An empirical study of strategies for organic dairy farms in Austria

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Map of Austria

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Economic strategies in dairy farming

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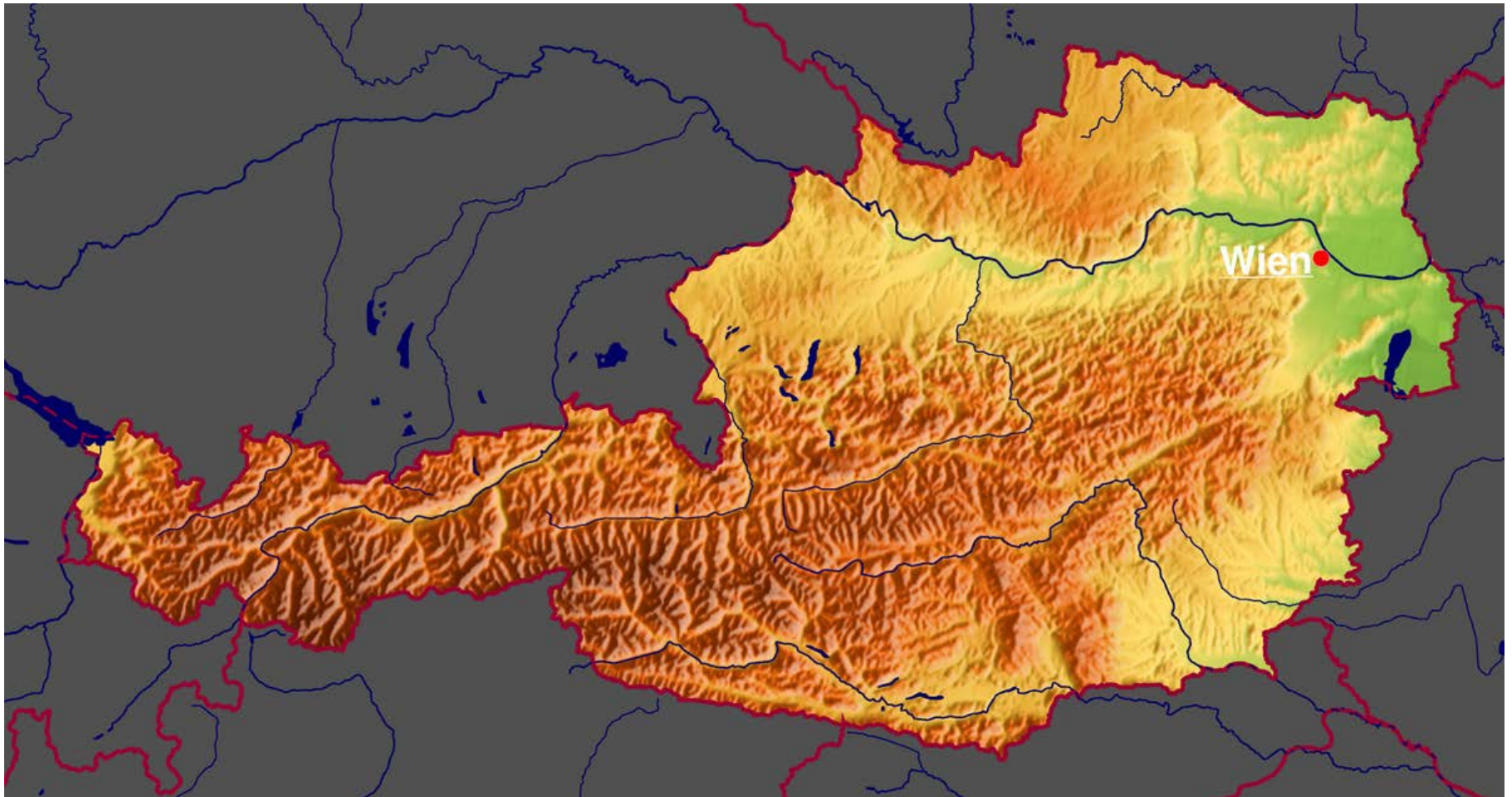
- **High-Output**
  - Decreasing costs (fix costs) through increasing milk yield per farm
  - Increase of milk yield per cow and/or farm growth
  - High level of inputs

