

# Value chain in pig production

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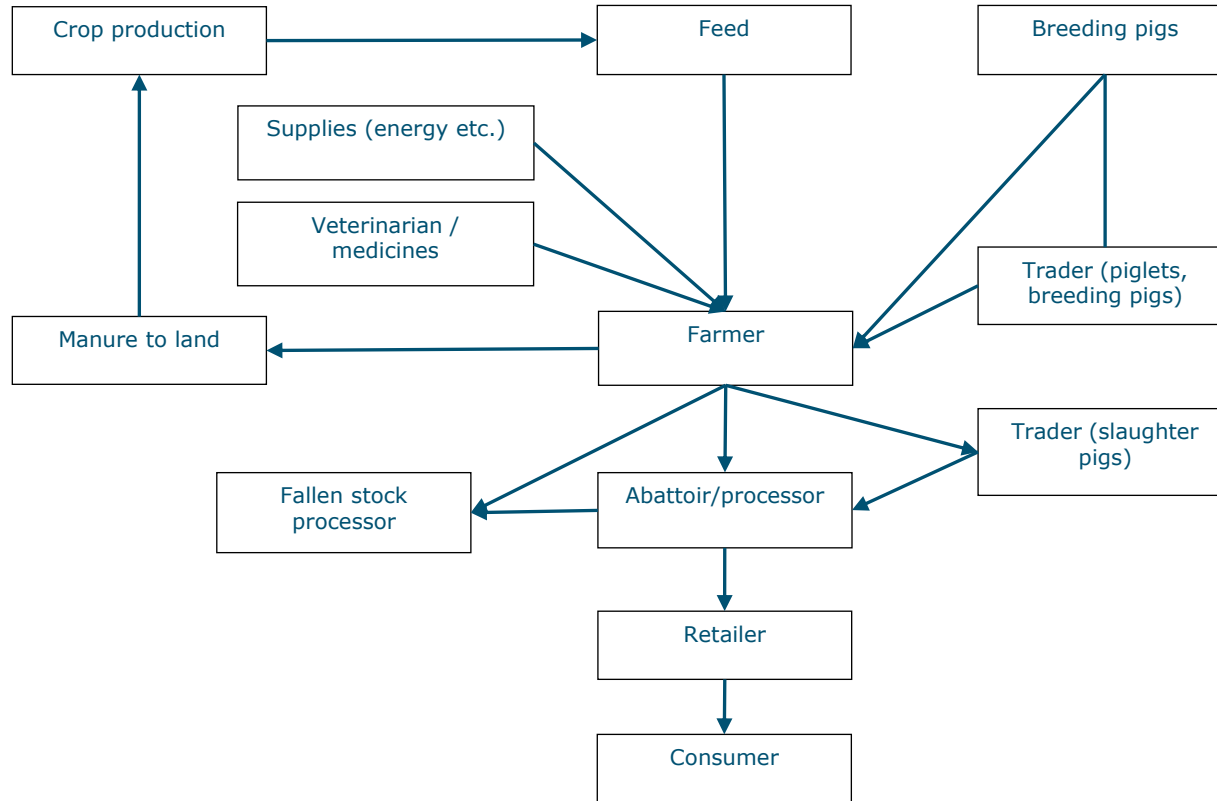
# Learning goals today

- Understanding supply chain
- Understanding supply chain failure costs principle
- Understanding carcass valorisation principle
- Understanding organization of supply chains

