Tax systems and their effects

Public Finance

SPSE, Waseda, Fall 2024

Today's talk

- Overview of Japan's tax system
- Tax principles: equity, neutrality, simplicity
- Consumption tax
  - VAT, excise tax
  - Relationship with income tax
  - Effects of consumption tax
- Income tax
  - Personal income tax in Japan
  - Effects of labor income tax
  - Negative income tax, Refundable income credit, basic income

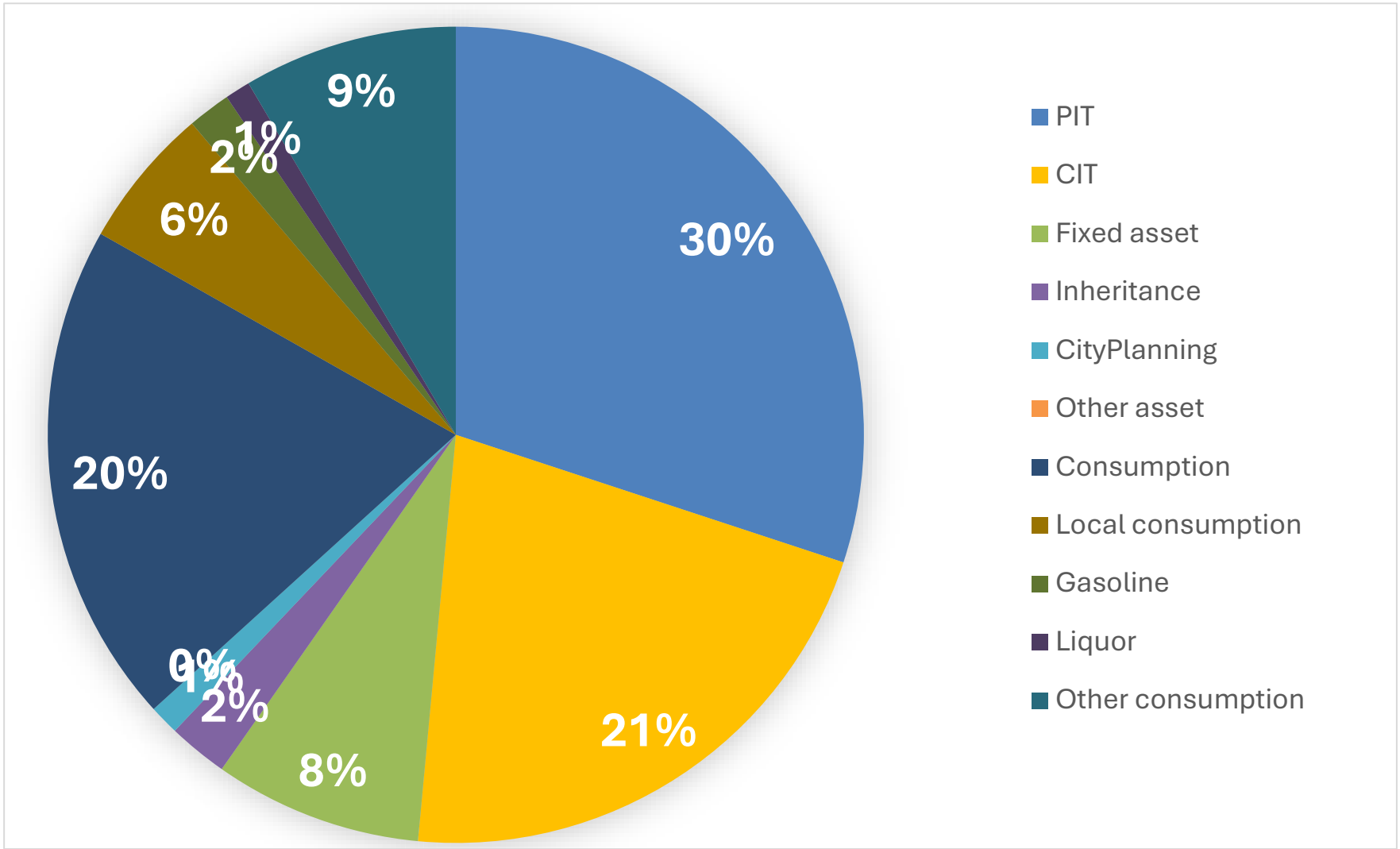
Tax items in Japan

- Learning More About Taxes (July, 2023)

	National	Local		National	Local
Income	• Income tax • Corporation tax • Local corporation tax • Special corporate enterprise Tax • Forest environment tax（From FY2024） • Special income tax for Reconstruction	Inhabitant tax Enterprise tax	Consumption	• Consumption tax • Liquor tax • Tobacco tax • Special tobacco tax • Gasoline tax • Local gasoline tax • Liquefied petroleum gas tax • Aviation fuel tax • Petroleum and coal tax • Promotion of power resources • development tax • Motor vehicle tonnage tax • International Tourist Tax • Tariffs • Tonnage tax • Special tonnage tax	• Local consumption tax • Local tobacco tax • Golf course utilization tax • Light oil delivery tax • Automobile tax • Light motor vehicle tax • Mine lot tax • Hunting tax • Mine production tax • Bathing tax
Assets	• Inheritance/gift tax • Registration and license tax • Stamp tax	• Fixed asset tax • Real estate acquisition tax • City planning tax • Establishment tax • Water utility and land profit tax • Common facilities tax • Housing land development tax • Special land possession tax • National health insurance tax			

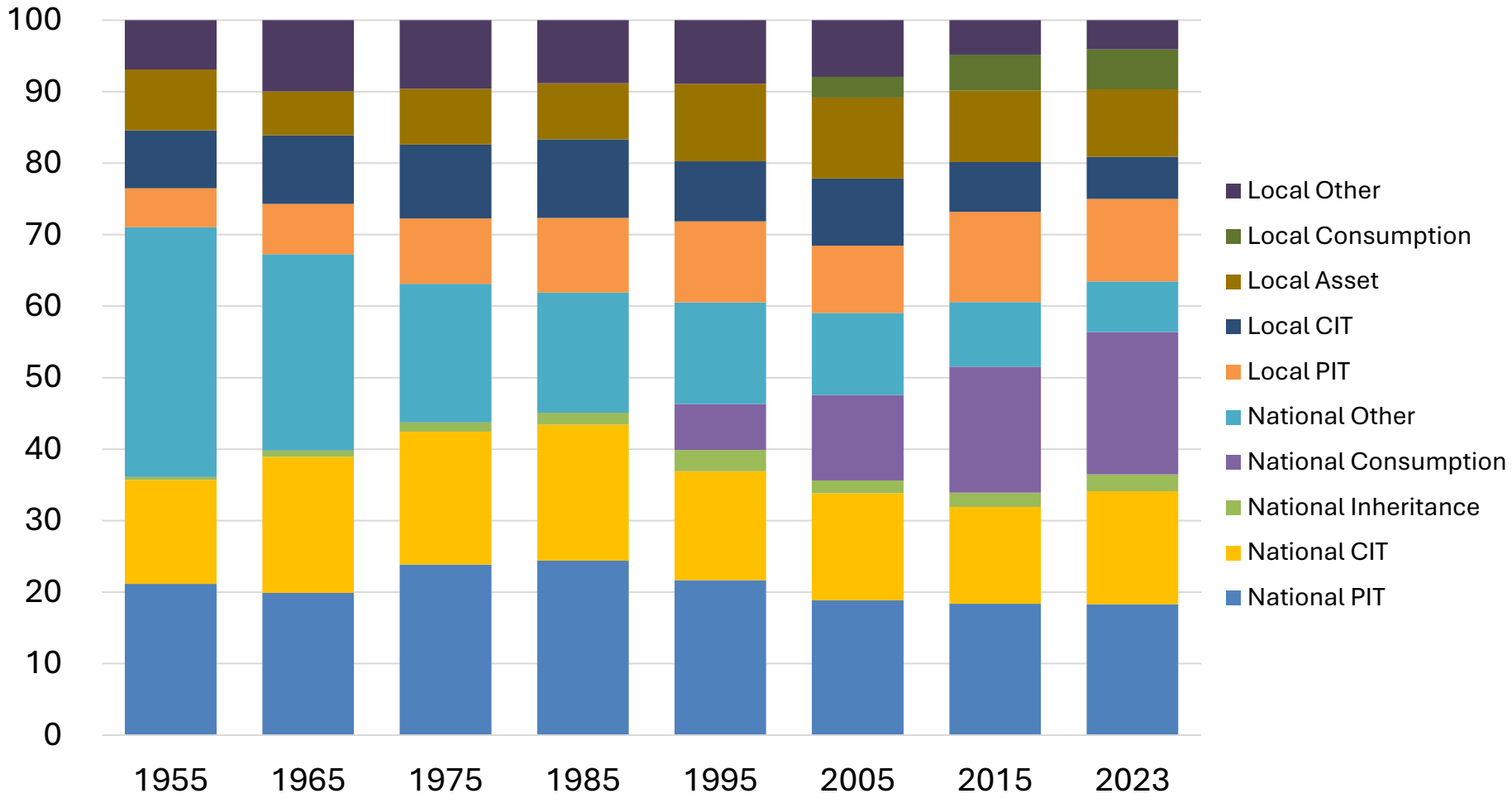
Breakdown of tax revenues

- FY2023, initial budget



History of tax revenues

- FY1989: Excise taxes were reformed. VAT introduced



Tax categories

- Direct tax (vs indirect tax)
  - Taxpayer are assumed to bear the burden
  - Considering the individual situations of taxpayers
- General purpose (vs specific purpose)
  - Not earmarked. Used for any purposes
- Lump-sum, proportional, progressive
  - Lump-sum: constant tax amount
  - Proportional: constant tax rate
  - Progressive: Increasing tax rates according to tax base
- Tax base
  - PIT (Personal income Tax), CIT (Corporate income tax), consumption tax, asset tax, …

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Tax principles

- Tax principles
  - Tax is a violation of property rights. It requires justifications
  - What kind of taxes are desirable?
  - Optimal taxation theory: based on microeconomics
    - Maximize social welfare subject to revenue constraints

- In Japan, three principles are often used
  - Equity
    - Benefit-based, ability-based
  - Neutrality
  - Simplicity

Equity

- Horizontal equity
  - Same tax burden on those who have the same economic capacity
- Vertical equity
  - Larger burden on those who have more economic capacity

- Fundamental issue: how to measure economic capacity
  - Tax capacity
  - Often used: income (how much earn), consumption (how much spend), asset (how much have)
  - Tax agency can capture these accurately?

Equity

- Horizontal equity: definition of “the same capacity”
  - Measure: income? Consumption? Asset?
  - Income: non-cash income is possible
    - E.g.; personal consumption, fringe benefits
  - Necessary expenses
    - E.g.: Medical expenditures
  - Time span
    - E.g.: stable incomes or not (professional athletes)
- Vertical equity: how much progressive?
  - Single with 30M JPY vs Two with 60M JPY
  - How much should tax burden be different btn one with 30M and 300M?
- Value judgement (unobservable)

Equity: Benefit or ability

- Benefit-based:
  - Basing tax liabilities on how much an individual benefits from the activities of the state (Scherf and Weinzierl 2019 NBER)
  - Price for government services
  - Gasoline tax, property tax
- Ability-based:
  - Basing tax liabilities on how much an individual can pay
  - Income tax, consumption tax
  - Tax is distributive
- Both are necessary
  - Benefit-based tax is easy to understand
  - Ability-based tax is for redistribution
  - Measurement of benefits / ability?

