GIZ Vietnam

Report Book #2 Concept
Size: A4 (W20.5cm x H29.5cm)

THE COVID-19 OUTBREAK AND ITS ECONOMIC AND ENVIRONMENTAL IMPACTS

designed by AvantDG

2021.10.07 | P.T.B.Anh
CMYK | Scale 1/1

THE COVID-19 OUTBREAK AND ITS ECONOMIC AND ENVIRONMENTAL IMPACTS

FOR INTERNAL USE

Hợp tác Đức
DEUTSCHE ZUSAMMENARBEIT

Published by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

THE MINISTRY OF FINANCE

IEM

Imprint

Published by the
Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices
Bonn and Eschborn, Germany

Macroeconomic Reforms/Green Growth Programme
68 Phan Dinh Phung Street, Ba Dinh District, Ha Noi, Viet Nam

www.giz.de/viet-nam

This publication is supported by the German Development Cooperation GIZ, under the framework of the Macroeconomic Reforms/Green Growth Programme. The programme is commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ).

Disclaimer

FOREWORD

The years 2020 and 2021 may be labelled in the future" the Covid 19 years". The Covid wave swept through the world from the beginning of 2020 and is not over yet in 2021, especially with the worldwide spreading of the Delta variant of the Covid 19 virus.

When Covid started hitting the world beginning 2020, Viet Nam activated its response with strong economic fundamentals: macroeconomic stability, acceptable inflation, decreasing public debt, stable exchange rate... Viet Nam introduced early a policy of restrictions, identification of cases, containment and isolation, which proved as one of the internationally most successful ones in 2020. Therefore, Viet Nam scored again one of the highest growth rates worldwide despite Covid 19 in 2020.

In order to sustain economic activity and alleviate the economic consequences of Covid 19, the Government of Viet Nam issued policies very much in line with the international standard, for example decreased fees and interest rates for bank credits, decreased administrative fees and postponed payment of taxes, established cash handouts for unemployed and other groups of needy persons, and sped up the implementation of the national and provincial investment programmes to foster the demand side.

In 2020 the Government of Germany decided to help its development partners in their efforts to tackle the Covid 19 crisis with additional funds in the framework of its development cooperation for the response to the Covid 19. Some of the funds earmarked for Viet Nam have been channelled through the projects and programmes of the Sustainable Economic Development cluster of German Technical Cooperation implemented by GIZ. The funds were used for studies which provide international experience of the response to the Covid 19, analyse the economic and environmental impacts by Covid 19, analyse the social impacts, the repercussions of Covid on the private sector and the efficiency of the respective government programmes. The studies are written by the Central Institute of Economic Management and the by individual consultants, one in collaboration with the Viet Nam Chamber of Commerce and Industry. The studies have been designated to the partners institutions of the Sustainable Economic Development Cluster, namely Office of the Government, Central Institute of Economic Management, Ministry for Planning and Investment, Ministry of Finance, State Bank of Viet Nam and Ministry of Labour, Invalids and Social Affairs.

The studies have been conducted in 2020 and beginning of 2021 and shared with our partners at that time. We chose to publish them as well for a wider public as the efforts to come to grips with this Pandemic crisis are not yet over and the lessons for future pandemics are not yet fully translated into policies and laws. This process will accompany us for some more years and the Sustainable Economic Development Cluster is prepared to cooperate with our partners in this process.

I would like to thank our partner institutions and the staff of the Sustainable Economic Development cluster for their good collaboration and intense work to make this publication possible.

Michael Krakowski
Cluster Coordinator "Sustainable Economic Development"
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Table of Reports

Report

01

THE IMPACT OF THE COVID-19 PANDEMIC ON THE STATE BUDGET

Consultants:
Dr. Le Hai Mo
Dr. Dang Van Du

Hanoi, 2020

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

ASEAN: Association of Southeast Asian Nations

CIT: Corporate Income Tax

CPTPP: Comprehensive and Progressive Agreement for Trans-Pacific Partnership

EIA: Energy Information Administration

EU: European Union

GDP: Gross Domestic Product

OECD: Organization for Economic Cooperation and Development

PIT: Personal Income Tax

RCEP: Regional Comprehensive Economic Partnership

SNA: System of National Accounts

TFP: Total Factor Productivity

VAT: Value Added Tax

WHO: World Health Organization

PREFACE

1. Significance

The Covid-19 pandemic emerged in China at the end of 2019 and spread globally throughout 2020. Currently, Covid-19 remains complicated and difficult to predict. This has seriously affected socio-economic development in Viet Nam and around the world. The pandemic forced many countries to implement social distancing, leading to delays in production and causing the interruption of supply chains globally. This has led to a decline in investment, difficulties for business, an increase in unemployment, and a significant decrease in workers' incomes.

Viet Nam is an open and globally integrated country. As such, the impacts of external economic, political and social factors have a significant impact on Viet Nam's socio-economic development goals, including state budget revenue and expenditure targets for 2020 and beyond. Faced with the pandemic, the Government of Viet Nam has defined a "dual goal" to both effectively prevent and combat pandemics while focusing on socio-economic recovery and development, ensuring social security, national defence, security and foreign relations.

In order to achieve the above "dual goal", the Government of Viet Nam has made several policy adjustments, including fiscal policy. The adjustment of fiscal policy in the context of the Covid-19 pandemic will affect implementation of socio-economic development goals and tasks in general, financial and budget tasks in 2020, and particularly financial and budget tasks for the 5-year period 2016-2020.

2. Objective

The objective of the report is to analyse and evaluate the impact of the Covid-19 pandemic on the state budget in terms of both revenue and expenditure in Viet Nam as a basis for proposing options for fiscal policy that will contribute to the effective implementation of socio-economic development goals, ensuring national financial safety and security in the context of the Covid-19 pandemic.

3. Subject and scope

The object of the study is the effects of the Covid-19 pandemic on state budget revenue and expenditure.

4. Methodology

The report uses general analysis and macro methods to forecast state budget revenue and expenditure in 2020 in the context of a mutant factor related to Covid-19.

5. Outline

The report focuses on the following subjects:

- The general context of the economy and the Covid-19 pandemic situation in Viet Nam.
- Analysing and evaluating the impact of the Covid-19 pandemic on state budget revenue and expenditure, and forecasts of Viet Nam's state budget situation.
- Proposing fiscal policy to ensure financial and budgetary security in the upcoming period.

Report on

ANALYSIS OF THE IMPACT OF THE COVID-19 PANDEMIC ON THE STATE BUDGET IN 2020

1. The socio-economic context of the Covid-19 pandemic

The outbreak of acute respiratory infections caused by a new strain of the Coronavirus (Covid-19) emerged in December 2019 and on January 31, 2020, the WHO declared a global medical emergency. To date, the Covid-19 pandemic has been serious, spreading rapidly to countries around the world and affecting every aspect of socio-economic life. It has changed people's behaviours and living habits across the world. The progress of the pandemic remains complicated and unpredictable with no end in sight. The pandemic has led to delays in production, causing an interruption of supply chains globally. Trade has faced difficulties due to travel bans and strict social isolation, leading to a fall in global economic growth forecasts and a serious recession.

Viet Nam is a largely open country. Its economy is integrated with global markets and growing rapidly compared to similar countries in the region[1]. Therefore, external economic, political, financial or pandemic events have a strong impact on Viet Nam's development goals in general, and its state budget revenue in particular.

It can be seen that Viet Nam enjoyed several advantages in 2020: (i) With macroeconomic stability, economic growth in 2019 reached a high of 7.02%, exceeding the target set by the National Assembly (6.6%-6.8%), and improving growth quality[2]. In addition, development investment, inflation control, and the promotion of imports and exports achieved positive results[3]; (ii) Viet Nam has strong investment attraction in the region[4]; (iii) Viet Nam's national credit rating has been raised from B1 (positive) to Ba3 (stable); (iv) With the country's participation in RCEP, CPTPP,

[1] The index of total import-export value/GDP of Vietnam in 2019 is estimated at 200%, increasing rapidly compared to previous years (it was only 18.2% in 1985, 65.4% in 1995, 96.5% in 2000, 147.1% in 2008 and 153.9% in 2013) and is much higher than Thailand (123.3% in 2018), the Philippines (76.6% in 2018) and Malaysia (130.5% in 2018).

[2] Contribution of total factor productivity (TFP) to GDP growth reached 46.11%, the average in the 2016-2019 period reached 44.46%, much higher than the average of 33.58% in the period 2011-2015.

[3] The total social investment capital in 2019 increased by 10.2% compared with 2018, equalling 33% of GDP; average CPI in 2019 increased by only 2.79%, the lowest in the previous 3 years; the trade balance of goods in 2019 saw an export surplus of about USD 9.9 billion, the highest level in 4 consecutive years of trade surplus.

[4] As reported by the U.S. News & World Report, Vietnam ranked 8th (up 15 places from 23rd in 2018) in the world's best economies to invest in 2019.

and EVFTA trade agreements Viet Nam has more opportunities to diversify its cooperative relationships, gain more motivation for growth and reduce its dependence on a few large trading partners.

However, Viet Nam's challenges are not insignificant in the context of the following factors: (i) The slower growth of the world economy; (ii) The US-China trade war and the geopolitical conflicts between countries and groups of countries; (iii) Limited opportunities to mobilise cheap resources as Viet Nam is not in the group of low-income countries; (iv) An ageing population that requires increased government spending and which affects the labour market and fiscal situation; (v) Climate change, natural disasters, and pandemics, especially Covid-19; (vi) Limited fiscal space when the rate of mobilisation into the state budget tends to decrease and the need for increased spending on development and healthcare in the context of Covid-19.

By the end of September 2020, over 33 million people were infected with Covid-19, with over 1 million people deaths in 215 countries and territories. The USA is the most seriously affected, followed by India, Brazil, and Russia. As for Viet Nam (at September 28, 2020) there have been 1,077 Covid-19 cases and 35 deaths.

In the Covid-19 pandemic, the Government of Viet Nam has identified a "dual goal" to both effectively prevent and combat the pandemic and focus on socio-economic recovery and development. Accordingly, the government has made administrative adjustments in general and in its fiscal policy in particular – specifically state budget revenue and expenditure policy.

2. Changes in state budget policy in 2020

In the context of Covid-19 affecting every aspect of socio-economic life, many enterprises were forced to suspend operations and reduce size. Many employees had to take alternate leave or work part time. Some were made unemployed. A portion of the population faced extreme difficulties. In order to cope with the pandemic and support people and businesses to overcome their difficulties, the government has proposed and submitted to the National Assembly a variety of urgent solutions to restore business and production activities.

2.1. Changes in state budget revenue policy

Firstly, implementation of tax exemption and budget collection: (i) Import tax exemption for medical supplies and equipment serving Covid-19 pandemic prevention; and supplies and raw materials for enterprises in the leather, footwear, textile, agriculture, mechanics, and supporting industries and the automobile industry; (ii) Exemption of license fees for certain subjects; (iii) Extension of agricultural land-use tax exemption until 2025.

Secondly, the reduction of taxes and budget revenue through: (i) Increasing deductions in personal income tax for taxpayers and dependents; (ii) 30% reduction of corporate income tax payable in 2020 for enterprises, cooperatives, non-business units and other organisations whose total taxable revenue in 2020 does not exceed VND 200 billion; (iii) 30% reduction of environmental protection tax on jet fuel applied by the end of 2020; (iv) Reduction of import tax rates for several commodity groups in order to remove difficulties for businesses and promote the development of agriculture, mechanics, supporting industries, and the automobile industry; (v) 15% reduction of payable land rent in 2020 for certain types of enterprises, organisations, households, and individuals paying annual land rent forced to stop doing business due to Covid-19; (vi) and Reviewing and cutting the collection of some fees and charges by 10%-70%.

Thirdly, extension of the deadline for paying taxes and budget revenues. For instance, extending the deadline for payment of VAT, corporate income tax, personal income tax and land rent for businesses and business households; and expanding the deadline for excise tax on domestically produced or assembled cars until 2020 in order to stimulate both domestic production and consumption.

2.2. Changes in state budget expenditure policy

From April 2020, the government introduced a number of solutions to limit the impact of Covid-19 on the economy. On 3 April 2020, the government approved a credit support package worth a total of VND 250 trillion (equivalent to USD 11 billion) to fully and promptly meet the capital needs for production and business, including rescheduling debt repayments, interest exemptions or reduction, and reduction of fees, etc., for bank customers facing difficulties due to the impact of Covid-19[5]. On 8 April 2020, the government issued Decree No. 41/2020 / ND-CP on extending the deadline of tax and land rental fee payments for enterprises, individuals and business households ("taxpayers") affected by Covid-19. On 9 April 2020, the government issued Resolution No. 42/ NQ-CP on measures to support those facing hardship due to the Covid-19 pandemic, including loss of income and unemployment, ensuring the minimum standard of living. In addition, the government also supported several target groups, who are enjoying preferential policies and social protection during the pandemic. In the context of declining state budget revenue due to the impact of Covid-19, the budget must still ensure an increase in expenditure on pandemic prevention and control. The government has made recommendations to the National Assembly to postpone adjustments of the base salary and pension from 1 July 2020 to share difficulties with the state and employees.

In addition to the economic stimulus packages, tax policies, fees and land rent (about VND 180 trillion) and credit policy (about VND 250 trillion) to boost the economy, the government also issued a number of spending policies that aim to prevent and combat pandemics and ensure social security, including the following policy groups:

[1] Recurrent expenditures for disease prevention

There are a number of policies using the state budget to support health facilities; support civil servants and public employees involved in disease isolation prevention; support the purchase of medical equipment for pandemic prevention, food and living expenses for people and medical units during the quarantine and pandemic prevention process; support expenses for medical examination and treatment according to regulations on price setting of medical examination and treatment service charges for infected people; and to support civil servants, public employees and employees who participate in disease prevention.

On 5 February 2020, the Ministry of Finance issued Official Dispatch No. 1074 / BTC-HCSN dated 5 February 2020, guiding the allocation and use of funds for the prevention and control of Covid-19. According to Article 60 of the Law on Infectious Diseases, funds for the prevention and control of Covid-19 include the state budget, aid, and other funding sources as prescribed by law. Ministries, central agencies, provincial people's committees, agencies and units participating in the prevention and control of Covid-19 actively used the assigned state budget in 2020, using available and on-site resources to ensure financial resources for the implementation of Covid-19 prevention and control measures. In case there is a need for additional funding, ministries, central agencies and provincial people's committees shall report to competent authorities to decide on spending from state budget reserve sources in accordance with the Law on State Budget and its guiding documents. Responsibility for financing people undergoing medical isolation and coercive medical isolation, including benefit payments, must be based on Circular No. 32/2012/TT-BTC dated 29 February 2012 by the Ministry of Finance. Expenditures and rates for civil servants, public employees and employees participating in anti-pandemic activities shall comply with the provisions of the Prime Minister's Decision No. 73/2011/QD-TTg dated 28 December 2011, and Joint Circular No. 10/2014/TTLT-BYT-BNV-BTC-BLDTBXH dated 26 February 2014.

At the central level, the state budget has provided additional funding for the Ministry of

[5] Directive No. 11/ CT-TTg dated 03/4/2020 on urgent tasks and solutions to deal with difficulties for production and business, ensuring social security to cope with the Covid-19 pandemic.

Health and the Ministry of Foreign Affairs to carry out Covid-19 prevention and control, including additional funding for units under the Ministry of Health for Covid-19 prevention and control[6]; funding for the Ministry of Health to provide humanitarian assistance to Chinese people[7]; and funding for the Ministry of Foreign Affairs to provide subsidies for affected areas[8].

At localities, the local budget has been adjusted to support health care units and people participating in Covid-19 prevention in quarantine. The local budget is spent to arrange, transport and control people in quarantine areas, assist staff and people in quarantine, and support payments for food expenses for cases of medical isolation. For example, Hai Phong has allocated resources to pay for people in isolation at a rate of VND 120,000-150,000/person/day; provide free masks for students and cover other necessary expenses as proposed by the health sector. Hanoi has decided to support all people in isolation at hospitals, concentration areas, and homes at a rate of VND 100,000 person/day, regardless of whether they are Vietnamese or foreign nationals. In Vinh Phuc, the provincial budget has provided quarantined people with VND 60,000/person/day.

On 29 March 2020, the government issued Resolution No. 37/ NQ-CP on a number of specific regimes in the prevention and control of Covid-19, specifying the rate for people in medical isolation and anti-pandemic allowances; and the 24/24 anti-pandemic allowances (details in Appendix 1). At the same time, the Prime Minister issued Decision No. 437/QD-TTG dated 30 March 2020 on the principle of targeted transfer from the central budget to local budgets to carry out the activities relevant to Covid-19 prevention and control.

The Covid-19 pandemic remains complicated. The need to open commercial flights between Viet Nam and a number of other countries has increased. Also, the demand from overseas Vietnamese and foreigners to enter Viet Nam has soared. On 1 September 2020, Vietnamese authorities started charging a quarantine fee for anyone entering Viet Nam. Accordingly, those entering and using military camps, schools and other sites managed by the competent state agency as a concentrated isolation site must pay their own expenses for meals (VND 80,000/person/day), living needs (VND 40,000/person/day) and Covid-19 testing. The cost of examining and treating Covid-19 for Vietnamese people continues to be covered by the state budget. All foreigners entering Viet Nam must purchase international health insurance that covers medical examination and treatment in Viet Nam.

[2] Social security policy

The government issued Resolution No. 42/ NQ-CP dated 9 April 2020 on measures to support those facing hardship due to the Covid-19 pandemic, specifying financial solutions from the state budget. The total state budget is estimated at around VND 62 trillion. Some specific subjects and levels of support are as follows:

- A worker who has his/her employment contract suspended or has to take unpaid leave for at least 1 month because his/her employer does not have adequate funds to pay wages due to Covid-19 will receive VND 1,800,000 per month for up to 3 months beginning from 1 April 2020. The duration of assistance varies according to the duration of employment contract suspension or unpaid leave and the pandemic situation.

- An employer who is facing financial difficulties and has paid at least 50% of suspension allowance for their employees in accordance with Clause 3 Article 98 of the Labour Code during the period from April to June 2020 may apply for an unsecured loan worth up to 50% of the total region-based minimum wage of the suspended employees over the suspension period (but not exceeding 3 months) at an

[6] Decision No. 217/ QD-TTg dated 7 February 2020 on supplementing funding for units under the Ministry of Health to implement COVID-19 pandemic prevention and control.

[7] Decision No. 08/ QD-TTg supplementing funding for the Ministry of Health to provide humanitarian assistance to the Chinese people.

[8] Official Dispatch No. 1470/ BTC-HCSN dated 17/02/2020 providing additional funding for the Ministry of Foreign Affairs to provide subsidies for areas affected by the disease caused by Covid-19.

interest rate of 0% with a loan term of up to 12 months from the Viet Nam Bank for Social Policies. The loan shall be used for payment of unpaid wages and disbursed monthly to pay suspended employees.

- A household business that earns annual revenue of less than VND 100 million/year and has to suspend business operation from 1 April 2020 will receive VND 1,000,000 per month for up to 3 months according to the pandemic situation.

- A worker who has his/her employment contract terminated but is not eligible for unemployment benefits; a worker who does not have an employment contract and is laid off will receive VND 1,000,000 per month for up to 3 months according to the pandemic situation. This will apply from April to June 2020.

- A person with meritorious service to the revolution who is receiving monthly benefits will receive an additional amount of VND 500,000 per month for 3 months from April to June 2020. This will be paid in a lump sum.

- A social protection beneficiary who is receiving monthly benefits will receive an additional amount of VND 500,000 per month for 3 months from April to June 2020. This will be paid in a lump sum.

- A poor or near-poor household according to the national poverty standards by 31 December 2019 will receive VND 500,000 per person per month for 3 months from April to June 2020. This will be paid in a lump sum.

In short, in response to the impact of Covid-19 on the economy, the government has been implementing a number of economic stimulus packages and spending policies on pandemic prevention and social security. These policies may increase state budget expenditure, but this depends on various factors, such as the ability to cope with an outbreak, the number of people infected, and the extent of disease.

3. The context of the state budget in the first 9 months of 2020

3.1. State budget revenue

[1] The management and implementation of state budget revenue

Due to the impact of Covid-19 at the beginning of the year, along with the review and issuance of policies on state budget revenue to remove difficulties for enterprises and the people, measures on the management of state budget revenue were urgently implemented.

Firstly, an emulation movement in the tax field was launched to complete the assigned state budget revenue and ensure proper, full and timely state budget revenue into the state budget. The National Assembly resolution on the 2020 draft state budget[9], the Prime Minister's decision on the assignment of the 2020 state budget[10], and the Ministry of Finance's[11] circular providing for implementation of the draft state budget[12] in 2020 were implemented. The General Department of Taxation issued an official letter[13] requesting tax departments to fully implement state budget collection solutions. At the same time, the Department launched an emulation movement to complete the assigned state budget revenue draft in 2020.

Secondly, a focus was put on the timely and effective implementation of state budget revenue management solutions such as: reviewing all businesses registered for business to put them under tax administration; strictly controlling the production and business situation of enterprises, including tax declarations and payments; identifying the entire number of taxpayers reporting shutdown; inspecting and strictly controlling VAT refunds to ensure they are in accordance with regulations;

[9] Resolution 86/2019/QH14 dated 12 November 2019.
[10] Decision 1704/QD-TTg dated 29 November 2019.
[11] Decision 2503/QD-BTC dated 29 November 2019.
[12] Circular No. 88/2019/TT-BTC dated 24 December 2019.
[13] Official Letter 5490/TCT-DT dated 25 December 2019.

strengthening sales invoice management; enhancing tax inspection and examination; and strengthening debt collection management and tax debt enforcement.

Thirdly, in the context of the Covid-19 pandemic's strong impact on state budget revenues and thanks to the promotion of state budget revenue management, there have been several positive results: (i) By the end of September 2020, tax agencies had deployed nearly 49,000 inspections and examinations. The total amount proposed to be handled through inspection and examination is over VND 39 trillion, of which the total tax increase through inspection is VND 13.3 trillion, an increase of 38.3% compared with the same period in 2019. The total amount of tax paid to the state budget increased by 4.8% compared with the same period in 2019; (ii) In the management of debt collection and tax enforcement in the first 9 months of 2020, tax authorities recovered over VND 20 trillion, an increase of 5.9% compared with the same period in 2019. Of this amount, revenue collection from debt management was around VND 14 trillion and collection by debt enforcement measures over VND 6 trillion.

[2] State budget revenue results

In the first 9 months of 2020, although the management of state budget revenue had been strengthened, due to the adjustments in the policy on state budget revenue in the context of Covid-19 and the current economic situation tending to decline, the total state budget revenue in the first 9 months of 2020 reached VND 975.3 trillion, equivalent to 64.5% of the estimate and a decrease of 11.5% compared with the same period in 2019.

Domestic revenue reached 64.3% of the estimate, a decrease of 8.3% over the same period in 2019 and the lowest level compared to the same period in recent years (the same period from 2017 to 2019 reached 67.4%, 72.1% and 75.5%, consecutively). This result reflects the current difficult situation of the economy in the first 9 months of the year affected by the pandemic and the implemented solutions for tax exemption, reduction, and extension as well as state budget revenue items implemented to remove difficulties for businesses and citizens as a result of Covid-19.

Many localities (39/63 localities) experienced a strong decrease in revenue compared to the same period in 2019, focusing on VAT revenues (reaching 57.6% of the estimate and down 12.4% over the same period), corporate income tax revenues (accounting for 56.6% of the estimate and down 11.8%), excise tax revenues (constituting 55.5% of the estimate and a decline of 15.7%), and registration fee revenues (reaching 53.6% of the estimate and down 20.7%). The revenue from the business sector did not meet the estimate, falling sharply: Revenue from the state-owned enterprise sector reached 56.9 % of the estimate, down 16.2%; revenue from the foreign investment business sector accounted for 61.2% of the estimate, a decline of 7.4%; and revenue from the non-state economic sector was 54.5% of the estimate, a decrease of 14.6%.

Revenue from crude oil was estimated at 78.2% of the estimate, a decrease of 36.9% over the same period in 2019 because the average crude oil price was USD 47.7/barrel, down from the estimated price by USD 12.3/ barrel.

Revenue from import and export activities was 64.7% of the estimate, a decrease of 20.1% compared with the same period in 2019 due to the import value of some goods and a large decrease in budget revenues from goods such as petroleum, complete cars, steel, machinery, equipment, tools and spare parts.

[3] Reasons for state budget revenue results in the first 9 months of 2020

Research shows that there are several reasons for reduced state budget revenue in the first 9 months of 2020:

Firstly, economic growth is low, and enterprises face a number of difficulties due to the impact of the Covid-19 pandemic.

The Covid-19 pandemic disrupted investment,

production and business, causing economic growth[14] to decline. In particular, a number of sectors were severely affected, such as: import and export, transportation (especially air transport), tourism, services, catering, accommodation, car manufacturing, electronics manufacturing, computers, textiles, leather and shoes. The industrial production index for industry as a whole in the first 9 months increased by 2.69% over the same period in 2019. This is the lowest increase compared to the first 9 months of the years from 2011-2020 (Figure 1). The production of manufacturing industries contributing significantly to state budget revenue decreased at the following rates: mining by 7.4%, of which oil and gas exploitation declined by 11.4%; beverage production decreased by 6.6%; motor vehicle production decreased by 12.2% (of which automobile production decreased by 11.8%). Several industries recorded very low growth, such as: food processing (4.4%), textiles (0.6%), rubber and plastic products (4.4%), prefabricated metal (3.6%), and electricity and distribution (2.8%).

For-non-manufacturing, the operations of the credit institution system in the first 9 months of 2020 were also negatively affected by the pandemic; credit growth by September 2020 reached just 5.12%. In general, due to the impact of Covid-19, consumer demand decreased, resulting in reduced production with many businesses making losses in the first 9 months of 2020.

In the first 9 months of the year, the country recorded nearly 99,000 newly registered enterprises with 777,900 registered employees, a decrease of 3.2% in the number of enterprises and 16.3% in the number of employees compared with the same period in 2019. The number of enterprises temporarily suspending business for 9 months was 38,600, an increase of 81.8% over the same period in 2019. The number of enterprises completing dissolution procedures was nearly 12,100, an increase of 0.1% while the number of businesses not operating at their registered address was 36,500, an increase of 39.6%.

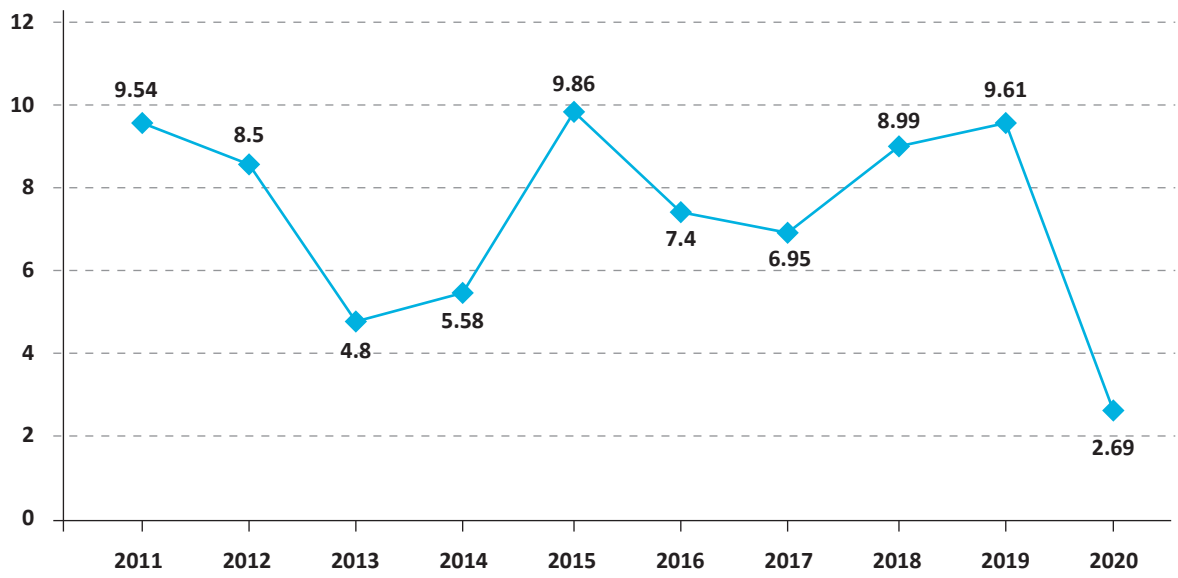


Figure 1: Growth rate of industrial added value in the first 9 months of the years 2011 to 2020

Source: General Statistics Office

[14] Gross domestic product (GDP) in the third quarter of 2020 increased by 2.62% over the same period in 2019, the lowest third quarter increase in the period 2011-2020. GDP in the first nine months of 2020 will increase by 2.12% (by 3.68% in the first quarter; 0.39% in the second quarter; and 2.62% in the third quarter), the lowest growth rate in the first nine months in the years 2011-2020.

Secondly, policies on budget revenue and tax exemption, reduction, and extension of payment deadlines were implemented to remove difficulties for businesses, helping them to secure more resources to concentrate capital for business and production in the context of the Covid-19 pandemic. Accordingly, up to 22 September 2020, the tax authority received nearly 185,000 requests for tax and land rental extension at a total amount of nearly VND 67 trillion. In fact, implementing these policies in the first 9 months of 2020 reduced state budget revenue by approximately VND 88.4 trillion. In this figure: (i) Extension of tax payment deadlines and land rental accounted for around VND 71.8 trillion[15]; and (ii) Exemption or reduction of taxes, fees and charges was around VND 16.6 trillion.

Thirdly, a number of collection policies effective from 2020 were implemented to reduce state budget revenues. For example, regulations sanctioning administrative violations in the road and railway transport[16] sectors caused the production and consumption of alcohol in the first months of the year to decrease, reducing revenue significantly.

3.2. State budget expenditure

Viet Nam is one of the countries that has responded well to the Covid-19 pandemic, facilitating the reopening of production and business activities, encouraging the domestic tourism industry, and supporting businesses in their business activities, thus softening impacts by the pandemic on employees and reducing unemployment. As a result, the number of people receiving support from the VND 62,000 billion bailout package is less than projected, which has reduced pressure on the state budget, specifically:

- The number of employees postponing labour contracts and who have resigned is 15,909 people, equivalent to only 1.59% of the estimate (one million people).
- The number of individual business households with a tax return of less than VND 100 million/year (submitted by the commune-level People's Committee to the Tax Department for appraisal) is 31.9 thousand households, equivalent to only 4.19% of the estimate (760,000 households).

As of September 2020, based on the assessment of the Ministry of Labour, Invalids and Social Affairs, the total number of people belonging to the beneficiary groups that need support is 15.8 million, in which the number of people with meritorious services to the revolution, the beneficiaries of social protection, and poor and near-poor households is over 11.8 million; and the number of employees in enterprises and business households without labour contracts is about 4 million people.

As of 24 September 2020, the state budget had spent around VND 17.5 trillion on pandemic prevention and on providing support to people facing difficulties caused by the Covid-19 pandemic, of which: (i) Expenditures on pandemic prevention under Government Resolution No. 37/ NQ-CP dated 29 March 2020 and Decision No. 437/ QD-TTg dated 30 March 2020 of the Prime Minister accounted for around VND 4.92 trillion[17]; (ii) Financial support for 12.65 million people affected by the Covid-19 pandemic under Government Resolution No. 42/NQ-CP and Decision No. 15/ 2020/ QD-TTg dated 24 April 2020 by the Prime Minister accounted for around VND 12.57 trillion.

Thus, as of September 2020, 12.65 million people affected by the Covid-19 pandemic had received support, equivalent to 80% of the people assessed by the Ministry of Labour, Invalids and Social Affairs. The total state budget expenditure was VND 17.5 trillion, equivalent to 48.6% of the projected expenditure (VND 36 trillion)[18].

[15] Contains: (i) Extension of VND 66.7 trillion in tax and land rental for 128,619 enterprises and 56,268 business households and individuals according to Government Decree No. 41/2020 / ND-CP dated 8 April 2020; (ii) An extension of more than VND 5 trillion in excise tax for domestically manufactured and assembled cars according to Government Decree No. 109/2020/ND-CP dated 15 September 2020.

[16] Decree No. 100/2019/ND-CP dated 30 December 2019.

[17] In which: the central budget was VND 3.92 trillion to supplement the Ministry of Health, Ministry of National Defence, the Ministry of Public Security, and 27 localities. The localities spent VND 1 trillion.

[18] The total budget for supporting people affected by the Covid-19 pandemic is projected at VND 62 trillion; in which: (i) Direct expenditure from the state budget is about VND 36 trillion (of which the central budget accounts for around VND 22-23 trillion and the local budget around VND 13-14 trillion); (ii) Credit policy for the employer to borrow from the Vietnam Bank for Social Policy to pay salaries for suspended employees is projected at around VND 16 trillion; (iii) Other financial support policies (temporary suspension of contributions to the Pension and Survivorship Fund and support from the Unemployment Insurance Fund for re-training employees) is projected at around VND 10 trillion.

In general, despite the impact of the pandemic, state budget spending ensured the implementation of socio-economic development tasks. The accumulated state budget expenditure in the first nine months of 2020 was estimated at VND 1,113.7 trillion, equivalent to 63.7% of the estimate, an increase of 8.1% compared to the same period in 2019; of which, spending for investment and development was nearly VND 269.2 trillion, equivalent to 57.2% of the estimate[19], lower than requirements[20]; interest payments were nearly VND 80.7 trillion, equivalent to 68.3% of the estimate and a reduction of 5.6% compared to the same period in 2019; and recurrent expenditures reached VND 756.9 trillion, equivalent to 71.6% of the estimate, an increase of 3.2% compared to the same period in 2019. The state budget met the requirements of recurrent expenditures for socio-economic development, national defence, security, state management, and social security.

4. Expected effects on the state budget in 2020 due to the Covid-19 pandemic

4.1. Expected effects on state budget revenue

[1] Expected effects on reducing state budget revenue

Although Viet Nam has made efforts to control the pandemic and has achieved quite good results, the pandemic is still unpredictable with no end in sight. Therefore, the need to control and prevent the pandemic is still the top priority to minimise negative impacts on state budget revenue both in the short and long term.

With the unpredictable situation, some impacts on state budget revenues can be clearly observed, including:

- Reduced domestic revenue from production and business activities

The pandemic directly affected several industries and sectors with tourism, transport, commercial services, imports and exports most strongly affected. When these sectors face difficulties, revenue and profit decreases and consequently, the tax paid to the state budget is also reduced. The number of international visitors to Viet Nam in the first 9 months of 2020 decreased sharply compared with the same period in 2019.

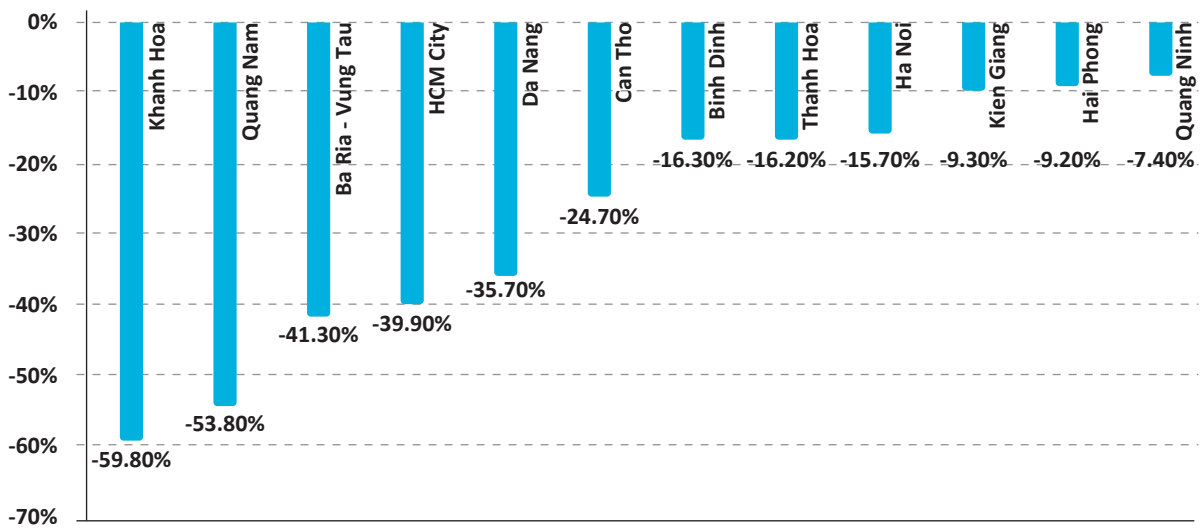


Figure 2: Declining rate of accommodation and catering services from tourism activities in the first 9 months of 2020

Source: General Statistics Office

[19] The figure was 45.1% of the estimate in the same period of 2019.

[20] The 9-month disbursement reached VND 328.77 trillion, equivalent to 52.06% of the plan.

The number of international visitors to Viet Nam in the first 9 months of 2020 was estimated at 3.8 million, down 70.6% from the same period in 2019 as the government continued to implement measures to prevent and control the Covid-19 pandemic. With borders being closed for international tourists, international visitors to Viet Nam were mainly foreign experts and technical workers. Revenue from accommodation and catering services for tourism activities in the first 9 months of 2020 plummeted: travel revenue was estimated at VND 14.2 trillion, a decrease of 56.3% compared with the same period in the previous year. Revenue from accommodation services, and food and beverages from tourism activities in several localities fell sharply over the same period in the previous year: Khanh Hoa (78.7%); HCM City (73.7%); Quang Nam (70.6%); Ba Ria - Vung Tau (68.5%); Da Nang (68.1%); Can Tho (57.1%); Quang Ninh (49.8%); Binh Dinh (44.3%); Hanoi (42.6%); Thanh Hoa (39.9%); and Hai Phong (34.9%).

For the whole of 2020, the number of international visitors to Viet Nam is forecast to decrease by 80% compared to 2019. The number of domestic tourists is expected to decrease by up to 50%. Although the tourism industry has made great efforts to implement major stimulus programmes, 95% of international travel businesses were forced to stop operations, many hotels closed, and occupancy rates of many accommodation facilities in big cities and tourist areas reached only 10-15%[21].

Due to the decrease in tourist arrivals, transportation businesses and transport support services were also affected, especially air transport support services, with revenue from these industries plunging. In the first 9 months of the year, the two largest airlines in Viet Nam, Vietnam Airlines and Vietjet, lost trillions of dong. The net revenue of Vietnam Airlines was VND 32.4 trillion, down 57% over the same period in 2019, recording a net loss of more than VND 10.7 trillion. In the same period in 2019 the airline recorded a profit of VND 2.5 trillion[22].

Due to the implementation of measures to prevent the pandemic from spreading, such as entry restrictions, suspension of cross-border resident exchanges, social isolation, and travel restrictions, export activities, especially with China, would be greatly affected. Accordingly, the export of seasonal agricultural products, such as dragon fruit and watermelon, faced difficulties. Imports to Viet Nam from China also showed signs of slowing down due to reduced production in China, especially raw materials, equipment parts, electronic components, phones, high technology, and auto accessories, etc., causing difficulties for domestic production and business.

When a number of industries and sectors are negatively affected by a pandemic, the remaining related production areas are also adversely affected, reducing investment activities in both the short and long term, especially foreign investment and investment in the non-state enterprise sectors. For invested projects, it is very likely that additional investment will be postponed, making the growth of the FDI sector worrying and indirectly reducing the state budget revenue from these sectors.

In addition to providing support for businesses and people, the National Assembly and the Government of Viet Nam issued a number of policies on exemption, reduction, extension of tax payment and budget revenues. It is expected that these policies could result in reducing state budget revenue in 2020 by about VND 230 trillion[23], of which about VND 180 trillion is from deferred tax and land rental payment, and VND 50 trillion is from the exemption or reduction of taxes, fees and charges[24].

[21] https://nhandan.com.vn/tin-tuc-du-lich/co-cau-lai-thi-truong-khach-du-lich-viet-nam-625406/

[22] http://cand.com.vn/Kinh-te/Hai-hang-hang-khong-lon-nhat-Viet-Nam-van-gap-kho-618241/

[23] Government Report on assessment of the implementation of the state budget in 2020 and the state budget draft in 2021 dated 15 October 2020.

