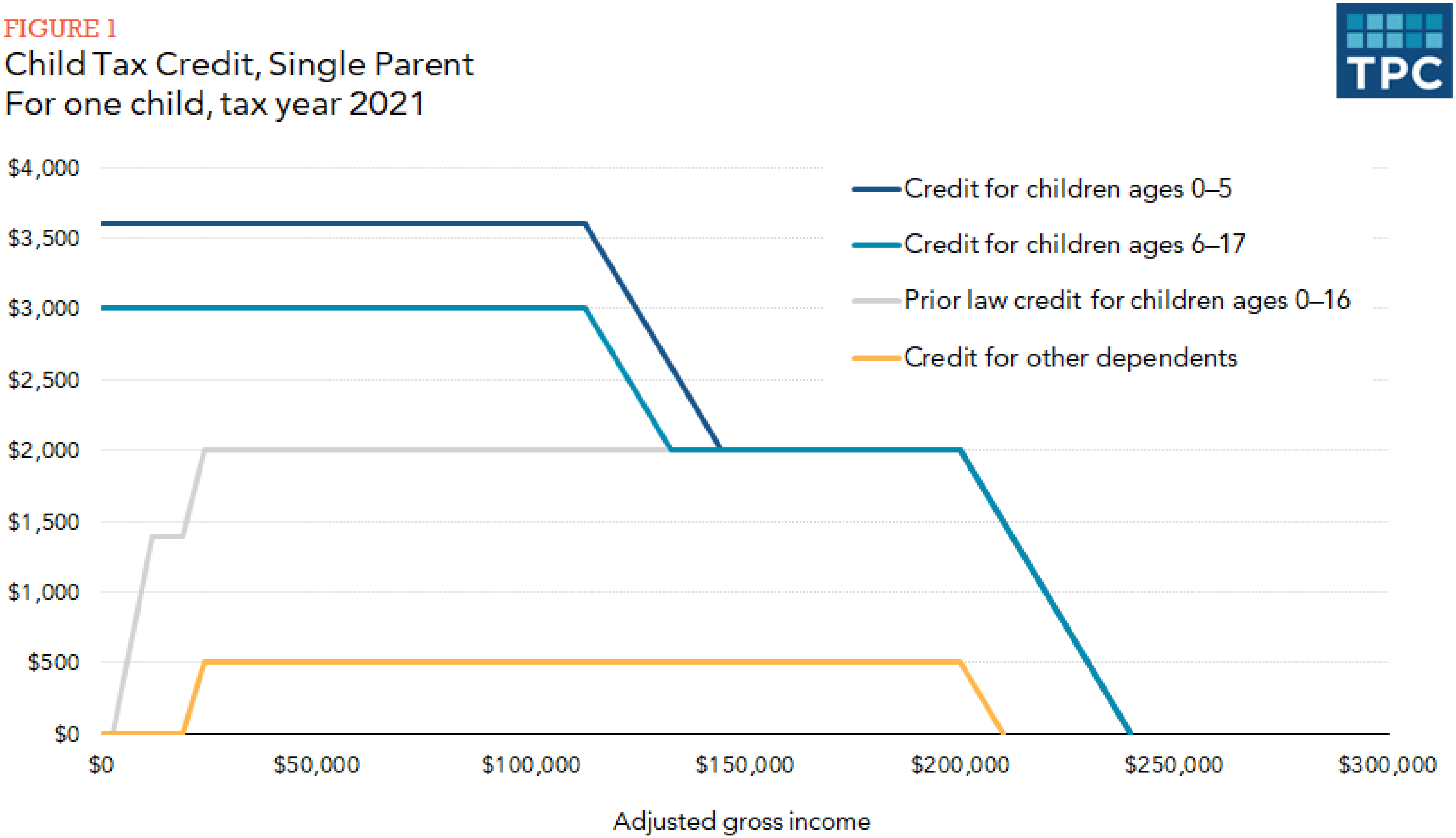
Credit Amount by Marital Status and Number of Children



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

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.

FEDERAL US INCOME TAX: TAX FILING

Taxes on year t earnings are withheld on paychecks during year t (pay-as-you-earn)

Income tax return filed in Feb-April 15, year $t + 1$ [filers use either software or tax preparers, huge private industry, most OECD countries provide pre-populated returns]

Most tax filers get a tax refund as withholdings larger than taxes owed in general

Payers (employers, banks, etc.) send income information to govt (3rd party reporting)

3rd party reporting + withholding at source is key for successful enforcement

MAIN MEANS-TESTED TRANSFER PROGRAMS

1) **Traditional transfers:** managed by welfare agencies, paid on monthly basis, high stigma and take-up costs $\Rightarrow$ low take-up rates (often only around 50%)

Main programs: Medicaid (health insurance for low incomes), SNAP (former food stamps), public housing, TANF (welfare), SSI (aged+disabled)

2) **Refundable income tax credits:** managed by tax administration, paid as an annual lumpsum in year $t+1$, low stigma and take-up cost $\Rightarrow$ high take-up rates

Main programs: EITC and Child Tax Credit [large expansion since the 1990s] for low income working families with children

KEY CONCEPTS FOR TAXES/TRANSFERS

Draw budget $(z, z - T(z))$ which integrates taxes and transfers

1) Transfer benefit with zero earnings $-T(0)$ [sometimes called demogrant or lumpsum grant]

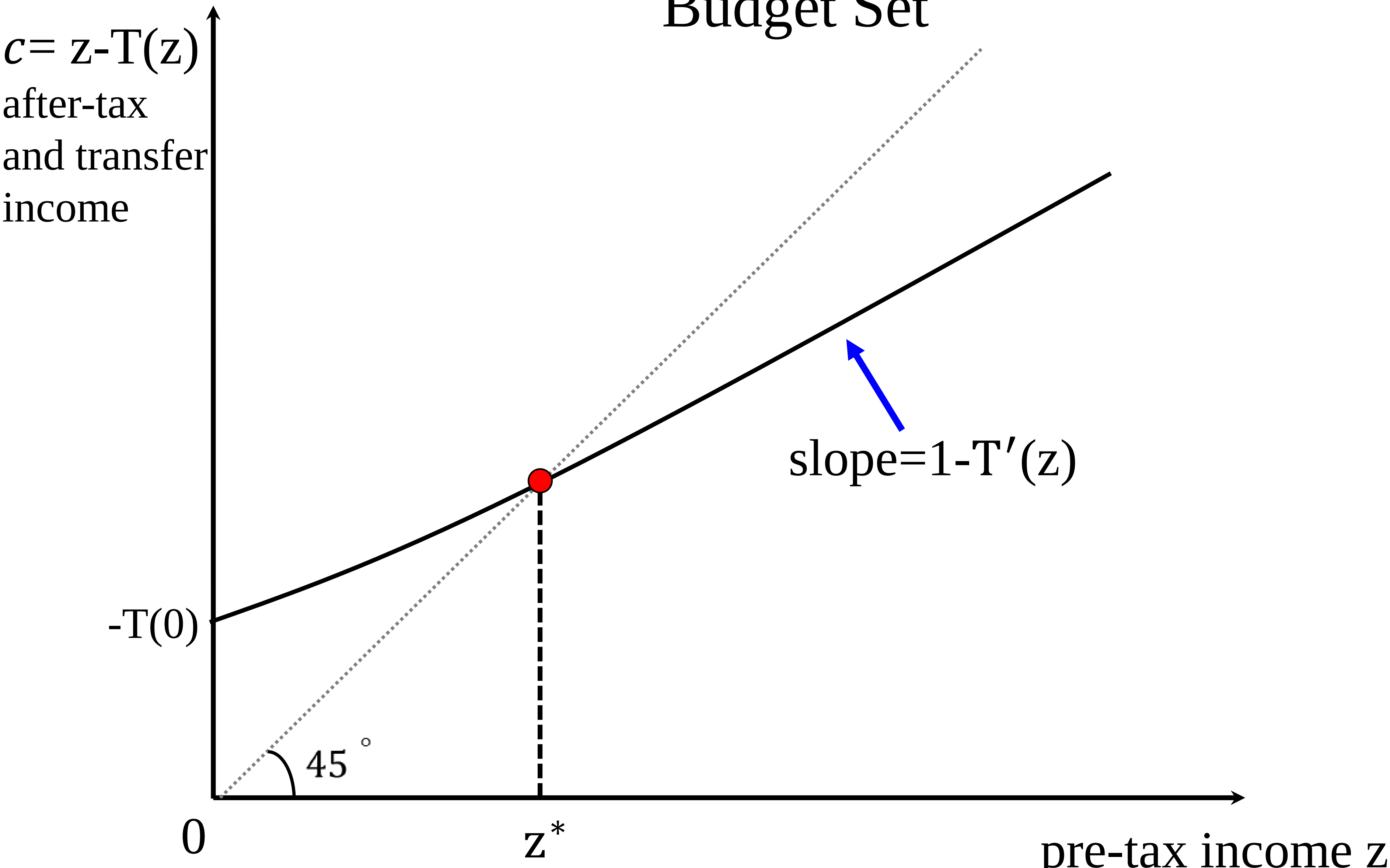
2) Marginal tax rate (or phasing-out rate) $T'(z)$: individual keeps $1 - T'(z)$ for an additional $1 of earnings (intensive labor supply response)

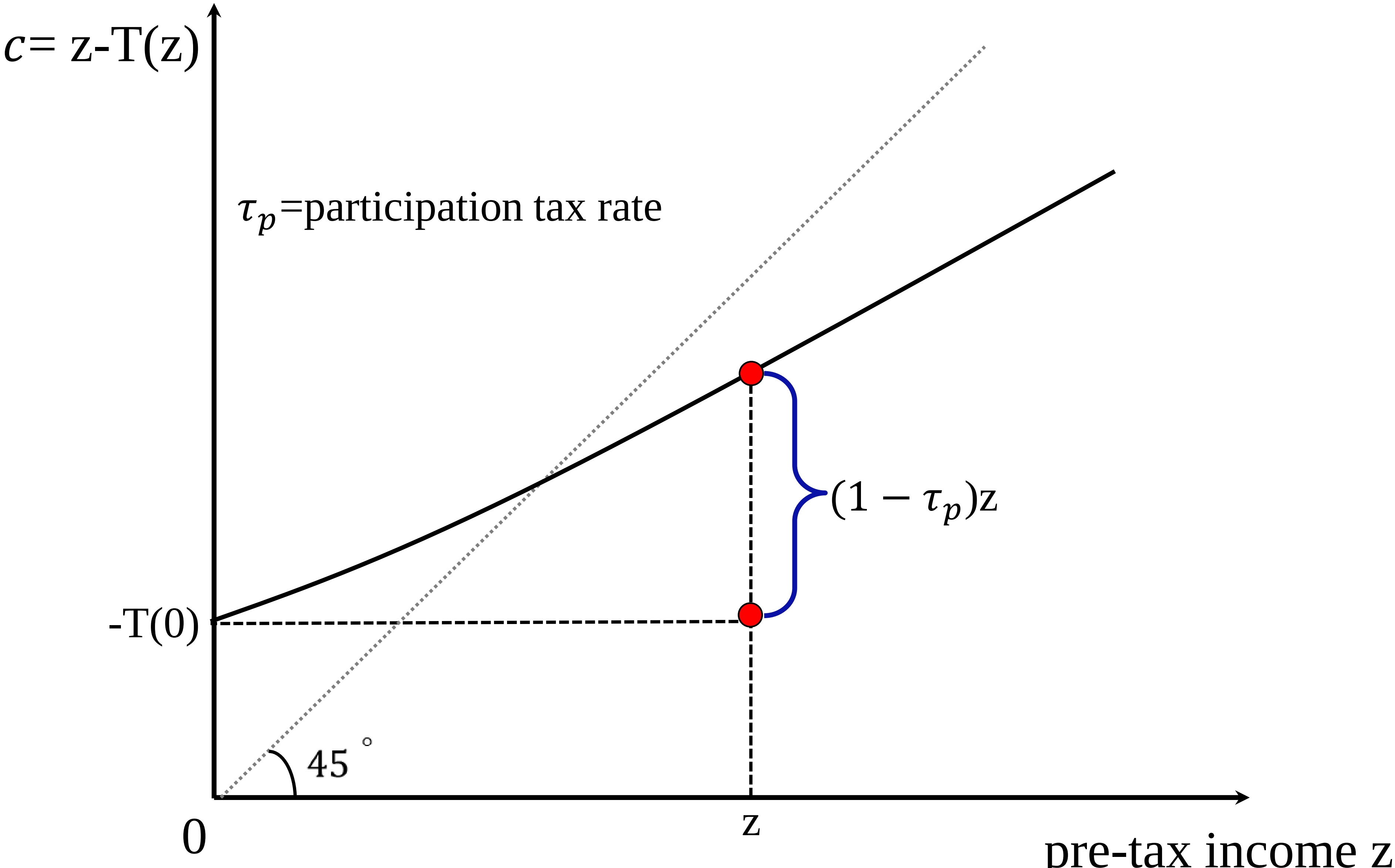
3) Participation tax rate $\tau_p = [T(z) - T(0)]/z$: individual keeps fraction $1 - \tau_p$ of earnings when moving from zero earnings to earnings z (extensive labor supply response):

$$z - T(z) = -T(0) + z \cdot (1 - \tau_p)$$

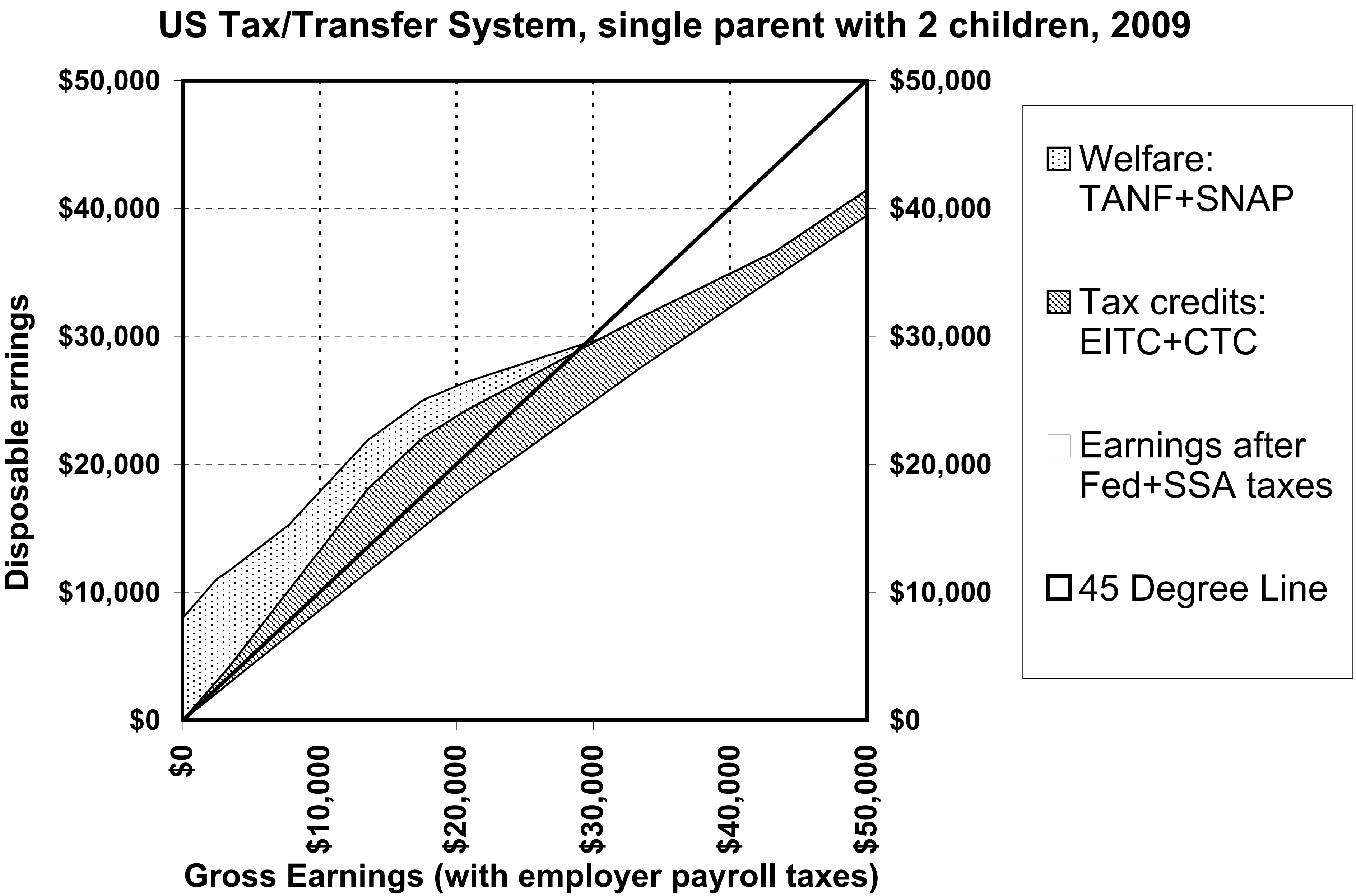
4) Break-even earnings point z^*: point at which $T(z^*) = 0$

Budget Set

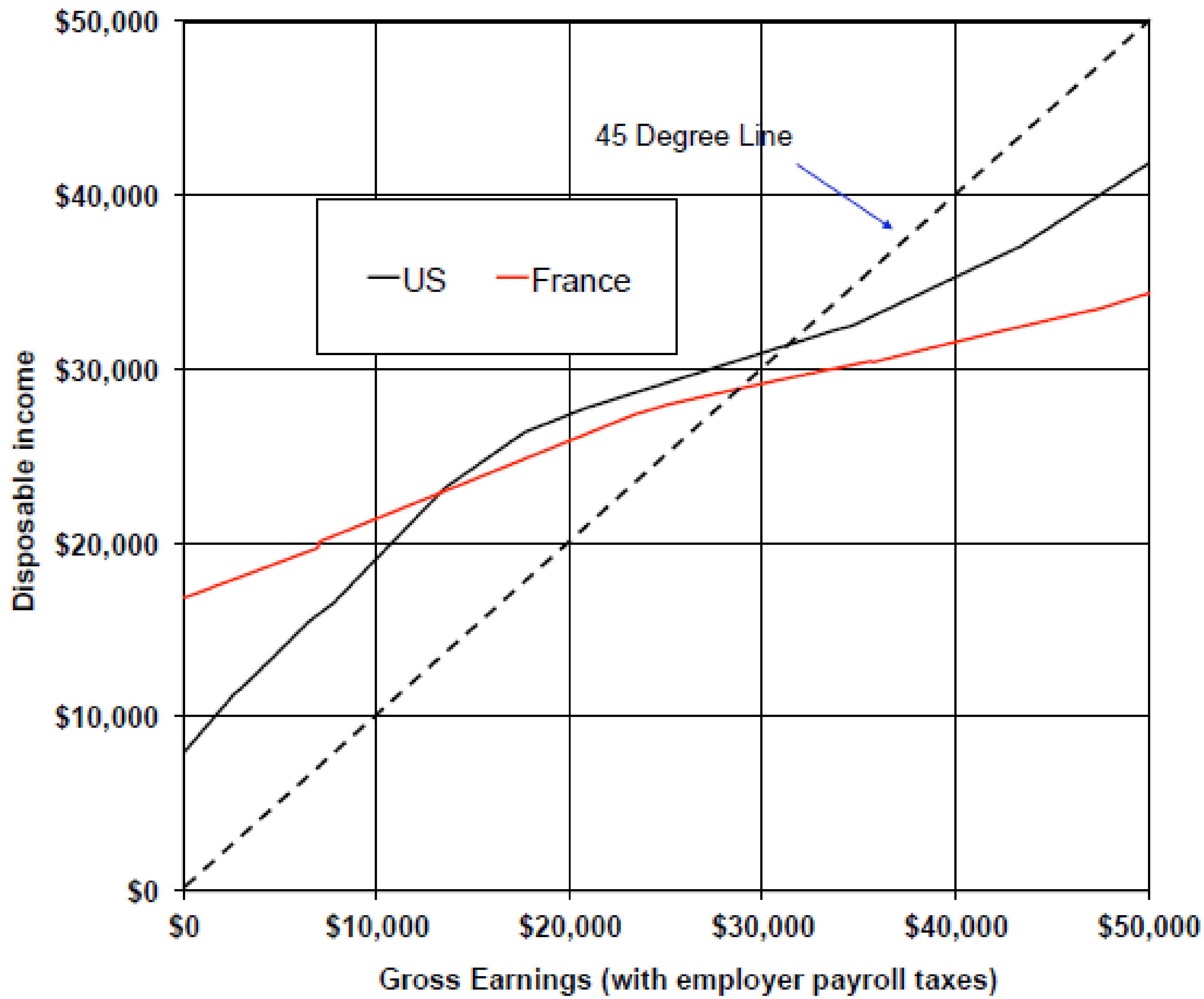

c= z-T(z)
after-tax
and transfer
income
slope=1-T′(z)
-T(0)
45 °
0
z*
pre-tax income z



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



Source: Computations made by Emmanuel Saez using tax and transfer system parameters



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

Profile of Current Means-tested Transfers

Traditional means-tested programs reduce incentives to work for low income workers

Refundable tax credits have significantly increased incentives to work for low income workers

However, refundable tax credits cannot benefit those with zero earnings

Trade-off: US chooses to reward (low paid) work more than most European countries (such as France) but therefore provides smaller benefits to those with no earnings

Optimal Taxation: Case with No Behavioral Responses

Utility $u(c)$ strictly increasing and concave

Same for everybody where c is after tax income.

