## Contributions of Economic Sectors to Goal of Building an Industrialised Country towards Modernity

Tran Thi Van Hoa<sup>1</sup>

<sup>1</sup> National Economics University. Email: hoatranthivan@gmail.com

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**Abstract:** The target of developing Vietnam into an industrialised country towards modernity has been pursued with incessant determination by the Party as expressed in many of its Congresses so far. In the 2011-2016 period, the growth of mining, processing and manufacturing industries and agriculture were exerting strong and multi-faceted impacts on the realisation of the target. Based on analysing the reasons for the limitations in the development of the economic sectors, six solutions have been proposed to achieve the target in the near future, which include: (1) clarifying the criteria of an industrialised country towards modernity; (2) defining clearly the targets and sectors which are the driving forces to give priorities to in terms of investments in the upcoming period; (3) intensifying the research and application of high technologies in the domains of agricultural production with high economic value; (4) combining the efforts by enterprises and the assistance by the State to enhance the technological level and competitiveness of the enterprises; (5) boosting the linkage between domestic and foreign direct investment (FDI) companies to improve the efficiency and sustainability of the processing industry; and (6) applying synchronous solutions to establish the national trademark and those of Vietnamese commodities in the international markets.

**Keywords:** Economic growth, mining industry, processing industry, manufacturing industry, agriculture.

Subject classification: Economics

### 1. Introduction

The economic development of each country depends significantly on the growth of all the sectors in the economy. Thus, the structural composition and the portions of contributions of each economic sector in the gross domestic product (GDP) is one of the criteria to assess and determine the level of national development and the country's ranking to be an industrialised nation or not. Research on the growth performance of economic sectors and their contributions to the economic development seeks to identify not only the position of each sector in the modern economy but also the challenges posed to sectoral growth in particular, which will help find appropriate solutions to achieve the development goals of each country in each particular period.

During the 2011-2016 period, Vietnam's economy was continuously encountering difficulties due to internal problems of the economy and various effects of the global economic recession. In the 2011-2015 period, the average growth rate of the economy was 5.91%, lower than the 6.32% level of the 2006-2010 period, and failed to achieve the goal of 6.5-7% as planned in the growth strategy [4]. In 2016, the economic growth rate was 6.21%, lower than that of 2015 and also failed to meet the planned target of 6.7%. Failure to accomplish the goals set in development plans for this period might be attributed to the negative impacts of the global economic downturn and ineffective domestic reforms that have not produced much result, plus a number of shortfalls arising from the growth performance of some economic sectors. This paper attempts to analyse the shortcomings spotted in the growth performance of the three sectors of agriculture, mining, and manufacturing and processing from 2011 to 2016 along with their causes. It then will propose a set of key solutions to promote the growth of the sectors in the 2017-2020 period and beyond.

# 2. The growth of the mineral exploiting industry

The industry was growing in an unstable manner and faced with serious recession

during the 2011-2016 period, especially in the oil and gas and the coal mining – the two sub-sectors in which the country has the advantage brought about by its natural resources.

Statistical data show that the industry experienced very unstable growth rates and was trapped in negative growth for several years before hitting the trough (-4%) in 2016. This is a warning sign of the recession of the mining industry as well as the exhaustion of mineral resources in Vietnam. The signs were evident in both the two main products: coal and oil and gas. The coal output was reported to decrease by approx. 6% while crude oil output fell by roughly 10% compared with the planned targets. The proportion of the workforce of the two sub-sectors dropped by 8.2% in 2016, not because of the application of science and technology, but rather due to the depletion of resources. The downturn in the sector reduced the growth of Vietnam's industry by 4% and diminished the overall growth of the economy by 0.33% in 2016. This depression also led to a severe decline in the total value of the country's exports of goods and made its balance of exports and imports suffer from more serious deficits. Shrinking mining production happened to not only big corporations but also small and medium enterprises in localities. The volume of coal produced by the Vietnam National Coal and Mineral Industries Group (Vinacomin), the largest mining corporation of the country, in the first half of 2016 also plunged by more than two million tonnes compared with the planned target. Also in the year, many coal mining

enterprises in localities had to close down or scale back production.

