FPT Securities

OUTLOOK 2021 VOLUME 02

BOUNCING BACK AFTER PANDEMIC

Aviation Industry
Logistics Industry
Textile & Garment Industry
Aquaculture Industry
Pharmaceutical Industry

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LIST OF ABBREVIATIONS IN THE REPORT

WB	World Bank
UNWTO	World Tourism Organization
IMF	International Monetary Fund
CAGR	Compound annual growth rate
EC	European Commission
EMA	European Medicines Agency
IATA	International Air Transport Association
IMO	International Maritime Organization
VPA	Vietnam Seaports Association
VITAS	Vietnam Textile and Apparel Association
VASEP	Vietnam Association of Seafood Exporters and Producers
GOAL	Global Outlook for Aquaculture Leadership
GDC	General Department of Vietnam Customs
GSO	General Statistics Office
MoH	Ministry of Health
DoH	Department of Health
BMI	Market research and analysis company, owned by Fitch Solutions
EUI	Euromonitor International
IQVIA	Data provider, technology solutions, analytical services, scientific research and medical-pharmaceutical markets (Formerly Quintiles and IMS Health)

FPT Securities

A. THE IMPACTS OF THE COVID-19 PANDEMIC

By 2019, most countries expected an optimistic global economic outlook in 2020. According to WB's forecasts, the world's GDP in 2020 was expected to grow by 3.5% yoy. However, as COVID-19 broke out in early 2020 and threatened the health and safety of not only all living beings but also many economies, all predictions about a brighter 2020 had been questioned.

On December 31st, 2019, WHO announced first COVID-19 cases in China. The virus had quickly spread to many countries, resulting in more than 84 million cases and more than 1.8 million deaths around the world as of January 3rd, 2021. Currently, the US is having the highest number of infected cases of more than 7.1 million, followed by India, Brazil, and Russia, etc. The global number of infected cases and fatalities caused by COVID-19 has yet to show signs of stopping. In Vietnam, 1,494 infections and 35 deaths were recorded as of January 3rd, 2021.

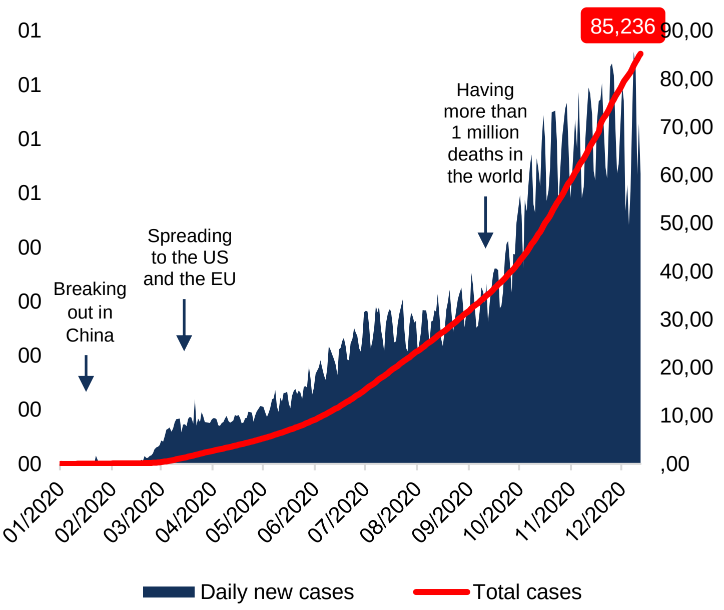
Owning a highly opened economy in which the trade-to-GDP ratio reached over 200%, Vietnam is very vulnerable and sensitive to impacts from COVID-19. Most domestic business sectors have faced many difficulties in 2020. At the beginning of the year, when the pandemic broke out in China, Vietnam's agricultural sector was most directly affected as a series of agricultural, forest, and ***aquaculture*** products could not be exported. When the pandemic started spreading, service industries such as tourism, ***aviation***, and ***logistics*** began to plunge. In addition, the pandemic created many challenges for industries dependent on imported raw materials including ***textiles*** and ***pharmaceuticals***, forcing businesses to cut costs by proactively suspending parts of production lines or laying workers off. Moreover, due to the impact of the pandemic, travel schedules and field trips of experts were interrupted, slowing down the progress of implementing investment projects, adding extra stagnation to most of the fields.

Despite being heavily damaged by the COVID-19 pandemic, Vietnam has been able to control the spreading of COVID-19 and is one of the few economies in the world to have a forecasted positive growth in 2020. According to IMF forecasts, Vietnam's 2020 GDP growth is estimated at 1.6%, and is expected to grow strongly to reach 6.5% in 2021. Therefore, with the Government's supports and the anticipated distribution of COVID-19 vaccines, we expect business activities across various industries to gradually bounce back in 2021.

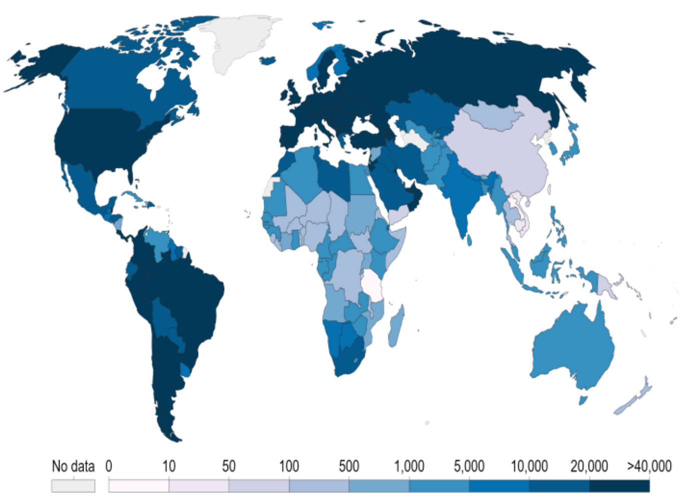
I. COVID-19 pandemic and global economic shock

1. The number of COVID-19 infections worldwide has yet to show signs of stopping

Total global COVID-19 cases (million of cases)



Map of the number of global COVID-19 cases



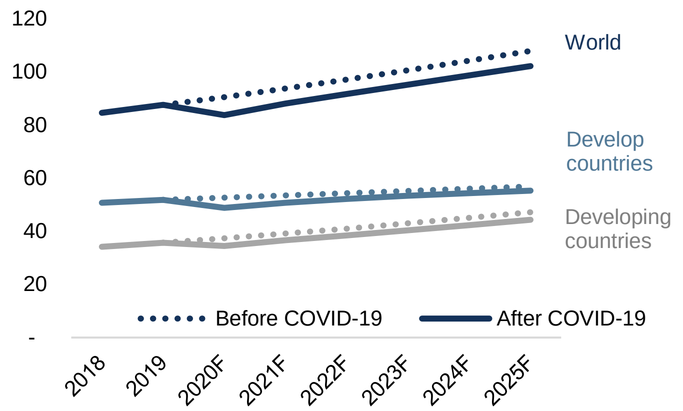
Sources: Johns Hopkins University (CSSE), FPTS Research

On December 31st, 2019, Wuhan's local government (China) confirmed first cases of "strange pneumonia". Within a year, as of January 3rd, 2021, the world had more than 84 million cases of COVID-19 infection. The number of deaths related to COVID-19 has reached more than 1.8 million, many times higher than those caused by the SARS pandemic in 2002-2003 (nearly 800 cases) and MERS in 2011 (845 cases) which all derived from coronavirus strains. Up to now, Europe and Americas are the regions with the highest number of cases in the world. The number of COVID-19 infections and deaths still shows no signs of stopping on a global scale.

Under the influence of the COVID-19 pandemic, a series of disease prevention measures were quickly adopted by governments around the world. Policies including social distancing, closing borders, suspending domestic and international commercial flights, restricting public gathering, etc. have helped prevent the spreading of the coronavirus. These measures, however, have created negative effects on economic growth around the world.

2. The global economy is heavily affected by the COVID-19 pandemic

World GDP projections under the influence of COVID-19 pandemic (trillion USD)



Sources: IMF, FPTS Research

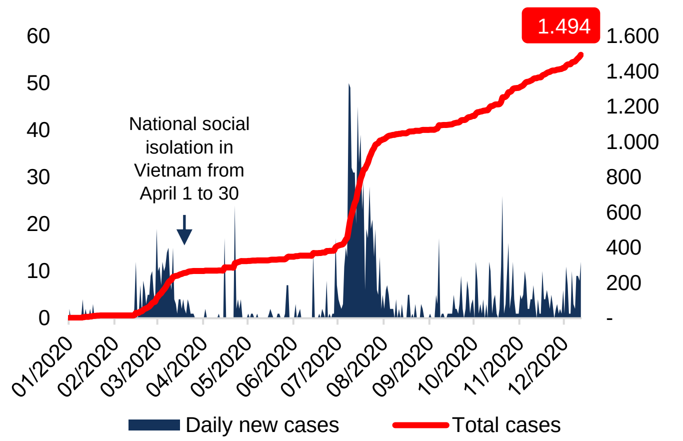
Being the most severe recession in nearly a century (*according to WB*), the COVID-19 pandemic has a direct impact on the health and safety of global beings, thereby indirectly forcing a series of countries to close their borders and pushing the world economy into a recession.

IMF forecasts that the world economy will reach USD84.000 billion in 2020 (-4.4% yoy). In other words, not until at least the end of 2021 will the world economy return to its 2019 size.

II. Vietnam's economy with the COVID-19 pandemic

1. Vietnam is one of the most effective countries response COVID-19 pandemic in the world

COVID-19 infections in Vietnam (as of January 3, 2020)

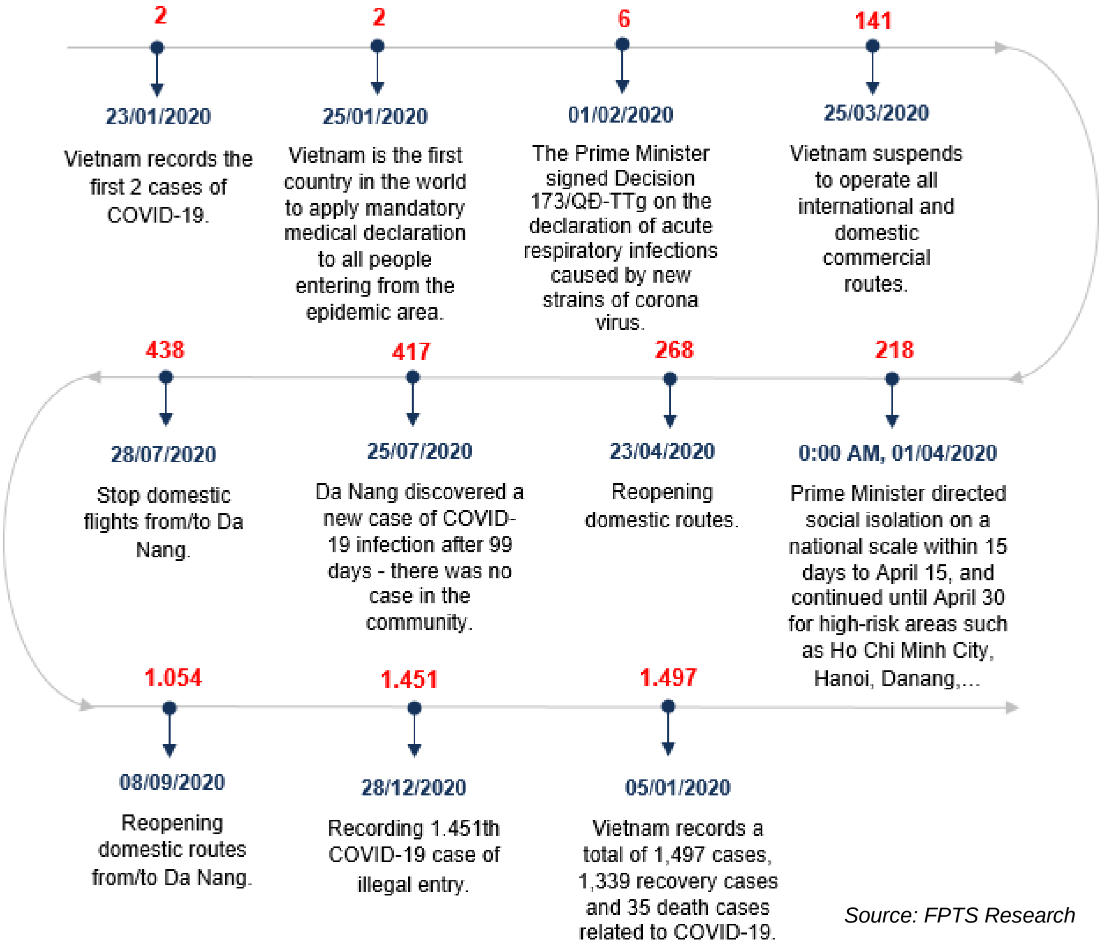


Sources: Johns Hopkins University (CSSE), FPTS Research

On January 23rd, 2020, Vietnam confirmed the first two cases of COVID-19 related to the infected area of China. Since then, Vietnam has implemented a series of drastic measures, namely entry restrictions, international flight suspensions, border tightening, quarantines upon entry, large-scale tracing of COVID-19 close contacts, etc. to prevent the spreading of the pandemic.

These quick and aggressive measures have resulted in a low number infected cases and deaths by COVID-19 in Vietnam compared to those in many other countries. As of January 3rd, 2020, Vietnam recorded a total of 1,494 COVID-19 infected cases; 1,339 of which have recovered, 120 are under treatment and 35 have deceased.

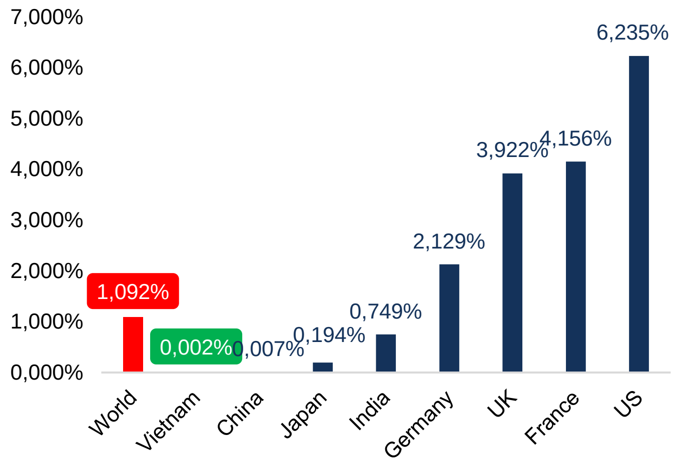
Events in the prevention of COVID-19 pandemic in Vietnam



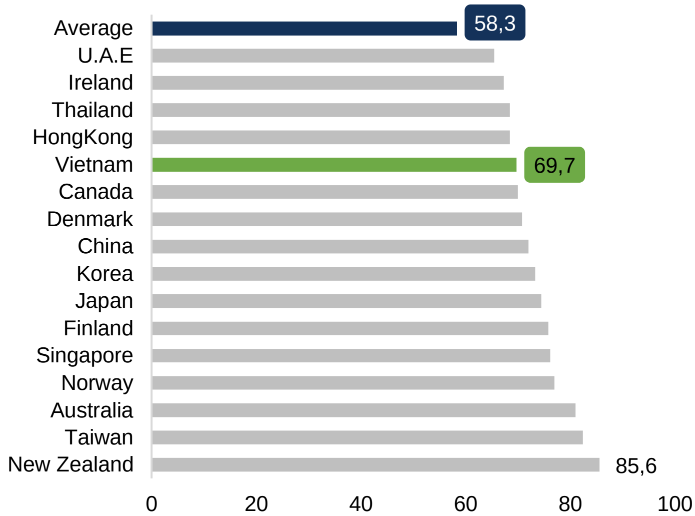
Source: FPTS Research

The number of COVID-19 cases of Vietnam accounts for only about 0.002% of its total population, much lower than the average figure of 1.092% of the world and 6,235% of the US, the country with the current highest number of COVID- 19 infections. According to Bloomberg's rankings of countries' ability to control the spreading of the disease, Vietnam ranks 12th with a score of 69.7, higher than the average of 58.3 points.

Ratio Number of cases/Total population of some selected countries (as of January 3, 2020)



COVID-19 Resilience Ranking

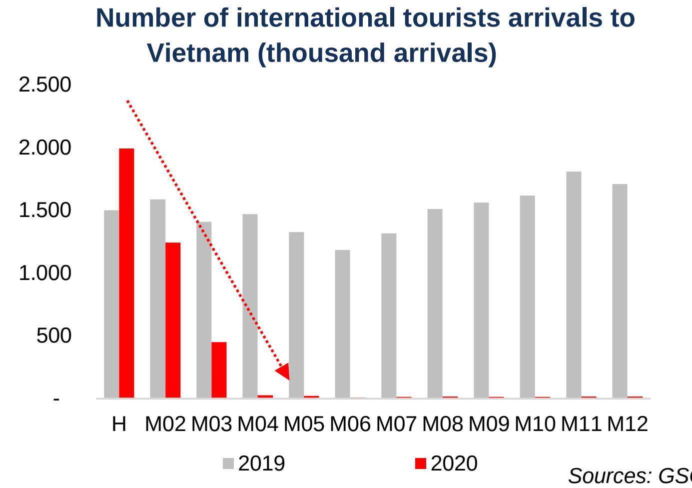


Sources: Johns Hopkins University (CSSE), FPTS Research

With the initial success in ensuring the health of the community, the Vietnamese government has issued a series of fiscal and monetary policies to support businesses, households and workers affected by the pandemic, aiming at tackling the spreading of COVID-19 and implementing socioeconomic development strategies. (For more details, see Outlook 2021 - Book 01 - Construction, Industrial Real Estate and Ceramic Tile).

2. Contrary impacts of several economic sectors by the effects of COVID-19 pandemic

2.1. The travel and aviation industry are most directly and severely affected

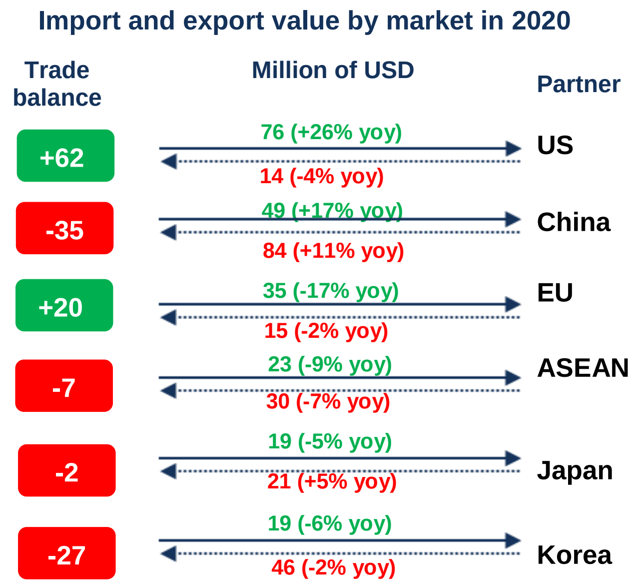


Sources: GSO, FPTS Research

The COVID-19 pandemic has pulled the growth of the world tourism industry down to the level of 30 years ago. According to UNWTO statistics, the number of international tourists in the world has decreased by 75%, corresponding to approximately a USD 1.1 trillion hit. In Vietnam, tourism is considered an important economy growth driver, which contributed directly to 9.2% of the nation's increasing GDP in 2019. Under the influence of various prevention measures, such as flight and entry restrictions, Vietnam's tourism was heavily impacted. Subsequently, Vietnam's aviation industry also faced a hit when there were no international visitors.

In 2020, the number of international visitors to Vietnam reached 3.8 million (-79% yoy), indicating almost no new arrivals recorded since April 2020 due to entry restriction orders. According to the Ministry of Culture, Sports and Tourism, Vietnam's tourism would face a USD 23 billion hit in 2020, equivalent to about 8.8% of Vietnam's 2019 GDP. Besides, the number of air passengers dropped by 49% yoy. The disruption of the travel process has delayed work schedules and entry of international partners, customers and experts to Vietnam, making it more difficult for many domestic production activities.

2.2.The balance of import-export trade recorded a record surplus value



Sources: General Department of Vietnam Customs, FPTS Research

With an increasing participation in the value chain of the world, Vietnam's import and export activities have faced certain impacts caused by COVID-19. When the pandemic started spreading, the domestic production slowed down in the first half of 2020. Thanks to the Government's effective attempts to control the disease and to support domestic enterprises, production activities strongly recovered in the latter half of 2020. Furthermore, Vietnam is a potential destination for U.S. and Japanese manufacturers as they shift their production out of China. Bilateral and multilateral trade agreements have also created a great motivation for Vietnam's economic development.

