

GÔNG TY CỔ PHẦN CHỨNG KHOÁN FPT

# REVIEW 2018 OUTLOOK 2019

# TABLE OF CONTENTS

## VIETNAM ECONOMIC OUTLOOK

[Vietnam economic review in 2018](#)

[Vietnam economic outlook in 2019](#)

### INDUSTRIES

### OUTLOOK IN 2019

[Construction](#)

**NEGATIVE**

[Steel](#)

**NEGATIVE**

[Tiles](#)

**NEGATIVE**

[Plastic](#)

**POSITIVE**

[Aviation](#)

**POSITIVE**

[Fertilizer](#)

**POSITIVE**

[Beer](#)

**NEGATIVE**

[Sugar](#)

**POSITIVE**

[Power](#)

**POSITIVE**



# VIETNAM | ECONOMIC SITUATION |

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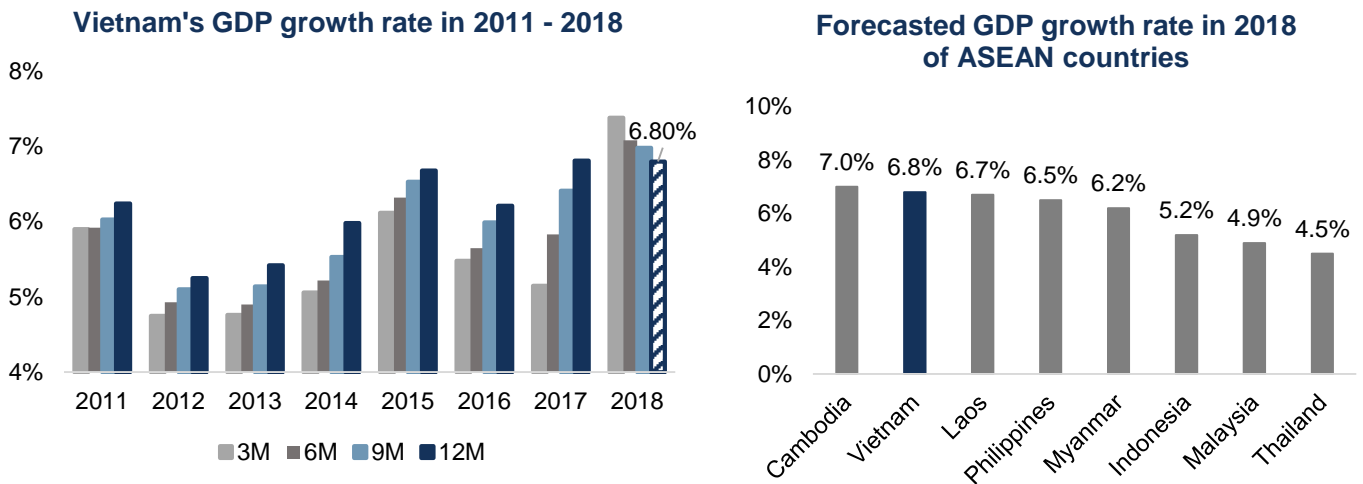
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# VIETNAM ECONOMIC REVIEW IN 2018

## 1. Economic growth

According to the statistics, Vietnam's GDP in 3 months, 6 months and 9 months of 2018 were estimated to increase to 7.08%; 7.08% and 6.98%. These are the highest growth rates in the period of 2011 – 2018. In the “East Asia and Pacific Economic Update Report” (October 2018), World Bank forecasts that Vietnam's GDP growth could reach 6.8% in 2018, which is quite high compared to other countries in the region.



Source: General Statistics Office of Vietnam, World Bank, FPTs Research

## Manufacturing is the main driver of Vietnam economic growth

### The Index of Industrial Production was estimated to increase over the same period in 2017

The Index of Industrial Production (IIP) in 11M2018 was estimated to increase by 10.1% yoy<sup>1</sup>. In particular, the manufacturing continued to have highest growth rate with an increase of 12.2% yoy<sup>2</sup>; production and distribution of electricity increased by 9.6% yoy; water supply, sewerage, waste management grew by 6.3%; mining and quarrying fell by 2% yoy. The output of some main products was expected to increase over the same period in 2017, such as: petroleum output increased by 51.8% yoy because Nghi Son Refinery and Petrochemical Complex (Thanh Hoa) has started trial operation since June, 2018; crude steel, iron ore increased by 40.9% yoy due to contribution of Formosa (Ha Tinh). According to Ministry of Industry and Trade (MoIT), Formosa runs the 2nd blast furnace with a capacity of 3.5 million tons per year in the last 6 months of 2018, which could lead to HRC increase by 154% yoy<sup>3</sup>.

For the year 2018, Ministry of Industry and Trade estimates the IIP will increase by 9.4% yoy, added value of whole industrial sector will rise about 7.32% yoy. In which, the manufacturing index will grow 12% – 13% yoy, added value will increase about 12.34% – 12.46% yoy.

<sup>1</sup> IIP in the first 11 months of the year, period 2012 – 2018: 4.6%, 5.6%, 7.5%, 9.9%, 7.4%, 9.2%, 10.1%.

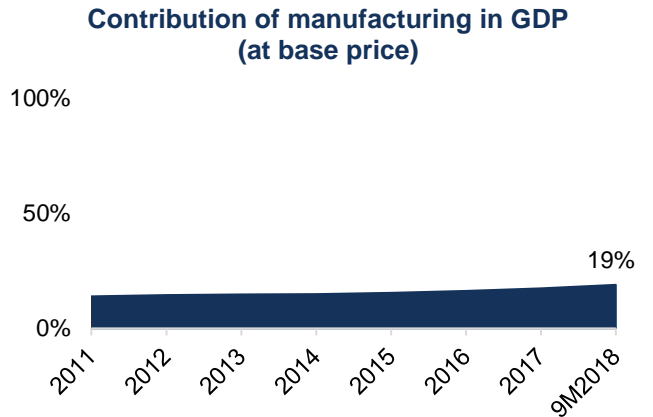
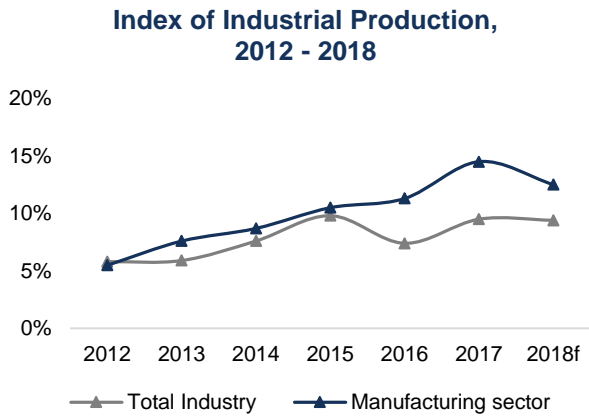
<sup>2</sup> Manufacturing index in the first 11 months of the year, period 2012 – 2018: 3.9%, 7.1%, 8.6%, 10.3%, 11%, 14.1%, 12.2%.

<sup>3</sup> Source: "Industrial production and trade activities in the first 9 months, Orientations and solutions for the last 3 months of 2018 Report" of the Ministry of Industry and Trade, October 2<sup>nd</sup>, 2018

### Manufacturing sector increases contribution in GDP

In the 9M2018, the industry was estimated to grow about 8.98% yoy and contribute 29% of GDP approximately. In particular, the manufacturing sector grew by 12.65% and contributed to nearly 19%.

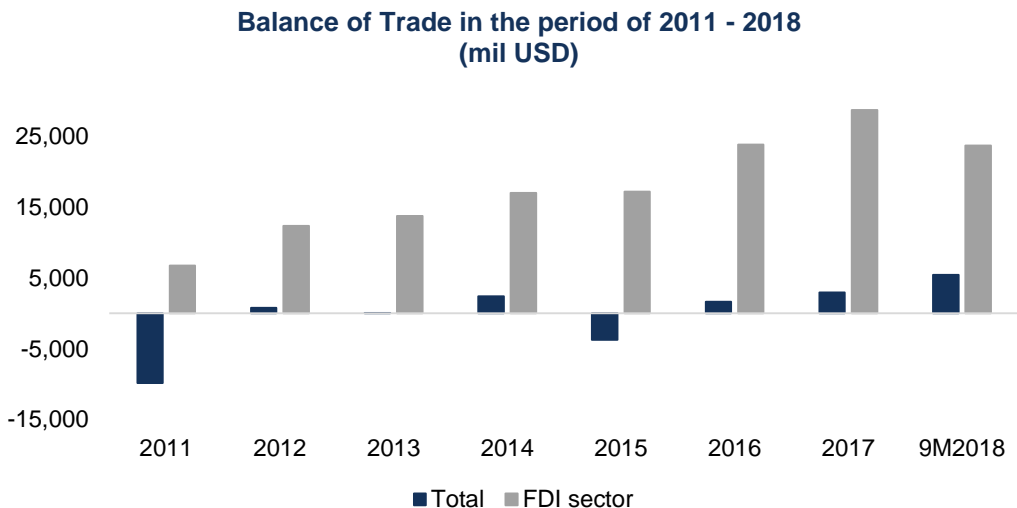
With the assumption of GDP growth 2018 will be 6.8% and manufacturing sector will increase by 12.4% yoy, the contribution of manufacturing sector in GDP will be around 18%.



Source: General Statistics Office of Vietnam (GSO), MoIT, FPTs Research

### FDI sector plays a key role in Vietnam's economic development

Even FDI contributes to only 24% of total realized social investment capital, this sector plays an important role in Vietnam's economy, especially in Imports and Exports of goods. In 9M2018, the FDI's export turnover accounted for 71% of the country's total export. The Vietnam's balance of trade was \$5.4 billion surplus, mainly due to the FDI surplus of \$23.7 billion.



Source: GSO, FPTs Research

Two enterprises that have great influence on the national economy are Formosa Ha Tinh Steel Corporation and Samsung Corporation in Vietnam. In 9M2018, the IIP in Ha Tinh ranked #1 nationwide with an increase of 110.4% yoy. However, if excluding the effect of Formosa, the IIP of this province increased by only 4.2%<sup>4</sup>. According to Ministry of Industry and Trade, as of June 2018, after 10 years of operation in Vietnam, Samsung Group has produced more than 01 billion mobile devices. In which, Samsung in Bac Ninh has manufactured more than 625 million products, Thai Nguyen factory has produced over 431 million products and 97% of total production are for export<sup>5</sup>.

In 2018, there are large projects have been granted investment registration certificates with total investment of more than \$1 billion:

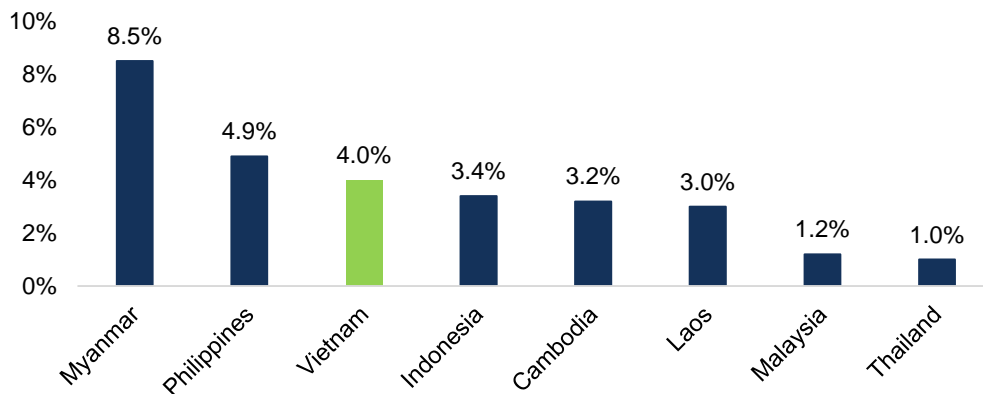
- Smart City project in Dong Anh, Hanoi was granted investment certificate on July 14<sup>th</sup> 2018 with total investment capital of \$4.138 billion from Sumitomo Corporation (Japan).
- The project of Polypropylene (PP) manufacturing and liquefied petroleum gas (LPG) warehouse invested by Hyosung Corporation (Korea) in Ba Ria - Vung Tau with total investment capital of \$1.201 billion, received investment registration on May 30<sup>th</sup> 2018.
- Laguna (Vietnam) Company Ltd,. project increased investment capital by \$1.12 billion on May 25<sup>th</sup> 2018. This project was invested by Singaporean in Thua Thien Hue and was granted the certificate of investment registration in 2007.

## 2. Inflation

### Consumer price index (CPI) might increase by 4% compared to the same period in 2017

The average CPI in 11M2018 was estimated to increase by 3.59% yoy. Average core CPI rose by 1.46% yoy. According to the “East Asia-Pacific Economic Update Report” (October 2018), CPI in 2018 is forecast to increase by 4% yoy, equal to the plan of the Government but still higher than that of several countries in the region.

**Forecasted CPI in 2018 in some countries in ASEAN**



Source: World Bank, FPT Research

<sup>4</sup> Source: Social and economic situation 9M2018 report in Ha Tinh Province

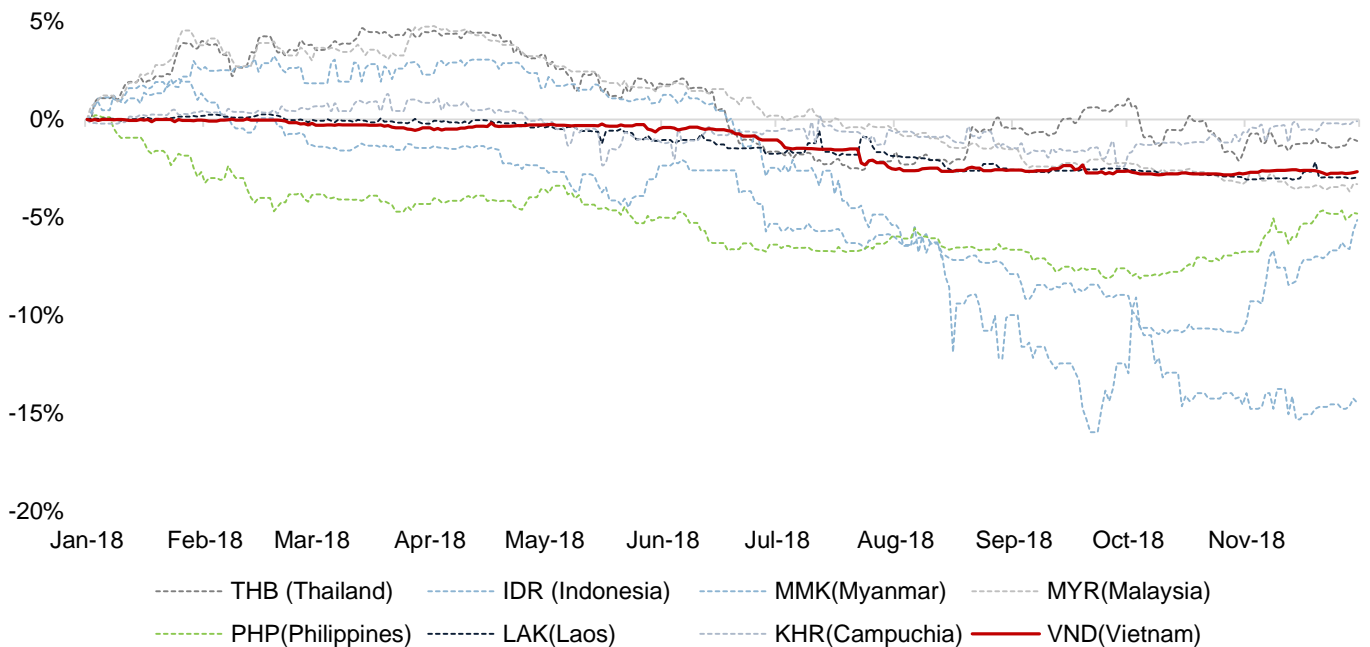
<sup>5</sup> Source: "Industrial production and trade activities in the first 9 months, Orientations and solutions for the last 3 months of 2018 Report" of the Ministry of Industry and Trade, October 2<sup>nd</sup>, 2018

### 3. Exchange rate and Interest rate

#### The exchange rate of USD/VND decreased by 2.7% compared to the beginning of 2018

As of the end of November, the exchange rate between US dollar and Vietnam dong decreased by 2.7%. In other words, Vietnam dong has depreciated by 2.7% from the beginning of the year. This volatility is low compared to the volatility of other currencies in the region in relation to the USD: Cambodia (KHR: -0.1%), Thailand (THB: -1.1%); Vietnam (VND: -2.7%); Laos (LAK: -2.9%); Malaysia (MYR: -3.3%); Philippines (PHP: -4.8%); Indonesia (IDR: -5.1%); Myanmar (MMK: -14.5%).

**Volatility of exchange rate between US dollar and domestic currencies in some countries in ASEAN (As of November 30th 2018)**



Source: Bloomberg, FPTs Research

#### Deposit rates and lending rates were relatively stable

According to the statistics of State Bank of Vietnam, deposit rates and lending rates in 11M2018 were relatively stable. Deposit rates in VND were commonly between 0.6% - 7.3%, deposit rate in USD was 0% for individuals and institutions. The lending rates in VND were between 6.0% - 9% p.a for short term loans, 9% - 11% p.a for medium and long term loans. The US dollar lending rates ranged from 2.8% to 6.0% p.a.

##### Deposit rates

	Term	Rate
VND	Demand and below 1-month	0.6 - 1%
	1-month to below 6-month	4.3 - 5.5%
	6-month to below 12-month	5.3 - 6.5%
	12-month or more	6.5 - 7.3%
USD		0%

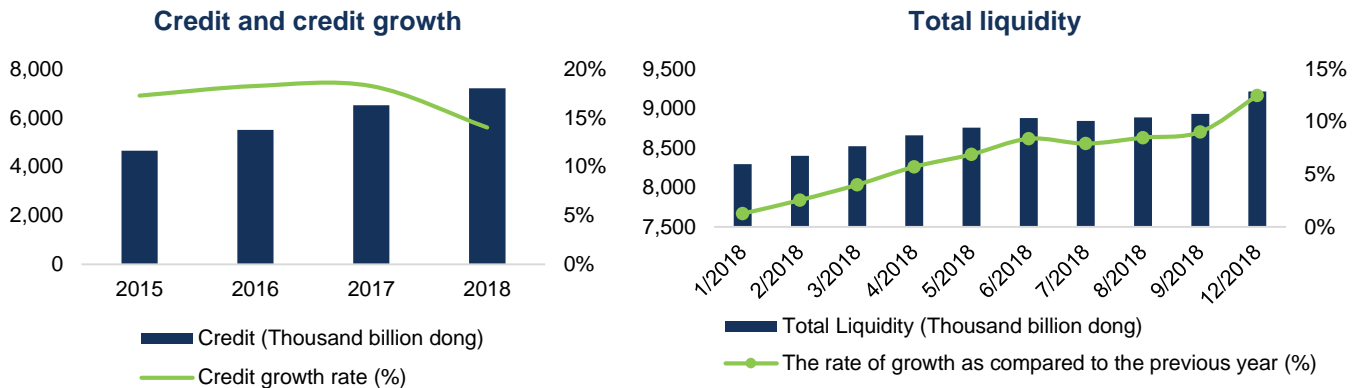
##### Lending rates

	Term	Rate
VND	Short-term	6.0 - 9.0%
	Medium and Long-term	9.0 - 11%
USD	Short-term	2.8 - 4.7%
	Medium and Long-term	4.5 - 6.0%

Source: State Bank of Vietnam, FPTs Research

## IMPORTANT POLICIES IN THE FIELD OF CURRENCY AND BANKING IN 2018

### 1. Flexible and prudent monetary policy to control inflation and stabilize the macro economy



Source: State Bank of Vietnam, General Statistics Office of Vietnam (GSO)

According to the State Bank of Vietnam, total liquidity increased by 12.5% yoy in 2018 (versus 14.97% yoy in 2017); credit growth rate reached 14% (versus 18.24% in 2017), this result is consistent with the credit growth target of about 17%.

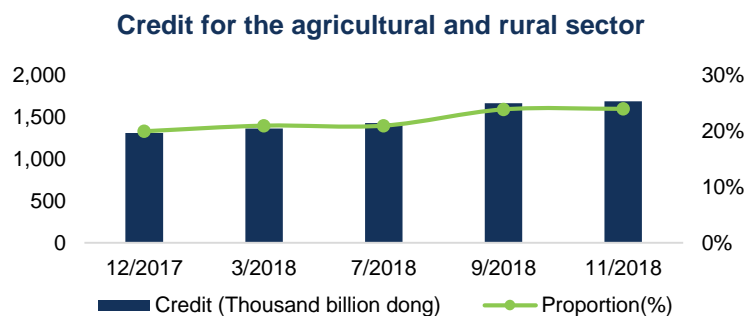
In 2018, the government's goals of GDP growth (6.7%) and average inflation (4%) were achieved. The GDP in 2018 was estimated to increase by 7.08%, the highest growth since 2011; average CPI in 2018 increased by 3.54% compared with that in 2017.

### 2. Policy documents issued to tighten credit

Circular No.19/2017/TT-NHNN was issued on the limits and safety ratios in the operation of credit institutions and international banks. Credit institutions and foreign banks must reduce the proportion of short-term funds for medium and long-term loans from the current of 45% to 40% since January 1, 2019. Circular No.19 also provides more detail on the credit limit, such as: do not exclude deposit guarantees including savings deposits from the credit limit; credit institutions must not lend for investment or stock trading, including cases of stocks collateral of credit institutions and subsidiaries of credit institutions; stocks collateral of issuing enterprises that customers borrow to buy shares of these enterprises.

In January 2018, the State Bank lowered the interest rate to buy OMO from 5% p.a to 4.75% p.a, credit institutions thus reduced the cost of capital and lowered the lending interest rate. The lending interest of the economy has decreased compared to the same period last year, specifically reducing by roughly 0.5% for priority sectors, down 0.3% for short-term and 0.8% for long-term loans.

### 3. Credit structure focused on manufacturing fields, as well as tightened in high potential risky sectors such as securities and real estates



Source: State Bank of Vietnam

Credit inflows have focused mainly on priority areas: agricultural and rural development; export goods; small and medium enterprises; supporting industry; high-tech enterprises, especially the development of agriculture and rural areas. According to the General Statistic Office, in the end of 2018, the credit for agriculture and rural



areas increased by 15.5% compared to the end of 2017, accounting for 24% of the total credit of the economy. For risky areas such as BOT, BT traffic projects, real estate; credit has been directly controlled through regulations to increase the risk ratio of real estate loans from 150% to 250% and lower the rate of short-term capital used for medium and long-term loans from 60% to 40%.

## **COMPREHENSIVE & PROGRESSIVE AGREEMENT FOR TRANS-PACIFIC PARTNERSHIP**

**Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) was officially signed on March 8, 2018.** The CPTPP is a trade agreement between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam. On November 12, 2018, the National Assembly of Vietnam passed a resolution to ratify CPTPP. Despite the withdrawal of the United States, CPTPP is still the largest free trade agreement with a market of about 500 million people, total GDP of 10,100 billion USD, equaling to 13.5% of global GDP.

**There are 2 adjustments compared to TPP:**

- **Change of requirement for effectiveness:** if at least six nations approve the CPTPP, it may take effect in 60 days after signing. Additionally, the new agreement has also adds regulations related to the process of withdrawal, participation, and flexible reviewing.
- **Delaying implementation of 22 articles of the CPTPP, including the facilitation of trade, investment, services, government procurement, intellectual property rights, the environment and the transparency.** Intellectual property rights have made the biggest change because most of the strong commitments was proposed by the US before. CPTPP postponed requesting member countries to change their laws and practices to protect new drugs, including probiotics; temporary suspension of the regulation on extension of copyright terms in cases of delay of licensing agencies or unreasonable delays in licensing, as well as licensing the importation of certain drugs into member countries.

### **(1) CPTPP has a positive impact on the entire Vietnamese economy**

**Impact of potential FTAs on Vietnamese economy by 2030 (%)**

	Standard simulations		Simulations with productivity boost	
	CPTPP	TPP12	CPTPP	TPP12
GDP	1.1	3.6	3.5	6.6
Exports	4.2	19.1	6.9	22.8
Imports	5.3	21.7	7.6	24.9

*Source: World Bank*

According to the World Bank's assessment, the benefits that Vietnam will achieve when participating in CPTPP are lower than TPP. However, in the CPTPP, the export market will be more diversified and uniform, less dependent on a large US market.

### **(2) Different effects from lower tariffs and non-tariff measures on various economic sectors**

**Tariffs and non-tariff measures (NTMs) before and after trade liberalization (%)**

	CPTPP		TPP12	
	2017	2030	2017	2030
Tariffs faced by Vietnam in FTA markets	1.7	0.2	4.2	0.1
Tariffs imposed by Vietnam on FTA members	2.9	0.1	3.2	0.1
Non-tariff barriers (NTB) faced by Vietnam in FTA markets	9.4	5.8	9.4	4.3
NTB imposed by Vietnam on FTA members	7.9	5.0	10.3	5.0

*Source: World Bank*

Light and labor-intensive industries will benefit such as garments, footwear, food and beverage sectors, etc. The current export tariff on textiles to non FTA markets is above 10% on average, (US is 17% - 18%), when CPTPP is effective and products meet strict technical standards as “yarn forward” rule, the tax rate will be at 0%, therefore, the growth rate of textile exports is forecasted to be up by 8.3% - 10.8%. According to World Bank, by 2030, exports to CPTPP countries will increase from 54 to 80 billion USD, accounting for 25% of total exports. Exports increased in the food, beverage and tobacco industries; clothing, leather and textiles will be 10.1; 6.9 and 0.5 billion USD. This result is limited partly because Vietnam has a bilateral and multilateral FTA with 7/10 members in CPTPP.

Negative impacts will focus on the areas of agriculture, livestock and poultry, food processing such as chicken and pork due to weak competitiveness. The reduction of import tariffs from CPTPP is forecasted to impact the output of the livestock sector by 0.3%; the growth rate of the food processing industry will decrease by 0.37% to 0.52%. According to the World Bank, 23 export sectors of Vietnam having the largest net reduction will be: agriculture (-1.6 billion USD), other industrial production (-1.2 billion USD), electrical equipment (-0.5 billion USD), metal (-0.4 billion USD).

CPTPP will also divert FDI inflows into industries benefiting from agreements such as textiles and footwear. Increased investment may increase productivity and increase technology content in exports, exports will be less dependent on imported materials, but will rely more on domestic supply chains instead, in order to overcome the limitations of rules of origin, encourage domestic private companies to integrate more actively into the value chain formed after the CPTPP takes effect, drag on the development of small and medium enterprises.

### **(3) Lower poverty and increase distribution for skilled labors**

Socially, participating in CPTPP will reduce unemployment, increase income and reduce poverty. According to research of the Ministry of Planning and Investment in September 2017, CPTPP can help increase the average number of jobs per year by about 20,000 - 26,000 (0.037-0.048% compared to the total number of jobs in Q2/2018). According to the World Bank report, by 2030, the agreement is expected to help reduce 0.6 million poor people at a poverty standard of 5.5 USD/day. Although all expected income groups benefit from CPTPP, the highest skilled workers in the region with 60% of the highest income will benefit more.

### **(4) Challenges from CPTPP**

Cutting import tariffs will reduce budget revenue. In recent years, the Government has determined to reduce the proportion of revenue from available natural resources such as crude oil as well as continuously lowering corporate income tax rates to attract FDI, which will worsen the budget decline.

Participation in numerous trade agreements will increase the economy’s openness and vulnerability to external shocks if the world economy is in crisis or recession.

Vietnam might not immediately take advantages from attracting and receiving large FDI inflows due to the lack of capacity to facilitate global affiliates to join global value chains; high logistics costs and weak infrastructure, electricity, marine ports. Foreign investment activities still face problems such as environmental issues, transfer pricing, trade fraud, technology transfer, and supporting industry development.

Strict regulations on standards and technical regulations will be a major barrier to export goods when major changes are required in the process of farming and exploitation (forest and aqua products); packaging process, preservation and transportation (agricultural products and food).

## ECONOMIC OUTLOOK IN 2019

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### 1. Global economic growth forecast

**Global economic growth in 2019 is forecast to be equal to or lower than that of 2018.** Specifically, the IMF forecasts the growth of 3.7% (equal to 2018 forecast)<sup>6</sup>; the OECD gives the forecast of 3.5% (less than 2% compared to 2018)<sup>7</sup> and the forecast of World Bank is 2.9% (down 1% compared to 2018 forecast)<sup>8</sup>.

### 2. Commodity prices forecast

According to the World Bank's Commodity Markets Outlook Report (October 2018), **price of most commodities are expected to increase in 2019.** Specifically:

- *Energy:* Oil prices in 2019 are forecast to increase by \$2/barrel (from average \$72/barrel in 2018 to \$74/barrel in 2019). Meanwhile, coal and natural gas prices are expected to fall in 2019, the coal price in Australia will decrease from average \$108/mt in 2018 to \$100/mt in 2019 approximately, etc.
- *Beverage:* The price of Arabica coffee is expected to rise about \$2.85/kg to \$2.89/kg (+1.4%), tea price will increase from average \$2.85/kg to \$2.88/kg (+1.1%), etc.
- *Food:* Thailand rice price will increase slightly from \$420/mt to \$422/mt (+0.5%); wheat price will rise roughly from \$210/mt to \$212/mt (+1.0%); shrimp price will up from \$12.4/kg to \$12.53/kg (+1.0%); sugar price is forecast to increase sharply from \$0.27/kg to \$0.28/kg (+3.7%), etc.
- *Raw materials:* Rubber price will increase by 3.8% (from average \$1.58/kg to \$1.64/kg); Cotton prices will rise slightly 0.5% (from \$2.04/kg to \$2.05/kg), etc.

### 3. Vietnam economic growth forecast

Along with the trend of global economic growth, Vietnam's economy in 2019 is forecast to grow at a 0.2% lower than forecast in 2018 and reach 6.6%. Inflation will maintain at 4% over the same period last year<sup>9</sup>.

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<sup>6</sup> Source: World Economic Growth, October 2018, IMF

<sup>7</sup> Source: OECD Economic Outlook, Growth has peaked amidst escalating risks, November 21<sup>st</sup> 2018

<sup>8</sup> Source: World Bank East Asia and Pacific Economic Update October 2018

<sup>9</sup> Source: World Bank East Asia and Pacific Economic Update October 2018

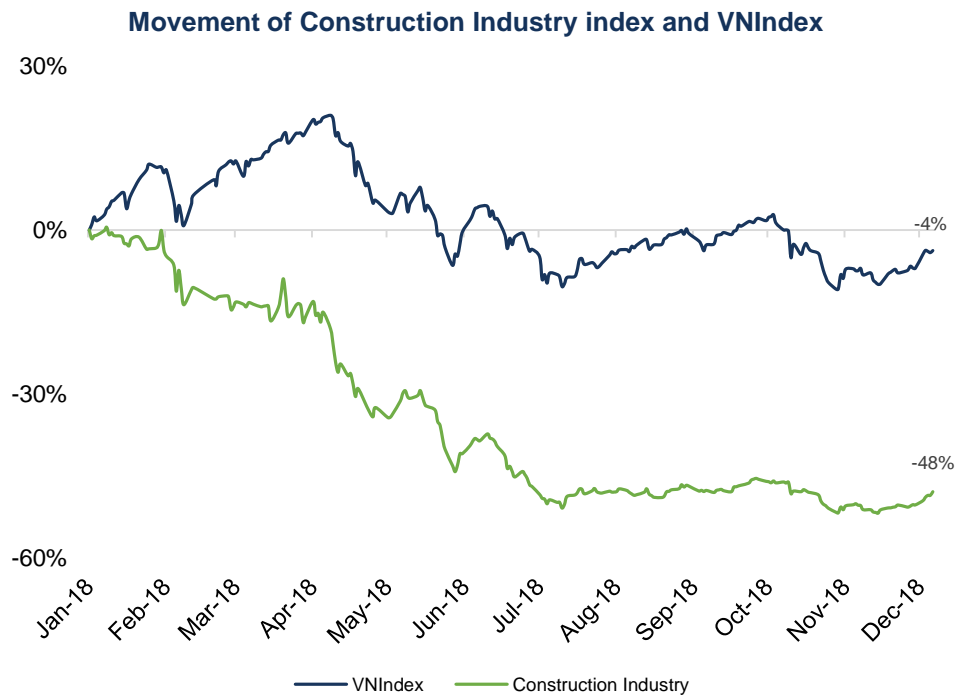
# CONSTRUCTION CONTINUING DECELERATION TREND

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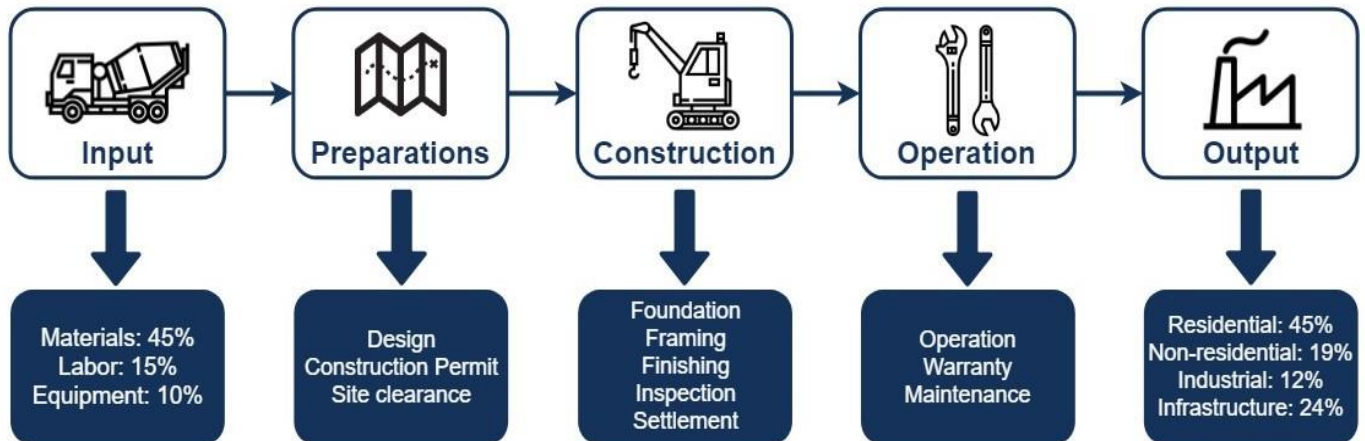
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Source: EzSearch

## A. CONSTRUCTION INDUSTRY OVERVIEW

### 1. Construction Industry Value Chain



#### (1) Input

- Construction materials: main input cost, makes up 45% of construction costs, among which steel accounts for 60 and cement 20%.
- Labor: only makes up 15% of total costs but determines construction quality and speed. Construction industry is labor intensive because all construction processes requires human operation and oversight.
- Construction equipment: accounts for 10% of construction costs, determines construction capacity. Vietnam is unable to manufacture construction equipment and has to import about \$835 million of construction equipment annually, 70% of which comes from Japan, China, and Korea.

#### (2) Construction process

The constructions process includes foundation, framing, and finishing.

- **The weights of each steps vary depending on the type of construction product:** for example, finishing accounts for 35 - 55% of residential building costs, but is usually negligible in transportation projects (roads and bridges)
- **Contractors typically face capital appropriation from clients:** companies typically get paid after completion, inspection and settlement, which typically lasts 02 – 03 months depending on the building/client.

**Specialization in construction increases with project's size:** a single contractor rarely has enough human resource or machinery to finish the entire project. As a result, subcontracting is prevalent in Vietnam, with main contractors typically provide management function.

- Many of the subcontractors are seasonal workers (makes up ~60% of total construction workers). These seasonal workers are usually untrained and can only work on low value-added jobs.
- On the other hand, some subcontractors are highly specialized and typically work on foundation or finishing.

#### (3) Key players

**Construction market in Vietnam is highly fragmented and features intense competition** because (1) large number of companies, (2) low barriers to entry, and (3) similar construction techniques. At the end of 2017, there are 67,000 construction companies in Vietnam, making up 13% of total companies.

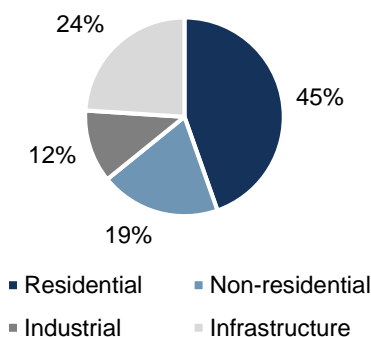
**Competition in construction is based on tender price and capabilities of the contractor.** These two factors are determined by (1) financial capacity, (2) construction techniques, and (3) project management capability. Based on these, foreign contractors have the highest competitive advantage in Vietnam, next comes domestic private and public contractors, and lastly state contractors.

	State	Domestic private and public	Foreign
<b>Foundation</b>	- Licogi Corporation	- Fecon Joint Stock Company ( <a href="#">FCN</a> ) - Minh Duc Cement and Construction Co., Ltd. - Phan Vu Group	- Bachy Soletanche Vietnam - Fico-Corea Construction Co., Ltd
	- Vietnam Construction and Import - Export Joint Stock Corporation (Vinaconex - <a href="#">VCG</a> ) - Lilama Corporation (Lilama) - 319 Corporation - Cienco 4 Group ( <a href="#">C4G</a> ) - Song Da Corporation Joint Stock Company - Cofico Company	- Cotecons Construction Joint Stock Company ( <a href="#">CTD</a> ) - Hoa Binh Corporation ( <a href="#">HBC</a> ) - Phuc Hung Holdings Construction Joint Stock Company ( <a href="#">PHC</a> ) - Delta Corporation	- Obayashi Vietnam Corporation - Sumitomo Mitsui Construction Co., Ltd. Maeda Vietnam Co., Ltd
<b>Finishing</b>		- REE Corporation ( <a href="#">REE</a> ) - Searefco Refrigeration Industry Corporation ( <a href="#">SRF</a> ) - VietREE Corporation - Hawee Joint Stock Company	- Kurihara Vietnam Co., Ltd - Taikisha Vietnam Engineering Inc Kinden Vietnam Co., Ltd

#### (4) Output

Construction output value reached 1,089 trillion VND in 2016, approximately 25% of GDP. Per our estimates, residential construction has the biggest share, next are infrastructure, non-residential and industrial.

**Construction Output Value**



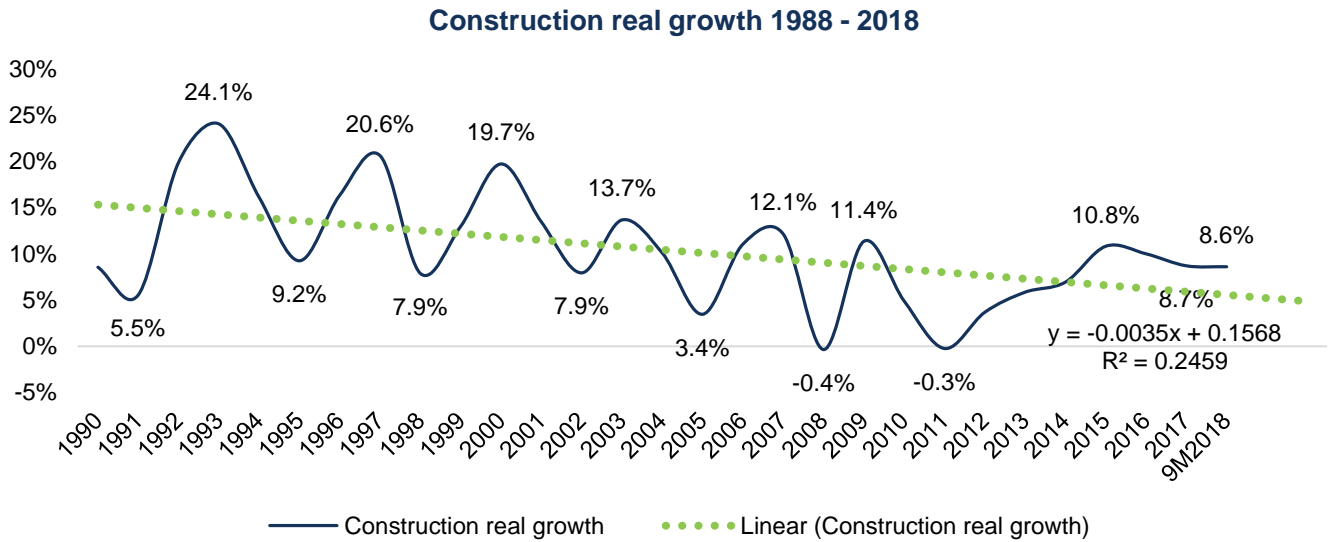
Source: GSO

Construction output is tailored to specific location and specifications from client – which is different from mass production without a designated buyer of typical manufacturing industry.

Construction output is very diverse: there is no universal law to classify construction output. In this report, we categorize these output by their intended use: residential, non-residential, industrial, and infrastructure.

