



ASSPRO CEE 2007

Collaborative Focused Research Project
FP7-SSH-2007 Grant Agreement no.: 217431



EUROPEAN COMMISSION
European Research Area

Funded under Socio-economic Sciences & Humanities



SEVENTH FRAMEWORK
PROGRAMME

Potential effects of the user chargers on the consumption of physician services in six Central and Eastern European countries:

Application of the stated preference techniques

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ШКОЛА
ОХОРОНИ
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SCHOOL
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Health Services Research
Focusing on Chronic Care and Ageing

Introduction

- Patient payments (co-payments):
 - Reducing waste
 - Additional funds
 - Regulation and superseding informal charges
- In Central and Eastern European Countries:
 - Formal service charges are relatively new
 - Informal payments are wide-spread
 - No scientific evidence for potential effects of formal charges
- Potential of formal service charges \leq consumer willingness and ability to pay (WATP)

Aim

- Provide evidence on the potential impact of the **formal patient charges** on the of the consumption of **specialized physician services** in six CEE countries:

Bulgaria, Hungary, Lithuania, Poland, Romania, and Ukraine

based on **stated willingness to pay**

Background

Country	Official charges	Informal payments
Bulgaria	Co-payments (flat-rate): 1% of minimum wage in country; many exemptions	Low
Hungary	No official charges Attempt to introduce co-payment (flat-rate 1 EURO) in February 2007 -> it existed 1 year and was abolished by referendum	Medium
Lithuania	For uninsured	Medium
Poland	For uninsured	Low
Romania	For uninsured (small package is covered)	High
Ukraine	None (publicly financed)	High

Data

- **Data collection:** representative household surveys

- Bulgaria 1003 respondents
- Hungary 1037 respondents
- Lithuania 1012 respondents
- Poland 1000 respondents
- Romania 1000 respondents
- Ukraine 1000 respondents

TOTAL 6052

- **Questionnaire: structure**

- Past use and payments
- Attitude towards informal payments
- Preferences towards health care services
- Discrete choice experiment
- Willingness to pay questions
- Socio-demographic characteristics

Data

- **Questionnaire: WATP question**

If you had a major health problem (unfamiliar symptoms that worry you), would you be willing to pay official fee for a visit to a MEDICAL SPECIALIST in order to obtain consultation of HIGH QUALITY and QUICK ACCESS?

YES

NO

If yes -> how much exactly?

If No – what is the reason?

HIGH QUALITY

Modern medical equipment

Well maintained premises

Polite attitude of the staff

QUICK ACCESS

Max 30 min of travel

Max 10 min of waiting in front of the office

Analysis

- **WTP levels**

- Mean, median -> Actual cost

- **Demand pools**

- Survival analysis:

$$h_j(X) = 1 - \exp\left[-\exp(\beta X) \int_{j-1}^j \theta_0(u) du\right]$$

- WTP: time to event

- Event: drop out from the demand pool

- Semi-parametric: intervals -> (0-2.5+] [2.6-5+] [6-7.5+] [7.6-10+] [11-12.5+] [12.7-25] (25 and more) EUR

- Two-stage: 0 vs positive -> level of WTP

- **Semi-Elasticity**

- Price

$$\frac{\partial \log[S(a_j, X)]}{\partial t} \Big|_{a_1}^{a_2} = -\exp(\beta X) \left[\sum_{a_1}^{a_2} \exp(\gamma_j) \right]$$

- Age, income

$$\frac{\partial \log[h_j(X)]}{\partial x} = -\beta_x \exp(\beta X) \sum_0^{a_j} \exp(\gamma_j)$$