- **Low-Input**
  - Decreasing costs through decreasing inputs (less technology, concentrate, incredients and working units)
  - Grassland based
  - Leads to reduced milk yield per cow

Economic strategies in dairy farming

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- Basic conditions determine the selection of a certain strategy
    - Which production factors are limiting?
    - Climate conditions
    - Grassland/arable land
    - Prices for milk and concentrate

- In organic farming the high-output strategy is limitied
- Organic farming is closer to low-input strategy

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Research questions

? Which strategy can be identified under the most successful farms from bookkeeping data?

  ➢ Clusteranlaysis

? How do those strategies perform under volatile market conditions?

  ➢ Analysis of the time period 2005-2010

Methodology

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- Clusteranalysis (Ward-approach)
  - Groups with similar units
  - Variables:
    - Costs for concentrate per cow
    - Share of grassland
    - Depreciation per livestock unit
    - Costs for hired work per hectare UAA

- Time series analysis
  - Mean comparison from 2005 - 2010

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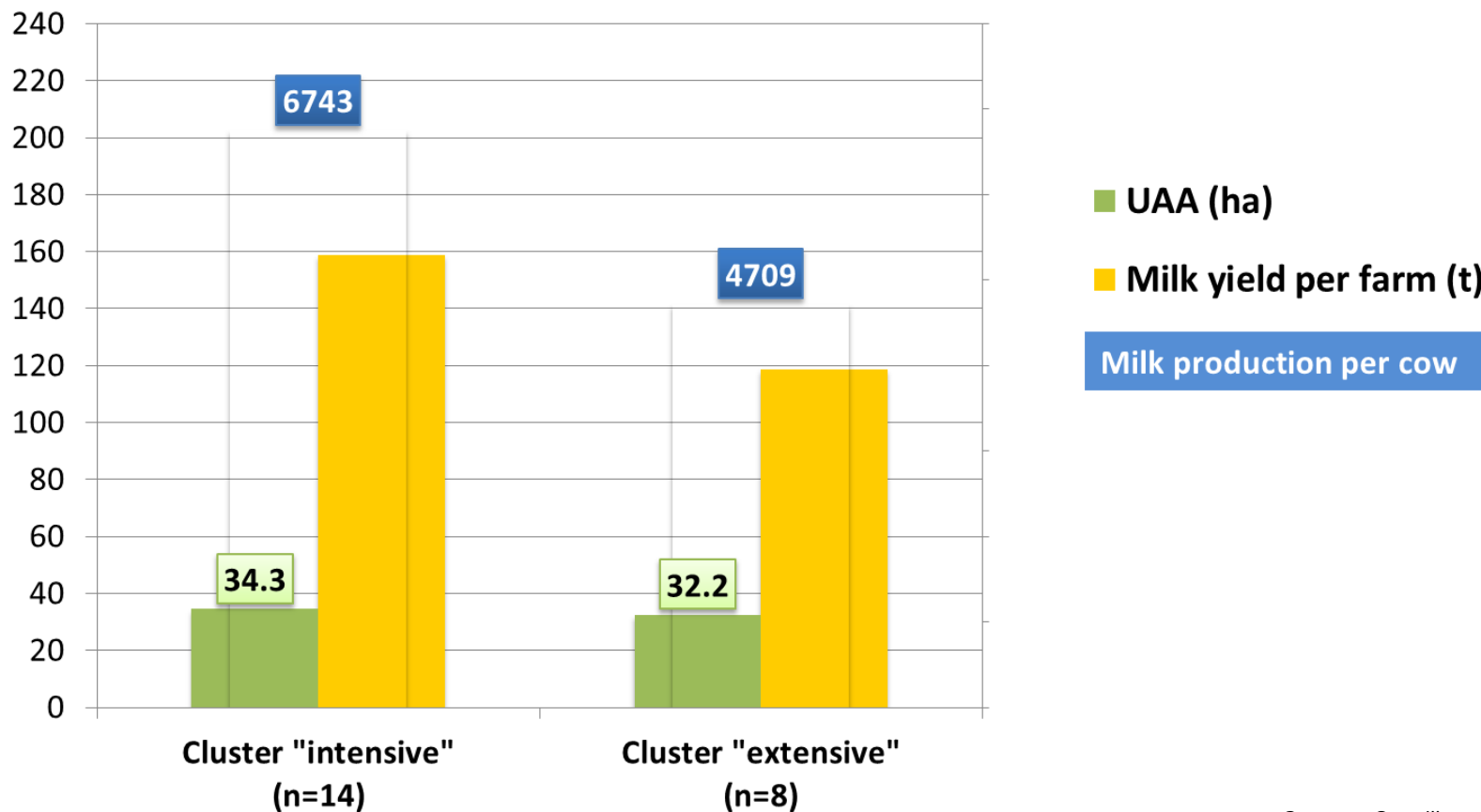
Data