Income z is fixed for each individual, $c = z - T(z)$ where $T(z)$ is tax/transfer on z (tax if $T(z) > 0$, transfer if $T(z) < 0$)

N individuals with fixed incomes $z_1 < ... < z_N$

Government maximizes **Utilitarian** objective:

$$SWF = \sum_{i=1}^{N} u(z_i - T(z_i))$$

subject to **budget constraint** $\sum_{i=1}^{N} T(z_i) = 0$ (taxes need to fund transfers)

Simple Model With No Behavioral Responses

Replace $T(z_1) = -\sum_{i=2}^{N} T(z_i)$ from budget constraint:

$$SWF = u\left(z_1 + \sum_{i=2}^{N} T(z_i)\right) + \sum_{i=2}^{N} u(z_i - T(z_i))$$

First order condition (FOC) in $T(z_j)$ for a given $j = 2, .., N$:

$$0 = \frac{\partial SWF}{\partial T(z_j)} = u'\left(z_1 + \sum_{i=2}^{N} T(z_i)\right) - u'(z_j - T(z_j)) = 0 \Rightarrow$$

$u'(z_j - T(z_j)) = u'(z_1 - T(z_1)) \Rightarrow z_j - T(z_j) =$ constant across $j = 1, .., N$

Perfect equalization of after-tax income = 100% tax rate and redistribution [draw graph]

Utilitarianism with decreasing marginal utility leads to perfect egalitarianism [Edgeworth, 1897]

Simpler Derivation with just 2 individuals

$$\max_{T_1,T_2} SWF = u(z_1 - T_1) + u(z_2 - T_2) \text{ subject to } T_1 + T_2 = 0$$

Replace $T_1 = -T_2$ in SWF using budget constraint:

$$\max_{T_2} SWF = u\,(z_1 + T_2) + u(z_2 - T_2)$$

First order condition (FOC) in T_2:

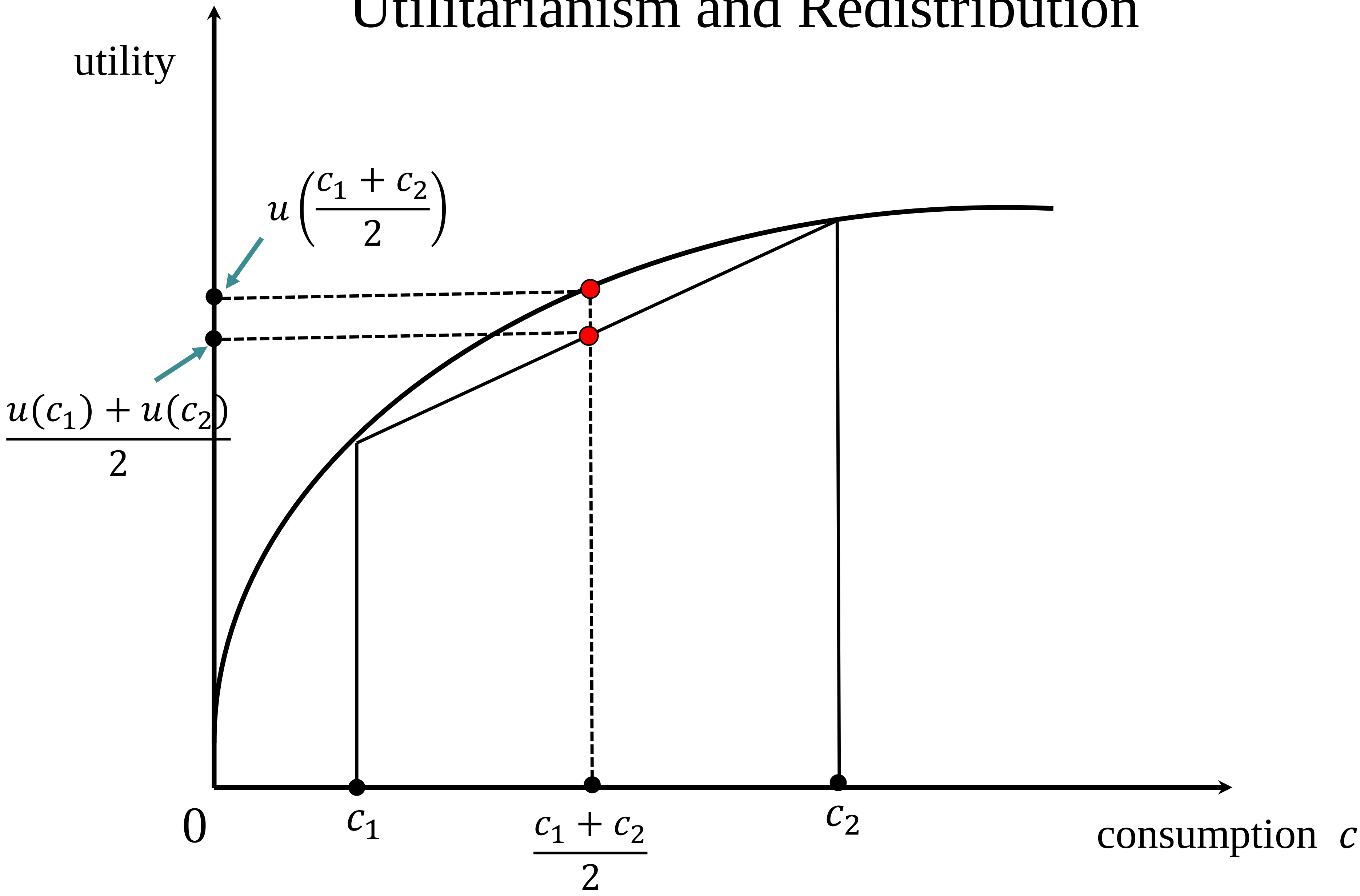
$$0 = \frac{dSWF}{dT_2} = u'\,(z_1 + T_2) - u'(z_2 - T_2) = 0 \Rightarrow$$

$$u'(z_1 + T_2) = u'(z_2 - T_2) \Rightarrow u'(z_1 - T_1) = u'(z_2 - T_2)$$

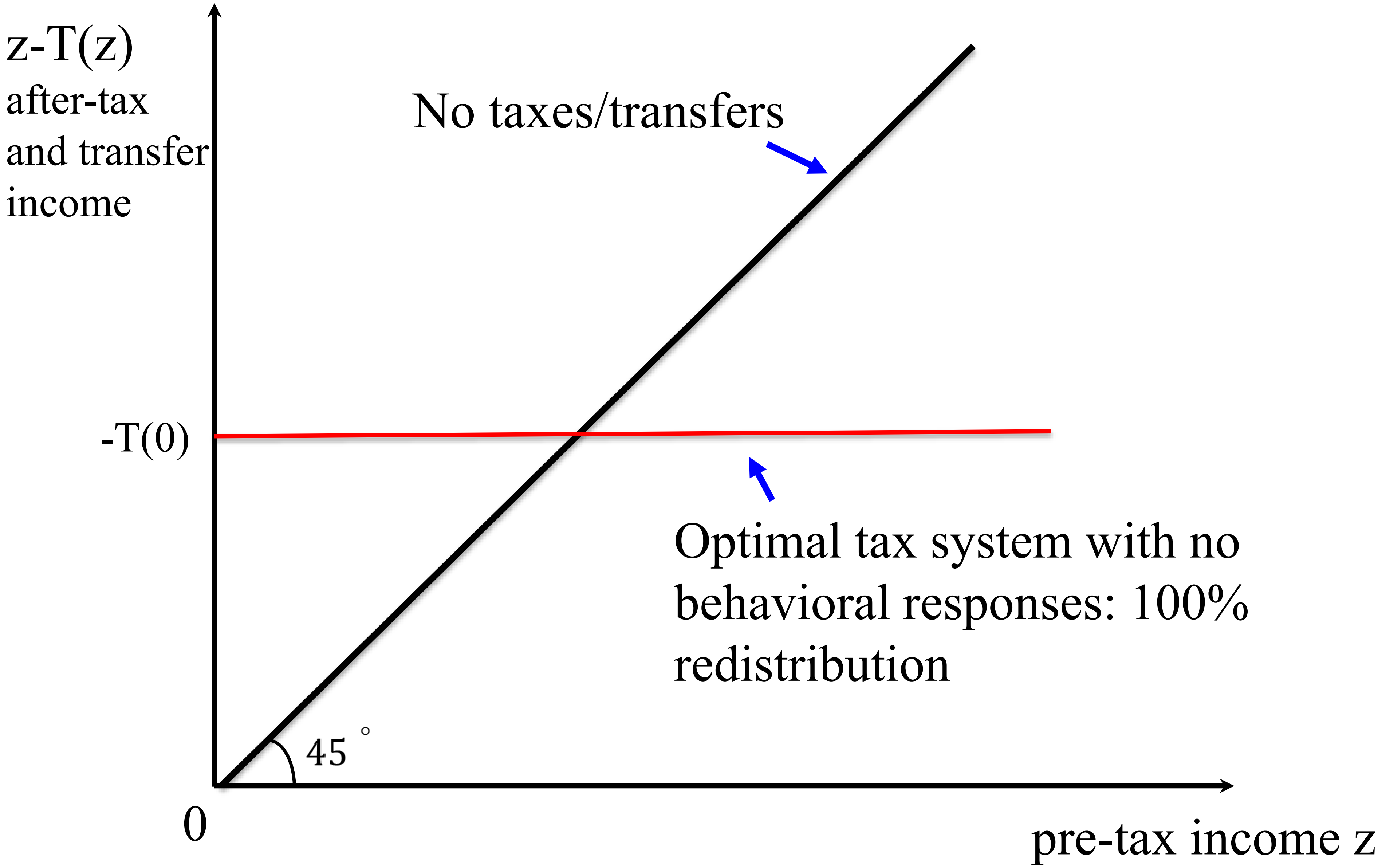
$\Rightarrow z_1 - T_1 = z_2 - T_2$ constant across the 2 individuals

Perfect equalization of after-tax income = 100% tax rate and redistribution [see graph]

Utilitarianism and Redistribution



Optimal Tax/Transfer Systems



ISSUES WITH SIMPLE MODEL

1) **No behavioral responses:** Obvious missing piece: 100% redistribution would destroy incentives to work and thus the assumption that z is exogenous is unrealistic

$\Rightarrow$ Optimal income tax theory incorporates behavioral responses

2) **Issue with Utilitarianism:** Even absent behavioral responses, many people would object to 100% redistribution [perceived as confiscatory]

$\Rightarrow$ Citizens' views on fairness impose **bounds** on redistribution govt can do [political economy / public choice theory]

EQUITY-EFFICIENCY TRADE-OFF

Taxes can be used to raise revenue for transfer programs which can reduce inequality in disposable income

$\Rightarrow$ Desirable if society feels that inequality is too large

Taxes (and transfers) reduce incentives to work

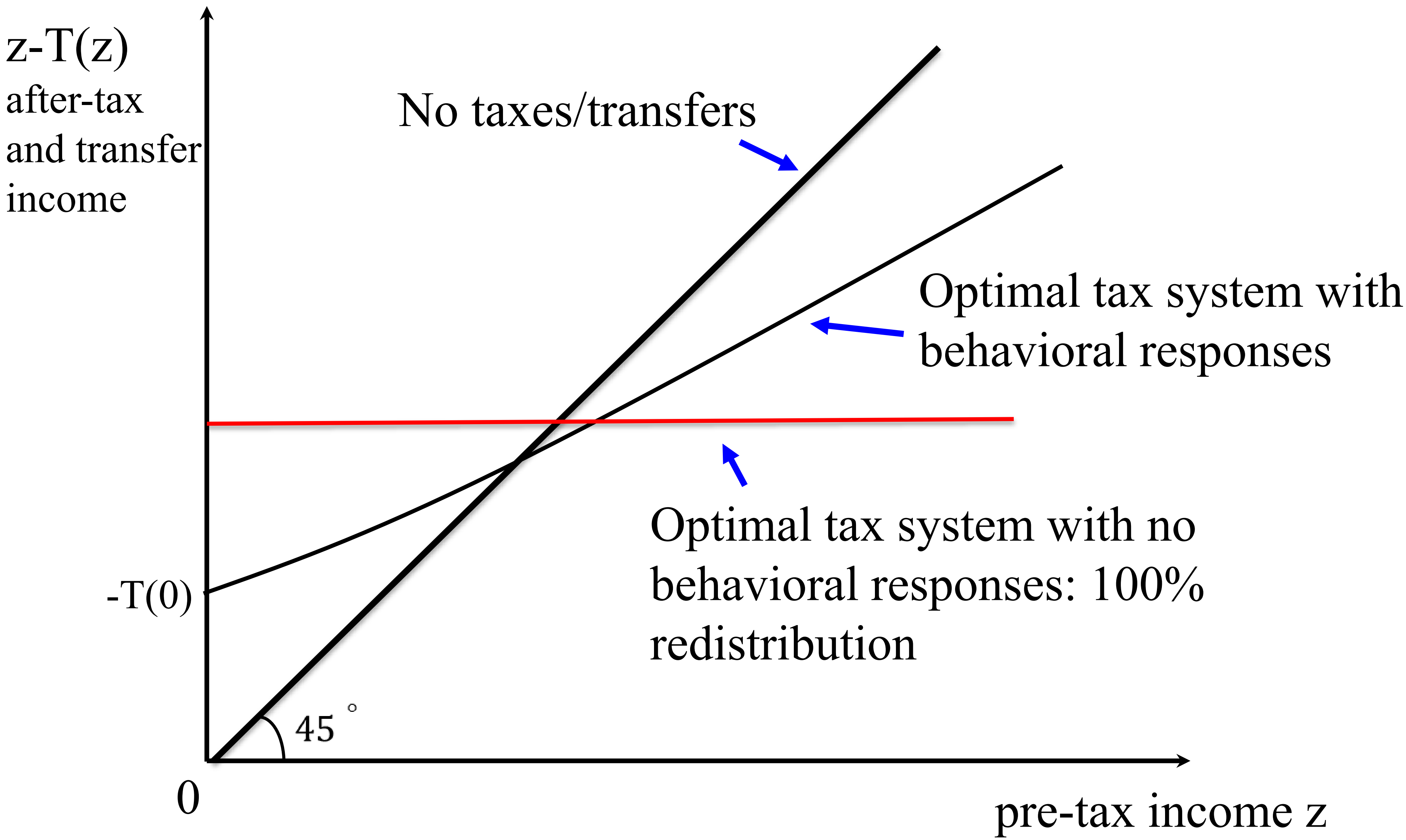
$\Rightarrow$ High tax rates create economic inefficiency if individuals respond to taxes

Size of behavioral response limits the ability of government to redistribute with taxes/transfers

$\Rightarrow$ Generates an equity-efficiency trade-off

Empirical tax literature estimates the size of behavioral responses to taxation

Optimal Tax/Transfer Systems



Labor Supply Theory

Individual has utility over labor supply l and consumption c: $u(c,l)$ **increasing** in c and **decreasing** in l [less free time]

$$\max_{c,l} u(c,l) \quad \text{subject to} \quad c = w \cdot l + R$$

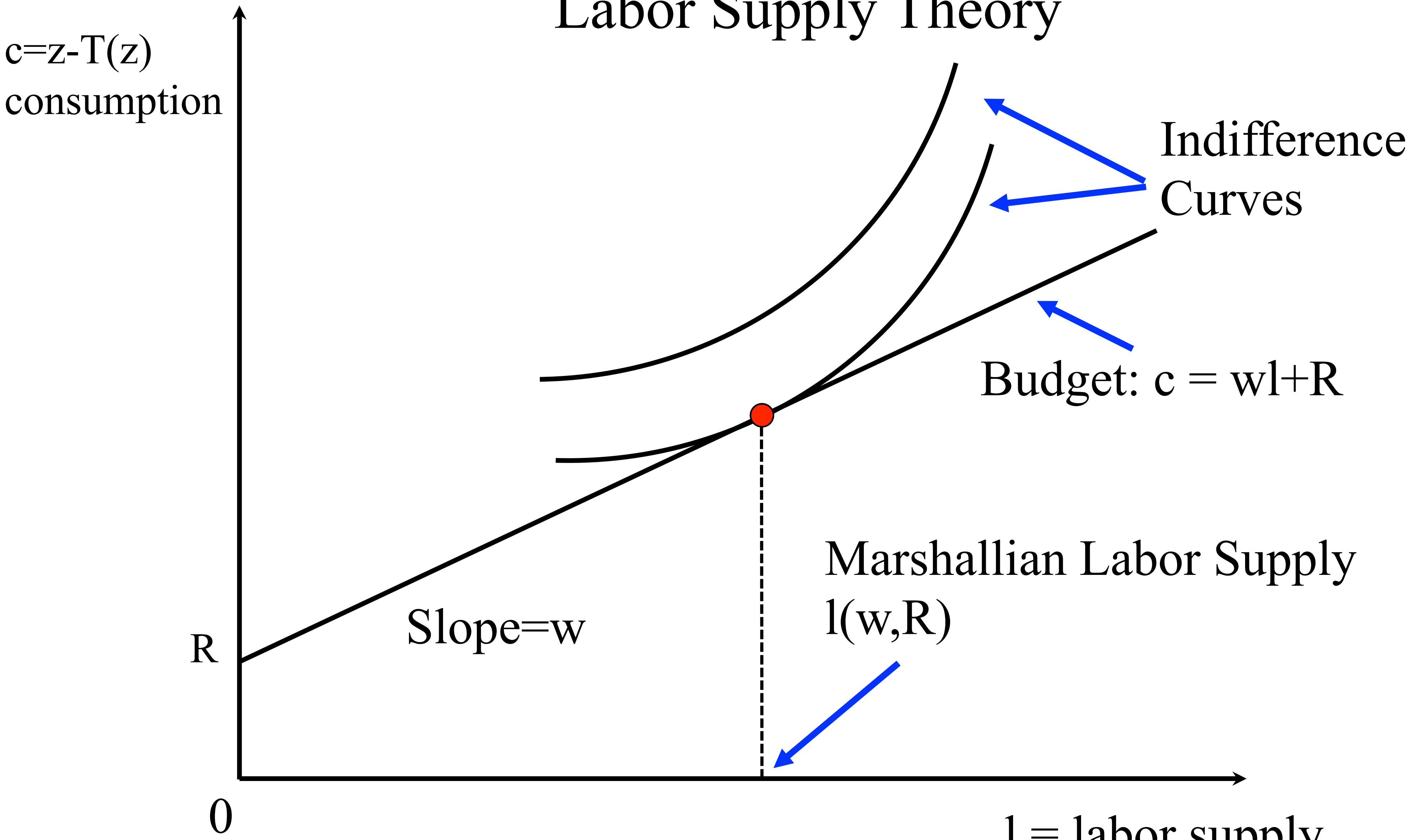
with $w = \bar{w} \cdot (1-\tau)$ the net-of-tax wage ($\bar{w}$ is before tax wage rate and τ is tax rate), and R non-labor income

FOC $w\frac{\partial u}{\partial c} + \frac{\partial u}{\partial l} = 0$ defines Marshallian labor supply $l = l(w,R)$