The recession in the industry can be attributed to four major causes as follows: (i) the decrease in the prices of coal and crude oil at the global level. In 2016, world coal prices dipped by 25% compared with that of the previous year while crude oil prices also dropped to only 45-50 USD per barrel [3], [4]; (ii) mining operations becoming more and more difficult due to the depletion of mineral resources, increasingly difficult conditions for exploitation and extraction of resources, a host of stricter technical requirements and a number of the State's policies which raised the mining costs; (iii) the low labour productivity and the outdated mining technologies used in businesses. Especially, some mining enterprises have imported production lines which adopted obsolete local technologies from China; and (iv) lastly, other causes that possibly trigger long-term and more severe consequences are found to be the depletion of resources and the changing trends of new energy consumption, with the green energy now

replacing the traditional energy which depends more on resources. That pushed Vietnam's mining industry into a state of recession not only in 2016 but also farther in the future.

The development trend of the mining industry in the period shows that natural resources were and are no longer an advantage for the development of the while cheap country and outdated technology is not beneficial to the development of the industry any more. It is time for Vietnam's mining industry to look for a new direction to grow and contribute effectively to the overall development of the economy in the upcoming period.

# 3. The growth of the manufacturing and processing sector

Although, in general, Vietnam's industry experienced unstable growth between 2011 and 2016, its manufacturing and processing industry benefited from much higher growth rates, which showed a tendency of steady increase from 2012 to date (Table 1).

Table 1: The Growth of the Manufacturing and Processing Sector over the 2011-2016 Period [3]

Target/year	2011	2012	2013	2014	2015	2016
Growth rate of Vietnam's industry (%)	6.8	5.8	5.9	7.6	9.7	7.57
Growth rate of the manufacturing and processing industry (%)	9.5	4.5	7.6	8.7	10.5	11.9
Contributions of the manufacturing and processing industry to growth of Vietnam's industry (%)	6.7	3.2	5.3	6.2	7.5	7.9

Last year, the manufacturing and processing sector enjoyed the highest growth rate over the 2011-2016 period. However, such growth is mainly involved with outsourced production and assembly activities. At the moment, the industry is positioned at the lowest value-added stage of the value chain of the global economy.

Contributions of the sector to the overall growth of Vietnam's industry were

increased from 6.7% to 7.9% in 2016. However, the growth solely stemmed from outsourced production and assembly activities. In contrast, the growth of the production and processing of goods using domestic raw materials remained fairly low. A typical characteristic of this situation is that the growth rate of gross output (GO) was much higher than the GDP growth rate of the economy (Figure 1).

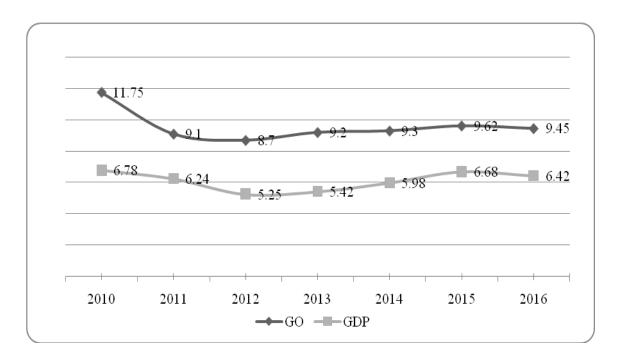


Figure 1: The Growth Rates of GO and GDP over the 2011-2016 Period [3]

Figure 1 reveals that, although GO showed a tendency to decrease at a steady pace (from 11.75% to 9.45% during the 2010-2016 period), the GO growth rate was still approx. 3 percentage points higher than the GDP growth rate in 2016, which confirms that (i) the sector failed to achieve high efficiency in growth due to low value-added manufacturing; and (ii) growth in Vietnam's manufacturing and processing sector has not been accompanied by an

intense and effective structural shift towards high value-added sectors.

