



A banker's view on the dynamics, challenges and investment flows in the aquaculture industry

Asset Class: Aquaculture

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Photograph: Aquaculture Puyuguapi, Chile



Rabobank: A leading global Food & Agri bank

- More than 700 offices in 40 countries



- AAA rated cooperative banking group, world's safest bank outside government ownership
- Over EUR 660 billion in assets – belongs to the top-25 of largest bank groups
- Focused on the F&A sector: > 50 corporate-level clients in the seafood industry

Presentation structure

- Why are investors excited?
- What makes aquaculture interesting & challenging?
- Investors and capital flows

Aquaculture:

Why are investors excited?

1. Positive demand function

- 7-billion-people mark recorded in 2011, 9 billion expected in 2050 (1.2% growth per year)
- Dietary shift towards protein consumption in developing countries
 - Urbanisation and disposable income growth
- Arguably one of the few proteins with growing demand in western economies
 - *"Seafood is the only protein Western consumers wish they ate more of"*
Martin Glenn, Birds Eye Iglo Group

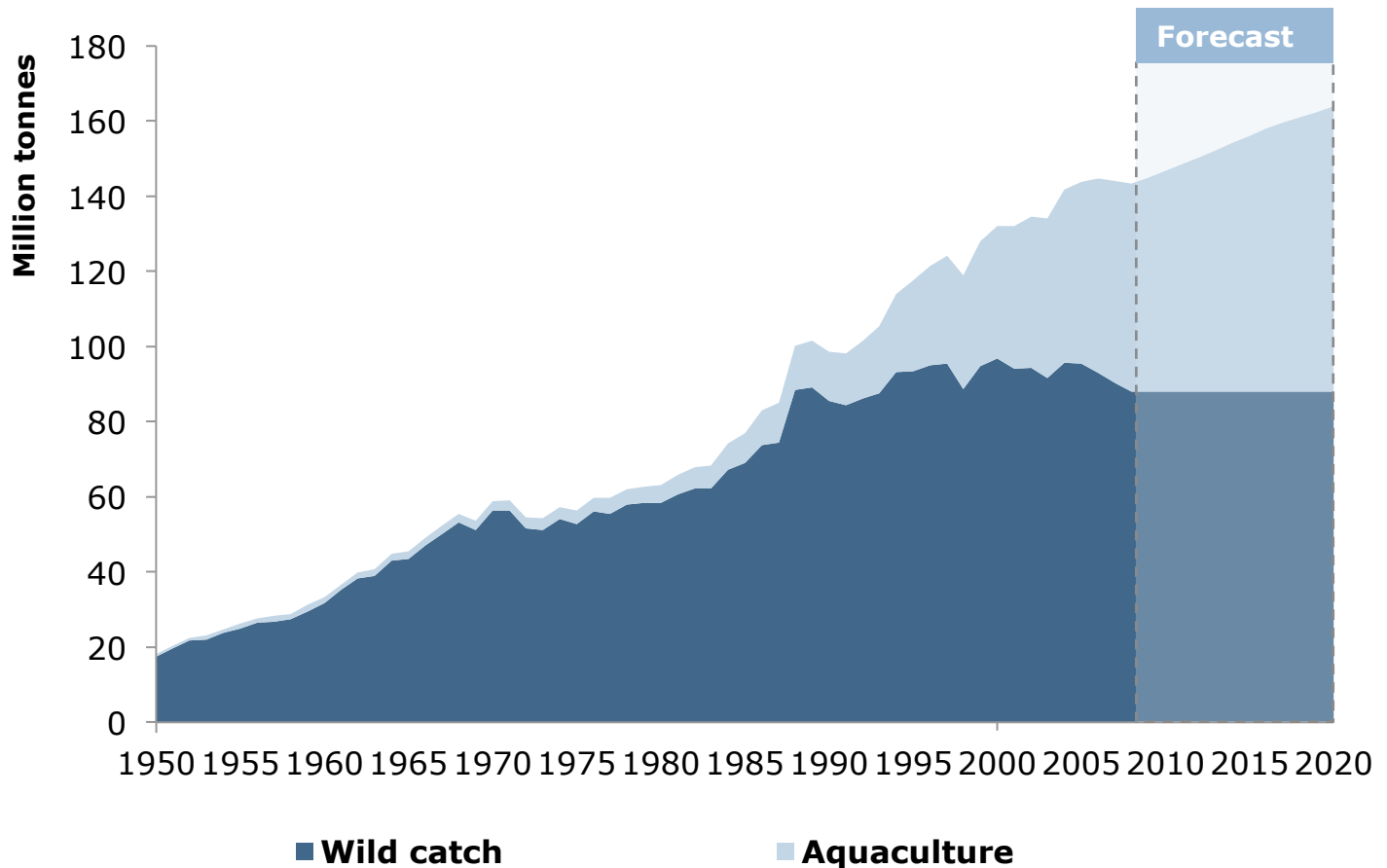
Wild catch supply cannot increase

50% of the industry responsible for 100% of the growth in demand

Aquaculture needs to produce around 4% (or 2.4 million tonnes) more marine proteins each year to satisfy demand

Historically, more than 7% has been achieved (but from a lower base volume)

Global Seafood production and forecast 1950 - 2020



2. New technology platform

Many potential technological improvements

- With improvements in economies of scale, genetics, feed formulations, etc., the cost curve still has the potential to decrease despite rising commodity prices

