

Determinants for the valuation of land

Theoretical considerations and practical applications

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Outline of the presentation

- Theoretical concepts of land valuation
- Methodological approach for this study
- Area of investigation
- Preliminary results

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Why care for land values?

- Financial stability (G 20 initiative towards closing of data gaps)
- Official statistics
 - National accounts (e.g. land-structure split)
 - Consumer price index (owner occupied housing, house price index)
- Investment decisions
- Urban development and planning

We analyse value-determining factors
for land, particularly undeveloped plots, only.

Location, location, location: Theoretical approaches to land values

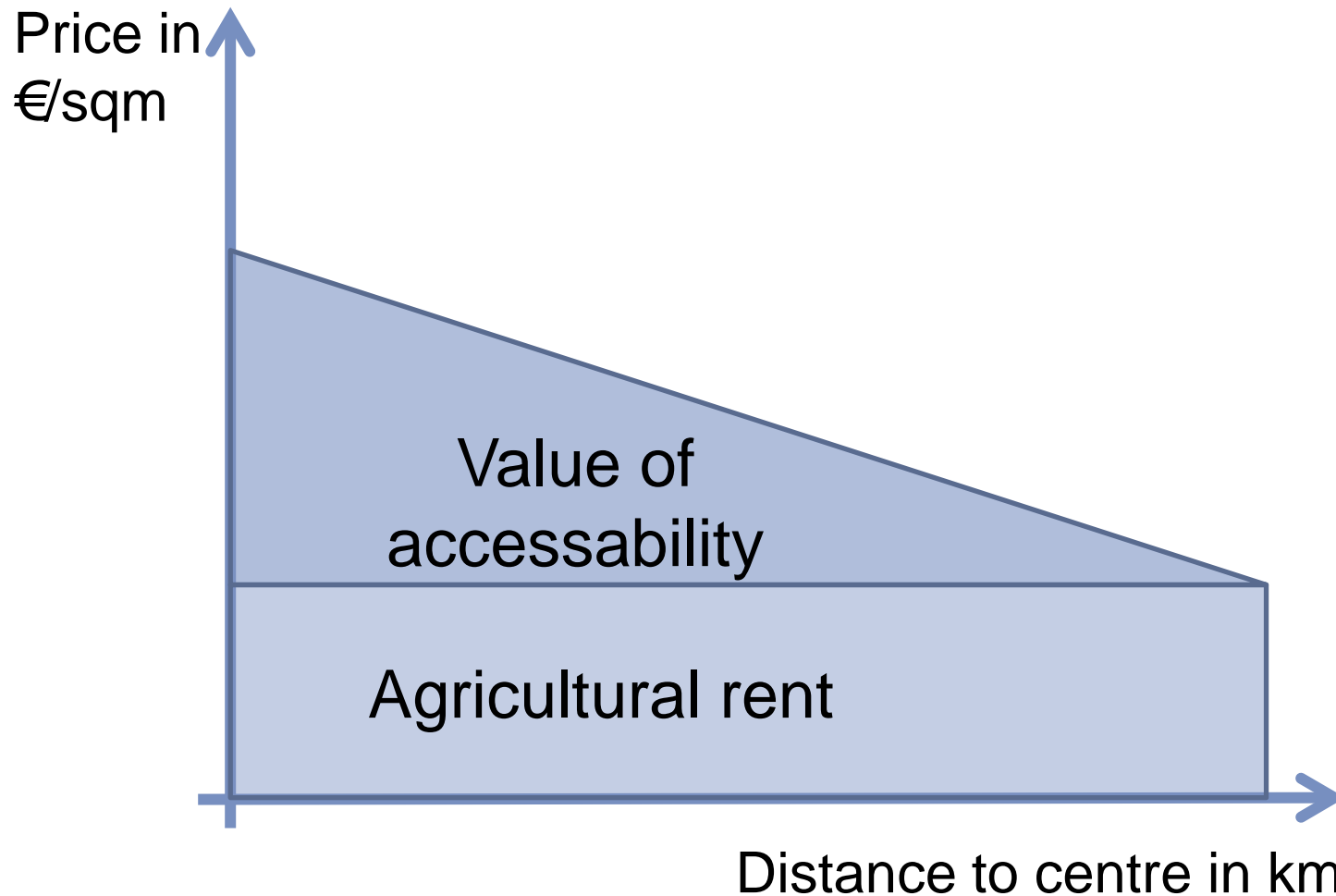
Location rent approach

Classical economic approach

Neoclassical approach

Social-economic approach

Cost gradient of monocentric city: How to describe the location in a simple model?