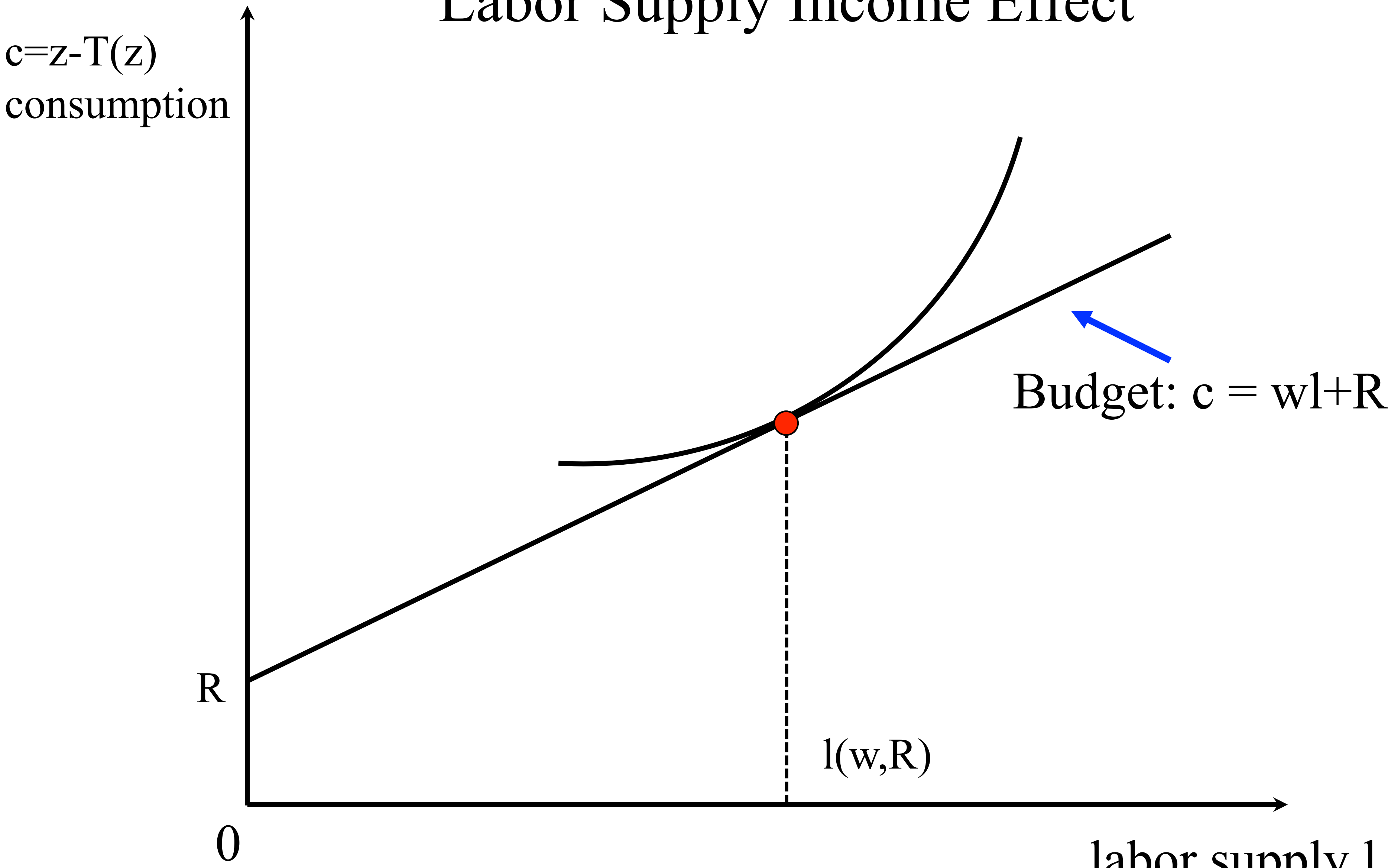
Uncompensated labor supply elasticity: $\varepsilon^u = \dfrac{w}{l} \cdot \dfrac{\partial l}{\partial w}$

Income effects: $\eta = w\dfrac{\partial l}{\partial R} \leq 0$ (if leisure is a normal good)

Labor Supply Theory



Labor Supply Income Effect



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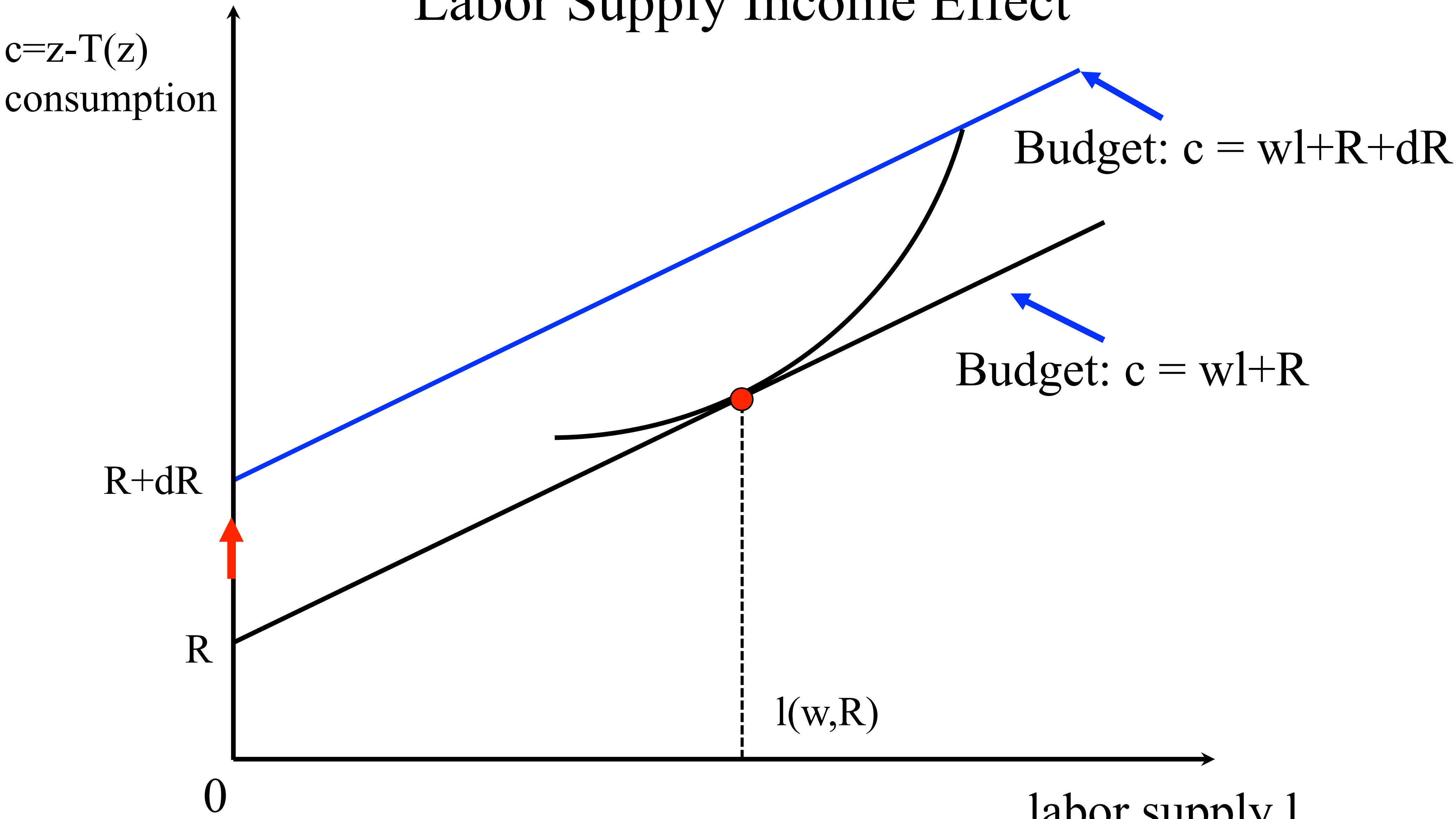
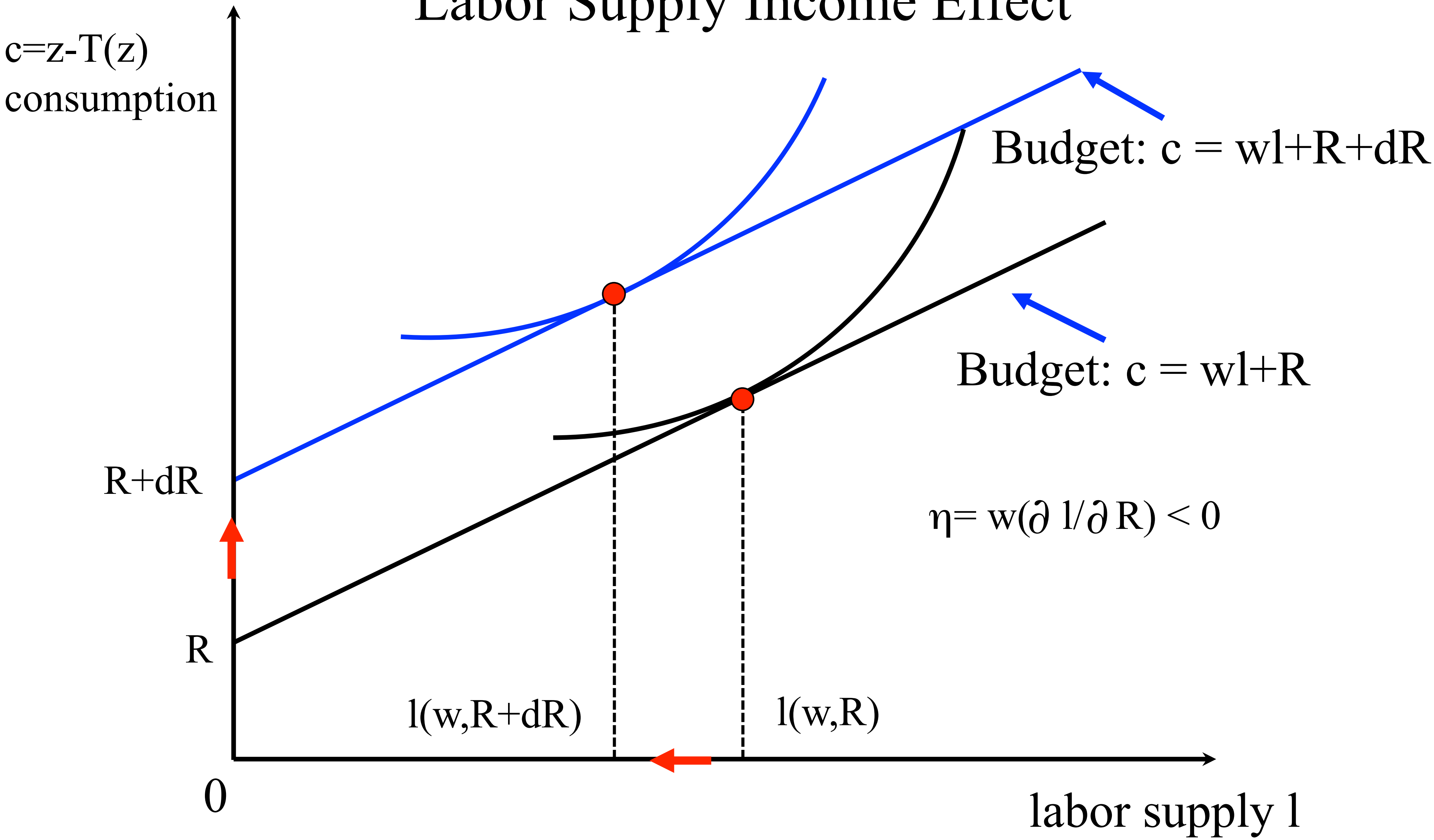


Labor Supply Income Effect



Labor Supply Theory

Substitution effects: Hicksian labor supply: $l^c(w, u)$ minimizes cost needed to reach u given slope $w \Rightarrow$

$$\text{Compensated elasticity} \quad \varepsilon^c = \frac{w}{l} \cdot \frac{\partial l^c}{\partial w} > 0$$

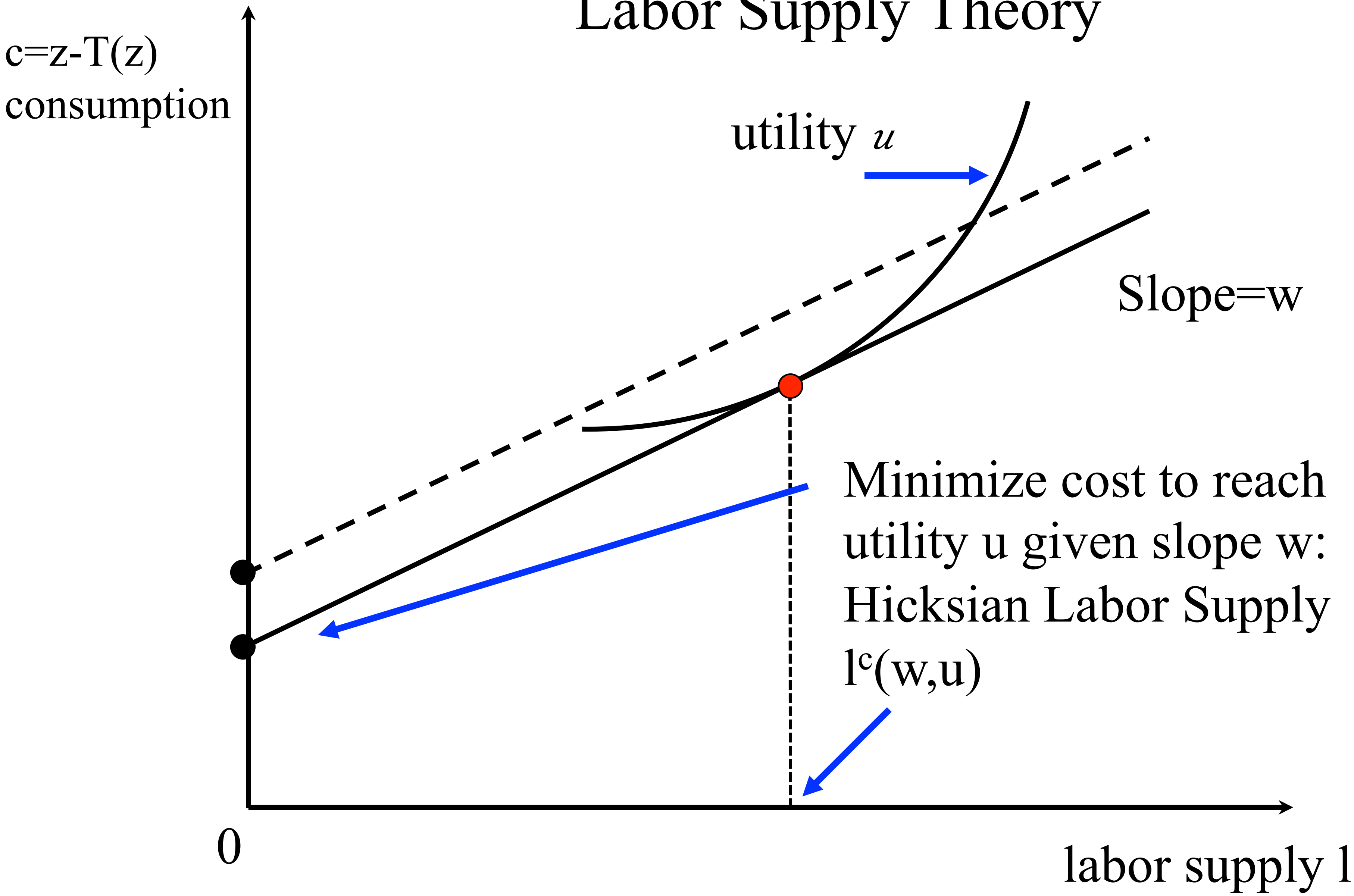
$$\text{Slutsky equation} \quad \frac{\partial l}{\partial w} = \frac{\partial l^c}{\partial w} + l\frac{\partial l}{\partial R} \Rightarrow \varepsilon^u = \varepsilon^c + \eta$$

Tax rate τ discourages work through substitution effects (work pays less at the margin)

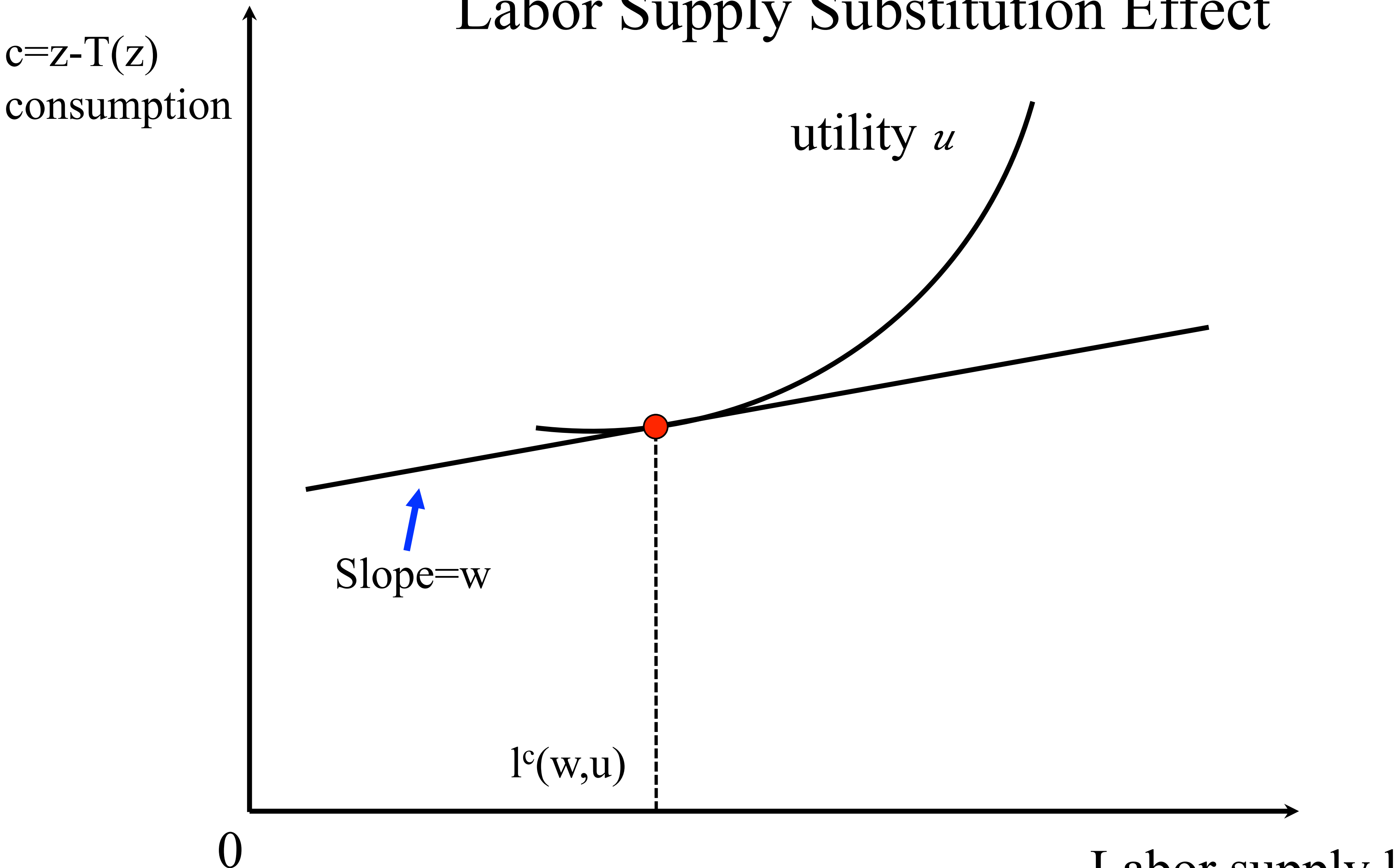
Tax rate τ encourages work through income effects (taxes make you poorer and hence in more need of income)

Net effect ambiguous (captured by sign of ε^u)

