



**Universität  
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**swiss economics**

# **Regulatory Remedies to mitigate asymmetric VAT-Exemptions**

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# Abstract

Asymmetric value added tax (VAT) exemptions for universal service providers (USP) have a series of distorting effects on competition. Based on the findings on the competitive and welfare effects of such exemptions of Dietl, Jaag, Lang, Lutzenberger and Trinkner (2011), I will outline whether (1) price regulation or (2) compensation of the universal service obligation (USO) are suitable regulatory remedies to compensate for the detected competitive effects of VAT exemptions. In line with Jaag (2010) I conclude that the net cost concept as foreseen in Directive 2008/6/EC will mitigate some of the effects of asymmetric VAT treatment. Thereby, it will be important to consider a global approach to the net cost calculation as suggested by Jaag, Koller and Trinkner (2009). The VAT exemption is then to be treated as a benefit of the USO that is to be included in the (global) net cost calculation. Secondly, as shown by Jaag and Trinkner (2011), it will be of great importance to include the financing mechanism into the net cost calculation in order to avoid under- or over-compensation of the USP.

## References

- “Impact of VAT-Exemptions in the Postal Sector on Competition and Welfare”**, in: M.A. Crew and P.R. Kleindorfer (eds.), *Reinventing the Postal Sector in an Electronic Age*. Edward Elgar. Working paper version available at <http://ideas.repec.org/p/chc/wpaper/0024.html>
- “Calculating the Cost of the USO - The Need for a Global Approach”**, in: M.A. Crew and P.R. Kleindorfer (eds.), *Progress in the Competitive Agenda in the Postal and Delivery Sector*, UK, Edward Elgar. Working paper version available at <http://ideas.repec.org/p/chc/wpaper/0010.html>
- “The interaction between universal service costing and financing in the postal sector: a calibrated approach”**, in: *Journal of Regulatory Economics* 39(1), 89-110. Working paper version available at <http://ideas.repec.org/p/chc/wpaper/0019.html>

# Agenda

- **The impact of VAT exemptions on competition and welfare**
  - Introduction
  - Model description and Simulation results
- **Back to the basics: Competition in the postal sector**
- **Regulatory remedies to VAT market distortions**
  - Price regulation?
  - USO compensation?
- **Remarks on the Costing of the USO**

# Introduction VAT

## Conflicting policy goals:

- Competition with level playing field for all operators
    - VAT exemptions unlevel the playing field
  - Guaranteeing the USO at affordable prices
    - VAT exemptions reduce retail prices
-  **Trade-off**

**European Community:** VAT exemptions for PPO recently confirmed by ECJ; however, no exemption for individually negotiated prices.

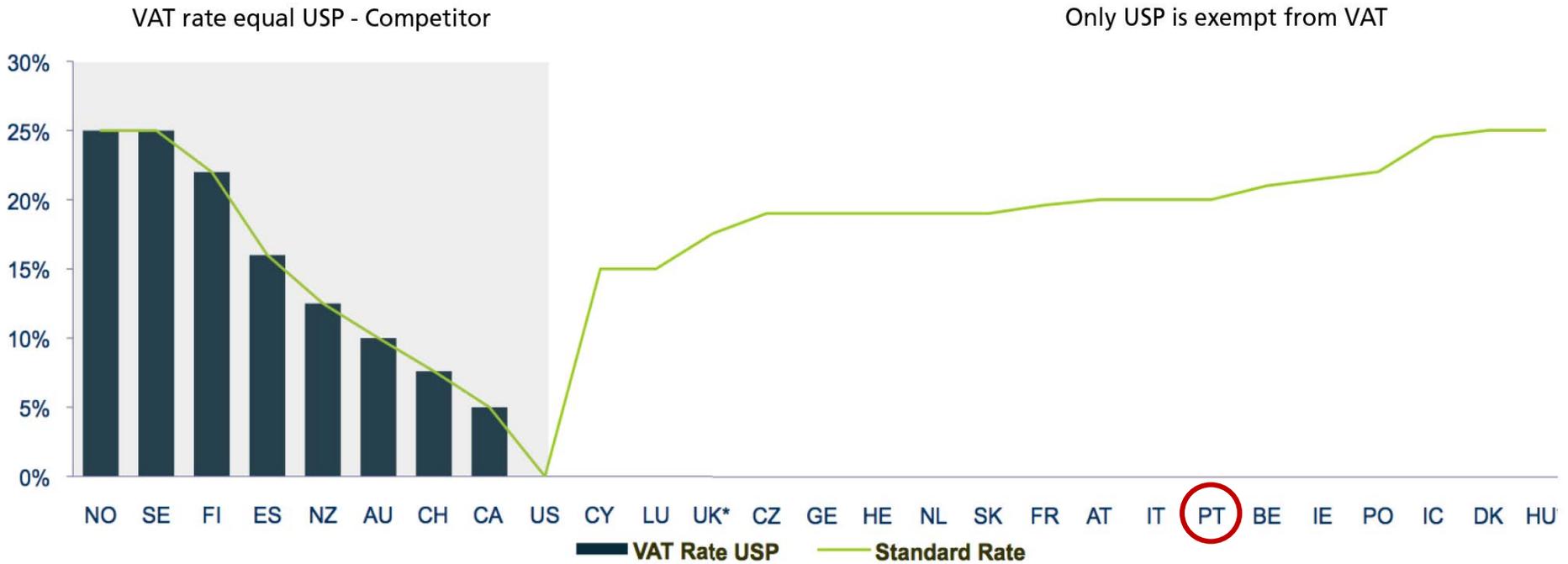
- Trade-off not resolved on community level

