



# Domestic Customer Portfolio Risk Management

---

Oliver Rix

Mathematics in the Management of Energy Systems Workshop, ICMS

Date: 29 January 2008

# Redpoint Introduction



- Redpoint Energy is a specialist energy consultancy, advising clients on investments, strategy and regulation across Europe's liberalised power and gas markets
- Formed in October 2004 by 3 former directors of Caminus in conjunction with Structure Europe
- Growing reputation based on depth of experience and innovative approaches for market, risk and asset modelling

## Our team

- 11 professionals:
- 3 directors
  - 2 senior managers
  - 5 consultants
  - 1 associate

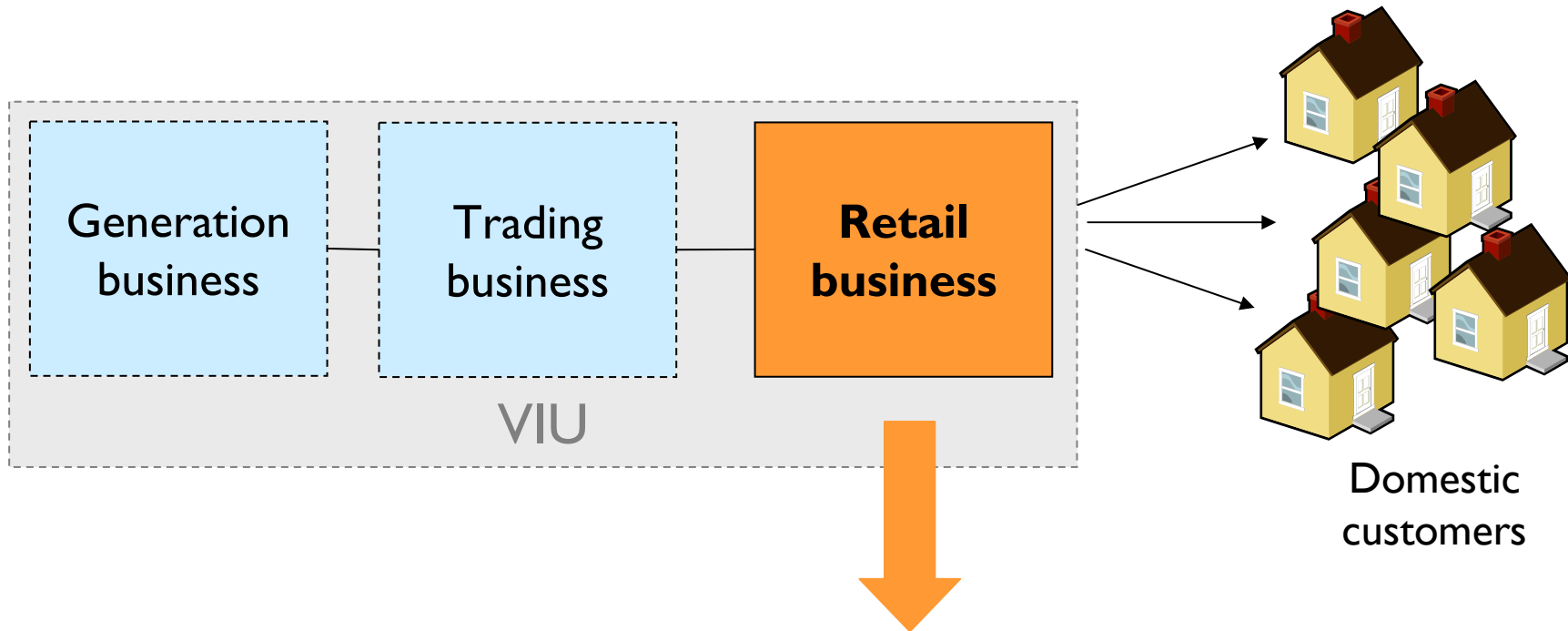
## Our services

Trading and risk best practice  
Strategy formation  
Investment advisory  
Energy market policy  
Model design and development

