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# Demographic change and consumption – how ageing affects the level and structure of private consumption

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Marc Ingo Wolter



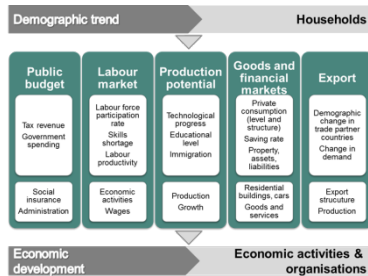
# Content

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1. Drivers and impact of demographic change
2. Demography in the macro-econometric model INFORGE
3. Impact of demographic change on consumption
4. Conclusion

# Content

## 1. Drivers and impact of demographic change

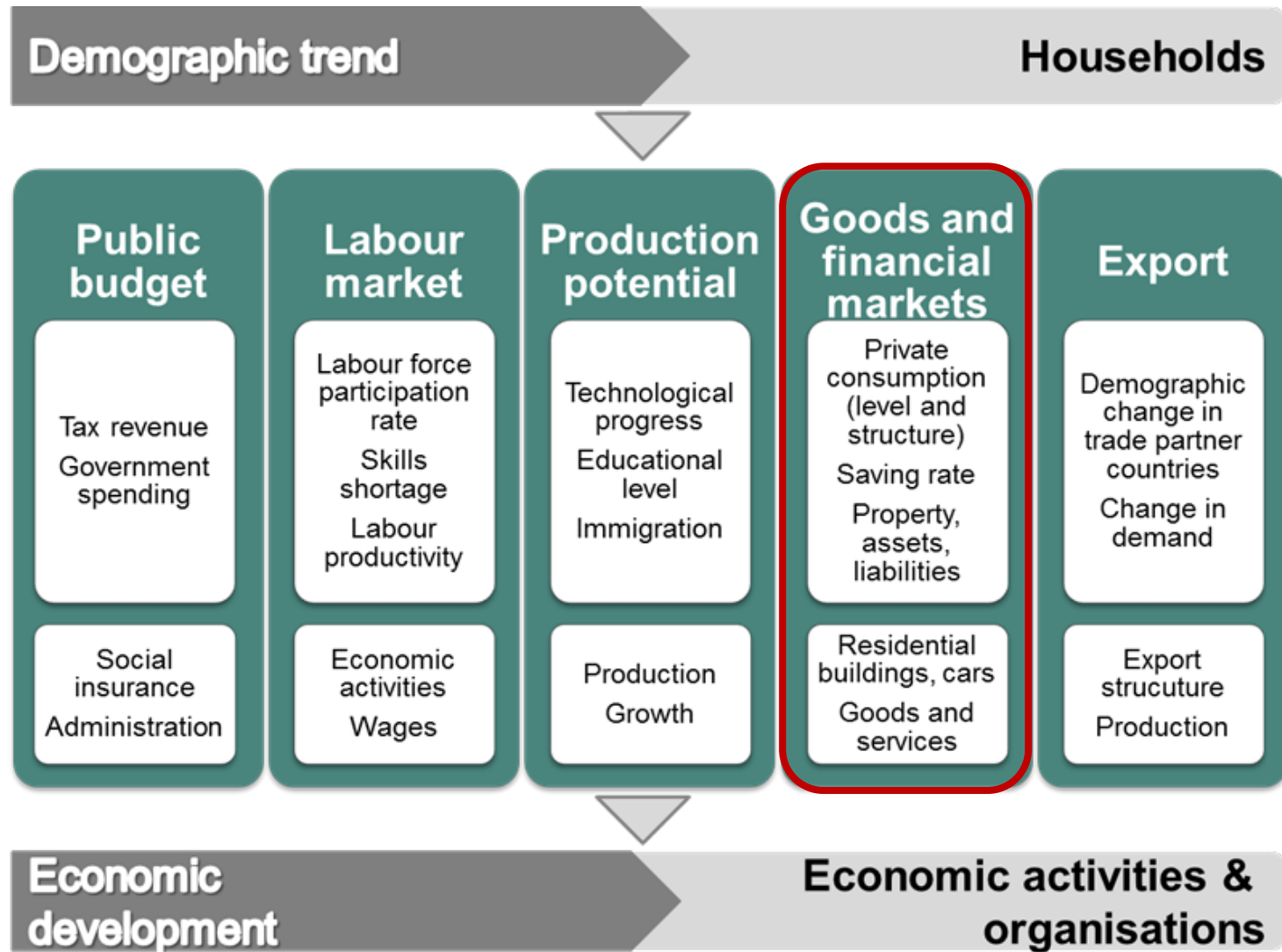


# Drivers and impact of demographic change

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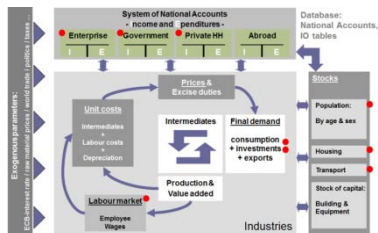
- ▶ Demographic change set in decades ago
- ▶ Interest in the consequences of demographic change
  - ⇒ Sachverständigenrat (Advisory Council) (2011)
  - ⇒ Federal Ministry of the Interior (2011)
  - ⇒ European Commission (2011)
- ▶ Research project „Hamburg“ commissioned by “Freie Hansestadt Hamburg“
  - ⇒ Economic consequences of demographic change for Germany
  - ⇒ Feedback on Hamburg