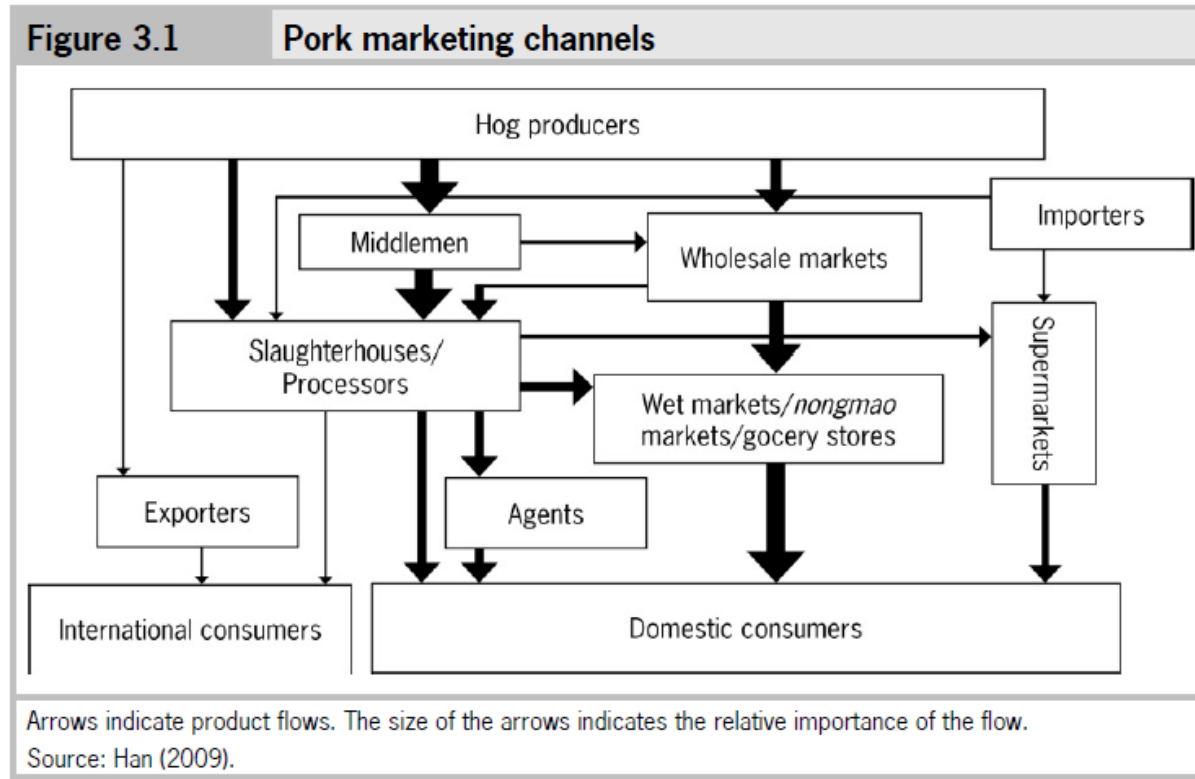


## 1. Supply chain

# Supply chain (general overview)



# Overview pork marketing channels in China





## 2. Failure costs



# Failure costs: lack of tuning among partners

- Failure costs are unnecessary costs, due to lack of tuning among partners in a supply chain. They result from optimization per part of the supply chain, not optimization of the entire supply chain. E.g.:
  - Payment of pigs on live basis (filled stomachs)
  - Bad fit in housing circumstances between piglet producer and finisher farmer
  - Feed producers changes diet formulation, to apply cheap ingredients
- Solution: improved tuning among partners; financial incentives



