

NAM VIET CORPORATION (HOSE: ANV)

Strong self-supply and diversified markets facilitate growth

Nam Viet (ANV) has been a pangasius processor and exporter since 2000. ANV's core business thrived and the company was once the leading pangasius exporter in the period 2006-2009. From 2009, the company expanded its business into banking, fertilizer and minerals but suffered losses. In 2016-2017 the company started strongly divesting from non-core investments. ANV's profit has since prospered.

For the industry as a whole, the problem of enhancing fingerling quality to stabilize input for processing has long been lumbering and has not reached an absolute solution. Therefore, ANV is considered a bright company since it is one of the few in the industry that has a strategic investment in fingerling for both objectives: production efficiency and product quality.

In addition to the increasingly tightening technical and tariff barriers worldwide, complex geopolitical tensions are impacting the demand of some markets. A diversified market structure will limit the impact of these factors. This is our favorite point about ANV, since the company is not too dependent on a single market.

Using FCF and P/E methods, we estimate the ANV value to be about **VND 35,400/share**. In addition to the cash dividend of VND 2,000/share approved in the 2019 AGM, the potential profit is **35%** based on the closing price on October 14, 2019 and we have a **BUY** recommendation.

- Full self-supply of raw materials brings low production costs
- Abundant processing capacity reduces investment costs for processing
- Diversified markets limit the effects of political risks and market barriers

Key financial ratios

Y/E Dec (VND Bn)	FY2017	FY2018	FY2019F	FY2020F
Net revenue	2.949	4.118	4.588	5.205
%change	4,0	40,0	11,4	13,4
PAT	142	600	663	766
% change	972,0	321,4	10,5	15,6
Net margin (%)	4,8	14,6	14,4	14,7
ROA (%)	5,3	17,5	16,8	16,3
ROE (%)	10,2	32,5	28,6	27,1
EPS (VND)	1.136	4.787	5.211	6.024
Book value (VND)	11.214	14.825	18.246	22.269
Cash dividend (VND)	1.200	1.200	1.500	2.000
P/E (x)	9,7	6,0	5,0	4,3
P/BV (x)	1,0	1,9	1,4	1,2

Source: ANV, RongViet Securities

BUY

+ 35%

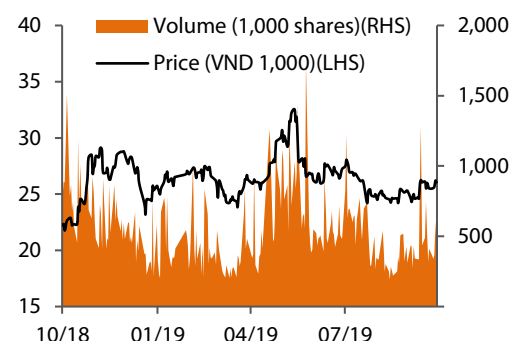
Market price (VND)	26,200
Target price (VND)	35,400

Cash Dividend (VND)*	2,000
----------------------	-------

* Expected in the next 12 months

Stock Info

Sector	F&B
Market Cap (VND Bn)	3,280
Share O/S (Mn)	127.1
Beta	0.8
Free Float (%)	22,3
52 weeks high	32,527
52 weeks low	14,663
Average trading volume (20 sessions)	643,019



Performance (%)

	3M	1Y	3Y
ANV	-6.8	51.5	1001.8
Agriculture & Fishery	-0.3	51.8	71.6
VN-Index	1.6	1.3	48.4

Major shareholders (%)

Doãn Tới	44.8
Doãn Chí Thanh	13.5
Doãn Chí Thiên	13.5
Foreigner Investor Room (%)	48.7

Tam Pham

(084) 028- 6299 2006 – Ext 1530

tam.ptt@vdsc.com.vn

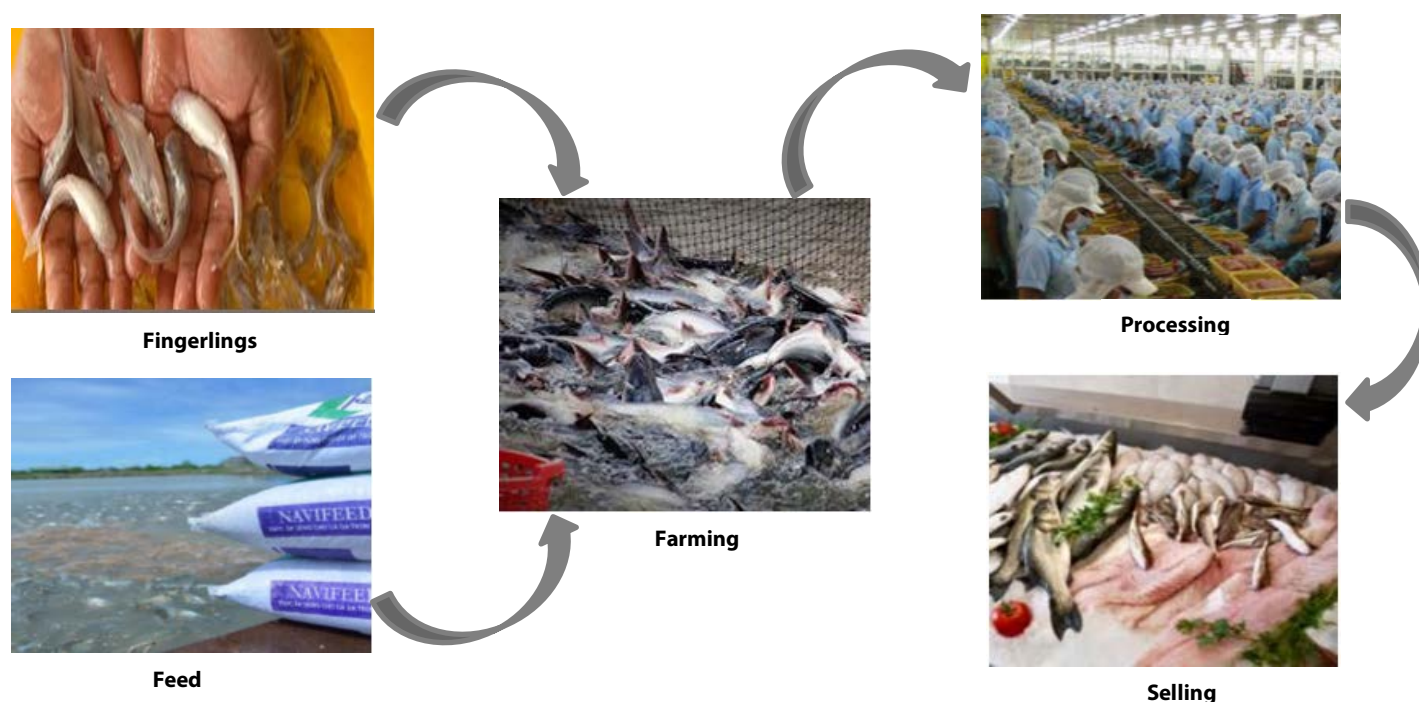
INVESTMENT RATIONALES

Full self-supply of raw materials brings low production costs

The pangasius industry has experienced many periods of material shortage. Material fish price has peaked in 2018 when it sometimes reached VND 36,000/kg, nearly 50% higher than the price of VND 26,000-27,000/kg during periods of stable supply. Production costs of processing plants are therefore also unstable.

After many years of investment, ANV has formed a closed vertical integration chain, ensuring stable source of material fish in both price and quality.

Figure 1: The pangasius value chain



Source: ANV

Fingerling: Fingerling quality is the most important factor in farming, determining the survival rate, time of raising, cost of feed and medicine as well as fillet recovery rate. As a result of many years of exploitation without conservation of pangasius gene, the quality of farming has been seriously reduced. The death rate is very high, the cost of farming is also high and the risk of antibiotic and chemical residues in fillet products exists. Farmers have to use medicines to prevent and cure diseases.

By the end of 2018, ANV self-produced 30% of its fingerling needs and it expects to reach the 100% level by the end of 2020 due to technology transferred from Israel in the Binh Phu farming project (see below). Good fingerling quality will help the company reduce farming costs. Less use of antibiotics, hence, will help in minimizing the risk of antibiotic residues in the final products.

Self-supply of fingerlings also means that ANV is gradually eliminating the risk of price fluctuations of material fish. According to our calculations, with the current average production rate of 3 fingerlings for 1 kg of material fish in the industry, fingerling price increases to a record high as in 2018 (VND 2,200-2,300/piece compared to VND 600 -700/piece in stable times), raising costs by about 25%.

Figure 2: Stages of commercial pangasius farming

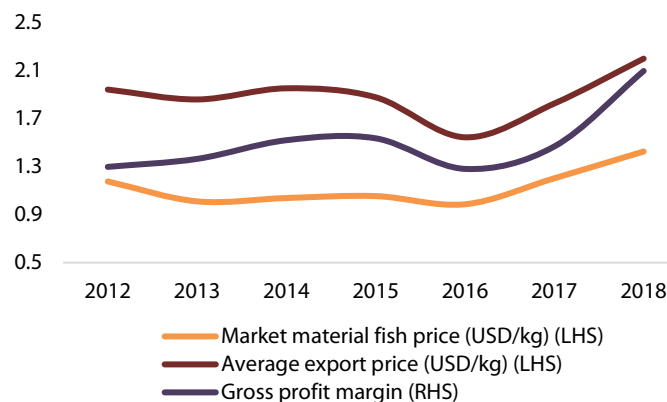
Table 1: ANV's fingerling production technique

Survival rate	ANV	Industry
Alevin – Fry stage	5-15%	6-10%
Fry – Fingerling stage	70-80%	30-50%
Fingerling – Material fish stage	75-85%	69-80%
ANV's targets of fingerling self-supply	2018	2019
	30%	70%
		2020
		100%

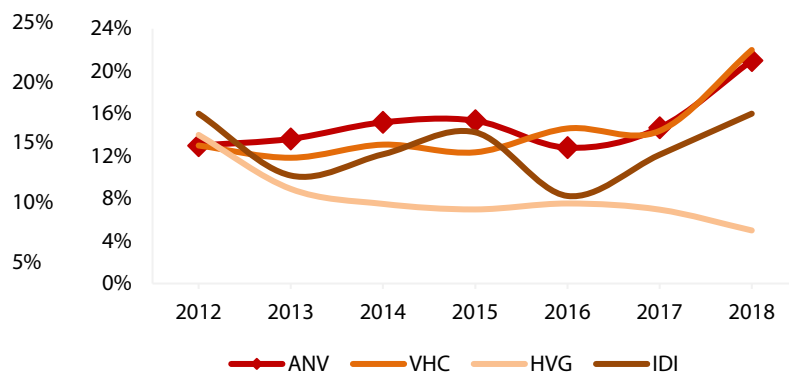
Source: ANV, Can Tho University (2017)

Feed: Feed costs account for 70-75% of the cost of material fish. ANV's feed plant Navifeed with a capacity of 800,000 tons/year is currently operating at nearly 50% of design capacity, which can meet the entire feed demand for the company's farming area and the redundant (depending on own farming times) to be marketed. Self-produced animal feed help ensure the best quality and nutrition needs for fish at different stages of development, avoiding the common "protein rate fraud" (feeding a lot but the fishes grow slowly) of feed on the market these days.

Farming area: Started raising fish in 2011. ANV has so far, a total farming bank of 330 hectares (250 hectares owned by the company, 80 hectares of leased land) capable of providing 120,000 tons of material fish per year. This allows to meet the demand of material fish for the company's processing plants. Some farms have attained certifications of clean materials, sustainably cultivated and traceable, such as BAP and ASC, meeting requirements of certain markets.

