

Price Transmission and Market Growth in Different Supply Chains

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Introduction

- Demand growth
 - A main driver for increased production of some products
 - The main driver for bringing some species to the brink of extinction

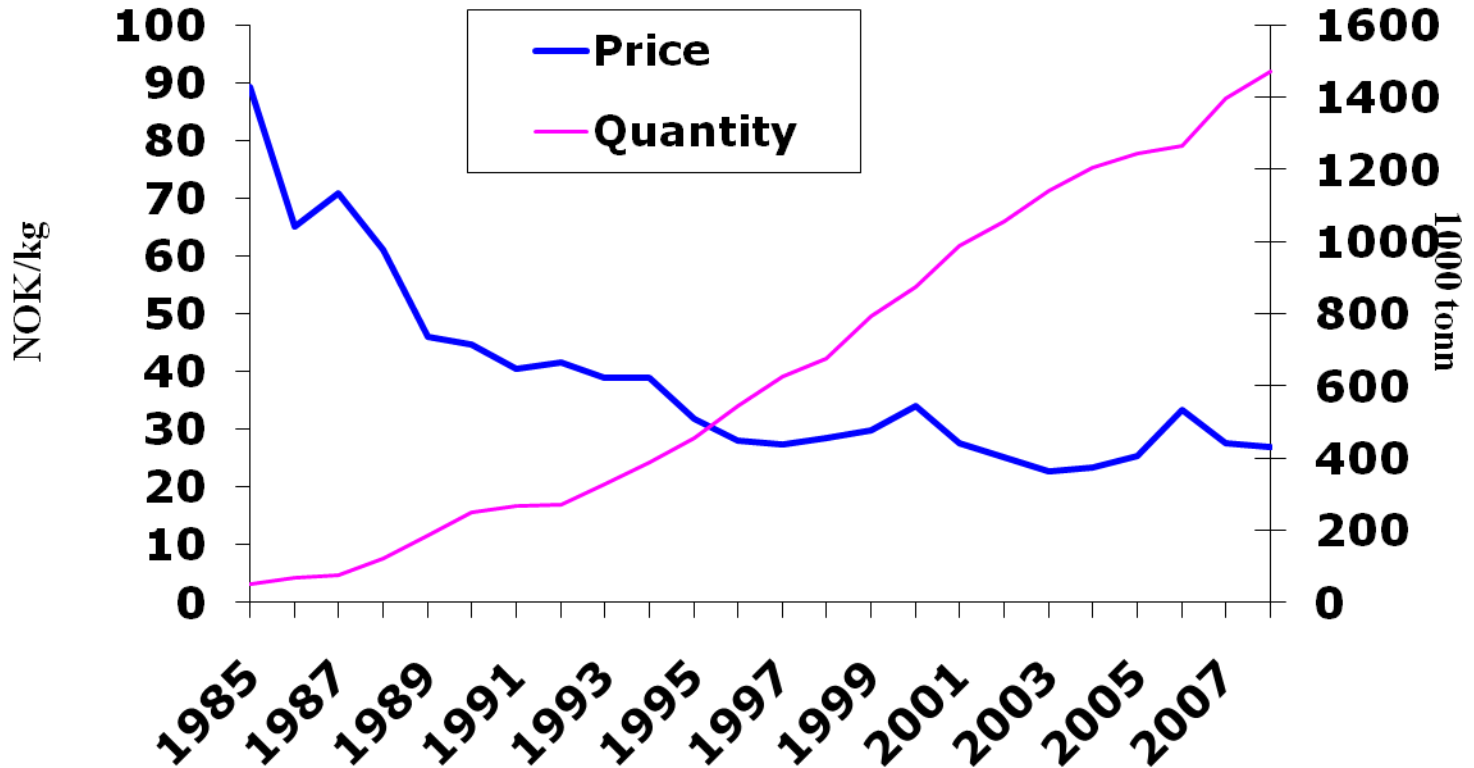
- Price transmission and organization of supply chains

Why is aquaculture production increasing?

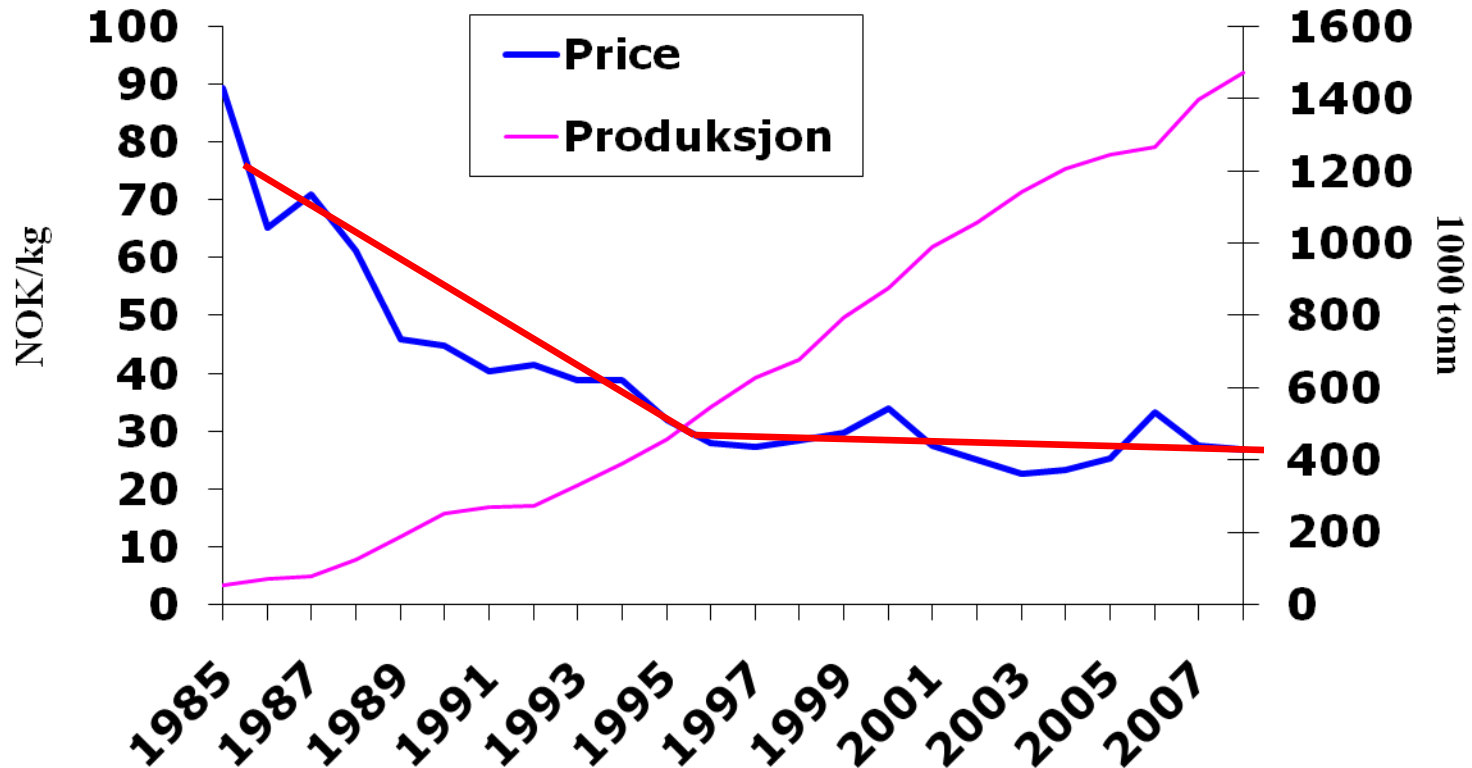


- Two main explanations
 - 1. Lower production cost makes it profitable to sell the product at lower prices
 - 2. Increased demand because of changed consumer preferences makes the consumers willing to buy more at the same price
- Until the mid 1990s productivity growth was the main engine in the growth of salmon aquaculture
- After this, demand growth has taken over as the main engine, as productivity growth has slowed