The General Statistics Office estimated Vietnam's total exports to reach USD 543.9 billion in 2020 (+5.1% yoy) with a trade surplus of USD19 billion, the highest level in five consecutive years of trade surplus since 2016. The US is the largest export market and China is the largest import market of Vietnam.

III.Outlook 2021

In 2021, we expect the global economy to be more stable than in 2020, thanks to stimulus measures, governments' support, and more importantly, the widely distribution of COVID-19 vaccines. According to Bloomberg statistics, up to now, there have been 10 vaccines licensed for commercial use developed by Germany, United States, United Kingdom, Russia, China and India. About 83 other vaccines are being tested in human clinical trials in many parts of the world.

Thus, based on the baseline scenario, we assume that in 2021:

(i) The COVID-19 pandemic in the world remains persistent, leading to a continuing social distancing circumstance which would then be eased as effective treatments and vaccines become accessible.

(ii) Vietnam continues to keep the disease spreading under control and no new outbreaks have arisen in the community.

(iii) A strong economic base supported by FTAs such as the EU-Vietnam Free Trade Agreement (EVFTA), the Regional Comprehensive Economic Partnership (ASEAN+6/RCEP), the Vietnam-UK Free Trade Agreement (UKVFTA), ...

Therefore, we expect industries with a high degree of dependence on the global supply chain such as Aviation, Logistics, Textiles, Aquaculture and Pharmaceuticals to go into the recovery cycle in 2021. The differences in the recovery level of each industry are shown as follows:

INDUSTRY	IMPACT LEVEL IN 2020	RECOVERY LEVEL IN 2021
AVIATION	HIGH	SLOW
LOGISTICS	HIGH	FAST
TEXTILE	HIGH	SLOW
AQUACULTURE	HIGH	MODERATE
PHARMACEUTICAL	LOW	MODERATE

AVIATION

SLOW RECOVERY DUE TO LIMITED INTERNATIONAL ROUTES

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Review 2020

The COVID-19 pandemic was an unprecedented shock to the Vietnam aviation industry with a disastrous consequence in which almost all domestic and international routes were suspended.

- The air transport segment suffered the greatest damage. Revenue passenger kilometers (RPK) of Vietnam's airlines in 2020 decreased by 45% compared to 2019. The passenger service segment's business results also dropped sharply (profit before tax in the first 9 months recorded a decline of 91.6% YoY).
- The air cargo terminal segment suffered the least losses owing to the maintenance of freighter flights. The cargo volume through Vietnam's airports in 2020 decreased by 15.6% YoY.

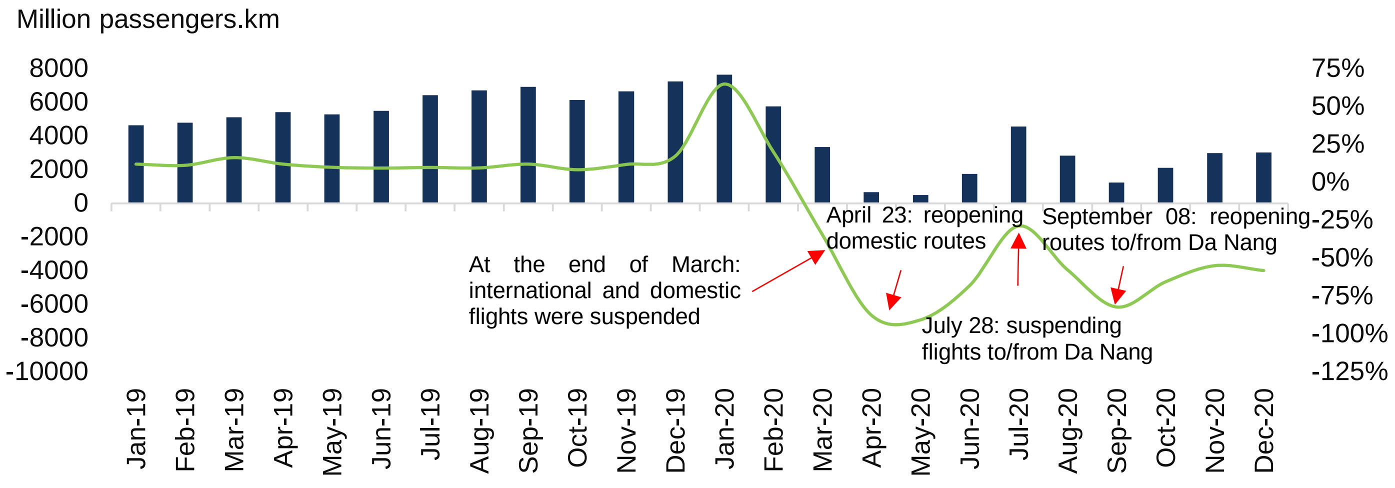
Outlook 2021

- The transport and passenger service segments will experience a slow recovery as only a few international routes are expected to resume in the second half of 2021. RPK of Vietnam's airlines in 2021 is expected to reach 90% of the level of 2019.
- The air cargo terminal sector is expected to rebound to the 2019 level due to a recovery in world trade.

B. AVIATION INDUSTRY: Slow recovery due to limited international routes

I. Review 2020: Grievous losses due to the suspension of flight routes as a result of the COVID-19 pandemic

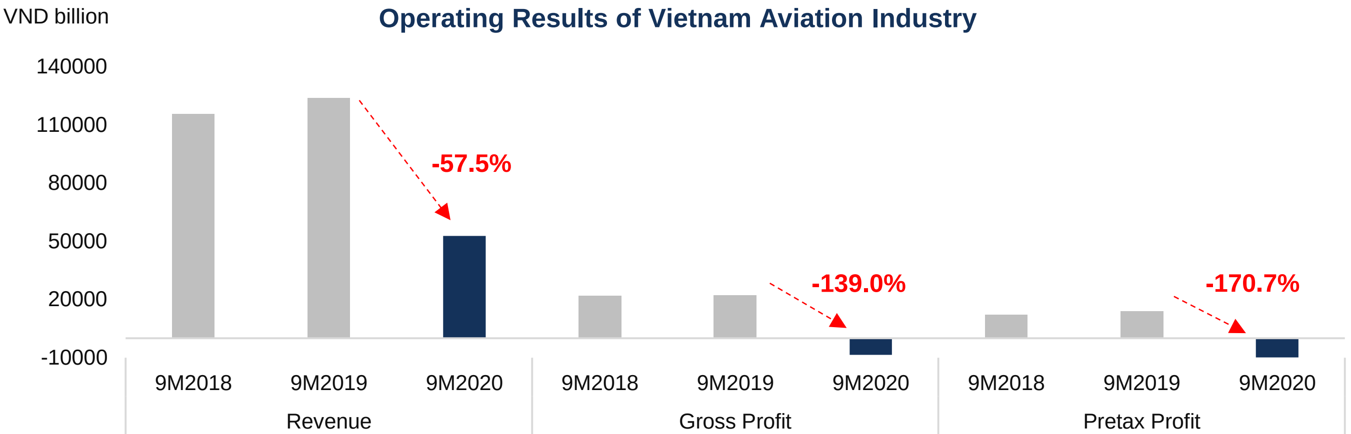
Revenue Passenger Kilometers (RPK) of Vietnam's Airlines



Sources: GSO, FPTS Research

Revenue passenger kilometers (RPK) declined sharply. After ceasing international and domestic flights at the end of March, RPK decreased by 88% YoY in April and by 91% YoY in May. With the reopening of domestic routes on April 23rd 2020, RPK gradually raised. However, on July 28th, passenger flights to/from Da Nang were required to stop (due to new COVID-19 cases in Da Nang), once again reducing RPK. From September 8th, the flight to/from Da Nang was reopened, RPK therefore increased gradually. The increase in RPK, however, was insignificant. Hence RPK was still very low compared to the same period last year due to international flights (accounting for about 60% of Vietnam's RPK in 2019) has not yet been reopened.

Operating Results of Vietnam Aviation Industry

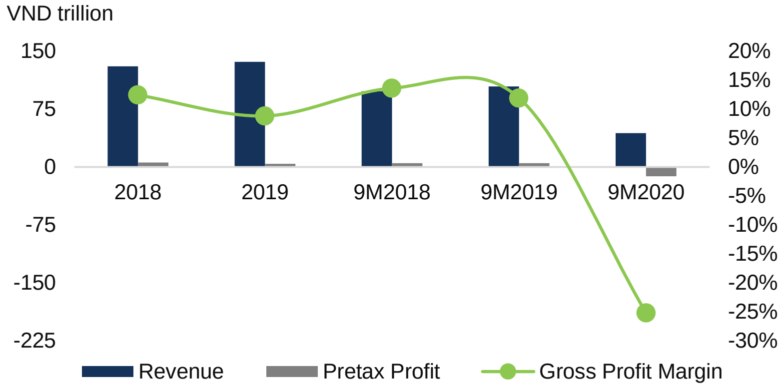


Data from financial statements of HVN, VJC, ACV, AST, SAS, SGN, CIA, NCS, MAS, NCT, SCS. Revenue and profit from the sale and lease of aircraft are excluded from HVN and VJC's revenue and profit.

Operating results of airline companies also plummeted. In the first 9 months of 2020, pretax profit of the aviation industry dropped sharply by 171% YoY, to a loss of VND 9.82 trillion. The specific impact of the COVID-19 pandemic on the three main segments including air transport, passenger-related aviation and non-aviation services (ground service, air catering service, duty-free sales, souvenir shops, and restaurant service), and cargo terminal services are shown below.

1. Air Transport Sector suffered the greatest damage, affecting enterprises' ability to maintain operations

Operating results of the air transport sector



In the first 09 months of 2020, pretax profit of the air transport segment suffered a VND 12 trillion loss, decreasing by 3.4 times compared to the same period in 2019. The main reasons include (i) the suspension of domestic and international passenger flights and (ii) unavoidable expenses such as depreciation, aircraft rental, maintenance expenses, etc.

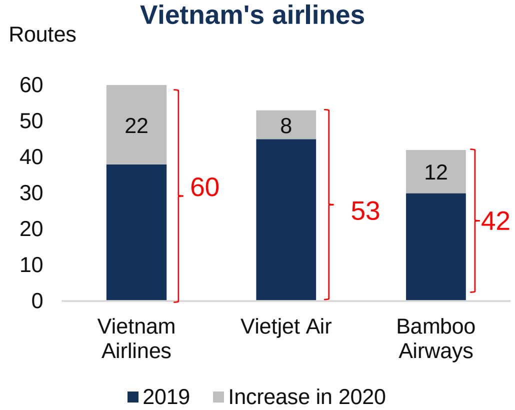
Data from financial statements of HVN, VJC. Revenue and profit from the sale and lease of aircraft are excluded from HVN and VJC's revenue and profit.

Airlines' ability to maintain operations. Current liabilities of HVN and VJC at the end of Q3 2020 exceeded current assets by VND 19.37 trillion. The total amount of cash, cash equivalents, and short-term deposits of HVN and VJC plunged by 55.8% at the end of Q3 2020 compared to the beginning of the year. In the first 09 months of 2020, the cash flow from operations of HVN and VJC was -VND 9.98 trillion.

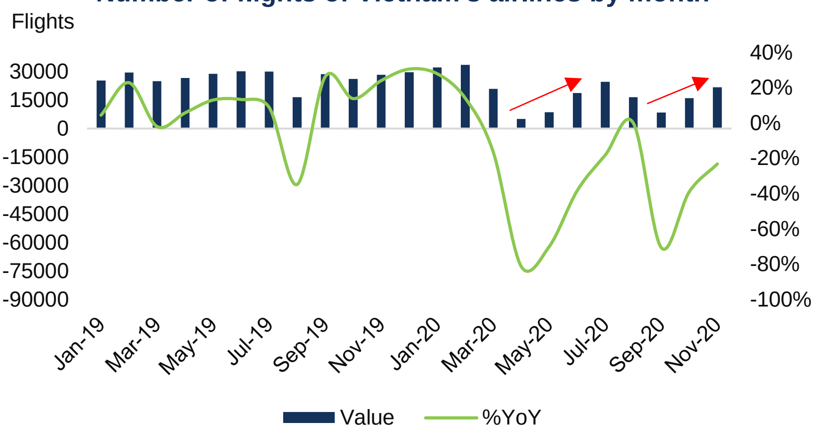
Policies were implemented by airlines to keep business running

Stimulating domestic market to offset the reduction in the number of international passengers: With Vietnam's success in controlling COVID-19, airlines launched new domestic routes to serve summer peak. This was demonstrated by the increase in the number of flights from May to July. The number diminished in August and September because of the return of COVID-19 and then completely restored when the outbreak was under control. In addition to the opening of new routes, airlines also implemented discount policies and advertised to attract customers.

Number of domestic routes of Vietnam's airlines



Number of flights of Vietnam's airlines by month



Sources: GSO, FPTS Research

The domestic market showed signs of recovery. At Noi Bai International Airport, from the beginning of September to the end of October, the number of passengers increased from 15 to 25% per week. In September 2020, the domestic passenger volume of Vietnam Airlines was equivalent to the same period in 2019. However, according to Vietnam Airlines, despite the improved number of domestic passengers, competitively low ticket prices had prevented enterprises from reaching the break-even point.

Negotiating with partners to postpone payment for the cost of aircraft rental, repair, and maintenance costs. HVN and VJC's accrued expenses related to aircraft rental, repair, and maintenance costs at the end of Q2 2020 increased by VND 1.97 trillion (+92% YoY).

Seeking other revenues from aircraft liquidation. The decrease in passenger volume caused airlines' fleets to be redundant. Therefore, HVN and VJC liquidated aircraft to generate more cash flow. In the first 09 months of 2020, HVN and VJC earned VND 1.66 trillion from the liquidation of aircraft and related parts.

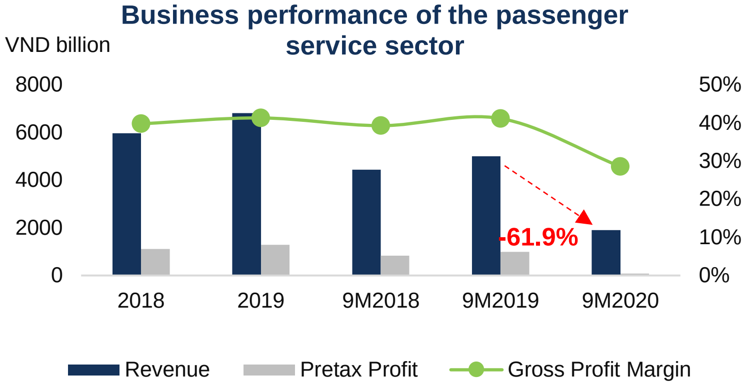
Vietnam Airlines increased short-term borrowings, negotiated to extend loans' payments and lower interest rates. HVN increased short-term borrowings from banks such as Vietcombank, BIDV, Techcombank, etc. HVN also negotiated with lenders to extend loans' payments and was acknowledged by some banks. At the end of Q3 2020, HVN's short-term borrowings were VND 11.68 trillion (+ 79.6% compared to the beginning of the year).

The government enacted policies to support airlines especially Vietnam Airlines

According to the resolution of the National Assembly's 10th session, the National Assembly approved the government's proposals on solutions to remove difficulties for Vietnam Airlines. Accordingly, HVN has been supported by the Government through two forms, including loans with preferential interest rates and equity investment (State Capital and Investment Corporation - SCIC was assigned). Previously, Vietnam Airlines proposed a support package of VND 12.0 trillion divided into two parts (1) VND 8.0 trillion were used to issue shares to existing shareholders, state shareholders could assign SCIC to invest; (2) a VND 4.0 trillion loan in 03 years with preferential interest rate.

Other government's supports for the aviation industry included reducing taking off and landing fees, flight navigation charges, ground operation fees, etc. Besides costs mentioned above, HVN and VJC bear other outside service costs such as the cost of repairing aircraft engines (accounting for about 34% of the outside service costs of HVN in 2019). Moreover, outside service costs account for about 31-33% of the total business costs of HVN and VJC.

2. Passenger Service Sector: The decline in passenger volume negatively affected business results



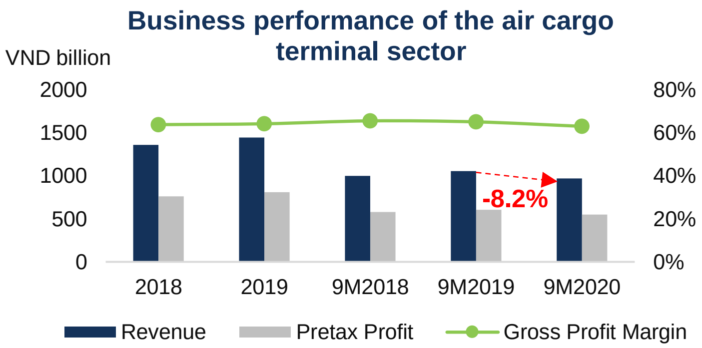
** Data from financial statements of AST, SAS, SGN, CIA, NCS, MAS.*

In the first 10 months of 2020, the number of passengers was approximately 53 million people (-45.5% YoY). In particular, the number of domestic passengers was about 46 million people (-26.8% YoY) and the number of international passengers was about 07 million people (-79.4% YoY). Because of the decline in the number of passengers, the passenger service segment's business performance plummeted. Revenue in the first 09 months of 2020 decreased by 61.9% YoY, profit before tax decreased by 91.6% YoY.

3. Air Cargo Terminal Sector: Suffered the least losses owing to the maintenance of freighter flights

Sources: Ministry of Transport, FPTS Research

According to the Ministry of Transport, the estimated volume of cargo through Vietnam's airports in 2020 was 1.3 million tons (-15.6% YoY, the first negative growth since 2009). The reason includes fluctuations in world trade and limited air transport activities due to the COVID-19 pandemic. Compared to the performance of the transport and passenger service segments, the cargo terminal service segment suffered the least from the Covid-19 pandemic because freighter flights have still been operated to maintain production and business activities in the world. In addition, some passenger aircraft cabins were re-configured to carry cargo by a removal of all, or some, of aircrafts' seats.



Revenue of the first 09 months of 2020 of the cargo terminal segment decreased by 8.2% YoY due to the drop in cargo volume. Gross profit margin diminished compared to previous years because enterprises implemented policies to support airlines such as reducing storage charges for delayed flights, canceled flights, and other related activities.

Data from financial statements of NCT, SCS.

II. Industry Outlook 2021: Slow recovery because the majority of international routes has not been reopened

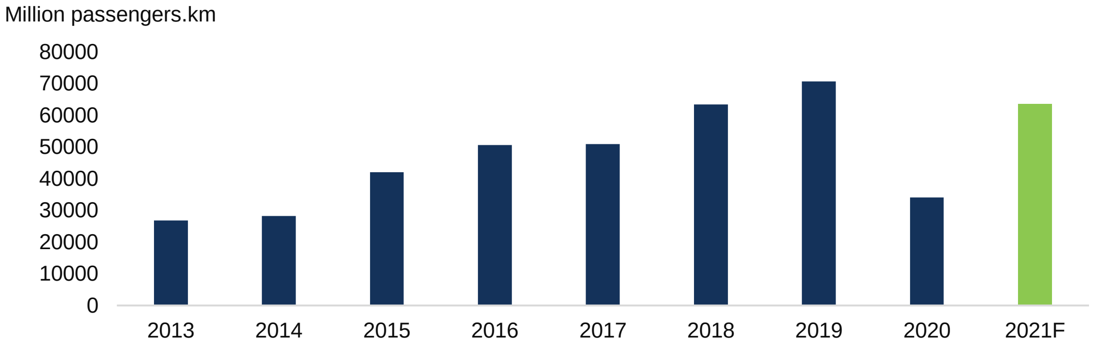
1. The transport and passenger services segments will recover slowly owing to limited international routes

According to Fitch Ratings (September 28, 2020), Vietnam's RPK is forecast to rebound in 2021, but only 90% of the baseline (in 2019) due to:

- **Only a few international routes are expected to resume in the second half of 2021.** In 2020, Vietnam allowed Vietnamese carriers to resume international air routes with countries that effectively control the COVID-19. The routes however were then suspended after 02 international flights from Korea because of incomplete isolation procedures. In the case that the COVID-19 pandemic in the world will be under control at the end of 2021 and vaccination has been gradually implemented in countries from 2021, we expect that some international commercial routes will reopen in the second half of 2021. VJC anticipates international commercial flights resuming in mid-2021. However, the reopening of international routes in the first phase will be restricted to a few countries and with a limited number of flights.

- **Domestic routes continue operating thanks to Vietnam's effective control.** However, as international commercial routes will not fully restore, airlines will continue to compete in the domestic market. Therefore, the pressure to reduce ticket prices will be high and profits from the domestic market will not have much impact on overall business performance.