Efficient use of feed

FCR are generally low

Potential to utilise resources that are currently underused:

- Unutilised coastal areas
- By-products of animal protein production
- Less reliance on land resources and the traditional grain and oilseed feed solutions
- Some raw materials not yet being fully utilised, such as algae and krill
As well as maybe:
 - Open ocean aquaculture
 - Desert aquaculture

3. Diversification (from an investor's point of view)

Company performance is largely uncorrelated with comparable protein industries and wild catch:

- Limited impact from crude oil prices
- Limited impact from grain and oilseed prices
- Relatively independent demand function; often cyclical, but not related to macroeconomic cycles

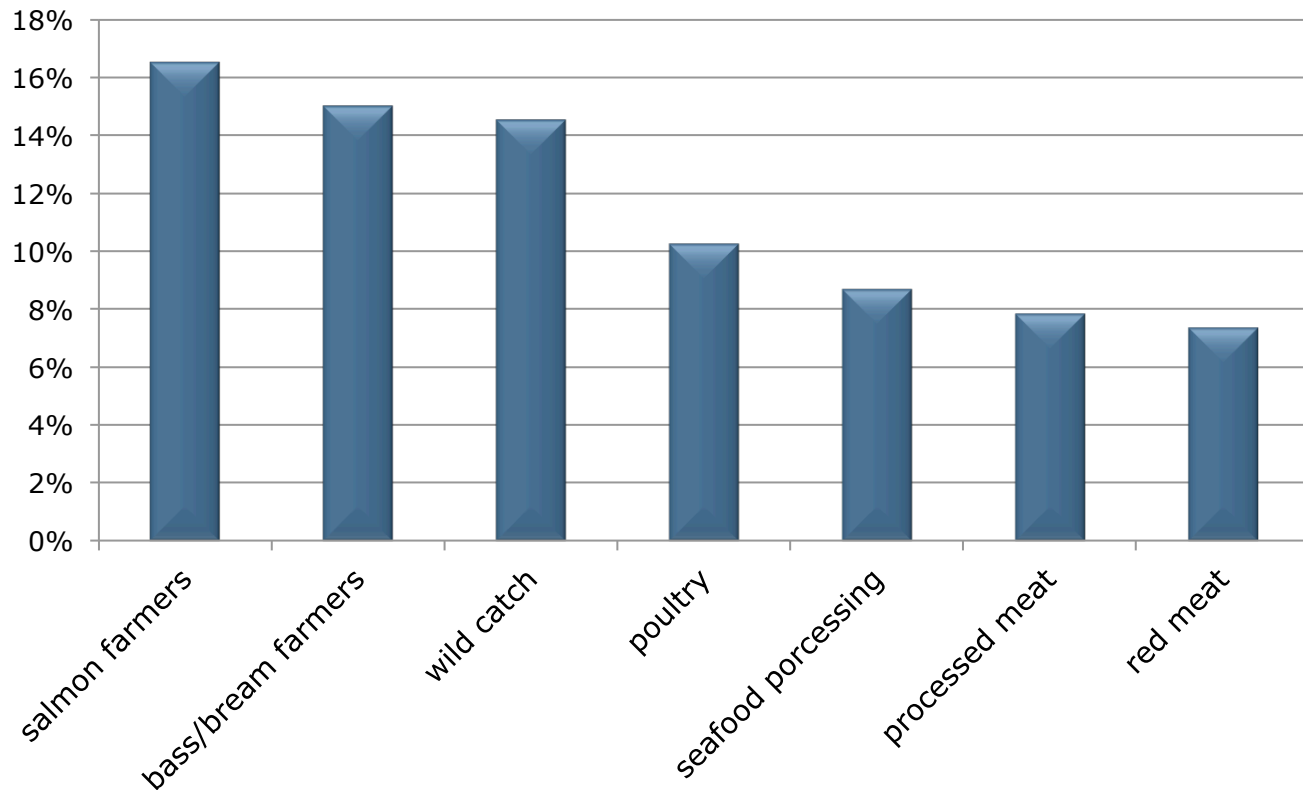
4. Sector leading long-term profitability and growth

Certain segments of the aquaculture industry can have high profitability

Contributing factors include:

- *high barriers to entry*
- *new technology*
- *positive demand function*
- *large asset base*

EBITDA margin across animal protein listed peer groups, average 2005-2010



Aquaculture:

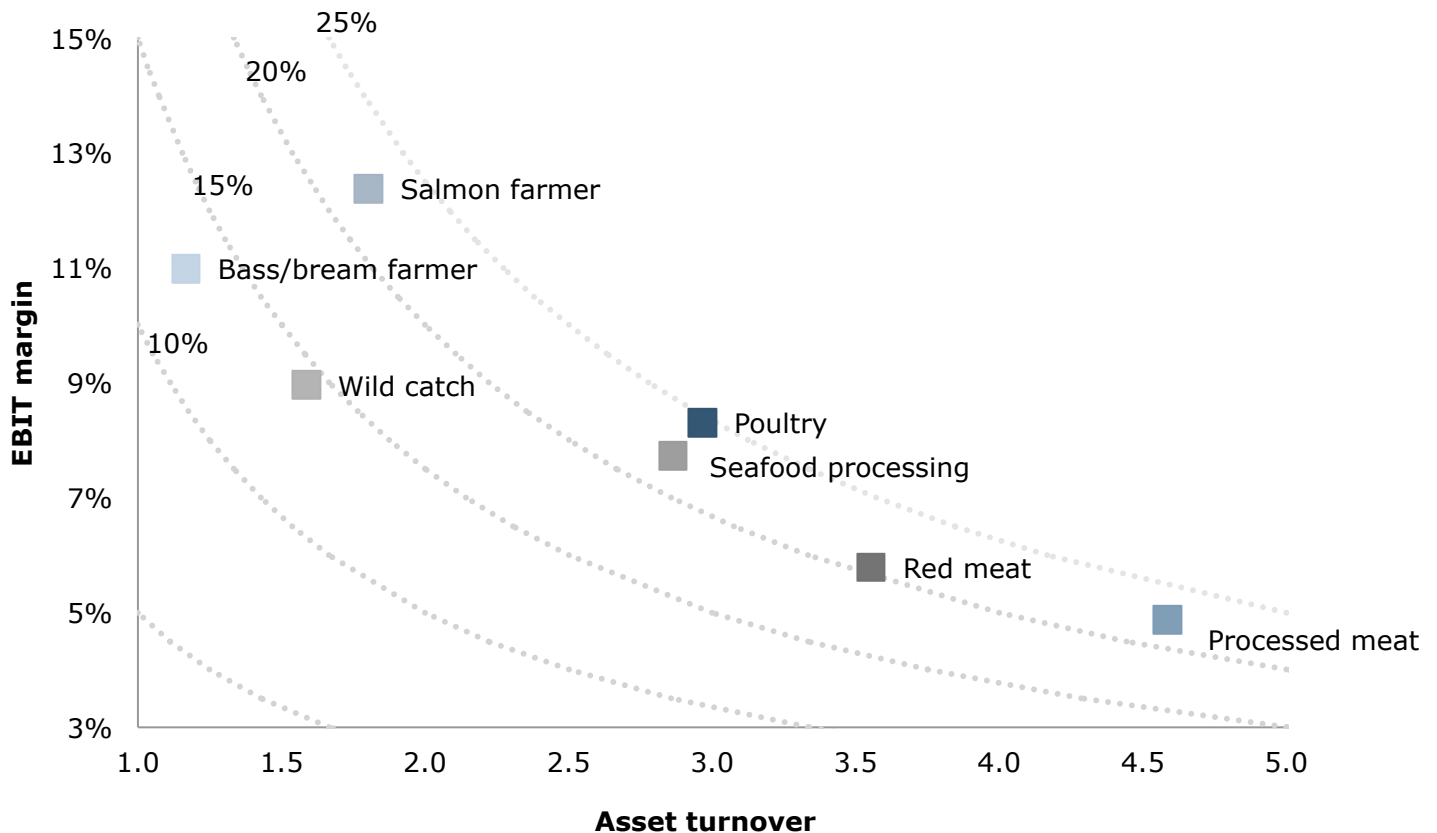
What makes aquaculture interesting
& challenging

1. Aquaculture sector potentially 'asset heavy'

'Asset heavy' is not a negative characteristic – just part of the business model

It means the sector requires proportionally higher capital investments and needs high long-term profitability to attract the necessary capital

ROCE based on average EBITDA and asset turnover, 2005-2010



2. Young and diverse industry

Specific knowledge is needed to understand the sector

- Many species and markets — huge global diversity
- Commercial aquaculture of some species is less than 10 years old