## **Dietl, Jaag, Lang, Lutzenberger, Trinkner (2011):**

- Elaboration of competitive effects of VAT exemptions
- Effects on profits, consumer surplus, tax revenue and welfare

# Current Situation

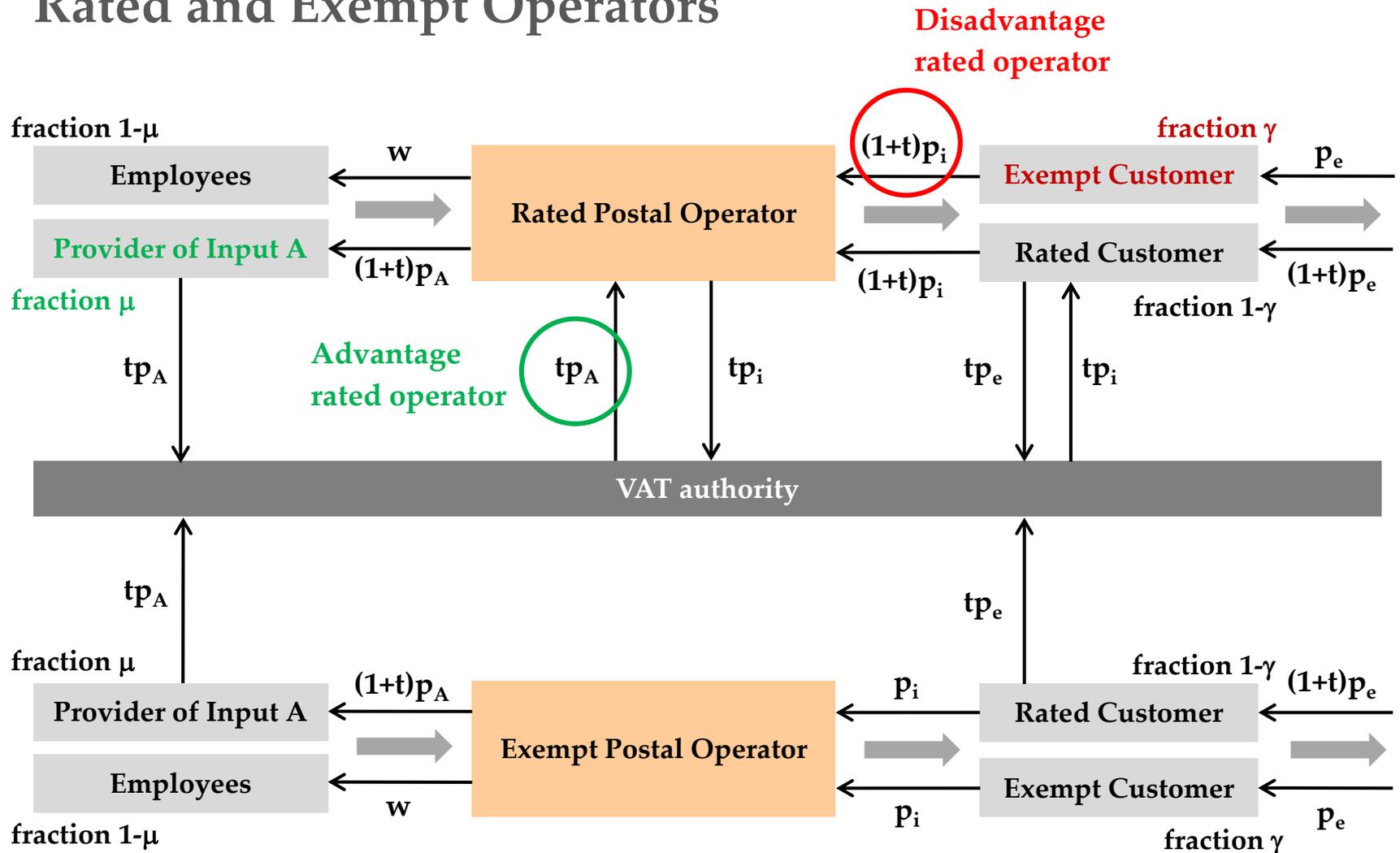
## VAT in IPC Member Countries



\*UK rate per January 2010, HU per July 2009

# How the VAT Works

## Rated and Exempt Operators



# Competitive Effects

Net competitive effect of VAT exemption is determined by the USP's

- ✘ **“Cost disadvantage”**: VAT on non-labor inputs cannot be reclaimed
- ✓ **“Pricing advantage”**: Lower net prices for exempt customers (e.g. banks, individuals)

