1VF466 FISCAL POLICY (MODERN TRENDS AND CASE STUDIES)

EVROPSKÁ UNIE
Evropské strukturální a investiční fondy
Operační program Výzkum, vývoj a vzdělávání

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EFFICIENT AND EQUITABLE TAXATION

Basic concept – ,,In the case of two commodities, efficient taxation requires taxing commodity complementary to leisure at a relatively high rate“

So called ,,The Corlett-Hague Rule“

Basic recommendantion how to deal with the ,,escape to the leasure“.

TAXES ON FACTORS

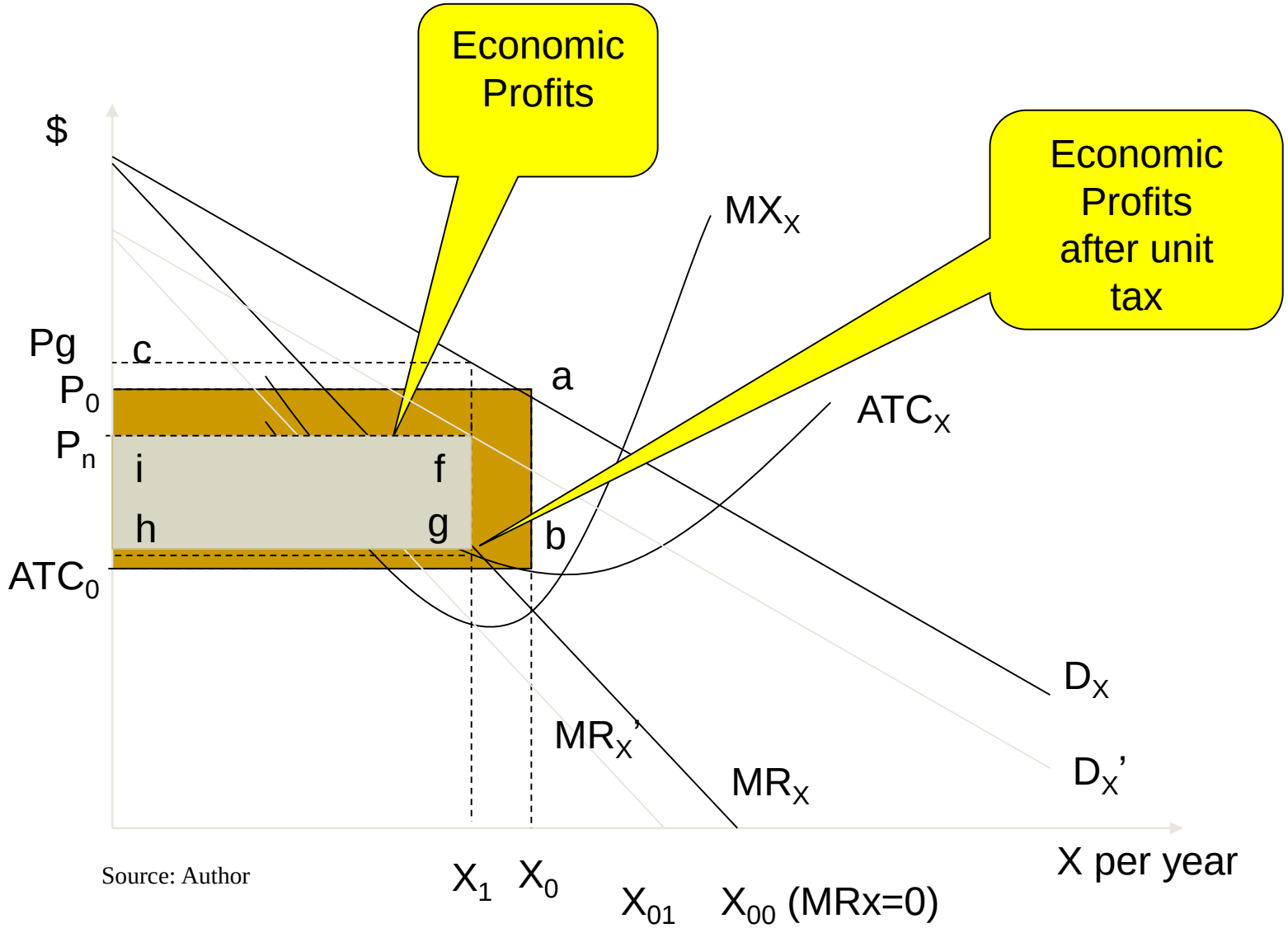
- The Payroll Tax (see ad valorem tax above)
- Capital Taxation in
  - OPEN Economy (Large X small)
  - CLOSED Economy (Large X small)

COMMODITY TAXATION WITHOUT COMPETITION

- Monopoly
- Oligopoly (a few sellers)
  - they are able to obtain cartel solution (similar to monopol)
  - or not because of cheating (similar to perfect competition)

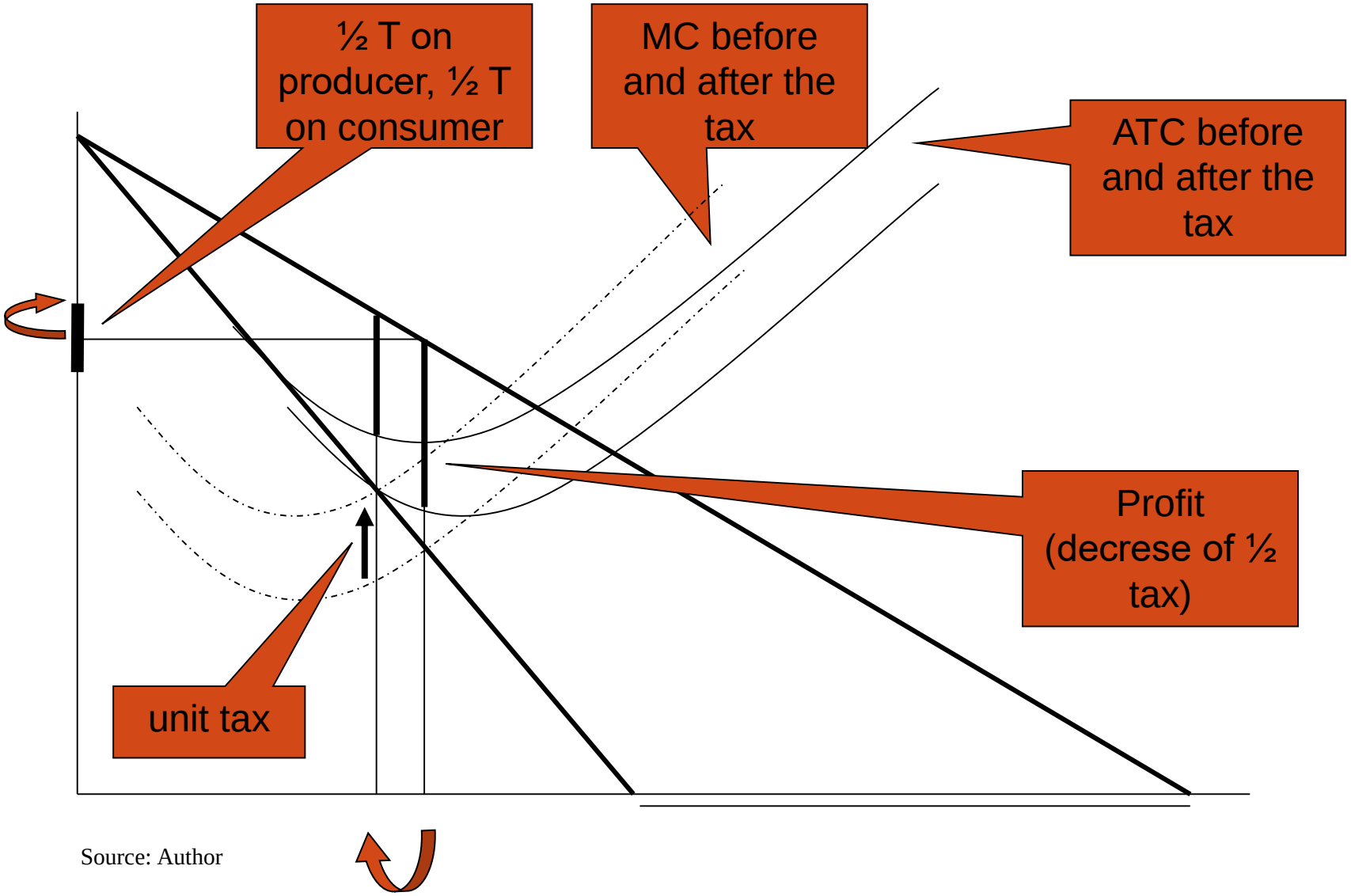
  - Based on BROWN, C. V. a Peter M. JACKSON, 1991. *Public Sector Economics*. 4th edition. Oxford, UK ; Cambridge, Mass., USA: Wiley-Blackwell. ISBN 978-0-631-16208-7.