[24] The Ministry of Finance has issued about 20 Circulars on reducing fees and charges, as a result of which fees and charges have been sharply reduced, such as: 70% reduction of business registration fees; 67% reduction of fees for publishing corporate information; a reduction of 50-70% of the appraisal fee for the amendment and supplementation of postal licenses; 50% reduction of the fee for granting operation licenses of credit institutions; 50% reduction of construction investment project evaluation fee and the construction project design evaluation fee; and a 50% reduction of 20/22 securities fees and charges.

- Reduced revenue from import-export activities

Although Viet Nam's trade activities achieved positive growth in the first quarter of 2020, they began to be strongly affected by Covid-19 from April 2020. The negative effects of the pandemic are forecast to have a more pronounced impact on Viet Nam's import and export activities in the last months of the year because from mid-March 2020 to date, the pandemic has seriously affected Viet Nam's major trading partners' markets such as the US, the EU, and Japan. In addition, the return of the pandemic in July continued to seriously affect trade activities between Viet Nam and many other countries. When the overall import-export turnover is reduced, the revenue from import-export tax, VAT, excise tax, and environmental protection tax decreases.

- Reduced revenue from crude oil

Table 1: Forecast of Brent oil price (USD/barrel)

	2019	2021
EIA (11/2020)	64.37	40.61
IMF (10/2020)	36.9	39.45
The Economist (7/2020)	40.5	45
European Economic Forecast (7/2020)	41.8	43.1
OECD (6/2020)	64.21	40.17

Source: IMF, OECD, The Economist

Due to the effects of the Covid-19 pandemic, the disruption of production chains as well as the implementation of social distancing reduced demand for energy globally, which in turn caused the crude oil price to decline, especially in China, which is currently the largest crude oil importer in the world, consuming about 10 million barrels per day. Many factories have ceased or scaled down operations and thousands of flights have been cancelled around the world. In addition, there have been impacts from the supply shock caused by the conflict between Saudi Arabia and Russia, two of the three largest oil producers in the world, after failing to negotiate an agreement on output cuts. The sharp fall in oil prices has a strong impact on the budgets of many countries, including Viet Nam.

Viet Nam's estimated revenue from crude oil in 2020 is VND 35,200 billion based on the domestic exploited output of 9.02 million tonnes and the estimated oil price of USD 60/barrel. If, according to the EIA forecast, the price of Brent oil drops to USD 40.61/barrel in 2020, state budget revenue from crude oil is expected to decrease by about VND 9,400 billion in 2020 if the expected exploitation output remains unchanged.

Since the three areas of state budget revenue – domestic revenue, revenue from crude oil and revenue from import-export activities – decreases, the total state budget revenue in 2020 will decrease significantly.

[2] Expected effects on state budget revenue increase

The Covid-19 pandemic has a negative impact on certain industries and fields, but some industries may take advantage of opportunities to promote business and production activities even in such difficult circumstances due to the effective new-generation CPTPP[25] and EVFTA[26] free trade agreements. Most of Viet Nam's agricultural, forestry and fishery products exported to the EU enjoy preferential tariffs. This promotes

[25] The CPTPP is a new generation of free trade agreement (FTA), consisting of 11 member countries: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam. The Agreement was signed on 8 March 2018 in the city of San-a-Congo, Chile, and officially entered into force on 30 December 2018 for the first group of six countries to complete the ratification process. Standard Agreement includes Mexico, Japan, Singapore, New Zealand, Canada and Australia. As for Vietnam, the Agreement comes into force from 14 January. The CPTPP Agreement maintains almost all of the TPP's commitments except for: (i) US or US commitments; (ii) 22 points of suspension (with detailed list); and (iii) certain modifications in the CPTPP's Bilateral Letters of the Party.

[26] The EVFTA was ratified by the European Parliament on 12 February 12, and ratified by the National Assembly of Vietnam on 8 June 2020, effective from 1 August 2020.

domestic production by increasing demand from the market, especially for aquatic and wood products. In addition, the impact of the pandemic on Viet Nam's leather, footwear, textile, steel, and tire manufacturing industries is not great in the short term, and even these industries can benefit in the short term because major export enterprises had plans to produce, export and supply raw materials in advance. In addition, industries in which Viet Nam and China are competitors in the export sector may experience an increase in the short term due to a temporary shift from China to Viet Nam[27].

In terms of attracting investment, due to the influence of the trade war between the United States and China, Viet Nam has become an attractive destination for foreign businesses, especially in the context of the serious pandemic in China. Foreign enterprises may shift their investment to other countries, including Viet Nam. This has a certain spill-over effect on the domestic business sector, contributing to improving the level of technology and economic governance, economic growth, and indirectly contributing to budget revenue from the business sector.

4.2. Expected effects on increasing state budget expenditure

During the last three months of 2020 and in 2021, global economic growth is expected to slow due to the impact of the Covid-19 pandemic. Also, Viet Nam's economy is forecast to have difficulty reaching its pre-determined targets. State budget spending should be based on state budget revenues to ensure the budget balance remains at a reasonable level. In fact, state budget revenue may face some difficulties. It is important to identify the priorities for state budget expenditures, as well as to ensure its effectiveness and maintain the budget deficit at a reasonable level.

Regarding state budget expenditure, in order to control the pandemic, it is necessary to increase spending on health care and environmental sanitation. At the same time, the state budget is also under pressure to support spending on social security because of the pandemic's great impact on production, business and employment (particularly in the areas of tourism, services, and food and beverages)[28]. In the case of a more widespread and prolonged pandemic, there may be more serious impacts on economic growth and people's lives. Viet Nam may continue to implement economic stimulus, increase investment and consumption to maintain economic growth, and even increase state budget expenditures to implement these measures. If the pandemic situation becomes more serious and unpredictable, the state budget deficit may increase due to the decline in revenue and the increase in spending. Even if the pandemic ends, state budget expenditure may still increase to promote economic development in the post-pandemic period. According to the World Bank (7/2020), Viet Nam's state budget deficit is projected to reach around 6% of GDP in 2020, 4.8% of GDP in 2021, and 4% of GDP in 2022.

At present, Viet Nam's response to the pandemic has been successful and expenditure on pandemic prevention and control in the last months of 2020 is predicted to decrease compared to the previous period due to a reduction in the number of quarantined people, medical staff, and the amount of materials and machinery required for pandemic prevention and control. In addition, the government has applied quarantine fees for anyone entering Viet Nam. The policy to ensure social security has been largely implemented (80%). On that basis, if the pandemic is well controlled by the end of 2020, budget expenditure on disease prevention and control and to ensure social security is projected at around VND 23-25 trillion, lower than the estimate of VND 36 trillion.

[27] http://trungtamwto.vn/su-kien/14829-dich-benh-do-virus-corona-nganh-nao-ton-thuong-nganh-nao-huong-loi

[28] According to the General Statistics Office (7/2020), employment in QII 2020 faced many difficulties. The labour force aged 15 and over in QII 2020 was 53.1 million people, a reduction of 2.2 million compared to the previous quarter and by 2.4 million people compared to the same period in the previous year. This year recorded a significant decrease in the workforce. The labour force of working age in QII 2020 was 46.8 million, a decrease of 2.1 million compared to the previous quarter and by 2.2 million people from the same period in 2019

On 19 October 2020, the Government promulgated Resolution No.154/NQ-CP to amend and supplement Resolution No.42/NQ-CP dated 9 April 2020 on measures to assist people affected by Covid-19. According to Resolution No. 154/NQ-CP, a worker who has his/her employment contract suspended or has to take unpaid leave for at least one month because his/her enterprise does not have adequate funds to pay wages will receive 1,800,000 VND per month. The measure came into effect on 1 April 2020 and the duration of assistance, which may not exceed 3 months, varies according to the duration of employment contract suspension, unpaid leave and the pandemic situation. The expansion of this measure may lead to an increase in state budget expenditure, but this increase will not be too large. It is estimated around VND 300 billion of additional budget expenditure will be required for an increase in number of people receiving support of around 30,000-50,000 persons.

In general, Viet Nam has achieved a number of positive results due to the drastic measures it has taken and its rapid response to Covid-19. The macroeconomic situation has remained stable and production and business have been maintained and boosted. As a result, the pressure on state budget expenditures and the budget deficit has been reduced. In addition, the Ministry of Finance carried out a number of measures to ensure state budget spending, such as transferring the revenue increase source and the central budget in 2019 to 2020, implementing wage increase delays, saving 10% of recurrent expenditures, and cutting at least 70% of conference and travel expenses. Accordingly, the state budget deficit in 2020 is estimated at around VND 320,000-358,000 billion, an increase of VND 85,000-123,000 billion compared to the estimate, equivalent to about 5-5.6% of GDP. Public debt is estimated at 57% of GDP, government debt 51% of GDP, and national external debt 48% of GDP. Thus, by the end of 2020, it is expected that the debt-to-GDP ratios will remain within the safety thresholds allowed by the National Assembly.

In 2021, the Covid-19 pandemic is expected to be controlled. Covid-19 vaccines may help the socio-economic situation improve and reduce pressure to support social security. However, pressure on health care expenditure still remains, particularly in scientific research, technology transfer and price support for purchasing vaccines. At the same time, an increase in public investment may put pressure on the balance of the state budget. Therefore, it is necessary to review and adjust state budget revenue and expenditure to cope with the Covid-19 pandemic.

5. Challenges in forecasting state budget revenues in the context of the Covid-19 pandemic

Firstly, traditional forecasting approaches based on tax buoyancy or macro elasticity can lead to underestimations of the decline in budget revenues. Since the current shock is disproportionate across sectors and by business size, in order to get better results, it is necessary to forecast revenue sources by sector and tax type. The forecast needs to be constantly updated whenever there is new information about the pandemic and measures and policies to deal with it.

Secondly, Covid-19 will seriously reduce state budget revenues from taxes due to the economic slowdown, indirect causes such as tax policies, and management measures taken in response to the pandemic.

Thirdly, the tax system in Viet Nam is not stable. It is regularly amended and supplemented, so forecasting methods are limited.

6. State budget revenue forecast in 2020

6.1. Using macro methods to forecast state budget revenue for 2020

[1] An overview of the macro method

The study uses the macro method to forecast state budget revenue in 2020 in the context of Covid-19. The method uses macroeconomic variables in the national account. They are used as an approximate estimate of the tax base for each tax revenue that accounts for a large proportion of total annual state budget revenues (such as CIT, PIT, VAT, etc.). Based on regression analysis from a system of equations (each

equation shows certain characteristics of the economy), it can be used as a basis for forecasting state budget revenue. In the context of limited data and resources when implementing impact assessments and the context of Covid-19, this is a proper method using given macroeconomic forecasts of domestic and foreign organisations.

[2] Forecasting steps

Step 1: Identify the tax base for each tax revenue

Macroeconomic variables, namely GDP and the components of GDP in the national account (such as private consumption, government expenditure, investment, etc.) are used as an approximate estimate of the tax base of each major tax revenue (CIT, VAT, excise tax, etc.). Since it is an approximate estimate, there will be errors between the macroeconomic variables and the actual tax base. For example:

- For VAT and excise tax on domestic goods, the tax base will be estimated according to the private consumption component of the national account.

- For CIT, because it is levied on the taxable income of enterprises, which constitutes the total VAT of the economy (i.e. GDP). Therefore, the base for CIT is estimated by GDP.

- For export tax and import tax: the basis for calculating import tax and export tax (including the collection of excise tax on imported goods, VAT on imported goods, and environmental protection tax on imported goods, etc.) will be on import turnover.

- For PIT, the tax base is disposable income.

- Revenue from crude oil is forecast on the basis of plans on oil export volume, world crude oil price, and exchange rates.

Step 2: Identify the forecasting method

Estimations of the elasticity of revenues for each tax against the corresponding tax base are based on historical data. Finally, the tax revenue for the following years will be forecast by multiplying the estimated elasticity by the forecast of the tax base. The macroeconomic factors are based on the forecasts of international organisations or based on the number of implementation plans for 2020 from Vietnamese government agencies.

In order to forecast state budget revenues based on tax elasticity, the study builds a data series for each tax that is intended to be forecast according to: (i) tax revenue sources and (ii) tax bases. Data series on tax revenues are obtained from the state budget revenue agency. The tax base is taken from the national account or the GDP account (salary and income for PIT, private spending for VAT).

The functional relationship between adjusted tax revenue (ATn) and economic variables (proxy selected for tax base) is specified by OLS regression analysis to determine the elasticity of each type of tax to its corresponding base tax:

$AT_i = a + b^* B_i$

In which, ATi is the adjusted tax revenue source and Bi is the tax base in year I;

A and b are the estimated constants (intercept and slope). Using this equation, tax elasticity can be estimated.

Alternatively, the same equation can be expressed in log, the coefficient Bi (b1) directly yields the tax elasticity:

$LnAT_i = a1 + b1 * Ln\ B_i$

Sometimes, it is necessary to introduce dummy variables into the model to take into account other relevant events affecting tax collection; for example, tax reform or economic recession.

Example: for a VAT forecast, the relevant equation would be as follows:

$LnAT_{vat} = a + b\ Ln\ Consumption\ (or\ GDP) + gD$

Use the above equation to forecast future VAT revenue.

VAT revenue next year = (1 + tax elasticity x % change in tax base) x current year's VAT collection.

Step 3: Extracting forecast results for state budget revenue in 2020

6.2. Applicable data series

The model uses macro data extracted from the national account system (SNA) due to factors in the SNA representing the tax base, including:

(i) Economic growth and inflation

In the period 2011-2015, average economic growth was about 5.92% per year. TFP's contribution to Viet Nam's economic growth on average was 33.58%[29] in the period 2011-2015, which is quite low and the TFP growth per year was slower. There are a number of reasons, such as low investment efficiency, limitations in planning, spread and fragmented investment, a large working age population, very low labour productivity, an unreasonable trained labour structure, and an unemployment rate that tends to decrease but still significantly affects economic growth. In addition, the low TFP is due to backward technical skills (especially rudimentary equipment and technology), slow technological innovation, low investment in technological innovation, and low management skills. By 2016-2019, Viet Nam's GDP growth was quite high, especially in 2017-2019, which saw

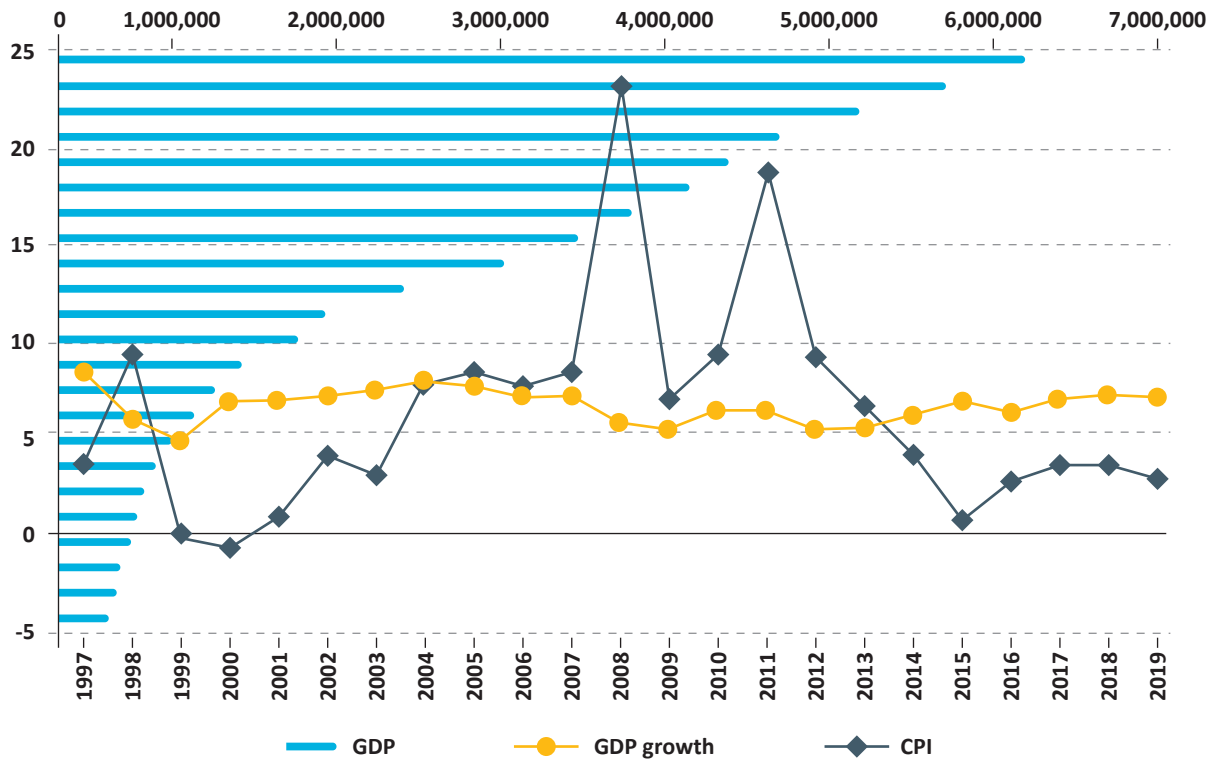


Figure 3: Economic growth and inflation from 1997 to 2019 *(billion VND, %)*

Source: General Statistics Office

[29] http://quochoi.vn/tintuc/pages/tin-hoat-dong-cua-quoc-hoi.aspx?ItemID=37746

growth of about 6.8% per year on average. This was due to supply[30] and demand[31] factors.

In addition, the macroeconomic foundation was strengthened, inflation maintained at a low level (below 4%), and the exchange rate was flexibly adjusted in line with market developments. The interest rate was stable, and the credit and money supply tightly controlled in line with the goal of macro stability and economic growth in each period. Growth quality has improved and has depended less on credit. The contribution of the TFP factor in economic growth in 2016-2019 was about 44.46%[32], higher than the 33.58% recorded in 2011-2015.

(ii) Turnover and growth of imports and exports

In the period 2015-2019, exports and imports reached more than VND 2,100 billion, higher than the value of the previous 15 years combined. The total import-export turnover has just exceeded USD 500 billion for the first time and is estimated at USD 517 billion for the whole of 2019. Exports reached nearly USD 263.5 billion, an increase of more than 8% compared to 2018 while imports were well controlled at around USD 253.5 billion. As a result, the trade surplus reached approximately USD 10 billion, the highest level ever recorded.

In 2001, the total value of Viet Nam's imports and exports was just over USD 30 billion. The USD 100 billion milestone was achieved in 2007 after Viet Nam became a member of the World Trade Organization (WTO). By 2011, the total import and export value had doubled – reaching USD 200 billion. Four years later, Viet Nam continued to achieve a trade turnover of USD 300 billion. Just two years later, imports and exports reached USD 400 billion in December 2017.

In the period 2000-2019, total import-export value reached nearly USD 4,000 billion. As a result, Viet Nam's export and import WTO rankings increased significantly. In 2006, Viet Nam ranked 50th in the world in terms of exports and 44th in terms of imports. By 2018, Viet Nam ranked 26th in terms of exports and 23rd in terms of imports. In the ASEAN region, Viet Nam is third in terms of imports and exports, after Singapore and Thailand.

In 2019, Viet Nam achieved a trade surplus in four consecutive years. From 2011 onwards, the trade balance was in deficit for billions of USD. At its peak in 2008, Viet Nam saw a trade deficit of over USD 18 billion. However, since 2012 (except for 2015), the trade balance has changed direction. The number of exported products with minimum turnover of VND 1 billion had increased to 32, which is 1.5 times compared to 2011. Amongst these products, eight of them had turnover of more than USD 5 billion, and six of them achieved turnover of more than USD 10 billion. Japan, the United States, the EU, and ASEAN were Viet Nam's main export markets in 2019.

---

[30] Including: (i) Industry, construction and service sectors grew higher than the previous period (increased from an average of 39.9% in 2011-2015 to over 44% in 2016-2019); (ii) The processing and manufacturing industry, although slowing down due to the decline in external demand, still experienced a good increase in 2018 and 2019 (about 13%), so for the period 2016-2019, this industry grew at an average rate of 12.8%/ year, contributing up to 32% to GDP growth of the whole economy, which plays an important role of driving general growth; (iii) Labour productivity in the period 2016-2019 increased by an average of 5.95%/ year, higher than the growth rate of 4.33%/ year in the period 2011-2015; (iv) Investment efficiency improves with a decrease of ICOR, from 6.25 (2011-2015) to 6.11 (2016-2019).

[31] Including: (i) Consumption increased and the trade surplus was larger than in the previous period (final consumption is estimated to increase by 7.32%/ year with a stable trend in the whole period 2016-2019, 1.32 percentage points higher than 2011-2015, contributing 5.3% to GDP growth of the whole economy); (ii) Imports and exports have maintained a relatively high growth rate in the context of declining international trade because Vietnam has effectively taken advantage of opportunities from the context of the world economy and international integration; (iii) Investment from the domestic private sector increased rapidly, foreign direct investment inflows increased and there was a strong shift in both form, partners and investment fields.

[32] The target for the 2016-2020 period is "Total factor productivity (TFP) contributes about 30-35% to growth. Average social labour productivity is about 5%/ year. Energy consumption as a percentage of GDP decreases by 1-1.5%/ year on average". Source: Documents of the 12th National Congress of Delegates. Party Central Office, 2016, p. 272.

https://www.quanlynhanuoc.vn/2019/08/04/nang-cao-hieu-qua-thuc-hien-cac-chi-tieu-tang-truong-kinh-te-giai-doan-2016-2020/

https://www.gso.gov.vn/default.aspx?tabid=382&idmid=2&ItemID=19453

Viet Nam has a trade surplus in markets with strict quality requirements, such as the US at USD 46.4 billion and the EU at almost USD 27 billion. A year after the CPTPP took effect, export turnover to several countries increased significantly, reaching nearly USD 4 billion for Canada and approximately USD 3 billion for Mexico.

According to several international organisations, it will not be easy for Viet Nam to reach the import-export milestone of USD 500 billion this year in the context of the global downturn in trade and continuing trade wars. From being a country where food shortages were common and subsidies essential, Viet Nam has become a major exporter to the world.

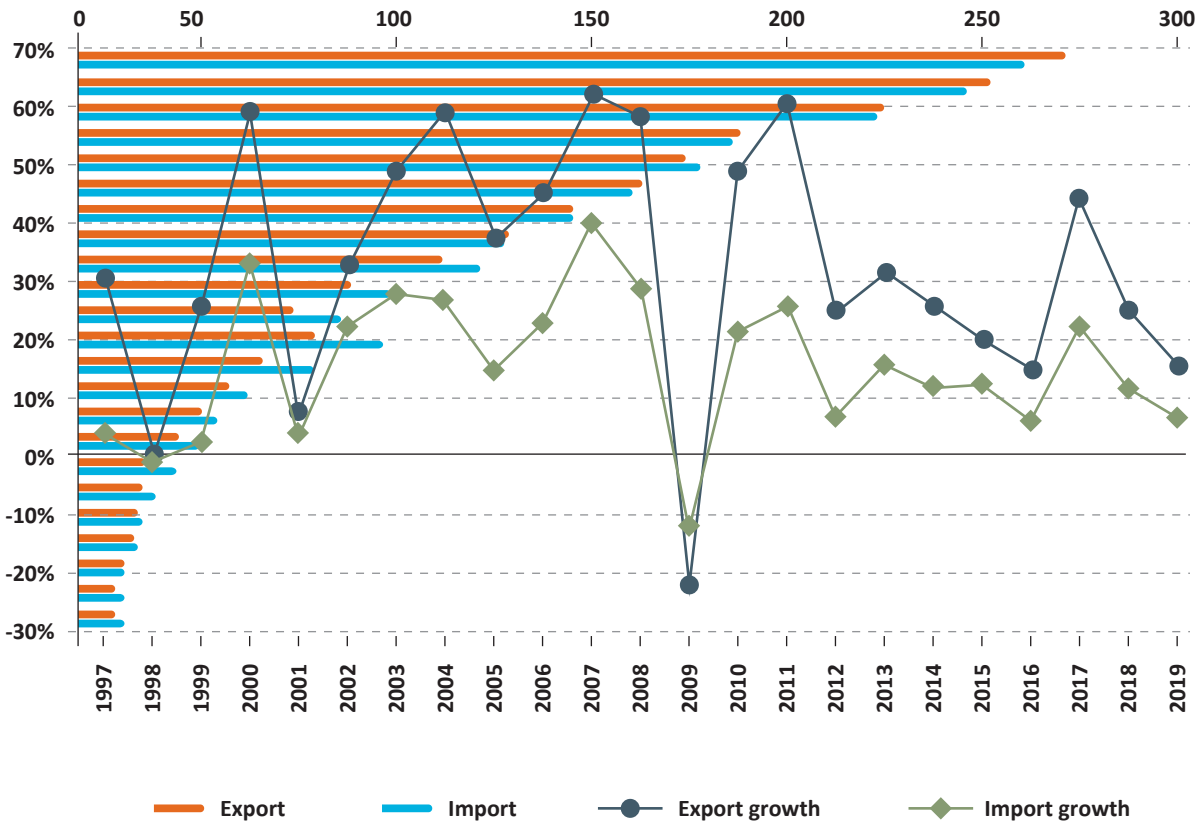


Figure 4: Viet Nam's exports and imports in 1997-2019 *(billion VND, %)*

Source: General Statistics Office

(iii) Data on private consumption

Private consumption or household consumption is one of the most important variables used to forecast excise tax and VAT. Household consumption partly reflects people's living standards, which is a factor that stimulates economic growth. On average in the 2016-2019 period, household consumption reached VND 3.6 trillion, about 1.6 times higher than 2011-2015, 3.8 times higher than 2006-2010, and 8.7 times higher compared to 2001-2005.

The growth rate of household consumption has increased significantly since 2008 (up 34%), and then gradually stabilised in 2014-2019 (at an average of 10%).

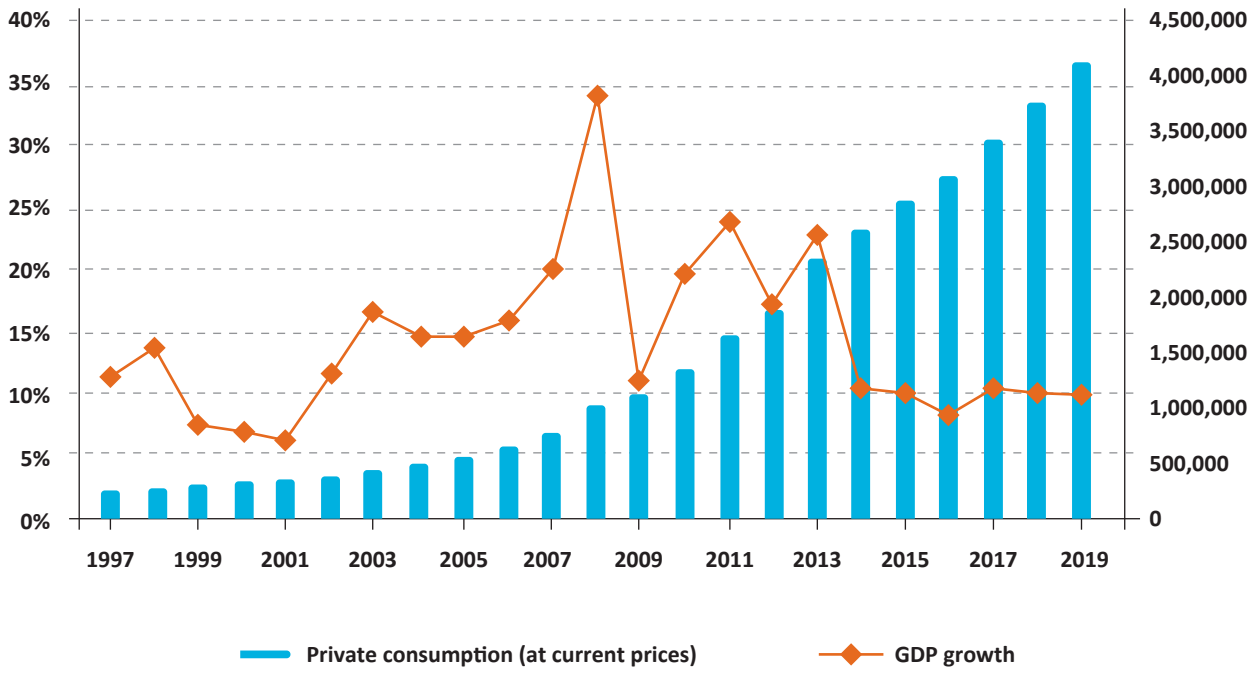


Figure 5: Private consumption in Viet Nam, 1997-2019 *(billion VND, %)*

Source: General Statistics Office

(iv) Data on state budget revenue

Total state budget revenue in the 2006-2010 period reached an average of 26.34% of GDP (the planned target was 20-21%) and an average of 23.56% of GDP in 2011-2015 (the planned target was 23-24% of GDP). In the period 2016-2019, the total state budget revenue reached an average of 25.36% of GDP. In terms of absolute figures, the total state budget revenue realised was much higher than the National Assembly's annual estimate[33].

Total revenue from taxes, fees and charges reached 23.63% of GDP in the 2006-2010 period and was 21.7% of GDP in 2011-2015 (the planned target was 22-23% of GDP). In the period 2016-2019, total revenue from taxes, fees and charges was about 22.81% of GDP (the target for the whole period 2016-2020 was 21-22%). Specifically, in 2016, the total state budget revenue was estimated at 24.6% of GDP, of which revenues from taxes, fees and charges was estimated at 22.15% of GDP. In 2017, the total state budget revenue was estimated at 25.8% of GDP, of which revenue from taxes, fees and charges was estimated at 23.1% of GDP. In 2018, the total state budget revenue reached 25.79% of GDP, of which revenue from taxes, fees and charges was estimated at 22.94% of GDP. In 2019, the total state budget was estimated at 25.67% of GDP, of which revenue from taxes, fees and charges was estimated at 23.02% of GDP. The average annual growth rate of revenue from taxes, fees and charges was about 12.06% in the period 2011-2015 while in 2016-2019, it was about 11.79% per year. This growth is relatively good in the context of an economy still facing many difficulties.

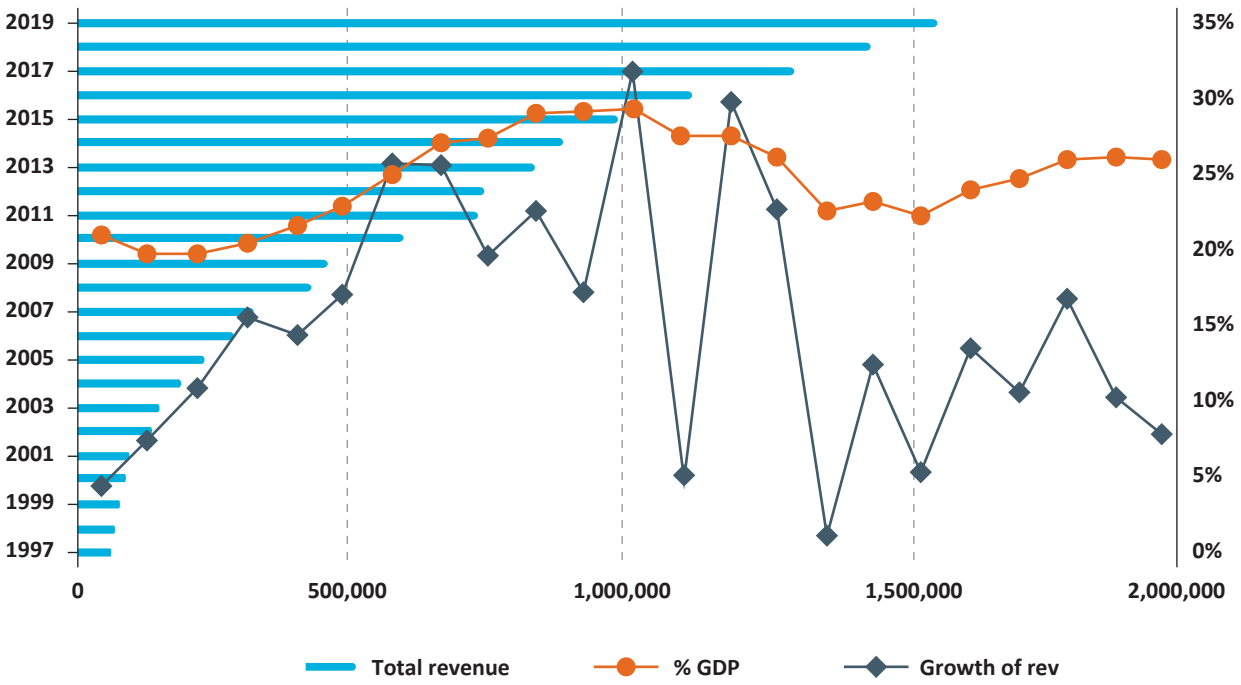


Figure 6: State budget revenue *(billion VND, % GDP)* and growth rates of state budget revenue in the period 1997-2019 *(%)*

Source: Ministry of Finance

[33] In 2016, it exceeded about VND 93 trillion; in 2017, it exceeded about VND 81 trillion; in 2018, VND 112 trillion; in 2019, it was estimated to exceed VND 138.2 trillion.

Tax revenues have increased significantly, especially in recent years (from 2014 to 2019). Income from PIT increased from nearly VND 1.5 trillion in 1997 to more than VND 2 trillion in 2001, to over VND 26 trillion in 2010 and to more than VND 109 trillion in 2019. Income from CIT (excluding revenue from crude oil) increased from over VND 14 trillion in 1997 to nearly VND 15 trillion in 2001, to over VND 101 trillion in 2010 and to more than VND 228 trillion in 2019. Revenue from VAT (domestic and imported goods) increased from nearly VND 12 trillion in 1997 to more than VND 19 trillion in 2001, to VND 155 trillion in 2010 and to over VND 362 trillion in 2019. Revenue from excise tax on domestic goods increased from VND 4.5 trillion in 1997, to more than VND 6 trillion in 2001, to more than VND 37 trillion in 2010 and to nearly VND 107 trillion in 2019. Revenue from export tax, import tax, excise tax and environmental protection tax on imported goods increased from over VND 13 trillion in 1997 to over VND 17 trillion in 2001, to about VND 74 trillion in 2010 and to over VND 98 trillion in 2019.

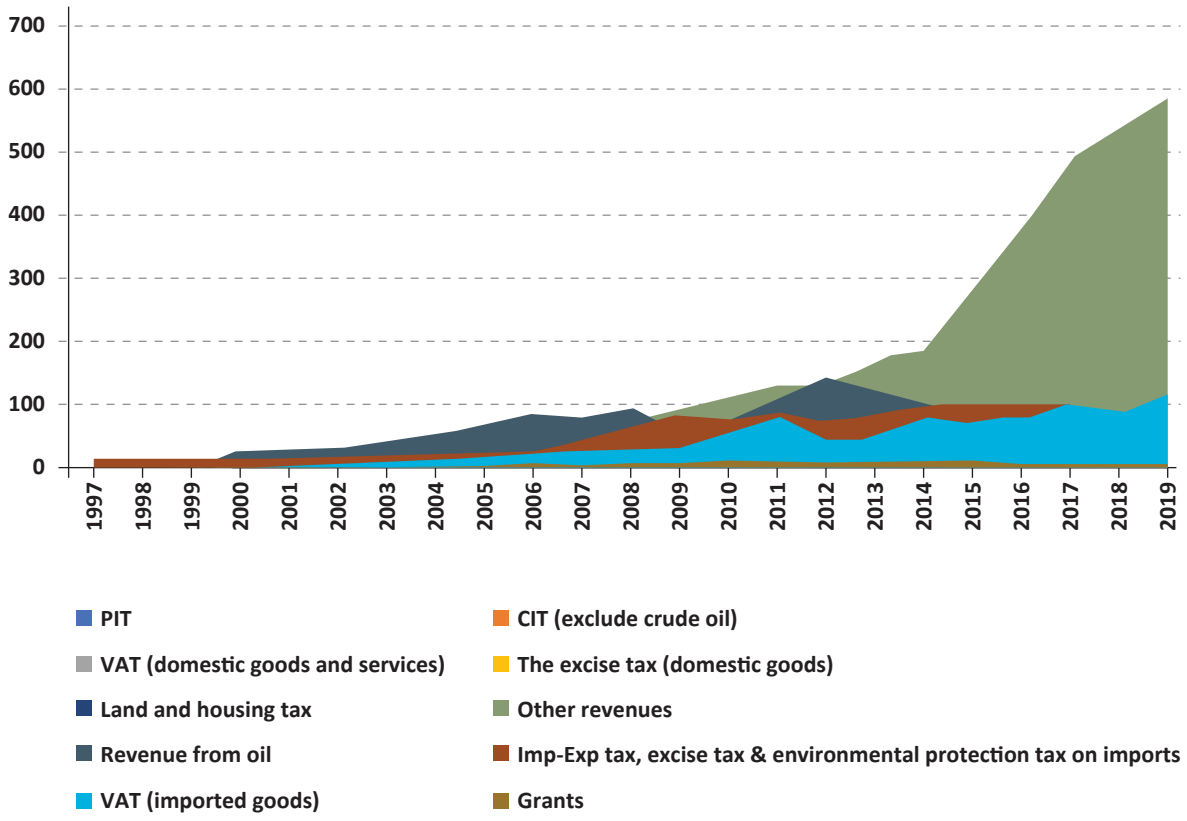


Figure 7: State budget revenues for the period 1997-2019 *(Trillion VND)*

Source: Ministry of Finance

Revenue from VAT on domestic and imported goods is an important source of revenue, currently playing the most important role in the structure of state budget revenue. In the 2016-2019 period, revenue from VAT was estimated to reach an average of about VND 315 trillion, 1.5 times higher than 2011-2015, 3.3 times higher than 2006-2010 and nearly 10 times higher than 2001-2005. The scale of revenue from VAT to GDP has remained stable in recent years (accounting for about 6% of GDP on average).

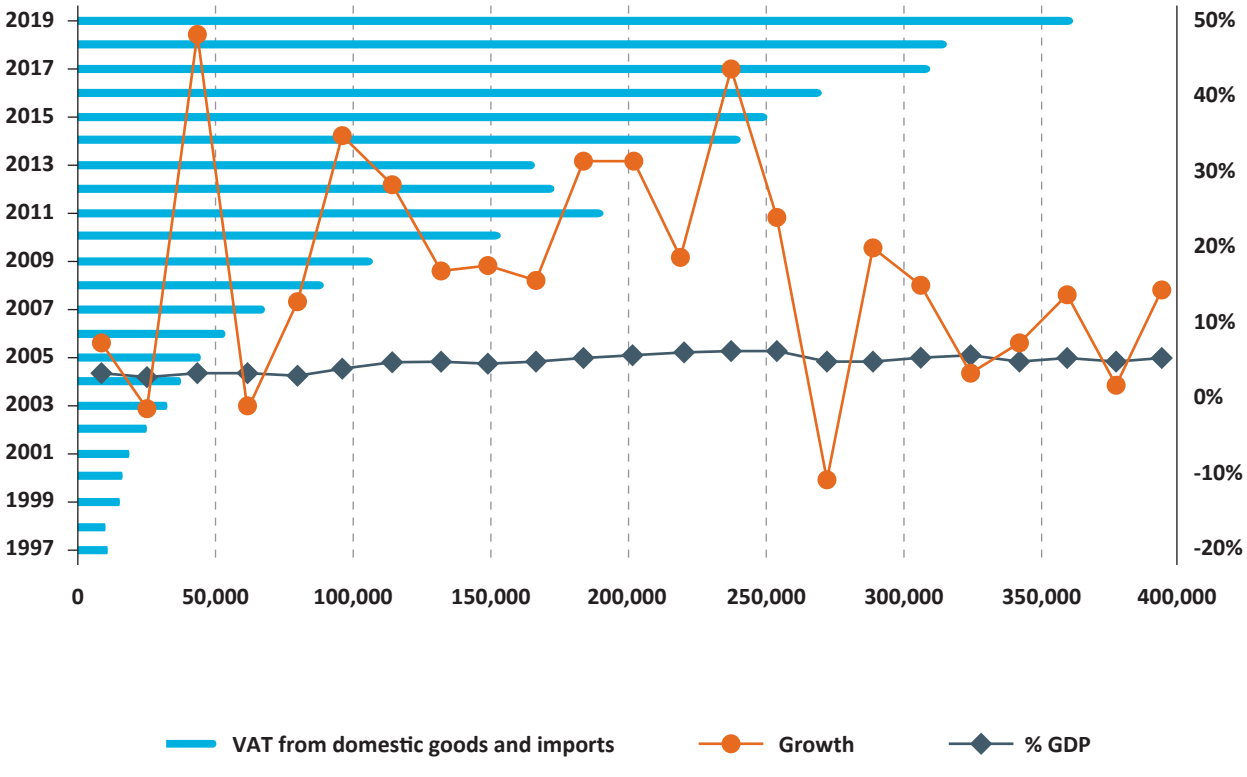


Figure 8: VAT revenue in the period 1997-2019 *(billion VND, % GDP, % growth)*

Source: Ministry of Finance

Income from CIT is also a very important source of state budget revenue, partially reflecting the production and business situation of enterprises in the whole economy.