Neutrality

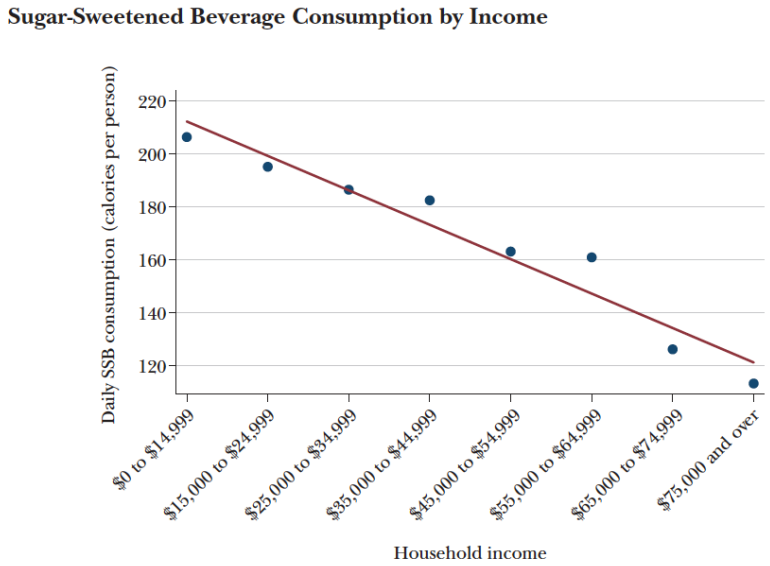
- No effect on economic behavior
  - "Efficiency" in microeconomics. Distortion in resource allocation
    - Pigouvian tax: when the original allocation is distorted
    - Sugar tax, soda tax
- Not neutral taxes
  - Window tax (England, 1696-1851)
    - The costs of the Honorary Revolution and the War against France
    - Residents (not owners) taxed according to # of windows
    - Glass windows were luxury goods, evidence of wealth
      - Fill in windows, health hazard (reduced ventilation and sunlight)
    - Similar taxes in Netherland and others
  - Frontage tax (Kyoto, Japan, Edo period)
    - Created long and narrow houses
  - Beard tax (Russia, c. 1704, Peter the Great)
    - He wanted to change customs

Simplicity

- Small implementation costs
  - Small tax collection costs
  - Small room for tax avoidance behavior
    - tax planning is legal, tax evasion is illegal
  - Horizontal equity between those who did tax planning or not
  - Vertical equity
    - Tax avoidance requires some costs
- This is different from just a “simple” tax system
  - This means that there are few loopholes
- This is not related to direct/indirect tax

Balancing principles

- Often conflicts among principles
  - Window tax is simple but not neutral
  - Capitation tax is simple but not equal
- Striking a balance
  - High soda tax is always good?
    - https://www.aeaweb.org/research/charts/sugar-sweetened-beverages-tax-impact
    - How revenues used?



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Taxes on consumption

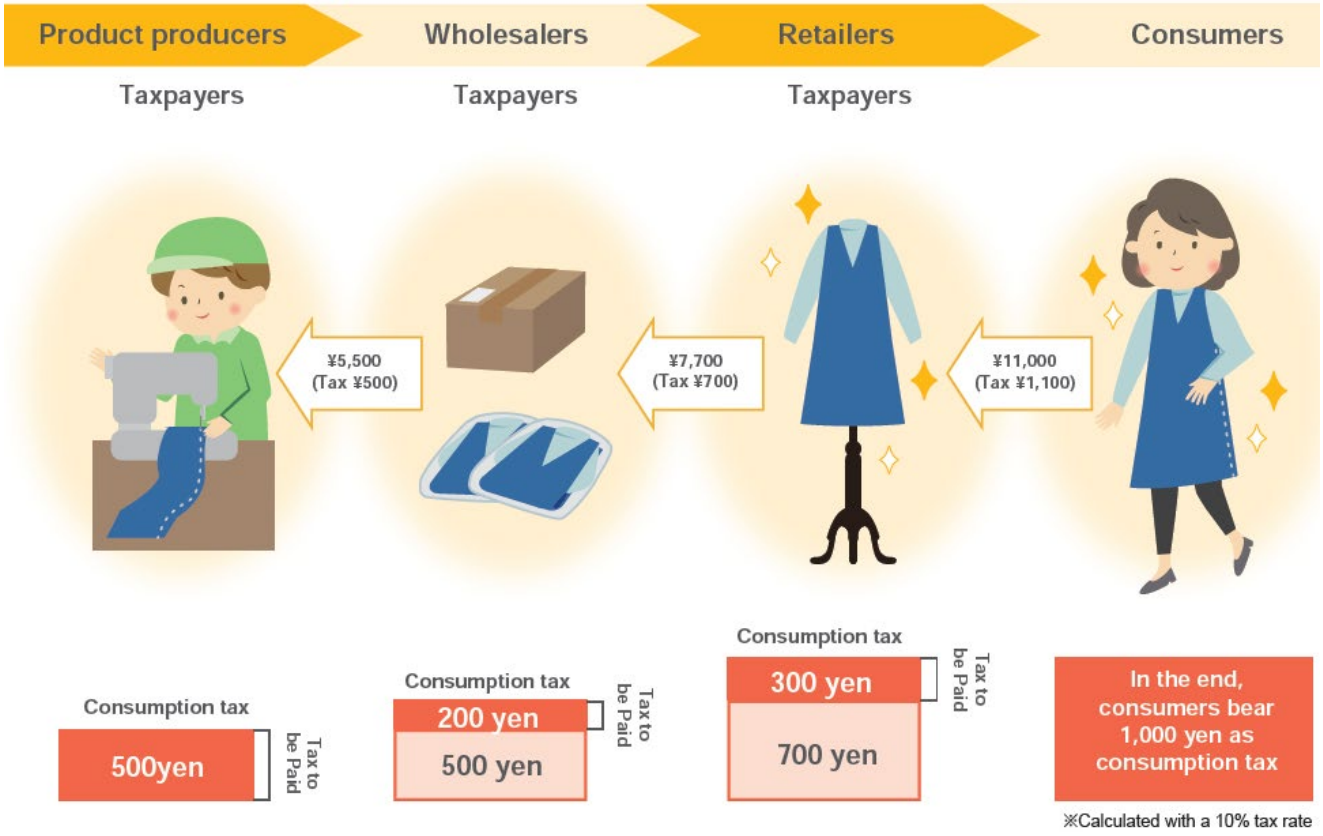
- General consumption tax
  - Tax on consumption expenditures, not depending on which goods
    - Exemption, reduced rate, zero rate
  - “Consumption tax” as a tax item in Japan
    - A kind of VAT (Value-Added Tax)
    - VAT can be seen as a corporate tax
  - Taxes on consumption may be sales tax
- Excise tax, specific consumption tax
  - Tax on consumption on specific goods or services
    - Tax base: expenditures or amount
  - E.g.: Tabacco tax, liquor tax

Excise tax: tax base

- Tax on consumption on specific goods or services
  - Denote before-tax price as p_x, consumption as x
- Ad Valorem tax
  - Tax base is expenditure $p_x x$ →tax rate is t, tax revenue is $tp_x x$
  - E.g.: VAT, many tariffs (standard rate for tomato is 5%)
- Unit tax
  - Tax base is consumption x →tax rate is τ, tax revenue is τx
  - E.g.: Tabacco tax, 15,244 JPY per 1000 cigarettes
  - E.g.: Gasoline tax, 48,600 JPY per 1 kiloliter
  - E.g.: Motor vehicle tonnage tax, 2,500 JPY per year per 0.5t (family car, satisfying some environmental standards)
- Mixed tax: max of ad valorem tax and unit tax
  - E.g.: some tariffs (woollen fabrics, egg yolks etc.)

Consumption tax as a VAT

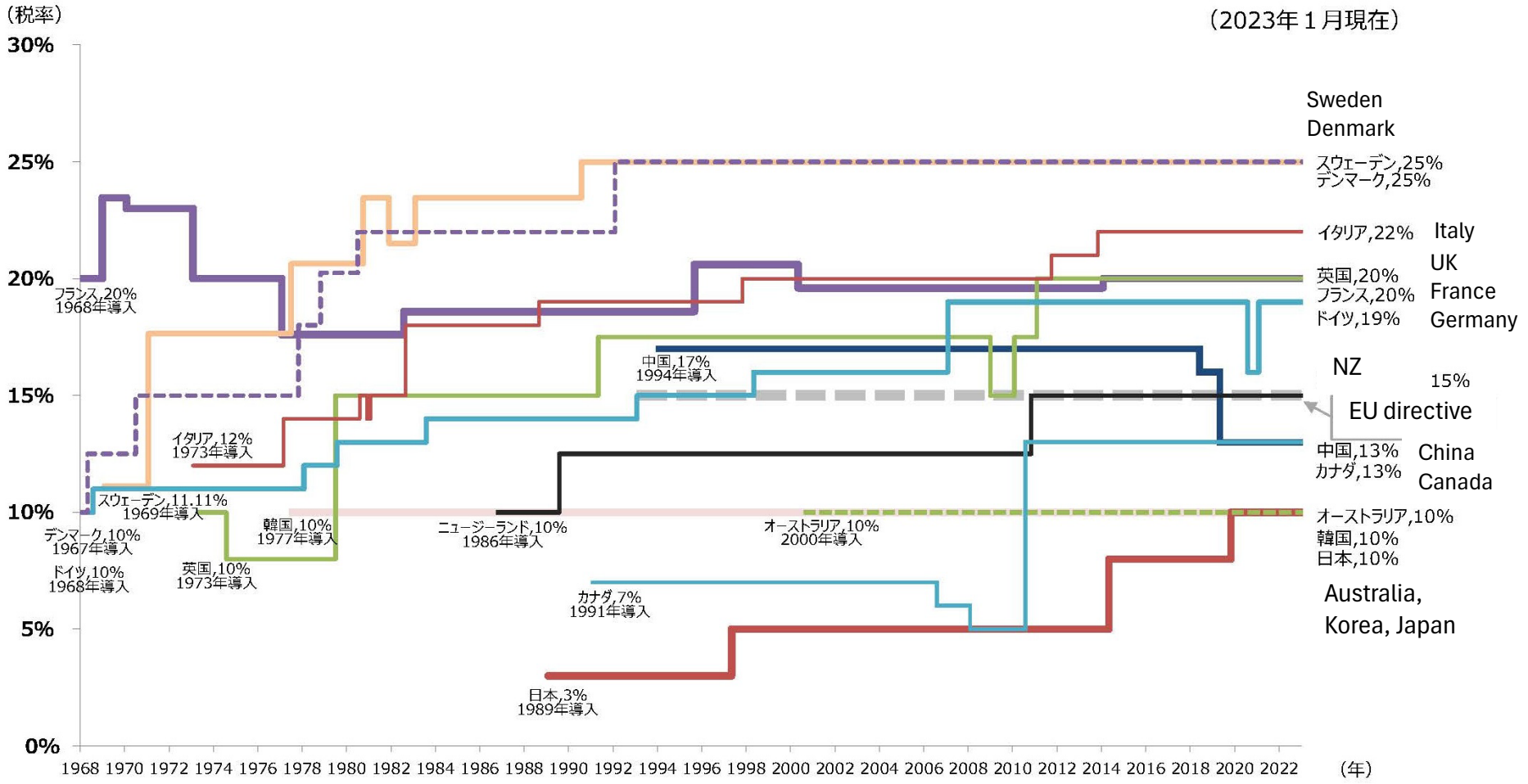
- Business entities are taxable person who pay taxes, but consumers are expected to bear the burden
  - Paid by each step of distribution
  - Business entities deduct input tax from output tax



(cf) Tax free?

- VAT is a tax on domestic consumption
  - If a good is consumed outside the country, it is not taxed
  - Export firms receive tax refunds
    - Receive zero, but pay VAT to upstream firms
    - “Tourists’ Consumption Tax Exemption To Take New Form; Refunds When Departing To Replace Waivers When Buying” (Japan News, Nov 27, 2024)

(cf) VAT rates



https://www.mof.go.jp/tax_policy/summary/consumption/d04.htm

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Consumption vs income taxes

- Consumption tax is different from income tax?
  - Yes, as a tax system
  - But how about the economic effects? Welfare effects?
    - Yes, effects are different in reality, depending on details
    - But is it different in essence? Where does the difference come from?