A remarkable trend of development in the processing and manufacturing sector is that the growth of some products processed from domestic raw materials was rather low, while the fast growth rates were mostly recorded for processed products under outsourced production and assembly activities. Compared with the overall growth rate of the processing and manufacturing sector (11.9%), industries using domestic raw materials saw very disappointing growth rates. Many products struggled to reach a 1-3% growth rate. This implies that Vietnam has yet to truly develop a well-functioning processing and manufacturing industry as per its meaning. The processing and manufacturing sector of Vietnam had not been able to fulfil its pioneering role in generating high added values for the country's industrial production. At the same time, industries engaged in outsourced production and assembly enjoyed much higher growth rates than the average level, e.g. electronics and computers/mobile phones, with a growth rate of 12.8%, automobiles with a growth rate of 16.4% and metal products with a growth rate of 17.9%.

Secondly, the growth of the processing and manufacturing sector is still dominated by outsourced FDI enterprises through the practice of temporary import for re-export. According to the GSO, in 2016, the growth rate of the exports of processed and manufactured products was 8.6%, of which domestic enterprises only reached 4.8% while the FDI ones with 100% foreign capital attained 11.8%. Those of textiles was 23%, of telephones and electronics was 14.4%, of computers and spare parts was 18.4%, of automobiles and machinery was 28.4%. Similar to the case of exports, outstanding growth in belonged to FDI enterprises. Imported goods, which are mainly spare parts, components and accessories to serve the operation of outsourced manufacturing, in the sense of being sub-contracted, and assembly, for export purposes, saw a growth rate of 20.1%. The growth rate of imports was only 4.6%. This means that Vietnam's industry still mirrors the image of "a hub of foreign outsourcing and assembly providers" located in the country. Thus, the added value for Vietnam's economy is actually very small, inefficient and unsustainable.

The situation has been triggered by three main causes: (i) the weakness of production capacity of domestic enterprises, especially those in the private sector; (ii) the lack of linkages and technology transfer between domestic and FDI enterprises; and (iii) the lack of strategic objectives for the overall development of Vietnam's industry in general and the manufacturing and processing sector in particular.

weakness of the production capacity of domestic enterprises is the most worrying factor. The reason for the that most weakness is mechanical enterprises used old and outdated machinery and equipment, with over 50% of the machines having been in use for 30-50 years and fully depreciated; some equipment originated from the former Soviet Union and Eastern Europe; and two-thirds of the equipment imported from China [1]. It can be said that, over a long period of time, investments in mechanical engineering industry of our country had always been fragmented. Enterprises often chose to invest in additional equipment for important stages that determine the product quality, and simply repaired refurbished and upgraded old machines for continued use. Such a trend asynchronous investments stemmed from the fact that they had been distressed by signs of market failure and the difficulties in raising capital, not to mention the lack of assistance from the government, including a long-term vision and sound policies to encourage the adoption of modern technology over the past years.

The lack of linkages between domestic and FDI enterprises was clearly shown in the processing and manufacturing sector. While the growth of the sector was robust thanks to the strength of FDI enterprises, connection between them domestic firms was found relatively weak. Domestic enterprises mainly focused on serving the domestic market, while over 90% of the output of FDI enterprises was for exports. The connection between these two market segments was very modest. Thus, the FDI sector remained a separate entity, rather than acting as a catalyst for growth, possibly with spillover effects to positively affect domestic firms, raising demands for inputs and creating further opportunities to access new technologies and modern management practices, and actively generating the effects demonstration and the benefits provided by clustering.

In addition, while pursuing the goal of building an industrialised country towards modernity, Vietnam still lacked a set of clearly-defined and straightforward criteria guide the overall economy. Furthermore. it still considered the development of the processing manufacturing sector and that of the industry to be one. The country has not linked the policy on industrial development in general and that on the development of the processing industry in

particular with each other in a comprehensive strategy. Hence. the processing and manufacturing industry still relied on labour-intensive practices which only create low added value. There was also a lack of policies of investment and in priorities for the development supporting industries that provide materials, such as cotton, synthetic fabrics, dyes, chemicals, plastics and steel, which currently import more than 70% of materials and ingredients from abroad [5]. Vietnam had not introduced sufficient preferential policies that would provide incentives for investment targeting specifically at high value-added industries so as to lay the foundations for the development of an industrialised country towards modernity. One more issue is the lack of adequate investment in human capital and effective development strategies to meet the requirements for the development of these industries.