## Our clients

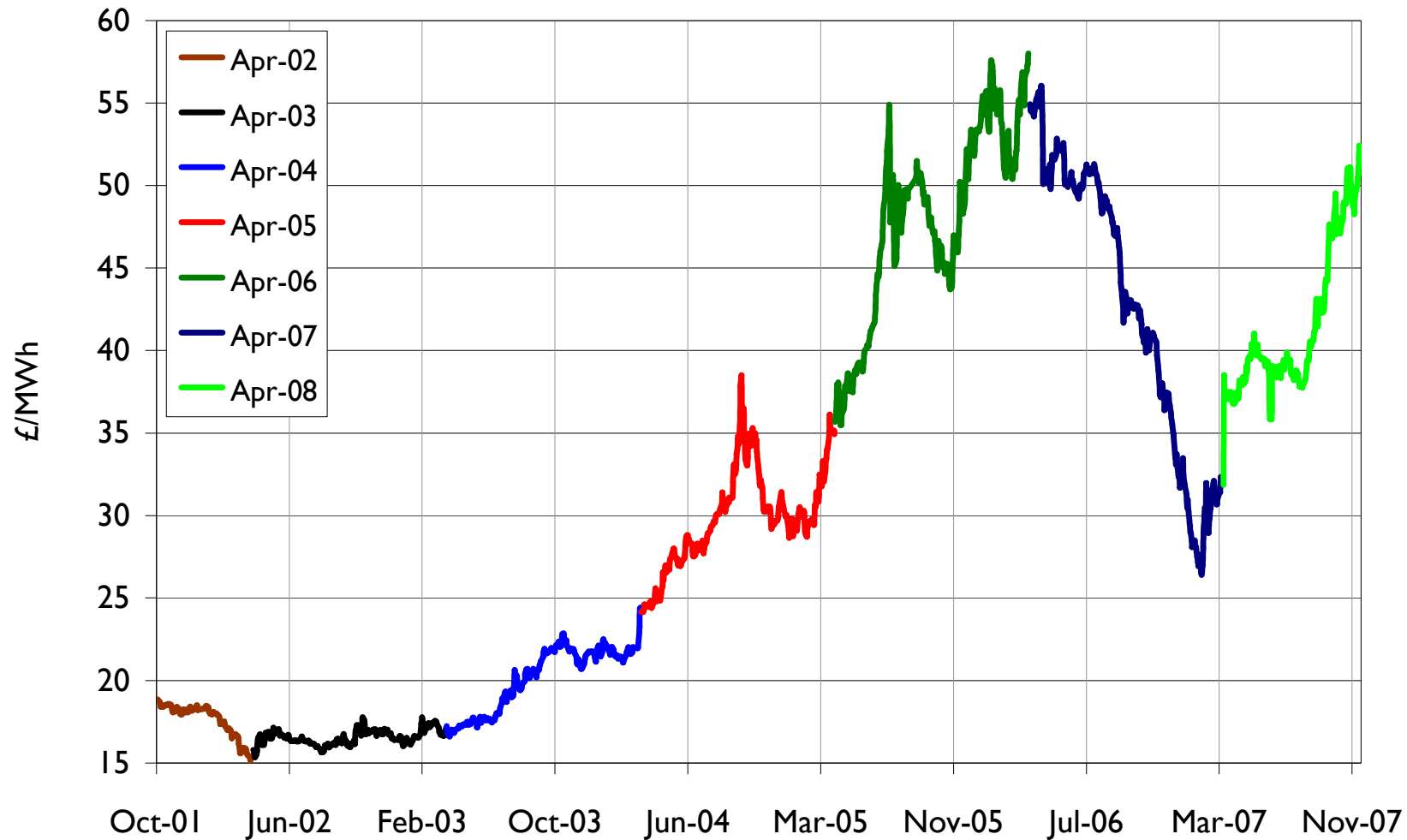
Vertically integrated utilities  
Independent generators  
Producers  
Lenders  
Government and regulators

# The challenge

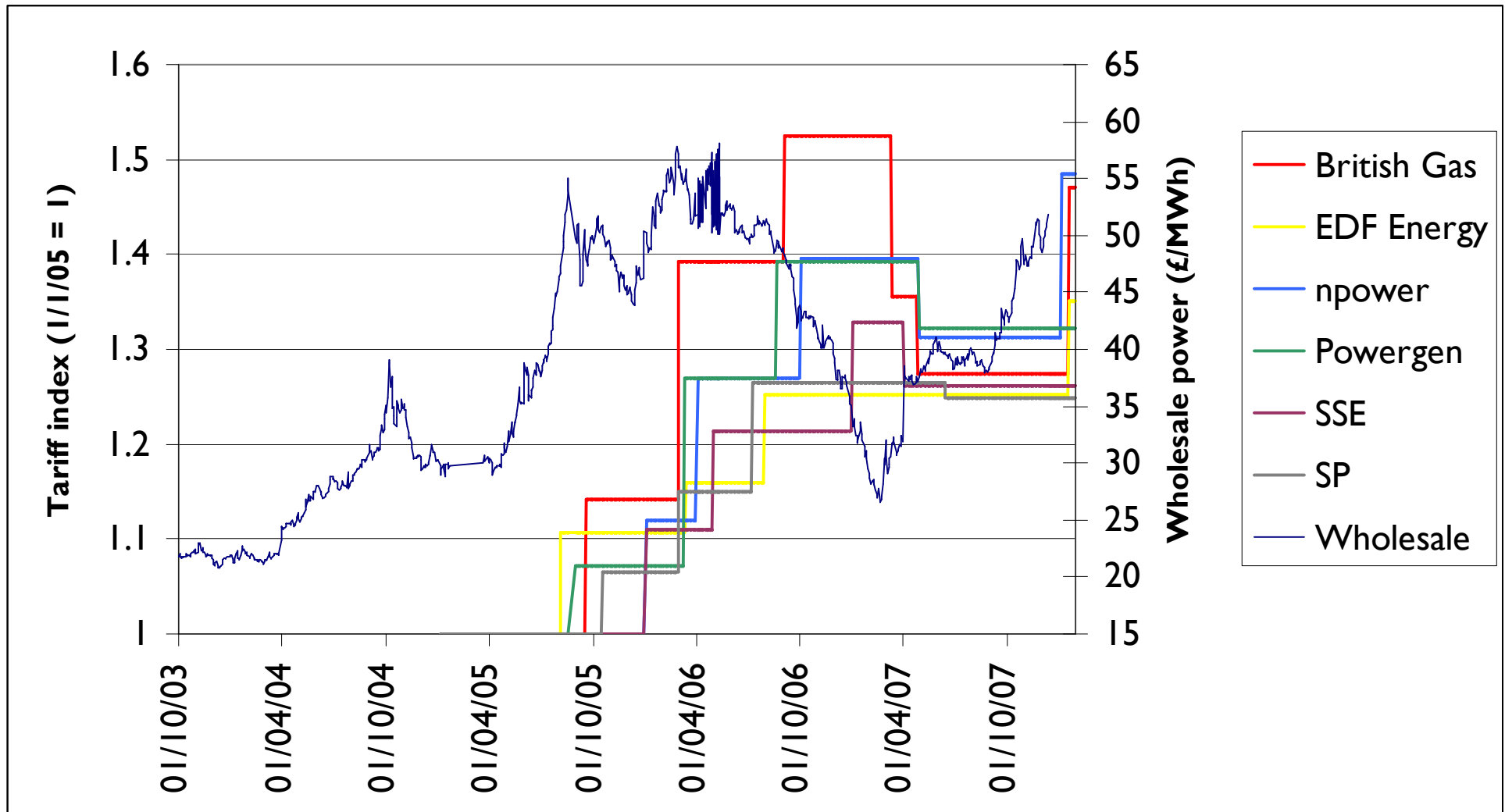


- What is the risk?
- How can we assess a hedging strategy?