- Setting
  - Proportional tax
  - Static, dynamic (2 periods)

Proportional, static

- 2 goods modes
  - Consumption tax rate t, income tax rate m,
  - Price of good X = p, price of good Y = 1 (normalization)
- Budget constraint with consumption tax

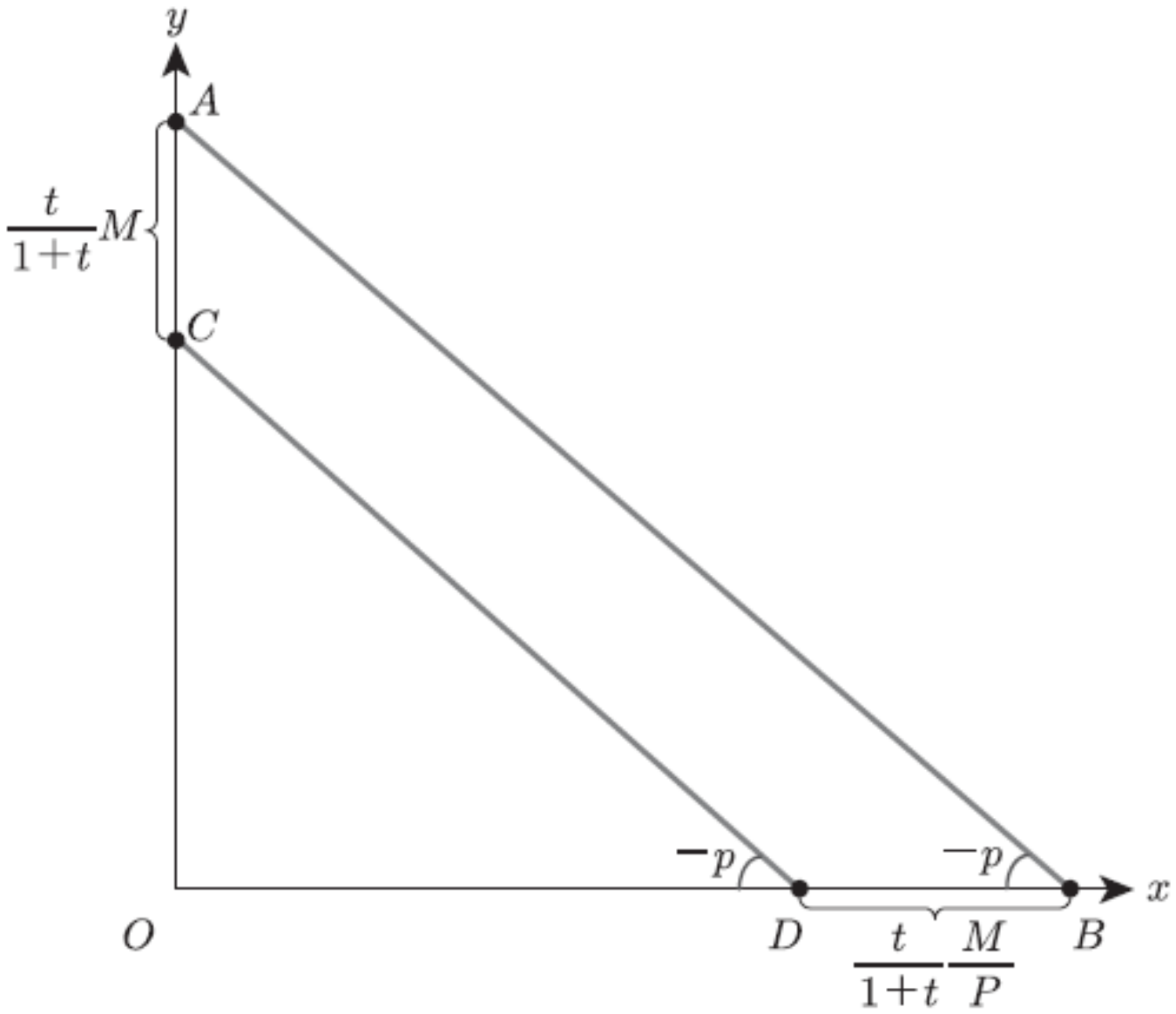
$$(1+t)px + (1+t)y = M \iff px + y = \frac{M}{1+t}$$

  - Relative price between goods X & Y does not change
- Budget constraint with income tax

$$px + y = (1-m)M$$

- Consumption tax and income tax are **equivalent**
  - When $1-m = \frac{1}{1+t} \Leftrightarrow t = \frac{m}{1-m}$, budget constraint is the same

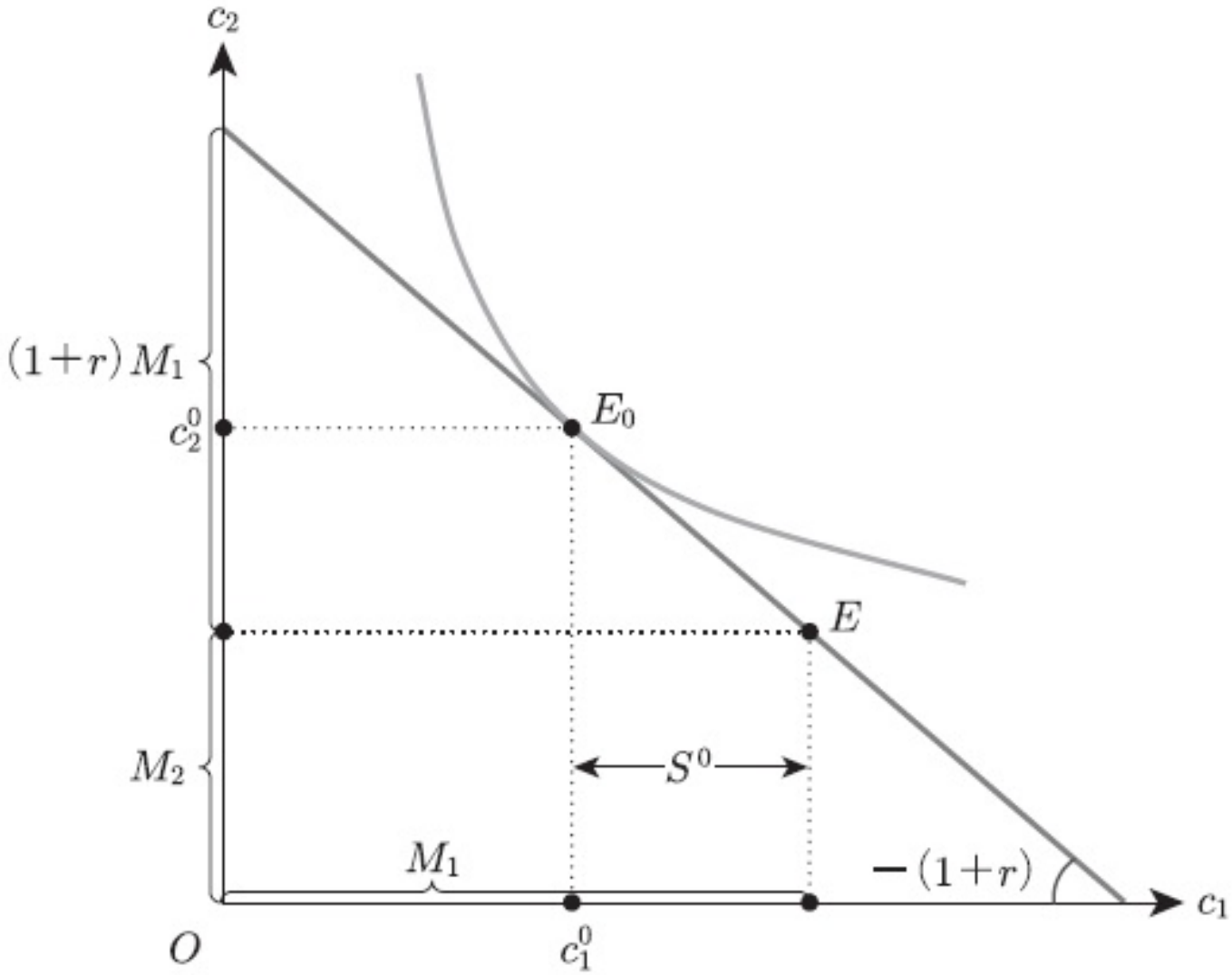
Budget constraint under consumption tax



Proportional, 2 periods

- 2 periods: present and future
  - Consumption in each period is represented by a single variable
  - The current consumption = C_1, future consumptions = C_2
  - Utility function: $u = U(C_1, C_2)$
  - Budget constraint: Saving (borrowing)= S
    - If there is no tax,
    - Period 1: $C_1 = M_1 - S$
    - Period 2: $C_2 = M_2 + (1 + r)S$
    - Rearranging: $C_2 = (1 + r)S + M_2 = (1 + r)(M_1 - C_1) + M_2$
    - Therefore: $C_1 + \frac{C_2}{1+r} = M_1 + \frac{M_2}{1+r}$

Intertemporal decision making



Proportional, 2 periods

- If consumption tax is introduced,

$$C_1 + \frac{C_2}{1+r} = \frac{1}{1+t}\left(M_1 + \frac{M_2}{1+r}\right)$$

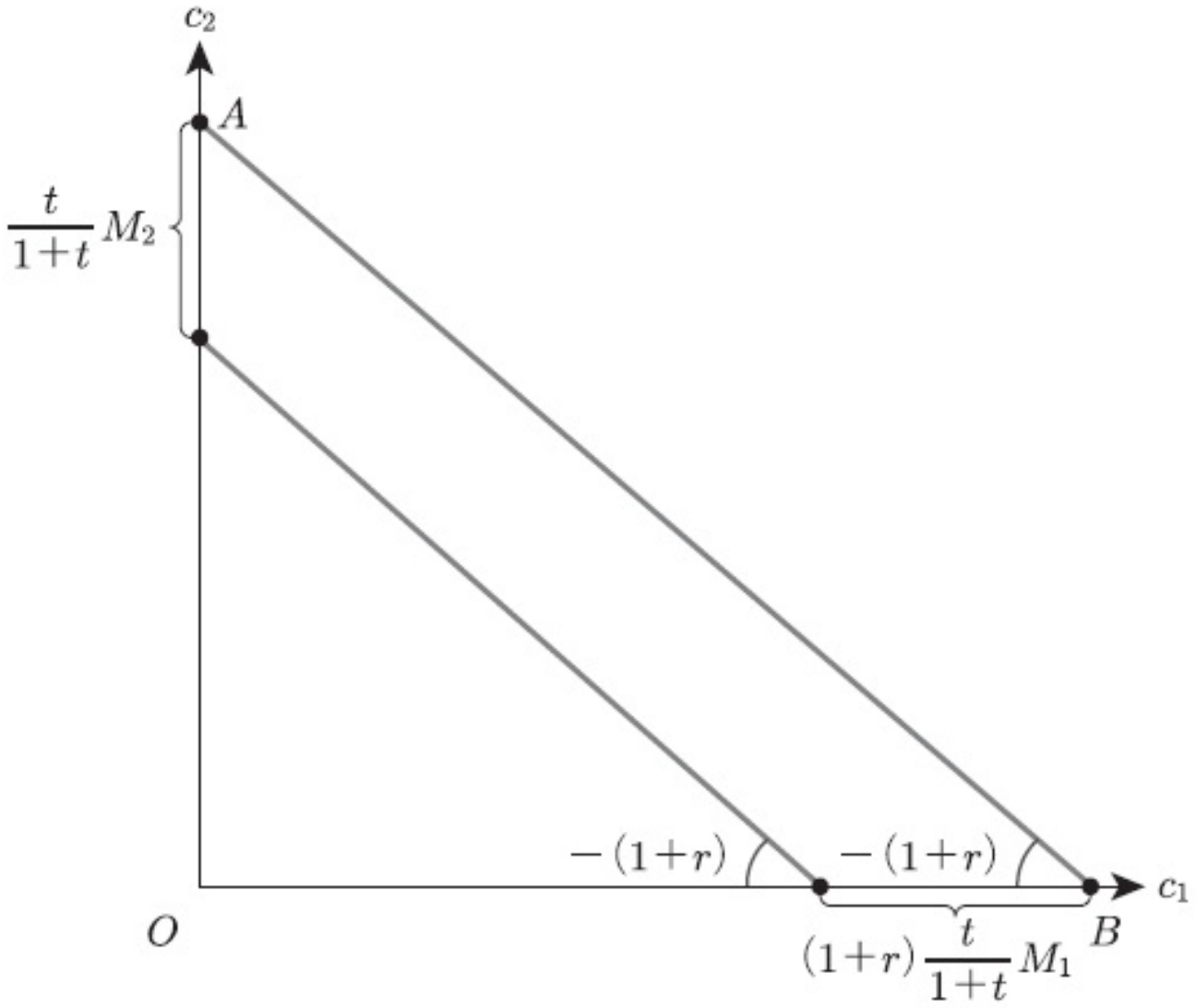
  - Period 1: $(1+t)C_1 = M_1 - S$
  - Period 2: $(1+t)C_2 = M_2 + (1+r)S$
  - Change only in lifetime income (discounted present value)
    - Only income effect works
    - No substitution effects: no intertemporal distortion

- If labor income tax is introduced,

$$C_1 + \frac{C_2}{1+r} = (1-m)\left(M_1 + \frac{M_2}{1+r}\right)$$

- Consumption tax and labor income tax are **equivalent**
  - When $1-m = \frac{1}{1+t} \Leftrightarrow t = \frac{m}{1-m}$, budget constraint is the same