### 4. The growth of the agriculture sector

Unlike in industry, the growth rate of the agriculture sector continued to decline to the lowest level, from 4.02% in 2011 to 1.36% in 2016. That was also the lowest growth rate during the period. Consequently, the contribution of agriculture to economic growth has reduced sharply, from 0.76 percentage points in 2011 to 0.54 in 2015 and 0.22 in 2016, which was also the lowest level over the past six years, diminishing by 50% compared to 2015 and down by more than 300% compared with that of 2011. In particular, the output of the crop production had decreased by 4% in comparison with 2015. In the first half of 2016, for the first time in many years, the agriculture sector experienced a GDP growth rate of -0.18%, equivalent to VND 397,400 billion.

A low agricultural growth rate not only slowed down the overall economic growth but also impeded the growth of the tradeservice and industrial sectors, weakening the value chain network of agricultural products. At the same time, it constantly depressed labour productivity in agriculture as well as the social labour productivity of the country, as nearly 70% of the Vietnamese workforce are still working in the agriculture sector.

The decline in the agricultural growth rate of 2016 was due to the three following factors.

The first factor is human-instigated disasters. The unprecedented environmental incident caused by the Formosa steel plant occurred at the end of April 2016 in the waters of Ha Tinh, Quang Binh, Quang Tri and Thua Thien Hue, causing mass fish deaths that have affected the operation of the fisheries sector in these coastal central provinces as well as the whole country. According to a report conducted by the Ministry of Planning and Investment in 2016, inshore and offshore fisheries production have experienced significant losses, which were estimated at around 1,600 tonnes per month; the area of shrimp farming which saw all the shrimp killed was 5.7 hectares, equivalent to nine million shrimp seeds and about seven tonnes of commercial shrimps waiting be harvested; more than 3,000 hectares of semi-intensive intensive and shrimp farming had been affected with high salinity and environmental degradation, causing stunted growth and diseases in shrimps, and over 350 hectares of scattered shrimp deaths. Moreover, this environmental incident also wiped out 1,613 cages of fish farming (about 30,000m³), equivalent to 140 tonnes of fish; an area of 6.7ha of clam farming, equivalent to 67 tonnes; and more than ten hectares of crab farming.

The second cause was the natural disasters, abnormal climate change and limited adaptability of the agriculture sector.

The last year, 2016, witnessed the largest drought ever recorded in all the 13 provinces of the Mekong River Delta along with the salinity intrusion distressing 9 out of the 13 provinces. The estimated losses caused by the drought and salinity intrusion in the years of 2015 and 2016 in the delta amounted to VND 5.500 trillion, of which agricultural production suffered the most, with more than 160,000 hectares of cultivated land, mainly of rice, in addition to sugarcane, fruit trees, vegetables..., suffering from salinity (Kien Giang and Ca Mau are the two most affected provinces), causing approx. VND three trillion of losses; and VND 200 billion in losses of aquaculture [3], [4].

The third factor was the underdevelopment of agricultural production. This is a factor that possibly not only dragged down the growth rate of the agriculture sector in 2016, but will also do so in the upcoming years unless the government and localities are able to develop a proper policy framework of drastic renovation. arising from agricultural Weaknesses development are reflected in the following aspects: (i) traditional the share of

agricultural products with low economic values remains significant in the structure of the sector; the crop production still accounts for 72% of the value of agricultural production and over 50% of the production value of agriculture, forestry and fisheries sectors; agricultural production largely bases on the practice of manual and mechanised techniques. Most of Vietnam's agricultural products are sold in the form of raw commodities and at prices generally lower than those of competitors due to poor quality and other causes. Agricultural growth in Vietnam severely relies on extensive farming as well as the increasing adoption of practices based on intensive land use and heavy exploitation of other resources. while agricultural production still faces substantial risks from natural hazards; and (iii) the agricultural production model remains small-scale, fragmented and disseminated with limited characteristics of a commodity market. According to the General Statistics Office (GSO), there are only 4,000 enterprises, 12,000 cooperatives, 56,000 groups of cooperatives and 29,500 farms operating in the agriculture sector. Regarding the household sector of the economy, the proportion of households using small fields of 0.5ha still accounted for 69% while households using more than 2 ha of land made up only 6%. In addition, the work on dồn điền đổi thửa (the exchange of plots for land consolidation) in many localities was still faced with many problems. This basically implies that the organisation of mass production agriculture is much limited, especially technology applied agricultural production is considerably oldfashioned, outdated, labour intensive, unproductive and largely depends on natural factors.