# GB power price history



# Domestic electricity tariff price movements



Source: TheEnergyShop.com

# Structure



- Risk mapping
- Risk measure
- Commodity price exposures
- Market share risk
- Risk interactions
- Risk quantification

# Risk mapping



Gross margin

Operational Risk

Model risk

Pricing  
decisions

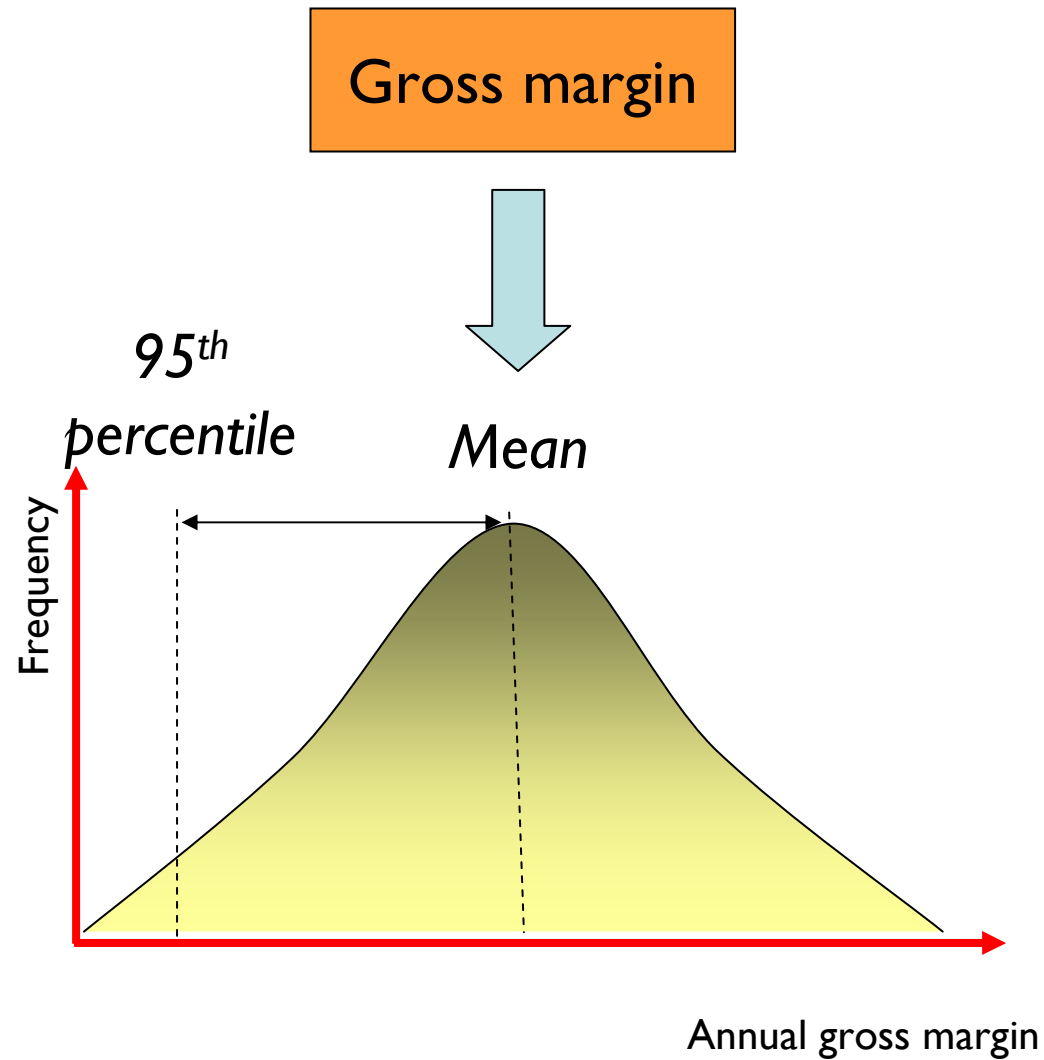
Hedging  
decisions

Competitor  
Pricing Risk

Volumetric  
Risk  
(Weather)