MONOPOLY MAXIMIZING PROFIT (MR=MC) X0 TO X1



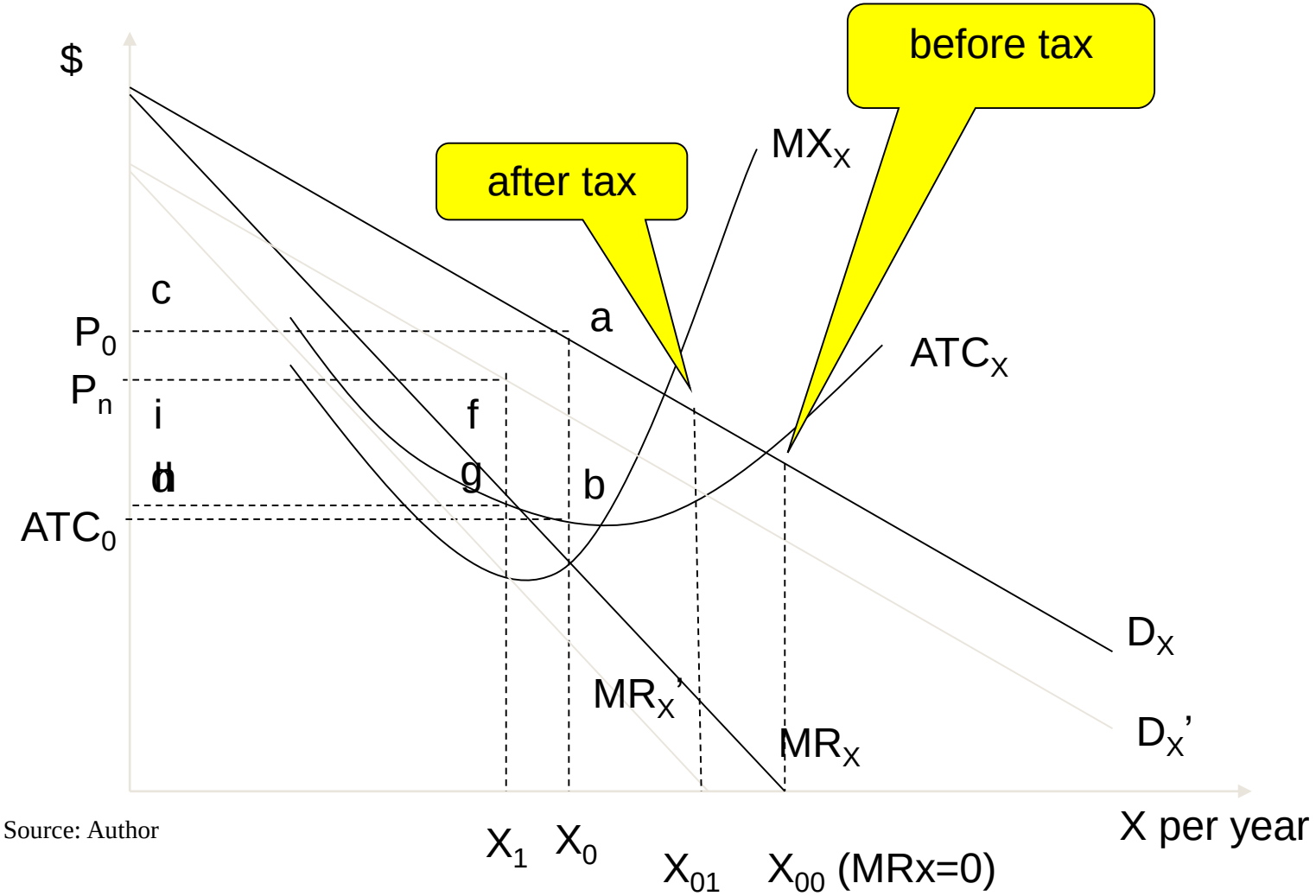
Source: Author

ALTERNATIVE - UNIT TAX ON MONOPOLY (SUPPLY SIDE, LINEAR DEMAND)



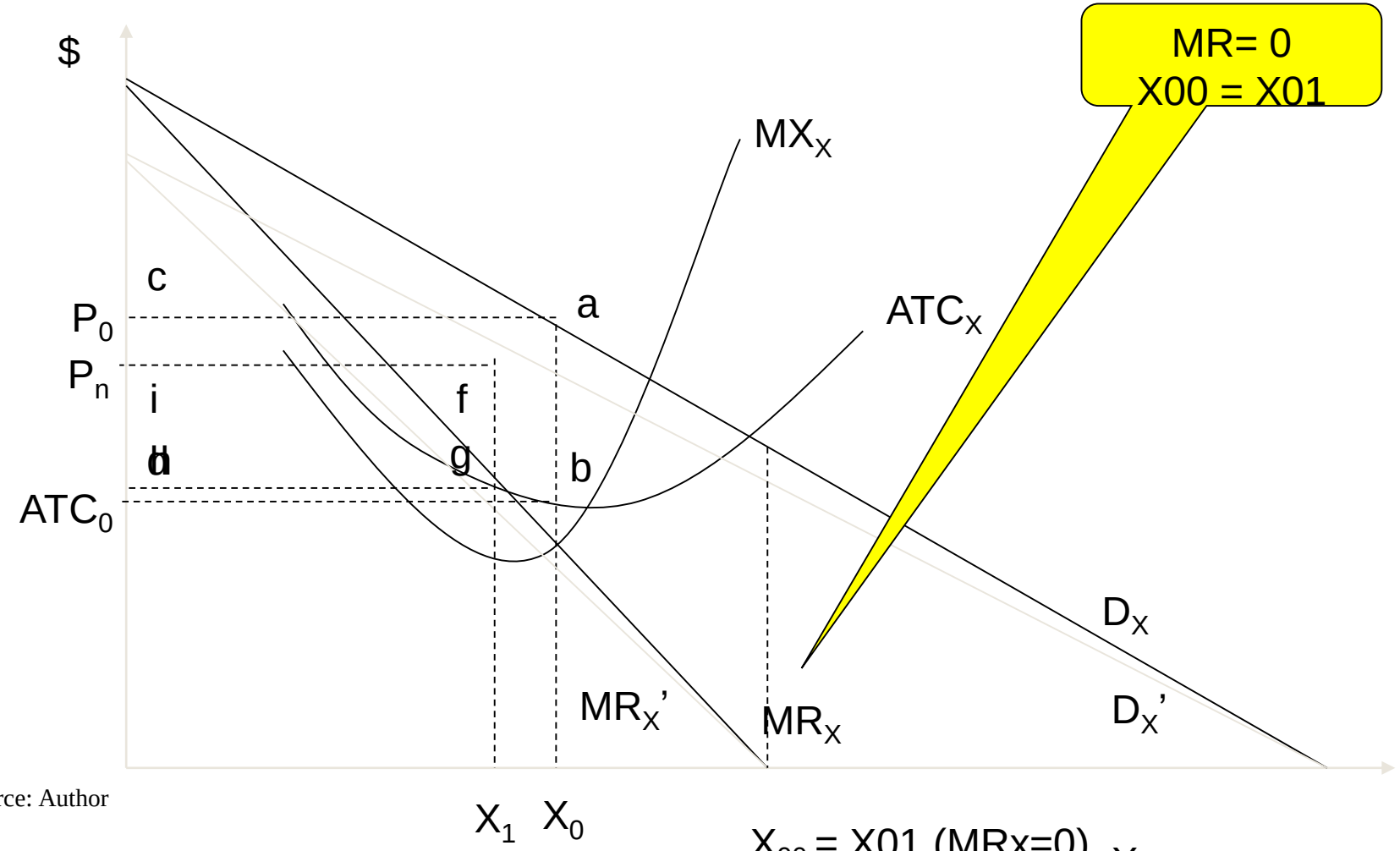
Source: Author

MONOPOLY MAXIMIZING SALES (MR=0) UNIT TAX



Source: Author

MONOPOLY MAXIMIZING SALES (MR=0)
AD VALOREM TAX



Source: Author

PROFITS TAXES (TAX BAZE)

- Economic profit (Long X short period)
  - Perfect competition
  - Monopoly
- Measuring economic profit (as rate of return , BUT original costs OR costs of replacing shoud be used?)
- Taxation of profit:
  - long period (perfect competion and Profit = 0 so T = 0)
  - short period (perfect competion and Profit > 0 so T > 0)
  - long period + monopoly (Profit > 0 so T > 0)