### 3. Carcass valorization



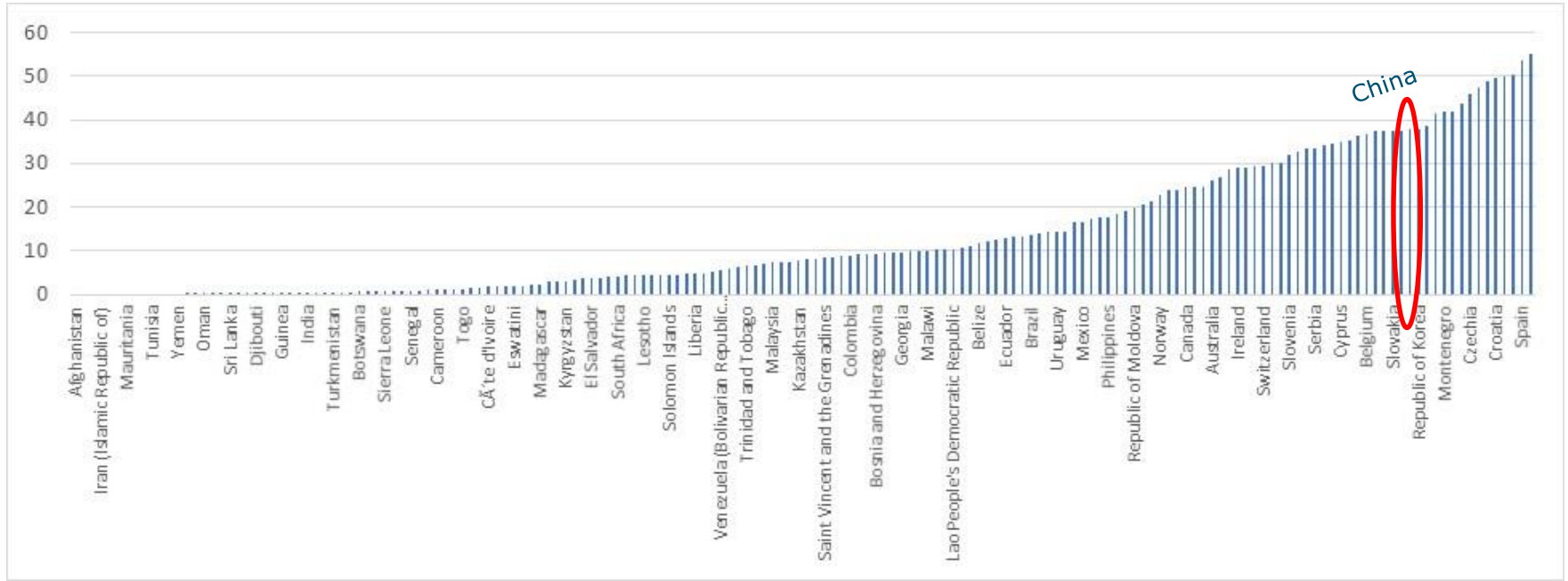
# Sales channels



# Consumption preferences



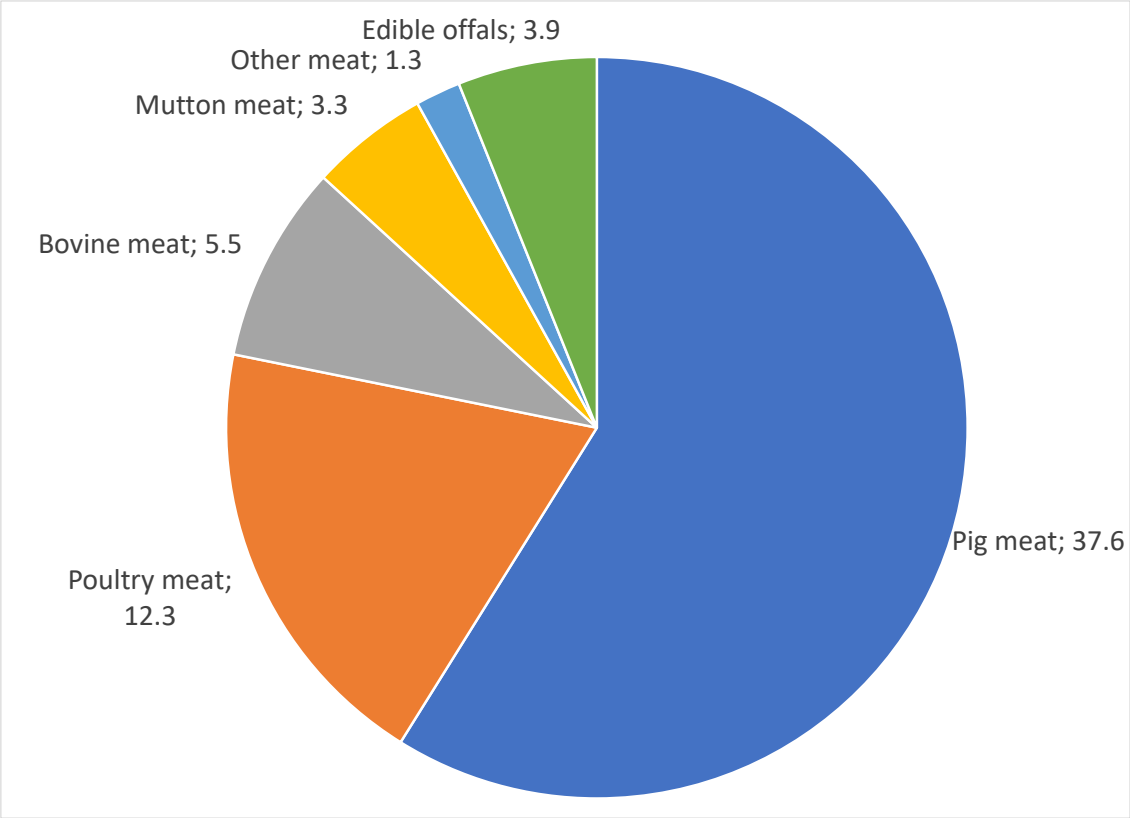
# Pig meat consumption per country



Source: FAOSTAT (2017), elaborated



# Meat consumption in China





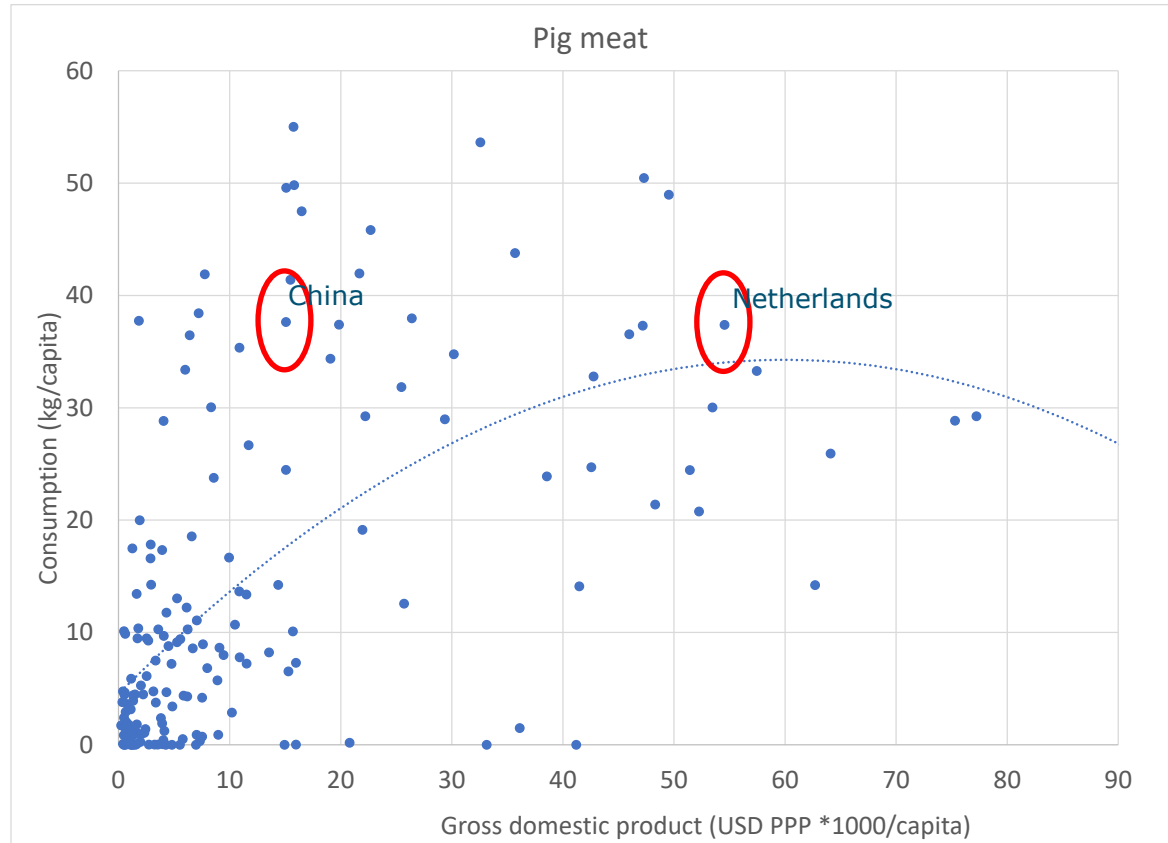
# Consumption trends in Europe

- More convenience (less time to buy and prepare)
- Authentic: Meat with a story
- Transparency: Origin and processing
- Animal welfare and environment protected
- Less meat consumption, esp. in pork
- Sales via Internet