Figure 3: Material fish price, average export price and gross profit margin


Source: ANV, Rong Viet Securities

Figure 4: ANV's gross profit margin compared with other companies


Source: Companies' financial statements, Rong Viet Securities

Although export prices often fluctuate due to changes in demand worldwide, **the ability to control costs thanks to material fish self supply has helped the company maintain a stable and high gross profit margin.** Since 2012 when the company could self-supply 70% of material fish, the gross profit margin has gradually increased and stabilized around 13-15%, approximately the gross margin of the leading company VHC. In 2018 strong demand and lack of material fish created a surge in export prices.

ANV benefited as its gross profit margin increased sharply to 21%. This shows that ANV's integrated production chain is a sustainable competitive advantage.

Binh Phu farm to double ANV's self-raised fish capacity from 2021 on. In early 2019, ANV started a project of high-tech pangasius farming in Binh Phu (An Giang). The company established Nam Viet Binh Phu Aquaculture Co., Ltd. (ANV owns 100% of charter capital) to manage this project. The project's 600 ha area is separated into two:

- 150 hectares of high-quality fingerling production using Israeli technology, aiming to the goal of 100% fingerling self-supply by 2020 (30% in 2018).
- 450 hectares of commercial fish farming based on Japanese technology with an annual capacity of 160,000 tons of material fish. Fingerlings are "rolling" seeded continuously to ensure enough harvest volume for processing. According to the company, the cost of raising fish at Binh Phu farm is 16-17% lower than at the existing farms. When the whole Binh Phu farm project comes into operation in 2Q/2021, ANV will return 80 hectares of leased land, then the total material fish production is expected to reach 250,000 tons/year, an increase of 108% compared to 2019.

The quality of fish at Binh Phu farm will also be better than that of other farms because the clay in this area makes it easy to clean fish ponds and its upstream position in the Hau river limits saline intrusion and nano aeration technology and bakture catalyst protect the environment by not discharging pond water into the river. Automation will be applied to operation management including water pumping, feeding, harvesting, transportation, etc., helping to reduce management costs by 6-8%, according to the company's calculations.

Typically, companies that want to distribute directly to supermarkets must be able to supply products in large quantities, meet minimum technical standards and have a brand that is familiar to consumers. With Binh Phu farm, it can be seen that ANV is trying to build its direct distribution capacity to increase profit margin, especially in the Chinese market where the company is boosting brand promotion.

In addition, Binh Phu farm will enjoy a preferential corporate income tax due to high technology application of aquaculture, with a tax rate of 0% in the first 3 years, 5% in the next 9 years and 10% in the following years.

Abundant processing capacity reduces investment costs for processing

The company has 4 plants processing pangasius fillet with a total capacity of 1,200 tons of material fish/day. The plants were built in 2000-2004 to meet the demand of Russian and European markets (75% of sales in 2007). Since 2008, Russia has stopped importing pangasius and with weak demand in Europe in the global financial crisis caused factories to reduce capacity. Meanwhile, the new markets require more sophisticated products (filleting, skinning, removing red meat, shaping, etc.) than the Russian market (just filleting and skinning). This is also a factor that reduces the amount of material that can be processed in a day.

Table 2: ANV's processing capacity

Plant (tons of material fish/day)	Designed capacity	Operating capacity
An Do Duong	450	350
Nam Viet	120	120
Thai Binh Duong	80	30
Dai Tay Duong	450	Leasing
Total	1,200	500

Source: ANV, Rong Viet Securities

The plants are operating at 500 tons material fish/day, equivalent to 45% of the designed capacity. With the above production plan, it is clear that ANV will not need to invest in its processing facilities in at least the next three years even if the output of material fish doubles.

The manufacturing process meets the global standards for processing such as Global GAP, BRC, HACCP, GMP, IFS, HALAL, ISO 22000 and codes DL 152, DL 384, DL 18, DL 408 (codes for plants that meets European export standards) supporting ANV to control hazards from input, processing to storing finished products.

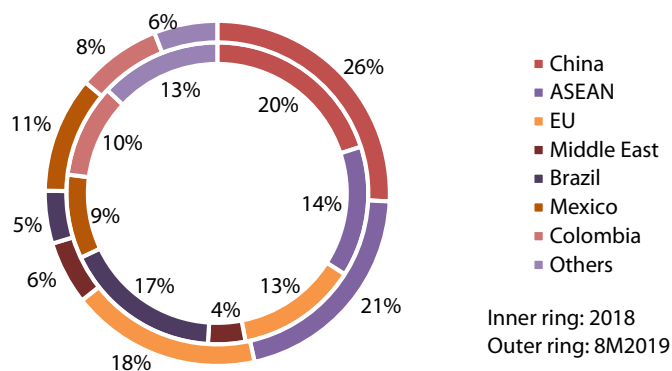
Diversified markets limit the effects of political risks and market barriers

Historically the pangasius export industry has experienced many large shocks due to economic turbulences as well as tariff and technical barriers. Typically, exports dropped when the US first imposed anti-dumping duty in 2003, Russia suspended imports in 2008 after finding out antibiotic residues in some batches of Vietnamese pangasius, Europe reduced consumption under the impact of the public debt crisis in 2012, or global purchasing power declined due to the devaluation of many currencies in 2015. Therefore, market diversification is the most important issue for fishery companies.

Nam Viet has exported to more than 70 markets, spread across many continents and does not focus too much on a single market. The main markets in the America are Mexico, Brazil and Colombia, in Asia are Thailand, China and Malaysia, while in Europe are Italy and the Netherlands. In the context of escalating geopolitical uncertainties adversely affecting pangasius consumption in some major markets, a diversified market portfolio will shield ANV from the risk of declining sales. In the first 9 months of 2019, ANV's export value and profits still grew by 14% YoY and 71% YoY respectively, despite a fall of 8% YoY of the industry export value.

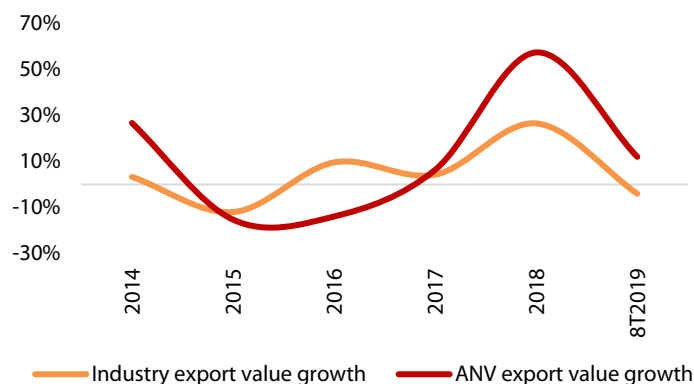
The US is a market with large and stable demand, complicated trade barriers and the most stringent technical standards. Therefore, exporters to this market enjoy a higher selling price than other markets and are highly appreciated for their farming and processing skills. The biggest difficulty for companies lies in the anti-dumping duty. Because of low production cost due to fully self-supplied inputs, ANV plans to return to the US market (the company has stopped exporting to the US since 2014 due to high anti-dumping duty) from 2021 if it is entitled to a low anti-dumping duty rate. However, the annual antidumping duty rate is unpredictable, as the calculation method, beside factors that Vietnamese companies can control, is based on many other factors that aim to protect the US domestic production.

Figure 5: Market structure



Source: ANV, Rong Viet Securities

Figure 6: ANV's export value growth compared to industry



Source: VASEP, Rong Viet Securities

China to be the strategic market from 2018 on

From May 2018, ANV started distributing high-class pangasius products (no glazing, no additives) with higher selling prices than ordinary frozen fillets to China through its exclusive partner Shanghai Feinglei International Trading, with the ANV brand on the product packaging. The agency contract is 10 years. The distribution chain goes from Shanghai Feinglei to wholesalers before entering hotpot restaurants and community kitchens in Shanghai. The partner will also be in charge of research, market forecasting and marketing.

The company expects this new step together with Binh Phu farm to make an important contribution towards the goal of increasing sales and profits as well as promoting the Nam Viet brand to Chinese consumers. China-Hong Kong accounted for 26% of ANV's first 8 months of 2019, compared to 20% in 2018. The good increase in demand was due to (1) the Chinese government tightened "grey trade" across the Chinese - Vietnam border and completely banned border trade from the end of July 2019, (2) African swine fever has caused a shortage of pork in China and people tend to switch to seafood as a substitute and (3) Chinese VAT on imported seafood has been reduced from 10% to 9% from 1 April 2019.

Risks

Escalating US-China trade tensions. The US-China trade war has caused negative effects on the Chinese economy. The weakness of the Renminbi may make imported goods relatively more expensive, while a fall in consumer incomes may reduce demand for imported pangasius.

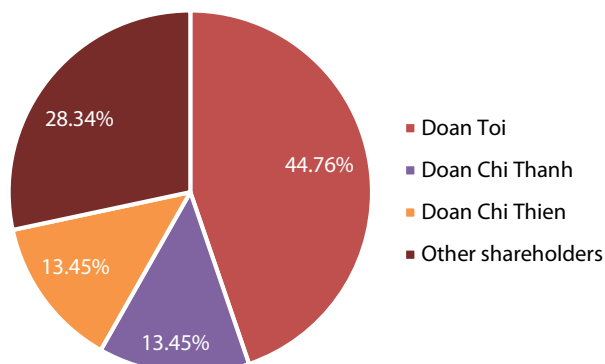
Trade and technical barriers and sabotaging media campaigns in importing countries. The Vietnamese pangasius industry has not yet developed a proper strategy of promoting the product globally. Tariffs and technical barriers in markets are also increasingly advanced and complex. Because ANV has a market structure that does not focus too much on a single market, we think the company would be less affected by these risks compared to most companies in the industry.

COMPANY OVERVIEW

Starting out as a civil and industrial construction company in 1993, Nam Viet has shifted its business into pangasius processing and export since 2000. ANV's core business thrived and the company used to be the leading pangasius exporter in the period 2006-2009. Nam Viet began to expand its business into banking, fertilizer and minerals in 2009 but suffered losses. Since 2016, the company has strongly divested from non-core investments, creating favorable conditions for profits to recover.

The shareholder structure is concentrated with the family of the Chairman Doan Toi (Doan Toi, Doan Chi Thanh and Doan Chi Thien) owning nearly 72% of the company. The Chairman and CEO have more than 20 years of experience in farming, processing and exporting pangasius. All members of the Board of Directors are members of the Board of Management and have been with ANV since its establishment. Because members of a single family own the majority and also manage the company, the issue of criticizing management decisions may be limited.

Figure 7: ANV's shareholder structure



Source: ANV

Products

Figure 8: ANV's main products

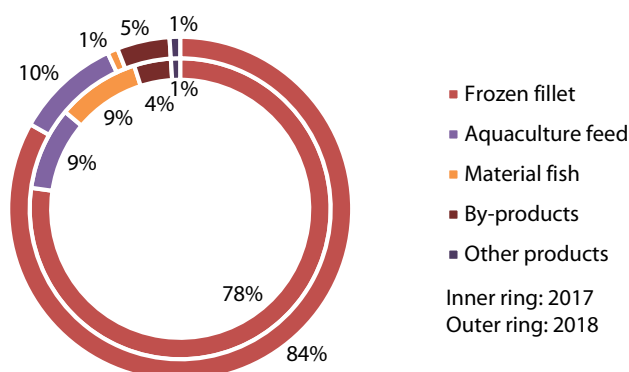


Source: ANV

The main product is pangasius (84% of revenue) with a variety of processing forms including fillet, cut, whole. Besides, the company also produces packaging and pangasius feed for farming activities. By-products such as pangasius skin and bones are processed into fish meal and fish fat, sold to cattle feed factories. Excess pangasius feed and material fish (depending on the time) is sold to family-scale fish farmers and other processing factories.