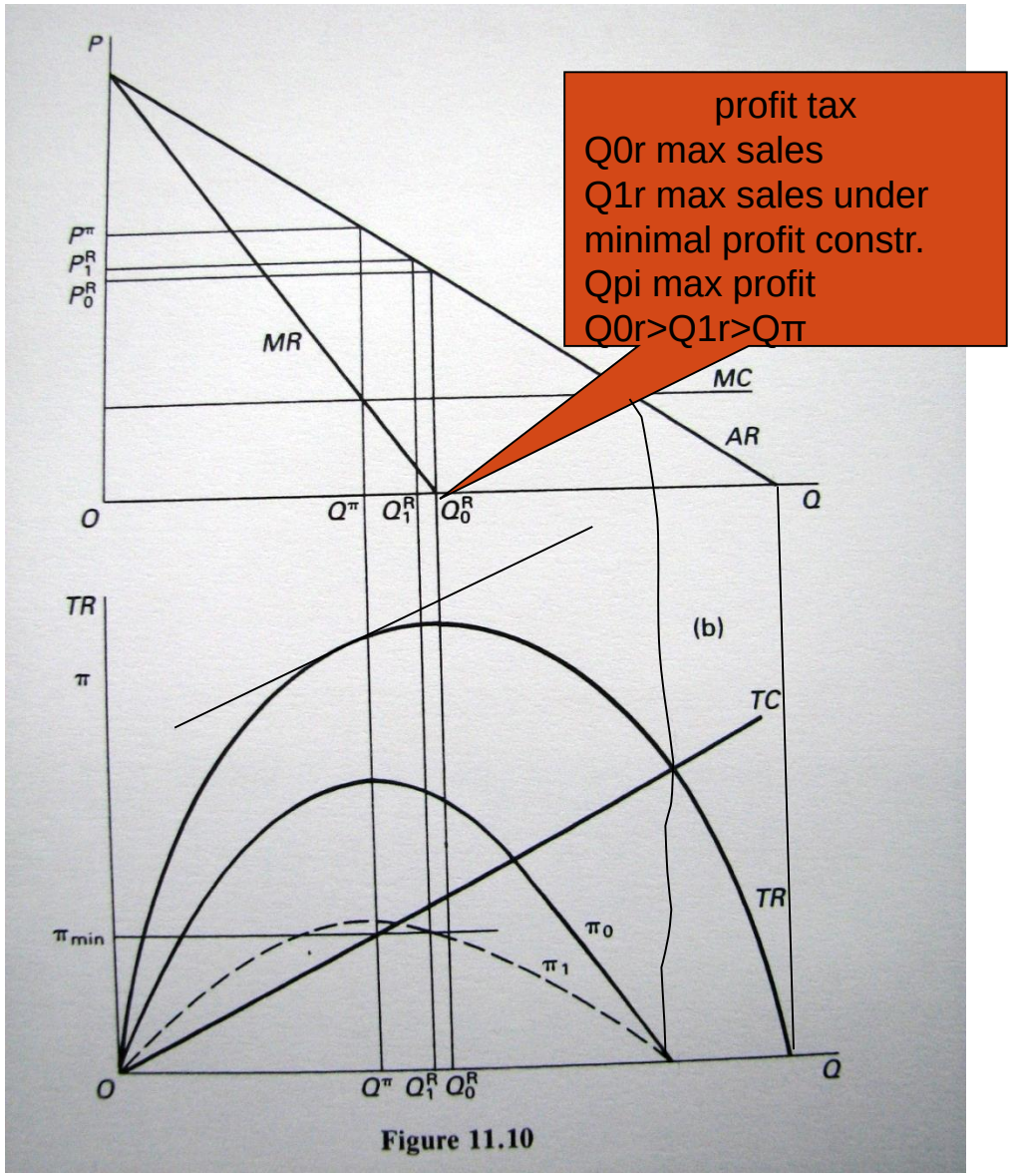


Figure 11.10

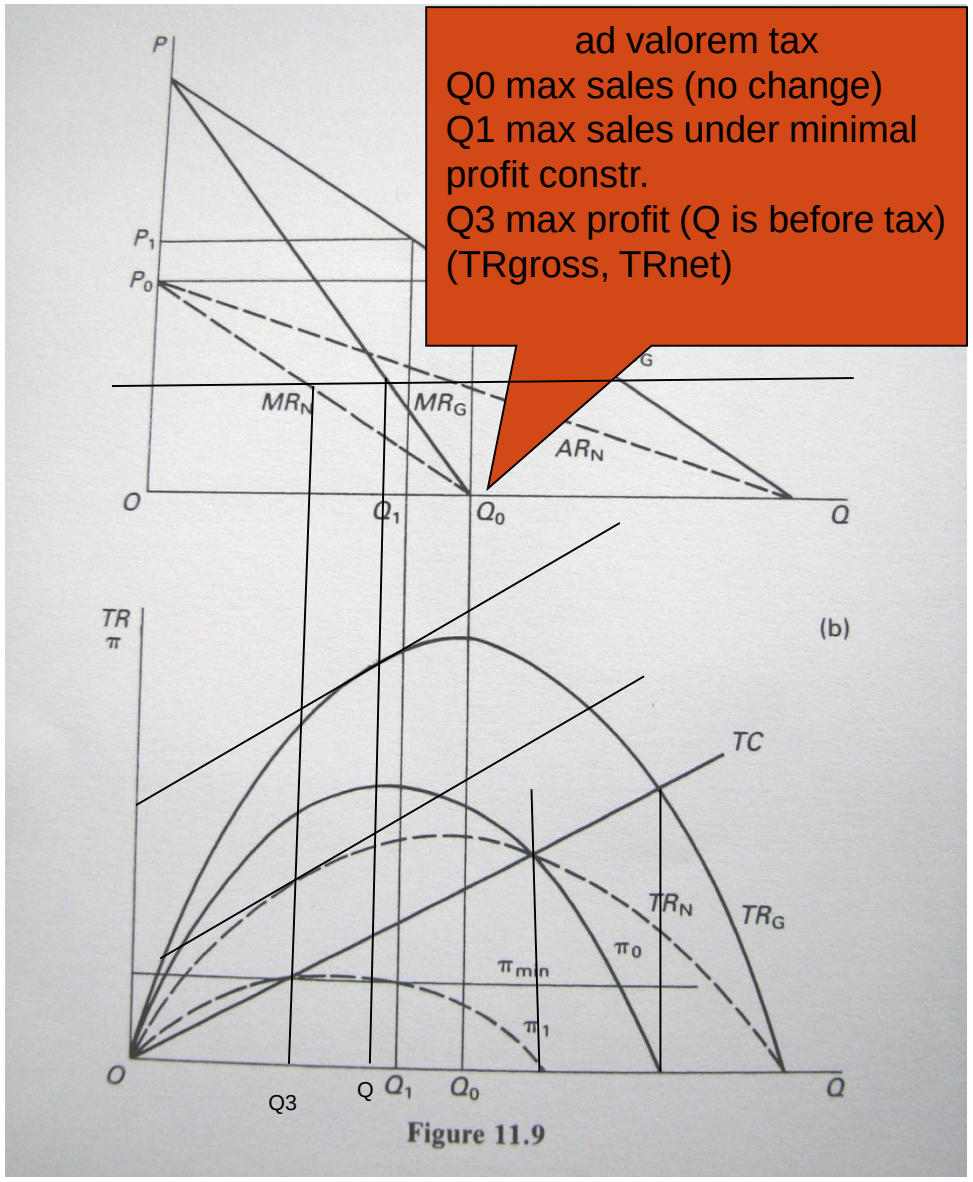


Figure 11.9

Source: (Brown a Jackson 1991)

PROFITS TAXES (INCIDENCE)

- Profit Tax and firm maximizing profit
  - No change, tax is borne by producer
- Profit Tax and firm maximizing sales
  - No change, if non binding profit constraints (profit after tax is still higher then minimal demanded profit by owner)
  - Possible change, if profit constraints becomes operative (profit is less then minimal demanded by owner), it is not sustainable to maximize sales

TAX INCIDENCE AND CAPITALIZATION

$$P_R = \$R_0 + \$R_1/(1 + r) + \$R_2/(1 + r)^2 + \ldots + \$R_T/(1 + r)^T$$

$$P_R' = \$(R_0 - u_0) + \$(R_1 - u_1)/(1 + r) + \$(R_2 - u_2)/(1 + r)^2 + \ldots + \$(R_T - u_T)/(1 + r)$$

$$u_0 + u_1/(1 + r) + u_2/(1 + r)^2 + \ldots + u_T/(1 + r)^T$$

Capitalization

P_R' = P_R minus all future tax liabilities

The today‘s owner bears the all future taxes

GENERAL EQUILIBRIUM MODELS

- Partial equilibrium (One Market, One Product, tax remains on this market)
- General equilibrium (tax can escape its market to other market/s)
  - 2 Markets, 2 Producers (sectors)
  - 2 Products (food X, manufactures Y)
  - 2 production factors – L and K

  - Based on Rosen, 2005

TAX EQUIVALENCE RELATIONS

t_{KF} = a tax on capital used in the production of food

t_{KM} = a tax on capital used in the production of manufactures

t_{LF} = a tax on labor used in the production of food

t_{LM} = a tax on labor used in the production of manufactures

t_F = a tax on the consumption of food

t_M = a tax on consumption of manufactures

t_K = a tax on capital in both sectors

t_L = a tax on labor in both sectors

t = a general income tax

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t = a general income tax

TAX EQUIVALENCE RELATIONS

- Partial factor taxes (C = I, I = TC = Wages + Interest)

t_{KF}	And	t_{LF}	are equivalent to *(TC = W+Int)*	t_F
and		and		and
t_{KM}	and	t_{LM}	are equivalent to	t_M
are		are		are
equivalent *(it can move between sectors)*		equivalent *(it can move between sectors)*		Equivalent *(budget constr. down)*
To		to		to
t_K	and	t_L	are equivalent to *(I = W+Interest)*	t