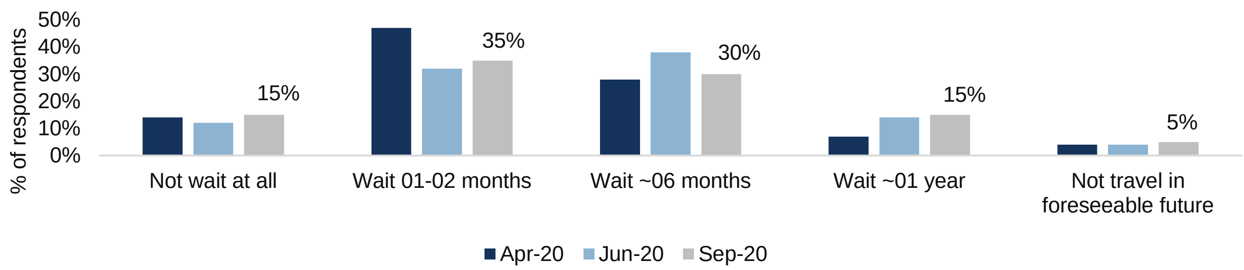
Revenue Passenger Kilometers of Vietnam's airlines



Sources: Fitch Ratings, FPTS Research

Besides, passenger behavior negatively affected by the pandemic, lowering the speed of recovery. According to the latest survey in September 2020 by the International Air Transport Association (IATA), around 50% of respondents are ready to travel by air when the pandemic is under control. In detail, about 35 % will wait from 01 to 02 months, and about 15% will choose to move immediately.

Passenger's choice of time to travel by air when the pandemic is under control



Source: IATA

According to Pham Van Hao, Deputy Director of the Civil Aviation Authority of Vietnam, it is predicted that the Vietnam aviation market will take about three years to rebound to the level of 2019. ACV believes that the negative impact of COVID-19 will continue in the years 2021 and 2022.

Note that risks associated with the pandemic of the transport and passenger services sectors are still high. Investors need to monitor information about the COVID-19 pandemic and the vaccination.

2. Air cargo terminal sector is expected to rebound to the 2019 level due to a recovery in world trade

According to World Trade Organization (WTO), trade volume growth in 2021 is expected to reach 7.2% in 2021, and global trade will recover nearly to the 2019 level. According to IATA, air cargo typically recovers more quickly than other modes of transport, as businesses seek to rapidly re-stock inventory levels in response to the pick-up in demand. We expect that the sector will recover to the 2019 level thanks to the recovery of world trade and the maintenance of freighter flights. Some Vietnam's cargo terminal firms also predict that the cargo volume in 2021 will recover to nearly the same level in 2019.

➔ Vietnam's aviation industry will experience a **SLOW RECOVERY** in 2021. The reason is that domestic market recovery, international routes are expected to resume, but only a few international routes are likely to reopen in the second half in 2021. In addition, passenger sentiment is negatively affected by the pandemic, the recovery speed of the aviation industry therefore will be quite slow. Unlike the general outlook of the industry, the air cargo terminal segment will recover faster due to the recovery of world trade. The cargo volume in 2021 is expected to almost recover to the 2019 level.

III. Watch list

Ticker	Market Cap. (Jan 14, 2020) (bil. VND)	Revenue 9M2020 (bil. VND)	Net Income 9M2020 (bil. VND)	Net Income Growth 9M2020	Net Income Margin	ROE (TTM)	P/E
SCS	**6,911.56**	**495.37**	**335.85**	**-8.5%**	**45.7%**	**3.8%**	**14.7x**

SCS is a cargo terminal company at Tan Son Nhat International Airport with a market share of 30.6% in 2019. Its main business is to operate a cargo terminal with airlines being the main customers.

Compared with TCS (SCS's competitor), SCS has more modern equipment. In addition, SCS is able to expand its design capacity by 75% of the current capacity. The capacity expansion is expected to be implemented in 2021. On the other hand, TCS currently operates at the full design capacity as the cargo terminal has already been expanded to its maximum capacity. Therefore, the only possibility of capacity expansion of TCS will be the widening of the canopies in the import and export delivery areas with low additional capacity. Rack systems in TCS have also been raised to maximum floors.

(See more SCS Valuation Report – Dec2020)

NCT	**1,904.87**	**476.04**	**154.26**	**-11.6%**	**32.4%**	**42.2%**	**9.5x**

NCT is a cargo terminal company at Noi Bai international airport with the greatest market share of 55% in 2019. Similar to SCS, NCT's main business is to operate cargo terminals and airlines are its primary customers.

NCT's customers are big airlines operating on Vietnam's major cargo routes. With the advantage of being a subsidiary of HVN, NCT gets the volume of goods from the parent company. The cargo volume from HVN accounts for about 55% of total cargo volume of NCT in 2019. HVN accounts for about 29.2% of Vietnam's air freight market share.

NCT rented a new CT2 cargo terminal (constructed by ACSV) at Noi Bai international airport with a capacity of about 200,000 tons per year (+50% of current capacity) from ACSV. NCT has a plan to put the CT2 into operation in June 2020, but the plan has been delayed due to the COVID-19. The remaining capacity of ACSV and ALS is quite low, leading to congestions during peak seasons. Therefore, putting CT2 into operation can help NCT improve their competitive advantage and attract new customers.

(See more NCT Valuation Report – Sep2020)

LOGISTICS

POSITIVE OUTLOOK FROM THE GROWTH OF TRADING ACTIVITIES

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Review 2020

- Seaport services: Container throughput at Vietnamese seaports still has strong growth thanks to the recovery of trading activities in the second half of 2020. The estimated container throughput in 2020 is nearly 22.1 million TEUs, +12.8% yoy.
- Shipping services: Domestic firms have not benefited much from the recovery of transportation volumes and lower fuel prices.
- Warehousing and ancillary services: Good resistance against the pandemic thanks to increased storage time when the value chain is interrupted.

Outlook 2021

In 2021, we expect that Vietnam logistics industry to keep a strong growth owning to favorable trading activities, which is supported by advantages from free trade agreements and FDI attraction.

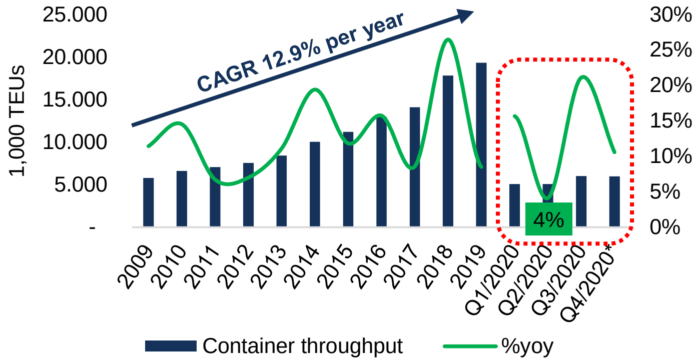
- Seaport services: Seaport throughput volume is expected to grow in line with trading activities. Moreover, seaport service fees are proposed to increase 10% per year to benefit the firms in the industry.
- Shipping services: A limited number of firms having low vessels investment costs and extending a service chain can take advantage from import and export growth.
- Warehousing and ancillary services: Firms in the industry continue to invest and expand the scale of warehouses, such as TCL's 28.5 ha of warehouses and depot expansion in 2021-2025 and Vinh Loc Logistics Center of TMS project in 2021, etc. to meet the increasing demand.

C. LOGISTICS INDUSTRY: Positive outlook from the growth of trading activities

I. Review 2020: Recovering rapidly after the COVID-19 pandemic shock in early 2020

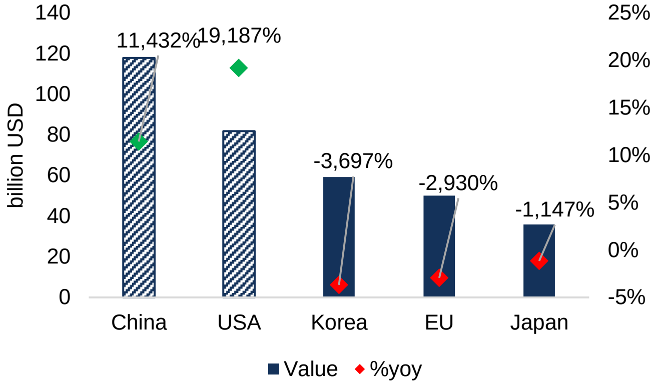
1. Seaport services: Container throughput still has strong growth thanks to the recovery of trading activities in the second half of 2020

Container throughput at Vietnamese seaports



Source: VPA, Vinamarine, FPTS research
(*)Vinamarine estimates

Export-Import turnover of Vietnam with some major partners in 11M 2020



Source: Vietnam Customs, FPTS research

Growth in seaport services depends heavily on Vietnam's trade. The COVID – 19 outbreak in the beginning of 2020 has affected import and export turnover as well as cargo throughput at seaports. Growth in container throughput at Vietnam's seaport bottomed out in Q2 with an increase of 4.1% yoy, much lower than 12.9% per year in 2009 – 2019. However, container volume has recovered in the second half of 2020, estimated to reach 22.1 million TEUs for the whole year, +12.8% yoy (*according to Vinamarine*).

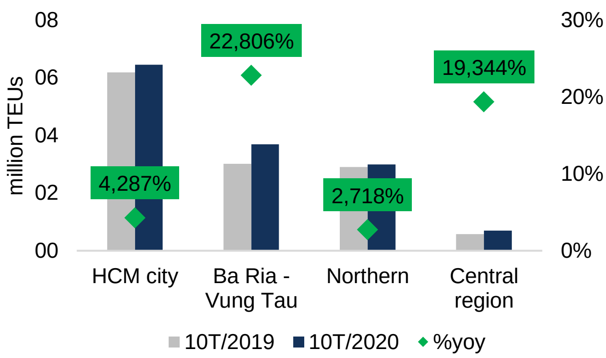
In particular, the main growth driver comes from the two largest import-export partners of Vietnam, which are China and the US, thanks to:

- ➢ Increasing demand for imported goods from Asian countries, including Vietnam, due to (1) high consumption demand at the end of the year, (2) low production activities in the US market.
- ➢ Benefit from the US – China trade war. The policy of increasing tariffs on goods imported from China by the US creates a shift of orders from China to Vietnam.

However, growth in container throughput has diverged across regions. Accumulated to 10 months of 2020, the market share in Ho Chi Minh city still maintains at 35.3% with container throughput of 6.4 million TEUs, +4.3% yoy.

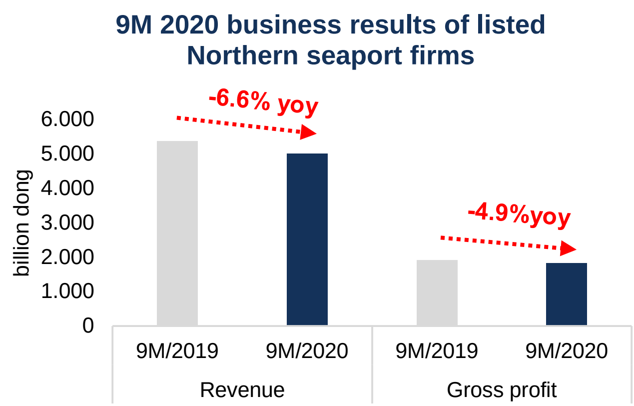
Cai Mep Thi Vai deep–sea port cluster in Ba Ria – Vung Tau recorded a remarkable growth compared to other areas, reaching 22.8% yoy. The reason is that deep–sea ports are able to receive mother ships going directly to Europe and America without going through other transit ports, helping to save costs for customers. Besides, the US, Vietnam's largest export partner, with experienced strong growth in export value in 2020.

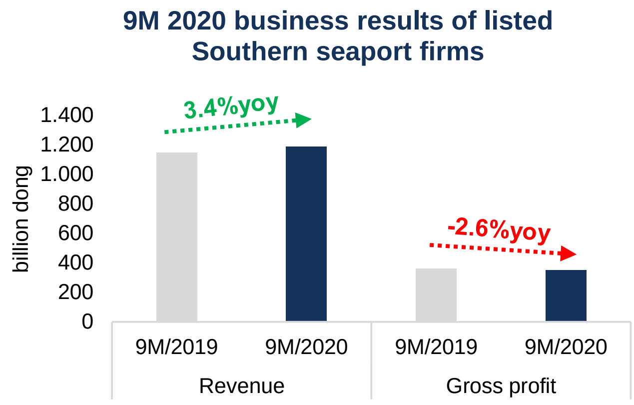
Container throughput by regions



Source: VPA, FPTS research

For the North region, the container throughput only increased slightly over the same period, reaching 3.0 million TEUs, +2.7% yoy. Lach Huyen deep–sea port (HICT) is still a positive signing with an output of 503 thousand TEUs, +57.2% yoy thanks to direct transport routes to Europe and America which have just been established since 2019. Meanwhile, activities of other seaports all declined due to competitive pressure from HICT.

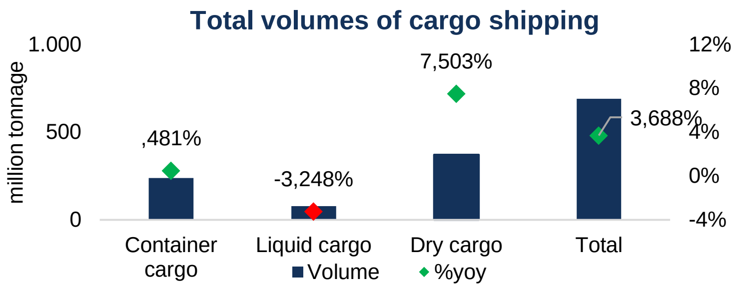




Source: Financial reports of GMD, PHP, VSC, DVP, PDN, CLL, PNP, CCT, FPTS research

2. Shipping services: Domestic firms have not benefited much from the recovery of transportation volumes and lower fuel prices

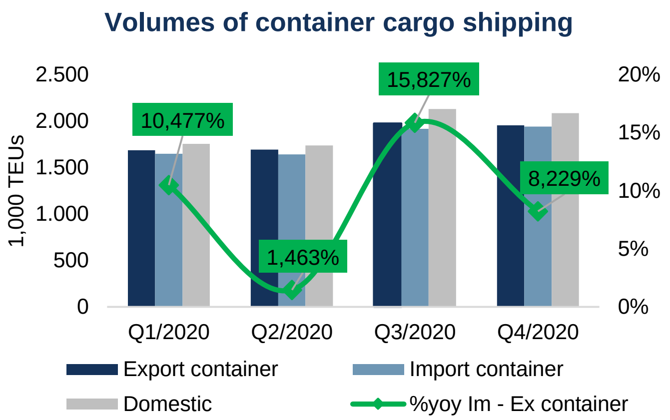
2.1. Volumes of cargo shipping recovered thanks to positive busy trading activities



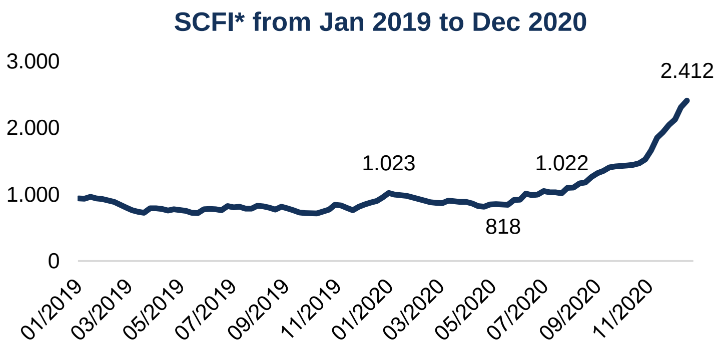
Source: Vinamarine, FPTS research

Similar to seaport services, shipping has a strong correlation with Vietnam's trading activities. Under the impact of the Covid-19 pandemic, the overall commodity transportation volume slowed down in Q2 2020 and gradually recovered in the second half of the year.

For container cargo: The volume of shipping containers grows strongly, which was mainly driven by import and export with two major partners, the US and China. About freight rates, container freight rates have also recovered since May and started to spike from August. The price increases occurred mainly in shipping routes serving exports to Europe and America.



Source: Vinamarine, FPTS research



(*) SCFI (Shanghai Containerized Freight Index): a type of container shipping index, *determined based on freight rates of 15 different transport routes from Shanghai to other regions such as the US, EU, India, etc.*

Source: Shanghai Shipping Exchange, Bloomberg, FPTS research

We believe that there are a number of causes for this situation:

- Consumption demand for goods in the US and EU increased sharply after a period of being constrained by pandemics and high demand in the year-end season.
- The shortage of empty containers is getting more and more serious when Vietnam's trade balance recorded a highest trade surplus in the 11 months of 2020, reaching 20.1 billion USD, +86.1% yoy. The volume of containers exported is too much and backlog in other countries, while the number of containers imported to Vietnam is not much, causing a shortage of empty containers. Thereby, making the owners pay higher fees to export goods.

However, we think that Vietnamese shipping companies have not benefited much from this growth. The reasons:

- The scope of activities of Vietnam's container fleet is limited, mainly running on domestic routes, only a few enterprises can run on other short international routes (from Vietnam to Singapore, Shanghai, and Hong Kong). Market share mainly belong to foreign shipping firms (about 90%).
- High investment costs and small fleets' size reduce competitiveness compared to those of foreign shipping lines.

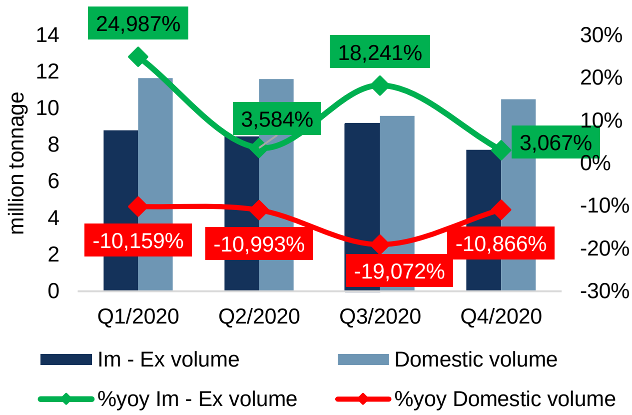
For liquid cargo (crude oil, petroleum, liquefied petroleum gas (LPG), etc)

Shipping volume of this commodity group recorded a slight decrease in 2020, estimated at 77.5 million tons, -3.2% yoy (*according to Vinamarine*).

In particular, domestic routes have a strong decline in output (reaching 43.3 million tons, -12.7% yoy) when the supply of petroleum products in the country is interrupted due to the impact of the COVID-19 pandemic, and Dung Quat oil refinery maintenance for 50 days from August.

This has indirectly increased the demand for importing petroleum products, reflected in the strong increase in international traffic volume in 2020, estimated at 34.1 million tons, +12.1% yoy.

Volume of liquid cargo shipping



Source: Vinamarine, FPTS research

For dry cargo: Transportation volume in 2020 will reach 371 million tons, +7.5% yoy, mainly thanks to the import of coal for thermal power plants, Vietnam's coal import volume in 2020 is estimated at nearly 57 million tons, +24.7% yoy.

2.2. IMO regulations prevent businesses from benefiting from lower fuel prices

In general, fuel oil prices in 2020 recorded a sharp decrease due to the impact of the COVID – 19 pandemic. This is a positive factor supporting the profitability of shipping firms. However, the new IMO regulations officially take effect from 2020. This regulation requires all types of ships to use fuel oil with a maximum sulfur content of 0.5% (VLFSO) instead of 1.5% (HSFO). Meanwhile, VLSFO oil price is usually about 30% higher than HSFO, thereby increasing fuel costs.

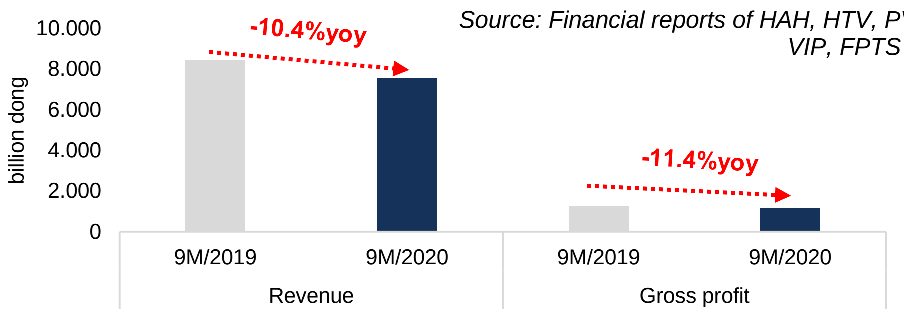
Under the opposite impact from the two events above, shipping companies will hardly benefit from the decrease in fuel prices in 2020.