Intertemporal Budget constraint under consumption tax



Proportional, 2 periods

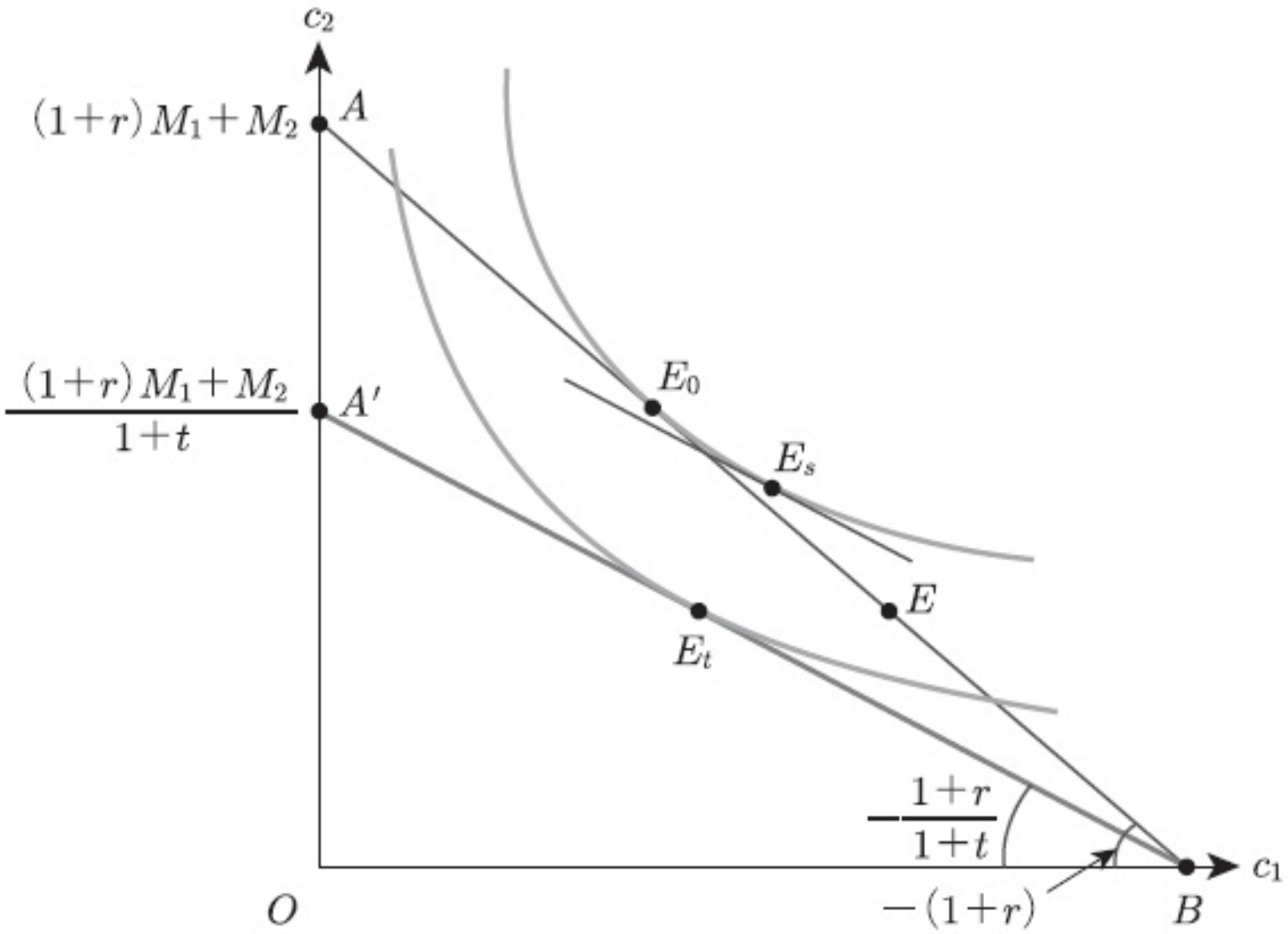
- Consumption tax and labor income tax are **equivalent**
  - The same budget constraint = the same consumption (C_1, C_2)

- How about saving S?
  - Consumption tax: $S = M_1 - (1+t)C_1$
  - Labor income tax: $S = (1-m)M_1 - C_1$
  - Saving under consumption tax is greater than under income tax
    - when tax rate t is low and the income in period 1 M_1 is large
    - Labor income tax: Tax in period 1 decrease disposable income
    - Consumption tax: More saving for tax in the future
  - If capital accumulation is desirable, consumption tax is preferred

Consumption tax only in period 2

- Budget constraint
  - Period 1: $C_1 = M_1 - S$
  - Period 2: $(1+t)C_2 = M_2 + (1+r)S$
  - Rearranging: $C_1 + \frac{1+t}{1+r}C_2 = M_1 + \frac{M_2}{1+r}$
    - Or: $C_2 = \frac{(1+r)M_1+M_2}{1+t} - \frac{1+r}{1+t}c_1$
- Increase in the price of "future consumption"
  - Substitution effect: decrease in future consumption, increase in current consumption
    - "last minute" demand
    - Intertemporal distortion
  - Income effect: decrease in both current & future consumption
    - Saving for taxation in the future
    - **Capital accumulation effect** of consumption tax

Intertemporal Budget constraint under consumption tax only in period 2



Consumption tax only in period 2

- Under some utility functions, “last minute” demand will not emerge
  - E.g.: Cobb-Douglas function: $u = \ln C_1 + \beta \ln C_2$
  - Consumption in period 1 does not depend on tax rate
    - $C_1 = \frac{(1+r)M_1+M_2}{(1+r)(1+\beta)}$
    - Ratio of expenditures in periods 1 & 2 is constant, regardless of the “price”
    - Substitution effect and income effect are cancelled out

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Comprehensive income tax

- One of ideal income tax system
  - Ability-based focusing on equity
- Definition of income
  - Total of economic gain during a period regardless of their sources
  - Haig-Simons definition: consumption + change in net worth
  - Income tax = tax on consumption + tax on savings
- Issue: Imperfect capture of income
  - Self-consumption (e.g., farm products), fringe benefit
  - Taxes on unrealized capital gain
    - Deduction of capital loss: (e.g.,) due to disaster
  - Taxes on income gain (interest, dividend, rent)
    - Taxes on imputed rent?
  - Definition of “period”: usually one year
    - Taxes on retirement bonus, professional atheletes

Personal income tax in Japan

- Personal income tax system in Japan
  - Income Tax: national tax
  - Inhabitants Tax: local tax
  - Social contributions: payroll tax

- Income tax (national) and inhabitant tax (local)
  - Almost same tax base
    - Revenue minus various kinds of income exemptions
  - Almost same calculation procedure
    - Applying tax rate schedule to taxable income, subtract tax credits
  - Different tax rate schedule
    - Income tax (national): progressive
    - Inhabitant tax (local): proportional (since 2010)

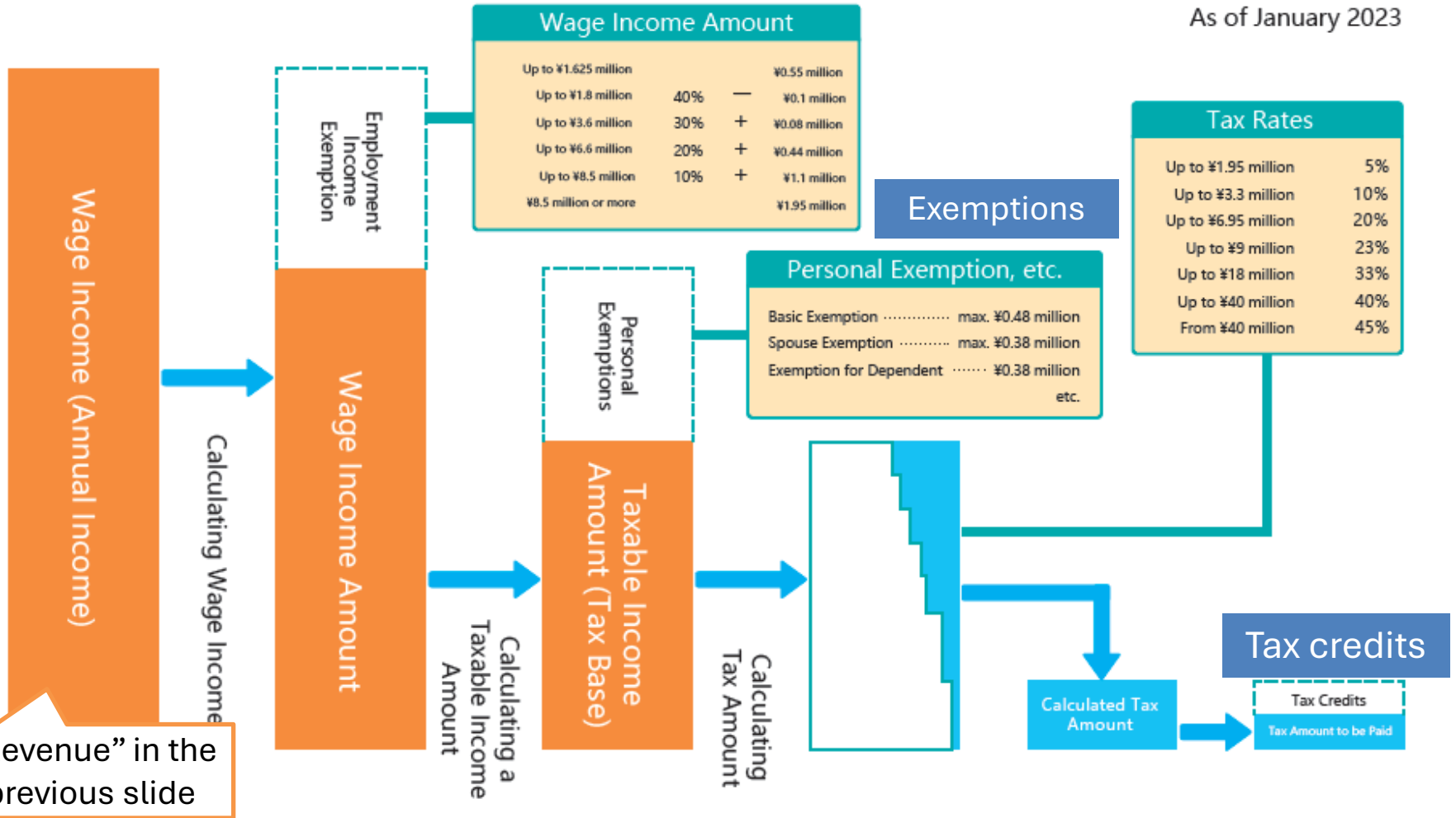
Income tax (national tax)

- Separate taxation depending on income sources
  - At first, designed as a comprehensive income tax
  - For each income sources
    - Income = revenue – necessary expenses
  - Summing up incomes
    - If possible, cancel out loss from income
  - Applying exemptions
  - Applying progressive tax schedule
  - Applying tax credits

  - (note) “deductions” are used for “exemptions” or “tax credits”. English words are not fixed.

Taxes on wage earners

- Learn about “income tax”
  - “income” and “income amount” is different



History of tax rate schedule

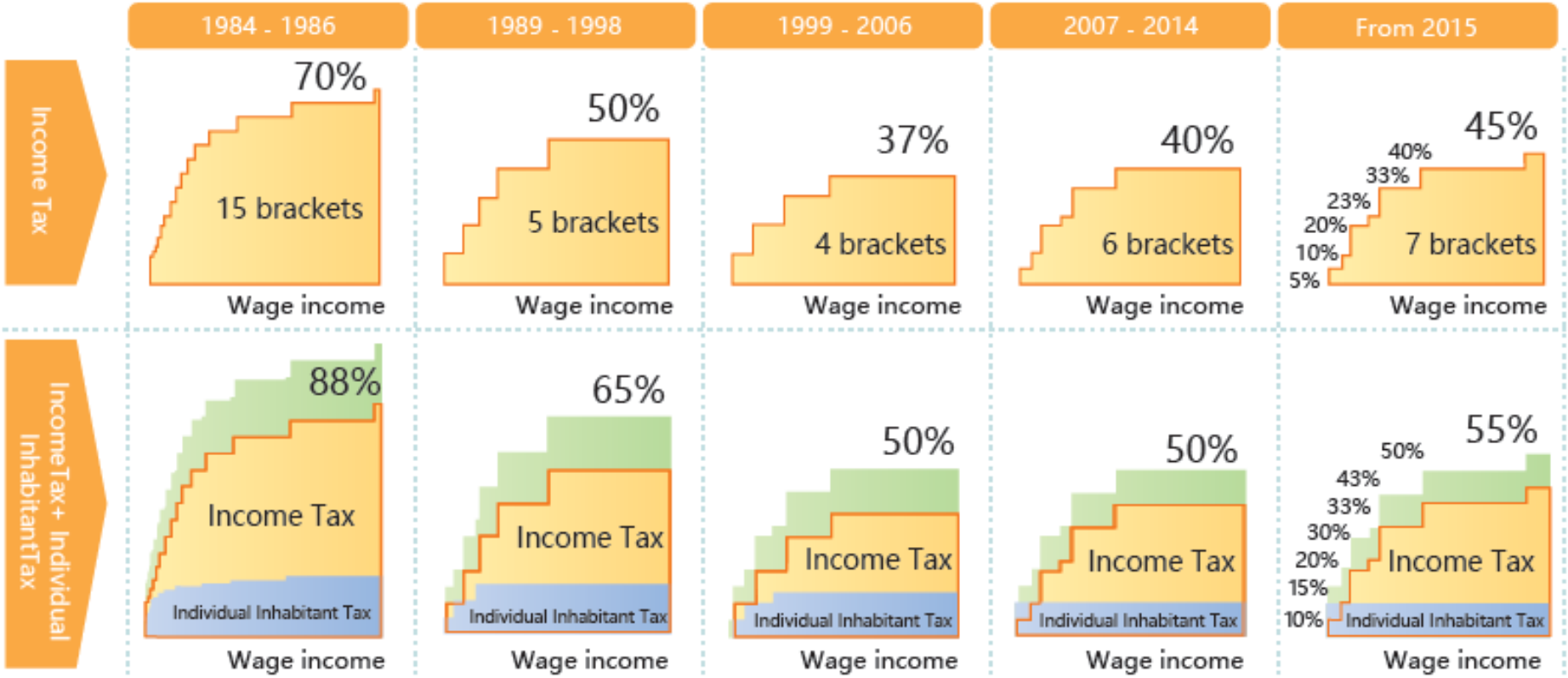
- More flat since late 1980s
  - Decrease in top rates since 2000