## 2. Characteristics of Construction industry

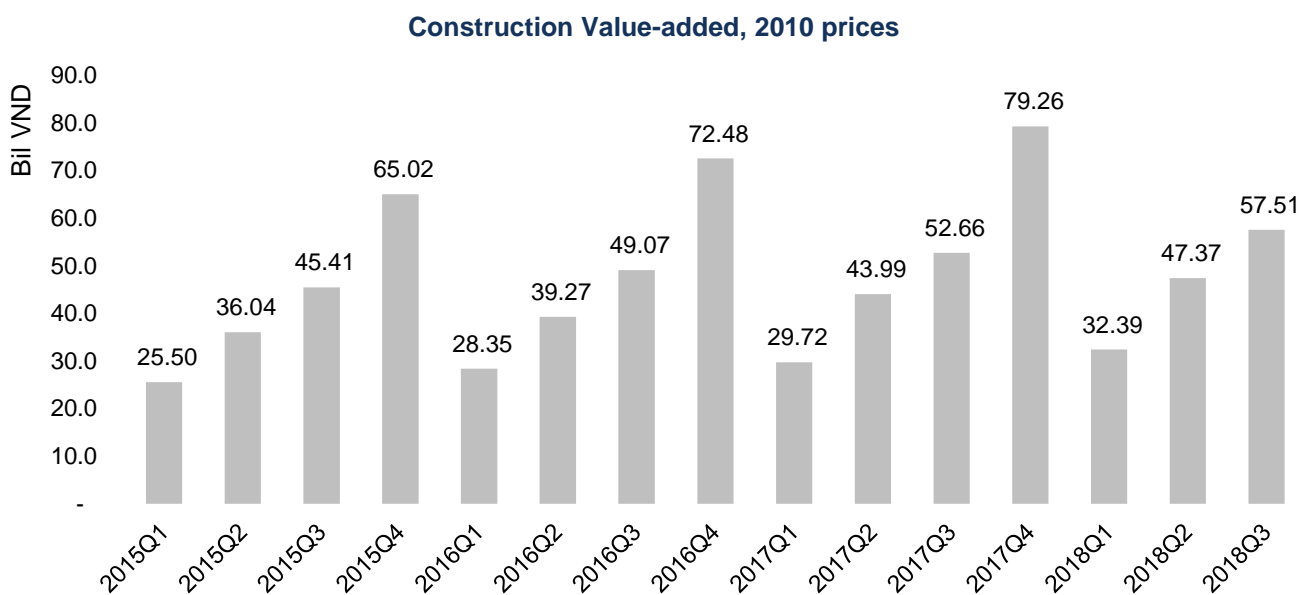
### (1) Cyclical industry: short cycle, heavily influenced by real estate market



Source: GSO

- In the last 30 years, the construction industry completed 6 complete accelerations – deceleration cycles, each lasting about 04 – 05 years.
- The cycle of construction industry in Vietnam is partly influenced by real estate market: the growth rate bottomed in 1995, 2008, and 2011 – when market froze after real estate bubble burst.
- Construction shows a trend of slowing growth in past years, **signing that construction industry is getting out of rapid growth period following “Doi moi” reforms (1986) and entering the Shakeout phase.**

### (2) Seasonality: construction work typically concentrates in second half of the year



Source: GSO

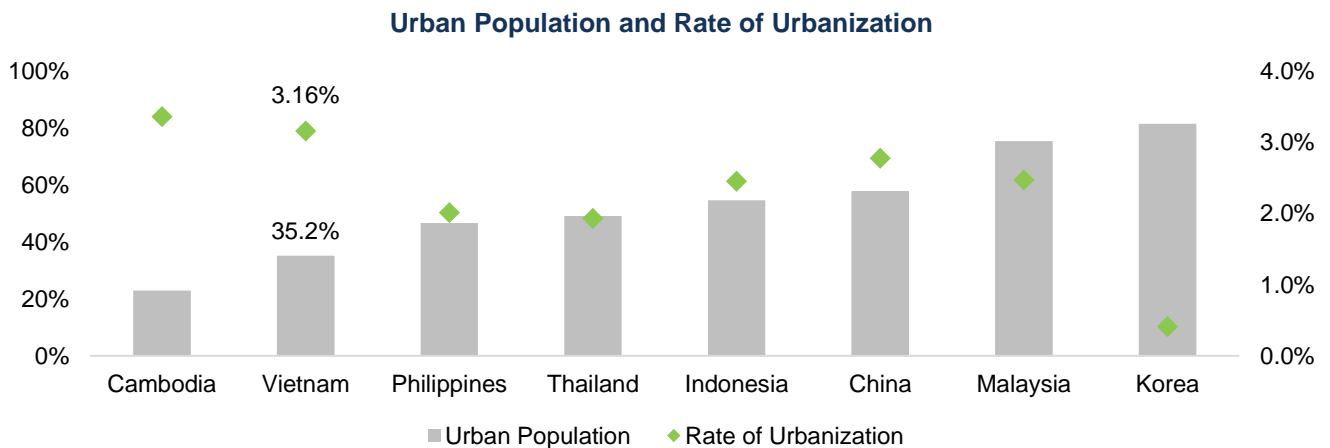
**Construction works are heavily influenced by weather and Vietnamese habits:** the third and fourth quarter are peak time for construction, many projects are started after Vietnamese Tet holiday and to be finished before the end of the year.

### 3. Construction demand drivers

Demand for construction is fundamentally driven by: **(1) demographic factors** determining long-term growth potential, **(2) economic growth** influencing short-term investment decisions, and **(3) legal framework** shaping the competitive environment. In Vietnam, all three of these factors are positive, creating promising long-term potential for construction.

#### (1) Demographics: big potential from golden population, urbanization trend, and middle class growth

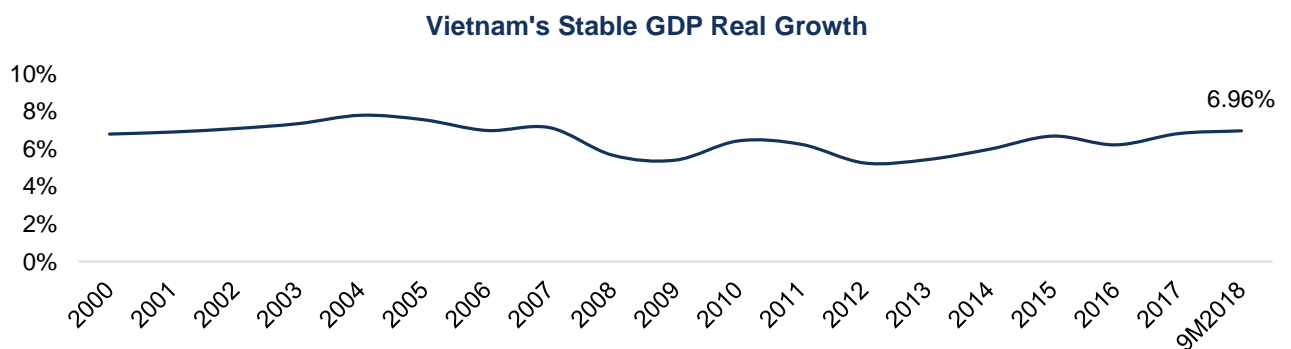
- On the supply side: abundant and low cost labor force
  - Vietnam population reached 96 millions in 2017 (ranks 15 globally) and is relatively young (average age is 31 years old).
  - Vietnam is currently enjoying the golden population period (more than 66% of population in working age). This period is projected to last another 20 years, according to World Bank population estimates.
- On the demand side: stable demand from urbanization trend and growth of middle class
  - Vietnam's cities have big potential because of low urbanization population and high rate of urbanization among regional countries
  - Vietnamese middle class (annual income between 7,000 – 70,000 USD) reached 22.1 million households in 2017, accounting for 81.7% of total households. According to World Bank's projection, the middle class is expected to grow 19% per year until 2020, which is among the highest regionally.



*Source: World Bank*

#### (2) Economic growth: high and stable growth attracts investment

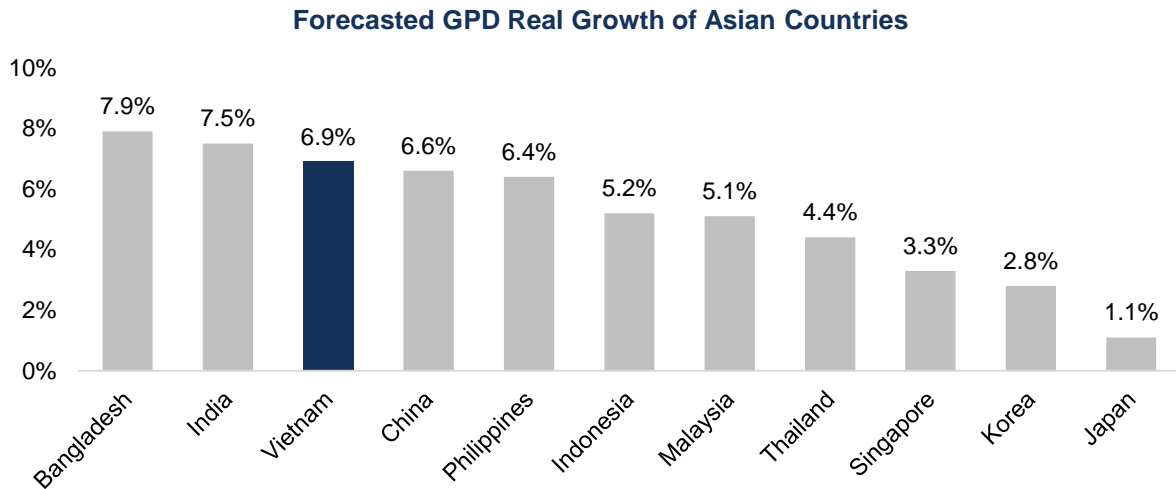
- **Vietnam's economic growth is generally stable in the last 20 years**, among which 2009 and 2012 are outliers due to global financial crisis in 2007 - 2008 and inflation control and macroeconomic stabilizing efforts in 2012.



*Source: GSO*



- **2018 marks an impressive year for Vietnam, economic growth among the highest countries in Asia**
  - Vietnam reached 6.98% in GDP growth in the first 09 months of 2018, the highest since 2011.
  - According to Bloomberg consensus, Vietnam is forecasted to grow 6.9% in 2018, only behind Bangladesh and India in Asia.



*Source: Bloomberg, FPTs Research*

### **(3) Legal framework: improving business environment from reform drive**

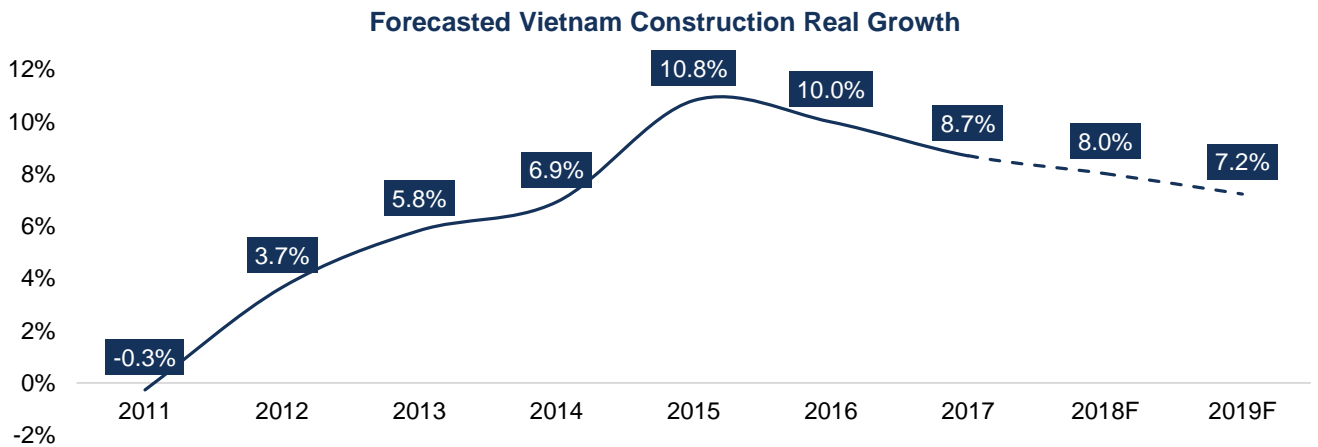
- As a rapidly developing country, the legal framework of Vietnam frequently lags actual economic development, leading to many inefficiencies restraining growth and negatively affecting the competitive environment.
- The call for liberalization, removing investment restriction and administrative reform of Vietnamese government is gradually improving business environment and encouraging private contribution to economy and attracting international investment.

## B. CONSTRUCTION IN 2018 AND OUTLOOK 2019

### 1. Construction growth decelerates in 2018 and 2019

We forecast construction real growth in 2018 will be 8.02%, lower than growth in the first 09 months (8.62%) mainly due to high growth in 2017Q4. At this growth rate, 2018 will be third year in this deceleration cycle of construction industry.

In 2019, we expect construction industry will continue its deceleration trend, mainly because residential, non-residential and infrastructure 2019 outlooks are less promising than 2018. Only industrial construction enjoys a brighter outlook for 2019, however this is the smallest sectors, only making up 12% output value in 2016. According to BMI forecast, Vietnam construction industry will grow 7.23% in real terms in 2019.

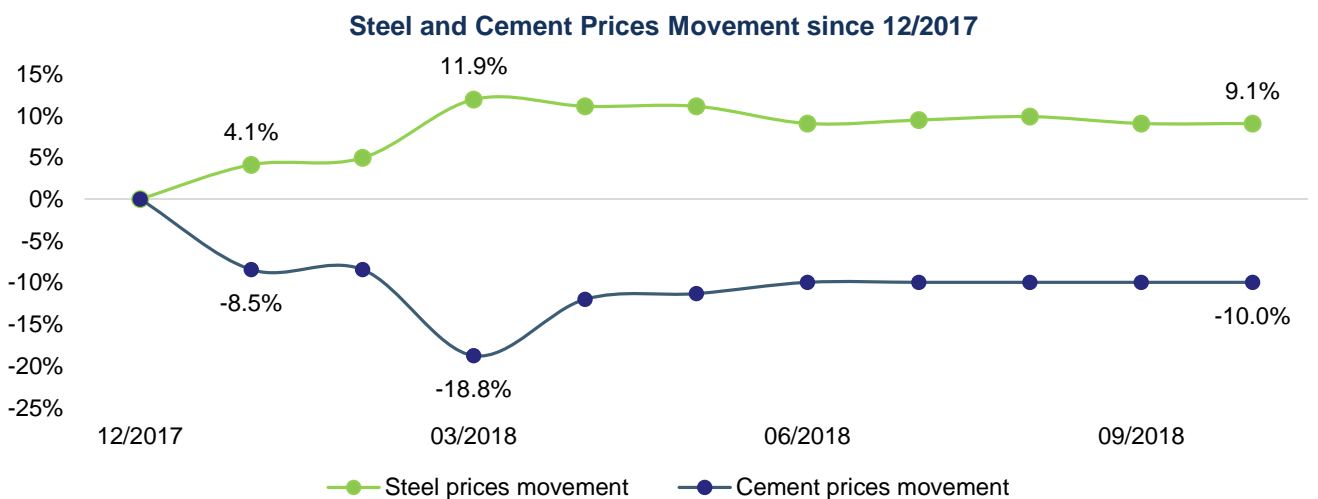


Source: GSO, FPTs, BMI

### 2. Main input costs: Stable in 2018 and 2019

Main construction input costs generally moved favorably in 2018 and are expected to continue this trend in 2019.

#### (1) Input costs:

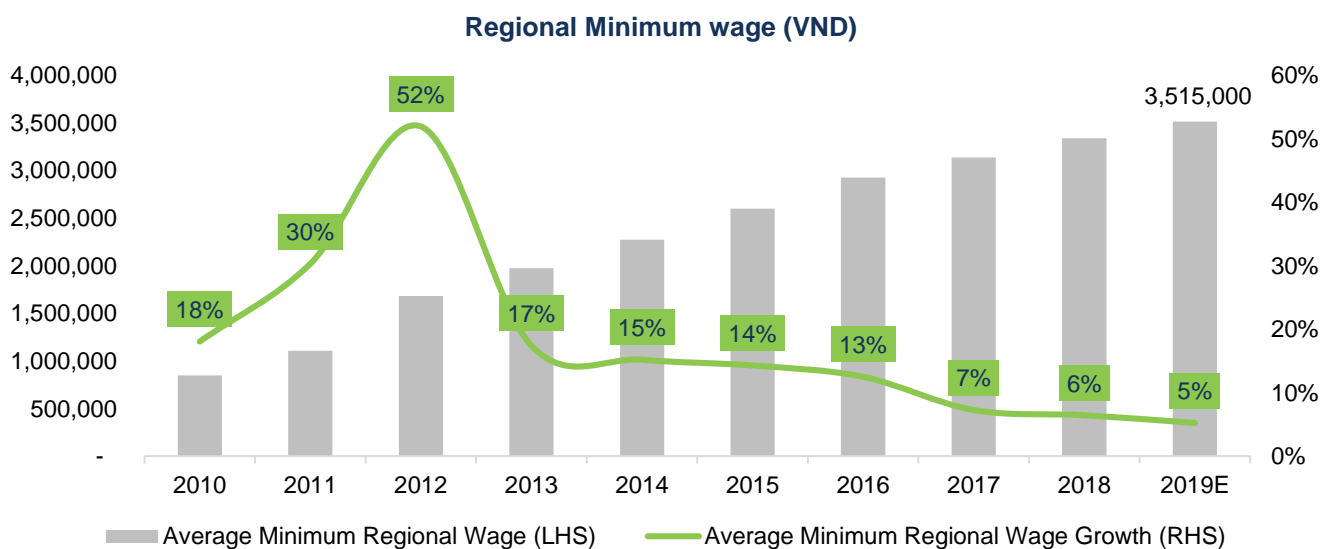


Source: Vietnam Steel Association

- **Steel: increased slightly in 2018, decrease in 2019**
  - In 2014 – 2016, domestic steel price decreased about 30% due to excess supply in China forcing Chinese steel producers to export below production costs.
  - In 2017, domestic steel price increased about 20% due to Vietnam's protective tariffs on Chinese imported steel.
  - In 2018, steel price increased sharply at the beginning of the year and then stabilized around 13,250 VND/kg
  - We expect steel price to lower in 2019 due to ~20% increase in domestic supply from major steel manufacturing projects completion (*detail in [Steel Industry](#)*)
- **Cement: sharply declined in 2018, decrease in 2019**
  - Domestic cement price has not increased since 2012 due to difficulties in cement industry: (1) Designed capacity exceeds domestic demands by ~50% and (2) policy to limit cement export of Vietnamese government.
  - In 2018, cement price has fallen ~10-20% due to diminishing export demand.
  - In 2019, we expect cement price to continue the downward trend if Vietnamese government tighten export restrictions.

## (2) Labor

Construction labor cost is heavily influenced by minimum regional wage because the majority of construction labor force is seasonal workers with limited training.



*Source: FPTS Research*

The minimum regional wage has increased by 17% per year since 2010 with the highest increase in 2012 due to high inflation at that time (18.7% and 9.1% in 2011 and 2012). However, the growth of minimum regional wage has been slowed down after 2012 with expected increase in 2019 the lowest in the last 10 years.

Furthermore, increase in minimum regional wage is usually announced early, limiting its negative impact on construction contractors: the increase in cost can be calculated and passed on to clients in tender price.

### 3. Construction sectors Outlook in 2019

#### (1) Infrastructure: slows down in 2019 due to structural challenges

**Vietnam has high infrastructure investment demands**, mainly due to pressure on existing infrastructure from rapid economic growth and urbanization trend. The Asia Development Bank estimated that Vietnam needs to spend about 11 – 12% of its GDP on infrastructure per year to maintain current pace of growth.

As one of the main focus of Vietnam economic development model for 2016 – 2020, **Vietnam spends about 5.8% of its annual GDP (according to World Bank) on infrastructure**. While this level of investment is high among the region (only lower than China), it is only 50% of Vietnam's investment needs. This is the result of many structural challenges in Vietnam.

- Fiscal budget deficit: continued overspending by Vietnamese government has inflated public debt and limited the government's ability to invest. The Ministry of Transportation estimated Vietnam needs to invest 1.000.000 billion VND into infrastructure during 2016 – 2020, of which the fiscal budget can only account for 30%.
- Official Development Assistance (ODA) drying up: Vietnam becoming a middle-income country has prompted many countries to tighten their ODA fund. This means future ODA will be harder to obtain and has higher costs for Vietnam, further limiting the ability to invest of Vietnamese government.
- Lack of experience managing large scale infrastructure projects from Vietnamese government: projects lagging behind schedule and/or running over budget is not a rare occurrence in Vietnam, as evidenced by major urban transit projects in Hanoi and Ho Chi Minh city.

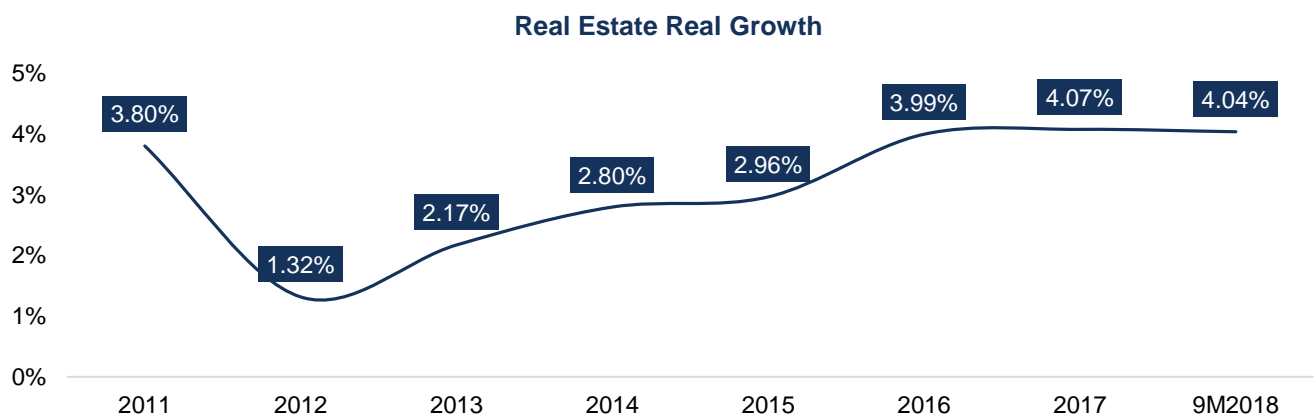
Facing these challenges, Vietnamese government will have to look for ways to attract private funds to meet infrastructure investment demands, mainly through (1) Public – Private Partnership (PPP) agreements, (2) Privatization of State-Owned-Enterprises (SOEs), and (3) Sale of public land. While these channels have shown some initial success, their effectiveness is marred by underdeveloped legal framework and lack of transparency of the process.

The problems in infrastructure investment of Vietnam mainly stems from structural challenges and cannot be solved quickly. **Because of this, we expect growth of infrastructure construction to slow down in 2019.**

#### (2) Residential and Non-residential: Real estate regulation efforts slowing down growth in 2019

In the last 10 years, Vietnam real estate market has gone through two property bubbles in 2007 and 2010. The subsequent bursts had led to bankruptcy of numerous companies, increased non-performing loans in the banking sectors, and froze real estate market for two to three years.

The acceleration of real estate sector since 2013 and signs of destabilization in the market have prompted worries of another market bubble in 2018 and 2019, leading to regulation efforts from the government.



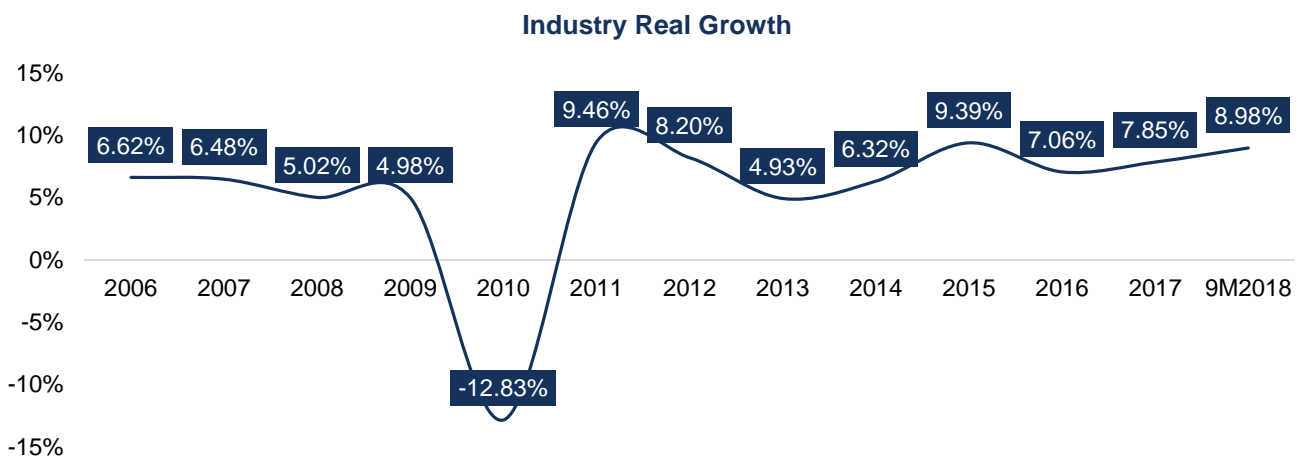
Source: GSO

- Tightening real estate credit: The State Bank of Vietnam (SBV) issued Circular No. 06/2016/TT-NHNN in May 2016 and Circular No. 19/2017/TT-NHNN in December 2017 to curtail credit into real estate. Specifically, real estate loan risk weights have increased from 150% to 200% (highest among all assets) and the ratio of short-term capital used for medium and long-term loan decreased from 60% to 45% in 2018 and further to 40% in January 1st 2019.
- Stop approving new residential projects in Ho Chi Minh city's Central Business Districts (CBD), which are District 01 and 03, starting November 2018: according to Ho Chi Minh City Real Estate Association (HoREA), Ho Chi Minh city real estate market started showing signs of excess supply in Luxury and High-end sector, which accounting for 31% of total supply in 9M2018.

These regulation efforts have slowed down the pace of real estate in 2018 and are expected to continue so in 2019. **Residential and Non-residential construction growth will similarly be affected in 2019.**

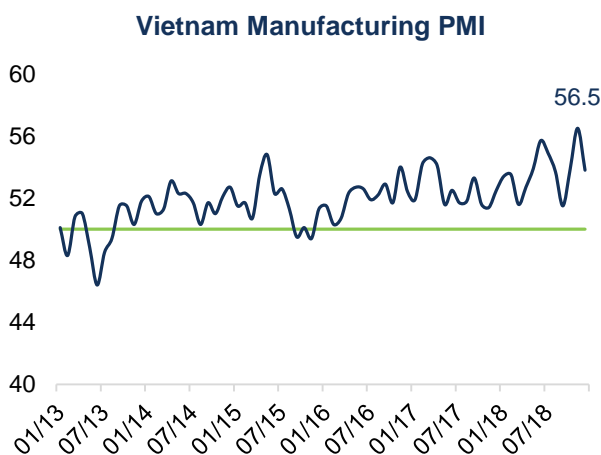
**(3) Industrial: Vietnam's potential to become the new industrial center in South East Asia promising a bright outlook in 2019**

After the decline in 2010 (which was an outlier), Vietnam Industrial sector has enjoyed high and sustained growth lasting almost 10 years.



Source: GSO

The Purchasing Manager's Index (PMI) and Index of Industrial Production (IIP) shows a similar picture of healthy industrial growth in Vietnam.



Source: TradingEconomics



Source: GSO, FPTs Estimates 2018

The advantages of Vietnam in attracting investment include:

- Abundant labor force, competitive cost: this is the essential factor for Vietnam to receive the reallocation trend of investment from China; mainly because China is no longer the low cost factory of the world and international trade tensions during 2018 lowers the competitiveness of Chinese exports.
- Vietnamese administrative reform drive, policies to attract international investment, and participation in several Free Trade Agreements (FTA) with major partners such as Japan, China, Europe.
- Convenient geological position: near major shipping routes from Indian Ocean to Pacific Ocean (accounts for 40% of global shipping volume).

With improving attractiveness to international industrial investment, **we expect Industrial construction growth to accelerate in 2019, a silver lining for the Construction Industry in deceleration.**



# STEEL

## INTENSE COMPETITION DUE TO SUPPLY EXPANSION AND TRADE PROTECTIONISM

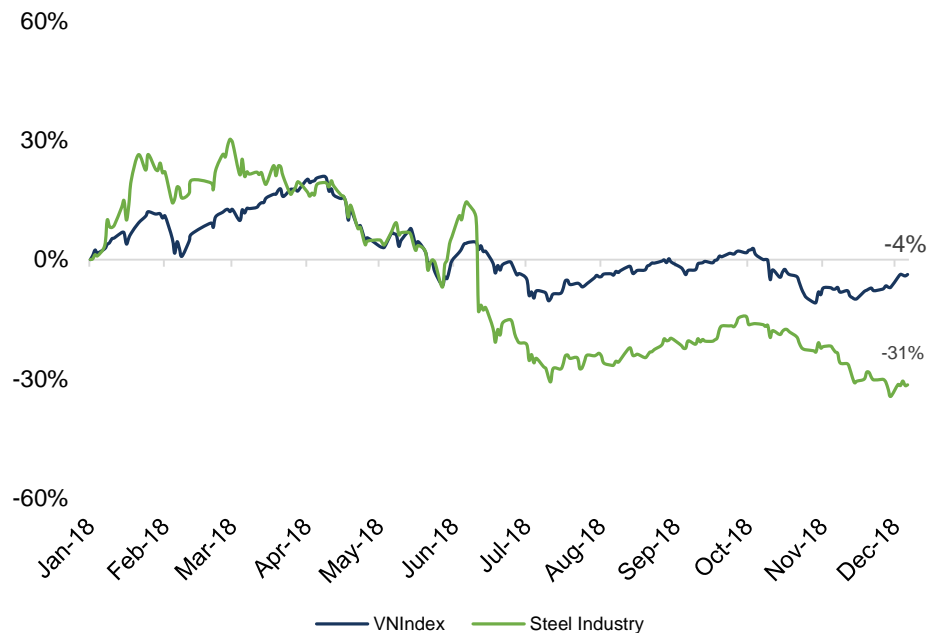
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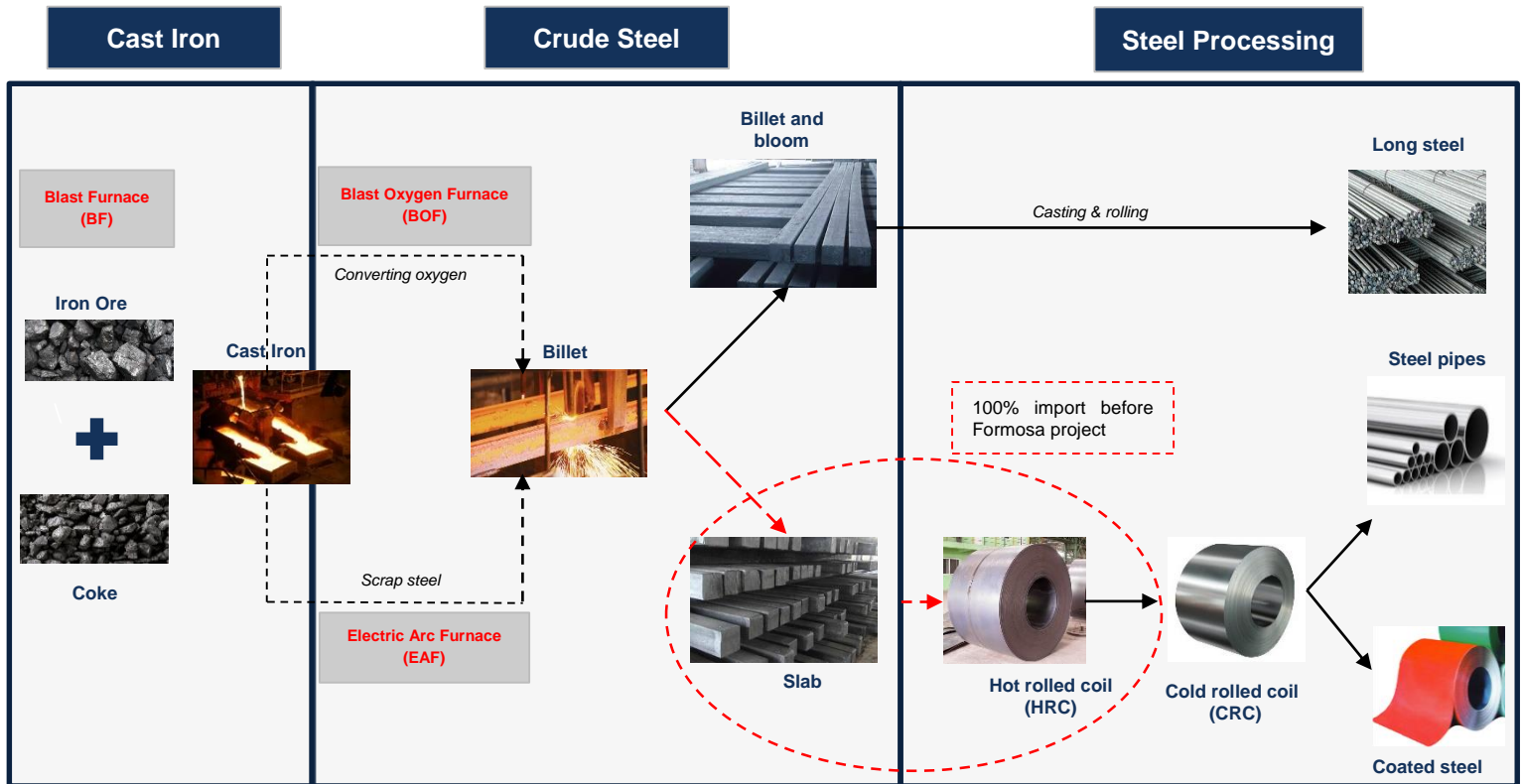
**Movement of Steel industry index and VNIndex**



Source: EzSearch

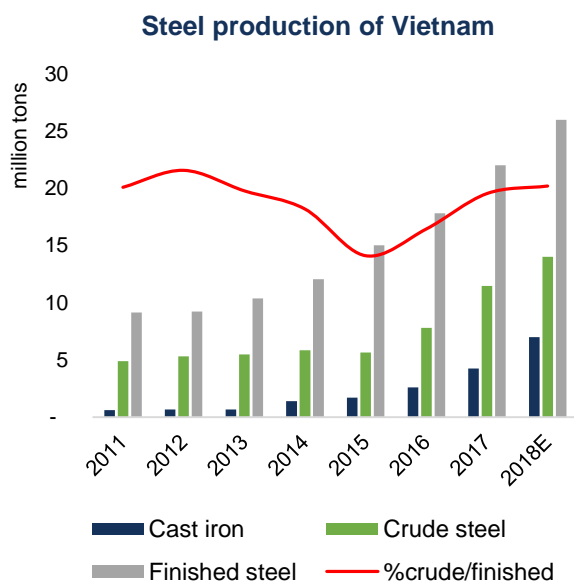
## A. VIETNAM STEEL INDUSTRY OVERVIEW

### 1. Value chain of Vietnam Steel Industry



Steel production process can be divided into 3 main stages: (1) Cast iron production, (2) Crude steel production, and (3) Steel processing. In 2018, Vietnam has produced 7 million tons of cast iron, 14 million tons of crude steel, and 26 million tons of finished steel.

Currently, Vietnam is applying safeguard tariff on billet, long steel, galvanized and color coated steel sheets till the year 2020.



Source: WSA, VSA, MoIT, FPTs Research



## 2. Characteristics of Vietnam Steel Industry

- **Mainly usage of EAF, gradually shift to BOF, and have not fully utilized designed capacity**

- Cast iron production:

Even it is the most added value process, casting iron is still a underdeveloped stage in Vietnam's steel value chain, because of (1) high initial capital requirement, (2) shortage of high quality domestic iron ore and coke. Recently, several enterprises have started to boost investment in cast iron processing with big projects such as Formosa in Ha Tinh or Hoa Phat in Dung Quat.

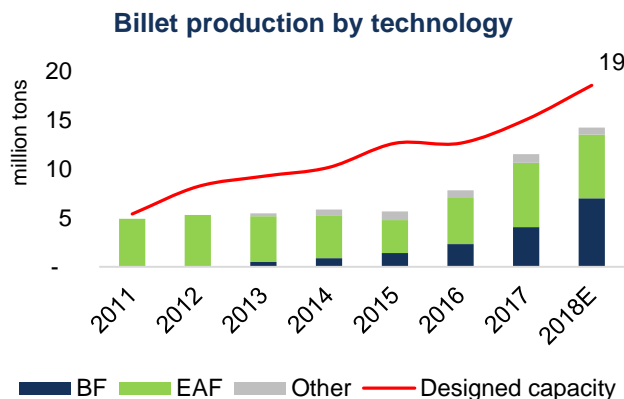
- Crude steel production:

Nowadays, there are 02 distinct processes in steel production used in Vietnam, which are (1) Blast oxygen furnace (BOF), and (2) Electric arc furnace (EAF). Below are features of each process:

	Blast oxygen furnace - BOF	Electric arc furnace - EAF
<b>Raw material consumption (per 01 ton of finished steel)</b>	- Iron ore: 1.4 tons (29% cost of production) - Coke: 0.45 tons (25% cost of production)	- Scrap steel: 1 ton (55% cost of production) - Electricity: 400 - 600 kWh (26% cost of production)
<b>Initial capital requirement</b>	Higher	Lower
<b>Cost of production</b>	Lower	Higher
<b>Features</b>	- Require continuous operation, not as flexible as EAF, due to high cost of restarting. - Able to expand or increase capacity by adding BF and BOF	- Able to flexibly switch crude steel sources (import or self-manufactured) - Hard to integrate or expand with BF and EAF
<b>Suitability</b>	Large scale enterprises	Small and medium scale enterprises

Source: SEAISI, FPTs Research

Before 2015, Vietnam mainly used EAF to produce crude steel (accounting for 60 - 80% of produced crude steel). However, the appearances of large-scale iron and steel integration such as Hai Duong (Hoa Phat) or Vung Ang (Formosa), has strongly surged the trend of shifting to BF. It is estimated that, in 2018, there will be about 7.5 million tons of billets produced from BOF process, equivalent to about 53% of total crude steel production.



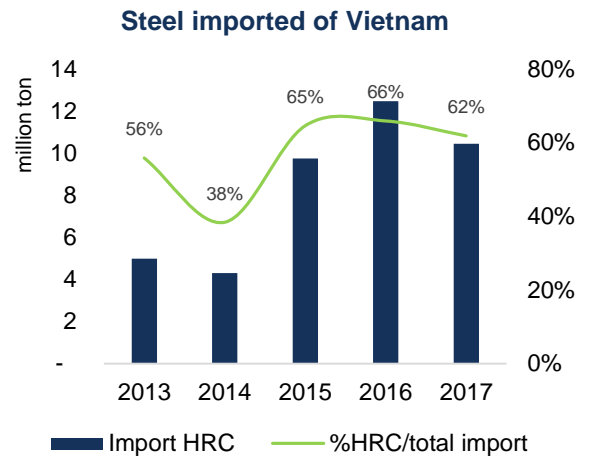
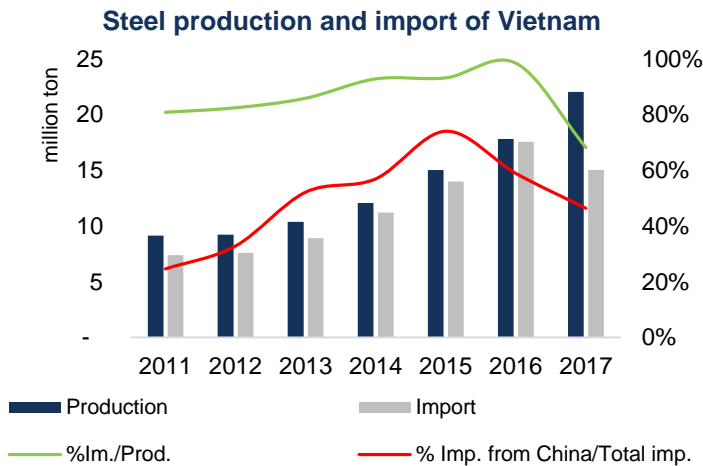
Products	Capacity (mil tons/year)	Production 2018 (est)	Utilization rate
Cast iron	9.6	7.0	73.2%
Crude steel	180	14.0	77.7%
Finished steel	40.0	26.2	65.4%

Source: WSA, VSA, FPTs Research

- Steel processing:

The current capacity has not been fully utilized, the utilization rate of 2018 is estimated at 65%, lower than the world average of 78% (WSA). According to VSA statistics, modern steel rolling technology accounts for ~30% of production (capacity of 250,000 - 500,000 tons/year), capable to roll continuously; moderate technology accounts for ~40%, able to roll semi-continuously (capacity of 150,000 - 300,000 tons/year), the rest is outdated technology of small mills with capacity of under 20,000 tons/year, outdated equipment, product quality is not guaranteed.