# Meat consumption level related to income

Each dot is a country

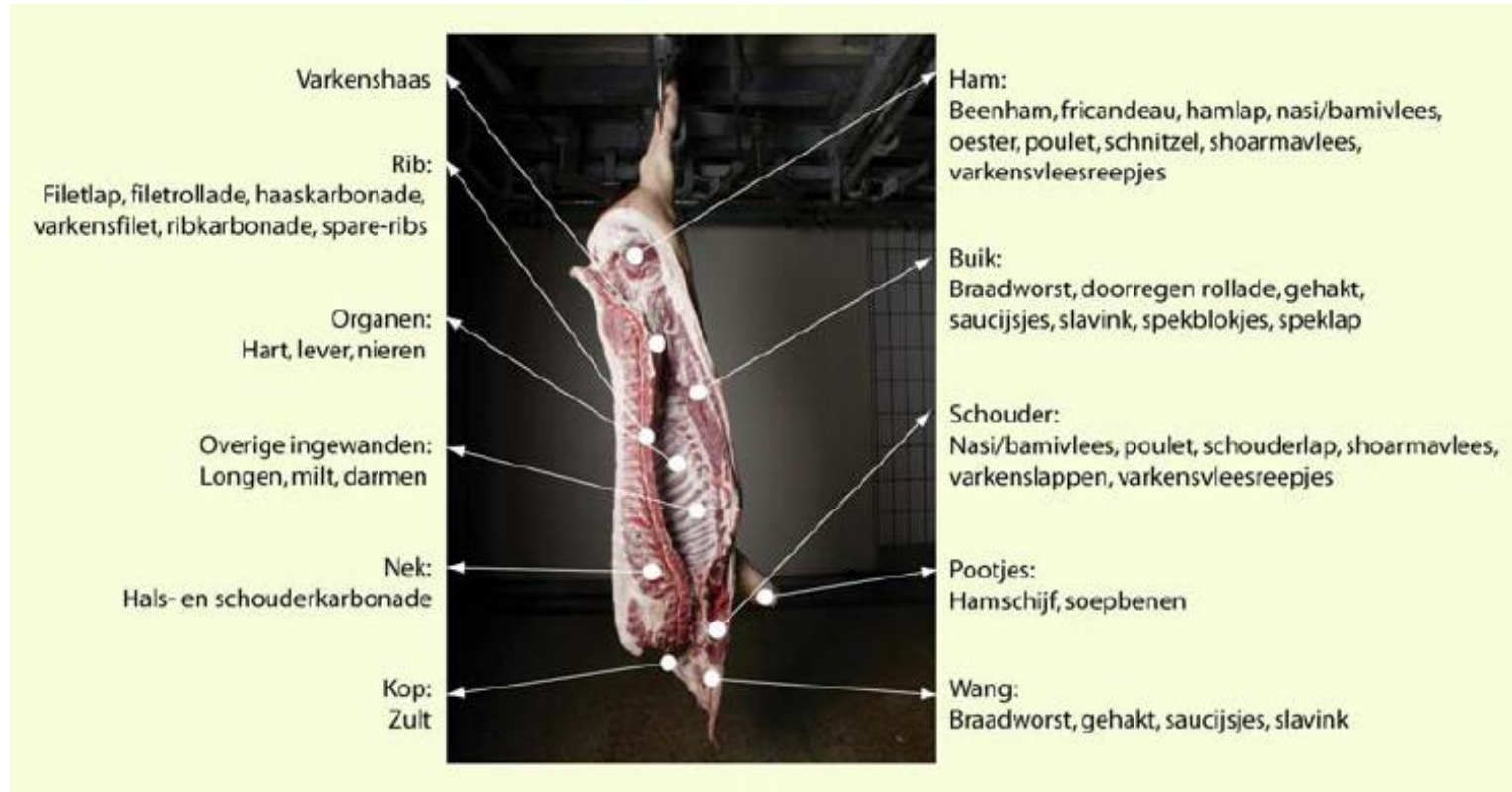
Pig meat without  
edible offals



# Different consumption patterns

- Countries (culture)
- Income class
- Sales channels
- Product quality: Lean/fat; Cartilage; Cut or minced/processed
- Meat type: beef/pork/poultry/etc.
- Amount
- Season