In the 2016-2019 period, the revenue from CIT reached an average of more than VND 230 trillion, 1.1 times higher than the 2001-2015 period, 3.5 times higher than the 2006-2010 period, and nearly 11 times more than the period 2001-2005.

In certain years, income from CIT decreased sharply (for example, in 2014 and 2015, CIT revenue decreased by about VND 23-31 trillion compared to 2013) because the economy still faced difficulties and as a result of adjusting CIT policies towards reducing the common tax rate and implementing other tax incentives.

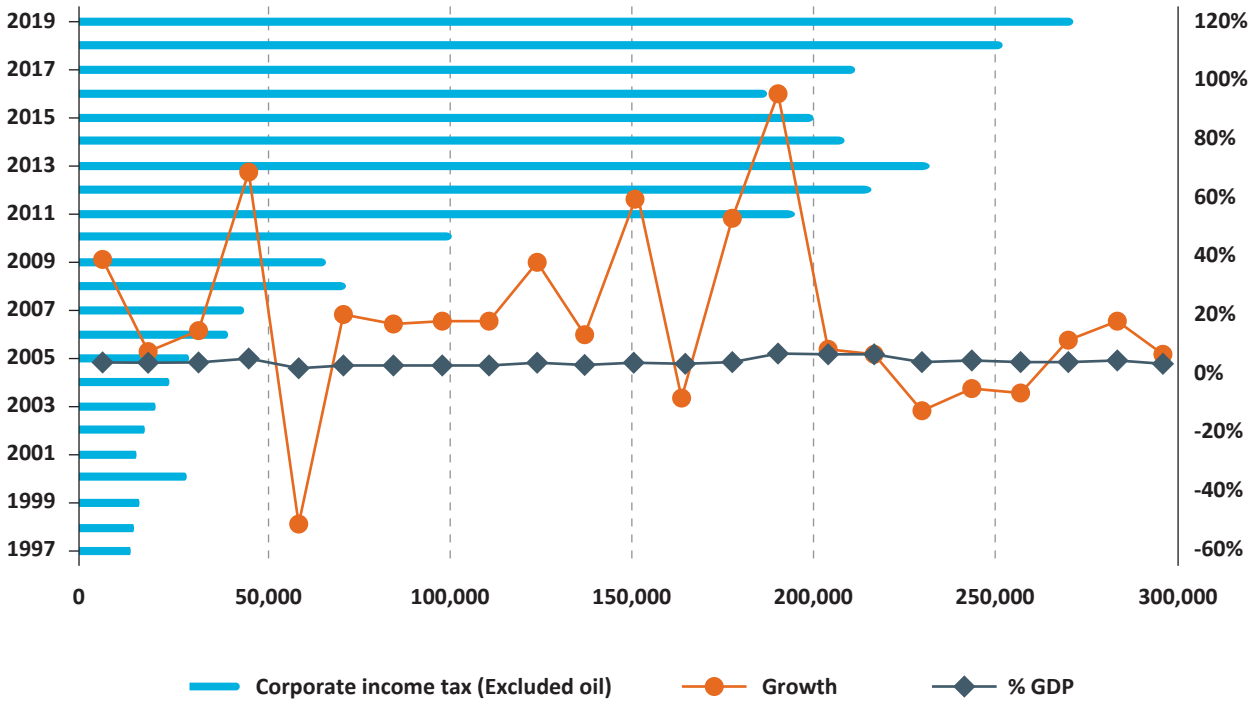


Figure 9: Corporate income tax revenues for 1997-2019 *(billion VND, % GDP, % revenue growth)*

Source: Ministry of Finance

Revenue from PIT has also grown well, but the scale of revenue from this tax compared to GDP is quite small, fluctuating at 1-2% of GDP, partly due to the large underground economy that makes tax administration difficult, leading to a loss of PIT revenue.

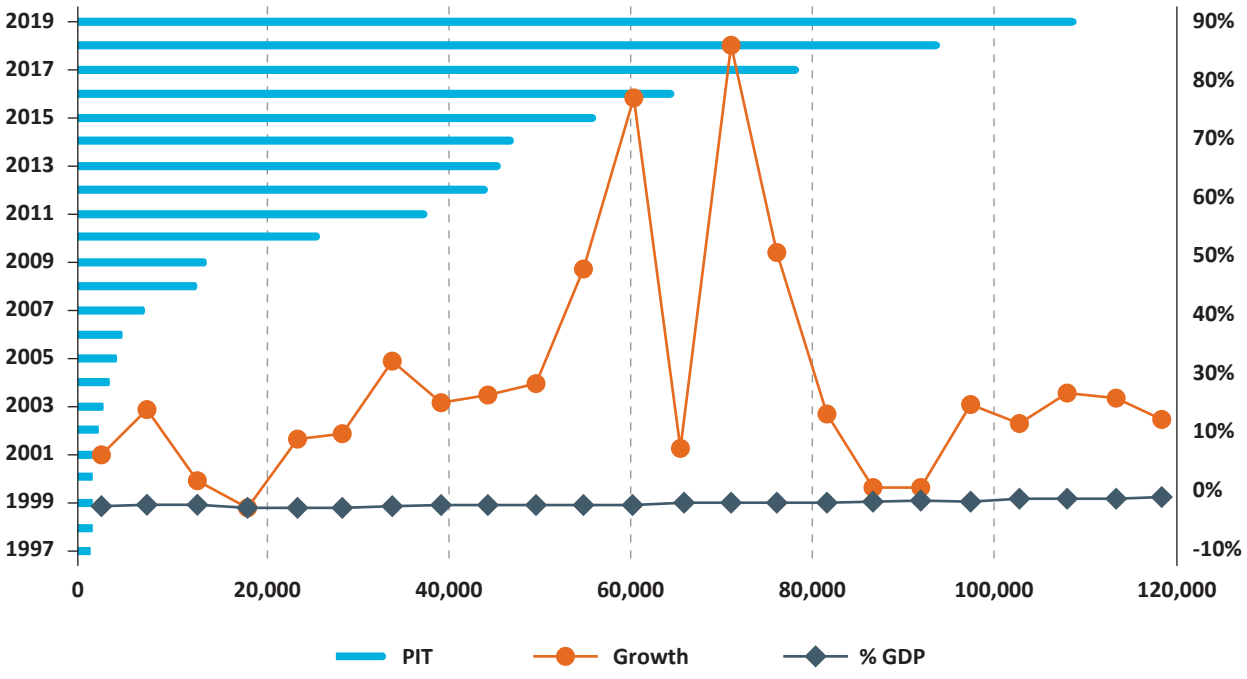


Figure 10: Revenue from personal income tax during 1997-2019 *(billion VND, % GDP, % growth)*

Source: Ministry of Finance

Tax revenue structure: Revenue from indirect taxes plays an increasingly important role in mobilising resources for the state budget. Direct taxes account for a smaller proportion due to recent tax polices adjusting forwards creating favourable conditions to promote production and business activities and creating an attractive investment environment. Specifically, in the 2016-2019 period, the proportion of corporate income tax revenue (excluding crude oil) compared to the total state budget revenue tended to decrease and reached an average of 14.5%, down from an average of 16.1% for the period 2011-2015. The proportion of personal income tax has increased due to an improvement in people's incomes. The proportion of personal income tax revenue in the total state budget revenue reached an average of 6.6%, increasing from 5.64% in the period 2011-2015. The proportion of non-agricultural land-use tax revenue in the total state budget revenue is about 0.12% on average (lower than 0.17% in the period 2011-2015). For indirect taxes, VAT contributed positively to the state budget, followed by excise tax. In the period 2016-2019, the proportion of VAT revenue to total state budget revenue increased rapidly and became the most important source of budget revenue, reaching an average of 24.3%; however it was still lower than the average rate of 25.78% in the 2011-2015 period but higher than the 2006-2010 period (22.36%). The proportion of revenue from excise tax on domestic goods compared to total state budget revenue also increased, from an average of 6.27% in the 2011-2015 period to 7% in the 2016-2019 period, which was due to the adjustment of an increase in the excise tax rate for a number of items according to the roadmap. In particular, the environmen-

tal protection tax, which was enacted in 2010 and applied since 2012, accounted for an increasing proportion of the total state budget revenue, at 3.4% of the total in 2019 (compared to 2.71% in 2015 and 1.72% in 2012).

6.3. Determining tax revenue elasticity

- VAT on domestic goods: VAT revenue elasticity is drawn based on nominal private consumption.

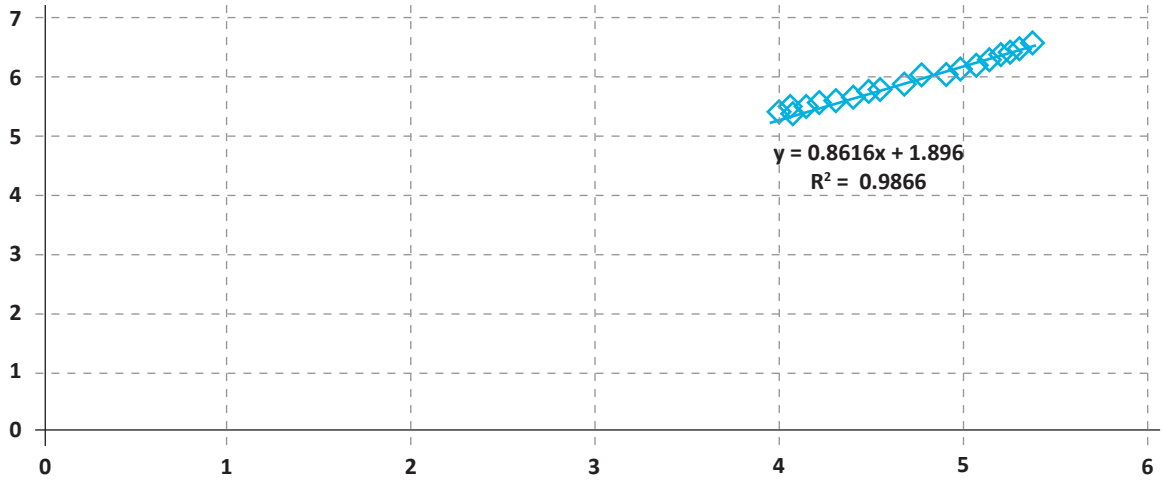


Figure 11: VAT collection and nominal private consumption, annual data, and use of the log function

Source: Ministry of Finance

- VAT on imported goods: the elasticity of the VAT revenue of imported goods is expressed on the basis of import turnover.

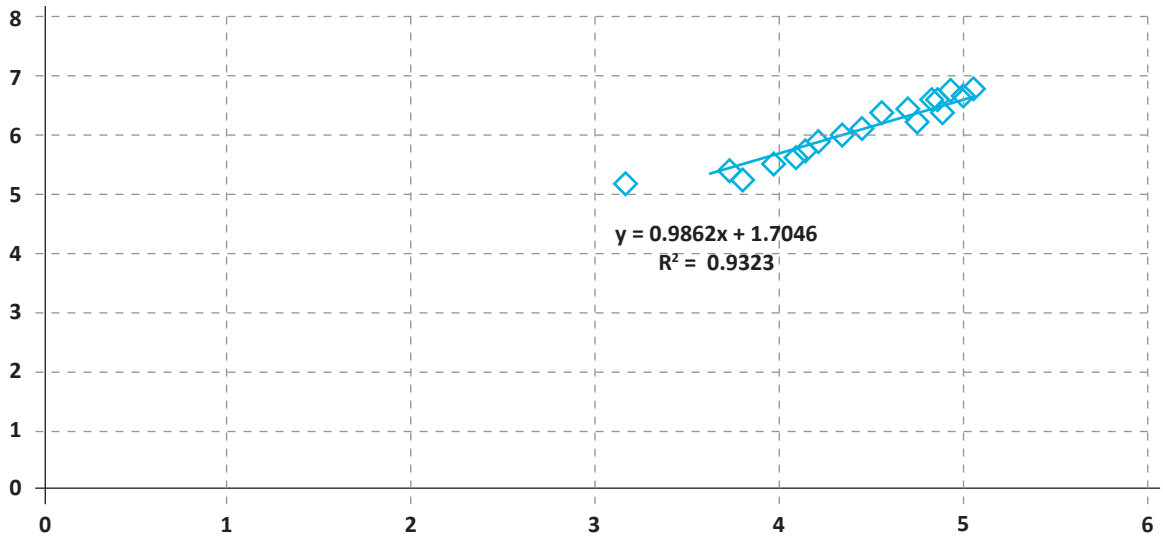


Figure 12: VAT collection on imports and imports, annual data, and use of the log function

Source: Ministry of Finance

- For PIT, revenue elasticity is plotted based on data on nominal disposable income.

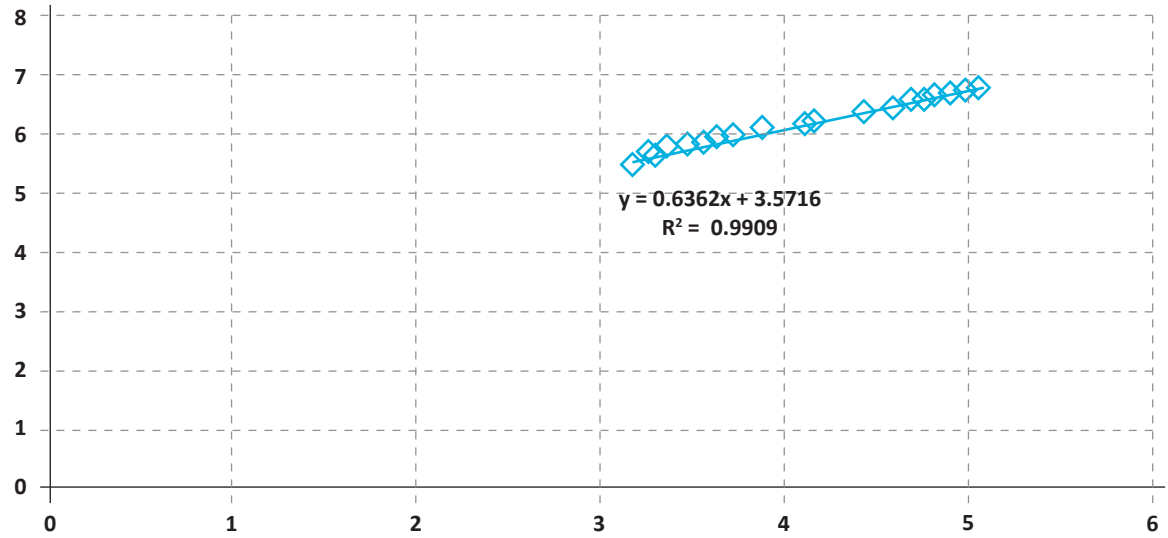


Figure 13: PIT collection and disposable income, annual data and use of the log function

Source: Ministry of Finance

- For CIT, income elasticity of income tax is shown based on data on nominal GDP.

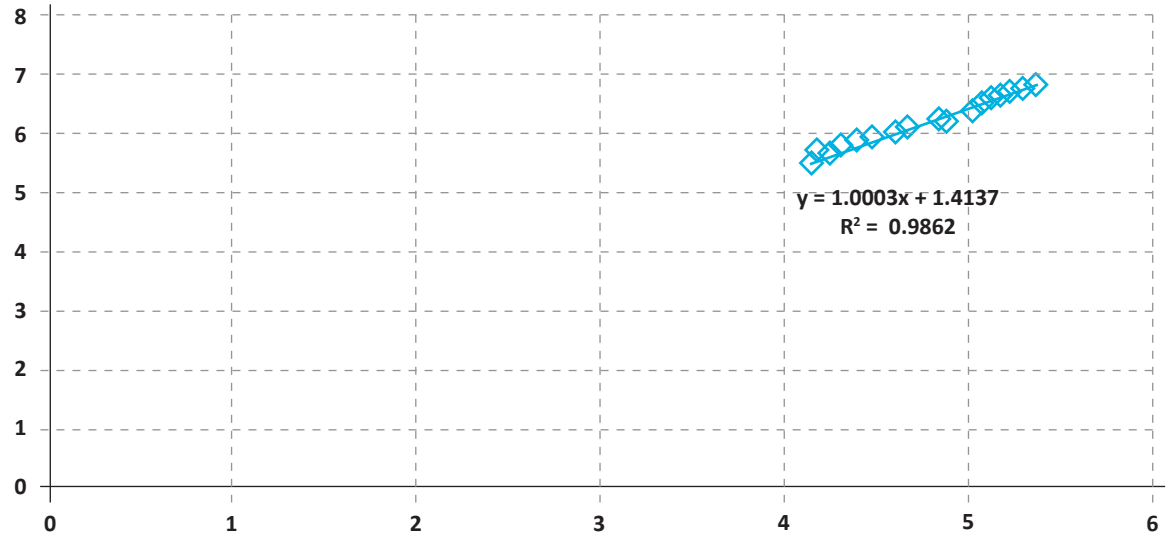


Figure 14: CIT collection and nominal GDP, annual data, and use of the log function

Source: Ministry of Finance

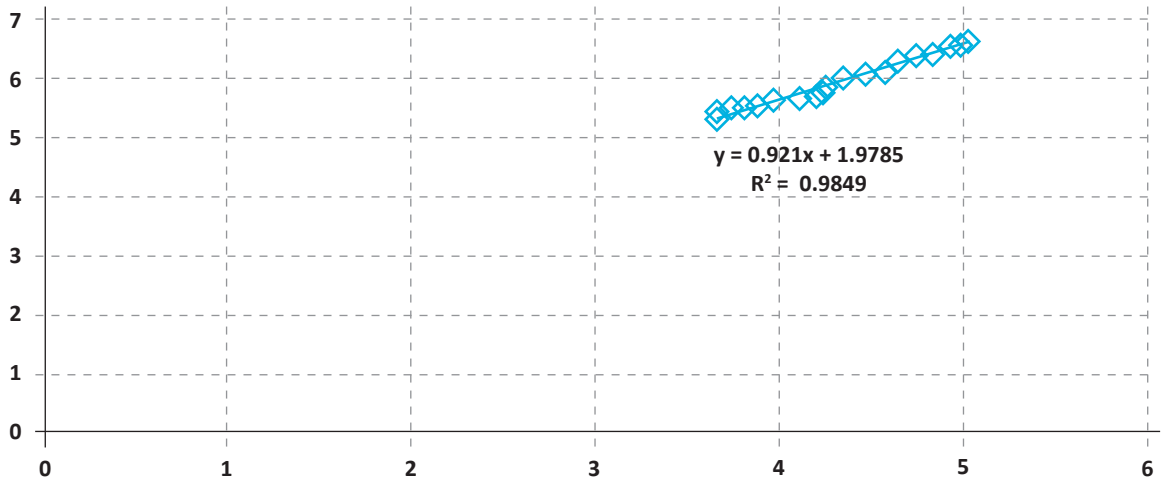


Figure 15: Collection of excise tax on domestic and nominal private consumption, annual data, and use of the log function

Source: Ministry of Finance

- For revenue from the environmental protection tax for domestic goods: The elasticity of revenue from the environmental protection tax for domestic goods is drawn based on data on nominal private consumption.

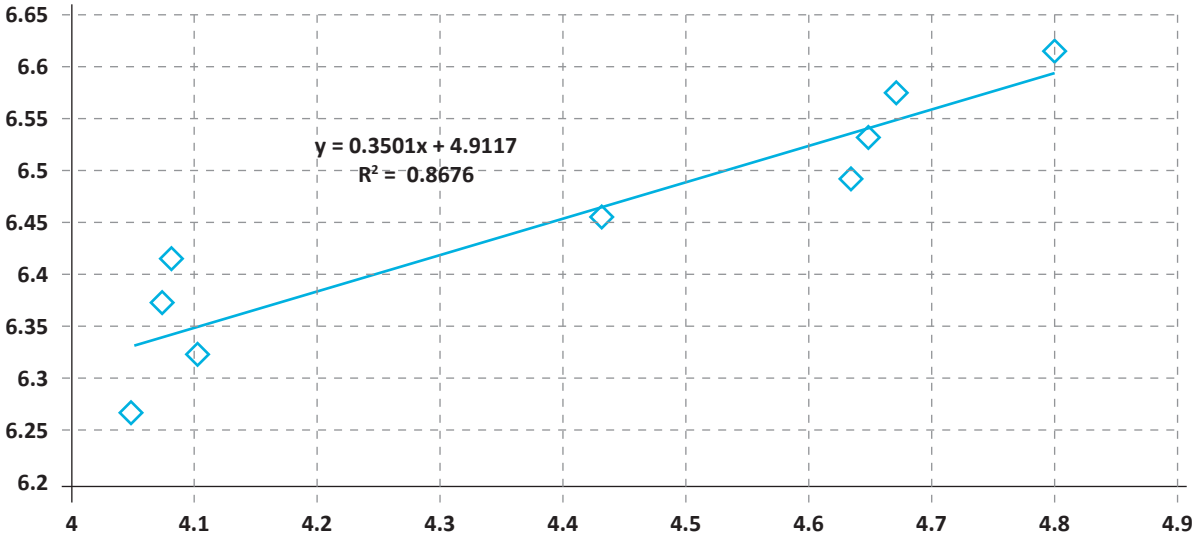


Figure 16: Environmental protection tax on domestic goods and nominal private consumption, annual data from 2011 to 2019 and using the log function

Source: Ministry of Finance

- The elasticity of revenue from import and export taxes, excise tax and environmental protection tax on imports is drawn based on import turnover data.

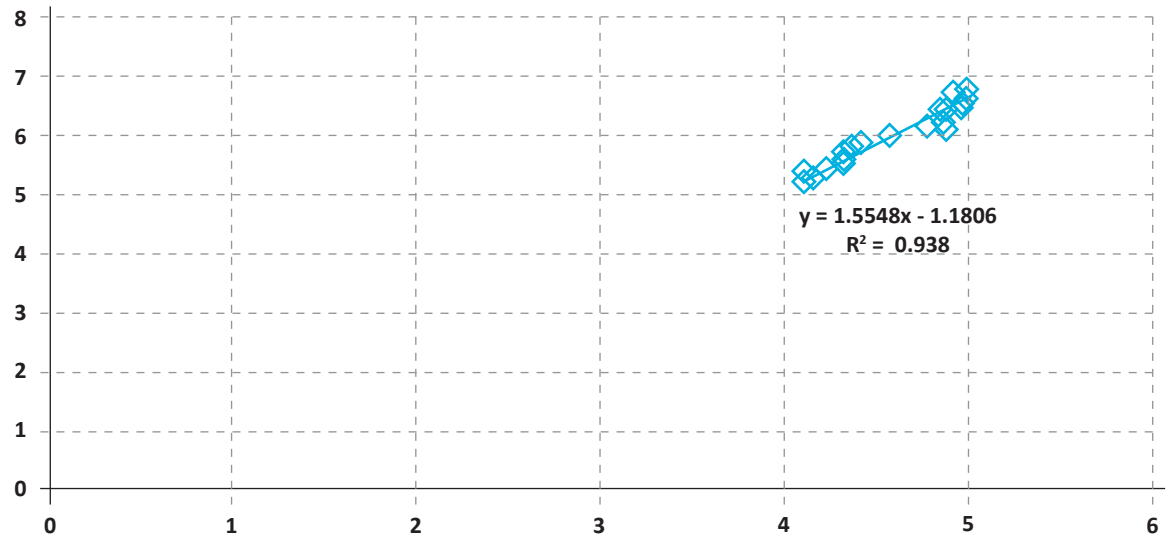


Figure 17: Export and import taxes, excise tax and environmental protection tax on imports, import turnover, annual data and using the log function

Source: Ministry of Finance

6.4. Forecast framework for macroeconomic indicators serving budget revenue forecasting

In 2020, the Covid-19 pandemic caused economies in many countries to fall into recession and Viet Nam was also affected. While the global economy in general and some countries in particular are forecast to record negative growth in 2020, Viet Nam's GDP is still forecast to be positive, with indicators of inflation and investment still likely to achieve their targets.

International organisations forecast Viet Nam's economic growth in 2020 as follows:

- According to the World Bank (October 2020), Viet Nam's GDP could reach a growth rate of 2.5-3% in 2020[34]. Previously, the World Bank (July 2020)[35] forecast two scenarios for Viet Nam's economic growth in 2020: (i) GDP to reach 2.8%, decreasing from 4.9% as projected by the World Bank in April 2020; and (ii) In a worse-case scenario where the external situation is less favourable, Viet Nam's economy will grow by only 1.5%.
- According to the IMF (October 2020), Viet Nam's economic growth in 2020 will be 1.6%, a decrease from the 2.7% estimate in June 2020.
- According to the Asian Development Bank (ADB) (September 2020), Viet Nam's economic growth will be 1.8% in 2020, lower than the forecast of 4.1% in June 2020.

Some domestic organisations forecast that Viet Nam's GDP growth in 2020 will be higher than the forecast made by international organisations. In October 2020, the Viet Nam Institute for Economic and Policy Research (VEPR)[36] forecast that Viet Nam's economic growth for the whole of 2020 will be in the range of 2.6-2.8% if the Covid-19 pandemic is completely controlled. However, if there are unexpected adverse events

[34] http://documents1.worldbank.org/curated/en/718451602831878653/pdf/Vietnam-Macro-Monitoring.pdf

[35] http://documents1.worldbank.org/curated/en/439611561653730211/pdf/Taking-Stock-Recent-Economic-Developments-of-Vietnam-Special-Focus-Vietnams-Tourism-Developments-Stepping-Back-from-the-Tipping-Point-Vietnams-Tourism-Trends-Challenges-and-Policy-Priorities.pdf

[36] https://dangcongsan.vn/kinh-te/du-bao-tang-truong-kinh-te-cua-viet-nam-nam-2020-dat-khoang-2-6-2-8-566201.html

in the last months of the year, the economy will grow by only 1.8-2% or less. The BIDV Research and Training Institute (October 2020) forecast that Viet Nam's GDP growth in 2020 will be 2.5% (base scenario), 3% (positive scenario) and 2% (negative scenario)[37]. Recently, the National Centre for Socio-Economic Information and Forecast (NCIF) predicted that Viet Nam's economic growth in 2020 will be 2.48%[38].

Table 2: Forecast of Viet Nam's GDP growth (%)

	2020	Note
ADB (September 2020)	1.8	
IMF (October 2020)	1.6	
World Bank (October 2020)	3 2.5	Scenario 1
NCIF (November 2020)	2.48	
BIDV Research and Training Institute (October 2020)	3 2.5 2	Scenario 2 Scenario 1 Scenario 3
VEPR (October 2020)	2.8 2.6 2 1.8	Scenario 1 Scenario 2 Scenario 3 Scenario 4

Domestic commodity prices are affected by the forecast of world price fluctuations, especially the two commodity groups accounting for a large proportion of CPI: gasoline and foodstuffs. However, many forecasts still indicate that inflation in Viet Nam will remain below 4% in 2020.

According to ADB (June 2020), Viet Nam's inflation rate will reach 3% in 2020 and 3.5% in 2021. Based on the IMF's forecast in April 2020, it will reach 3.2% in 2020 and 3.9 % in 2021. ANZ (July 2020) forecasts that Viet Nam's inflation rate will be 2.7% in 2020 and 3% in 2021 while the World Bank (July 2020) forecasts that Viet Nam's inflation will be 3.9% in 2020, 3.7% in 2021 and 3.6% in 2022. NCIF (July 2020) forecasts that Viet Nam's inflation rate will reach 3.4 (low scenario), 3.8% (base scenario) and 4.1% (high scenario) in 2020.

Table 3: Forecast of Viet Nam's inflation rate (%)

	2020	2021	2022	Note
ADB (June 2020)	3.0	3.5		
IMF (April 2020)	3.2	3.9		
ANZ (July 2020)	2.7	3		
World Bank (July 2020)	3.9	3.7	3.6	
NCIF (July 2020)	4.1 3.8 3.4			Scenario 3 Scenario 1 Scenario 2

Recently, the Government of Viet Nam proposed a scenario for 2020 in which growth will be about 2-3% (the target is 6.8%) and the CPI about 3.5-3.9%[39].

Other necessary assumptions for the forecast:

- Regarding private consumption in 2020:

  If looking at the GDP from the expenditure perspective, the final consumption in the first 9 months of 2020 increased by 0.86% over the same period in 2019. For this reason, it is assumed in this study that the final consumption of the whole of 2020 will increase by about 0.86-1% compared with 2019.

[37] https://www.miza.vn/du-bao-tang-truong-kinh-te-viet-nam-quy-42020-va-nam-2021-se-phuc-hoi-theo-chu-v-nam-2021-tang-khoang-65-7-d246#7

[38] http://ncif.gov.vn/Pages/NewsDetail.aspx?newid=22293

[39] Report on implementation of the 2021 and 5-year 2016-2020 Socio-economic development plans, expected plans in 2021 and the 5-year 2021-2025 plan. Government's directions and tasks, dated October 19, 2020.

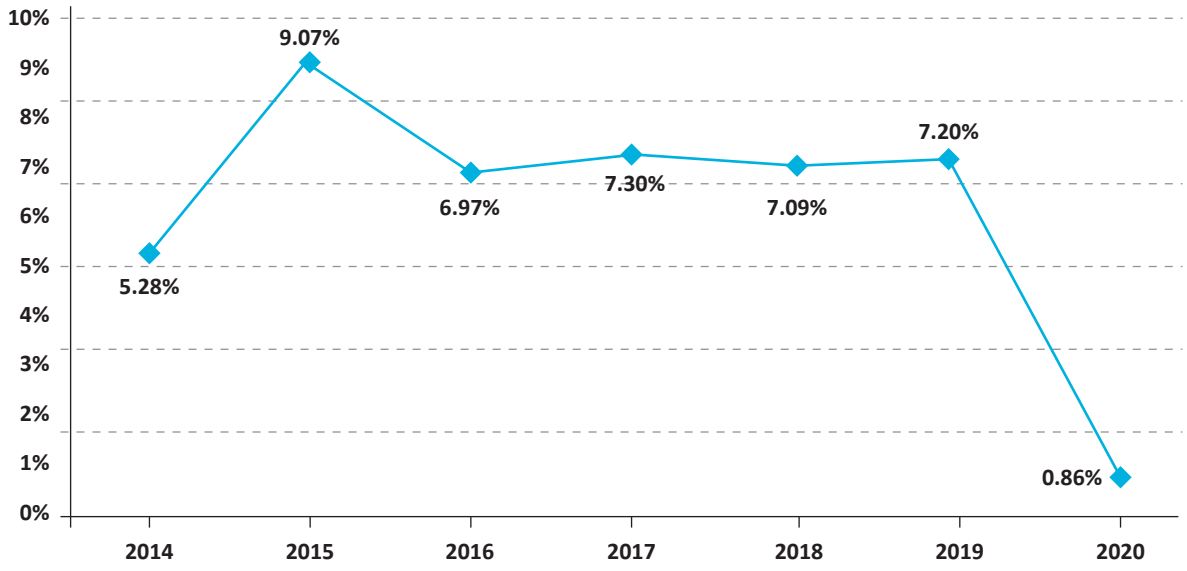


Figure 18: Growth rate of final consumption in the first 9 months of 2014-2020

Source: General Statistics Office

- Regarding disposable income: It is assumed that the rate of disposable income growth is equal to the rate of economic growth at about 2-3%.
- The price of crude oil in 2020 is based on the EIA forecast.

Table 4: Macroeconomic projection framework for 2020

Index	2016	2017	2018	2019	2020		
					Forecast [1]		Target [2]
					Scenario 1	Scenario 2	
GDP growth (%)	6.21	6.81	7.08	7.02	2	3	6.8
CPI (%)	4.74	2.6	2.98	5.23	3.5	3.9	< 4
Export growth (%)	9	21.8	13.3	8.1	3.5	4	7-8
Import growth (%)	5.6	21.9	11.2	7	2.9	3	
Brent oil price (USD/barrel) [3]	44	54.4	71.1	64.37	40.61	40.61	

Source: [1] Forecast of the Vietnamese Government on October 19, 2020 and the National Institute of Finance; [2] Resolution No. 85/2019/QH14 of the National Assembly dated November 11, 2019 introducing the 2020 Socio-Economic Development Plan, setting a 2020 growth target of 6.8% (effective from December 26, 2019.); [3] EIA

6.5. The results of state budget revenue forecasting in 2020

- Macro forecast under scenario 1:

State budget revenue in 2020 decreases significantly due to the impact of Covid-19.

+ Table 5 below shows that total state budget revenue in 2020 is forecast at VND 1,412,906 billion, a decrease of VND 99,394 billion compared to the total revenue estimated in 2020 (excluding the factor of revenue reduction due to the implementation of tax support).

+ If taking into account the revenue reduction of VND 88.4 trillion due to the implementation of tax exemption, reduction and extension policies (by the end of September, 2020), the total state budget revenue in 2020 is forecast to reach VND 1,324,506 billion, a decrease of VND 187,794 billion compared to the total revenue estimated in 2020.

+ If taking into account the factor of expected reduction in revenue of VND 230 trillion due to policies to support solutions for businesses and people during the pandemic, total state budget revenue in 2020 is forecast at VND 1,182,906 billion, a reduction of VND 329,394 billion compared to the total revenue estimated in 2020.

Table 5: Forecast of state budget revenue in 2020 (excluding the reduction in revenue due to the implementation of tax exemption, reduction and extension policies to support businesses and people) (Scenario 1)

Unit: VND billion

Index/ year	2016 Settlement	2017 Settlement	2018 Settlement	2019 Second estimated implementation	2020 Estimates	*2020 Forecast*	*Difference compared to estimate 2020*
State budget revenue	1,107,381	1,293,627	1,431,662	1,551,074	1,512,300	*1,412,906*	*-99,394*
VAT on domestic goods	195,704	208,403	228,840	247,108	275,457	*247,126*	*-28,331*
VAT on import	75,900	100,905	88,000	115,566	100,300	*115,599*	*+15,299*
CIT (excluding crude oil)	160,625	175,643	201,600	228,743	264,784	*228,788*	*-35,996*
PIT	65,235	78,775	94,364	109,401	128,635	*109,414*	*-19,221*
Excise tax on domestic goods	86,653	85,086.4	96,025	106,753	115,028	*106,761*	*-8,267*
Import/export taxes, excise tax, environmental protection tax on import	96,125	96,367	85,026.2	98,685	107,700	*98,729*	*-8,971*
Environmental protection tax on domestic goods	43,142	44,665	47,050	63,075	67,584	*63,077*	*-4,507*
Revenue from crude oil	40,186	49,583	66,048.5	56,251	35,200	*25,800*	*-9,400*

- Macro forecast under scenario 2:

  + Table 6 below shows that total state budget revenue in 2020 is forecast at VND 1,412,946 billion, a decrease of VND 99,354 billion compared to the total revenue estimate of 2020 (excluding the factor of revenue reduction due to the implementation of tax support).

  + If taking into account the revenue reduction of VND 88.4 trillion due to the implementation of tax exemption, reduction and extension policies (by the end of September 2020), total state budget revenue in 2020 is forecast at VND 1,324,546 billion, a decrease of VND 187,754 billion compared to the total revenue estimated in 2020.

  + If taking into account the factor of expected revenue reduction of VND 230 trillion when developing policies to support businesses and people, the total state budget revenue in 2020 is forecast at VND 1,182,946 billion, a reduction of VND 329,354 billion compared to the total revenue estimated in 2020.

Table 6: Forecast of state budget revenue in 2020 (excluding the reduction in revenue due to the implementation of tax exemption, reduction and extension policies to support businesses and people) (Scenario 2)

Unit: VND billion

Index/ year	2016 Settlement	2017 Settlement	2018 Settlement	2019 Second estimated implementation	2020 Estimates	*2020 Forecast*	*Difference compared to estimate 2020*
State budget revenue	1,107,381	1,293,627	1,431,662	1,551,074	1,512,300	*1,412,946*	*-99,354*
VAT on domestic goods	195,704	208,403	228,840	247,108	275,457	*247,129*	*-28,328*
VAT on import	75,900	100,905	88,000	115,566	100,300	*115,600*	*+15,300*
CIT (excluding crude oil)	160,625	175,643	201,600	228,743	264,784	*228,811*	*-35,973*
PIT	65,235	78,775	94,364	109,401	128,635	*109,422*	*-19,213*
Excise tax on domestic goods	86,653	85,086.4	96,025	106,753	115,028	*106,763*	*-8,265*
Import/export taxes, excise tax, environmental protection tax on import	96,125	96,367	85,026.2	98,685	107,700	*98,731*	*-8,969*
Environmental protection tax on domestic goods	43,142	44,665	47,050	63,075	67,584	*63,078*	*-4,507*
Revenue from crude oil	40,186	49,583	66,048.5	56,251	35,200	*25,800*	*-9,400*

7. Solutions

State budget revenue needs to meet spending needs in the context of the Covid-19 pandemic and other factors causing instability. Therefore, it is necessary to focus on the following measures:

First, continue to take measures to prevent, solve and control the Covid-19 pandemic to create stability for production and business activities as well as for people's lives.

Second, it is important to ensure a stable macro-economy, closely monitor global market price fluctuations, especially crude oil, commodities and essential services, and to monitor domestic inflation in order to propose and carry out appropriate fiscal and monetary policies and achieve inflation targets.

Third, it is important to implement the government resolutions on institutional improvement, economic restructuring, and growth model renewal to ensure economic growth, productivity, quality, efficiency, and competitiveness as the basis for implementing the 2020 state budget estimate and the three-year financial-budget plan for 2021-2023.

Regarding institutional improvement, it is necessary to improve the business investment environment and create more favourable conditions for the development of enterprises in all economic sectors. It is necessary to conduct researches and complete financial mechanism to promote the development of the private sector to become the most important engine of economic development.

Fourth, fiscal policy should be managed properly, ensuring fiscal discipline. The government should ensure effective use of public assets and non-budgetary funds and closely inspect and supervise borrowing, the use of loans, and repayment of debts. At the same time, it is important to restructure the state budget and public debt towards fiscal sustainability; strengthen management and supervision of government-guaranteed debt; strictly control overspending; and research and submit studies to competent authorities to adjust fiscal targets in accordance with the actual situation.

Fifth, urgently study and complete the system of state budget revenue policies in the direction of reviewing and rationalising tax incentives, developing new revenue bases, and adjusting tax rates to promote, expand and nurture revenue sources in a stable and sustainable manner.

Solutions, tax and fee policies should be applied to support people and businesses facing difficulties due to the pandemic, such as: extension of PIT and CIT payment deadlines; exemption from fines for late tax payment for enterprises that have paid taxes in full; exemption of import and export taxes on goods directly serving to fight the pandemic; implementing the state's policy of exemption and reduction of land rent for businesses and people affected by the pandemic during the pandemic; and extending payment schedules and delaying payment of land rent after the pandemic.

Measures should be implemented to manage state budget revenues and strengthen administrative procedure reform in the tax sector. The application of information technology should be promoted, and support provided to taxpayers. There should be a focus on the management of tax registration, declaration and payment. Inspection, examination, combating tax losses, and managing and speeding up tax collection should all be intensified.