Norwegian export price and global production of Atlantic salmon: Demand growth is becoming more important



Norwegian export price and global production of Atlantic salmon: Demand growth is becoming more important

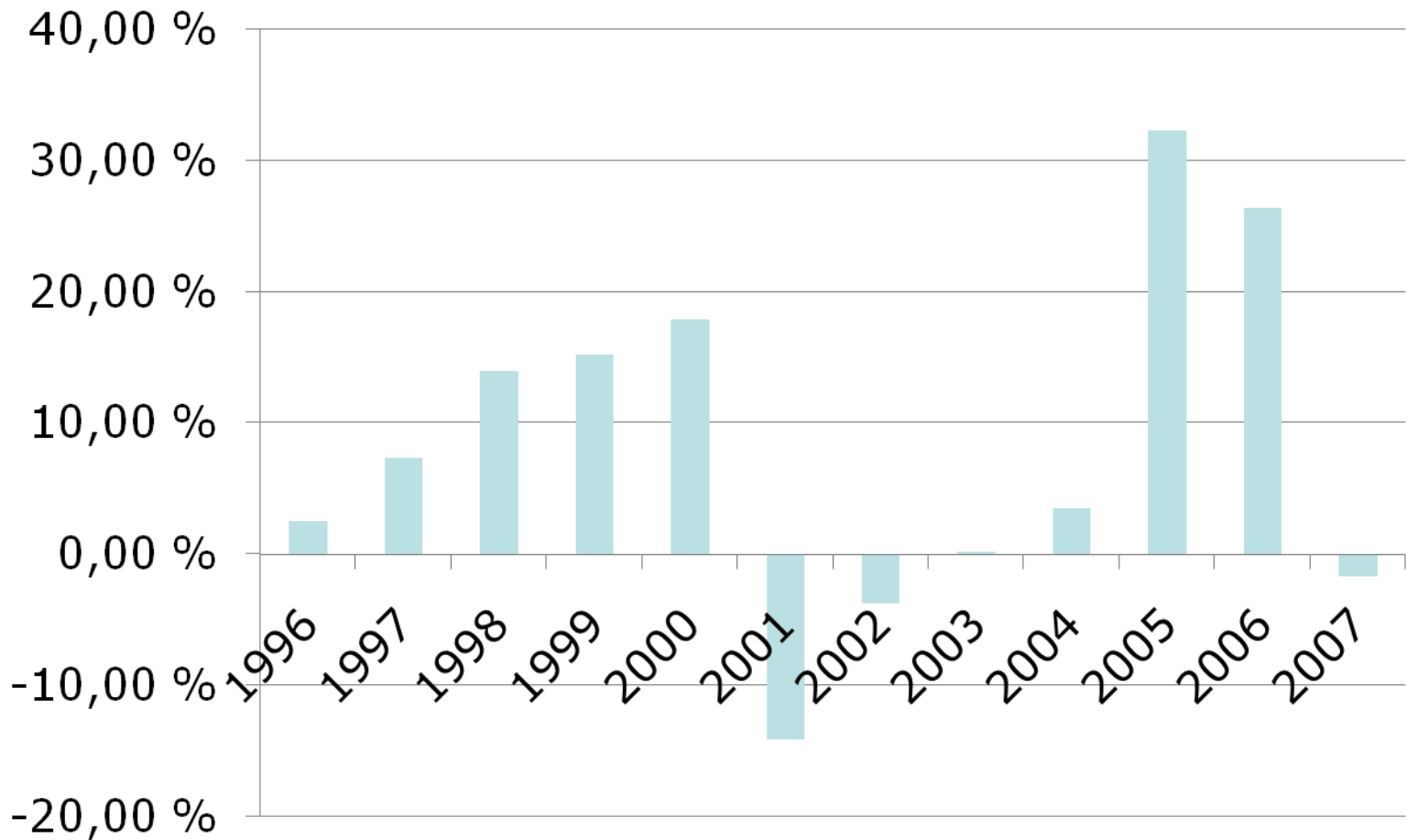


Demand growth is becoming more important

- Profitable growth during the last decade has been possible because of demand growth
 - Demand growth is primarily due to product development and new market channels
 - For many new products, there is a large degree of capital binding in the production

- Traditionally measured with trends and indicator variables
 - DEA and other nonparametric approaches