Labor Supply Theory



Labor Supply Substitution Effect



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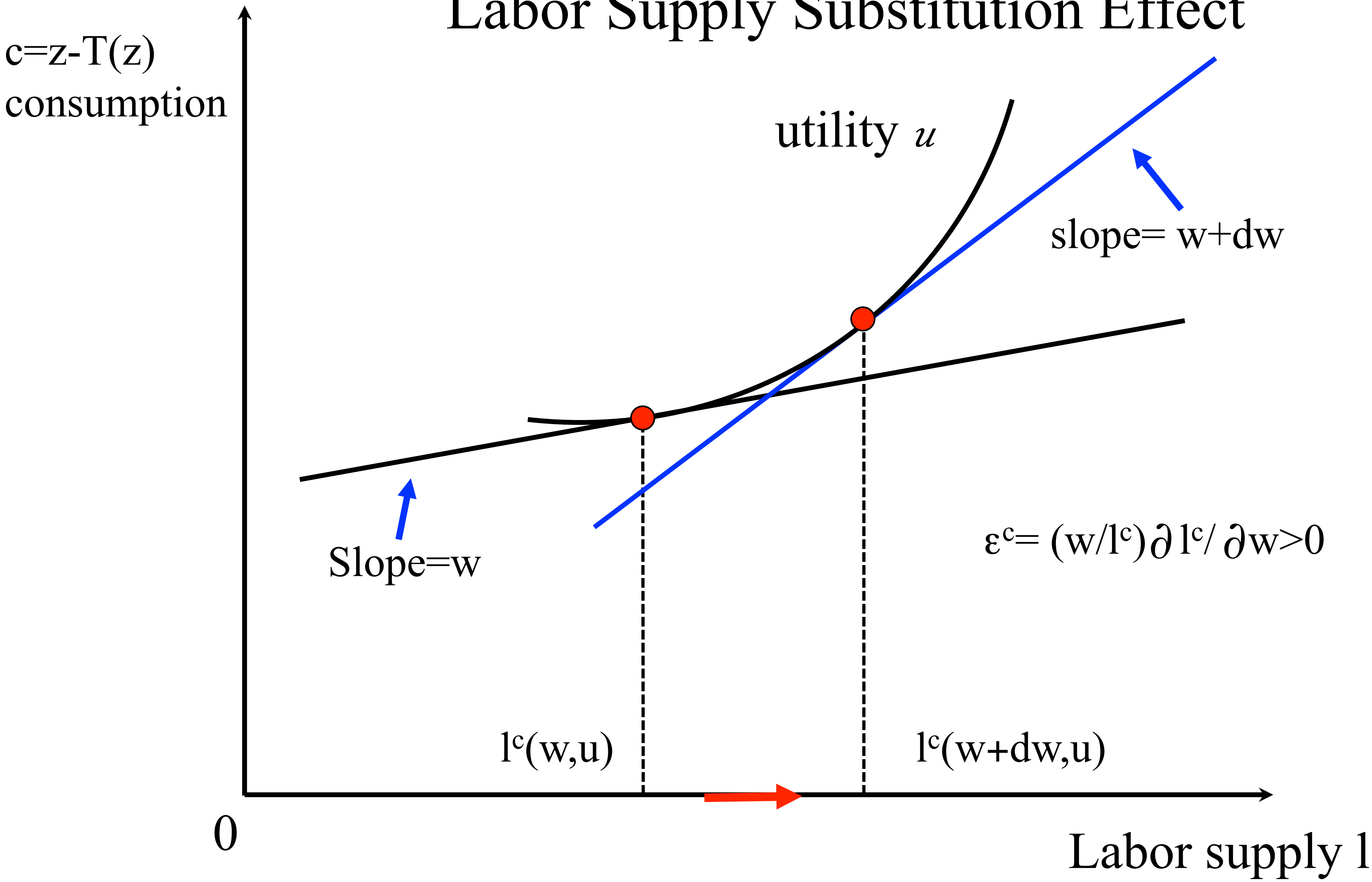
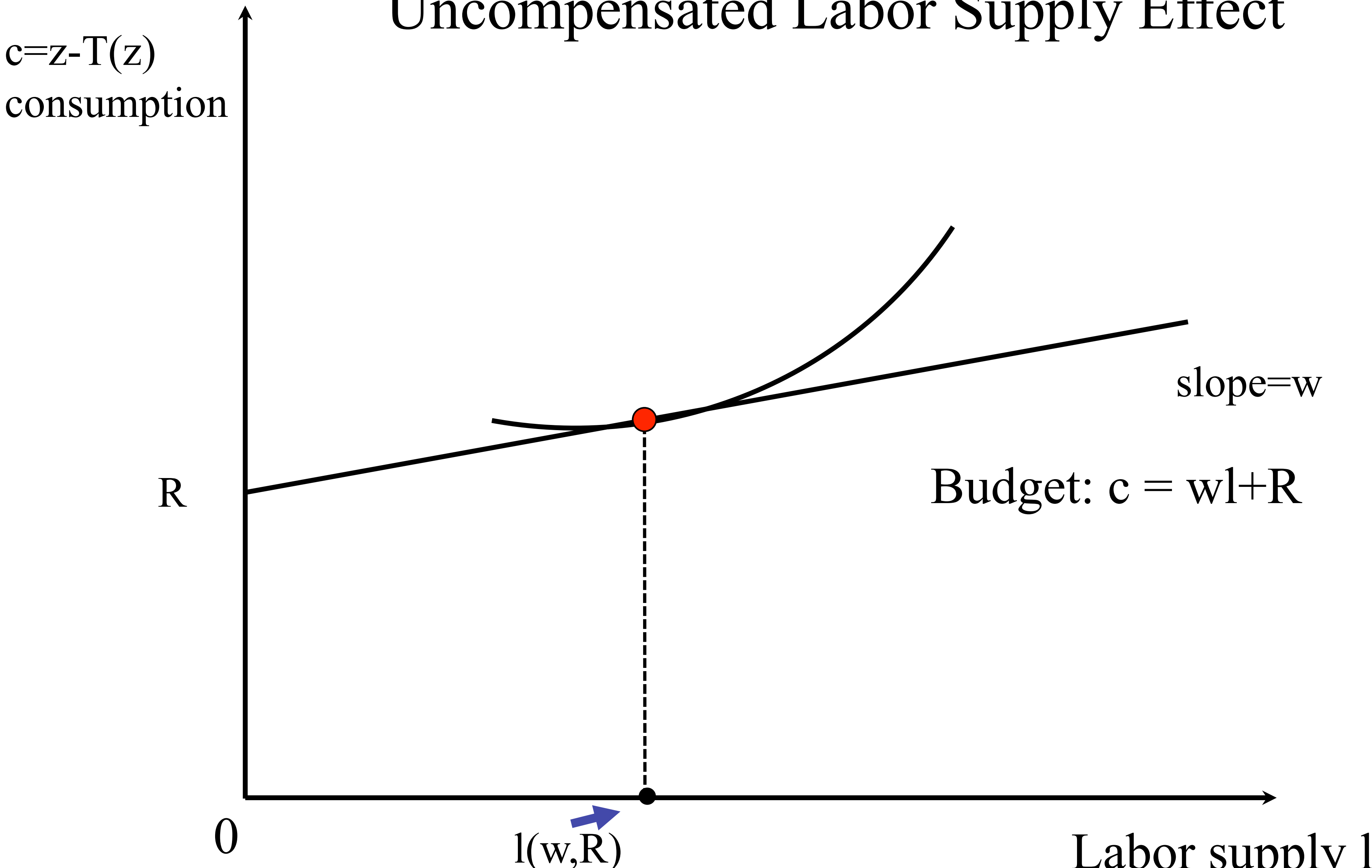


Uncompensated Labor Supply Effect



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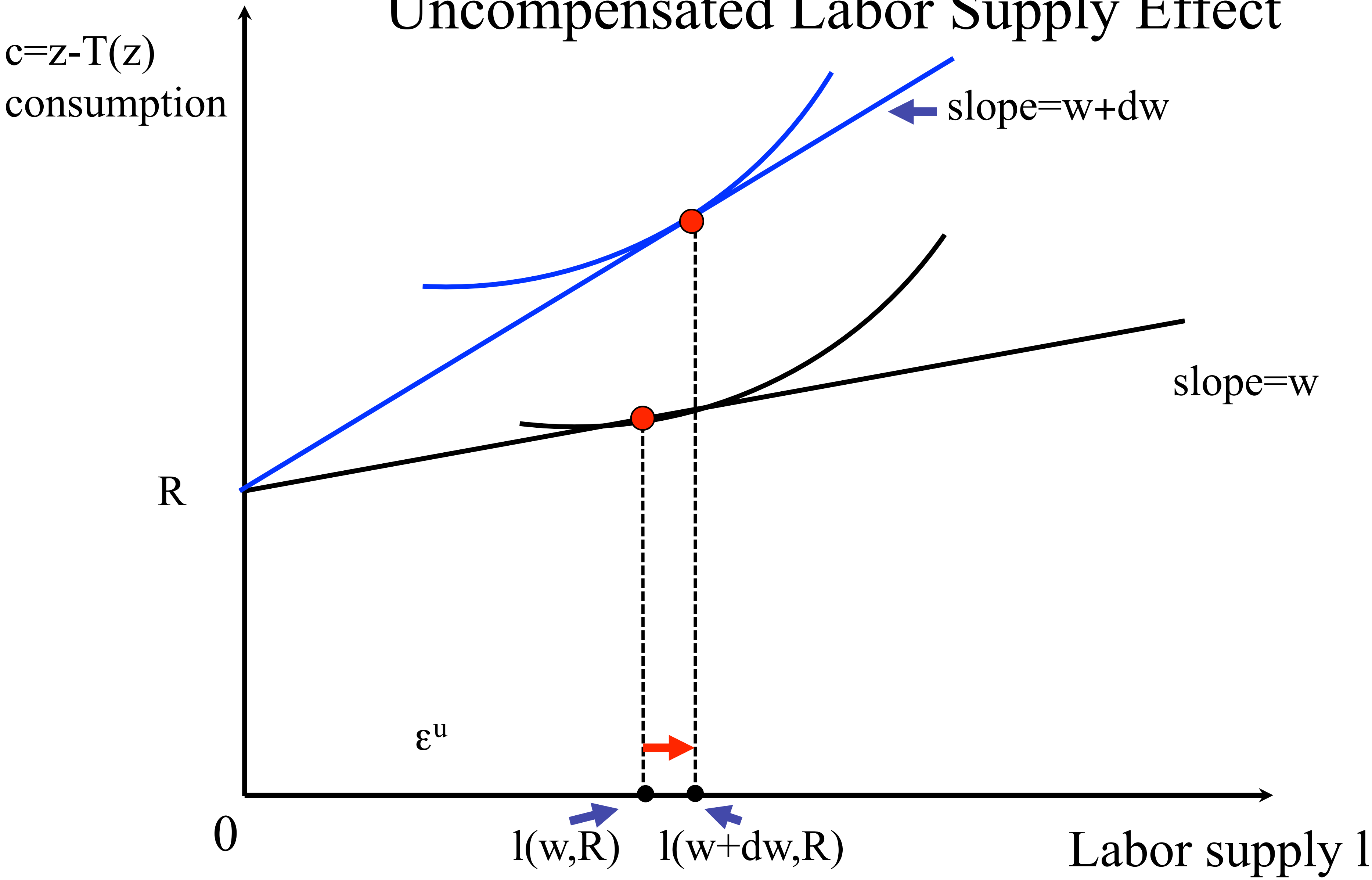

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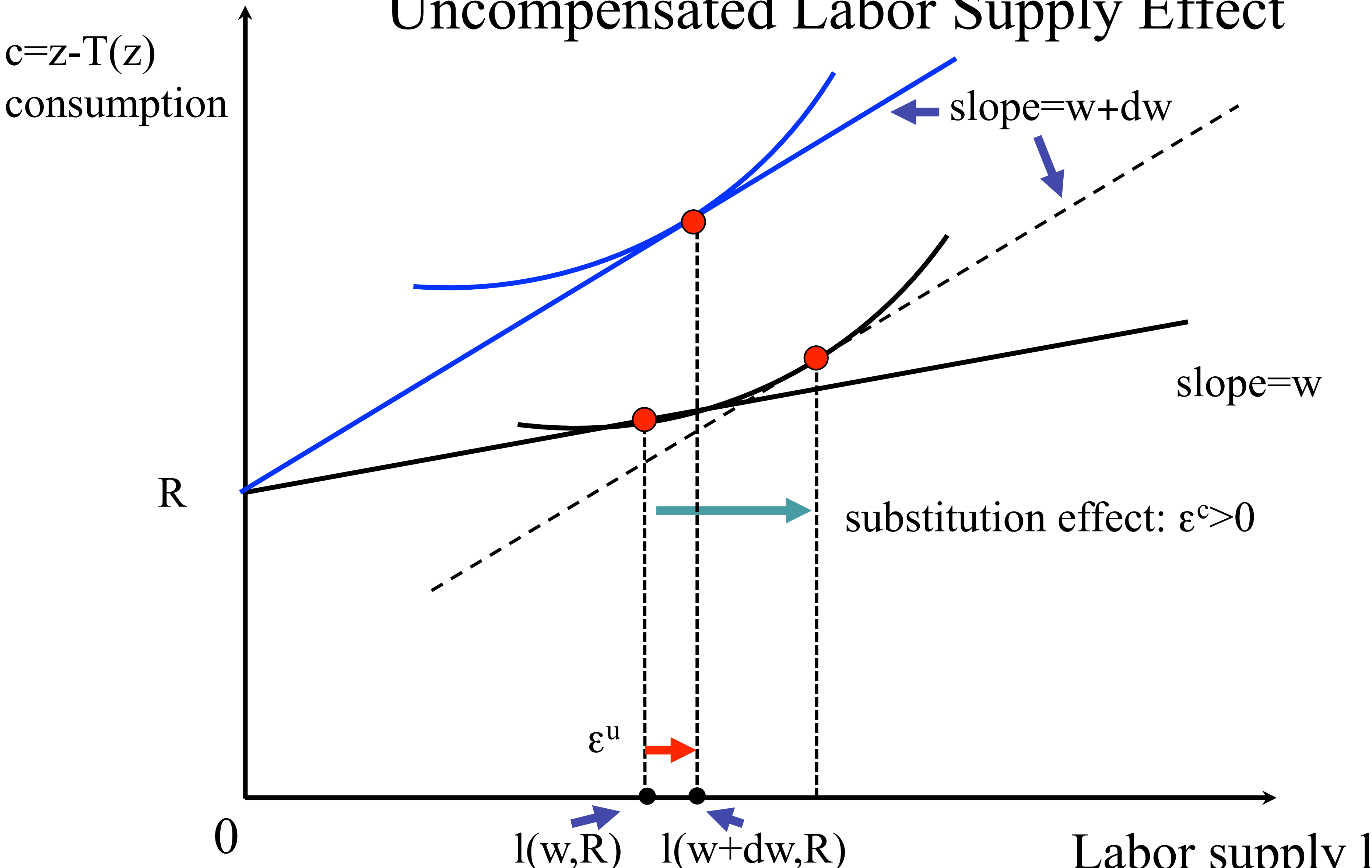

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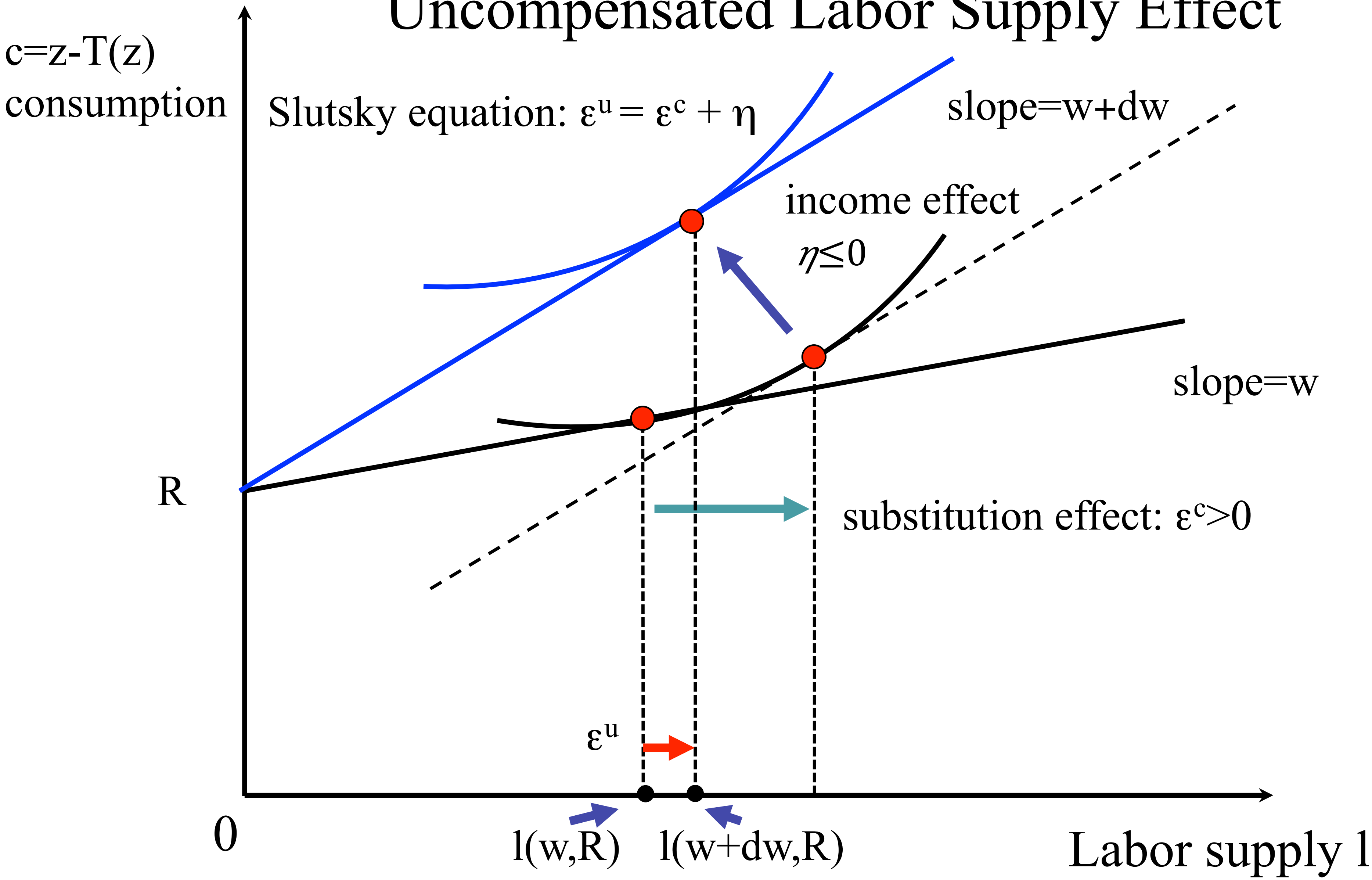


General nonlinear income tax [draw graph]

With no taxes: $c = z$ (consumption = earnings)

With taxes $c = z - T(z)$ (consumption = earnings - net taxes)

$T(z) \geq 0$ if individual pays taxes on net, $T(z) \leq 0$ if individual receives transfers on net