# Carcass valorisation: different products

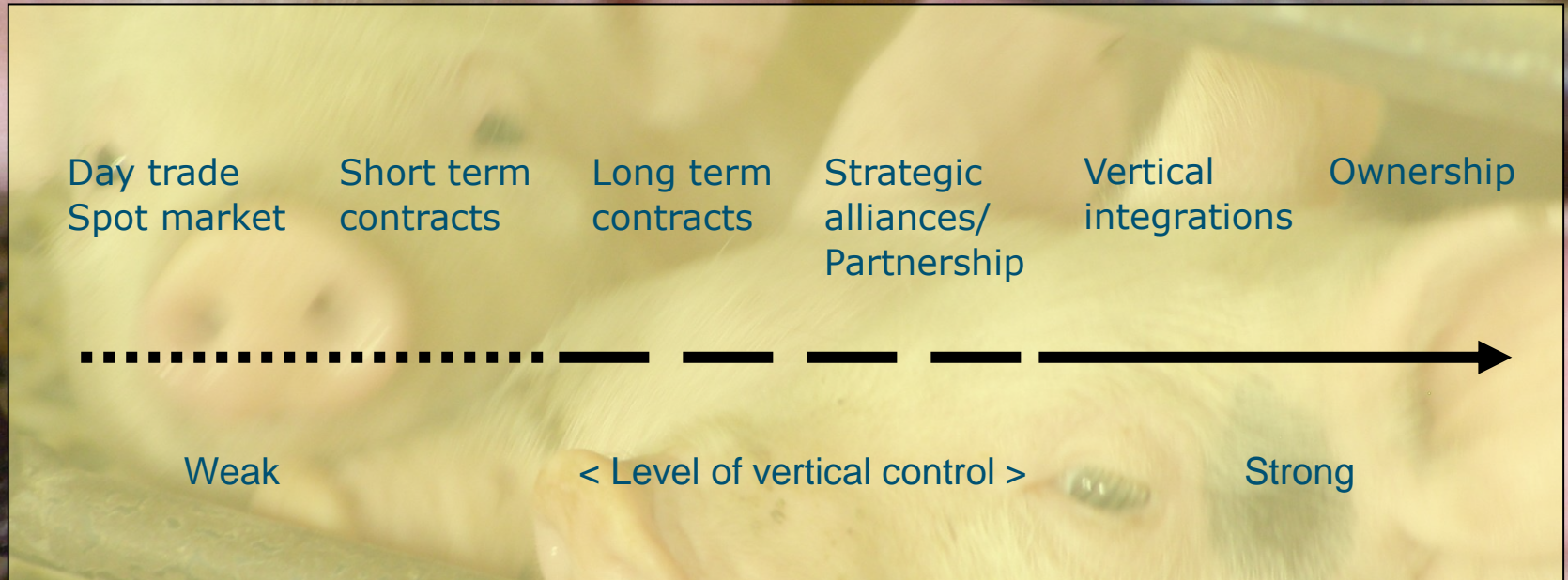




# Carcass valorisation is a challenge

- Given a pig, to sell all products to the right sales channel, at the best price
- Choices: which customer to deliver, which cut-out specification, how to sell less-demanded parts, etc.