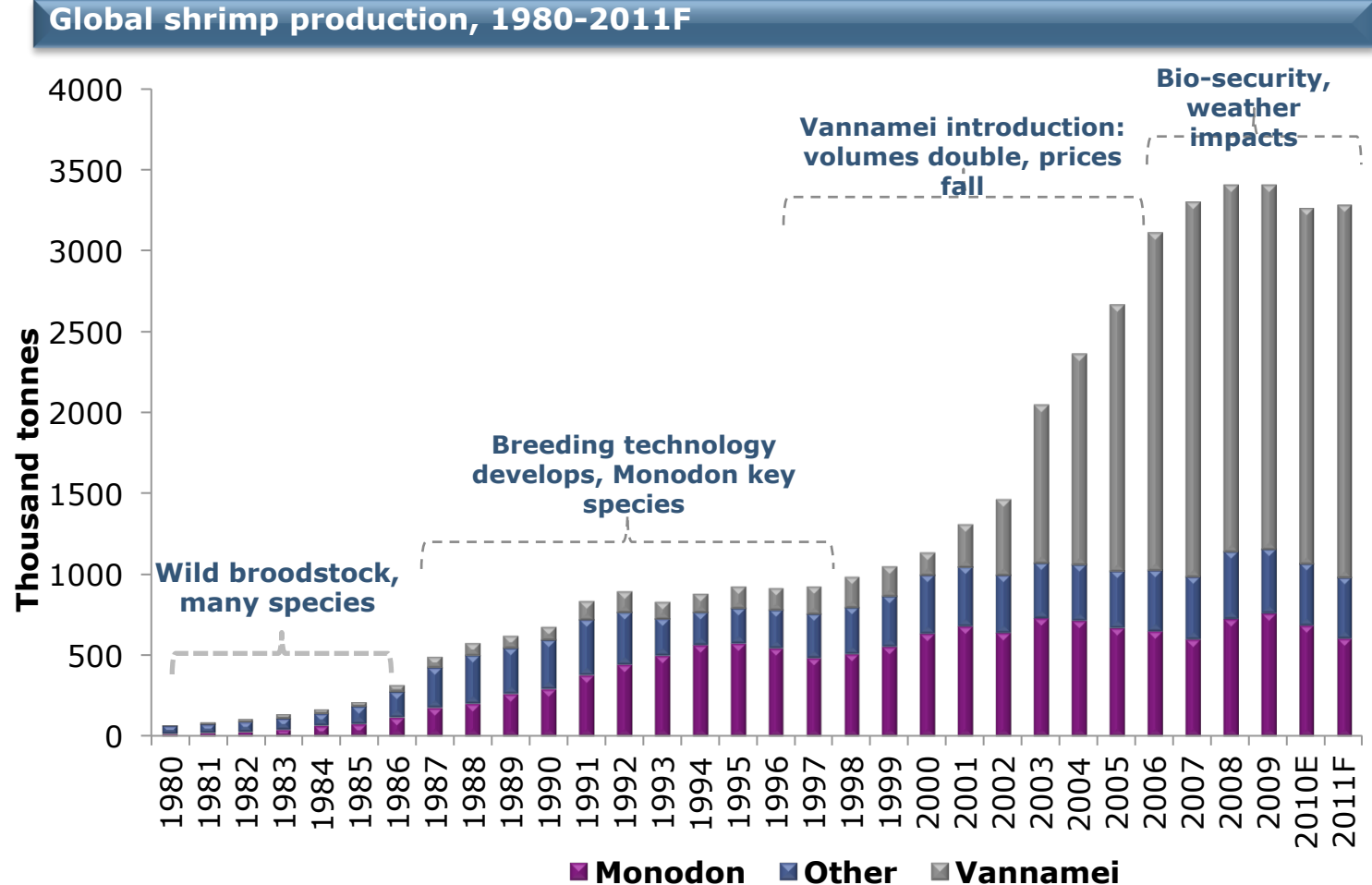
Rapid technological advances pose risks at the company level

- Market leaders can change rapidly
- Volume growth may outstrip short-term demand, leading to a price crash

For example: The marine shrimp industry

Rapid volumes expansion in distinct phases

Technological changes combined with a species change

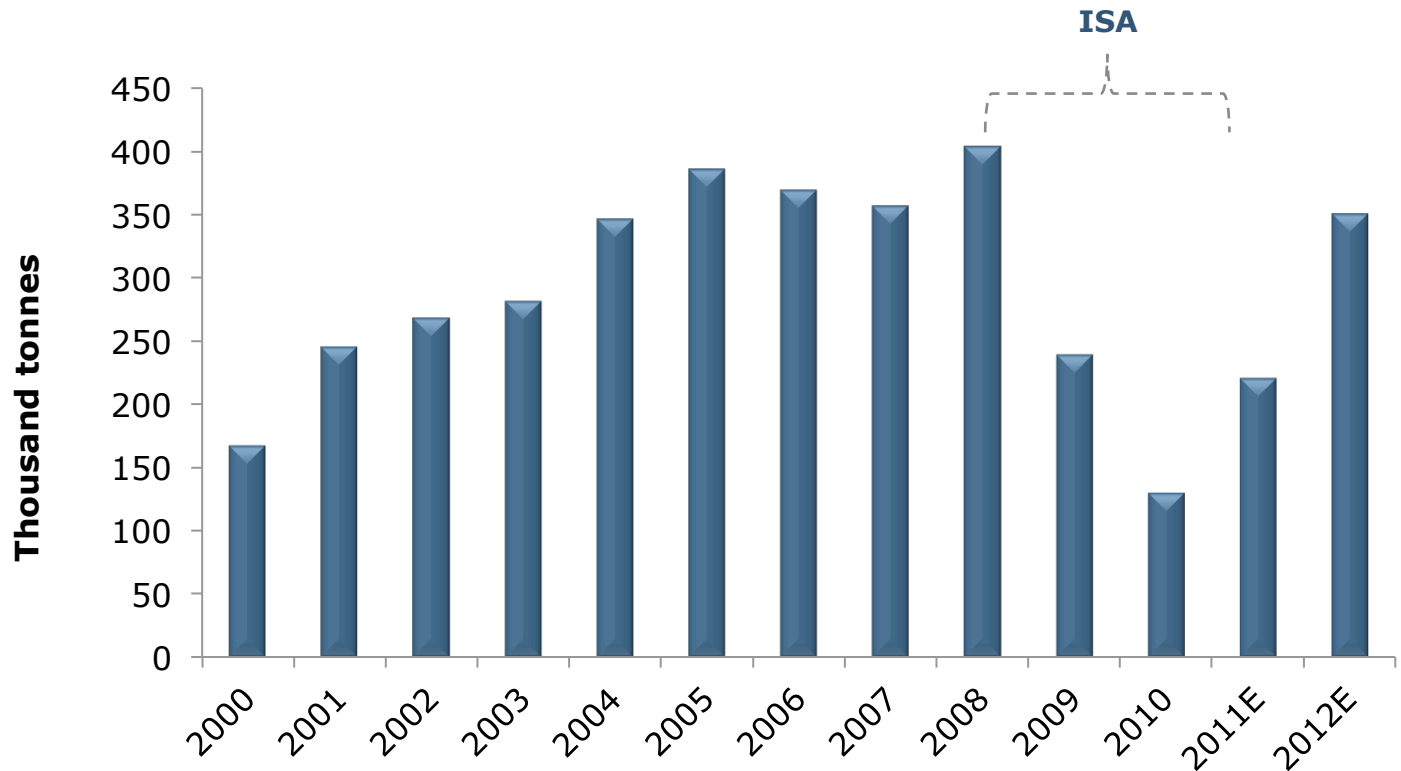


3. Disease, weather and other external risk factors

Disease outbreaks are common in all proteins, but are especially significant in aquaculture