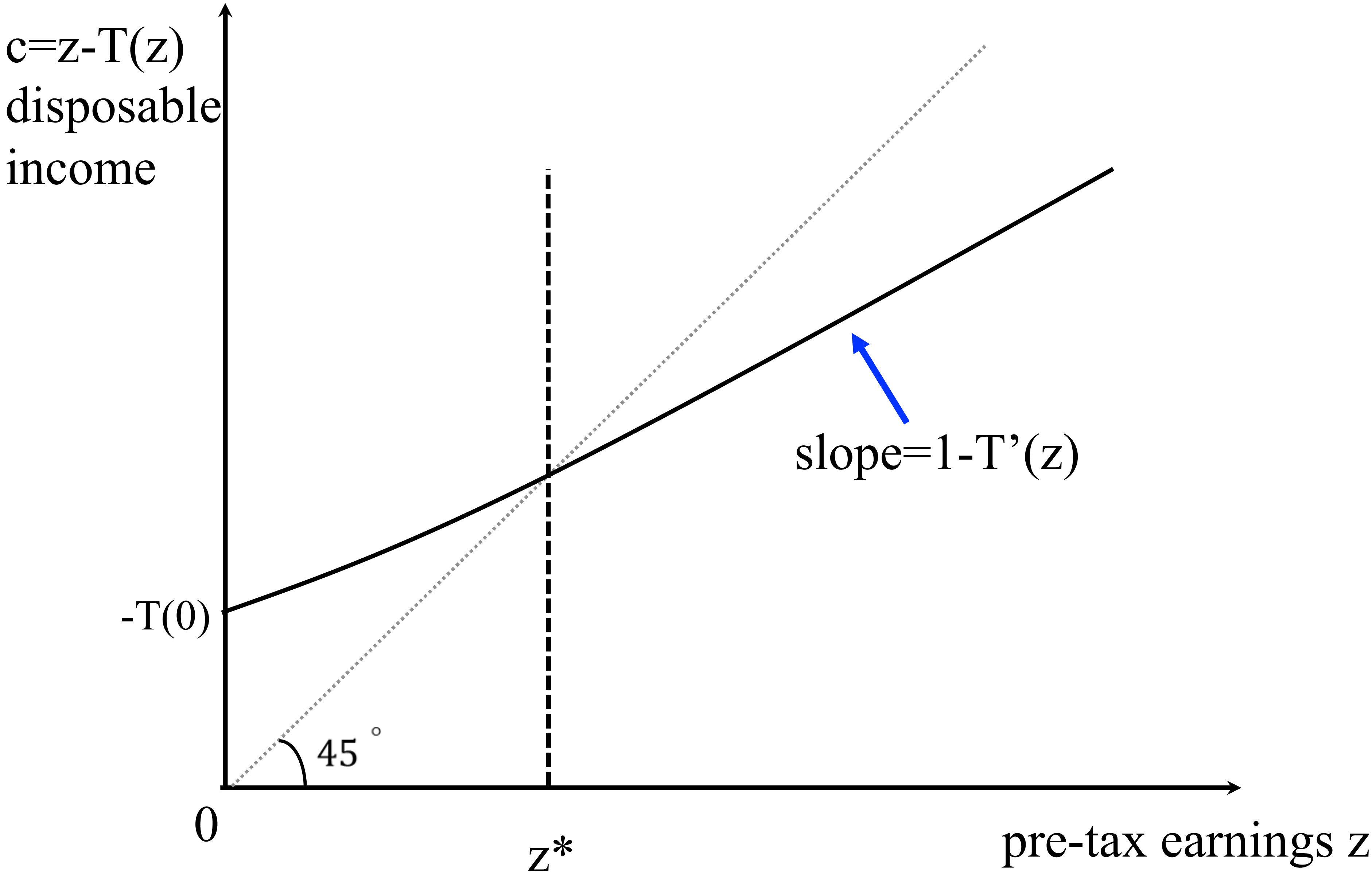
$T'(z) > 0$ reduces net wage rate and reduces labor supply through substitution effects

$T(z) > 0$ reduces disposable income and increases labor supply through income effects

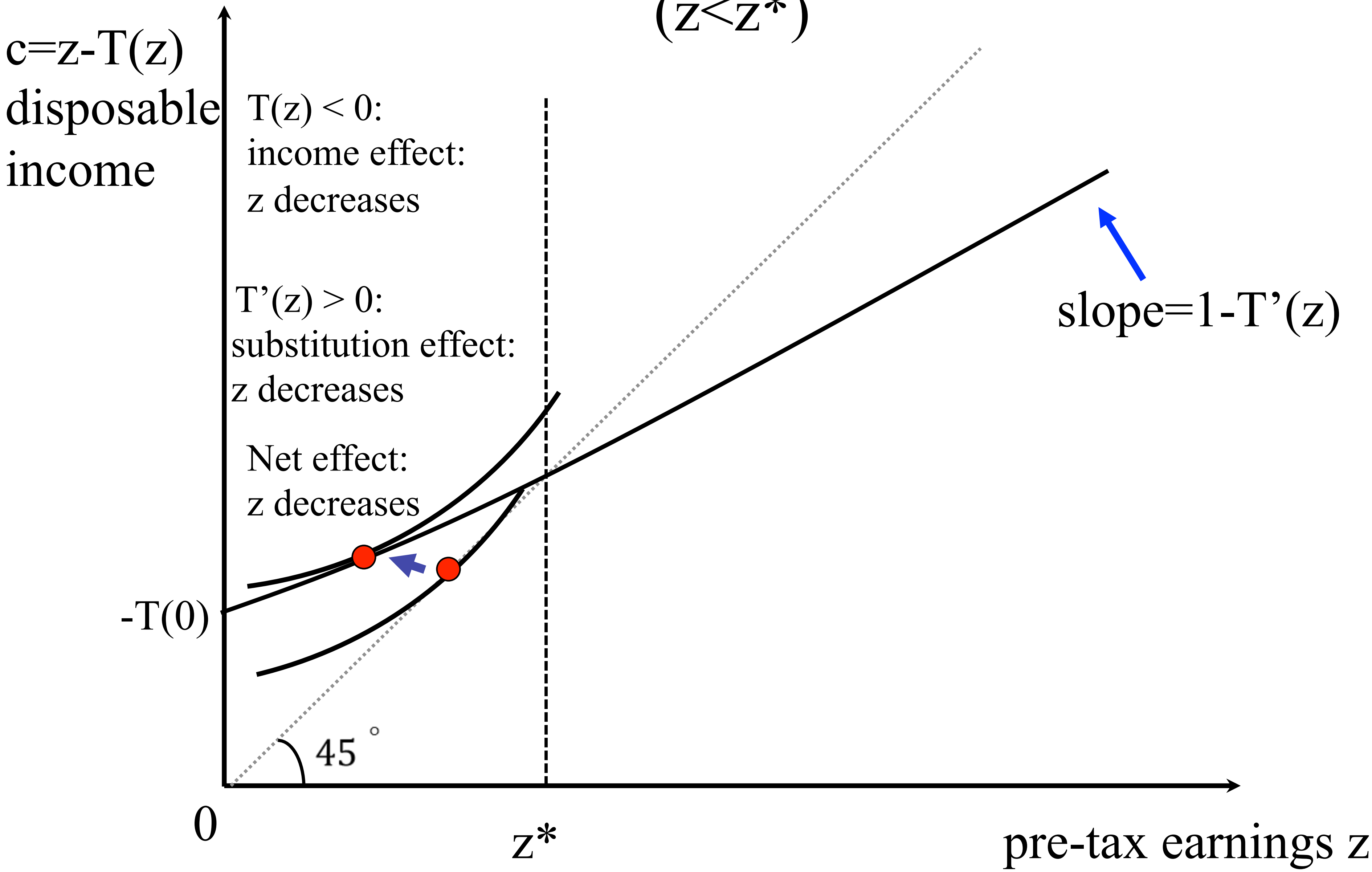
$T(z) < 0$ increases disposable income and decreases labor supply through income effects

Transfer program such that $T(z) < 0$ and $T'(z) > 0$ always discourages labor supply

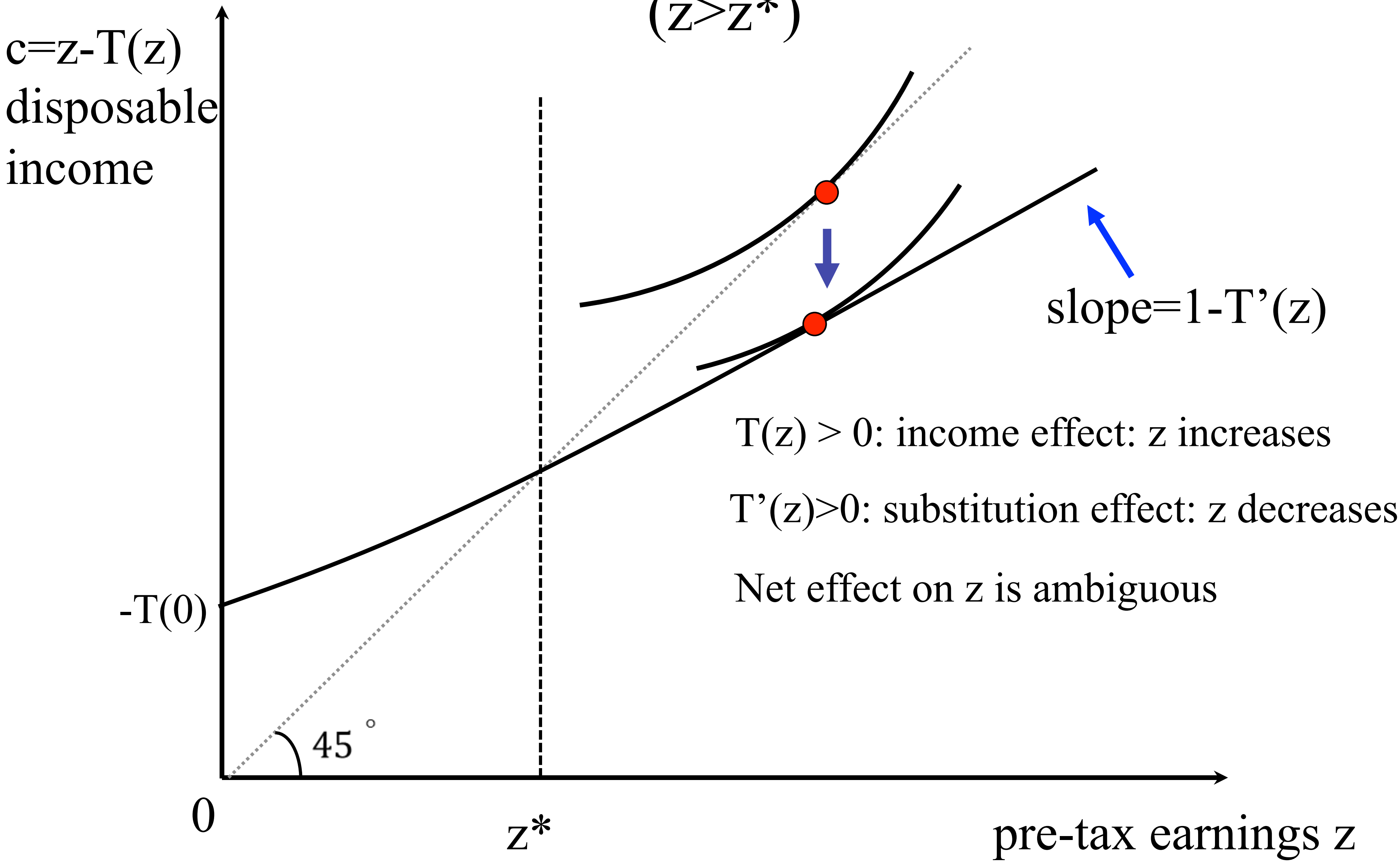
Effect of Taxes/Transfers on Labor Supply



Effect of Taxes/Transfers on Labor Supply (z<z*)



Effect of Taxes/Transfers on Labor Supply (z>z*)



Quiz on labor supply

With no taxes and transfers, suppose the individual chooses earnings $z = z^*$

Suppose that taxes and transfers are introduced with breakeven point z^* (no net tax or transfer is individual stays at z^*).

What will happen to the labor supply of the individual?

A. The individual will work less so that $z < z^*$

B. The individual will work the same so that $z = z^*$

C. The individual will work more so that $z > z^*$

D. The effect on z is ambiguous

OPTIMAL LINEAR TAX RATE: LAFFER CURVE

$c = (1-\tau)\cdot z + R$ with τ linear tax rate and R fixed universal transfer funded by taxes $R = \tau \cdot Z$ with Z average earnings

Individual $i = 1, .., N$ chooses l_i to max $u^i((1-\tau)\cdot w_i l_i + R, l_i)$

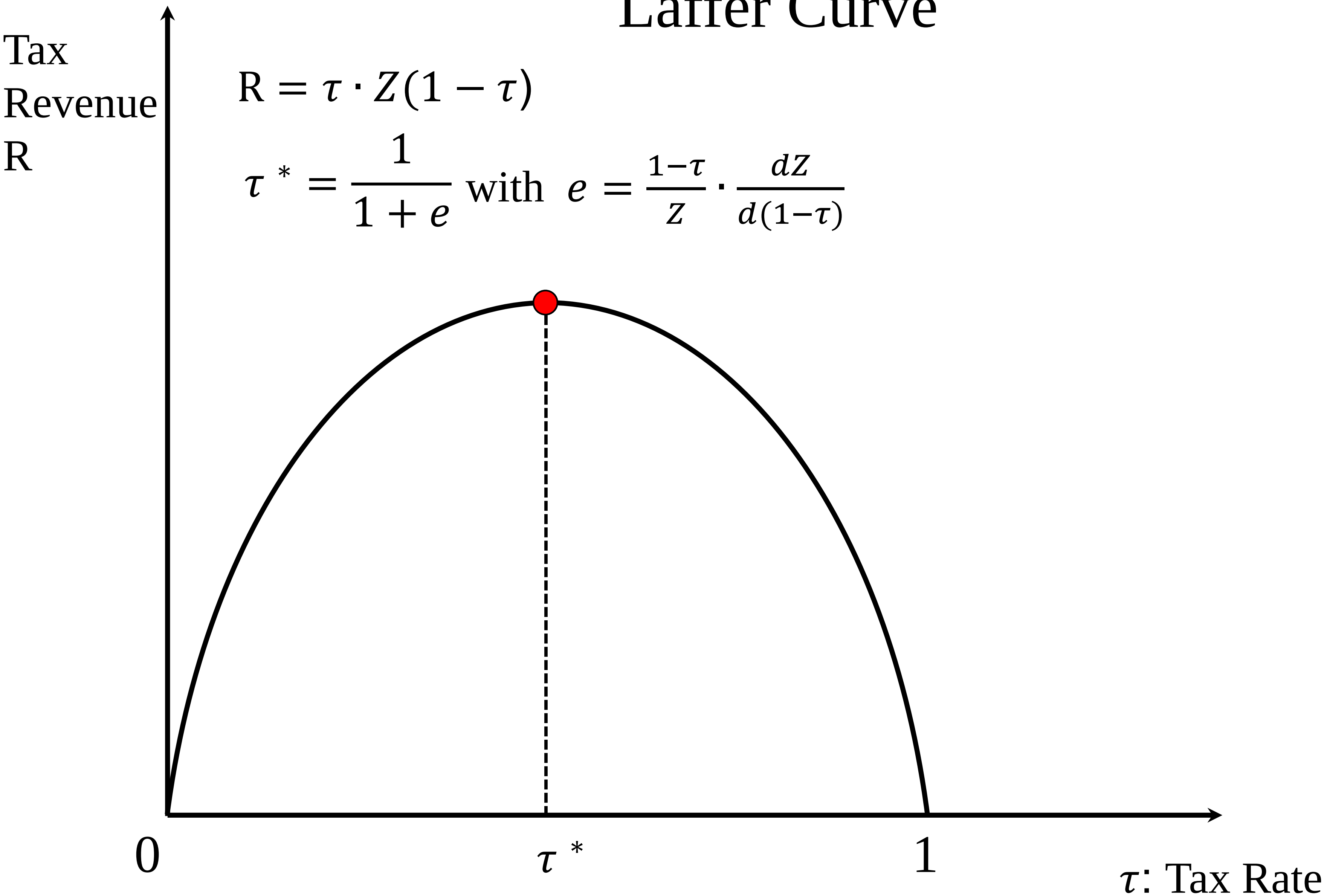
Labor supply choices l_i determine individual earnings $z_i = w_i l_i$
$\Rightarrow$ Average earnings $Z = \sum_i z_i / N$ depends (positively) on net-of-tax rate $1-\tau$.

Tax Revenue per person $R(\tau) = \tau \cdot Z(1-\tau)$ is inversely U-shaped with τ: $R(\tau = 0) = 0$ (no taxes) and $R(\tau = 1) = 0$ (nobody works): called the Laffer Curve

Laffer Curve

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

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



OPTIMAL LINEAR TAX RATE: LAFFER CURVE

Laffer rate τ^* maximizes tax revenue $R(\tau) = \tau \cdot Z(1-\tau)$:

$$0 = R'(\tau^*) = Z - \tau^* \frac{dZ}{d(1-\tau)} \Rightarrow \frac{\tau^*}{1-\tau^*} \cdot \frac{1-\tau^*}{Z} \frac{dZ}{d(1-\tau)} = 1$$

Revenue maximizing tax rate: $\tau^* = \dfrac{1}{1+e}$ with $e = \dfrac{1-\tau}{Z} \dfrac{dZ}{d(1-\tau)}$

e is the elasticity of average income Z with respect to the net-of-tax rate $1-\tau$ [empirically estimable]

Inefficient to have $\tau > \tau^*$ because decreasing τ would make taxpayers better off (they pay less taxes) and would increase tax revenue for the government [and hence univ. transfer R]

OPTIMAL LINEAR TAX RATE

1) If government is **Rawlsian** (maximizes welfare of the worst-off person with no earnings) then $\tau^{\text{optimal}} = \tau^* = 1/(1+e)$: government wants to make transfer $R(\tau)$ as large as possible

2) If government is **Libertarian** ($1 to a rich person has same value than $1 to a poor person) then $\tau^{\text{optimal}} = 0$: redistribution has no value and just creates efficiency costs

3) If government is **Utilitarian** ($1 to a rich person has less value than $1 to a poor person) then $0 < \tau^{\text{optimal}} < 1/(1+e)$:

(a) τ^{optimal} is close to $1/(1+e)$ when inequality is very high and/or marginal utility decreases fast with income

(b) τ^{optimal} is close to 0 when inequality is very low and/or marginal utility does not decrease fast with income

OPTIMAL TOP INCOME TAX RATE (Diamond and Saez JEP'11)

In practice, individual income tax is progressive with brackets with increasing marginal tax rates. What is the optimal top tax rate?

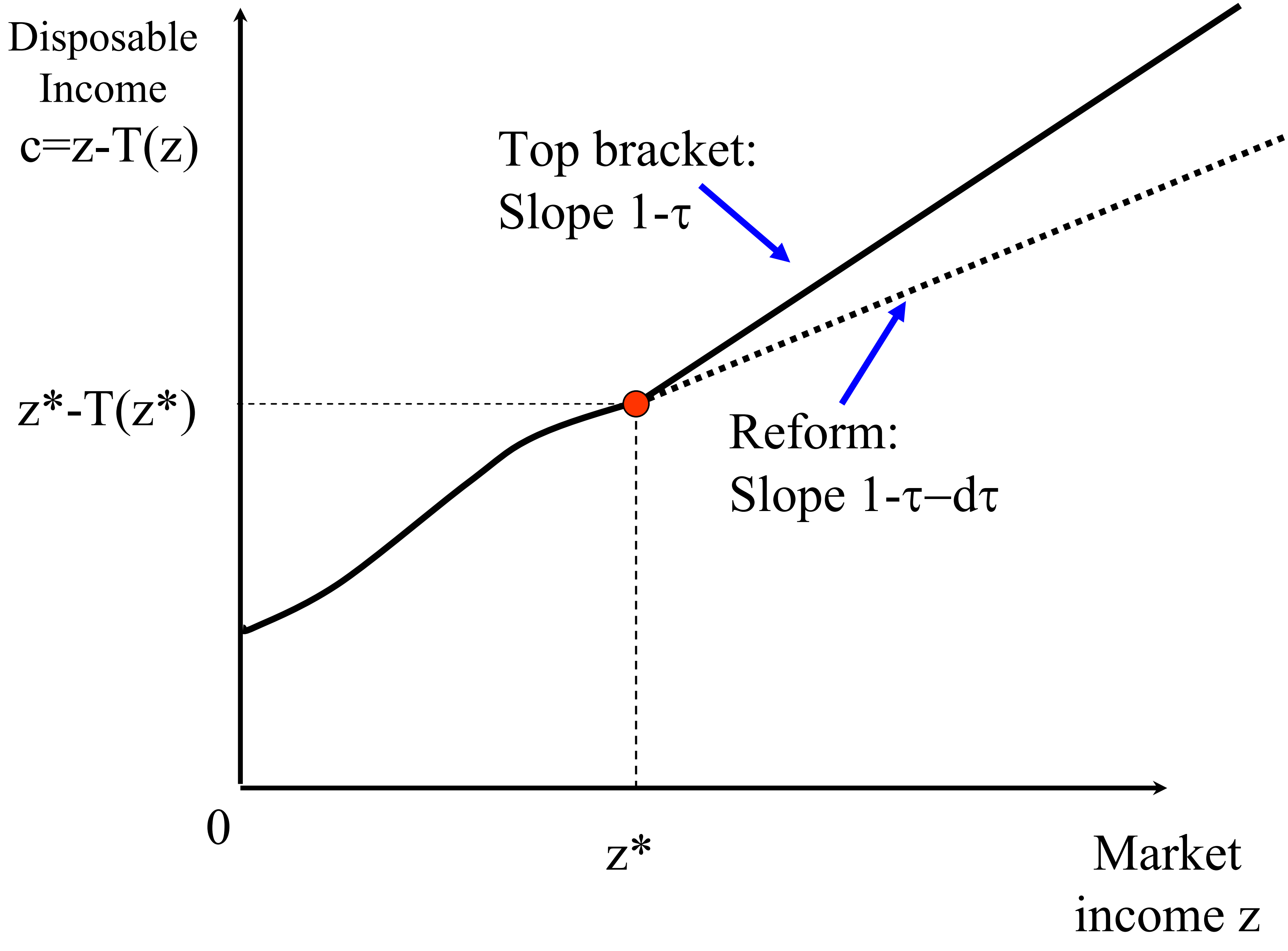
Consider constant MTR τ above fixed z^*. Goal is to derive optimal τ