# 5. Key solutions to foster growth in all sectors of Vietnam's economy

In order to speed up the transformation of Vietnam into an industrialised country towards modernity while gradually reforming the structure of the economy and boosting the growth of economic sectors in the direction of lessening the share of the labour force of agriculture, to increase labour productivity in every economic sector and develop the country's industry with a focus on high value-added domains, to reduce the dependence on natural resources and overcome obstacles rising in the development of economic sectors in recent years, Vietnam needs to implement a number of long-term and short-term solutions. In the immediate future, the following five major solutions should be implemented:

First of all, it is essential to identify and clarify the criteria of an industrialised country towards modernity so as to lay out the directions and objectives of the development of economic sectors, including the agriculture and manufacturing sectors. It is important to properly answer the question of, in order to quickly transform Vietnam into an industrialised country towards modernity, which sector shall be the main driving force and how it will exploit the advantages of Vietnam and thus attract adequate investment to promote the benefits of economic development.

Secondly, it is crucial to clearly identify a range of sectors and domains to prioritise for development in each period following the objectives of the overall development strategy of the economy, to invest in priority sectors such as human resources, and to avoid the spreading of investments and the lack of well-defined objectives which might reduce the overall efficiency of the economy.

Thirdly, it is required to reinforce the application research and of high technology in agriculture production with a focus on producing goods of high economic value and step by step reducing the proportion of labour of the agriculture sector. In addition to strict measures to protect the environment and respond to climate change, a restructuring programme for the sector is needed. After analysing the causes of the decline in agricultural growth, one can say that investment in research, development and application of high technology in agriculture is the key to solve all the problems of agriculture production at the moment, such as low productivity, limited characteristics of a commodity market, low economic value, risks of being harmful to the environment or not timely adapting to climate change. intensive important The most and direction, in our opinion, is the effective implementation of research, development and application of high technology in agriculture production. The need for urgent implementation is now lying in the creation, via transfer from outside and domestically, research done and application of new crop varieties and livestock breeds (in both the short and long term) of high economic value and adaptive

to the incidents of sea level rise, salinity intrusion, droughts, the winds of foehn from cold weather. Laos, and Geographically, the areas to be protected are those in which the impacts of climate change are highly significant, for example, the Mekong River Delta, Central Vietnam and the Central Highlands, or the northern mountainous region. New varieties, besides meeting the requirements of climate-smart agriculture, should also meet those of having high economic value, being capable of producing goods on a large scale and applying more advanced technology into production. In order to implement this third solution, it is necessary to complete the following tasks:

- To set up specific tasks and a clear roadmap for the research and development activities at agencies, research institutes and universities of agriculture. Specific research development (R&D) and contracts, not general tasks, shall be assigned to these units. They will be provided for each type of crop or livestock that is adaptive and directly linked to specific areas. During the process, there should be financial and technical support not only from the State but also from other diversified resources.
- To steer agricultural R&D activities towards high-tech zones. This is a new point to accomplish which needs high priority.

To perform large-scale production and invest in the improvement of the irrigation system under the irrigation and electricity restructuring programme to serve agriculture, to open a land market in agriculture and remove the policy on limitations of land area in use, to be able to

develop agriculture towards large-scale commodity production.

- The government should play important and dominant role in a number of areas. Many functions once performed by the government, such as devising land-use planning, production setting targets, undertaking crop management, the purchase and sale of farm produce, and securing the key technology supply, will, gradually, no longer be important or even necessary in the transition to a knowledge-based, marketoriented, and more agile agricultural economy. The government needs to curtail direct investments in agriculture, support private investments, provide technical services and promote some important State management functions, such environmental management, biosecurity. food safety and risk management, support the development of the agricultural land market, support the construction of rural infrastructure and other factors that affect the transaction costs offarmers and agribusinesses, and, at the same time, restore the system of innovations in agriculture.