The economic impact in aquaculture is diverse – some species rarely have large disease outbreaks

Atlantic salmon production, Chile, 2000 – 2012f



4. Fragmentation

Average company size in the aquaculture sector is quite small

- Normal for a young industry
- Influenced by the geographical location of many aquaculture industries (e.g., Asia)
- Influenced by many species and niche markets

Fragmentation reduces access to capital

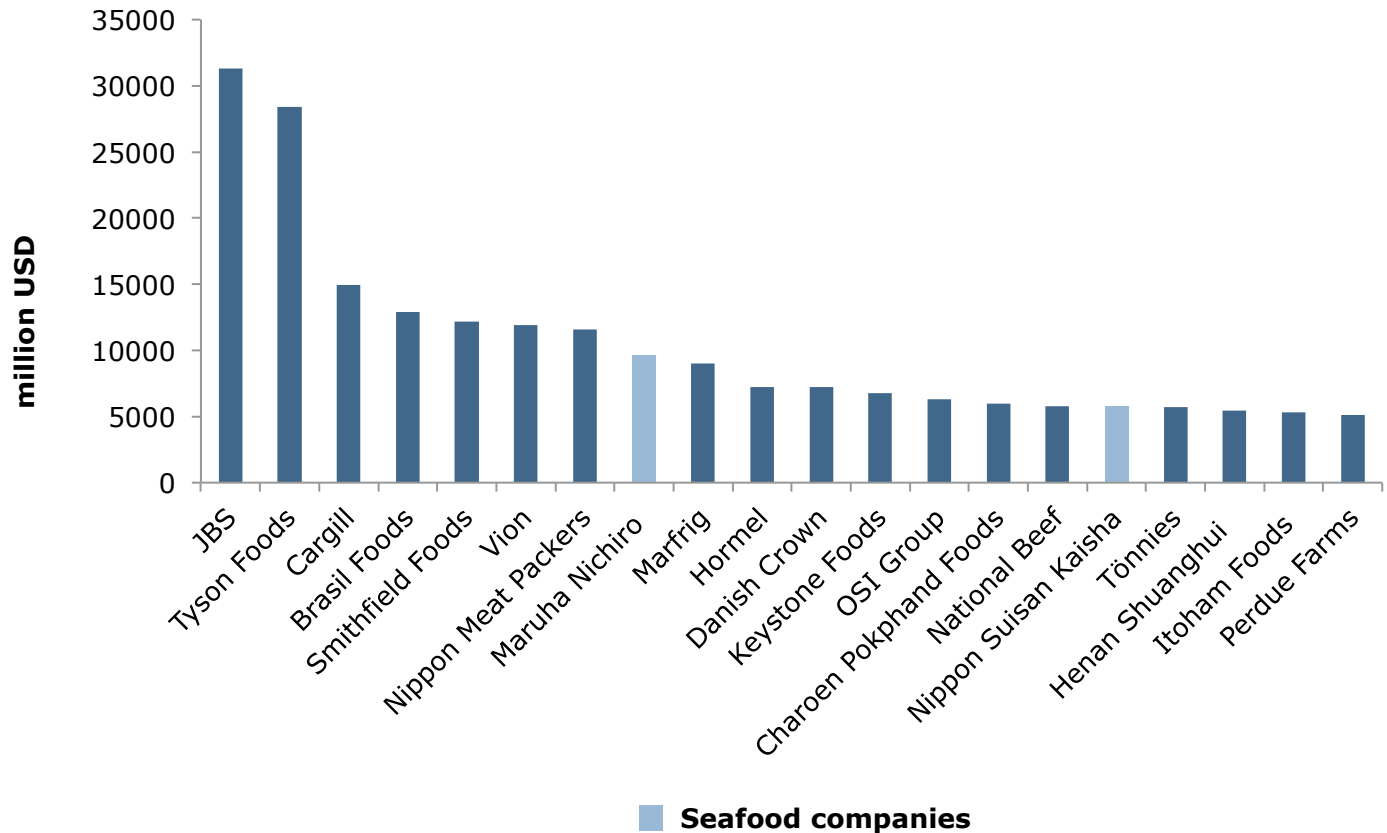
- Large companies have many sources of capital and access to cheaper funding

Global animal protein top 20 by yearly revenue

The largest protein producers have revenues above 10 billion USD per year

With the exception of some salmon and a few shrimp producers, most of the aquaculture sector is populated by producers with revenues below USD 100 million

Leading protein producers, yearly sales (2010)