**What is the net effect?**

→ **We need a theoretical model.**

- The first effect depends on the **fraction of non-labor inputs**
- The second effect depends on the **fraction of exempt customers**
- Total effect depends on calibration

→ **We need a simulation.**

# The Model

- Two postal operators: Incumbent, Entrant
- Distinction of VAT-rated inputs and exempt inputs  
 $1-\mu$  = fraction of exempt inputs  $\equiv$  fraction of labor costs
- Two types of customers: rated and exempt customers  
 $\gamma$  = fraction of exempt customers
- Equilibrium prices and quantities are endogenously determined. This allows to compute
  - Operators' profits
  - Consumer surplus
  - Tax revenues $\left. \vphantom{\begin{matrix} \text{Operators' profits} \\ \text{Consumer surplus} \\ \text{Tax revenues} \end{matrix}} \right\} \equiv \text{overall welfare}$
- Price competition in differentiated products with two VAT regimes:
  - **Scenario A:** VAT exemption for the USP (“status quo”)
  - **Scenario B:** No VAT exemption (“level playing field”)

## Formal results

### **Proposition 1 : Effect of higher VAT rate in Scenario A (VAT exemption)**

- (i) *A higher tax rate always yields an increase in the before-tax price of the incumbent, while the before-tax price of the entrant decreases for a reasonable range of parameters.*
- (ii) *A higher tax rate induces a decrease in the equilibrium demands of the incumbent and the entrant if is in a reasonable range of parameters.*

### **Proposition 2: Effect of higher VAT rate in Scenario B (both fully rated)**

- (i) *A higher tax rate yields a decrease in the before-tax prices of the incumbent and the entrant if demand is within a reasonable range of parameters.*
- (ii) *A higher tax rate yields a decrease in the equilibrium demands of the incumbent and the entrant if the ratio of cost parameters is within a reasonable range of parameters.*

### **Proposition 3: Comparison Scenario A and B**

- (i) *The before-tax price of the incumbent is higher in Scenario A than in Scenario B for a reasonable range of parameters.*
- (ii) *The before-tax price of the entrant is lower in Scenario A than in Scenario B if and only if the proportion of VAT exempt customers is lower than the fraction of upstream and delivery costs that is non-labor.*

→ **Simulation needed to examine the extent of competitive distortions and welfare effects in more detail**

# Assumptions

## Model Calibration

- **Incumbent's advantage in quality and reputation:**  
Has 80% market share if entrant offers same services
- **Entrant's cost advantage (different business model):**
  - 10% upstream (digital sorting)
  - 30% downstream (fewer deliveries per week)
- To isolate the competitive effects of different VAT regimes, we assume that
  - operators pay the same wages
  - employees and outsourced work force have the same wages
- **Outsourcing is only relevant for VAT reasons**

# Simulation Results I

## Base Case

Simulation Results Realistic Case ( $\mu_I=0.3$ ;  $\mu_E=0.8$ )

	Scenario A	Scenario B
Competitive Effects	tI=0;tE=0.2	tI=0.2;tE=0.2
Incumbent Market Share	60%	59%
Price Ratio (I/E) excl. VAT	137%	125%
Price Ratio (I/E) incl. VAT	114%	125%
Profit Ratio (I/E)	275%	178%
Profit I	33'210'986	23'547'197
Profit E	12'059'444	13'215'691
Welfare Effects		
Overall Price Level excl. VAT	0.34	0.32
Overall Price Level incl. VAT	0.36	0.38
Operator Profits	45'270'430	36'762'889
Consumer Surplus	352'656'946	349'511'937
Incremental Government Tax Revenue	-5'142'466	5'078'133
Overall Welfare	392'784'910	391'352'958

In the base case, compared to a symmetric VAT regime, the USP's VAT exemption

- distorts competition clearly in the incumbent's favor.  
Abolishing it would result in a decrease of its pre-tax prices and profits;
- increases consumer surplus and welfare.