- Voluntarily bookkeeping farms (about 2200 farms)
    - Organic
    - Specialized dairy farms
    - Data from 2005-2010
    - Farm income per family labour more than the average

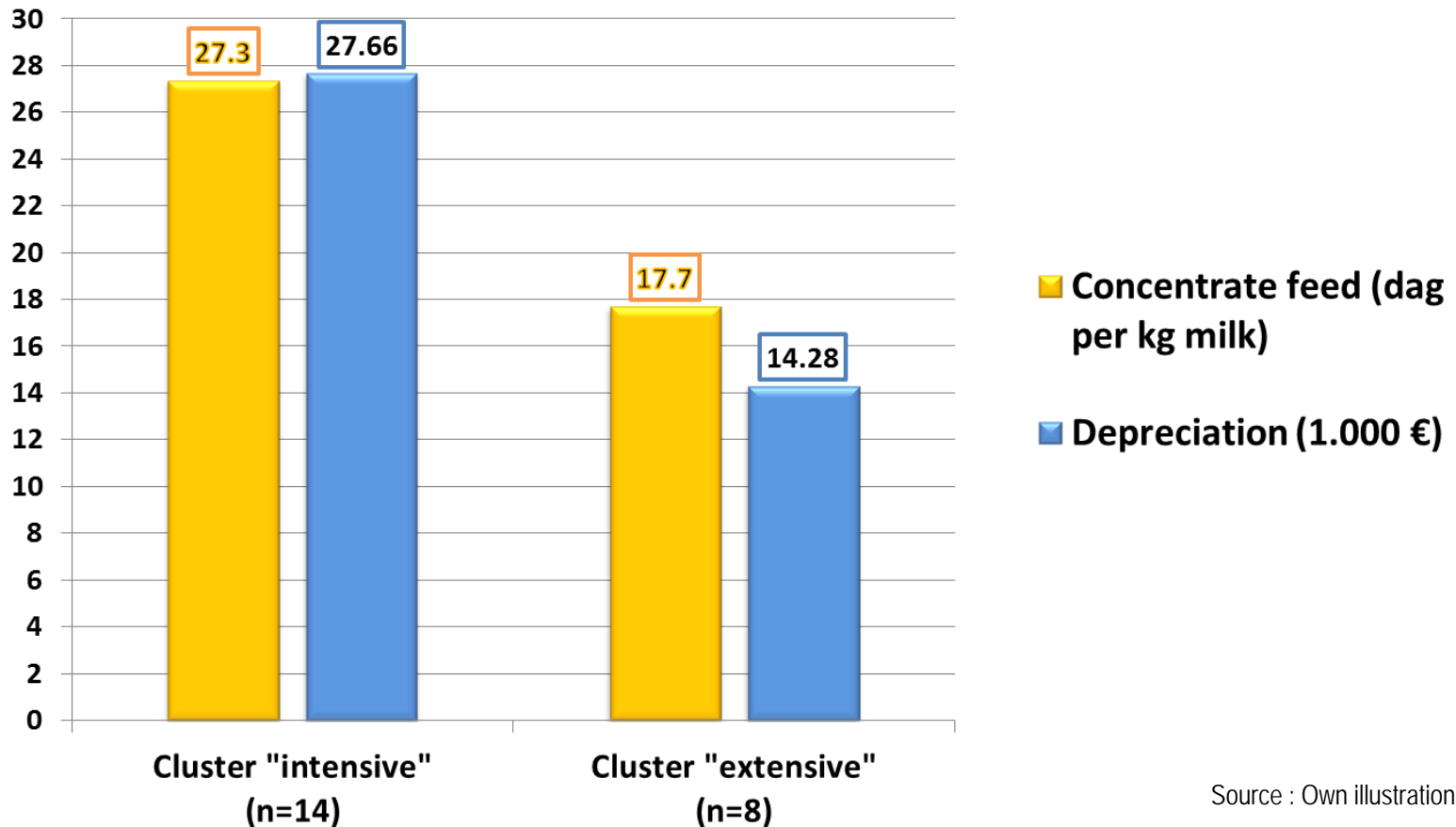=> 70 farms

Results from clusteranalysis
Structural data

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UAA (ha)

Milk yield per farm (t)

Milk production per cow

Chart values:
- Cluster "intensive" (n=14): UAA 34.3, Milk production per cow 6743