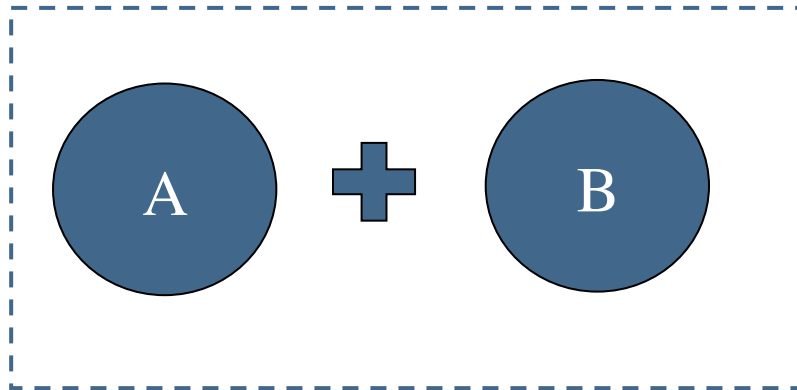
How can consolidation occur (1):

*Enabled by
ample financing*

*Discouraged by
opportunities
for organic
growth*

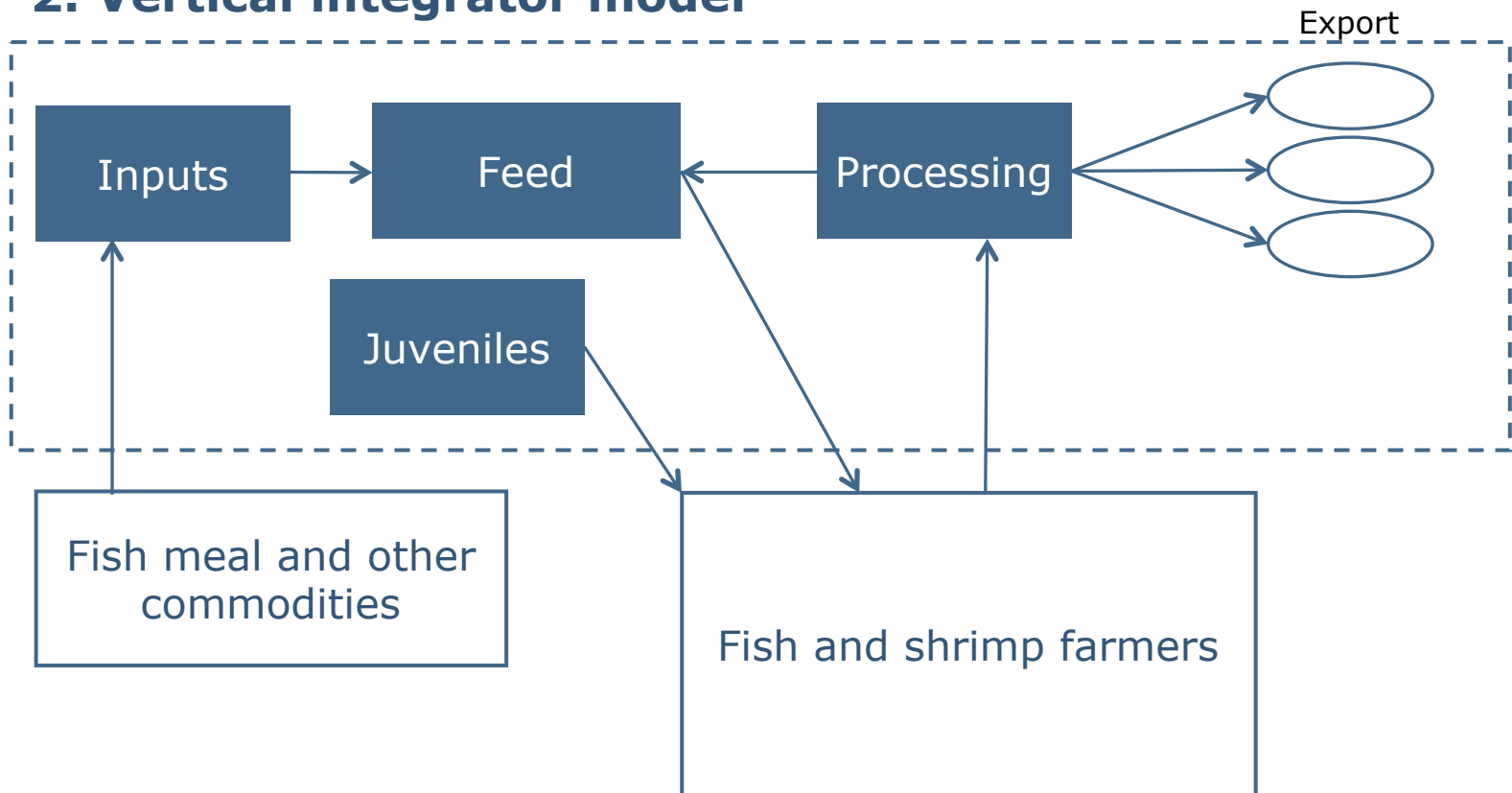
*Works best with
similar business
models*

1. Mergers and Acquisitions among peers



How can consolidation occur (2):