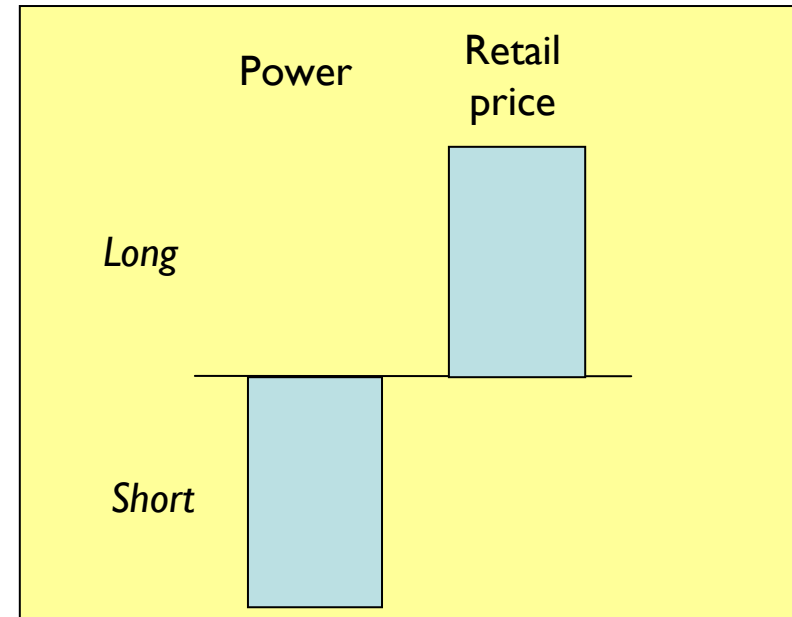
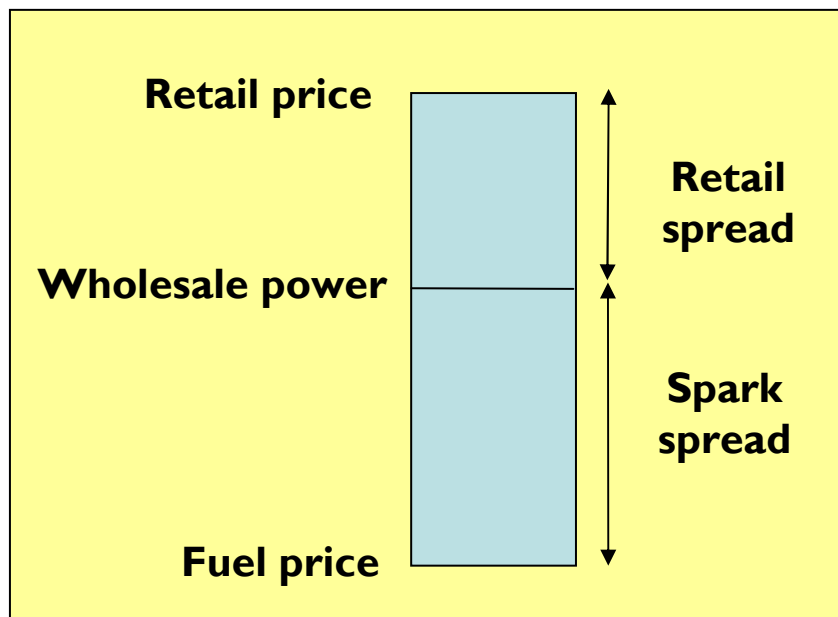
Commodity Price  
Risk

# Risk measure





# Retail portfolio exposure

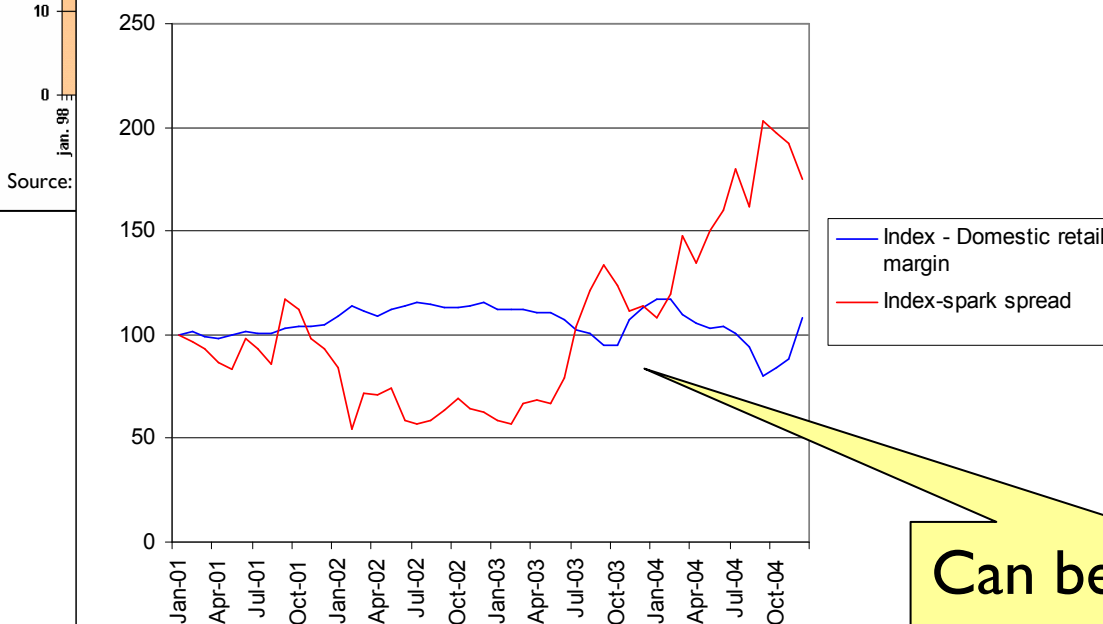
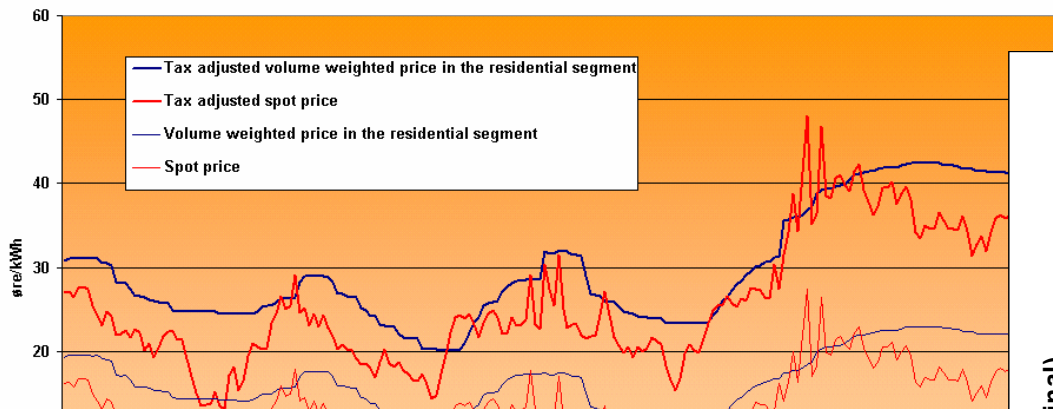