It is also necessary to take advantage of opportunities when participating in and implementing new-generation free trade agreements such as CPTPP and EVFTA to promote and expand exports, investment, and the application of science and technology, thereby increasing revenue for the state budget from the corporate sector.

Sixth, mechanisms, policies and solutions relevant to government expenditure management should be studied and established to promote economic growth. A new economic stimulus package in case of a worsening Covid-19 pandemic may need to be

introduced to stimulate domestic demand, promote production and business, and reduce unemployment, ensuring resources for pandemic prevention and social security. This will strengthen the confidence of the people and the business sector.

It is necessary to implement appropriate mechanisms and policies in terms of finance, money, and social security to support people, businesses and employees, especially for small and medium-sized enterprises that overcome the difficulties of the Covid-19 pandemic. This will contribute to socio-economy recovery and development.

Funding for Covid-19 pandemic prevention and control should be prioritised. Having said that, it is more important to detect outbreaks early to prevent a wider pandemic, thereby reducing morbidity and mortality. Also, the capacity of the preventive healthcare system and the ability to monitor non-communicable diseases should be improved and a plan to evaluate the purchase of vaccines should be developed. Priority should be given to scientific research and transfer of vaccine technology to ensure the production and supply of vaccines to the people at low prices in accordance with people's actual conditions.

Ensuring social security, creating jobs, and training human resources in line with the new context is essential. Favourable conditions should be created for employees to return to work as soon as possible, ensuring a workforce for the labour market to meet higher demand in the post-pandemic period. There are several ways to achieve this, such as supporting employers to train and re-train employees, improving the linkages between domestic labour supply and demand, and forging connections with the international labour market.

Because the state budget will face difficulties in the current context, it is necessary to review expenditure needs and strictly implement spending discipline.

Regarding public investment, it is important to accelerate disbursement, improve the efficiency of public investment capital, resolve problems in administrative procedures, accelerate approval procedures, and adjust policies where necessary. The implementation of large-scale projects which have spill-over effects on the socio-economic development of localities, regions and sectors should be commenced. Also, plans on public investment in 2020 among ministries, central agencies and localities within the scope of development investment expenditure estimates in 2020 should be proactively adjusted. A number of projects that are likely to shift from state budget investment to the public-private partnership (PPP) method should be adjusted, ensuring publicity, transparency, efficiency, and feasibility in accordance with the actual situation and the capacity to mobilise credit capital to implement PPPs, ensuring strict management, inspection and supervision mechanisms.

Seventh, strictly manage overspending and public debt to ensure it is within permissible limits and that debt payments are made.

APPENDIX

Some specific regimes in the prevention and control of the Covid-19 pandemic

(Source: Resolution No. 37/NQ-CP on specific regimes in Covid-19 pandemic prevention and control)

1. Meals for people subject to medical isolation.

a) Subjects of application: Vietnamese and foreigners subject to medical isolation measures at medical examination and treatment establishments or other establishments or locations (not applicable to isolation at home, residential accommodation, hotels, resorts and enterprises).

b) A meal allowance is VND 80,000/day during the isolation period.

For localities that are providing the meal allowance other than a that of VND 80,000/day for an isolated person before 29 March 2020, the payment shall be made in accordance with the amounts paid. Based on the local budget capacity, the Chairpersons of the People's Committees of provinces or centrally run cities shall decide whether to provide a higher allowance.

Based on the actual situation and local budget capacity, such localities may continue providing the current meal allowance or adjust to the new allowance of VND 80,000/day.

c) Authorities and units that are assigned to implement medical isolation shall be responsible for providing meals for isolated persons in a timely and favourable manner. In case the isolated person requests other meals (if any), he/she shall have to pay for the extra cost. The isolated person's requirement for different meals must comply with conditions of the facilities that carry out the medical isolation.

2. A person subject to medical isolation measures specified at Point a, Clause 1 of this Article shall be granted free of charge: drinking water,

face towels, masks, hand sanitiser, mouthwash, toothbrush, soap and other essential items, and expenses for living during medical isolation at a total of VND 40,000/day.

3. Payment of other medical examination and treatment for cases under concentrated medical isolation and suffering from other diseases requiring examination and treatment.

a) For those who have health insurance cards, the health insurance fund shall pay for the cost of medical examinations and treatment within the scope of health insurance entitlement as in the case of examination and treatment at the right level. The state budget covers the patient's co-payment and expenses outside the scope of health insurance coverage.

b) For those who do not have a health insurance card, Vietnamese people shall have their expenses paid by the state budget; foreigners will pay for examination and treatment themselves.

4. The allowance regime for health employees participating in pandemic prevention and control is as follows:

a) The allowance is VND 300,000/day, including holidays and public holidays, particularly:

- Persons who take responsibility of monitoring, investigating and verifying the pandemic.

- Persons who directly examine and treat infected person at the examination and treatment establishment.

b) The allowance is VND 200,000/day, including holidays and public holidays, for:

- Persons transporting sick people and specimens; preserving patients' corpses; washing clothes, including doctors' and patients' clothes; collecting chemical bottles, jars and boxes; protecting the isolation treatment area; cleaning, disinfecting and killing pathogens in isolation areas at medical examination and treatment establishments.

- Health employees who carry out epidemiological surveillance and medical supervision during isolation at home and at medical units as designated by state management agencies.

c) The allowance is VND 150,000/day, including holidays and public holidays for:

- Persons performing duties (other than those in the medical professional) at a centralised isolation establishments (does not

apply to isolation at home, accommodation, hotel, resort, or enterprise).

- Participants in medical isolation enforcement in the case where isolation measures are required but subjects fail to comply.

- Interpreters, emergency team 115, quarantined crew.

5. Benefits for participants who are always on duty 24 hours a day as follows:

a) The permanent 24-hour anti-pandemic allowance is VND 130,000/day, including holidays and public holidays.

b) Employees participating in permanent 24-hour anti-pandemic activities are supported at a rate of VND 80,000/session for meals.

6. Medical staff, the military, and police who perform their duties at medical isolation establishments (not applicable to isolation at home, accommodation, hotel, resort or enterprise); participants performing the task of classifying and carrying out procedures for people entering isolation areas; guardians of isolated areas in residential areas as designated by state management agencies; and medical staff on duty 24 hours a day at medical isolation treatment establishments to care for and treat patients of Covid-19 are supported at a rate of VND 80,000/day for meals.

7. Regime on supporting collaborators and volunteers participating in the prevention and control of the Covid-19 pandemic:

a) The allowance is VND 130,000/day for collaborators and volunteers directly or jointly participating in anti-pandemic activities.

b) The allowance is 80,000 VND/day for collaborators and volunteers directly propagating, distributing leaflets or participating in anti-pandemic exercises.

REFERENCES

1. Conclusion No. 77-KL/TW on orientations to handle impacts of the Covid-19 pandemic to support economic recovery and national development.

2. PEMNA (2020). Covid-19 Update: Policy Responses in PEMNA.

3. Report on the monthly budget of the Ministry of Finance.

4. Monthly macroeconomic report of the National Institute for Finance.

Report

02

IMPACTS OF POLICY RESPONSES TO THE COVID-19 PANDEMIC ON GREENHOUSE GAS EMISSIONS IN VIET NAM

Research team:
Dr. Ho Cong Hoa (Team leader)
MA. Luu Duc Khai
MA. Nguyen Thi Huy
Dr. Dinh Khanh Le
MA. Tran Trung Hieu
MA. Hoang Van Cuong
Dr. Tran Tien Dung

Ha Noi, 12/2020

ACKNOWLEDGEMENTS

To complete this research on “Impacts of policy responses to the Covid-19 pandemic on greenhouse gas emissions in Viet Nam”, we would like to extend our sincere gratitude to the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH for their financial and logistical support and for providing the necessary guidance concerning project implementation. We are grateful to Dr Tran Thi Hong Minh, President of the Central Institute for Economic Management for her support and provision of favourable conditions for the research team. We would also like to express our sincere thanks to Ms Duong Thi Cam and Mr Nguyen Viet Phong from the General Statistics Office for sharing information and data for the calculations of greenhouse gas emissions.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

FOREWORD

The COVID-19 pandemic has and will continue to negatively affect economic growth and social security for all nations. However, from the perspective of the environment and climate change, the COVID-19 pandemic is an opportunity to promote policies towards sustainable development and green growth. Due to the pandemic, governments have implemented social distancing as well as regional and national lockdowns. These responses have directly reduced energy demand in the transport sector and indirectly in production and business due to the breakdown in global value chains and an increased need to make savings. The pandemic is contributing to a significant reduction in energy demand, thus reducing greenhouse gas emissions (including CO_2, CH_4, N_2O, etc.).

Research published by the World Energy Organisation reveals that social distancing has significantly reduced greenhouse gas emissions. Energy demand has fallen by an average of 25% per week for countries on full lockdown and 18% for countries on partial lockdown. Accordingly, global CO_2 emissions were down by 5% in QI/2020 compared to QI/2019, of which there was 8% decrease from coal, 4.5% from petroleum, and 2.3% from gas (IEA, 2020a[1]; IEA, 2020b[2]). Another study by Corinne Le Quéré et al (2020)[3] also shows a strong decrease in daily global CO_2 emissions from 11% to 25% in April 2020 above the average rate of decline in 2019. The biggest drop was recorded at 26%. The reductions in greenhouse gas emissions related to social distancing are also a factor. While in the United States and Europe,

[1] IEA (2020a), 19/8/2020 via https://www.iea.org/topics/covid-19

[2] IEA (2020b), 19/8/2020 via Https://www.Iea.Org/Reports/Global-Energy-Review-2020/Global-Energy-And-CO2-Emissions-In-2020#Abstract

[3] Corinne Le Quéré, Robert B. Jackson, Matthew W. Jones, Adam Jp Smith, Sam Abernethy, Robbie M. Andrew, Anthony J. De-Gol, David R. Willis, Yuli Shan, Josep G. Canadaell, Pierre Friedlingstein, Felix Creutzig Và Glen P. Peters. (2020)

greenhouse gas emissions in transportation account for the largest share, the share of greenhouse gas emissions in industry and electricity in China and India are much greater than those from transportation.

Thus, the COVID-19 pandemic has had a strong impact on energy demand, especially from fossil fuels, which has reduced greenhouse gas emissions; however, the level and proportion of emissions differ in other countries. The reason is that the level of technological development and economic structures are different. Policy responses are also different. However, the previous global economic crises have shown that once a crisis ends greenhouse gas emissions skyrocket because policies in support of economy recovery. In some cases, countries have applied "growth at all costs" policies with little or no attention to environmental protection or climate change. The "psychological insecurity" in the use of public transport also increases the need to travel by private vehicle, which is one of the major challenges to the public transport promotion efforts that countries made before the COVID-19 pandemic. The increased use of private vehicles also increases greenhouse gas emissions.

Therefore, in order to ensure the growth and recovery of post-pandemic economies while still complying with the Paris Agreement on reducing greenhouse gas emissions, each country will need suitable long-term policies. The vision is not only to recover growth, but to build towards a green and sustainable economy through green support policies that promote the application of technology, especially information technology and artificial intelligence in production and consumption.

In Vietnam, the government has also been very proactive to limit outbreaks of the disease through policies, in which social distancing policies have the greatest impact on economic activity, reducing the need for energy from fossil fuels. Along with these policies, the Government of Vietnam also issued policies in support of economy recovery through supportive packages for businesses and the public to stimulate production, consumption, and to support people during and after the pandemic.

Thus, a number of questions need to be studied, such as: What is the impact of the Covid-19 pandemic and the government's resulting policy response on GHG emissions in Vietnam? What is the change in greenhouse gas emissions? Will Vietnam's efforts to promote economic recovery and transition to a new normal state increase greenhouse gas emissions to pre-pandemic levels? Are policies, such as the one reducing 30% of environmental protection taxes on jet fuels and supporting 10% of electricity prices for all households, suitable for sustainable development goals and the commitments that Vietnam has agreed to? Which policies need to be promulgated by the government and developed to be more sustainable, ensuring both economic growth and fulfilling Vietnam's Nationally Determined Contribution (NDC) commitments?

In an effort to seek answers to the above questions, it is necessary to perform an in-depth analysis in accordance with the following key requirements and orientations:

1) Identification of emissions sources and factors affecting emissions in Viet Nam.

This would help to set clear direction for analysis of Covid-19 response measures by the Vietnamese Government which have direct or indirect impacts on GHG emissions.

2) Overview on policy responses by the Vietnamese Government during the Covid-19 pandemic.

This part will focus on policy responses that could lead to changes in fossil fuel consumption and GHG emissions. For example: (i) policies on social distancing, limiting business activities and travel; (ii) policies to promote economic recovery, to support enterprises and individuals (reduction of ecotax levied on jet fuel to assist the aviation sector, or subsidising 10% of electricity costs for enterprises and individuals).

3) Calculation of monthly greenhouse gas emissions in 2020.

The calculation of monthly GHG emissions (in 2019, and at least in the months before, during and after the social distancing phase, and in the new normal phase) would serve as a foundation to analyse policies on social distancing and economic recovery.

4) Analysis of Vietnamese Government policies responding to the Covid-19 pandemic.

Reviewing policies and calculating GHG emissions will be followed by an analysis of the impacts of these policies on GHG emissions and the correlation between different groups of (social distancing, support) policies. These policies will also be benchmarked against Vietnam's commitments on GHG emissions reduction to evaluate their relevance and appropriateness in order to make policy recommendations for future pandemics and to ensure better responses, economic recovery, and the achievement of GHG reduction commitments. To best reflect the impacts of policies on GHG emissions, it is planned to compare corresponding emissions levels in the months (i) before the pandemic (baseline scenario in 2019 and January and February 2020); (ii) during the pandemic (March and April of 2020 with partial and nationwide full lockdown); and (iii) after the pandemic (the new normal phase with policies to push economic recovery and support enterprises and individuals).

5) Recommendations on appropriate policy solutions, not only for possible future similar pandemics, but also with a longer-term perspective, aiming at sustainable development and green growth.

Based on the results of the analysis of policy impacts and GHG emissions reduction commitments, appropriate policy solutions will be recommended for possible future pandemics to ensure effective control of the pandemic, maintain economic growth and social security, and reduce GHG emissions.

However, within the limited time and resources, this research will focus on the following objectives, objects, and scope:

Research objectives: To assess the impacts of policy responses to the COVID-19 pandemic on greenhouse gas emissions in Vietnam and propose policy recommendations applicable to the new normal phase to achieve the double targets of economic growth and greenhouse gas emissions reduction.

Research object: Policies and impacts of COVID-19 pandemic response policies on greenhouse gas emissions in Vietnam.

Scope of research:

- To focus on analysing social distancing policies, economic recovery policies, policies to support businesses and individuals to solve the Covid-19 pandemic, and their impacts on changes in greenhouse gas emissions related to fossil fuel consumption (petroleum, oil, gas and coal) and electricity consumption before, during, and after social distancing (new normal period) in Vietnam.

- To calculate total greenhouse gas emissions (mainly CO_2, CH_4, N_2O) from the burning of fossil fuels in the whole economy by month in 2019 and 2020 (months during and after the social distancing period), and breakdown of emissions by sector (energy, manufacturing and construction industries, transport and other sectors).

Research methodologies

(1) Desk research for policy overview

To provide an overview of the government's policy responses to the Covid -19 pandemic, especially those related to social distancing, promoting economic recovery, supporting

businesses and groups vulnerable to the pandemic.

(2) Methods of data collection

- To collect data on energy consumption by month and by sector for 2019 and 2020 from the General Statistics Office. Accordingly, the amount of energy consumption is calculated from the data on energy production, trade and consumption in the 2019 Business Survey and the monthly Industrial Enterprise Survey (IIP Survey). Specifically:

  Total fossil fuel consumption = ∑ (beginning inventory + domestic production + imports) - ∑ (exports + ending inventory)

  Total electricity consumption = ∑ (domestically produced electricity + imported electricity)

  Energy consumption by industry, locality = Total energy consumption * energy consumption structure of businesses, households by industry and locality

- With regard to energy consumption by sectors:

  + Total energy consumption in a sector will be computed according to the energy consumption structure of enterprises in the sector and the total amount of monthly energy consumed as calculated above. Energy consumed by people for business and residential purposes will be classified accordingly. The Energy table for 2015, which was published by the MOIT in the framework of the National Target Program on Energy Efficiency, will be used as a reference for adjusting the GSO's survey data on monthly energy consumption to be in accordance with the energy structure.

  + The below table will also be used to adjust for energy consumption structure by sectors in 2019 and 2020, combining with the consumption of coal-fired thermal power. The total amount of coal consumed in 2015 was 20.37 million tonnes, 86.9% of which was by industry, including energy industries. The total amount of petroleum consumed in 2015 was 4.98 million tonnes, 86.9% of which was used by the transport sector, the remaining share of 2.3% was used in agriculture. 7.5 million tonnes of oil were consumed in 2015, the shares of which for transport, industry, residential, commerce and services, and agricultures were 38.4%, 37.4%, 15.7%, 6.9% and 1.4%, respectively. As far as LPG concerned, 1.39 million tonnes were consumed, 54.5% of which was for residential purposes and 30.1% for commerce and services. Natural gas was used purely in industry with a total amount of 1,657 million m^3. Total electricity consumed in 2015 was 143.669 GWh, with 53.6% for industry, 35.1% for residential purposes, 5.3% for services, 4.3% for transportation and 1.8% for agriculture.

Table 1: Energy balance of Viet Nam in 2015

Year	Sector	Coal	Petroleum	Jet fuel	Kerosene	DO	FO	LPG	Natural gas	Electricity
		1000 tonnes							*Mio m^3*	*GWh*
2015	**Total**	**20,373**	**4,982**	**1,172**	**32**	**6,985**	**501**	**1,390**	**1,657**	**143,669**
	Industry	17,696			12	1,129	297	213	1,657	77,063
	Agriculture	30	117			290	-			2,528
	Transportation		4,865	1,172		5,204	204			6,157
	Commerce & Services	662			5	350	-	419		7,546
	Residential	1,985			15	12	-	758		50,375
Structure in 2015 (%)	Industry	86.9	0.0	0.0	37.5	16.2	59.3	15.3	100.0	53.6
	Agriculture	0.1	2.3	0.0	0.0	4.2	0.0	0.0	0.0	1.8
	Transportation	0.0	97.7	100.0	0.0	74.5	40.7	0.0	0.0	4.3
	Commerce & Services	3.2	0.0	0.0	15.6	5.0	0.0	30.1	0.0	5.3
	Residential	9.7	0.0	0.0	46.9	0.2	0.0	54.5	0.0	35.1

Source: The National Energy Efficiency Program (2017), Energy Statistics Yearbook Viet Nam 2015

(3) Method of calculating greenhouse gas emissions

There are in practice various approaches for analysing and evaluating the impacts of policies, including widely used statistical models. However, the existing models, such as CGE, mainly use yearly data and require a complicated dataset. This is not suitable for analysing the impact of response policies during the Covid-19 pandemic by month. For this reason, the calculated impact of policies on GHG emissions could only be performed in a simpler way, following recommendations by the IPCC 2006.

Accordingly, a rapid calculation of GHG emissions due to fossil fuel consumption (petroleum, oil, gas and coal) by month for 2019 and 2020 according to IPCC 2006 guidelines (based on average emissions factors for each fuel type) will be performed to compare the changes in greenhouse gas emissions (CO_2e - CO_2 equivalent) in the months before, during and after the social distancing period. The study will calculate 3 scenarios – high scenario, medium scenario and low scenario – corresponding to the emissions factors recommended by IPCC 2006.

- Calculation formula:

+ Formula to calculate GHG emissions from consumption of fossil fuel:

CO_2 emissions $_{(petroleum, oil, gas, coal\ CO2, CH4, N2O)}$ ($Gg_{(CO2, CH4, N2O)}$) = Total energy consumption $_{(petroleum, oil, gas, coal)}$ (TJ) * Emissions Factor $_{(petroleum, oil, gas, coal)}$ ($kg_{(CO2, CH4, N2O)}$/TJ)

+ Formula to calculate GHG emissions from consumption of electricity:

CO_2 emissions (tonnes CO_2) = Total electricity consumed * Emissions Factor (tonnes CO_2/KWh)

+ Converting consumption amount from m^3 to tonne:

  Total amount consumed (tonnes) = Total amount consumed (m^3) * Conversion Factor (tonne)

+ Converting consumption amount from tonne to TJ:

  Total energy consumed (Tj) = Total amount consumed (tonne) * Conversion Factor (TJ/Gg = Tj/1000t).

+ Converting CH_4, N_2O to CO_2e (CO_2 equivalent):

  CO_2e = Total CH_4 emissions * conversion factor from CH_4 to CO_2

  CO_2e = Total N_2O emissions * conversion factor from N_2O to CO_2

Calculation of GHG emissions are in 3 scenarios - high, medium and low - which is in line with the emissions factors recommended in the IPCC 2006 (table 2 below):

Table 2: Conversion factors for greenhouse gas emissions by type of energy

Types of energy	Scenario	m^3 to tonne	Tonne to TJ	Calculation of emitted CO_2	Calculation of emitted CH_4	Calculation of emitted N_2O
		tonne/m^3	*TJ/Gg*	*kgCO_2/TJ, tonne of CO_2/MWh*	*kgCH_4/TJ*	*kgN_2O/TJ*
Gasoline	High	0.76	44.8	73.000	10.0	2.0
	Low	0.70	42.5	67.500	1.0	0.2
	Medium	0.73	44.3	69.300	3.0	0.6
Oil	High	0.86	43.3	74.800	10.0	2.0
	Low	0.82	41.4	72.600	1.0	0.2
	Medium	0.84	43.0	74.100	3.0	0.6
LPG	High	0.45	52.2	65.600	3.0	0.3
	Low	0.45	44.8	61.600	0.3	0.0
	Medium	0.45	47.3	60.400	10.0	2.0
Coal	High		29.3	101.000	3.0	5.0
	Low		29.3	94.600	0.3	0.5
	Medium		29.3	98.300	1.0	1.5
Electricity	High (2018)			0.9130		
	Low (2013)			0.6244		
	Medium (2017)			0.8649		
CO_2e converted				1.0	25.0	298.0

Source: IPCC (2006)[4]; Guideline No. 263/BDKH-TTBVTOD dated 12.3.2020 by the Climate Change Department, Ministry of Natural Resources & Environment on emissions factors of the electricity grid of Viet Nam in 2018; Guideline No. 513/KTTVBDKH dated 28.05.2013 by the Climate Change Department, Ministry of Natural Resources & Environment; Final Report on the Study and Development of Emissions Factors (EF) for the Vietnamese Electrical Grid – the Climate Change Department, Ministry of Natural Resources & Environment.

[4] The Intergovernmental Panel on Climate Change – IPCC. (2006). 2006 IPCC Guidelines for National Greenhouse Gas Inventories

Greenhouse gas emissions are calculated in accordance with different scenarios, as emissions factors (EF) provided by the Ministry of Natural Resources and Environment vary from year to year. For example, the EF provided by the Ministry of Natural Resources and Environment in 2018 was about 5.56% higher than that of 2017, while the EF for 2017 was 1.4 times higher than that of 2013. For this reason, the research makes use of all 3 factors in line with high, medium, and low scenarios in order to derive an appropriate answer.

(4) Descriptive statistics method

The research analyses and compares results of greenhouse gas emissions with policy responses in order to identify problems and recommend appropriate future policy directions in case of similar epidemics. This will both support and promote growth while ensuring reductions in greenhouse gas emissions according to Viet Nam's Nationally Determined Contribution (NDC) commitments. The timeframe and contents of the impact assessment on the government's Covid-19 epidemic policy responses are shown in Table 3 below.

Table 3: Timeframe and contents of the impact assessment

Level	Extent of social distancing	Timeframe	Assessment
0	Without social distancing	January-December 2019 and January-February 2020	Reviewing energy consumption and GHG emissions in normal conditions, without any policies on social distancing. This is the baseline scenario.
1	Partial social distancing	March 2020	Comparison of impacts of partial social distancing policies on energy consumption and greenhouse gas emissions against the baseline scenario, nationwide lockdown and the new normal phase.
2	Nationwide lockdown	April 2020	Comparison of impacts of nationwide lockdown on energy consumption and greenhouse gas emissions against the baseline scenario, partial social distancing and the new normal phase.
3	New normal phase	May-September 2020	Comparison of impacts of new normal phase policies on energy consumption and greenhouse gas emissions against the baseline scenario, partial social distancing and the nationwide lockdown.

PART 1

Overview of sources of emissions and commitments in Viet Nam's Nationally Determined Contribution (NDC)

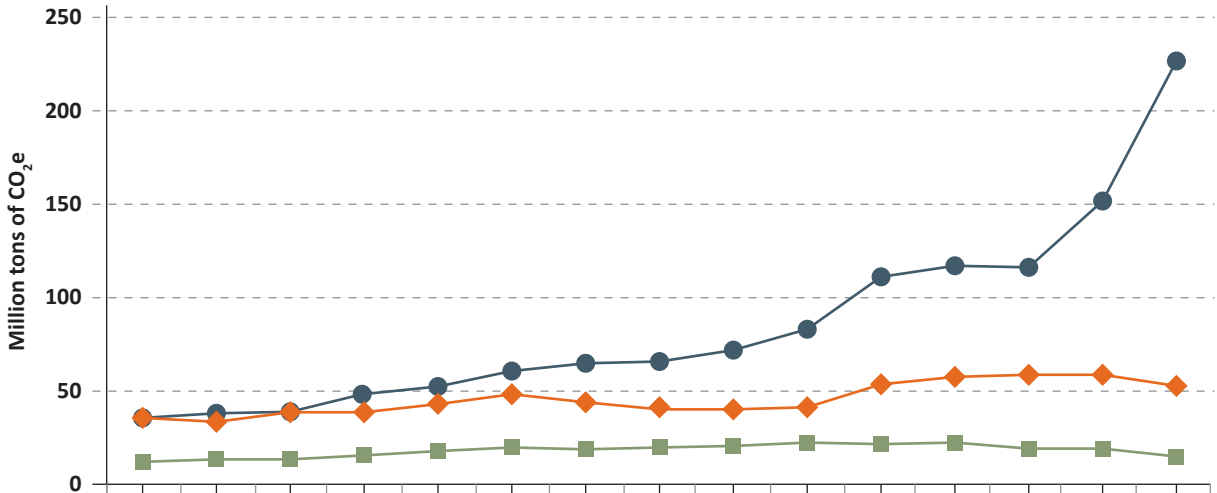
1.1. Sources of GHG emissions

1.1.1 Main sources of GHG emissions in Viet Nam

According to the most recent greenhouse gas inventory completed in 2014, Viet Nam's total emissions in 2014 was 321,505,710 tonnes of CO_2e. If subtracting the amount of CO_2 absorbed in the LULUCF sector (land use, land use change and forestry), Vietnam's total emissions in 2014 was 283,96 million tonnes of CO_2e (Ministry of Natural Resources and Environment, 2019)[5].

According to the IEA (2020), coal is the largest source of greenhouse gas emissions in Viet Nam and has increased sharply in recent years. In 2018, CO_2e emissions from coal, gasoline and gas were 150 million tons, 58 million tons and 18 million tons, respectively. This means a 30.4% rise of emissions from coal against 2017, while emissions form gasoline, oil and gas remained unchanged. The average annual CO_2e emissions growth rate in the past 5 years from consumption of coal is 16.3%, petroleum 9.1%, and gas -3.8%.

[5] Ministry of Natural Resources and Environment. (2019). The Third Biennial Updated Report Of Viet Nam to the UN Framework Convention on Climate Change" (Báo cáo cập nhật hai năm một lần thứ 3 của Việt Nam cho Công ước khung của Liên hợp quốc về biến đổi khí hậu).



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Coal	34	37	39	48	52	60	64	65	71	82	110	117	115	150	225
Gasoline	34	33	38	38	43	47	44	41	40	41	52	56	58	58	52
Natural gas	11	12	13	15	17	19	18	19	20	21	21	21	18	18	14

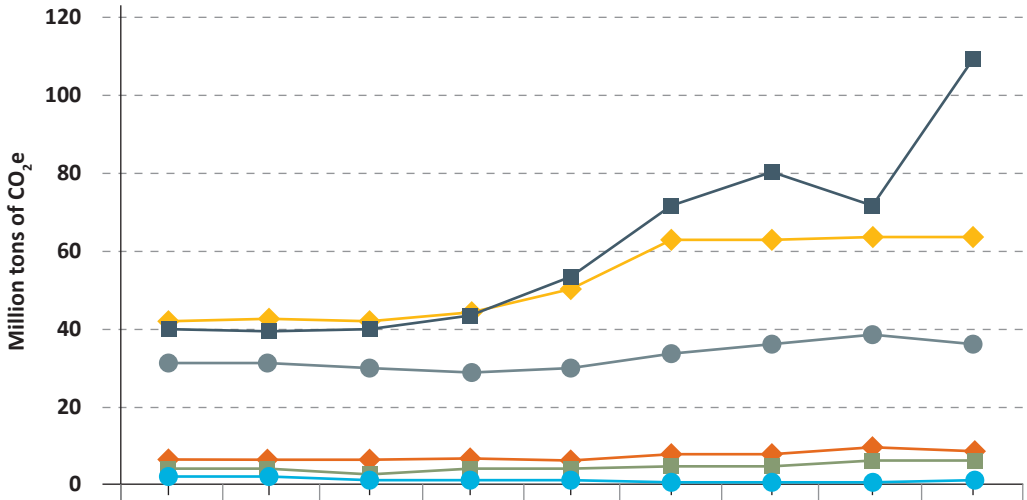
Figure 1: CO_2e emissions by energy type in Viet Nam

Source: IEA (2020c)[6]

The main sources of GHG emissions in Viet Nam come from energy (52%), agriculture (30%), industrial processes (11%) and waste (7%). As a wet rice agriculture country, the share of greenhouse gas emissions from agriculture reached 30% (Ministry of Natural Resources and Environment, 2017)[7]. A report by the IEA (2020) revealed that the total CO_2e emissions in 2018 from fossil fuels was 226 million tonnes, of which electricity and thermal power generation accounted for the largest proportion at 48.2%, followed by industry (28.3%), transport (15.9%), residential activities (4.0%), commerce (3.1%) and agriculture (0.4%).

[6] IEA. (2020c). https://www.iea.org/data-and-statistics?country=WORLD&fuel=Energy%20supply&indicator=TPESbySource

[7] Ministry of Natural Resources and Environment. (2017). The Second Biennial Updated Report of Viet Nam. (Báo cáo cập nhật hai năm một lần thứ 2 của Việt Nam)



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Electricity and heat	41	40	41	44	53	71	80	72	109
Industry	42	43	42	45	50	63	63	64	64
Transport	31	31	30	29	30	33	36	38	36
Residential	7	7	7	7	7	8	8	10	9
Commerce	3	4	3	4	4	5	5	6	7
Agriculture	2	2	2	1	1	1	1	1	1

Figure 2: CO_2e emissions from fossil fuels in Viet Nam by sector

Source: IEA (2020c)[8]

Energy is one of the largest sources of greenhouse gas emissions today, typically contributing more than 90% of CO_2 and 75% of other greenhouse gas emissions in developing countries (IEA, 2020c)[9]. In Vietnam, GHG emissions mainly come from the burning of fuel, and from the process of exploiting, transporting, and storing fuel. Total emissions in 2014 was 321.506 million tons of CO_2e without LULUCF, and 283.996 million tons of CO_2e with LULUCF. Total emissions in energy was 171.62 million tons of CO_2e, equivalent to 53.38% of total greenhouse gas emissions (without LULUCF), of which the main sources of emissions were fuel combustion at 87.8% and fugitive emissions at

[8] IEA (2020c), https://www.iea.org/data-and-statistics?country=WORLD&fuel=Energy%20supply&indicator=TPESbySource
[9] IEA (2020c), https://www.iea.org/data-and-statistics?country=WORLD&fuel=Energy%20supply&indicator=TPESbySource

12.2%. Fuel combustion is common in power generation, industry, construction, transportation, agriculture/forestry/fisheries, and some other sectors (Ministry of Natural Resources and Environment, 2019)[10].

Table 4 below contains data on total greenhouse gas emissions and the structure of greenhouse gas emissions in 2014.

(1) Energy industries (power generation and fuel production) are among the largest users of fossil fuels in Viet Nam. Total CO_2e emissions by energy industries in 2014 was 54.50 million tonnes of CO_2e, accounting for 31.8% of the total emissions in energy and 36.2% of emissions from fossil fuel combustion.

(2) The transportation sector had total GHG emissions in 2014 of about 30.6 million tonnes of CO_2e, equivalent to 7.80% of the total CO_2e emissions in energy and 20.3% of the emissions from fossil fuel combustion. Road transport accounted for 90.9% of emissions (27,004.17 thousand tonnes; the share of inland waterways was 4.6% (1,353.93 thousand tonnes of CO_2e), airways 4.1% (1,230.37 thousand tonnes of CO_2e), and railways only 0.4% (109.76 thousand tonnes of CO_2e).

(3) The industrial processes and product use (IPPU) sector

Total GHG emissions for this sector in 2014 was 38,62 million tons of CO_2e, accounting for 12.01% of total CO_2e emissions. Emissions from the production of construction materials and minerals had the biggest share at 91.2%, and the remaining 8.8% of emissions were equally distributed between chemical and metallurgy industries.

(4) Agriculture

The amount of greenhouse gas emissions in 2014 from the agricultural sector was 89.75 million tonnes of CO_2e, accounting for 27.92% of Vietnam's total GHG emissions. Of this figure, the largest shares were for rice cultivation and agricultural soils at 49.4% and 26.7%, respectively, followed by 11.4% from livestock farming, 9.9% from the use of fertilisers and 2.7% from the combustion of agricultural residue.

(5) Waste

In 2014, total CO_2 emissions from waste were 25.51 million tonnes, accounting for 6.9% of the total greenhouse gas emissions. The share of domestic sewage was 44.67%, from solid waste landfill 37.4%, from human excreta 9.3%, industrial sewage 7.3% and from waste incineration 1.4%.

[10] Ministry of Natural Resources and Environment (2019). The Third Biennial Updated Report Of Viet Nam to the UN Framework Convention on Climate Change (Báo cáo cập nhật hai năm một lần thứ 3 của Việt Nam cho Công ước khung của Liên hợp quốc về biến đổi khí hậu)

Table 4: GHG emissions in 2014 by sector

No.	Sector/ sub-sector	Total greenhouse gas emissions (thousand tonnes)				Emissions structure (%)			
		CO_2	CH_4	N_2O	CO_2e	CO_2	CH_4	N_2O	CO_2e
A	**Total emissions (with LULUCF)**	**148,766**	**99,526**	**35,674**	**283,966**				
B	**Total emissions (w/o LULUCF)**	**186,441**	**99,410**	**35,654**	**321,506**	**100.00**	**100.00**	**100.00**	**100.00**
1	***Energy***	***147,525***	***22,977***	***1,118***	***171,621***	***79.13***	***23.11***	***3.14***	***53.38***
1.1	Fuel combustion activities	145,979	3,598	1,115	150,692	98.95	15.66	99.68	87.81
1.1.1	*Energy industries*	*54,315*	*21*	*166*	*54,502*	*37.21*	*0.58*	*14.93*	*36.17*
1.1.2	*Manufacturing industries and construction*	*48,768*	*230*	*370*	*49,368*	*33.41*	*6.39*	*33.23*	*32.76*
1.1.3	*Transport*	*30,352*	*124*	*76*	*30,552*	*20.79*	*3.45*	*6.84*	*20.27*
1.1.4	*Other sectors*	*11,685*	*3,221*	*492*	*15,398*	*8.00*	*89.50*	*44.18*	*10.22*
1.1.5	*Other (non-energy use)*	*860*	*3*	*9*	*871*	*0.59*	*0.07*	*0.82*	*0.58*
1.2	Fugitive emissions from fuels	1,546	19,379	4	20,929	1.05	84.34	0.32	12.19
1.2.1	*Solid fuels*		*2,732*		*2,732*		*14.10*		*13.06*
1.2.2	*Oil and natural gas*	*1,546*	*16,647*	*4*	*18,197*	*100.00*	*85.90*	*100.00*	*86.94*
2	***Industrial processes***				***38,620***				***12.01***
3	***Agriculture***		***57,214***	***32,538***	***89,752***		***57.55***	***91.26***	***27.92***
4	***LULUCF***	***-37,676***	***116***	***20***	***-37,540***	***-20.21***	***0.12***	***0.06***	***-11.68***
5	***Waste***	***296***	***19,218***	***1,999***	***21,513***	***0.16***	***19.33***	***5.61***	***6.69***

Source: Ministry of Natural Resources and Environment (2019)[11]

[11] Ministry of Natural Resources and Environment (2019). The Third Biennial Updated Report Of Viet Nam to the UN Framework Convention on Climate Change (Báo cáo cập nhật hai năm một lần thứ 3 của Việt Nam cho Công ước khung của Liên hợp quốc về biến đổi khí hậu)

1.1.2 Factors causing greenhouse gas emissions in Viet Nam

Increasing demand for energy

The strong urbanisation trend has led to an increase in energy demand. The consumption of electrical appliances in households and in the service sector (hotels, shopping centres) has increased significantly over the years. As estimated in the Second Biennial Updated Report of Viet Nam, greenhouse gas emissions from commercial and residential buildings in 2010, 2020 and 2030 is 19.6, 36.0 and 67.3 million tonnes of CO_2, respectively (Ministry of Natural Resources and Environment, 2017)[12]. The total electricity consumption in the administrative, household and commercial service sectors accounts for about 43% of total annual electricity consumption, equivalent to about 45,000Gwh, or 25.7 million tonnes of CO_2 emissions (IFC, 2012)[13]. Sub-sectors of commerce, services and home electrical appliances are projected to have the fastest growth in energy demand.

Energy consumption in the transport sector has also increased rapidly. Petroleum is consumed by almost all road transport modes (e.g. 2-wheelers, passenger cars, light commercial vehicles) and aviation. Diesel oil is consumed by road, railway, and inland waterway transport. Fuel oil (FO) is used only for marine vehicles. Electricity is mainly consumed by 2-wheel electric vehicles. Diesel and gasoline are forecast to continue their strong rising trend, more than doubling consumption from 2014 to 2030. (Table 5).

Table 5: Fuel consumption by fuel type in the transport sector of Viet Nam

Unit: million tonnes of oil equivalent (Mtoe)

Type of fuel	2014	2020	2025	2030
Gasoline	4.86	7.05	9.33	12.33
Diesel	5.44	7.46	10.621	15.10
Fuel Oil	0.23	0.23	0.29	0.38
Jet Kerosene	0.37	0.93	1.16	1.44
Electricity	0.00	0.01	0.02	0.02

Source: Jung Eun Oh et al. (2019)[14] (data by the World Bank and GIZ)

[12] Ministry of Natural Resources and Environment (2017). The Second Biennial Updated Report Of Viet Nam to the UN Framework Convention on Climate Change; Vietnam Publishing House of Natural Resources, Environment and Cartography, Ha Noi (Báo cáo cập nhật hai năm một lần thứ 2 của Việt Nam cho Công ước khung của Liên hợp quốc về biến đổi khí hậu)

[13] IFC (2012), Survey report on green building, construction programs in Viet Nam

[14] Jung Eun Oh, Maria Cordeiro, John Allen Rogers, Nguyen Quoc Khanh, Daniel Bongardt, Dang Tuyet Ly and Vu Anh Tuan (2019). Addressing Climate Change in Transport : Volume 1 : Pathway to Low-Carbon Transport

Meanwhile, the master plan for renewable energy (RE) development still lacks a forward-looking vision and would need to be updated with new projects, especially wind and solar power. In the coming time, the national power source will still be dependent on coal-fired thermal power, of which the main input is imported coal, posing risks of environmental pollution, increasing greenhouse gas emissions and affecting national energy security.