# Drivers and impact of demographic change



# Content

1. Drivers and impact of demographic change
2. Demography in the macro-econometric model INFORGE



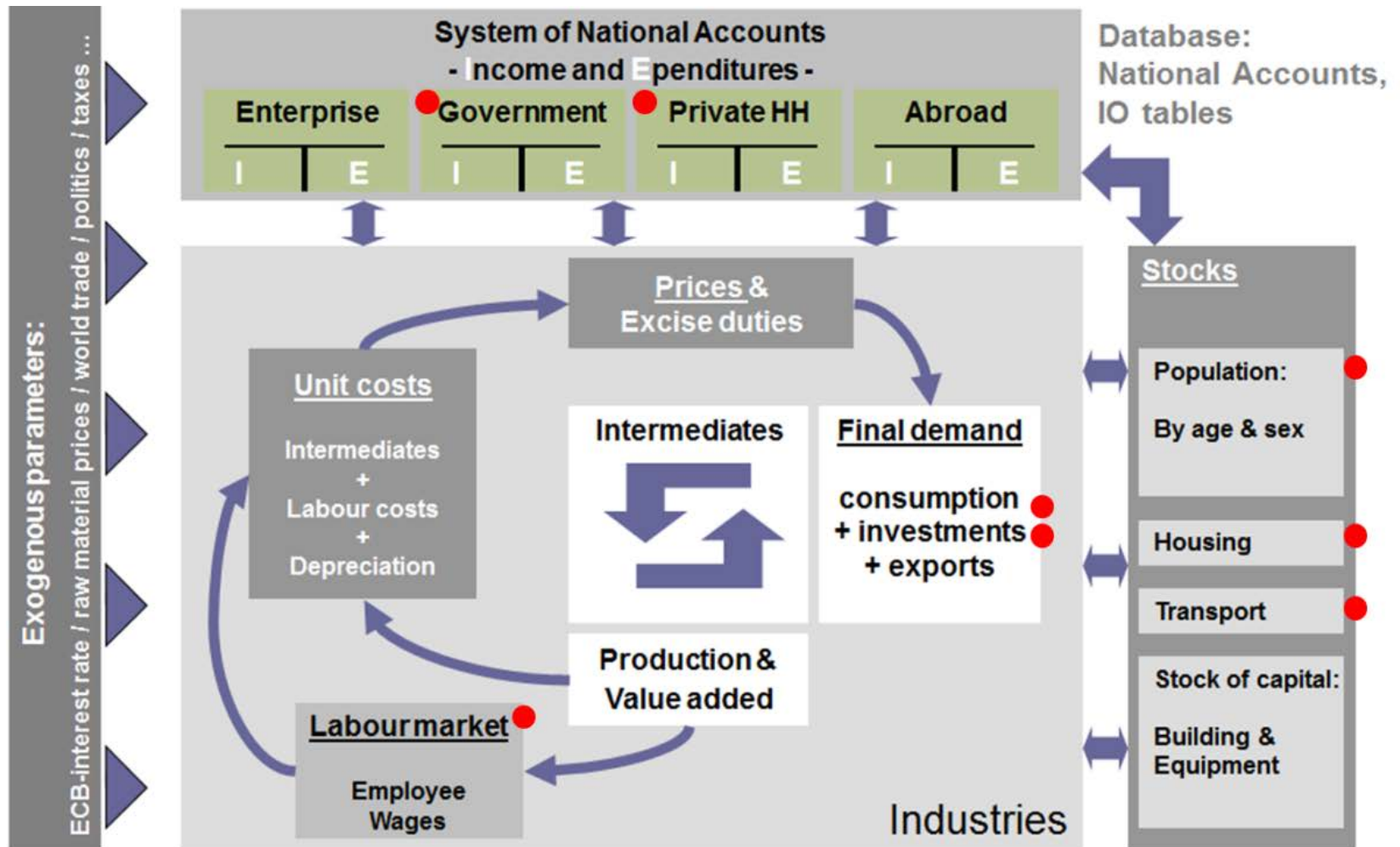
# The macro-econometric model INFORGE

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- ▶ Used and annually updated since the 1990s
- ▶ Based on INFORUM philosophy
- ▶ Used for economic forecasts, projections, scenario analysis
- ▶ Trade covered by TINFORGE (more than 60 countries)
- ▶ Extended by different modules
  - ⇒ Energy and environment
  - ⇒ Labour market by occupation and qualification
  - ⇒ Socio-economic issues
- ▶ Demographic information is considered

# Demographic information in INFORGE

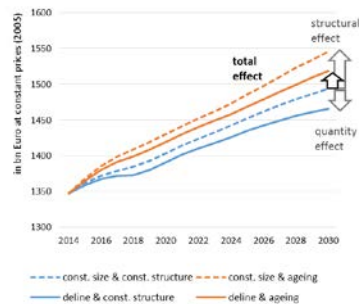
