
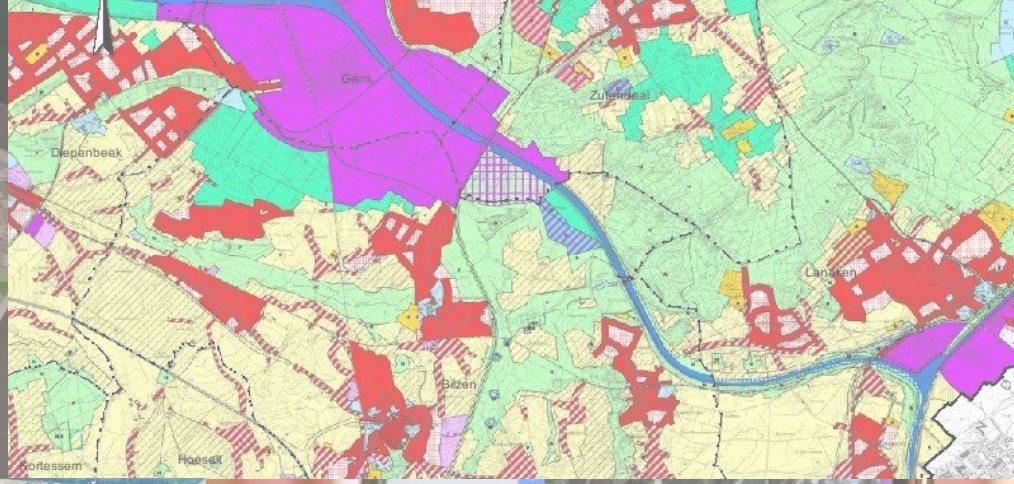



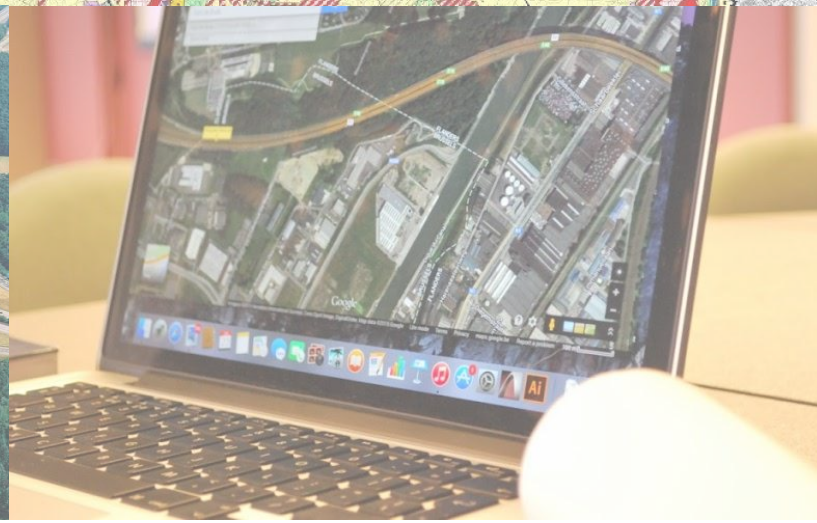

Analysis of Financial Consequences of Spatial Decisions: Framework and Case Studies

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Presentation Outline

(1) Introduction

(2) Spatial policy decisions and financial compensation

(3) Spatial policy recommendations

(4) Property Valuation

(5) Cases

- Case 1: Changing land use destination
- Case 2: Changing building programs
- Case 3: Brownfield development

(1) Introduction

Research questions:

- Impact of spatial policy on property value?
- Financial compensations?
- Adaptation of the planning system?