- **Production depends strongly on imports, mainly from China**



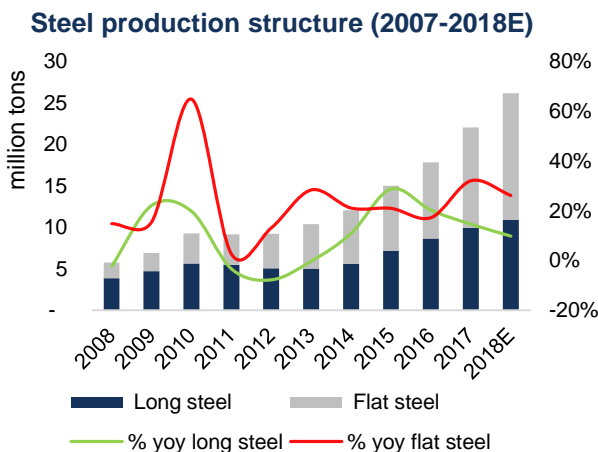
Source: VSA, GSO, FPTs Research

Currently, Vietnam's steel production still relies heavily on imports, and mainly from China. The main import product of Vietnam is hot rolled coil (HRC) - main material for flat steel production - as domestic market has not been able to produce HRC yet. However, after 2017, HRC import demand is expected to decrease, as the Formosa Ha Tinh project will come into operation and be able to supply this product.

- **Flat steels segment grows sharply while long steels grow steadily**

Vietnam steels products can be divided into 2 categories, which are:

- 1) **Long steels:** rebar steel, shaped steel; mainly used to form construction structures, due to their abilities to bear pressure and other physical characteristics.
- 2) **Flat steels:** steel pipes, coated steel sheets, cold rolled coil (CRC) and hot rolled coil (HRC); used in finishing phase of construction works (rooftop, handrail, shutters, etc.) due to anti-corrosion features.



Source: VSA, FPTs Research

In 2018, it is estimated that Vietnam produced about 26 million tons of finished steel products, including 58% of flat steels and 42% of long steels. In the recent 2 - 3 years, flat steels segment has been growing sharply, especially galvanized steel, steel pipes and HRC.

The steel produced is largely served for domestic demand (~80% of production output). The main export steel products of Vietnam are flat steels, especially galvanized steels (exporting ~50% of production output) mostly to Southeast Asian countries such as Cambodia, Indonesia or Malaysia.

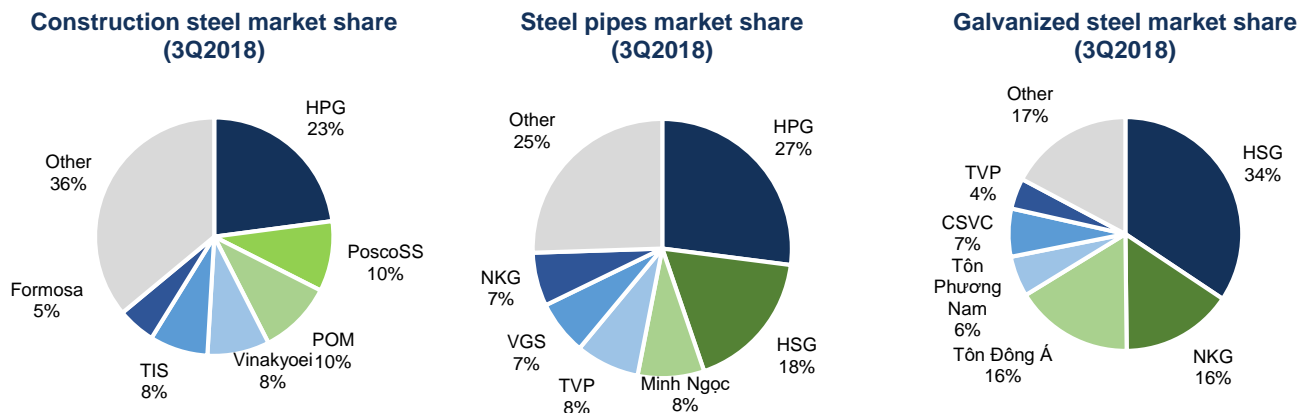
### 3. Key players

List of some large-scale steel enterprises with completed value chain:

Company	Ticker	Capacity (mil ton/year)	Products	Process
Formosa Ha Tinh	Unlisted	7,5	HRC, billet, construction steel	BF
Hoa Phat Group	<a href="#">HPG</a>	3,0	Construction steel, steel pipe	BF
Hoa Sen Group	<a href="#">HSG</a>	2,8	Coated steel, steel pipe, plastic pipe	
Pomina	<a href="#">POM</a>	1,5	Construction steel, billet	EAF
PoscoSS	Unlisted	1,0	Construction steel, CRC	EAF
TISCO	<a href="#">TIS</a>	1,0	Construction steel, steel pipe	BF

Source: FPTs Research

Based on production capacity, Formosa is the largest (7.5 mil ton/year) and the only mill which can produce hot rolled coil (HRC) in Vietnam. The scale is followed by Hoa Phat Group (3 mil ton/year) and Hoa Sen Group (2.8 mil ton/year). These enterprises are still expanding their capacity and investment in new projects, which will increase the overall industry capacity in the coming period.



Source: VSA, FPTs Research

Based on 9M2018 market share, HPG is leading in construction steel (23%) and steel pipes (17%). Meanwhile, HSG is leading in galvanized steel sheets segment (34%) and ranks the 2nd in steel pipes segment (18%).

Besides, there are smaller scale enterprises which participate partially in the value chain, like: billet processing, casting and rolling steel or commercial activities.

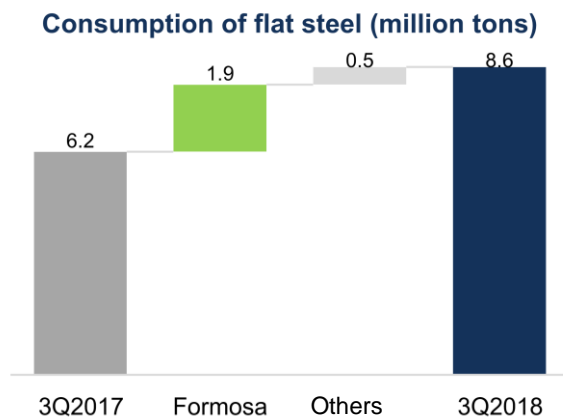
Company	Ticker	Products
Viet Trung Minerals & Metallurgy Company Limited	Unlisted	Billet
Tungho Steel Co., Ltd.	Unlisted	Billet
Viet My Steel JSC	Unlisted	Billet, long steel
Viet Y Steel JSC	<a href="#">VIS</a>	Billet, long steel
Thai Trung Steel Rolling JSC	<a href="#">TIS</a>	Long steel
SMC Steel Trading Investment JSC	<a href="#">SMC</a>	Trading
Thai Hung Trading JSC	Unlisted	Trading
Tien Len Steel Group JSC	<a href="#">TLH</a>	Trading
Thien Nam Import and Export JSC	<a href="#">TNA</a>	Trading

Source: FPTs Research

## B. REVIEW 2018

### 1. Long steel grew steadily; Formosa contributed significantly in flat steel segment; Steel pipes and galvanized steel experienced slower growth

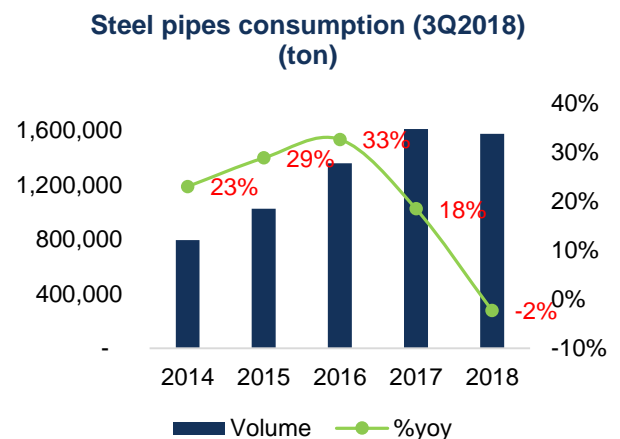
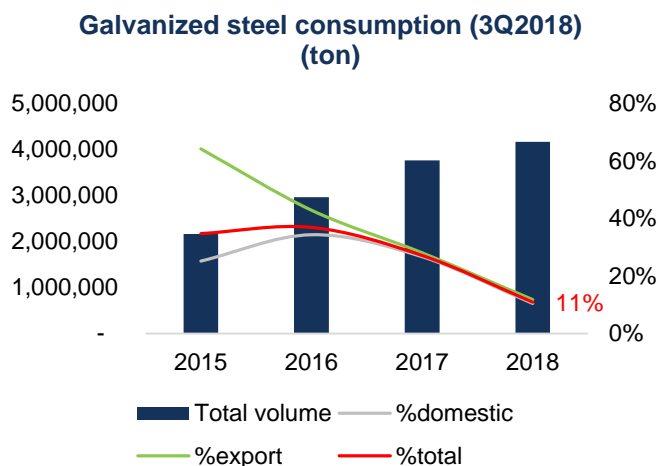
Overall, Vietnam's steel products growth remained stable in 2018. Specifically, in the first 9 months of 2018, production of finished steel products reached 17.6 million tons (+14.4% yoy), and consumption reached 15.9 million tons (+23.4% yoy). Notably, exports reached 3.4 million tons (+31.5% yoy), and imports from China decreased by 14.6% over the same period. These are the positive impacts of Formosa - the only domestic HRC supplier - stable operation since 2017.



Products	Consumption 3Q2018 (mil ton)	%yoy
Construction steel	7.4	+10.0%
Steel pipes	1.6	-2.3%
Coated steel	2.8	+10.4%
CRC	1.7	+17.3%
HRC	2.4	+340.6%
<b>Total</b>	<b>15.9</b>	<b>+23.4%</b>

Source: VSA, FPTs Research

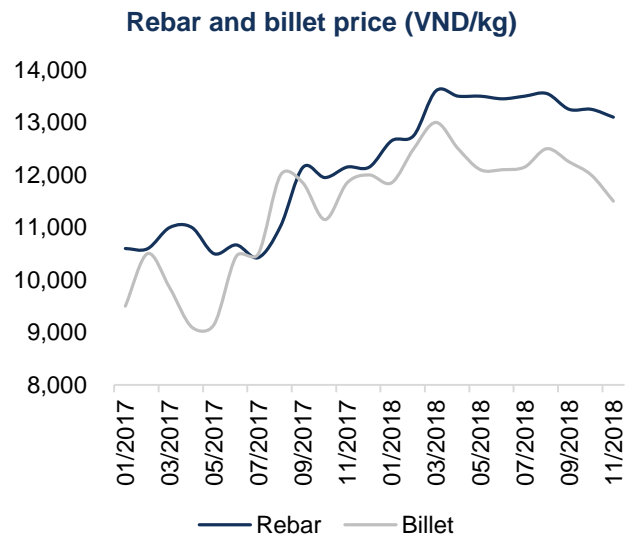
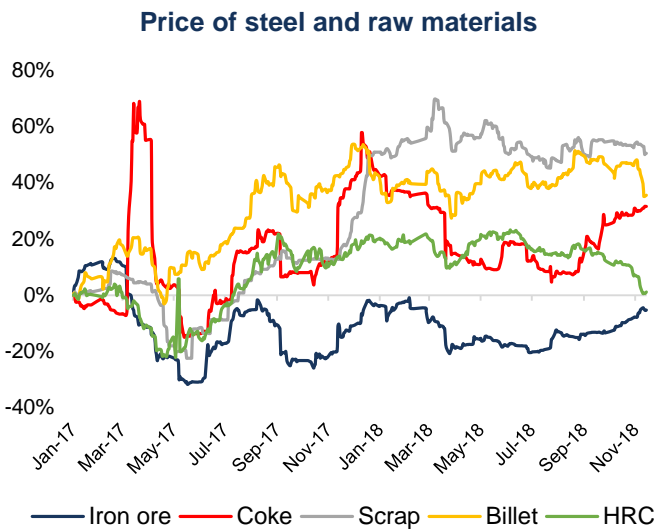
Formosa contributed up to 79% of the increase in flat steel production in 3Q2018, mainly used for domestic. This will help domestic firms reduce their reliance on imported HRC, and more importantly, avoid the taxes of countries that are applying on made-in-China steel. The proportion of Vietnam HRC exports is only 10-15%, due to the huge domestic demand.



Source: VSA, FPTs Research

However, steel pipe and galvanized steel segment has experienced a slower growth. The growth of galvanized steel domestic consumption is only about 10%, much lower than the level of ~25% in the last 3 years. The consumption of steel pipes has even decreased by 2%, compared with an average increase of ~26% in the last 4 years. This is a signal that domestic demand for these two product groups has passed a rapid growth period, and consumption may enter a steady growth period. Additionally, large enterprises are expanding their capacity, resulting in increased competition, **making profit margins likely to decline significantly in the future.**

## 2. Price of steel and raw materials



Source: Bloomberg, VSA, FPT S Research

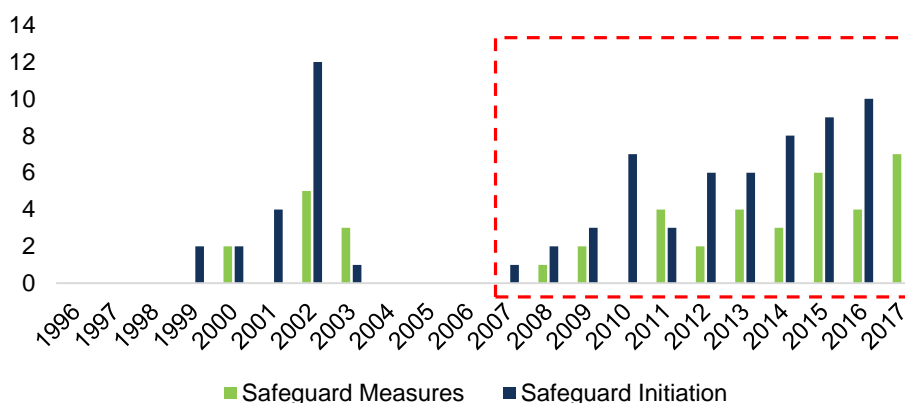
The price of raw materials for steel production tends to increase compared to 2017 but decreases compared to the beginning of 2018. In the 2nd quarter, the price of iron ore and coke fell by 15-20% YTD and bounced back after that. Especially, HRC has dropped by 16% since January 2018. In the domestic market, construction steel and billet prices increased by 20-25% over the same period and are currently fluctuating in a narrow price range. Construction steel price is fluctuating at 13,100 - 13,250 VND /kg, and billet price is at 11,200 – 11,700 VND/kg.

## 3. The rise of protectionism

From June - 2018, the United States - the world's largest steel importer - applies a 25% import duty on steel products. After the United States adopted a protectionist policy, the tendency of trade protectionism has also increased in other regions and countries. ([detail](#))

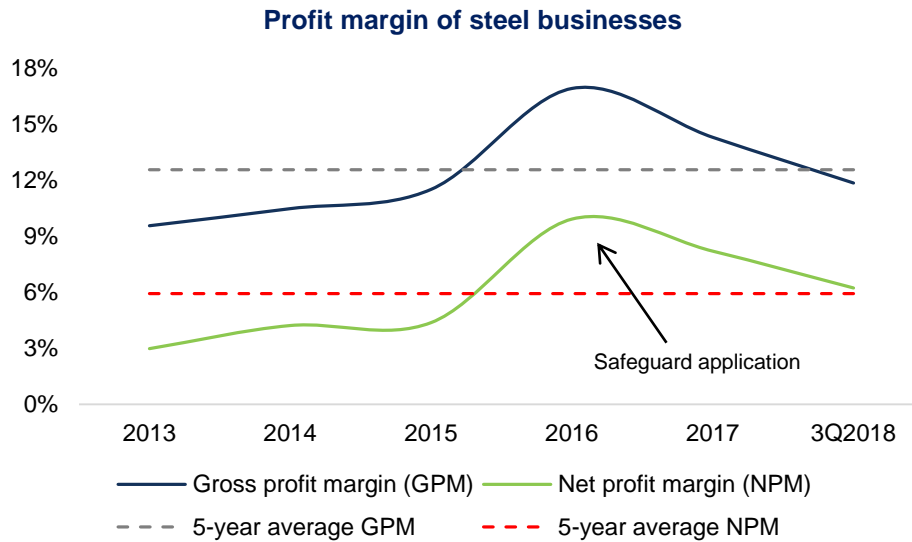
This will negatively affect trade activities in the world. Flat steel enterprises in Vietnam, especially galvanized steel sheets will be most affected, as this is the main export product of Vietnam. Construction steel enterprises will be less affected, since the proportion of exports in total production is not as high.

**Number of investigation and safeguard action of basic metal products (1996 - 2017)**



Source: FPT S Research

#### 4. Profit margin is shrinking

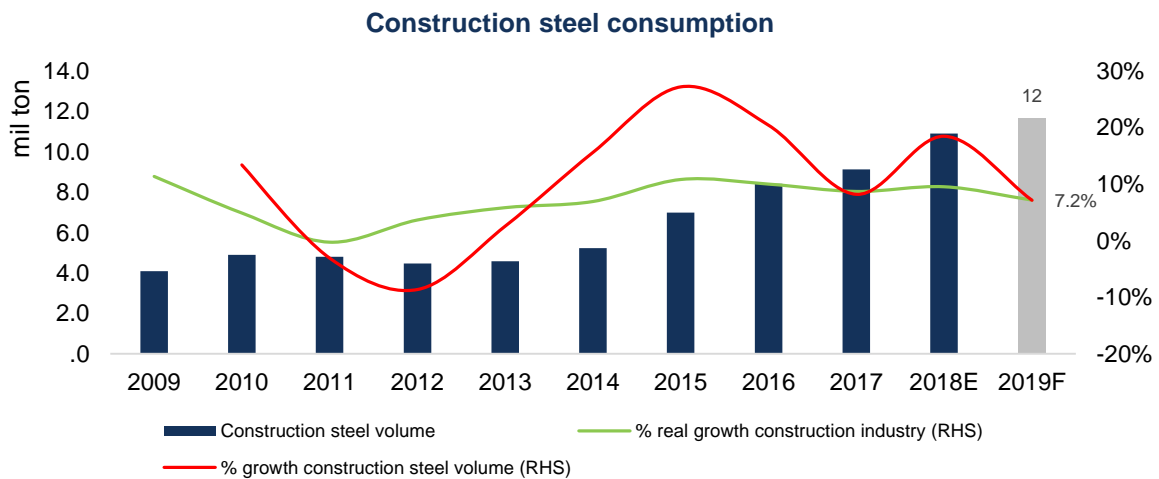


*Including: HPG, POM, HSG, TIS, NKG, VGS, VIS, SMC, TLH, DTL, DNY  
Source: FPTs Research*

In 2018, the revenue of listed steel companies increased by 30-40% compared to 2017. The main reason comes from the surge in finished steel price by ~30% yoy, and the consumption still grows quite stably. However, in terms of profit, only HPG achieved a positive growth, while other businesses all saw a strong drop in profit - mainly due to the very strong fluctuation of raw material prices. **In general, the impact of Vietnam's anti-dumping tax application in 2016 has gradually decreased, coupled with increased in supply and the rise in trade protectionism, the profitability of businesses is going to be shrunk.**

### C. OUTLOOK 2019

1. Long steel - Construction demand growth slowed down, domestic production capacity increased, causing a higher level of oversupply



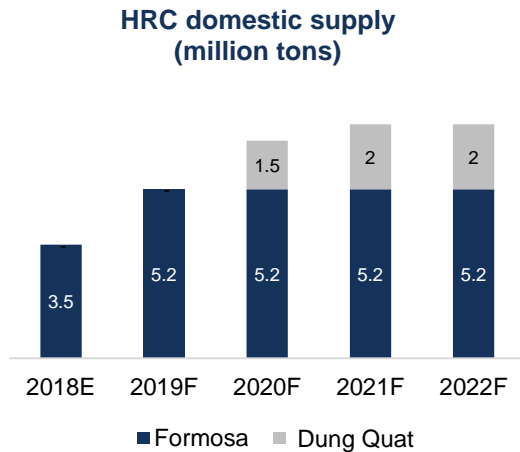
*Source: VSA, FPTs Estimates*

**Residential construction:** The real estate market is slowing down (the number of apartment transactions decreased, presales decreased, real estate credit tightened). Industrial construction is the main growth driver ([detail in Construction Industry](#))

Accordingly, the estimated demand for construction steel in 2019 will rise by about 7.2%. With the contribution of Dung Quat Phase 1 - capacity of 2 million tons/year (~20% of construction steel consumption in 2018), the total designed capacity will be about 17 - 18 million tons/year, the utilization rate is estimated at about 66%. **We believe that construction steel segment will have a steady growth in 2019 but will slow down compared to 2018 and the competition level will become more intense.**

## 2. Flat steel

**HRC – CRC: The contribution of Formosa Ha Tinh and Dung Quat Hoa Phat helps reduce dependence on imports**



With the contribution of Formosa - Ha Tinh (operation since 2017) and Dung Quat - Quang Ngai (expected to operate in 2020), in 2021, when the Vietnam trade protection measures expires, it is estimated that domestic supply can produce more than 7 million tons of HRC/year, equivalent to ~ 80% of HRC imports in 2017. **We think this will be the fastest growing segment in 2019.**

**Galvanized steel: More intense competition due to the capacity expansion and less favorable exports condition caused by trade protectionism**

Estimated in 2019, the consumption of galvanized steel (including export and domestic) was about 4.5 - 5 million tons. However, with the aggressive capacity expansion in 2017 - 2018, the designed steel sheet capacity has reached 7.5 - 8 million tons/year. Notably, the expansion of capacity mainly comes from enterprises having large market share (HSG, NKG, Ton Dong A) or large-scale new enterprises (HPG, POM). Besides, the prospect of the export market also is negatively affected by the rising of trade protectionism. Therefore, the upcoming competition will be fiercer, and the prospect of galvanized steel segment will become less promising than in 2018.

Company	Capacity expansion 2018 – 2019 (tons/year)
HSG	+350,000
HPG	+400,000
POM	+600,000
NKG	+270,000
Ton Dong A	+550,000
<b>Total</b>	<b>+2,170,000</b>

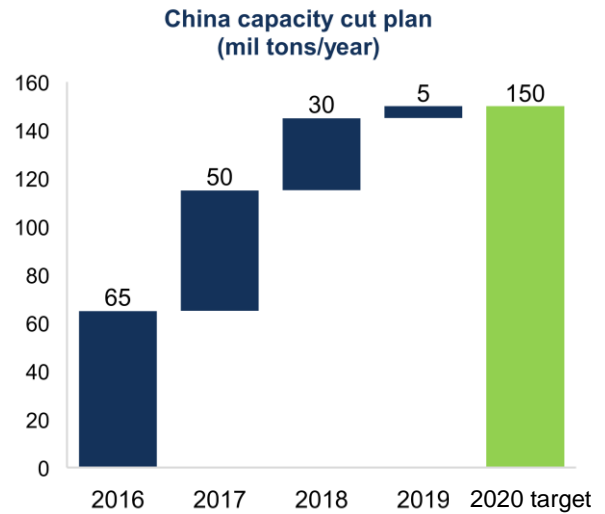
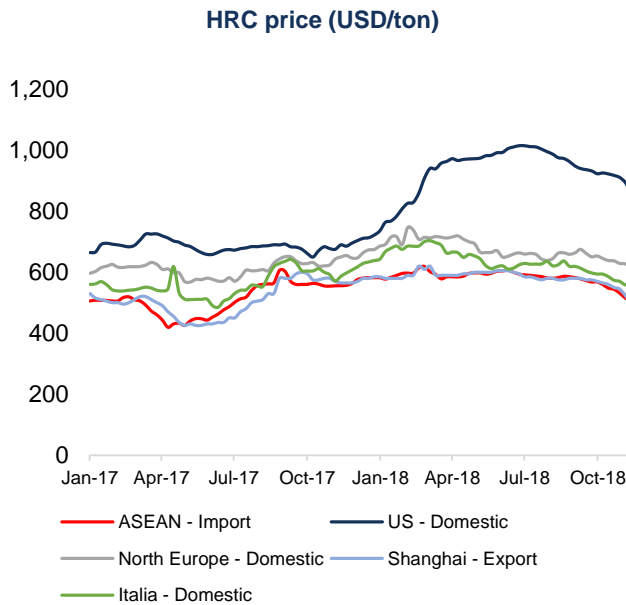
~55% total consumption in 2017

Products	Investigator	Subject
Stainless steel pipes	India	Vietnam, China
Galvanized coated	Malaysia	Vietnam, China
Carbon steel pipes	Canada	Vietnam, Turkey, Philippines, Pakistan
CR steel, core	US	Vietnam
HRC, CRC, coated steel	EU	Worldwide
CRC	Canada	Vietnam, China, South Korea
Steel pipes	Thailand	Vietnam

Source: VSA, MoIT, FPTs Research

### 3. The divergence in steel price of each country/region, downward pressure in price in 2019

With rising trade protectionism in many countries and regions, steel prices are likely to be in divergence. In addition, China has basically completed its capacity cutting plan, and is currently loosening environmental standards for steel production. Couple with the significant increase in Vietnam's steel supply, **we believe that the steel price will be under a downward pressure in 2019.**



Source: Bloomberg, FPTS Research

## D. APPENDIX (back)

Nation	Measures	Details
US	Tariff/quota	<ul style="list-style-type: none"> <li>Effective from 1/6/2018, US applies a 25% tariff on steel products. Only 4 countries are exempted from taxes: Argentina, Australia, Brazil, and South Korea, but still have a quota.</li> <li>Tariff barriers and quotas will likely lead to protectionist measures of other countries, leading to a divergence in the price among countries/regions.</li> </ul>
EU	Safeguard duty	<ul style="list-style-type: none"> <li>In order to prevent the amount of steel exported to the United States to shift to EU, EU has introduced trade defense measures, which are expected to impose a 25% tariff on 23 steel products if the amount of imports of these products is EU market exceeded the average of the last 3 years.</li> </ul>
India	Safeguard duty	<ul style="list-style-type: none"> <li>From November 2015, India applied a temporary safeguard duty of 10% on HRC and galvanized steel.</li> <li>India can impose a 5-year anti-dumping duty on Chinese steel.</li> </ul>
ASEAN	Anti-dumping	<ul style="list-style-type: none"> <li>Malaysia applies tax on CRC and HRC.</li> <li>Indonesia applies anti-dumping duty on: color coated steel, HRC, CRC.</li> <li>Thailand applies anti-dumping duty on steel pipes.</li> <li>Vietnam applies self-defense tax on: billet, long steel, galvanized steel sheet and color coated steel.</li> <li>Continuing anti-dumping investigation of other steel products.</li> </ul>

Source: FPTS Research





# TILES

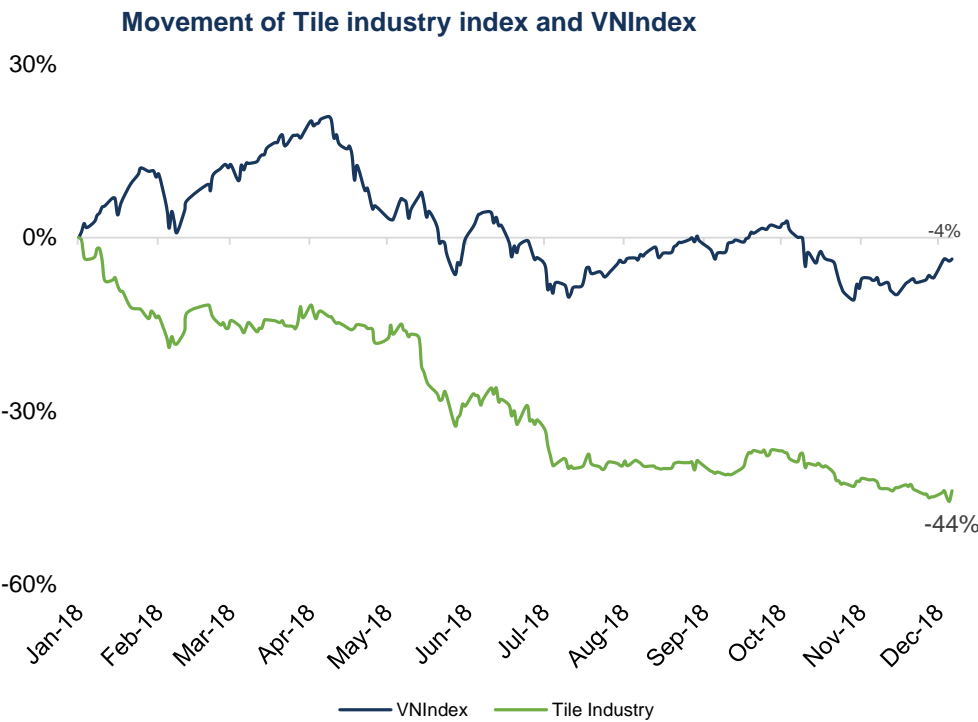
## HINDERED GROWTH RESULTING FROM CYCLICAL SLOWDOWN IN CONSTRUCTION

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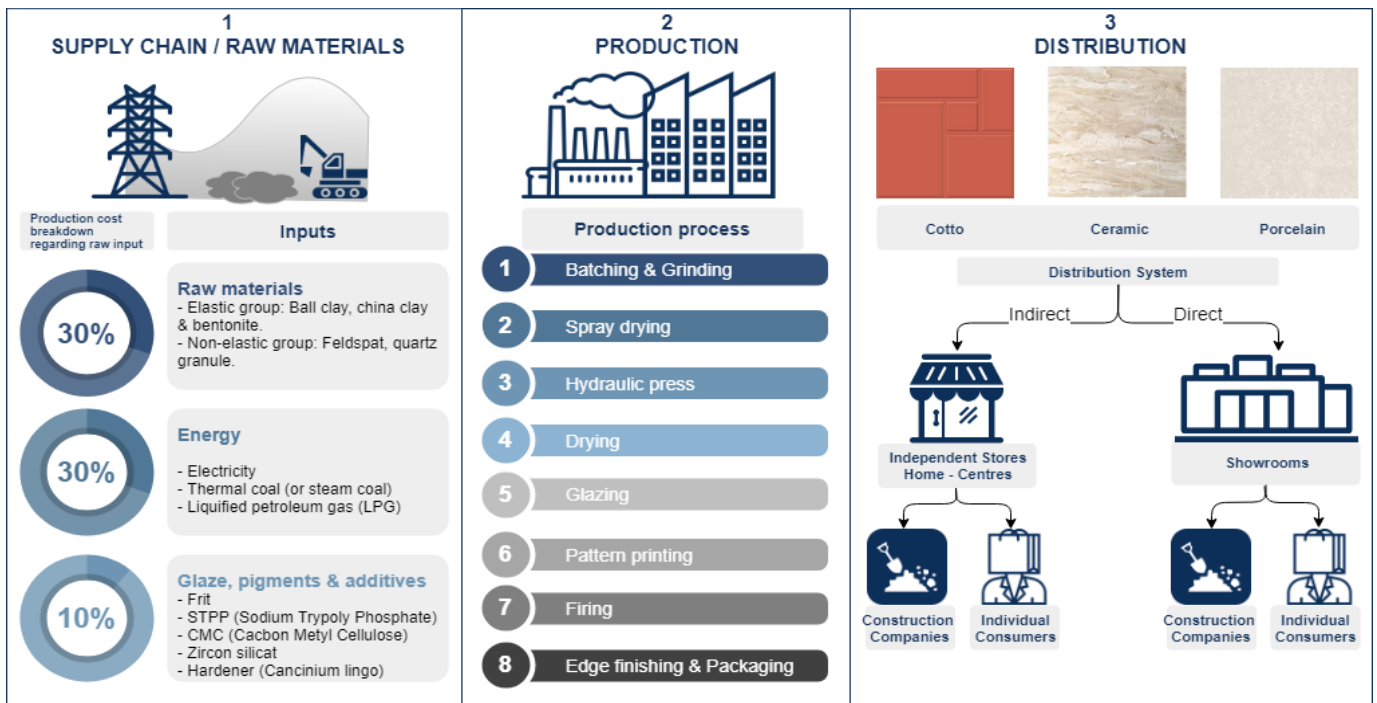


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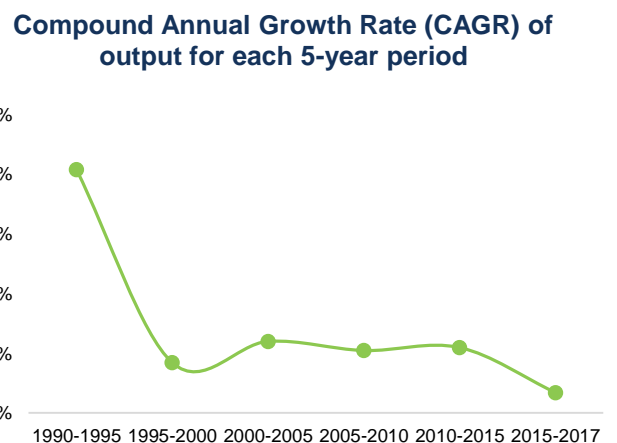
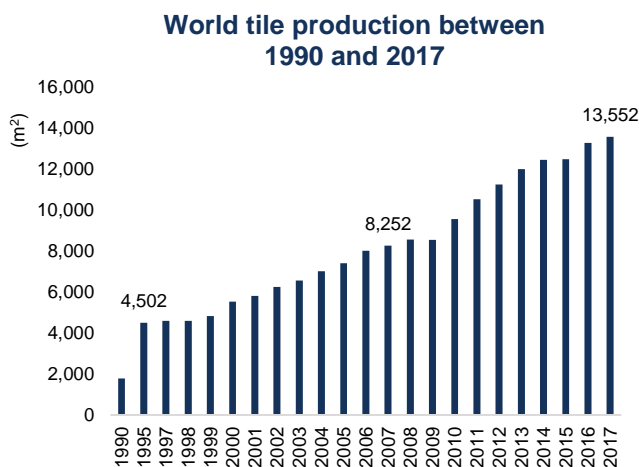
## A. TILES INDUSTRY OVERVIEW

Tiles, including floor and wall ones lie in the group of surface finishing construction materials. In general, there are three types of this genre available in the tile market, namely Cotto (fired clay tile), Ceramic (glazed tile) and Porcelain which is usually marketed under the name “Granite” by Vietnamese tile producers. The output from these are mainly for domestic consumption as the exported amount is very modest, approximately 10% of the annual output. In 2017, Vietnam’s tile export turnover reached 350 million USD, accounting for roughly 21% of the total export turnover of all construction materials.

### 1. Value chain



### 2. Global ceramic tile industry currently in shakeout period, moving toward maturity phase

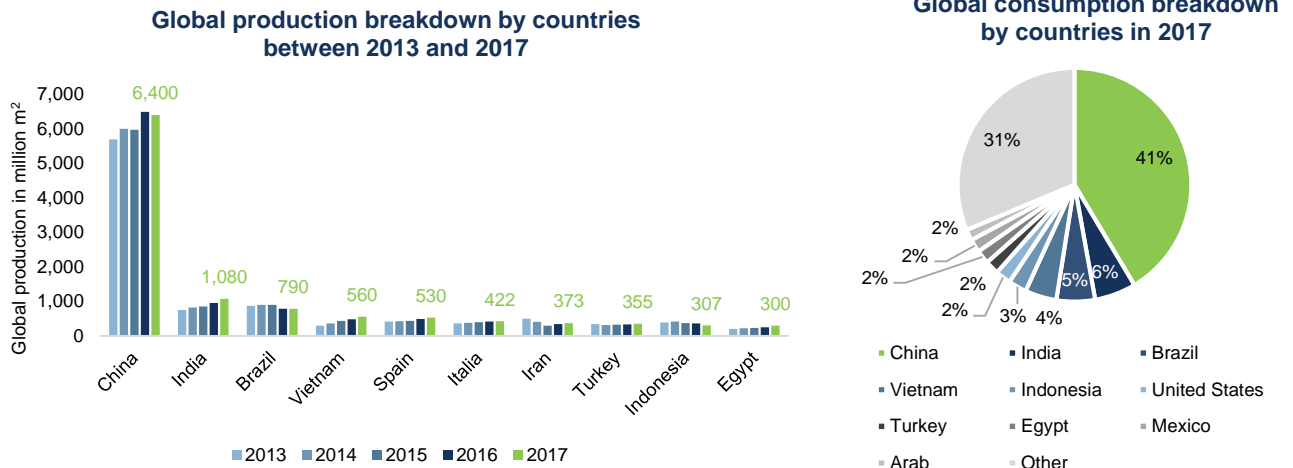


Source: Infotile, Ceramic World Review, FPTs Research

Moving into the 21st century, the industry cycle entered the shakeout period, during which growth slows and focus shifts toward expense reduction and consolidation occurs. The world production of ceramic tiles reached the average 5-year compounded annual growth rate of 5.5%. This figure was much lower than the rate 20% of the period 1990 – 1995. Along with that, there existed a trend of shifting share of production from Europe and America to Asian countries such as China, India, Iran and Vietnam. While European countries promote in-depth technology innovation to increase added-value with a view to export, Asian countries tend to focus on expanding

capacity and use technology lagging from 2 to 3 years behind Europe. **Based on the fact that construction activity in Asia slowed after the boom period and the diversity of substitute materials, it is forecasted that world production and consumption of tiles will rise slightly by 3% in the upcoming time.**

### 3. Vietnam tiles industry ranks in top 05 countries of production and consumption



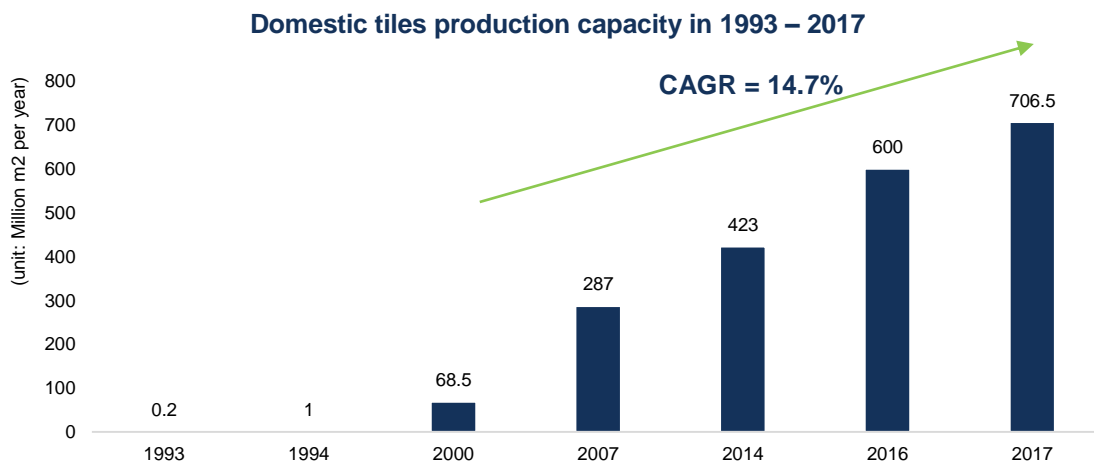
Source: Acimac, Ceramic World Review, FPTs Research

The world tiles industry is highly concentrated as the top 10 leading nations make up 82% of the global production output. In particular, China takes the lead in both production and consumption of ceramic tiles with shares of nearly 50%. With regard to tile export, Spain and Italy possess the highest proportion at 80% of quantity exported to national tile output.

Vietnam is among the largest producers and consumers of ceramic tiles in the world and currently shifting from favoring glazed tiles to porcelain ones. In 2017, domestic production and consumption of tiles reached 560 million (+15.5% yoy) and 580 million m2 (+40.8% yoy) in 2017. With 4.1% and 4.4% of global production and consumption, Vietnam ranks only after China, India and Brazil.

