

Retail Energy Prices in Germany

- some evidence for electricity and natural gas –
(under work)

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...work in progress

General interest:

what are the drivers of retail price evolvement?

Evidence from detailed data.

Background

Deregulation of energy retail markets since 1998:

- Households are free to choose their supplier
 - Firms have open grid access to serve customers
 - Supplier is obliged to feed into the grid the amount it sold, and is charged a regulated fee for grid usage.
- Suppliers should be engaged in fierce competition due to homogeneity of goods!

Some descriptive facts

- Incumbent players (still) serve the majority of the market.
- By 2009, the number of competitors is substantial in most regions.
- Persistent price differentiation between and within(!) regions
- Consumer web sites provide very high transparency

Price data

Retail prices

Verivox® web site compares retail prices by zip code

→ Verivox data give rise to a panel with $N > 7000$ regions

- natural gas: monthly prices 2007-2009
- electricity: quartal prices 2004-2007

Wholesale prices

- Index of upstream prices for natural gas sold to gas retailers published by the federal statistics office.
- Phelix (Physical Electricity Index) from German power exchange

Persistent inter-regional price dispersion...

Annual costs for natural gas of
av. household at incumbent
prices from January 2009

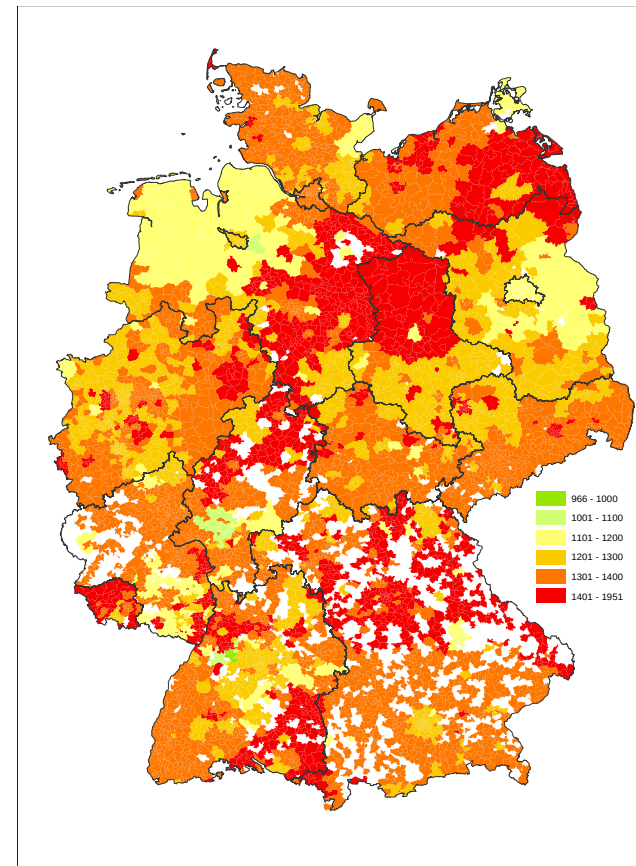
Range:

from ~966€
to ~1951€

Std. dev.: 129€

p < 1000€ (dark green)

p > 1400€ (dark red)



... and intra-regional price dispersion.

	Percentiles
1%	0
5%	0
10%	0
25%	18.722
50%	83.062
75%	155.22
90%	239.80
95%	274.55
99%	331.46

Mean	99.59
Std. Dev.	89.85
Variance	8072.55
Skewness	.8102317
Kurtosis	3.309051

Largest: 641€

Price Pass-through from wholesale to retail

- Public opinion: upward changes are transmitted faster than downward changes
- Very recent expert survey supports this perception

→ What about real data ?

Evidence on price adjustment

Estimation of an error correction model

- Dependent var.: local gas price, first difference
- Regressors:
 - Lags of upstream gas price, first diff.
→ separated in upward and downward changes
 - Lagged level of local gas price (error correction term)
 - local fixed effects (absorbed)

Preliminary results – natural gas

Lags	Upward changes	Downward changes
1 .	0.5525713	0.5434494
2 .	0.0988095	-0.6829088
3 .	0.8218004	0.5676818
4 .	1.237.561	0.7427928
5 .	2.088.105	1.051.584
6 .	2.845.647	-0.8598975
7 .	271.006	-0.652992
8 .	2.283.943	-0.7333976

Statistics:

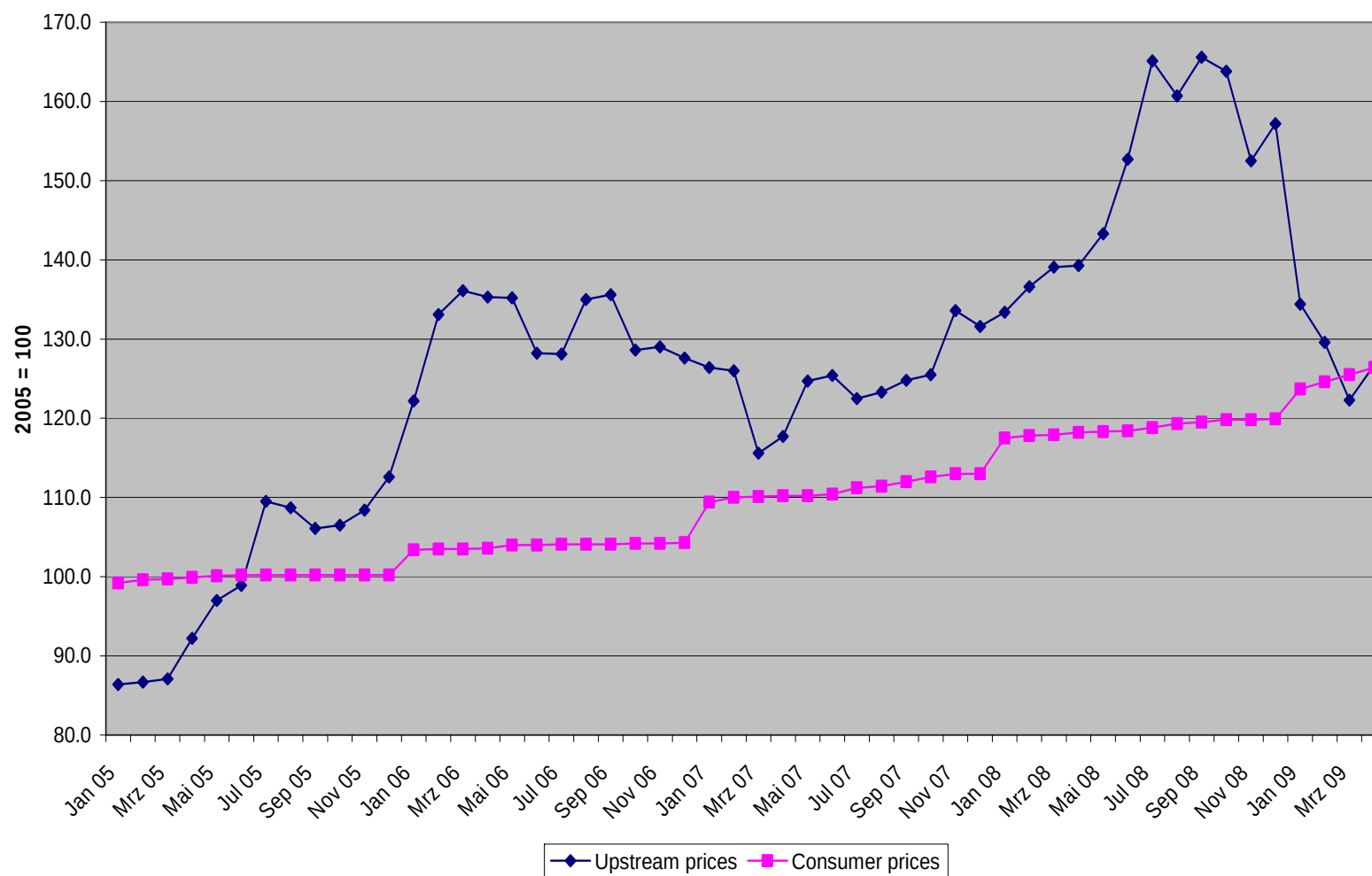
- No. of obs. = 136.216
- Significance > 99.99%
- $R^2 = 0.45$

F-test on symmetry rejected at any reasonable level of significance.

What about electricity markets?

- Retail prices adjust seldomly, panel data is not yet sufficient to estimate reaction fct.s
- Asymmetric adjustments exist on the whole sale level
→ does it stem from the whole sale / retail pass-through?
- Official consumer price statistics show no downward adjustments.
- *First results:* between regression yields small but significant effect of purchasing power:
→ higher prices in more affluent regions.

Indices on electricity prices



Open questions

- What drives price adjustments in retail markets?
- What is the right specification for an empirical model of price adjustment? (regressors?)
- How to explain the ongoing spreads in available prices within one region?
- How to explain the large regional price dispersion? (excluding network costs)

Thank you for your attention...

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...and your remarks!