Additionally

- Value of amenities
- Future rent increases
- Political decisions

Setting a price for location: Pricing of amenities

- Land rents
- Transportation costs
- Open spaces
- Clear water
- Schooling
- View

Early applications in a monocentric framework
(Muth, Thünen, Alonso)

Later applications in a neoclassical framework

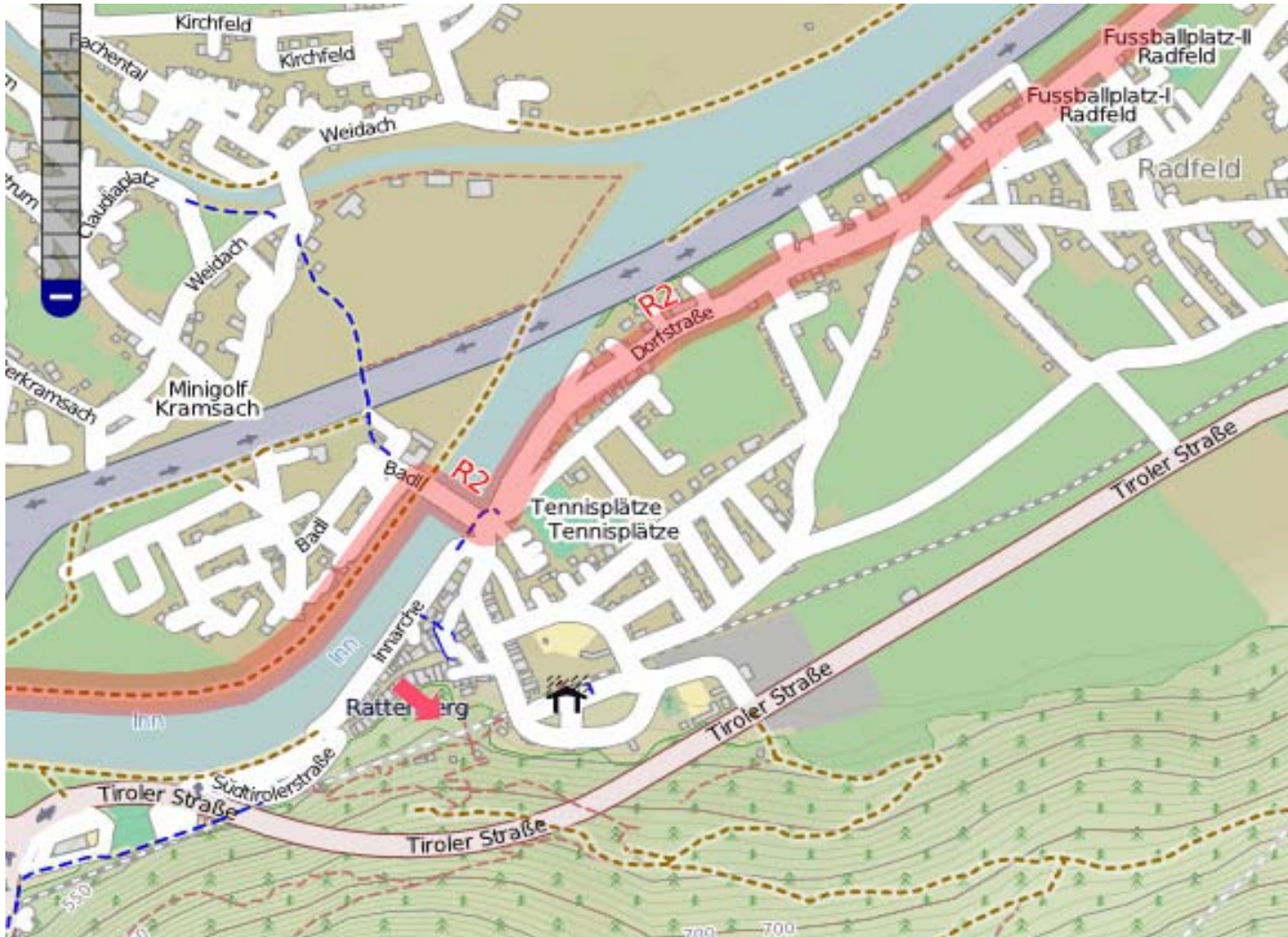
Rather new applications in a socio-economic framework
(GIS software etc.)