2. Vertical integrator model



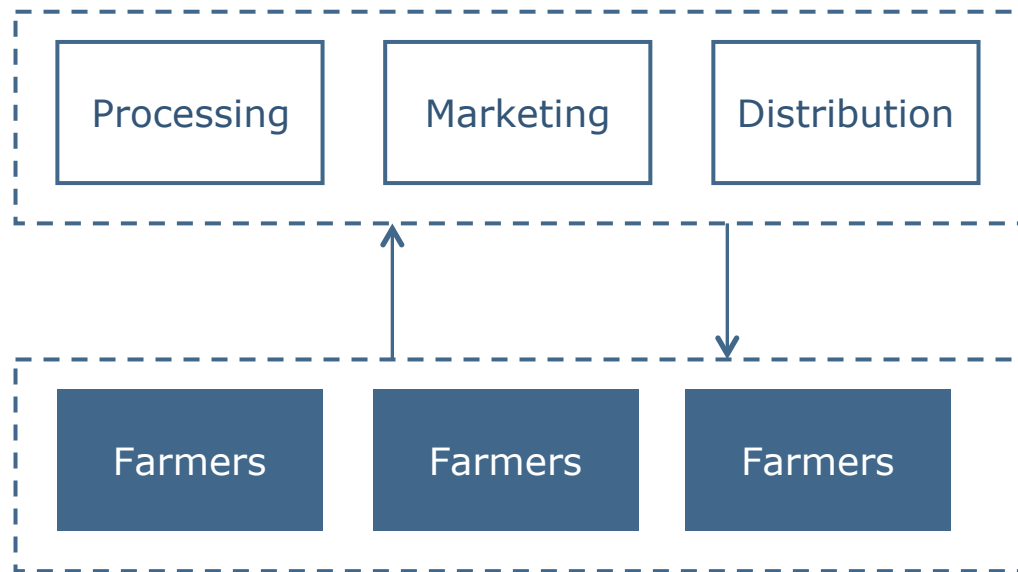
How can consolidation occur (3):

*Usually found
in more mature
industries,
such as dairy
or sugar*

*Needs farmers
with capital*

*Is not widely
used in
aquaculture*

3. Cooperative model



Aquaculture:

Investors and capital flows

The most mature wild catch sectors will continue to invest into aquaculture

Leading pelagic and whitefish harvesters are key investors in the aquaculture sector

- There are large consolidated groups in the wild catch sector with ample access to capital
- Profitability has been high for the market leaders
- Regulation, consolidation and fixed TACs limit growth options in the wild catch sector
- There are synergies between wild catch and aquaculture:
 - The marketing, storage and distribution parts of the value chain are the same
 - Small pelagic harvesters have an opportunity to vertically integrate into the aquaculture value chain

Examples of wild catch producers investments into aquaculture

Pescanova	Whitefish	Shrimp aquaculture	Central America
		Salmon aquaculture	Chile
		Turbot aquaculture	Portugal
		Tilapia aquaculture	Brazil
Sanford	Whitefish and pelagics	Salmon aquaculture	New Zealand
		Mussel aquaculture	New Zealand
Pacific Andes	Whitefish	Salmon aquaculture	Australia
Austevoll Seafood	Small pelagics	Salmon aquaculture	Norway
Camanchaca	Small pelagics	Salmon aquaculture	Chile
Sociedad Pesquera Coloso	Whitefish and pelagics	Salmon aquaculture	Chile
Blumar	Small pelagics and whitefish	Salmon aquaculture	Chile
		Mussel aquaculture	Chile

Source: Rabobank, 2011

Secondly, mature aquaculture industries will invest in less mature, more fragmented sectors

Investment will originate from salmon producers and possibly from the larger shrimp producers

- They enjoy ample access to capital
- Some 14 or 15 publically listed companies
- Many are located in developed countries, where capital is typically more readily available
- Profitability and cash flow generation have been high in the salmon sector
- Professionalism is high in the industry; there are no backyard or artisanal salmon farmers
- Knowledge and technological sophistication is high

Examples of salmon producers investments into other aquaculture

Investor	Sector	Investment	Location
AquaChile	Salmon farming	Tilapia aquaculture	Costa Rica
Cooke Aquaculture	Salmon farming	Sea bass and sea bream aquaculture	Spain
Marine Harvest	Salmon farming	Halibut aquaculture	Norway
Cermaq	Salmon farming and salmon feed	Pangasius feed	Vietnam
Multiexport Foods	Salmon farming	Mussel aquaculture	Chile

The seafood processing industry is also a potential investor

For seafood processors it's a strategic choice to become vertically integrated

- Mitigating raw-material spot price volatility
- Controlling quality and availability

So far, the flow of investment into aquaculture has not been significant

- The large numbers of species produced by the processor make achieving vertical integration difficult or expensive
- Producers with a great deal of exposure to a single species are more likely to choose to vertically integrate and invest in the aquaculture sector. Poland-based salmon smoker Morpol AS, for example, have invested in salmon farming.

Private Equity: A future investor in the aquaculture sector?

So far, PE has not played a role in aquaculture

- Cyclical and biological risk limit the amount of leverage aquaculture companies can bear

... But PE has been active in seafood processing

- Leading companies have stable cash flow
- There are opportunities to consolidate the sector and create synergies

PE-owned seafood processors could be new investors into aquaculture

- Potential add-ons to investments in the seafood processing sector
- E.g., Paine and Partners -> Icicle -> salmon aquaculture in Chile
- Mitigates the spot price volatility faced by both farmers and processors

The diversified seafood business model

A unique feature of the seafood industry, the diversified seafood business model is highly resilient and attractive to investors



- Strong cash flow
- Large asset base



- Top-line growth
- Technological improvements



- Price stability
- Value addition

Venture capital investments in the aquaculture sector?