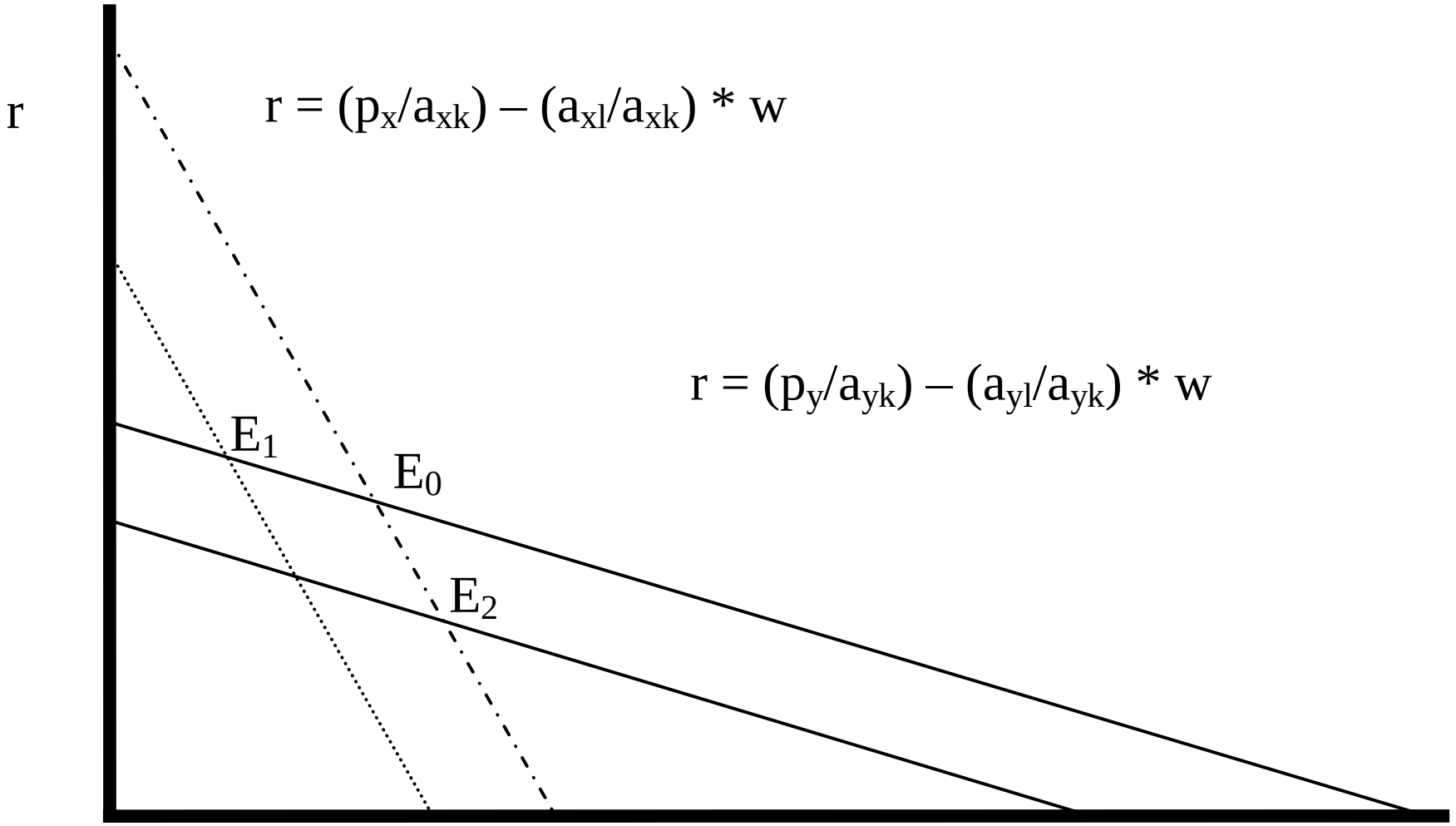
Source: Rosen, 2005

THE HARBERGER MODEL (F + M SECTORS)

- Assumptions
  - Behavior of factor suppliers (perfect mobility, wf=wm)
  - Market structure (competitive markets, MR=P=MC, full employment)
  - Total factor supplies (Kf+Km = K, is const.)
  - Consumer preferences (we focus only on source (I) side)
  - Tax incidence framework (differential tax incidence, I is const.)

ASSUMPTIONS II

- Technology (Cobb-Douglas prod. f.)
  - Elasticity of substitution K for L
  - Capital / Labor intensive sector
    - aFL = number of person-hours needed to produce one piece of food)
    - aFK = amount of capital needed to produce one piece of food)
    - if aFL/aFK > aML/aMK so F is labour intensive industry



Source: Author

ANALYSIS OF VARIOUS TAXES

- General tax on labor (t_L) (no escape to other, non taxed sector, no shift)
- Income tax (t) (equivalent to tfk+tfl and all is employed, so again no escape, no shift)
- Commodity tax (t_F)
  - Pf increase, Subst. Effect, Q of F decrease (how big?)
  - factors move to other sector
  - if F is K intensive, too many K and too less L (how much) for M industry, r must go down, W goes up, capitalists are worst off
  - if F is L intensive, … laborer are worst off

PARTIAL FACTOR TAX (T_{KM})

- Output effect (similar Commodity tax) – ambiguous with respect to who is worst off
- Factor substitution effect
  - r*gross goes up – SE, less K and more L is demanded
- Total effect = OE + SE
  - clear
  - ambiguous (for tkm if m is L intensive, OE decrease w, increase r, SE decrease r and increase w)

SOME QUALIFICATIONS (RELEASING OF ASSUMPTION)

- Differences in individuals' tastes (impact on uses side)
  - PIT – first impact on capitalist (progressive tax), but later through the increase of Px also on consumers (regressive impact)
- Immobile factors
  - all burden on L or K, can not excape)
- Variable factor supplies
  - tk in long run decrease Q K, but it mieans also decrese of productivity of L)

AN APPLIED INCIDENCE STUDY

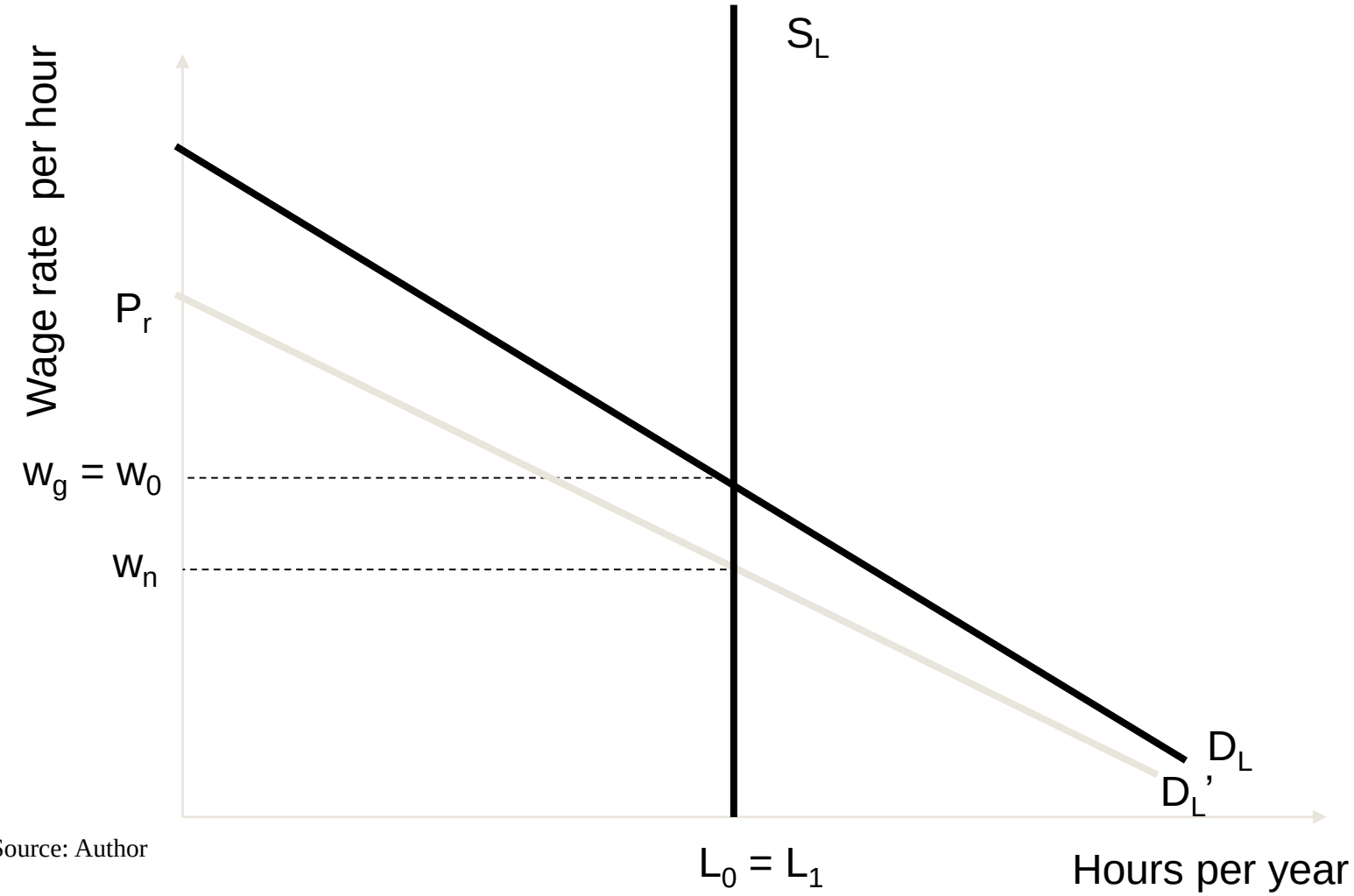
Table 14.3 Average federal tax rates and share of federal taxes by income quintile (2006)