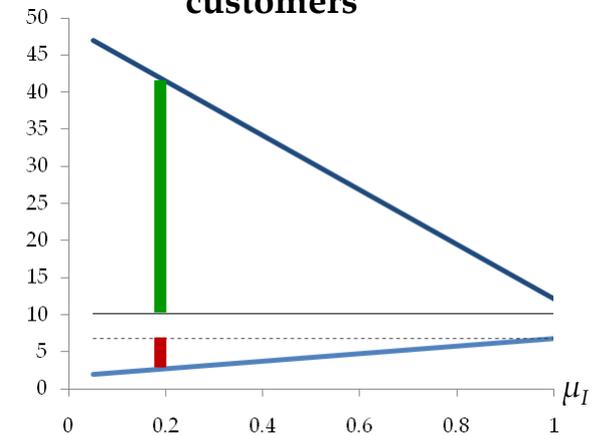
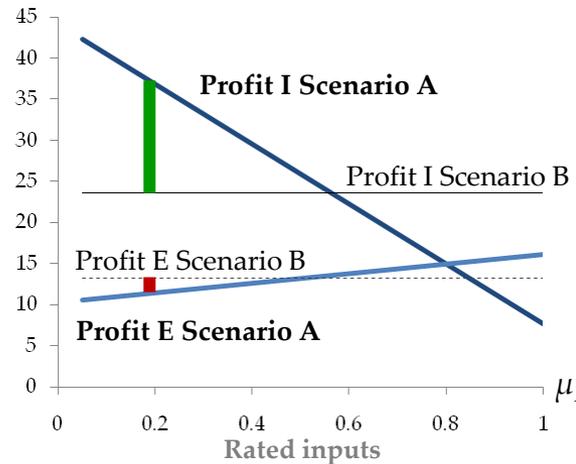
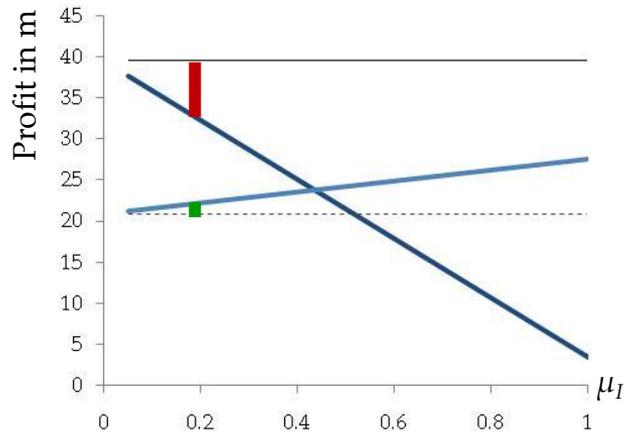
# Simulation Results II

## Is VAT Exemption Really a Competitive Advantage?

Case i: 100 % customers rated,  
e.g. industrial companies

Case ii: 50% customers rated

Case iii: 0% customers rated  
e.g. banks and retail  
customers



- The more important non-labor inputs are, the greater is the cost disadvantage of the exempt postal operator.
- The fewer customers are rated, the greater is the pricing advantage of the exempt postal operator.
- **Overall, VAT exemption is a competitive advantage.**

# Conclusion

## Main Findings

The USP's VAT exemption...

- has a positive effect on its profit
- has a negative effect on the competitor's profit
  - **therefore strengthens the USP's competitive position**
- has a positive effect on consumer surplus
- has a negative effect on tax revenue
  - **has little (but positive) effect on welfare**
  - **incentivizes the USP to employ own workers instead of subcontractors**

# Are There Regulatory Remedies?

To remember:

- Cost disadvantage is not product- or customer-specific
- Pricing advantage is specific to exempt customer segment

VAT is only one part of the puzzle

Is there a regulatory antidote?

- Price regulation?
- USO regulation?



Beware of the side effects!

# Competition in the Postal Sector

## Barriers to Entry vs. Invitations to Compete

- **Regulatory aspects**

- VAT exemptions
- USO and their financing
- Quality obligations
- Minimum wages
- Network access
- Pricing flexibility

- **Economic aspects**

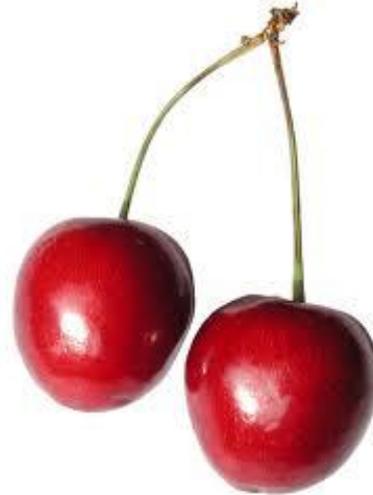
- Cost structure (proportion of fixed costs, geography)
- Market development (substitution!)



**Uncertainty**

# Competition in the Postal Sector

## It's All About the Cherries



Observed market entry strategies  
(Netherlands, Sweden) are highly selective with respect to

- area coverage,
- product range,
- customer focus.

**Postal competition is likely to remain asymmetric for the near future.**

**Where incumbents are well perceived by the customers, Entrants will be the „Price-followers“.**

# Competition in the Postal Sector

## A Level Playing Field or an Uphill Battle?

$$\begin{aligned}\text{Profit} &= \text{Revenue} - \text{Cost} \\ &= \text{Price} * \text{Quantity} - \text{Cost}\end{aligned}$$

→ Quantity (market share) comes at the cost of margin and vice versa.