# 4. Organization of supply chains

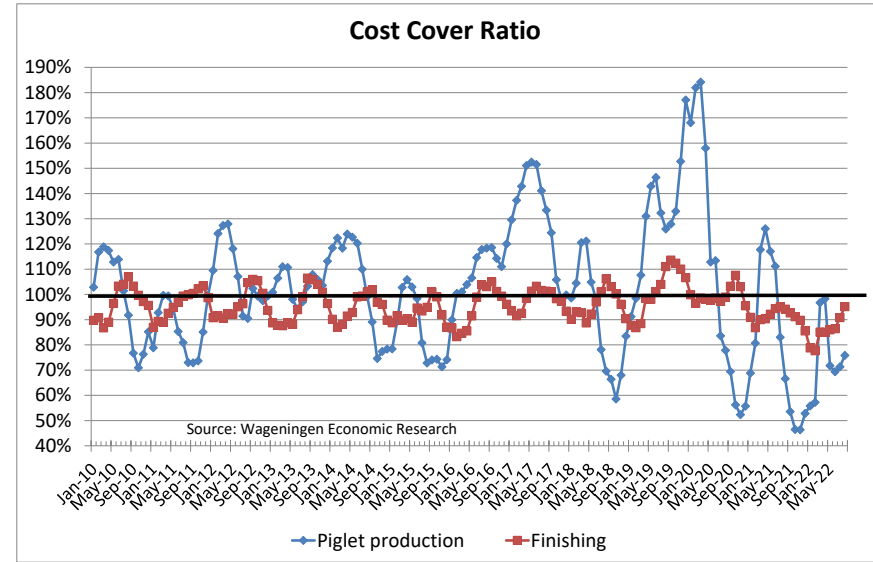
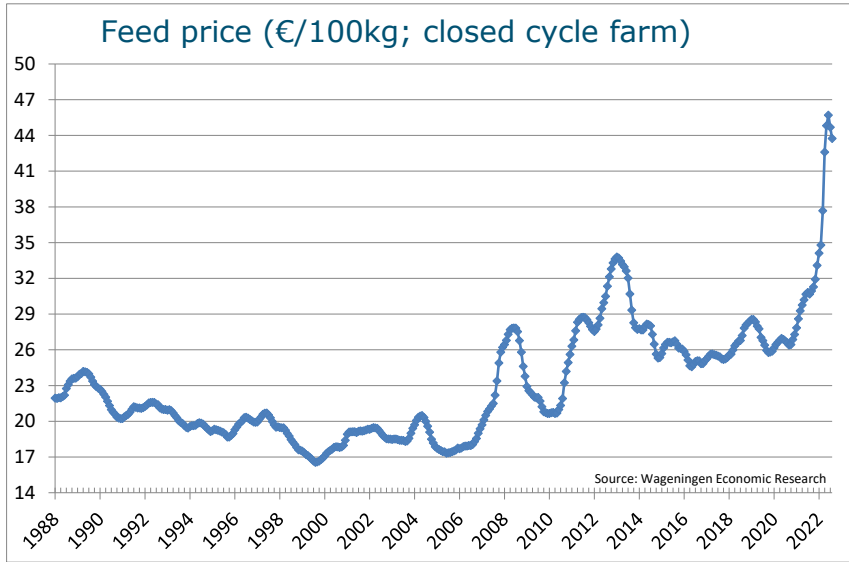


# After ASF the world looks different

- ASF (and Covid-19) are *game changers*: strong expansion of large-scale pig companies, loss of backyards, vertical integrations, western standard in biosecurity and production efficiency, high-tech
- Strong price volatility
- Economic weaker farms quit
- Large-scale modern integrations, strict hygiene, rather low production cost
- Further globalization



# Increasingly volatile market



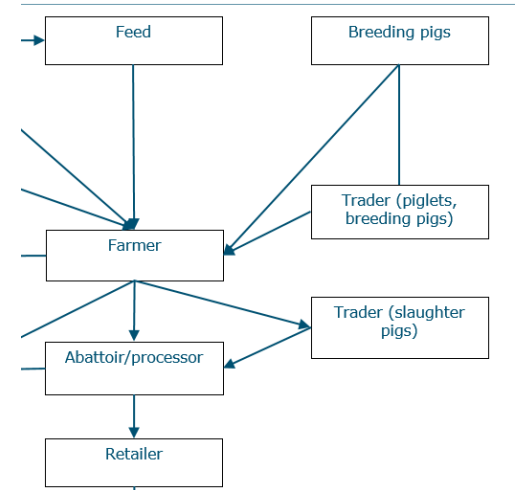
Strong increase in feed prices (left), ASF, Covid-19, etc., leading to higher fluctuation in cost coverage (right) (both graphs reflect situation in the Netherlands, but are a sample for rest of world)

Increased risks: increased demand for risk mitigation; integration could be an answer



# Why integrations?

1. Sales security and/or supply security
2. Demand of developing retailers
3. Weak position of farmers, including information asymmetry
4. Jointly bear/reduce/mitigate risks
5. Different interest within supply chain – failure cost reduction
6. Control of product quality
7. Joint value creation
8. Swift reaction on fluctuating market circumstances
9. Answer to survive in acute adverse market situation



