

A European Commission - DG EMPL conference  
Microsimulation for Policymaking in Times of Crisis  
Brussels November, 21 2012

# Assessing VAT-reforms by means of EUROMOD

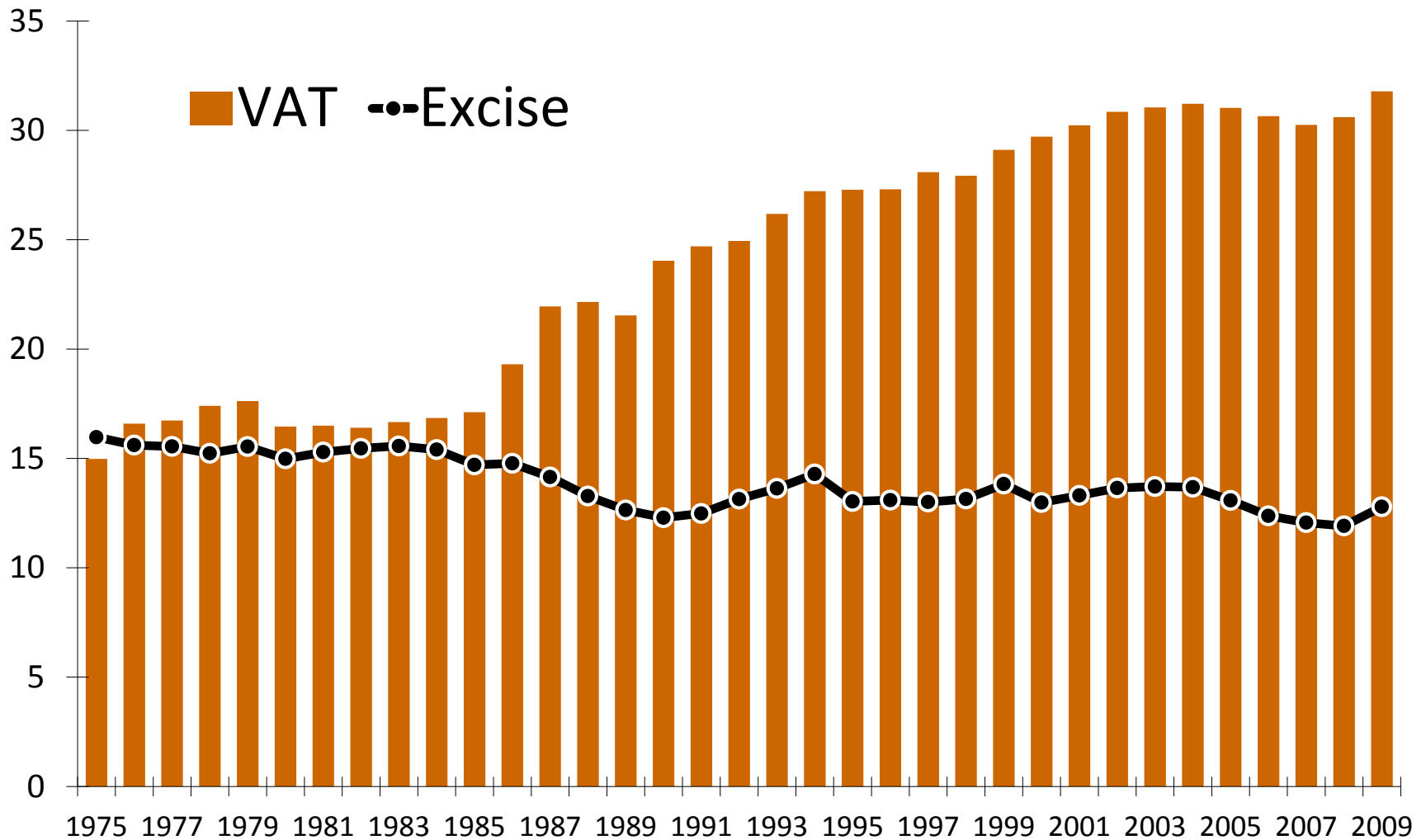
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P. Haan & R. Ochmann (DIW Berlin)

# 1. Context

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- succes VAT witnessed in terms of:
  - share in revenue
  - scholarly interest
  - actual policy proposals

# 1. Context: revenue shares (OECD, federal)



# 1. Context: academic & policy

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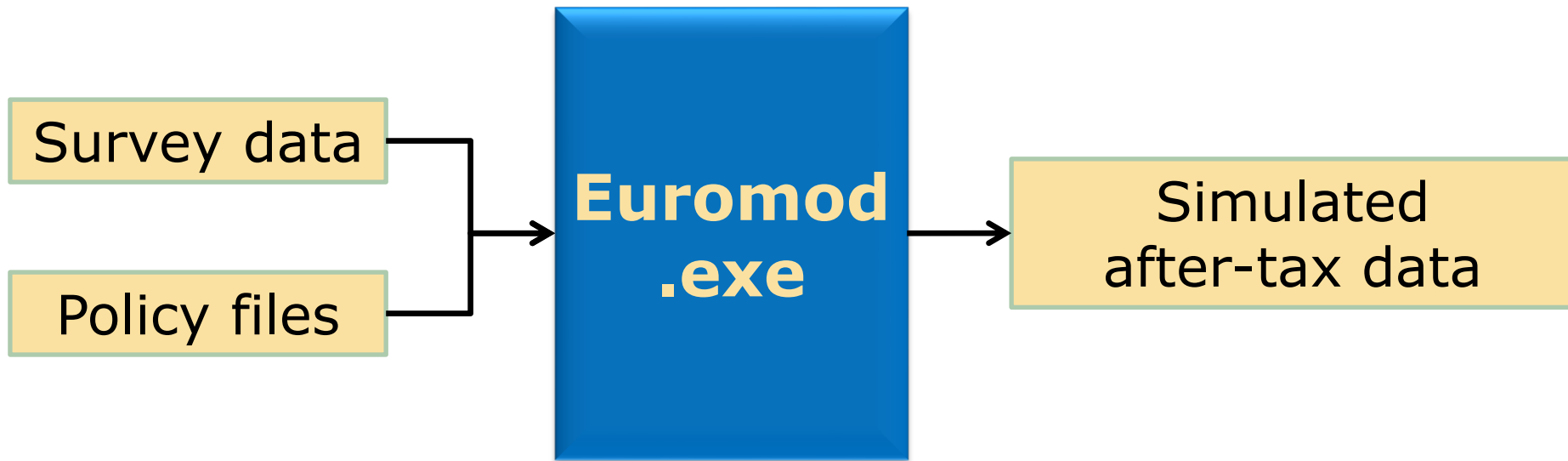
- Academic: Optimal tax theory
  - tax mix: direct versus indirect
  - tax structure: uniform or differentiated?
  - prominent in Mirrlees Review
- Policy:
  - fiscal consolidation (BE: 21=>22?; many others)
  - Besson 2007 (TVA Sociale)
  - de Mooij & Keen, 2012 (Fiscal devaluation)
  - Thomas & Picos-Sánchez 2012;
  - ...