# Retail prices...

Can closely follow wholesale prices

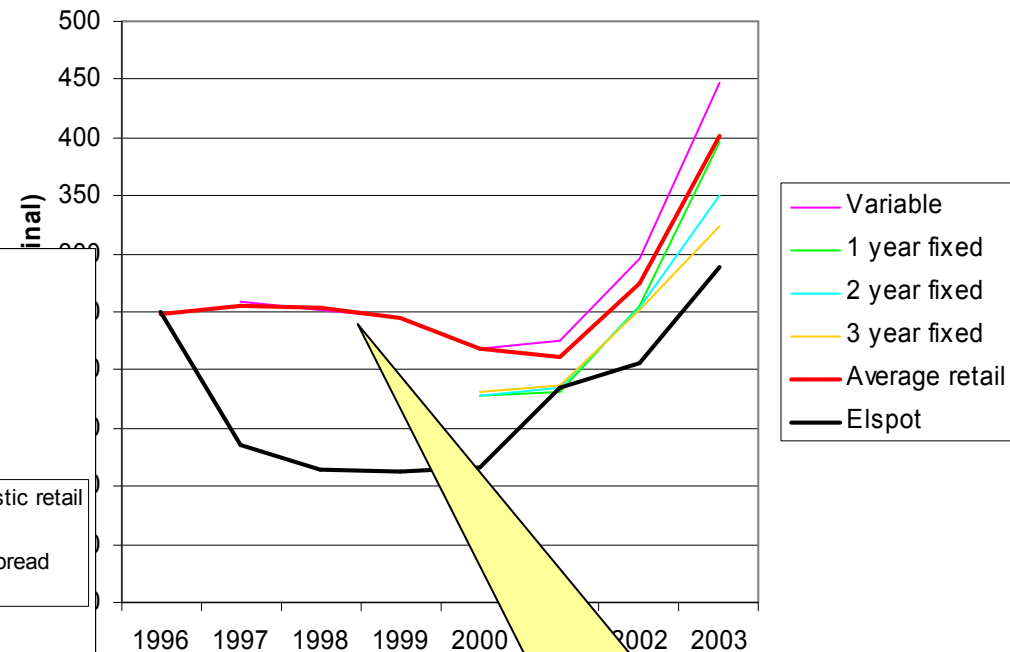


Volume weighted prices in the residential segment and spot prices



Source: Ofgem Domestic Competitive Market Review, July 2004, wholesale energy prices