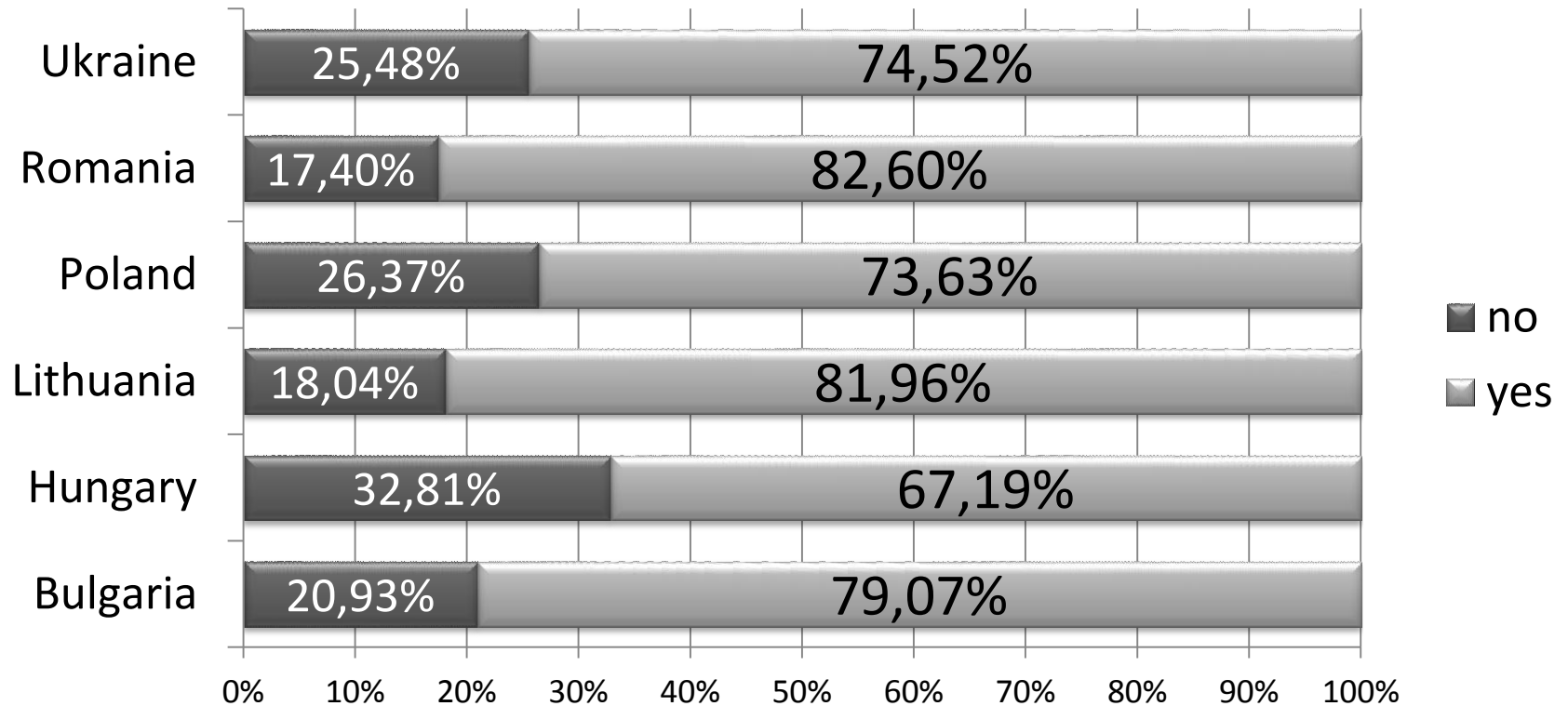
Results

WTP levels

Demand pools

Elasticity

Proportion of willing vs unwilling to pay for physician services



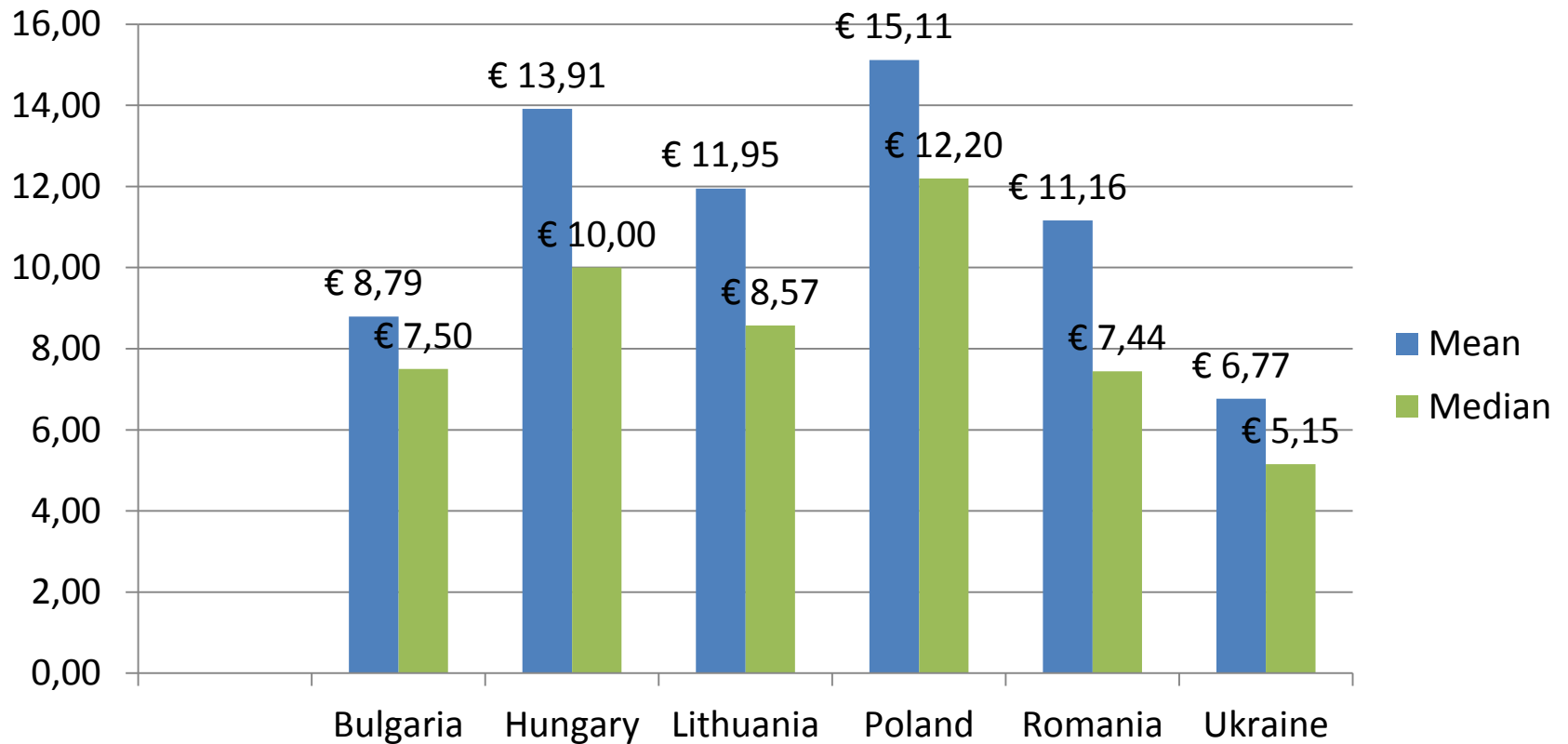
Results

WTP levels

Demand pools

Elasticity

Mean and median WATP:
only positive values



Results

WTP levels

Demand pools

Elasticity

WTP vs Service cost/tariffs

Country	Mean WTP	Cost of service range	
		Min	Max
Bulgaria	8.79	5.32*	9.20
Hungary	13.91	6.84	-
Lithuania	11.95	10.30	12.63
Poland	15.11	12.25	17.15
Romania	11.16	7.2	-
Ukraine	6.77	n/a	n/a

- WTP is substantial:
 - Cost < WTP: Bul*, Hun, Rom
 - Cost approaches WTP: Lith, Pol
 - Ukraine: no available data => WTP can cover personnel cost