In the US in 2018+, $\tau = 37\%$ and $z^* \simeq \$600,000$ ($\simeq$ top 1%)

Denote by z average income of top bracket earners [depends on net-of-tax rate $1-\tau$], with elasticity $e = [(1-\tau)/z] \cdot dz/d(1-\tau)$

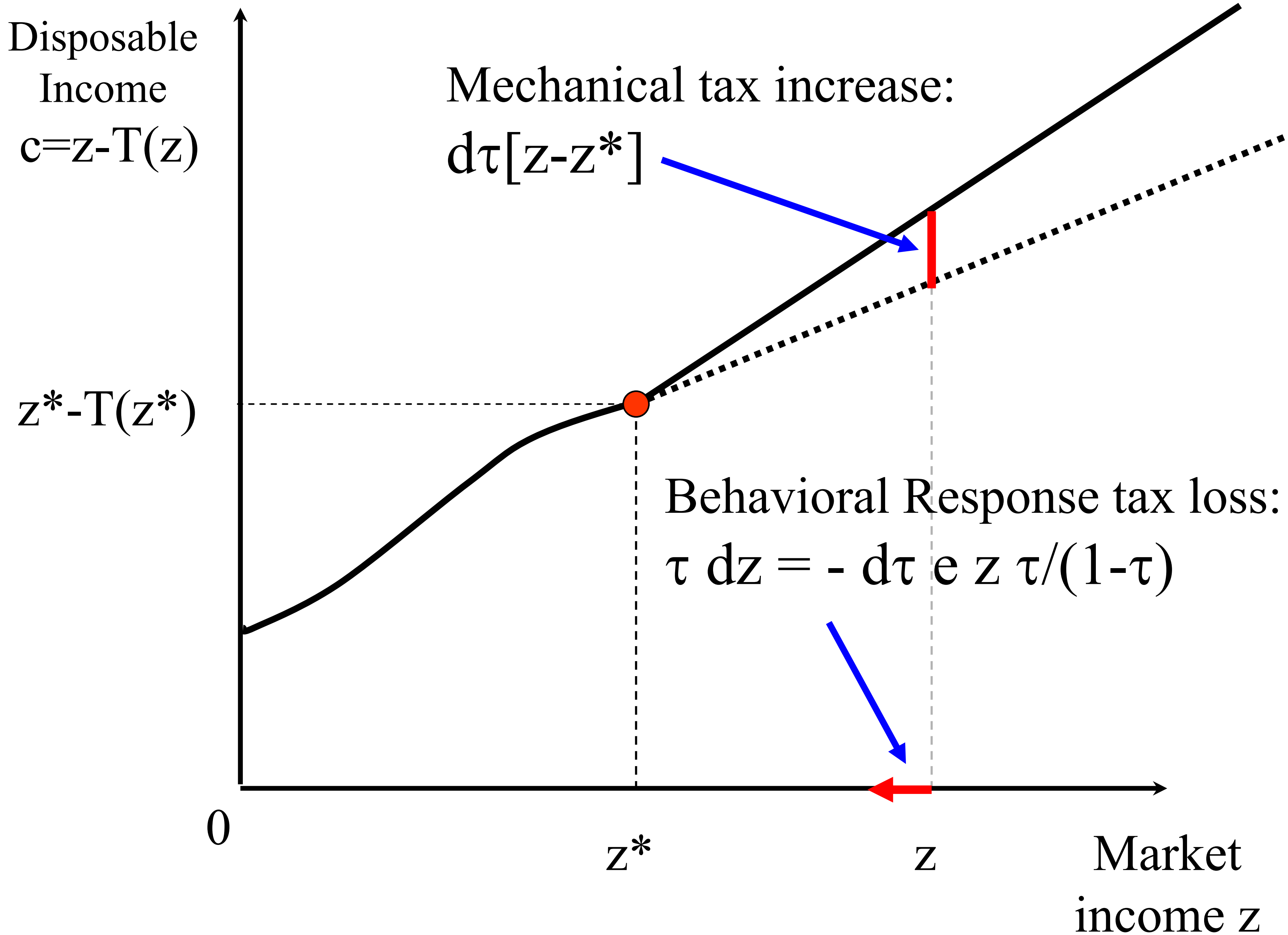
Suppose the government wants to maximize tax revenue collected from top bracket taxpayers (marginal utility of consumption of top 1% earners is small)

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

OPTIMAL TOP INCOME TAX RATE

Consider small $d\tau > 0$ reform above z^*.

1) **Mechanical increase** in tax revenue:

$$dM = [z - z^*]d\tau$$

2) **Behavioral response** reduces tax revenue:

$$dB = \tau dz = -\tau \frac{dz}{d(1-\tau)} d\tau = -\frac{\tau}{1-\tau} \cdot e \cdot z \cdot d\tau$$

$$dM + dB = d\tau \left\{ [z - z^*] - e \frac{\tau}{1-\tau} z \right\}$$

Optimal τ such that $dM + dB = 0$

$$\Rightarrow \quad \frac{\tau}{1-\tau} = \frac{1}{e} \cdot \frac{z - z^*}{z} \Rightarrow \tau = \frac{1}{1 + a \cdot e} \quad \text{with} \quad a = \frac{z}{z - z^*}$$

OPTIMAL TOP INCOME TAX RATE

Optimal top tax rate: $\tau = \dfrac{1}{1 + a \cdot e}$ with $a = \dfrac{z}{z - z^*}$

Optimal τ decreases with e [efficiency]

Optimal τ decrease with a [thinness of top tail]

Empirically $a \simeq 1.5$, easy to estimate using distributional data [mean income above $z^* = \$.5$m is about $1.5m in the US]

Empirically e is harder to estimate [controversial]

Example: If $e = .25$ then $\tau = 1/(1 + 1.5 \cdot 0.25) = 1/1.375 =$ 73%

REAL VS. TAX AVOIDANCE RESPONSES

Behavioral response to income tax comes not only from reduced labor supply but from tax avoidance or tax evasion

Tax avoidance: legal means to reduce tax liability (exploiting tax loopholes)

Tax evasion: illegal under-reporting of income

Labor supply vs. tax avoidance/evasion distinction matters because:

1) If people work less when tax rates increase, there is not much the government can do about it

2) If people avoid/evade more when tax rates increase, then the govt can reduce tax avoidance/evasion opportunities [closing tax loopholes, broadening the tax base, increasing tax enforcement, etc.]

REAL VS. AVOIDANCE RESPONSES

Key policy question: Is it possible to eliminate avoidance responses using base broadening, etc.? or would new avoidance schemes keep popping up?

a) Some forms of tax avoidance are due to **poorly designed tax codes** (preferential treatment for some income forms or some deductions)

b) Some forms of tax avoidance/evasion can only be addressed with **international cooperation** (offshore tax evasion in tax havens)

c) Some forms of tax avoidance/evasion are due to technological limitations of tax collection (impossible to tax informal cash businesses)

OPTIMAL PROFILE OF TRANSFERS

If individuals respond to taxes only through **intensive** margin (how much they work rather than whether they work), optimal transfer at bottom takes the form of a "Negative Income Tax":

1) Lumpsum grant $-T(0) > 0$ for those with no earnings

2) High marginal tax rates (MTR) $T'(z)$ at the bottom to phase-out the lumpsum grant quickly

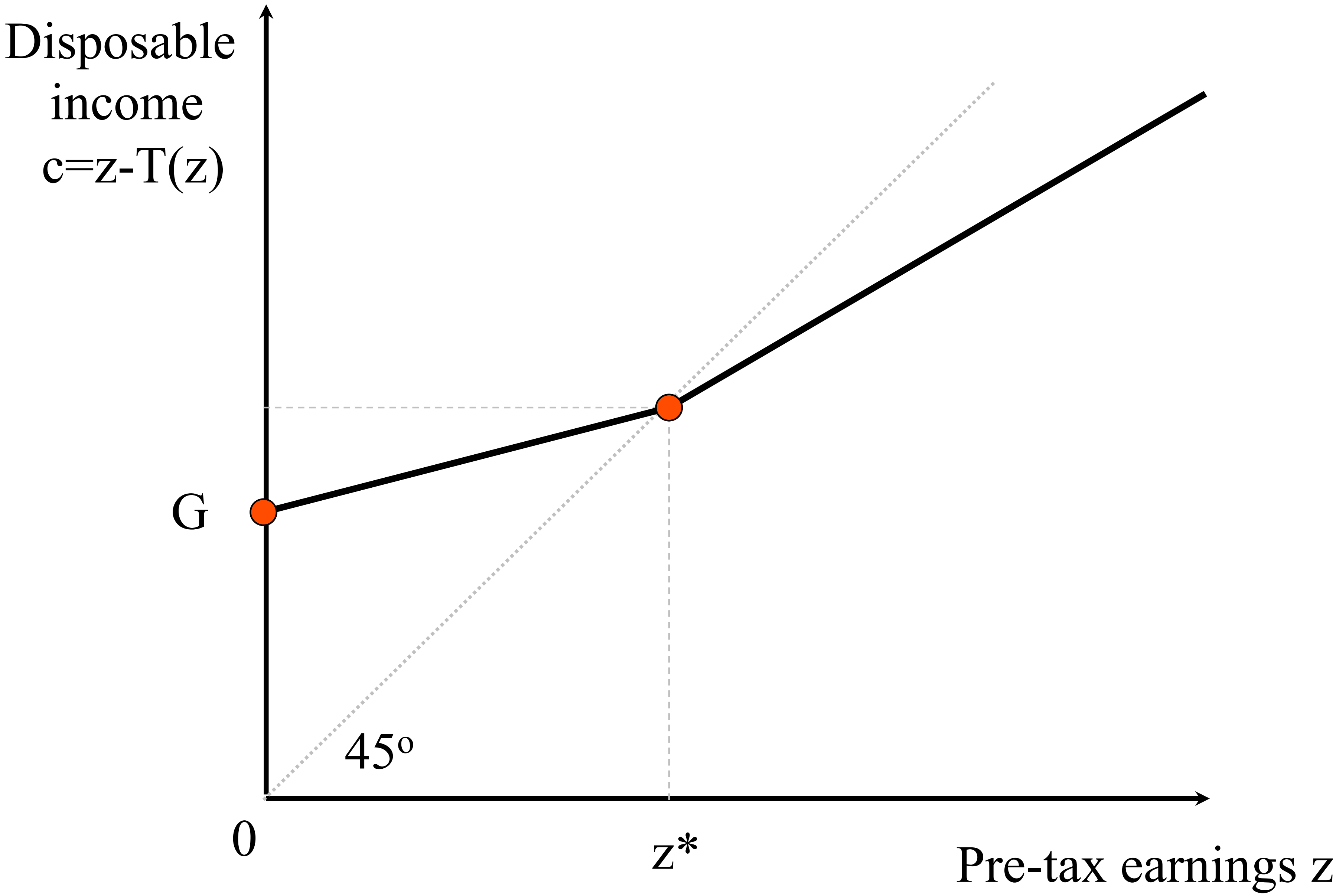
Intuition: high MTR at bottom are efficient because:

(a) they target transfers to the most needy

(b) earnings at the bottom are low to start with $\Rightarrow$ intensive labor supply response does not generate large output losses

But US system with zero MTR at bottom justified if society sees people with zero income as **less deserving** than average

Starting from a means-tested program

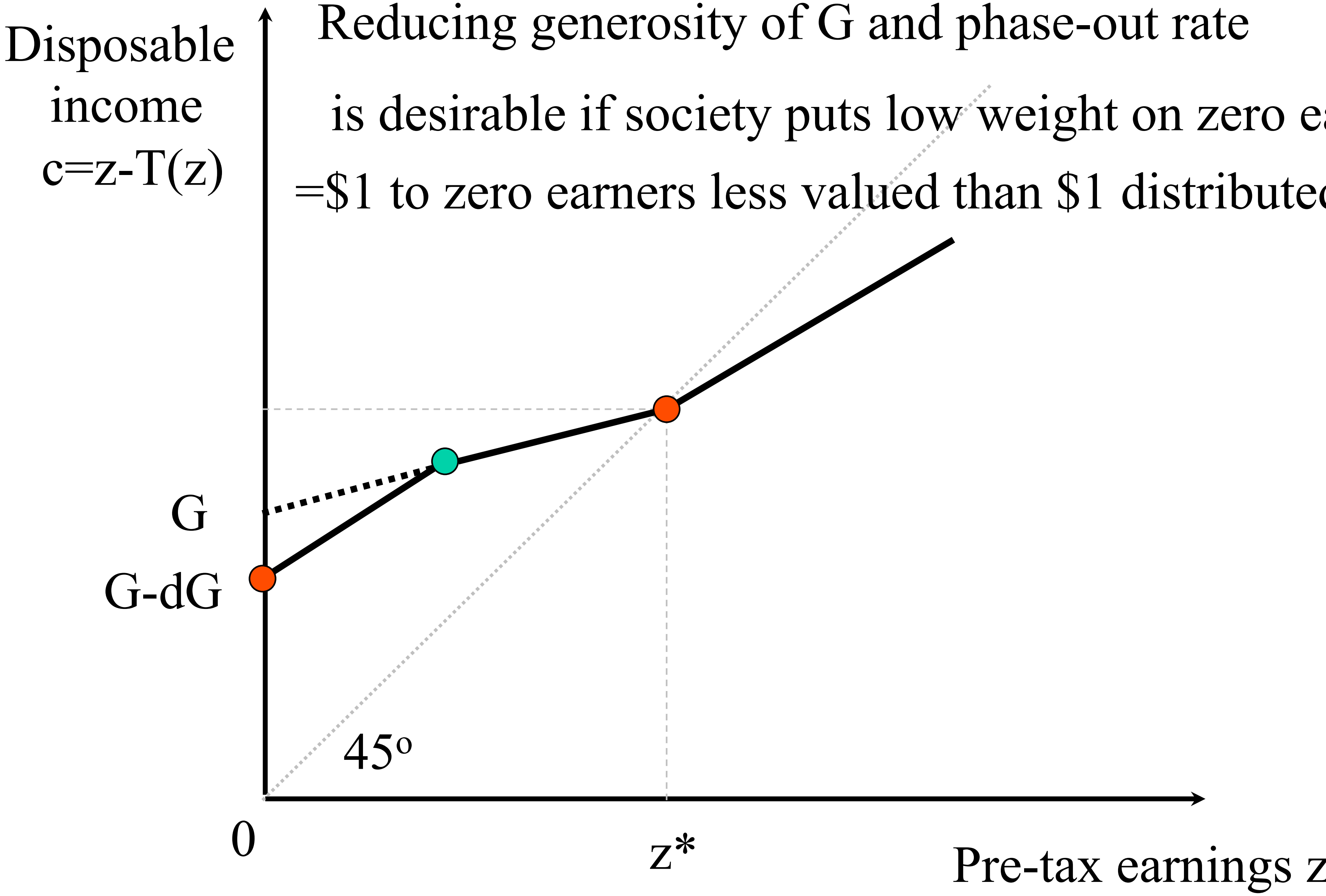


Starting from a means-tested program

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



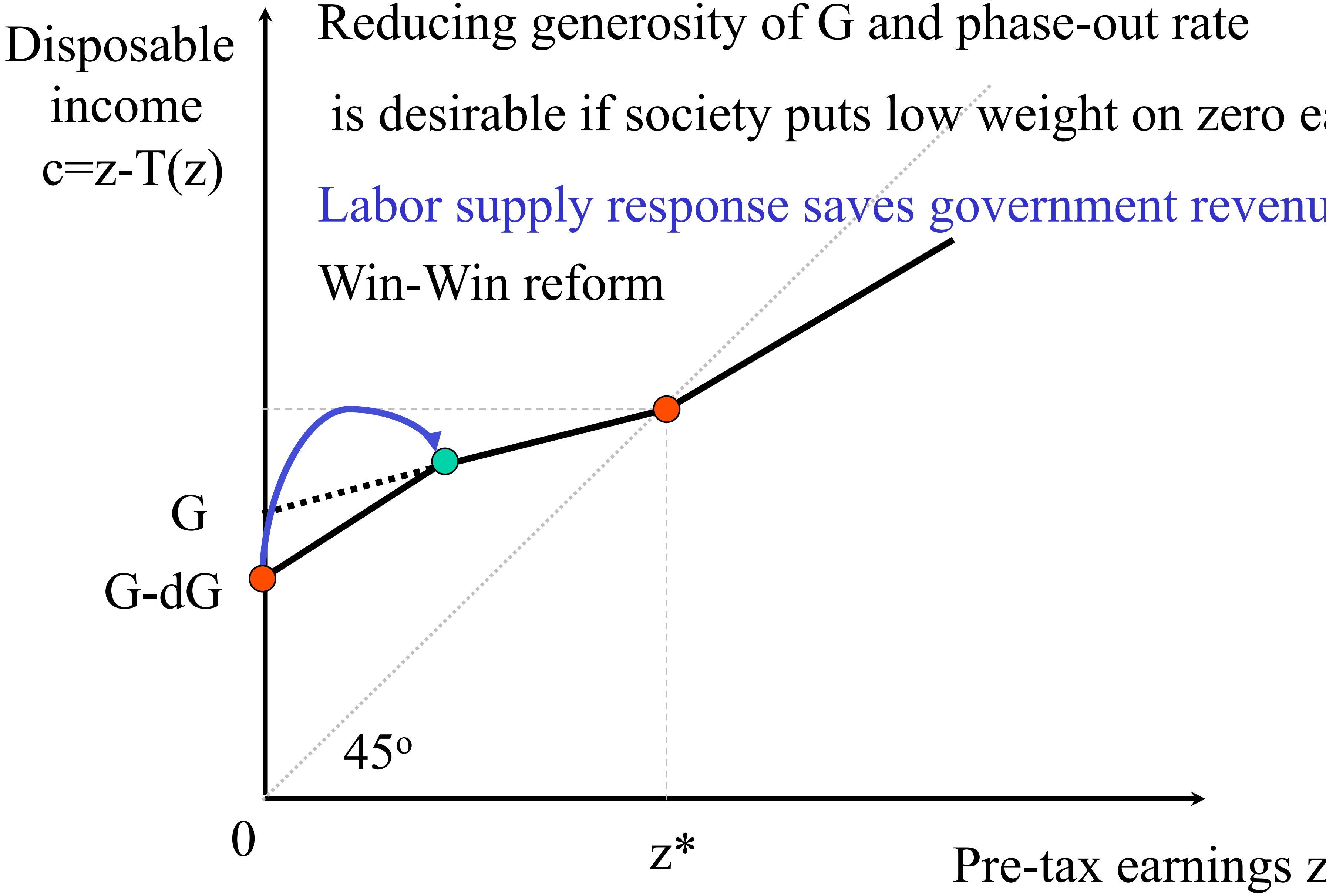
Starting from a means-tested program

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



Optimal Transfers: Participation Responses

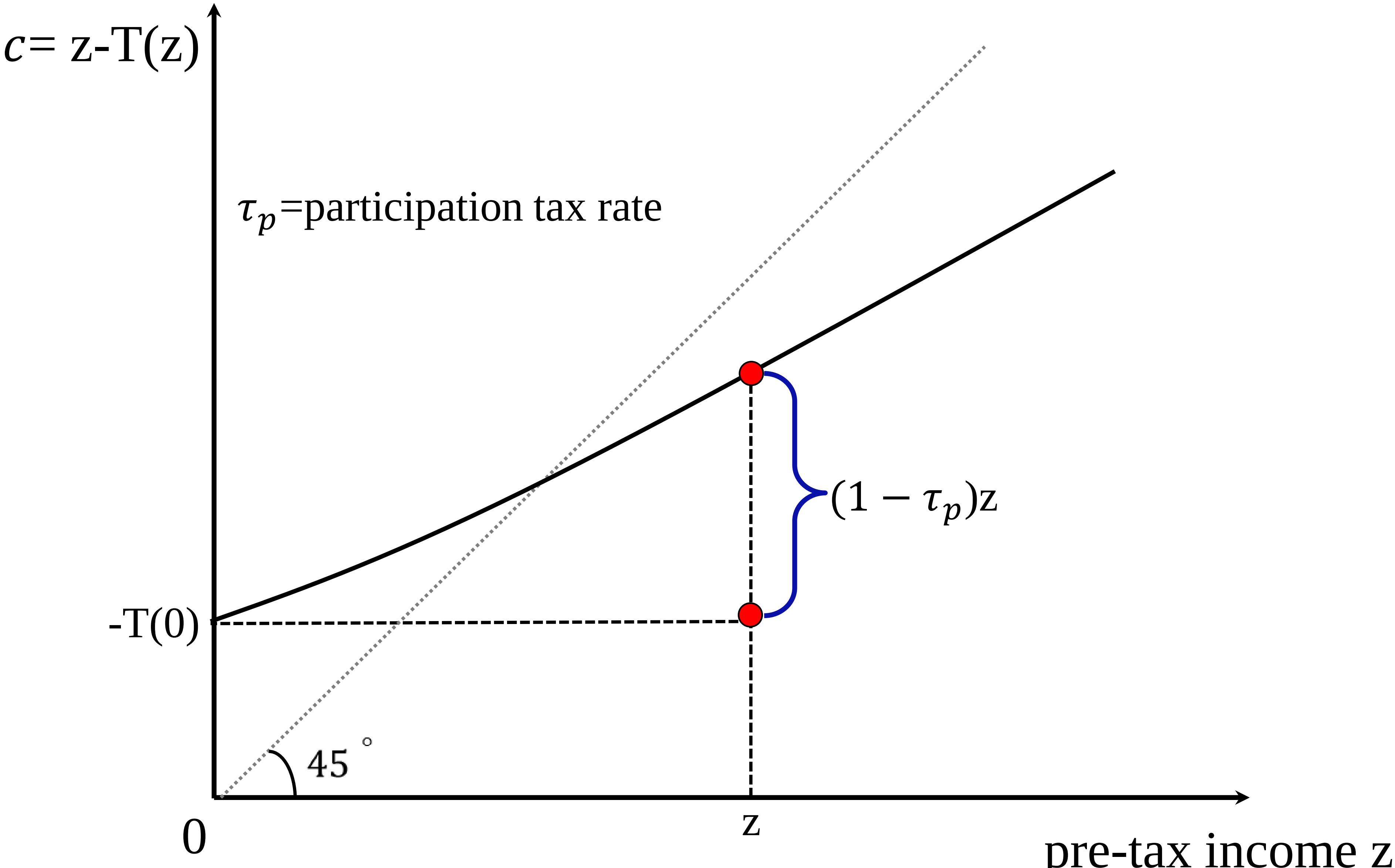
Empirical literature shows that participation labor supply responses [whether to work or not] are large at the bottom [much larger and clearer than intensive responses]