Fuel oil price movements from Oct 2019 to Jan 2021

Source: Bloomberg, FPTS research

2.3. Update operating results of some shipping companies

9M 2020 business results of listed shipping firms



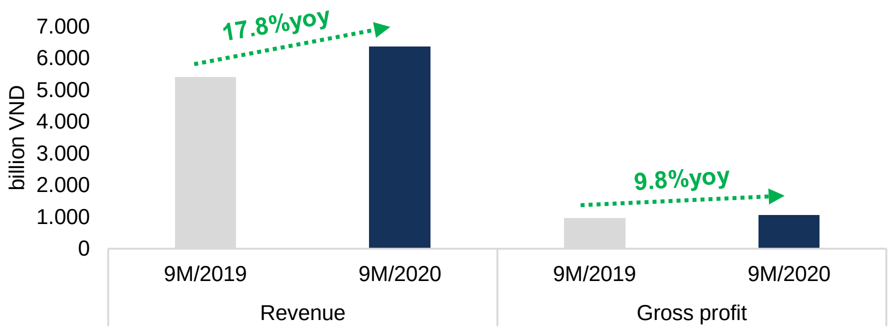
Source: Financial reports of HAH, HTV, PVT, VTO, VIP, FPTS research

3. Warehousing and ancillary services: Good resistance in the pandemic period thanks to increased storage time when the value chain is interrupted

The activities of businesses in this service segment are almost not affected by Covid – 19. Accumulate to Q3 2020, the majority of revenue and gross profit of large enterprises in the industry increased growth over the same period. Causes come from:

- Industry characteristics of the industry help to better fend off a pandemic. Interrupted value chain and low circulation of goods lead to increase time for storing goods. From there, this help warehouse businesses maintain a stable source of income.
- Export and import volume has recovered since Jun 2020, helping increase demand for storage activities.

9M 2020 business results of listed shipping firms



Source: Financial reports of TMS, STG, TCL, SFI, TCW, ILB, IST, FPTS research

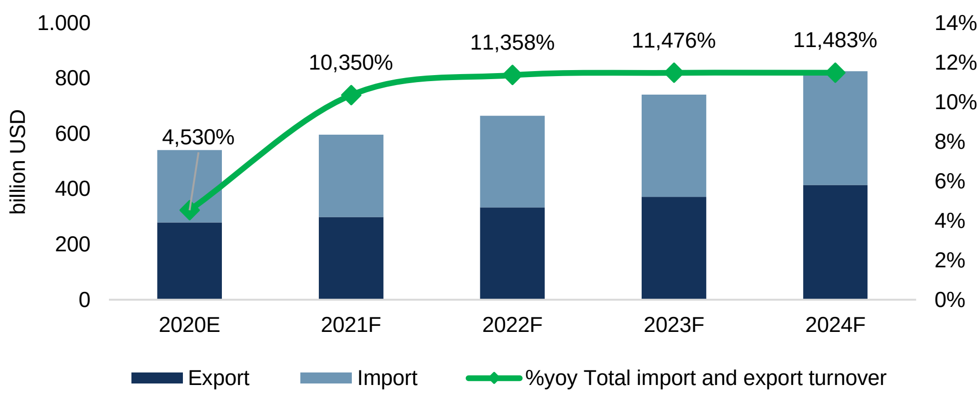
II. Outlook 2021: Continuing rapid and sustainable growth

1. Seaport services: Positive outlook thanks to growth in import and export activities

According to BMI, Vietnam's import – export turnover in 2021 will reach nearly 597 billion USD, +10.3% yoy, and will continue to grow 11.4% per year until 2024 thanks to the following factors:

- Expectations from Vietnam's Free Trade Agreements. In specially, the Trans –Pacific Partnership Agreement (CPTPP) and the European Union – Vietnam Free Trade Agreement (EVFTA), which have just come into effect from Jan 2019 and Aug 2020, create opportunities to trade with major markets such as EU, Japan, Australia, etc.
- Vietnam's FDI attraction continues to be positive thanks to the advantages of cheap labor costs, preferential tax rates for FDI enterprises, low cost of industrial construction. Production activities will be expanded, helping to increase the need to import raw materials and export finished products. In the first 11M 2020, total newly registered and realized FDI decreased by 16,9% yoy and 2.4% yoy, much higher than the 40% decline in global FDI inflows in 2020 (*according to the forecast of the United Nations Conference on Trade and Development UNCTAD*).

Forecast of import and export turnover of Vietnam



Source: BMI, FPTS research

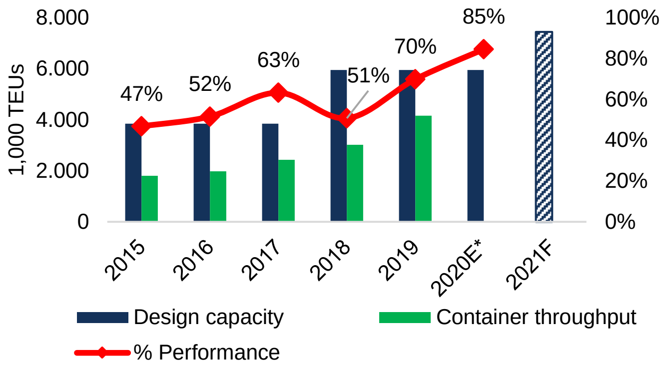
Thereby, the container throughput of Vietnam's seaports will continue to grow in the coming years. However, we believe that the growth rate of import and export may slow down in the first half of 2021 due to: (1) the slowdown in consumer demand after the end of 2020 and (2) the pandemics are still complicated in some big markets such as the US, EU, Japan, etc.

▶ Deep–sea ports will continue to outperform the whole industry thanks to additional capacity

With the advantage of saving costs for customers, container throughput of deep–seaports has grown by about 23.2% per year from 2015 to 2019, higher than the whole industry. Operational performance as of 10M 2020 has reached approximately 84.6% of design capacity and does not have much growth potential for existing deep–seaports.

This opens up growth opportunities for new deep–sea ports to meet the growing demand in this segment. Expected in Q1 2021, phase 1 of Gemalink deep–sea port will come into operation, increasing the capacity of deep–sea ports by about 1.5 million TEUs, equivalent to 25.2% of the current design capacity.

Performance of deep–sea ports in Vietnam



Source: VPA, FPTS research

▶ Expected service charges at seaports to increase 10% per year in the period of 2021 – 2023 to benefit the firms in the industry

According to the draft amendment to Circular 54/2018/TT – BGTVT of the Ministry of Transport, the prices of seaport services including container handling charges, maritime pilotage, ship towing, and use of bridges, berths, mooring buoys will increase about 10% per year in 2021 – 2023. Specifically as follows:

Region	2021	2022	2023
Hai Phong (except for HICT)	+10%	+10%	+10%
HICT	+10%	0%	+10%
Central region	0%	+10%	+10%
Ho Chi Minh	0%	+10%	+10%
Cai Mep – Thi Vai	+10%	0%	+10%

Source: Ministry of Transport, FPTS research

2. Shipping services: Difficulty for most domestic firms to take advantage of the growth potential from import and export activities

Shipping services in the coming years is expected to grow well thanks to positive import and export activities. However, each segment will have a different level of growth:

- **For container cargo:** We believe that it is difficult for Vietnamese firms to take advantage of this potential. Most domestics firms don't have competitiveness compared to foreign shipping firms, due to small vessel tonnage, high investment cost. Except for a few firms that having low vessels investment costs and extending a service chain such as HAH, TanCang Shipping, can take advantage from import and export growth.
- **For liquid cargo:** Imports of petroleum products in the coming years will continue to increase. Thanks to the demand for petroleum and LPG will grow 4.9% (*according to BMI*) and 5.7% (*according to the Danish Energy Agency*) in 2020 – 2024, while the domestic supply has not been added to capacity.

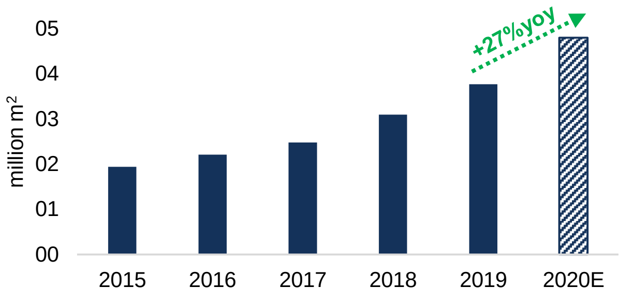
However, fuel prices are forecasted to increase in 2021 and IMO regulations will negatively affect the firms in the industry. According to EIA forecasts, the price of Brent and WTI crude oil in 2021 will reach 48.53 USD per barrel and 45.78 USD per barrel, up by 12% yoy and 15% yoy, due to:

- The pandemic will be controlled to help the world economy recover, leading to a rebound in crude oil demand. In 2021, it is estimated at 98.16 million barrels per day, +6.26% yoy.
- The OPEC + Alliance continues to reduce crude oil production as committed from 12/04/2020.

3. Warehousing and ancillary services: Stronger investment, anticipating strong growth in warehouse demand in the future

With the prospect of positive import – export activities and FDI attraction, we believe that warehouse demand will continue to grow strongly in the coming years. Thereby, the supply of warehouses will have to be expanded to meet the demand. Despite the COVID – 19 outbreak in 2020, the supply of ready – built factories and warehouses in the North and the South still grew strongly, reaching 2.1 million m^2 (+25.3% yoy) and 2.7 million m^2 (+28.2% yoy) (*according to CBRE*). It means service providers have actively scaled up to anticipate growth.

Total size of ready – built factories and warehouses in the North and the South



Source: CBRE, FPTS research

In the coming time, large firms in the industry will continue to invest such as TCL's 28.5 ha of warehouses and depot project in 2021 – 2025; Vinh Loc Logistics Center (in 2021), a project to expand a Logistics Center of Saigon Hi – Tech Park, phase 2 of Thang Long Logistics Center from 2021 to 2023 of TMS.

Besides, the cold chain is also a growing trend thanks to the increasing demand for temperature – sensitive products such as agricultural products, seafood, and pharmaceuticals. According to Allied Market Research, the size of the global cold chain market will grow by about 17.7% from 2018 to 2026. For Vietnam, we think this trend will be stronger due to the current size of cold storage can only meet 30 – 35% of actual demand (*according to the Ministry of Industry and Trade*). This opens up growth opportunities for firms that own cold storage such as TMS, ILB.

➔ In 2021, we evaluate that the Logistics industry will CONTINUE GROWTH thanks to positive import and export activities with the expectation from Free Trade Agreements and attract FDI attraction. In particular, each service segment will have different assessments, specifically:

- **Seaport services:** The firms will benefited from an increase in seaport service fees. Besides, the deep–seaports continued to outperform the market thanks to the addition of capacity from Gemalink port.
- **Shipping services:** Except for a few firms that having low vessels investment costs and extending a service chain such as HAH, TanCang Shipping, can take advantage from import and export growth.
- **Warehousing and ancillary services:** Warehouse demand is growing positively thanks to prospects for export and import activities and positive FDI attraction. Also, the supply of warehouses in the future will be expanded to meet the demand.

III. Watch list

Symbol	Market capitalization at 14/01 2021 (billion dong)	Net revenue 9M 2020 (billion dong)	Net income 9M 2020 (billion dong)	Net income growth	Net income margin	ROE trailling	P/E
GMD	10,774	1,901	314	-30.3%	16.5%	5.8%	28.5x

Gemadept JSC (HSX: GMD) is the largest seaport operator among the listed companies (accounting for 8.9% of the market share of Vietnam's seaports in 2019). Currently, GMD owns 5 seaports with a total design capacity is 2 million TEUs/year and 2 million tons of general cargo.

Besides seaports, GMD also owns other associated assets including warehouses, ship fleets, barge fleets, truck fleets through affiliated companies. Thereby helping the company create a closed value chain and save outsourcing costs.

Outlook: Gemalink deep-water port, will be GMD's main growth driver in 2021. Gemalink is located at the gateway of Cai Mep Thi Vai deep–sea port cluster, with a designed capacity of 1.5 million TEUs, equivalent to 75% of the company's current capacity. According to GMD, Gemalink will reach 60% of capacity in the first year and expect to full of capacity from 2022, thanks to the partner shipping company CMA – CGM. Thereby revenue and profit of GMD will grow strongly in the next 2 years.

HAH	972	830	89	-1.0%	10.7%	9.4%	8.1x

Hai An Transport and Handling JSC (HSX: HAH) is a firm that owns the largest fleet of container ships in the country (accounting for about 31% of the tonnage of Vietnam's container fleet), mainly operating on Hai Phong – Da Nang – HCM City route and some international routes from Vietnam to Hong Kong, China, and Korea. HAH's fleet has a competitive advantage thanks to its low investment costs and large fleet size. HAH's average fill rate per train is estimated at 88.2%. Accumulation of 9M 2020, HAH has implemented 198 trains, +17.2% yoy thanks to the investment in additional ships HAIAN MIND and HAIAN VIEW from May 2019 and July 2020.

In Q2 2020, HAH completed phase 2 of Pan Hai An Logistics Center, with a total area is 8 ha. It helps HAH to complete a chain of logistics services including shipping, seaport, and warehouse.

Outlook: Shipping will continue to be the main growth driver for HAH in 2021 as the company continues to invest in additional HAIAN VIEW vessels from July 2020. At the same time, the operation of Pan Hai An Logistics Center also helps HAH to save more on outsourcing costs and improve profits.

TMS	3,189	2,290	221	+37.6%	9.6%	11.9%	11.3x

Transimex JSC (HSX: TMS) operates mainly in the warehouse segment with 5 warehouses, a total area of 25.8 ha, ranking 5th in terms of warehouse – size among listed companies. The warehouses of TMS aim to provide a full range of storage facilities including bonded warehouses, CFS warehouses, cold storage, cool storage, and container yards. Especially the type of cold storage, cool storage is a growing trend in Vietnam as well as in the world.

Outlook: We believe that the potential of TMS in 2021 will depend on new projects, such as Vinh Loc Logistic Center (completed in May 2021); expanding cold storage at Logistics Center of Saigon Hi – Tech Park; Phase 2 Thang Long Logistics Center. TMS is planning to raise capital of about 400 billion VND through issuing convertible bonds and issuing private shares to finance the above projects.

TEXTILE & GARMENT INDUSTRY

FTAs SUPPORT THE TEXTILE AND GARMENT INDUSTRY'S POST-PANDEMIC RECOVERY

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Review 2020

With the import of over 60% of raw materials and export of over 90% of finished products, Vietnam textile and garment industry has in turn suffered supply and demand shocks in 2020:

- Supply shock: Vietnamese enterprises were at risk of raw materials shortage in March 2020 due to Chinese plant closures. However, as China took control of the disease by mid-March 2020, its factories were back at work, and material supplies were reconnected.
- Demand shock: Garment orders from the US and EU have been delayed/canceled from April 2020 due to the widespread pandemic.

Outlook 2021

The export value of Vietnam's textiles and garments is expected to recover in 2021 thanks to:

- Demand for textiles and garments in major export markets will increase as the economy recover by the end of 2021;
- FTAs will help increase the export value of Vietnam's textiles and garments in 2021. TPP is likely to be renegotiated under Biden's presidency, the majority of Vietnam's textiles and garments will start enjoying preferential tax under EVFTA, and RCEP is expected to enter into effect in Q1 2021.

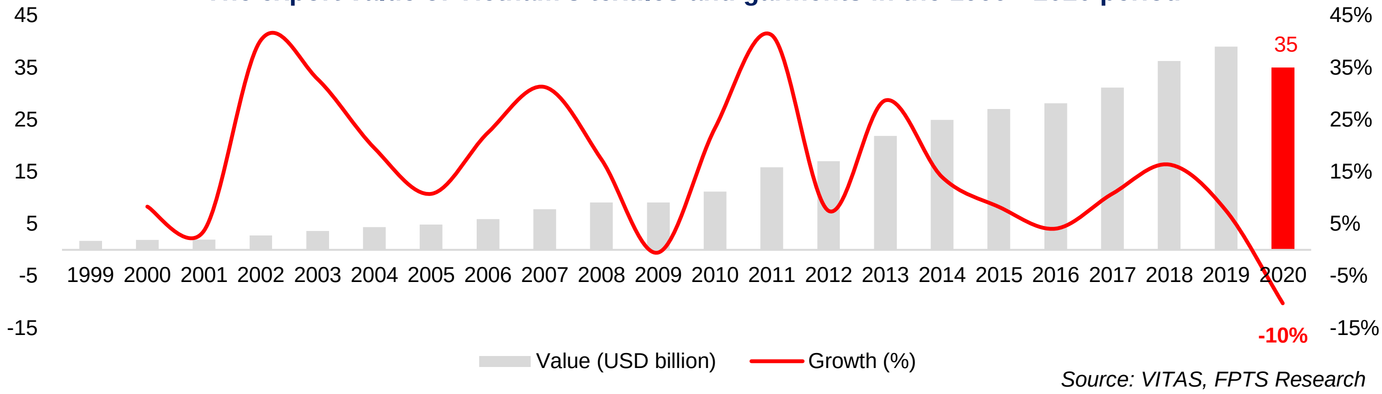
However, we believe that demand for non-essential goods such as textiles and garments will slowly recover in 2021. Export value can only return to the 2019 level, i.e., USD 39 billion, by 2022.

D. TEXTILE & GARMENT INDUSTRY: FTAs support the textile and garment industry's post-pandemic recovery

I. Review 2020: Demand shock following supply shock

Vietnam's textile and garment industry is one of the industries which was **HEAVILY AFFECTED** by the COVID-19 pandemic. For the first time in 20 years, Vietnam's textile export value experienced negative growth as after reaching only USD 35 billion in 2020 (-10% yoy).

The export value of Vietnam's textiles and garments in the 1999 - 2020 period

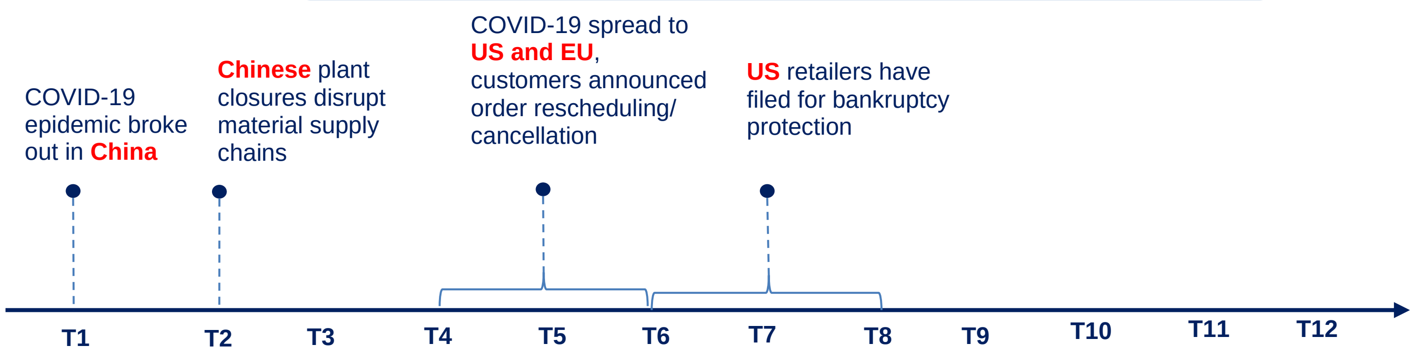


Source: VITAS, FPTS Research

With the import of over 60% of raw materials and export of over 90% of finished products, Vietnam's textile and garment industry has in turn suffered supply and demand shocks when COVID-19 broke out in China and spread to the US and EU.

1. SUPPLY SHOCK: Vietnamese enterprises were at risk of material shortage in March 2020 due to Chinese plants' closures

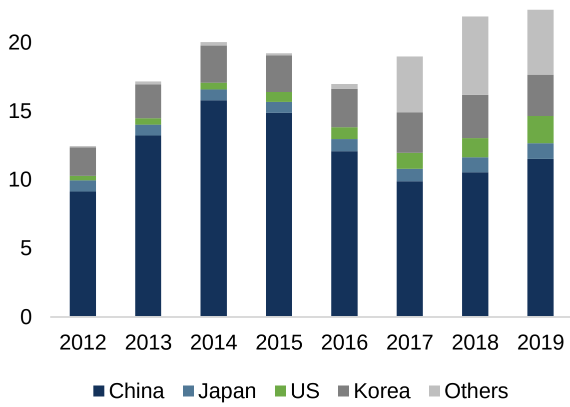
Events affecting Vietnam textile and garment industry in 2020



China is the biggest material supplier for Vietnam textile and garment industry. Due to the impact of COVID-19, factories in China had to stop working for 10-15 days in February 2020 causing Vietnamese enterprises to face material shortage at the end of April 2020.

Garment orders are usually signed from 2 to 3 months in advance, and the orders' raw materials sources must be approved by the ordering party. When the sources of the approved materials (mainly from China) is suspended, it is difficult for Vietnamese enterprises to switch to other sources immediately. This is because costs of fabrics bought from domestic suppliers or imported from South Korea and Taiwan are 15% higher than those of fabrics imported from China. Fortunately, as China took control of the disease by mid-March 2020, its factories were back at work, and material supplies were reconnected.