Results

WTP levels

Demand pools

Elasticity

1st stage modeling:

hazard of drop out if any fee is introduced

	Bulgaria	Hungary	Lithuania	Poland	Romania	Ukraine
Age			+	+	+	+
Income	-	-	-	-	-	
Household size						
Sex: female			-		-	
Residence						
rural						
big city	+	+	+	+		
Education	-			-		-
Ill family members				+		

Results

WTP levels

Demand pools

Elasticity

1st stage modeling:

hazard of drop out if any fee is introduced

	Bulgaria	Hungary	Lithuania	Poland	Romania	Ukraine
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Chronic states

diabetes

+

CVD

+

kidney, liver, lung

other

+

Past use

experience

visited

-

paid officially

-

-

-

-

paid informally

-

-

+

-

-

Results

WTP levels

Demand pools

Elasticity

2nd stage modeling:

hazard of drop out at certain fee levels

	Bulgaria	Hungary	Lithuania	Poland	Romania	Ukraine
Age						
Income	-	-	-	-	-	
Household size						
Sex: female	+	+				
Residence						
rural	+	+				
big city	+	+	+	-		
Education	-	-		+		
Ill family members			-			+

Results

WTP levels

Demand pools

Elasticity

2nd stage modeling:

hazard of drop out at certain fee levels

	Bulgaria	Hungary	Lithuania	Poland	Romania	Ukraine
Chronic states						
diabetes		-	-			
CVD					-	
kidney, liver, lung						-
other			+			
Past use experience						
visited	-				+	
paid officially	+		-	-		
paid informally				-		+