- Cluster "extensive" (n=8): UAA 32.2, Milk production per cow 4709

Source : Own illustration
UAA = Utilized agricultural area

Results from clusteranalysis
Selected inputs

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Source : Own illustration

Results from clusteranalysis
Income data

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BOKU

Source : Own illustration
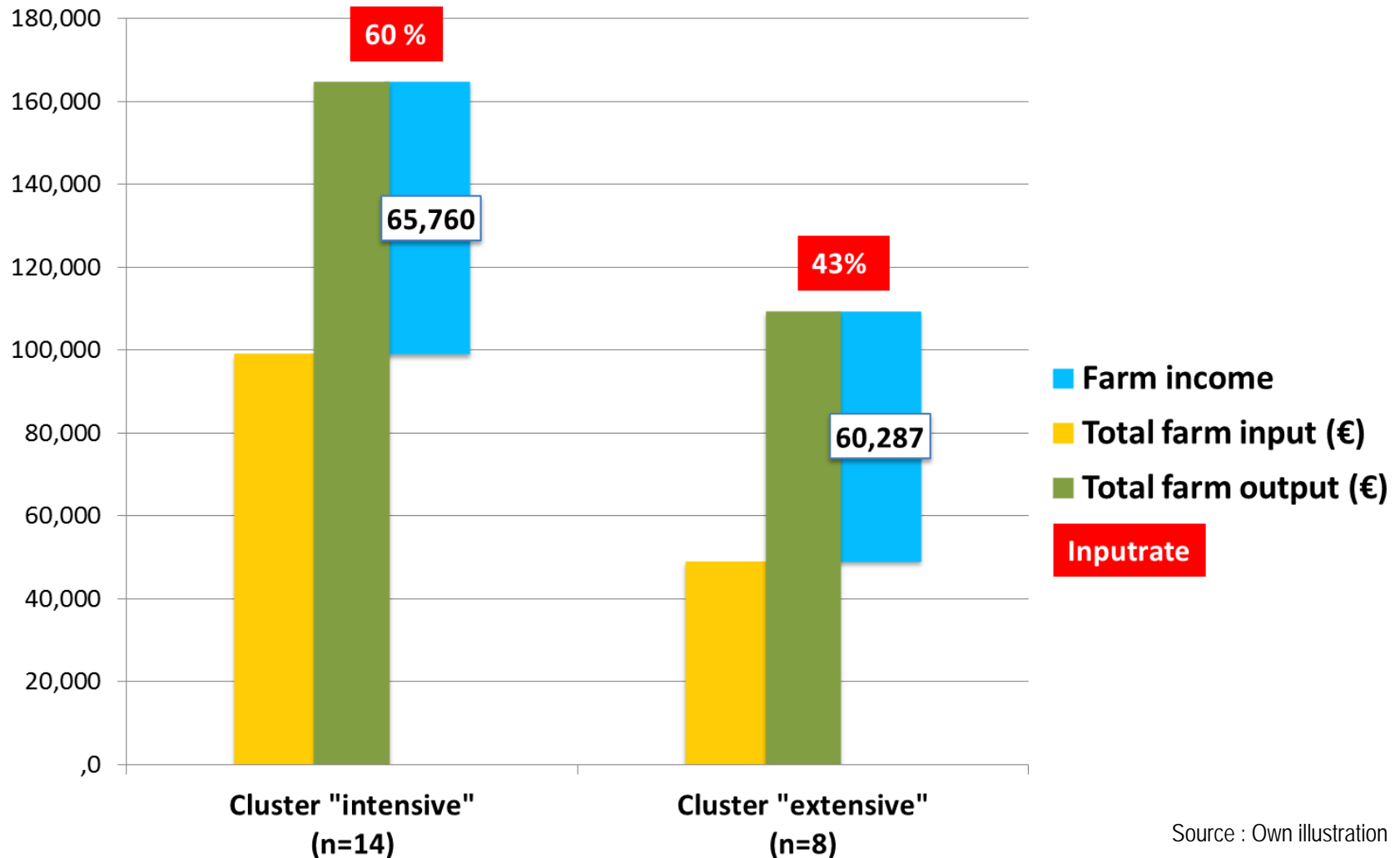
Results for time series analysis
Indicies for total farm input and output (2005=100)