**Competition is in Prices**

**Cost is the Playing Field**

**Price ~ Cost**

Determined by

- Form of Production (delivery frequency,...)
- Scale of Production
- Labor conditions (up to 80% cost share!)
- Taxes

May vary for different customers

# Regulatory Remedies

## What About Price Regulation?

VAT-advantage may already be compensated by other factors

Retail-price regulation

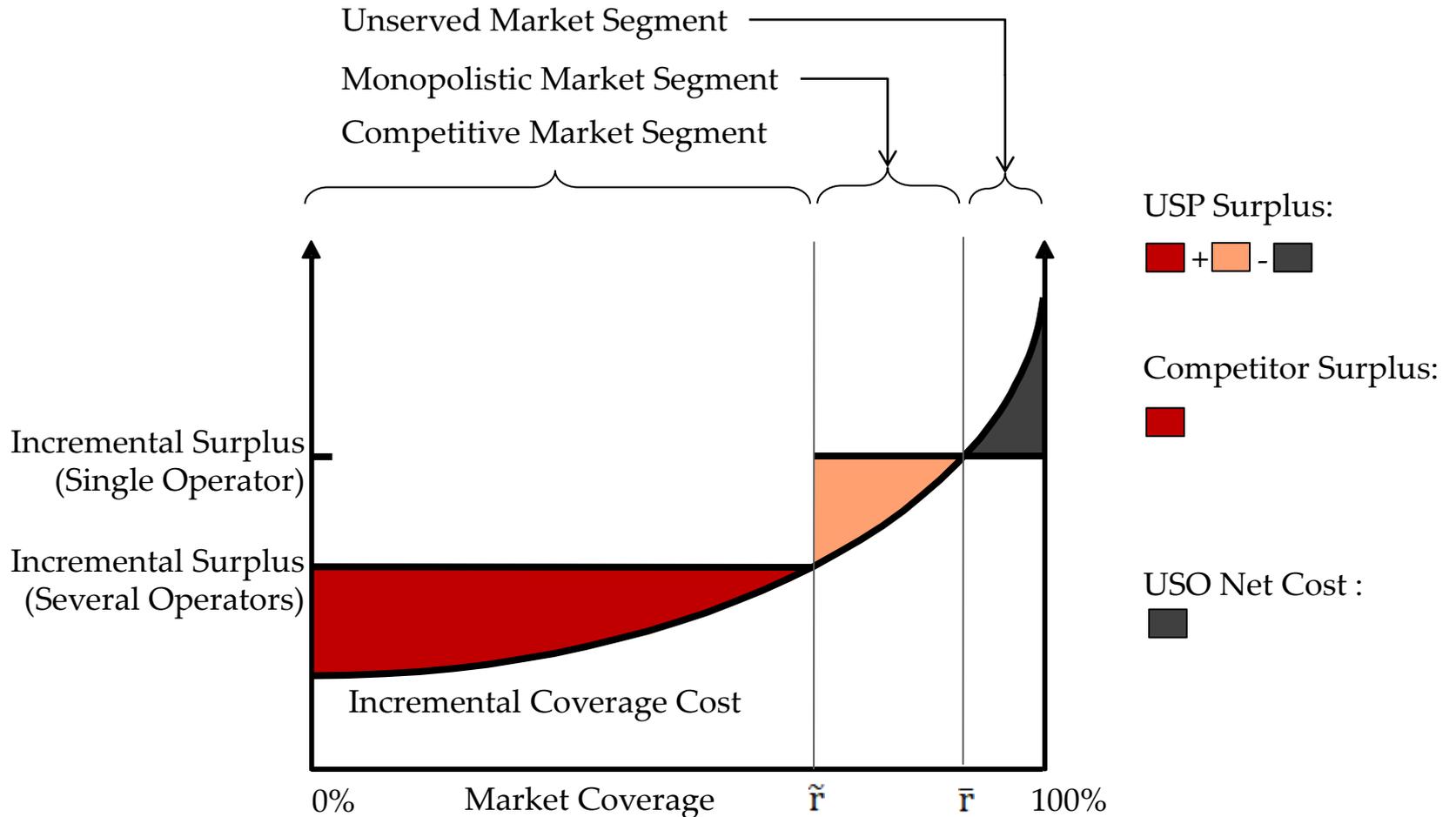
- Reduces the USP's profit...
- But: Also the competitors'!
- May drive competitors out of the market (if binding)

Wholesale-price regulation (access price)

- Lowers competitors' cost
- But: Access regulation to fine-tune competition?