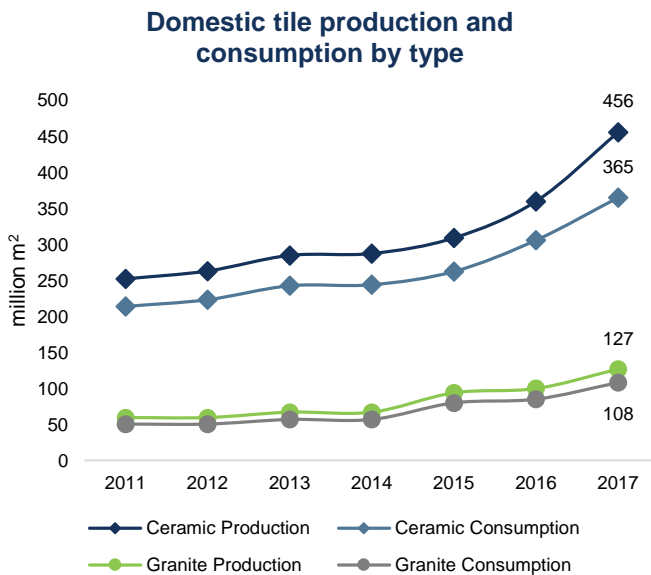
### 4. Production capacity of Vietnam tiles industry grew at CAGR of 14.7% in 2000 - 2017

Compared to 1993 when there were only 3 tile works for producing wall tiles in Ha Noi, Dong Nai and Thai Binh with a modest total capacity of 0.2 million m2 per year; up to now, this number has reached 706.5 million m2/year with more than 80 producers of medium and large scale. Specifically, in 2017, production capacity of cotto, ceramic and porcelain tiles are 31,537 and 169.5 million m2 per year respectively. In 169.5 million m2 of porcelain production capacity, unglazed polished porcelain tiles account for 30% and the rest are glazed porcelain tiles.



Source: Vietnam Ceramic Association (VCA), FPTs Research

## 5. Fierce competition among tile producers due to excessively produced quantity



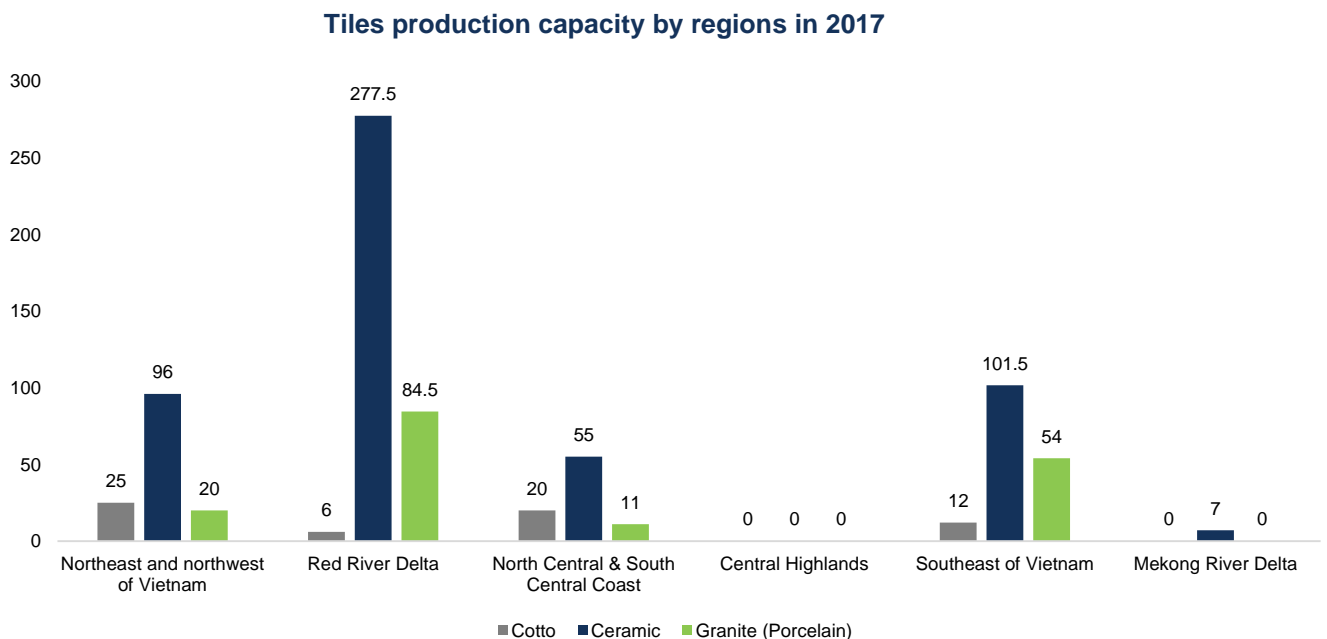
Source: Institute of Construction Materials, FPTs Research

With a total capacity of approximately 706.5 million m<sup>2</sup> per year, it can be seen that manufacturing enterprises only operate 80 - 85% of their designed capacity. In 2017, the tile industry continued to stock up nearly 110 million m<sup>2</sup>; equivalent to 18.9% of production volume of the same period. Inventory of traditional ceramic tiles was more than 90 million m<sup>2</sup>; mainly of which are small tiles due to the trend of using large size ones in recent years.

That the domestic market is in excess supply together with the emergence of imported tiles from China and European countries continue to create fierce competition among businesses. The price competition drives down the selling price; narrow profit margins and negatively impact business operations of manufacturing enterprises in the industry.

## 6. Majority of tile producers concentrated in Northern Vietnam due to input resources proximity

Based on the characteristics of inputs, raw materials are divided into elastic group (clay & kaolin) and the non-plastic one (Quartz & silica sand). Clay is the main material which makes up between 30% and 70% of the green tile. Besides, the process of milling, glazing and firing also requires the participation of additives such as enamel and talcum powder. Due to the advantage of proximity of raw material sources with large feldspar and kaolin mines in provinces such as Lao Cai, Hai Duong, Phu Tho, Vinh Phuc and Quang Ninh; the majority of tile enterprises are concentrated in the North with the proportion of 67% and 58% to the total production capacity of ceramic and granite tiles.



Source: Vietnam Institute of Construction Materials, FPTs Research

## 7. New trend in single firing technology: high-pressure hydraulic presses and inkjet technology

During production process, combinations of clay, feldspar, kaolin and additives are finely ground, then either semi-dried or dried using sprayers. The composition of the ceramic tiles includes three layers: the green tile (raw body created by presses), the middle layer of glaze and the upper aesthetic enamel one. Currently, the technology applied in manufacturing ceramic tiles is categorized by the number of firing times; namely single firing, double firing and three-step firing. The last one is the most advanced but least popular firing technology in Vietnam and currently only Prime uses this technology. Due to the trend in energy efficiency and material saving, domestic tile producers tend to favor single firing to double firing technology.

### Comparison between single firing and double firing technologies

	Single firing	Double firing
<b>Benefits</b>	<ul style="list-style-type: none"> <li>✓ Shorter production time</li> <li>✓ Lower energy costs</li> <li>✓ Lower initial capital and operation costs</li> </ul>	<ul style="list-style-type: none"> <li>✓ Higher durability (100kg/cm<sup>2</sup>) thanks to higher firing temperature</li> <li>✓ Unlimited times of printed decorations</li> <li>✓ Higher rate of type I tiles</li> </ul>
<b>Drawbacks</b>	<ul style="list-style-type: none"> <li>× Lower durability (25kg/cm<sup>2</sup>)</li> <li>× Maximum of two colors can be printed</li> <li>× Lower rate of type I tiles</li> </ul>	<ul style="list-style-type: none"> <li>× Higher initial capital investments</li> <li>× 10 percent higher energy costs than that of single firing</li> </ul>

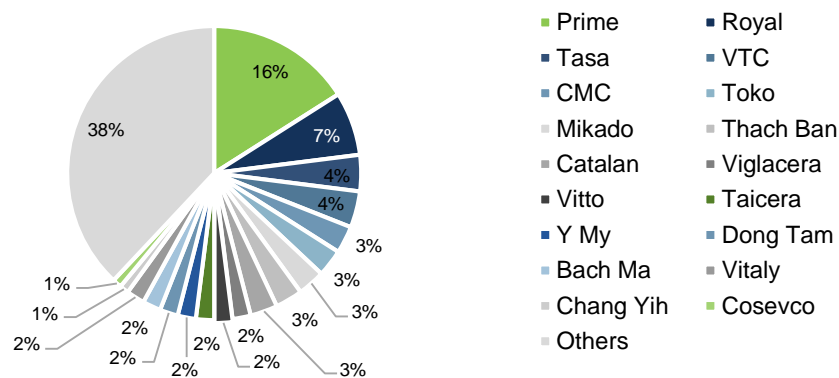
Source: FPTs Research

Disadvantages of single firing as mentioned above and the trend in favoring large size panels with diverse variations of decoration created the need for production process innovation in the past such as changes from wet grinding to dry grinding; kilns with higher temperatures and shortened firing time. Since the end of 2016, ceramic tile enterprises have invested in replacing low pressure presses and old rotor color printers with high pressure hydraulic presses and the inkjet technology for decorations. This has been result from the trend in which consumers enjoy installing bigger tiles and well customized printed decorations for their houses.

## 8. Highly segmented and competitive industry: Larger market shares belong to FDI producers

Vietnamese ceramic tile industry is highly segmented with 82 medium and large-scale (more than 2 million m<sup>2</sup> per year) enterprises and hundreds of small-scale ones. In 2017, the total capacity of ceramic and granite production is estimated to reach 537 and 169.5 million m<sup>2</sup> per year, respectively. Big players of the industry are mainly companies with FDI and unlisted domestic public firms such as Prime (70 million m<sup>2</sup> per year), Royal, Vitto (36 million m<sup>2</sup> per year), Tasa (24 million m<sup>2</sup> per year), Catalan (18 million m<sup>2</sup> per year) and Toko (15 million m<sup>2</sup> per year). Meanwhile, domestic enterprises such as Viglacera, CMC, Thach Ban or Dong Tam mostly focus on the mid-end segment and have been in the trend of shifting to high-end since the end of 2015.

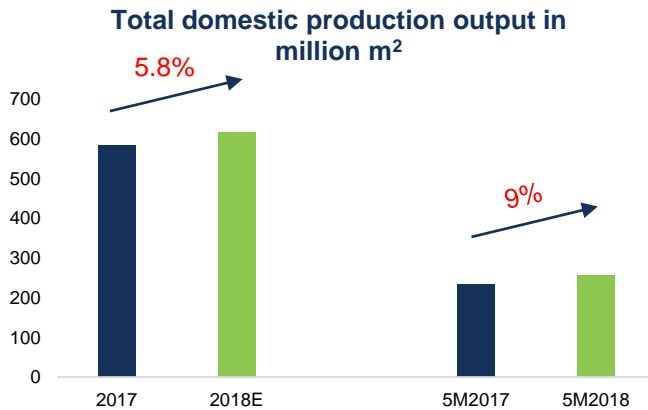
### Tile market share breakdown by companies in terms quantities sold in 2016



Source: GSO, FPTs Research

## B. REVIEW 2018

### 1. Excessive supply due to the growth of 5.8% in production and consumption



Source: Ministry of Construction, FPTs Estimates

According to the Ministry of Construction, production of wall and floor tiles reached 257 million m<sup>2</sup> in 6M2018, equivalent to a growth rate of 9% yoy. FPTs estimates that the whole year production will be roughly at 617 million m<sup>2</sup> (+5.8% yoy).

With the average consumption rate at about 80% of total production, 2018 consumption of tiles is estimated at 500 million m<sup>2</sup>. Thus, with a total production capacity of 706.5 million m<sup>2</sup> per year; the whole industry is currently in excess supply at 29%. Tile consumers continues to be in favor of large size ceramic and granite tiles and various patterns thanks to digital printing technology.

### 2. Narrower gross profit margins as a result of decreasing selling prices

Due to a huge excessive supply and recently out of the consumption trend, traditional glazed ceramic tiles suffered the largest price reduction of 20% – 30%, especially with small size products printed using outdated methods. For granite tiles, the prices went down by 5% - 20% for the two main product lines, which are 600x600 and 800x800 mm.

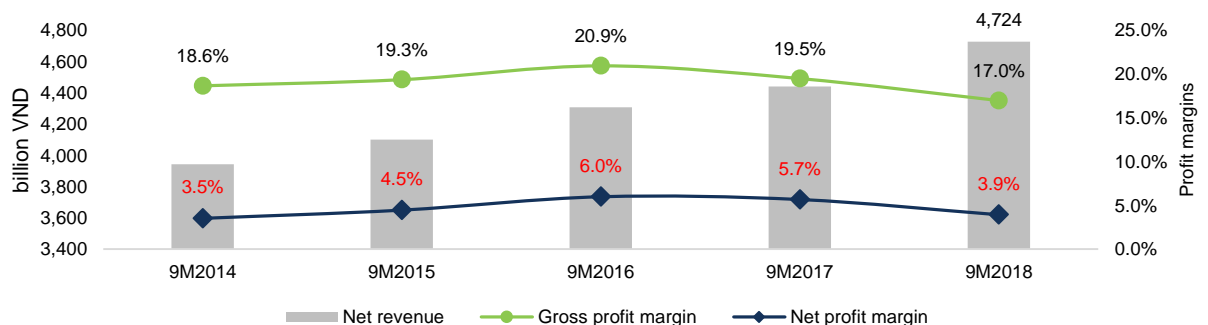
#### Selling price (thousand VND) for granite tiles of size 600x600mm & 800x800mm

Companies	Granite size 600x600 mm			Granite size 800x800 mm		
	2017	2018	% change	2017	2018	% change
Prime	115 - 135	100 - 125	-10%	170 - 190	135 - 165	-16.7%
Catalan	110 - 130	102 - 120	-7.5%	165 - 220	145 - 165	-19.5%
Hoan My	120 - 130	115 - 125	-4.0%	180 - 200	145 - 165	-18.4%
Viglacera (VGC)	168 - 185	160 - 170	-6.5%	210 - 230	190 - 210	-11.0%
Mikado	105 - 125	100 - 125	-2.2%	180 - 200	160 - 165	-14.5%
Tasa	110 - 130	110 - 115	-6.3%	-	-	-
CMC (CVT)	162 - 192	152 - 182	-5.7%	260 - 400	236 - 338	-13.0%

Source: Vietnam Ceramics Association, Public Report of construction material prices by provinces

The year 2018 continued to witness growth in revenues of tile companies due to rising quantity sold to the market. However, decreasing selling prices is the direct reason behind the decline in gross profit margin and net profit Vietnam tile producers.

#### Net revenue (bil VND) & profit margin for 9M2018 of ceramic tiles industry



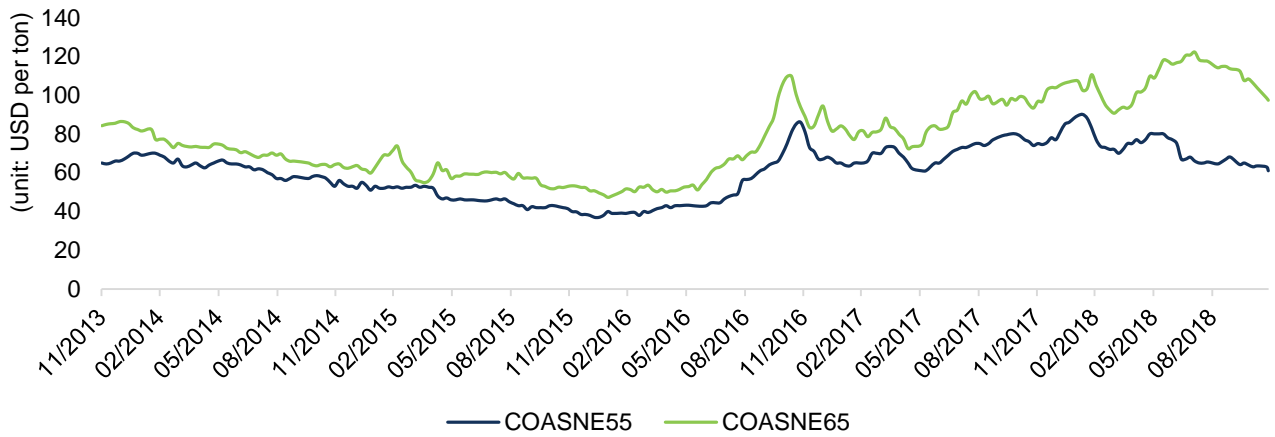
Source: FPTs Research

\*Statistics from listed tile companies: CVT, VHL, VIT, TTC, GMX, TCR

### 3. Sharp increases in thermal coal and liquified petroleum gas (LPG) in Q2 & Q3 2018

Energy cost, including thermal coal and LPG, accounts for a large proportion of 30% – 35% of the total cost of producing tiles. Therefore, in addition to the impact of downward selling price, the thermal coal price peaked at USD 122 per ton in the last 6 years and the steep rise in LPG price in the third quarter of 2018 further drove down gross profit margin of the tile industry.

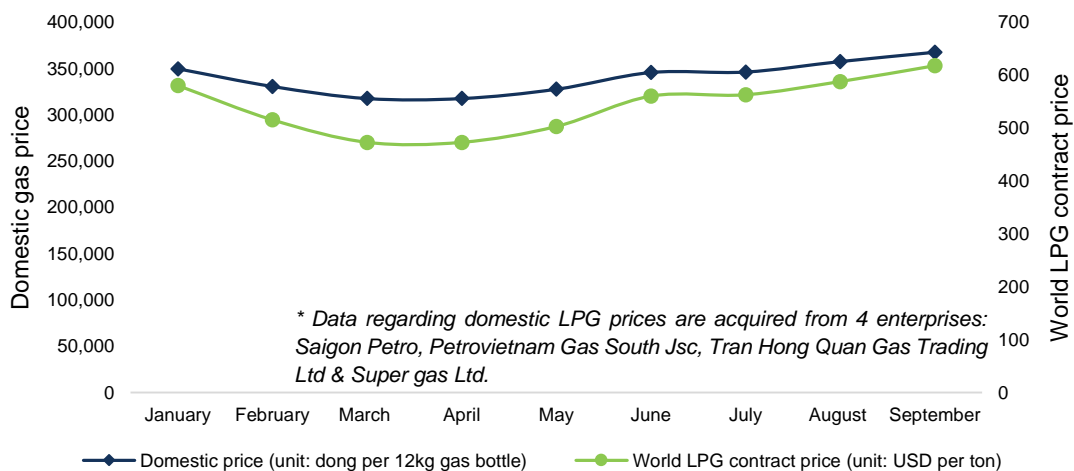
**FOB price of Australian 5500 & 6500 kcal/kg thermal coal at Newcastle port**



Source: Bloomberg

In early August 2018, Australian thermal coal price reached its highest level since 2012 at USD 122.3 per ton. The increase was 144.6% since 2016 after hitting a record low of 50 USD per ton. Coal demand for import in the first half 2018 increased sharply, mainly of Asian countries' demand such as China (+10.2% yoy), India (+3.3% yoy), Japan (+3.4% yoy) and Korea (+1% yoy). Meanwhile, coal supplies in South America and Australia were disrupted along with Indonesia's policy on restriction of coal exports in order to serve the domestic market. These are main factors pushing up thermal coal prices in 2018.

**Global and domestic LPG prices in 9M2018**



Source: DoPM

Oil price jumped in the third quarter of 2018 to 80 USD per barrel, leading to a sharp increase in natural gas price. In the domestic market, LPG price for a 12kg bottle was adjusted up follow upward world's oil price trend, ranging from 4.22% to 5.35%

## C. OUTLOOK 2019

### 1. Hindered growth in consumption due to slowdown in residential and non-residential construction

Due to the Government's effort of slowing down real estate bubbles in 2018 (tightened real estate credit by increasing real estate loan risk weights from 150% to 200%, and the ratio of short-term capital used for medium and long-term loan decreased to 45% in 2018 and further to 40%), residential and non-residential construction growth will similarly be affected in 2019. According to BMI, forecasted residential construction growth rate in 2019 will be at 5.8% (slow down compared to the rate of 7.5% in 2018) and non-residential growth rate at 10.3% compared to 7.6% in 2018.

#### Forecasted growth rate of residential and non-residential construction in Vietnam 2018 - 2022

	2017	2018F	2019F	2020F	2021F	2022F
Residential construction growth rate	10.9%	7.5%	<b>5.8%</b>	6.3%	7.2%	7.7%
Non-residential construction growth rate	9.4%	7.6%	<b>10.3%</b>	9.6%	8.3%	7.1%

Source: BMI Infrastructure Report

The gloomy 2019 prospect of tiles consumption continues to reduce selling price. In particular, sharpest decline is expected to be in the ceramic segment. Decreases in price will be less severe for cotto and granite. In 2019, the average gross profit margin of the whole industry is forecasted at 16% compared to 17% in 2018 and 19% in 2017.

### 2. Domestic output expected to rise at 4.5% - 5%, while production capacity roughly stays the same

Tile domestic output in 2019 is forecasted to reach 650 million m<sup>2</sup>, equivalent to an expected growth of 4.5% – 5% compared to 2018. The growth rate will still maintain the industry's annual growth rate but much slower than the 2018 rate of 5.8%. This is mainly due to the expected slowdown in construction along with firms' focus on enhancing inventory sales.

The production capacity is unlikely to grow strongly considering the whole industry's proportion of consumption to production capacity is just 70%. As tile factories are currently operated at only 80 – 85% of the designed capacity, there is virtually no economic stimulus for tile producers to invest and increase scale of production.





# PLASTIC

## IMPROVEMENT OF MATERIAL UTILIZATION MAINTAINING GROWTH MOMENTUM

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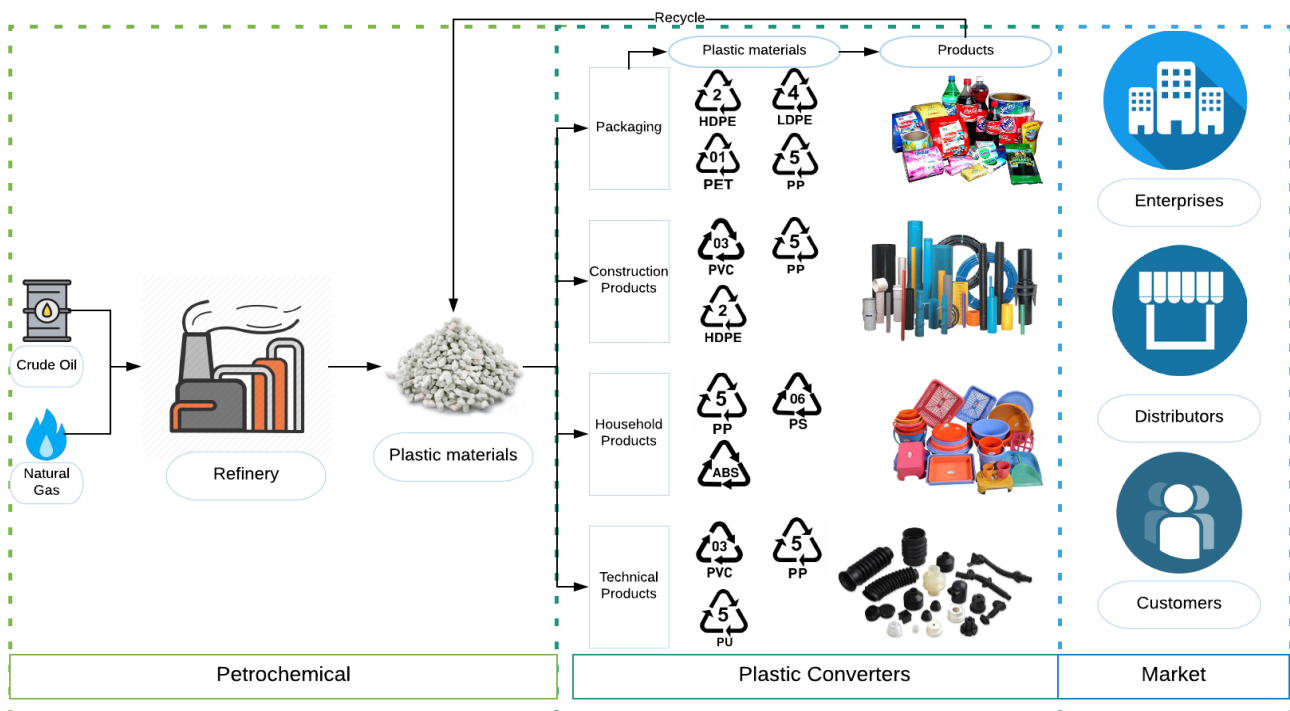
Source: EzSearch

## A. VIETNAM PLASTIC INDUSTRY OVERVIEW

Plastic industry is one of the sectors with relatively fast growth with CAGR 2012 - 2017 reaching 11.62%. Vietnam plastic industry is inadequately developed when domestic production fails to meet domestic demand for plastic material. Downstream of the plastic industry is divided into four main segments: Packaging, Construction, Household product and Technical product with the industry scale in 2017 estimated at USD 15 billion, accounting for 6.7% of Vietnam's GDP. Within the scope of the report, we will focus more on the two largest segments in the downstream of the plastics industry: packaging and construction.

### 1. Value Chain

Vietnam plastic industry as well as other countries in the world, includes two main segments: upstream and downstream. The upstream of the plastics industry (Petrochemical) includes petrochemical refineries, chemical plants, which transform fossil feedstocks into plastic resins. Downstream of the plastic industry (Plastic Converters), consists of manufacturers who convert plastic resins into plastic products. Downstream of the plastic industry, based on products can be divided into four main segments which are packaging, construction, household product and technical product.



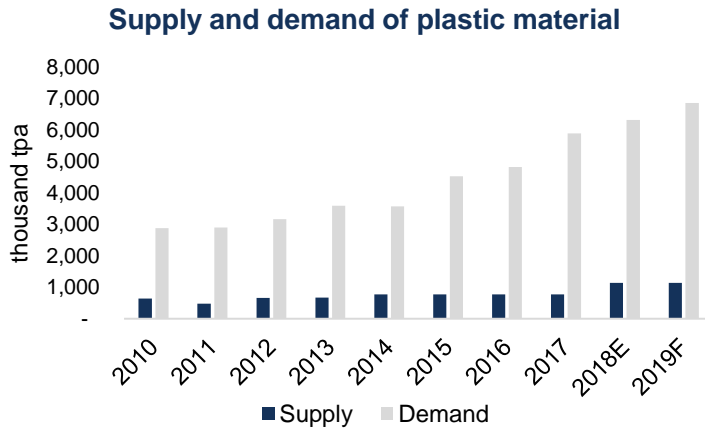
Upstream (Petrochemical)	Downstream (Plastic Converters)			
	Packaging	Construction	Household	Technique
Binh Son refinery ( <a href="#">BSR</a> )	AnPhat Plastic ( <a href="#">AAA</a> )	Binh Minh Plastic ( <a href="#">BMP</a> )	Dai Dong Tien	Ha Noi Plastic ( <a href="#">NHH</a> )
Hung Nghiep Formosa	Tapack ( <a href="#">TPP</a> )	Tien Phong Plastic ( <a href="#">NTP</a> )	Long Thanh Plastic	Mediplast
AGC chemical Viet Nam	Batico	Dong Nai Plastic ( <a href="#">DNP</a> )	Duy Tan Plastic	
Plastic and Chemical TPC	Liksin	Dong A Group ( <a href="#">DAG</a> )		
Polystyrene Viet Nam	Ngoc Nghia ( <a href="#">NNG</a> )			

Source: FPTS Research

## 2. Characteristics of Viet Nam value chain

### 2.1. Inputs – Raw plastic material depends heavily on import, enterprise performance is greatly affected by feedstock prices

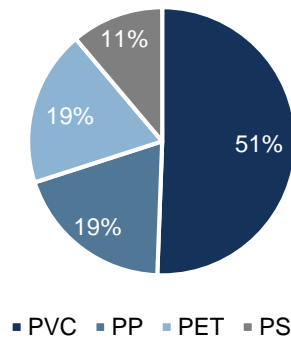
#### 2.1.1. Raw plastic material



Source: S&P Global Platts, FPTs Research

Particularly, Vietnam plastic converters are relying mainly on the imported plastic material. Upstream of the plastic industry is very capital intensive. Because of that, there are only five currently online refineries in Viet Nam. The production capacity of plastic materials in Vietnam is only about 771 thousand tons per annum in 2017, accounting for about 15% of domestic demand. Therefore, the remaining 85% of domestic demand depends entirely on imported materials.

#### Plastic material producing by types (2017)

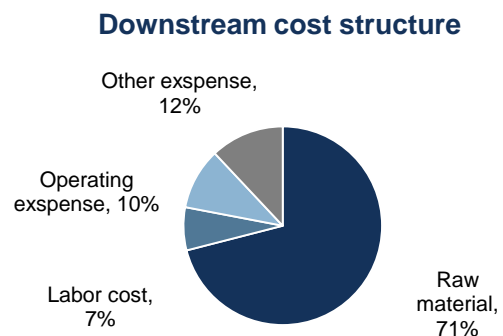
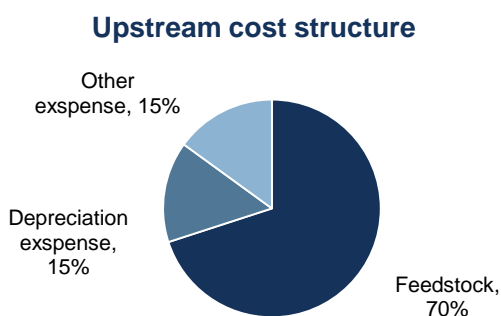


Source: FPTs Research

Plastic material production in Vietnam is not diversified. Among more than thirty types of plastic material imported annually, Vietnam is currently able to produce only four types: PVC, PP, PET and PS.

Plastic material manufacturing is highly PVC - oriented. PVC and PP account for 51% and 19% respectively in the total plastic material production capacity in 2017. In addition, the upstream of the plastic industry in Vietnam currently does not produce PE – a very important plastic resin for packaging and construction segment, so the raw plastic material of PE depends total on import.

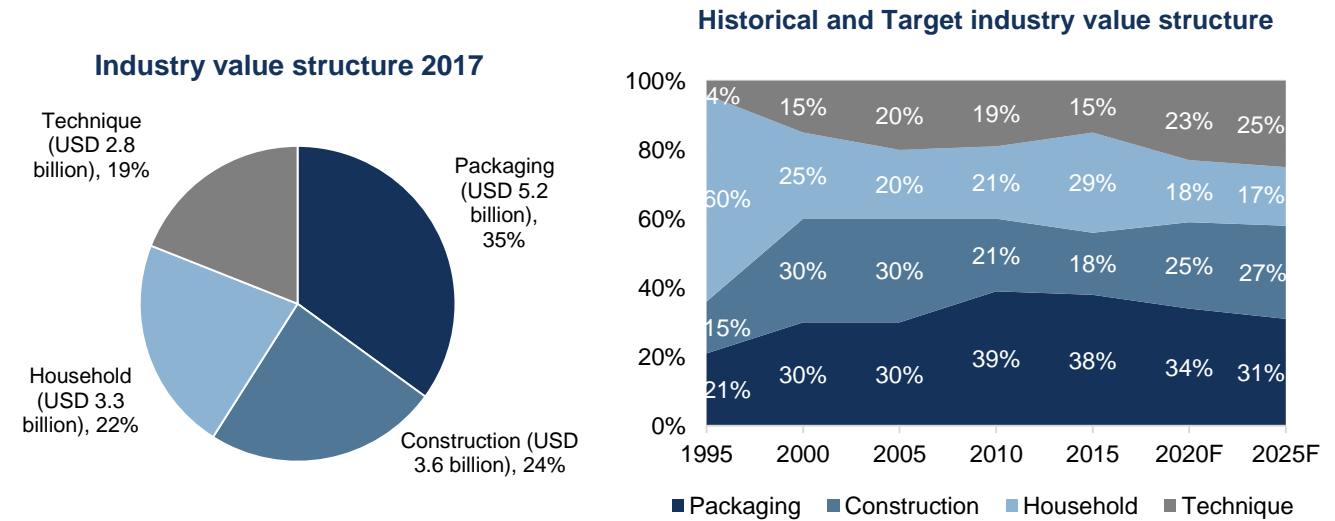
#### 2.1.2. Cost structure



Source: KPMG, ACC, FPTs Research

**Performance plastic firms are greatly affected by fluctuations in prices of fossil fuels** such as crude oil or natural gas. Typically, for both upstream and downstream manufacturers, the cost of feedstocks and raw materials account for a large proportion in their cost structures. Therefore, the prices of raw plastic materials move along side with the prices of feedstocks such as crude oil or natural gas. Thus, a rise in price of feedstock will most likely affect negatively the performance of plastic converters and vice versa.

## 2.2. Manufacturing – Shifting toward construction and technical product segments

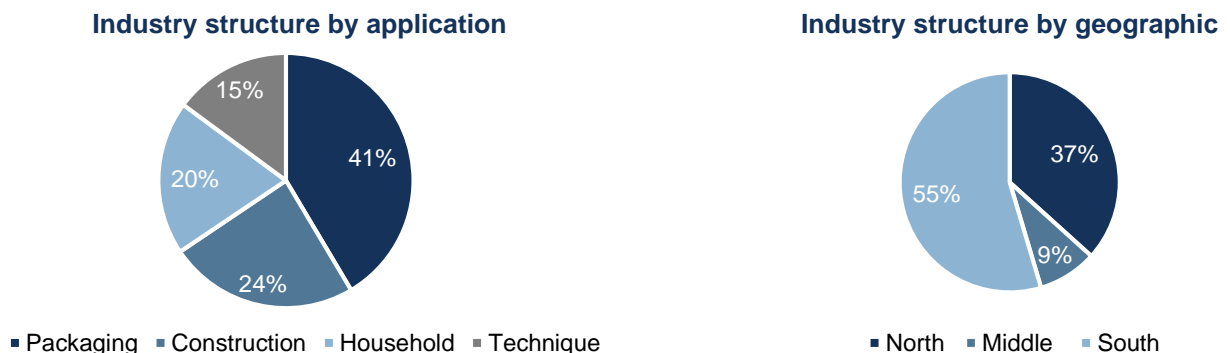


Source: VPA, MoIT, FPTS Research

**Packaging segment accounted for the largest proportion in the total value of Vietnam's plastic industry in 2017.** According to data from the Vietnam Plastics Association and FPTS estimates, Vietnam's plastic industry value in 2017 is about USD 15 billion, in which plastic packaging accounted for the largest proportion with the value of about 5.2 billion USD in 2017, growing about 11% compared to 2016.

**Industry value is shifting from packaging and household product segments to construction and technical product segments.** Vietnam's plastics industry value tends to shift from low value-added segments such as packaging and household product to higher value-added segments such as construction and technical product. In the industry value structure in 2017, construction segment is worth about 3.6 billion USD, up by 60% yoy, accounting for 24% and technical product segment is worth about 2.8 billion USD, up by 50% yoy. and account for 19%. According to the industry development plan (QD/2992 - MOIT), two segments of construction technical product are expected to account for 27% and 25% in the plastic industry value structure in 2025 respectively.

## 2.3. Output – Enterprise distribution and output characteristics



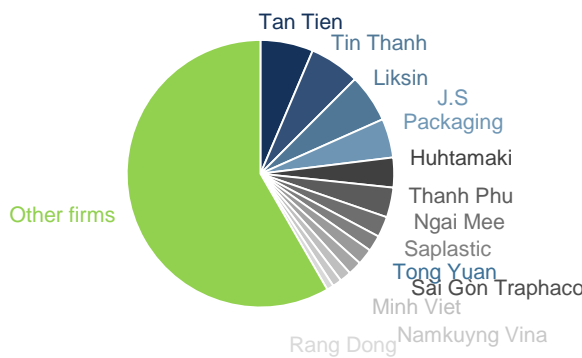
Source: GSO

**Vietnam plastic industry enterprises are mainly operating in packaging segment and concentrating in the South.** The plastic industry currently has more than 3,300 enterprises, in which the number of enterprises operating in the packaging sector accounts for 41% of the total number of businesses, equivalent to more than 1,300 businesses. Plastic enterprises mainly concentrate in the South with about 55% of the total number of enterprises because the South is the focus of food processing, beverage firms, the main client of the plastic packaging industry.

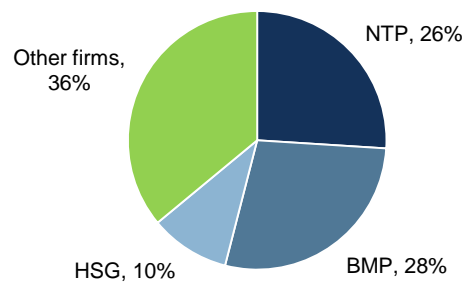
**Output of packaging segment and construction segment:**

- **Packaging (B2B):** this sector is divided into four main groups: monolayer film packaging, multilayer film packaging, PET bottles and non-PET bottles. Most of plastic packaging products serve beverage, pharmaceutical and food processing industries, therefore, the growth of plastic packaging segment is highly dependent on the growth of these industries.
- **Construction (B2C):** main products are water pipes, plastic doors, profiles, ceiling panels, plastic flooring mostly for the finishing phase of the construction industry. Thus, output growth of the construction plastic segment depends heavily on the growth of construction and real estate industry.

**Multilayer packaging market share (2017)**



**Plastic pipe market share (2017)**

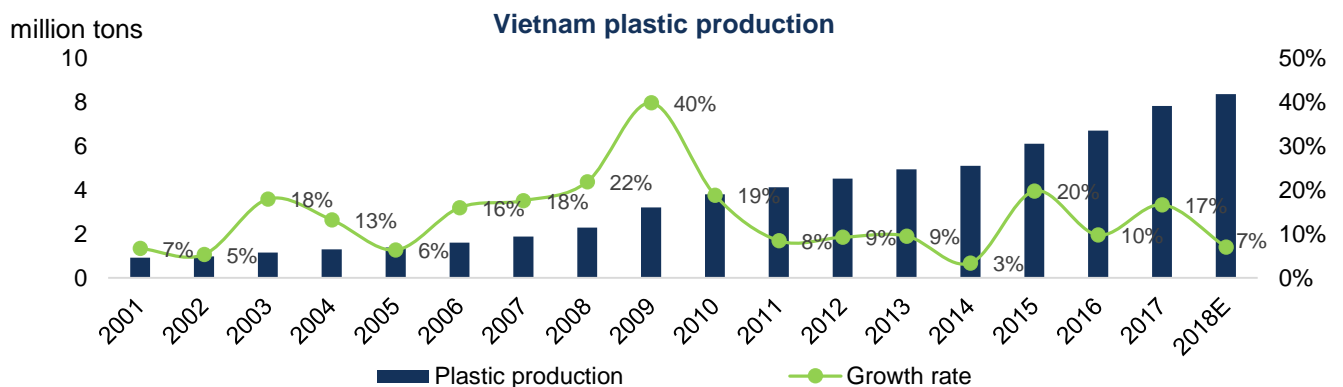


Source: FPTS Research

**The market for plastic packaging is fragmented while the plastic construction market is relatively more concentrated.** Plastic packaging with more than 1,300 enterprises operating has a high level of fragmentation. The monolayer film packaging sector mainly consists of small enterprises and household businesses. For the multilayer film packaging sector, the market is also fragmented with thirteen largest enterprises (each accounting for at least 1% of market share) taking about 41.7% of total market share. In contrast, construction plastic segment has a higher concentration than plastic packaging segment. For instance - the plastic pipe market, two leading enterprises Tien Phong Plastic and Binh Minh Plastic are currently accounting for 54% of the plastic pipe market share in Vietnam.

## B. REVIEW 2018

### 1. Total plastic production slow down in 2018, export value continues to grow



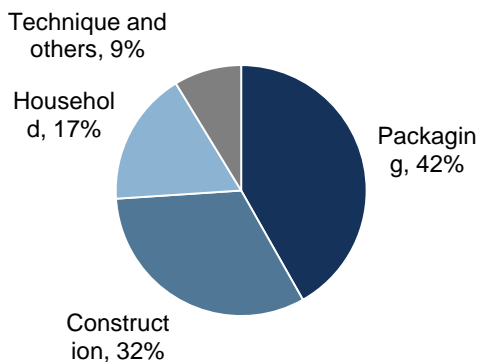
Source: VPA, GSO, FPTS Research

**Plastic industry is growth industry with average growth rate of 11.62% in the 2012 – 2017 period.** In 2017, Vietnam plastic production output reached about 7.8 million tons, up 16.6% compared to 2016. The main reason for the growth of the plastic industry's output in 2017 is due to the growth of food processing and beverage industries, retail industry and construction industry. According to the GSO report, manufacturing and processing industries grew by 17.8% and retail sales from household appliances increased by 8.5%. These are the two main growth drivers for plastic packaging and household product segment in 2017. Construction value in 2017 increased by 8.7% compared to 2016 which creates a driving force for output growth for construction plastic segment.

**In 2018, it is estimated that the growth rate of plastic production is about 7% compared to 2017.** The plastic production estimated in 2018 of the plastic industry is about 8.3 million tons, the growth rate of the plastic production in 2018 is lower than the growth rate in 2017 because the growth of both manufacturing and construction sectors was slower than in 2017. The reported growth of manufacturing and construction sector and construction value in nine months of 2018 were 12.6% and 8.6% respectively, lower than in 2017.

**Export turnover of plastic products continue to grow in 2017 and 2018.** Vietnam's export turnover of plastic products in 2017 was about USD 2.5 billion, growing by 14.3% compared to 2016, accounting for about 16.7% of the total value of the industry. Export turnover of plastic products in 2018 is estimated to reach USD 2.78 billion, up 13% compared to 2017.