Demand growth, EU



Other species

- Shrimp
- Pangasius and tilapia
- Sea bass and sea bream
- Bluefin tuna
- Cod

- Interaction

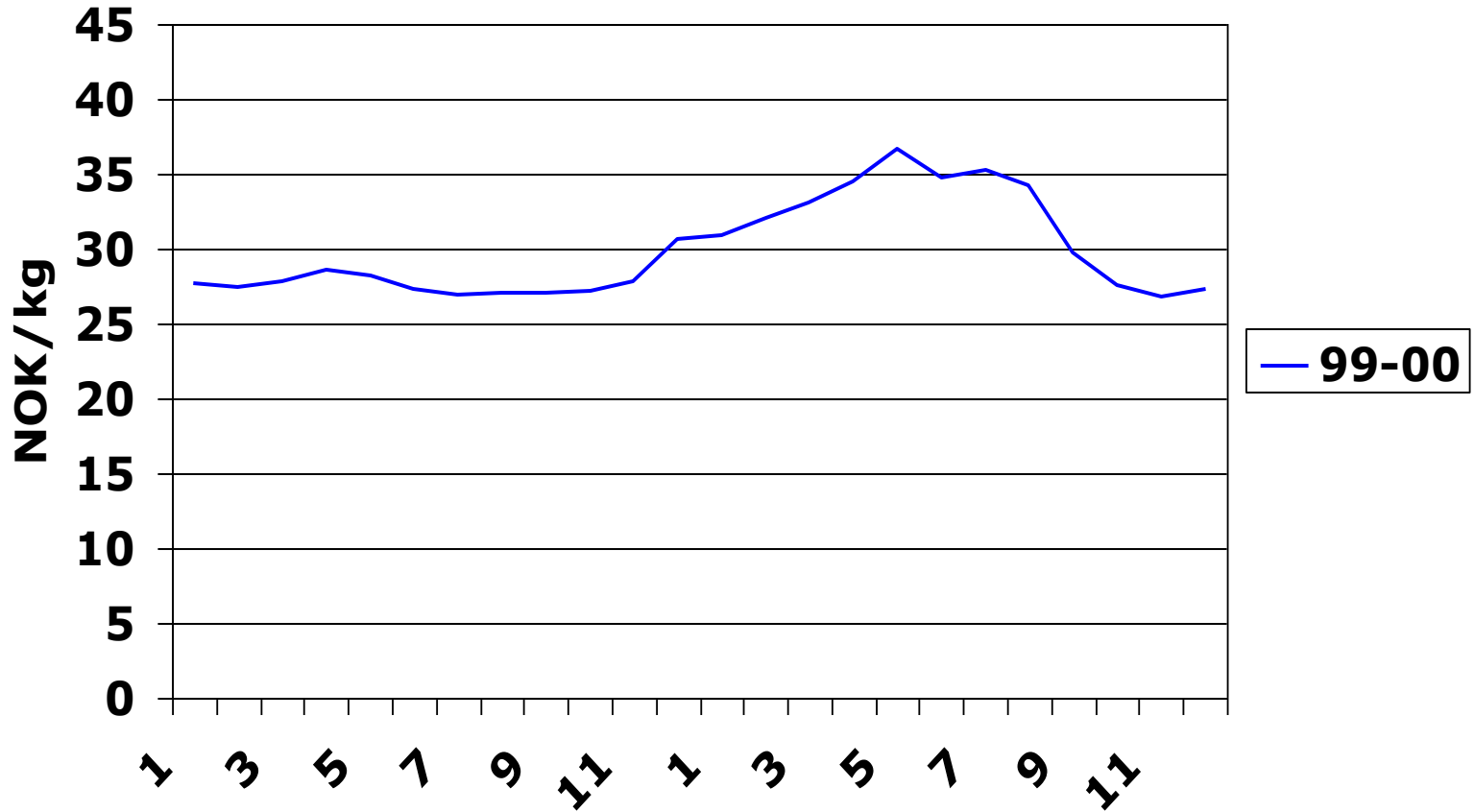
Price cycles are unavoidable

- Seafood supply chains have changed from traditional spot oriented chain to chains with a significant number of new transaction forms,
 - Salmon most advanced
 - Mainly after the salmon has left Norway and the UK
 - Also gives a number of new types of risks in the supply chain
- As long as nobody can predict productivity and demand growth with sufficient precision, there will be price cycles
 - Chile and exchange rates seems to be most important for the current salmon cycle
 - Pangasius is hit by the financial crises
 - Sea Bream
- Is present in all commodity markets
 - The largest commodity market in the world, crude oil is as exposed as any other market

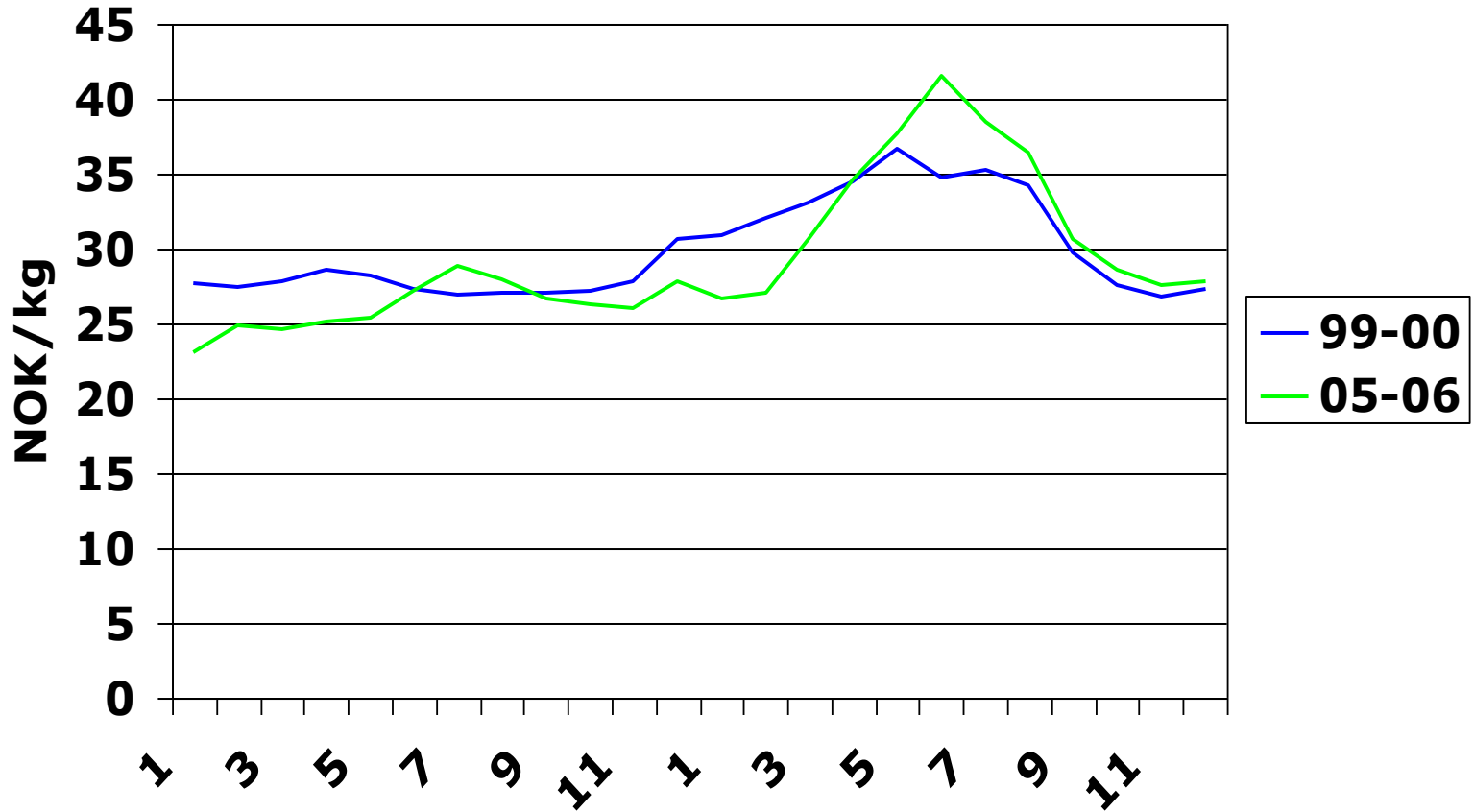
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- The price is the most important mechanism to ration any product

 - Still, one may wonder if salmon prices above 40NOK/kg is necessary in short period when there at any point is significant quantities available in the pens and production cost is around 20 NOK/kg.

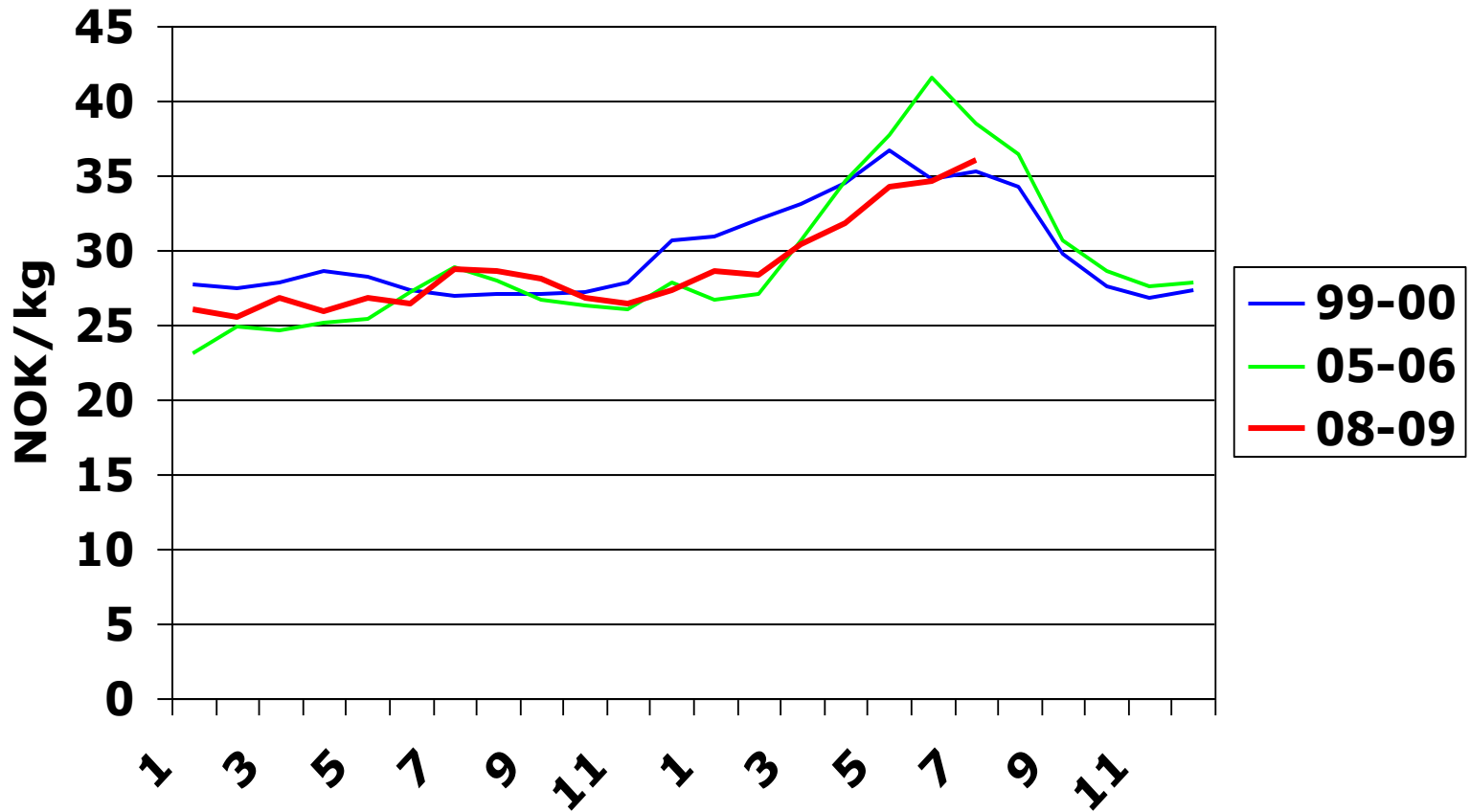
Salmon price during "bubbles"