In order to improve its competitive advantage and profitability, ANV has invested in trial production of some value-added products, collagen and surimi. According to the company, these products have a very high gross profit margin of 30-50% due to the advantage of by-products of fish fillet process. Because collagen is mainly used to manufacture cosmetics and functional foods, we believe that ANV's process of seeking customers will take many years for strict quality certification and trial of customers who are pharmaceutical and cosmetic companies.

Figure 9: Revenue structure

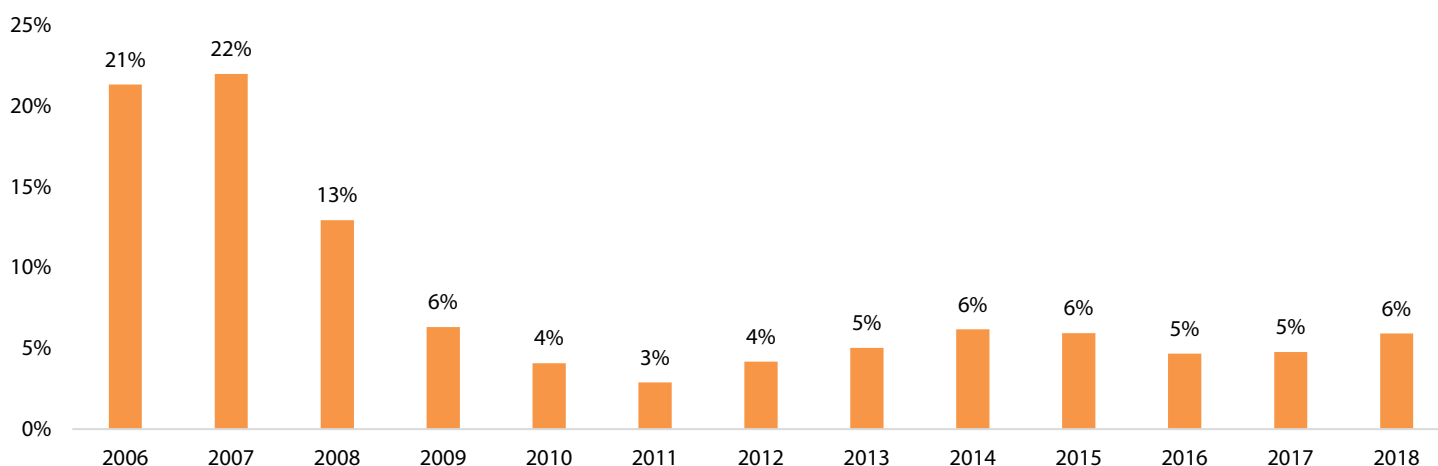


Source: ANV, Rong Viet Securities

Position in the industry

In 2018, ANV ranked 3rd in the industry in terms of export value. Due to very low entry barriers, fierce competition makes the position of many companies in the industry constantly changing. After leading the industry in the period of 2006-2009, from 2010 to the present (except for 2012), ANV has maintained its position in the group of five companies with the largest export value of the industry.

Figure 10: ANV's share in Vietnamese pangasius export value

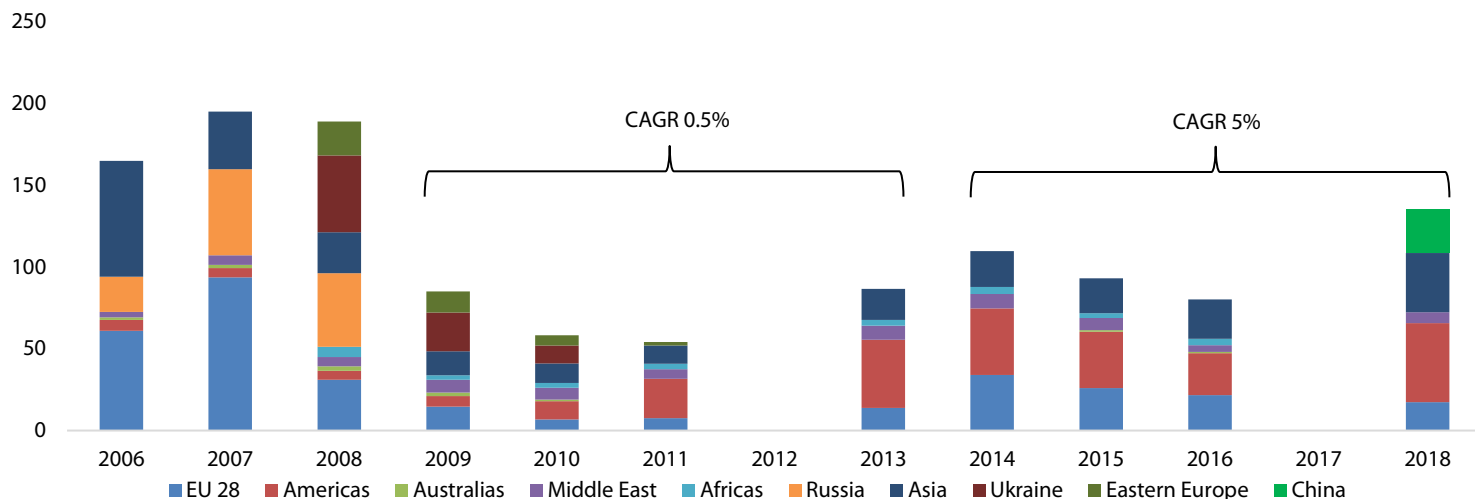


Source: VASEP, Rong Viet Securities

FINANCIAL ANALYSIS

Revenue

Figure 11: Pangasius export value (USD mn) and ANV's market structure



No market structure data for 2012 and 2017

Source: ANV, Rong Viet Securities

ANV's export value fluctuates due to tariffs and technical barriers as well as economic and political developments. In the fishery sector, this is inevitable.

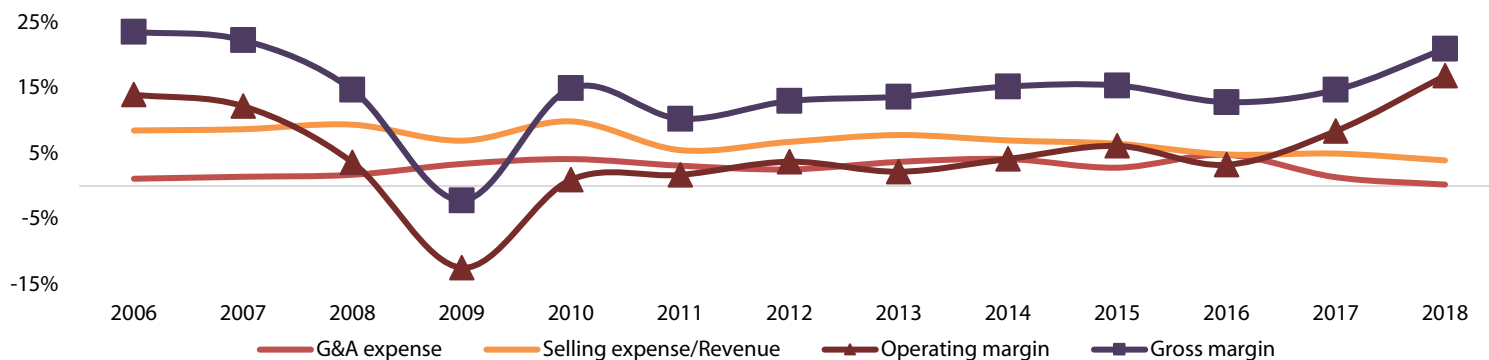
After a period of prosperity thanks to strong demand in Russia, Ukraine, Eastern European countries and the EU (accounting for 76% of export value in 2008), the business has faced difficulties since 2009 due to (1) Russia stopped importing pangasius due to antibiotic residues detected and (2) the global financial crisis weakened purchasing power. The market structure changed continuously until 2013. Growth in the period of 2009-2013 was low with a CAGR of only 0.5%.

From 2014 to the present, the market structure has gradually stabilized with ASEAN and the Americas being the main markets. The sales growth is 5%/year, approximately 6%/year for the industry. Since 2018, the partnership with Shanghai Fenglei has helped China become a new growth engine (20% of sales in 2018 and 26% in the first 8 months of 2019) mainly by boosting sales volume, thanks to high demand in China. This market does not require high import standards, meaning that it is unlikely for companies to propose high export prices.

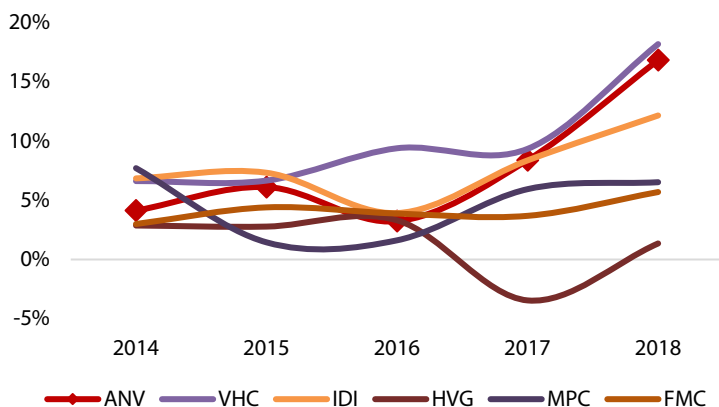
Meanwhile, the US is a large market (accounting for 20-24% of the industry's total turnover), long-standing and high-end with strict requirements not only for quality but also for responsible farming. Therefore, this market accepts high selling prices and the demand is more stable than elsewhere. This is the reason for ANV's intention to return to the US. For this market, anti-dumping duty is the most difficult barrier to overcome. Because ANV's products do not differ much from most catfish products sold in the US, we believe that the company's annual exports to the US will be affected by changes in the anti-dumping duty. If the duty is not too high, ANV has great potential to increase gross profit margin thanks to low and stable farming costs.

Profit

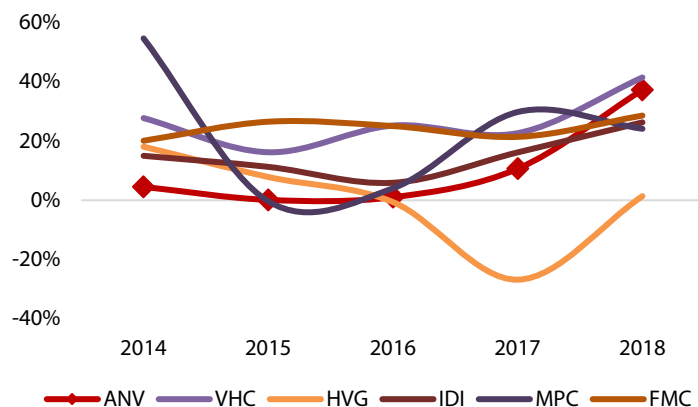
Effective management with the proportion of expenses/ revenues decreasing gradually over time. While the gross profit margin remained around 13-15% from 2013 to 2017, well-managed operation of expenses has supported the expansion of operating profit margin from 2% to 8% in the same period.