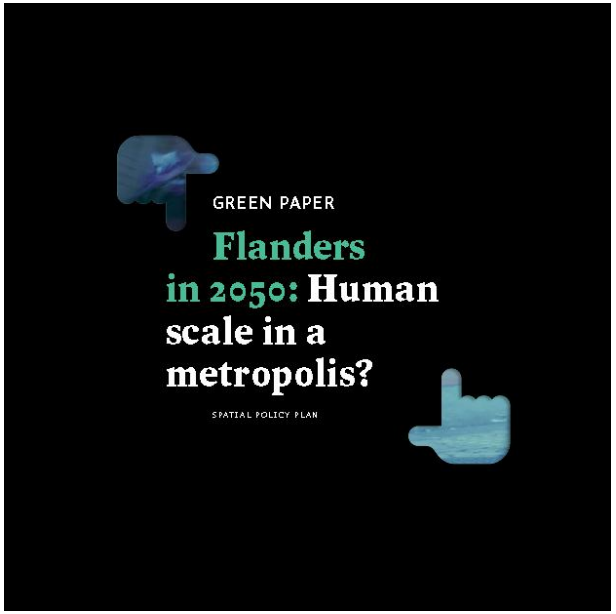
Report (Dutch)

(1) Introduction

Context:

- Renewal of spatial policy in Flanders
  - Greenpaper

- Financial crisis, limited public (and private) resources



(2) Spatial policy decisions and financial compensation

Several decisions in spatial policy have a financial impact:

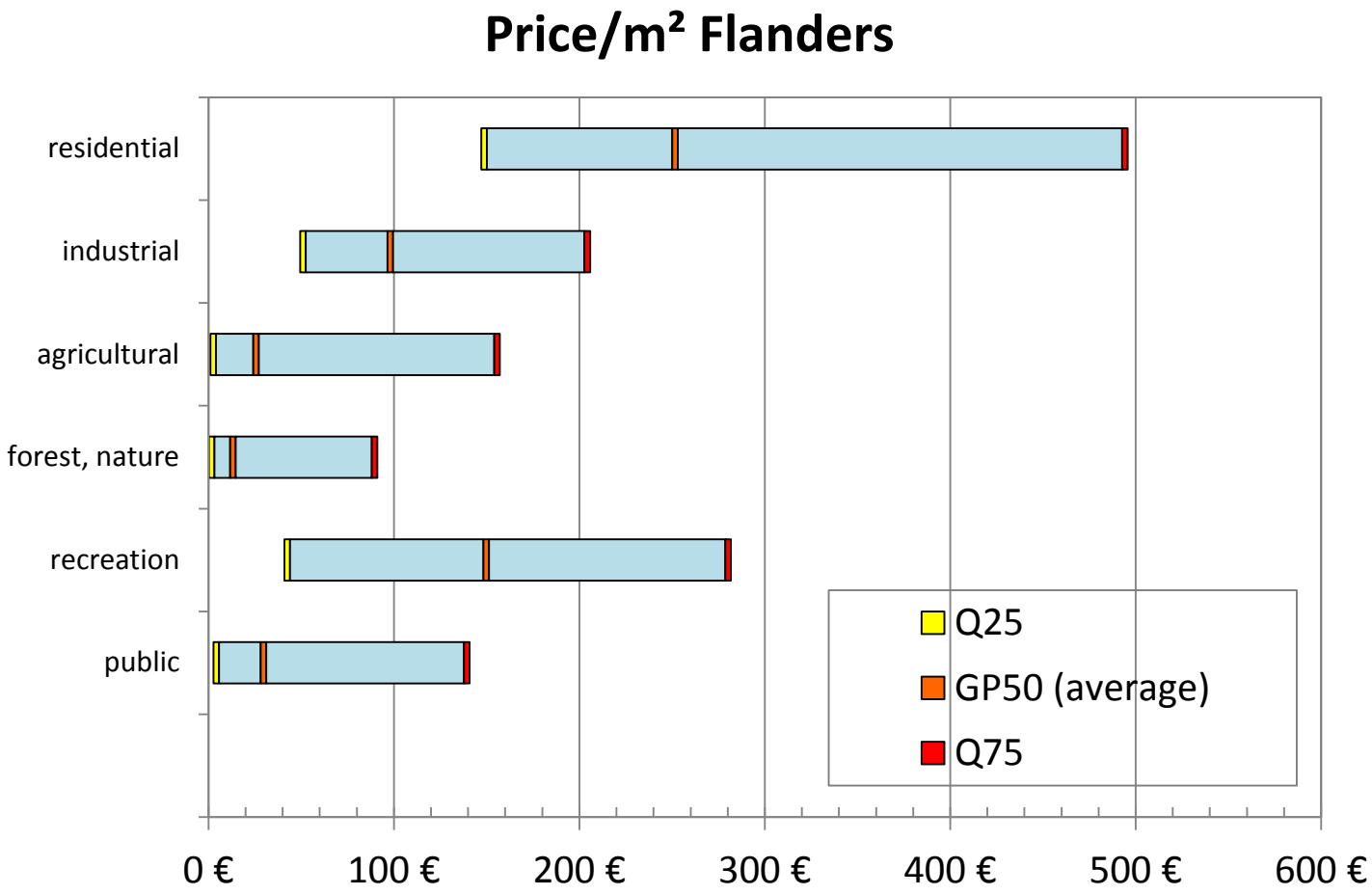
- Generic decisions and legislation
- Area-specific decisions and policies
- Decisions related to actual projects
- Interventions (public and private), not related to the specific project or area but with a financial impact