## ► Demographic information ●





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# Scenario settings

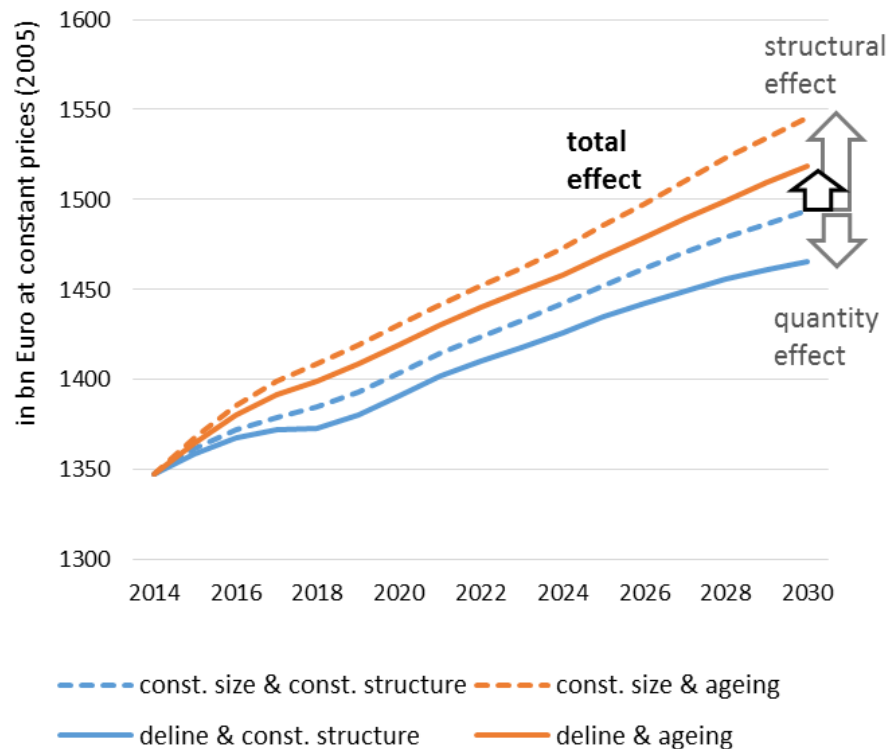
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Scenarios	Population		Additional adjustments		Effect
	size	age structure	labour force participation rate	social security contributions rate	
<b>constant size &amp; constant structure</b>	status in 2014	status in 2014	unchanged	declining	
<b>decline &amp; constant structure</b>	population projection (V1W2)	status in 2014	unchanged	declining	<b>quantity effect</b>
<b>constant size &amp; ageing</b>	status in 2014	population projection (V1W2)	increasing	increasing	<b>structural effect</b>
<b>decline &amp; ageing (reference scenario)</b>	population projection (V1W2)	population projection (V1W2)	increasing	unchanged	<b>total effect</b>