The import markets of Vietnam's textile raw material (USD billion)



Source: VITAS, FPTS Research

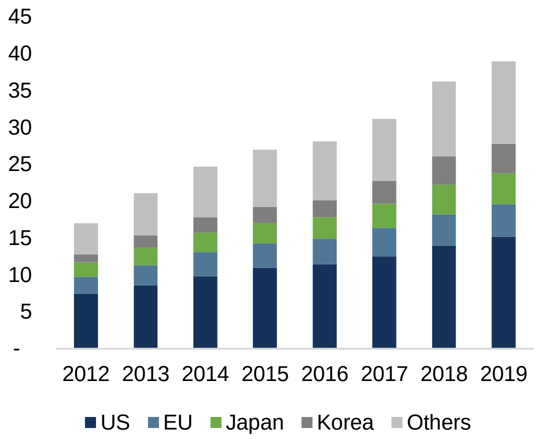
2. DEMAND SHOCK: Garment orders from the US and EU have been delayed/canceled from April 2020 due to the widespread pandemic

The US and the EU are the two largest textile and garment export markets of Vietnam, accounting for over 50% of the annual textile export value. By the end of March 2020, the epidemic spread to the US and the EU, causing the demand for garments in these two markets to plummet. By mid-April 2020, many customers in the US and EU has announced to delay/cancel their orders from Vietnam.

The majority of Vietnam garment and textile enterprises are small and medium-sized (less than 1,000 employees), which mainly receive orders from intermediaries rather than working directly with brands. Therefore, it is difficult to ask the intermediaries to support/ compensate when brands delay/ cancel orders.

On the other hand, larger enterprises (over 1,000 employees, mainly listed firms) whose have built long-term partnerships with brands can directly negotiate with the brands to adjust contract terms and payment time.

The export markets of Vietnam's textiles and garments (USD billion)



Source: VITAS, FPTS Research

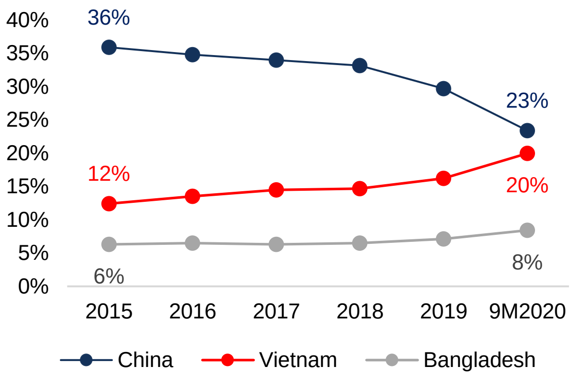
Since June 2020, a wave of bankruptcy protection filing from US retailers has made it difficult for Vietnamese enterprises to recover their debts. Before COVID-19, US retailers had a difficult time as the e-commerce wave rose. The pademic has made the business situation getting worse. The main reason that knocked out US retailers is the huge inventory from the Spring-Summer 2020 collections. With the seasonal characteristics and the constantly changing trend, these inventories would lose most of their value within a few months and can only liquidate at a low price.

For Vietnamese enterprises, due to their weak negotiating position, outsourcing orders are usually paid by TT payment method (Telegraphic Transfer). This is a non-collateral payment method. When retailers file for bankruptcy protection, these payments will be difficult to recover.

However, Vietnam is the supplier that is least affected in the US market. The pandemic surely affects all global textile and garment suppliers, but the level of impact is varying. Three biggest U.S. garment importers include China, Bangladesh, and Vietnam, in which the import value from Vietnam has the lowest decrease. Hence, for the first time in decades, Vietnam accounts for more than 20% of the US garment market share, although total garment export value has not reached the level of 2019.

This comes from two reasons: 1) Vietnam's good control over the pandemic allows manufacturers to meet the orders, 2) Garment orders have been shifting from China to Vietnam to avoid impact of the US-China trade war since 2018.

Market shares of garment import value in the US

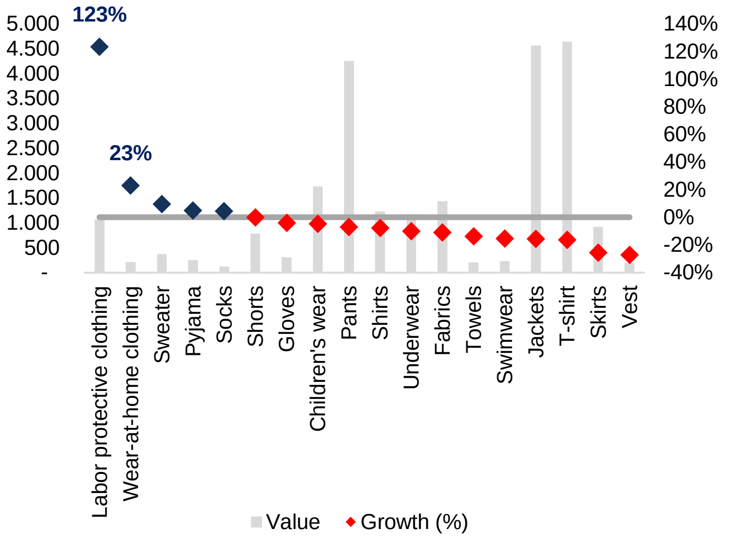


Source: VITAS, FPTS Research

The export value of Vietnam's textiles and garments has recovered since June 2020 thanks to masks and medical protective clothing orders. While the export value of key products such as T-shirts, and jackets has been declined sharply, the export value of labor protection products (including medical protective clothing) and wear-at-home clothing has increased compared to the same period in 2019.

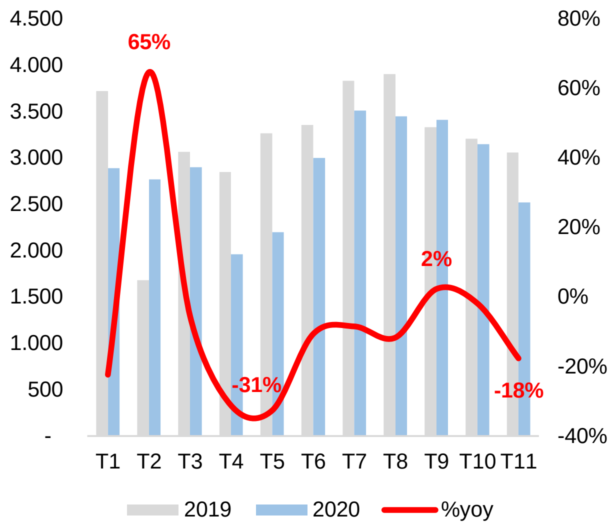
The manufacturing of anti-pandemic products is considered as a temporary solution for many businesses to cope with the pandemic. Up to now, the supply of anti-pandemic products has been skyrocketing while the demand has been saturated as the pandemic is slowly in control. Besides, to prevent the spread of the pandemic, people are encouraged to work from home, which has driven up demand for wear-at-home products.

The export value of Vietnam's textiles and garments by product types in 10M2020 (USD million)



Source: VITAS, FPTS Research

The export value of Vietnam's textiles and garments over the months (USD million)



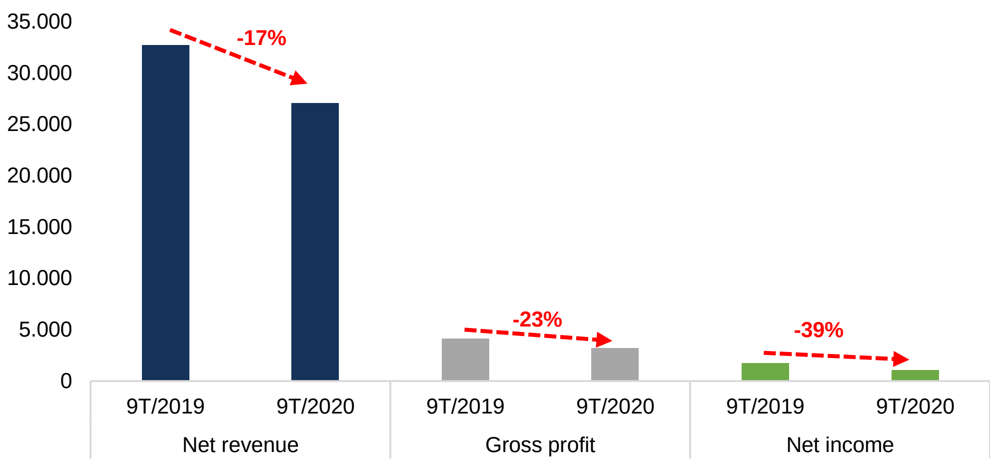
Source: VITAS, FPTS Research

The orders of anti-pandemic products and wear-at-home clothing have supported the export value of Vietnam's textiles and garments to recover in the second half of 2020. After dropping to its lowest in April and May 2020, the growth of Vietnam's textile and garment export value has recovered since June 2020. The accumulative export value in 11M2020 has reached USD 32 billion (-12% yoy). With the current export progress, the Ministry of Industry and Trade estimates that the export value of Vietnam's textiles and garments would reach USD 35 billion (-12% yoy) in 2020.

Order postponing/cancellation has caused 9M2020 financial results of the garment companies to plunge. Net revenue has dropped by 10-30% yoy and net income has plummeted by 20-80% yoy. Net income's dropping rate has been down stronger compared to that of net revenue because businesses still have to pay operating fixed costs (especially labor costs) while there are no orders.

Some companies such as TNG Investment and Trade JSC (HNX: TNG) and Thanh Cong Textile - Investment - Trade JSC (HSX: TCM) have flexibly converted to produce anti-pandemic products and actively found export orders for these products. These orders have partly offset the shortage of garment orders, which minimized their revenue decline. Especially, thanks to the anti-pandemic products with higher profit margins than traditional garment products, TCM's 9M2020 profit after tax even increased by 31% yoy.

Financial results of garment companies in 9M2020 (VND billion)



Source: VGT, VGG, MSH, TNG, TCM, STK, GMC, FPTS Research

II. Outlook 2021: Slow post-pandemic recovery

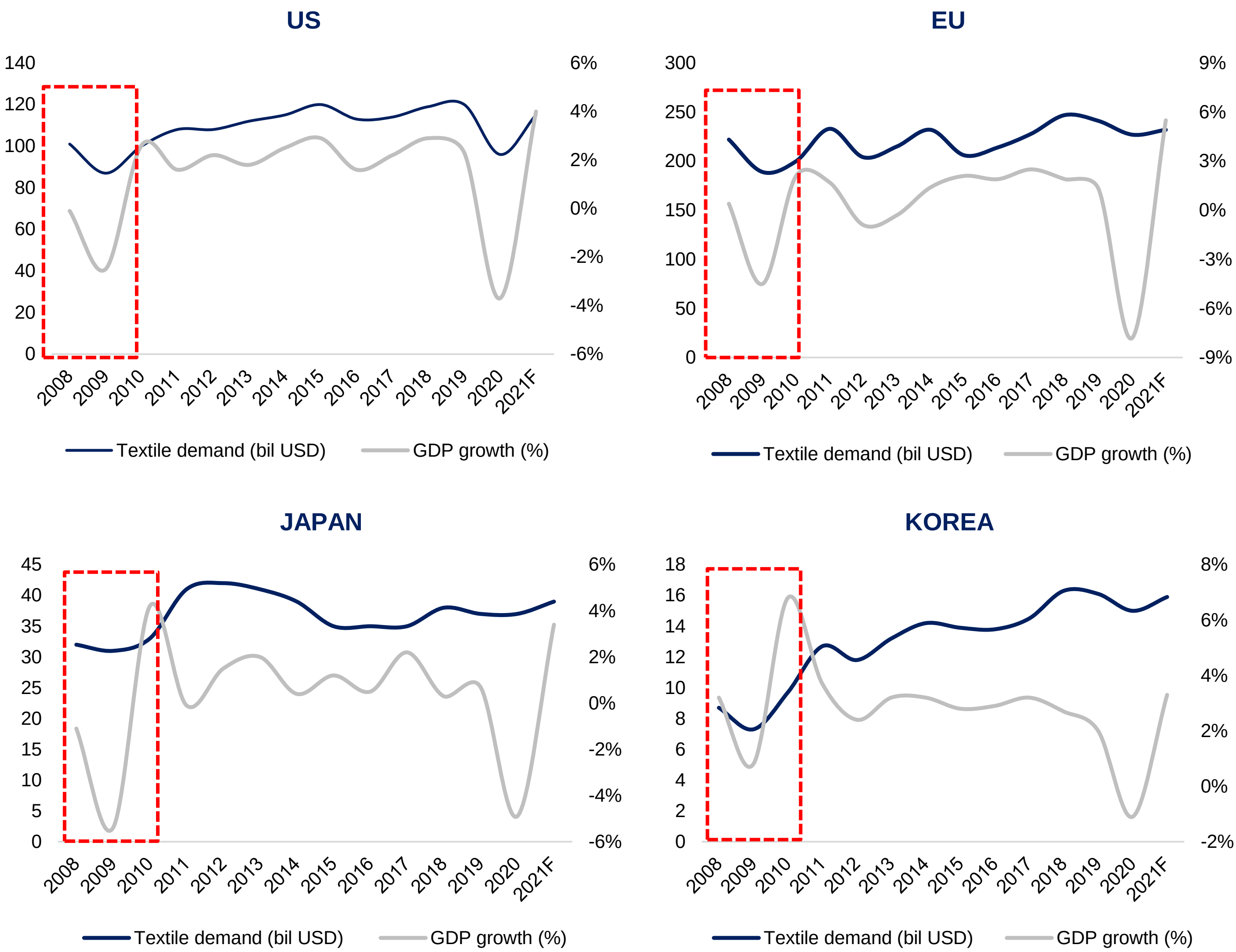
As an export-oriented industry, the recovery of Vietnam's textile and garment industry strongly depends on disease control and the pace of economic recovery in key export markets such as the US, EU, South Korea, and Japan. While there are many free trade agreements driving the industry's export growth next year, we believe that demand for non-essential goods such as textiles and clothing will **SLOWLY RECOVER** in 2021.

1. Demand for textiles and garments in major export markets will increase as the economy recovers by the end of 2021

In the past 12 years, the world has experienced the 2008 financial crisis and it took about 2 years (from 2008 to 2010) for textile and garment demand to return to pre-crisis levels. So far, many international organizations have forecast the global GDP growth in 2021 quite cautiously.

In 2021, we expect the export value of Vietnam's textiles and garments to recover as economies in key export markets such as the US, EU, Japan, and South Korea gradually recover. However, the speed of recovery will be slow and the export value can only return to the 2019 level by 2022 (i.e., USD 39 billion). According to the Vietnam Textile and Apparel Association (VITAS), Vietnam's textile and garment industry would remain under impact from by COVID-19 in 2021. VITAS forecasted that the textile and garment export value may reach USD 37-38 billion in 2021.

Correlation between textile demand and GDP growth in major export markets



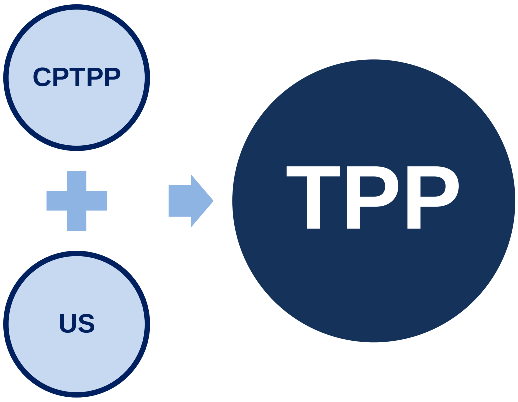
Source: Worldbank, Vinatex, FPTS Research

2. FTAs will help increase the export value of Vietnam's textiles and garments in 2021

▶ The US may rejoin Trans-Pacific Partnership (TPP) under Biden's presidency

The TPP was negotiated under Obama's administration but never approved by Congress. The pact was signed in February 2016 by 12 countries. As President Donald Trump pulled the US out of the TPP in 2017, the remaining 11 countries re-negotiated and signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in March 2018.

CPTPP basically does not bring any tariff benefits to Vietnam's textile and garment enterprises because Vietnam has already signed FTAs with 7 member countries (including Australia, New Zealand, Chile, Japan, Brunei, Malaysia, and Singapore). The remaining 3 member countries (including Canada, Mexico, and Peru) have a small textile demand (about USD 4 billion) and are not major textile export markets of Vietnam.



CPTPP covers an economic scale of about 14% of global GDP, much lower than TPP's 38% coverage. Biden, who backed the TPP as Obama's vice president, has reportedly said he would renegotiate the trade deal if he's elected. So, we expect the TPP to be renegotiated under his administration.

The yarn-forward rule in CPTPP has been kept from the original version of TPP. Even if TPP is renegotiated, this rule will likely remain the biggest barrier for Vietnamese garment companies. According to this rule, all stages from spinning, weaving, and sewing must be processed within the member countries. Vietnam, however, still depends on raw materials imported from China. This leads to the fact that only a few firms can take advantage of tariff preferences, that is, yarn enterprises and garment enterprises whose has a complete value chain of spinning – weaving – sewing.

▶ The majority of Vietnam textile and garment products will start enjoying preferential tariff under EVFTA

EU – Vietnam Free Trade Agreement (EVFTA) was signed in June 2019 and officially came into effect in August 2020. Accordingly, the previous GSP[1] tax rate of 9.6% on Vietnamese textiles has already fallen to the MFN[2] tax rate of 12% and will follow a schedule to decrease to 0%. Most of Vietnam's textiles and garments exported to the EU (in groups B5 and B7) will start enjoying preferential tariffs from 2021.

Group	The proportion of value exported to the EU in 2019	Schedule of tax elimination under EVFTA							
		2020	2021	2022	2023	2024	2025	2026	2027
A	12%	0%							
B3	11%	9%	6%	3%	0%				
B5	58%	10%	8%	6%	4%	0%			
B7	19%	11%	9%	8%	6%	5%	3%	2%	0%

Source: VCCI, FPTS Research

The biggest challenge for Vietnam garment enterprises is the fabric-forward rule of origin under EVFTA. According to this rule, garment enterprises have to use fabrics produced in Vietnam or imported from third countries having FTAs with both Vietnam and the EU at present (South Korea) or in the future (Japan and some ASEAN countries which are negotiating FTA with the EU).

Currently, more than a half of Vietnam's fabric needs are imported from China; therefore, to take advantage of EVFTA, Vietnam garment companies need to find substituted material sources for Chinese fabrics by (1) Cooperating with domestic fabric manufacturers to complete the value chain, or (2) Importing fabrics from countries having FTAs with both Vietnam and the EU such as South Korea and Japan.

[1] GSP (Generalized System of Preferences): Preferential tariff for some imported goods from developing countries.
[2] MFN (Most Favoured Nation): Tariffs based on the principles of equality and non-discrimination among WTO member countries.

▶ RCEP is expected to expand export opportunities for Vietnam's textiles and garments

Regional Comprehensive Economic Partnership (RCEP, or ASEAN +5) is a FTA between 10 ASEAN countries and 5 other countries including China, Japan, South Korea, Australia, and New Zealand. The negotiation progress ended in November 2019. As India decided to opt-out of RCEP, 14 other countries signed the RCEP on 15 November 2020. RCEP will become effective 60 days after 6 ASEAN countries and 3 non-ASEAN countries have ratified the Agreement. This Agreement will create the largest free trade area in the world, accounting for 30% of global GDP.

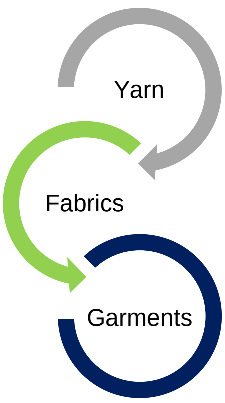
Existing FTAs among RCEP member countries

	China	Japan	South Korea	Australia, New Zealand
ASEAN	ACFTA (2002)	AJCEP (2008)	AKFTA (2005)	AANZFTA (2009)
Vietnam	-	VJEPA (2008)	VKFTA (2015)	-

(*) In parentheses are the years in which FTAs were signed *Source: VCCI, FPTS Research*

Vietnam has already signed bilateral and/or multilateral FTAs with all RCEP members. Thus, RCEP is not opening new markets; instead, it simply is connecting existing commitments. However, the biggest benefit of RCEP is the rule of origin that allows to add up from all members.

If the rules of origin in the previous agreements are an obstacle, the rule of origin in RCEP is a plus when China, Vietnam's largest importer of textile materials, is also involved. Accordingly, Vietnam's textiles and garments using raw materials imported from China and exported to other RCEP members will enjoy tariff preferences. Based on the above analysis, we believe that Vietnam textile and garment industry in 2021 will form these following trends:



➢ **Textile and garment enterprises will promote upstream linkages to meet CPTPP and EVFTA rules of origin.** The story of sourcing raw materials to meet the CPTPP and EVFTA rules of origin has been around since these agreements were still under negotiation. However, most international brands still require Vietnamese enterprises to import fabrics from China due to their diversity and low price. The COVID-19 outbreak in China caused disruptions in the global supply chain, which motivated Vietnamese enterprises to search for alternative sources of fabrics in domestic and forced global brands to use domestic fabrics instead.