Increasing demand for local mobility

The transport sector is increasingly contributing to the total greenhouse gas emissions in Vietnam, accounting for 18% of total CO_2 emissions in 2014. Despite the decreasing trend of CO_2 intensity in the economy (Figure 3 below), improved GDP per capita, a growing population, and urban migration are some of the factors that have drove down demand for mobility - an important source of GHG emissions in the past decade. Meanwhile, public transportation systems in municipalities remain quite modest. In 2018, the share of public passenger transportation in Ha Noi reached only 13.7%, and the number for Ho Chi Minh City was 9.38%. The proportion of buses using low-emission fuels, such as LNG and LPG, is around 4%. The share of private transport is significant and continuing to rise.

The total national passenger-km increased from 32 billion in 2000 to 169 billion in 2016, or by about 520%; during the same period, the total national freight ton-km increased from 32 billion to 111 billion or by about 340%.

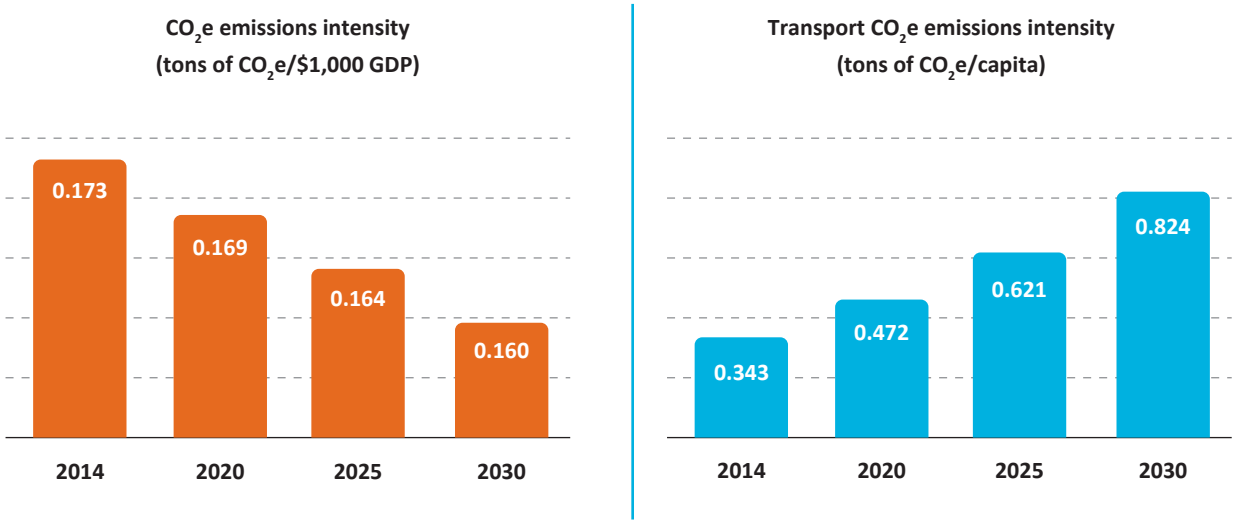


Figure 3: GHG emissions from transport per capita and per GDP (2014-2030)

Source: Jung Eun Oh et al. (2019)[15]

[15] Jung Eun Oh, Maria Cordeiro, John Allen Rogers, Nguyen Quoc Khanh, Daniel Bongardt, Dang Tuyet Ly and Vu Anh Tuan (2019), Addressing Climate Change in Transport: Volume 1: Pathway to Low-Carbon Transport.

1.2. Overview of commitments and actions by Viet Nam to implement its Nationally Intended Contributions (NDC)

1.2.1 Policy framework supporting implementation of GHG emissions reduction objectives

The Paris Agreement was adopted by parties of the UNFCCC at COP 21 in Paris in 2015. This could be considered as the very first legally binding international treaty on climate change, according to which the responsibilities of involved parties would be expressed via Intended Nationally Determined Contributions (INDC). The INCD of Viet Nam was submitted to the UNFCCC Secretariat in September 2015. Upon the Paris Agreement taking effect, the INDCs become Nationally Determined Contributions (NDC). Viet Nam's NDC consists of components on GHG mitigation and climate change adaptation.

The GHG mitigation component includes conditional and unconditional contributions. Unconditional contributions are activities implemented using national resources, while conditional ones are realised if there are new and additional financial resources, technology transfer and capacity building from the international community. According to the NDC, Viet Nam set a target of reducing GHG emissions by 8% compared to BAU by 2030 using domestic resources and expects to increase this target to 25% with international support.

Since submission of its NDC, Viet Nam has developed and promulgated numerous important policies on climate change responses at the national level. Specifically, Resolution No. 24-NQ/TW dated 3 June 2013 by the Party Central Committee on "Proactively responding to climate change, enhancing natural resource management and environmental protection"; Conclusion No. 56-KL/TW dated 23 August 2019 by the Central Committee on continuing to implement the Resolution on proactive response to climate change, enhancing natural resource management and environmental protection; and Resolution No. 55-NQ/TW dated 11 February 2020 by the Politburo on the orientation of Viet Nam's National Energy Development Strategy to 2030, with a vision to 2045.

Legal documents related to GHG emissions mitigation are incorporated into the Law on Economical and Efficient Use of Energy (2011), the Law on Water Resources (2012), the Law on Environmental Protection (2014) and the Law on Forestry (2017).

Strategies relating to greenhouse gas emissions mitigation, climate change and green growth include the National Strategy on Climate Change (2011); Vietnam's Green Growth Strategy (2012); National Energy Development Strategy to 2020, with a vision to 2050 (2007); National Energy Development Strategy to 2030, with a vision to 2045 (2020); Renewable Energy Development Strategy to 2030, with a vision to 2050 (2015); National Power Development Plan (PDP) adjusted for the period 2011-2020, with a vision to 2030 (2016); National Transport Development Strategy to 2020, with a vision to 2030 (2013); and Viet Nam's Forestry Development Strategy for the 2006-2020 period (2007).

The programs, plans and schemes related to greenhouse gas emissions, climate change and green growth include the Plan for Implementation of the Paris Agreement – PIPA (2016); the National Action Plan to Implement the 2030 Agenda for SDGs (2017); National Action Plan on Climate Change (2012); National Plan on Urban Development of Viet Nam in Response to Climate Change (2013); the Target Programme on Climate Change Response and Green Growth for the 2016-2020 period (2017); National Target Programme on Energy-saving and Energy Efficiency (2006); the Scheme on Development of Biofuel up to 2015, with a vision to 2025 (2007), the National Power Development Plan for the period 2011-2020, with a vision to 2030 (2016); the Support Programme in Response to Climate Change (SP-RCC); the 2011-2015 National Target Programme to Respond to Climate Change; the National Action Programme on Reduction of GHG Emissions through Efforts to Reduce Deforestation and Forest Degradation, Sustainable Management

of Forest Resources, Conservation and Enhancement of Forest Carbon Stocks for the period 2011-2020 (2017)[16].

Among the above-mentioned documents, the PIPA cements Viet Nam's international commitments on climate change response, including 68 groups of tasks to be implemented by 2030 on climate change mitigation and adaptation, resource mobilisation, enhancing and improving institutional frameworks, and establishing the enhanced transparency frameworks on responses and support received for responses to climate change. The content of Viet Nam's NDC has been comprehensively reflected in its corresponding Plan, which identifies the tasks requiring the most ambitious and continuous efforts in line with national conditions and adjustments of Viet Nam's commitments in implementation of the Paris Agreement, geared towards a low-carbon and climate-resilient economy.

Viet Nam reviewed and updated its NDC to be submitted to the UNFCCC Secretariat in 2020[17]. Mitigation and adaptation contributions were reviewed, updated and adjusted to be more in line with the country's current situation and latest socio-economic development forecasts up to 2030, ensuring that NDC implementation objectives are consistent with the objectives of the Socio-Economic Development Strategy, the National Climate Change Strategy, the Viet Nam Green Growth Strategy, and the National Strategy for Natural Disaster Prevention, Response and Mitigation, and at the same time, to follow several new requirements for the NDC adopted at COP24 that are suitable to Viet Nam's capacities.

According to the updated NDC, the Industrial Processes (IP) sector has been included in the GHG inventory, BAU scenario and GHG emissions mitigation measures. Viet Nam will have reduced its GHG emissions by 9% compared to the BAU scenario by 2030 with its own domestic resources. This can be increased to 27% with international support through bilateral as well as multilateral cooperation and the implementation of new mechanisms under the Paris Agreement.

Compared to the submitted NDC, unconditional contributions in the updated NDC have been increased both in absolute amount of emissions (against BAU) and rate of emissions reduction. Specifically, the amount of emissions reduced would increase by 21.2 million tonnes of CO_2e (from 62.7 million tonnes of CO_2e to 83.9 million tonnes of CO_2e), meaning a 1% rise in GHG emissions reduction (from 8% to 9%). Conditional contributions with international support increase from 25% to 27%, which means an increase of 52.6 million tonnes of CO_2e (from 198.2 million tonnes of CO_2e to 250.8 million tonnes of CO_2e)[18].

1.2.2. Efforts by Viet Nam to implement its commitments on GHG reduction

1.2.2.1. In the energy sector

Prior to the COVID-19 pandemic, Viet Nam had implemented numerous programs and solutions to reduce greenhouse gas emissions in the energy, transport, agriculture, LULUCF and waste management sectors, and had achieved certain successes. In addition, strengthened education and communication on climate change and green consumption in community behaviours have also contributed to reducing greenhouse gas emissions.

a) Policies on renewable energy development

Renewable energy (RE) sources are becoming more important to ensure

[16] The Socialist Republic of Viet Nam (2020). Updated Nationally Determined Contribution (NDC) (NDC cập nhật của Việt Nam)

[17] The Socialist Republic of Viet Nam (2020). Updated Nationally Determined Contribution (NDC) (NDC cập nhật của Việt Nam)

[18] Natural Resources and Environment e-newspaper: Finalisation of the NDC: Increased contribution by Vietnam to the global efforts to respond to climate change (Hoàn thành cập nhật Đóng góp do quốc gia tự quyết định (NDC): Nâng mức đóng góp của Việt Nam cho ứng phó với BĐKH toàn cầu) Accessed on 3/8/2020 via https://baotainguyenmoitruong.vn/hoan-thanh-cap-nhat-dong-gop-do-quoc-gia-tu-quyet-dinh-ndc-nang-muc-dong-gop-cua-viet-nam-cho-ung-pho-voi-bdkh-toan-cau-308225.html#:~:Text=(Tn%26mt)%20%2d%20ng%C3%a0y%2024%2f,83%2c9%20tri%E1%Bb%87u%20t%E1%Ba%a5n%20CO2t%C4%91

sufficient power supply, given fading hydropower sources and the immaturity of other sources. Resolution No. 55-NQ/TW by the Politburo identified the objective: "the proportion of renewable energy sources in the total primary energy supply will reach about 15%-20% by 2030; 25-30% by 2045", which will correspond to a ratio of RE in the total electricity production in 2030 and 2045 of 30% and 40%, respectively.

To support the development of renewable energy, the Prime Minister has issued various policies, namely Decision No. 37/2011/QD-TTg dated 29 June 2011 on the mechanism to support the development of wind power projects in Viet Nam; Decision No. 24/2014/QD-TTg on the mechanism to support the development of biomass power projects in Vietnam; and Decision No. 31/2014/QD-TTg on the mechanism to support the development of power generation projects using solid waste in Vietnam. Accordingly, the current price of wind power is VND 1,614/kwh (7.8 cents), of which a subsidy of VND 207/kwh (1 cent) is provided to buyers; the price of biomass power is VND 1,220/kwh (5.8 cents); electricity from solid waste incineration is VND 2,114/kwh (10.05 cents); and electricity from landfilling solid waste is VND 1,532/kwh (7.25 cents). Although there is a pricing mechanism in place, grid connection remains a major problem at present (Ho Cong Hoa, 2015)[19]. Table 6 below summarises prices applicable to RE by the Ministry of Industry and Trade.

Table 6: Summary of existing support mechanisms for renewable energy

Generation sources	Technology	Tariff	Electricity sale price
Small hydropower plants	Electricity production	Avoided cost tariff announced annually	598-663 VND/kWh (by time. region. season) 302-320 VND/kWh (surplus energy vs contracted) 2.158 VND/kWh (capacity price)
Wind power	Electricity production	FIT for 20 years	7.8 USc/kWh (on land)
Biomass	Co-generation	FIT for 20 years	5.8 USc/kWh
	Electricity production	FIT for 20 years	7.5551 USc/kWh (North) 7.3458 USc/kWh (Central) 7.4846 USc/kWh (South)
Waste	Direct burning	FIT for 20 years	10.5 USc/kWh
	Landfill for gas production	FIT for 20 years	7.28 USc/kWh
Solar power	Grid-connected generation	FIT for 20 years	9.35 USc/kWh

Source: Ministry of Industry and Trade (2017)[20]

[19] Ho Cong Hoa (2015). Green Energy Forum. PPP – a channel to mobilise private financial and technological resources for renewable energy in Viet Nam. (Mô hình đối tác công-tư PPP: kênh huy động tài chính và công nghệ tự nhân cho năng lượng tái tạo ở Việt Nam)

[20] Ministry of Industry and Trade (2017). The Vietnam Energy Outlook Report 2017 (Báo cáo Triển vọng năng lượng Việt Nam năm 2017)

b) Investment in renewable energy (RE) development

The field of RE is attracting numerous investors. Viet Nam has mobilised huge resources to invest in RE development with the involvement of various stakeholders with state-owned enterprises as the core actor. In the period 2007-2017, total investment in the energy sector stood at VND 2,100 thousand billion, equal to 18,4% of total social investment (around VND 11,400 thousand billion), thus contributing to economic growth with an increasingly diverse ownership and business model (the Central Economic Committee, 2020)[21].

Policies on price subsidies and preferential treatment for RE, especially FIT being fixed for 20 years, have led to a surge of investment in RE in Viet Nam. Green banking and green credit are also emerging in Viet Nam, which include investments in RE. As of QI/2029, there were 20 credit institutions providing green loans with total loans of VND 242,000 billion, an increase of 2% compared with 2018, of which the share of medium and long-term loans was VND 188,000 billion, and for short-term loans VND 54,000 billion. VND 131,000 billion of green loans were made to the agricultural and rural sector; the figure for sustainable urban management was VND 31,000 billion; for sustainable forestry VND 13,600 billion; and for renewable energy just over VND 8,000 billion (State Bank of Viet Nam, 2019)[22].

It is forecast that the demand for investment in renewable energy in Vietnam will be huge and follow a rising trend (see Table 7).

Table 7: Projected capital demand for investment in the electricity sector of Viet Nam

No.	Component	Fund requirement (VND 1.000 billion)				Percentage (%)			
		2016-2020	2021-2025	2026-2030	2032-2045	2016-2020	2021-2025	2026-2030	2032-2045
III	**Total**	**719**	**1,174**	**1,257**	**3,473**				
1	***Power sources***	***549***	***825***	***886***	***2,468***	***76.4***	***70.3***	***70.5***	***71.1***
1.1	Coal-fired thermal power	394	211	145	186	71.9	25.5	16.4	7.5
1.2	Hydro power	32	16	23	24	5.9	1.9	2.6	1.0
1.3	Hydrogen gas turbine	17	227	109	289	3.2	27.5	12.3	11.7
1.4	Renewable energy	104	372	609	1,968	19.0	45.0	68.7	79.8
2	***Grid***	***170***	***348***	***372***	***1,005***	***23.6***	***29.7***	***29.5***	***28.9***
2.1	Transmission network	86	178	201	488	50.9	51.2	54.2	48.5
2.2	Distribution network	83	170	170	518	49.1	48.8	45.8	51.5

Source: Calculated by the authors based on data from the Central Economic Committee (2020)[23]

[21] Central Economic Committee (2020). The Strategic Orientation of the National Energy Development of Vietnam to 2030, with a vision to 2045 (Định hướng phát triển năng lượng quốc gia của Việt Nam đến năm 2030, tầm nhìn đến năm 2045)

[22] State Bank of Viet Nam (2019). New encouraging signals for green finance in Viet Nam (Tài chính xanh tại Việt Nam có nhiều tín hiệu bước đầu khởi sắc). Accessed on 23.09.2019 via https://www.sbv.gov.vn/webcenter/portal/m/menu/trangchu/ttsk/ttsk_chitiet?leftWidth=0%25&showFooter=false&showHeader=false&dDocName=SBV401252&rightWidth=0%25&centerWidth=100%25&_afrLoop=13505726570976297#%40%3F_afrLoop%3D13505726570976297%26centerWidth%3D100%2525%26dDocName%3DSBV401252%26leftWidth%3D0%2525%26rightWidth%3D0%2525%26showFooter%3Dfalse%26showHeader%3Dfalse%26_adf.ctrl-state%3Ddb7bj7t8h_9

[23] Central Economic Committee (2020). The Strategic Orientation of the National Energy Development of Vietnam to 2030, with a vision to 2045) (Định hướng phát triển năng lượng quốc gia của Việt Nam đến năm 2030, tầm nhìn đến năm 2045)

Upon availability of the RE promotion mechanism, there is a significant rise observed in the total planned capacity of RE by 2025. Up to now, selected RE projects have been added to Vietnam's Power Development Master Plan VIII (PDP 8); for example, around 11,800MW of wind power capacity, of which 4,800 MW had been approved by competent authorities before 1 January 2019, not including many other proposals since 2018 on feasibility studies; the development of wind power plants (onshore, nearshore and offshore) with a total capacity of around 50,000MW; 8.935MW of solar power (135 projects); and 30 MW of two waste-to-energy plants (VCEA, 2019[24]; VCEA, 2020[25]; EVN, 2019)[26].

According to the Ministry of Industry and Trade (2017), with the existing FIT applicable to wind and solar energy, the scale of price subsidies granted to RE will reach USD 540 million in 2025, and about USD 2.56 billion in 2030, given the current power purchasing price (Table 8).

Table 8: Estimated annual subsidy costs for renewable energy (billion USD)

Item	Types of RE	2020	2025	2030	2035
Power production (GWh)	Solar	3.88	7.62	18.86	24.77
	Wind	4.31	7.97	17.55	55.45
	Biomass	1.67	5.59	15.67	30.54
Subsidies (billion USD) (difference between the existing FIT and average power purchase price of EVN in December 2016)	Solar	0.16	0.31	0.77	1.01
	Wind	0.11	0.20	0.44	1.39
	Biomass	0.01	0.03	0.08	0.16
	Total	**0.28**	**0.54**	**1.29**	**2.56**

Source: MOIT (2017)

Role of FDI enterprises in investment in RE

From 1988 to now, there have been a total of 48 registered FDI projects in the renewable energy sector with a total capital of USD 3.8 billion. In the period 2007-2017 alone, there were 25 projects with a total capital of about USD 2 billion. Over the same period, FDI sources were allocated mainly to wind power (10 projects) with a total registered capital of USD 1.2 billion, accounting for about 61% of investment capital in the renewable energy sector. With regard to solar power, there were 12 FDI

[24] VCEA (2019). Temporary stop making proposals and agreements on solar power projects using FIT mechanism (Tạm dừng đề xuất, thoả thuận các dự án điện mặt trời theo cơ chế giá FIT). Accessed on 18.12.2019 via http://Nangluongsachvietnam.Vn/D6/Vi-Vn/News/Tam-Dung-De-Xuat-Thoa-Thuan-Cac-Du-An-Dien-Mat-Troi-Theo-Co-Che-Gia-Fit-6-165-5512

[25] VCEA (2020). Temporary stop adding new wind power projects to the Power Development Master Plan. (Tạm dừng bổ sung quy hoạch dự án điện gió). Accessed on 9.10.2010 via http://Nangluongsachvietnam.Vn/D6/Vi-Vn/News/Tam-Dung-Bo-Sung-Quy-Hoach-Du-An-Dien-Gio-6-164-8160

[26] EVN (2019). Adding two waste-to-energy projects to the National Power Development Master Plan (Bổ sung 2 dự án điện rác vào Quy hoạch phát triển Điện lực Quốc gia). Accessed on 15.11.2020 via https://www.evn.com.vn/D6/News/Bo-Sung-2-Du-An-Dien-Rac-Vao-Quy-Hoach-Phat-Trien-Dien-Luc-Quoc-Gia-141-17-23184.Aspx

projects with registered capital of USD 716 million, accounting for 36% of total investment capital. There are only 3 FDI projects on biomass power, accounting for 3% of total investment due to the lack of optimal and efficient use of this energy (CIEM, 2019)[27].

c) Status of renewable energy development

As of 2016, the total renewable energy production (excluding hydropower) reached about 0.1 million TOE, equal to 0.16% of the total primary energy sources. Total installed capacity of power plants from new and renewable sources by 2017 was 380 MWh, accounting for 0.83% of total power capacity, and electricity produced was 549 million kWh, equivalent to 0.3% of total electricity generation. By the end of 2019, the total capacity of small-scale hydropower had reached 3,674 MW, wind power 377 MW, biomass 325 MW, and solar power 4,696 MW (Updated Nationally Determined Contribution, 2020)[28].

- Solar power: As of July 2020, there is 5,053MW of solar power connected to the grid nationwide, while the figure for wind power is only 429MW. It is expected that by the end of December 2020, there will be about 3,000MW of solar power connected to the grid, thus increasing the total installed solar power capacity to more than 8,000MW.

- Wind power: As of July 2020, there is only 2,688.68 MW of wind power nationwide under the signed power purchase agreements, of which 11,800 MW was approved in the master plan. Except for the projects that have been connected to the national grid or have been under construction, most are at the preparation stage of investment and are expected to be completed by the end of 2021. However, due to the impact of Covid-19, many wind power projects will be behind schedule (The Nang Luong Viet Nam journal, 2020)[29].

In the field of energy savings and energy efficiency (EE)

According to statistics, measures on energy-saving and energy efficiency helped reduce CO_2e by about 7.3 million tonnes in 2014 compared to the previous BAU scenario. In 2014, electricity loss decreased by 1.55% (equivalent to about 2.2 billion kWh) compared to 2010, contributing to a reduction of 1.46 million tonnes of CO_2e. In the 2015-2019 period, electricity loss was cut by about 29.7 billion kWh compared to 2010, which helped reduce emissions by 26.5 million tonnes of CO_2e.

1.2.2.2. In the transportation sector

Climate change and GHG emissions adaptation measures have been mainstreamed into the process of updating, adjusting, and developing strategies and sector-specific master plans. Based on the tasks and responsibilities assigned in the PIPA, the Ministry of Transport has implemented numerous activities aiming at GHG reduction which is in line with the targets of 8% and 25% committed to in the NDC of Viet Nam, specifically:

- Converting consumption to clean fuel (E5 petroleum, electric vehicles);

- Shifting the cargo transportation model from roadway to railway, inland waterway and maritime transport;

[27] CIEM (2019). Implementation of policies to attract investment in power development by economic sectors in the period 2007-2017 and recommendations for the period to 2030, with a vision to 2045 (Kết quả thực hiện chính sách thu hút đầu tư phát triển năng lượng của các thành phần kinh tế giai đoạn 2007-2017 và những đề xuất, kiến nghị cho giai đoạn đến năm 2030, tầm nhìn đến năm 2045)

[28] The Socialist Republic of Viet Nam (2020). Updated Nationally Determined Contribution (NDC) (NDC cập nhật của Việt Nam)

[29] The Vietnam Energy Journal (2020). Wind and solar powers in the structure of the National Power Development Master Plan VIII: Current status and solutions (Cơ cấu điện gió, mặt trời trong QHĐ VIII: Hiện trạng và giải pháp). Accessed on 14/09/2020 via Http://Nangluongvietnam.Vn/News/Vn/Nhan-Dinh-Phan-Bien-Kien-Nghi/Co-Cau-Dien-Gio-Mat-Troi-Trong-Qhd-Viii-Tam-Ket-Hien-Trang-Va-Giai-Phap.Html

- Shifting the passenger transportation model from using private means of transportation to public means;

- Striving for energy efficiency (limiting the level of fuel consumption applicable to motor vehicles and improving truck-load factors).

In addition, climate change responses have been mainstreamed into the process of updating, adjusting and developing sectoral strategies and planning, including detailed planning of seaport groups; development planning of Viet Nam's dry port system; detailed planning of the dry port system to 2020 with orientation to 2030; the Master Plan for Railway Transport Development; and the planning of Long Thanh Airport and other airports. The use of renewable energy in public lighting and traffic light systems has also increased.

1.2.2.3. In agriculture and forestry sectors

Actions on GHG reduction have been implemented in the agriculture sector, including: replacing long-duration rice varieties with short-duration ones; helping to reduce typhoon-related risks and duration of GHG emissions; increasing areas with mid-season water drainage and alternating wet and dry irrigation techniques; reducing the rate of field burning of rice straw from 90% to less than 30%; improving diets for tens of thousands of milk cows; collecting and treating millions of tonnes of organic waste in livestock production to make organic fertilisers; and applying water-saving irrigation techniques on hundreds of hectares of coffee.

Viet Nam has actively implemented GHG mitigation measures, especially under the REDD+ Program. In the period 2015-2020, REDD+ programs and projects have been focusing on improving institutional frameworks and policies, capacity building, developing technical guidelines (reference emissions level for REDD+, MRV, benefit-sharing mechanism, etc.) and investing in the implementation of REDD+ activities. Several REDD+ programs have calculated the potential of GHG reduction and enhancement of forest carbon stock under specific REDD+ activities. The emissions reduction program in North Central Viet Nam is expected to cut 25 million tonnes of CO_2e in the 2018-2025 period. National forest coverage has also been on the rise, reaching 41.89% by the end of 2019.

Pursuant to Official Letter No. 7208/BNN-KHCN dated 25 August 2016 by the Ministry of Agriculture and Rural Development, the NDC implementation plan for the agricultural sector includes mitigation and adaptation components. The Action Plan component to reduce GHG emissions in the Agriculture Sector under Vietnam's Nationally Determined Contribution (NDC) includes four sub-sectors; crops, livestock, fisheries and LULUCF.

1.2.2.4. In the waste sector

In the waste sector, many solid waste treatment plants have been built and put into operation with new and advanced technologies combined with compost production, contributing to reducing landfill and limiting environmental impacts, and especially to shifting from landfill technology to waste-to-energy (WtE) incineration technology.

The electricity price applicable to power generation projects using solid waste is stipulated in Circular 32/2015/TT-BCT dated 08 October 2015 by the Ministry of Industry and Trade on Project Development and Standardised Power Purchase Agreements for power generation projects using solid waste. Accordingly, the purchase price is 10.05 US cents/kWh for power generation projects using solid waste that is directly incinerated, and 7.28 US cents/kWh for gas-fired power generation projects recovered from solid waste landfills. The electricity purchase price is adjusted according to fluctuations in the VND/USD exchange rate.

Currently, Vietnam has a number of waste-to-energy (WtE) power plants in operation,

such as the Go Cat Waste-to-Energy Plant with a capacity of 2.43 MW, the Can Tho solid waste treatment plant with a capacity of 6 MW, and a 0.6 MW industrial waste-to-energy plant located at the Nam Son waste treatment area. There are two more WtE projects with a total capacity of 30 MW included in the Power Development Master Plan VIII[30].

As for co-generation, there are now 42 energy cogeneration plants including 41 sugar mills with a potential for generating more than 500 MWe and 1 paper mill in which 6 bagasse fired co-generation projects are to be connected to the national grid with a total installed capacity of 88.5 MWe. Their capacity ranges from 1.5 to 25 MWe. The power and steam generated from these plants is used to feed these very plants. The majority of energy produced is used to crush sugarcane and refine sugar. There are only 3 plants selling their redundant power to the national grid at the price of 4-5 US cents/kWh. Other plants are keen to sell power on their expansion (GIZ-GDE/MOIT Renewable Energy Support Project, 2014)[31].

[30] EVN (2019). Adding two waste-to-energy projects to the National Power Development Master Plan. (Bổ sung 2 dự án điện rác vào Quy hoạch phát triển Điện lực Quốc gia). Accessed on 25.02.2019 via https://www.evn.com.vn/D6/News/Bo-Sung-2-Du-An-Dien-Rac-Vao-Quy-Hoach-Phat-Trien-Dien-Luc-Quoc-Gia-141-17-23184.Aspx

[31] GIZ-GDE/MOIT Renewable Energy Support Project (2014). Summary of studies on supporting mechanism for development of grid-connected bioenergy power in Vietnam (Báo cáo Tóm tắt nghiên cứu hỗ trợ cơ chế phát triển điện năng lượng sinh học nối lưới ở Việt Nam)

PART 2

Overview of GHG emissions - relevant policy responses by the Vietnamese Government during the Covid-19 pandemic.

2.1. The Covid-19 pandemic in Viet Nam

Even before the first case of Corona virus infection was confirmed in Viet Nam, the government had proactively developed various scenarios and response measures to curb outbreaks and to prepare for the worst-case scenario. As soon as the first community infection case was detected on 23 January 2020, Viet Nam took measures to quarantine, track and restrict people traveling from epidemic zones, temporarily closed its borders, implemented medical reporting and limited "crowd" activities and inter-provincial travel. In some places, additional preventive measures were implemented, such as body temperature measurement and free provision of face masks. Social distancing, which was imposed at an early stage of the pandemic, successfully controlled infections, but at the same time directly affected social and economic activities and reduced demand for energy, especially for petroleum used in transportation and production.

The government also issued "adaptive policies" to support businesses and vulnerable groups to reduce the negative impacts of social distancing rules, and at the same time to promote economic recovery, providing basic financial assistance for groups of vulnerable people during and after the pandemic.

- In public services, different policies have been promulgated to promote the application of online services in meetings, workshops and remote working from home.

- In the training and education field, legal stipulations were issued to give official recognition of results from online study, to provide support for training and educational

facilities in terms of electricity costs and internet broadband to facilitate online study.

- In the health care sector, a series of policies on promoting research and application of telehealth, and on settlement of medical insurance and health care costs, have been implemented during pandemic. With Telehealth, patients can benefit from health care services provided by leading doctors at central hospitals without having to be physically present. This is really a "pandemic-adaptive solution", aiming at the multiple objectives of complying with social distancing rules; improving the quality of health care services; providing the poor with opportunities to access high quality health care services; supporting doctors at local medical facilities to enhance their expertise; reducing the needs of domestic travel; saving financial and other sources; and contributing to the reduction of greenhouse gas emissions.

- In the manufacturing sector, numerous policies were issued by the government to encourage innovation and the application of advanced technologies, aiming at the effective use of natural resources, energy saving, green and sustainable production, and improvements in productivity.

With all these efforts, Viet Nam is considered to have successfully controlled the Covid-19 pandemic and maintained a positive economic growth rate of 2.12% in the first 9 months of 2020. As of 9 October 2020, the country had 1,100 confirmed Covid-19 cases and 35 deaths. The rate of infection is 11 cases/1 million population, and the corresponding fatality rate is 0.4, which resulted from the second wave of Covid-19 pandemic in Da Nang and are mainly patients with existing conditions, such as cancer, haemodialysis, etc.

Therefore, although the Covid-19 pandemic has caused negative consequences to the health and lives of people as well as economic growth, it has also brought opportunities for countries to renew their growth models, restructure their economies, and to become adaptive to pandemics and climate change. In fact, the above-mentioned policies have enabled the country respond more effectively to the current and future pandemics through more effective use of resources, appropriate changes to manufacturing methods and business models, and the public's adoption of behaviour in support of sustainable development.

2.2. Covid-19 "adaptive" policies

2.2.1. Social distancing policies

Faced with the complicated developments of the Covid-19 pandemic, the Vietnamese Government issued policies on social distancing requirements in order to constraint and prevent outbreaks. These policies were implemented on two levels: partial social distancing and nationwide lockdown, specifically:

- The partial social distancing requirement was stipulated in Directive No. 15/CT-TTg dated 27 March 2020 by the Prime Minister on Covid-19 prevention and control. Accordingly, it is required by the Prime Minister that leaders of Provincial People's Committees adopt measures to limit gatherings of large crowds from 00h00 from 28 March to 15 April 2020. The main points stipulated in this Directive are: (i) to temporarily halt all meetings, religious gatherings in large crowds; (ii) to shut down all business, excluding those providing daily necessary basic products and services; and (iii) to limit travel by people.

- The nationwide lockdown was regulated by Directive No. 16/CT-TTg dated 31 March 2020 by the Prime Minister on urgent measures for Covid-19 prevention and control. According to this Directive, the nationwide lockdown was imposed within 15 days, from 00h00 of 1 April 2020, specifically: (i) to strictly comply with social distancing requirements; people are requested to stay at home and only go out in cases of extreme necessity; (ii) to permit only a number of social and economic activities; (iii) and to halt public transportation in principle, with few special exemptions, and to minimise travel by private vehicles.

Social distancing policies were implemented in a flexible manner to be best adapted to the development of the covid-19 pandemic in different localities. Specifically, the Prime Minister on 15 April 2020 approved suggestions by the Central Covid-19 Steering Committee on implementation of social distancing in 3 groups:

(i) The group of high-risk localities would be required to continue implementing Directive 16/CT-TTg on comprehensive lockdown until 22 April or until 30 April.

(ii) For the group of moderate risk localities, they are required to follow Directive No. 16/CT-TTg and strictly comply with Directive 15/CT-TTg until 22 April, meaning that a roadmap to gradually transition from comprehensive lockdown to partial social distancing will be implemented.

(iii) The group of low-risk localities will continue to strictly comply with the Government Directive No. 15/CT-TTg on partial social distancing until 15 April.

2.2.2. Policies supporting post-pandemic economic recovery

In addressing the negative impacts on the economy, numerous policies have been promulgated by the Vietnamese Government to respond to the pandemic and aim at the objectives of green growth.

2.2.2.1 Policies responsive to the pandemic and targeting green growth

This group of policies has a dual objective to: (i) promote development and application of internet and information technologies in manufacturing, trade, health care, education and the provision of public services to respond to the pandemic, and (ii) strive for green and sustainable development.

- The policies on telemedicine were issued as a measure both to comply with social distancing requirements and to promote green growth, which is partially due to travel restrictions and more efficient use of resources. According to Directive No. 16/CT-TTg, one of the important Covid-19 preventative measures is to restrict people from accessing medical facilities if it is not necessary. To implement this, the Prime Minister instructed the Ministry of Information and Communications to coordinate with the Ministry of Health to implement the telemedicine program targeted at households, villages, communes, and districts through the Telehealth tool. The first telemedicine session was piloted by the Ministry of Health at Hanoi Medical University Hospital on 18 April. To date, many live telemedicine sessions have been held, especially consultations of serious cases, including patients with COVID-19.

- In response to the complexity of the pandemic, the Ministry of Education and Training issued guidelines on the provision of online training to support teachers and pupils to continue and complete the 2019-2020 school year (Letter No. 1061 / BGDĐT-GDTrH dated 25.03.2020).

- In the context of social distancing requirements, the government issued Decree No.45/2020/ND-CP dated 08 April 2020 on implementation of public administrative procedures over internet platforms. According to this decree, citizens and organisations are encouraged to use online public services to minimise virus transmission.

2.2.2.2. Policies supporting groups vulnerable to the effects of Covid-19

Policies to support vulnerable people affected by travel restrictions, closure of non-essential services and social distancing were issued during the implementation of social distancing but were only implemented in the new-normal period of post-pandemic economic recovery. These policies include policies to support poor and vulnerable people directly with cash or indirectly through subsidised electricity prices, etc.

Resolution No. 42/NQ-CP dated 09 April 2020 on measures to support people facing difficulties caused by the Covid-19 pandemic has been

implemented with about VND 62,000 billion disbursed. In addition, the Prime Minister also issued Decision No. 15/2020/QD-TTg dated 24 April 2020 on implementing policies to support people facing difficulties caused by the Covid-19 pandemic. Details on the beneficiaries and corresponding support levels are specified in Table 9 below.

Table 9: Beneficiaries and corresponding support as specified in Resolution No. 42/NQ-CP

No.	Beneficiaries	Supporting measures	Results achieved in Da Nang
1	A worker who has employment contract suspended or has to take unpaid leave for at least 01 month because of the employer's inability to pay wages due to insufficient income or financial resources caused by COVID-19.	Receive VND 1.8 million per month for up to 03 months (from 1 April 2020).	A list of 23,598 workers and corresponding budget of VND 23.8 billion was approved, of which 18,761 workers received in total more than VND 19 billion, equivalent to about 80% of workers and the planned budget.
2	An employer who is facing financial difficulties and has paid at least 50% of job suspension allowance for their employees in accordance with Clause 3 Article 98 of the Labour Code during the period from April to June 2020.	Eligible for an unsecured loan that is worth up to 50% of total minimum region-based wages (maximum of 3 months with an interest rate of 0% and a loan term of up to 12 months).	
3	Private business household that has yearly income declared for tax purposes less than VND 100 million and has suspended their business activities from 01 April 2020.	Eligible to receive monthly support of VND 01 million (for up to 3 months).	
4	A worker who has his/her employment/working contract terminated but is not eligible for unemployment benefit; a worker who does not have an employment contract and is laid off.	Eligible to receive VND 01 million per month (up to 3 months). This measure is applied from April to June 2020.	
5	A person with meritorious service to the revolution who is receiving monthly benefits.	Eligible to receive an additional amount of VND 500,000 per month, which will be applied for 3 months from April to June 2020 and paid once in a lump sum.	Total VND 289 million has been paid to all 191/191 eligible persons.

(Table 9 - Continued)

No.	Beneficiaries	Supporting measures	Results achieved in Da Nang
6	A beneficiary of monthly social benefit.	Eligible to receive an additional amount of VND 500,000 per month, which will be applied for 3 months from April to June 2020 and paid once in a lump sum.	Total 26,560/26,605 eligible persons have been paid at a cost of nearly VND 40 billion. The remaining 45 persons were not available in the city.
7	A poor or near-poor household according to the national poverty standards by December 31, 2019.	Eligible to receive VND 250.000/month from April to June 2020, which will be paid in a lump sum.	Total 52,763/52,772 eligible persons have been paid at a cost of nearly VND 39,6 billion. The remaining 9 persons were not available in the city.

Source: Combined by the author from Resolution No. 42/NQ-CP

2.2.2.3. Policies supporting groups of enterprises to cope with Covid-19

In responding to difficulties in business activities and ensuring social security, the Prime Minister issued Directive No. 11/CT-TTg dated 4 March 2020 on urgent tasks and solutions to overcome difficulties in business activities and ensure social security to cope with the Covid-19 epidemic. There are seven groups of tasks and solutions prescribed in the Directive, including: (i) Removing difficulties and creating favourable conditions for getting access to capital, credit, finance, tax, commerce, and electronic payments; (ii) Reviewing, reducing administrative procedures and costs for businesses; (iii) Facilitating production and trading activities, promoting imports and exports; (iv) Urgently restoring and developing tourism and aviation sectors; (v) Accelerating the implementation and disbursement of investment capital, improving the business environment; (vi) Focusing on addressing labour-related bottle necks; and (vii) Promoting communication.

In order to be more specific about the policies to support people in the context of the pandemic, the Prime Minister issued Decision No. 15/2020/QD-TTg dated 24 April 2020 providing for the implementation of policies to support people facing difficulties due to the Covid-19 pandemic. The Decision took effect on 24 April 2020, but its measures were applied retrospectively from 01 April 2020.

a) Group of policies focusing on reducing business costs

This group consists of policies to support the reduction in electricity prices and costs for those consumers affected by the Covid-19 pandemic (Letter No. 2698/BCT-DTĐL dated 16 April 2020 by the Ministry of Industry and Trade); to deduct 30% of environmental protection tax on aviation fuel (Resolution 979/2020/UBTVQH14, effective from 01 August 2020); to review and restructure administrative procedures for levels 3 and 4 for their integration into the National Public Service Portal towards significantly cutting costs to create favourable conditions for people and businesses.

On 16 April, the Ministry of Industry and Trade issued Letter No. 2698/BCT-DTĐL to provide guidelines to the provincial Departments of Industry and Trade and Vietnam Electricity (EVN) on supporting the reduction of electricity prices

and costs for their clients affected by Covid-19. Accordingly, households using electricity for residential activities in April, May and June 2020 will receive a corresponding discount in their electricity bills for May, June, and July 2020, at a total expected amount of about VND 11,000 billion. After this timeframe, electricity prices will be applied in accordance with the Decision No. 648/QD-BCT dated 20 March 2019 regarding the amendment of average retail prices and regulations on electricity selling prices.