**Export value structure by application (2017)**

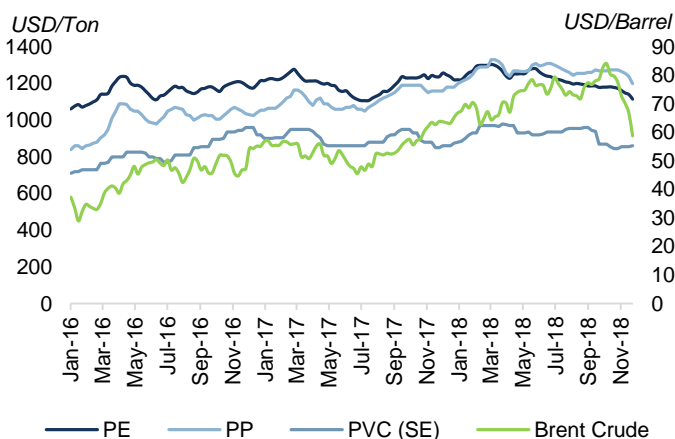


Source: VPA

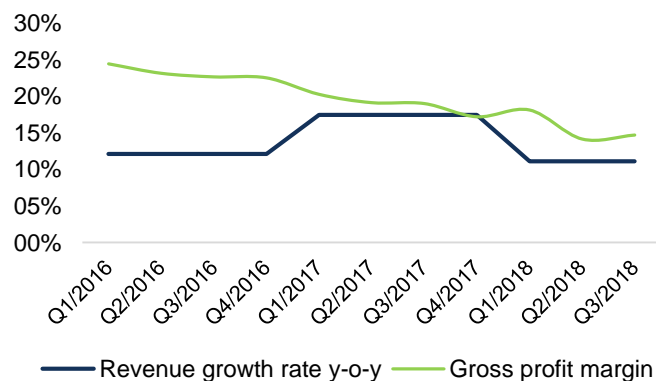
**Packaging accounts for a large proportion in the export turnover of plastic products.** Plastic packaging segment not only accounts for a large proportion in the total value of the industry but also contributes a significant amount in Vietnam's plastic product export turnover. In 2017, the value of exported plastic packaging products is estimated at US \$ 1.03 billion, accounting for 42% of the export turnover of the whole industry. The second is construction plastic products with 32%, equivalent to about 0.8 billion USD in 2017.

## 2. Revenue growth slows down and gross profit margin declines

**Brent Crude and Plastic material price**



**Revenue growth rate and gross profit margin**



(\*based on plastic listed firms: AAA\*\*, NNG, RDP, SPP, VBC, TPP, TPC, NHP, BBS, BPC, PMP, BXH, STP, PBP, BMP, NTP, DNP, DAG, DPC)  
(\*\*exclude resin trading revenue of AAA)  
Source: Bloomberg, FPTS Research

**Revenue of listed plastic companies still maintained the growth momentum.** The 3Q2018 revenue of listed plastic companies continued to grow at an averaging rate of about 11%, slower than the average growth of 2017 (17%). Revenue of listed plastic businesses slowed down compared to 2017, because the growth of manufacturing and processing industry was slower than in 2017.

**Gross profit margin decreases due to increasing prices of plastic materials.** Prices of raw plastic materials in the period of 2016 - 2018 continued to increase with the recovery of crude oil prices, PE increased by 5% on average, PP by 43% and PVC increased by 21%. Plastic material costs account for a large proportion in the cost structure of plastic companies, so gross profit margins of listed plastic companies continuously decreased from 25% on average in 2016 to 15% by Q3 2018. Another factor which has negatively impact on the gross profit margin of plastic enterprises was the import tariff of primary PP resins was adjusted up from 0% to 3%, effective from January 1, 2017.

## C. OUTLOOK 2019

### 1. Plastic production will continue to grow with the decelerating growth rate

The year 2019 is forecasted to be another growth year for Vietnam plastics industry but the expected growth rate is only about 6% - 7%, slower than 2018. Packaging segment and construction segment is still the two main growth drivers of Vietnam plastic industry:

#### 1.1. Packaging Plastic:

(thousand billion VND)	2016	2017	2018E	2019F	2020F	2021F	2022F
Household spending	2,469	2,735	3,035	3,397	3,802	4,253	4,756
Growth rate - 2010 prices (%)	5.64%	7.25%	7.26%	7.13%	7.13%	7.12%	7.12%
Food spending	469	519	575	643	720	804	899
Growth rate yoy (%)	8.22%	10.67%	10.86%	11.82%	11.83%	11.79%	11.74%
Non – alcoholic drink spending	37	41	46	51	57	64	72
Growth rate yoy (%)	8.45%	10.94%	11.11%	12.07%	12.05%	11.99%	11.92%

Source: BMI Research

**Growth in spending on food and non-alcoholic beverages will be the main growth driver for packaging segment in 2019.** According to BMI, household spending in 2019 will be about 3.3 million billion VND, in which spending on food and non-alcoholic drinks still accounts for the largest proportion of about 20% of total household expenditure. The growth of the two segments of food and non-alcoholic beverages is expected to grow by about 11% in 2019. This is the main driver for the growth of the food processing and beverage industries which are the main clients of the packaging segment.

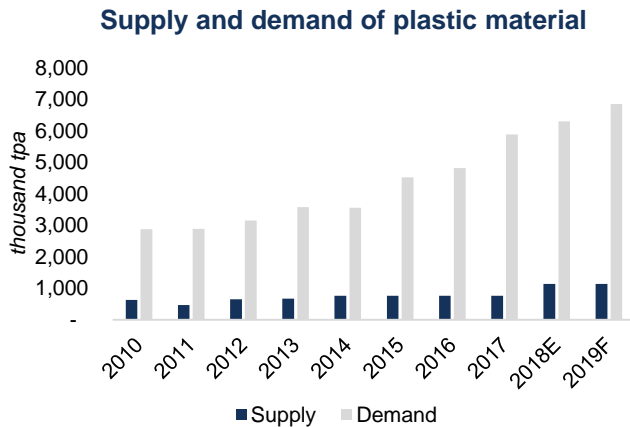
#### 1.2. Construction Plastic:

Growth	2018E	2019F	2020F	2021F	2022F	2023F	2024F	2025F
Residential	7.4%	5.7%	6.2%	7.1%	7.7%	7.5%	7.4%	7.3%
Non-residential	5.8%	8.2%	7.5%	6.4%	5.3%	5.3%	5.1%	5.2%
Water infrastructure	6.7%	7.7%	7.2%	7.2%	7.0%	6.8%	6.8%	6.8%

Source: BMI Research

**Growth of the construction segment in 2019 comes mainly from non-residential building and water infrastructure growth.** Construction industry is expected to grow by about 8%, slower than the growth rate of 2018. In which, residential building growth is forecasted to reduce to only 5.7% while growth non – residential building and water infrastructure are expected to increase by 8.2% and 7.7% respectively.

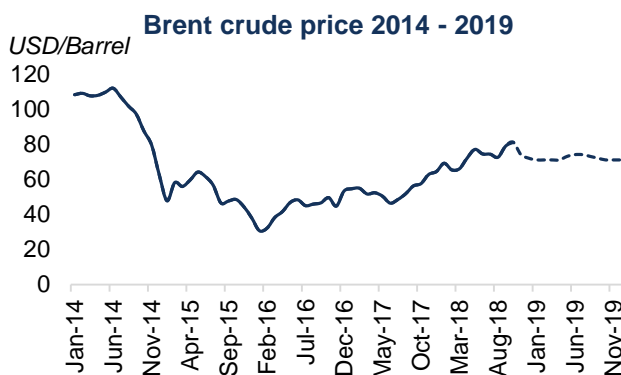
## 2. Reducing dependence on imported materials, especially PP



Source: S&P Global Platts, FPTs Research

**Supply of domestic plastic materials is about to increase rapidly in order to meet the demand of downstream plastic converters.** In 2018, Nghi Son oil refinery officially came into operation with a designed capacity of 370,000 tons of PP per year, helping the PP production capacity of Viet Nam increase by 246% and meet about 50% of domestic demand. In 2018, there are also two major petrochemical projects approved by the government. Long Son petrochemical project and HyoSung petrochemical project of which the main product is still PP and are currently under construction. After being completed and put into operation in 2020, the production of plastic materials in Vietnam is expected to meet 44% of domestic plastic material demand.

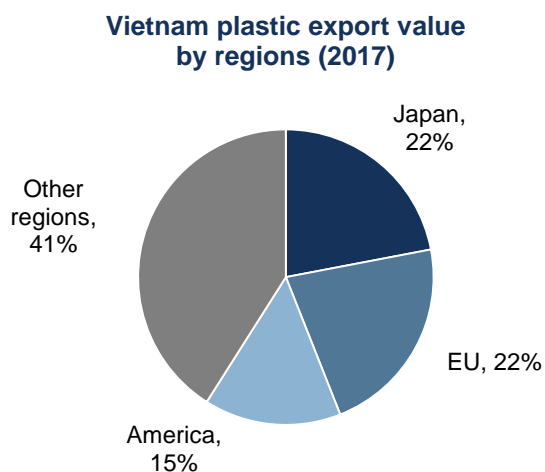
## 3. The average price of plastic material in 2019 is expected to be more stable



Source: EIA Short term Outlook 06/11/2018

In 2019, according to the forecast of the US energy agency EIA, the average Brent oil price will be at \$72 per barrel, slightly lower than the average of 2018. Therefore, the price of two materials which are PE and PP is expected to be stable at an average of \$1,210 per ton and \$1,255 per ton slightly down by 1% compared to the 2018 average price. For PVC material, construction demand in China which is the largest PVC production and consumption country in the world has slowed down. Thus, the PVC (Southeast Asia) average price in 2019 is expected to stabilize at \$926 per ton equal to the average price of 2018.

## 4. Prospects from EVFTA



Source: TCHQ, FPTs Research

**The free trade agreement between EU and Vietnam is expected to complete the final round of negotiations and come into effect in 2019.** In the export value structure of plastic products in Vietnam, EU region accounts for the second largest proportion with about 22%. Currently, plastic packaging products of Vietnam have a competitive advantage in the EU market with plastic packaging products from other countries in the region due to exemption of anti-dumping tariff of 4% - 30%. After the EVFTA comes into effect, the tariffs of most plastic products exported to the EU market will be removed. This will be a great opportunity to increase the export volume of plastic products of Vietnam plastic industry towards important market like EU.



**Appendix: Oil refineries in Vietnam**

Refinery	Feedstock	Product	Capacity (ton p.a)	Active year	Status
Binh Son refinery (BSR)	Crude oil	PP	150,000	2009	Active
Hung Nghiep Formosa	Crude oil	PET	145,000	2004	Active
AGC chemical Vietnam	Crude oil	PVC	200,000	2004	Active
Plastic and Chemical TPC VINA	Crude oil	PVC	190,000	2010	Active
Polystyrene Viet Nam	Crude oil	PS	48,000	2012	Active
Polystyrene Viet Nam	Crude oil	PS	38,000	2006	Active
Nghi Son refinery	Crude oil	PP	370,000	2018	Active
Long Son refinery	Crude oil	PP, HDPE, LLDPE	1,410,000	2020	Under Construction
Hyosung refinery	Crude oil	PP	600,000	2020	Under Construction
Vung Ro refinery	Crude oil	PP	900,000	2018	Delayed
PTT refinery	Crude oil	PE	800,000	2021	Delayed
Dung Quat expansion - 1st phase	Crude oil	PP	15,000	2021	Planning
Dung Quat expansion - 2nd phase (Blue whale feedstock)	Natural Gas	Methanol	N/A	2023 – 2035	Planning
PVGas Ba Ria Vung Tau	Natural Gas	PP	400,000	2021	Planning
PVGas Ba Ria Vung Tau	Natural Gas	Ethane	120,000	2021	Planning

Source: S&P Global Platts, VPA, FPTs Research



# AVIATION CONTINUE TO GROW IN 2019

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**Movement of Aviation Industry index and VNIndex**



Source: EzSearch

## A. AVIATION INDUSTRY OVERVIEW

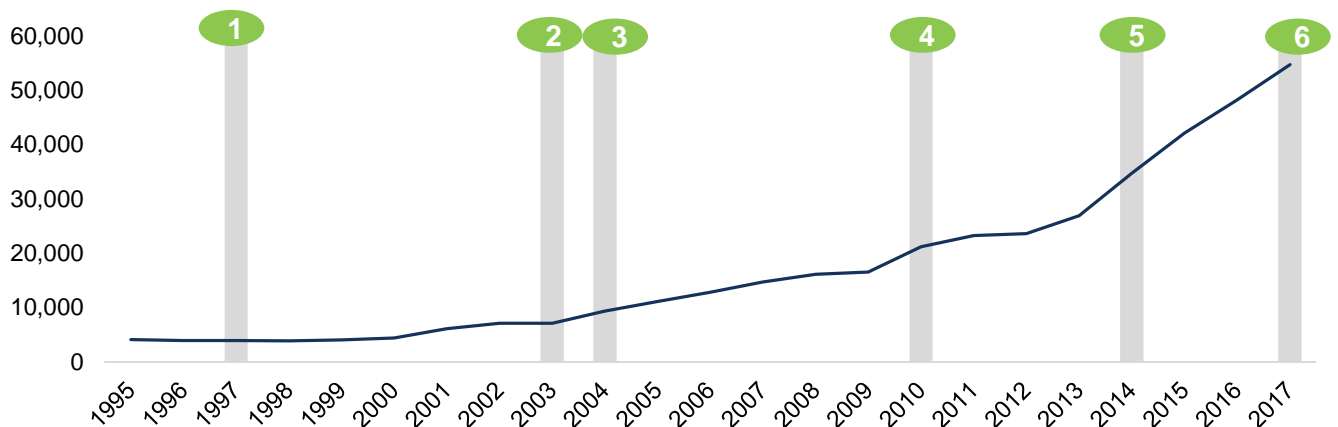
### Vietnam Aviation Industry Value Chain



Source: FPTs Research

Similar to the world aviation value chain, Vietnam's aviation industry includes groups of businesses (1) Aircraft manufacturers, aircraft leasing companies, (2) Airport enterprises, (3) Airline carriers, (4) Cargo terminal/Services, (5) Forwarding agent.

### Passenger traffic (million passenger kilometer)



Source: GSO

#### Vietnam Aviation main events from 1996 to 2017:

- (1) 1997 – Asian countries were affected by 1997 Asian financial crisis. Numbers of airlines stopped operating regularly to Vietnam such as Emirates Airlines, Garuda, Philippines Airlines, KLM, Lauda Air, Swiss Air.
- (2) 2013 - Translating Sars made flight routes between Vietnam and epidemic areas such as China, Taiwan, Hong Kong, etc cut and shut down operating.
- (3) 2004 - Vietnam - US air transport agreement was signed, VASCO went into operation. The CAAV had a policy of discounting air traffic control services and airports services to support and attract foreign airlines to operate in Vietnam. At the same time, airlines also had discount promotional policies to stimulate demand and attract customers after the SARS pandemic. The growth of aviation industry recovered.
- (4) 2011 – Vietjet Air participated in air transport sector.

(5) 2014 - Significant growth of domestic passengers by boosting low-cost carrier airlines (LCC), especially Vietjet Air.

(6) 2017 – High passenger growth rate associated with the expansion of international routes, leading to the increase of 13.3% passenger traffic (*unit: million passenger kilometer*) compared to 2016.

## **SUB-SECTOR OF AVIATION INDUSTRY**

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### **AIRCRAFT MANUFACTURERS**

Vietnam currently has no aircraft manufacturers, airlines place orders to foreign aircraft manufacturers such as: Boeing, Airbus, ATR.

### **AIRCRAFT LEASING COMPANIES**

The only aircraft leasing company in Vietnam is VALC (HVN owns 32.5%) that ranked 46th among the world's aircraft leasing companies (that calculated on the value of leased assets - according to Airfinance Journal statistics).

The major partners of Vietnam airline companies:

- VJC: GECAS (ranked 1<sup>st</sup>), AWAS (belonging to DAE Capital - ranked 7<sup>th</sup>), JACKSON SQUARE AVIATION (ranked 12<sup>th</sup>), Goshawk (ranked 25<sup>th</sup>), Aviation PLC.
- HVN: Aviation Capital Group (ranked 10<sup>th</sup>), VALC (ranked 46<sup>th</sup>)
- Bamboo Airways: Gy Aviation

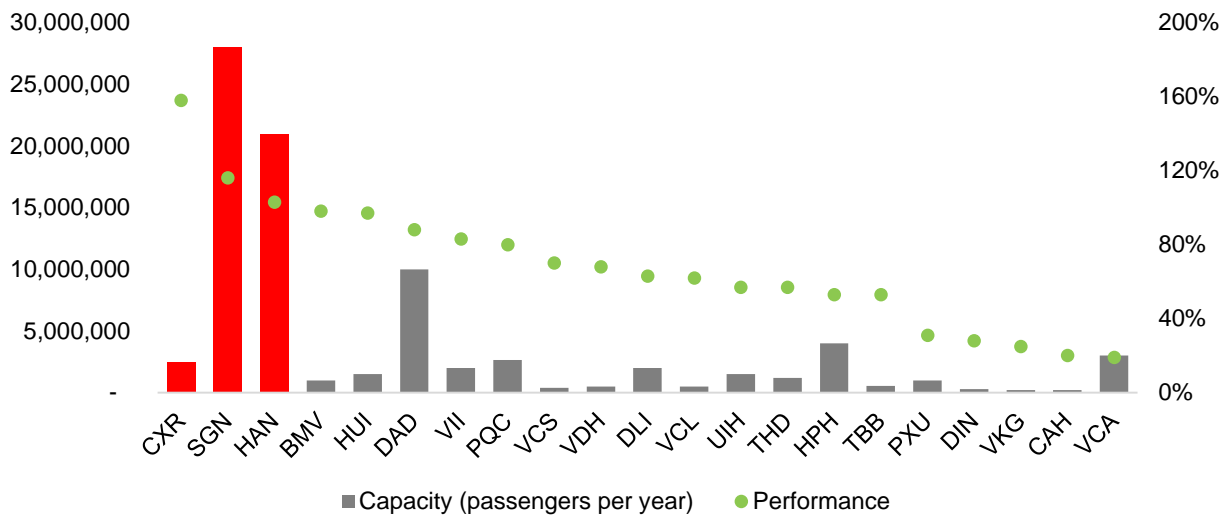
### **AIRPORT COMPANIES**

Vietnam Airport Corporation (ACV) is the exclusive airport operator in Vietnam through owning 21 airports. Boosting up the socialization of investment in aviation is a breakthrough solution to release the pressure of the state budget and increase competitiveness of the economy. The number of companies has participated in investment, construction and operation airports, such as:

- Da Nang International Terminal Investment and Operation Joint Stock Company (AHT): Investing and operating Da Nang International airport from May 2017.
- Cam Ranh International Terminal Joint Stock Company (CRTC) - ACV holds 49.8%: Investing and operating Cam Ranh international terminal operating from June 30, 2018
- Sun Group - owner of Van Don international airport expected to go into operation in December 2018.

**(1) Airport infrastructure is not enough to meet growing demand - a major requirement is to upgrade infrastructure**

**Capacity and performance of Vietnam airports in 2017**



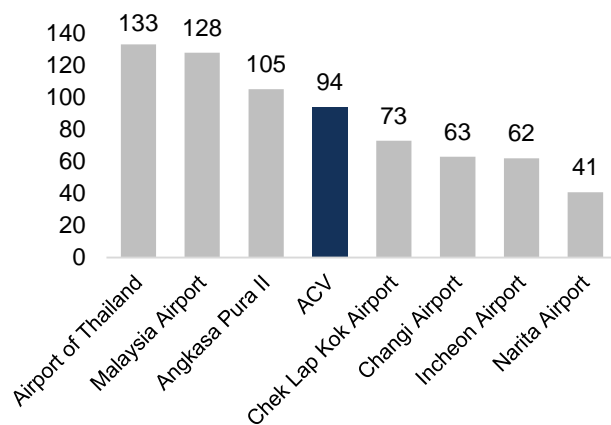
Source: ACV, FPTs Research

The construction and operation of airports are not effective. While the overloading situation often shows large airports such as Tan Son Nhat and Noi Bai, some other airports almost only operate less than 30% of capacity such as Pleiku, Dien Bien, Rach Gia, etc.

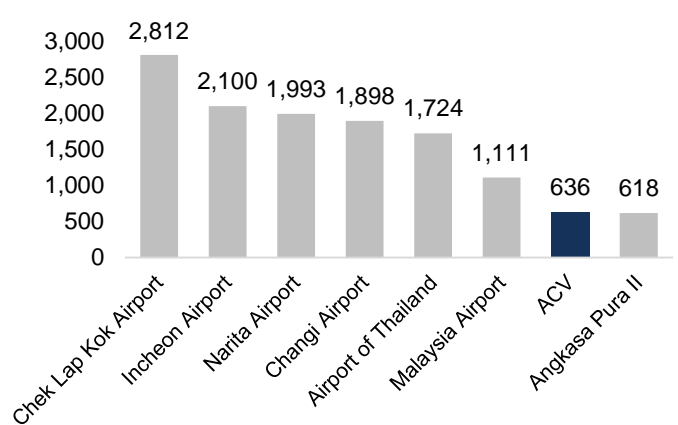
Vietnam Airport Corporation needs to invest about 15 billion USD in basic construction by 2030 with the main projects: Major maintenance at Tan Son Nhat and Noi Bai airports; building T3 station in Tan Son Nhat airport; Long Thanh airport that would be expected to be completed in 2025.

**(2) Revenue has not yet corresponded to passenger traffic**

**Passengers traffic in 2017 (mil passengers)**



**Revenue FY2017 (mil USD)**



Source: Annual Report, FPTs Research

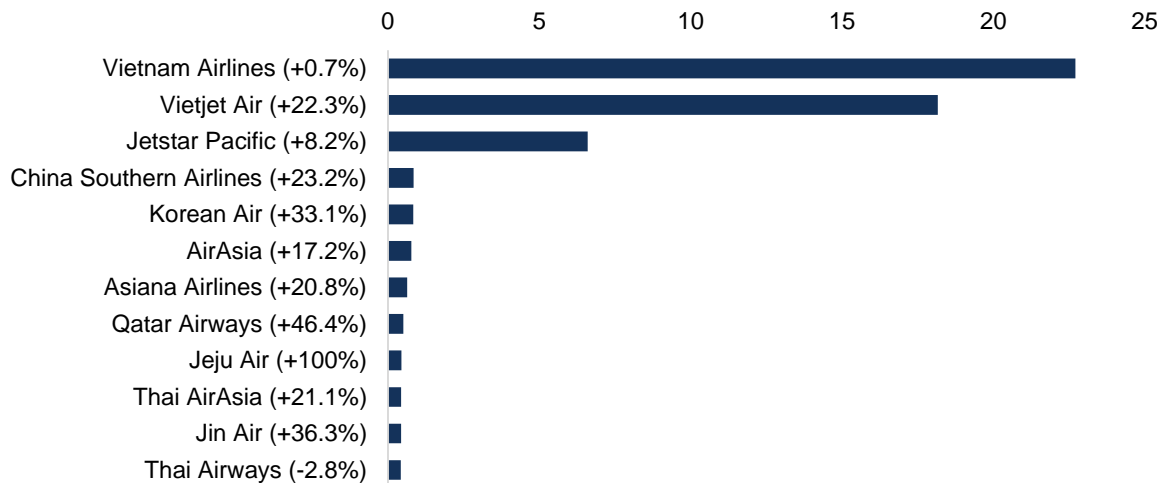
The number of passengers at airports in Vietnam reached 94 million in 2017, ranking 4th compared to some airlines in ASEAN, behind Thailand, Malaysia and Indonesia. However, ACV's revenue is only ranked 7th that is equal to 37% of Thai airport's revenue while passenger arrivals reach 70%. The cause of this inefficiency comes from limiting the value-added services included. Major airports in Thailand, Malaysia have provided complex services such as shopping, accommodation and restaurants. Meanwhile, in major airports such as Tan Son Nhat and Noi Bai, non-aviation services merely include dining activities, souvenirs shopping.

## AIRLINES CARRIERS

### (1) Concentration of Vietnam air transport market is high, only two big players

Currently, Vietnam's aviation industry has 2 main domestic operators, [HVN](#) (including Vietnam Airlines, Jetstar Pacific and VASCO) and [VJC](#) (Vietjet Air) with 55% and 45% market share respectively in first 9 months of 2018 (data used from calculations of VJC). At the beginning of January 2019, Bamboo Airlines will enter the market with plans to exploit 24 domestic routes and 16 international routes.

Annual departing seat capacity in 2018 (mil seats)

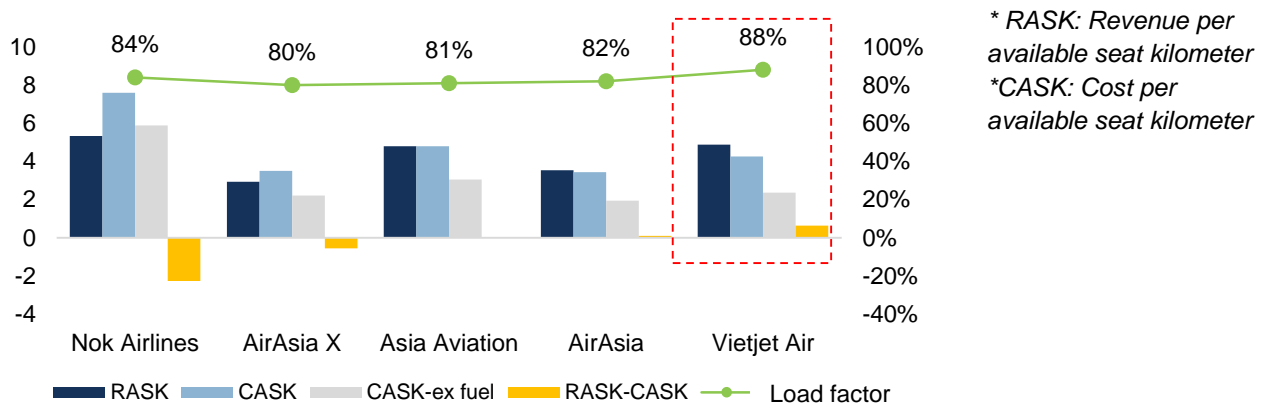


\* Change in departing seats 2018 vs 2017

Source: OAG Schedules Analyzer

### (2) High competition in the low-cost carriers segment - towards new-age generation

RASK, CASK of VJC vs LCCs in the region in 9M2018



\* RASK: Revenue per available seat kilometer  
\*CASK: Cost per available seat kilometer

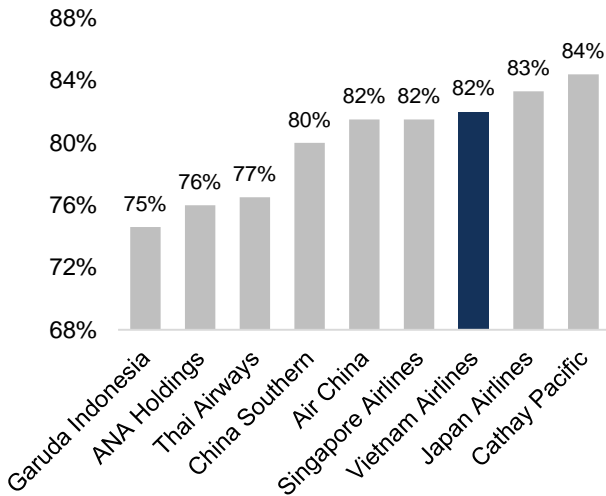
Source: Companies Reports

Compared to low-cost carriers in ASEAN, VJC is the best profitable airline in the first 9M2018 when fuel prices rise sharply. Other airlines have lower load factor compared to 2017 because the number of passengers has a high sensitivity to the fare increase. VJC still retains the 88% load factor compared to 2017. Not only offering competitive price campaign, VJC also expanded its operation by increasing the international flights and ancillary revenue. This market increased strongly to help RASK increase at 4.88 USc / ASK (+15% yoy). This is also the factor that helped VJC overcome the period of high oil price to get better results than the low-cost carriers in the region.

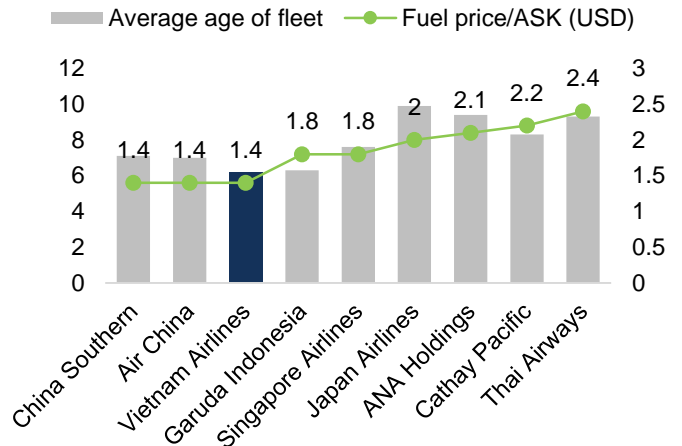
### (3) Vietnam Airlines operates effectively compared to full services carriers in the region

Compared to regional airlines, Vietnam Airlines has a high and stable load factor of 82%. The cost of oil per available seat kilometers is lower than that of Southeast Asian carriers due to (1) low average age of jet fleet with reasonable fleet structure, (2) operation activities with strict requirements high technique.

**Load factor of FSCs in 2017**



**Average age fleet and fuel cost/ASK of FSCs in 2017**



\*FSC: Full Service Cost

Source: BDS Bank, Airlines, FPTs Research

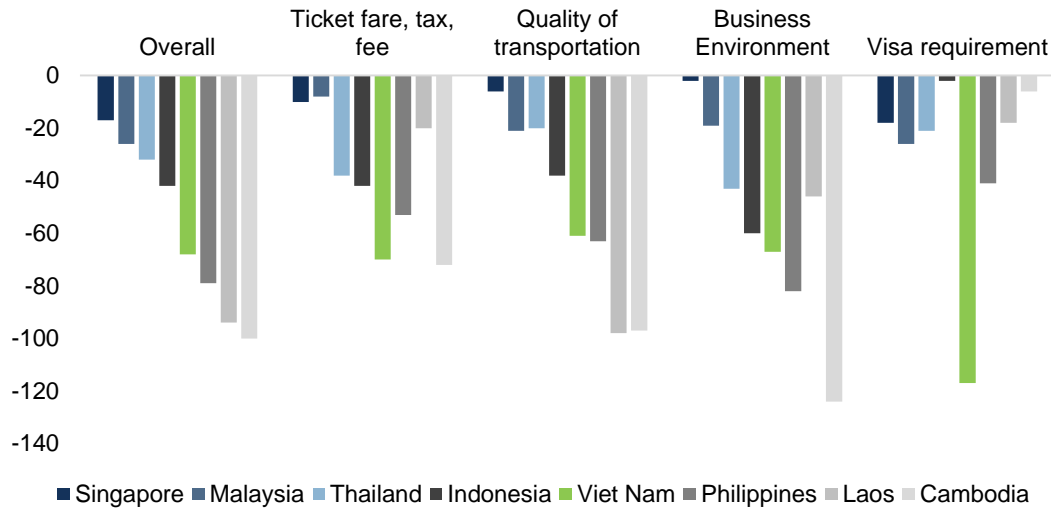
### SERVICE COMPANIES/OFF-AIRPORT CARGO TERMINAL

Cargo Terminal	Aviation Services	Non-aviation Services
<p><b>At Noi Bai Airport:</b></p> <p><a href="#">NCT</a> (55% owned by <a href="#">HVN</a>)</p> <p>ALS</p> <p>ACSV (20% owned by <a href="#">ACV</a>)</p> <p><b>At Tan Son Nhat Airport:</b></p> <p><a href="#">SCS</a> (15% owned by ACV)</p> <p>TCS (55% owned by HVN)</p>	<p><b>1. Takeoff and landing, security system</b></p> <p>SCS (15% owned by ACV)</p> <p>Airimex (41,3% owned by HVN)</p> <p><b>2. Fuel supply</b></p> <p>Skypec (100% owned by HVN)</p> <p>Petrolimex Aviation (supplier of VJC)</p>	<p><b>3. Taxi, bus, parking</b></p> <p><a href="#">NAS</a> (51% owned by HVN)</p> <p><a href="#">AST</a></p> <p><b>4. Ground services (check-in, luggage, jet bridge)</b></p> <p>HGS (20% owned by ACV)</p> <p><a href="#">SGN</a> (48% owned by ACV)</p> <p>VIAGS (100% owned by HVN)</p> <p><b>5. Restaurant, duty-free shop, advertising</b></p> <p>AST</p> <p><a href="#">SAS</a> (49% owned by ACV)</p> <p><a href="#">CIA</a> (46% owned by ASG)</p> <p><b>6. Air catering</b></p> <p>NCS (60% owned by HVN)</p> <p><a href="#">MAS</a> (36% owned by HVN)</p> <p><a href="#">AST</a></p> <p>VACS (100% owned by HVN)</p> <p>VINACS (26,7% owned by AST)</p> <p><b>7. Supply of goods (blankets, towels, etc), laundry</b></p> <p>NCS</p> <p>Airserco (53% owned by HVN)</p>

Source: FPTs Research

**Service quality is at an average level in Southeast Asia such as Singapore, Malaysia or Thailand**

**Rating Air Services in ASEAN countries in 2017**



Source: IATA Economics

**FORWARDING AGENTS**

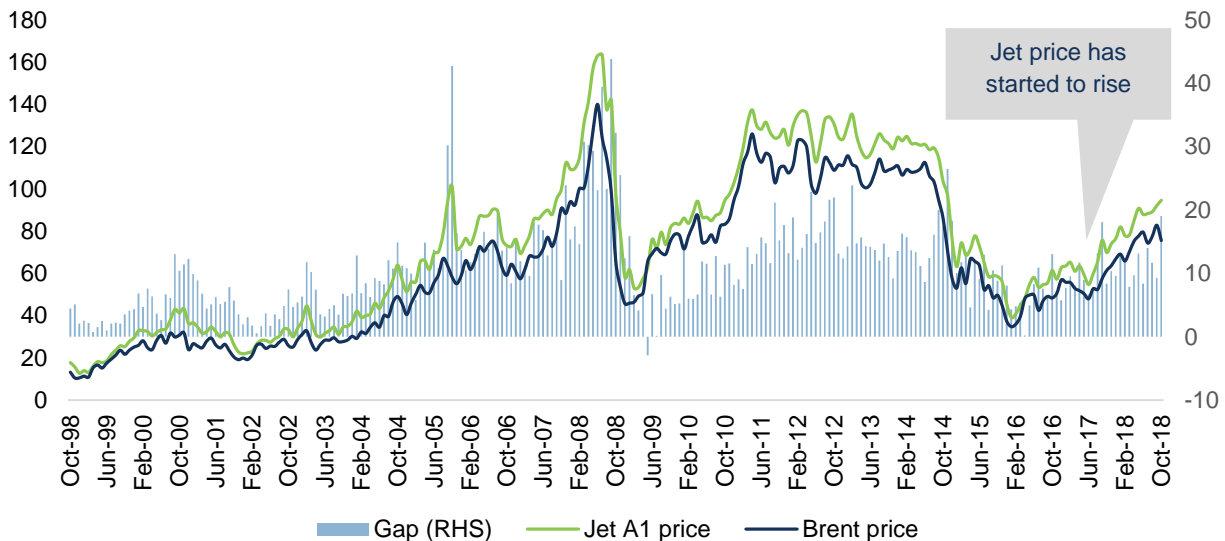
Mostly enterprises operate in the field of freight forwarding from shippers/agents to airports and vice versa. Currently there are 3 main businesses:

- Vinako (not yet equitized): operating at Tan Son Nhat airport
- TECS (not yet equitized): operating at Tan Son Nhat airport
- ASG (unlisted): operating at Tan Son Nhat and Noi Bai airports

**B. REVIEW 2018**

**1. Profit margin of airline carriers declined due to rising oil price**

**Brent oil price and Jet A1 price 1998 – 2018 (USD/barrel)**



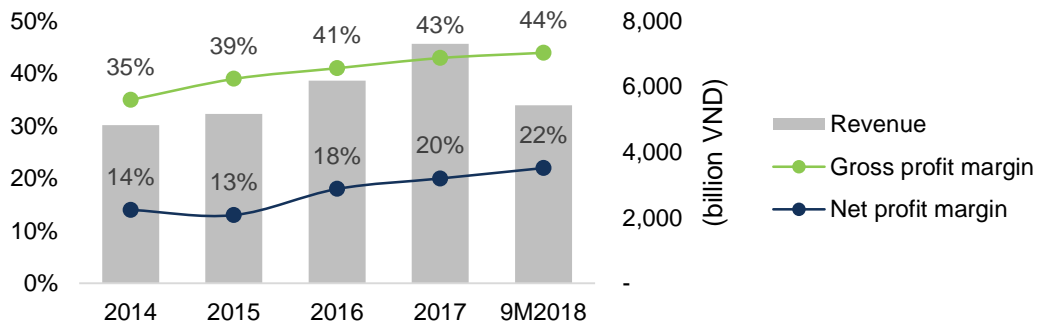
Source: Bloomberg



Fuel prices at the end of September 2018 increased by 25% compared to the same period in 2017. This made the gross profit margin of HVN only 13% in 9M2018 compared to 15.1% in the same period. Meanwhile, VJC's fuel costs also accounted for 38% of total revenue (excluding aircraft sales) in 6 months of 2018, up from 36% in 2017 and 34% in 2016.

## 2. Profit margin of cargo terminal and services companies are stable and tends to increase

**Profit margin cargo terminal and services companies**



\*Data: NCT, SCS, SGN, SAS, CIA, NAS, AST, NCS, MAS

\*\*Have no data of NAS in 9M2018

Source: FPTs Research

Profitability ratios of cargo terminal and services companies tend to increase from 2014 to 9M2018 due to the benefits of air passenger traffic growth. This is the group of enterprises with the highest profit margin in the airline industry. The main risk comes from ownership structure. Those companies are less affected by oil price fluctuations than airline carriers.

## 3. The increase in passenger, cargo volume and the proportion of international visitors support the growth of airport enterprises

**Visitors by air 2010 – 10M2018**



Source: Vietnam National Administration of Tourism

(USD/passenger)	International	Domestic	Effective period
<b>Aviation security fees</b>			
	2	0.51	1/10/2017 - 31/12/2017
	2	0.59	1/1/2018 - 31/3/2018
	2	0.78	From 01/04/2018
<b>Passenger services charges</b>			
	21.7	2.9	1/10/2017 - 31/12/2017
	21.7	3.1	1/1/2018 - 31/3/2018
	21.7	3.3	01/04/2018 - 30/06/2018
	21.7	3.9	From 01/07/2018

Source: 2345/QĐ-BGTVT

In 2018, aviation security fees and domestic passenger service charge increased by ~40% compared to 2017. Cost of services from international visitors was still about 7 times higher than that of domestic tourists.

In 2016 and 2017, the growth rate of international tourists reached 32%. According to the data of the first 10 months of 2018, the growth rate of tourists increased by 17% year to year, coming from Northeast Asia such as Japan, China, and Korea.