## 2. Challenge: why not (yet) in EUROMOD?

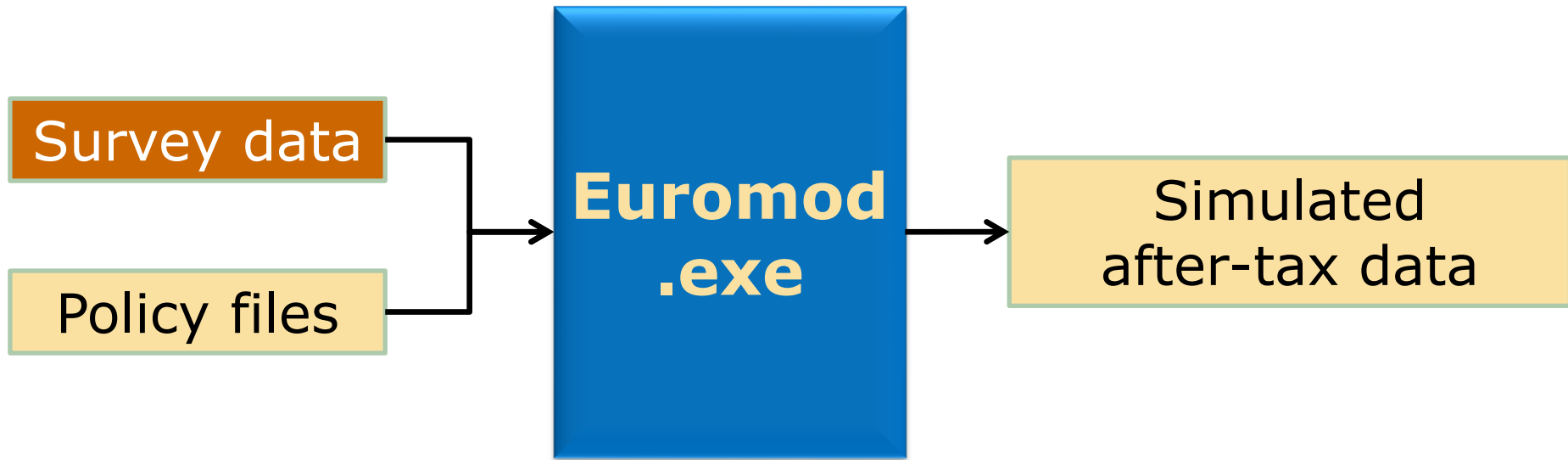
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- reason for lack of integrated models:
  - not complexity of VAT-legislation
  - income datasets (SILC): no detailed expenditures
  - expenditures in HBS
- two solutions
  - run EUROMOD on HBS
  - impute expenditures in EUROMOD-dataset (SILC)