(2) Spatial policy decisions and financial compensation

Only (changes in) zoning plans give rise to compensation

- Compensation of financial losses (80%)
- Plan income charge: taxation on added value created (20%)

(2) Spatial policy decisions and financial compensation



(3) Spatial policy recommendations

Be aware of possible financial consequences of decisions

Monitor the changes in property values, and develop **calculation instruments**

Develop **financial arguments** to support the spatial policy

Harmonise and broaden the **financial compensation mechanisms**

(4) Property Valuation

Fair value of property =

- “Price that would be received …an orderly transaction between market participants at the measurement date” (IASB, IFRS)

(4) Property Valuation

Value of land depends on*:

- Current land use
- Specific use characteristics
- Construction and adaptation costs
- Perception of the market

Affected by spatial decisions

- Location of the parcel and characteristics of the surroundings
- Macro-economic factors

Impacts are location and time specific

** Sirmans, MacDonalds, Machperson & Zietz (2006); Vissers & Van Dam (2006); Kroll & Cray (2010); Damen, Vastmans & Buyst (2014)*

(4) Property Valuation

Combination of methods depending on effects of spatial decisions and availability of data.

- Hedonic method (mass appraisal)
- Residual value method (~ building plots)
- Comparative method (individual appraisal)
- Capitalization method (~ rent, income)
- Construction costs (~ building cost)

(4) Property Valuation

Combinations of methods used in selected case studies

	Case study	Land use	Mass appraisal (hedonic)	Residual value method	Specific market studies
1	Change in land use	Agriculture; Natural park	x		
2	Changing building program	Residential	x	x	
3	Brown field development	Residential	x	x	
		Industrial		x	x

(5) Case 1: Changing Land Use Destination

1a. Description:

Event: Land use plan changes zonation:

'agricultural land use ' → 'natural park'

Case: parcel (0.3 ha) situated in a small river valley, used for agriculture

(5) Case 1: Changing Land Use Destination

1b. Valuation method:

Site specific hedonic study made by Flemish Land Agency

- Dependent variable: market price
- Independent variables:
  - legal status (agricultural / natural park)
  - use value for agriculture (score: 1-100)

Results

- Loss of value of 34 %
- Half due to lower market prices
- Half due to lower Use Value (% related to a best case situation)

(5) Case 1: Changing Land Use Destination

1c. Compensation:

Land owner
Gets financial compensation for change in legal status and future market price, But - Only if parcel size = + 0.5 ha - limited to 80% of the change in value

(5) Case 1: Changing Land Use Destination

1d. Results

		Before plan (ref) 'Agriculture'	**After plan 'Natural area'**
(1)	Market value parcel (300 m²) in k€	12	8.1
(2)	Change in market value (k€)		-3.9
(3)	Existing governmental compensations Min Max (80%)		 0 3.1
(4)	Change for landowner, after com. (k€) Min Max		 -3.9 -0.8

(5) Case 1: Changing Land Use Destination

1e. Conclusion

- Spatial policies and change in legal status affects market value of a parcel, irrespective of its actual use.
- Effect of change in zonation + effect of possible limitations for use have an impact on total financial value
- Full compensation by government is not guaranteed
- Compensation is given at the moment of (legal) change in zonation, not on the moment of change in use.

