FIG Working Week 2012
Knowing to manage the territory, protect the environment, evaluate the cultural heritage

THE INFLUENCE OF FLOODING ON THE VALUE OF REAL ESTATE

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Motivation

The recurrence interval gets smaller → flood events will occur more often in the future.
I. Climate change and flood risk
II. Market value – the impact of flooding
III. Best practice approach
IV. Conclusion
• global warming & climate change
  → intensification of the water cycle
  → increase of frequency and severity of floods

• causes of flooding
  → surface water flooding
  → coastal and river flooding

• sea level raise
  → regions just some centimeters above sea level ????
Market value – the impact of flooding
most important value-influencing factors

- demographic structure
- neighborhood
- traffic situation
- flooding or flood risk
- population development
- business situation
- interest on capital
- social facilities
- purchasing power
- environmental influences
- living costs
- urban greening
- unemployment rate
- legal situation
- topography
- development status
- form and size of the property
- contamination
- type and degree of building and land use
- protection of historical monument

market value of real estate

Market value – the impact of flooding  
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• discount based on experts opinion
• in general comparable purchase prices are missing
• very often reference land values are not derived properly

→ positive effect of waterfront location (up to a threefold land value) – overlapping???
results of German & international studies

e.g. Australia, New Zealand, UK or US:
• price discount between 3-15%
• no effect at all (or not detectable)
• temporary effect
• positive effect
• no effect on flood designated areas without a flood event
• insufficient data basis

methods:
• expert interviews, hedonic pricing, repeat sale
consideration in the valuation methods

**comparison method**

- in general comparable purchase prices are missing

**replacement cost method**

- higher production costs (e.g. water resistant basement, demountable door and window guards)
- a lower remaining operating life period
- factor for adjustment to the local market
discounted cash flow method

- a lower remaining operating (economic) life period
- lower amount of rent (especially for the ground floor)
- higher management cost (e.g. for reconstructions, administrative work)
- property yield

→ “mercantile” decrease in the market value ??
Best practice approach

→ “NO” double consideration

→ there is no “all-in-one” solution”

• results from (past) studies give a hint (3-15%)
• facts instead of assumptions

(personal) favorites:
• calculation of the additional production costs to manufacture a flood resistant building
• capitalization of the costs for 100% insurance cover
Conclusion

• climate change → higher flood risk in the future
• flooding has an influence on the value of real estate
• many “adjustment screws” to consider flooding in the valuation process
• no “all-in-one” solution → discount based on experts opinion

• further research is needed
• alternative approaches

⇒ the aspect of flooding has to be considered
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