# 3. EUROMOD+

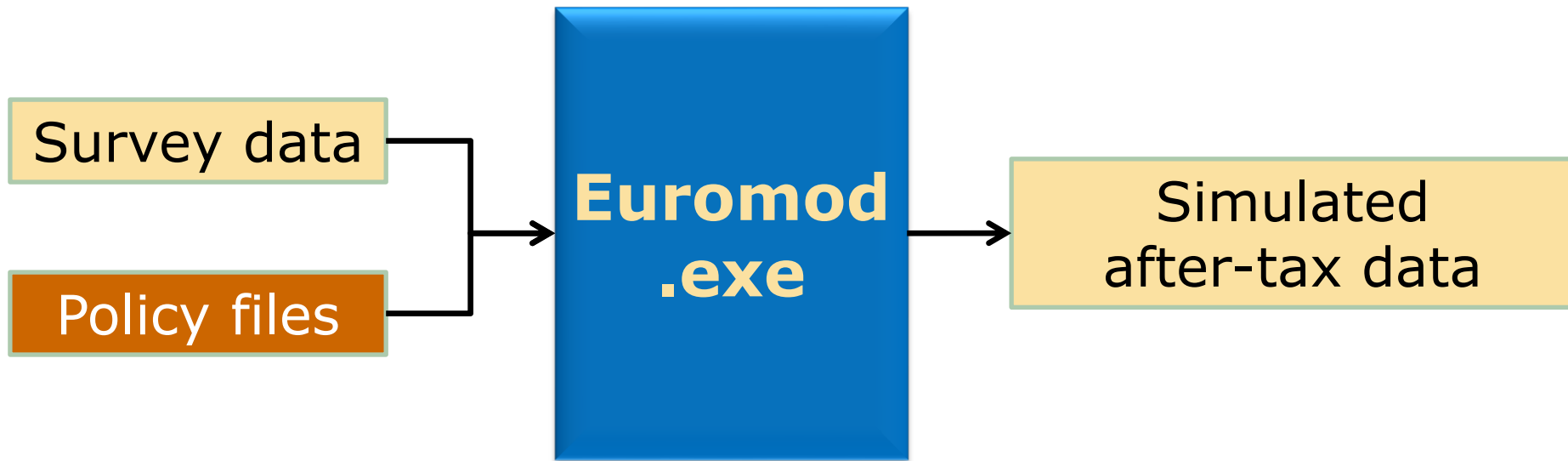


# 3.1 EUROMOD+ Imputation



- Imputed expenditures into SILC

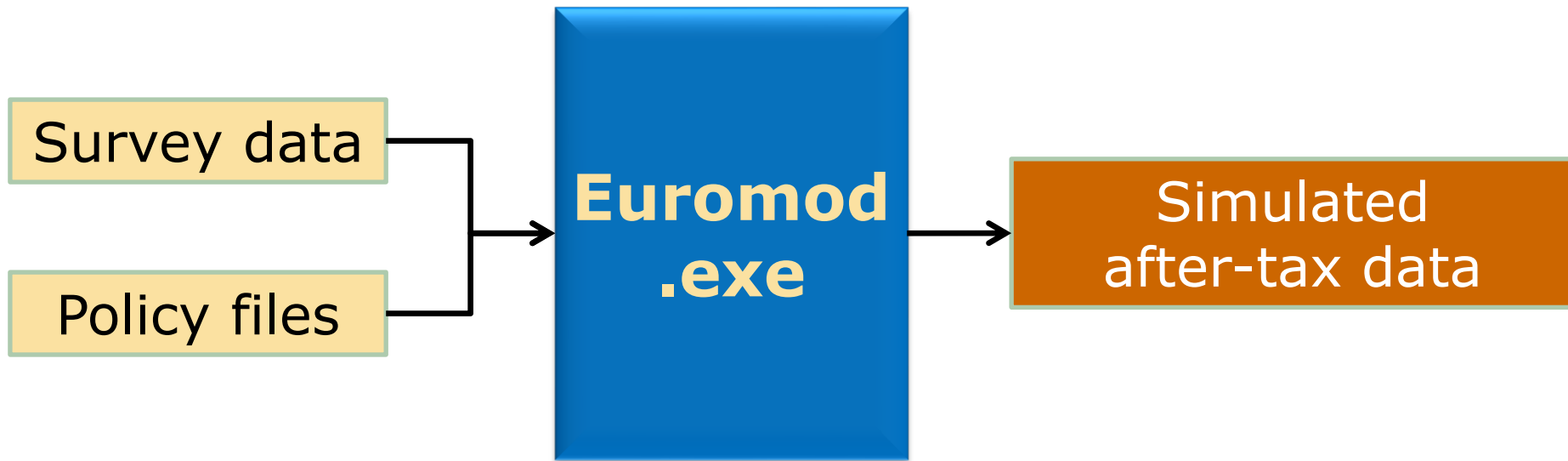
## 3.2 EUROMOD+ Policy



- Built in indirect tax policies (VAT)
  - user changes statutory VAT-rates
  - at most detailed level of HBS

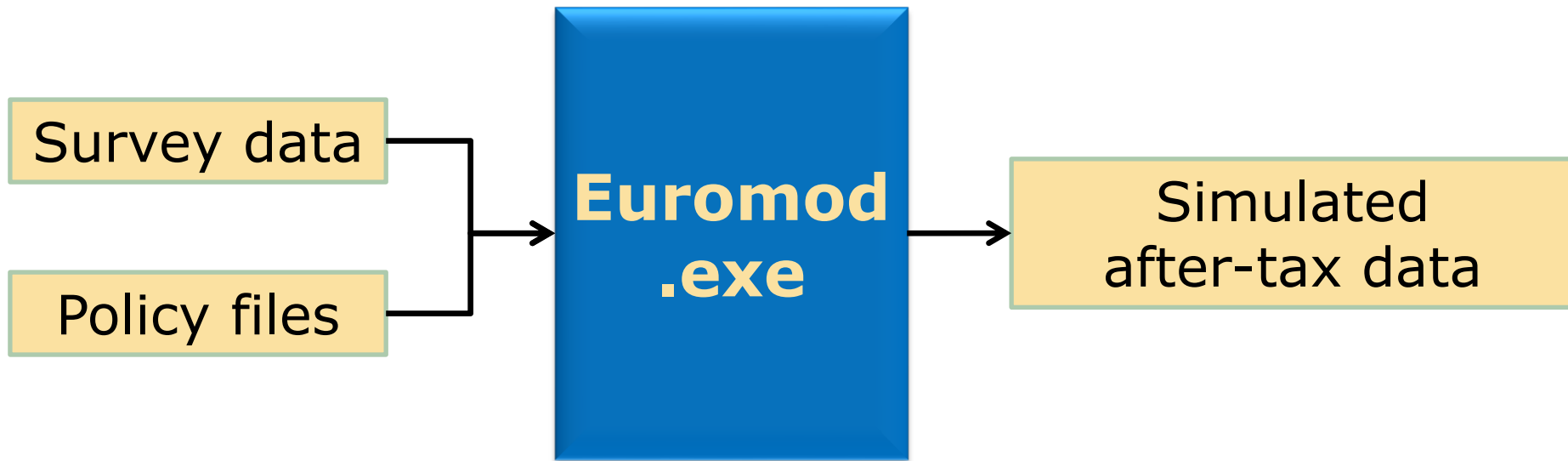


## 3.3 EUROMOD+ Extended output



- welfare analysis
  - extend beyond change in disposable income
  - purchasing power changes
    - CPI => change in real disposable income
    - subtract changes in VAT paid