Due to the thorough differences in the spinning, weaving, and tailoring process, expanding the value chain upstream requires large capital investments and exposure to many risks. Instead, garment businesses tend to associate with yarn and fabric manufacturers to create a complete value chain. Accordingly, the spinning - weaving - sewing alliance will shortly begin to be formed in the Vietnam textile and garment industry.

➢ **The Green Fashion trend will be accelerated after the pandemic.** The Green Fashion trends have been started in the 2015 - 2016 period. Accordingly, many global brands such as Nike, Adidas, or Decathlon have committed to increasing the proportion of recycled fibers in their products. According to a McKinsey report, consumers' attitudes will transform after the pandemic, Fast Fashion may no longer be the leading trend and the Green Fashion trend may be on the rise. Consumers will pay more attention to environmentally friendly products. Accordingly, the demand for recycled fiber products will continue to increase in the coming time, enterprises producing recycled fibers will benefit from this trend. In Vietnam, Century Fiber Corporation (HSX: STK) has been gradually increasing the proportion of recycled yarn in revenue from 3% in 2016 to 40% in 9M2020.

➔ As an export-oriented industry, Vietnam textile and garment industry has been **HEAVILY EFFECTED** by COVID-19 in 2020. The export value of Vietnam's textiles and garments is expected to recover in 2021 thanks to (1) Economic recovery in major export markets and (2) FTAs such as EVFTA, RCEP will soon come into effect. However, we believe that demand for non-essential goods such as textiles and garments will **SLOWLY RECOVER** in 2021. The recovery speed of textile and garment companies is also varied, based on trends after the pandemic, we believe that the following companies will recover faster than the industry average:

- Polyester yarn companies;
- Fabric companies;
- Large-scale garment companies that have built long-term relationships with global brands;
- Companies have a complete value chain of spinning - weaving - sewing or be able to associate with yarn and fabric manufacturers to create a complete value chain.

III. Watch list

Ticker	Market cap (22/01/2021)	FY2020 Net revenue	FY2020 Net profit	Growth in net profit	Net profit margin	ROE (TTM)	P/E
STK	**1,684 bil**	**1,766 bil**	**143 bil**	**-33%**	**8.1%**	**13.3%**	**12.4**

Like the gloomy situation of Vietnam textile and garment industry, 9M2020 financial results of STK have plummeted due to the impact of the COVID-19. However, we believe that STK will recover faster than its peers and grow well after the pandemic thanks to the following factors:

- **Less affected by the trade war.** Unlike the general gloomy situation of Vietnam's yarn segment, STK produces polyester yarns and has diverse consumption markets, it does not heavily depend on the Chinese market hence less affected by the trade war;
- **STK will benefit from CPTPP**. The yarn-forward rule in CPTPP will motivate textile companies to purchase yarns in domestic market. As the third-largest synthetic yarn manufacturer in Vietnam, this will be an opportunity for STK to increase sales in the domestic market;
- **Recycled yarn continues to be a growth driving force.** According to a McKinsey report, after COVID-19, consumers will pay more attention to environmentally friendly products. Accordingly, demand for recycled fiber products will continue to increase in the coming time. STK has also gradually increased the proportion of recycled yarn in revenue from 3% in 2016 to 40% in 9M2020.

TCM	**5,013 bil**	**3,470 bil**	**276 bil**	**+27%**	**8%**	**16.8%**	**10.9**

Despite the delay/cancellation of orders taking place in Vietnam textile and garment industry, 9M2020 financial results of TCM still grow well thanks to:

- From April to July 2020, TCM has signed orders for masks and medical protective clothing which partially offset the shortfall of garment orders;
- Since August 2020, the wave of exporting masks and medical protective clothing has passed, but TCM still maintains its revenue growth thanks to the return of garment orders. The long-term relationships with major customers and the advantage of having a complete value chain have helped TCM to flexibly adapt during the pandemic.

In the long term, TCM is one of the few Vietnamese enterprises that have a complete spinning - weaving - sewing value chain which helps TCM meet the rules of origin of the CPTPP and EVFTA.

However, we believe that the company's prospects have been reflected in its stock price in the past time. The price of a TCM share has continuously increased from VND22,000 to 23,000 per share in early November 2020 to exceeded VND70,000 per share since mid-January 2021.

AQUACULTURE INDUSTRY

Expect to recover seafood consumption after the pandemic

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Review 2020

Shrimp and Pangasius are products which dominate in Aquaculture industry of Vietnam. In 2020, during the COVID-19 pandemic, shirmp and pangasius export had contrary results.

- Vietnam's total shrimp export value rose by 12% yoy, based on stable production, meanwhile, shrimp output in many key producers in the world such as India and Ecuador declined due to disease of shrimp and COVID-19's effect.
- The pangasius export value of Vietnam decreased by up to two digits (-25% yoy). The reason is the main consumption channels of pangasius such as restaurants, hotels, etc restricted due to the COVID-19 disease prevention measures.

Outlook 2021

We expect that the impact of the COVID-19 pandemic to Vietnam seafood industry will gradually decrease, thanks to the recovery of main consumption channels of seafood products and the support of Free Trade Agreements (FTAs).

- Shrimp segment is forecasted to continue to grow, thanks to continuing stable supply when competitors take a long time to return to normal production as before the pandemic.
- Major consumption channels of pangasius are expected to recover. China will be the main market driving the growth of pangasius export value in 2021.

E. AQUACULTURE INDUSTRY: Expect to recover seafood consumption after the pandemic

I. Review 2020: The contrary results from shrimp and pangasius export

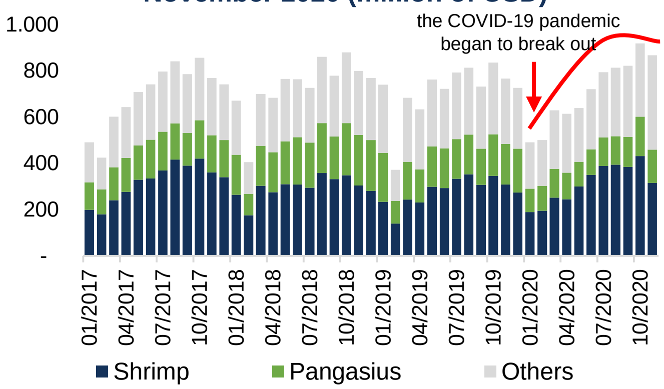
In early 2020, the COVID-19 pandemic began to break out in China and quickly spread to the world. With the possibility of human-to-human transmission of the corona virus, global socio-economic activities have been disrupted. In particular, the value chain of the global fishery industry as well as Vietnam faces many challenges.

(1) Major seafood consumption channels in the world such as restaurants, hotels, resorts, etc (food services) are plummeted, due to the effects of measures to blockade, close borders, social isolation, etc. Meanwhile, retail channels's sales (supermarkets, grocery, etc) grow when consumers storing food during periods of extensive and prolonged isolation.

(2) As a result, manufacturers and exporters have to change their market approach, because consumers' habits have changed. They use canned, frozen products, etc instead of using fresh seafood; The products of smaller size and lower price are being substituted for premium seafood due to declining income. Furthermore, online food delivery for home processing becomes the preferred choice of consumers.

(3) The import-export and transportation activities have been interrupted, because many countries tighten control imported seafood to prevent the spread of COVID-19. This causes an increase in selling costs, logistics, etc of manufacturers and distributors.

Seafood export value of Vietnam from January 2017-November 2020 (million of USD)

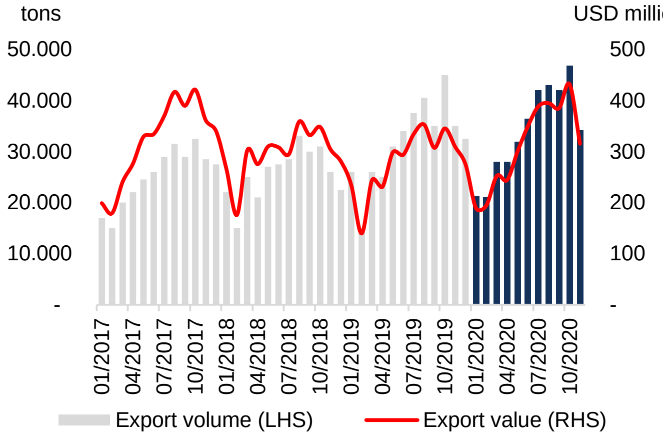


Sources: VASEP, FPTS Research

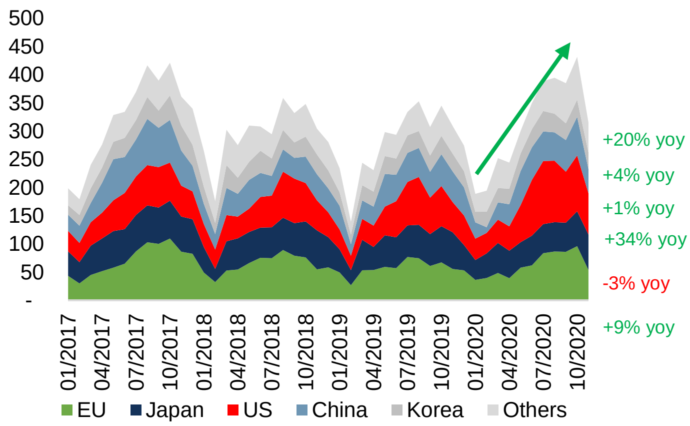
As a high value industry mainly from export, therefore, Vietnam's seafood industry is very sensitive to export markets's fluctuations. The total seafood export value of Vietnam reach about 8.58 billion USD in 2020, equivalent to the value of exports in 2019. However, the two largest segments of the industry - Shrimp and Pangasius (accounting for about 39% and 23% of the total export value in 2019, respectively) have the contrasting result. In particular, shrimp has a good export growth, meanwhile, the export of pangasius faces many difficulties in 2020.

1. Shrimp segment: Stable supply, shrimp export value increases strongly

Vietnam shrimp export volume and value from January 2017 to November 2020



Vietnam shrimp export value by export market from January 2017 to November 2020 (USD million)



Sources: VASEP, FPTS Research

1.1. Raw shrimp supply is stable, creating opportunities to boost exports when competitors face many difficulties due to COVID-19 pandemic

Vietnam's shrimp sector has been reaping the benefits of the country's successful controlling of the COVID-19 outbreak, with growth seen in export and farming activities. Data from VASEP shows that in 11M 2020, Vietnam's total shrimp export production still reached about 370,000 tons, +7% yoy, equivalent to a total export value of about 3.4 billion USD, +12% yoy. Stable supply is an advantage for Vietnam to receive more shrimp orders from foreign customers as its major competitors including India, Ecuador, Indonesia, and Thailand are still coping with the COVID-19 crisis.

Specifically, India is the country with the second largest number of COVID-19 infections in the world (with more than 10 million cases, updated as of December 25, 2020). This causes the country's shrimp farming to disrupt, many factories face a serious shortage of processing workers, so the supply is significantly reduced. According to estimates by Indian seafood experts, the Indian shrimp industry in the period 2020-2021, may lose about 1.5 billion USD under the impact of COVID-19 pandemic.

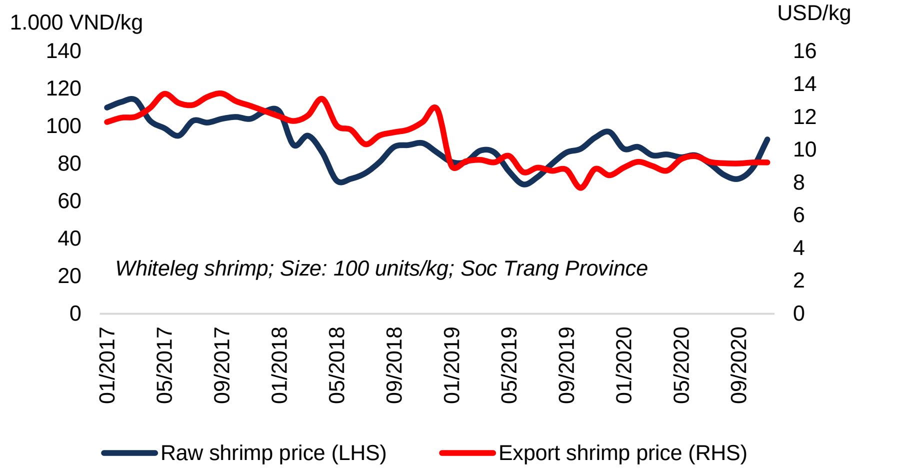
India is the largest shrimp supplier to the US market. Becasuse of the shortage of supply in India during the period of the COVID-19 epidemic, Vietnam's shrimp exports to US record the highest increase among export markets, +34% yoy, reaching 807 million USD. Most of the remaining key markets such as the EU, China, and South Korea recorded positive growth over the same period, only the Japanese market decreased slightly, -3% yoy.

1.2. Shrimp export price remained stable due to declining demand under the impact of COVID-19 pandemic

The export price in 11M 2020 remained stable over the same period, averaging about 9.2 USD/kg, +3% yoy. This stems from decreasing consumption demand due to the influence of social isolation measures in major consumption channels such as restaurants, hotels, resorts, etc as well as consumers have trend to choose the mid-end segment with smaller shrimp sizes, lower prices.

Besides, raw shrimp price in the Mekong Delta provinces has remained in a downward trend since early 2020, due to stable supply. In 11M 2020, the average price of whiteleg shrimp (size 100 units/kg in Soc Trang province) was about 83,000 VN/kg, +1% yoy.

Raw shrimp and export shrimp price of Vietnam from January 2017 to November 2020

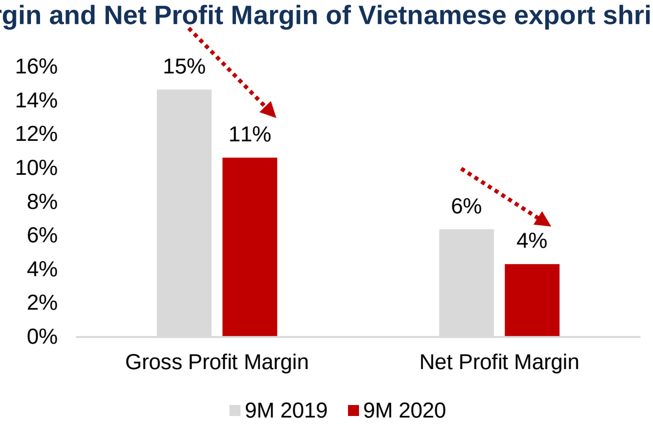


Sources: General Department of Vietnam Customs , Argomonitor, FPTS Research

1.3. Under pressure from shrimp export price, gross profit margin of many companies declined

Most of Vietnamese shrimp exporting enterprises recorded revenue growth over the same period. But, due to the difficulty shrimp farming activities in rainy weather conditions - La Niña year and the decline export price, causing gross profit margin and profit after tax of these enterprises to decline compared to the same period.

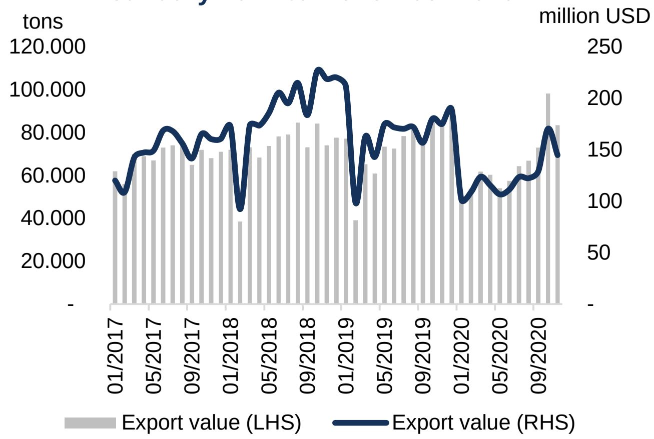
Gross Profit Margin and Net Profit Margin of Vietnamese export shrimp companies



Data based on MPC, FMC, CMX *Sources: FPTS Research*

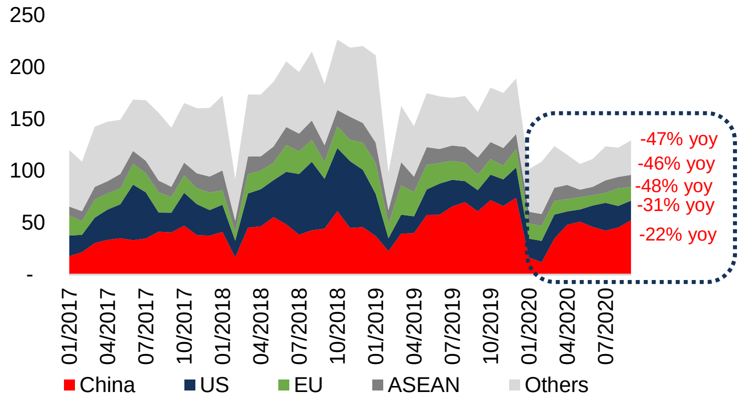
2. Pangasius segment: Being sharply impacted by reducing consumption demand and export price

Export shrimp volume and value of Vietnam from January 2017 to November 2020



Sources: VASEP, FPTS Research

Vietnamese export shrimp value by market from January 2017 to November 2020 (million of USD)



Sources: VASEP, FPTS Research

2.1. Gloomy demand in major consumption channels (restaurants, hotels, etc), Vietnamese pangasius export value dropped dramatically

In 11M 2020, Vietnam's pangasius export production only reached about 700,000 tons, -11% yoy, corresponding to the export value about 1.4 billion USD, -25% yoy. The cause is (1) Major consumption channel accounting for more than 70% of Vietnamese pangasius products in export markets (restaurants, hotels, etc) were retricted bt measures of blockade, social isolation to prevent the spread of COVID-19 pandemic, and (2) the level of brand identity of Vietnamese pangasius in the global seafood map remains relatively low, compared to other popular whitefish species, particularly Chinese tilapia.

Most of the key export markets recorded a 2-digit decrease compared to the same period in 2019. In which, the Chinese market, the largest export market of Vietnamese pangasius began to recover from around the beginning of Q2, however, purchasing power of customers was still quite slow. At the beginning of Q4, China market's orders started to improve. In 11M 2020, the total pangasius export value of Vietnam to China reached about 456 million USD, -22% yoy.

2.2. Pangasius export prices continue to decline since the beginning of 2019

Raw and export shrimp price from from January 2017 to November 2020

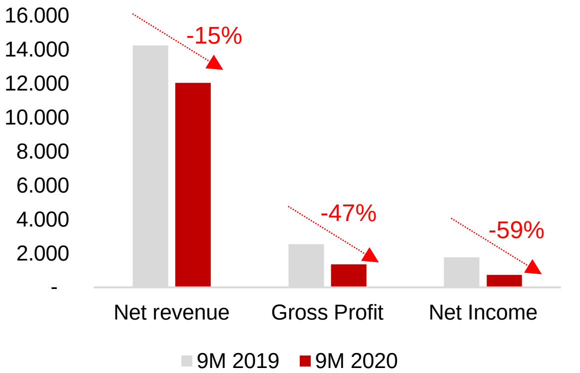
Sources: VASEP, FPTS Research

Consumption demand is decreased, causing export price to continue to decline since the beginning of 2019. In 11M 2020, the average export price is about 1.9 USD/kg, -18% yoy.

Furthermore, raw pangasius price also remained at the lowest level in history, only at 17,000-18,000 VND/kg, which means that farmers loss approximately 20% - 30% compared to product cost. With low price maintained for a long time, farmers have significantly narrowed their pond area, hesitated to stock up on new farming, and wait for signals to recover from the export market. Meanwhile, pangasius exporting enterprises focus on harvesting in theirs farming areas, limiting outside purchasing. 2020, a year full of difficulties and challenges for both farmers, processors, exporters, consumption channels and consumers alike.

2.3. Weakening demand and low export price, the profit of pangasius enterprises is strongly affected

Performance of Vietnam's export pangasius companies



Sources: Data based on VHC, IDI, ANV, ACL, ABT, FPTS Research

Vietnamese pangasius exporting enterprises recorded a sharp decline over the same period, due to the double impact of weakening demand and low export price. In 9M 2020, revenue and gross profit of some listed pangasius companies on average decreased by 17% and 46% respectively over the same period. In addition, due to the pressure when the supply chain is interrupted during the epidemic period, the selling costs, transporting,... has arisen significantly, which makes the after-tax profit decline 59% compared to with the same period.