Income Category	Average Federal Tax Rate T/BAZE	Share of Federal Taxes T/SUMT
Lowest Quintile	5.6%	1.1%
Second Quintile	12.1	5.2
Third Quintile	15.7	10.3
Fourth Quintile	19.8	19.0
Highest Quintile	26.5	64.2
All Quintiles	21.6	100.0
Top 1%	31.2	21.3

Source: Congressional Budget Office [2004]. These figures are based on projections that rely on assumptions about inflation and income growth. They include all tax law as of 2001.

Source: Author

THE PAYROLL TAX



Source: Author

PROGRESSIVENESS OF THE VAT AND EXCISES IN THE CZECH REPUBLIC

Case studies based on previons research:

KLAZAR, Stanislav, SLINTÁKOVÁ, Barbora. How Progressive is the Czech Pension Security? *Prague Economic Papers*. 2012, roč. 21, č. 3, s. 309–327. ISSN 1210-0455.

KLAZAR, Stanislav, SLINTÁKOVÁ, Barbora. Incidence Analysis of Pension Security in the Czech Republic. In: *International Conference on Engineering and Business Management*. Wuhan, 22.03.2011 – 24.03.2011. Wuhan : Wuhan University, 2011, s. 3456–3458. ISBN 978-1-935068-19-8.