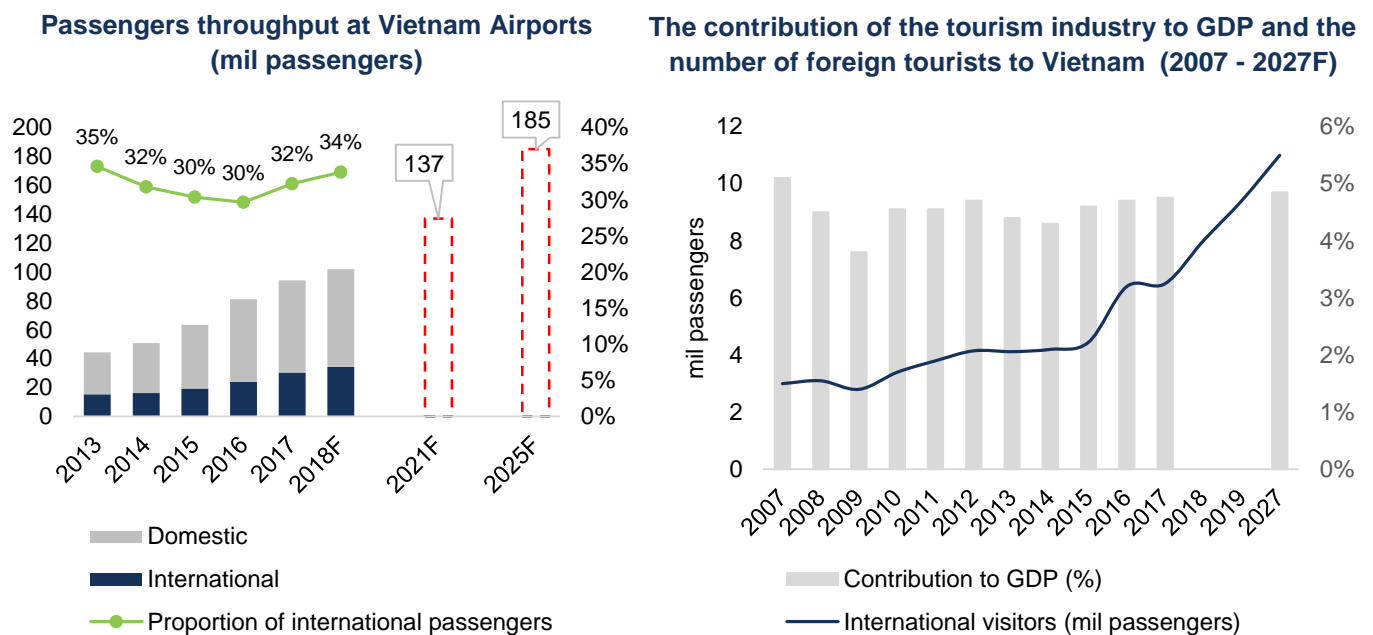
#### 4. The positive information affects the airline industry in 2018

- Prime Minister Nguyen Xuan Phuc's visit to Japan in May extended opportunities for cooperation in aviation transport and supply chain; welcome ANA airline of Japan to buy more shares of HVN. In addition, VJC also signed a cooperation agreement to operate 3 flights between Japan - Vietnam at the end of 2018 and early 2019.
- In October 2018, Vietnam Airlines Corporation (Vietnam Airlines) and Vingroup signed a cooperation agreement to build products combining aviation and tourism across the entire route network, accommodation facilities and travelling.
- In-town check-in service was implemented from October 2018 by VIAGS - a subsidiary of HVN. The expansion of utility services leads HVN into a 4-star airline company.

### C. OUTLOOK 2019

#### 1. Stable passenger growth - Tourism is the driving force for international passenger growth

According to IATA's forecast, Vietnam's aviation industry will grow fastest, becoming the 15th largest market in 2035.



Source: Vietnam National Administration of Tourism, ACV

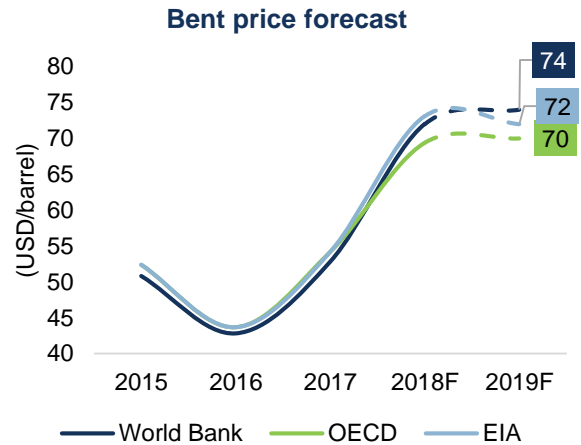
Passenger traffic through airports in the first 9 months of 2018 reached 79.3 million passengers (+12.1% yoy) with the proportion of international passengers increasing to 34% in 2018. As forecasted by the Port Corporation Vietnam aviation, passenger traffic through airports can reach 127 million passengers by 2021 (equivalent to CAGR 2017 - 2021 = 9.8%) and 185 million passengers by 2025 (equivalent to CAGR 2021 - 2025 = 7.8%). With the expectation of an increase in international passenger rates from (1) Vietnamese airlines open flights to new markets, especially in Northeast Asia, (2) motivation from tourism industry; profits of air carriers, airports and services are expected to grow significantly in 2019.

#### Benefits from increasing the proportion of international visitors:

- (1) For airline carriers: Ancillary revenue of international tourists is higher than domestic ones.
- (2) For airport terminal: As analyzed above, international passenger service prices are 7 times higher than domestic ones.
- (3) For services companies: Ground service, flight safety, air catering service, duty-free sales, shops in the isolation area all grow due to international visitors.

## 2. Oil prices are on a downward trend in late 2018 and stable in 2019

After soared at \$86/barrel on October 2018, Brent oil price is around \$60/barrel (down more than 30% compared to October 2018). Oil prices are expected to cool down by the end of 2018, reaching an average of more than 70 USD/barrel in 2018. As forecasted by some organizations such as World Bank, OECD or EIA, oil prices in 2019 will be stable at \$72/barrel. With a cost structure of more than 30% from fuel prices, stable oil prices in 2019 will be a support factor for the growth of airline carriers.



Source: World Bank, OECD, EIA

## 3. Competition has increased in cargo terminal and services companies

### (1) VINACS participates in air catering services, NCS expands operating activities

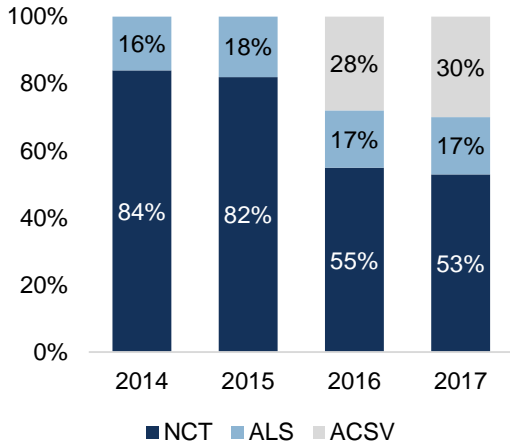
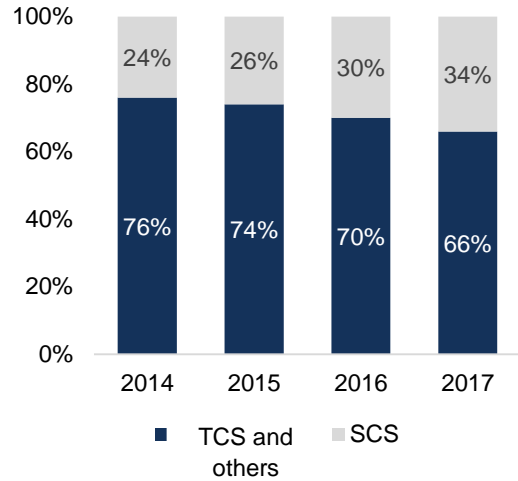
	NCS	MAS	VINACS	VACS
<b>Initial year of operation</b>	1978	1993	2017	n/a
<b>Capacity</b>	10,000	2,000	25,000	20,000
<b>New capacity in 2018</b>	35,000			
<b>Actual volume</b>	25,000	15,000	15,000	12,000
<b>Venue</b>	Noi Bai	Da Nang, Cam Ranh, Phu Bai	Noi Bai, Cat Bi, Da Nang, Cam Ranh, Phu Quoc	Tan Son Nhat
<b>Revenue 2017 (bil VND)</b>	614	293	78	826
<b>Net Income 2017 (bil VND)</b>	83	39.6	-41	172
<b>Ownership Structure</b>	60% owned by HVN	36% owned by HVN	26,7% owned by AST	100% owned by HVN

Source: FPTs Research

Previously, enterprises participating in air catering sector were either subsidiaries or affiliates of HVN. In 2017, VINACS that is AST's affiliated company joined the market, competing directly with NCS, VACS and MAS. With the goal of building supply chains for airports nationwide, VINACS is focusing on price competition strategy, attracting customers. In fact, VINACS has won a large customer named Qatar Airways from NCS in 2018, VJC will also work with VINACS in 2019. Big competition makes NCS have to invest more factories that put into operation from 15 August 2018.

### (2) Cargo terminal: Opportunities for businesses to have room for growth

Cargo terminal operation is the business segment that brings the highest profit margin in the airline value chain with a 9M2018 profit margin of 66% (data calculated on the listed companies NCT and SCS). However, the situation of these two companies is different. NCT is losing its market share at Noi Bai airport while SCS is an enterprise with growth momentum at Tan Son Nhat airport.

**NCT, ALS, ACSV market share at Noi Bai**

**SCS, TCS market share at Tan Son Nhat**


*\*Others: including courier companies with a relatively low market share*

*Source: Companies reports, FPTs Research*

NCT, ALS, TCS are enterprises owned by HVN; ACSV, SCS owns ACV. In 2019, we assess that the competition in this group of enterprises is higher because SCS plans to expand its capacity to 350,000 tons per year (75% increase compared to the current capacity).



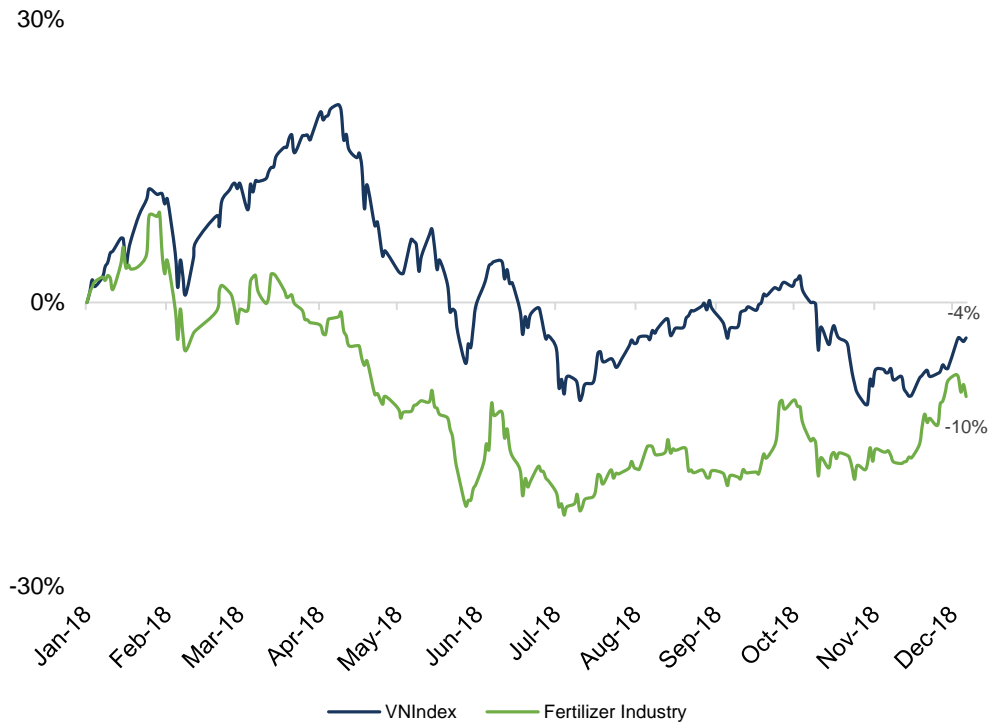
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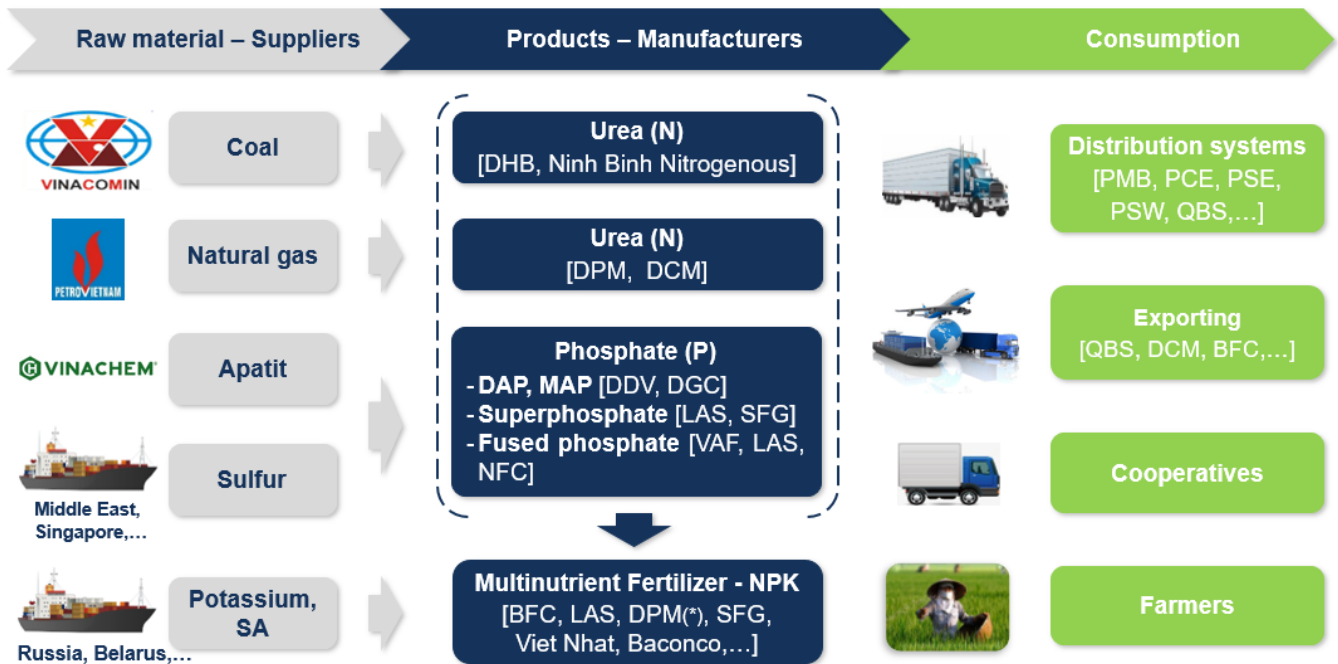
**Movement of Fertilizer Industry index and VNIndex**



Source: EzSearch

## A. VIETNAM FERTILIZER INDUSTRY OVERVIEW

### 1. Vietnam Fertilizer Industry Value Chain



(...) In parentheses, Single nutrient fertilizers are inputs to product NPK fertilizers.

(\*) Material Inputs of the DPM include: Amoniac (NH<sub>3</sub>), Axit phosphoric (H<sub>3</sub>PO<sub>4</sub>) and Kaliclorua (KCl)

### 2. Fertilizer industry characteristics

#### (1) In Vietnam, the Fertilizer industry only supplies NPK, Urea and Phosphate fertilizers

Currently, the domestic fertilizer industry only produces products such as NPK, Urea and Phosphate fertilizers. Some products such as SA and Potassium fertilizer, etc, due to the limitation of potash sources (the main material for producing potassium fertilizers) and sulfur sources, therefore domestic production has not able to supply those products yet, must import from other countries.

#### (2) High number of enterprises in the industry and differentiated in scale

By the end of the 1H2018, total Fertilizer industry had 735 licensed fertilizer trading and manufacturing enterprises with total capacity up to 29.5 million tons per year. In which, there are 10 large enterprises under Vietnam National Chemical Group (Vinachem) and 2 enterprises under Vietnam Oil and Gas Group (PVN) accounting for most of the annual domestic fertilizer quantity production. The rest are small and medium-sized enterprises, mainly involved in NPK fertilizer segment.

#### (3) Similar quality in single nutrient fertilizer segment, strongly differentiated in NPK fertilizer segment

**Single nutrient fertilizers including Urea, Phosphate** - are fertilizers that can only be produced by chemical methods from material inputs such as ore, coal or gas. So the process and technology production are complicated and the investment cost is high. The leading enterprises of the Vinachem and PVN have met all of the domestic demand with product quality that has no differences among manufacturers.

### Single Nutrient Fertilizer Segment

Single Nutrient Fertilizer	Products	Manufacturers
Nitrogen (N)	Prilled Urea	<a href="#">DPM</a> , <a href="#">DHB</a> , Ninh Binh Nitrogenous
	Granular Urea	<a href="#">DCM</a>
Phosphate (P)	Superphosphate	<a href="#">LAS</a> , <a href="#">SFG</a>
	Fused Phosphate	<a href="#">LAS</a> , <a href="#">VAF</a> , <a href="#">NFC</a>
	Phosphate DAP, MAP	<a href="#">DDV</a> , DAP-Lao Cai, <a href="#">DGC</a>

Source: FPTs Research

**NPK fertilizers are three-component fertilizers providing nitrogen (N), phosphate (P), potassium (K)**, so it is possible to select input materials from single nutrient fertilizers or materials from the beginning of the value chain. Therefore, hundreds of manufacturers participating in NPK fertilizer segment with the differentiated scale from small and local firms to large scale firms, covering the whole country. Due to different production processes and technologies, the quality of NPK products on the market has a large difference. This is also the segment that difficult to control in recent years.

### NPK Fertilizer Segment

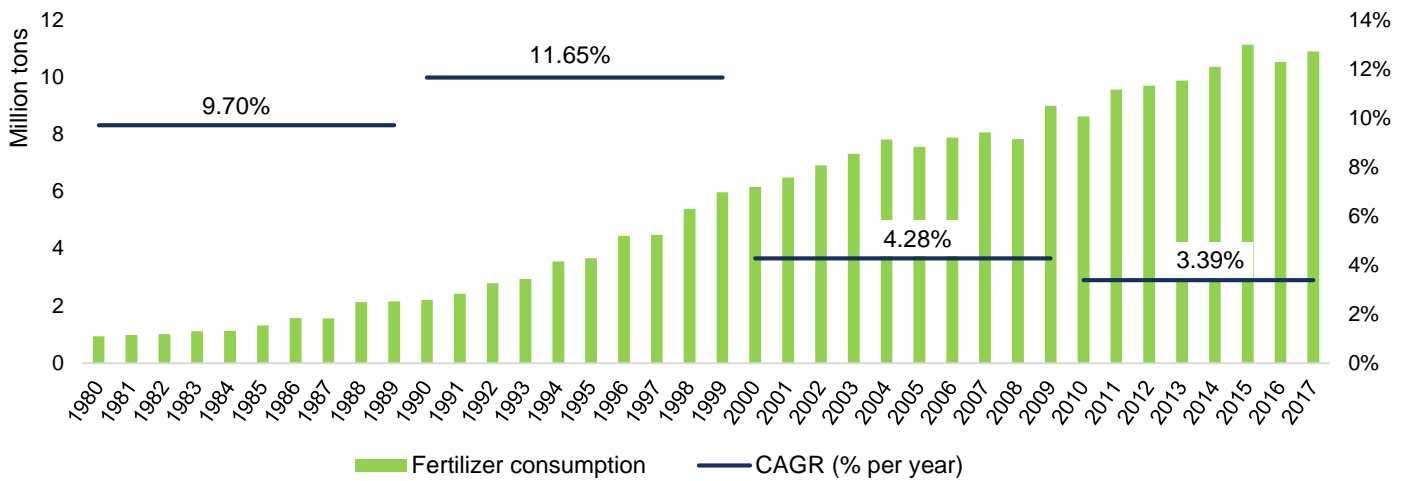
Technology	Raw material	Manufacturers	Characteristics and product quality
<b>Mixing 3 types method</b>	Single nutrient fertilizers	Small production facilities	- Small scale, rudimentary mixing method. - Nutritional ingredients are not uneven in a product unit.
<b>Steam granulation method</b>	Single nutrient fertilizers	BFC, LAS, SFG, NFC, VAF,...	- Do not require large scale and capital. - Products are limited in types and nitrogen content.
<b>Liquefied urea method</b>	Single nutrient fertilizers	BFC, Viet Nhat	- Higher quality products, supplementing medium and micro elements (TE). - Products containing N ≤ 20%, P <sub>2</sub> O <sub>5</sub> ≤ 16%.
<b>Chemical method</b>	Amoniac (NH <sub>3</sub> ) Axit Phosphoric (H <sub>3</sub> PO <sub>4</sub> ) Kali Clorua (KCl)	DPM	- Large investment costs, complex operation. - A product contains enough nutritional ingredients in predetermined proportions.

Source: FPTs Research

### 3. Stages of formation and development of the Vietnam Fertilizer Industry

- (1) Vietnam's fertilizer industry has been formed since the 60s of the twentieth century, but actually entered the development stage after the country reunited from 1975 to 1980.
- (2) 1990 – 2000: the strongest growth period with CAGR of 11.65% p.a, due to widespread of NPK fertilizers with outstanding advantages compared to the single nutrient fertilizers, boosting demand for fertilizer growth.
- (3) In the period of 2000 - 2009, the fertilizer consumption slowed down with CAGR of only 4.28% per year, while the domestic supply continued to increase.
- (4) In the period of 2010 - 2015, the consumption growth rate recovered slightly compared to the previous period, reaching 5.22% per year due to stronger growth in agricultural production in this period.
- (5) In 2016, agricultural production faced difficulties due to drought and soil salinity in the South, fertilizer consumption also decreased and there was a sign of saturation in some of products such as NPK, Urea and Phosphate fertilizers (accounting for 60% of total fertilizer demand).

### Fertilizer consumption and annual growth rate



Source: MARD, Vinachem, FPTs Research

## B. REVIEW 2018

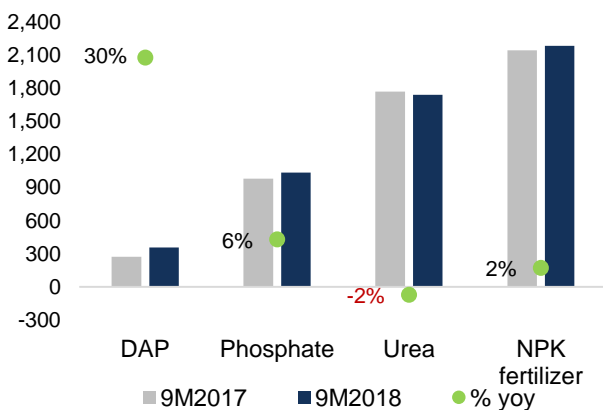
**Advantages:** In 2017 - 2018, favorable weather and increasing cultivated area are advantage factors for the fertilizer industry:

- Almost types of fertilizers production in the first 9 months 2018 increased compared to 2017, the strongest increase was DAP when the self-defense tax policy came into effect, officially from 03/2018.
- Domestic fertilizer prices also increased significantly due to the impact of rising global fertilizer prices and agricultural cyclical, especially from 10/2018.

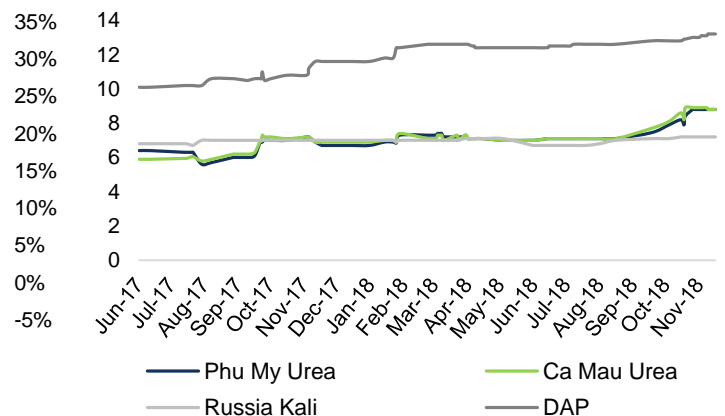
**Difficulties:** Negative influences on fertilizer industry in 2018 such as:

- Prices of energy products such as oil, gas, coal increased, which pushed up the production cost of fertilizer enterprises.
- In the opposite direction, prices of industrial crops such as coffee, pepper, rubber, etc, are low. Demand for investment to take care of these crops decreases. However, with each type of fertilizers, the above factors will have different impact on the inputs and outputs of each type.

**Main fertilizers production in 9M2018**  
(million tons)



**Domestic retail price of main fertilizers**  
(Million VND/ton)



Source: MoIT, GSO, FPTs Research



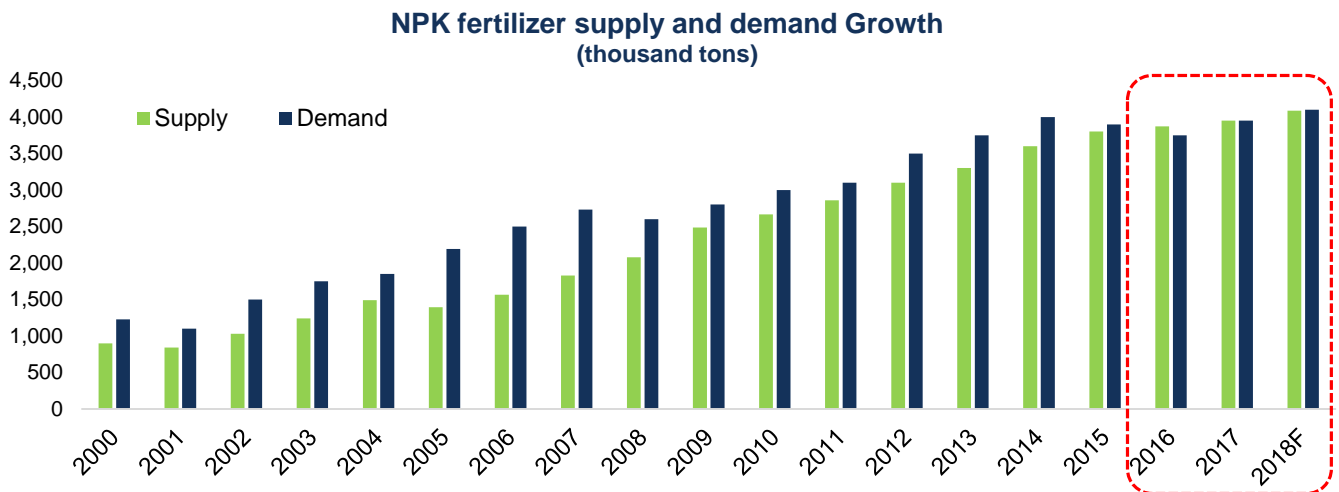
## 1. NPK fertilizers grows faster than industry average, high quality is growth motivation

**NPK fertilizer is a late-appearing but most consumed fertilizer**, accounting for nearly 40% of the total domestic consumption due to its easy mixing, convenience to use and products containing enough nutrients.

In the period 2000 - 2015, NPK consumption increased rapidly and steadily, CAGR about 8% per year, higher than the industry average growth rate. Besides, the supply also increased rapidly with CAGR about 10% per year, quickly offset the demand.

In 2016, the negative impact of weather and natural disasters on agricultural production made fertilizer demand decline and oversupply, especially NPK fertilizer, the excess supply of up to 120,000 tons.

In 2017 - 2018, NPK fertilizer demand has recovered at a slower rate than the previous period, estimated CAGR about 4.6% per year.



*Source: MARD, Agromonitor, FPT S Research*

**On the supply side, 2018 is a challenging year for manufacturers in the NPK segment.** While demand grew slowly, manufacturing enterprises continued to expand capacity, built factories, towards high quality NPK segment such as DPM, BFC. Competition in this segment was very intense, local production facilities may lose market share to large enterprises, good brand positioning and wide distribution channels in the future.

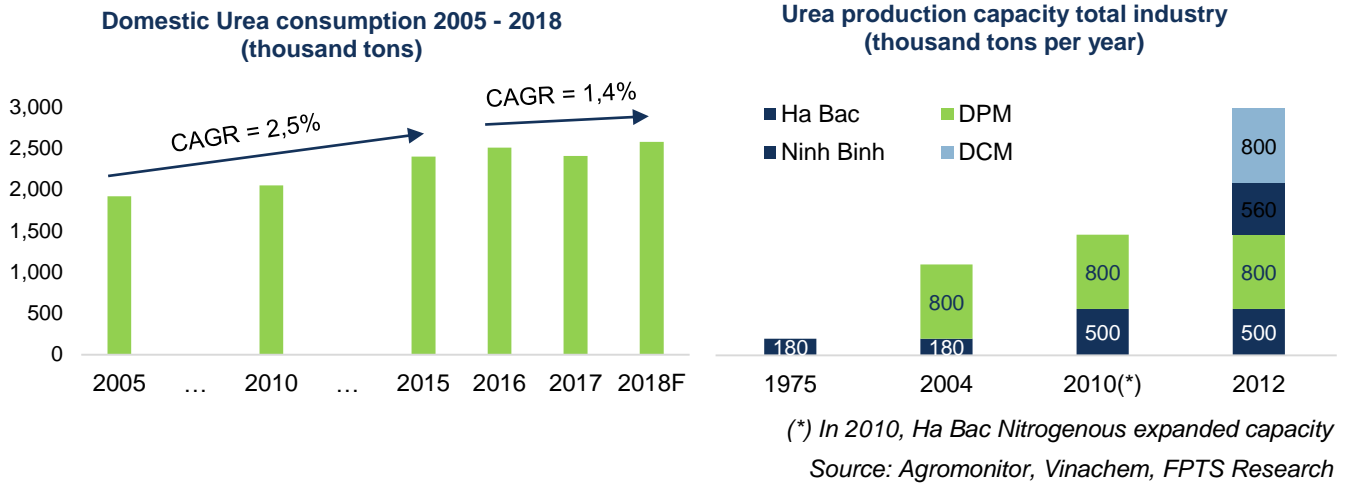
Besides, in 2018 the prices of inputs are increasing significantly from the end of 2017 until now, due to the increase of world fertilizer prices and raw material prices. In intense competition market, NPK price cannot increase accordingly. Therefore, the gross profit margin 9M2018 of most NPK enterprises decreased compared to the same period in 2017. Typically, BFC had to buy out all of input single nutrient fertilizers from other suppliers. The increase in input price will make the gross profit margin of BFC significantly decrease compared to the previous year.

## 2. Urea grows slowly, tending to shift to compound fertilizers

**Urea is the fertilizer with 2nd largest consumption after NPK fertilizer**, accounting for about 22% of the annual fertilizer consumption.

Urea is one of the earliest fertilizers since 1975, manufactured by Ha Bac Fertilizer Plant - the first fertilizer plant in Vietnam. Over 30 years of development, the growth of nitrogen fertilizer demand has started to decline.

In the period of 2005 - 2015, demand growth rate CAGR was 2.5% per year and estimated to be only 1.4% per year from 2016 to 2018 due to demand saturation and shifting trend to use NPK fertilizers.



**Currently, there are 4 nitrogen plants in Vietnam:** Ha Bac and Ninh Binh Nitrogenous (using coal) in the North, 2 plants in the South are DPM and DCM (using natural gas). Since 2012, the introduction of 2 nitrogen plants has pushed the total nitrogen capacity of the whole country to 2.66 million tons per year, while the annual demand is only about 2.4 - 2.5 million tons. Overcapacity has made nitrogen-coal factories disadvantaged due to high production costs. These factories have cut production, operating only about 40% of the plant's capacity. In 2017 - 2018, the sharp increase in global coal price made these factories more difficult, had to close due to losses. Besides, the world crude oil price also increased strongly, nitrogen-natural gas factories (DPM, DCM) were also negatively affected by the natural gas price being floating according to the world oil price

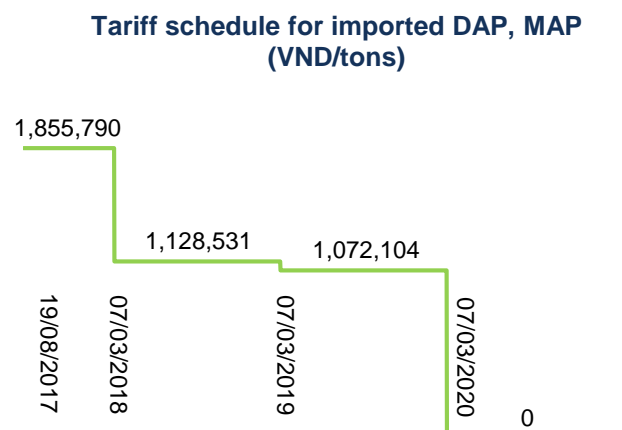
**In 2018, domestic urea price has increased significantly and increased strongly from 10/2018 to now,** this positive impacts in the short-term to the operating revenue of enterprises in the Q4 2018. However, the price increasing is inevitable when the input materials price increase sharply. The fertilizer price from beginning of the year increased more slowly than the price of raw materials, which made the profit of these enterprises decrease compared to the same period in 2017.

### 3. Phosphate: Demand for super and fused phosphate is stable, DAP benefit from self-defense tax

**For superphosphate and fused phosphate:** the demand for these two fertilizers is quite stable, growing at CAGR of 3.3% per year in the period 2000 - 2015, lower than NPK fertilizer growth rate. We believe that in the coming time, the consumption of these two fertilizers will continue to be stable, the growth potential for fused phosphate will be higher because this fertilizer is suitable for many types of soil, especially sour soil and alum soil in the lowland plains.

**For DAP fertilizer:** DAP demand in recent years has grown quite high from 400 thousand tons in 2005 to 1 million tons in 2015, corresponding to CAGR of 12%. However, the country currently has only 2 DAP plants of Vinachem, meeting 35% of domestic DAP demand, the rest must be imported.

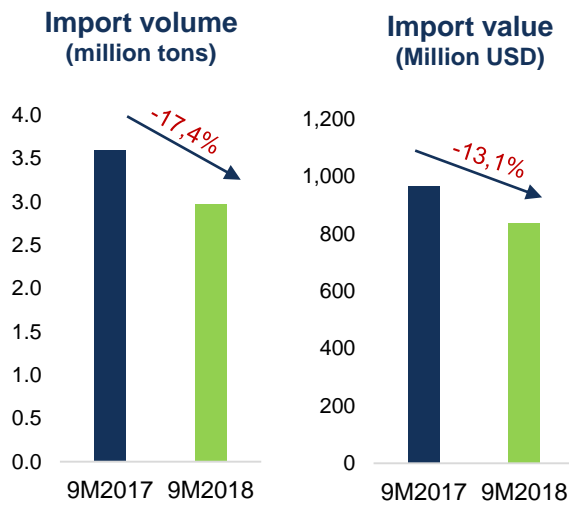
Although the growth potential for DAP is very high, domestic producers still face intense competition by imported products. Therefore, from March 2, 2018, the Ministry of Industry and Trade officially applied the self-defense tax on DAP and MAP products imported into Vietnam with the tariff schedule to 2020. Domestic DAP prices has increased sharply since the end of 2017 and will continue this trend until Q1 2020.



Source: MoIT, FPTs Research

#### 4. Imported fertilizers fell in both volume and value in 9M2018 compared to the same period last year

For SA and potassium fertilizers, the demand for these two types of fertilizer is almost saturated, fluctuating at 850 - 950 thousand tons every year. Currently, potassium fertilizer in Vietnam is not yet produced, must be imported completely. Domestic supply of SA only meets about 10% of consumption demand and no domestic SA factory has been built up, so the rest must be imported.



Sources: Vietnam Customs, FPTs Research

9M2018, the volume of imported fertilizer reached 2.97 million tons, equivalent to 839 million USD, declined 17.4% in volume and 13.1% in value over the same period 2017.

DAP imports decreased by 31.4% in volume and 21.2% in value in the first 2 quarters 2018 due to the impact of self-defense tax applied from March 2018. Besides, imported NPK and SA fertilizer also decreased.

Urea imports increased by 5.8% in volume and 18.7% in value compared to 2017. The reason is the decline in domestic urea production in the first 9 months, the shortage is offset by import.

World fertilizer prices increased quite high in 2018, so the fertilizer import for domestic distribution will not bring a significant competitive advantage compared to domestic products.

## C. OUTLOOK 2019

### 1. Development trend of fertilizer industry - Shifting to high quality fertilizer

**Shifting to high quality NPK fertilizer is the general trend of the world fertilizer industry**, improving fertilizer efficiency and Vietnam is gradually shifting to this trend. The use of high quality NPK brings a lot of benefits to farmers such as high nutrient content in 1 unit of fertilizer, slow solubility, avoid loss of nutrient source, and bring high efficiency for plants. In the coming time, we believe that the NPK fertilizer consumption will continue to increase as the trend of using high quality NPK is currently preferred.

Although NPK fertilizer has many advantages compared to single fertilizers, the use of single fertilizer for each period of plant development is indispensable. Some products meet the requirements such as granular Urea with N.Humate + Te and N.46.Plus of DCM, which are supplemented with effective Te components, ensuring a slow solubility. Along the same trend, phosphate fertilizers also need to combine between quick-dissolving and slow-release phosphate to increase the absorbing time of plants and avoid nutrient deficiency.

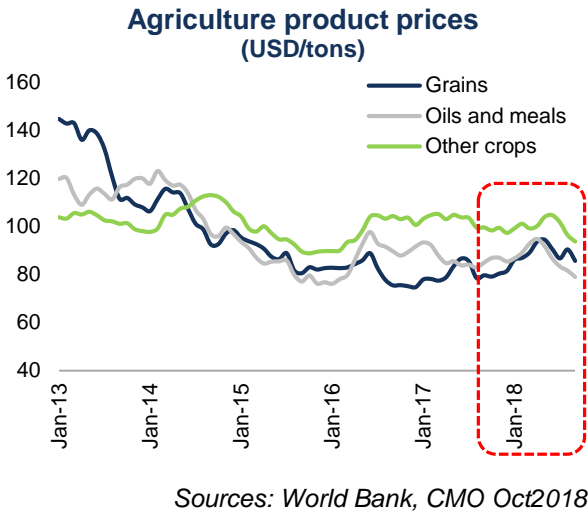
### 2. Fertilizer industry will grow slowly, some support factors in 2019

**In the medium and long term**, the agricultural supporting policies will greatly affect the fertilizer consumption because fertilizer is an input to agricultural production. According to BMI's forecast, Vietnam's agricultural production will grow at CAGR of 5.7% per year by 2025 due to the demand for domestic and export agricultural products. Accordingly, the domestic fertilizer industry will continue to grow at CAGR about 4% by 2025, according to Stockplus's forecast.

**In short term, the fertilizer demand is expected to not increase in the first half of 2019**

**(1) The first half of 2019 weather is forecasted to be complicated**

El Nino is forecast to maintain in the last months of 2018 and the first half of 2019 with the probability of about 70 - 80%. It is forecasted that in the first half of 2019, the weather will be erratic, the average temperature will increase, the rainfall will be low and may appear cold, affecting agricultural cultivation in the Winter-Spring crop 2018 - 2019.



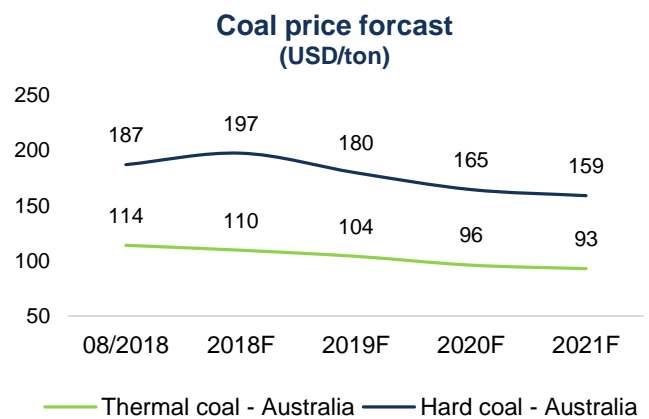
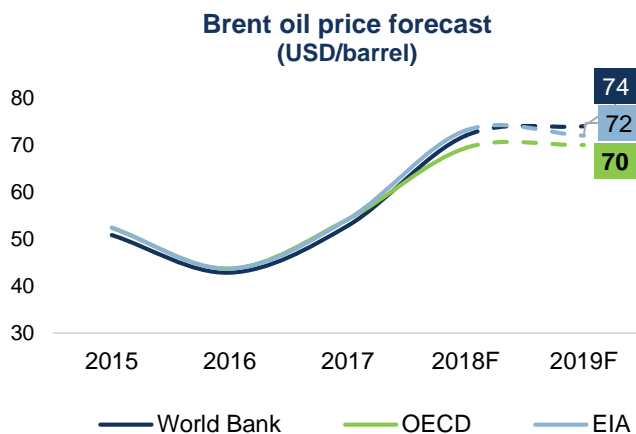
**(2) Agricultural product prices are forecasted to increase slightly in 2019**

In the second half of 2018, prices of agricultural products have gradually fallen to the bottom of 2016. According to the World Bank's forecast, the downward trend of these products will continue until the end of 2018 and forecast to increase by 2 % in 2019 due to the increase in energy costs and input fertilizers.

The above factors may adversely affect domestic agricultural production in the first half of 2019, especially industrial crops such as rubber, coffee, pepper, etc. That may make fertilizer consumption demand do not grow in short term.

**Gross profit margin of enterprises in the industry will stabilize after strong fluctuations in 2018.**

**(3) Prices of crude oil and coal are forecasted to decrease slightly in 2019, which will help reduce input costs for fertilizer enterprises**



Source: World Bank, OECD, EIA, Bloomberg

In 2018, brent oil price averaged over \$73/barrel. According to some organizations such as World Bank, OECD or EIA, brent oil price in 2019 will be stable at \$72/barrel. Coal price is also expected to decrease significantly compared to 2018, in particular, Australian hard coal price decreases from \$197.3/ton to \$179.7/ton, thermal coal decreases from \$109.5/ton to \$104/ton in 2019. After strong fluctuations in 2018, the energy price dropped slightly in 2019 will help nitrogenous enterprises improve their gross profit margin over the same period when natural gas and coal costs account for nearly 70% of the total cost of production.