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Source : Own illustration
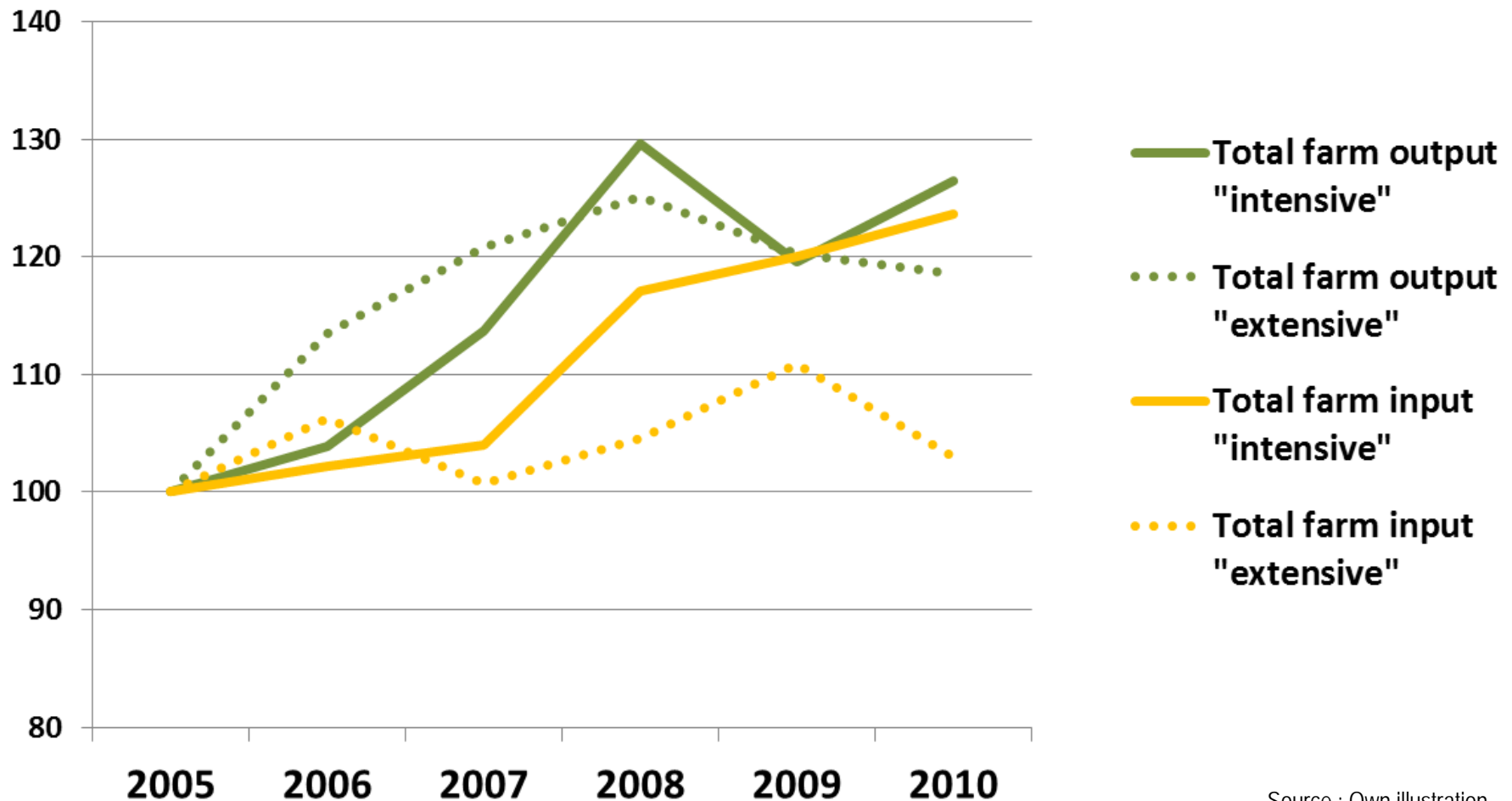
Results for time series analysis
Indicies for farm income and public funds (2005=100)