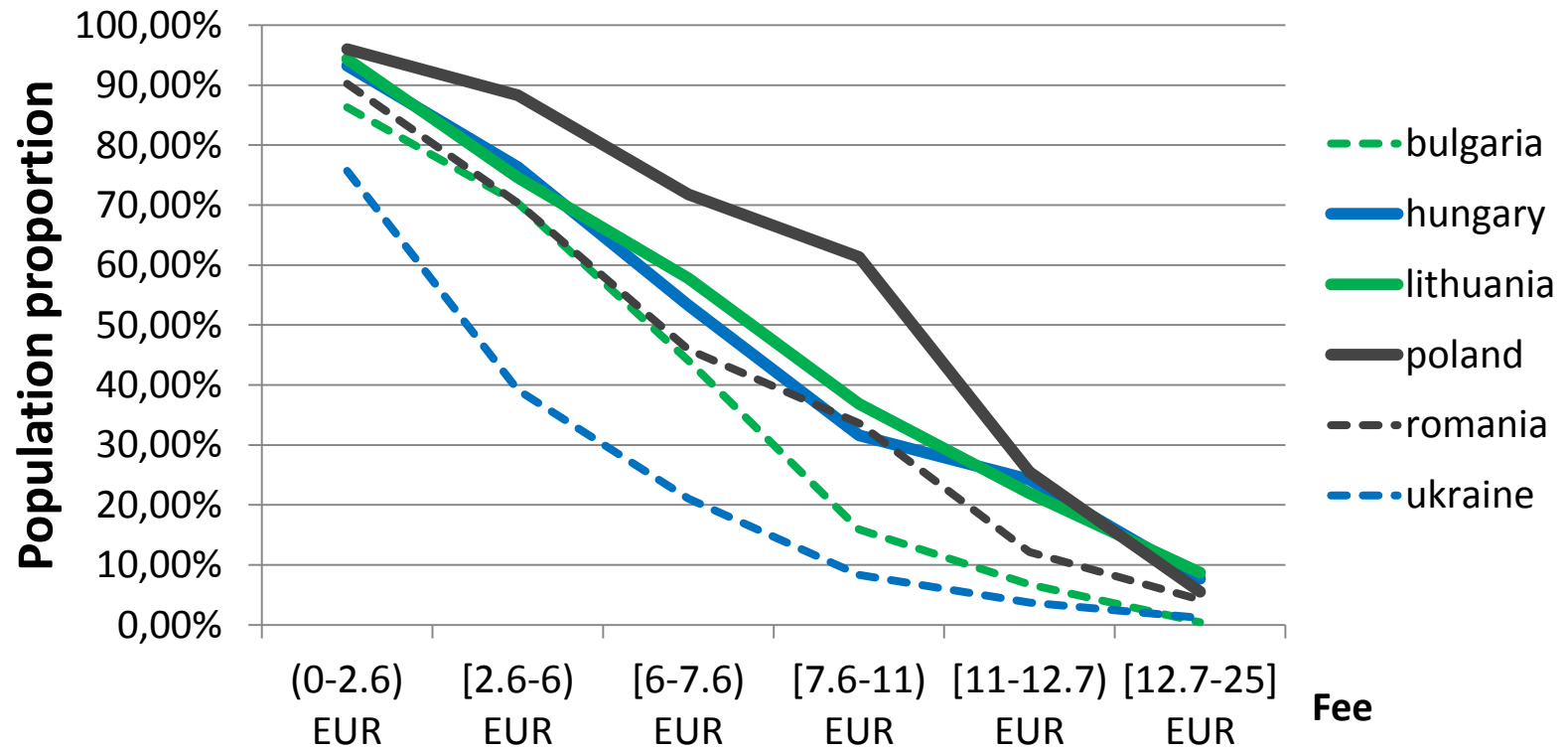
Results

WTP levels

Demand pools

Elasticity

Potential demand pools



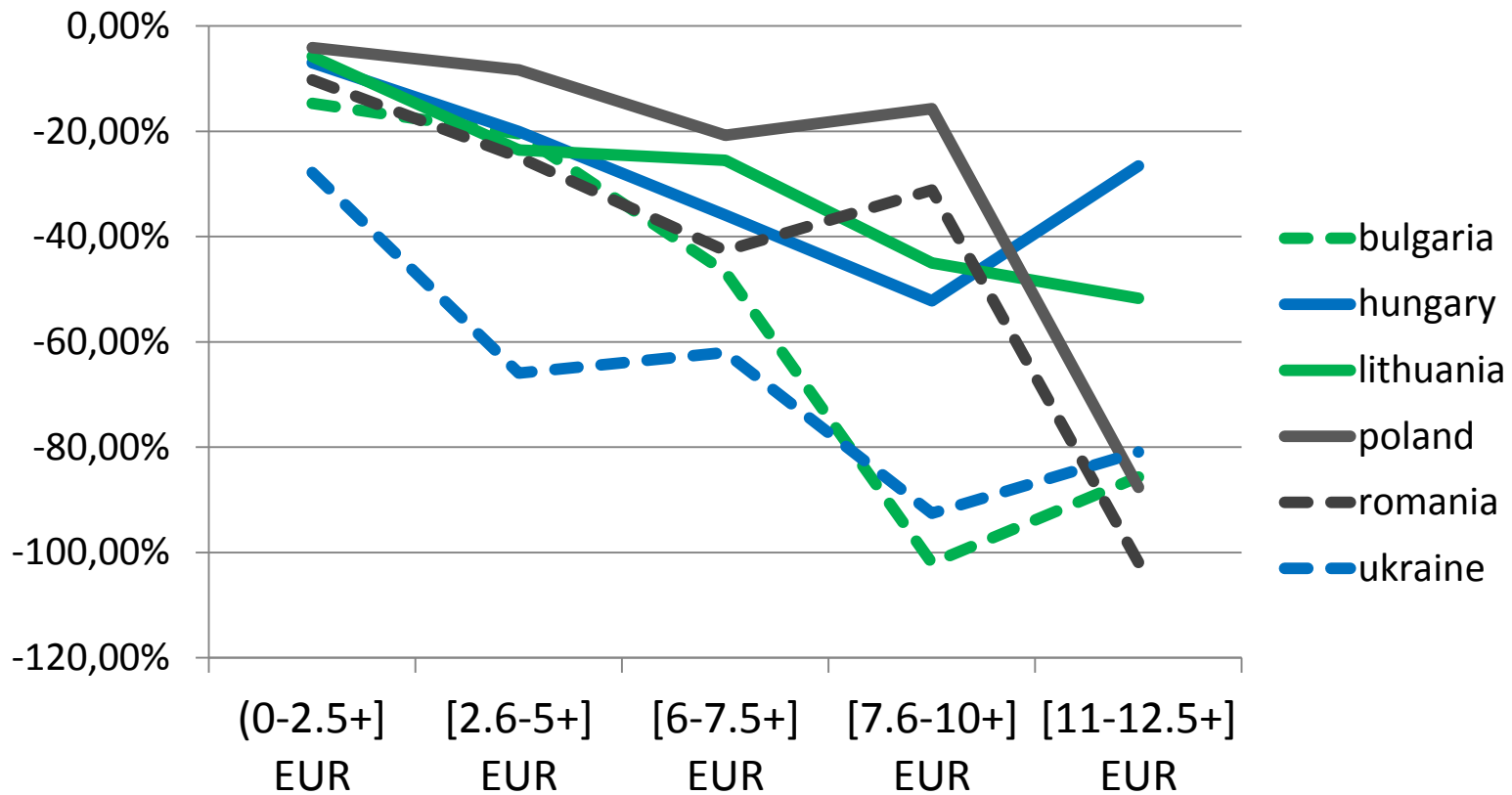
Results

WTP levels

Demand pools

Elasticity

Price semi-Elasticity (step-up interval)



Results

WTP levels

Demand pools

Elasticity

- Ukrainian consumers are the most susceptible to price increase (introduction) at all levels