FY1950	FY1960	FY1970	FY1980	FY1990	FY2000	FY2010	FY2020
-- 50K :20%	--100K :10%	--300K :10%	--600K :10%	--3,000K :10%	--3,300K :10%	--1,950K : 5%	--1,950K : 5%
50K- :25%	100K- :15%	300K- :12%	600K- :12%	3,000K- :20%	3,300K- :20%	1,950K- :10%	1,950K- :10%
80K- :30%	200K- :20%	600K- :14%	1,200K- :14%	6,000K- :30%	9,000K- :30%	3,300K- :20%	3,300K- :20%
100K- :35%	500K- :25%	900K- :16%	1,800K- :16%	10,000K- :40%	18,000K- :37%	6,950K- :23%	6,950K- :23%
120K- :40%	1,000K- :30%	1,200K- :18%	2,400K- :18%	20,000K- :50%		9,000K- :33%	9,000K- :33%
150K- :45%	1,500K- :35%	1,500K- :21%	3,000K- :21%			18,000K- :40%	18,000K- :40%
200K- :50%	2,500K- :40%	2,000K- :24%	4,000K- :24%				40,000K- :45%
300K- :55%	4,000K- :45%	2,500K- :27%	5,000K- :27%				
	6,000K- :50%	3,000K- :30%	6,000K- :30%				
	10,000K- :55%	3,500K- :34%	7,000K- :34%				
	20,000K- :60%	4,000K- :38%	8,000K- :38%				
	30,000K- :65%	5,000K- :42%	10,000K- :42%				
	50,000K- :70%	6,000K- :46%	12,000K- :46%				
		8,000K- :50%	15,000K- :50%				
		10,000K- :55%	20,000K- :55%				
		20,000K- :60%	30,000K- :60%				
		40,000K- :65%	40,000K- :65%				
		60,000K- :70%	60,000K- :70%				
		80,000K- :75%	80,000K- :75%				

Top rate was almost 90%, considering local taxes

History of tax rate schedule

- Less progressive to achieve neutrality
  - Smaller number of tax brackets



Social contributions (payroll tax)

- Public pension contributions

  18.3% (equal shares by employer and employed): **9%**

- Public health insurance contributions (depending on insurances)

  About 10% (average, equal shares by employer and employed): **5%**

- Public long-term insurance contributions (aged 40+)

  1.77% (equal shares by employer and employed): **0.9%**

- Caps (upper limits) for these contributions
  - Regressive for high income people?

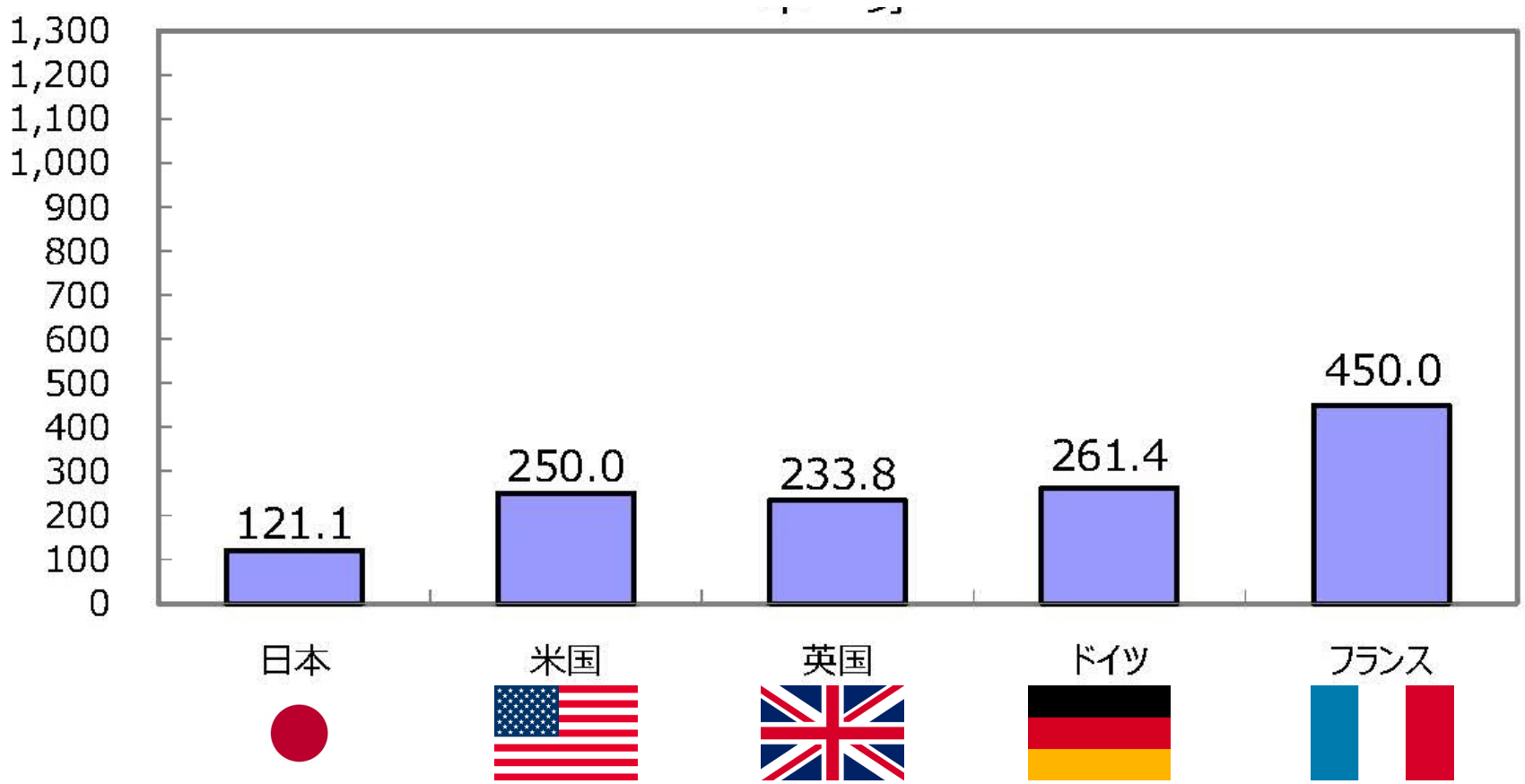
Tax exemption limit

- If income is too small, tax is zero
- Tax exemption limit
  - Maximum income that pays zero income tax
  - Different between income tax and inhabitant tax (national / local)
  - Depending on family structure: Spouse exemptions etc.

- A simple case
  - Single household, not dependent, wage income only
  - Social contributions 15%
  - Basic exemptions 380K
  - Employment income exemption: min 650K
  - $x - (650) - 0.15x - 380 = 0$, x = 1,211K

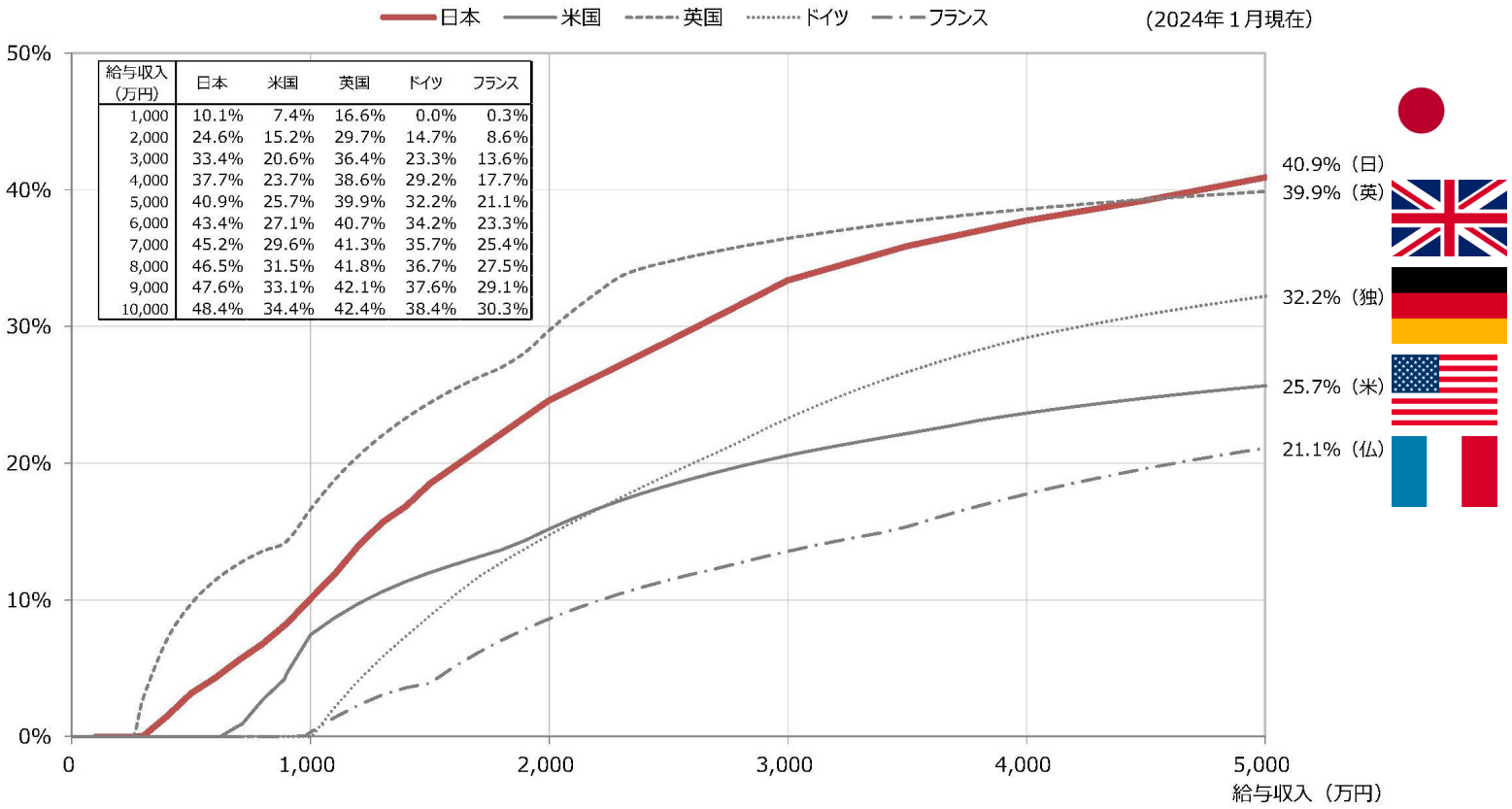
Tax exemption limit

- Single households (MOF)



Tax burden

- Depends on household structures
  - A couple, a single earner, two children
  - Payroll taxes (social security contributions) are excluded



給与収入（万円）	日本	米国	英国	ドイツ	フランス
1,000	10.1%	7.4%	16.6%	0.0%	0.3%
2,000	24.6%	15.2%	29.7%	14.7%	8.6%
3,000	33.4%	20.6%	36.4%	23.3%	13.6%
4,000	37.7%	23.7%	38.6%	29.2%	17.7%
5,000	40.9%	25.7%	39.9%	32.2%	21.1%
6,000	43.4%	27.1%	40.7%	34.2%	23.3%
7,000	45.2%	29.6%	41.3%	35.7%	25.4%
8,000	46.5%	31.5%	41.8%	36.7%	27.5%
9,000	47.6%	33.1%	42.1%	37.6%	29.1%
10,000	48.4%	34.4%	42.4%	38.4%	30.3%

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Income tax and neutrality

- Income taxation is not neutral
  - Labor income tax: tax on wage income
    - If my wage will be taxed, I will not work hard
    - If my wage will be taxed, I will move to another country
    - Even if my wage will be higher after I study hard in university, the wage will be taxed. Then I will not study hard
  - Capital income tax: tax on interest, dividend, rent
    - If my return will be taxed, I will not invest
    - If my return will be taxed, I will invest in another country

- Here I focus ”I will not work hard”
  - “Hard”: endeavor, education, retirement, …