# Consequences for private consumption

- ▶ Quantity effect: negative
- ▶ Structural effect: positive
- ▶ With demographic change private consumption is higher
  - ⇒ Disposable income is higher
  - ⇒ Propensity to consume is higher
  - ⇒ Different consumption structure

Total private consumption 2014-2030  
(constant prices)

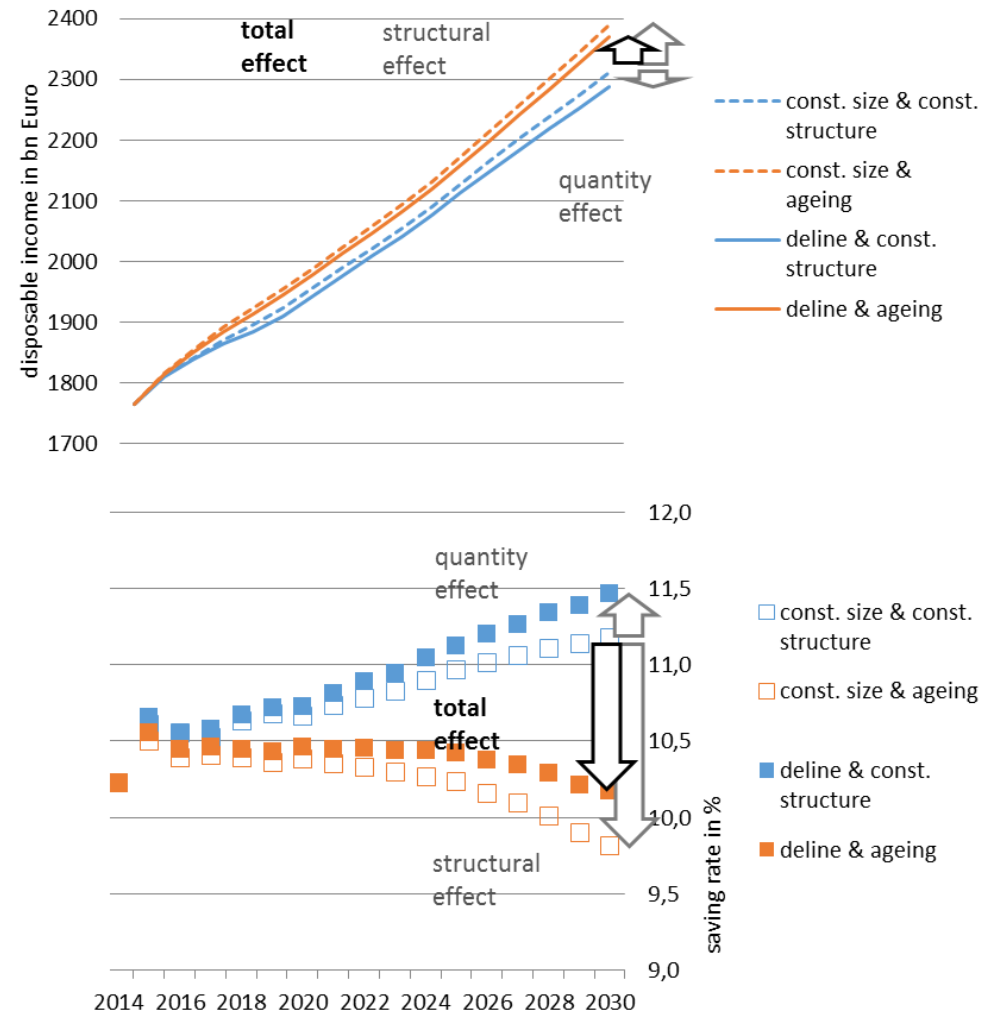


Source: INFORGE

# Consequences for private consumption

- ▶ Disposable income:
  - ⇒ Higher wages
- ▶ Saving rate:
  - ⇒ Small quantity effect
  - ⇒ Very large structural effect
  - ⇒ Old people with lower saving rates

Disposable income and saving rate  
2014-2030 (current prices)



Source: INFORGE

# Consequences for private consumption

- ▶ More expenditures for health and restaurants & services
- ▶ Less for stimulants, fashion and education

private consumption expenditures in bn Euro at constant prices, consumption purposes SEA 2013	2030		percentage deviation		
	const size & const structure	structural effect	quantity effect	total effect	
food, beverages and tobacco	198,3	-1,2%	-0,7%	-1,8%	↓
clothing and footwear	71,5	-1,8%	-1,4%	-3,2%	↓
housing, water, electricity, gas, other fuels	340,1	1,7%	-1,5%	0,4%	
furnishings, household equipment	87,5	3,1%	-2,5%	0,9%	
health	92,0	36,0%	-4,7%	29,8%	↑
transport	169,5	1,5%	-2,6%	-1,0%	
communication	55,9	1,6%	-1,6%	0,2%	
recreation and culture	160,6	0,8%	-1,9%	-0,9%	
education	20,4	1,3%	-4,3%	-2,6%	↓
restaurants and hotels	84,9	2,5%	-0,7%	2,1%	↑
miscellaneous goods and services	212,0	2,6%	-2,1%	0,8%	
<b>Total consumption</b>	<b>1493,7</b>	<b>3,5%</b>	<b>-1,9%</b>	<b>1,7%</b>	