THE VAT AND EXCISES IN THE CZECH REPUBLIC

Global tax mix

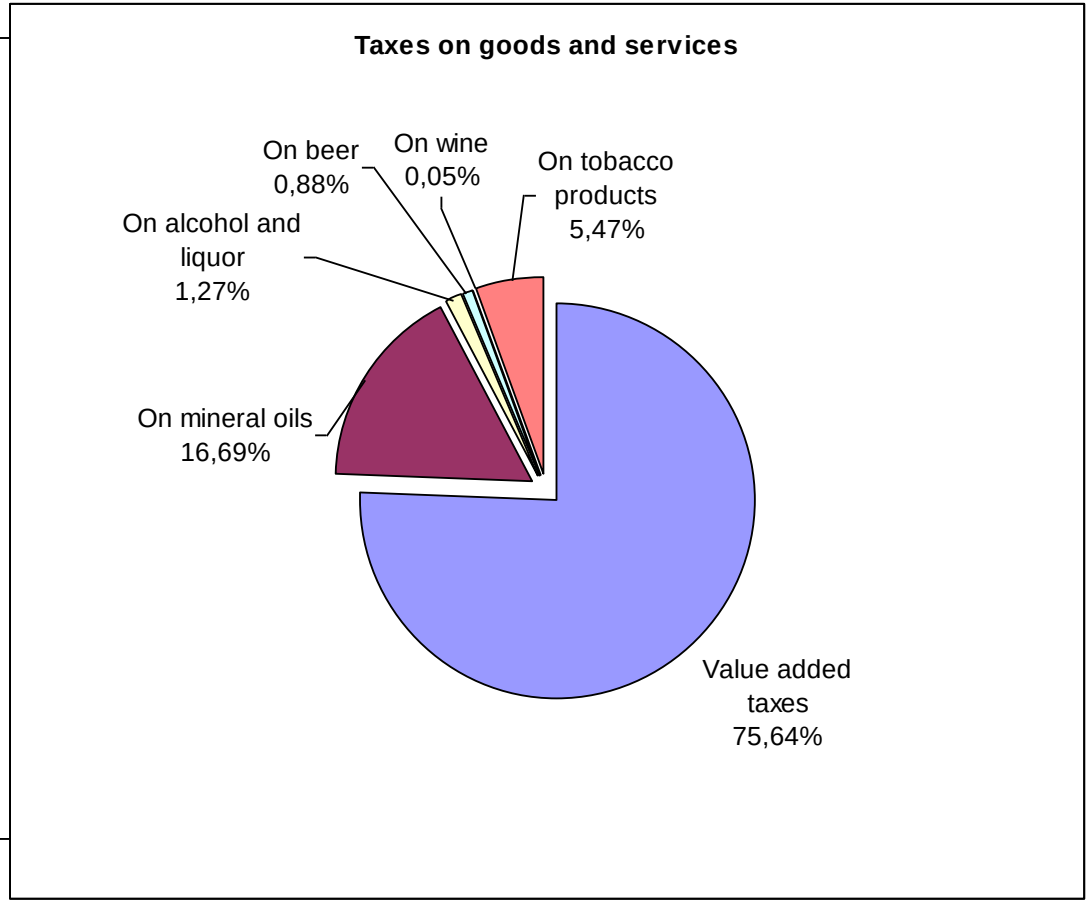
Social Security Contribution - 43 %

PIT – 12 %

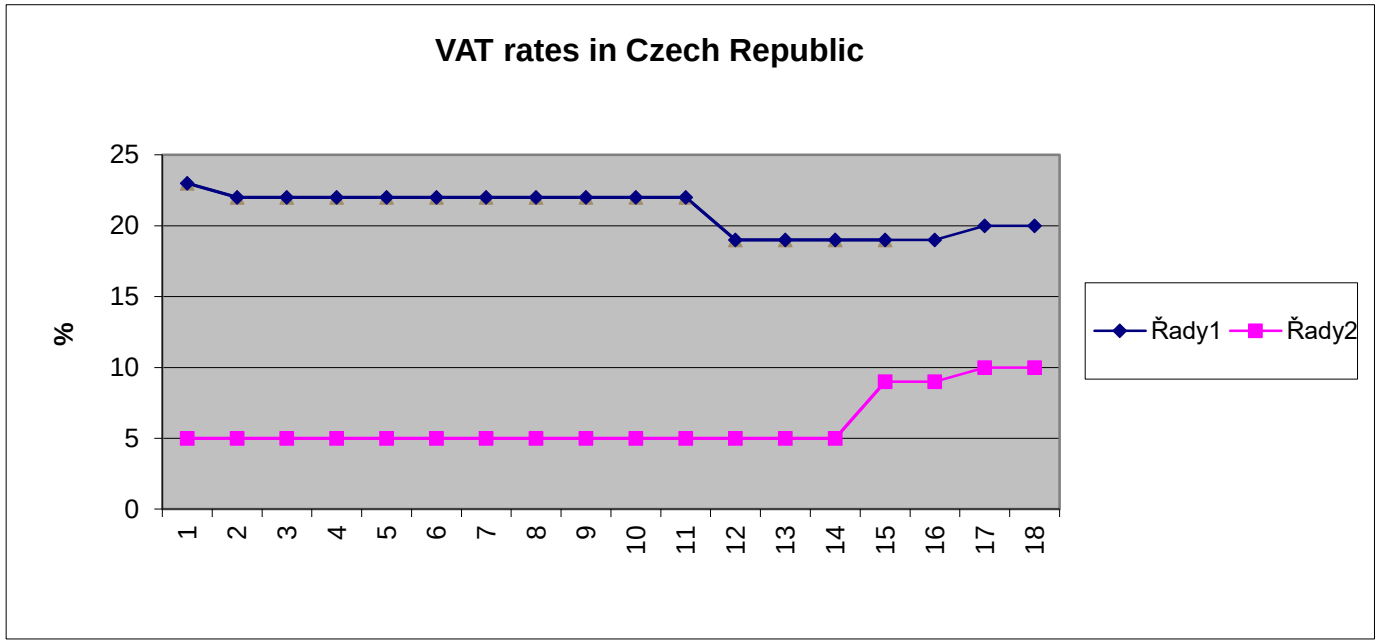
CIT – 13 %

VAT – 23 %

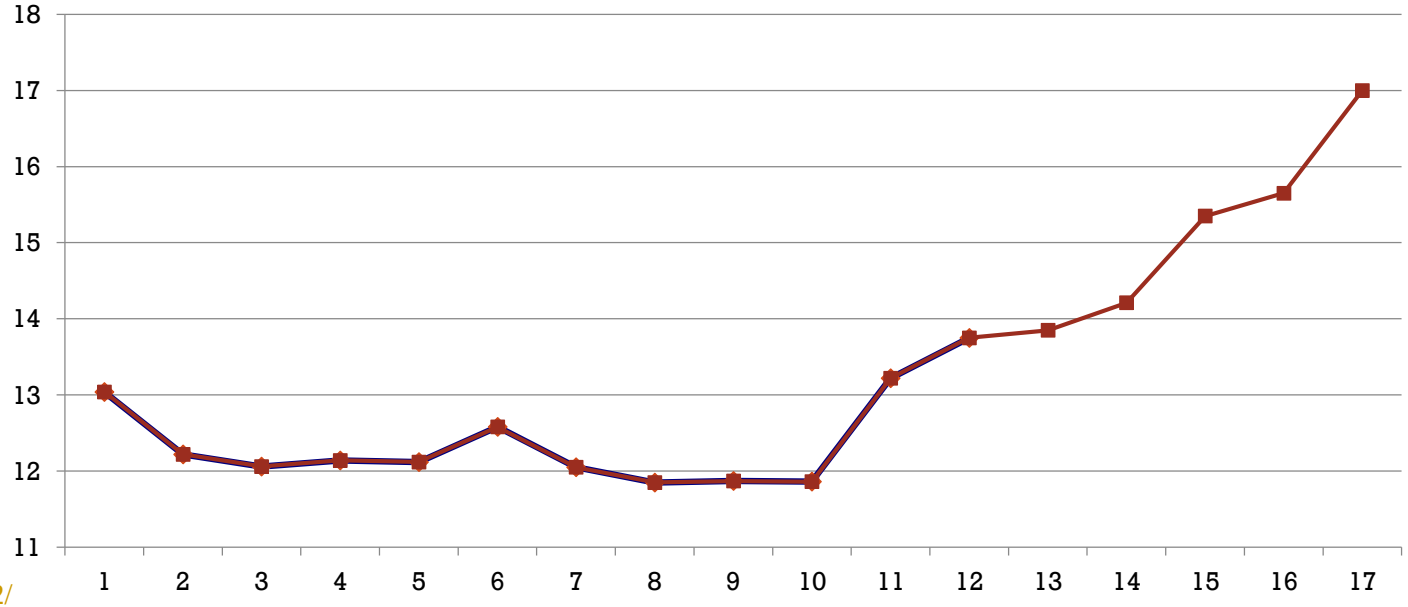
Excises – 7 %



Source: https://slideplayer.com/slide/9006472/



* breakpoint 1. 5. 2004



Source: https://slideplayer.com/slide/9006472/

TWO WAYS OF DISTRIBUTIONAL TAX ANALYSIS

All distributional analyses are based on measurement of impact on the poor and on the rich subjects (i.e. subjects on different part of well-being scales).

So the crucial question is: what should be selected as appropriate measure of well-being (of household).

- **annual framework**
  - **Well-being = f (annual income)**
  - **Theoretically not so appropriate**
  - **Easily measurable (appr. 90 % of distributional analyses used this approach)**

- **lifetime framework**
  - **Well-being = f (lifetime income)**
  - **Theoretically more appropriate because the lifetime incidence approach tries to eliminate temporary fluctuations in income**

MEASURES OF LIFETIME INCOME

- **Well-being = f(lifetime income)**
- **Estimation of lifetime income is the most exciting and challenging issue in up to date distributional research.**
- **Lifetime income can be measured (see Slintakova (2006); Metcalf (1994)) as:**
  - **the present discounted value of earned income plus bequests (gifts) received**
  - **the present discounted value of consumption plus bequests made**
    - **used in this analysis.**

MODIFIED LIFETIME INCOME

- Due to the lack of appropriate information we had to modified definition of lifetime income. We measured lifetime income as:
  - Current consumption (money expenditures PLUS natural consumption MINUS social insurance)
  - Bequests were ignored (Metcalf (1994) supported this exclusion)

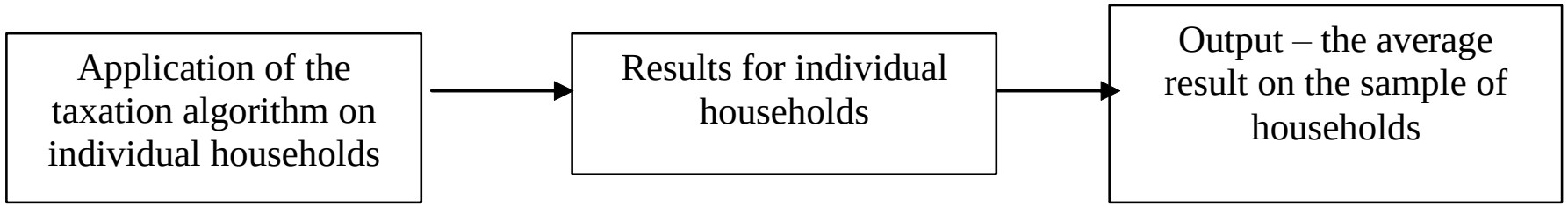
TAX BURDEN CALCULATION

- choose the average (typical for the selected part of income scale) households and calculate their tax burden
- calculate the burden for all (and every) individual households, it means to calculate relevant tax burden for every households in the survey, and then study the differences in tax burdens.
  - We used microsimulation model to calculate individual tax burdens

ADVANTAGES OF MICROSIMULATION MODEL

- analyse not only the averages for the ex-ante defined (social) groups of households, but also its variability within these groups
- identify some kinds of outliers
- try to find some other relevant input variables
- use the impact of taxation itself as a classification variable
- It enables the analysis of observed characteristics of the groups with lowest vs the highest tax rates

MICROSIMULATION MODEL



Source: Author

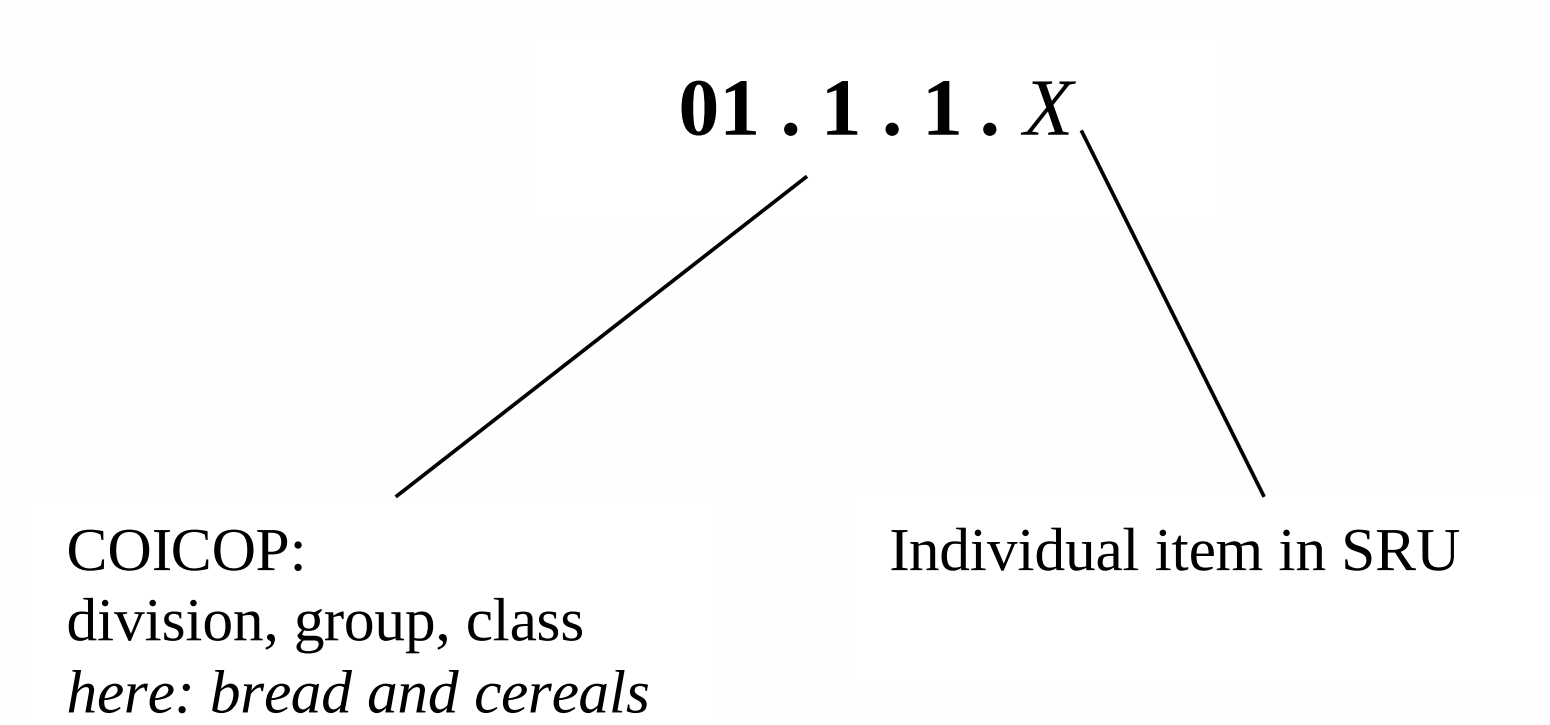
$$T_i = \sum_{n=1}^{N} SCI_{ni} * t_n / (t_n + 100)$$

Where

- **SCIni** means money expenditures on a statistical consumption item **n in year i**
- **tn** (in %) is a tax rate assigned to the statistical consumption item;
- the base which is used for the tax liability calculation is in fact paid prices of goods or services including the VAT so that the tax rate was converted accordingly.