Salmon price during "bubbles"

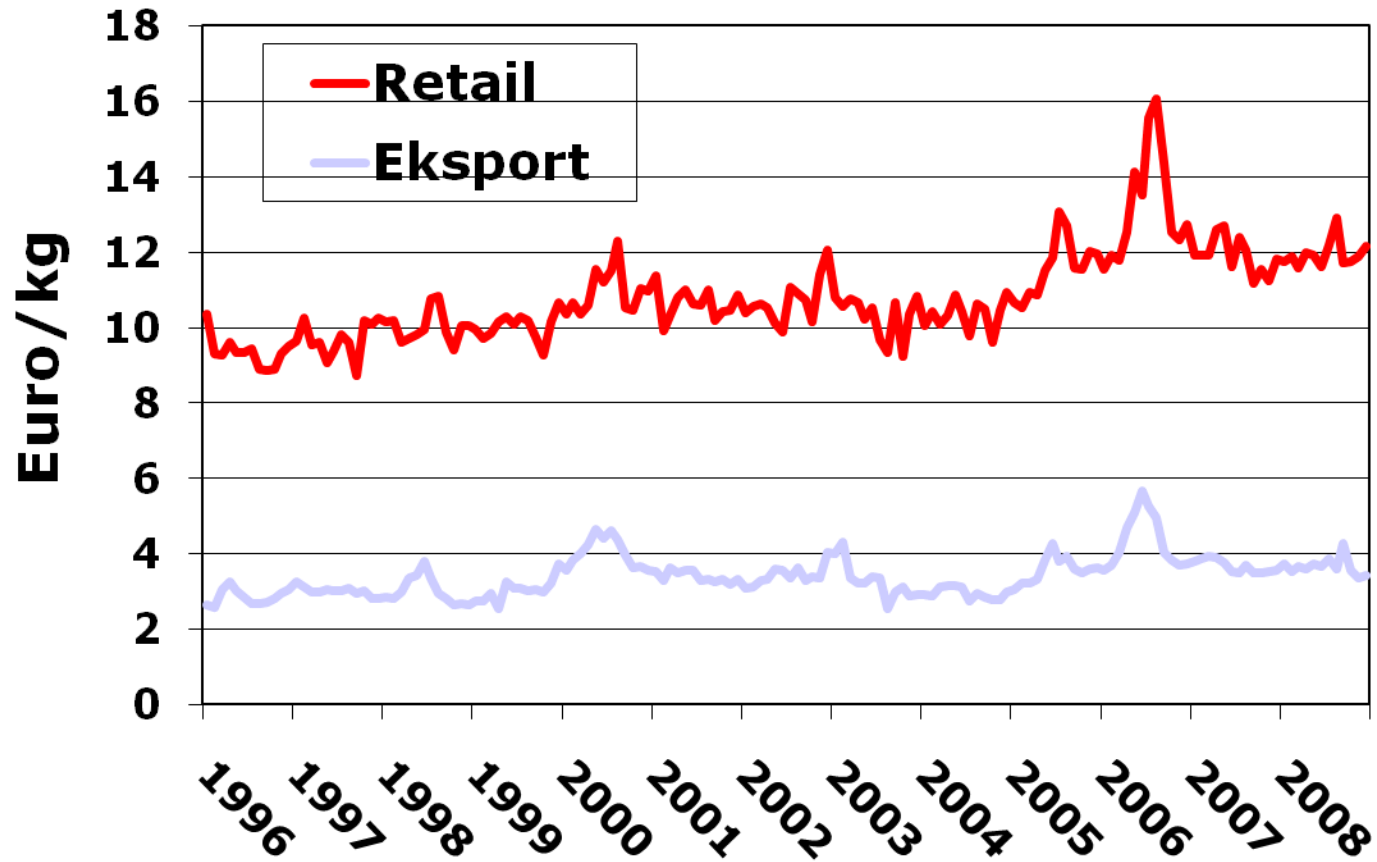


Salmon price during "bubbles"