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Legend:
- **Farm income "intensive"** (solid yellow)
- **Farm income "extensive"** (dotted yellow)
- **Public funds "intensive"** (solid green)
- **Public funds "extensive"** (dotted green)

Source : Own illustration
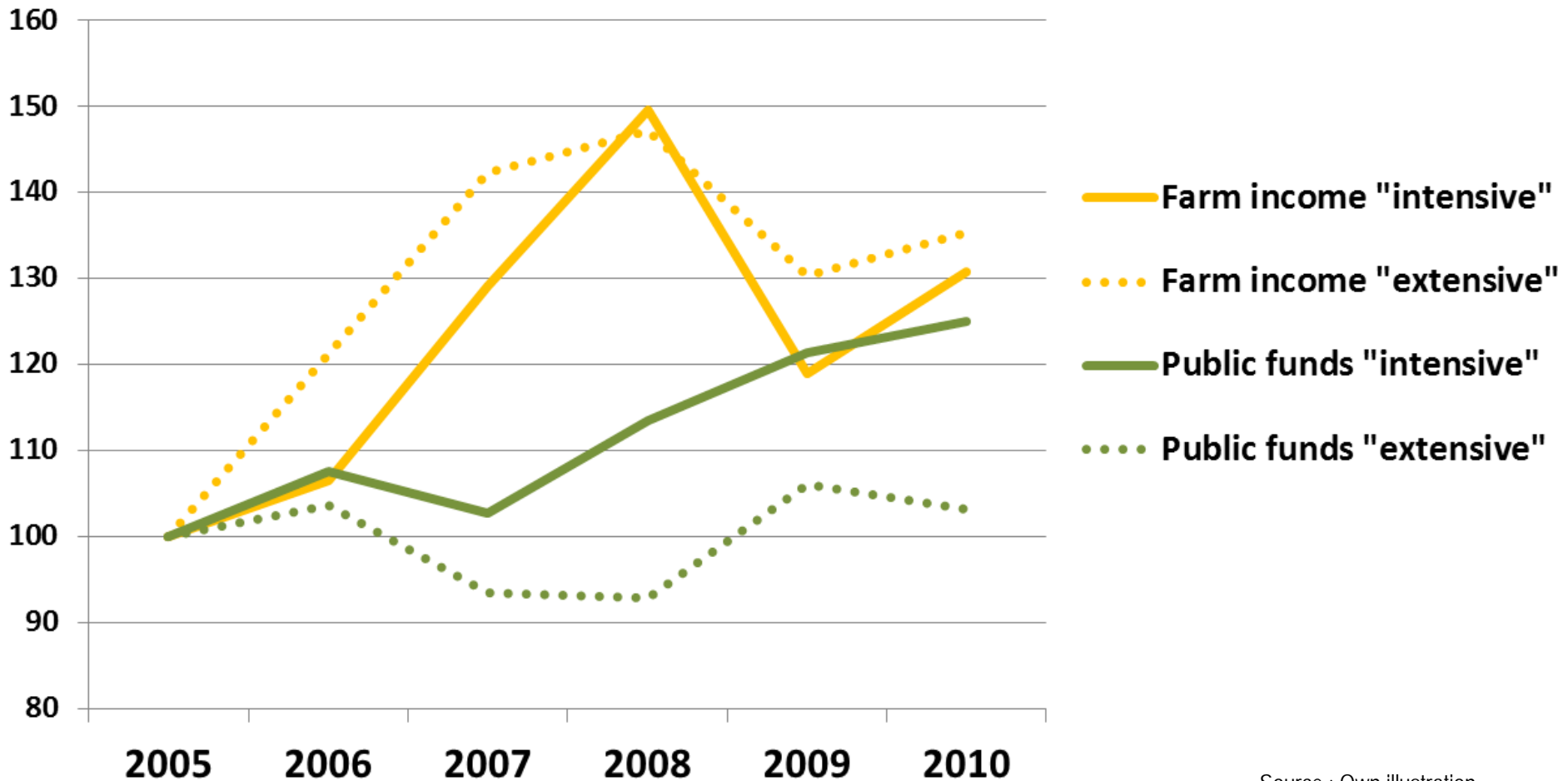
Results for time series analysis
Indicies for UAA and dairx cows (2005=100)