Fourthly, it is necessary to combine the efforts of enterprises and the assistance of In the context of deep the State. integration into the world economy, domestic production seems unable to avoid cyclical economic fluctuations. Therefore, in order to secure stable growth, efforts to improve the endogenous capacity of enterprises in general and mining enterprises in particular crucial. At the moment, the biggest weakness of domestic enterprises is the low level of technology endowment and competitiveness. This is the most

important point that needs to be eliminated so that local firms can take part in the higher end of the value chain of the global manufacturing and processing industry. To that end, it is necessary to combine the efforts of enterprises and the support of the State.

For businesses, investment in science and technology should be considered one of the important factors to enhance competitiveness and reduce the costs of the products. In addition, they need strengthen cooperation to exploit the redundant capacity of one another; closely cooperate to avoid overlapping investments, intensely stabilise production and move towards modern management practices. It is also completely possible to produce high quality mechanical products at competitive prices and without negative impacts on the environment, but only by professionalisation modernisation, as well as promoting further investment in hi-tech equipment lines.

The State needs to adopt a breakthrough policy which will raise the level of technology endowment and enhance the competitiveness of manufacturing and processing enterprises. One of the most important directions is to provide funding for the businesses to renovate and enhance the technology level through vocational training, hiring specialists and purchasing technology; offering more arrangements for and long-term loans reasonable interest rates and repayment schedules consistent with the actual return on capital of each specific project, each product and appropriate to the specific period; facilitating enterprises' access to loans for development investment. In supporting enterprises that are in need of technology renovation, the role of the National Technology Innovation Fund is very important.

Fifthly, it is advisable to strengthen the linkages between domestic firms and FDI enterprises so as to boost the development of domestic supporting industries and reinforce the efficiency and sustainability of the processing industry. In order to connect domestic enterprises with FDI ones, the former need to improve their capacity and gradually build up the confidence in the latter in the process of linkages between them. Therefore, it is important to lay emphasis on the growth of start-ups with a viewpoint of putting the business at the centre in directing scientific and technological activities at research institutes and universities. The State needs to invest more in science and technology renovation as well as provide capital assistance to universities and research institutes. That is the model that most centres for competition around the world have been applying. Such a centre comprised of businesses. universities, research institutes, investors and socio-economic organisations. The members of the centre collaborate in a voluntary manner improve to effectiveness of research activities, along with the transfer and application of technology in production and business in order to improve the competitiveness of each of them. Besides, it is also essential to develop and implement a roadmap linking domestic firms with enterprises along the global value chain.

The above reinforcement of linkages is to follow the main directions of: (i) coordinating with or, possibly, requesting FDI enterprises, when they apply for investment licences, develop to comprehensive profile of their value chains with potential components that local firms can take part in. In addition to the government's attraction of FDI, domestic firms need to proactively invest in appropriate technologies and adopt suitable development plans for proactive connection with partners and full exploitation of all the production and business opportunities which bring about comparative advantages and higher added values; (ii) developing plans for the assistance of FDI enterprises, firstly to improve capacity of domestic the enterprises, especially regarding quality of human resources, so that they can undertake high-tech activities and absorb cutting-edge technologies; (iii) the State's establishment of a favourable mechanism for the development of supporting industries which shall in turn assist the development of the processing and manufacturing sector. This is the key to participate in the global value chain of the sector of industry, as well as to link domestic firms with FDI enterprises upon the new FDI influx into Vietnam; and (iv) adopting preferential policies (where feasible, turning them into conditions) for FDI enterprises to assign the components of outsourced manufacturing activities and spare part supply to local firms. Such preferential policies might include policies on land, tax incentives and interest rates for products generated from the linkages.

### 6. Conclusion

The above analysis clearly shows that, over the 2011-2016 period, the growth of the agriculture sector, and the mining, processing and manufacturing industries of Vietnam encountered numerous inadequacies, which also greatly distressed the overall development of the whole economy. By effectively implementing both the short-term and long-term solutions mentioned given above, the strong participation of the State, businesses and people, we will step by step achieve the goal of Vietnam becoming an industrialised country towards modernity.

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