Figure 12: Selling expense, G&A expense, gross margin and operating margin


Source: ANV, Rong Viet Securities

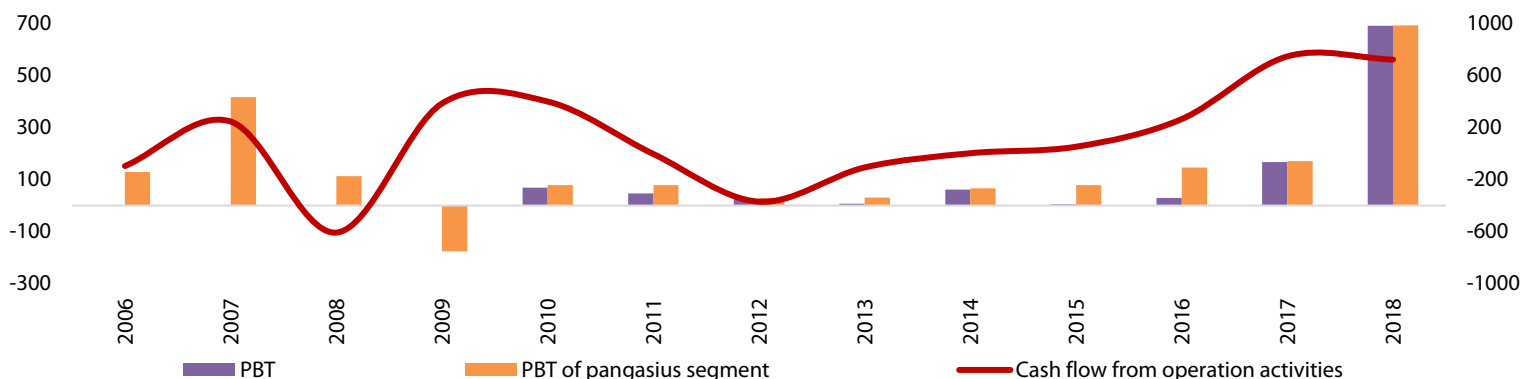
Figure 13: Operating margin of some fishery companies


Source: Companies' financial statements, Rong Viet Securities

Figure 14: ROE of some fishery companies


Source: Companies' financial statements, Rong Viet Securities

2011-2016: Borrowing interest and provision expenses of ineffective non-core investments increased the burden of financial expenses and management costs. After divesting of non-core investments in 2016-17, costs also decreased. Combined with skyrocketing export prices in 2018, operating profit margin increased to 17%, the highest in the company's history since listing. Thanks to no longer being burdened with losses from non-core investments, profit and cash flow have strongly recovered since 2017. ROE also rallied.

Figure 15: PBT, PBT of pangasius segment (LHS) and cash flow from operation activities (RHS) (VND bn)


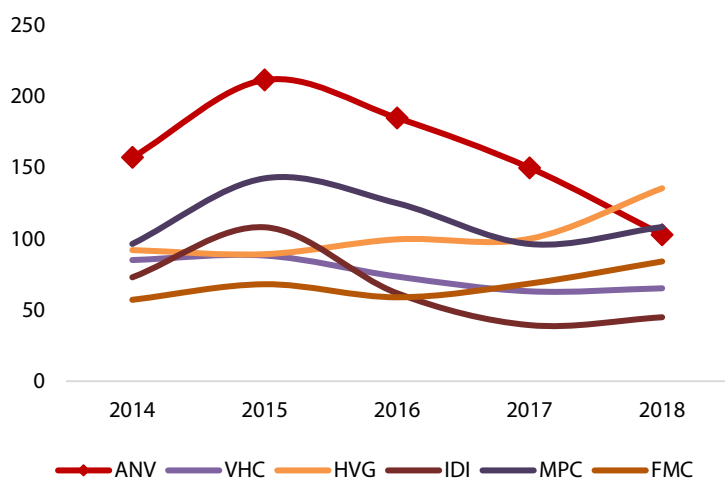
Source: ANV, Rong Viet Securities

Working capital management improves

Both the average days of inventory on hand and the average days of receivables decreased over time, showing a better ability to sell and collect from customers. The number of days of inventory on hand decreased but is still higher than some leading companies in the fishery industry (VHC, FMC and IDI). We believe that the reason is partly due to the fact that the company recognizes the value of fish being raised in ponds, with a higher level of self-supply material fish than other pangasius companies (VHC 50-60%, IDI 70-80%).

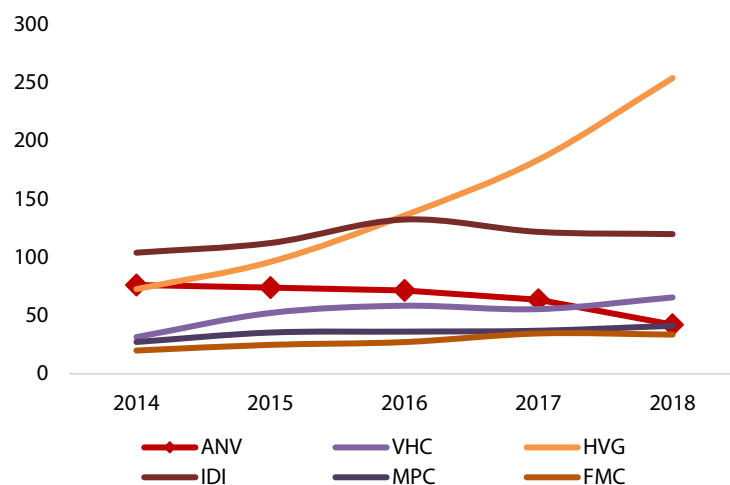
The collection period plummeted in 2018 (from an average of 71 days in the previous 4 years to 42 days in 2018) when cooperation with Shanghai Fenglei in China. The company limits the share of this market at 35% and only exports via official channel, hence the payment risks are not high.

Figure 16: Average days inventory on hand of ANV and other companies



Source: Companies' financial statements, Rong Viet Securities

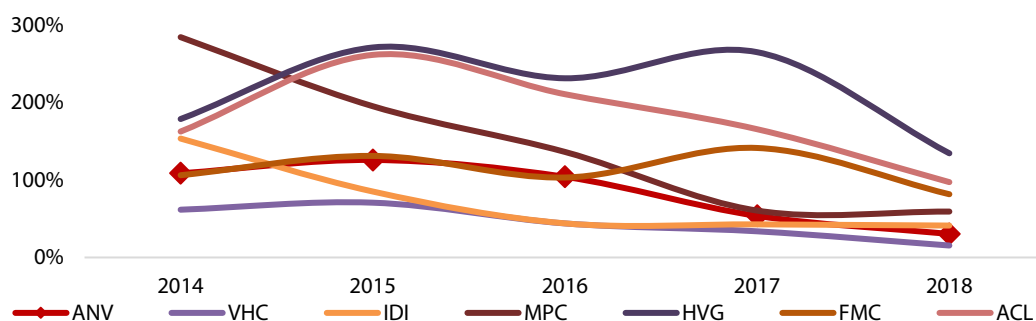
Figure 17: Average days receivables collected of ANV and other companies



Source: Companies' financial statements, Rong Viet Securities

Healthy capital structure

Fishery is an industry that frequently faces risks both in terms of inputs (weather, diseases) and outputs (economic fluctuations and political instability as well as technical and tariff barriers that regularly change). A low-debt financial structure acts as a cushion to reduce the pressure on cash flow and profitability in difficult times thanks to low interest expenses. ANV's capital structure from the listing in 2006 to 2011 was relatively healthy with an average net debt to equity ratio of 19%. Most of that was short-term debt for working capital. When fertilizer and mineral prices fell sharply in 2012-2015, the decline in profits caused the company to increase its debt with an average leverage ratio of up to 91%. The capital structure has improved gradually since 2016 thanks to divestments from non-core businesses. The leverage ratio at the end of 2018 reached 30%, a sound level in the industry. Given the costly lesson from past non-core investments, we believe the company will be more cautious in its decisions and, therefore, will maintain a safe capital structure.

Figure 18: Net debt/Equity ratio of ANV compared with other companies


Net debt = Short-term and Long-term debt – (Cash+Short-term investment + Long-term bank deposits)

Source: Companies' financial statements, Rong Viet Securities

Forecast

In 2019, the export value is forecast to reach USD 160 million (+10.4% YoY) thanks to a 15% increase in export volume, compensating for a 4% decrease in selling price after the price had soared 30% in 2018. High demand in China and ASEAN, in addition to the strict control of unofficial trade across the Vietnam-China border by the Chinese government, are the main driving forces for ANV's export value growth.

In 2020, the export turnover will reach USD 181 million (+12.9% YoY), corresponding to the output growth. The price of material fish in the market may increase sharply as farmers drastically reduce fingerling and material fish production in the second half of 2019, resulting in a shortage of raw fish for processing plants. With the advantage of being fully self-sufficient for material fish with low costs thanks to Binh Phu farm, we believe that ANV can keep selling prices competitive while increasing profit margins.

Growth of export value mainly comes from volume growth. The selling price will almost be unchanged compared to 2019 because the 2018 price increase has set a new price base that is higher than the previous period for the whole industry. The large demand in China and that Vietnam's pangasius production monitoring system has been recognized to be similar to the US system are strong supporting factors for the new price base.

Our assumptions have not taken into account the plan for the US market and the new collagen and gelatin product group.

Gross profit margin gradually increases from 21.5% in 2019 to 23% in 2023 due to the efficiency of Binh Phu farm.

Table 4: 2019-2023 forecast

VND bn	2018	2019F	2020F	2021F	2022F	2023F
Export value (USD mn)	145	160	181	202	221	238
Revenue	4,118	4,588	5,205	5,856	6,420	6,961
Gross margin	20.9%	21.5%	21.9%	22.2%	22.6%	23.0%
PAT	600	663	766	905	1,039	1,188

Source: ANV, Rong Viet Securities

Valuation

We use the discounted cash flow method (FCFF) and the relative P/E ratio to value ANV stock.

FCFF method

Because ANV is a company with unstable cash flow and relatively high financial leverage in recent years, the method of discounting cash flow will have a certain reliability. We use a WACC of 15.2%.

P/E method

No listed fishery companies in Vietnam have the same market capitalization as ANV. We consider the relative valuation of similar businesses in terms of revenue size, capitalization and fishery industry worldwide.

Table 5: Comparable in the fishery industry worldwide

Company	Country	Market cap (VND bn)	2018 revenue (VND bn)	ROE (%)	Trailing P/E (x)	Trailing P/B (x)	P/S (x)
NAM VIET CORPORATION	Vietnam	3,330	4,409	32.5	4.4	1.6	1.0
YONKYU CO LTD	Japan	3,867	8,279	3.9	14.4	0.7	0.4
NEW ZEALAND KING SALMON INVESTMENT	New Zealand	3,264	2,552	8.9	14.8	1.5	1.6
SILLA CO LTD	Korea	3,788	7,640	9.1	4.4	0.4	0.5
ASIAN SEAFOODS COLDSTORAGE	Thailand	2,323	6,928	14.7	8.7	1.2	0.4
DAIREI CO LTD	Japan	2,560	5,756	10.7	13.2	1.5	0.4
FLEURY MICHON SA	France	4,073	19,704	6.3	N/A	N/A	N/A
PESQUERA EXALMAR S.A.A.	Peru	3,403	5,540	12.5	N/A	N/A	N/A
YUTAKA FOODS CORP	Japan	3,207	4,374	5.3	11.19	0.6	0.5
YAIZU SUISANKAGAKU INDUSTRY	Japan	3,029	3,467	2.6	20.5	0.7	0.8
Average					9.2	0.7	0.5

Source: Bloomberg, as of 10/09/2019

While ANV's trailing P/E is significantly lower than its peers, comparing trailing P/B and P/S ratios shows that investors are paying high prices for its shares. Therefore, a P/E that is lower than average would be suitable for ANV. Considering the ability of increasing profit margin by cutting costs in the coming years, we think a P/E higher than that of 2018 P/E, 6.5x is suitable for ANV.

Thus, we estimate the share price to be VND 35,400.