Venture capital investors seek out innovative sectors with rapid technological changes

- The aquaculture and seafood industry provides a myriad of opportunities for venture capital investors in every part of the value chain. Some examples:

Juveniles and feed

- Fish meal replacement, micro-ingredients
- Breeding technology, new species

Farming

- Farming technology (recirc systems, open ocean systems, water treatment)
- Auxiliary industry (vaccines, anti-lice products, etc.)

Processing and logistics

- By-product utilisation (blood, bones, skin)
- Preservation and storage (high-CO2 packaging)

Animal protein producers as investors in aquaculture?

The large protein companies have so far resisted playing a role in the aquaculture sector

- A different knowledge platform is needed
- Often, different business models are used; most animal protein producers are unaccustomed to owning primary production facilities

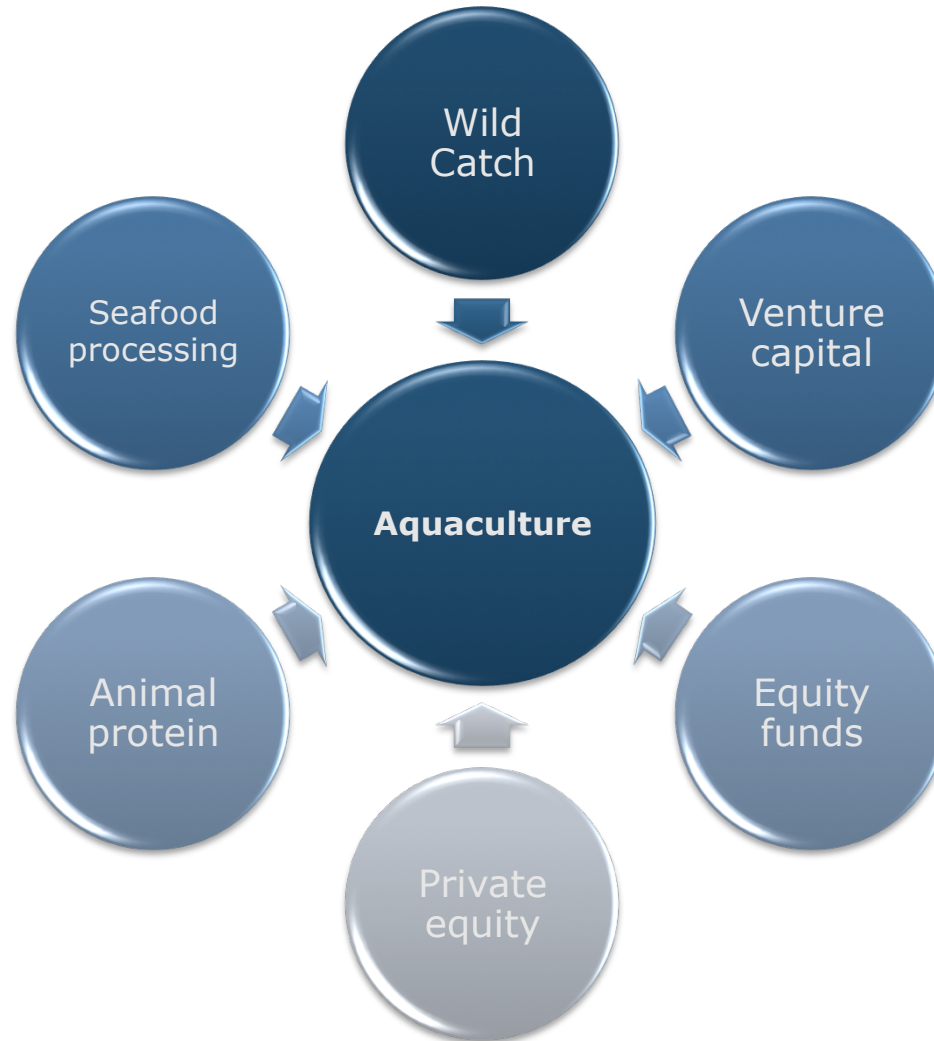
... but could become important investors in the future

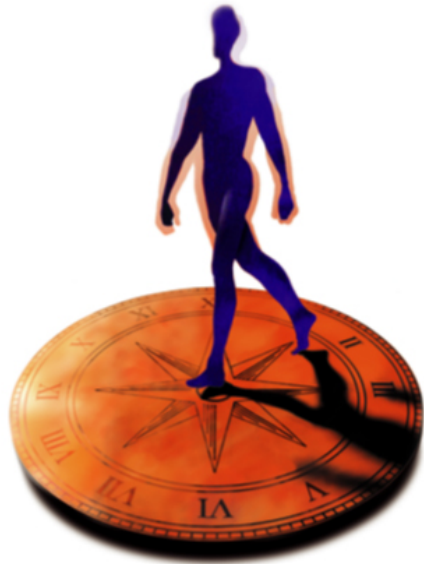
- The animal protein sector is becoming increasingly consolidated
- For some producers (especially of beef and pork), organic growth options are limited
- Downstream, there are synergies in logistic and marketing. Animal protein producers are experts in product development
- Charoen Pokphand Foods is one example. This Thailand-based poultry and animal feed producer has become the world's largest shrimp producer and a key driver in the Asian aquaculture industry

Investments in the aquaculture sector will come from a diverse group of investors

Each investor type has different goals and requirements

The aquaculture sector (and their banks) have the task of profiling themselves and educating potential investors about the opportunities in this industry





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