A total budget of nearly VND 11,000 billion for electricity price subsidies is targeted at the following groups:

- Business customers are eligible for a reduction in electricity prices at peak hours, normal hours and off-peak hours with a reduction of 10% in comparison with the current unit cost specified under Decision No. 648/QD-BCT dated 20 March 2019 by the Minister of Industry and Trade (MOIT) regarding the amendment of average retail prices and regulations on electricity selling prices.

- Households using electricity will enjoy a 10% reduction in retail prices applied to the first 4 levels in the electricity scale (below 300 kWh per month) as specified in Decision No. 648/QD-BCT.

- For the wholesale price of electricity in rural areas, dormitories, residential complexes, trade-service-life complexes, a 10% reduction from the first to fourth levels of living expenses and a 10% reduction for other purposes were prescribed in Decision No. 648/QD-BCT.

- For the wholesale price of electricity in industrial zones and markets, a 10% reduction from the first to fourth levels of living expenses and 10% reduction for other purposes were prescribed in Decision No. 648/QD-BCT. At the same time, electricity wholesale prices for industrial parks and markets were reduced by 10%.

- In particular, the MOIT approved a reduction in electricity costs (pre-tax value) directly to facilities serving Covid-19 pandemic prevention and control upon their purchases of electricity from the Group's units. Specifically, a reduction of 100% of electricity costs for facilities (not hotels) used for isolation, medical examination and treatment of Covid-19 infected patients; and 20% of electricity costs for health facilities and hotels used for examination, testing and treatment of Covid-19 patients.

- For customers using electricity outside residential activities (production, business and administration, etc.) the reduction of electricity prices was implemented from the latest bill period from 16 April 2020.

- For tourist accommodation establishments, there will be detailed guidance by EVN and provincial Departments of Industry and Trade to ensure that the reduction of electricity prices and costs are consistent with the prevailing regulations and relevant to specific conditions at localities.

After 3 months of implementation, the EVN Northern Power Corporation (EVNNPC) has applied a reduction of electricity prices and costs for 9,89 million clients located in 27 provinces/cities affected by the Covid-19 pandemic at a total cost of VND 3,243.5 billion[32]. This policy has been highly appreciated by many businesses and households for the provision of timely support in this difficult period. In the three most recent electricity bill payment periods (10 days each), the Duy Tan Plastic Company has benefited from a reduction of about VND 200 million/each billing period. This means that the company enjoyed a reduction of about VND 600 million from its bills of VND 6 billion[33]. This support from the power sector has had positive impacts on the activities of enterprises, helping businesses to save funds for other purposes.

[32] EVN (2020b). EVNNPC reduces prices by more than VND 3,200 billion for customers affected by Covid-19. (EVNNPC giảm hơn 3.200 tỷ đồng cho khách hàng bị ảnh hưởng bởi COVID-19) Accessed on 21.08.2020 via Https://www.evn.com.vn/D6/News/Evnnpc-Giam-Hon-3200-Ty-Dong-Cho-Khach-Hang-Bi-Anh-Huong-Boi-Covid-19-6-14-26283.Aspx

[33] Finance Journal (2020). VND 11,000 billion for supporting electricity price reductions for customers. (11.000 tỉ đồng hỗ trợ giảm giá điện cho khách hàng) Accessed on 12.5.2020 via Http://Tapchitaichinh.Vn/Tai-Chinh-Kinh-Doanh/11000-Ti-Dong-Ho-Tro-Giam-Gia-Dien-Cho-Khach-Hang-322832.Html

In order to support the aviation industry, which was badly hit by the social distancing policy, the Ministry of Transport issued the Circular No.19/TT - BGTVT dated 01 September 2020 on price rates and price frames for a number of specialised aviation services at airports applicable from 1 March 2020 to 30 September 2020. Accordingly, from 1 March 2020 to the end of September 2020, the prices charged on services for aircraft take-off and landing, and arrival and departure flight administration for domestic flights shall be equal to 50% of that prescribed in Circular No. 53/2019/TT-BGTVT dated 31 December 2019 by the Ministry of Transport on price rates and price frames for a number of specialised aviation services at Vietnam's airports.

b) Group of policies on credit support

A credit package of VND 250,000 billion has been assigned in line with Directive No. 11/CT-TTg dated 4 March 2020 by the Prime Minister on tasks and solutions to remove difficulties for business activities to ensure social security and the Covid-19 pandemic response. On 13 March 2020, the State Bank of Viet Nam promulgated Circular No. 01/2020/TT-NHNN on debt rescheduling, exemption or reduction of interest and fees, and retention of debt category by credit institutions and foreign bank branches to assist borrowers affected by the pandemic. The State Bank of Viet Nam also requested each credit institution to review and evaluate the extent of impacts of Covid-19 on their clients, to develop different scenarios and action plans to support clients, and implement the credit package of VND 250,000 billion with preferential rates lower by 0.5%-1.5% than normal lending rates.

According to the State Bank of Viet Nam - Vinh Phuc Branch - as of 20 April, in Vinh Phuc province 4,150 customers had borrowed from the new preferential credit package, with total loans of VND 6,050 billion, of which 308 were corporate customers, with loans of VND 4,239 billion. In addition, 30 corporate customers were among the total of 200 customers who benefited from exemptions, reduction of interest rates and payment rescheduling with total loans of VND 220 billion.

As shared by Truong Son Service Co., Ltd: "The fact that banks require collateral to be eligible for borrowing from the VND 250,000 billion credit support package would make it difficult for our company, because all our restaurants and hotels are currently closed due to the Covid-19 pandemic, and other big assets have been pledged as collateral since 2017 to borrow more than VND 10 billion"[34].

c) Group of policies on taxation and fee support

On 08 April 2020, the government promulgated Decree No. 41/2020/ND-CP on tax and land rent deferral applicable to enterprises, organisations, households and individuals engaged in business and production activities which are directly affected by the Covid-19 pandemic. For value-added tax and personal income tax of business households and individuals payable in 2020, the deadline for tax payment is no later than 31 December 2020. Besides, the government also extends the time limit for paying land rentals in the first period of 2020 by 5 months.

The extension time shall be 5 months for the

[34] The Vinh Phuc Province Portal (2020). Enterprises still face difficulties in accessing the credit package of VND 250,000 billion (Doanh nghiệp vẫn khó tiếp cận với gói hỗ trợ tín dụng 250.000 tỷ đồng). Accessed on 21.4.2020 via https://vinhphuc.gov.vn/Ct/Cms/Tintuc/Lists/Kinhte/View_Detail.Aspx?Itemid=4682

payable value-added tax amount arising in the tax period of March, April, May and June 2020 and the tax period of the 1st and the 2nd quarter of 2020. For enterprise income tax, the extension is also 5 months, applied for the payable enterprise income tax amount in accordance with tax finalisation for the tax period of 2019 and the temporarily paid amount of enterprise income tax for the 1st and the 2nd quarters of the tax period of 2020.

In implementing Decree No. 41/2020/ND-CP, the General Department of Taxation communicated and supported taxpayers to complete procedures on tax and land rent deferral. After only one week from the date of the Decree's promulgation, nationwide more than 14,400 applications on tax and land rent deferral were submitted to the tax authorities[35].

On 25 September 2020, the government issued Decree No. 114/2020/ND-CP on detailing implementation of the National Assembly's Resolution No. 116/2020/QH14 on reduction of enterprise income tax payable in 2020 for enterprises, cooperatives, non-business units and other organisations. According to this decree, there will be a reduction of 30% for the enterprise income tax amount payable in the enterprise income tax period of 2020 for enterprises with a total turnover no more than VND 200 billion in 2020.

[35] Hương Thủy (2020). Tax and land rent deferral – to ensure quick implementation and compliance with policies (Gia hạn thời hạn nộp thuế và tiền thuê đất: bảo đảm nhanh, đúng chính sách). Accessed on 20.4.2020 via https://hanoimoi.com.vn/tin-tuc/Tai-chinh/965075/gia-han-thoi-han-nop-thue-va-tien-thue-dat-bao-dam-nhanh-dung-chinh-sach

PART 3

Analysis of the impacts of Covid-19 response policies on greenhouse gas emissions in Viet Nam

3.1. Overview of the impacts of the Covid-19 pandemic on business activities in Viet Nam

3.1.1. Impacts on socio-economic growth

Viet Nam has been successful in controlling two waves of the Covid-19 outbreak and in limiting to certain extent the negative impacts of the pandemic on socio-economic development. However, with its complexity and global scale, the Covid-19 pandemic has caused disruptions in international trade, thus affecting domestic production and commercial activities leading to a slowdown in economic growth and a decline in people's incomes and social benefits. Growth rates in almost all sectors have decreased, and unemployment is on the rise.

Indeed, Covid-19 has caused quarterly GDP growth rates in 2020 to drop to levels not seen in the period 2011-2019. Although Viet Nam successfully achieved a positive GDP growth rate in the first 9 months of 2020, it was only 2.12%, meaning a reduction of about 65% compared to the average annual growth rate of 5.69% for the period 2011-2019.

Compared to the same period in 2019, GDP growth in the first quarter of 2020 was 3.69%, 0.39% in the second quarter of 2020 as a result of the strict nationwide lockdown, 2.69% in the third quarter, and reached 4.48% in the fourth quarter thanks to effective control of the pandemic. The average GDP growth rate for 2020 is 2.91%. Other quarterly indicators of labour, employment and income in 2020 all decreased compared to the same period last year, while the number of businesses closing down, and the unemployment rate increased. That being said, the overall situation remained more positive than in other countries in the region and the world (GSO, 2020a[36]; GSO, 2002c[37]).

[36] GSO (2020a). Report on Socio-Economic Condition in the 3rd Quarter and the first 9 months of 2020 (Báo cáo tình hình kinh tế xã hội Quý III và 9 tháng năm 2020)

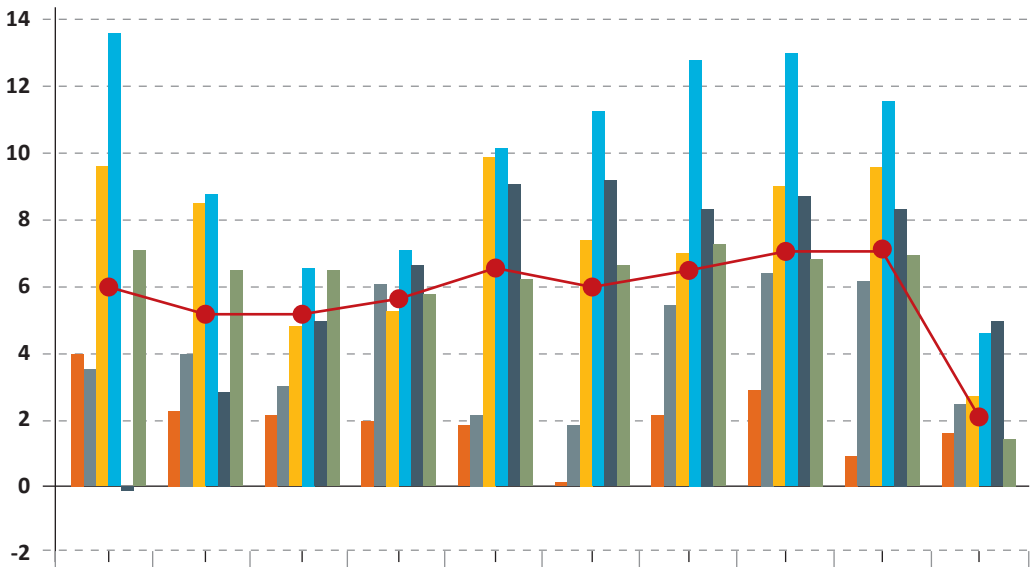
[37] GSO (2020c). Report on Socio-Economic Condition in the 4th Quarter of 2020 (Báo cáo tình hình kinh tế xã hội Quý IV năm 2020)

- The sector most affected by the pandemic is the service sector, with growth in the first 9 months of 2020 reaching only 1.37% compared to 6.10% in the period 2011-2019, down 79.3%. Industry achieved a growth rate of just 2.69% compared with 7.39% in the period 2011-2019, down 66.0%. In this sector, the growth rate for processing and manufacturing industries reached 4.60%, but still decreased by 56.2% compared to the average growth rate of 9.9%. The agriculture sector is the sector with the least impact from the pandemic, maintaining its growth rate in the first 9 months of 2020 of 1.65%, compared with 1.97% in the 2011-2029 period, down only 17. 8% (Figure 4).

- The agriculture, forestry, and fisheries sector increased slightly in the first 9 months of 2020 against the same period last year. Specifically, agriculture increased by 1.65%, only higher than the growth rates of 0.02% and 0.91% in the first 9 months of the years 2016 and 2019 in the period 2011-2020.

- Industry and construction

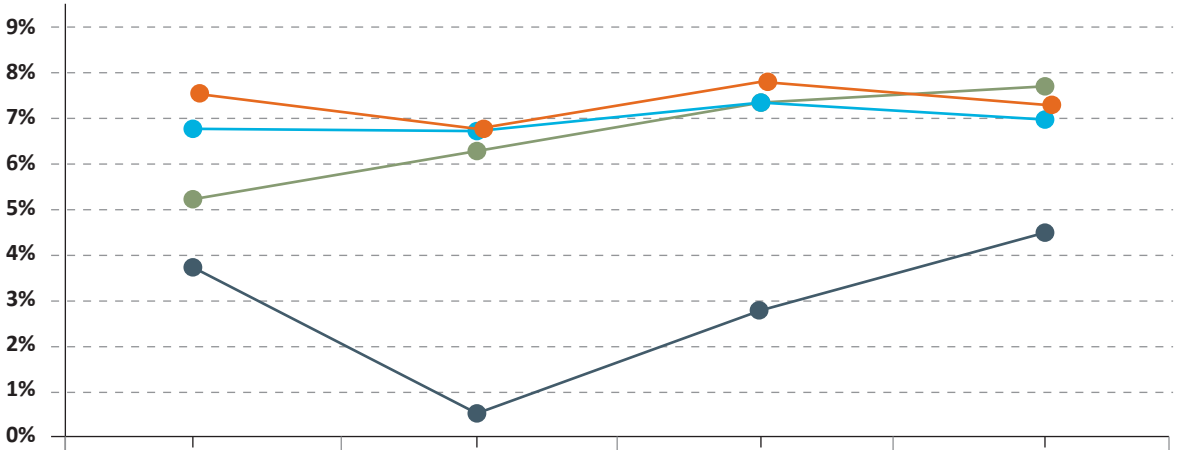
In the first 9 months of 2020, industry recorded a YOY rise of 2.69%, which was much lower than the rates recorded during the period of 2011-2019 and contributed only 0.91 percentage points to the growth rate of the total added value of the whole economy. The processing and manufacturing industry grew by 4.6%, which was lower than the YOY growth rate in the period 2011-2019 and contributed 1.02 percentage points.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Agriculture	4.03	2.28	2.11	2.01	1.78	0.02	2.08	2.85	0.91	1.65
Fisheries	3.46	4.06	2.95	6.15	2.11	1.81	5.48	6.37	6.24	2.44
Industry	9.54	8.50	4.80	5.58	9.86	7.40	6.95	8.99	9.61	2.69
Processing and manufacturing industry	13.48	8.74	6.58	7.09	10.15	11.20	12.77	12.95	11.48	4.60
Construction	-0.01	2.78	5.31	6.61	9.00	9.10	8.30	8.76	8.33	5.02
Service	7.09	6.47	6.43	5.94	6.10	6.67	7.21	6.75	6.92	1.37
GDP	6.03	5.10	5.14	5.53	6.53	5.99	6.41	6.96	7.04	2.12

Figure 4: GDP growth rates in the first 9 months of 2020

Quarterly growth rate of GDP



	Quarter I	Quarter II	Quarter III	Quarter IV
2017	5.15	6.28	7.46	7.65
2018	7.45	6.78	7.88	7.31
2019	6.82	6.73	7.48	6.97
2020	3.68	0.39	2.69	4.48

Figure 4: GDP growth rates in the first 9 months of 2020 *(conntinued)*

Source: Calculated by the authors based on data from GSO (2020a[38], 2020c[39]) and MOIT (2020)[40]

- Similarly, the Covid-19 pandemic had serious impacts on trade, services, and export-import sectors in the first 9 months of 2020.

  + The lowest growth rate during the period 2011-2020 was recorded in the service sector. Compared to the same period in 2019, passenger transport and freight transport decreased by 29.6% and 7.3%, respectively. The number of passengers and value of goods transported decreased in Q3 by 34% and 6.4%, respectively. Aviation was the industry most affected by Covid-19 with a 45.5% drop in passengers and 39.4% reduction in freight. The number of foreign visitors to Viet Nam reached nearly 3.8 million, a drop of 70.6% over the same period last year, of which more than 97% were international arrivals in the first quarter of 2020.

  + In the context of disrupted international trade due to the complicated developments of Covid-19, Viet Nam's foreign trade was successful in maintaining a positive growth trend. It is estimated that total turnover of exports and imports of goods/commodities in September 2020 reached USD 51.5 billion, up by 15% over the same period last year. Total export and import turnover in the first 9 months of 2020 was up by 1.8% to USD 388.73 billion, of which exports increased by 4.2% to USD 202.86 billion, and the import value was USD 185.87 billion, representing a drop of 0.8% (GSO, 2020a)[41].

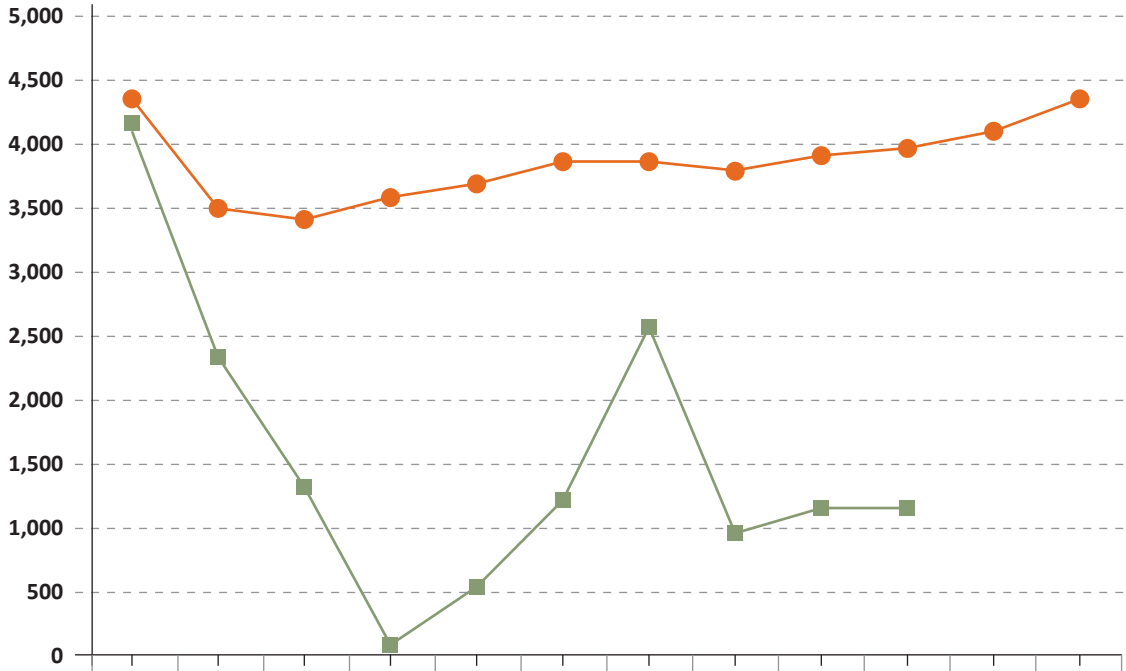
[38] GSO (2020a). Report on Socio-Economic Condition in the 3rd Quarter and the first 9 months of 2020 (Báo cáo tình hình kinh tế xã hội Quý III và 9 tháng năm 2020)

[39] GSO (2020c). Report on Socio-Economic Condition in the 4th Quarter of 2020 (Báo cáo tình hình kinh tế xã hội Quý IV năm 2020)

[40] Ministry of Industry and Trade (2020). https://moit.gov.vn/web/guest/bao-cao-tong-hop1

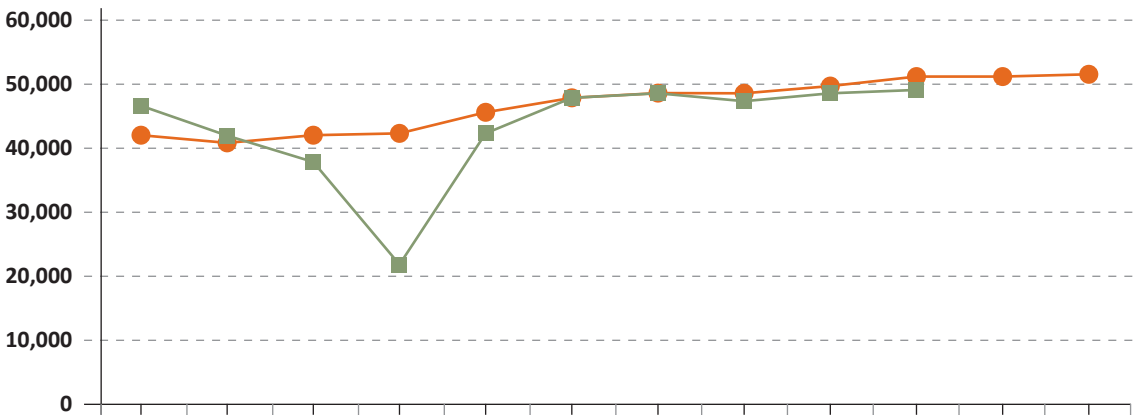
[41] GSO (2020a). Report on Socio-Economic Condition in the 3rd Quarter and the first 9 months of 2020 (Báo cáo tình hình kinh tế xã hội Quý III và 9 tháng năm 2020)

Total retail sale of tourism services (billion VND)



	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Tourism, 2019	4,307	3,488	3,430	3,570	3,695	3,869	3,845	3,808	3,895	3,977	4,077	4,318
Tourism, 2020	4,149	2,337	1,293	51	518	1,197	2,548	946	1,159	1,157		

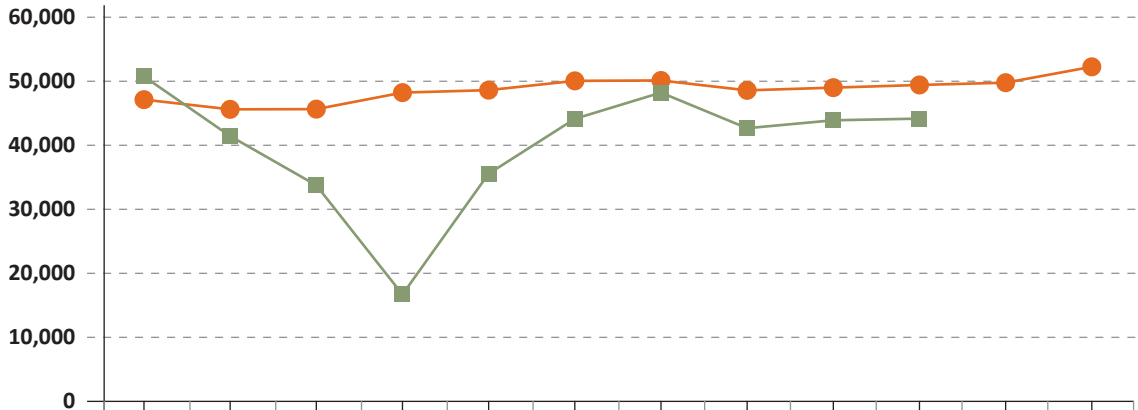
Total retail sales of services (billion VND)



	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Services, 2019	41,521	40,659	41,330	42,126	45,258	47,438	47,956	48,348	49,370	50,361	50,462	50,797
Services, 2020	46,098	41,595	37,257	21,342	42,053	47,468	48,433	46,351	47,303	48,250		

Figure 5: Retail sales of goods in selected service industries by month in 2019 and 2020

Total retail sales of food and foodstuff (billion VND)



	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Food and foodstuff, 2019	47,388	45,966	46,287	47,633	48,984	50,256	50,382	48,942	48,811	49,215	49,942	52,880
Food and foodstuff, 2020	50,799	41,544	33,886	16,574	35,858	44,107	48,438	42,848	43,866	44,804		

Figure 5: Retail sales of goods in selected service industries by month in 2019 and 2020 *(continued)*

Source: Compiled by the authors from data from GSO (2020a)[42] and MOIT (2020)[43]

- The credit institution system was also negatively affected by the Covid-19 pandemic in the first 9 months of 2020. As of 22 September 2020, credit growth stood at the low level of 5.12%. However, the State Bank of Vietnam adjusted its policy interest rates to stabilise the monetary and foreign exchange markets. Insurance businesses experienced relatively high growth, ensuring the benefits of all policyholders as well as insured persons. The total funds mobilised via the stock market for the economy in the first 9 months of 2020 increased by 1.43% over the same period last year.

- The realised social investment for the first 9 months of 2020 was up by 4.8% against 2019, which is the lowest growth rate recorded in the 2016-2020 period. Despite this, as the government promotes implementation and disbursement of public investment funds to maintain economic growth momentum in the context of Covid-19, growth of investment from the state budget recorded its highest rate in the 2016-2020 period.

As of 20 September 2020, total foreign investment in Vietnam, including newly registered capital, adjusted registered capital, capital contribution and share purchases by foreign investors reached USD 21.2 billion, down 18.9% over the same period last year. There were 1,947 newly licensed projects with registered capital of USD 10.4 billion, down 29.4% in the number of projects and 5.6% in registered capital compared to the same period last year.

- The number of newly established enterprises in September 2020 decreased by 12.6% against the same period in 2019, mainly due to the influence of Covid-19. In addition, September 2020 coincides with the 'lunar July', in which people tend to refrain from starting businesses because they consider it an unlucky month.

- Labour and employment

  + As of September 2020, Vietnam had 31.8 million people aged 15 and over that were negatively affected by the Covid-19 pandemic

[42] GSO (2020a). Report on Socio-Economic Condition in the 3rd Quarter and the first 9 months of 2020 (Báo cáo tình hình kinh tế xã hội Quý III và 9 tháng năm 2020)

[43] Ministry of Industry and Trade (2020). https://moit.gov.vn/web/guest/bao-cao-tong-hop1

to different degrees, including job losses due to temporarily halted businesses (around 14%), reduced income (68.9%), and reduced working hours (nearly 40%). The service sector was most badly hit by Covid-19 with 68.9% of workers affected. This figure in industry and construction was 66.4% and, in the agriculture, forestry and fisheries sectors was 27.0% (GSO, 2020b)[44].

+ Small and medium-sized enterprises are the businesses suffering the most labour cuts. Accordingly, the average number of SME employees in the first 9 months of 2020 was down by about 10.0% over the same period in 2019, while the figure for big corporations was 4.5%.

+ In the first 9 months of 2020, a significant labour cut of 30.4% was observed in aviation, transportation and tourism[45], 29.9% in accommodation services, 17.4% in sports and entertainment, 15.4% in restaurant services, and of 14.1% in the construction sector[46].

+ Generally, in the first 9 months of 2020, industries with significant decreases in the number of employees are air transport and tourism by 30.4%, accommodation services by 29.9%, sports activities, and entertainment by 17.4%, food and beverages by 15.4%, and construction by 14.1%.

+ The average monthly income of workers in informal sectors[47] in the first 9 months of 2020 stood at VND 5.5 million, 1.5 times lower than the monthly average income of workers in the formal sector (VND 8.4 million). Compared to the same period last year, the monthly average income of workers in the formal sector decreased by 1.9%, and for workers in the informal sector by 0.8%.

- Consumption of petroleum

Huge losses were faced by oil trading businesses. Production and trading of nitrogenous fertilisers and fibres also struggled with many difficulties. The amount of traded oil in the first 3 months by the PVOIL went down by about 20%, retail sales decreased by around 15% compared to the average of the same period in 2019, and the average unit cost (VND/litre) was up by about 20% against 2019 due to a drop in volume. Oil refineries also faced difficulties caused by the sharp drop in consumption. In Q1/2020, the Nghi Son oil refinery saw production decrease by 30-40%. The amount of petroleum sold by the Petrolimex (Vietnam National Petroleum Group) also showed a continuous drop – sales in the Q1 of 2020 were down 12% against the same period in 2019. There was a significant fall in demand for aviation fuel.

- Investment in the energy sector

According to reports from state-owned energy corporations, the Covid-19 pandemic exerted an impact on investment in the energy sector. Specifically, the investment value by PVN (the Vietnam Oil and Gas Group) in the first quarter of 2020 was only VND 4,000 billion, equivalent to 39% of the amount planned for the first Quarter, and 8% of the planned amount for the whole year. Similarly, EVN (Vietnam Electricity) invested VND 14,460 billion in Q1/2020, representing 15.5% of the planned investment and a reduction of VND3.389 billion against the same period in 2019. The TKV (Vietnam National Coal and Mineral Industries Group) also invested only VND1.778 billion, equal to 11% of the annual planned amount. The performance of the Petrolimex saw a sharp decrease in Q1/2020 which became more obvious in the second quarter of 2002 (the Central Economic Committee, 2020)[48].

[44] GSO (2020b). Report on impact by the Covid-19 pandemic on labour and employment in the 3rd Quarter 2020 (Báo cáo tác động của dịch COVID-19 đến tình hình lao động, việc làm Quý III năm 2020)

[45] Including activities relating to travel, inbound and outbound tours, and travel supporting services.

[46] Construction includes construction of all kinds of building, residential technical sites and professional construction activities.

[47] Exclusive of workers in agriculture, fisheries and forestry households with an average monthly income of VND 2.9 billion in the first 9 months of 2020.

[48] The Central Economic Committee (2020). Strategic Orientation on National Energy Development by 2030, with vision to 2045 (Định hướng chiến lược phát triển năng lượng quốc gia của Việt Nam đến năm 2030, tầm nhìn đến năm 2045)

3.1.2. Impacts on energy consumption

3.1.2.1. Extent of changes in energy consumption

Being affected by the pandemic and the Tet (lunar new year) season, GDP growth in the first 9 months of 2020 stood at only 2.23%, the lowest rate in the last 10 years. In this context, total energy consumption also increased by only 1.06% against the same period in 2019.

Because of the Tet holidays and social distancing imposed at the end of March, the GDP growth rate in QI/2020 reached only 3.68%, with energy demand recording a minor rise of 2.9% over the same quarter in 2019.

The nationwide lockdown was applied from the end of March, and the "new normal" status started in April. In this context, combined with the negative impacts from the disrupted global supply chain, the GDP growth rate in QII/2020 dropped drastically to only 0.39%, with energy demand down by 1.24%.

In the third quarter of 2020, social distancing was imposed again in Da Nang, Hoi An, and Hai Duong, while a "new normal" phase was observed in other localities. Also, negative impacts of the broken global supply chain have become even more serious, contributing to a 2.69% rise in GDP and 1.53% in energy demand against the same period in 2019 (see Figure 6).

Due to the social distancing requirements, demand for all types of energy experienced a sharp decrease in April and a slight fall in the first 8 months of 2020 against the same period in 2019 but then increased again in subsequent months. Petroleum and oil are most widely used in transportation (97.3% and 73.2% of consumed energy, respectively), and thus were significantly affected by social distancing policies (Figure 7). Coal and gas, on other hand, were not directly affected by these policies, but were indirect impacted by the economic slowdown and disruption in the international supply chain.

- *Petroleum:*

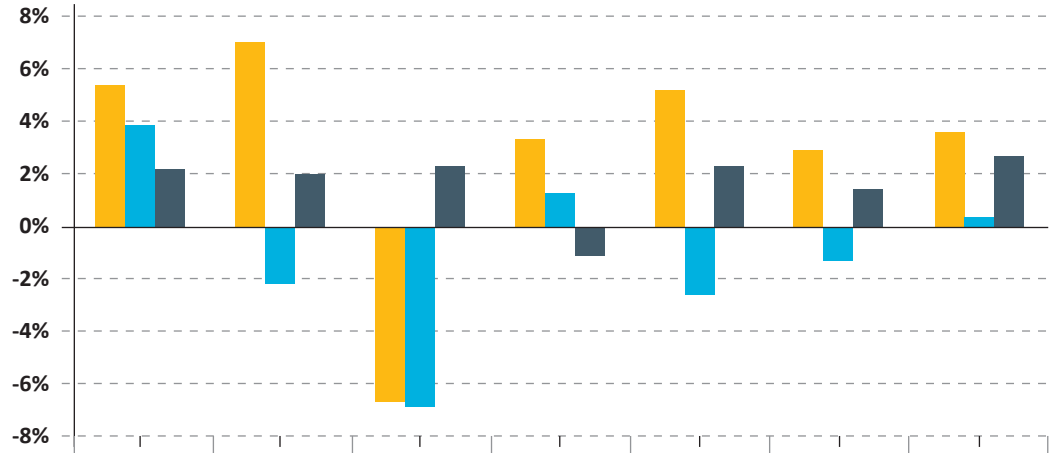
The total petroleum consumption was 4.6 billion litres in 2019, and 3.6 billion litres in the first 9 months of 2020 – an average increase of 3.8% over the same period in 2019. In the month of Tet (January), petroleum consumption was down by 1.7%, equivalent to 6 million litres of petroleum. After the Tet holidays, petroleum consumption increased by 11.1% in February, equivalent to an increase of 34 million litres, and by 6.8% in March. The most significant decrease in petroleum consumption (10.5%) occurred during the nationwide lockdown in March and April, followed by an increase of 9.0% in May and 13.4% in June. At the end of July, with the second wave of the pandemic, petroleum consumption was up by only 3.0% and then went down by 2.2% in August due to a partial lockdown in selected provinces (Da Nang, Quang Nam and Hai Duong) and people's hesitancy regarding travel. Once the second wave of the pandemic was controlled, petroleum consumption increased by 5.4% in September.

- *Aviation fuel* (jet fuel) in 2020 began its sharp drop from February due to the pandemic outbreak. The greatest fall in jet fuel consumption was recorded in April and May, followed by a slight recovery in June and July, before decreasing again in August and September.

- *Oil:*

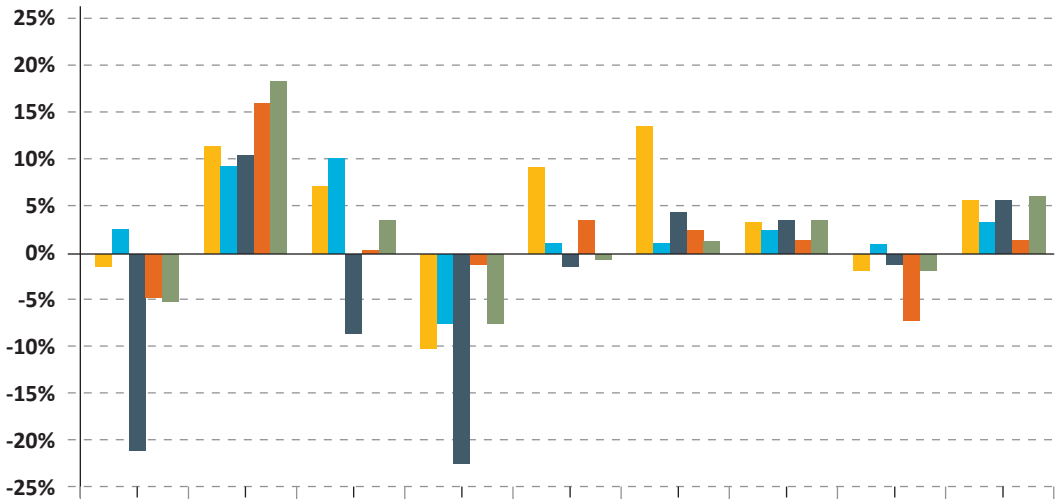
Total oil consumption was 12.98 million tonnes in 2019 and 9.6 million tons in the first 9 months of 2020 – an average increase of 2.25% over the same period in 2019. In the month of Tet (January), oil consumption saw a minor rise of 2.16% followed by a strong increase of 9.02% and 9.79% in February and March, respectively. In April, with the nationwide lockdown, there was a decrease of 7.92% in petroleum consumption, equivalent to 84,000 tons of oil, before increasing again in the remaining months of the year. Specifically, oil consumption in the service sector went down significantly by 10.62%, equivalent to 6,000 tons of oil, while these figures for the transportation sector were 8.2% and 64,000 tons.

Comparing the growth rate of energy consumption in 2020 with the same period in 2019



	Gasoline	Oil	Gas	Coal	Electricity	Energy average	GDP 2020
Quarter 1	5.41	6.99	-6.61	3.44	5.29	2.90	3.68
Quarter 2	3.95	-2.21	-6.75	1.30	-2.51	-1.24	0.39
Quarter 3	2.09	1.95	2.37	-1.03	2.24	1.53	2.62

Comparing the energy consumtion rate by month in 2020 over the same period in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Gasoline	-1.7	11.1	6.8	-10.5	9.0	13.4	3.0	-2.2	5.4
Oil	2.2	9.0	9.8	-7.9	0.7	0.6	2.3	0.7	2.8
Gas	-21.5	10.4	-8.8	-22.6	-1.6	4.0	3.1	-1.4	5.5
Coal	-5.2	15.9	0.3	-1.3	3.2	2.0	1.2	-7.3	3.1
Electricity	-5.4	18.1	3.2	-7.8	-0.6	0.8	3.2	-2.2	5.7

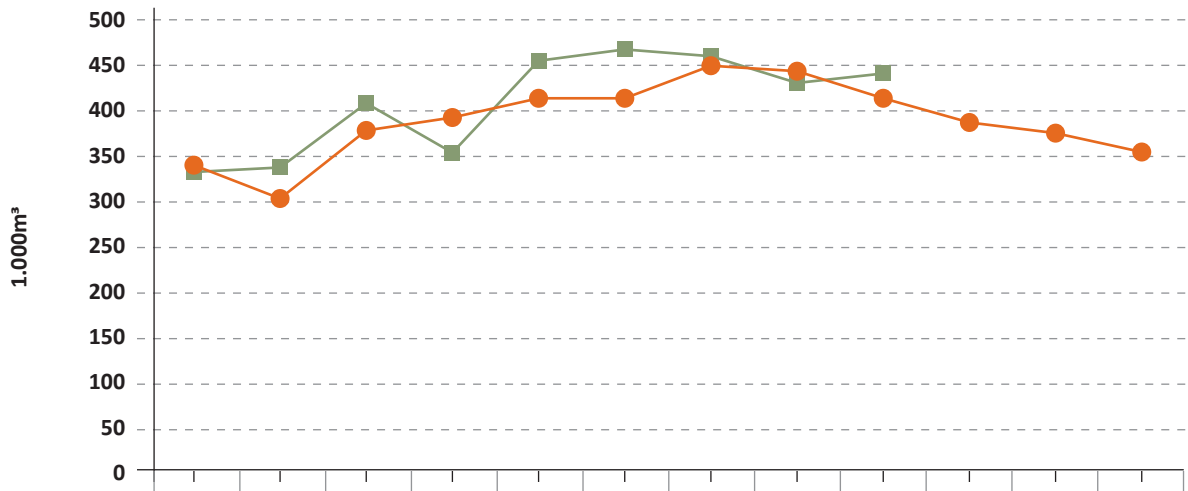
Figure 6: Growth in energy consumption in 2020 against the same period in 2019

Source: Calculated by the authors from GSO data

- Gas:

Total gas consumption rose to 10.75 million m^3 in 2019, and 4.73 million m^3 in the first 9 months of 2020, meaning a 3.66% reduction compared with the same period in 2019. Despite being not directly affected by the social distancing policies, gas was the type of energy receiving the most serious impacts in 2020. Specifically, in the month of Tet (January), given a slowdown or even suspension in almost all business sectors, gas consumption recorded an average decrease of 21.88% (about 167 million m^3) in all sectors, except for a minor rise of 3.03% in the household sector as a result of increased demand during Tet. A similar drop (22.61%) in gas consumption was observed in April.