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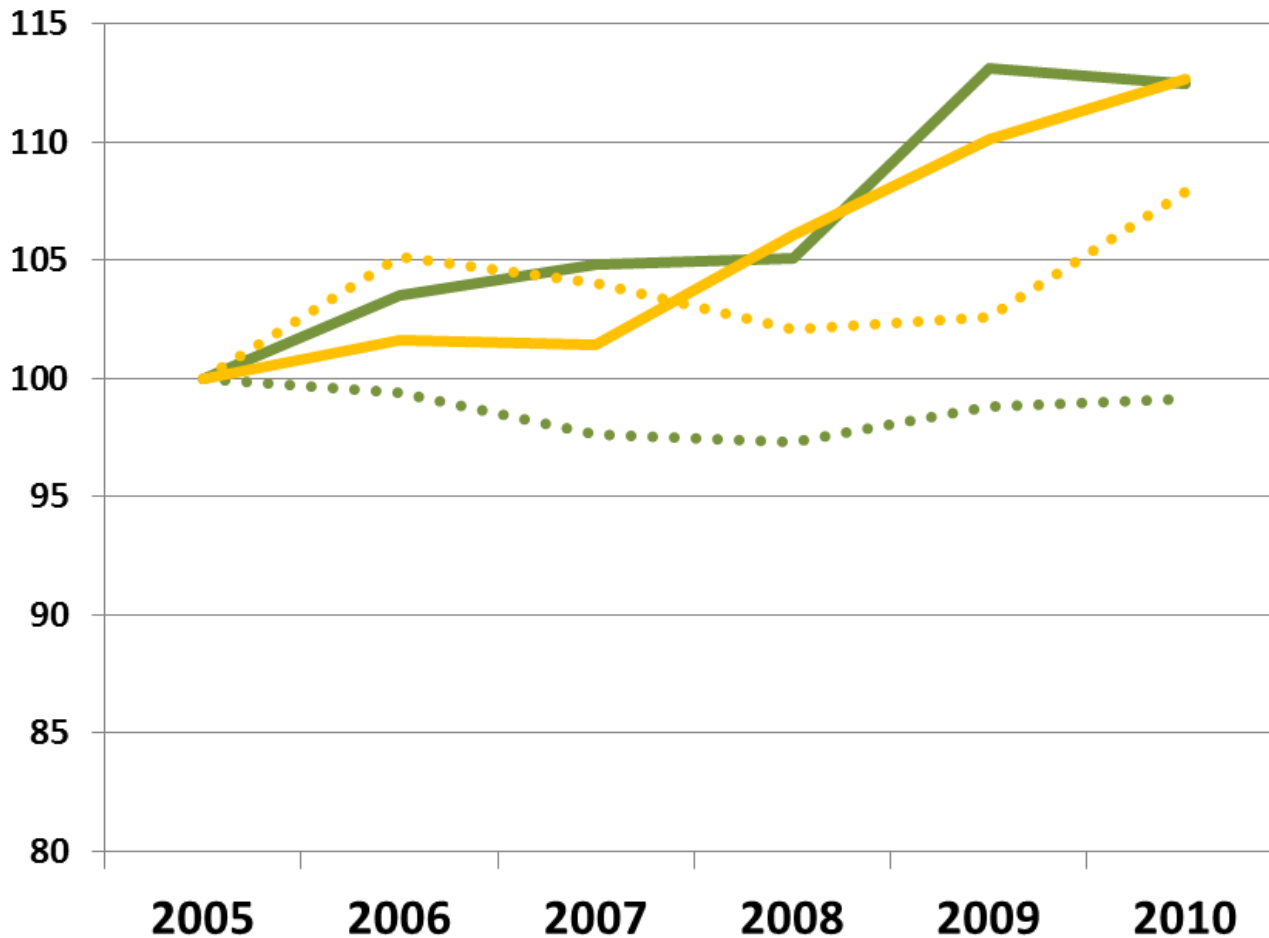
Legend:
- UAA "intensive"
- UAA "extensive"
- Dairy cows "intensive"
- Dairy cows "extensive"