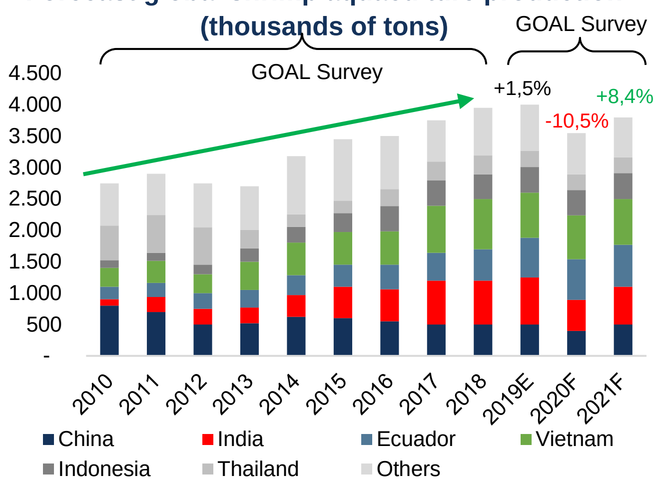
II. Outlook 2021: Brighter picture

1. Shrimp segment: Stable supply and recovery demand

1.1. Domestic shrimp supply is forecast to continue to be stable

After 2020, global shrimp supply was severely reduced by the impact of the COVID-19 pandemic. According to estimates at the GOAL 2020 conference, global farmed shrimp production in 2020 will reach about 3.5 million tons, -10.5% yoy. It is forecasted that the countries' farmed shrimp production will stabilize again thanks to efforts to control disease, global shrimp production reaches about 3,8 million tons in 2021, up about 8,4% compared to 2020.

Forecast global shrimp aquaculture production (thousands of tons)



Sources: GOAL 2020, FPTS Research

India is the largest shrimp exporter in the world, and also the country that has suffered the most damage by COVID-19 pandemic. Up to now, the number of COVID-19 infections in India has gradually decreased, but we believe that this country will take a long time to recover and stabilize the domestic shrimp farming and processing.

Meanwhile, Vietnam is forecasted to continue increasing shrimp production in 2021, reaching about 730,000 tons, +4% yoy. Therefore, we expect that, the stable supply of shrimp will be an advantage for Vietnamese shrimp exporters to continue increasing their market share.

1.2. The export price of shrimp depends heavily on COVID-19 pandemic control in export markets

In 2021, shrimp export price is likely not to increase sharply and depends heavily on the recovery of major consumption channels. The main reason is (1) Competitive pressure will increase, when global shrimp production is forecast to increase again, and (2) the development of the trend of diversifying export markets to reduce the risks of major players. Assuming that the pandemic situation in the world in 2021 is persistent, but the level will gradually decrease thanks to the wider distribution of the vaccine. Therefore, the food service channels such as restaurants, hotels, casino, tourism, etc will gradually recover. We choose the scenario, Vietnamese export shrimp price in 2021 will increase slightly by 5% yoy, reaching an average of about 9.6 USD/kg.

Tariff schedule according to EVFTA to SHRIMP product of Vietnam

	Fresh frozen shrimp (HS: 0306)	Prepared or preserved shrimp (HS: 1605)
Base Rate	12,0%	20,0%
GSP Tariff	4,2%	7,0%
EVFTA		
01/08/2020-31/12/2020	0,0%	7,0%
01/01/2021-31/12/2021	0,0%	7,0%
01/01/2022-31/12/2022	0,0%	7,0%
01/01/2023-31/12/2023	0,0%	7,0%
01/01/2024-31/12/2024	0,0%	7,0%
01/01/2025-31/12/2025	0,0%	5,0%
01/01/2026-31/12/2026	0,0%	3,0%
After 01/01/2027	0,0%	0,0%

In addition, shrimp exports to ***EU*** (accounting for 21% of total shrimp export value of Vietnam) are expected to be actively supported by the EVFTA Agreement, which takes effect from August 1, 2020. At that time, the frozen raw shrimp (HS code: 0306) will immediately decrease to 0% when the Agreement comes into effect, while processed shrimp (HS code: 1605) will be gradually reduced to 0% after 7 year of entry into force of the Agreement, specifically from January 1, 2027.

The proportion of these two products in Vietnam's shrimp exports was about 55%:45%. Therefore, the 0% tax rate for raw shrimp will significantly boost the competitive advantage of this product in the EU market. In 2021, the tax rate for processed shrimp is still 7%, equal to the preferential tax rate currently enjoyed by GSP. Therefore, Vietnam's processed shrimp products have not yet gained many advantages from EVFTA.

Besides, Vietnamese shrimp exporters will face risks when the antidumping tax rate to ***the US market*** may increase in the 14th administrative review period (POR14). But, we expect that Vietnamese shrimp products will continue to receive 0% antidumping duty to the US market as shown in the recent review POR 13.

In addition, under the impact of changing weather conditions (the La Niña phase has commenced operations since May 2020, and is expected to last until the end of Q1 2021). Shrimp farming activities will be detrimental, because the environment is easy to change, pathogenic microorganisms are easy to spread and cause disease for shrimp. Therefore, the domestic supply may decline in unfavorable weather conditions. So, we forecast that the price of raw shrimp will tend to increase in 2021.

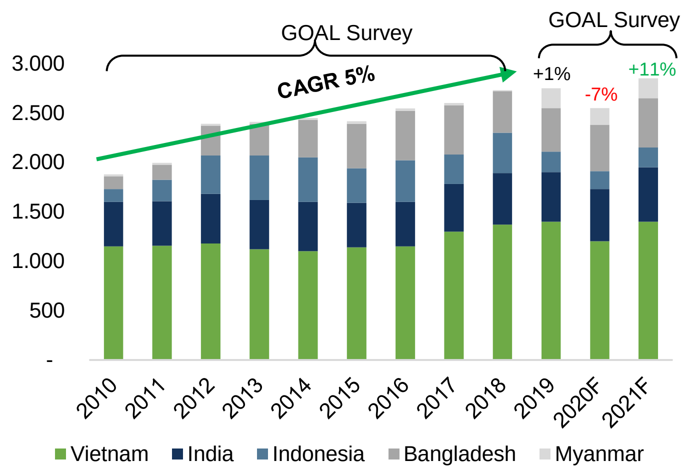
2. Pangasius segment: Increasing demand in major consumption channels thanks to the control of the COVID-19 pandemic

Vietnam is almost absolute pangasius export market share in the world, accounting for 95% in 2019 (according to statistics of the World Trade Organization - ITC). Many countries such as India, Indonesia, Banglades, Myanmar or China have started pangasius farming. However, due to the unfavourable water environment and weather, its pangasius meat is yellow, so it is unpopular and only for domestic consumption.

Farmed pangasius production in Vietnam is forecast to continue to increase; Export volume and price depend heavily on consumer purchasing power in key consumption channels

According to GOAL 2020's forecast, by 2021, global pangasius farming procduction will increase about 11% yoy, reaching about 2.8 million tons. The production of aquaculture pangasius in Vietnam is forecasted to reach about 1.4 million tons, +17% yoy.

Forecast global pangasius aquaculture production



Sources: GOAL 2020, FPTS Research

We also expect pangasius exports to recover, thanks to rebouncing demand after a long period of intermission from restaurants, hotels, resorts, etc when the COVID-19 in main export markets such as China, US, and EU are gradually controlled.

We believe that ***China*** will be leading market in the recovery trend, thanks to the success in early efforts to control the disease, as well as the main consumption channel in this market was almost back to normal. From the beginning of Q4 2020, raw pangasius prices will also begin to increase when the Chinese market increases imports to meet the increasing consumption demand at the end of the year.

Unfortunately, since November 10, 2020, the Chinese border gates begin to apply the regime of control, fumigation and traceability of 100% of shipments for prevent the risk of COVID-19 infection. It causes port congestion and problems related to checking of goods to storing yards, storage, etc. According to VASEP, it is likely that this situation will last until the end of Q1 2021. However, VASEP believes that the Chinese authorities can fully apply the special clearance regime for frozen seafood shipments from Vietnam because of the good results of Vietnam's disease control.

In ***the EU market***, tax incentives from the EVFTA Agreement applied to pangasius products (accounting for about 12% of the total value of Vietnamese pangasius exports) will promote pangasius exports in 2021. Specifically, the tax rate of all pangasius products will be reduced to 0% from 2023. In 2021, tax rates on pangasius products begin to be cut, most notably frozen pangasius fillets (HS code: 030462), accounted for 80% of the total pangasius exports to the EU market, will decrease to 2.75%, half lower than the normal preferential tax rate GSP. Therefore, we expect this tax will significantly support pangasius exporters to promote their products to the EU market in 2021.

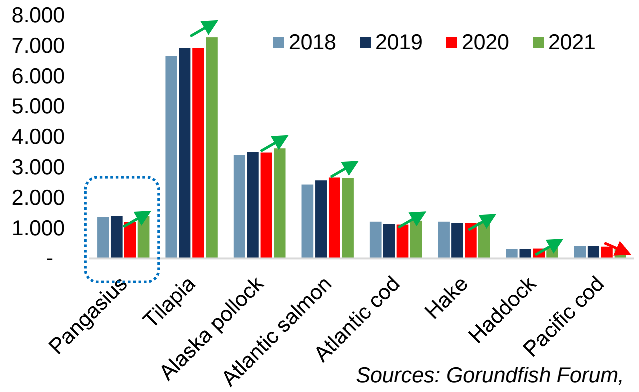
Tariff schedule according to EVFTA to PANGASIUS product of Vietnam

	Fresh or chilled pangasius (HS: 030272)	Frozen pangasius (HS: 030324)	Fresh or chilled fillets of pangasius (HS: 030432)	Frozen fillets of pangasius (HS: 030462)
Base Rate	4,5%	4,5%	5,5%	5,5%
GSP Tariff	8%	8%	9%	5,5%
EVFTA Tariff				
01/08/2020-31/12/2020	4,500%	4,500%	5,500%	4,125%
01/01/2021-31/12/2021	4,000%	4,000%	4,500%	2,750%
01/01/2022-31/12/2022	2,000%	2,000%	2,250%	1,375%
After 01/01/2023	0,000%	0,000%	0,000%	0,000%

Sources: FPTS Research

In addition, Vietnamese pangasius businesses also face the risk of antidumping tax to ***the US market*** (accounting for 14% of the total export value of Vietnamese pangasius in 2019). 2021 is the 16th administrative review (POR 16) of the US Department of Commerce (DOC) applied to Vietnamese pangasius products. As of December 28, 2020, DOC announced preliminary results of the POR 16, the nationwide tax rate continued to be 2.39 USD/kg, meanwhile, VHC and ANV enjoy the tax rate of 0.09 USD/kg. The official result will be announced around April 2021.

Forecast of global white fish production in 2021 (thousand tons)



Sources: Gorundfish Forum, Undercurrentnews, FPTS Research

Besides, competition with global whitefish species will increase when most of the production of tilapia, pollock, salmon, cod, etc is forecasted to be positive growth in 2021. Therefore, the export price of Vietnamese pangasius will be difficult to increase sharply.

We expect that the advantage of lower price and the efforts to focus more and more on value-added processed products, fully meeting conditions of food safety and hygiene and traceability will contribute to boosting the export value of Vietnamese pangasius by 2021.

➔ **Conclusion**: According to forecasts of VASEP, the seafood export value of Vietnam will reach about 9.4 billion USD in 2021 (+9,6% compared to the estimated export value in 2020 of 8.6 billion USD). Despite of having positive supporting factors, Vietnam's seafood industry will face risks from (1) the disease situation will prolong as well as (2) the speed of recovery of consumption channels of Vietnamese seafood products in recovering markets response slower than expected. We believe that Vietnam's seafood export value will be **MORE POSITIVE** in 2021.

- **SHRIMP SEGMENT: KEEP GROWING**. Based on (1) Continuing to take advantage of the stable domestic shrimp production, when the supply of competitors like India is forecasted that it will take a long time to recover. And (2) The tax rate of frozen raw shrimp (HS code: 0306) officially reached 0% after the official EVFTA Agreement.
- **PANGASIUS SEGMENT: MODERATE RECOVERY.** The key export market – China is facing difficulties because the government is tightening the measures to control imported seafood to prevent the infection of COVID-19. However, we believe that Vietnamese seafood will soon be removed from the country's control list by the success of disease control. And we expect that the disease situation in major markets such as the US, EU, etc will be gradually controlled; restaurants, hotels,... will start operating again, the business performance of Vietnamese exporting pangasius enterprises will recover in 2021.

III. Watch list

Ticker	Market Capital 14/01/2020 (billion VND)	Net revenue 2020 (billion VND)	Net income 2020 (billion VND)	Net income Growth (yoy)	Net profit margin	ROE	P/E
VHC	**7.724**	**7.037**	**705**	**-40%**	**10%**	**14%**	**10x**

VHC – the world's largest exporter of pangasius, possesses a well-established value chain and to possess a great competitive advantage in the US market, when enjoying anti-dumping tax rates lower than other compaies. Therefore, when consumption demand in key markets recovers, VHC is expected to have the strongest rebound.

In 2021, the expanding production line of Collagen and Gelatin of more than 1,500 tons product per year is officially put into operation, +75% capacity compared to 2020. We expect C&G products's revenue to reach 1.000 billion VND in 2021, +60% yoy, contributing 15% of VHC's total revenue.

VHC has a safety financial structure and low debt levels compared to other companies in the Pangasius segment. Along with large cash flow, high bank deposits, 1,500 billion VND (at Q3 2020), VHC is expected to receive 100 billion VND of deposit interest each year.

FMC	**1.873**	**4.415**	**226**	**-2%**	**5%**	**21%**	**8x**

Owning a shrimp farming area of 270ha, equivalent to 30% autonomy rate, this is a high rate relative to other businesses in the industry (MPC can only self-control 10% of the amount of raw materials input).

In early 2021, FMC will build Sao Ta seafood processing factory, with a capacity of about 15,000 tons/year, increasing the company's total processing capacity to 35,000 tons/year. The new factory aims to focus on producing high-end shrimp products, serving the EU market so that it can take full advantage of tax incentives from the EVFTA Agreement.

The capital structure of FMC is quite safe, the D/E ratio as of Q3 2020 reaches 0.7, in which FMC does not use long-term debt at all.

FMC maintains a very regular and stable dividend payment. With the average annual dividend payment is about 2,000-2,500 VND/share. We think that this is an attractive dividend payout level for investors.

PHARMACEUTICAL INDUSTRY

API SUPPLY-CHAIN RECOVERY;

OPPORTUNITY FOR HIGH-GMP-CERTIFIED DOMESTIC PRODUCTS

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Review 2020

The total pharmaceutical consumption in Vietnam is estimated to have grown by 10,8% yoy. The temporary impacts of COVID-19 on the industry are shown as follows:

- Extreme API shortage within the first 02 months of 2020.
- Delayed cooperative progress between Vietnam manufacturers and international partners.
- Remarkable growth on the retail channel.

Outlook 2021

In 2021, as (i) the pandemic has been under relatively a good control in Vietnam and (ii) COVID-19 vaccine development progress has shown positive results, the pharmaceutical industry in Vietnam is expected to witness the following changes:

- A slight drop of pharmaceutical consumption growth rate in the retail channel.
- An increase in demand for EU-GMP or Japan-GMP-certified domestic products in the hospital channel.
- A continuning M&A trend in the pharmaceutical industry between domestic manufacturers and global pharmaceutical incorporations.

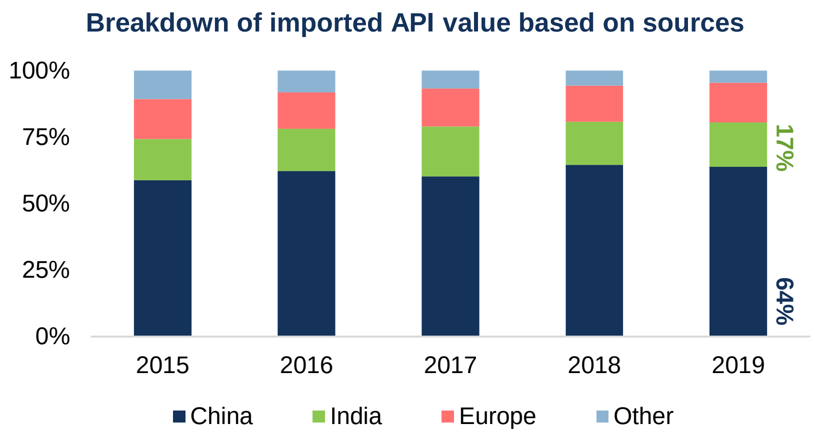
J. PHARMACEUTICAL INDUSTRY: API supply-chain recovery; Opportunity for high-GMP-standard domestic products

I. Review 2020: A short-lived hit from the COVID-19

1. API supply chain: Shortage within the first 02 months of 2020

1.1. Dependent on import sources, Vietnam's API supply chain witnessed a sudden break

China and India are the two major API suppliers for Vietnam



Source: GDC, FPTS Research

Imported API[3] accounts for 80-90% of API demand in Vietnam. Due to limited domestic technology, Vietnamese manufacturers are not yet capable of extracting pure API for commercial purpose.

The value of API imported from China and India accounts for 74.3-80.7% of total API demand in Vietnam between 2015-2019 owning to their low manufacturing costs compared to those in Europe and America.

COVID-19 broke the supply chain

Sources of API	Value (USD million)	Changes (% yoy)
China	USD27.2 million	-30.0%
India	USD9.4 million	-25.8%
Europe	USD7.8 million	-37.8%
Others	USD1.7 million	-14.2%

Source: GDC, FPTS Research

Within the first 02 months of 2020, Vietnam's total imported API value reached USD 46.5 million (-30.8% yoy) as the sources of API supply from China and India experieced sudden disruptions:

- The COVID-19 pandemic broke out in Hubei province (China) and rapidly spread to other Eastern provinces in China, including Shandong and Jiangsu where located a number of API factories. By late January 2020, the Eastern regions of China had experienced (i) a large amount of COVID-19 patients, (ii) city lockdowns, and (iii) discontinuing manufacturing activities.
- India imposed restrictions on API export as: (i) 70-85% of API demand in India depended on Chinese suppliers and (ii) India's import of Chinese API in Q1 2020 had been delayed. To prioritize its domestic consumption, India had restricted the export of 13 antibiotics, analgesics, antipyretics and vitamins and their derivatives, including: paracetamol, chloramphenicol, vitamins B1, B6, B12, etc. [4]

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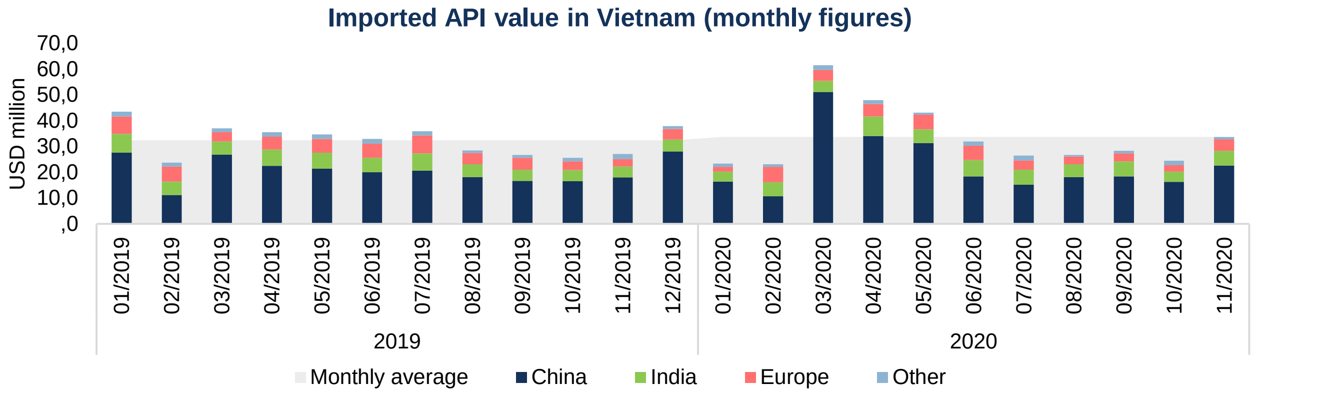
[3]**API (Active Pharmaceutical Ingredient(s))**: The substance or compound that carries the pharmacological effect of each drug, which has direct influence in the dianogis, treatment, and prevention of a disease or in the restoration and modification of the physiological functions of the body.

[4]**Full list includes**: Paracetamol, Tinidazole, Metronidazole, Acyclovir, Vitamin B1, Vitamin B6, Vitamin B12, Progesterone, Chloramphenicol, Erythromycin, Neomycin, Clindamycin, Ornidazole, and their derivatives.