Sweden

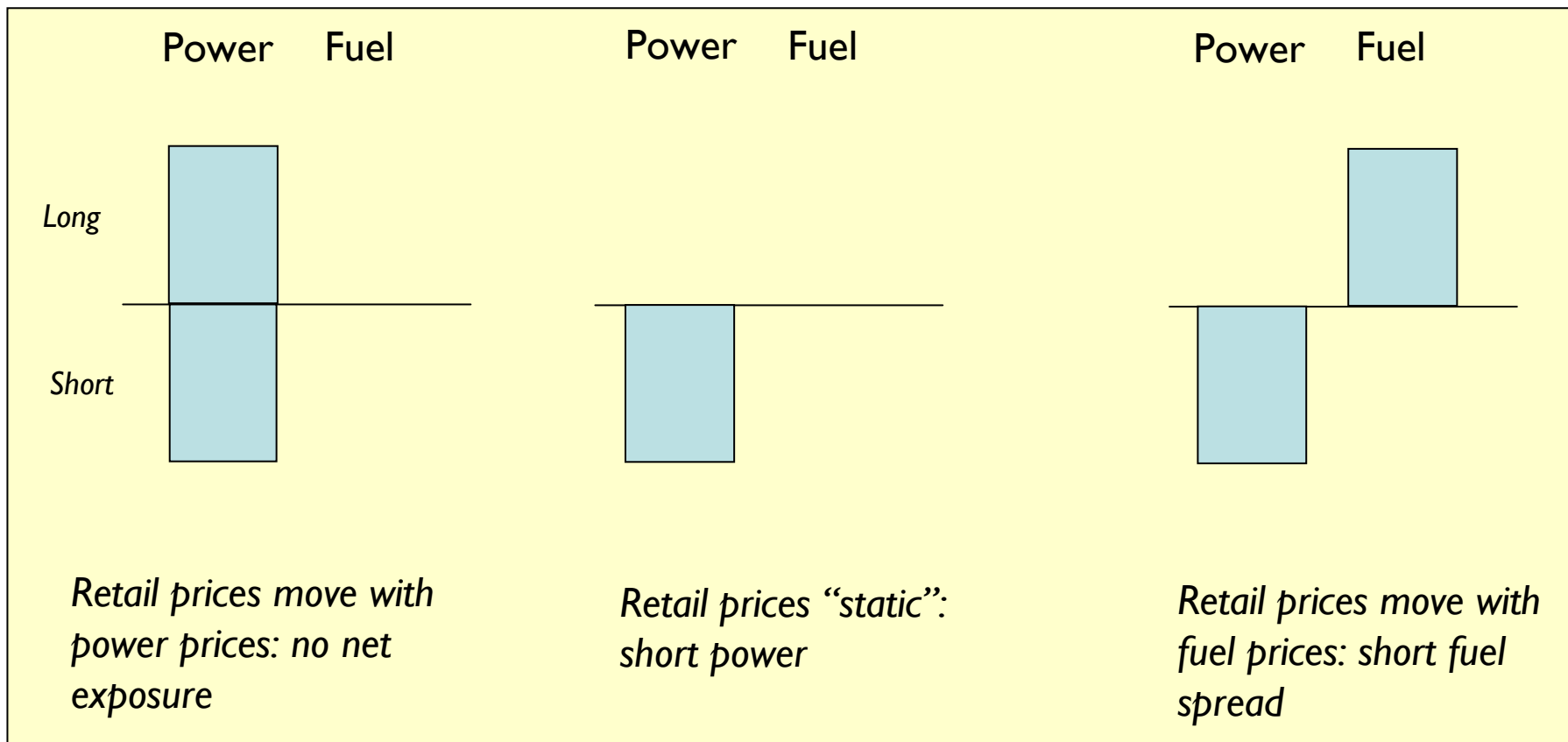


Amundsen and Bergman, 2003, NordPool

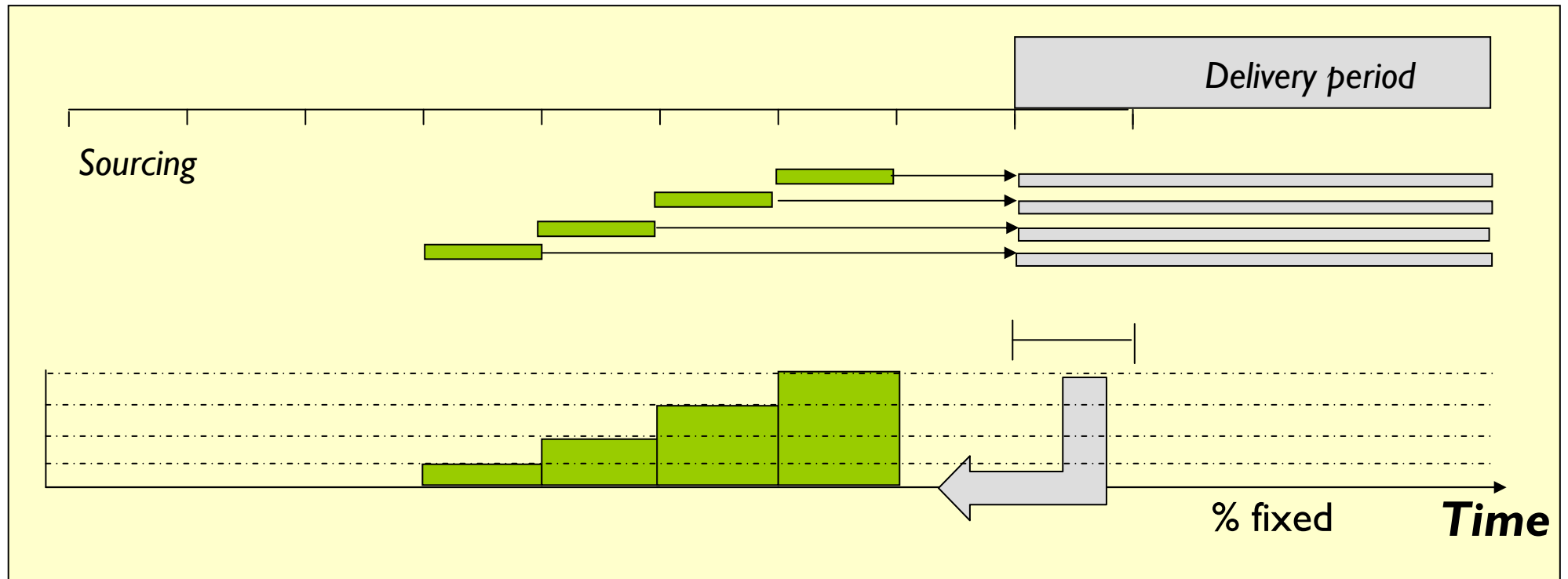
Can be correlated to fuel prices

Can remain static (for periods)