Source: INFORGE

# Consequences for private consumption

## ► Consumption purpose health

⇒ All consumption purposes within health profit from ageing

⇒ High positive deviation to constant population:

- historical increase stops
- With ageing it continues on a lower pace

⇒ Consumption functions depend on age

Consumption expenditures in bn Euro at constant prices consumption purposes SEA 2013	2030	Percentage deviation		
	const size & const structure	structural effect	quantity effect	total effect
Medical products, appliances and equipment	30,7	19,0%	-2,1%	17,2%
Out-patient services	45,2	59,3%	-7,3%	48,8%
Hospital services	16,2	2,8%	-2,3%	0,8%

Source: INFORGE

# Consequences for private consumption

- ▶ Consumption purpose restaurants & hotels
  - ⇒ Only positive effects for catering services
    - Higher labour force participation rate
    - Hospitals → catering
    - Higher disposable income
  - ⇒ Accommodation services are slightly negative
    - Quantity effect is very large
    - Less business, but more private trips

Consumption expenditures in bn Euro at constant prices consumption purposes SEA 2013	2030 const size & const structure	Percentage deviation		
		structural effect	quantity effect	total effect
Catering services	66,3	2,3%	0,3%	2,9%
Accommodation services	18,6	3,1%	-4,1%	-0,5%

Source: INFORGE

# Consequences for private consumption

- ▶ Consumption purposes food, beverages & tobacco and clothing & footwear
  - ⇒ Consumption functions for alcohol, tobacco, clothing and footwear negatively depend on age
  - ⇒ Food and non-alcoholic beverages show low impact