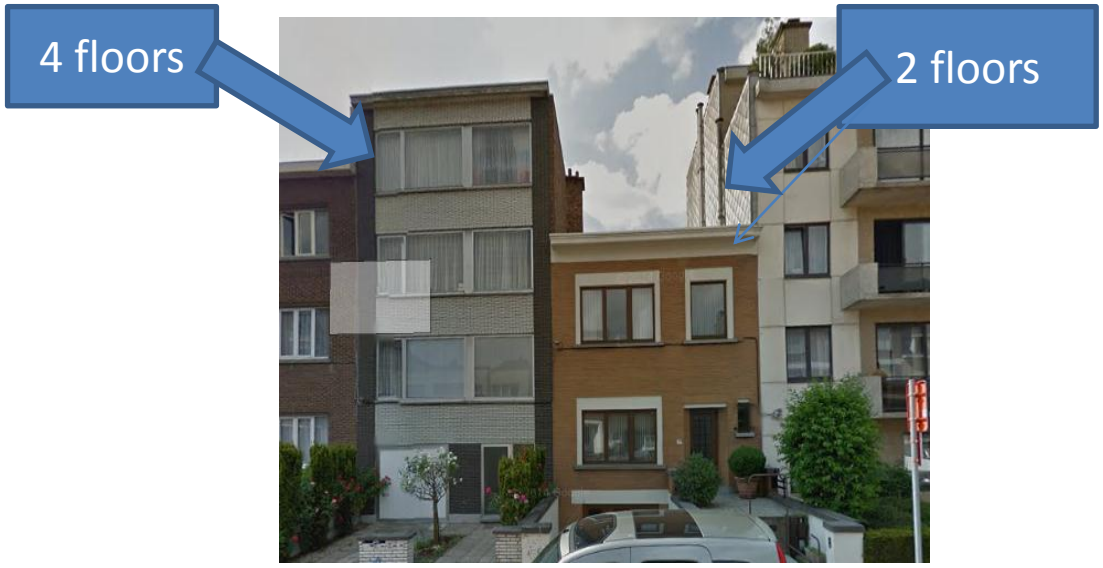
(5) Case 2: Changing Building Programs

2a. Description:

- Event: Change in general spatial policy with greater flexibility regarding the program
- Case: Small parcel in urban fringe (270m²);

  from 2 floors (reference) to 4 floors (policy scenario)

  Possible additional apartment (+ 125m² floor space)



(5) Case 2: Changing Building Programs

2b. Valuation method: Residual value method

- Gross income
  - Net present value of future rents
  - rents based on hedonic study (Vastmans *et al. 2012)* (www.huurschatter.be – Flemish government)
  - Accounts for location of the property and relevant characteristics

- Building costs /m²
  - web-based tools
  - (m² living area, level of completion, type of building, quality of construction, workmanship)

- Assumptions
  - Simplified method (no maintenance, no fiscal incentives)
  - Discount rate: 3% and 4% (required return on investment)

(5) Case 2: Changing Building Programs

2c. Compensation: No compensation

2d. Results: (creation of additional apartment of 125m²)

		Reference scenario (2 floors)		Policy scenario (4 floors)	
		Low	High	Low	High
(1)	Floor space (m²)	125	125	**250**	**250**
(2)	Rent (€/year/m²)	5,9	8,6	7,1	8,6
(3)	Gross income (k€/year)	8	12	20	24
(4)	Discount rate	3%	3%	4%	3%
(5)	Current value future rents (k€)	266	393	484	787
(6)	Building costs (k€)	-163	-201	-325	-401
(7)	Residual value parcel (k€) (€/m²)	92 341	172 637	142 525	344 1275
(8)	Change in value (per parcel) (k€) (€/m²) %			50 185 54%	172 637 100%