Choice of consumption and leisure

- Assume: an individual can control income level through controlling labor supply
  - Utility depends on consumption of good C and leisure l

$$u = U(C, l)$$

- Budget constraint
  - Income: $M = Wh + N$
  - h: labor supply (hours)
    - $h = H - l$, where H: time endowment (e.g., 24 hours, 365 days)
  - W: Gross (before-tax) wage rate, N: non-labor income
- Rearranging…

$$C = M = Wh + N = W(H - l) + N$$

$$C + Wl = WH + N$$

RHS: Virtual income

  - Maximizing utility $\mathrm{U}(C, l)$ under price $(1, \mathrm{W})$ and income $WH + N$

Proportional labor income tax

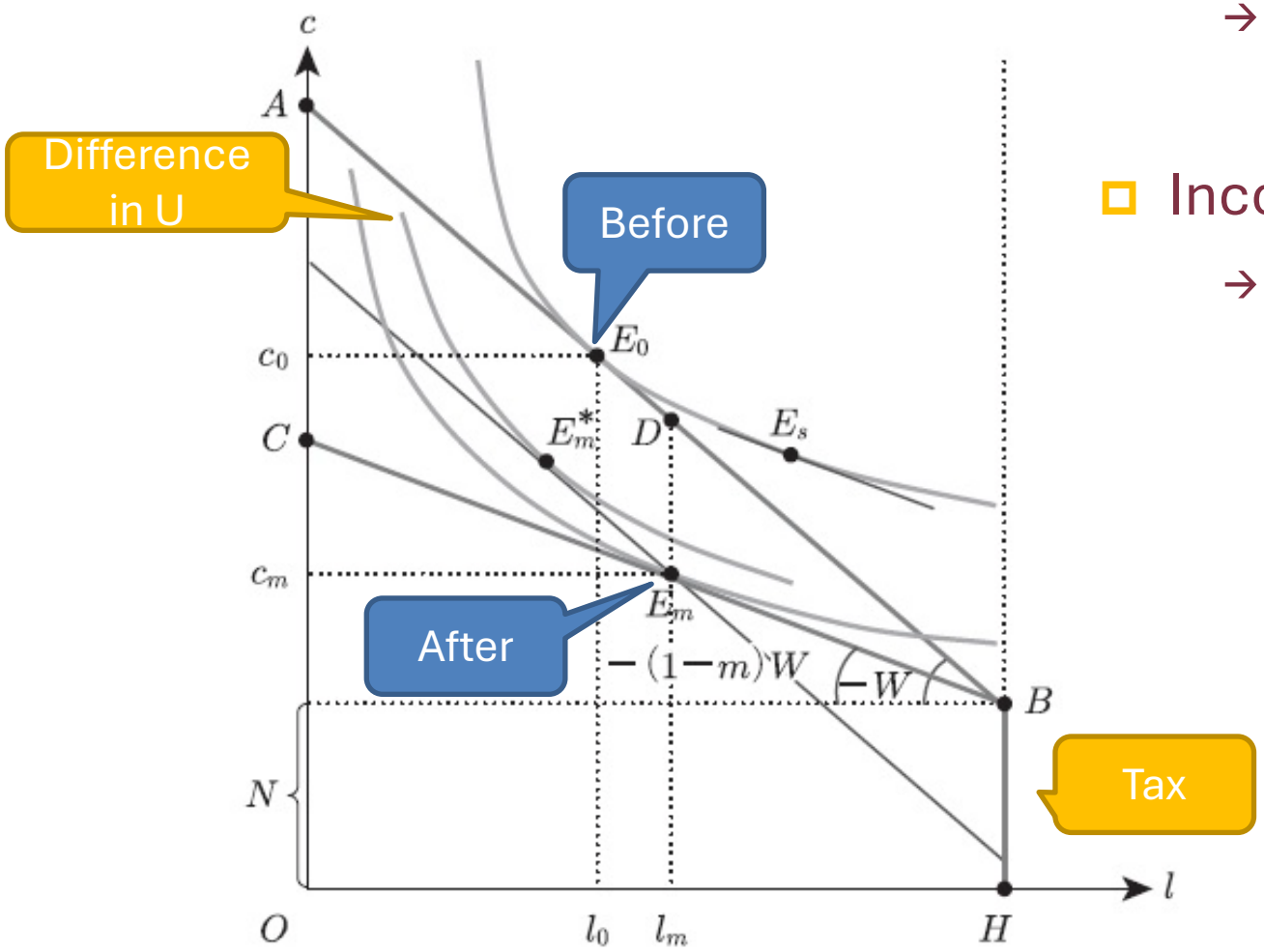
- Budget constraint: $C = (1-m)Wh + N$
  - Rearranging: $C + (1-m)Wl = (1-m)WH + N$
    - Decreases the price of l: W to $(1-m)W$
    - Decreases the virtual income
- Substitution effect & income effects
  - Substitution effects of $(1-m)W$: l increase (h decrease), C decrease
  - Income effects of $(1-m)W$: l increase (h decrease), C increase
  - Income effects of $(1-m)WH + N$: l decrease (h increase), C decrease

	Substitution	Income	Income	total
Consumption	-	+	-	?(-)
Leisure	+	+	-	?
Labor	-	-	+	?

Increase in tax rates may induce an increase in labor supply
(Labor supply curve is backward bending)

Substitution and income effects

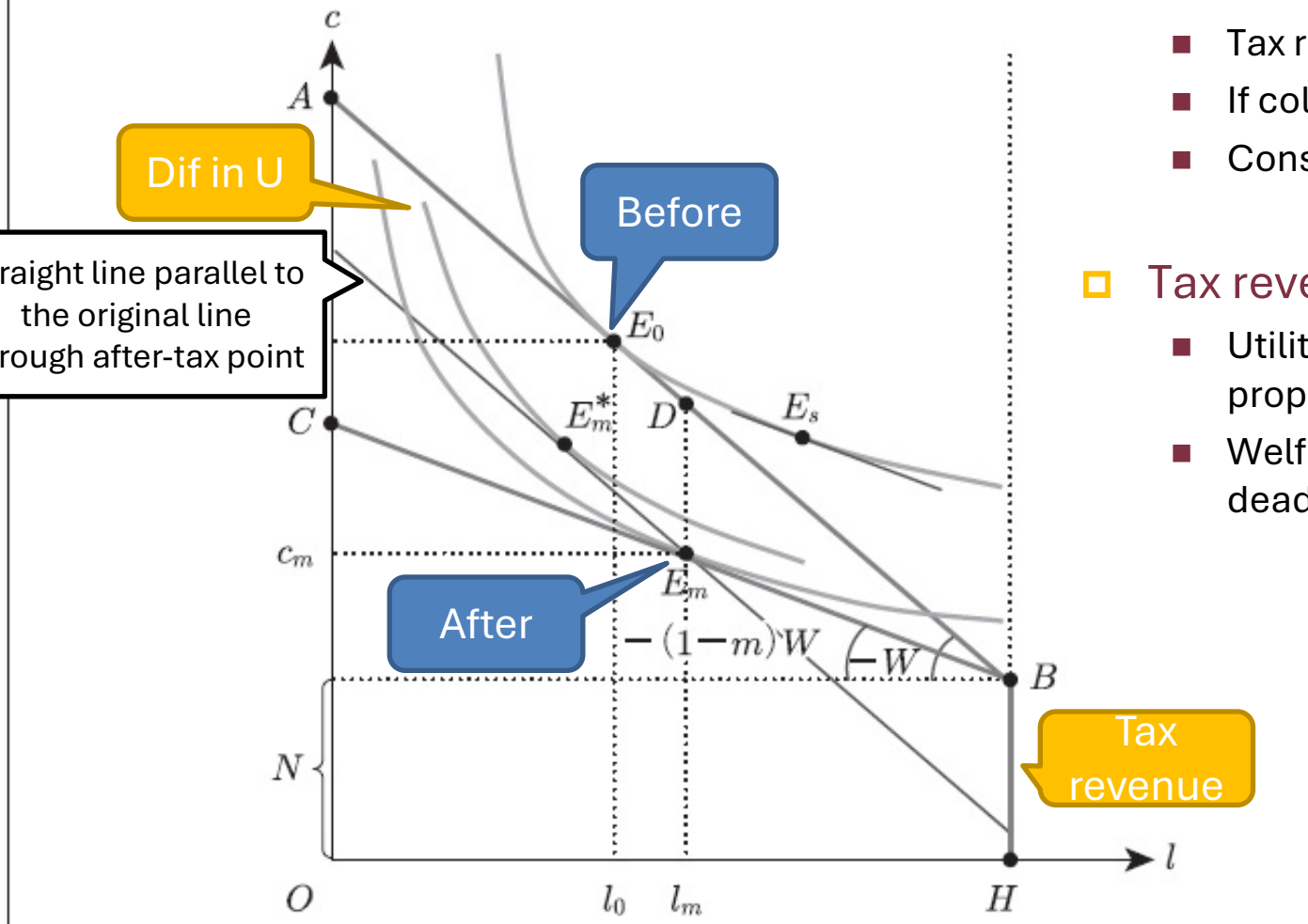
Proportional labor income tax



- Substitution effect
  →
- Income effects
  →

Comparison with lump-sum tax

Proportional labor income tax



- Utility difference between E_m and E_m^*
  - Tax revenue is the same
  - If collected by lump-sum
  - Consumption point is E_m^*
- Tax revenues are same,
  - Utility is lower if proportional tax is used
  - Welfare loss, distortion, dead weight loss

Remarks

- Even if labor supply is inelastic (irresponsive to wage rate), resource allocation may be distorted
  - Even if labor supply does not change a lot after proportional income tax
  - Because substitution effect and income effects are cancelled out
  - As long as substitution effect exists, welfare loss emerges

Effects of minimum income

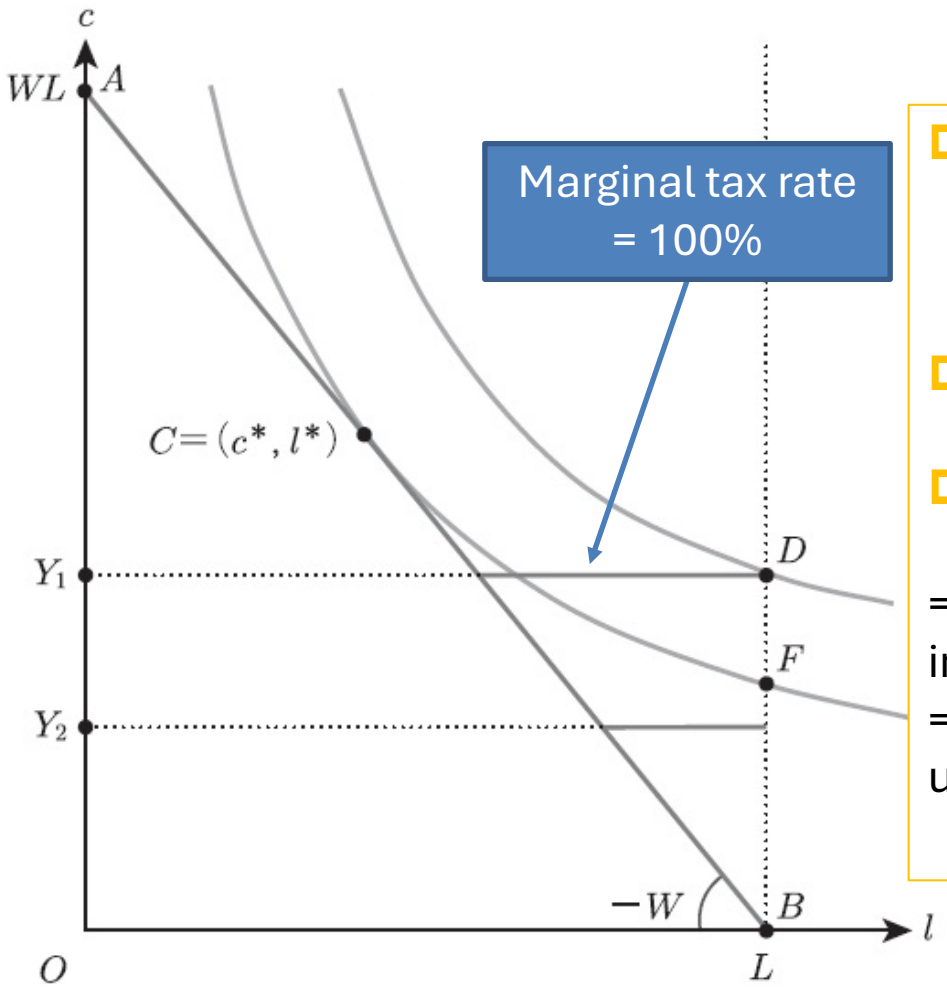
- 2 goods model: consumption of good & leisure
  - Utility depends on a good C and leisure l : $u = U(C, l)$
  - Constraint : $M = Wh + G(Wh), G(Wh) = \begin{cases} S - Wh, \text{if } Wh < S \\ 0, \text{if } Wh \geq S \end{cases}$
  - h: labor supply (hours), $h = H - l$, where H: time endowment
  - W: Gross wage rate, $G(Wh)$: Benefit function
- Guaranteeing minimum level of consumptions
  - Different with minimum wage rate
- Rearranging

$$C = M = \begin{cases} S & , \text{if } Wh < S \\ W(H - l) & , \text{if } Wh \geq S \end{cases}$$