Example of statistical consumption item

- for **n = 01.1.1.X**
- ***Classification of expenditures in SRU (Czech Household budget survey (HBS))***

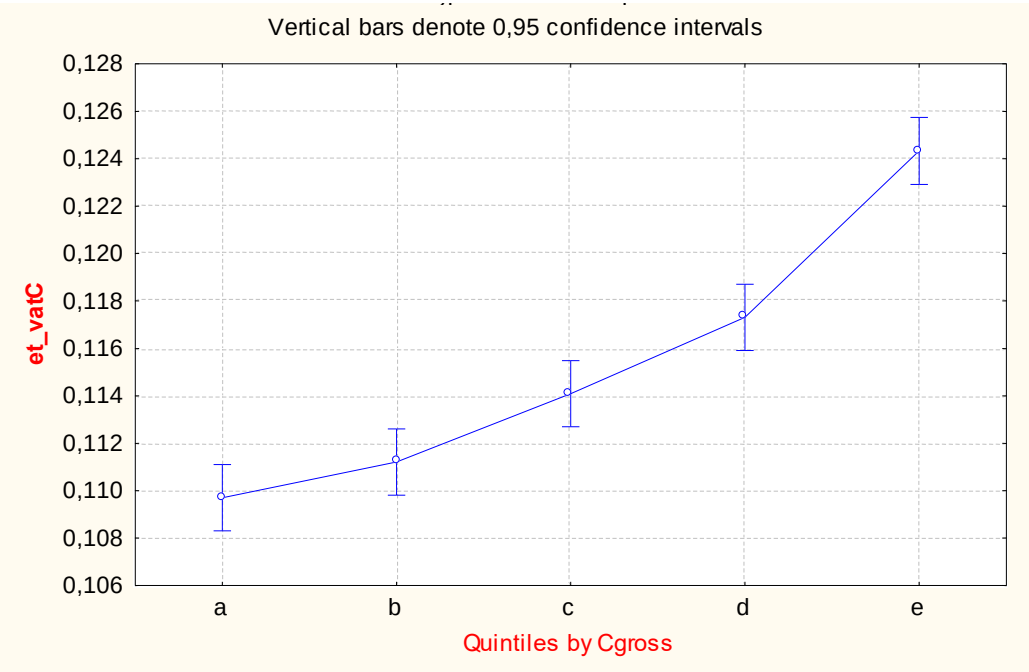


THE AIM OF EMPIRICAL ANALYSIS

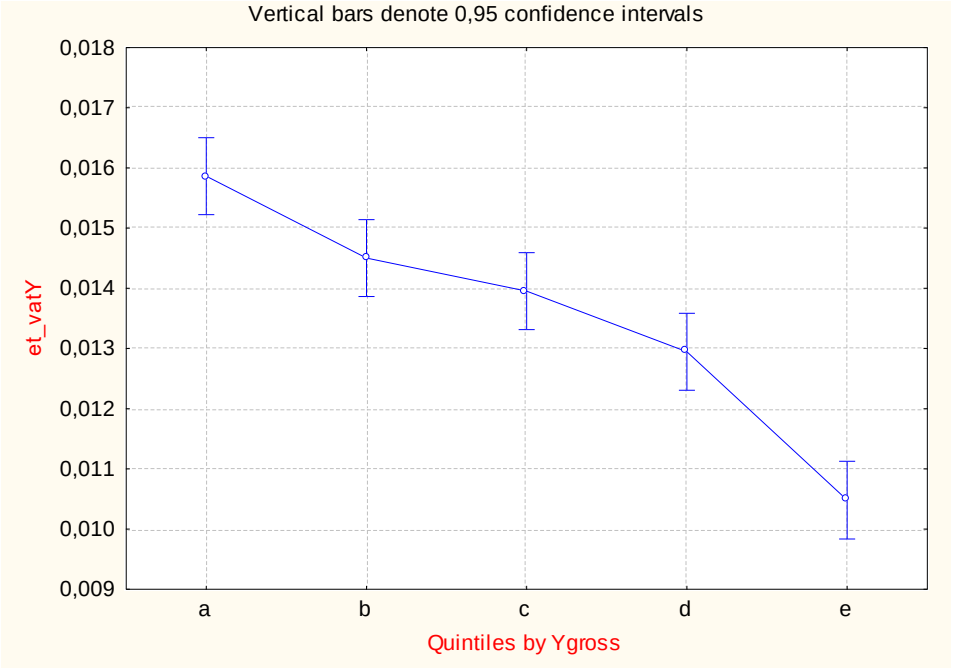
- to study the distribution impact under both well-being measures.
- The presupposed (theoretical) result is:
  - The consumption taxation is progressive under lifetime income framework and
  - The consumption taxation is degressive under one year (short run) approach.
- Important input for the policymakers and their decisions. (try to discuss why?)

RESULTS OF VAT ANALYSIS

Lifetime income (annual consumption)



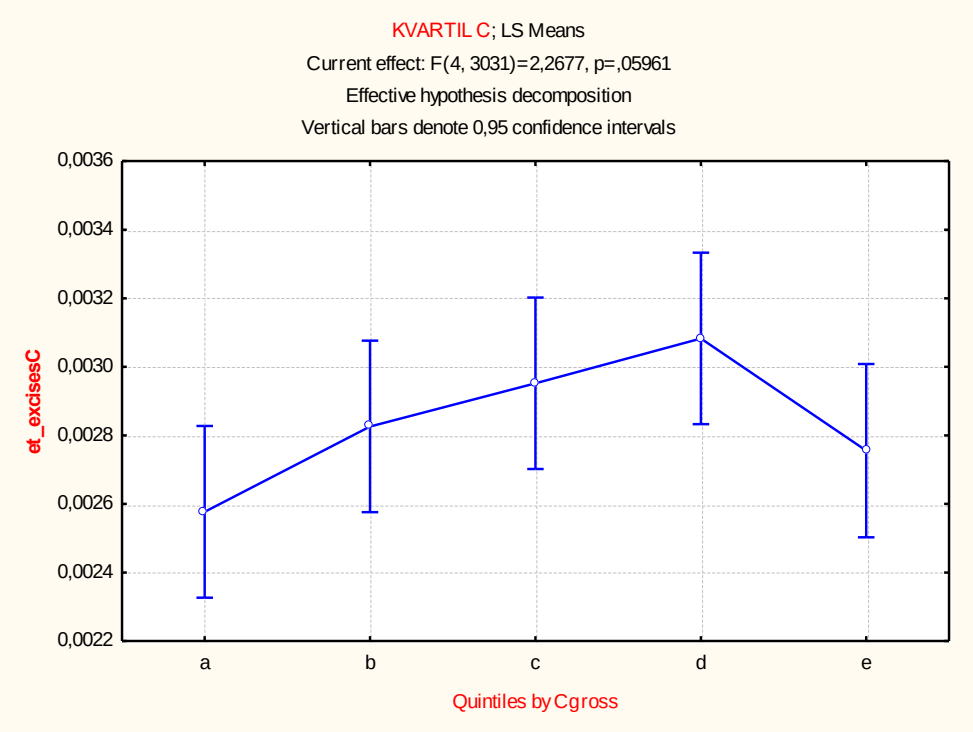
Annual framework (annual income)