Case study of location specific amenities: The alpine region of Austria



Source:
wikipedia.org

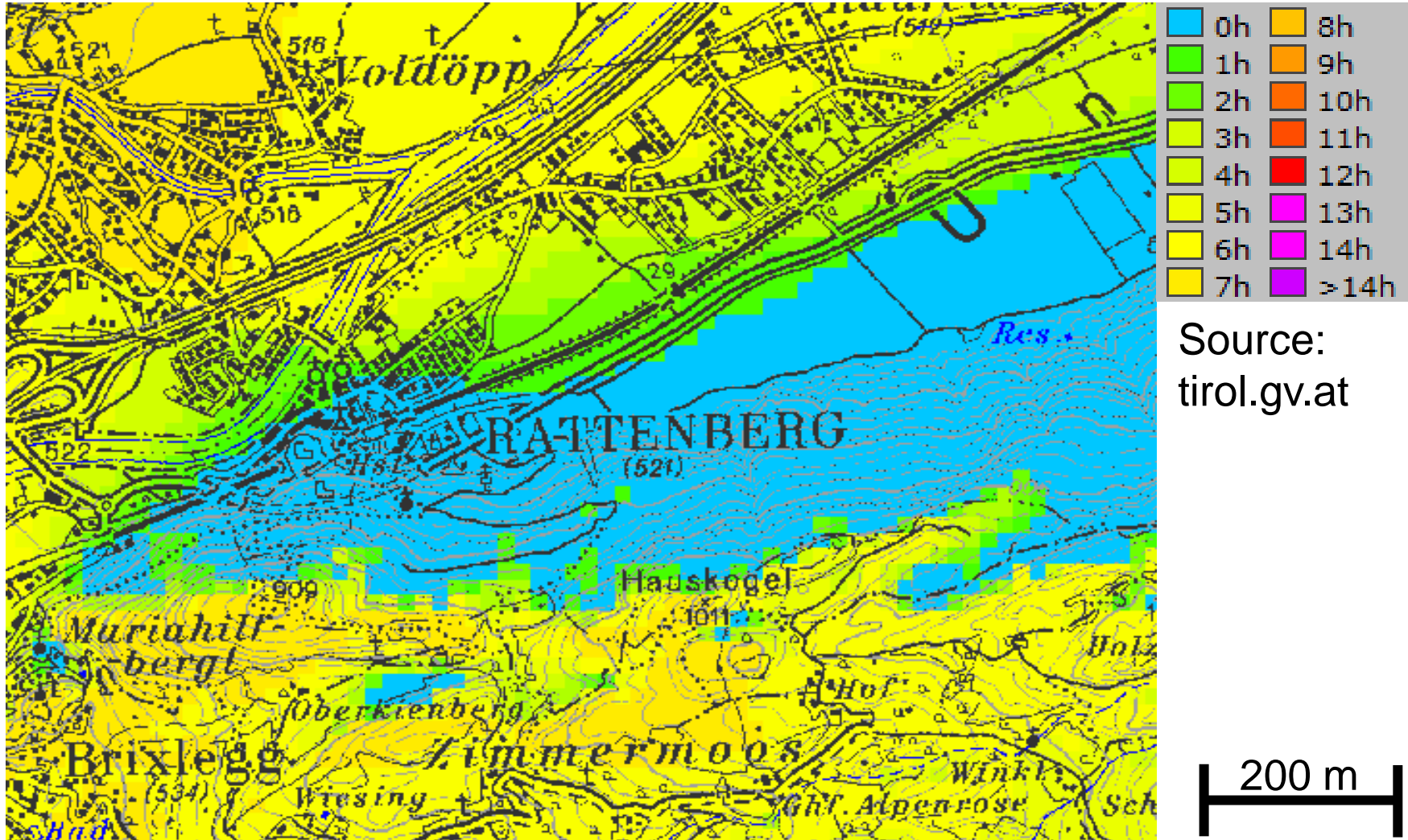
Case study of location specific amenities: Topography