Source : Own illustration
UAA = Utilized agricultural area

Conclusions and discussion

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- Both strategies are applied under the „best" farms (number is limited)

- Increasing milk yield is not the only successful strategy

- Strategy selection depends on basic conditions (location, politics,…) and strength of the farm and farmer

- Strategies are influenced differently from price fluctuations

- Intensive production needs better risk management

- Both strategies are successful options for farmers in the future

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Thank you for your attention!!

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Daten	Cluster 1 (n=22) Cluster 1 (n=22)	Cluster 2 (n=21) Cluster 2 (n=21)	Cluster 3 (n=14) Cluster "intensive" (n=14)	Cluster 4 (n=8) Cluster "extensive" (n=8)
Anzahl Betriebe	22	21	14	8
Milk yield per farm (t)	136	223	159	119
UAA (ha)	36.4	44.5	34.3	32.2
Mittelwert von gveproha	116	134	120	133
Mittelwert von kfkuh	354	552	667	299
Farm income	54,670	75,297	65,760	60,287
Mittelwert von ek_lf_nak2	31,196	38,517	37,265	31,403
Mittelwert von milprokuh	5,750	6,255	6,743	4,709
Mittelwert von tmgve	95.8	89.0	69.7	50.7
Mittelwert von öpulant	46.0%	39.8%	39.6%	44.0%
Mittelwert von almant	5.3%	7.5%	7.0%	6.9%
Mittelwert von afamil	192	117	189	130
Mittelwert von tmmil	30	24	20	19
Mittelwert von samil	291	237	308	216
Mittelwert von foermil	237	208	302	320
Concentrate feed (dag per kg milk)	16.2	23.5	27.3	17.7
Total farm input (€)	89,082	94,975	98,992	49,030
Total farm output (€)	143,752	170,272	164,752	109,317
Depreciation (1.000 €)	25.1	23.9	27.7	14.3
Standardabweichung (Grundgesamtheit) von ek_lf_nak2	10,869	12,708	17,520	10,980
Mittelwert von opul	13,498	15,993	16,641	13,893
Mittelwert von nak	1.81	1.89	1.86	1.76