Consumption expenditures in bn Euro at constant prices consumption purposes SEA 2013	2030	Percentage deviation		
	const size & const structure	structural effect	quantity effect	total effect
Food	131,5	0,3%	-0,3%	0,0%
Non-alcoholic beverages	21,4	1,0%	-1,8%	-0,5%
Alcoholic beverages	21,9	-7,1%	-1,1%	-8,0%
Tobacco	23,5	-6,2%	-1,7%	-7,7%
Clothing	61,0	-1,5%	-1,7%	-3,2%
Footwear	10,5	-3,5%	0,2%	-3,2%

Source: INFORGE



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# Conclusion

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- ▶ Due to demographic change
  - ⇒ Private consumption is higher
  - ⇒ Saving rate is lower
  - ⇒ The consumption structure is different
    - More expenditures for health and catering services
    - Less expenditures for stimulants, fashion and education
- ▶ The model structure (consumption functions) is sufficient to show demographic effects on consumption

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# Thank you for your attention

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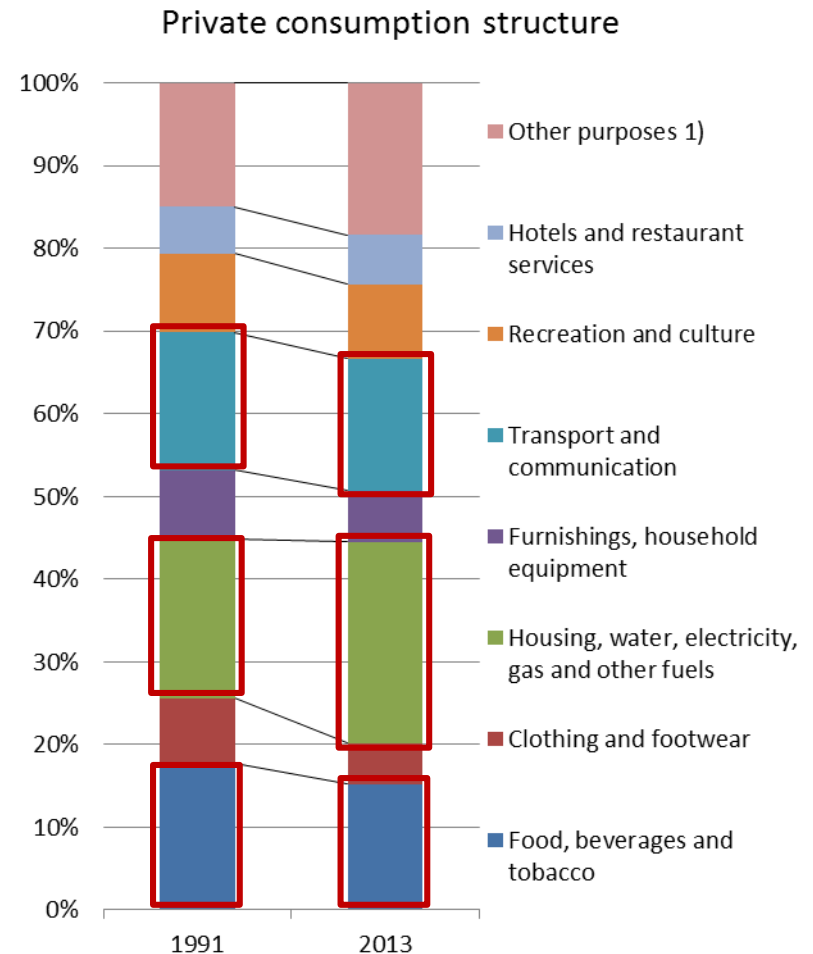
Email: [stoever@gws-os.com](mailto:stoever@gws-os.com)

[www.gws-os.com](http://www.gws-os.com)



# Private consumption in Germany

- ▶ Contributes about 60% (1.6 trillion Euro) to domestic uses (2013)
- ▶ Consumption structure changes
  - ⇒ Food, clothes and furniture lose importance
  - ⇒ More expenditures on habitation and other purposes
- ▶ Changes due to
  - ⇒ Prices, income, behavior
  - ⇒ Household structure



1) Other purposes include health, education, personal care, personal effects, social protection, insurance and financial services, other services

Source: Federal Statistical Office (SNA 2014)