#### **(4) The world fertilizer price is forecasted to grow about 2% in 2019**

Currently, world fertilizer prices have risen quite high in 2018. According to the World Bank's forecast, this price will continue to increase by about 2% in 2019 due to rising energy and input prices. Domestic fertilizer prices are influenced by world fertilizer prices with a lag, also increased strongly from the end of 2018. Forecast, domestic fertilizer prices will continue to increase slightly in 2019.

When the price of raw materials is more stable in 2019, the increase in output price will help to improve the gross profit margin of manufacturing enterprises from the beginning of the value chain. For NPK complex segment, the increase in single fertilizer price will make gross profit margin of NPK businesses decrease slightly because NPK price increases more slowly when competition of this segment is very intense.

#### **(5) The Government support policies: VAT and self-defense tax policy**

- **VAT policy for fertilizer products**

The amendment of the Value Added Tax Law No.13/2008/QH12, the new tax rate will be applied to fertilizer products of 6%, instead of not taxable under the amended law No.71/2014/QH13. The amendment of this tax law will have a positive impact on the business results of most fertilizer producers from the beginning of the value chain. Specifically, these enterprises will be deducted from the input VAT instead of adding to production cost as before. However, currently there is no official decision passed by the National Assembly, we expect that the amended Law will be officially applied from 2019.

- **Self-defense tax policy for DAP and MAP fertilizers**

The self-defense tax on DAP and MAP will help DAP, MAP enterprises take their competitive advantages in 2019 before the tax rate is 0% from March 7, 2020.



# BEER

STABLE GROWTH

RISK FROM INPUT PRICES VOLATILITY

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Movement of Beer Industry index and VNIndex



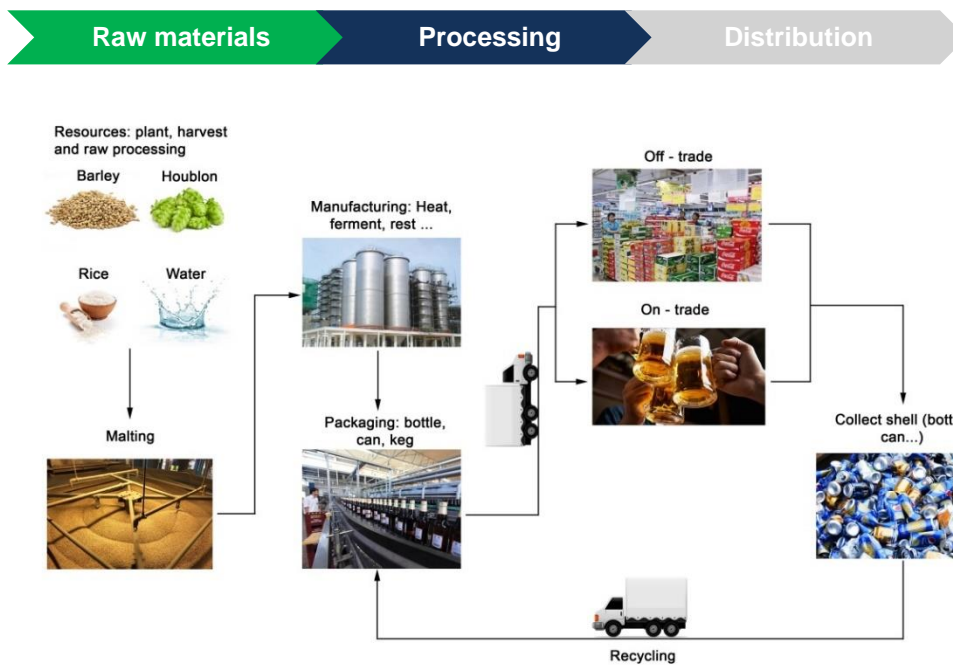
Source: EzSearch

## A. BEER INDUSTRY OVERVIEW

### 1. Vietnam Beer Industry

Beer is the one of the oldest beverages in the world which appeared 7,000 year ago. Nowadays, beer is a popular beverage, each year beer's consumption reaches hundred billion litres. Beer industry developed rapidly and created some huge globally corporation. In Vietnam, beer production has begun since the 19th century by the French. In 1875, Mr. Victor Larue - a Frenchman founded the first beer in Vietnam. This brewery is the former of Saigon Beer Corporation. Beer quickly became a popular drink in Vietnam. Today, beer accounts for 93% of the total consumption of alcoholic beverages in Vietnam. Due to the foundation of two large corporations (Sabeco, Habeco) and the globalization, Vietnam's beer industry grew sharply. Vietnam's beer production volume is among the top 10 countries in the world.

### 2. Value Chain



#### (1) Raw materials

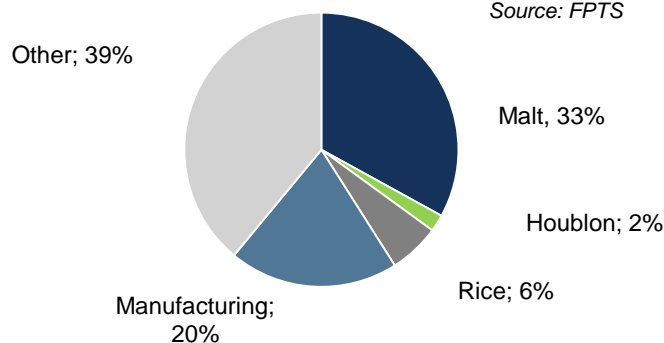
Source: FPTs Research

The input of the brewing process in Vietnam includes ingredients: Malt, Houblon hops, other carbohydrate resource, yeast, and water.



#### Cost structure of Vietnam's corporations

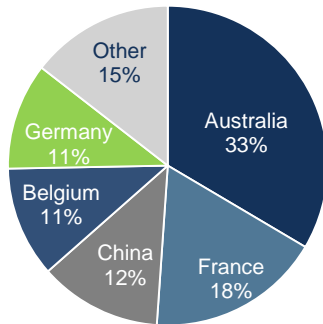
Source: FPTs



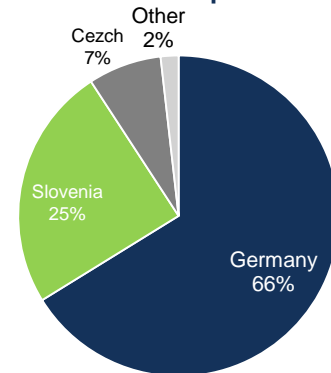
**Malt:** is the primary ingredient used in beer manufacturing process. Malt used in Vietnam is made from two row barleys (2R). Because the Vietnam’s climate isn’t suitable for barley planting, malt is mainly imported. Malt suppliers for Vietnam’s beer market are mostly from Australia and Europe.

**Houblon hop:** Houblon hops are used to increase foaming ability and create bitter favor of beer. Houblon hops grow well in Central Europe and North America, hops grown in Slovakia and Czech regions are the best quality. This material is also not available in Vietnam, the source comes entirely from imports.

**Malt supply resources for Vietnam's beer production**



**Houblon supply resources for Vietnam's beer production**



Source: UNcomtrade

**Yeast (Saccharomyces):** Yeast is essential ingredient in beer making process. There are two kinds of yeasts: ale (ale beer) and lager (lager beer). In Vietnam, most firms use lager in manufacturing beer.

**Alternative materials:** are other carbohydrate resources besides malt. Its functions are lowering production cost, and creating signature favor of beer. Cereals such as rice, wheat, corn, sweet potatoes and cassava could be used as alternative materials. In Vietnam, most firms use rice or corn due to their common.

**Water:** 90% of beer is water. Water is used to support chemical and biological reactions occur. In Vietnam, most beer manufacturers have a water treatment system.

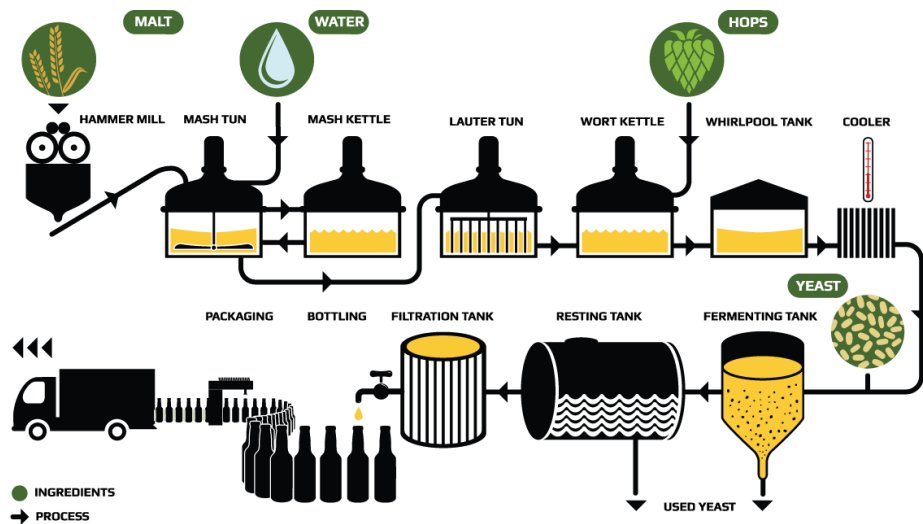
**Evaluation:** Malt and Houblon hops are materials which depend strongly on imports. The source is not available in Vietnam, so the beer industry is heavily influenced by material price movements. Moreover, shipping cost is also a factor that pushes the cost of domestic beer brewers.

## (2) Processing

The brewing process includes grinding stages, heating, boiling, fermentation, brewing, sterilizing and packaging. Each stage has absolute mandatory conditions and non – mandatory conditions which can change within an allowable range. Changing these conditions affects the taste and quality of beer thus creating differentiation in products of the manufacturers.



### Beer production process

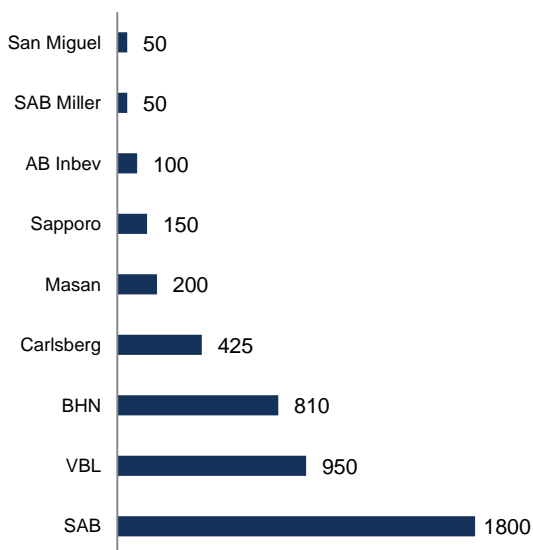


Source: FPTs Research

In beer industry, technology does not play a decisive role because brewers use similar technology. The change in the materials portion, timing of adding ingredients, brewing duration have a great influence on the taste as well as the quality of beer. This is considered as the secret of brewers to create a signature in products and bring different experiences to users.

In terms of production scale, Vietnam's total beer production volumes are more than 4 billion litres p.a. The brewery factories spread throughout the country. Big players in the industry are: Sabeco (23 factories, total capacity of 1.8 billion litres p.a), Heineken Vietnam (6 factories, total capacity of 950 million litres of beer p.a), Habeco (17 factories, total capacity of 810 million litres p.a).

**Major brewery firms capacity in Vietnam (ml litres/year)**



**Vietnam breweries allocation**



Source: FPTs Research

### (3) Products and distribution

Based on quality and price, beer would be divided into 3 product segments:

- **Premium products** have high price, high quality, sold to high-income users. The popular brands in this segment are Heineken, Truc Bach, Saigon Gold, etc. The premium segment accounts for about 10% of total market consumption.
- **Mid-price products** sold at an average price, with average quality towards most users in Vietnam. Common brands in this segment are Bia Saigon Lager, Saigon Export, 333, Bia Ha Noi, etc. This segment contributes roughly 60% in market share.
- **Economic products** have a low price and quality, mainly targeted towards low-income consumers. “Bia hoi”, which is often home-brewed, is an affordable beer in suburban and rural areas. The economy segment accounts for about 30% of total consumption.

Based on method of sales, beer produced in Vietnam is mainly consumed domestically and distributed through 2 channels:

- **On-trade channel:** is a form of consumption that buyers consume products directly at the place of purchase, usually a restaurant.
- **Off-trade channel:** is a form of consumption that buyers consume products at another location beside purchase places, such as: buying at supermarkets, grocery stores and consuming at home, or at leisure places, etc.

#### On-trade and Off-trade consumption



Source: Euromonitor International

### 3. Vietnam beer characteristics

#### (1) Large scale and rapid growth market

##### Top 10 countries with the largest market size in 2017

2017								2016		2007
2017 Rank	2016 Rank	2007 Rank	Country	Volume (bil litres)	Global market share	%yoy	10 year CAGR	Volume (bil litres)	%yoy	Volume (bil litres)
1	1	1	China	39.8	20.8%	-3.9%	0.2%	41.4	-3.7%	38.9
2	2	2	United State	21.8	11.4%	-2.6%	-0.7%	22.4	-0.3%	23.3
3	3	6	Brazil	14.0	7.3%	5.0%	3.0%	13.3	-3.8%	10.4
4	4	4	Mexico	11.0	5.8%	4.8%	0.4%	10.5	8.1%	10.6
5	5	5	Germany	9.3	4.9%	-2.0%	-1.1%	9.5	-0.7%	10.4
6	6	3	Russia	7.4	3.9%	-4.9%	-4.2%	7.8	-0.3%	11.5
7	7	7	Japan	5.2	2.7%	-2.1%	-1.8%	5.4	-1.9%	6.3
8	8	8	United Kingdom	4.4	2.3%	0.7%	-1.5%	4.4	-0.9%	5.1
9	9	9	Poland	4.1	2.1%	-2.1%	1.3%	4.1	1.1%	3.6
10	10	25	Vietnam	4.0	2.1%	5.7%	8.3%	3.8	9.3%	1.8

Source: MoIT, Kirin Holding

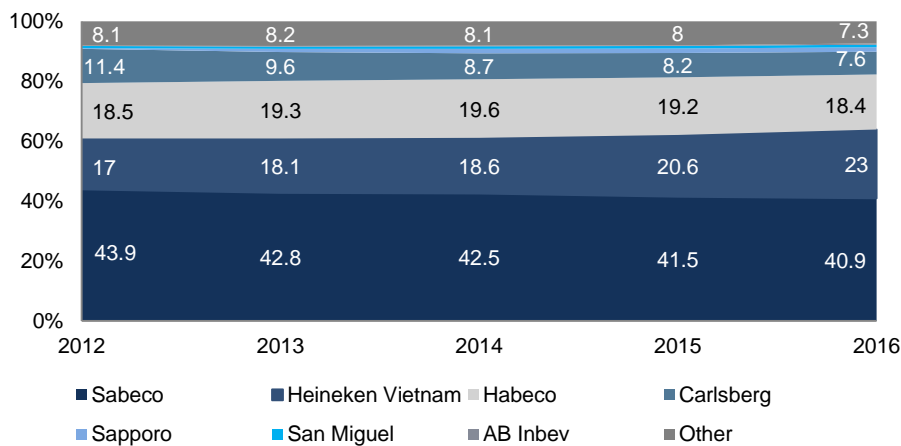
Vietnam is one of the largest beer markets in the world. Specifically, the total consumption of beer in 2017 reached 4 billion litres, accounting for 2.1% of the total global beer consumption, ranked 10<sup>th</sup> in the world and 3<sup>rd</sup> in Asia (after China and Japan).

In 2017, the industry growth rate was 5.7%, the highest among the top 10 countries. Considering the 10-year period (from 2007 to 2017), Vietnam's CAGR reached 8.3%, the highest in this group. In the period of 2007 - 2017, Vietnam market size increased 15 ranks from 25<sup>th</sup> to 10<sup>th</sup> in the world.

## (2) High concentration, market share by region

Vietnam beer market currently has a high concentration, 04 key players are Sabeco, Habeco, Heineken Vietnam, and Carlsberg have accounted for 90% market share, the remaining 10% is from Sapporo, San Miguel and other local brewers.

**Domestic beer market shares in 2012 - 2016**

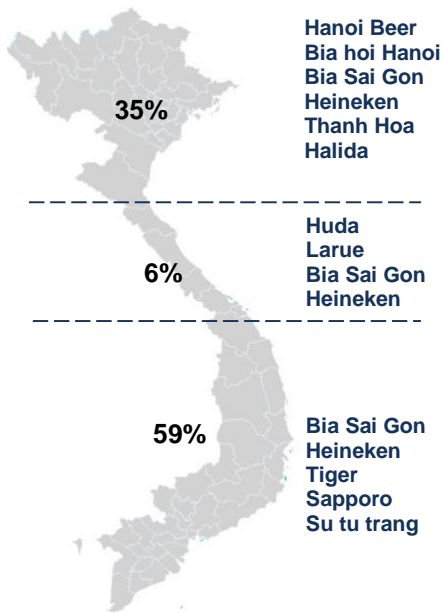


Source: Euromonitor International

- **Saigon Beer – Alcohol – Beverage Corporation** (Sabeco - [SAB](#)) is the largest beer company in Vietnam with 23 factories and a nationwide distribution system. Sabeco accounts for 40.9% of the beer market in Vietnam. The company has maintained its leading position in beer industry by owning various famous brands, especially in the mid-end segment such as Saigon Lager, Saigon Export, 333, etc.
- **Heineken Vietnam** is a joint venture enterprise, a partnership between Singapore-based Heineken and Saigon Trading Joint Stock Company (Satra). The holding rate is 60% and 40% respectively. This is the business that owns the famous beer brand in the world as well as in Vietnam, Heineken and Tiger. In the period of 2012 - 2016, the market share of Heineken Vietnam is constantly expanding. Currently, this enterprise accounts for 23% of the beer market, the second largest in Vietnam.
- **Hanoi Beer – Alcohol – Beverage Corporation** (Habeco - [BHN](#)) is the largest beer company in the North and the third largest in Vietnam. Habeco owns 17 manufacturing plants and a large distribution system in the North. In recent years, Habeco has a declining market share. In 2015, this enterprise lost its second position in the beer industry to Heineken. Currently, Habeco accounts for 18.4% market share.
- **Carlsberg Vietnam** is a subsidiary of Carlsberg (Denmark) - the sixth largest beer group in the world. In Vietnam, Carlsberg distributed Carlsberg-branded products and acquired local beer brands such as Hue (Huda), Halida.

In recent years, enterprises with Vietnamese beer brands such as Sabeco (Saigon Export, 333, etc.), Habeco (Truc Bach, Bia Ha Noi, etc.), Carlsberg (Huda) all tend to reduce market share. Meanwhile, Heineken with foreign beer brands (Heineken, Tiger, etc.) increased their market share significantly. This shows that Vietnamese beer brands are losing their position in the competition. Foreign beer brands such as Heineken with brand positioning in premium segment are growing strongly due to the trend of using high quality products of Vietnamese people. Inheriting the parent company's global experience and marketing strategy helps foreign brewers made a strong impression on consumers, especially in the premium segment.

### Beer consumption based on geography



Source: Euromonitor

According to geographical areas, Vietnam market is divided into 3 regions of North, Central and South:

**North:** accounts for about 35% of the domestic beer consumption. Leading market share in this area is Hanoi Beer, followed by Heineken and Tiger of Heineken Vietnam and Saigon Special, 333 of Sabeco. Halida, a mid-price brand beer is consumed largely in Thanh Hoa, Nghe An provinces.

**Central:** Characterized by a small population and not many urbans. The central region accounts for 6% of total consumption of the beer industry. This is the main consumption area of Hue Brewery (owned by Carlsberg) with Huda beer brand, leading the regional competition. Next is Larue beer and products of Saigon beer & Heineken beer, etc.

**South:** The strongest beer consumption area in Vietnam, accounting for 59% of the total consumption of the whole industry. Sabeco is the leader in beer market share in this region. With a larger market size than the Northern and Central regions, good exploitation of the Southern market (favorable conditions such as per capita income, climate and drinking culture), Sabeco has become the leading enterprise in Vietnam. This is also where Heineken Vietnam places headquarter and where foreign beer businesses choose to penetrate the domestic market.

### (3) Premium trend

In the period of 2014 - 2017, CAGR of premium segment reached 15%, whereas the economy segment had a low CAGR, only 4.8%, indicating that Vietnamese people tend to switch to advanced products. This can be explained by the following reasons:

- Vietnamese people drink beer to enjoy beer flavor, in addition to expressing social position, building relationships. Hence, they are willing to spend a lot of money to use premium beer, famous brands.
- Vietnam's GDP per capita has increased from \$2,012 in 2014 to \$2,343 in 2017. As a result, the proportion of people in high and middle class also increased sharply, which caused their consumption trends to change to use products with higher prices.
- Large number of Vietnamese people believes that imported products have better quality. Since then, the consumption of imported premium products increases as soon as consumers are able to afford the price.
- The trend of using high quality and verified products in order to limit the impact on health.

Due to the above trends in the beer industry, businesses are increasingly focusing on the premium segment - where the profitability is higher but also requires a more fundamental business strategy.

- **Heineken Vietnam:** With its experience in premium products and the advantage of inheriting marketing campaigns from the parent company, Heineken dominated this segment. Recently, the company also acquired Carlsberg's Vung Tau brewery and planed to expand its capacity from 50 to 650 million litres p.a.
- **Sabeco:** Strategy of hiring foreign consultants to advertised for Saigon Special beer products has gained huge achievements. With Saigon Special brand, Saigon beer is considered to have the second market share in the premium segment. Thai Bev's acquisition of Sabeco at the end of 2017 is expected to improve the business's management activities, enhance competitiveness, especially in the premium segment.
- **Habeco:** Participates in the premium segment by rebuilding a product that used to be a trademark of Hanoi - Truc Bach Beer. However, this product has not been able to confirm its position as expected by business leaders.

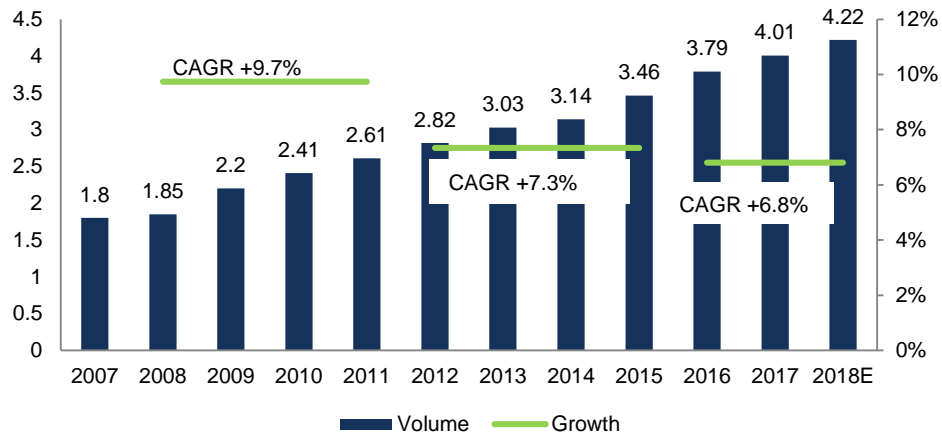
## B. REVIEW 2018

### 1. Beer industry increased by 5.7% in total volume, reached 4.2 billion litres

In 2018, Vietnam's beer industry has about 110 manufacturing enterprises, widely distributed in regions with an estimated production output of 4.3 billion litres of beer, estimated consumption volume of 4.2 billion litres. Thus, it is likely that Vietnam will surpass Poland to become the world's 9<sup>th</sup> largest beer market.

Consumption growth is estimated at 5.7%, equivalent to the growth rate in 2017. Vietnam continues to be the fastest growing market among the 10 countries with the largest market size.

**Vietnam's total beer consumption volume 2007 - 2018**



Source: MoIT, Euromonitor International

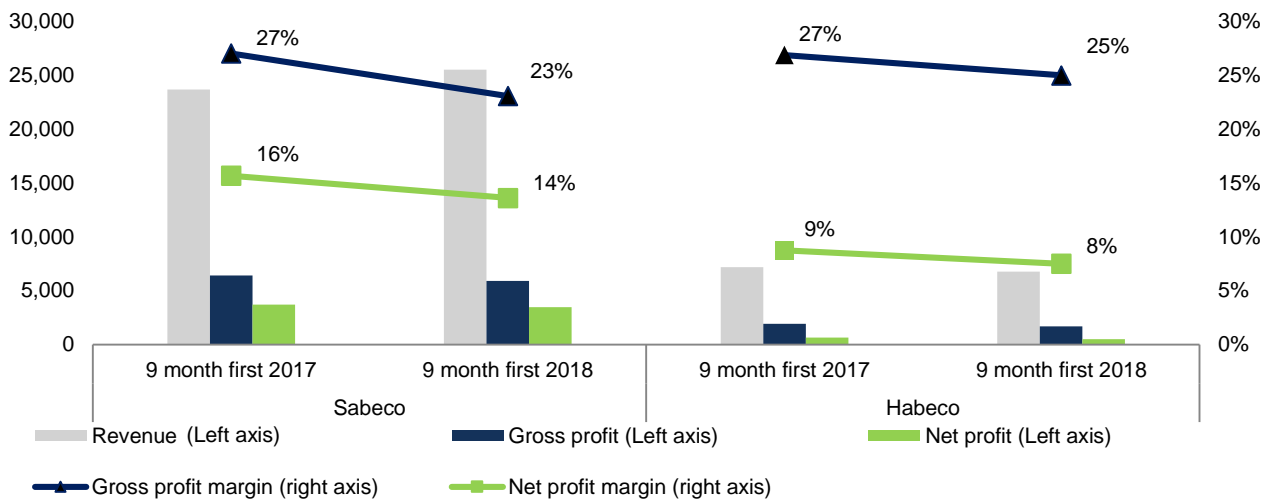
The growth of the beer industry is showing signs of slowing down, the last 3 years of the growth rate are all lower than those of the previous periods. Specifically, in the period of 2007 - 2011 CAGR reached 9.7%, the period from 2012 to 2015 CAGR was 7.3%, while the period from 2016 to 2018 was only 6.8%. However, the trend of declining growth rate is also weakening, the growth rate of 2018 is equivalent to the growth rate in 2017. This shows that the market has undergone a rapid growth period and the beer industry growth is gradually more stable.

### 2. The profit margin of the industry decreased due to increasing material costs

Business results for the first 9M2018 of beer companies showed a decline in profit margin. Specifically, Sabeco's accumulated 3Q2018 business results recorded a gross profit margin of 23%, net profit margin of 14%; these two indicators in the same period in 2017 were 27% and 16% respectively. Habeco's accumulated results in the first 3Q2018 recorded gross profit margin of 25%, profit after tax margin of 8%; These two indicators in the same period in 2017 were 27% and 9% respectively.

Increasing input costs mainly cause the profit margin of beer industry declined in 2018. Specifically, the average barley grain price in the 9M2018 is \$127/ton (+30% yoy). The average rice price in the 9M2018 reached \$424/ton (+6% yoy). Special consumption tax increased from 60% to 65% in 2018, this tax burden was not transferred to end users, which also contributed to reduce the profitability of enterprises in the industry.

### Profit margin of Sabeco and Habeco in the first 9 months of 2018



Source: Sabeco, Habeco

## C. OUTLOOK 2019

### 1. Beer industry growth ranges from 5% to 6%

In 2019, the demand for beer consumption in Vietnam market is forecasted to grow well:

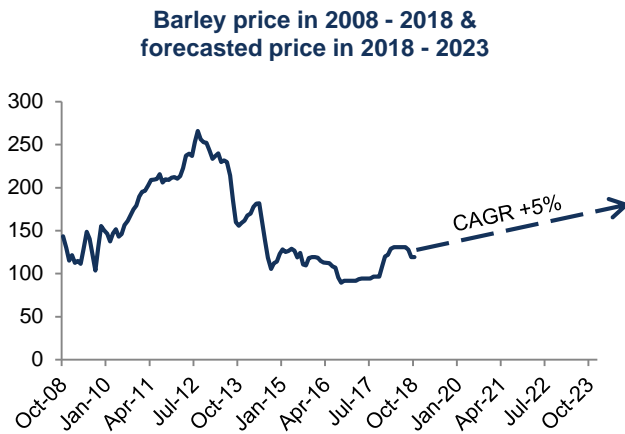
- Vietnam is an emerging economy in Asia, GDP growth has reached over 6% over the past few years, improved per capita income is the factor that promotes consumption of essential goods products, like beer in particular.
- Culture of eating and drinking of Vietnamese people preferred beer. Occupying 93% of alcohol consumption, beer is the most popular drink in Vietnamese meals. The use of beer through on-trade channel also helps beer consumption is not limited compared to beer consumption at home or in other locations.
- The population structure of Vietnam will still be in the golden population period (the period with the highest proportion of working age people) in at least next 10 years. The large number of potential consumers sustained for a long time is the driving force for beer demand in the market to grow.
- Vietnam currently has quite high beer consumption per capita. However, compared to other countries with similar culture and human health condition, this index is still lower than Korea and Japan, even Vietnam has hot favorable weather for beer consumption. Therefore, it is likely that this index will continue to increase in the coming years (Comparing Vietnam's per capita beer consumption with Western countries is not suitable, because of physical differences and drinking culture).
- Vietnam's urbanization rate is the highest in Asia, the proportion of people living in urban areas has increased from 28.2% (in 2007) to 35% (in 2017), this momentum is expected to continue to rise. The large number of people living in urban areas, with many restaurants, leisure services and social relationships is the reason for the average beer consumption per capita in this area is higher than in rural areas. Therefore, the process of urbanization is also a factor that benefits Vietnam beer market.

**Industry growth is hard to surpass the growth rate in 2018** due to the downward trend of growth rate that has been maintained for the past 10 years. FPTS forecasts beer industry growth in 2019 at the same level as 2018, among 5% and 6%.

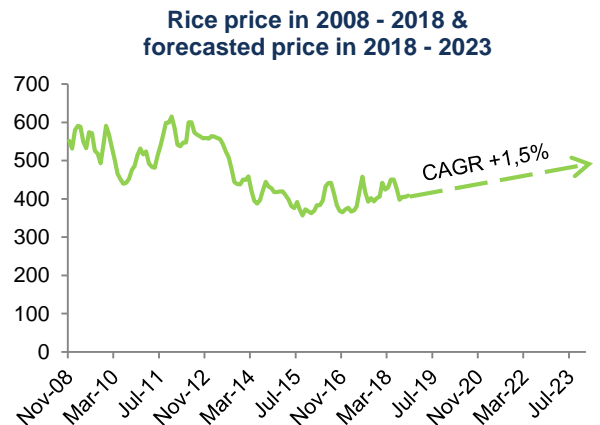
## 2. Industry profit margin decreased due to rising raw material prices

Some ingredients for beer production in Vietnam tend to increase in 2019, which are malt and rice.

Malt is produced from barley grain so it is directly affected by world barley price. Due to the reduction in barley area in Europe, barley prices increased by 25% in 2018 and are forecast to continue to increase by about 10% in 2019 (according to World Bank). Accounting for 33% of the cost structure, malt directly affects the cost of beer businesses. In 2018, rice prices increased by about 6%. Rice prices are forecast to increase by about 2% in 2019.



Source: World Bank, Indexmundi



Source: World Bank, Indexmundi

Houblon hops do not account for a large proportion of the cost structure, so they do not have much impact on the profit margin of the industry. However, the lack of hops resources may be a potential risk for businesses. Specifically, in 2018, the world supply of hops only met about 80% of the demand. This situation might continue in 2019.



# SUGAR

## EXPECTED REBOUND IN SUGAR PRICE TILL 2020

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**Movement of Sugar Industry index and VNIndex**



Source: EzSearch

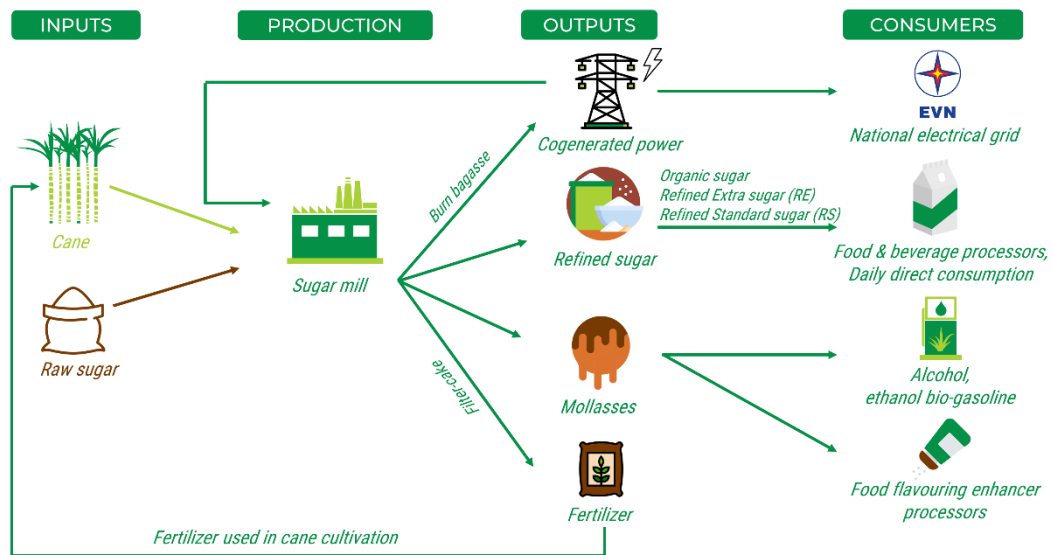


## A. VIETNAM SUGAR INDUSTRY OVERVIEW

Sugar is one of basic and essential commodities, used directly in daily life and as an input for food & beverage industry, which contributes 15% to Vietnam's GDP 2017. Sugarcane and imported raw sugar are the inputs of sugar production. Sugarcane is supplied from mills' planting areas and purchased from farmers. Sugarcane accounts for more than 90% of the input proportion in extracting sugar. Sugar production from sugarcane includes following steps: purchasing sugarcane, crushing sugarcane, centrifuging cane to sugar and other sub-products. Purchase price of sugarcane accounts for about 70% of the sugar production cost.

Raw sugar is imported by sugar mills and food processors every year and can be used for year-round refining sugar. In 2018, raw sugar import volume were around 144,000 tons of sugar (10% of production), mainly imported according to WTO quota and sugar from SBT's mill in Attapue (Laos).

### Vietnam Sugar Value Chain



Source: FPTs Research

### (1) Natural and weather conditions affect sugarcane quality

Sugarcane crushing period usually lasts for 4 - 5 months. Mills start crushing cane from December to May of the following year. The sugarcane planting area of Vietnam reached nearly 250,000 ha (2017/18), of which, mainly concentrated in the Central Coast and Central Highlands (48%). Natural and weather conditions have a great influence on sugarcane quality such as cane's yield and sugar content level.

#### Cane production in Vietnam (crop year 2017/18)

	Planted area (ha)	Yield (tons/ha)	Cane production (tons)	Sweetness (CCS)	Note
North & Northern Central	67,350	56	3,902,395	9.79	► Favorable natural conditions bring high level of sugar content in cane (sweetness)
Central Coast – Central Highlands	119,060	60	5,779,913	9.10	► The largest sugarcane plantation area in country, average yield and average sugar content due to unfavorable weather factors
Southeastern	25,570	72	2,021,504	9.20	► Small planting area due to competition with other crops, less affected by weather conditions
Mekong Delta	36,950	75	1,752,825	9.92	► Highest yield and level of sugar content
<b>Total</b>	<b>248,930</b>	<b>65</b>	<b>13,456,637</b>	<b>9.45</b>	

Source: Vietnam Sugarcane and Sugar Association (VSSA), FPTs Research

## (2) Small scale of production compared to direct competitor - Thailand

In 2017/18, Vietnam produced 1.4 million tons of sugar (0.7% global shares). Within the country, Vietnamese mills face intense competition with cheap smuggled sugar from Thailand, the #4 sugar producer in the world. Currently, there are 38 sugar mills operating nationwide, of which 22 mills have small production capacity, (crushing less than 3,000 tons cane per day - TCD), producing ~300,000 tons sugar p.a (28% market share).

### Cane and Sugar production in Vietnam and Thailand (2017/18)

CANE	Planted area (ha)	Yield (tons/ha)	Cane production (tons)	Sweetness (CCS)	Cane price (VND/ton)	
Vietnam	248,930	65	13,456,637	9.5	900,000 – 1,200,000	
Thailand	1,758,158	77	134,929,298	12.5	600,000 – 700,000	
SUGAR	Number of mills	Crushing capacity (TCD)	Sugar production (tons)	Kg sugar/ ton cane	Tons sugar/ ha	Production cost (VND/kg)
Vietnam	38	153,750	1,421,000	100	5	13,000 – 15,000
Thailand	54	850,000	14,679,559	109	8	8,000 – 9,000

Source: VSSA, Thailand's Office of the Cane and Sugar Board (OCSB) , FPTS Research

### Sugar Production in Vietnam (2017/18)

	Number of mills	Crushing capacity (TCD)	Cane/Sugar	Tons sugar/ha	Mills of listed companies
North & Northern Central	11	41,950	9.67	5.24	<a href="#">SLS</a> (01), <a href="#">LSS</a> (02)
Central Coast – Central Highlands	14	69,700	10.67	5.29	<a href="#">QNS</a> (02), <a href="#">KTS</a> (01), <a href="#">SBT</a> (04)
Southeastern	5	19,800	11.82	7.17	<a href="#">SBT</a> (04)
Mekong Delta	8	22,300	11.48	6.87	
<b>Total</b>	<b>38</b>	<b>153,750</b>	<b>10.66</b>	<b>5.67</b>	

Source: VSSA; FPTS Research - \*There is one more mill of SBT located in Attapue (Laos)

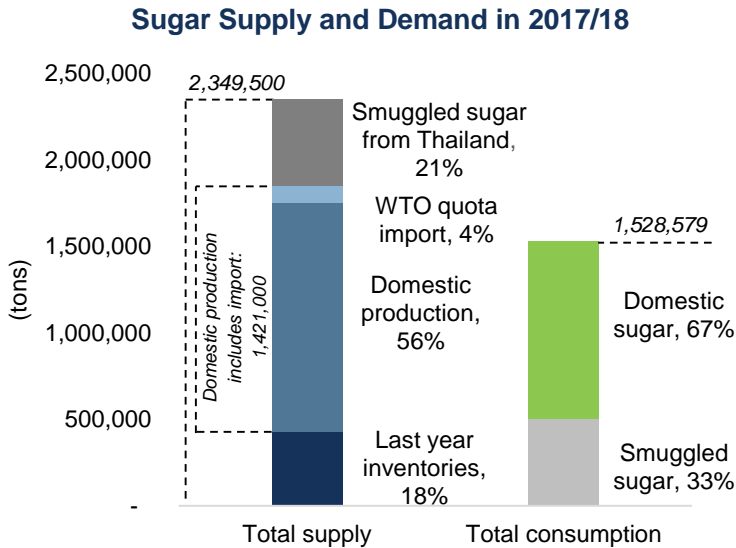
## (3) Few mills are able to produce Refined Extra (RE) Sugar

Outputs of raw sugar are RS sugar and RE sugar. Only mills with extra refining line are able to process raw sugar to RE year-round. Meanwhile, sugar cane can produce for more sub-product or by-sugar products.

- **Sugar products:** consumed directly and are main inputs of the food & beverage industry.
  - **RS (Refined Standard)**, white sugar, used in food processing and direct daily consumption.
  - **RE (Refined Extra)**, refined sugar with high quality, able to meet the demand input of carbonated soft drinks and high quality confectionery. RE has a selling price of 10% higher than RS due to higher quality and less supply (only 33% of the domestic sugar). Currently, there are only 5 enterprises capable of producing RE sugar, which are: SBT, LSS, SLS, NIVL and KCP Vietnam.
- **Organic sugar** is good for health and has a higher selling price than normal sugar at 20% - 30%. Firms like LSS and SBT are developing this product to gain added value.
- **Cogeneration:** Bagasse used to burn and generate electricity for the plants. Mills with a crushing capacity greater than 6,000 TCD (SBT, QNS, LSS) can gain advantage of scale and able to sell electricity to national electrical grid. The selling price of cogeneration electricity is currently at 5.8 Uscents/Kwh (1,350 VND/Kwh), and is being considered by the Government to raise the selling price to the same level as biomass electricity, about 7 Uscents/Kwh (+20%).
- **Fertilizer, micro-organic fertilizer:** Filter cake is used to make fertilizers and micro-organic fertilizers.
- **Molasses:** processed to alcohol & ethanol bio-gasoline; or used in processing food flavoring enhancer.