# 3. EUROMOD+



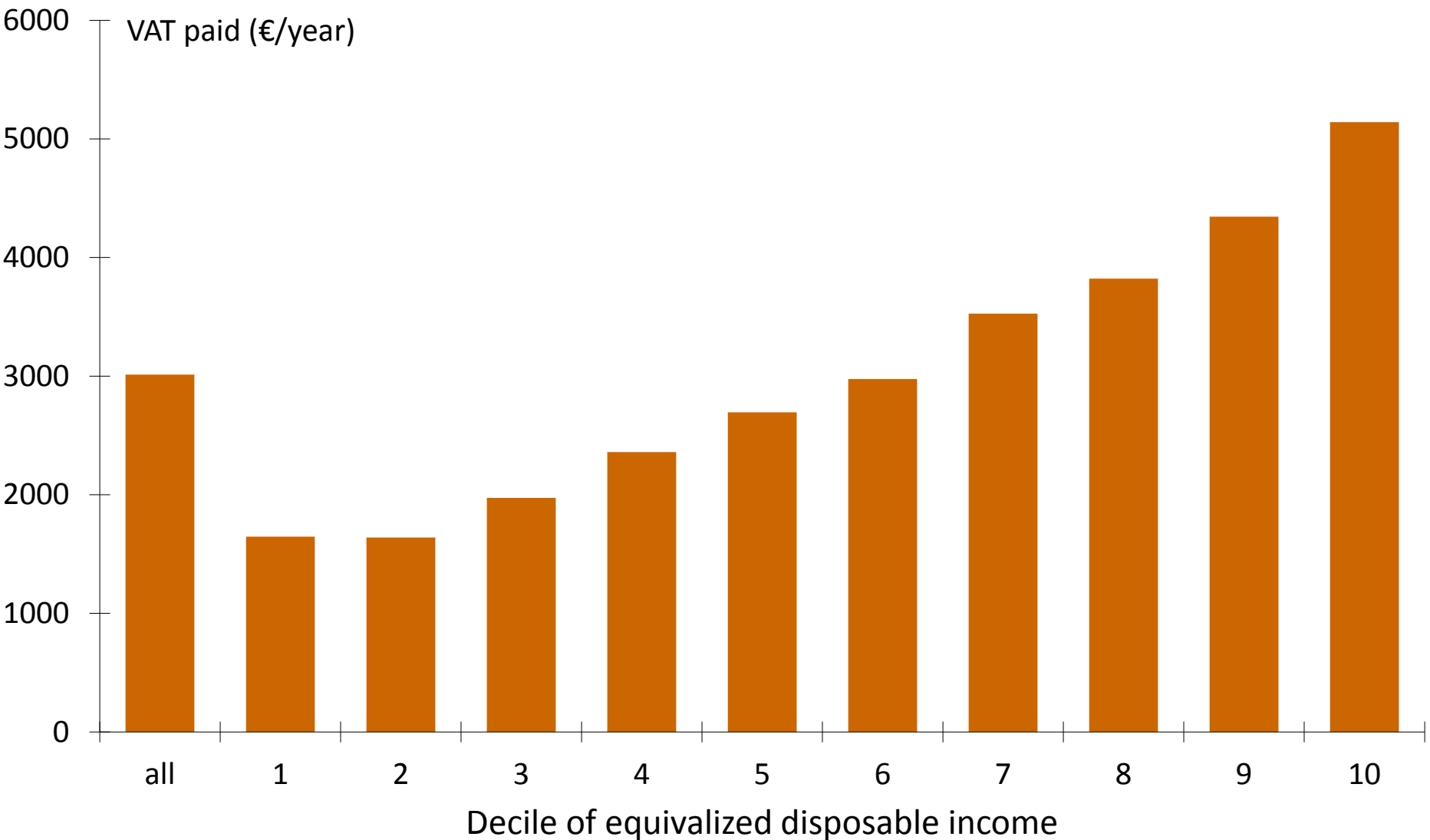
- tested for two countries:
  - Belgium (results below)
  - Germany
- HBS 2005
- SILC 2008

# 4. Baseline: rates and shares (HBS BE)

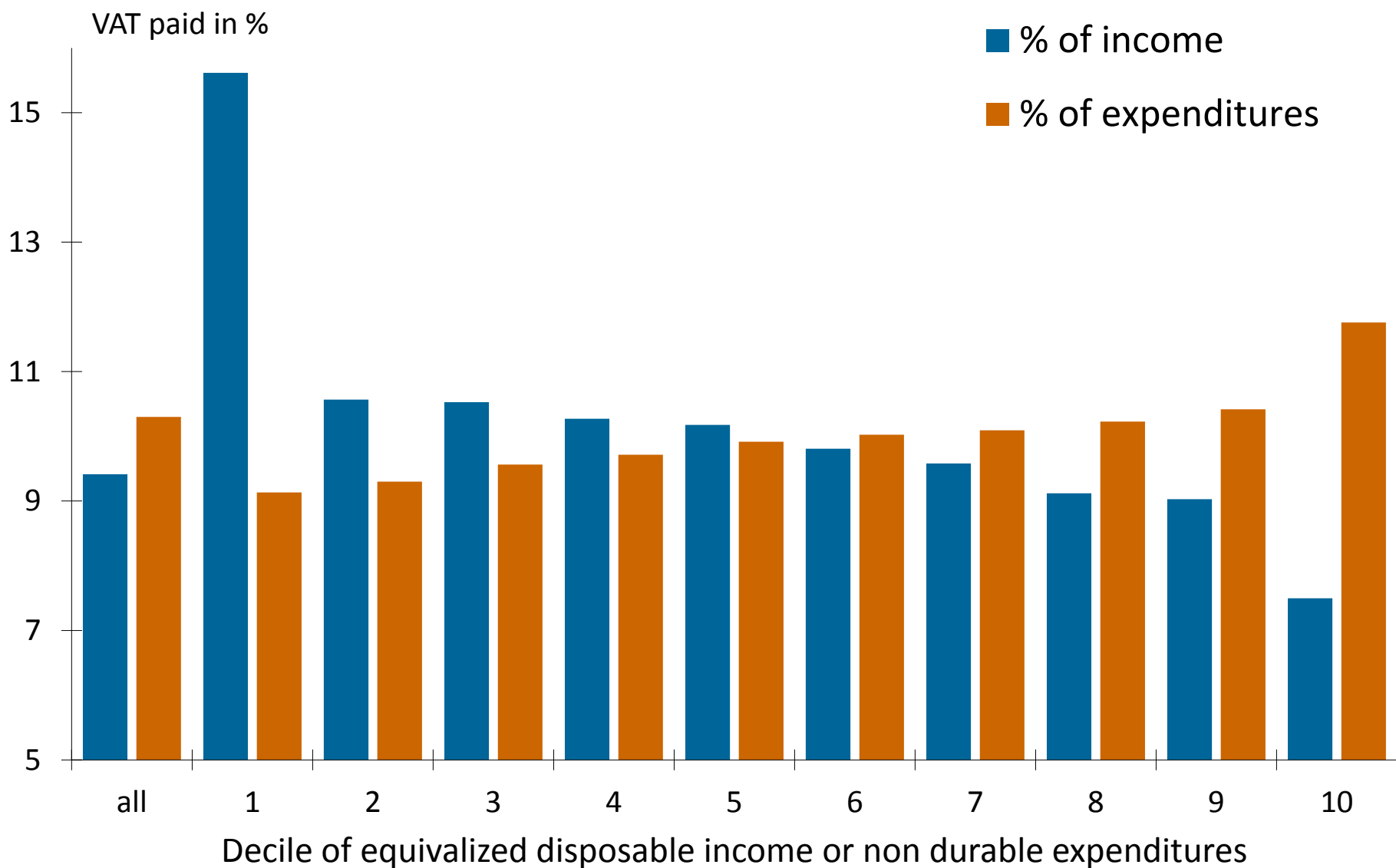
	Total	Exempted	0%	6%	12%	21%
Expenditures (billion €)	138.3	47.2	0.0	25.5	5.8	59.8
VAT (billion €)	12.5	0.0	0.0	1.4	0.6	10.4
VAT/(EXP-VAT) in %	9.9	0.0		6.0	12.0	21.0
share of EXP in %	100.0	<b>34.1</b>	<b>0.0</b>	<b>18.4</b>	<b>4.2</b>	<b>43.2</b>
share of VAT in %	100.0	0.0	0.0	11.6	5.0	83.4