Method	Price	Weight	Contribution
FCFF	36,919	50%	18,460
P/E	33,873	50%	16,937
Target price			35,396

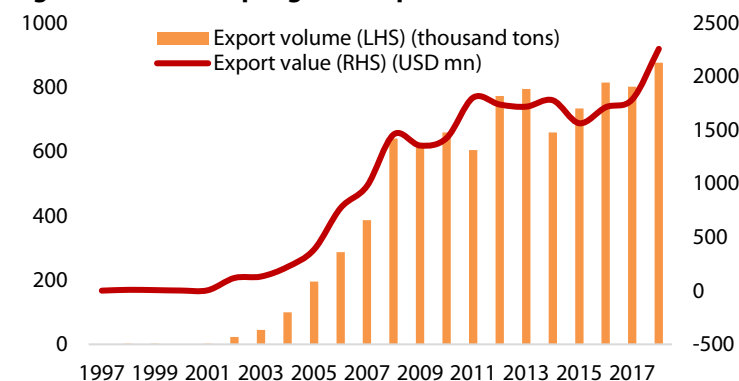
Source: Rong Viet Securities

PANGASIUUS SECTOR OVERVIEW

Vietnam dominates the global catfish export market

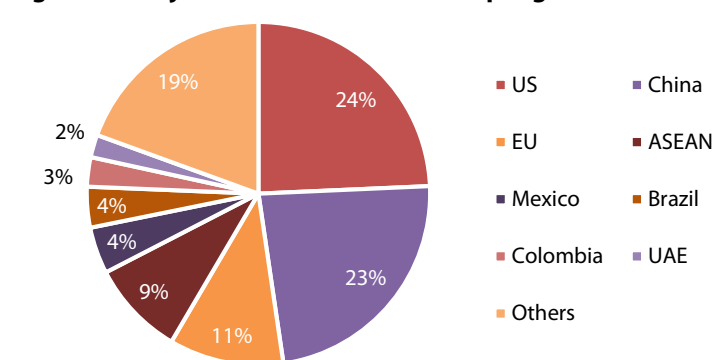
Pangasius is one of the two key agricultural products that Vietnam exports (along with shrimp). Starting exporting 20 years ago, the annual export CAGR growth rate is 1%/year. The four major markets are the US, the EU, China and ASEAN.

Figure 19: Vietnam pangasius exports



Source: VASEP, Rong Viet Securities

Figure 20: Major market for Vietnamese pangasius in 2018

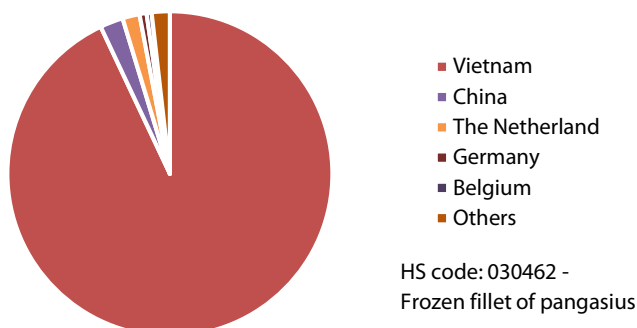


Source: VASEP, Rong Viet Securities

Unique natural conditions and advanced farming techniques

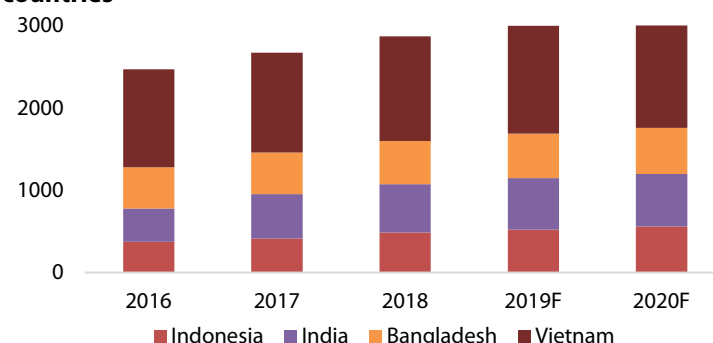
Pangasius farming started in the 1940s in An Giang and Dong Thap provinces, and has then expanded to the whole Mekong Delta. Ideal soil conditions and long-term farming experience create pangasius that has white meat, mild smell that suits the taste of consumers, making Vietnam controlling the global market of catfish exports. Meanwhile, other pangasius farming countries (India, Bangladesh and Indonesia) are producing low-value yellow pangasius and the volume is only sufficient to meet domestic demand.

Figure 21: Market share of catfish export by country in 2018



Source: International Trade Center (ITC), Rong Viet Securities

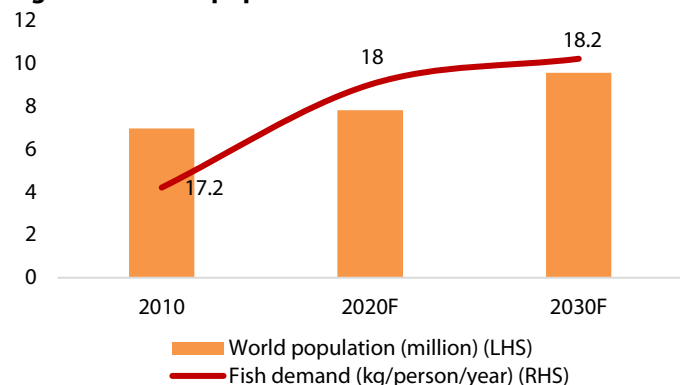
Figure 22: Pangasius harvest volume in major producing countries



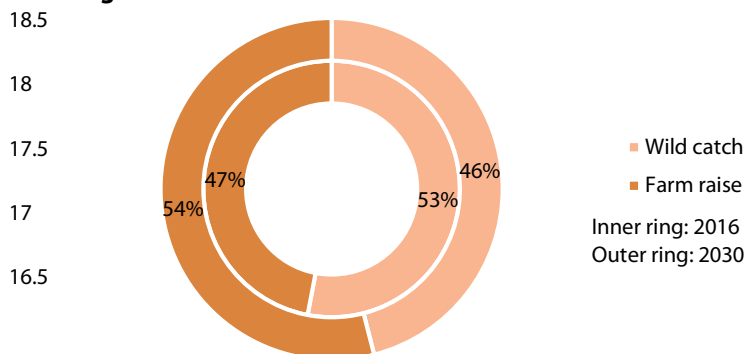
Source: Global Aquaculture Alliance, Rong Viet Securities

Pangasius prices will remain high due to increasing demand

According to a forecast by the Food and Agriculture Organization (FAO), the world population will exceed 8.5 billion people by 2030. The demand for fish consumption will increase to 18.2 kg / person / year by 2030, compared with a level of 17.2 kg / person / year in 2010. However, the wild catch industry will not grow to ensure biodiversity. Therefore, the demand for aquaculture will increase faster than the population growth. The proportion of aquaculture products in the total supply is forecast to increase from 47% in 2016 to 54% in 2030.

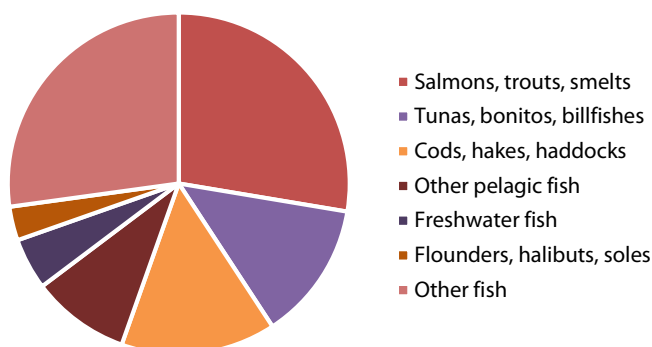
Figure 23: World population and fish demand until 2030


Source: FAO, Rong Viet Securities

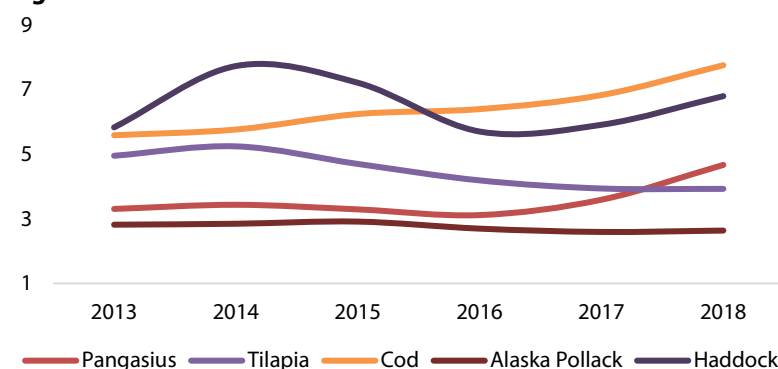
Figure 24: Global wild catch versus farm raised seafood


Source: FAO, Rong Viet Securities

In the white fish family, cod and pollock have long been the two most commonly consumed marine fishes. In recent years, the supply of these species has decreased due to global warming. Countries have to cut catching quotas, leading to a sharp rise in the prices. Demand for farmed fish thus increased significantly due to their lower prices. This is one of the main factors that pushed the export price of pangasius to a peak in 2018.

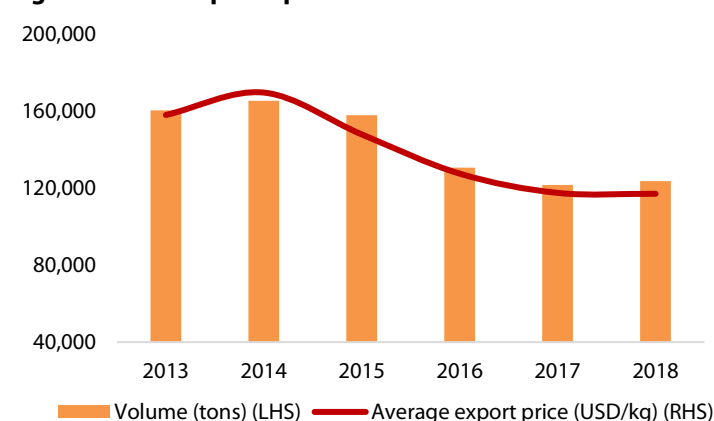
Figure 25: Share of white fish in world fish trade 2016


Source: FAO, Rong Viet Securities

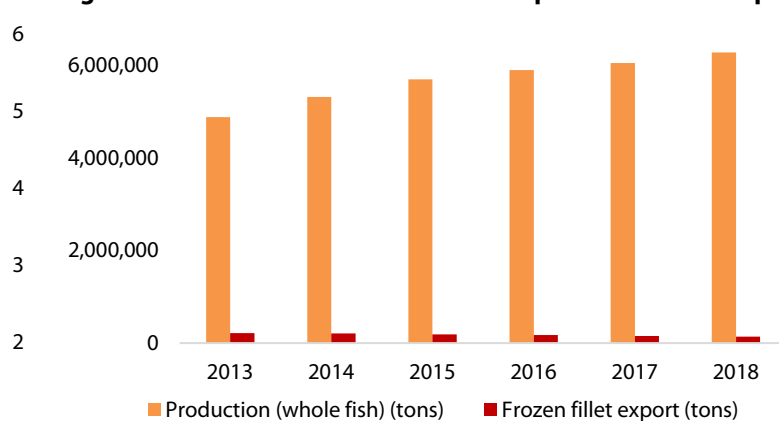
Figure 26: Prices of some white fishes in the US in 2013-2018


Source: ITC, Rong Viet Securities

The closest substitute of pangasius is tilapia, most of which is produced in China. However, tilapia exports are declining as the Chinese government is tightening management of aquaculture to reduce adverse effect on the environment, leading to a decline in the production of many aquacultured species. As well as a negative view by US consumers (the main market) about tilapia is a factor affecting demand.

Figure 27: US tilapia imports


Source: ITC, Rong Viet Securities

Figure 28: Global harvest volume and export volume of tilapia


Source: ITC, Global seafood market conference 2019, Rong Viet Securities

Relatively sustainable farming advantages, increasing consumer demand, together with the decline in export supplies of direct substitutes are factors that support long-term export prices. However, uncertainties related to the US-China, US-EU trade tensions and Brexit events may drag down export prices in the short term.