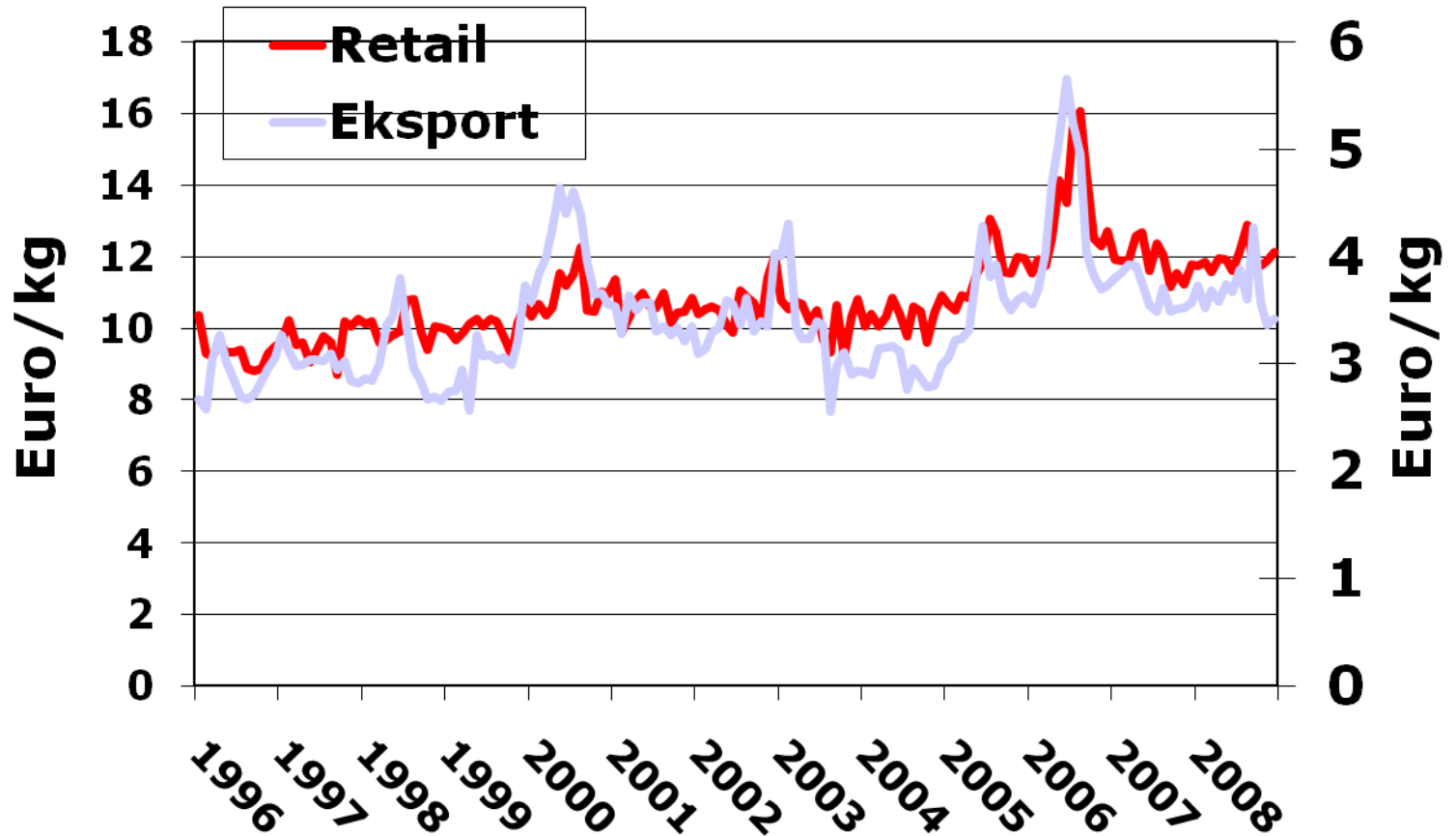


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- It is a limited supply together with the fact that some buyers must have salmon that create these bubbles
 - Is there some particular factors during some summers that creates these bubbles in the years 2000, 2006 and 2009?
 - A tight market seems to be a necessary but not sufficient condition