- VAT revenues 2005: 21.4 billion (OECD)
- not covered:
  - VAT paid by private households not in HBS
  - VAT paid by government
  - VAT paid by business exempted from VAT
  - ...
  - estimate: 9.5 bn

# 4. Baseline: VAT paid by income decile (€)



# 4. Baseline: VAT paid by decile (%)

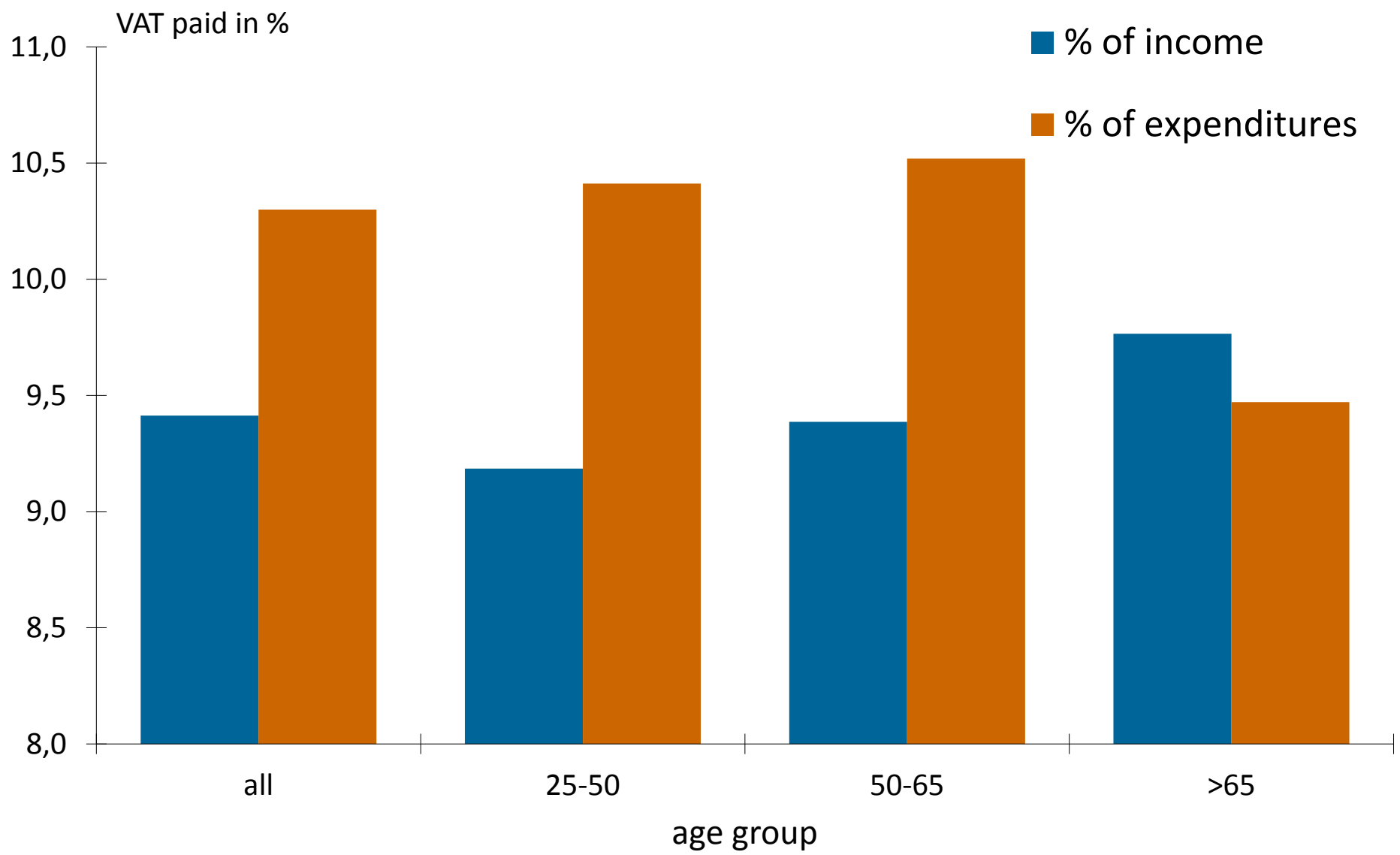


# 4. Baseline

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- EUROMOD: allows other covariates
  - age groups
  - household size
  - working/non-working
  - region
  - ...