Export output has many barriers in markets

Export is unstable because of trade and technical barriers which change frequently and are increasingly complex, especially in the US and EU. Not only demanding food hygiene and safety, sustainable farming, packaging, labeling and quarantine, the motivation to protect domestic production also prompts governments to apply Import tax and anti-dumping duty on imported pangasius.

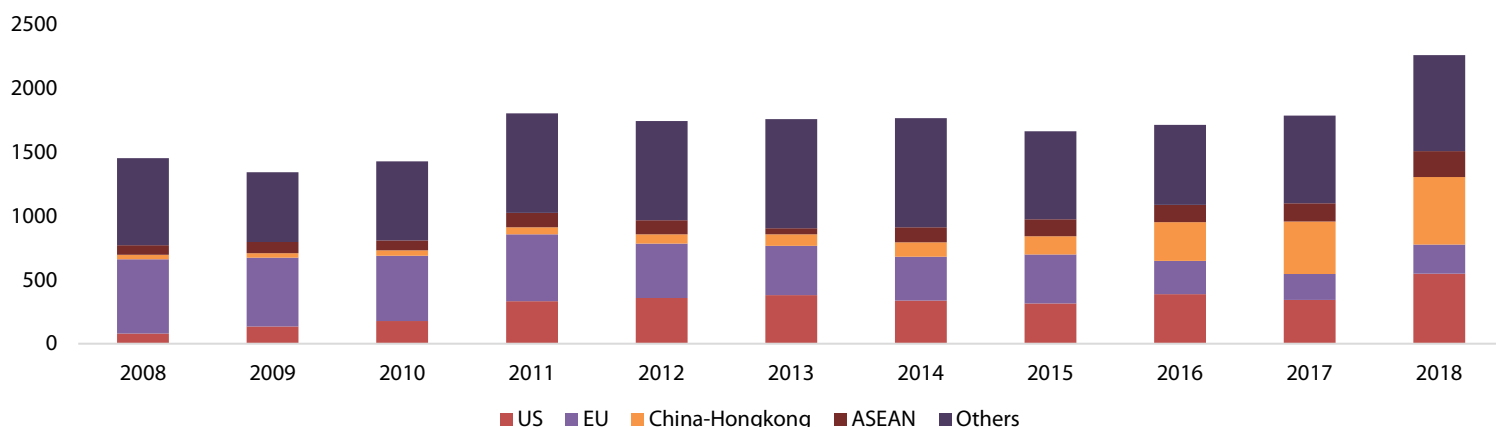
- *Anti-dumping lawsuit against pangasius in the US since 2002.* Vietnamese pangasius has entered the US market in 1998 and quickly became popular with US consumers thanks to its similar taste but cheaper price than American catfish. The growing threat has caused US catfish producers to lobby the US Government to bring Vietnam pangasius into an antidumping investigation since 2002. The annual tax change has caused exports of Vietnamese pangasius to the US to face many difficulties.

Table 7: Antidumping duty on Vietnamese pangasius in the US

		Mandatory respondents	Self-requested respondents	Country-wide	Period of review
POR 1	%	36.80-80.88		63.88	08/01/2003 – 07/31/2004
POR 2	%	21.23-80.88		63.88	08/01/2004 – 07/31/2005
POR 3	%	0.00-80.88		63.88	08/01/2005 – 07/31/2006
POR 4	%	0.52-6.81		63.88	08/01/2006 – 07/31/2007
POR 5	USD/kg	0.00-0.02	0.02	2.11	08/01/2007 – 07/31/2008
POR 6	USD/kg	0.00-0.56	0.56	2.11	08/01/2008 – 07/31/2009
POR 7	USD/kg	0.00-0.03	0.03	2.11	08/01/2009 – 07/31/2010
POR 8	USD/kg	0.19-1.34	0.77	2.11	08/01/2010 – 07/31/2011
POR 9	USD/kg	0.03-1.20	0.42	2.11	08/01/2011 - 07/31/2012
POR 10	USD/kg	0	0.97	2.39	08/01/2012 - 07/31/2013
POR 11	USD/kg	0.41-0.97	0.69	2.39	08/01/2013 - 07/31/2014
POR 12	USD/kg	0.69	2.39	2.39	08/01/2014 - 07/31/2015
POR 13	USD/kg	3.87	7.74	2.39	08/01/2015 - 07/31/2016
POR 14	USD/kg	1.37-3.87	1.37	2.39	08/01/2016 - 07/31/2017

Source: US Department of Commerce, International Trade Administration, Rong Viet Securities

- *The US Farm Bill 2014 Act*, effective since mid-2017. According to the US Agriculture Law 2014 (also known as Farm Bill 2014), all shipments of catfish (Siluriformes) imported into the US must be inspected by the Food Safety and Inspection Service (FSIS) of the Department of Agriculture. The Bill also requires Vietnam to prove the similarity in food safety supervision with the US system. Exports to the US encountered difficulties in the early stage when the new regulations were implemented because the number of FSIS authorized facilities conducting inspection was very small compared to the amount of goods that need to be inspected, causing goods to be congested at ports and companies enduring excess warehouse expenses. In September 2018, the US preliminarily recognized the similarity of Vietnam's pangasius management system, along with China's and Thailand's.

Figure 29: Pangasius export value by market (USD mn)


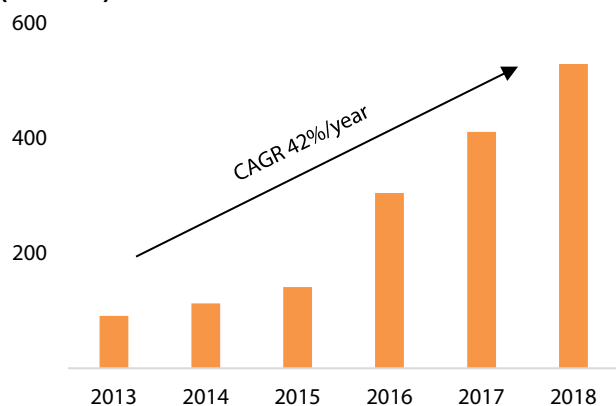
Source: VASEP, Rong Viet Securities

- Sabotaging media news on pangasius in the EU:** The lack of promotion campaigns for pangasius has led to a continuous decline in demand for pangasius in the European market for 8 years from 2010 to 2017 under the impact of 'false' information. For example, a Spanish television channel in 2017 accused pangasius farms of causing negative impacts on the environment and feeding fish with home-made food that is not hygienic and nourishing.

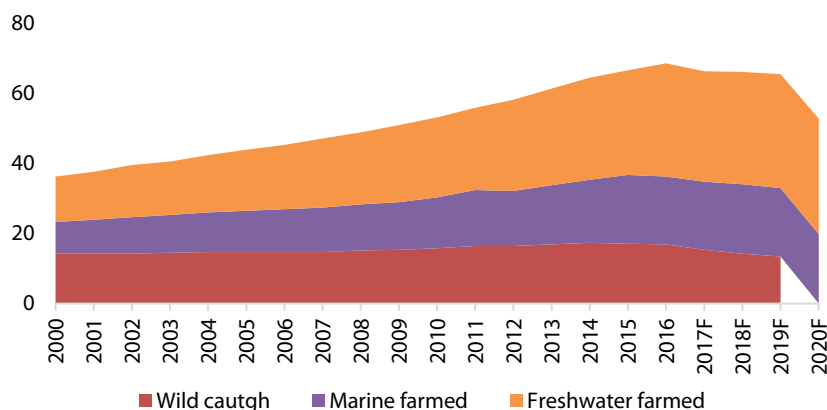
The fact that the US preliminarily recognized the Vietnamese pangasius management system similar to that of the US system would be a guarantee for the image of pangasius for not only with the US consumers but also the whole world because the US is a demanding market. However, the pangasius industry currently has not developed a proper promotion strategy to be able to respond proactively to adverse information.

China has emerged as a potential market

Pangasius exports to China have accelerated since 2013 with an average annual growth rate (CAGR) in the period 2013-2018 of 42% per year. Favorable geographic location, large population, increasing demand for seafood products following the rise in incomes, and favorable changes in Chinese policies are factors that make China a good and long-term replacement market when exporting to the US and Europe is increasingly difficult.

Figure 30: Pangasius export to China-Hongkong (USD mn)


Source: VASEP, Rong Viet Securities

Figure 31: Chinese seafood production is declining


Source: Rabobank (2018), Rong Viet Securities

Rising incomes have boosted consumer demand for imported seafood due to the perception that imported products have stringent hygiene standards. The high-income young population with a busy lifestyle increasingly prefers prepared foods to home cooking. Along with a sharp increase in the number of hotpot restaurants chains in many major cities and the popularity of e-commerce, sales of pangasius in China have boomed in recent years.

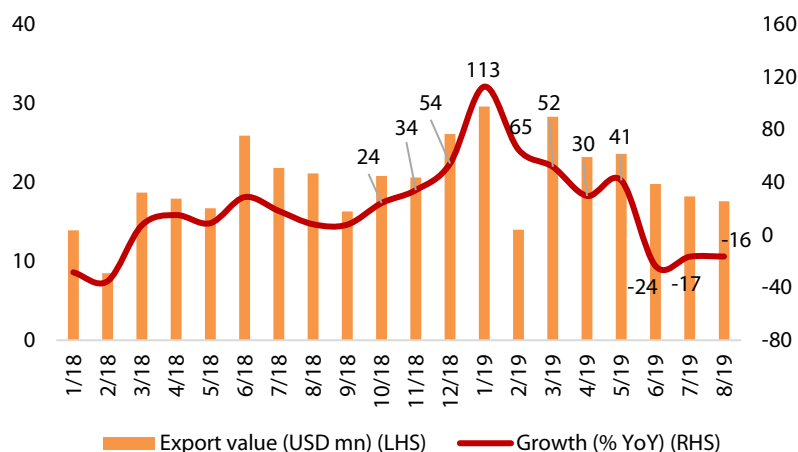
The Chinese seafood industry is also seeing many changes that are benefiting Vietnam's pangasius exports, including the government's efforts to protect the environment and sustainable farming practices by limiting expansion of farming areas and forcing closure of many farms causing pollution. OECD - FAO forecasts China's seafood production will reduce growth and in the long term will reduce harvest volume (Rabobank, 2018). In addition, the import tax of frozen pangasius has decreased from 12% to 7% since July 2018. The VAT on seafood has decreased from 10% to 9% from April 2019 and the "grey trade" import of seafood across the China - Vietnam border has been strictly controlled, giving opportunities for official export of pangasius from Vietnam.

A matter that has been of concern recently is that China has been able to raise pangasius since 2018 with an output of 30,000 tons of material fish (compared to 1.3 million tons of Vietnam). However, the year-round low temperature in China is a huge obstacle to the ability to increase production output. Therefore, we do not think that China can compete with Vietnam for its domestic pangasius supply, let alone compete in other markets.

The EU market has not recovered firmly due to US-China trade tensions, although the Europe-Vietnam trade agreement (EVFTA) is a driving force for long-term growth

The supply and prices of marine fish in EU waters from 2021 will be under pressure as the quota of marine fishing in the Atlantic and the North Sea declines significantly, increasing the demand for farmed fish, including pangasius. Pangasius exports to this market showed a strong positive rally from October 2018 to June 2019, right after Vietnamese pangasius was preliminarily recognized by the US to have a similar supervision system. However, exports to the EU fell in July and August due to the indirect impact of US-China trade tensions on the European economy and people's concerns about the difficulties of a "Brexit no deal" scenario.