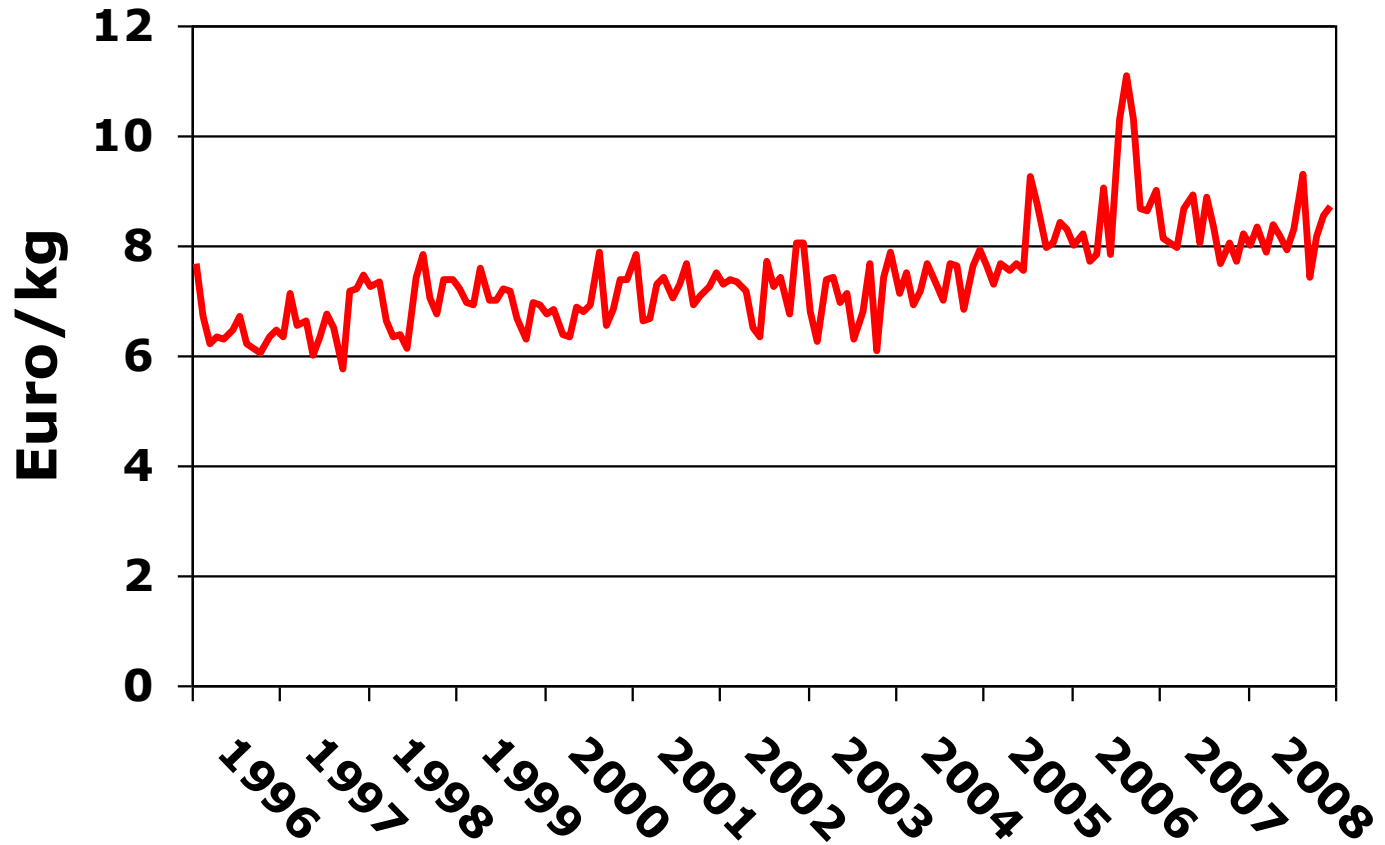
Norwegian and French fillet prices



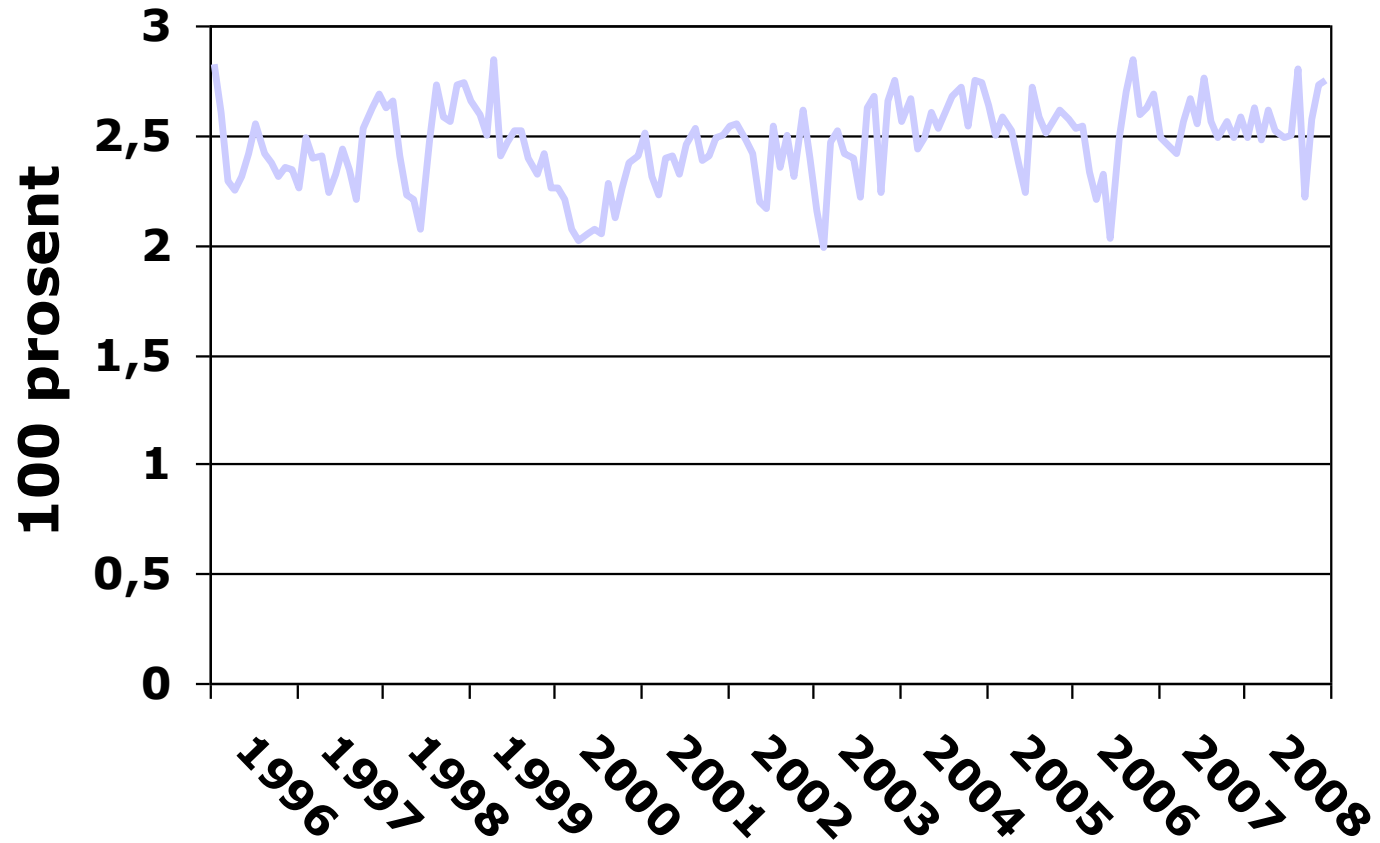
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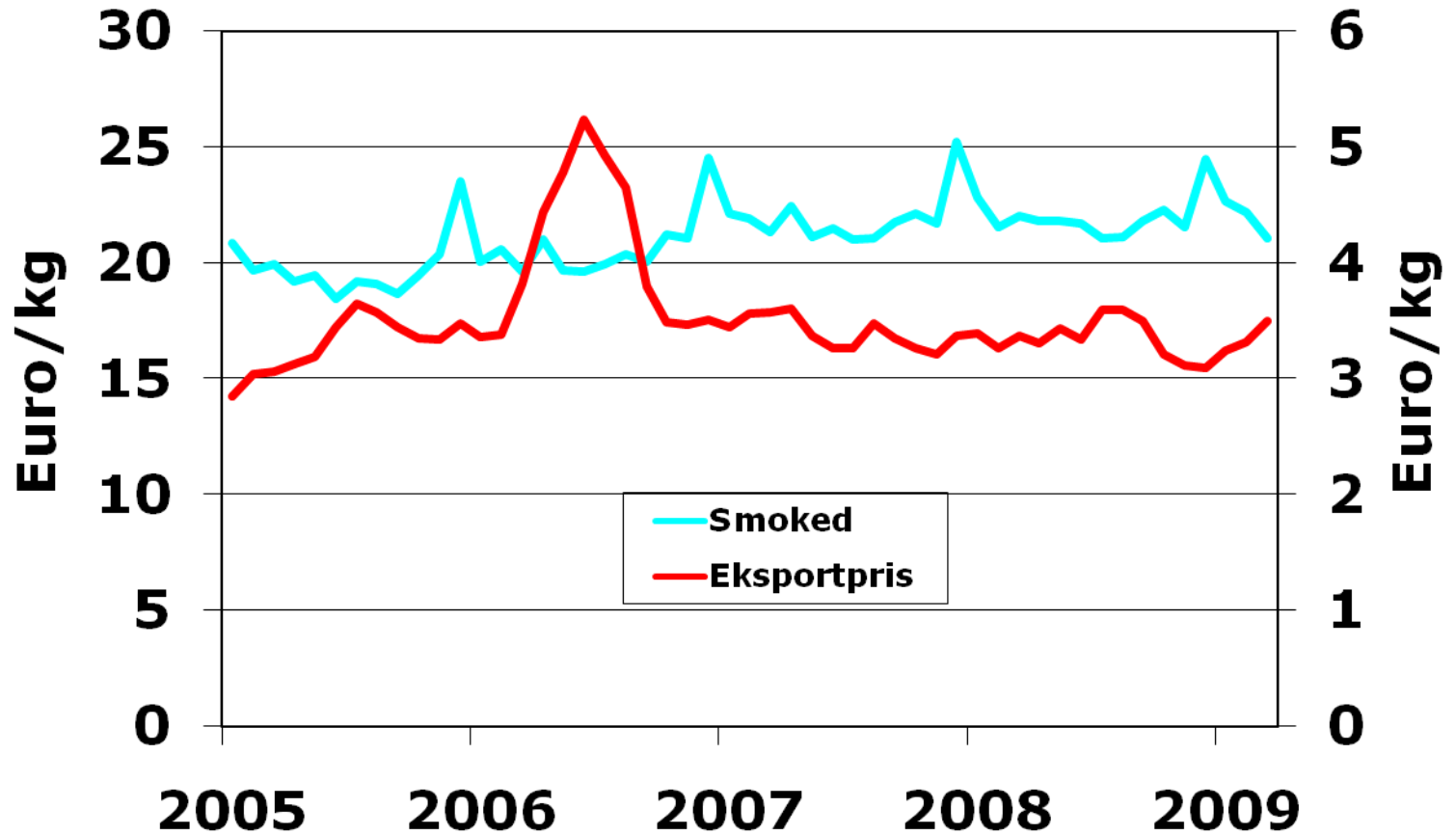
Margin