Source:
openstreetmap.org

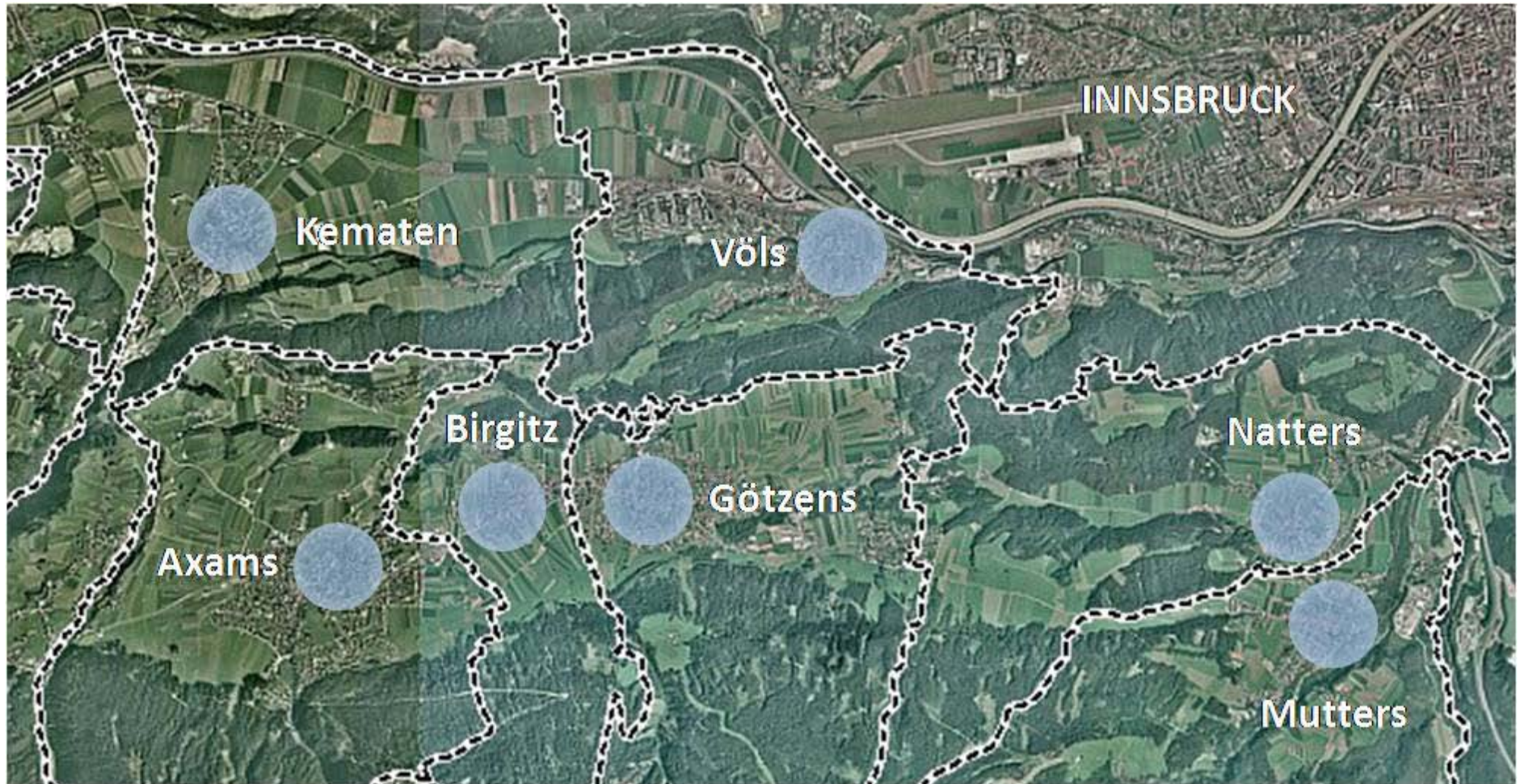
200 m

Case study of location specific amenities: Sunshine duration in winter



Source:
tirol.gv.at

Area of investigation



Source: tirol.gv.at

Sentiment effects in assets

Weather effects in assets

Hirshleifer (2001)

Hirshleifer et al. (2003)

Find good weather has a positive effect on stock returns.

Investor sentiment

Edemanns et al. (2007)

Find sport events have multiple effects on stock returns and volumes.

(amongst others)

Does sunshine duration matter?

First results

	Restricted	Unrestricted
Intercept	6.08*** (0.103)	4.71*** (0.349)
Distance to public transport	-0.07 (0.202)	0.011 (0.186)
Distance to town centre	-0.12 (0.062)	-0.12* (0.057)
Distance to Innsbruck	-0.02** (0.007)	-0.01* (0.007)
Sunshine duration after 3 p.m.		0.09*** (0.023)
R ²	0.12	0.28
R ² adjusted	0.09	0.24
AIC	-16.50	-30.39
Observations	83	83

Conclusions

- Land values and prices are still important for many applications, such as national accounts, investment decisions, and financial stability, though lesser academic research in this area.
- Amenities and socio-economic factors drive the land prices considerably.
- Additional facts (e.g. sunshine duration) have major effects and should be considered in a hedonic model in order to measure 'pure' price movements.