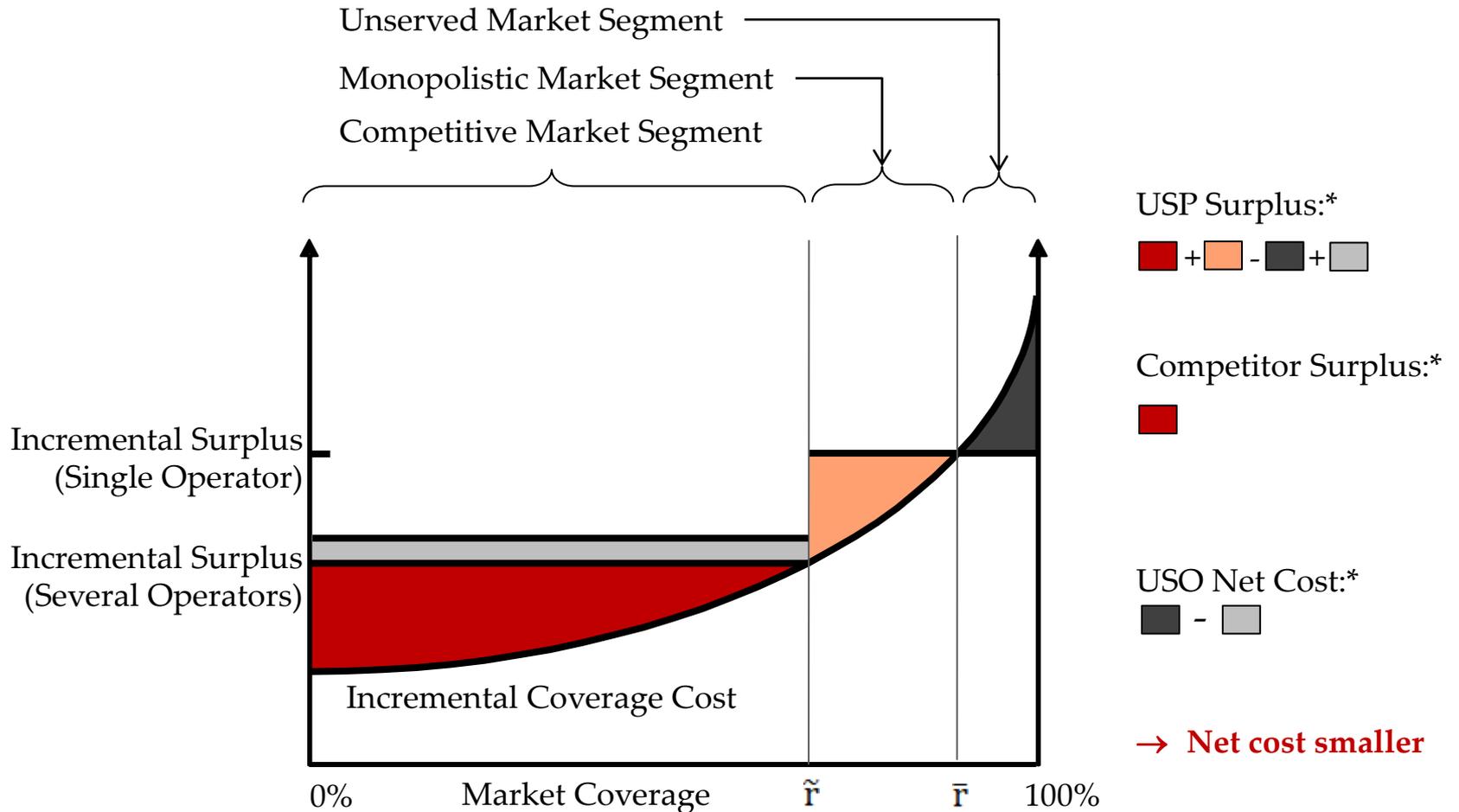
# What About the Net Cost of The USO?

## Competition with Equal VAT treatment



# What About the Net Cost of The USO?

## Competition with VAT Exemption



\*Additional effect: Reduced competitor's market coverage due to lower surplus in the competitive market segment; see Jaag and Trinkner (JRE, 2011)

# Calculating the Net Cost of Universal Service Obligations Again: Beware of the Side Effects

## VAT exemption is a benefit of the USO

→ Take it into account in the costing of the USO!

## Annex I of the Directive

“The calculation of the net cost of specific aspects of universal service obligations is to be made separately and so as to avoid the double counting of any direct or indirect benefits and costs.”

→ **Separate calculation!**

## **Interaction of interdependent USO-dimensions?**

## Article 7 of the Directive

“Where a Member State determines that the universal service obligations [...] entail a net cost [...] and represent an unfair financial burden on the universal service provider(s), it may introduce:

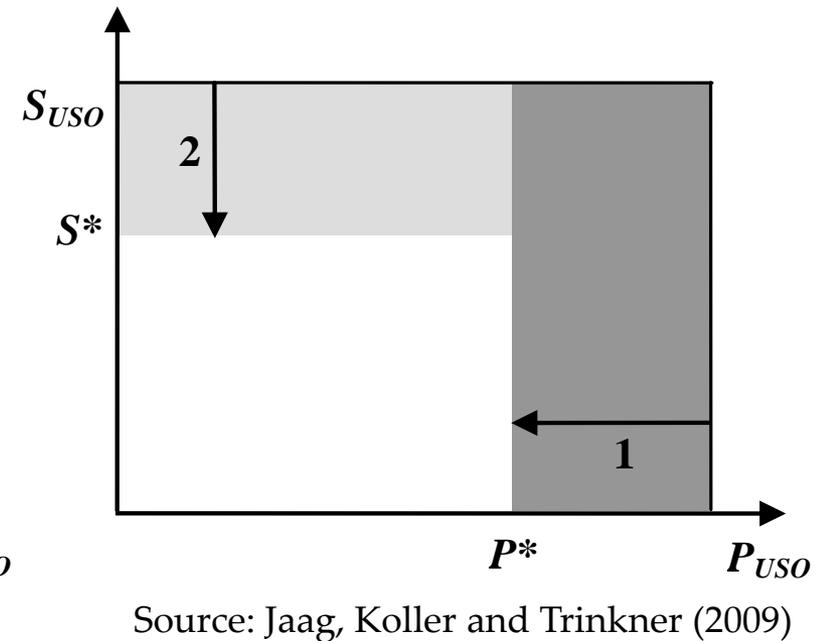
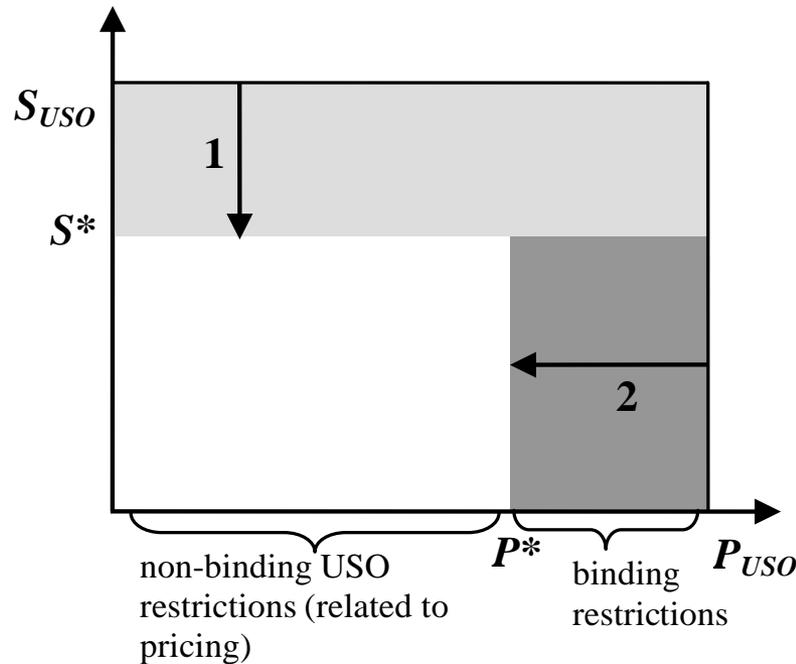
- a mechanism to compensate the undertaking(s) concerned from public funds; or
- a mechanism for the sharing of the net cost of the universal service obligations between providers of services and/or users.”

→ **Two-step procedure!**

## **Interaction of costing and financing?**

# Interaction of interdependent USO dimensions (I)

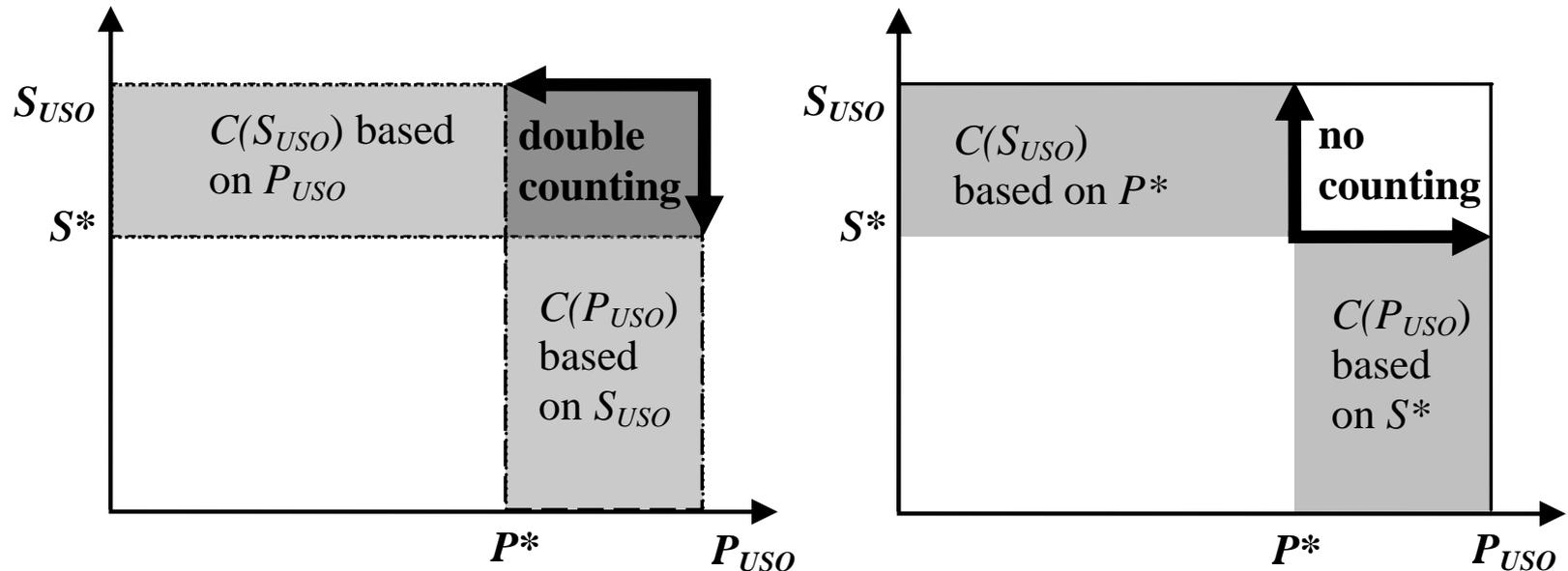
- Example: Assume USO consists of two dimensions only:
  - Obligations to provide a Service ( $S$ )
  - Obligations in pricing ( $P$ )