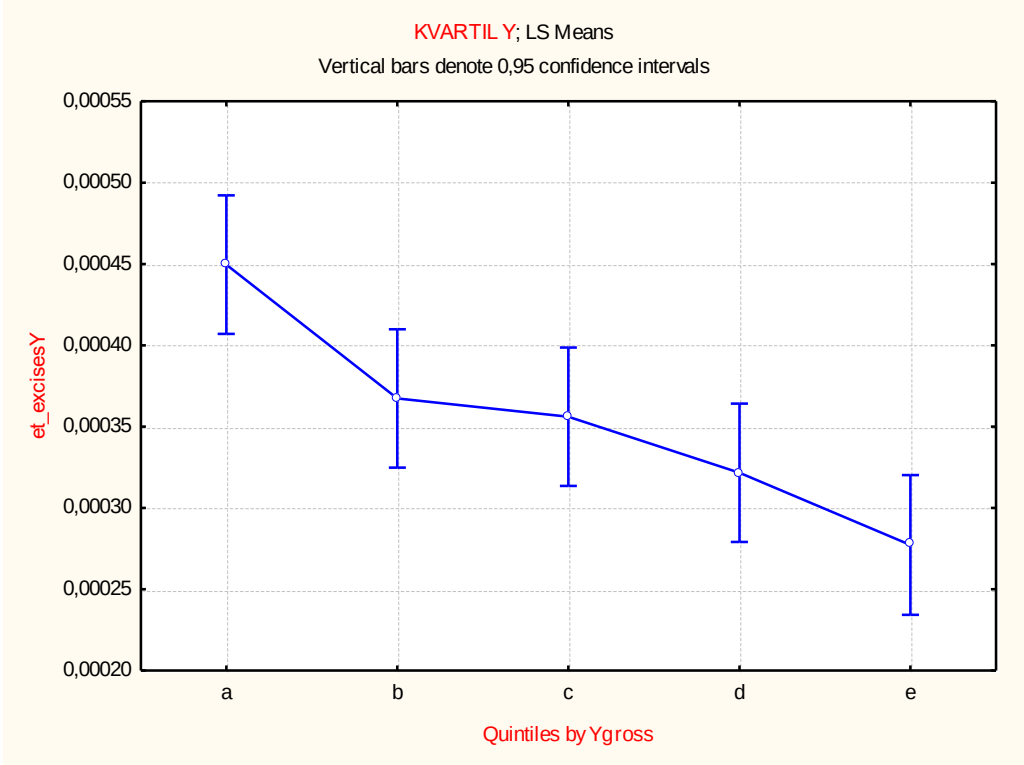
Source: Author

RESULTS OF EXCISE ANALYSIS

Lifetime income (annual consumption)



Annual framework (annual income)



Source: Author

CONCLUSIONS

- design of the VAT is generally progressive (tax base and tax rates are in favor to poor consumer),
- but the propensity to consumption outweighs this design effect

Finally, the VAT to be regressive under the annual income framework (on the contrary to lifetime approach)

- See also KLAZAR, Stanislav, SLINTÁKOVÁ, Barbora. How Progressive is the Czech Pension Security? *Prague Economic Papers*. 2012, roč. 21, č. 3, s. 309–327. ISSN 1210-0455.

CONCLUSIONS 2

- Supportive factor of progressivity of the Czech VAT:
  - application of the reduced rate on selected goods and services (especially necessities, i.e. goods expenditures on which represent higher portion of total consumption for lower income households)
- Czech VAT
  - looks progressive if we use the consumption expenditure for allocation of households to quintiles (and for calculation of the relative tax burden).
  - Completely different results are obtained under the short run framework.

TAXATION OF SME IN THE CZECH REPUBLIC

TAXES WITH THE HARDEST IMPACT ON ENTERPRISES

- ✓**Corporate income tax**
  limited and incorporated companies
- ✓**Personal income tax**
  public company limited, unincorporated enterprisers, special limited partnership
- ✓**Value added tax**

TAX SUPPORT OF SME

- ✓The tax system of the Czech Republic does not support SME directly
- ✓The support of SME through subsidies, bank credits, loans (guarantee by state) etc.

CORPORATE INCOME TAX CIT

- ✓**CIT** is levied on income
- ✓tax base is calculated from the **accounting profit/loss**
- ✓Udjusted further by
  - ✓non-deductible costs,
  - ✓non-taxable revenues etc.
- ✓the tax period may be a **calendar year** or **fiscal year**

CORPORATE INCOME TAX CIT

- ✓Reducing of the tax rate in time
  - 1993: 45 %
  - 2006: 24 %
  - 2009: 20 %
  - 2010-2019: 19 %

CORPORATE INCOME TAX CIT

- ✓The liability to pay **Advance tax** – based on the amount from the last tax declaration
- ✓Small enterprises usually do not pay tax in advance

Last tax declaration (LTD)	*Advance tax (AT)*	*Nr. of AT per year*
Up to 30 000 CZK	**-**	**-**
30 000 CZK up to 150 000 CZK	**40% LTD**	**2**
More than 150 000 CZK	**25% LTD**	**4**

Source: Author

PERSONAL INCOME TAX PIT

- ✓Is levied on the all incomes of self-employed persons and employees
- ✓Single tax rate **15** % (effectively about **23 %)**
  - ✓**History** – four bracket system with tax rates from **12 %** to **32 %**
- ✓The minimum tax base for self–employed persons was abolished in 2008

PERSONAL INCOME TAX PIT

- ✓Applicable to
  - ✓Salaries and wages
  - ✓Income from business activities
  - ✓Income form capital assets
  - ✓Rental income
  - ✓Other income
- ✓The liability to pay **Advance tax** – based on the amount from the last tax declaration (the same conditions as for advance tax of CIT)

PERSONAL INCOME TAX PIT

- ✓The self-employed persons have liability to conduct accounting
- ✓Small enterprisers have opporunity to conduct so called „Tax evidence“ – simplified accounting
- ✓The Tax evidence contains only information (records) about incomes and expenditures, amount of assets, amount of debts

PERSONAL INCOME TAX PIT

- ✓Another opportunity how to show expenditures is to approve expenditures as a percentage part of income (percentage lumps set by the law - differently for each business activities)
  - ✓Reducing of administration burden
  - ✓Recording of expenditures is aboslished in this case
- ✓The amounts of lumps differ from 60 % up to 80 %

VALUE ADDED TAX VAT

- ✓A general, broadly based consumption tax assessed on the value added to goods and services
- ✓Taxable person – an individual or corporation in case of economic activity
- ✓Two rates
  - ✓Standard rate
  - ✓Reduced rate (foodstuff, medicaments, books, dwelling etc.)

VALUE ADDED TAX VAT

- ✓Small enterprisers with turnover up to 1 mil. CZK do not need to registrate to VAT
- ✓In this case enterprisers do not have right to deduction of VAT
- ✓Obligatory registration vs voluntary registration to VAT

VALUE ADDED TAX VAT

- ✓Small enterprisers with turnover up to 1 mil. – obligatory registration to VAT
- ✓Tax period
  - ✓Quarter period for small enterprises with turnover up to 10 mil. CZK
  - ✓Month period for bigger enterprises

TAX LEGISLATIVE PROCEDURE OF PARLIAMENT

- Czech Parliament has two chambers
- Chamber of Deputies (200 members)
  - elections every four years
- Senate (81 members)
  - elections of one third (27) of Senators every two years
  - thus, every Senator serves six years

TAX LEGISLATIVE PROCEDURE OF PARLIAMENT

- Legislative process usually begins in the government
- It is the same for all kinds of legislation
- Act on the state budget - specific procedure

TAX LEGISLATIVE PROCEDURE OF PARLIAMENT

- Government
  - preparation of the new law starts within the responsible ministry
  - internal comments
    - tax administration (central and regional levels) takes part in the internal comments
  - external comments
    - other ministries
    - other stakeholders – Highest Court, Czech Central Bank, trade unions, employer unions, various associations etc.
    - sometimes general public

TAX LEGISLATIVE PROCEDURE OF PARLIAMENT

- Government cont'd
  - Legislative Council of Government
  - governmental approval
    - if there are disagreements among various ministries and/or other stakeholders, governemnt has to decide
  - the law is then presented to the Parliament

DRAFTING AND REVIEWING OF TAX LAW IN PARLIAMENT

- Chamber of Deputies
  - The rules of procedure of the Chamber of Deputies are given by law
  - Every new law has to go through the three readings
  - **1st reading**
    - general debate
    - may be rejected or returned to the government for reworking
    - steering Comittee specifies a rapporteur
    - the new law is introduced by the sponsoring ministry
    - committees to deal with the particular law are assigned
    - tax legislation always assigned to Budgetary Comittee
    - more committees may be assigned to one law

DRAFTING AND REVIEWING OF TAX LAW IN PARLIAMENT

- Chamber of Deputies cont'd
  - **Work in the committees**
    - committee shall consider the proposed law
    - pass a resolution with recommendations
    - present it to the whole Chamber
    - there may be an opposing reports if at least one-fifth of all members agree
    - other committees or all individual Deputies may state opinion
  - **2nd reading**
    - more specific debate follows
    - committees' recommendation discussed
    - amendments may be presented

DRAFTING AND REVIEWING OF TAX LAW IN PARLIAMENT

- Chamber of Deputies cont'd
  - **3rd reading**
    - law can be rejected
    - if not, amendments presented durign the second reading are voted
    - after that there is a final vote on approval of the law
  - the law is then submitted to the Senate

TAX LEGISLATIVE PROCEDURE OF PARLIAMENT

- Senate
  - 30 days to express their view
  - they can pass or defeat the law or propose an amendment
    - if it is passed it is sent to the President of the Republic
    - if the law is defeated, Chamber of Deputies gets a second vote, they can outvote the Senate‘s rejection
    - if amendments are proposed, Chamber of Deputies has to vote to agree with them

LITERATURE

- BROWN, C. V. a Peter M. JACKSON, 1991. *Public Sector Economics*. 4th edition. Oxford, UK ; Cambridge, Mass., USA: Wiley-Blackwell. ISBN 978-0-631-16208-7.
- ROSEN, Harvey a Ted GAYER, 2013. *Public Finance*. 10th edition. New York, NY: McGraw Hill. ISBN 978-0-07-802168-8.

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