Participation depends on participation tax rate:

$$\tau_p = [T(z) - T(0)]/z$$

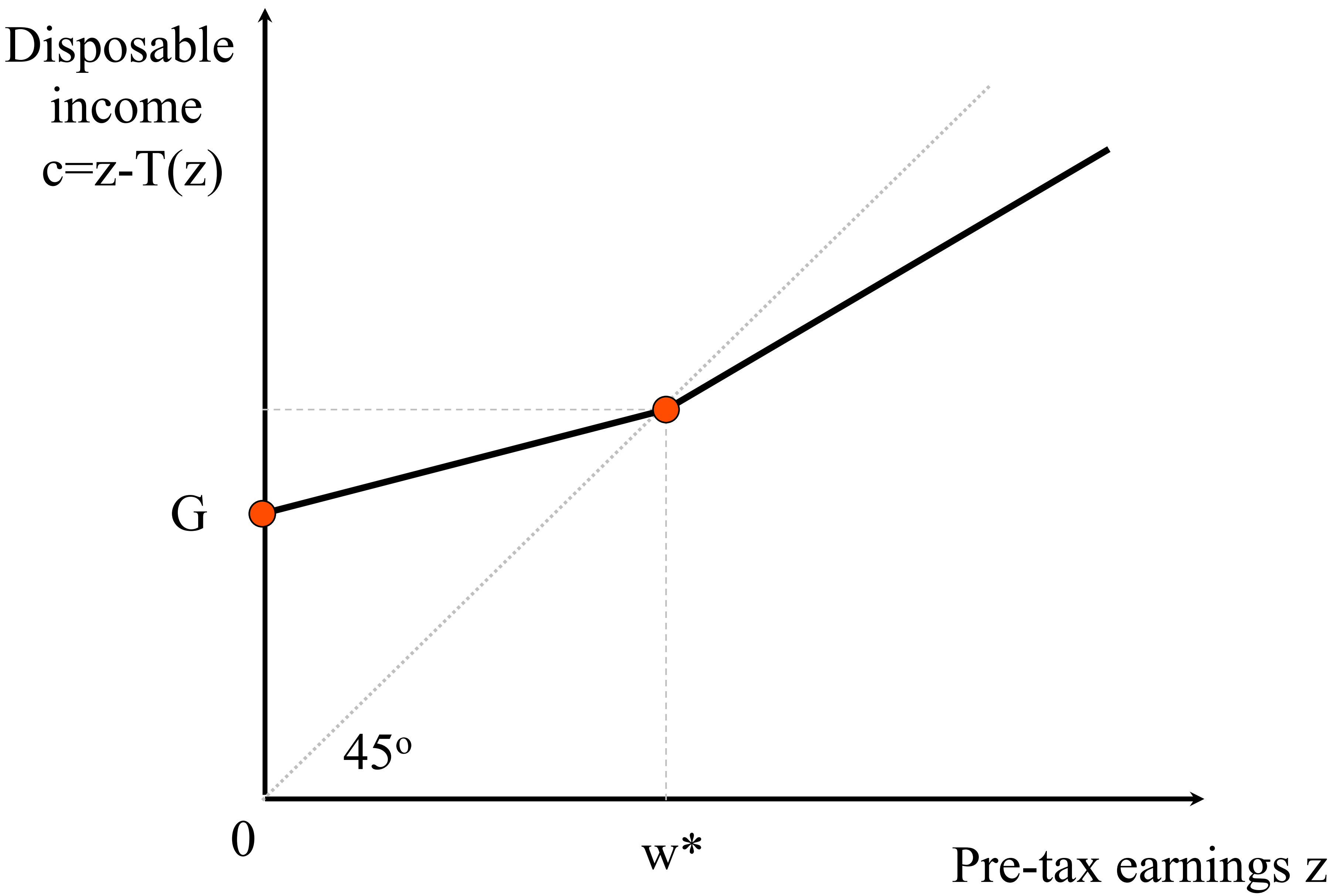
Individual keeps fraction $1 - \tau_p$ of earnings when moving from zero earnings to earnings z: $z - T(z) = -T(0) + z \cdot (1 - \tau_p)$

Key result: in-work subsidies with $T'(z) < 0$ are optimal when labor supply responses are concentrated along extensive margin and govt cares about low income workers.



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

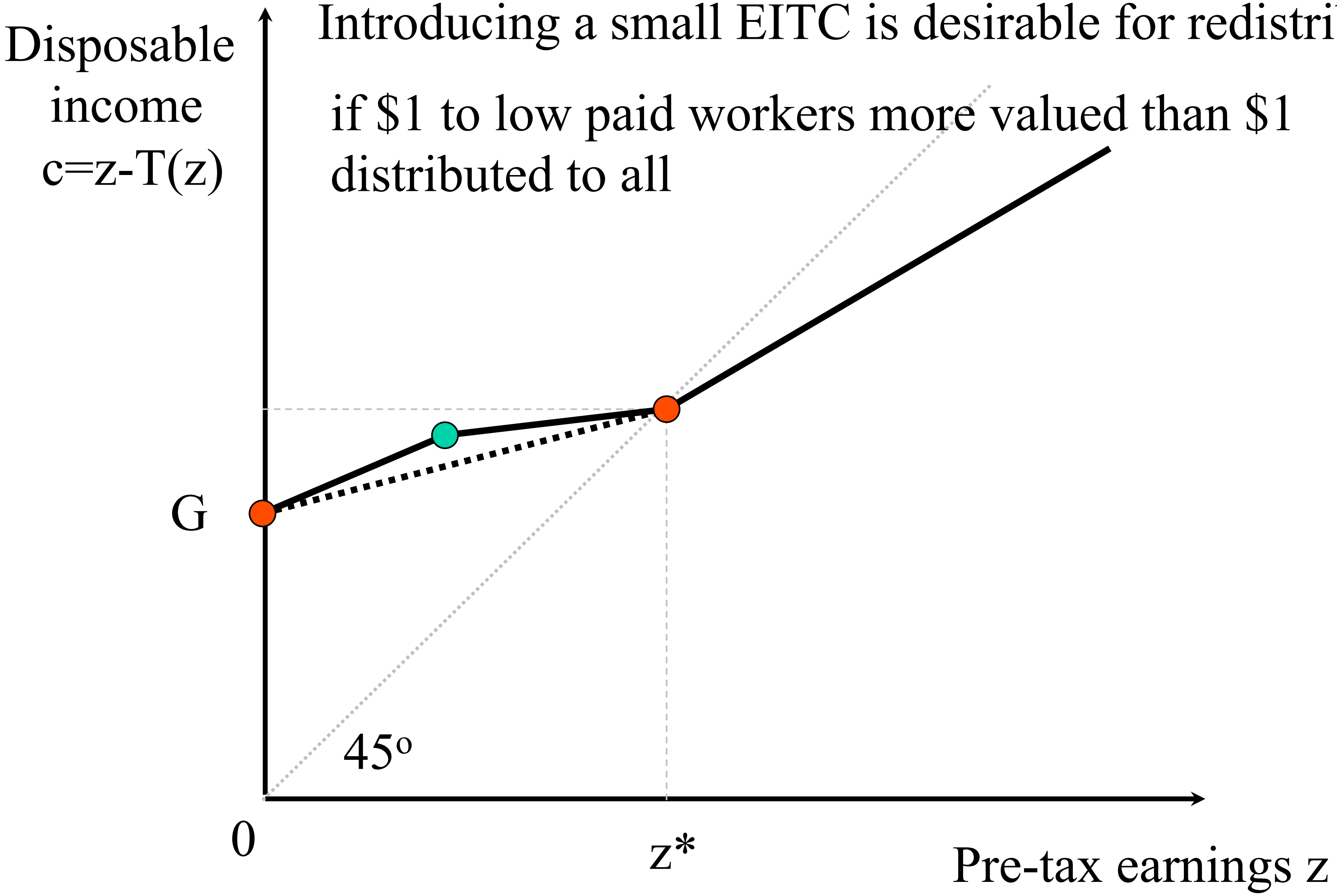
Starting from a Means-Tested Program



Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

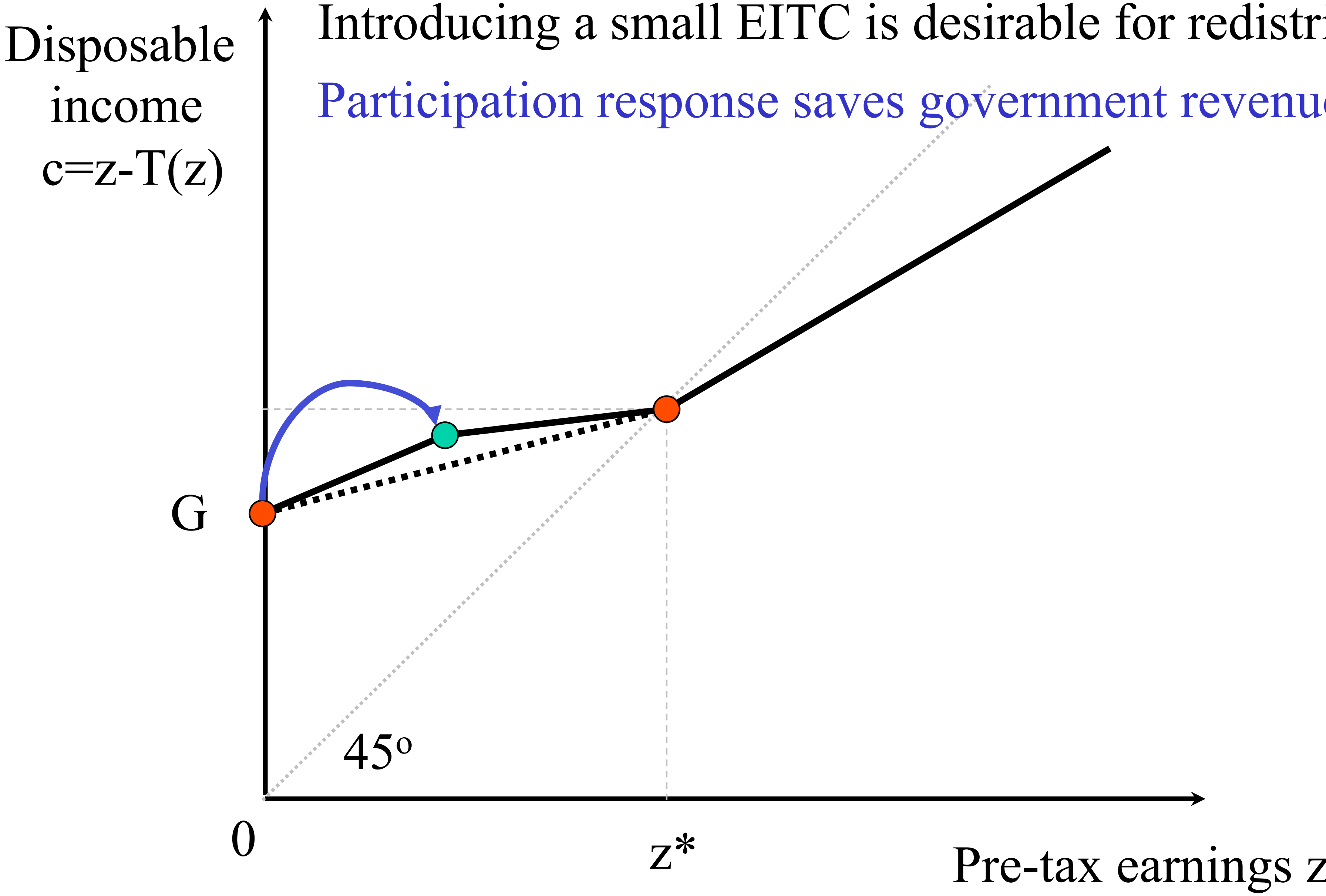
if $1 to low paid workers more valued than $1 distributed to all



Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

Participation response saves government revenue

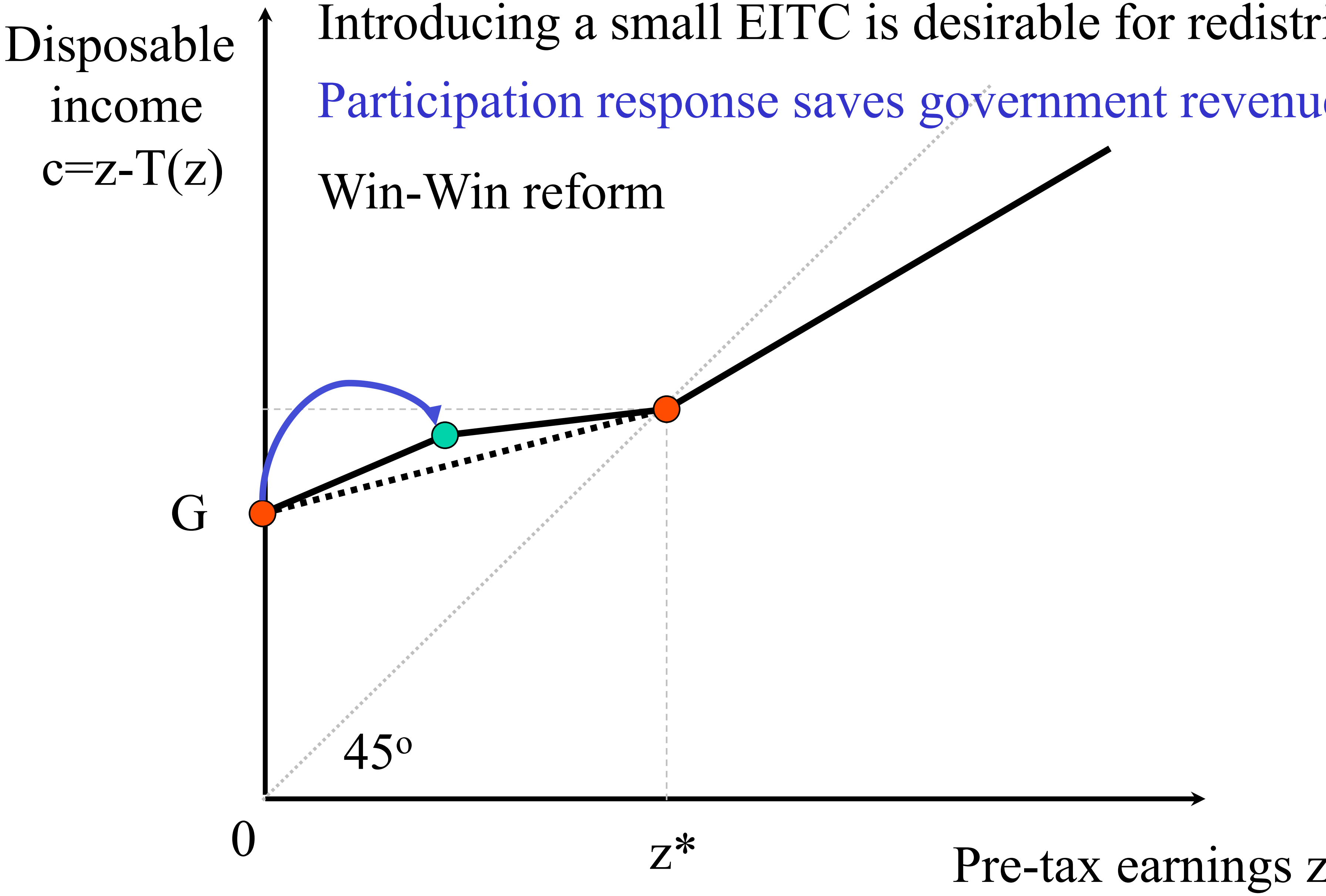


Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

Participation response saves government revenue

Win-Win reform

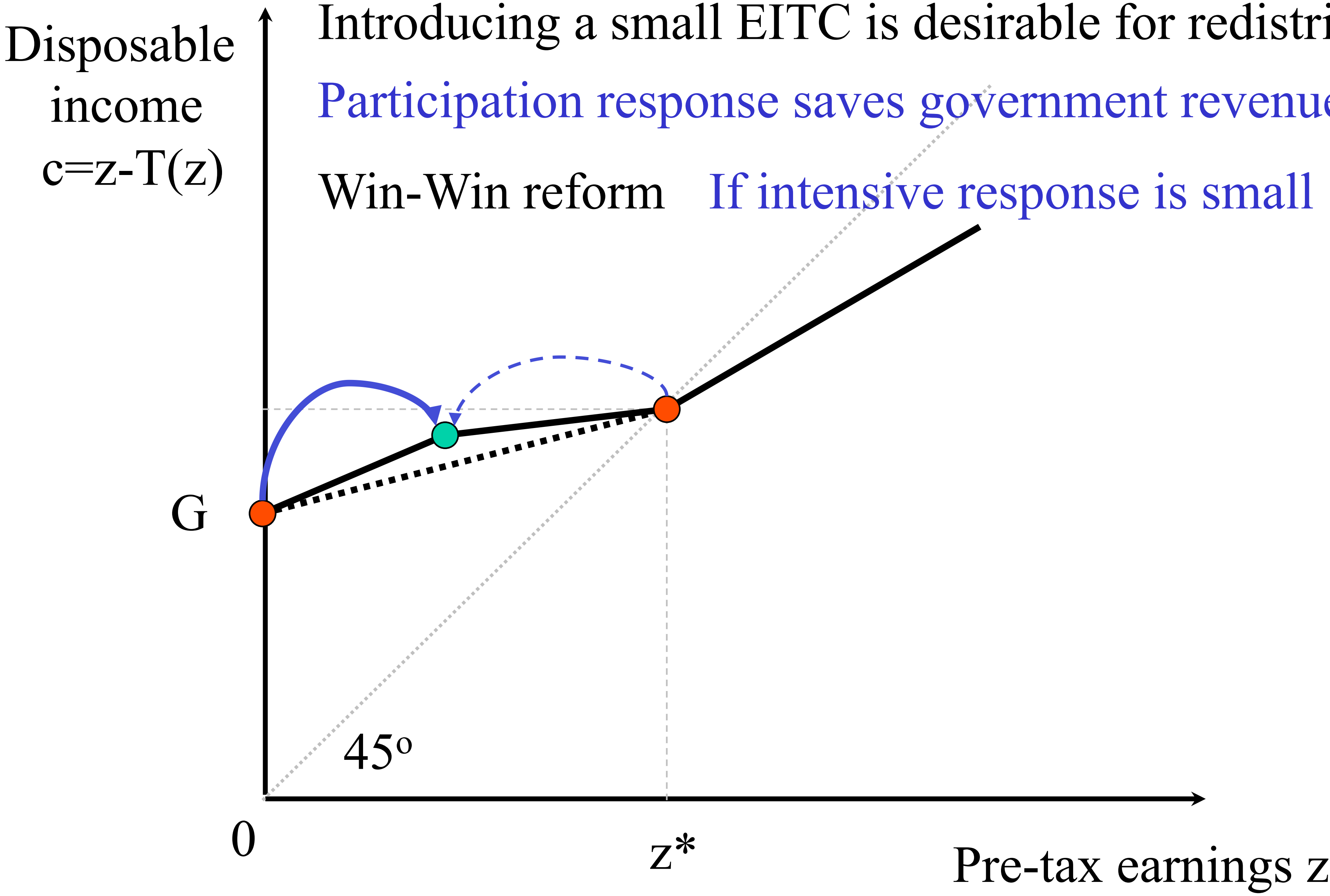


Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

Participation response saves government revenue

Win-Win reform If intensive response is small



OPTIMAL PROFILE OF TRANSFERS: SUMMARY

1) If society views **zero earners** as less deserving than average [conservative view that substantial fraction of zero earners are "free loaders"] then low lumpsum grant combined with low phasing out rate at bottom is optimal