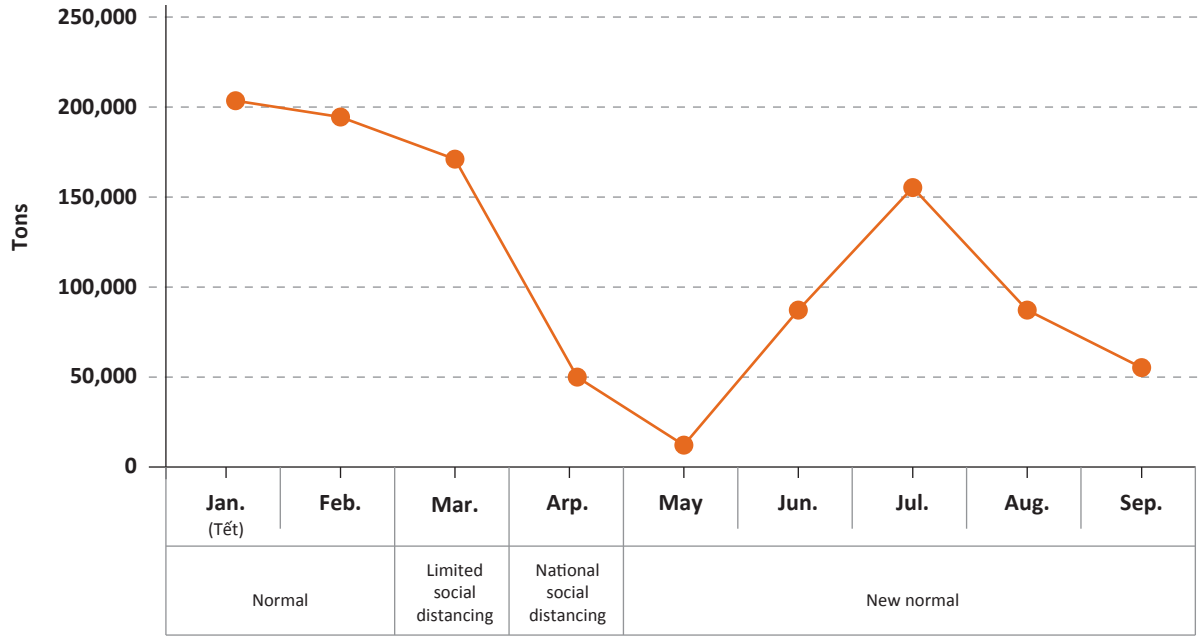
Gasoline (petroleum) consumption



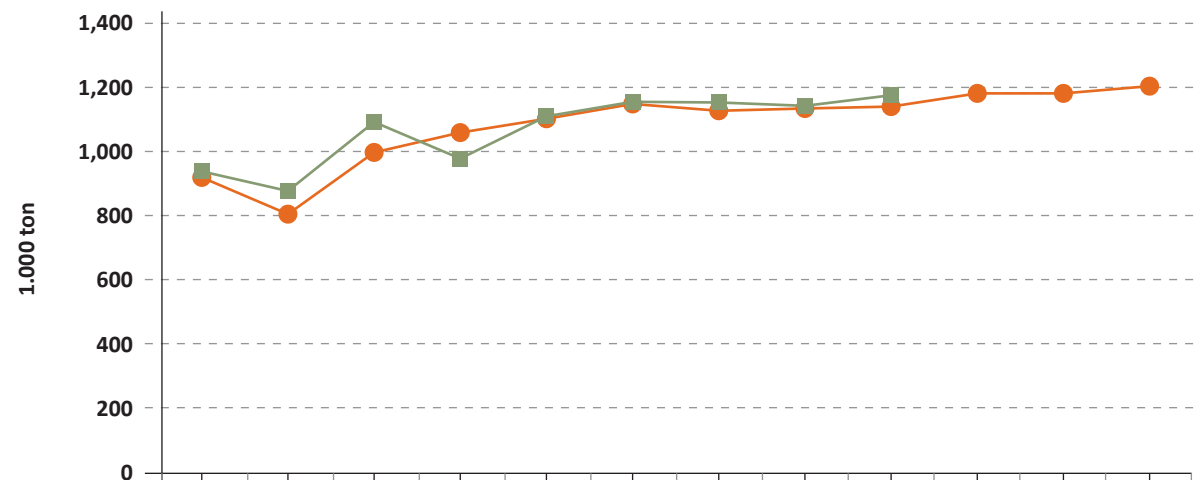
	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
Gasoline, 2019	335	302	378	391	413	411	444	439	415	386	373	351
Gasoline, 2020	329	336	403	350	450	466	458	429	438			

Figure 7: Changes in monthly energy consumption in 2019 and 2020

JET/KO consumption excluding inventory (tons)



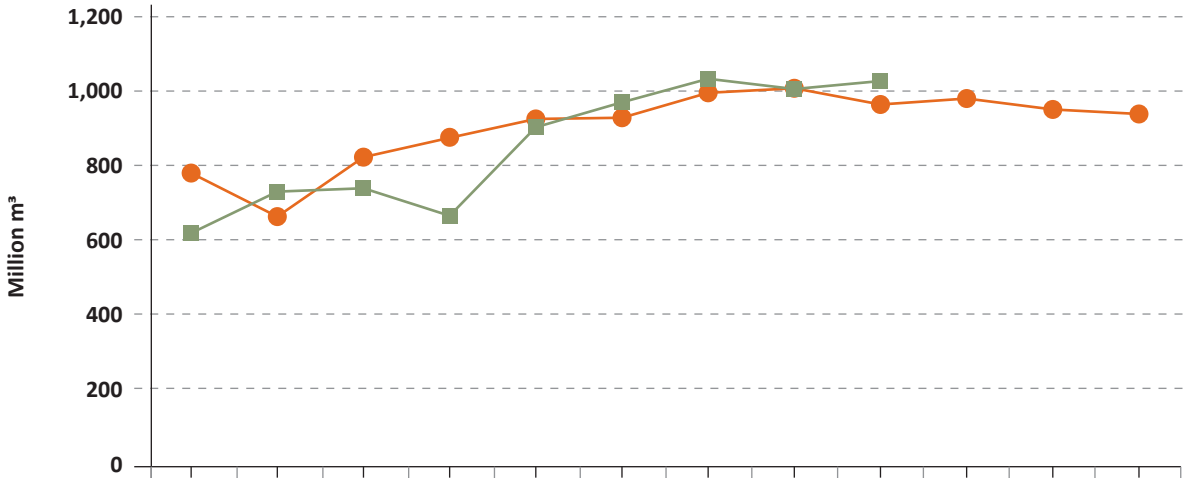
Oil consumption



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Oil, 2019	915	802	997	1,060	1,100	1,145	1,130	1,133	1,144	1,178	1,182	1,200
Oil, 2020	935	874	1,095	976	1,107	1,152	1,156	1,141	1,176			

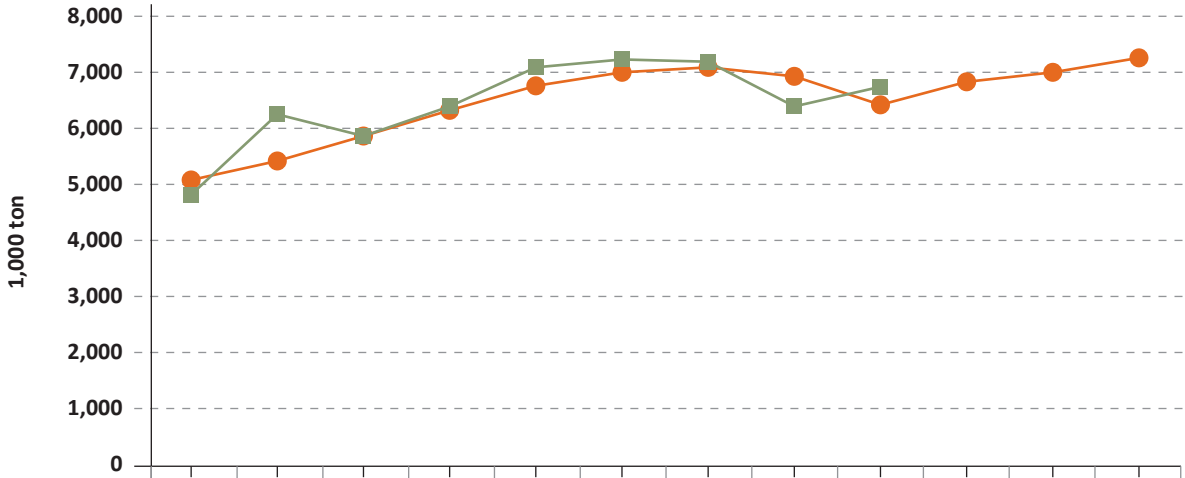
Figure 7: Changes in monthly energy consumption in 2019 and 2020 *(continued)*

Gas consumption



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
Gas, 2019	778	652	813	862	914	923	993	1,006	965	977	938	933
Gas, 2020	611	719	742	667	899	960	1,023	992	1,017			

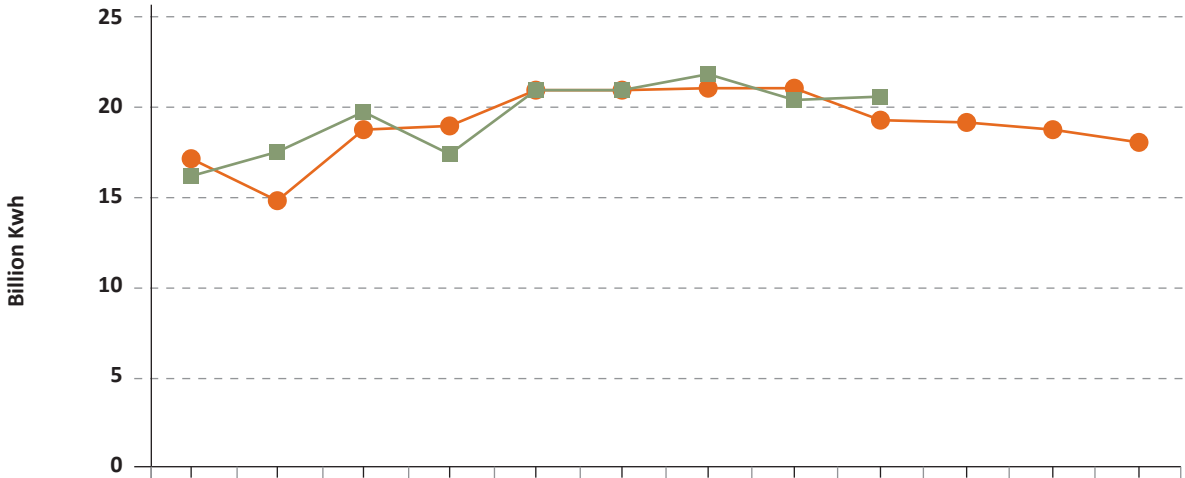
Coal consumption



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
Coal, 2019	5,058	5,347	5,873	6,402	6,774	7,031	7,107	6,884	6,454	6,753	6,968	7,203
Coal, 2020	4,795	6,195	5,853	6,317	6,993	7,172	7,189	6,380	6,653			

Figure 7: Changes in monthly energy consumption in 2019 and 2020 *(continued)*

Electricity consumption



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
Electricity, 2019	17.0	14.7	18.9	18.8	20.9	20.7	21.0	20.9	19.3	19.0	18.6	17.9
Electricity, 2020	16.1	17.3	19.5	17.3	20.8	20.8	21.7	20.4	20.4			

Figure 7: Changes in monthly energy consumption in 2019 and 2020

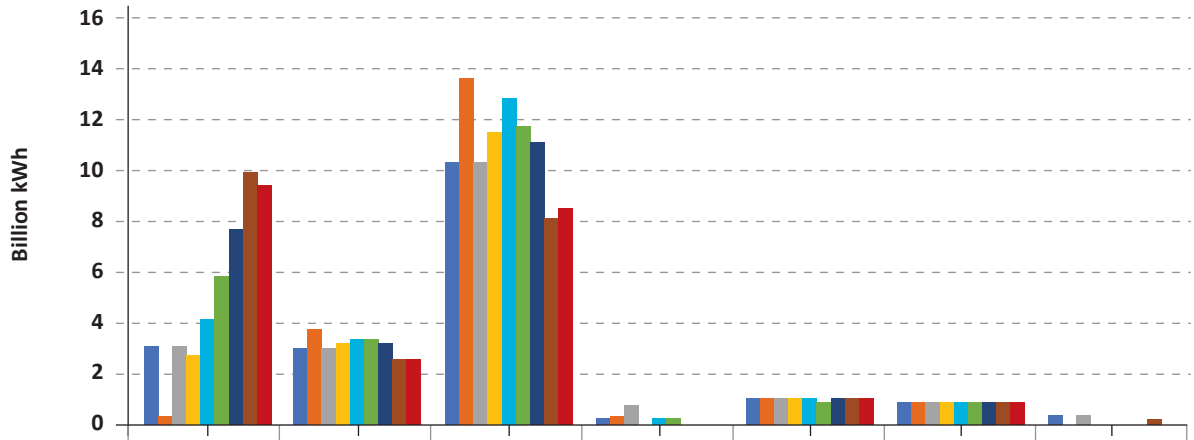
Source: Calculated by the authors according to the input data provided by the GSO

- Coal:

The total amount of coal consumption in 2019 was 77.85 million tons. In the first 9 months of 2020 it was 57.53 million tons, equivalent to a 1.24% rise over the same period in 2019. Coal is mainly used in thermal power plants, industry, and construction (94.2% of total coal consumption), and is thus less impacted by lockdowns.

The total amount of coal consumption in April 2020 was down by 1,33% against the same period in 2019, which is equivalent to 85,16 thousand tonnes, with 65.81 thousand tons from the manufacturing industries and construction, and 20.53 thousand tonnes from the electricity sector. A higher reduction of 5.2% was observed in January 2020, equal to 262,96 thousand tonnes, of which 166.5 thousand tonnes was from the electricity sector, and the remaining 91.89 thousand tonnes from industry and construction.

Produced and imported electricity



	Hydropower	Gas power	Coal power	Oil power	Renewable energy	Of which solar power	Imported electricity
Jan.	3.07	2.92	10.20	0.18	0.89	0.75	0.32
Feb.	0.30	3.63	13.52	0.23	0.91	0.81	
Mar.	3.07	2.92	10.20	0.61	0.89	0.75	0.32
Apr.	2.67	3.16	11.42		0.93	0.82	
May	4.12	3.33	12.76	0.01	0.90	0.83	
Jun.	5.83	3.29	11.68	0.01	0.82	0.75	
Jul.	7.67	3.16	11.10		0.92	0.85	
Aug.	9.81	2.56	8.00		0.94	0.83	0.16
Sep.	9.35	2.46	8.42		0.89	0.84	

Figure 8: Electricity production and imports in the first 9 months of 2020

Source: Calculated by the authors from EVN data (2020a)[49]

- *Electricity:*

The total electricity used in 2019 was 227.65 billion kWh and 174.37 billion kWh in the first 9 months of 2020 – an average increase of 1.67% over the same period in 2019. Electricity consumption declined in January (down by 5.4%), April (by 7.76%), May (by 0.75%) and August (by 2.2%). In the remaining months, electricity consumption increased, especially in February (by 18.11%) and September (by 5.72%). Electricity is a secondary source of energy, reflecting the trend of energy consumption in the economy. Despite being affected by the COVD-19 pandemic, electricity production still grew in the first 9 months of 2020. In the first 9 months of 2020, the accumulated amount of electricity produced and imported for the whole system reached 185.37 billion kWh, up by 2.68% over the same period in 2019, specifically:

+ 97.29 billion kWh from coal-fired thermal power, up by 10.5% over the same period in 2019, accounting for 52.5% of the total electricity.

+ 48.38 billion kWh from hydropower, down by 6.93%, accounting for 26.2% of the total electricity.

+ Gas-fired thermal power produced 27.42

[49] EVN (2020a). Monthly press release. Accessed via https://www.evn.com.vn/c2/pages-c/Thong-cao-bao-chi-66.aspx

billion kWh, down by 16.56%, accounting for 14.8%.

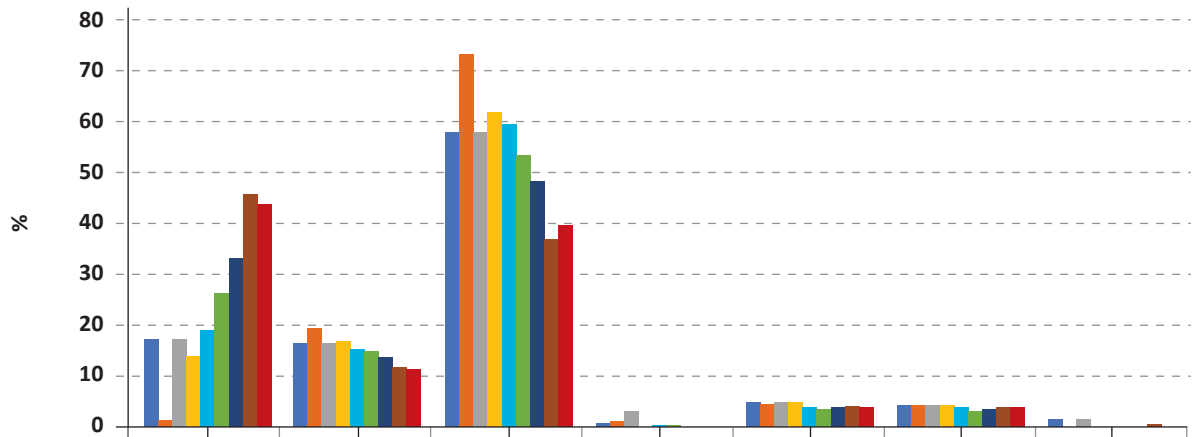
+ Oil thermal power reached 1.04 billion kWh, up 33.02%, accounting for 0.6%.

+ 8.16 billion kWh from renewable energy, accounting for 4.4%, of which solar power reached 7.23 billion kWh, an increase of 2.6 times over the same period in 2019.

Figure 8 shows a sharp decline to only 0.3 billion kWh in electricity produced by hydropower plants due to the drought season in February. For this reason, production of electricity by coal-fired thermal power rose to 13.52 billion kWh compared to 10.2 billion kWh in January, and production of electricity by oil-fired thermal power rose to 0.23 billion kWh compared to 0.18 billion kWh in January.

Figure 9 below shows that the power structure by input source depends on hydropower production capacity. In the dry season from January to May, the water flow through the hydropower reservoirs decreases, so the shortage in electricity supplied by hydropower plants is supplemented by coal, gas, and oil. In April, the electricity demand decreased slightly because of social distancing, so there was no need to mobilise additional sources of oil. In July, August and September as hydroelectric power started up again, there was no need to mobilise oil.

Share of produced and imported electricity



	Hydropower	Gas power	Coal power	Oil power	Renewable energy	Of which solar power	Imported electricity
Jan.	17.39	16.54	57.85	1.02	5.03	4.25	1.79
Feb.	1.64	19.53	72.78	1.24	4.92	4.37	
Mar.	17.39	16.54	57.85	3.46	5.03	4.25	1.79
Apr.	14.40	17.04	61.60		5.02	4.42	
May	19.09	15.43	59.13	0.05	4.17	3.85	
Jun.	26.49	14.95	53.07	0.05	3.73	3.41	
Jul.	33.28	13.71	48.16		3.99	3.69	
Aug.	45.50	11.87	37.11		4.36	3.85	0.74
Sep.	43.86	11.54	39.49		4.17	3.94	

Figure 9: Structure of electricity production and imports in the first 9 months of 2020

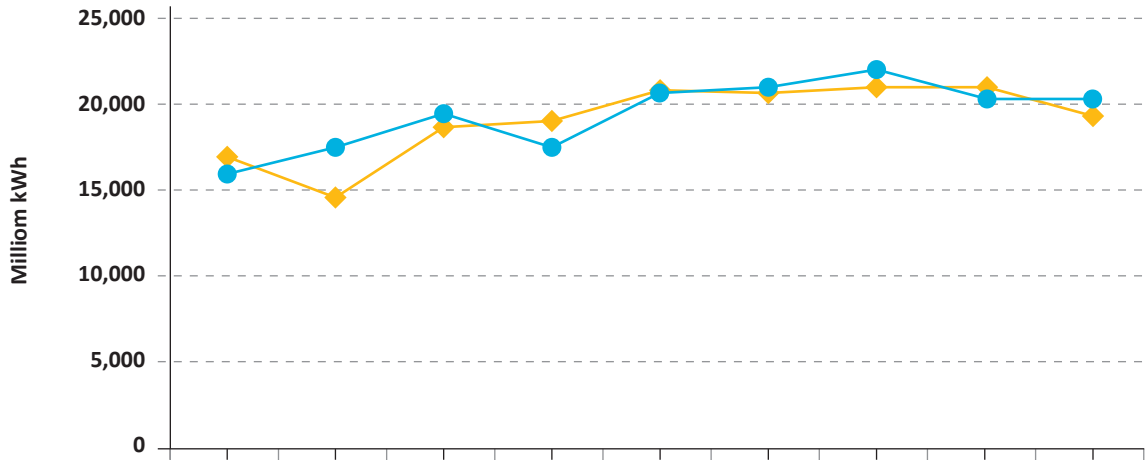
Source: EVN (2020a)[50]

[50] EVN (2020a). Monthly press release. Accessed via https://www.evn.com.vn/c2/pages-c/Thong-cao-bao-chi-66.aspx

To implement government policies to assist enterprises and individuals, the MOIT issued Letter No. 2698/BCT-ĐTĐL dated 16 April 2020 to provide provincial Departments of Industry and Commerce and EVN with detailed guidance on reducing electricity prices for users affected by Covid-19. In principle, lower electricity prices normally boost demand. However, this was not the case in 2020 due to the impacts of the pandemic and economic difficulties. Thus, subsidies were not enough to affect electricity consumption.

Figure 10 below shows that electricity subsidies only helped to ease difficulties for people and enterprises but did not lead to increased demand. Specifically, total electricity consumption in January (Tet) decreased by 5.4% against 2019, followed by a strong increase of 18.1% in February, a modest rise of 3.2% in March, a drop of 7.8% in April. It then experienced minor changes in the following months.

Comparing the electricity consumption trends in 2019 and 2020



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal			Support 10% of electricity price (2698 / BCT-DTĐL, MOIT)			New normal		
2019	16,988	14,690	18,867	18,807	20,870	20,670	21,003	20,901	19,333
2020	16,070	17,350	19,461	17,348	20,750	20,834	21,676	20,440	20,440

Figure 10: Comparison of electricity consumption in 2019 and 2020

Source: Calculated by the authors based on the data from the GSO

After 3 months of implementation, the Northern Electricity Corporation reduced electricity bills and electricity prices for 9.89 million customers in 27 provinces and cities affected by Covid-19 to the amount of VND 3,243.5 billion (EVN, 2020b)[51].

3.1.2.2. Impact on energy demand of economic sectors

The structure of energy demand by economic sector is shown in Figure 11 below.

- In 2019, the majority of petroleum was used in the transportation sector (93,3%), followed by agriculture (2,7%) and other sectors. This structure remains unchanged in 2020.
- Oil is also used mainly in transportation.

[51] EVN (2020b). EVNNPC reduces more than VND 3,200 billion for customers affected by the Covid-19 (EVNNPC giảm hơn 3.200 tỷ đồng cho khách hàng bị ảnh hưởng bởi COVID-19). Accessed on 21.08.2020 via Https://www.evn.com.vn/D6/News/Evnnpc-Giam-Hon-3200-Ty-Dong-Cho-Khach-Hang-Bi-Anh-Huong-Boi-Covid-19-6-14-26283.Aspx

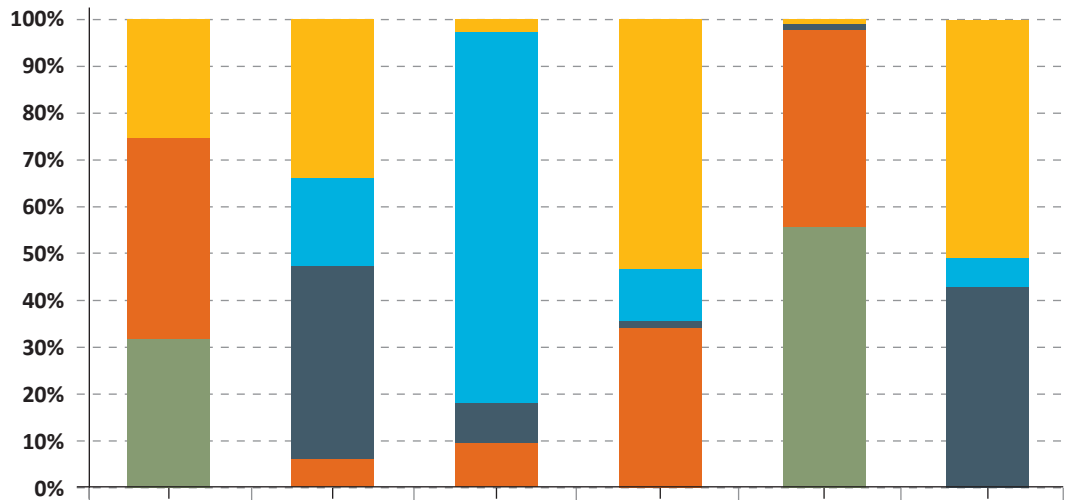
Specifically, the proportion of oil used in the transportation sector was 73.2%, 9.4% in industry, 7.7% in energy (mainly to compensate shortages of hydropower in the dry season), 5.8% in the service sector, 3.6% in agriculture and 0.2% for households (exclusive of transportation). In 2020, despite Covid-19 and the response measures, there were almost no changes in this structure; these figures were 73.2%, 9.1%, 7.8%, 5.6%, 3.7% and 0.2%, respectively.

- Gas consumption is concentrated in industry, construction and household sectors. Specifically, in 2019, the industry and construction sector accounted for 63.4% of total oil consumption, the household sector for 26.8%, energy 7.1%, transportation 2.5%, and the service sector 0.2%.

- Coal is the key fuel in energy, manufacturing industries and construction sectors. The proportion of coal consumption in 2019 by energy, industries, household, and service sectors was 65.8%, 28.4%, 3.8% and 1.9%, respectively. In 2020, this structure remained almost unchanged, with figures for the above-mentioned sectors 65.0%, 29.2%, 3.9% and 1.9%.

- Electricity used in energy, industry and construction, household, service, energy, agriculture and transportation sectors were 52.0%, 33.0%, 9.0%, 2.3%, 2.2% and 1.6%, respectively. Similar to oil, electricity consumption is not directly affected by the pandemic, so its consumption remained almost unchanged in 2020, with figures for the above-mentioned sectors 52.4%, 32.6%, 8.9%, 2.3%, 2.2% and 1.6%.

Share of energy consumption



	Agriculture	Industry and construction	Energy	Services (excluding transport)	Transportation	Household (excluding transport)
Electricity	2.2	52.4	2.3	8.9	1.6	32.6
Coal	0.0	28.4	65.8	1.9	0.0	3.8
Gas	0.0	63.4	7.1	0.2	2.5	26.8
Oil	3.6	9.4	7.7	5.8	73.2	0.2
Gasoline	2.7	0.0	0.0	0.0	97.3	0.0

Figure 11: Structure of energy consumption by economic sectors in 2020

Source: Calculated by the authors based on GSO data

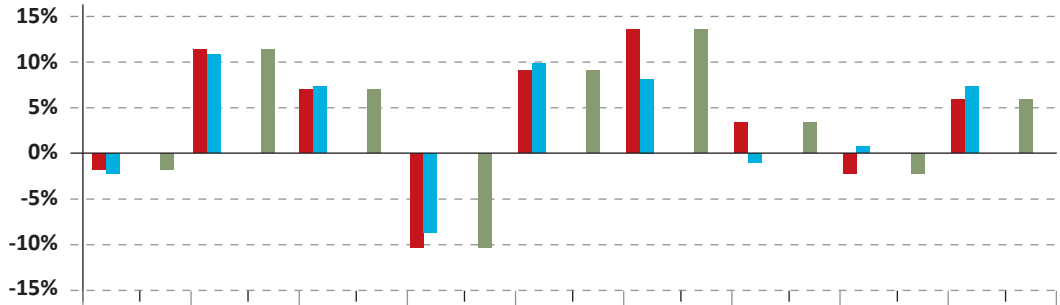
Note: Energy consumption by households is exclusively for residential purposes.

Changes in energy consumption by sector also varied depending on the type of energy (Figure 12), specifically:

- Despite being affected by the social distancing policies, total petroleum consumption still recorded a YOY growth of 3.82% in the first 9 months of 2020 . This growth rate in the transportation sector was also 3.82% as this sector accounts for nearly 97,3% of the total petroleum consumption. Petroleum consumption was down by 10.5% in the April of full nationwide lockdown, and by 1.7% in January (lunar new year). Energy consumption in the transportation sector increased by 13.5% in June 2020 when the pandemic was generally under control, social distancing requirements were removed, and local travel increased during the summer. It also increased by 11.1% in February (after Tet).

- The biggest drop in oil consumption in 2020 was seen in the service sector (exclusive of transportation). Specifically, in April oil consumption decreased by 10.62% in the service sector, by 10.38% in manufacturing industries and the construction sector, and by 8.2% in the transportation sector. Oil consumption recovered in the months after lockdown, but the level of recovery was not as strong as for petroleum as in addition to the direct impact of social distancing policies, oil consumption was driven by the economic slowdown.

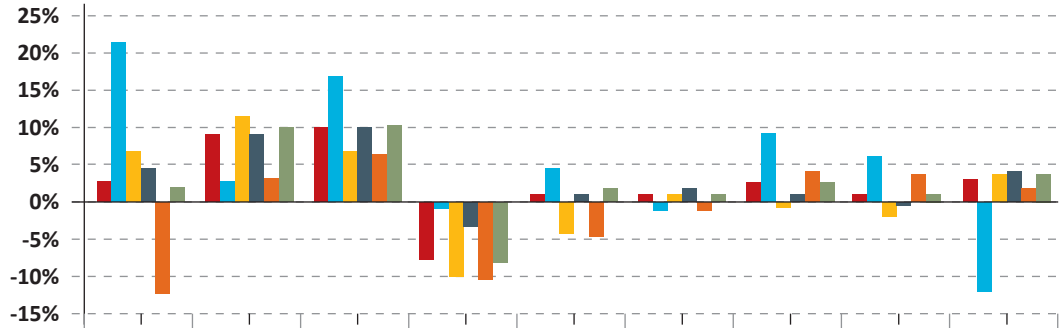
Comparing the petroleum consumption growth rate of 2020 with the same period in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	-1.7	11.1	6.8	-10.5	9.0	13.4	3.0	-2.2	5.4
Agriculture	-2.3	10.9	7.1	-8.9	9.5	7.9	-1.1	0.2	6.9
Industry and construction	-	-	-	-	-	-	-	-	-
Energy	-	-	-	-	-	-	-	-	-
Services (excluding transport)	-	-	-	-	-	-	-	-	-
Transportation	-1.7	11.1	6.8	-10.5	8.9	13.5	3.2	-2.3	5.4
Household (excluding transport)	-	-	-	-	-	-	-	-	-

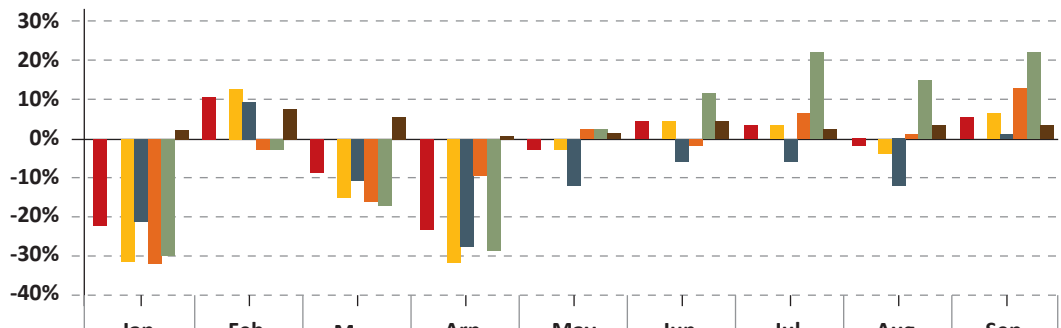
Figure 12: YOY energy consumption growth in 2020

Comparing the oil consumption growth rate of 2020 with the same period in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	2.16	9.02	9.79	-7.92	0.76	0.60	2.29	0.73	2.82
Agriculture	21.29	2.23	16.71	-0.74	4.03	-1.29	8.71	5.66	-12.24
Industry and construction	6.39	11.07	6.62	-10.38	-4.26	0.58	-0.69	-2.12	3.50
Energy	4.26	9.02	9.61	-3.67	0.84	1.40	0.84	-0.61	3.88
Services (excluding transport)	-12.40	2.53	6.28	-10.62	-4.89	-1.30	3.75	3.57	1.49
Transportation	1.54	9.61	10.17	-8.20	1.64	0.72	2.43	0.76	3.49

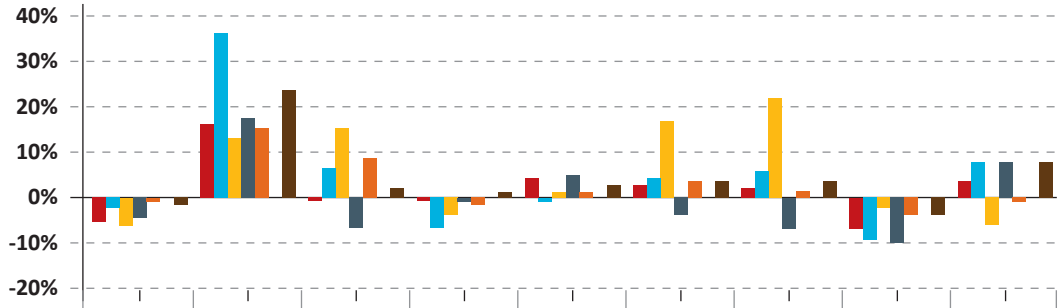
Comparing the gas consumption growth rate of 2020 with the same period in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	-21.48	10.40	-8.75	-22.61	-1.63	3.98	3.08	-1.41	5.45
Agriculture	-	-	-	-	-	-	-	-	-
Industry and construction	-31.42	12.66	-14.24	-31.72	-2.24	4.41	3.42	-2.90	6.19
Energy	-20.41	8.78	-10.07	-27.47	-11.67	-4.94	-5.45	-11.26	0.64
Services (excluding transport)	-31.30	-2.24	-15.10	-9.50	2.10	-0.77	5.91	1.22	12.48
Transportation	-30.26	-2.13	-16.36	-28.47	2.60	11.66	22.07	14.31	21.67
Household (excluding transport)	3.03	7.61	5.70	0.99	2.11	4.64	2.68	3.66	3.44

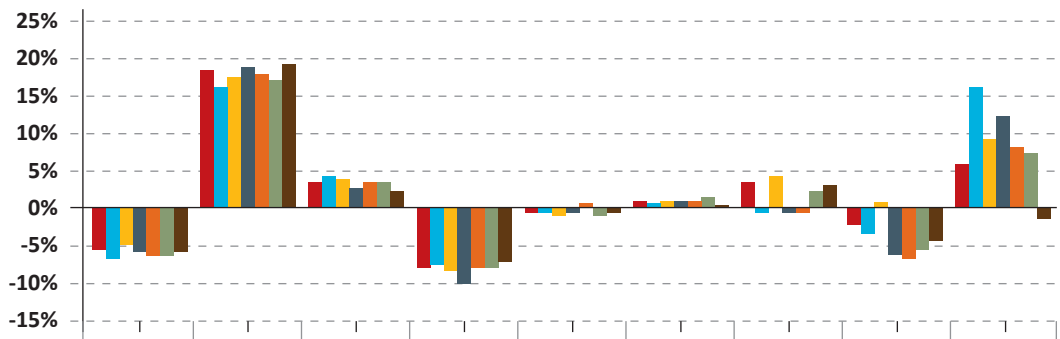
Figure 12: YOY energy consumption growth in 2020 *(continued)*

Comparing the coal consumption growth rate of 2020 with the same period in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	-5.20	15.86	-0.34	-1.33	3.24	2.00	1.15	-7.33	3.09
Agriculture	-2.33	36.22	5.93	-6.93	-0.86	3.54	4.92	-9.55	7.13
Industry and construction	-6.65	12.54	14.41	-3.67	0.78	16.01	21.49	-2.53	-6.56
Energy	-4.91	16.74	-6.96	-0.48	4.39	-3.86	-7.30	-9.73	7.61
Services (excluding transport)	-0.58	14.50	7.93	-1.63	0.78	2.94	0.13	-4.21	-0.27
Transportation	-	-	-	-	-	-	-	-	-
Household (excluding transport)	-2.12	23.53	2.25	1.31	2.60	3.48	3.51	-3.98	7.88

Comparing the electricity consumption growth rate of 2020 with the same period in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	-5.40	18.11	3.15	-7.76	-0.57	0.79	3.20	-2.20	5.72
Agriculture	-6.36	16.29	4.16	-7.37	-0.41	0.37	-0.16	-3.19	15.99
Industry and construction	-4.90	17.54	3.66	-8.06	-0.76	1.03	4.34	0.23	9.25
Energy	-5.68	18.76	2.68	-9.82	-0.08	0.86	-0.23	-6.04	12.16
Services (excluding transport)	-6.01	17.76	3.40	-7.73	0.07	0.87	-0.31	-6.52	7.91
Transportation	-6.16	17.08	3.42	-7.70	-0.67	1.35	2.01	-5.37	6.97
Household (excluding transport)	-5.92	19.24	2.24	-7.17	-0.48	0.40	2.95	-4.34	-1.37

Figure 12: YOY energy consumption growth in 2020 *(continued)*

Source: Calculated by the authors based on GSO data

- The consumption of gas sharply decreased in 2020, not only in April with the nationwide lockdown, but also in January during the Tet holiday. The biggest drop in gas consumption was observed in the industry and construction sector, 31,72% in April and 31,42% in January against the same period in 2019. As this sector accounts for the largest share (62.0%) of total gas consumption, it affects the total gas consumption of the economy. Gas consumption in the industry and construction sector experienced a significant rise of 12.66% in February (after Tet), and slight growth in the remaining months of 2020.

- The majority of coal is used in the energy sector (65%) and in the industry and construction sector (28.4%). For this reason, coal consumption was not too negatively affected by the pandemic and social distancing requirements. In the first 9 months of 2020, total coal consumption by these two sectors changed by - 0.5% and 5.09%, respectively, compared with the same period in 2019. Specifically, coal consumption by the energy sector went down by 6.65% in January (Tet holiday), by 3.67% in April, and by 2.53% in August. In the months of February, May and September, there were rises in coal consumption with corresponding growth rates of 16.74%, 4.39% and 7.61%.

- In January (Tet holiday) and April (nationwide lockdown), consumption of electricity declined in a relatively consistent manner across all sectors, by about 5%-6% in January and 7%-9.8% in April against the same period in 2019. Electricity consumption in February 2020 grew by 17%-19% compared with February 2019.

3.1.2.3. Energy consumption of risk groups

In order to ensure effective prevention and control of the pandemic, the Prime Minister issued Directive No. 15/CT-TTg dated 27 March 2020, according to which nationwide social distancing and limited mass gathering requirements were applied from 00:00h on 28 March 2020 to 15 April 2020. Given the rising complexity of the Covid-19 pandemic, Directive No. 16/CT-TTg was promulgated on 27 March 2020 to impose a 15-day nationwide lockdown, from 00:00h on 01 April 2020. After two weeks implementing the nationwide lockdown, in consideration of the scale and characteristics of the Covid-19 pandemic in different localities, and with the stance of fighting the pandemic like fighting an enemy, the Prime Minister agreed to implement different levels of social distancing requirements in 3 groups: (i) Group of high-risk localities (12 provinces, cities) to continue implementing Directive 16/CT-TTg on comprehensive lockdown until 22 April or until April 30; (ii) Group of moderate-risk localities (15 provinces, cities) to follow Directive No. 16/CT-TTg and strictly comply with Directive 15/CT-TTg until 22 April; and (iii) Group of low-risk localities (36 provinces, cities) to strictly comply with Directive No. 15.CT-TTg on social distancing until 15 April.