Figure 32: Pangasius exports to the EU



Source: VASEP, Rong Viet Securities

Figure 33: Total allowable catch (TAC) of pelagic white fish in 2019-2020 (tons)

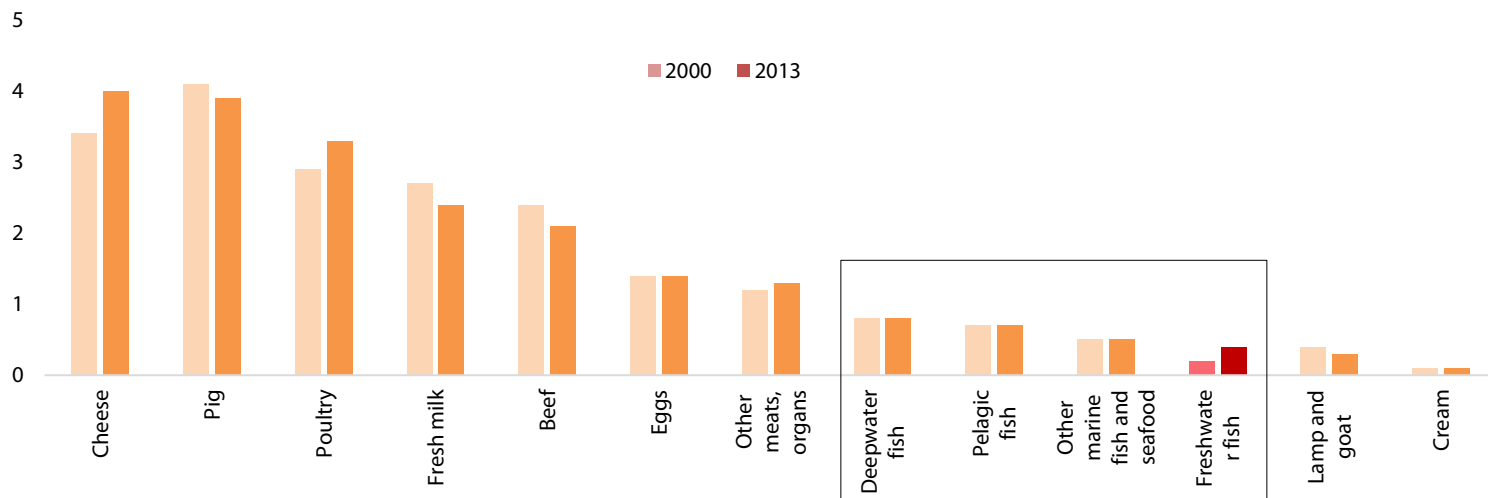
	TAC 2018	TAC 2019	Change
Herring	537,544	379,850	-29%
Cod	103,943	84,593	-19%
Haddock	56,763	51,867	-9%
Whiting	46,728	35,349	-24%
Hake	121,043	150,418	24%
Blue whiting	457,336	366,291	-20%
Plaice	135,196	127,009	-6%
Pollack	14,555	14,555	0%
Turbot and brill	7,102	8,122	14%
Greenland halibut	8,790	8,640	-2%
Common sole	25,801	22,422	-13%
Sole	1,072	1,072	0%
Total	1,515,873	1,250,188	-18%

Source: European Commission, Rong Viet Securities

A positive factor that will help the pangasius industry to recover in the EU market is the EVFTA agreement signed at the end of June 2019. It is expected to take effect from 2020. According to the agreement, the

import tax to the EU will be reduced from 5.5% to 0% within 3 years for frozen pangasius fillet (HS code 03) and from 7% to 0% within 7 years for processed pangasius (HS code 16). However, we do not think that EVFTA can make a big impact as the annual tax reduction is not significant and Europeans prefer marine fish over farmed fish.

Figure 33: Average consumption per capita (kg/year) of animal protein in Europe in 2013

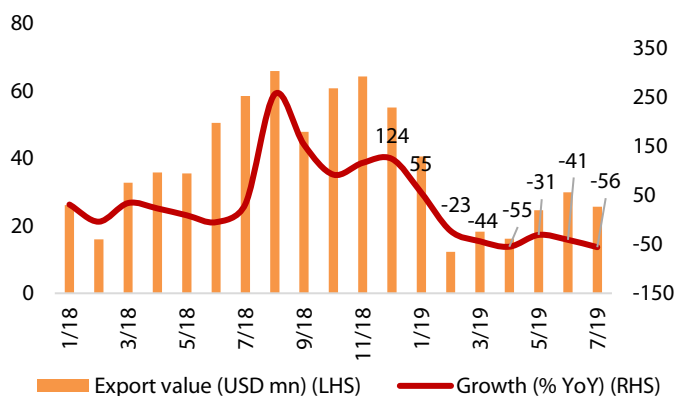


Source : European Environment Agency (EEA), Rong Viet Securities

The US-China trade tensions create opportunities for pangasius to replace Chinese tilapia in the US

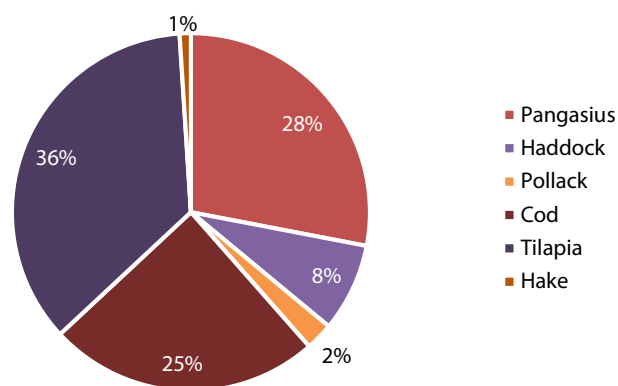
The fact that the US increased imports of many kinds of Chinese seafood (including tilapia) in late 2018 and early 2019 before the import tax increase from 10% to 25% has made Vietnam's pangasius exports to this market fall sharply in 2019. We think this is only a temporary decrease until Chinese seafood inventories in the US are mostly consumed. The new 25% import tax rate on Chinese tilapia officially taking effect on May 10, 2019 is expected to bring a large growth opportunity for Vietnamese pangasius.

Figure 34: Pangasius exports to the US tumbled in early 2019 due to the US-China trade tensions



Source: VASEP, Rong Viet Securities

Figure 35: White fish imports by the US (in volume), 10M2018



Source: VASEP, Rong Viet Securities

Unit: VND billion

PROFIT & LOSS STATEMENT	2017	2018	2019F	2020F
Revenue	2,949	4,118	4,588	5,205
COGS	2,517	3,256	3,603	4,067
Gross profit	432	862	985	1,138
Selling expenses	146	161	184	208
G&A expenses	39	9	35	40
Financial income	20	74	52	57
Financial expense	64	75	59	70
Other income/loss	-32	1	1	1
Gain/(loss) from joint	-5	-2	-2	-2
Profit Before Tax	167	690	758	875
Tax expense	23	86	91	105
Minority interests	2	4	4	4
Profit After Tax	142	600	663	766
EBIT	247	693	766	889
EBITDA	328	773	896	1,043

Percentile changes	2017	2018	2019F	2020F
Growth				
Revenue	4.4%	39.6%	11.4%	13.4%
EBITDA	94.1%	136.0%	15.9%	16.5%
EBIT	170.6%	180.2%	10.6%	16.1%
PAT	632.3%	321.4%	10.5%	15.6%
Total assets	-10.5%	26.7%	15.1%	19.4%
Total equity	6.3%	32.2%	25.5%	22.0%
Profitability				
Gross margin				
EBITDA margin	14.7%	20.9%	21.5%	21.9%
EBIT margin	11.1%	18.8%	19.5%	20.0%
Net margin	8.4%	16.8%	16.7%	17.1%
ROA	4.8%	14.6%	14.4%	14.7%
ROIC	5.3%	17.5%	16.8%	16.3%
ROE	16.8%	37.3%	30.8%	29.7%
	10.2%	32.5%	28.6%	27.1%
Efficiency				
Receivables turnover				
Inventories turnover	7.7	7.2	6.9	6.9
Payables turnover	2.9	3.4	2.9	2.9
	12.2	10.3	9.4	9.4
Liquidity				
Current				
Quick	1.1	1.3	1.6	1.7
	0.4	0.7	0.8	0.9
Finance Structure				
Total debt/equity				
ST debt/equity	78.8%	68.2%	53.4%	51.0%
LT debt/equity	73.3%	67.7%	46.3%	45.1%

Unit: VND billion

BALANCE SHEET	2017	2018	2019F	2020F
Cash and cash equivalents	26	69	77	87
Short-term investments	0	452	313	671
Accounts receivable	383	569	665	754
Inventories	874	962	1,248	1,409
Other current assets (inc. non-trade receivables)	34	38	41	40
Property, plant & equipment	342	645	682	506
Acquired intangible assets (Inc. Goodwill)	243	297	707	1,019
Long term investments	478	326	135	135
Other non-current assets	323	68	75	85
Total assets	2,702	3,425	3,943	4,707
Accounts payable	206	316	384	433
Short-term borrowings	1,025	1,251	1,074	1,277
Long-term borrowings	76	10	165	165
Other non-current liabilities	0	0	0	0
Bonus and Welfare fund	1	1	1	1
Technology-science development fund	0	0	0	0
Total liabilities	1,308	1,577	1,623	1,876
Common stock and APIC (additional paid in capital)	1,272	1,272	1,272	1,272
Treasury stock (enter as -)	-27	-27	-27	-27
Retained earnings / accumulated deficit	153	603	1,075	1,587
Other comprehensive income / (loss)	0	0	0	0
Investment and Development Fund	0	0	0	0
Total equity	1,398	1,848	2,320	2,831
Minority Interest	-4	0	0	0
CASH FLOW STATEMENT	2017	2018	2019F	2020F
Profit before tax	167	690	758	875
Depreciation	69	72	130	154
Adjustments	61	-48	0	0
Change in Working capital	448	7	-408	-305
Net Operating CFs	746	721	480	724
Change in Fixed Asset	-96	-101	-577	-290
Change in Deposit, equity investment	-267	-581	183	-10
Interest, dividend, cash profit	-4	-2	0	0
Net Investing CFs	-375	-685	-394	-301
Change in Capital	590	-	0	0
Change in Debt	-283	159	-22	204
Dividend paid & other	-674	-152	-191	-254
Net Financing CFs	-366	7	-213	-51
Beginning cash & equivalents	22	26	69	77
Change in cash & equivalents	4	43	-127	373
Ending cash & equivalents	26	69	77	87

Initial Coverage

This report is created for the purpose of providing investors with an insight into the discussed company that may assist them in the decision-making process. The report comprises analyses and projections that are based on the most up-to-date information with the objective that is to determine the reasonable value of the stock at the time such analyses are performed. Through this report, we strive to convey the complete assessment and opinions of the analyst relevant to the discussed company. To send us feedbacks and/or receive more information, investors may contact the assigned analyst or our client support department.

RATING GUIDANCE

Ratings	BUY	ACCUMULATE	REDUCE	SELL
Total Return including Dividends in 12-month horizon	>20%	5% to 20%	-20% to -5%	<-20%

ABOUT US

RongViet Securities Corporation (RongViet) was established in 2007, licensed to perform the complete range of securities services including brokerage, financial investment, underwriting, financial and investment advisory and securities depository. RongViet now has an operating network that spreads across the country. Our major shareholders, also our strategic partners, are reputable institutions, i.e Eximbank, Viet Dragon Fund Management, etc... Along with a team of the professional and dynamic staffs, RongViet has the man power as well as the financial capacity to bring our clients the most suitable and efficient products and services. Especially, RongViet was one of the very first securities firms to pay the adequate attention to the development of a team of analysts and the provision of useful research report to investors.