(5) Case 2: Changing Building Programs

2e. Conclusion

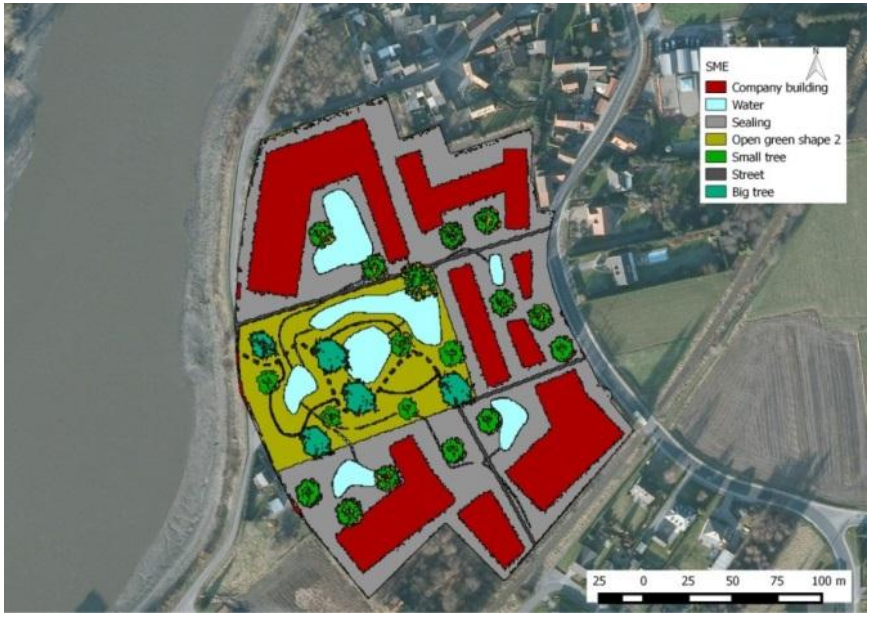
- Doubling in rentable floor size leads to doubling total gross income, as the local market appreciates this type of small apartments
- Value of the small parcel + 54 % to 100 %
- No compensation mechanism
- Added value is created on the moment of receiving the building permit for 4 floors-program

(5) Case 3: Brown field development

1a. Description:

Event: Brownfield redevelopment, Land use changes (industrial or residential + building programs)

Case: parcel 4 ha, rural area, nearby river Scheldt.



(5) Case 3: Brown field development

3a. Description:

Event: Brownfield redevelopment, Land use changes (industrial or residential + building programs

Case: parcel 4 ha, rural area, nearby river Scheldt.

alternative land uses and programs,

- Residential use (with high and low density),
- Industrial use (SME and waterfront industries (waterIND)

(5) Case 3: Brown field development

3b. Valuation method: Residual value method

- Gross income
  - Residential scenarios : idem as case 2
  - Industrial land uses :
    - SME : data from market studies (local + regional)
    - Waterfront industries: specific long term contracts Flemish government
- Building costs /m²
    - + additional costs for land development (grey and green infrastructure)
    - Rough approach for SME and commercial buildings
    - + subsidies for quay development (waterfront industries)

- Assumptions
  - Discount rate: 4% (societal perspective for industrial uses)

(5) Case 3: Brown field development

3c. Compensation: case specific, subsidies for remediation and quay development

3d. Results:

Indicator	Unit	Residential		Industry	
		High	Low	SME	WaterInd
		1	2	3	4
Land uses					
m² floor area	1000 m²	18	14	13	21*
Grey infrastructure	1000 m²	30	30	13	21*
Green infrastructure	1000 m²	4	4	16	14
Gross income					
m² floor area *	1000 m²	18	14	13	21*
Rent €/year/m²	€/m²	5,9	5,9	3,3	4,5
Total rent year	k€/year	1.288	952	507	94
Current Value future rents (4 %)	million €	32	24	13	2
Costs		-	-	-	-
Building costs	million €	26	19	7,6	0,57
Grey infrastructure	million €	0,5	0,5	2,4	-
Green infrastructure	million €	0,9	0,9	0,4	0,6
Total costs	million €	27	21	10	1,2
Net income	million €	5,0	3,3	2,3	1,2
	€/m²	120	79	55	29

* m² floor area for waterfront industry is building and grey infrastructure

(5) Case 3: Brown field development

For comparison : Remediation of pollution

- 2 to 12 million € (with / without subsidy)
- Same for all scenario's.

3e. Conclusion

- Comparable appraisal of effects of spatial decisions is much more complex in this case (multiple land-uses or programs, industry,..). Limited data available due to specific elements (waterfront location, brownfield,…)
- Large difference in values depending on land uses and on programs.
- Illustrates both potential and difficulties to select combinations of land uses and programs that allow to compensate for remediation costs.

Questions?

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