→ **Cost attribution to individual USO elements is arbitrary!**

# Interactions call for a global approach

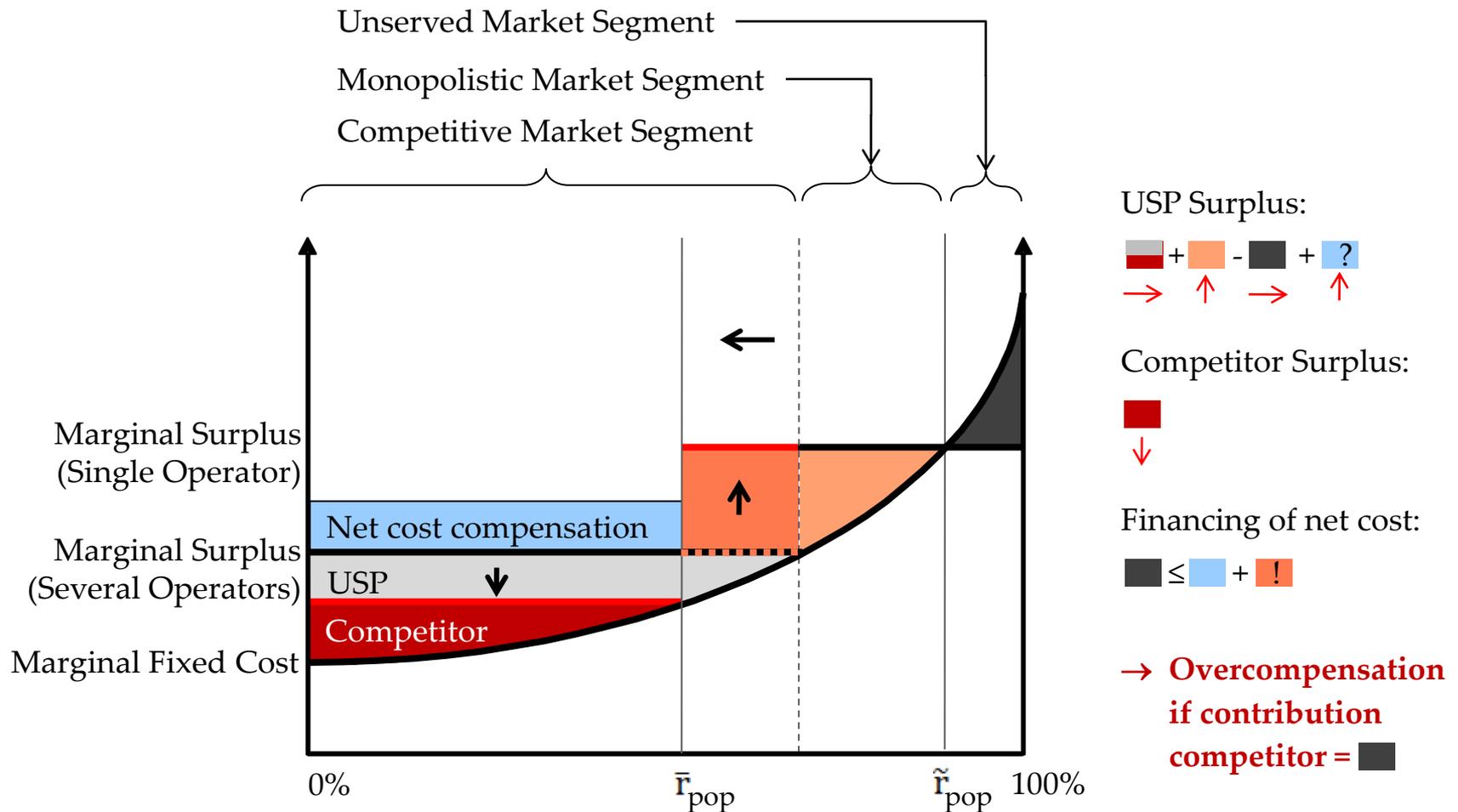
- Summing up the net cost of individual USO dimensions likely to result in under- or overestimation



→ Apply a “global approach” by computing two scenarios:

- Full USO
  - No USO
- } **Difference = Net Cost**

# Net cost depend on financing mechanism



$\rightarrow$  Apply an “integrated approach”

# Summary

1. VAT exemptions distort competition in all segments, however, tends to increase welfare.
2. VAT exemptions are a benefit of the USO and should be included in the costing of the USO. Thereby, the competitive distortions are mitigated.
3. The USO costing exercise should be done
  - in a global way to avoid under- or overestimation;
  - in an integrated way to avoid under- or overcompensation.

**VAT exemption ok  
if included in USO  
costing**

**Invest in USO costing  
know-how**

**Thank you for your attention!**

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