- Other 5 countries are relatively inelastic at the lowest level of copayments (0-2.5 EUR).
- Poland: inelastic at the level of 2.6-5 EUR.
- After 7.5 EUR of co-payments in Ukraine and Bulgaria, and after 10 EUR in other countries demand reacts rather fast.

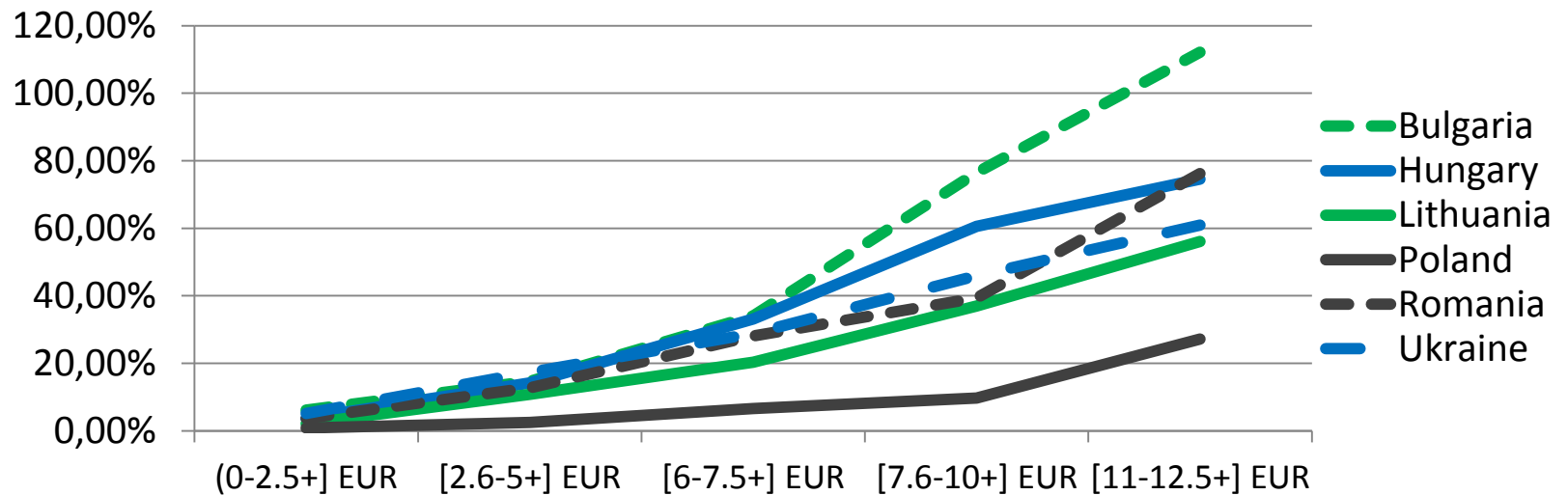
Results

WTP levels

Demand pools

Elasticity

Income semi-Elasticity, % by 1000 EUR



- Poland: the lowest elasticity at all levels
- Ukraine and Bulgaria: the most elastic