  - Kinked budget line
  - **Welfare trap**: No work generates more utility
  - Lower wage rate is associated with welfare trap

Effects of minimum income

Guaranteeing minimum income



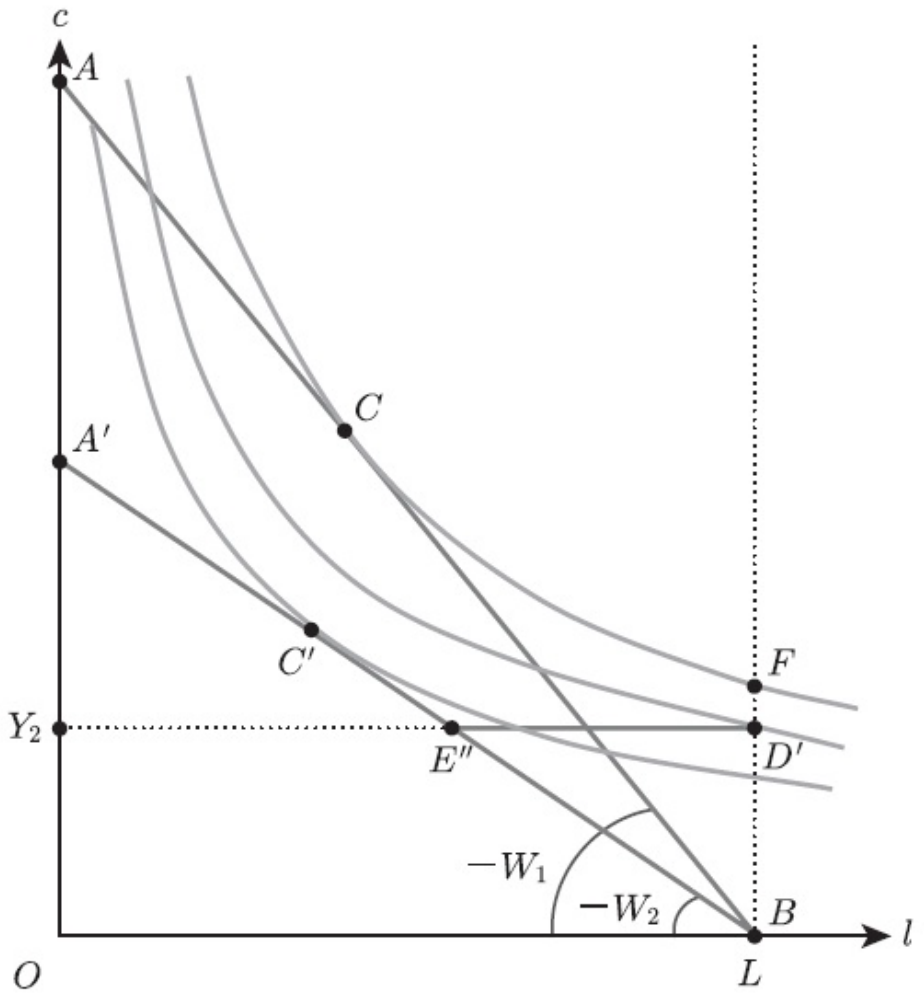
- Note: Marginal tax rate is a marginal tax burden when the tax base expand marginally
- MTR = 1 – (Δbefore-tax – Δafter-tax)
- Additional before-tax wage increase by 1 unit

= Additional after-tax wage increase by 0 unit

= Additional tax increase by 1 unit

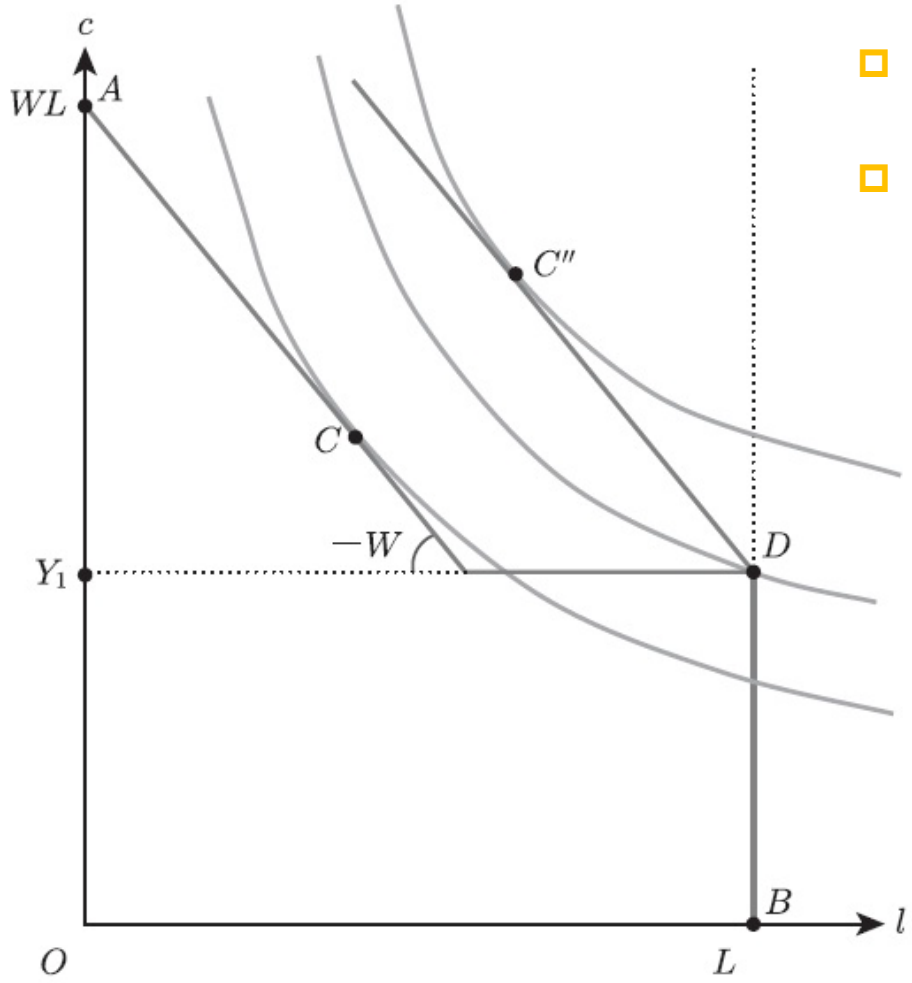
Effects of minimum income

Guaranteeing minimum income



Effects of lump-sum benefit

Guaranteeing minimum income or Lump-sum benefit



- Lump-sum benefits generate no distortion
- A lot of funds are necessary
  - Especially in case of asymmetric information on eligibility

Today's talk

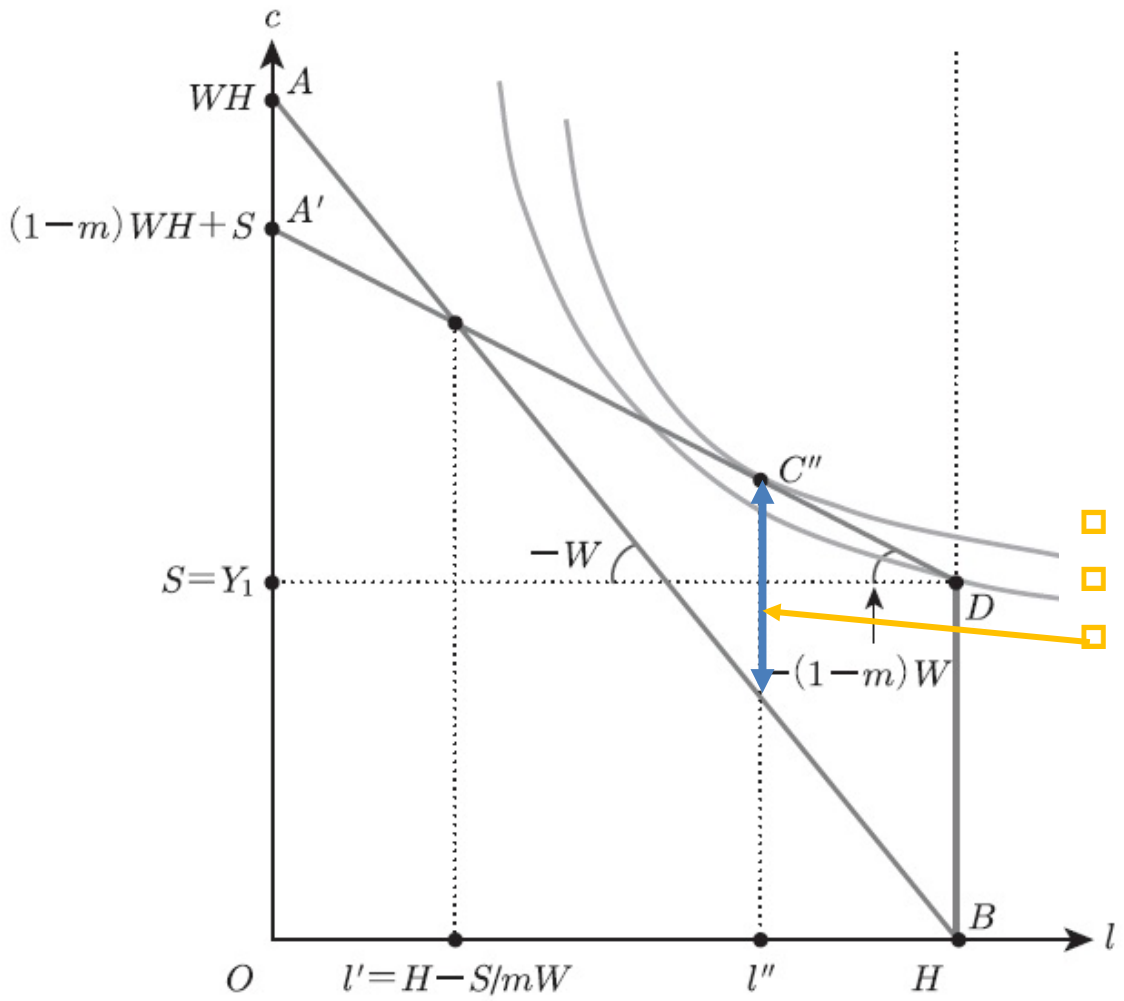
- Overview of Japan's tax system
- Tax principles: equity, neutrality, simplicity
- Consumption tax
  - VAT, excise tax
  - Relationship with income tax
  - Effects of consumption tax
- Income tax
  - Personal income tax in Japan
  - Effects of labor income tax
  - Negative income tax, Refundable income credit, basic income

Negative income tax

- An option with less welfare loss (& socially acceptable)
- Avoid 100% marginal tax rate
  - Combination of lump-sum benefits and proportional income tax
    - Lump-sum benefits are like basic income
  - Budget constraint: $M = Wh + G(Wh) = Wh + [S - mWh]$
    - When labor income Wh is large, they have to pay tax
    - When labor income Wh is small, they can receive benefits (negative tax)
  - Marginal tax rate is constant, m
    - Effects on labor supply is smaller than that of proportional labor income tax
    - If marginal tax rate is high and lump-sum benefit is large, labor supply may become zero.