The **Analysis and Investment Advisory Department** of RongViet Securities provides research reports on the macro-economy, securities market and investment strategy along with industry and company reports and daily and weekly market reviews.

ANALYSIS & INVESTMENT ADVISORY DEPARTMENT

Lam Nguyen

Deputy Manager

lam.ntp@vdsc.com.vn
 + 84 28 6299 2006 (1313)

- Banking
- Market Strategy

Duong Lai

Senior Analyst

duong.ld@vdsc.com.vn
 + 84 28 6299 2006 (1522)

- Real Estate
- Building Materials

Vu Tran

Senior Analyst

vu.thx@vdsc.com.vn
 + 84 28 6299 2006 (1518)

- Oil & Gas
- Fertilizer

Trinh Nguyen

Senior Analyst

trinh.nh@vdsc.com.vn
 + 84 28 6299 2006 (1551)

- Steel
- Construction
- Utilities

Tu Vu

Analyst

tu.va@vdsc.com.vn
 + 84 28 6299 2006 (1511)

- Macroeconomics

Son Tran

Analyst

son.tt@vdsc.com.vn
 + 84 28 6299 2006 (1527)

- Market Strategy
- Consumer discretionary
- Pharmaceuticals

Tung Do

Analyst

tung.dt@vdsc.com.vn
 + 84 28 6299 2006 (1521)

- Logistics
- Aviation

Thao Dang

Analyst

thao.dtp@vdsc.com.vn
 + 84 28 6299 2006 (1529)

- Food & Beverage
- Textiles

Tam Pham

Analyst

tam.ptt@vdsc.com.vn
 + 84 28 6299 2006 (1530)

- Insurance
- Fishery

Anh Nguyen

Analyst

anh2.ntt@vdsc.com.vn
 + 84 28 6299 2006 (1531)

- Banking

Vy Nguyen

Analyst

vy.ntk@vdsc.com.vn
 + 84 28 6299 2006 (1528)

- Automobile & Parts

Hoang Nguyen

Analyst

hoang.nt@vdsc.com.vn
 + 84 28 6299 2006 (1538)

- Market Strategy

Hoang Bui

Analyst

hoang.bh@vdsc.com.vn
 + 84 28 6299 2006 (1514)

- Natural Rubber
- Agriculture

Tu Pham

Analyst

tu.pm@vdsc.com.vn
 + 84 28 6299 2006 (1536)

- Steel

Bernard Lapointe

Senior Consultant

bernard.lapointe@vdsc.com.vn
 + 84 28 6299 2006

Ha Tran

Assistant

ha.ttn@vdsc.com.vn
 + 84 28 6299 2006 (1526)

Vi Truong

Assistant

vi.ttt@vdsc.com.vn
 + 84 28 6299 2006 (1517)

DISCLAIMERS

This report is prepared in order to provide information and analysis to clients of Rong Viet Securities only. It is and should not be construed as an offer to sell or a solicitation of an offer to purchase any securities. No consideration has been given to the investment objectives, financial situation or particular needs of any specific. The readers should be aware that Rong Viet Securities may have a conflict of interest that can compromise the objectivity this research. This research is to be viewed by investors only as a source of reference when making investments. Investors are to take full responsibility of their own decisions. VDSC shall not be liable for any loss, damages, cost or expense incurring or arising from the use or reliance, either full or partial, of the information in this publication.

The opinions expressed in this research report reflect only the analyst's personal views of the subject securities or matters; and no part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendations or opinions expressed in the report.

The information herein is compiled by or arrived at Rong Viet Securities from sources believed to be reliable. We, however, do not guarantee its accuracy or completeness. Opinions, estimations and projections expressed in this report are deemed valid up to the date of publication of this report and can be subject to change without notice.

This research report is copyrighted by Rong Viet Securities. All rights reserved. Therefore, copy, reproduction, republish or redistribution by any person or party for any purpose is strictly prohibited without the written permission of VDSC. Copyright 2019 Viet Dragon Securities Corporation.

IMPORTANT DISCLOSURES FOR U.S. PERSONS

This research report was prepared by Viet Dragon Securities Corp. ("VDSC"), a company authorized to engage in securities activities in Vietnam. VDSC is not a registered broker-dealer in the United States and, therefore, is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. This research report is provided for distribution to "major U.S. institutional investors" in reliance on the exemption from registration provided by Rule 15a-6 of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act").

Additional Disclosures

This research report is for distribution only under such circumstances as may be permitted by applicable law. This research report has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient, even if sent only to a single recipient. This research report is not guaranteed to be a complete statement or summary of any securities, markets, reports or developments referred to in this research report. Neither VDSC nor any of its directors, officers, employees or agents shall have any liability, however arising, for any error, inaccuracy or incompleteness of fact or opinion in this research report or lack of care in this research report's preparation or publication, or any losses or damages which may arise from the use of this research report.

VDSC may rely on information barriers, such as "Chinese Walls" to control the flow of information within the areas, units, divisions, groups, or affiliates of VDSC.

Investing in any non-U.S. securities or related financial instruments (including ADRs) discussed in this research report may present certain risks. The securities of non-U.S. issuers may not be registered with, or be subject to the regulations of, the U.S. Securities and Exchange Commission. Information on such non-U.S. securities or related financial instruments may be limited. Foreign companies may not be subject to audit and reporting standards and regulatory requirements comparable to those in effect within the United States.

The value of any investment or income from any securities or related financial instruments discussed in this research report denominated in a currency other than U.S. dollars is subject to exchange rate fluctuations that may have a positive or adverse effect on the value of or income from such securities or related financial instruments.

Past performance is not necessarily a guide to future performance and no representation or warranty, express or implied, is made by VDSC with respect to future performance. Income from investments may fluctuate. The price or value of the investments to which this research report relates, either directly or indirectly, may fall or rise against the interest of investors. Any recommendation or opinion contained in this research report may become outdated as a consequence of changes in the environment in which the issuer of the securities under analysis operates, in addition to changes in the estimates and forecasts, assumptions and valuation methodology used herein.

No part of the content of this research report may be copied, forwarded or duplicated in any form or by any means without the prior.

RESEARCH DISCLOSURES

Third Party Research

This is third party research. It was prepared by Rong Viet Securities Corporation (Rong Viet), with headquarters in Ho Chi Minh City, Vietnam. Rong Viet is authorized to engage in securities activities according to its domestic legislation. This research is not a product of Tellimer Markets, Inc., a U.S. registered broker-dealer. Rong Viet has sole control over the contents of this research report. Tellimer Markets, Inc. does not exercise any control over the contents of, or the views expressed in, research reports prepared by Rong Viet.

Rong Viet is not registered as a broker-dealer in the United States and, therefore, is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. This research report is provided for distribution to "major U.S. institutional investors" and other "U.S. institutional investors" in reliance on the exemption from registration provided by Rule 15a-6 of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act").

Any U.S. recipient of this research report wishing to effect any transaction to buy or sell securities or related financial instruments based on the information provided in this research report should do so only through Tellimer Markets, Inc., located at 575 Fifth Avenue, 27th Floor, New York, NY 10017. A representative of Tellimer Markets, Inc. is contactable on +1 (212) 551 3480. Under no circumstances should any U.S. recipient of this research report effect any transaction to buy or sell securities or related financial instruments through Rong Viet. Tellimer Markets, Inc. accepts responsibility for the contents of this research report, subject to the terms set out below, to the extent that it is delivered to a U.S. person other than a major U.S. institutional investor.

None of the materials provided in this report may be used, reproduced, or transmitted, in any form or by any means, electronic or mechanical, including recording or the use of any information storage and retrieval system, without written permission from.

Rong Viet is the employer of the research analyst(s) responsible for the content of this report and research analysts preparing this report are resident outside the U.S. and are not associated persons of any U.S. regulated broker-dealer. The analyst whose name appears in this research report is not registered or qualified

as a research analyst with the Financial Industry Regulatory Authority ("FINRA") and may not be an associated person of Tellimer Markets, Inc. and, therefore, may not be subject to applicable restrictions under FINRA Rules on communications with a subject company, public appearances and trading securities held by a research analyst account.

Tellimer Markets, Inc. or its affiliates has not managed or co-managed a public offering of securities for the subject company in the past 12 months, has not received compensation for investment banking services from the subject company in the past 12 months, and does not expect to receive or intend to seek compensation for investment banking services from the subject company in the next three months. Tellimer Markets, Inc. has never owned any class of equity securities of the subject company. There are no other actual, or potential, material conflicts of interest of Tellimer Markets, Inc. at the time of the publication of this report. As of the publication of this report, Tellimer Markets, Inc. does not make a market in the subject securities.

About Tellimer

Tellimer is a registered trade mark of Exotix Partners LLP. Exotix Partners LLP and its subsidiaries ("Tellimer") provide specialist investment banking services to trading professionals in the wholesale markets. Tellimer draws together liquidity and matches buyers and sellers so that deals can be executed by its customers. Tellimer may at any time, hold a trading position in the securities and financial instruments discussed in this report. Tellimer has procedures in place to identify and manage any potential conflicts of interests that arise in connection with its research. A copy of Tellimer's conflict of interest policy is available at www.tellimer.com/regulatory-information.

Distribution

This report is not intended for distribution to the public and may not be reproduced, redistributed or published, in whole or in part, for any purpose without the written permission of Tellimer. Tellimer shall accept no liability whatsoever for the actions of third parties in this respect. This report is for distribution only under such circumstances as may be permitted by applicable law.

This report may not be used to create any financial instruments or products or any indices. Neither Tellimer, nor its members, directors, representatives, or employees accept any liability for any direct or consequential loss or damage arising out of the use of all or any part of the information herein.

United Kingdom: Distributed by Exotix Partners LLP only to Eligible Counterparties or Professional Clients (as defined in the FCA Handbook). The information herein does not apply to, and should not be relied upon by, Retail Clients (as defined in the FCA Handbook); neither the FCA's protection rules nor compensation scheme may be applied.

UAE: Distributed in the Dubai International Financial Centre by Exotix Partners LLP (Dubai) which is regulated by the Dubai Financial Services Authority ("DFSA"). Material is intended only for persons who meet the criteria for Professional Clients under the Rules of the DFSA and no other person should act upon it.

Other distribution: The distribution of this report in other jurisdictions may be restricted by law and persons into whose possession this document comes should inform themselves about, and observe, any such restriction.

Disclaimers

Tellimer and/or its members, directors or employees may have interests, or long or short positions, and may at any time make purchases or sales as a principal or agent of the securities referred to herein. Tellimer may rely on information barriers, such as "Chinese Walls" to control the flow of information within the areas, units, divisions, groups of Tellimer.

Investing in any non-U.S. securities or related financial instruments (including ADRs) discussed in this report may present certain risks. The securities of non-U.S. issuers may not be registered with, or be subject to the regulations of, the U.S. Securities and Exchange Commission. Information on such non-U.S. securities or related financial instruments may be limited. Foreign companies may not be subject to audit and reporting standards and regulatory requirements comparable to those in effect within the United States. The value of any investment or income from any securities or related financial instruments discussed in this report denominated in a currency other than U.S. dollars is subject to exchange rate fluctuations that may have a positive or adverse effect on the value of or income from such securities or related financial instruments.

Frontier and Emerging Market laws and regulations governing investments in securities markets may not be sufficiently developed or may be subject to inconsistent or arbitrary interpretation or application. Frontier and Emerging Market securities are often not issued in physical form and registration of ownership may not be subject to a centralised system. Registration of ownership of certain types of securities may not be subject to standardised procedures and may even be effected on an ad hoc basis. The value of investments in Frontier and Emerging Market securities may also be affected by fluctuations in available currency rates and exchange control regulations. Not all of these or other risks associated with the relevant company, market or instrument which are the subject matter of the report are necessarily considered.