# 4. Baseline: VAT paid by age group (%)



## 5. Reform & Simulation(s)

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- move to “more” uniform VAT
  - rates 0, 6 and 12 to 21%
  - keep exemptions
- resulting price changes:

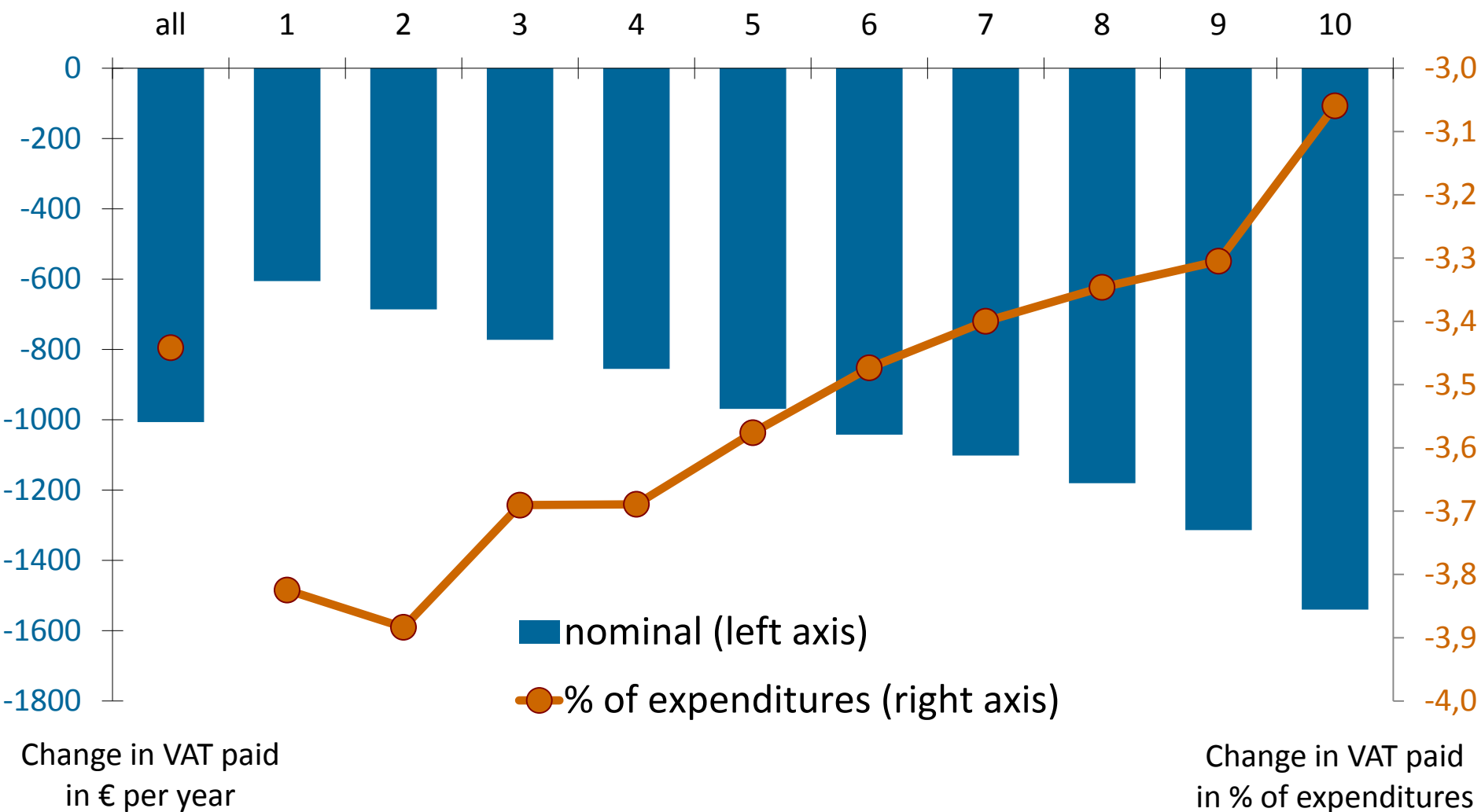


# 5. Reform: implicit rates and price change

	Implicit tax rate (%)	Implicit tax rate (%)	Price change (%)
Total	11.5	<b>15.2</b>	<b>3.4</b>
<b>1. Food, non-alcoholic beverages</b>	<b>6.1</b>	<b>21.0</b>	<b>14.0</b>
2. Alcoholic beverages	20.9	21.0	0.1
3. Tobacco	21.0	21.0	0.0
4. Clothing and footwear	20.8	21.0	0.1
5. Home fuels, electricity and water	19.2	21.0	1.5
6. Rents (excluding imputed rents)	4.5	4.5	0.0
7. Household services	19.2	19.2	0.0
<b>8. Health</b>	<b>3.0</b>	<b>7.6</b>	<b>4.4</b>
9. Private transport	17.6	17.7	0.1
<b>10. Public Transport</b>	<b>5.1</b>	<b>15.5</b>	<b>9.9</b>
11. Communication	20.1	20.1	0.0
<b>12. Recreation and culture</b>	<b>12.7</b>	<b>16.5</b>	<b>3.4</b>
<b>13. Education</b>	<b>0.7</b>	<b>0.7</b>	<b>0.0</b>
<b>14. Restaurants and hotels</b>	<b>12.6</b>	<b>17.3</b>	<b>4.2</b>
15. Other goods and services	5.2	5.4	0.2
Durables	21.0	21.0	0.0