1.2. The API supply chain made a swift recovery in March, 2020



Source: GSO, FPTS Research

The end of Q1 2020 marked the recovery of Chinese and Indian API supply sources:

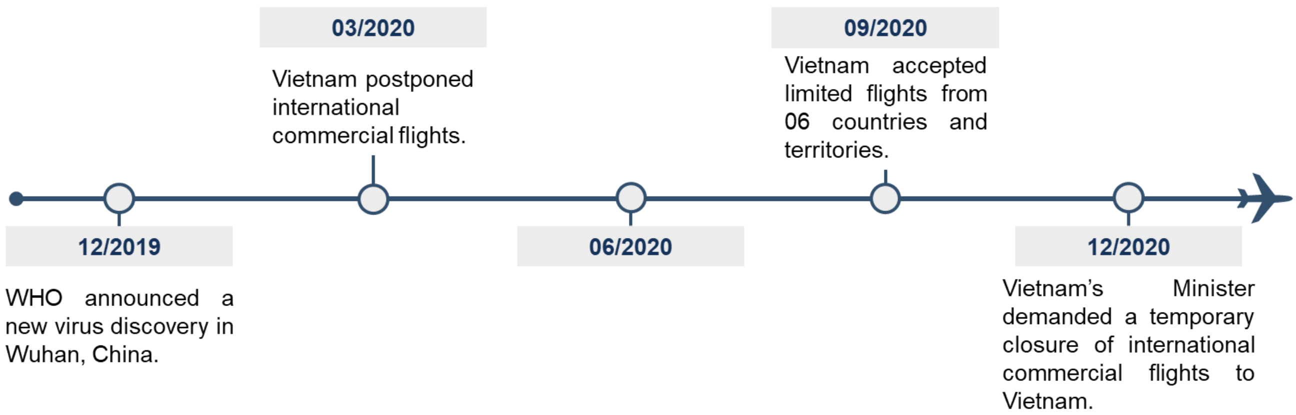
- In mid-February 2020, several pharmaceutical and API manufacturers in China resumed activities despite lack of human resources and key starting materials.
- In April 2020, India removed its import restrictions for 12 API and their derivatives, excluding Paracetamol.

Vietnamese pharmaceutical manufacturers started stockpiling API. In March, the total value of imported API reached USD 61.5 million (+66.0% yoy), ending the API shortage period. The accumulative imported API value reached USD 371.5 million (+5.6% yoy) after 11M 2020.

2. Delayed GMP testing and technology transfer

2.1. Disrupted flight schedules prevented international experts from entering the country

Throughout 2020, COVID-19 interfered experts' planned flights to Vietnam. The re-opening of international commercial flights has been unstable amid the pandemic.



As a result, the following main cooperative activities have been delayed:

Activities	Impacted partners
Consulting and reviewing EU-GMP and Japan-GMP qualifications for production lines in Vietnam.	Experts from pharmaceutical regulatory agencies in Europe and Japan.
Assembling and testing production lines; supporting and training employees for operating new machines.	Experts of production line providers, mainly from China.
Transferring manufacturing technology.	Vietnam manufacturers' partnered global pharmaceutical incorporations.

Source: FPTS Research

2.2. Solutions from the Vietnam Government and European Medicines Agency

Vietnam National Steering Committee for COVID-19 Prevention allowed international experts' entry

Beside allowing a limited number of flights from China, South Korea, and Japan to Vietnam in September and October 2020, Vietnam National Steering Committee for COVID-19 Prevention have provided procedures for international experts upon entry, including COVID-19 testing and quarantine requirements.

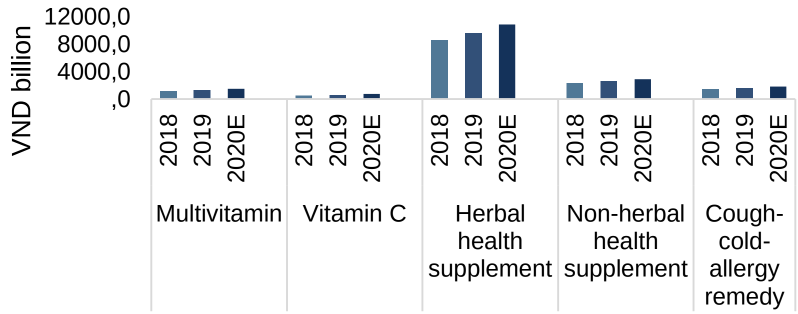
European Medicines Agency changed GMP reviewing mechanism for non-EU manufacturers

The European Commission, Heads of Medicines Agencies, and European Medicines Agency jointly allowed: (i) extensions of expiring EU-GMP certifications until 2021 to ensure the continuing supply of pharmaceutical products amid the pandemic and (ii) virtual EU-GMP reviewing and approval procedures[5] for new production lines. We expect the reviewing progress for Vietnam's new production lines to be delayed from two to three quarters or until the pandemic is under a complete global control.

3. Pharmaceutical and healthcare product demand hiked in the retail channel

Healthcare and medical products including masks (N95 respirators, surgical masks, and face masks), protective clothing, medical alcohol, and hand sanitizers were highly demanded. As of November 2020, the total number of masks manufactured in Vietnam reached more than 5.2 billion pieces; of which an estimated amount of 3.9 billion pieces were used domestically (equivalent to about 40 masks used per person per day).

Consumption of a few pharmaceutical products and health supplements in the retailing channel in Vietnam



Source: EUI, FPTS Research

Demand for vitamins, analgesics and antipyretics increased significantly within first half of 2020. Consumers' concern for a prolonged pandemic and social distancing period had led to the stockpiling of basic medicines and necessities. The distribution of pharmaceutical and medical products in the retail channel were not only limited to traditional pharmacies/drugstores but also expanding to other retailing forms such as e-commerce and individual distributors.

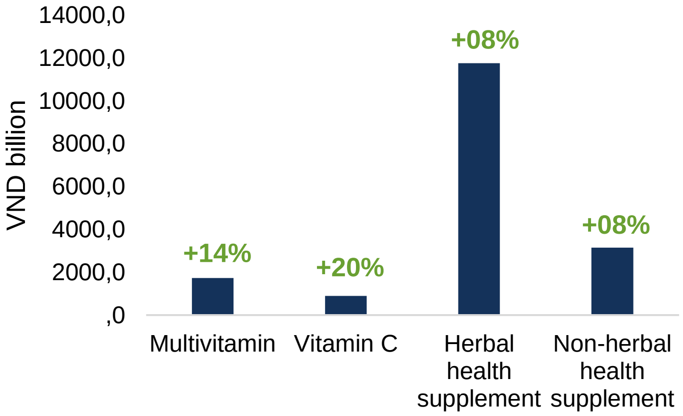
II. Outlook 2021: Slow growth in the retail channel; Opportunities for EU-GMP/JAPAN-GMP domestic pharmaceutical products in the hospital channel

Total pharmaceutical consumption in Vietnam is expected to reach VND 123.6 trillion in 2021 (+8.0% yoy) (*IQVIA*). As COVID-19 has been under a relatively stable control in Vietnam and recent vaccine developments have shown positive results globally (read more), we expect the consumption growth in the retail channel to slow down due to weakened demand. In the hospital channel, a growing health insurance fund deficit is anticipated to open up opportunities for domestic EU-GMP/Japan-GMP-certified products.

[5] An EU-GMP certification based on the virtual approval procedures will be re-examined directly at the production site as soon as EMA's authorized experts are allowed to travel. If a production line does not pass the virtual reviewing process, the review is posteponed until a direct examination can be conducted.

1. Slower growth in the retailing channel as stockpiling demand falls

Consumption of a few pharmaceutical products and health supplements in the retailing channel in Vietnam (2021F)



Source: EUI, FPTS Research

Vietnam's Government's strict quarantine and social distancing policies have proven to be effective against the COVID-19 pandemic. As (i) consumers' fear for another returning wave of the COVID-19 has become weakened and (ii) necessity and healthcare product suppliers have become abundant, immediate demand for these products would gradually fade. With that being said, we still expect the growth momentum for the retail channel to come from several pharmaceutical products and immune boosters, including multivitamins, vitamin C, and herbal products due to consumers' growing "Prevention-is-better-than-cure" awareness. In summary, the growth of pharmaceutical and medical products in the retail channel is expected to decrease from 15.5% yoy (2020E) to 10.2% yoy (2021F) (*EUI*).

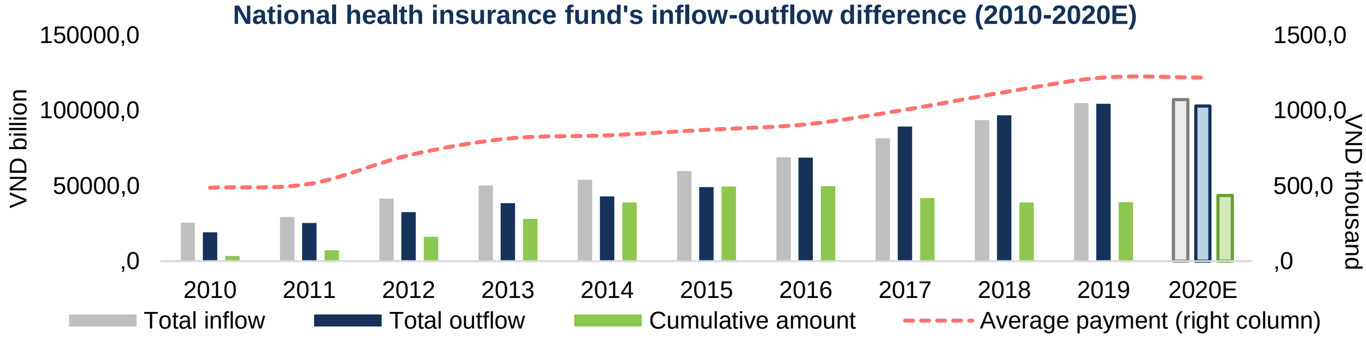
2. Opportunities for domestic EU-GMP/JAPAN-GMP pharmaceutical products in the hospital channel

From 2015, the cumulative balance of the health insurance fund has gone down while the average inflow has been rising. Subsequently, attempts to rebalance the inflow and outflow of the fund have focused on restraining the amount of patented drugs[6] used in hospitals. To replace patented drugs in the higher 1st and 2nd bidding tiers, domestic drugs need to meet the required EU-GMP/Japan-GMP standards. In fact, very few domestic manufacturers are currently possessing the above GMP requirements because of the limited resources of capital and technology.

We believe that cooperations between Vietnamese manufacturers and international pharmaceutical incorporations are necessary (i) for domestic manufacturers to upgrade their GMP standards and to expand their manufacturing capacity to gradually replace patented drugs and (ii) for international players' drugs to compete against Vietnamese products regarding pricing by having their products manufactured in Vietnam. These cooperations can occur under many forms, including M&A which have recently been adopted between several pharmaceutical manufacturers in Vietnam and global incorporations.

2.1. Use of patented drugs have been limited to minimize health insurance fund's outflows

National health insurance fund's inflow-outflow difference (2010-2020E)



Source: GSO, DoH of Ho Chi Minh City, MoH, Vietnam Social Security, FPTS Research

The cumulative amount of the national health insurance fund has dropped from VND 49.6 trillion (2015) to VND 39.2 trillion (2019) despite an increased average payment amount from 2015 to 2019. The main reason came from a considerable amount of patented drug usage, which has been held accountable for about 26-27% of total drug expenses paid with the national health insurance fund between 2016 and 2019. This figure has remained relatively high at about 45% and about 39% in Hanoi and Ho Chi Minh City, respectively.

[6] Patent-protected drugs: these are usually imported and sold with high price in Vietnam.

Allowed patented drug usage at different hospital tiers

Hospital tier	% Patented drug use/ Total pharma value
Central tier	30%
Provincial tier	5%
District tier	0%

Source: Vietnam Social Security, FPTS Research

Solely raising the average payment amount for the national health insurance fund would not be sufficient; as a result, use of patented drugs has been limited:

- Use of patented drugs has been limited at 0-30% of the total pharmaceutical product usage, depending on hospital tiers.
- Domestic manufacturers are encouraged to conduct research on producing generic drugs under equivalent GMP standard with patented drugs.

2.2. Priorities for domestic generic EU-GMP/Japan-GMP manufacturers

- Pharmaceutical Law 105/2015/QH13 encouraged the development of generic drugs in Vietnam as soon as patents for patented drugs expire. Additionally, in a case where a domestic product is equivalent to its imported homogenious product in terms of (i) manufacturing quality, (ii) bidding price, and (iii) supply capacity when bidding in the hospital channel, the domestic one is prioritized to win the bid.
- Circular No. 03/2019/TT-BYT expanded the list of bid API prioritized for domestic manufacturers from 146 to 640 API.

The resulted benefits for domestic EU-GMP/Japan-GMP generic products include: (i) possessing bidding advantages compared to imported ones and (ii) being relieved from rough competitions against other domestic WHO-GMP products in the 3rd, 4th and 5th bidding tiers.

2.3. Cooperations between domestic and international manufacturers tend to result in M&A deals

To utilize the bidding priorities in the hospital channel, domestic manufacturers are required to obtain higher GMP standards such as EU-GMP, Japan-GMP, etc. This higher GMP pursuing trend would call for support, i.e., researching and developing clinical trials, from experienced international pharmaceutical incorporations, which could potentiallly result in M&A deals for the mututal benefits of both domestic and international manufacturers.

List of M&A activities which occurred in 2020:

Co.	Investing Partner	Ownership	Details
IMP	SK Investment Vina III (belongs to SK Group)	24.94%	May 2020, SK Group received partial ownship of IMP mainly from Dragon Capital.
PME	STADA Service Holding B.V. (belongs to STADA Arzneimittel AG)	about 92.23%(*)	December 2020, STADA Service Holding B.V. was accepted to increase ownership of PME to 100%.
DHT	ASKA Pharmaceutical Co., Ltd.	19.9-24.9%	September 2020, DHT and ASKA Pharmaceutical Co., Ltd. entered a private offering deal.

(*)FPTS estimated based on Well Light Investment Co. Ltd.'s PME ownership (a subsidiary of STADA) and the amount of PME stocks registered to be sold by PME's BoD in December 2020.

We expect the M&A trend in the pharmaceutical industry in Vietnam to continue in 2021 due to bilateral benefits:

Benefits for domestic manufacturers	Benefits for international incorporations
• Accessing to higher manufacturing standards including EU-GMP, Japan-GMP, etc. • Interacting with abundant sources of technology and data on generic drug research and clinical trials. • Exporting and entering new markets using the international incorporations' distributing networks.	• Utilizing a low-cost source of manufacturing and human resources. • Competing in Vietnam's pharmaceutical market with cheaper products when manufacturing within the country. • Expanding to other Asian markets.

➔ We expect Vietnam's pharmaceutical market in 2021 to be **MORE FAVORABLE** because of the following reasons:

- The imported API supply sources have recovered.
- The cooperations between Vietnamese manufacturers and international partners have been supported by the Vietnamese Government and European Medicines Agency.
- Pharmaceutical consumption in the retail channel is expected to grow due to consumers' "Prevention-is-better-than-cure" awareness.
- Domestic EU-GMP/Japan-GMP manufacturers are expected to meet opportunities in the hospital channel due to their products' competitiveness against both imported EU-GMP/Japan-GMP products and domestic WHO-GMP products.

III. Watch list

Ticker	Market Cap. on 14/01/2021 (VND bil.)	Revenues 9M2020 (VND bil.)	Net Income 9M2020 (VND bil.)	NI Growth (%yoy)	NI Margin	TTM ROE	TTM P/E
IMP	**3,770.7**	**882.4**	**139.3**	**+26.1%**	**15.8%**	**11.7%**	**19.7x**

Imexpharm Corporation (IMP) primarily manufactures generic drugs including antibiotics, cardiovascular, diabetes, analgesics, antipyretics, anti-histamines and allergy drugs, etc. IMP's 2019 revenue breakdown in terms of distributing channels consists of sales from the retail channel (about 57%), hospital channel (about 29%), exporting (about 1%), and distributing activities for partners (about 12%). 9M 2020, IMP had reached 51.1% of its 2020 revenue target and 64.3% of its 2020 net income target.

In 2020, COVID-19 did not significantly impact IMP's API supply sources as the company (i) stored API for approximately 04-05 months of manufacturing and (ii) imported API from a variety of sources. However, the pandemic had slowed down IMP's EU-GMP reviewing progress for its new IMP4 factory, which has been preventing IMP from exporting and bidding its potential non-beta-lactam products in the 1st and 2nd tiers in the hospital channel.

IMP completed its Health Supplement factory construction in July and received a HS-GMP certification in October 2020. Its health supplement products would likely generate high margins and are expected to grow at a fast pace in the current pandemic circumstance. On the other hand, IMP3's Cephalexin 500mg capsules recently received a marketing authorization from the Spanish Agency of Medicines and Medical Devices (AEMPS), which would potentially expand IMP's export market.

TRA	**2,984.7**	**1,306.8**	**141.4**	**+31.0%**	**10.8%**	**17.0%**	**14.6x**

Traphaco Joint Stock Company (TRA) primarily manufactures herbal medicines and health supplements. The manufacturer is capable of growing and self-providing its own raw WHO-GACP certified herbal materials. TRA's 2019 revenue breakdown included herbal product sales (58.6%), generic drug sales (23.5%), and sales from other distributing services for its partners (17.8%). 9M 2020, TRA had reached 65.3% of its 2020 revenue target and 78.6% of its 2020 net income target.

In 2020, COVID-19 barely impacted TRA's material sources as the company (i) self-provided its own herbal materials, (ii) had its major API suppliers' factories located far from the infected regions in China, and (iii) actively searched for back-up suppliers in India, Switzerland, Germany and Vietnam (for packaging materials). However, because of the pandemic, TRA was forced to delay the receiving progress for 07 product transfers from Daewoong Pharmaceutical (South Korea), one of its major shareholders, until 2021.

Facing intense competitions from similar products, TRA actively restructure product portfolio. For example, based on its traditional Boganic Forte, TRA has developed Boganic Lippi and Boganic herbal tea for the premium segment and the beverage market, respectively. On the other hand, TRA had stopped its distributing services for Sandoz to enter new partnerships with Natural Factors (Canada), CJ, JW Holdings, and Daewoong Pharmaceutical (South Korea). The new distributing product portfolio consists of mostly health supplements, which would potentially generate higher sales in the current pandemic circumstance.

APPENDIX (go back)

▶ Vietnam might be able to import vaccines for one-third of its population in 2021

On April 1st, 2021, Vietnam announced a potential deal with AstraZeneca for 30 million doses of vaccines, which would serve 15 million people (about 15.3% of Vietnam's population). Moreover, according to Bloomberg, Vietnam had obtained another deal which would provide vaccines for approximately 05 million people (about 5.0% of Vietnam 's population). In addition, being one of 92 low-to-middle-income countries and territories supported by the COVAX project, Vietnam may be able to provide with buying options for about 16.0% of its population. In short, supposed that the above announced vaccine deals would not overlap each other, Vietnam would potentially acquire COVID-19 vaccines for approximately 36.3% of its population.

▶ Domestically developed vaccines would be commercially available in late 2021 in the best scenarios

There are currently four active COVID-19 vaccine developers in Vietnam, including:

Manufacturer	Background	Products	COVID-19 vaccine developments
VABIOTECH	Established in 2020; currently under direction of Vietnam's Ministry of Health.	Vaccines for cholera, hepatitis A, hepatitis B, etc.	Collaborating with University of Bristol (UK) and currently evaluating safety on animals in Vietnam.
IVAC	Established in 1978; currently under direction of Vietnam's Ministry of Health.	Vaccines for pertussis, tetanus, tuberculosis, etc.	Collaborating with Icahn School of Medicine (US) and currently assessing safety on animals in the US.
POLYVAC	Established in 1994, currently under direction of Vietnam's Ministry of Health.	Vaccines for Rota virus, polio, measles, etc.	Research and potential assessment are pending for approval by the MoH.
NANOGEN	Established in 1997. Dr. Ho Nhan is the CEO and has spent 20 years studying and working in the biotechnology industry.	Biological drugs supporting bone marrow functions; antivirus biological drugs for hepatitis B, hepatitis C, etc.	Nano Covax vaccine was developed by NANOGEN. Safety assessment on animal was conducted in South Korea and Thailand. NANOGEN has collaborated with the Military Medical Academy to conduct clinical trials on human since December 2020.

Souce: FPTS Research

All of the vaccines researched and developed in Vietnam are currently in either the pre-clinical trial stage or in the early 1st phase of the clinical trial stage, which primarily aim at assessing the safety of the vaccines. To evaluate the comprehensive effectiveness of the vaccines, the research facilities are required to conduct the 2nd and 3rd phases of the clinical trial stage on the scale of 400-600 people and 3.000-30.000 people, respectively. As a result, we expect the domestic vaccines to take another 0.5-1.5 years of development before a successful one can be commercially manufactured.

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