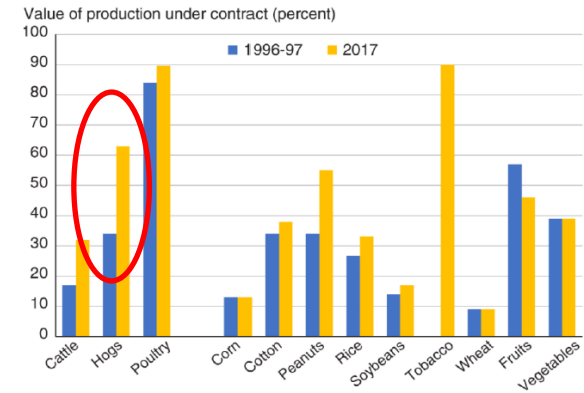
# Incomparable size and market power

Market share of the largest 4 and 8 players in the pig meat supply chain in the Netherlands

	<u>CR-4</u>	<u>CR-8</u>	
Pig breeding	99%	100%	
Animal feed	55%	65%	
Pig farmers	2%	3%	← little market power
Processors	85%	98%	
Super markets	71%	88%	

# USA

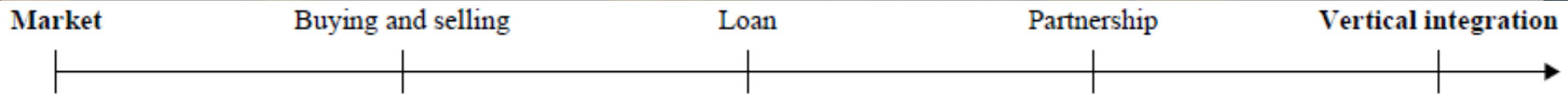
- >60% contract production
- Production- and marketing contracts
- Price: Daily price, Joint to average price, Value of carcass parts, futures
- E.g., Smithfield, ~1 mln. sows; owned & contract; meat industry
- E.g., Cactus, 35.000 sow owned, 100 contracted finisher farmers
- Payment ±40 dollar/finisher place/year - 12-year contract



Source: USDA Economic Research Service.

# Brazil

- Mainly integrations (Top-3: Brasil Foods, JBS, Aurora)
- Hardly space for independent producers
- Ractopamine-free production
- Production- and marketing contracts
- Miele (2013): “The spot market is more speculative than the integrated production, without sales guarantee ... The producer is risk taker, and profit margins fluctuate strongly.”



**Figure 1.** Contractual arrangements used in the Brazilian pork chain.

Source: Müller Martins et al., 2021

# Denmark – Danish Crown

- Cooperative
- Breeding
- Slaughter and processing
- Research



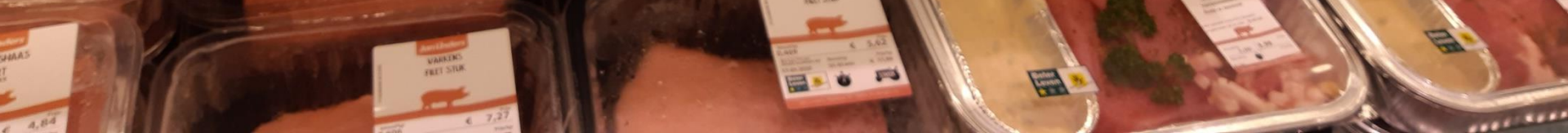


# Netherlands – Beter Leven

## ELK VARKEN EEN STER



- Netherlands: loosely coupled supply chain cooperation
- Beter Leven is NGO driven welfare program
- All NL supermarkets adhere, for all fresh pork
- Not always provided with logo
- Retailer orders processor, which in turn contracts pig farmers
- Some of the supply chain have pig producer groups





# Stronger supply chain cooperation expected

- Necessary to survive the increased volatility
- Different developments
  - Retail supply chains stronger cooperation with price support
  - Others to survive?
- Opportunity to add value, increase shelf price, distinguish production (branding?)
- Power balance in supply chain
  - Farmer as entrepreneur/partner, or price-taker?

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# End of presentation

感谢您的关注



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