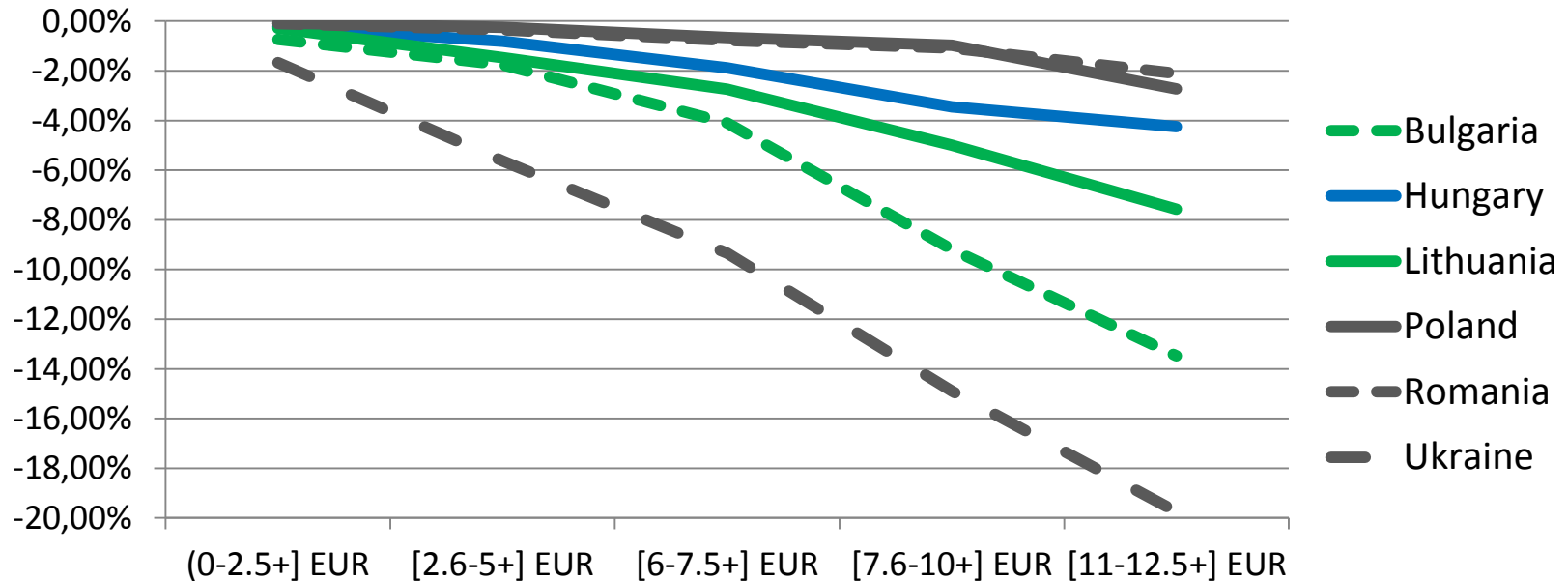
Results

WTP levels

Demand pools

Elasticity

Age semi-elasticity, % by 10 years



- Overall age has rather moderate effect on demand
- The highest age effect is observed in Ukraine

Conclusions

- User charges (co-payments) have a good potential in all 6 countries :
 - up to 2.5 EUR : Hungary, Lithuania, Romania, Bulgaria
 - up to 5.0 EUR : Poland
 - Ukraine : <2.5 EUR -> need country specific scale
- Exemption criteria:
 - Age: Ukraine
 - Income: Romania, Hungary, Lithuania, Romania (not Poland, Ukraine)
- Will they substitute informal payments?



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Thank you for your attention!

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