# 5. Reform: results with constant quantities

Decile of equivalized non durable expenditures

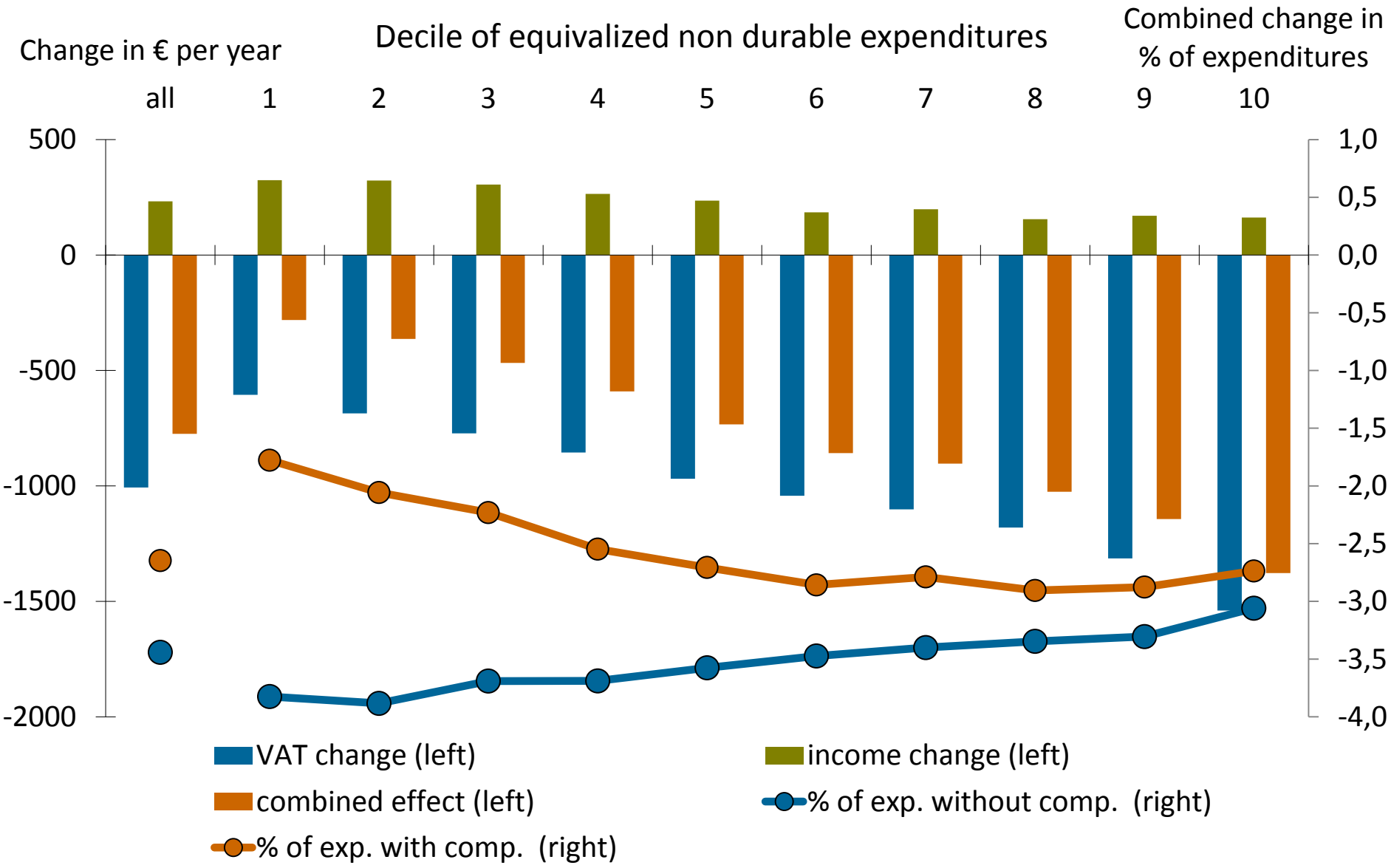


## 5. Reform: compensations

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- extra revenue: 4.6 bn (+33%)
- CPI: + 2.9%
- compensation
  - increase all benefits with 2.9%  
(UB, pensions, early retirement, guaranteed incomes, child benefits...)
  - cost: 1.07 billion EUR
  - effect on distributional pattern of welfare loss

# 5. Reform: compensation 1



## 5. Reform: compensations 1+2

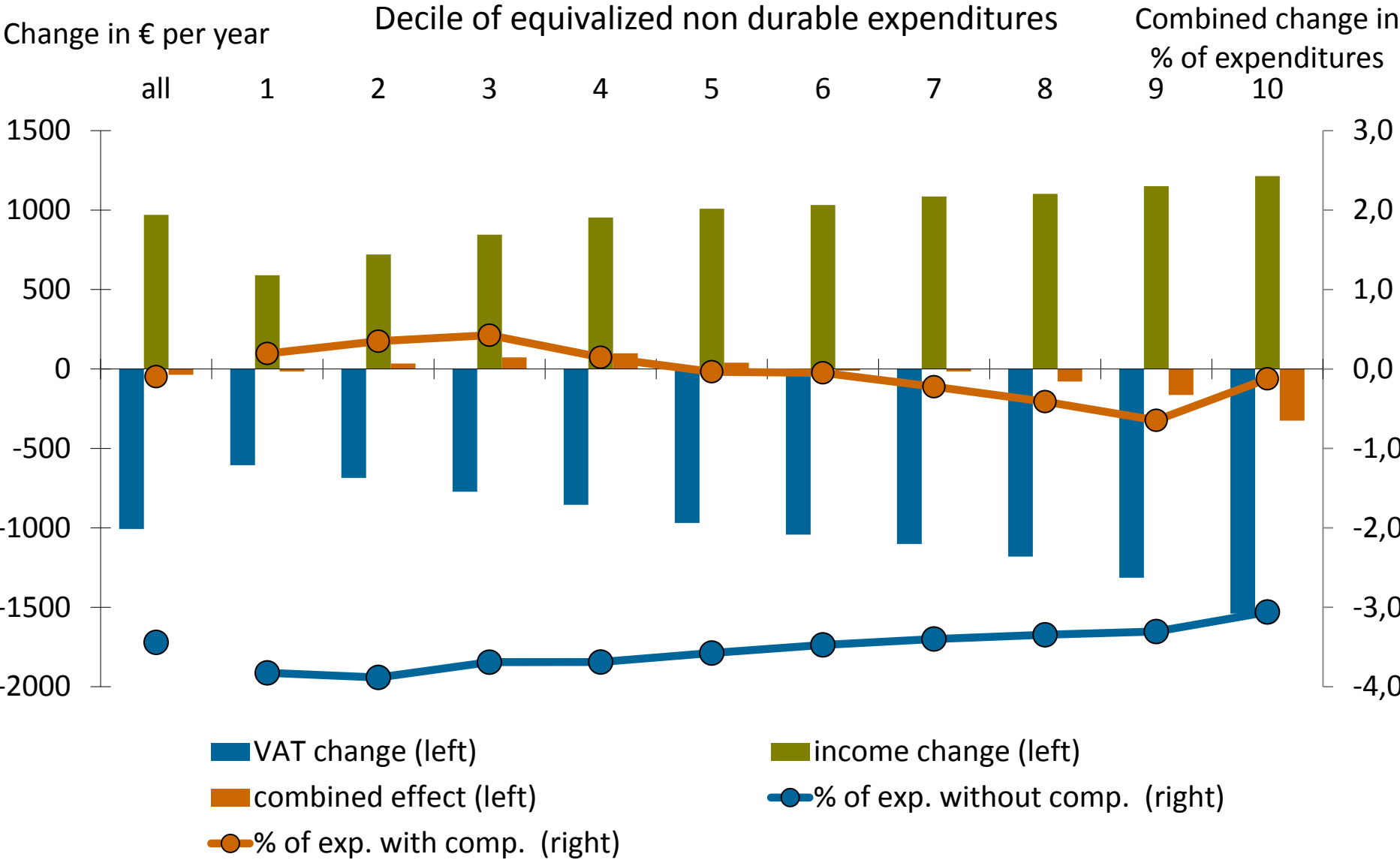
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- compensation