Negative income tax

Negative income tax



- When leisure = l''
- After-tax income = C''
- Receive benefits

Issues of negative income tax

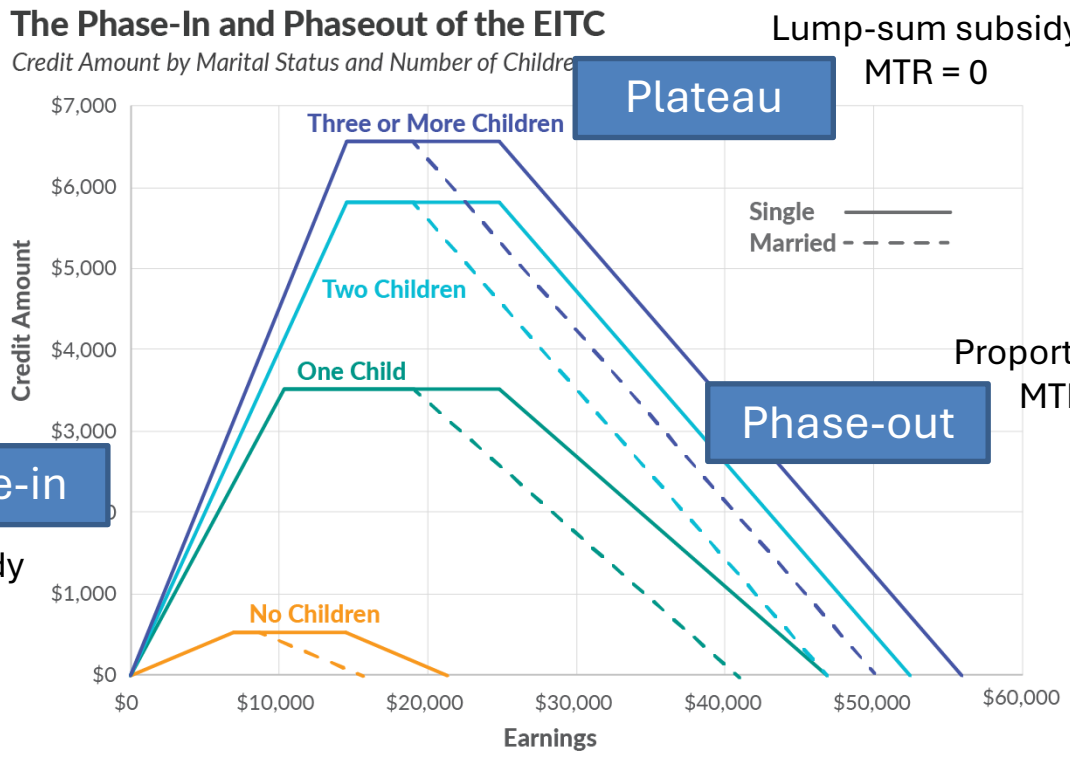
- Setting of lump-sum subsidy and marginal tax rate
  - Tradeoff
  - Large lump-sum benefit = large public funds are necessary
    - If financed within this system, higher marginal tax rate
    - Large distortion
  - Small lump-sum benefits
    - Sufficient for poverty alleviation
  - Lower marginal tax rate = smaller distortion
    - Many beneficiaries = large public funds
    - Where should it come from?

Refundable income credit

- Improvement of negative tax credit
  - Large funds are necessary: benefit only for the poor
  - Promotion of labor supply: benefit (subsidy) for low income
- Examples
  - US: EITC (Earned Income Tax Credit)
  - UK: WTC (Working Tax Credit)
  - Germany: Kindergeld
  - France: Prime Pour l'Emploi
  - Canada: Working Income Tax Benefit
  - http://www.tax.metro.tokyo.jp/report/tzc29_s1/09.pdf
  - http://www.ndl.go.jp/jp/diet/publication/issue/pdf/0678.pdf

Earned Income Tax Credit

- Tax credit for low-income people
  - If the credit offsets tax liability, the difference will be given as benefit
  - Subsidy for working
    - Promoting labor participation: extensive margin



Lump-sum subsidy
MTR = 0

Plateau

Proportional tax
MTR > 0

Phase-out

Phase-in

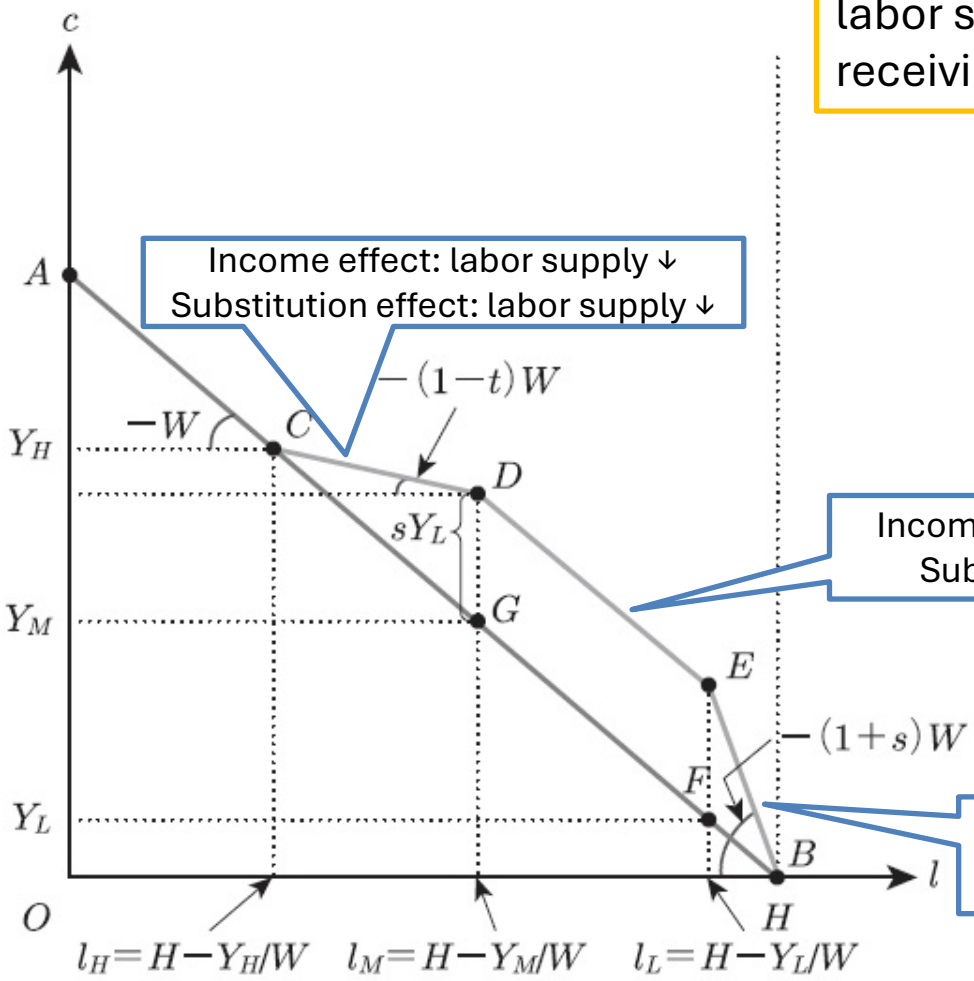
Proportional subsidy
MTR < 0

Source: Tax Foundation

Earned Income Tax Credit

Earned Income Tax Credit

People prefer working (positive labor supply) to non-working & receiving benefits



Income effect: labor supply ↓
Substitution effect: labor supply ↓

Income effect: labor supply ↓
Substitution effect: zero

Income effect: labor supply ↓
Substitution effect: labor supply ↑

Issues of refundable income credit

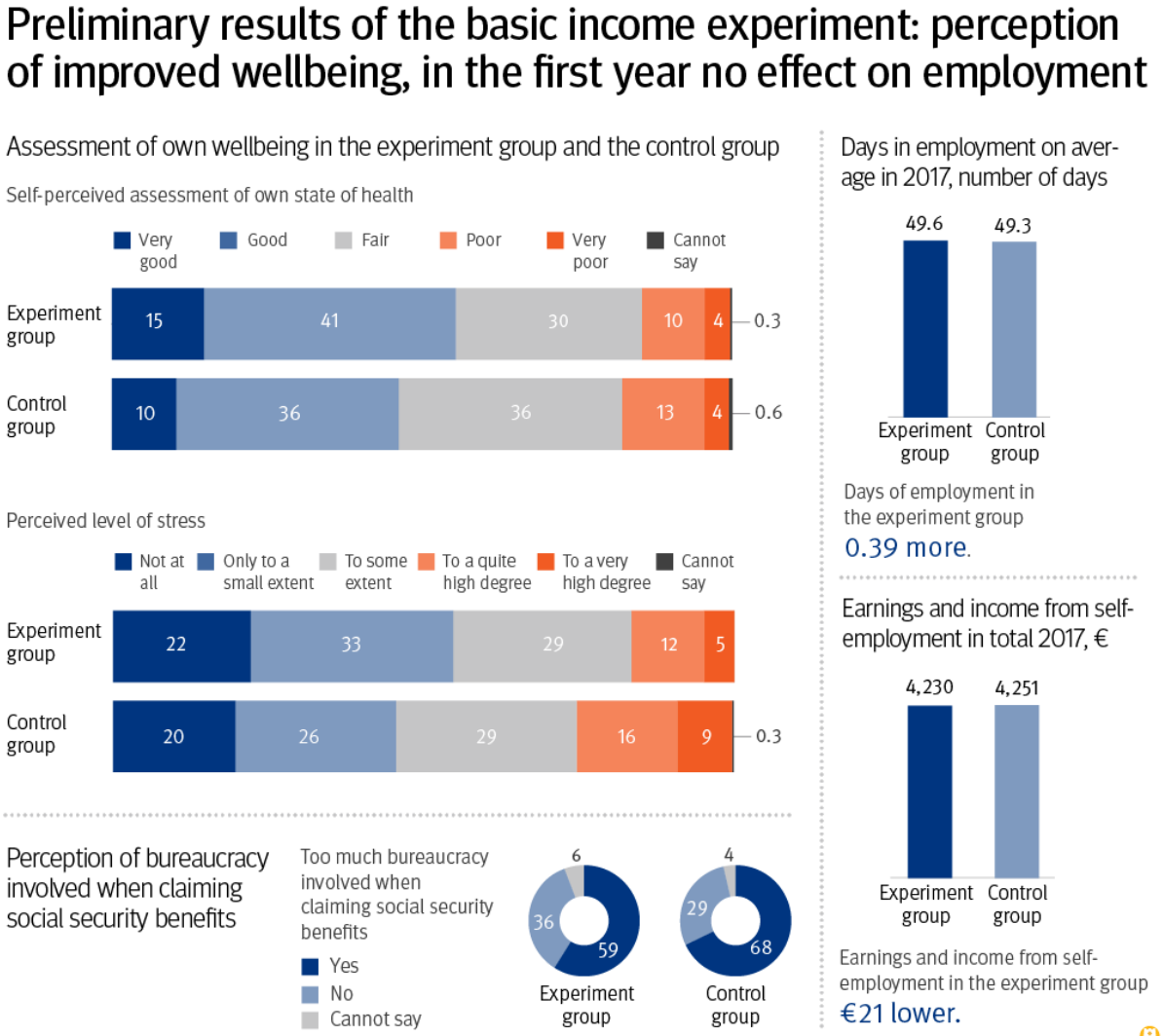
- Pros
  - Promotion of labor participation
    - Labor participation also enhances education, technology, a sense of belonging to society
    - (Small discretion over working hours)
  - Favorable for low-income earners: More progressive taxation
- Cons
  - Cannot help those whose income is zero
  - In Plateau & phase-out stages, depressing labor supply
  - Identification system to capture income & asset on a household basis

Basic income

- Basic income
  - Lump-sum benefits to all, regardless of income
  - Poverty reduction without welfare loss
- Finland's Basic Income Experiment
  - 560 euros (approximately 74,300 yen) per person
    - 2000 people were randomly selected from the unemployed
    - Benefits continue even if they do not look for a job or find a job
    - Trial operation will end as planned at the end of 2018
  - https://www.mckinsey.com/industries/social-sector/our-insights/an-experiment-to-inform-universal-basic-income
  - https://www.dw.com/en/does-finland-show-the-way-to-universal-basic-income/a-53595886

Finland Basic Income Experiment

- Results
  - Employment slightly improved
  - Improved self-evaluation of health and stress
- Explanation
  - https://toolbox.finland.fi/life-society/finlands-basic-income-experiment-2017-2018/
  - https://www.youtube.com/watch?v=yBQW1zi1xIM



Measuring effects on labor supply

- Statistical analysis based on observed behavior
  - Compare labor supple among individuals with different wage rates
    - To pick up the effects of wage only
    - Considering other factors as possible
  - General agreement
    - Labor supply of married men is irresponsive to wage change
      - Both substitution & income effects are large or small?
    - Labor supply of married women is relatively elastic
      - Statistical issues
    - Labor participation decision is elastic than working hours
  - Estimated as more elastic than experimental evidence
    - Trends of labor supply? Loopholes?
    - Elderly people who face higher MTR

Measuring effects on labor supply

- Experiments
  - Expensive. Small-scale
- Negative income experiment
  - 4 experiments in US in late 1960 - 1970
  - [New Jersey, Pennsylvania] [Iowa, North Carolina] [Gary, Indiana] [Seattle + Denver].
  - Not very large effects on labor supply: Robins 1985, JHR

TABLE 8
AVERAGE SUBSTITUTION AND INCOME EFFECTS FROM ALL EXPERIMENTS
(Substitution and total income elasticities in parentheses)
(1984 dollars)

	Substitution Effect (per dollar per hour)		Income Effect (per thousand dollars)	
Husbands	45	(.08)	−25	(−.10)
Wives	101	(.17)	−22	(−.06)
Single female heads	78	(.13)	−55	(−.16)

Other issues of labor income tax

- Dynamic decision making
  - Work now or in future
  - Working now may change wage rate in future: education etc.
- Intrahousehold resource allocation
  - Negotiation in couples, collective decision making
- Intensity of labor supply
- Knowledge on tax system
  - Behavior based on the knowledge on tax?
  - Tax avoidance, tax planning.
- General equilibrium effects
- Institutional constraints, traditions, norms
  - “optimal” working hours can be chosen? Peer effects?
  - Overtime payments