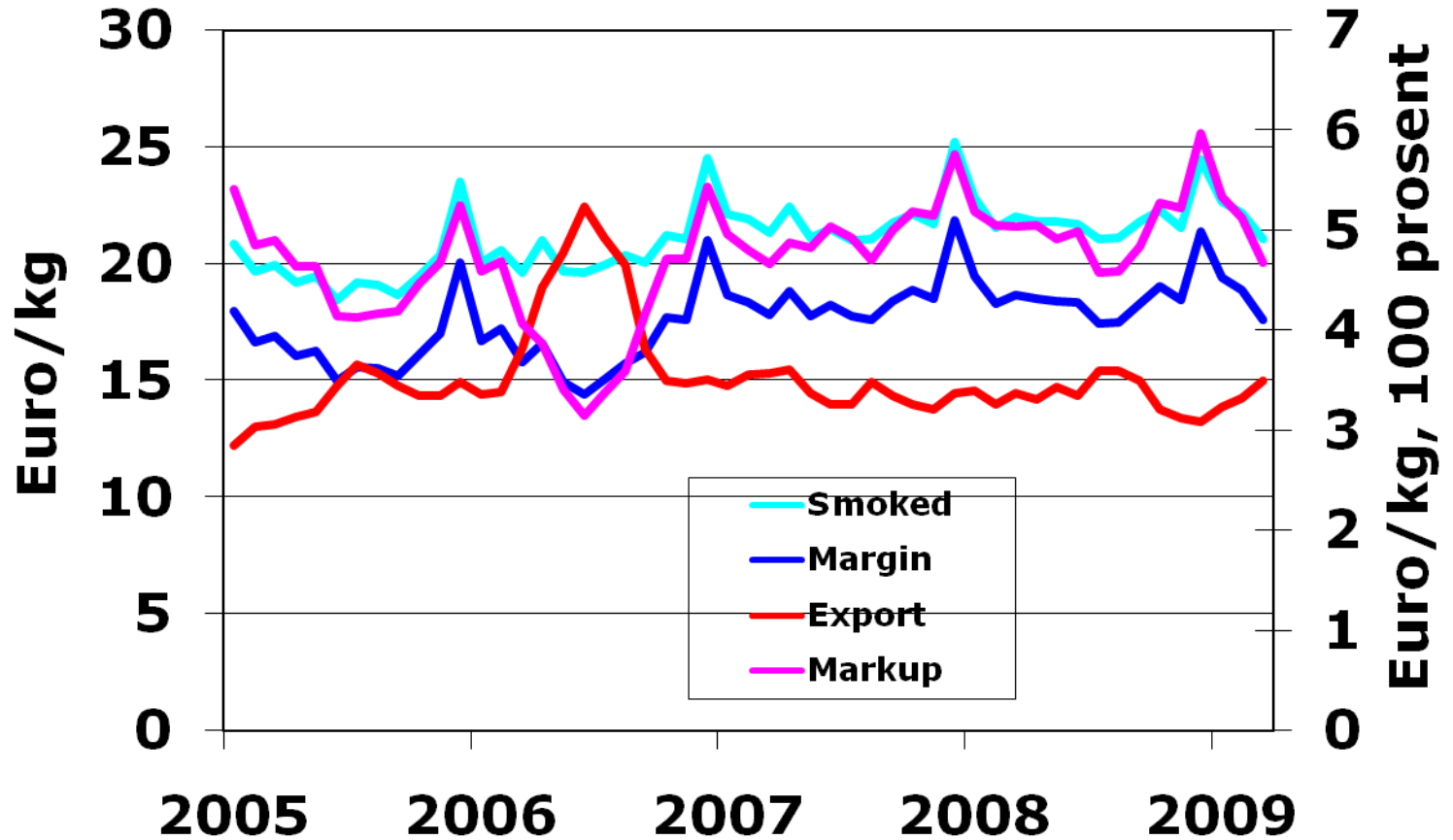
Percent markup



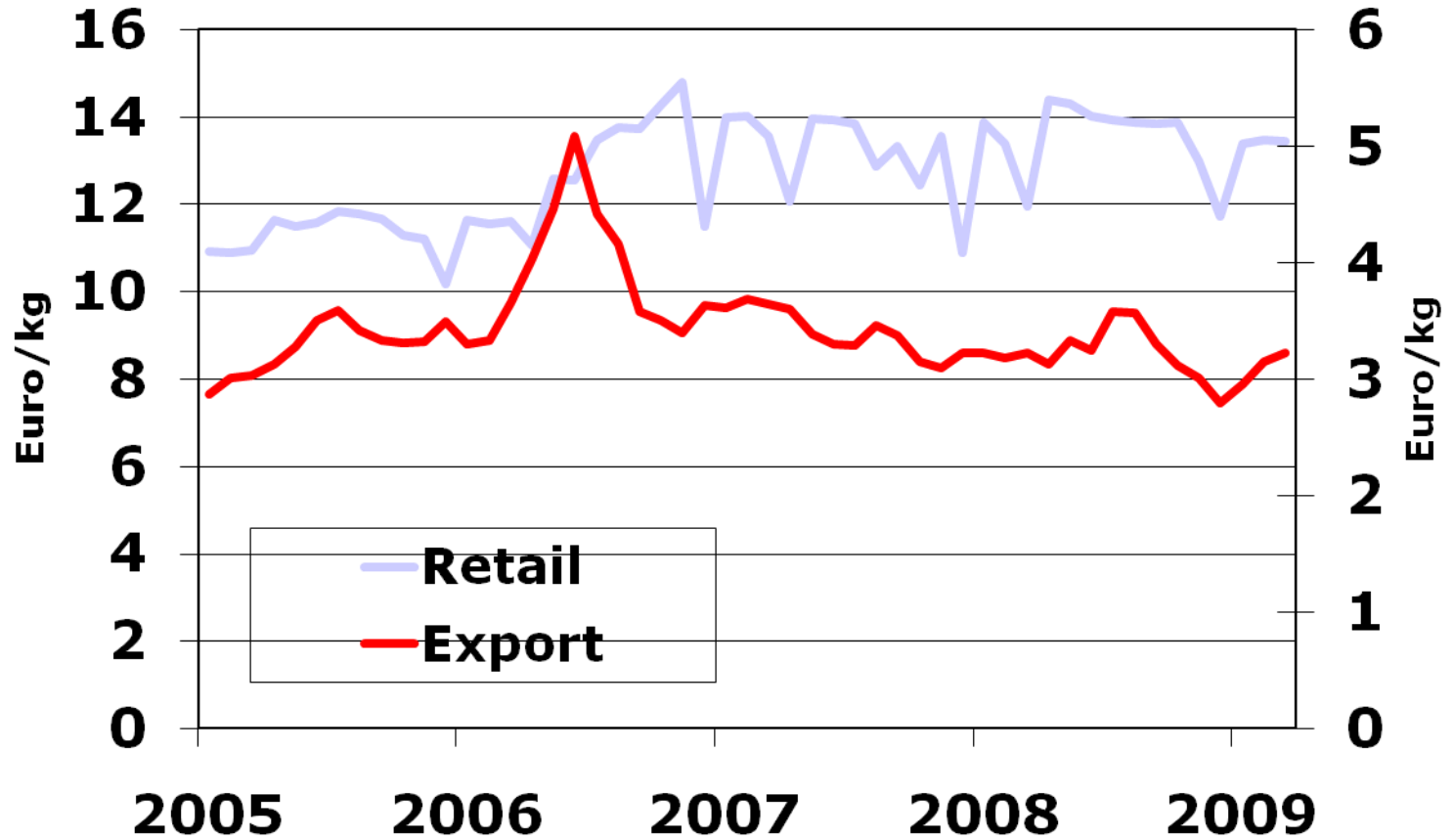
France, smoked salmon



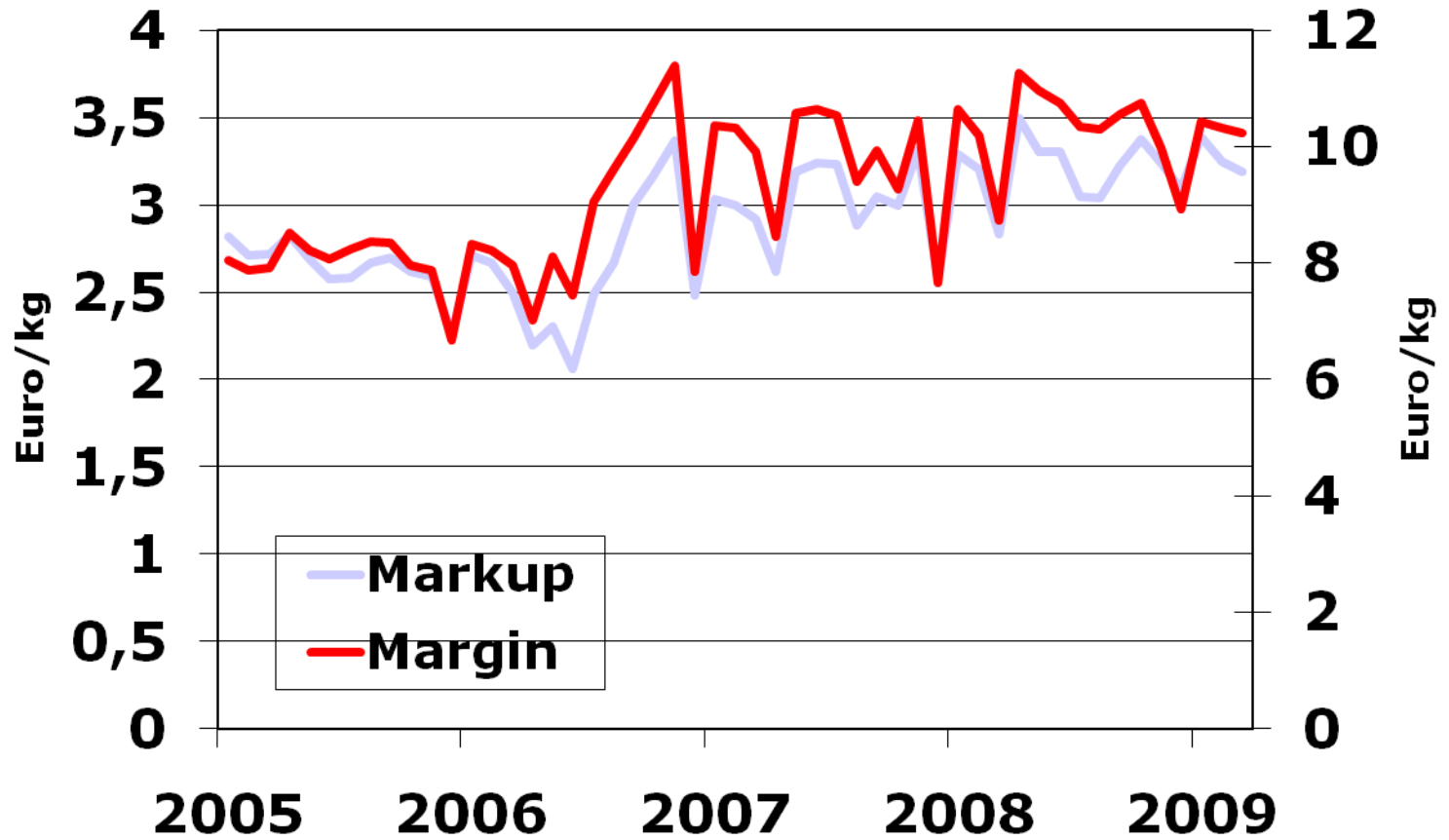
France, smoked salmon



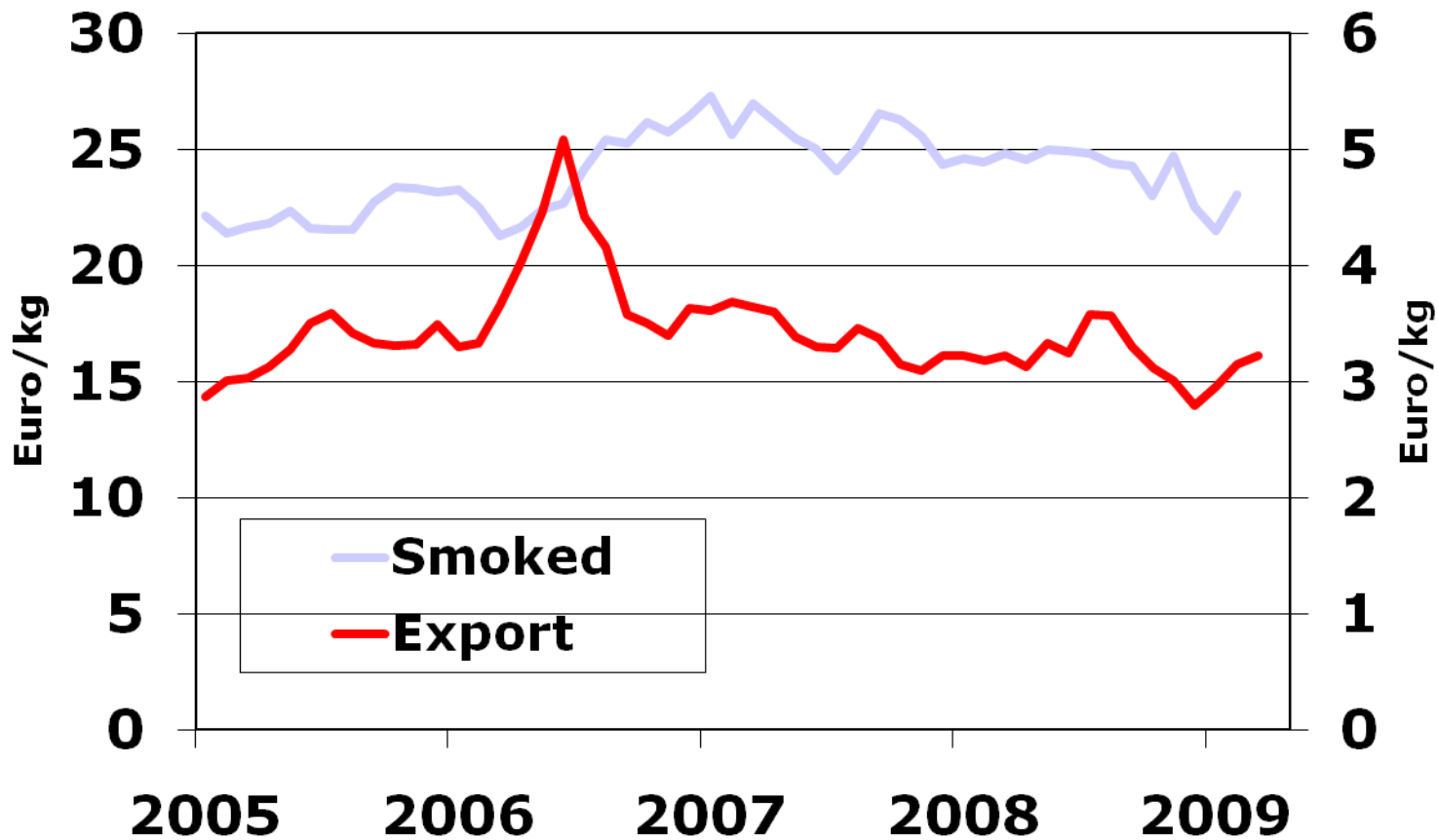
UK, fresh fillets



UK, fresh fillets



UK, smoked salmon



Price transmission differs

- Price cycles is transmitted differently in different supply chains
 - The cycles also influenc profitability for companies in different chains differently

- One can observe price transmission elasticities that are one and basically zero, and that some price changes are permanent while others are being absorbed by intermediaries
 - Implies different risk premium in the different supply chains

- Price transmission tend to be high upstream

We know too little about intermediaries

- The effect for smoked salmon in France is most likely the most representative for more processed products
 - Retail chains demand stable prices in the short run
- The companies must then have financial ability to get through the cycles, or find other means for insurance
 - But this requires capital that must give a return
 - In periods with high prices, some intermediaries will disappear, and reappear (as new firms) when prices come down
 - Both structures create risk costs in the supply chain, and reduce the competitiveness for salmon

Other measures

- Contracts
- Vertical integration
- Futures (Fish Pool)

- All approaches gives a smother cash flow, but as costs

- With futures the risk premium is most explicit

Other issues

- Reexports
 - China, then Vietnam and now India
 - Polan

- Cod
 - The share of dried and salted products are higher when prices are high
 - The frozen industry has moved to China

- Pangasius
 - As a cluster
 - In processing companies
 - In India

Per capita seafood consumption, USA