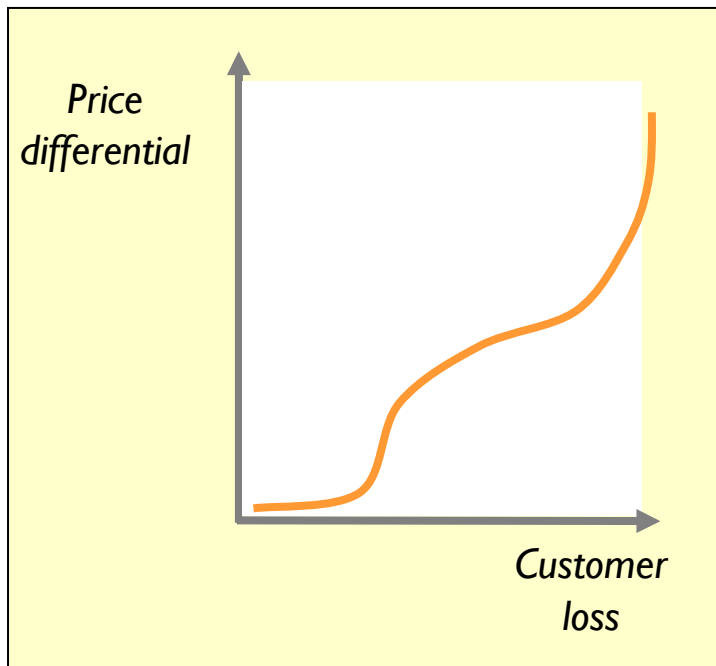
## ...and long term exposures



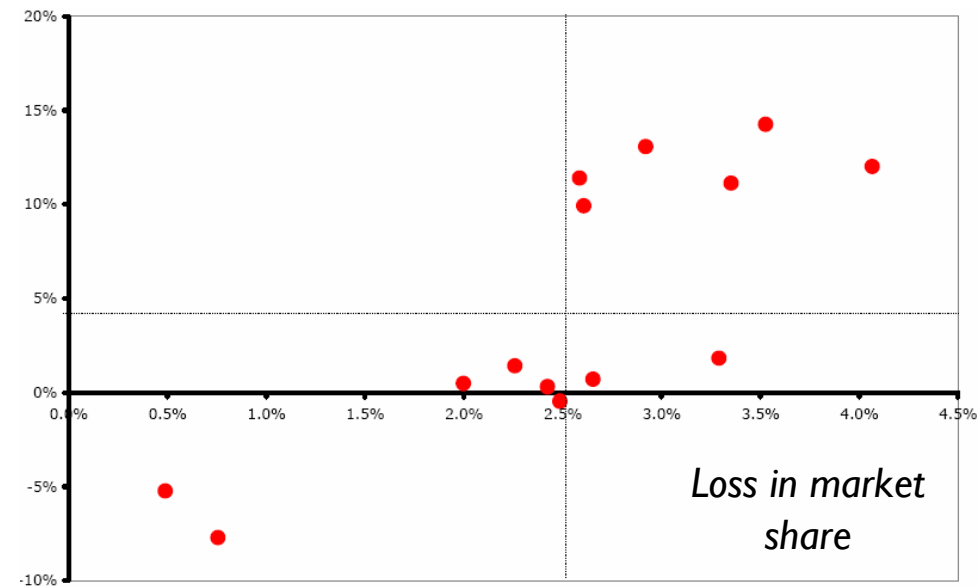
# Medium term exposures



# Price setting and market share



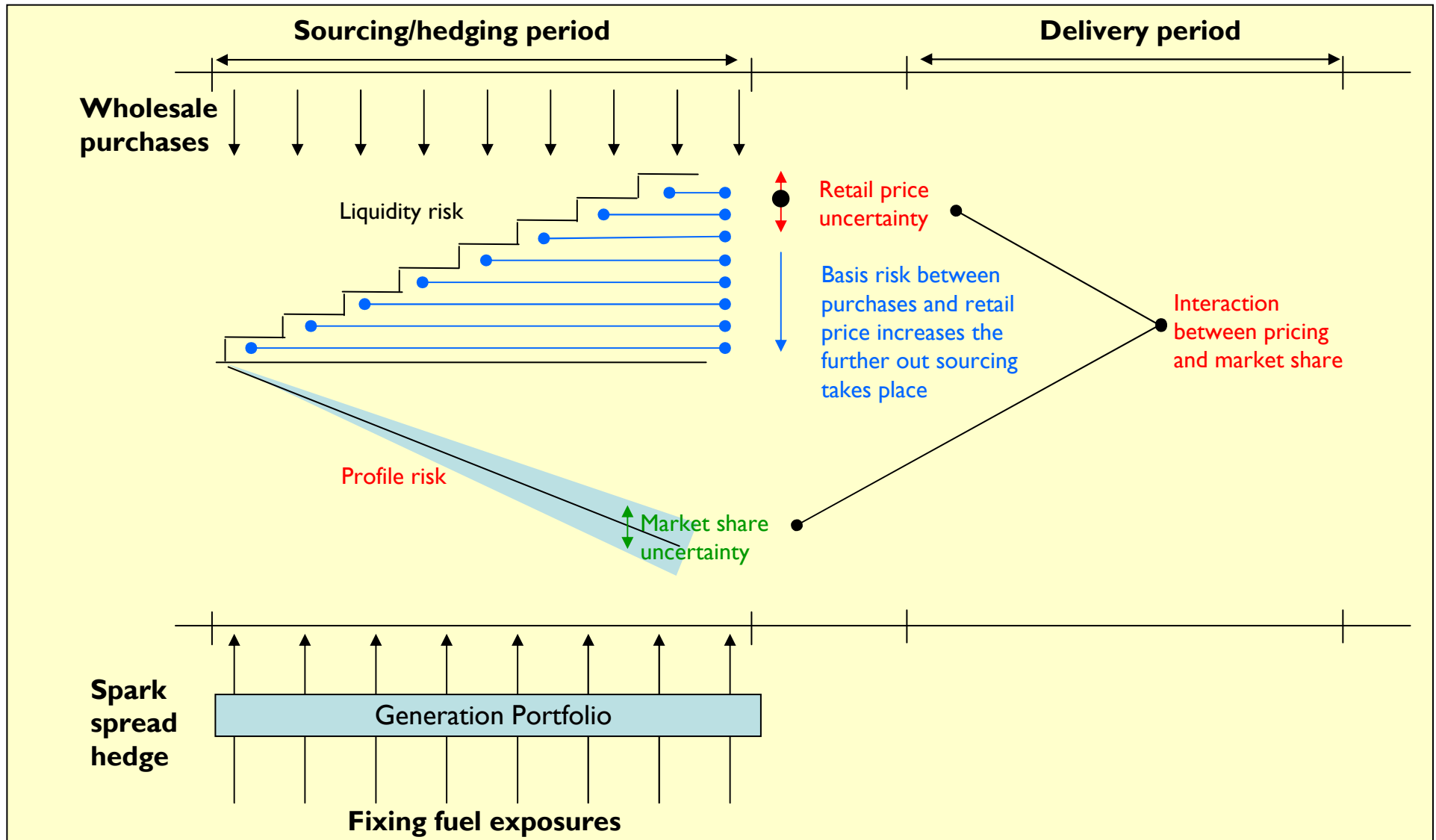
*Price relative to average (incumbent)*



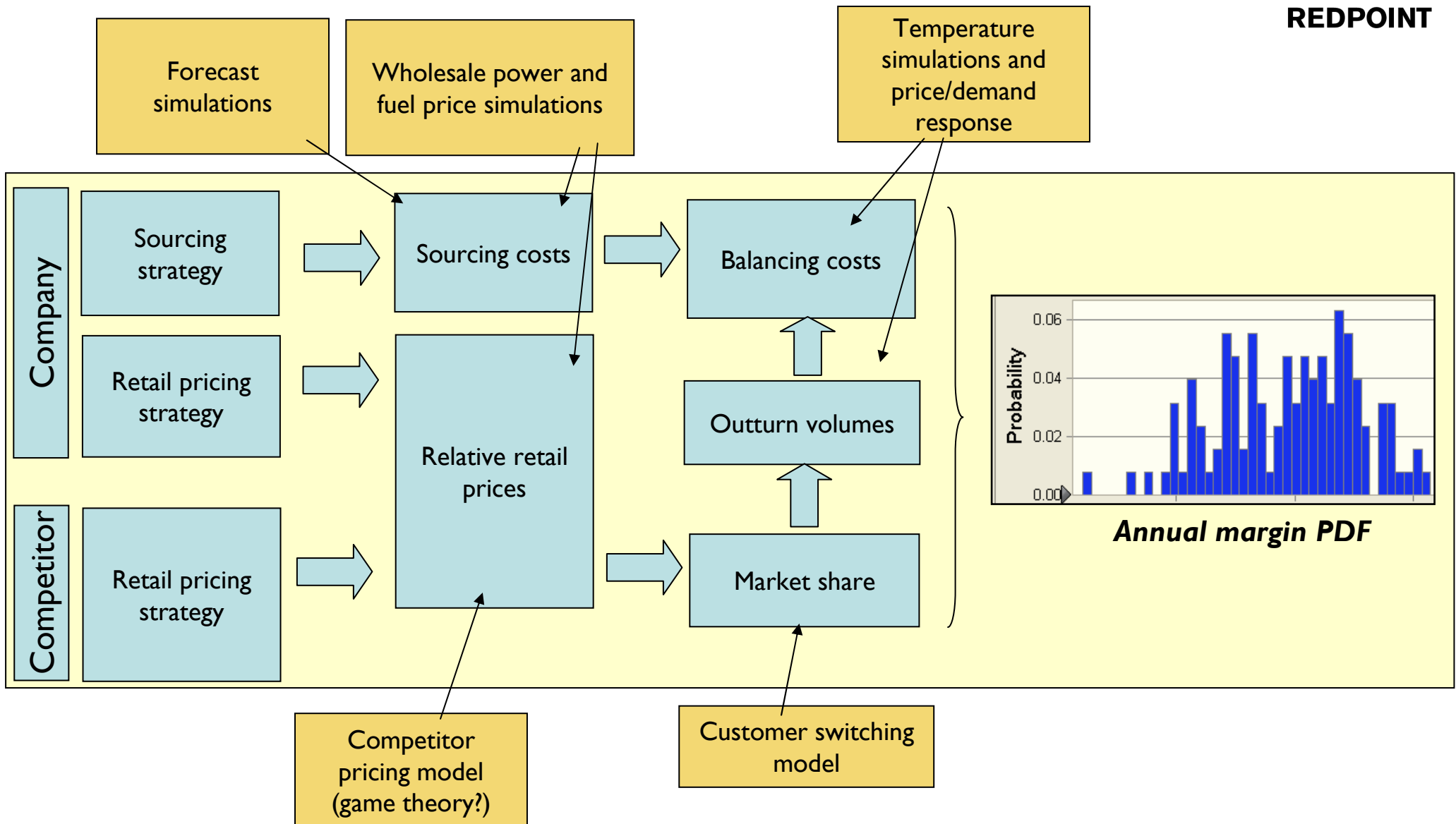
(12 months to March 2007)

From: Ofgem Domestic Retail Market Report, June 2007

# Risk interactions



# Risk quantification and modelling challenges



# Conclusions



- Historically, retail divisions have often been seen as “low risk”
- In a competitive market, however, the interplay of competitor and customer behaviour means that domestic portfolios pose a significant risk measurement problem
- Exposures depend on retail price behaviour driven by competitor strategies
- There is a critical interaction between hedging decisions, pricing and market share
- Attempting to quantify this is important for risk capital allocation and to support hedging and pricing decision-making
- A range of modelling challenges exist in assembling the tools to achieve this



# Questions?



Oliver Rix

[oliver.rix@redpointenergy.com](mailto:oliver.rix@redpointenergy.com)

+44 7790 017576