2) If society views **low income workers** as more deserving than average [typically bipartisan view] and labor supply responses concentrated along extensive margin (work vs. not) then low phasing out rate at bottom is optimal

3) Generous lumpsum grant with high MTR at bottom justified only if society views non workers as deserving and no strong response along the extensive margin (work vs. not)

ACTUAL TAX/TRANSFER SYSTEMS

1) Means-tested transfer programs used to be of the traditional form with high phasing-out rates (sometimes above 100%) $\Rightarrow$ No incentives to work (even with modest elasticities)

Initially designed for groups not expected to work [widows in the US] but later attracting groups who could potentially work [single mothers]

2) In-work benefits have been introduced and expanded in OECD countries since 1980s (US EITC, UK Family Credit, etc.) and have been politically successful $\Rightarrow$ (a) Redistribute to low income workers, (b) improve incentives to work

Basic Income vs. Means-tested transfer: Mankiw quiz

Consider an economy in which average income is \$50,000 but with much income inequality. To provide a social safety net, two possible policies are proposed.

A. A universal transfer of \$10,000 to every person, financed by a 20-percent flat tax on income.

B. A means-tested transfer of \$10,000. The full amount goes to someone without any income. The transfer is then phased out: You lose 20 cents of it for every dollar of income you earn. These transfers are financed by a tax of 20 percent on income above \$50,000.

Which would you prefer? A, B, (C=indifferent btw A and B)

Basic Income vs. Means-tested transfer

Basic income definition: all people receive an unconditional sum of money (every year) regardless of how much they earn

This is the R of the linear tax system $c = (1 - \tau) \cdot z + R$

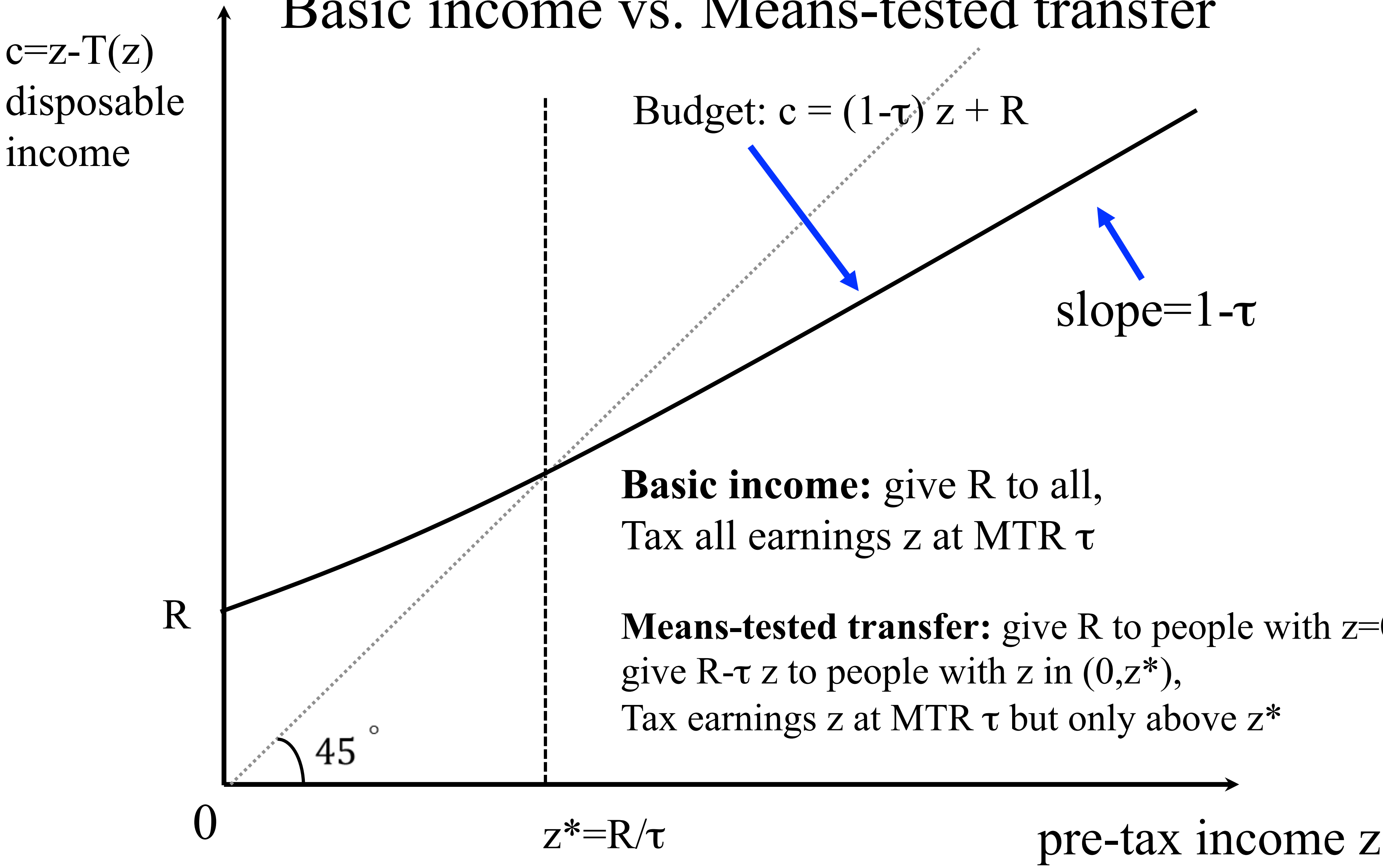
Or the $-T(0) > 0$ of the nonlinear tax system $c = z - T(z)$

Basic income for everybody + higher taxes to fund it is **economically equivalent** to means-tested transfer phased out with earnings

Cons: basic income requires higher "nominal" taxes (that are then rebated back)

Pros: Much more widely accepted. Countries provide "in-kind" basic income in the form of universal health care (not the US), public education, and child allowances

Basic income vs. Means-tested transfer



Basic income: give R to all,
Tax all earnings z at MTR τ

Means-tested transfer: give R to people with z=0,
give R-τ z to people with z in (0,z*),
Tax earnings z at MTR τ but only above z*

Modern social state and fairness

Taxes roughly proportional to income = tax rate roughly equal = broad fairness appeal in isolation

Social transfers (child care, education, health) roughly equal per person and de-commodified = everybody gets access to quality education and health care = broad fairness appeal

Very redistributive combination but somewhat hidden
$\Rightarrow$ Successful large social state (EU countries)

Means-tested transfers are economically equivalent but reveal the redistribution $\Rightarrow$ Less generous social state (US)

See Esping-Anderen '90 book for welfare-state regimes sociological analysis

IN-KIND REDISTRIBUTION

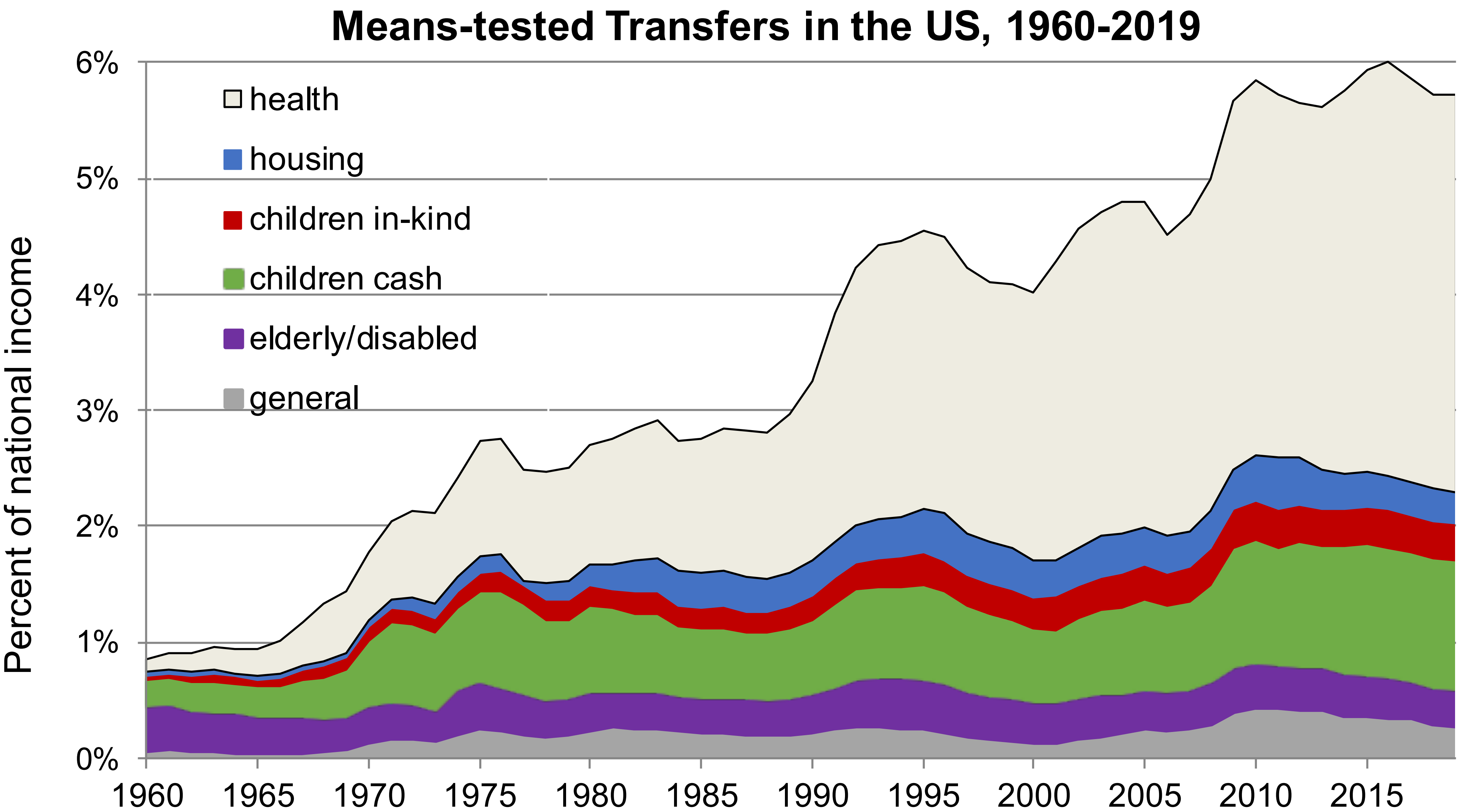
Most means-tested transfers are in-kind and often rationed (health care, child care, public education, public housing, nutrition subsidies) [care not cash San Francisco reform]

1) **Rational Individual perspective:**

(a) If in-kind transfer is **tradeable** at market price $\Rightarrow$ in-kind equivalent to cash

(b) If in-kind transfer **non-tradeable** $\Rightarrow$ in-kind inferior to cash

Cash transfer preferable to in-kind transfer from individual perspective



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.

IN-KIND REDISTRIBUTION

2) **Social perspective:** 3 justifications:

a) Commodity Egalitarianism: some goods (education, health, shelter, food) seen as **rights** and ought to be accessible to all in a just society

Quality education and health care unaffordable for bottom 50% even in rich countries.

b) Paternalism: society imposes its preferences on recipients [recipients prefer cash]

c) Behavioral: Recipients do not make choices in their best interests (self-control, myopia) [recipients understand that in-kind is better for them]

FAMILY TAXATION: MARRIAGE AND CHILDREN

Two important issues in policy debate:

1) Marriage: What is the optimal taxation of couples vs. singles?

2) Children: What should be the net transfer (transfer or tax reduction) for family with children (as a function of family income and structure)?

TAXATION OF COUPLES

Three potentially desirable properties:

(1) income tax should be based on resources (i.e., family income if families fully share their income)

(2) income tax should be marriage neutral: no higher/lower tax when two single individuals marry

(3) income tax should be progressive (i.e., higher incomes pay a larger fraction of their income in taxes)

It is **impossible** to have a tax system that satisfies all 3 conditions simultaneously:

Income tax that is based on family income and marriage neutral has to satisfy: $T(z^h + z^w) = T(z^h) + T(z^w)$ and hence be linear i.e. $T(z) = \tau \cdot z$

TAXATION OF COUPLES

(1) If couples share their incomes, then family taxation is better. If couples don't share their incomes, then individualized tax is better

(2) If marriage responds to tax/transfer differential $\Rightarrow$ better to reduce marriage penalty, i.e., move toward individualized system

Particularly important when cohabitation is close substitute for marriage (as in Scandinavian countries)

(3) If labor supply of secondary earners more elastic than labor supply of primary earner $\Rightarrow$ Secondary earnings should be taxed less (Boskin-Sheshinski JpubE'83)

Labor supply elasticity differential between primary and secondary earners is decreasing over time as earnings gender gap decreases (Blau and Kahn 2007)

TRANSFERS OR TAX CREDITS FOR CHILDREN

1) Children reduce **normalized family income** $\Rightarrow$ Children increase marginal utility of consumption $\Rightarrow$ Transfer for children T_{kid} should be positive

In practice, transfers for children are always positive

2) Should $T_{kid}(z)$ increase with income z?

Pro: rich spend more on their kids than lower income families

Cons: Lower income families need child transfers most

In practice, $T_{kid}(z)$ is fairly constant with z

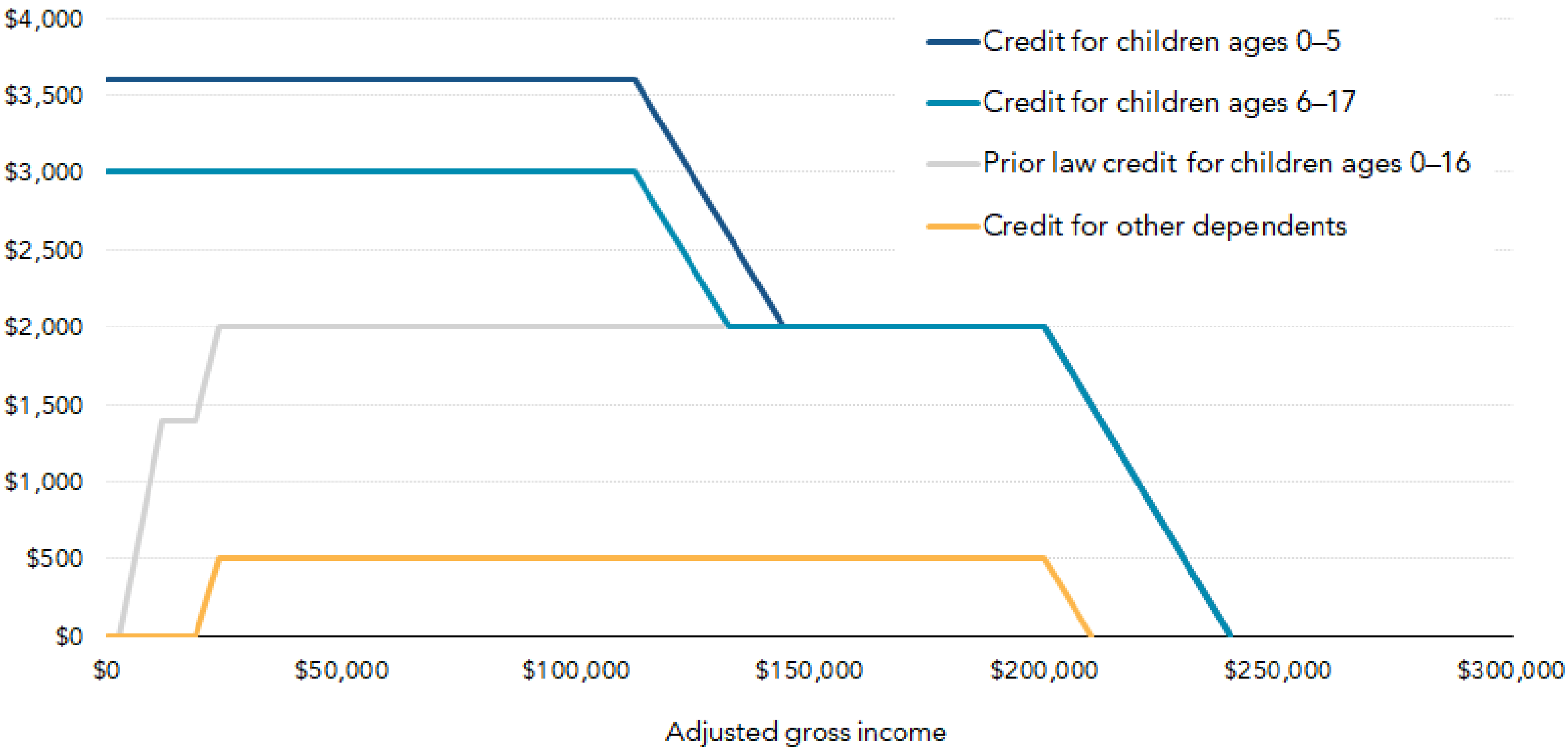
Europe has much more generous pre-kindergarten child care benefits, US has more generous cash tax credits for working families with children

Strong evidence that govt provided child care (Europe) more egalitarian and cheaper overall than private provision (US)

FIGURE 1

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

TPC



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.

REFERENCES

Jonathan Gruber,Public Finance and Public Policy, Fifth Edition, 2016 Worth Publishers, Chapter 20 and Chapter 21

Blau, F. and L. Kahn "Changes in the Labor Supply Behavior of Married Women: 1980-2000", Journal of Labor Economics, Vol. 25, 2007, 393-438. (web)

Boskin, Michael J., and Eytan Sheshinski. "Optimal tax treatment of the family: Married couples." Journal of Public Economics 20.3 (1983): 281-297.(web)

Diamond, P. and E. Saez "From Basic Research to Policy Recommendations: The Case for a Progressive Tax", Journal of Economic Perspectives, 25.4, (2011): 165-190. (web)

Esping-Andersen, Gosta. 1990 *The Three Worlds of Welfare Capitalism*, Princeton University Press.

IRS, Statistics of Income Division "U.S. Individual Income Tax: Personal Exemptions and Lowest and Highest Tax Bracket"(2013) (web)

Piketty, Thomas and Emmanuel Saez "Optimal Labor Income Taxation," Handbook of Public Economics, Volume 5, Amsterdam: Elsevier-North Holland, 2013. (web)

Saez, Emmanuel. "Optimal income transfer programs: intensive versus extensive labor supply responses." The Quarterly Journal of Economics 117.3 (2002): 1039-1073.(web)