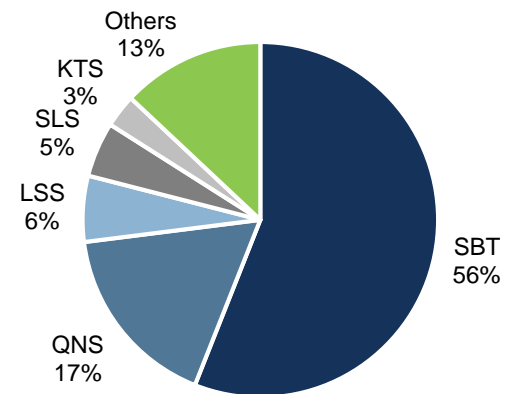
## B. REVIEW 2018

### 1. Supply & Demand situation – Smuggled sugar accounts for 30% total consumption



Source: VSSA, FPTs Research

### Domestic sugar market share 2017/18



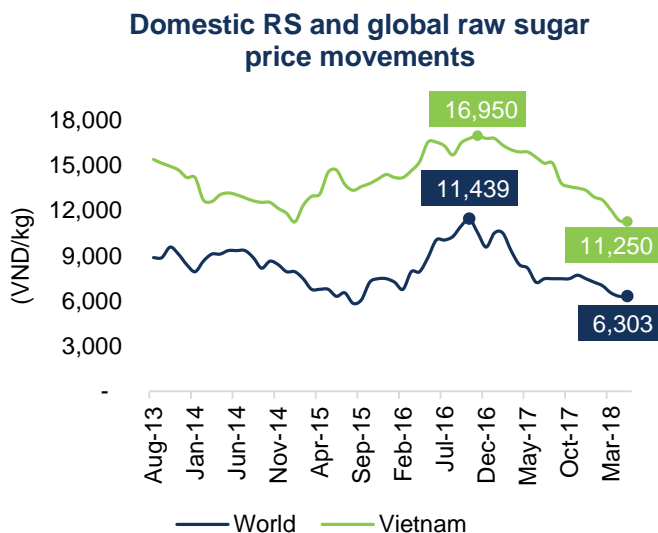
Source: VSSA, FPTs Research

In 2017/18, Vietnam produced 1.4 million tons of sugar, including 94,000 tons of sugar imported under WTO quotas and more than 1.3 million tons of sugar produced from sugarcane and raw sugar imported out of quota. Along with the inventory of sugar from 2016/17 at 430,000 tons of sugar, the domestic sugar industry was able to meet the demand of 1.5 million tons of sugar in the past year.

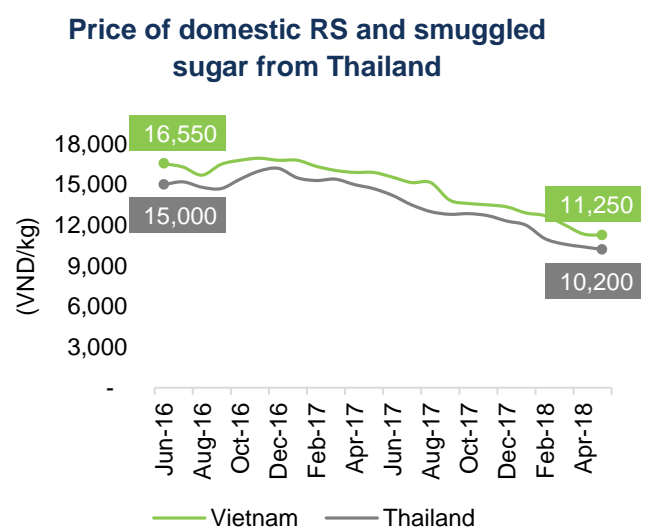
However, due to competition in price and quality with about 500,000 tons of cheap smuggled sugar from Thailand (estimated by VSSA), corresponding to more than 30% of total domestic consumption, making Vietnam sugar inventories amounted to 800,000 tons in this crop year.

Currently, Vietnam is applying WTO sugar import quotas with a 5% tax rate and allowing enterprises to import non-quota sugar at the tax rate of 80% - 85%. It is expected that by 2020, this quota will be removed and facilitated for imported sugar. This will greatly affect the domestic sugar industry. We will analyze details in section "[Pressure from ASEAN Free Trade Agreement - ATIGA](#)".

### 2. Sugar price slumped in 2017/18



Source: Indexamundi, DoPM, FPTs Research



Source: DoPM, VSSA, FPTs Research

The 2017/18 season is a difficult period for the world sugar and Vietnamese sugar industry. In May 2018, world raw sugar price fell to 10.4 UScents/pound (6,300 VND/kg) due to global excessive supply. Sugar production in 2017/18 reached 191.8 million tons (+10.3% yoy), consumption reached 174 million tons (+2% yoy). This situation comes from record production in major sugar producing countries in the world such as India (+46% yoy), Thailand (+37% yoy) and EU (+15% yoy).

Meanwhile, Vietnam's sugar price decreased by 35% compared to 2016/17, down to 11,250 VND/kg, due to the influences of the following factors:

**(1) Pressure from ASEAN Free Trade Agreement - ATIGA:** On January 1st 2018, the ATIGA was expected to go into effect. This agreement has 02 main issues affecting the Vietnamese sugar industry.

[\(back\)](#)

### Effects of ATIGA on Vietnam Sugar Industry

Before ATIGA	After ATIGA
<p><b>1. Import Quota:</b> Quota under WTO agreement (94,000 tons of sugar in year 2018, increase 5% p.a) and agreement between Vietnam - Laos (50,000 tons, 2.5% tariff).</p>	<p>1. <b>Remove quota</b> imported from ASEAN countries.</p>
<p><b>2. Tariff:</b> In quota: 5% Out of quota: 80% - 85%</p>	<p>2. <b>Tariff</b> among ASEAN countries remained at <b>5%</b>.</p>
<p>→ Due to the fact that Vietnam located near Thailand (#4 sugar producer, #2 sugar exporter in the world), domestic sugar will face great competition with cheap Thai sugar flowing into Vietnam. This is the main competitor of the whole industry as well as domestic sugar enterprises.</p>	
<p>→ ATIGA is <b>suspended until January 1<sup>st</sup> 2020</b>. This is a 1-year opportunity for Vietnam sugar to reduce the competition gap with Thai sugar.</p>	

**(2) Smuggled sugar from Thailand across the Southwest border:** Smuggled sugar from Thailand is cheaper than domestic RS about 10%. Smuggled volume of up to 400,000 - 500,000 tons/year (30% of total consumption in Vietnam), lead to high domestic sugar inventories of over 800,000 tons in May 2018.

**(3) HFCS sweetener with 0% tariff, no quota from China:** Because HFCS is 10% cheaper than domestic white sugar, its sweetness is 1.2 times higher than cane sugar, HFCS is used by many small and medium food processors. The level of HFCS sweetener imported to Vietnam in 2017 is up to 89,434 tons (7% of the demand for sugar in Vietnam).

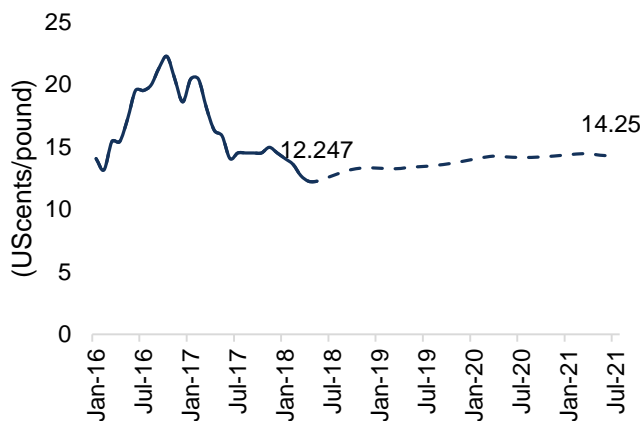
## C. OUTLOOK 2019

### 1. Rebound of world sugar price in 2018/19

Crop year 2017/18 is a difficult period for the world sugar industry. In May 2018, world raw sugar price fell to 10.4 UScents/pound (6,300 VND/kg) (-33% yoy) due to global oversupply. Sugar production reached 191.8 million tons (+10.3% yoy), consumption reached 174 million tons (+2% yoy). This situation comes from record production volume in major sugar producing countries in the world such as India (+46% yoy), Thailand (+37% yoy) and EU (+15% yoy).

In October 2018, the price of futures contract on raw sugar delivered in March 2019 increased by more than 20% over the previous month, to 13.25 UScents/pound (6,820 VND/kg). According to the forecast of the ISO (International Sugar Organization) and USDA (USA Department of Agriculture), sugar price will recover in 2018/19, the global sugar supply is forecast to decrease by 2%, reaching 188 mil tons of sugar, due to:

**World sugar price forecast in 2018 - 2021**



**(1) Drought** makes production output in Brazil and EU forecast to decrease by 12% and 4% respectively. These players are #1 and #3 producers in the world.

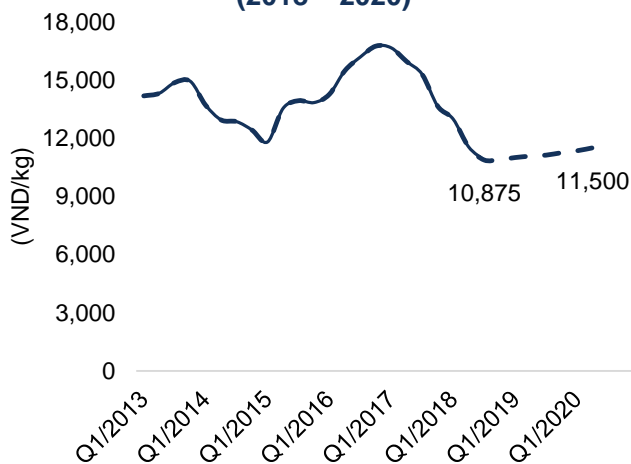
**(2) Trend of using sugarcane to produce ethanol in Brazil, India and Thailand:** the world sugar price declined steeply, making sugar factories in major producing countries shift to produce ethanol from sugar cane to meet their ethanol domestic demand, causing world sugar supply to decline.

Source: ISO, USDA, Rabobank, WorldBank, FPTS Research (According to USDA – USA Department of Agriculture)

### 2. Domestic sugar recovers till 2020

From the analysis of factors affect domestic sugar price, FPTS forecast the domestic wholesale price of RS sugar as below:

**Forecasted domestic RS sugar wholesale price (2018 – 2020)**



Source: FPTS Research

#### **(1) Postponing ATIGA, domestic sugar is not yet competing with Thai sugar**

In 2017/18, Vietnam sugar industry faced more than 500,000 tons of smuggled sugar from Thai and HFCS sweetener with 0% tariff, no quota from China.

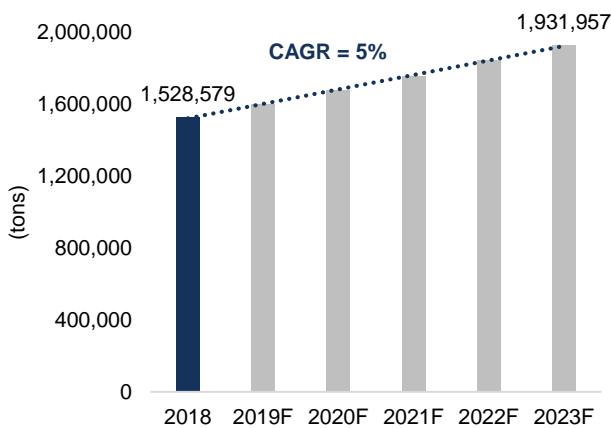
On January 1<sup>st</sup>, 2018, ASEAN's ATIGA Trade Agreement is expected to enact. Meanwhile, food & beverage processors were waiting to import Thai sugar with cheaper price has made domestic sugar price drop dramatically. The postponement of the ATIGA until the end of 2020 will pause the direct import in large quantities of Thai sugar into Vietnam. Domestic sugar prices might not be able to increase sharply but will **recover again in the following year.**

Besides, Vietnam Sugarcane and Sugar Association (VSSA) has proposed to the Government to develop a policy mechanism to manage and develop the sugar industry sustainably. If approved, these policies will have positive impacts on the whole Vietnamese sugar industry, including:

- Draft of “Sugar and Sugarcane Act”
- Sugarcane development fund, profit sharing policy between sugar mills and farmers
- Sugarcane plantation planning to 2020 and vision to 2030, forming sugar mills with over 6,000 TCD crushing capacity and power plants complex
- Protection and limitation on HFCS sweetener from China

**(2) Demand for domestic sugar will grow 5% in the period of 2019 - 2023**

**Forecast domestic sugar demand (2019 – 2023)**



Source: FPTs Research

Currently, Vietnamese people is consuming more than 1.5 million tons of sugar per year, equivalent to 16 kg/per capita per year, which is 7 kg lower than the world average. We forecast that the demand for domestic sugar consumption will increase about 5% in 2023, compared to the current level, consuming nearly 2 million tons of sugar according to following factors:

- Vietnam’s population growth rate in the period of 2019 – 2023 is 1.12% p.a (IMF)
- Sugar consumption growth rate in developing countries is 2% p.a (OECD)
- Vietnam’s food and beverage sector growth rate is 11% p.a (OECD)
- Forecasted average sugar consumption growth reaches 5% p.a (OECD)
- Past sugar consumption growth was 5% p.a (USDA)



# POWER SUSTAINABLE GROWTH

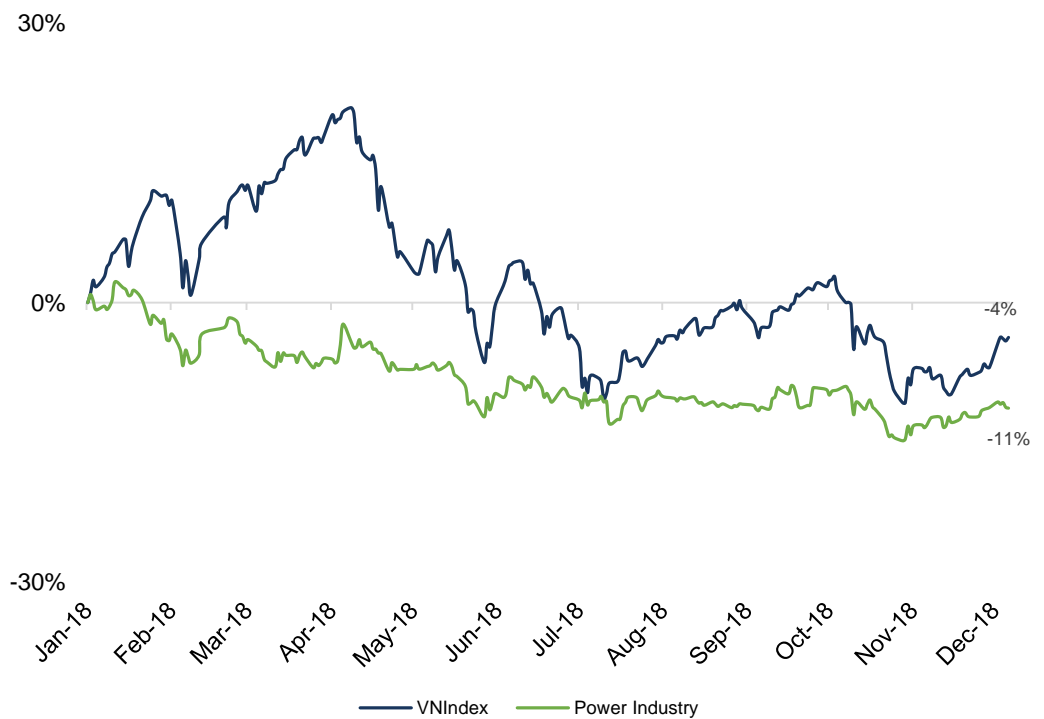
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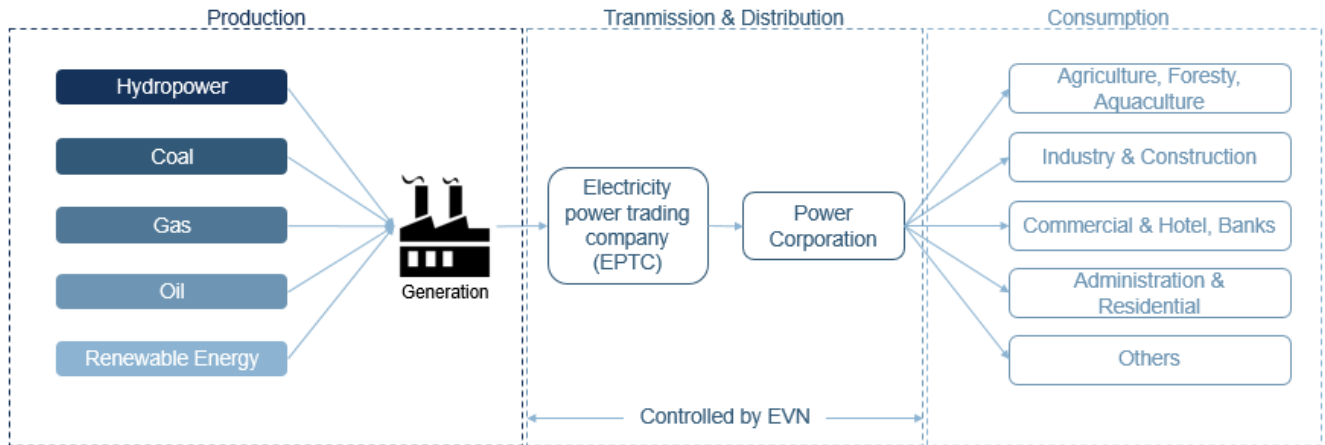
**Movement of Power Industry index and VNIndex**



Source: EzSearch

## A. POWER INDUSTRY OVERVIEW

### 1. Value chain



Grouping businesses in the power industry:

Group	Operating activities	Participating units
<b>Power production</b>	Hydropower, coal-fired, oil-fired, gas-fired	EVN, TKV, PVN, IPPS
<b>Electrical business activities</b>	Distribute electricity to end-users	Mainly controlled by EVN
<b>Auxiliary services</b>	Design and construct the electrical infrastructure; Transmission	Mainly controlled by EVN

Within the scope of the report, we will only mention the information related to the power production group in the value chain of this industry.

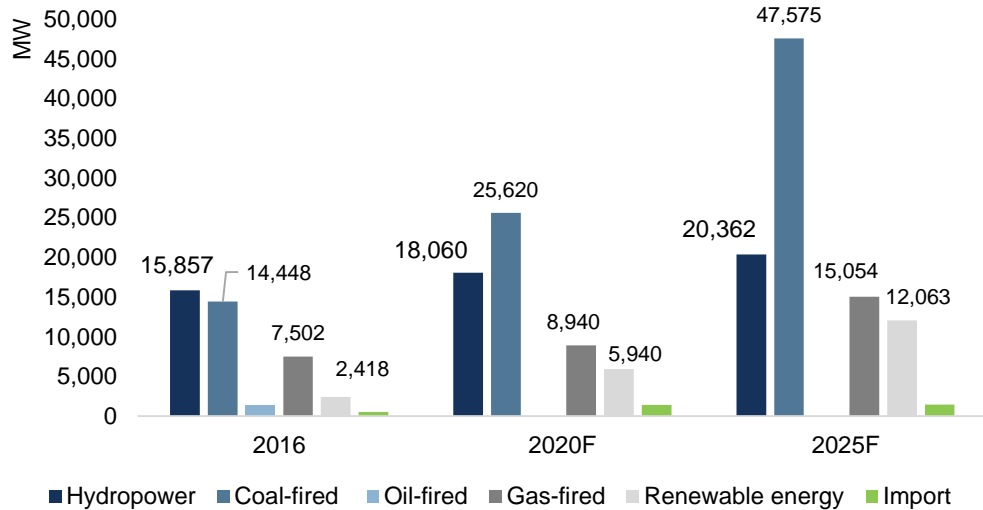
### 2. Vietnam Power industry characteristics

In Vietnam, there are 4 main sources of electric power: Coal, Natural Gas, Hydropower and renewable energy.

**Electricity of Vietnam depends heavily on traditional energy sources (hydropower, coal, natural gas), which accounts for more than 90% of total designed capacity.** By the end of 2016, hydropower, coal-fired and gas-fired power plants are still three largest power sources with the proportion of 38%, 34% and 18% respectively. Together with oil-fired power plants, which are currently being used for hedging purpose, renewable energy power plants (commonly wind and solar energy) have a small weighted in national system. In the near future, the proportion of renewable energy group is expected to increase and replace hydropower as one main source of electricity.



**Vietnam's installed capacity portfolio by fuel**



Source: EVN

**Power source of the whole country has a significant differentiation by region and natural conditions.** Coal thermal plants mainly concentrate in the North, Gas & Oil thermal plants concentrate in the South and the hydropower plants are concentrated mainly across 3 river systems: Dong Nai, Se San and Da river.

**Power plants allocation in Vietnam**



Source: FPTs Research

**Electricity production is shifting to use imported resources.** With the aim of making the most out of available resources, power production activities mainly have been using domestic resources. However, according to the evaluation of the supply - demand for fuel, from 2019, coal-fired thermal power plants in operation and coming into operation will start using imported coal. For thermal power plants, gas from domestic mines is still sufficient for the next 2 - 3 years.

**Due to strong dependence on hydropower, the national electricity supply is seasonal.** Occupying nearly 40% of the electricity supply, the seasonality of hydropower often has a great impact on the country's power output. At times when the availability of hydroelectricity is limited, thermal power plants will be mobilized for stabilizing electricity market. That creates the seasonality of the year for power plants in Vietnam. Generally, thermal power plants will be mobilized a lot during first and fourth quarters while hydropower will be mobilized for the rest of the year.

**Power sales of plants are fully purchased by EVN.** Consuming products is one of the biggest advantages of electricity production activities compared to other manufacturing industries. Electricity produced by power plants is fully purchased by EVN.

### 3. Vietnam's Electric Power market characteristics

Electricity trading activities are carried out in parallel between two forms of electricity trading. Enterprises producing electricity will usually be paid by EVN through the Electricity Power Trading Company (EPTC) in two forms: Power Purchase Agreement (PPA) and full market price (FMP).

#### Features of electricity trading

Form of electricity trading	Sale volume	Price
<b>Power Purchase Agreement</b>	About 80 - 100% of the annual output of the generation.	According to the principle of costs of production of each generation plus with a profit level.
<b>Full market price (FMP)</b>	Based on the variable costs of production 1 kWh (the lower the cost, the higher competitiveness).	Depend largely on the contribution of thermal power plant to the national electricity output. Apply for the whole market.

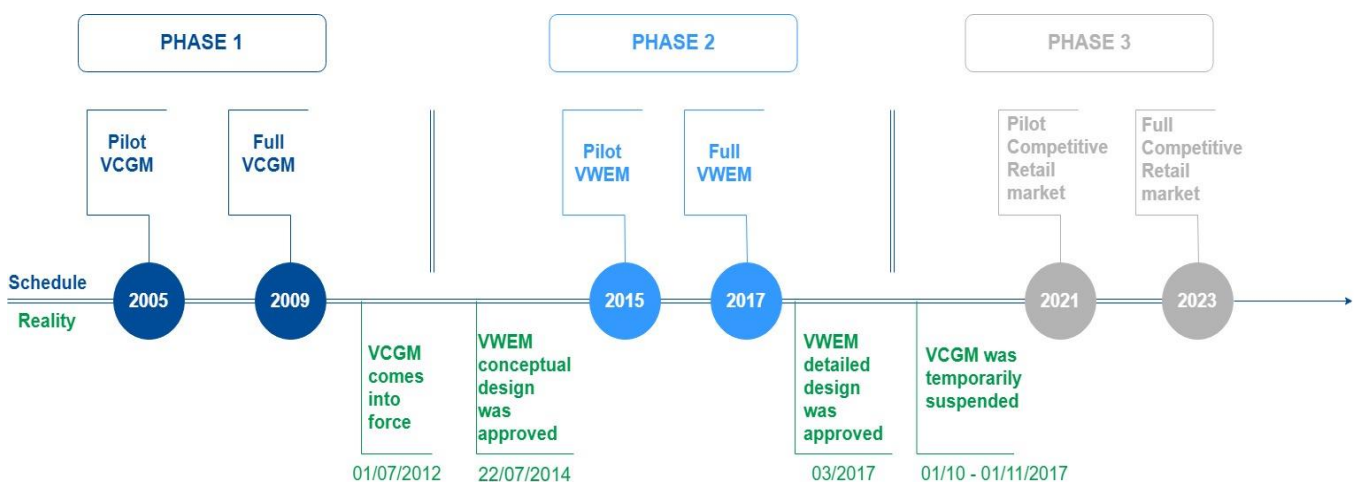
Vietnam's electricity market is moving to the **Vietnam Wholesale Electricity Market (VWEM) from 2019**. Currently, the electricity market is in phase 1 – the Vietnam Competitive Generation Market (VCGM). By the end of 2017, the competitive generation market had 86 factories directly involved, with a total installed capacity of 22,910 MW (55% of the total national capacity). According to MOIT's plan, from 2019, Vietnam electricity trading market will move to phase 2 as a competitive wholesale electricity market.

Compared to the VCGM, VWEM has some new significant changes:

#### Comparison between VCGM and VWEM

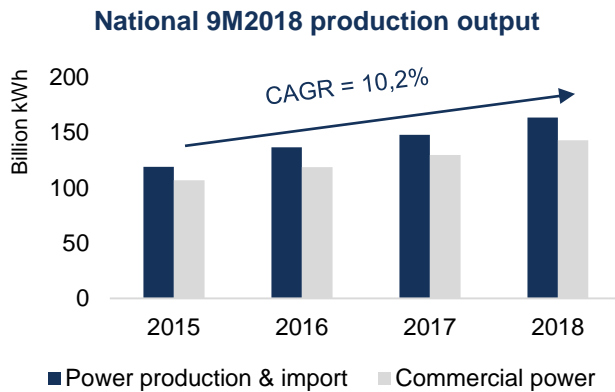
Characteristics	VCGM	VWEM
<b>Wholesale Buyer</b>	EPTC is the sole buyer	05 power corporations become buyers
<b>PPA Contract</b>	Only a single PPA contract	Might have various PPA contract

#### Development phases of Vietnam's electricity market



## B. REVIEW 2018

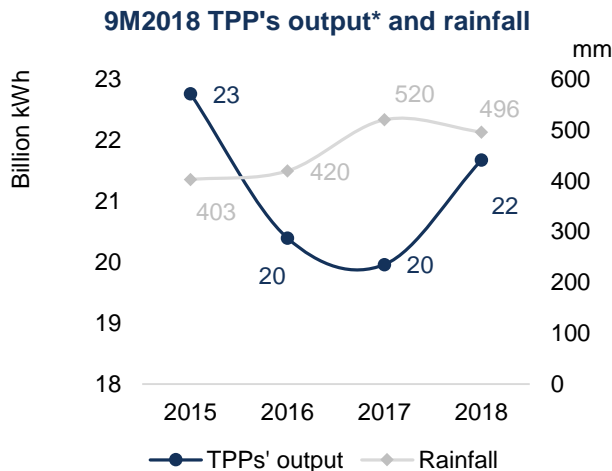
### 1. Electricity output continued to grow at a stable rate



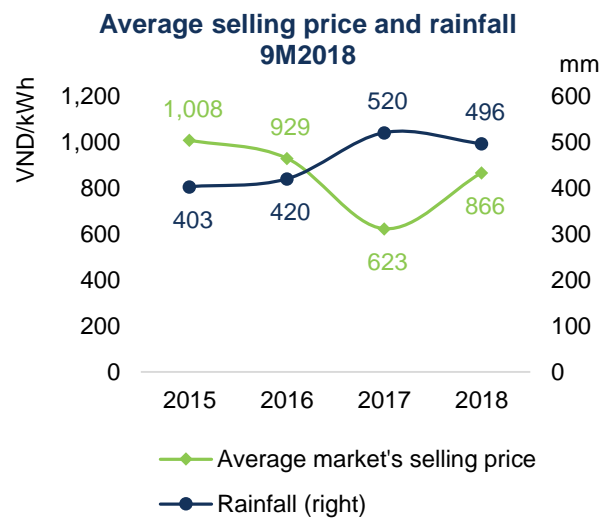
Source: FPTTS Research

Generally, electricity production and consumption still tend to increase compared to previous years. The annual growth rate of power industry still reaches 9% – 10%. In 9 months of 2018, total power production and import reached 163.5 billion kWh, showing an increase of 10.54% over the same period in 2017. Accumulated 9M2018, power sales are estimated at 143 billion kWh (+ 10.1% yoy), of which domestic power sales increased by 10.21%.

### 2. Thermal power plant's output and selling price increased due to decreasing rainfall



(\*) Output is estimated based on 2 assumptions: (1) the selling price of TPPs is fixed about 1,200 VND/kWh; and (2) the performance over 9M of 6 companies [QTP](#), [HND](#), [PPC](#), [NBP](#), [NT2](#), [BTP](#).

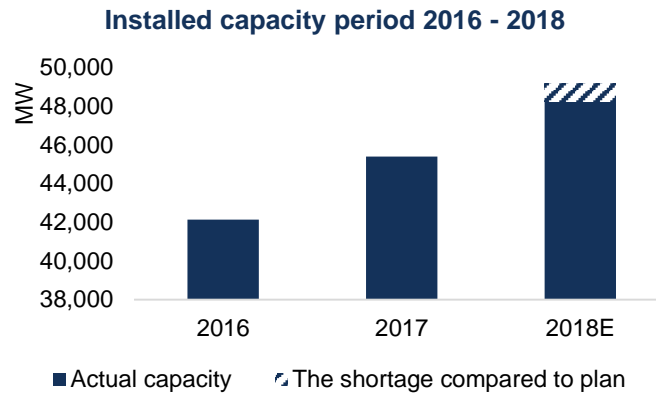


Source: IMH, FPTTS Research

**Electricity output from thermal power plants (TPPs) increased thanks to favorable weather in 2018.** In 9M2018, the average rainfall is estimated to decrease about 5% compared to 2017, in which the South has the most fluctuating rainfall with a decrease of 16%. The disappearing La Nina has reduced the amount of water flowing to the reservoirs, thus reducing the power supply of the hydropower plants (HPPs). As a result, this has made a positive impact on the total output of thermal power plants. Power sales 9M2018 of listed company in this group contributed to the market reached about 21 billion kWh, 9% higher than the same period in 2017.

**The average selling price in the market tends to increase again after La Nina ends.** Reaching the lowest point in the last 6 years in 2017, the average selling price is gradually recovering and reached an average of VND 870/kWh in 9 months of 2018. The main reason for this recovery comes from the increased output of thermal power plants in the first 6 months, when the weather is not favorable for hydropower. In the last 3 months of the year, the electricity price continues to be higher than the same period of 2017 due to the end of the rainy season. The hydropower reservoirs have to start storing water for the beginning of next year. Thus, it will boost the power supply from hydropower, and raise the electricity price in the market

### 3. Power supply could not meet 2018 target

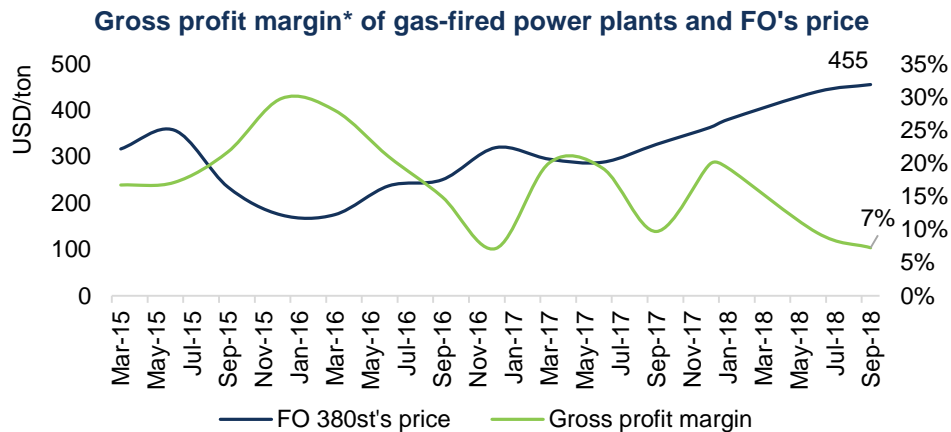


Source: EVN, MoIT

According to the adjusted VII electricity plan, for meeting the demand and limiting dependence on imported power sources, domestic power supply will need to grow corresponding to consumption, reaching about 60,000 MW by 2020 and 96,000 MW in 2025. In order to achieve these milestones, national power supply would have to increase an annual average by 4,500 - 5,000MW, corresponding to the growth rate of 9 – 10% per year. However, by the end of September 2018, the power capacity in Vietnam was only 47,900 MW. In the last 3 months, about 350 MW will be added to the national grid, bringing the total national capacity to about 48,250 MW (+6.3% yoy).

The difference between the actual output and the plan of the power source is mainly due to the influence of the US embargo on PM contractor (Russia) on the Long Phu 1 thermal power project. Strong impact on procurement packages of equipment and supplies from the US manufacturers, making the units of Long Phu 1 factory unable to go into operation in 2018.

### 4. Gross profit margin of gas-fired group decreased due to the impact of FO oil price



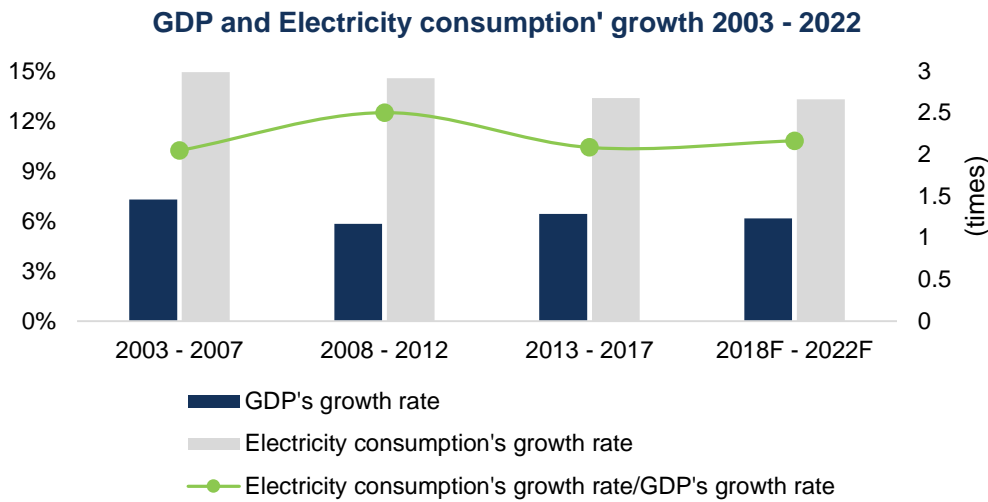
(\*): Gross profit margin is based on 2 gas-fired power plants: NT2 and BTP  
Source: Bloomberg

Under the new regulations on market gas price, market gas price fluctuations are following directly and in the same direction with changes in FO oil prices in Singapore market. At the end of September 2018, FO oil prices have increased by more than 30% compared to the same period in 2017 when FO oil prices in the Singapore market have tended to increase sharply in the first 9 months. That dragged down the gross profit margin of gas thermal power plants in 9M2018 to 13% compared to 17% in the same period in 2017.

## C. OUTLOOK 2019

### 1. The electricity demand is expected to keep increasing in 2019

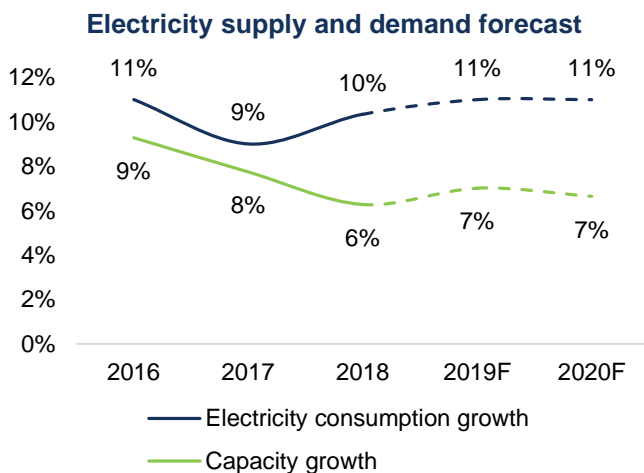
As the input of the economy, the growth of electricity demand always leads the GDP growth. National electricity consumption in the period of 2011 - 2016 has always increased twice as fast as the growth of GDP. According to the World Bank's forecast for the period of 2018 - 2022, Vietnam's GDP growth rate will fall to about 6.5%. In response to this GDP growth, the demand for electricity consumption is expected to increase approximately 11 - 13% per year in the coming years.



Source: FPTS Research

### 2. Supply growth is gradually not keeping up with electricity demand

As above estimated, the growth rate of electricity consumption will reach about 11% in the period of 2018 - 2022 and then fall to 9 - 10% by 2030. Meanwhile, the actual power supply currently reaches only 6 - 7%. The difference between the growth of supply and demand is still being offset by the operation of oil-fired power plants. It is expected that in 2019 and 2020, oil thermal power will contribute about 4.4 and 5.2 billion kWh, helping to ensure the balance of electricity supply and demand. However, after 2021, Vietnam will be more likely to face power shortage risks in the market. A number of factors leading to slow growth in supply include:

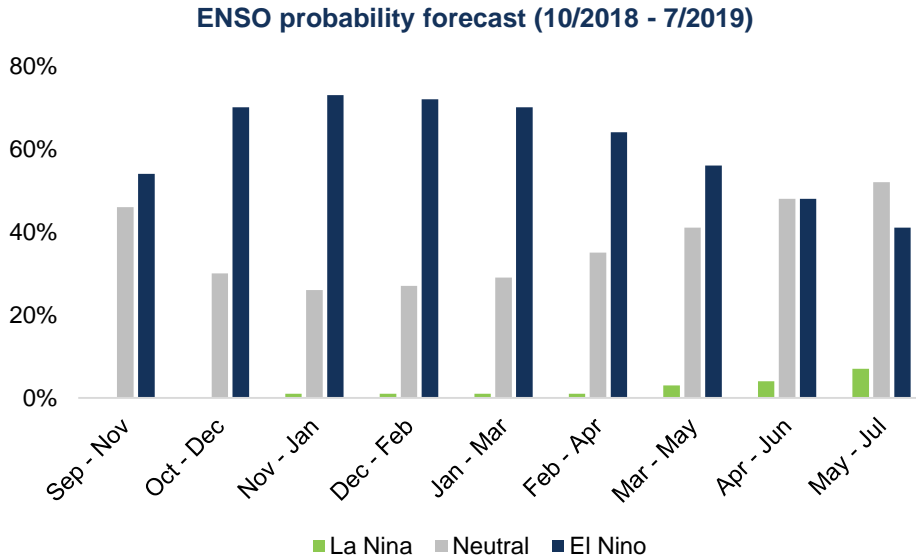


Source: MOIT, FPTS Estimates

- Low water level in hydroelectric reservoir limits the ability to generate electricity.
- Gas mining projects such as Blue Whale, Block B - O Mon are facing a risk of slow progress while existing gas fields are beginning to run out. The shortage of gas supply will affect the operation of gas power plants in the coming years.
- Coal-fired thermal power investment projects in the South are also being delayed. It is estimated that for each coal-fired thermal power plant to be delayed, the electricity market is suffering from a loss of 7.2 - 7.5 billion kWh, equivalent to about 3% of the system's output.

### 3. Weather forecast for early 2019 shows positive signs for thermal power plants

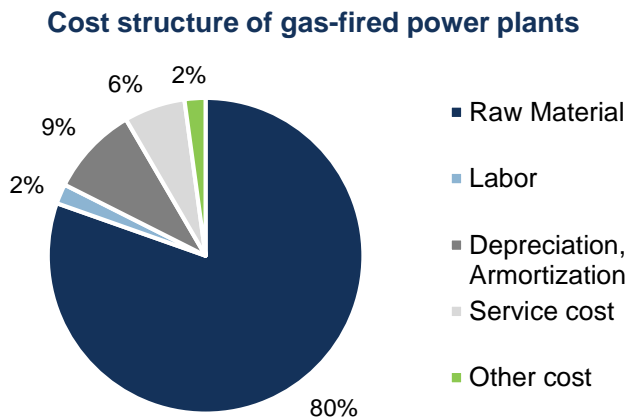
According to the forecast report of Vietnam Institute of Meteorology, Hydrology and Climate change, ENSO phenomenon is forecasted to gradually shift to El Nino status in the last months of 2018, early of the year 2019 with a probability of 80%. We estimate that moving to El Nino will reduce about 10 - 15% of rainfall flowing to reservoirs at hydropower plants, which will help thermal power plants to increase about 10% of output compared to 2018.



Source: IRI, IMH

### 4. Oil prices tend to decrease at the end of 2018 and stabilize in 2019

After skyrocketing to \$508 per ton in October 2018, the current price of FO oil has gradually decreased to USD400 per barrel (20% lower compared to October 2018). As forecasted by some organizations such as World Bank, OECD or EIA, oil prices in 2019 will tend to be stable compared to the end of 2018. With oil prices stabilizing around \$455 per ton, Gross profit margin of gas thermal power plants is expected to remain at a low level of 7% as of 9M2018, thus affecting the profitability of enterprises as fuel costs account for more than 80% of the cost structure of this group.



Source: FPTs Research

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