1. increase all benefits with 4.0% (UB, pensions, early retirement, guaranteed incomes, child benefits...)
2. increase basic exemption in PIT:  
from € 6,570 to € 8,300

- cost of both measures: 4.45 bn

# 5. Reform: compensation 1+2



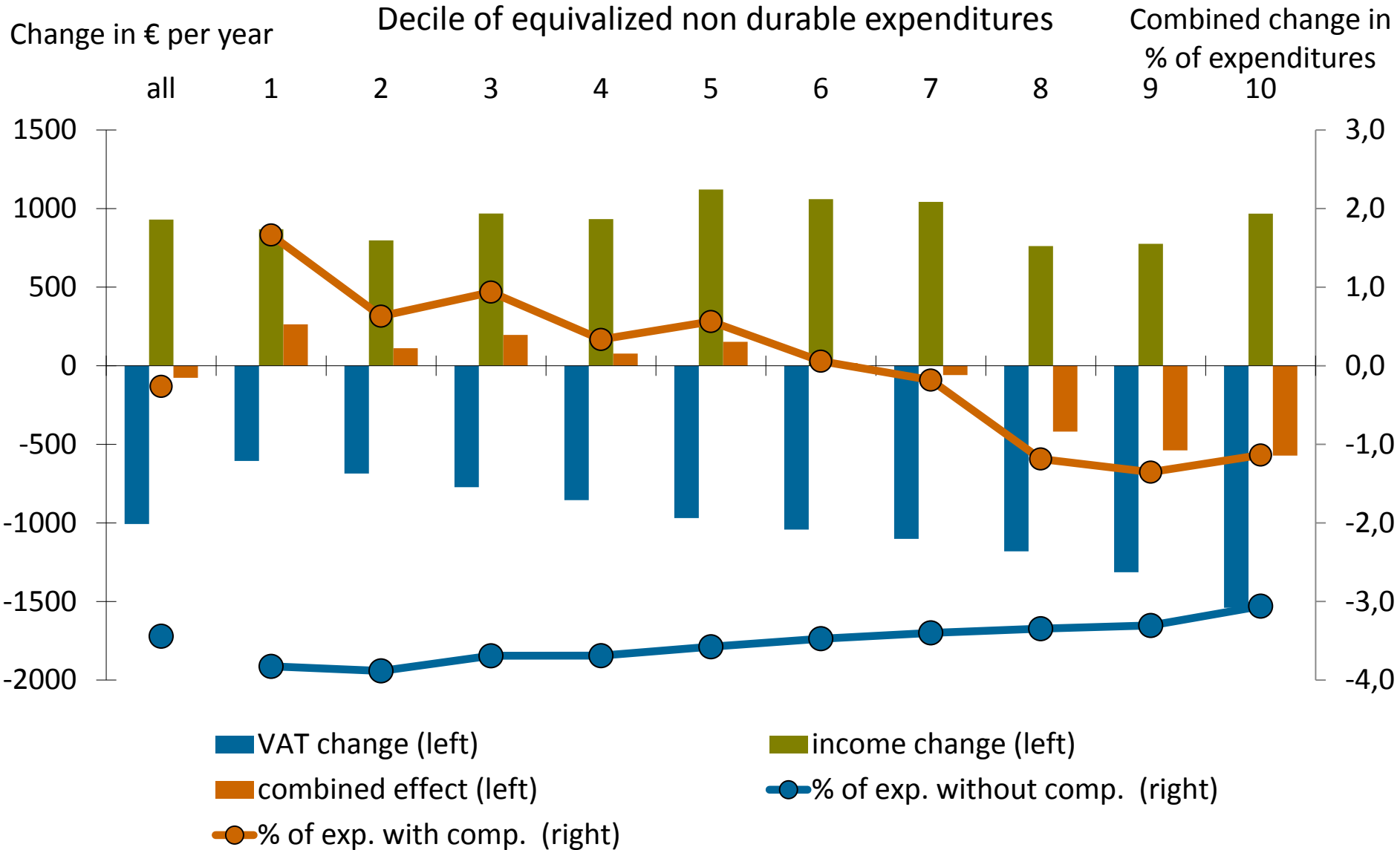
# 5. Reform: compensations

- compensation

1. increase all benefits with 2.9%
- ~~2. increase basic exemption in PIT:  
from € 6,570 to € 8,300~~
3. **lower social security contributions**  
employee => direct effect on net wage  
targeted to low wages = **workbonus**:  
increased from €175 to €400/month, and  
paid out as subsidy)

- cost: 4.26 bn

# 5. Reform: compensation 1+3 by decile





# 6. Conclusions

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- move to uniform VAT
  - is indeed a regressive move
  - but can be compensated by other reforms
- VAT-analysis *is* feasible in EUROMOD
  - => roll out for other countries?
  - ? availability HBS (EUROSTAT, OECD-study)