The 3 risk groups[52]:

- The group of high-risk localities (Ha Noi, Ho Chi Minh City, Lao Cai, Quang Ninh, Bac Ninh, Ninh Binh, Da Nang, Quang Nam, Binh Thuan, Khanh Hoa, Tay Ninh and Ha Tinh) were required to continue implementing Directive 16/CT-TTg on comprehensive lockdown until 22 April or until 30 April, depending on the actual situation of community infection.
- The group of 15 moderate-risk localities (Binh Duong, Dong Nai, Can Tho, Nam Dinh, Ha Nam, Nghe An, Hai Phong, Kien Giang, Thai Nguyen, Thua Thien-Hue, Lang Son, An Giang, Binh Phuoc, Dong Thap, and Soc Trang) is required to follow Directive No. 16/CT-TTg and strictly comply with Directive 15/CT-TTg until 22 April.
- The group of 36 low-risk localities will continue to strictly comply with the Government's Directive No. 15/CT-TTg on social distancing until 15 April.

[52] Ministry of Health (2020). The Prime Minister agreed on continuing implementation of the Directive No. 16/T-TTg in selected localities until 22nd April (Thủ tướng nhất trí tiếp tục thực hiện Chỉ thị 16 ít nhất đến 22/4 tại một số địa phương) https://moh.gov.vn/tin-noi-bat/-/asset_publisher/3Yst7YhbkA5j/content/thu-tuong-nhat-tri-tiep-tuc-thuc-hien-chi-thi-16-it-nhat-en-22-4-tai-mot-so-ia-phuong

Analysing the impact of social distancing policies on energy consumption by these 3 risk groups shows that:

- Petroleum consumption dropped by 10.5% in April 2020 (nationwide lockdown) in comparison with the same period in 2019. The biggest drop in petroleum consumption (12.3%) was in the group of 15 high-risk localities. Decreases in the other two groups were 7.1% and 8.9%, respectively, meaning the impacts of social distancing policies were insignificant.

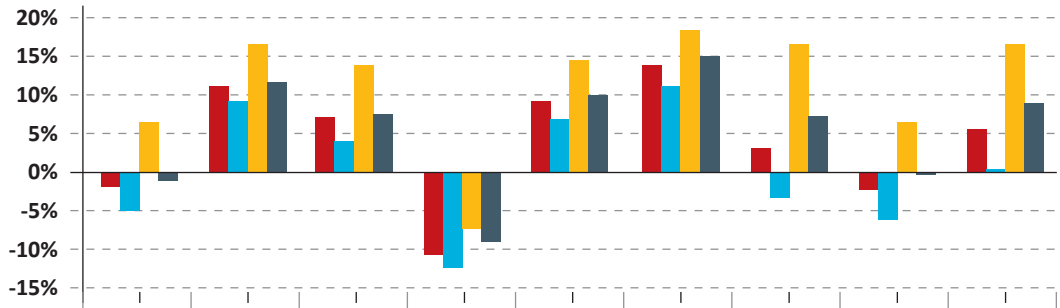
- Oil consumed in April was down by 7.92% against 2019 as there was a nationwide lockdown and thus there was no need to compensate shortages in electricity supply with hydropower. The rates of decrease were 9.64% for 15 provinces and cities in the high-risk group, 3.44% for the moderate-risk group, and 7.99% for the low-risk group. In January, although there was a shrink in consumption of other energy sources due to temporarily downsizing business activities during the Tet holiday, oil consumption still grew by 2.16% against the same period in 2019 to cover the shortage in hydropower supply.

- Gas experienced the most significant fluctuation in consumption, especially in the months of Tet and the lockdown. Gas consumption dropped by 22.61% in April 2014 in the whole country, by 23.11% in the group of high-risk localities, and by 21.45% and 22.82% in the moderate and low-risk groups, respectively. A similar decline was observed in the month of January (Tet holiday) showing an indirect impact of lockdown policies on energy demand in the economy.

- Coal is mainly consumed in power generation, industry processes and construction, and thus indirectly affected by social distancing requirements. Specifically, coal consumption during the Tet holiday and nationwide lockdown by the group of high-risk localities fell by 6.6% and 2.3%, respectively. The numbers for the low-risk group were 4.6% and 2.6%. The group of moderate risk was a special case, with coal consumption falling by 4.0% in January and then increasing by 1.6% in April.

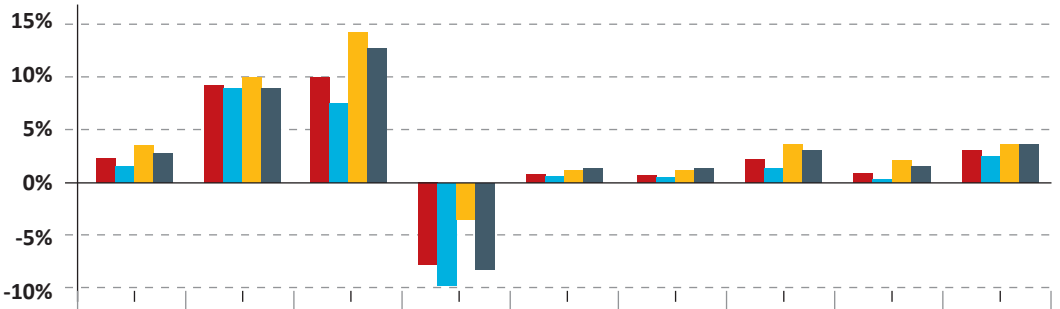
- Electricity usage saw the biggest drop in January and April. The extent of decline in electricity usage by the group of high-risk localities was lower than the national average; and amongst the 3 groups, the group of low-risk localities had the largest reduction. Specifically, in April, the average growth of electricity consumption nationwide was -7.7%, while the number for the 3 risk groups – high risk, moderate and low risk – was -7.17%, -7.55% and -8.31%, respectively.

Gasoline consumptions in months of 2020 against the same periods in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Nationwide	-1.7	11.1	6.8	-10.5	9.0	13.4	3.0	-2.2	5.4
High-risk (12 provinces)	-4.9	9.1	4.1	-12.3	6.6	11.0	-3.2	-6.0	0.3
Moderate-risk (15 provinces)	6.3	16.3	13.6	-7.1	14.3	18.2	16.3	6.2	16.2
Low-risk (35 provinces)	-1.0	11.4	7.3	-8.9	10.1	14.9	7.1	-0.1	8.8

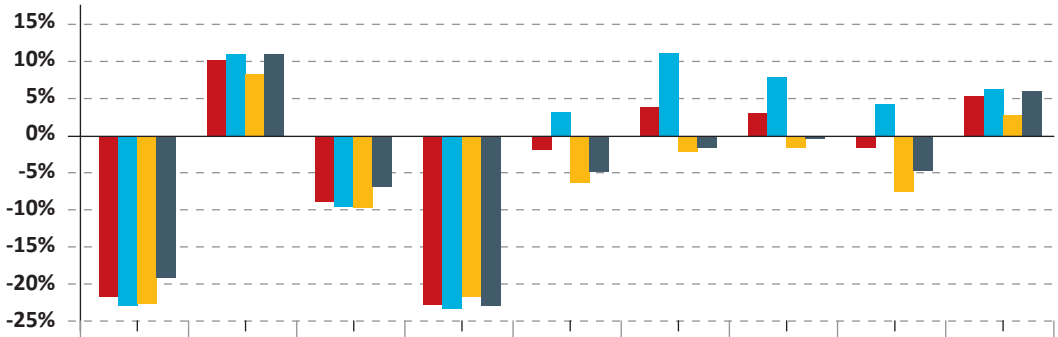
Oil consumptions in months of 2020 against the same periods in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Nationwide	2.16	9.02	9.79	-7.92	0.69	0.60	1.99	0.73	2.82
High-risk (12 provinces)	1.54	8.74	7.34	-9.64	0.46	0.27	1.18	0.05	2.39
Moderate-risk (15 provinces)	3.39	9.83	14.00	-3.44	0.98	1.04	3.33	1.94	3.44
Low-risk (35 provinces)	2.74	8.92	12.55	-7.99	1.08	1.10	2.97	1.39	3.45

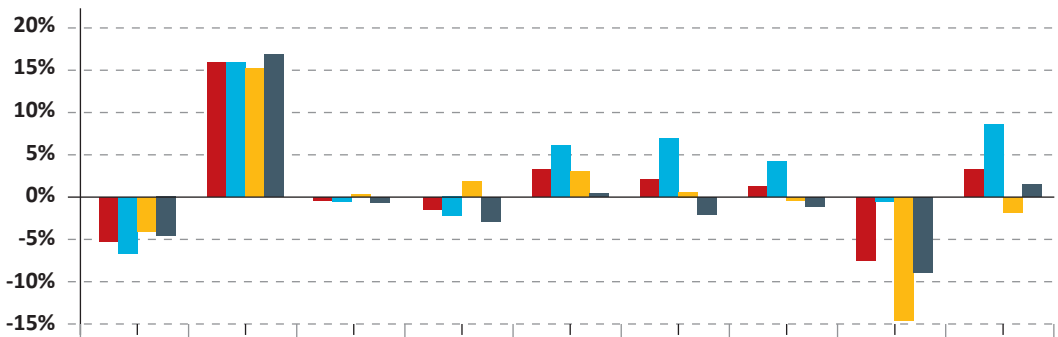
Figure 13: YOY energy consumption growth in 2020 by risk group

Gas consumptions in months of 2020 against the same periods in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Nationwide	-21.48	10.40	-8.75	-22.61	-1.63	3.98	3.08	-1.41	5.45
High-risk (12 provinces)	-22.78	11.13	-9.67	-23.11	3.27	11.45	7.97	4.22	6.41
Moderate-risk (15 provinces)	-22.33	8.49	-9.85	-21.45	-6.19	-1.87	-1.48	-7.33	2.76
Low-risk (35 provinces)	-19.05	10.98	-6.63	-22.82	-4.59	-1.48	-0.12	-4.48	6.24

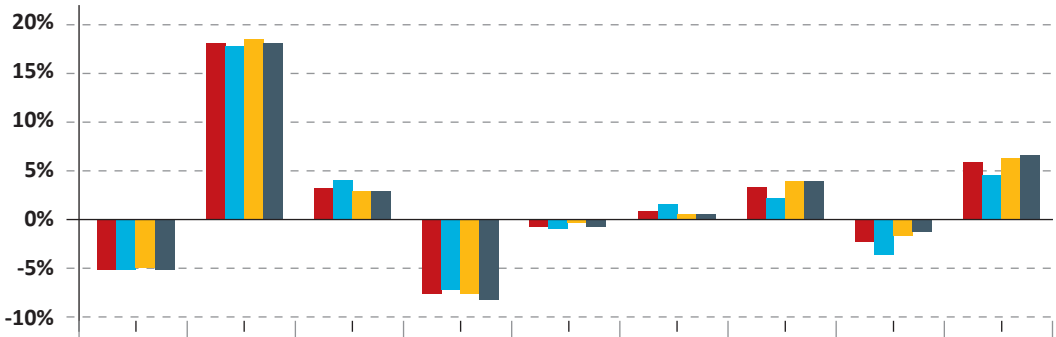
Coal consumptions in months of 2020 against the same periods in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Nationwide	-5.2	15.9	-0.3	-1.3	3.2	2.0	1.2	-7.3	3.1
High-risk (12 provinces)	-6.6	15.9	-0.5	-2.3	5.9	6.6	4.0	-0.8	8.5
Moderate-risk (15 provinces)	-4.0	15.1	0.1	1.6	2.9	0.4	-0.4	-14.4	-1.9
Low-risk (35 provinces)	-4.6	16.4	-0.6	-2.8	0.3	-2.1	-1.0	-8.9	1.5

Figure 13: YOY energy consumption growth in 2020 by risk group *(continued)*

Comparing the growth rate of electricity consumption in months of 2020 with the same period in 2019



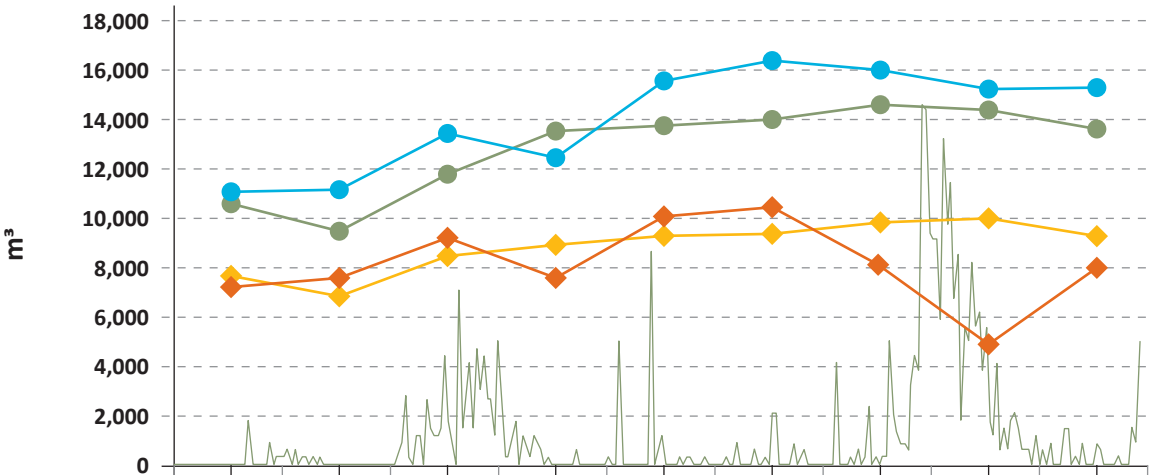
	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Nationwide	-5.40	18.11	3.15	-7.76	-0.57	0.79	3.20	-2.20	5.72
High-risk (12 provinces)	-5.42	17.96	3.86	-7.17	-0.91	1.34	2.09	-3.76	4.49
Moderate-risk (15 provinces)	-5.32	18.45	2.86	-7.55	-0.02	0.52	3.87	-1.71	6.13
Low-risk (35 provinces)	-5.43	18.05	2.76	-8.32	-0.61	0.52	3.70	-1.28	6.44

Figure 13: YOY energy consumption growth in 2020 by risk group

Source: Calculated by the authors based on GSO data

In Figure 14 below, we can see the differences between Da Nang and Ba Ria-Vung Tau, which are two cities with different social distancing requirements. Ba Ria-Vung Tau was mainly affected by the first two phases of social distancing in January and April 2020 and was classified in the group of low-risk localities. Da Nang, on other hand, was under both phases of social distancing requirements, especially the strict lockdown in July and August 2020. For this reason, petroleum consumption in July and August for these two cities fell at different levels. Ba Ria-Vung Tau experienced a rather small decline in petroleum consumption due to shrinkages in mobility and tourism demand, while there was a steep drop of petroleum consumption in Da Nang due to the strict lockdown.

Gasoline consumption in Da Nang and Ba Ria - Vung Tau



	Jan.	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
Da Nang, 2019	7,801	7,026	8,787	9,040	9,578	9,518	9,930	9,971	9,355
Da Nang, 2020	7,465	7,727	9,214	7,808	10,165	10,466	8,245	4,926	8,149
Ba Ria - Vung Tau, 2019	10,707	9,589	12,028	13,703	13,825	14,073	14,635	14,719	13,799
Ba Ria - Vung Tau, 2020	11,110	11,357	13,627	12,577	15,648	16,435	16,196	15,311	15,470

Figure 14: Differences in the impacts of the Covid-19 pandemic on petroleum consumption in Da Nang and in Ba Ria-Vung Tau

Source: Calculated by the authors based on GSO data

3.2. Impacts of Covid-19 response policies on greenhouse gas emissions in Viet Nam

3.2.1. Greenhouse gas emissions before, during and after implementation of policies on social distancing

3.2.1.1 Greenhouse gas emissions from the combustion of fossil fuels

a) Total greenhouse gas emissions

Table 10 below summarises the calculation of the total greenhouse gas emissions (carbon dioxide equivalencies – CO_2e) in 3 different scenarios (high, medium and low) with 3 corresponding emissions factors as recommended in the IPCC 2006. As a result of the calculation, the total greenhouse gas emissions from fossil fuels in the high, medium and low scenarios in 2019 were 304.8 million tonnes, 291.9 million tonnes and 278 million tons of CO_2e, respectively, which corresponds to growth rates of 35%, 29% and 23%.

Table 10: Greenhouse gas emissions in 3 scenarios with corresponding emissions factors as recommended by the IPCC 2006 (million tonnes)

Month	CO_2e from fossil fuels					
	High Scenario		*Medium Scenario*		*Low Scenario*	
	2019	**2020**	**2019**	**2020**	**2019**	**2020**
January	20.2	19.2	19.4	18.4	18.4	17.6
February	20.5	23.4	19.6	22.5	18.7	21.4
March	23.1	23.3	22.1	22.4	21.1	21.3
April	25.0	24.1	24.0	23.1	22.8	22.0
May	26.4	27.2	25.3	26.0	24.1	24.8
June	27.3	28.0	26.2	26.8	24.9	25.5
July	27.7	28.1	26.5	26.9	25.3	25.6
August	27.1	25.5	25.9	24.4	24.7	23.2
September	25.7	26.5	24.6	25.4	23.4	24.2
October	26.6		25.5		24.3	
November	27.2		26.1		24.8	
December	27.9		26.7		25.5	
Total	304.8		291.9		278.0	
Change		1.06%		1.08%		1.08%

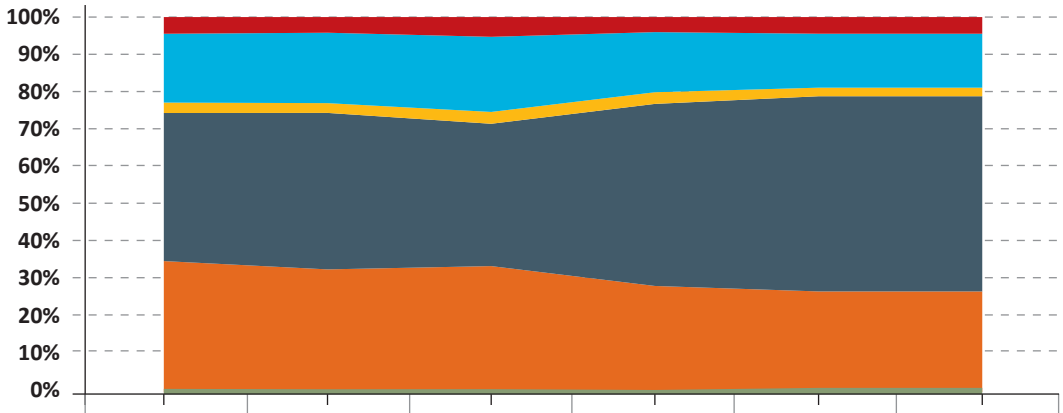
Source: Calculated by the authors based on GSO data

b) Structure of greenhouse gas emissions from the combustion of fossil fuels

Total GHG emissions (CO_2e) from fossil fuel combustion according to the medium scenario in 2019 was 291.8 million tonnes of CO_2e, of which 77.2% was from coal, 14.2% from oil, 5.0% from gas and 3.6% from petroleum. Below are findings from an analysis of emissions sources by sector:

- Energy sector:

There was a minor change in GHG emissions (CO_2e) structure in the energy sector from the combustion of fossil fuels in 2019 against 2018 (as announced by the IEA). Specifically, the share of GHG emissions from fossil fuels in the energy sector rose from 48.2% in 2018 to 52.3% in 2019, followed by a slight decline to 51.7% in the first 9 months of 2020.



	2015	2016	2017	2018	2019	9 months of 2020
	IEA's sources				Medium scenario	
Household	4.4	4.1	5.2	4.0	4.4	4.4
Transportation	18.2	18.7	19.9	15.9	14.0	14.3
Services (excluding transport)	2.8	2.6	3.1	3.1	2.3	2.3
Energy	39.2	41.5	37.7	48.2	52.3	51.7
Industry and construction	34.8	32.6	33.5	28.3	26.4	26.6
Agriculture	0.6	0.5	0.5	0.4	0.6	0.7

Figure 15: Changes in structure of GHG emissions CO_2e from fossil fuels

Source: Calculated by the authors based on GSO data and IEA (2020)

- *Manufacturing industries and the construction sector:*

The share of GHG emissions from fossil fuels in 2018 was 28.3% declining to 26.4% in 2019 and 26.6% in the first 9 months of 2020.

- *Transportation sector*

The share of GHG emissions from fossil fuels in 2018 stood at 15.9% of total GHG emissions, but then declined to 14.0% in 2019 and 14.3% in the first 9 months of 2020.

- *Service sector (exclusive of transportation services):*

The share of GHG emissions from fossil fuels was 3.1% in 2018 and then decreased to 2.3% in 2019 and the first 9 months of 2020.

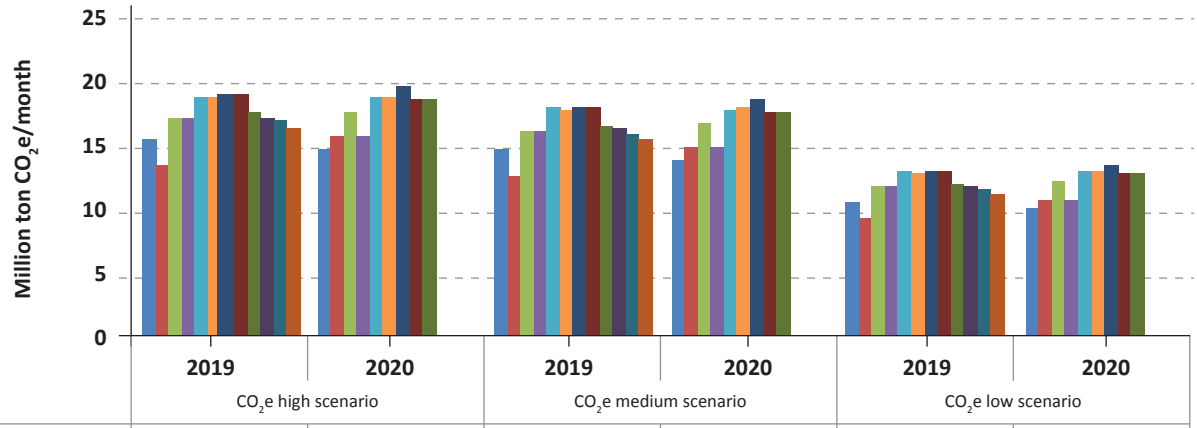
- *Agriculture:*

The share of GHG emissions from fossil fuels in this sector in 2018, 2019 and the first 9 months of 2020 reached 0.4%, 0.6% and 0.7%, respectively.

3.2.1.2. Greenhouse gas emissions from using the electricity grid

Electricity is considered as an intermediate good that represents the level of energy consumption, and therefore it is possible to calculate greenhouse gas emissions (CO_2e) based on the electricity consumed. Figure 16 below illustrates the total greenhouse gas emissions CO_2e (CO_2 equivalent) calculated for the 3 scenarios, with corresponding 3 emissions factors provided by the Ministry of Natural Resources and Environment in 2013, 2017 and 2018. Specifically, total greenhouse gas emissions from electricity consumption in 2019 in the high, medium and low scenarios was 207.8 million tonnes, 196.9 million tonnes and 142.1 million tonnes of CO_2e.

CO_2e from electricity



	CO_2e high scenario		CO_2e medium scenario		CO_2e low scenario	
	2019	2020	2019	2020	2019	2020
Jan.	15.51	14.67	14.69	13.90	10.61	10.03
Feb.	13.41	15.84	12.71	15.01	9.17	10.83
Mar.	17.23	17.77	16.32	16.83	11.78	12.15
Apr.	17.17	15.84	16.27	15.00	11.74	10.83
May	19.05	18.95	18.05	17.95	13.03	12.96
Jun.	18.87	19.02	17.88	18.02	12.91	13.01
Jul.	19.18	19.79	18.17	18.75	13.11	13.53
Aug.	19.08	18.66	18.08	17.68	13.05	12.76
Sep.	17.65	18.66	16.72	17.68	12.07	12.76
Oct.	17.34		16.43		11.86	
Nov.	17.00		16.11		11.63	
Dec.	16.35		15.49		11.18	

Figure 16: GHG emissions with 3 emissions factors from electricity consumption as recommended by MONRE (billion tons of CO_2e)

Source: Calculated by the authors based on GSO data

In the high and medium scenarios, there is a big gap between CO_2e emitted from electricity consumption and emissions from thermal power (coal, oil, gas). For the low scenario, this gap is insignificant. This is explained by much higher emissions factors from electricity announced by the Ministry of Natural Resources and Environment in February 2017 and February 2018 compared to 2013. Specifically, the emissions factor from electricity in 2013 was 0.6244 tonnes of CO_2/MWh, in 2017 0.8649 tonnes of CO_2/MWh and in 2018 0.9130 tonnes of CO_2/MWh.

Table 11: Comparison between GHG emissions from electricity consumption with 3 emissions factors as recommended by MONRE and GHG emissions from thermal power (coal, oil, gas) according to IPCC 2006 (million tonnes of CO_2e)

Scenario	Emissions from electricity	GHG emissions from thermal power (coal, oil, gas)	Difference in CO_2e emissions scenarios from electricity and thermal power (coal, oil, gas)		
			High scenario	*Medium scenario*	*Low Scenario*
High	207.8	158.5	49.37 (31%)		
Medium	196.9	152.5		44.3 (29%)	
Low	142.1	146.2			- 4.1(-3%)

Source: Calculated by the authors based on GSO data

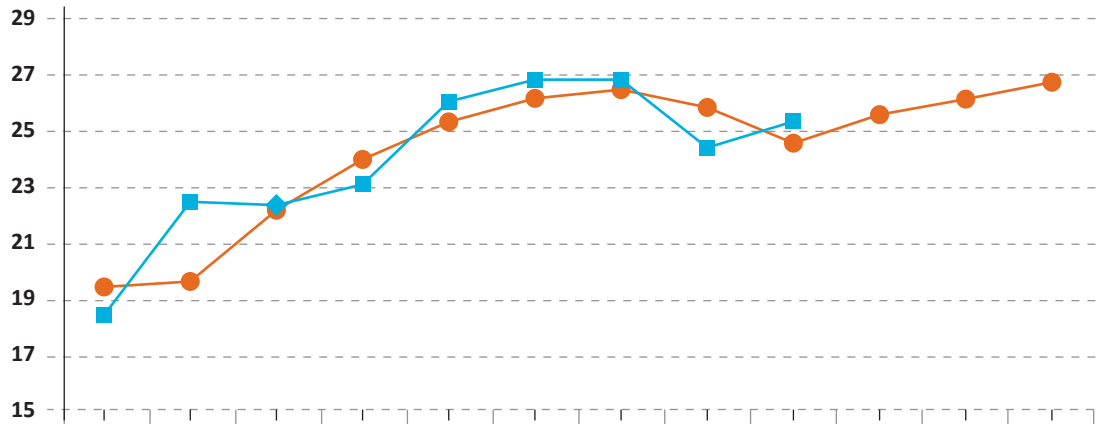
3.2.2. Analysis of the impacts of Covid-19 policy responses on greenhouse gas emissions

3.2.2.1. Impact of social distancing policies on total greenhouse gas emissions

The implementation of social distancing, especially the nationwide lockdown in April and partial social distancing in August in Da Nang, Hoi An and Hai Duong, has led to a decrease in fossil fuel consumption. For this reason, GHG emissions in these months was down against 2019. However, changes in CO_2e are also driven by Viet Nam's energy structure.

Although Vietnam is forced to implement social distancing during the Covid-19 pandemic, two waves of pandemic outbreaks in Vietnam were controlled thanks to the support of the whole of society and the timely response. The social distancing period was not as long as in many other countries. With that success, the amount of greenhouse gas emissions from the direct use of fossil fuels and from the use of Vietnam's electricity grid is still increasing compared to the same period in 2019, although the growth rate decreased sharply at only 1.1%. This is consistent with the GDP growth rate for the first 9 months of 2020, which reached 2.23% compared to 7.01% in the first 9 months of 2019.

CO_2e emissions from fossil fuels by the medium scenario (million tons CO_2e)



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	19.4	19.6	22.1	24.0	25.3	26.2	26.5	25.9	24.6	25.5	26.1	26.7
2020	18.4	22.5	22.4	23.1	26.0	26.8	26.9	24.4	25.4			

Figure 17: CO_2e emission from the combustion of fossil fuels in 2019 and 2020

Source: Calculated by the authors based on GSO data for 2020

Figure 17 shows that during January 2020 (Tet holiday), total CO_2e emissions from fossil fuel combustion reached 18.4 million tonnes, equivalent to a decline of 4.8% against the same period in 2019. Greenhouse gas emissions rose again by 14.6% to 22.4 million tonnes in February 2020 as business activities resumed after Tet and because February 2019 coincided Tet with a limited energy demand.

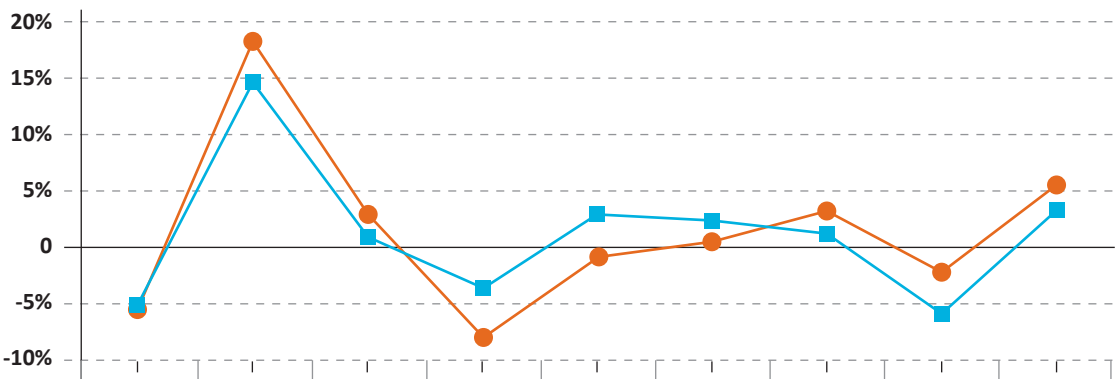
Total CO_2e emissions from fossil fuel combustion in March was slightly lower than that of February 2020, but still recorded an increase of 1.0% over the same period in 2019. In the April of the nationwide lockdown, total CO_2e emissions decreased by 3.6% to 23.1 million tons, compared with 24.0 million tonnes in April 2019.

May, June and July marked the transition to a "new normal" phase. The total greenhouse gas emissions rose again, with corresponding monthly growth rates of 2.9%, 2.3% and 1.5% against the same period in 2019. As at the end of July, partial social distancing requirements started to be imposed in Da Nang and Hoi An because of the second wave of the pandemic outbreak. However, July is the month of summer vacations with the highest rates of mobility and tourism during the year. For this reason, social distancing requirements caused a minor slowdown in growth of CO_2e against June, but the total CO_2e was still higher over the same period in 2019.

In August, social distancing was required in some localities only, such as Da Nang, Hoi An and Hai Duong. However, the more serious nature of the pandemic (35 deaths recorded) and a hesitation to travel led to a decline in the demand for petroleum in the transport sector. In addition, other factors such as the economic slowdown as a result of the disrupted global value chain, the recovery of electricity supplies from hydropower plants, and the shrinking demand for coal and gas for thermal power contributed to reducing total emissions of CO_2e to 24.42 million tons, against 25.9 million tonnes in August 2019, a -5.7 % decline. The emissions level in August was lower than in January and April due to a significant decrease in coal consumption in August. Specifically, coal consumption in August was down by 7.55%, which is the lowest monthly decline recorded in the first 9 months of 2020.

Social distancing requirements were removed at the beginning of September for Da Nang and since the end August for other localities such as Hai Duong and Hoi An. Because of this, total greenhouse gas emissions CO_2e increased again in September to 25.6 million tonnes, equivalent to a rise of 3.3% against 2019.

Comparing the CO_2e growth rates from electricity and fossil fuel consumption



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
CO_2e growth rate from electricity	-5.4%	18.1%	3.2%	-7.8%	-0.6%	0.8%	3.2%	-2.2%	5.7%
CO_2e growth rate from fossil fuels	-4.8%	14.6%	1.0%	-3.6%	2.9%	2.3%	1.5%	-5.7%	3.3%

Figure 18: Changes in greenhouse gas emissions from energy consumption in 2020 against 2019

Source: Calculated by the authors based on GSO data

As electricity is an intermediate source of energy, the calculated CO_2e emitted from use of the grid is relatively matched with the growth rate of CO_2e from fossil fuels (Figure 18). This illustrates the trustworthiness of data and research approaches.

3.2.2.2. Impacts of social distancing policies on greenhouse gas emissions by type of energy

Social distancing policies have different impacts on demand for fossil fuels. While petroleum is used mainly in transportation and directly affected by social distancing policies, coal and gas are widely used in thermal power and industry. Therefore, coal and gas are not directly affected by social distancing, but they are affected by economic decline due to social distancing, especially global value chain disruption. Besides, coal and gas consumption also depend on the supply situation of energy sources such as hydroelectricity, wind power, solar power, biomass and waste electricity, etc.

CO_2e emissions from petroleum

Petroleum is the main fuel used in transportation (70.6%), so it is most directly and clearly affected by social distancing policies. The CO_2e emissions from petroleum rose by 3.7% in the first 9 months of 2020 and accounted for 3.8% of the total CO_2e emissions from fossil fuels. However, CO_2e from petroleum decreased in January (Tet holiday) and in April and August (with imposed requirements on social distancing). Specifically, CO_2e emissions from petroleum in April and August were down by 10.5% and 2.2%, respectively, against the same period in 2019. CO_2e emitted from petroleum went down by 1.7% in January. In February, May, June, July and September, CO_2e from petroleum increased again by 11.1%, 9.0%, 13.4%, 3.0% and 5.4%.

CO_2e emissions from oil:

Unlike petroleum, oil is impacted twice by policies on social distancing. Oil is widely used in industry and construction (34.7%), in transportation (32.8%), in energy (22%) and services (inclusive of transportation - 9.8%). Therefore, emissions from oil are directly affected by social distancing policies due to decreased demand on mobility, and indirectly affected by economic slowdown and decreased demand of oil used in business activities. Despite this, CO_2e emissions from oil was still up by 2.0% in the first 9 months of 2020 and accounted for 14.2% of total CO_2e emissions from fossil fuel. The biggest drop in CO_2e emissions from oil (7.9%) was observed in April. Apart from April, CO_2e emissions from oil remained almost unchanged for the first 9 months of 2020, except for slight rises in February and March as oil-fired thermal power was required to compensate for shortages in hydropower supply in the dry season.

CO_2e emissions from coal

The amount of CO_2e emissions from coal in the first 9 months of 2020 increased by 1.1% over the same period in 2019, accounting for 77.2% of total CO_2e emissions from fossil fuels. In January 2020, given the slowdown in business activities during the Tet holiday, CO_2e emissions from coal shrank by 5.2%, followed by a strong increase of 15.9% in February against the same month in 2019 as business activities resumed after Tet and because February 2019 was the month of Tet. In April 2020, despite the imposed social distancing requirements, CO_2e emissions from coal only decreased by 1.3% compared to the same period in 2019 because at that time coal thermal power increased by 12.0% compared to March 2020. In July, CO_2e emissions decreased by 7.3% due to the economic slowdown and the decrease in coal used for thermal power because of an increase in hydroelectricity.

CO_2e emissions from gas

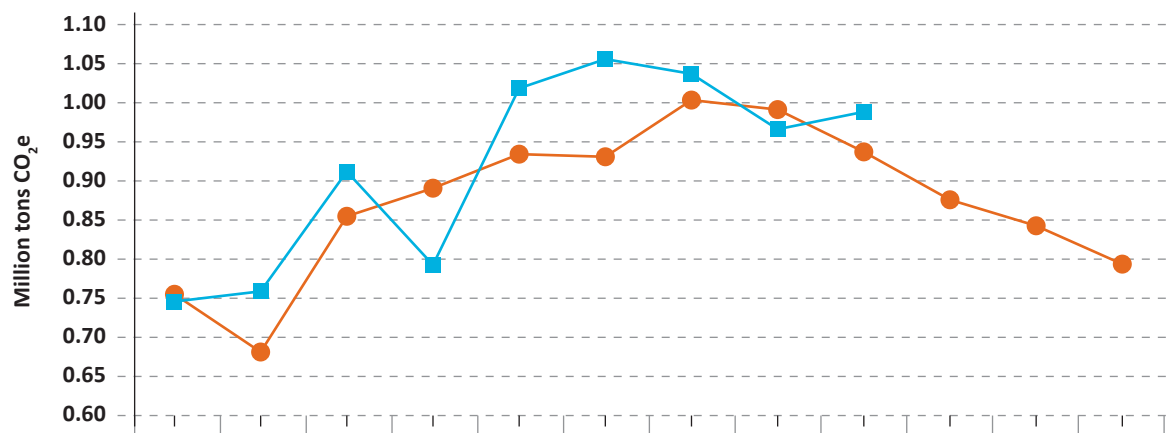
Among all fossil fuels used in Vietnam, CO_2e emissions from gas in the first 9 months of 2020 experienced the strongest decrease of 3.5% compared to the same period in 2019. Its biggest drops were in April (22.6%) and in January (21.5%). This was in line with declines of 31.7%

and 31.4%, respectively, in demand for gas for industry and construction sectors, which accounts for 62% of the total demand of gas in the economy. Gas demand in the household sector accounts for 28.5% of the total gas required by the whole economy, but CO_2e emissions from gas in this sector were up by only 3.0% in January and by 1.0% in April. As CO_2e emissions from gas accounts for only 4.8% of total CO_2e emissions, it does not contribute much to reducing greenhouse gas emissions.

CO_2e emissions from grid electricity use

Although electricity is an intermediate type of energy, it also reflects the effects of social distancing on energy consumption. Electricity is widely used in industry and construction (52.4%) and in the household sector (32.4%), and thus is indirectly affected by social distancing policies. Specifically, CO_2e emissions from the electricity grid were still up by 1.3% in the first 9 months of 2020 against the same period in 2019. CO_2e emissions from the electricity grid declined sharply by 7.8%, 5.4% and 2.2% in July, January and August, respectively, over the same period in 2019, and strongly increased by 18.1% in February.

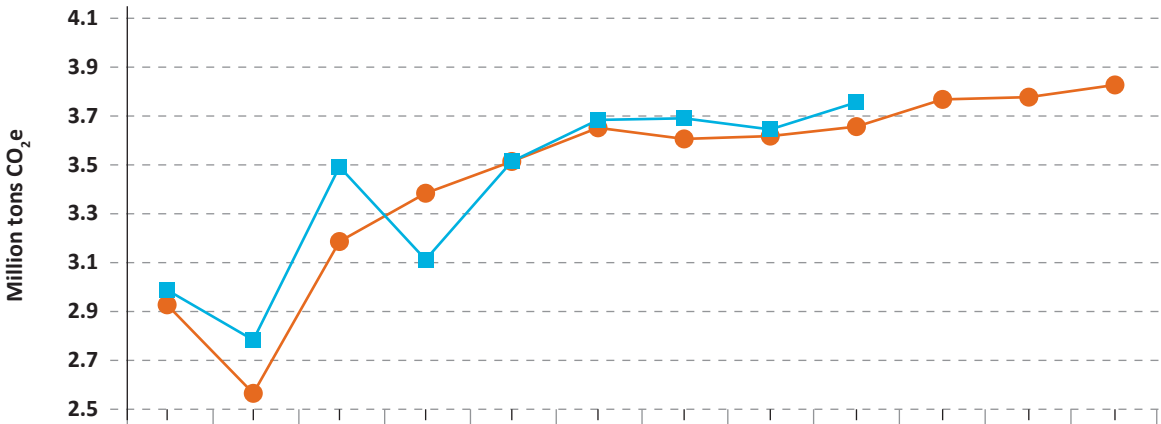
CO_2e emissions from petroleum consumption



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	0.76	0.68	0.85	0.89	0.94	0.93	1.01	0.99	0.94	0.87	0.84	0.80
2020	0.75	0.76	0.91	0.79	1.02	1.06	1.04	0.97	0.99			

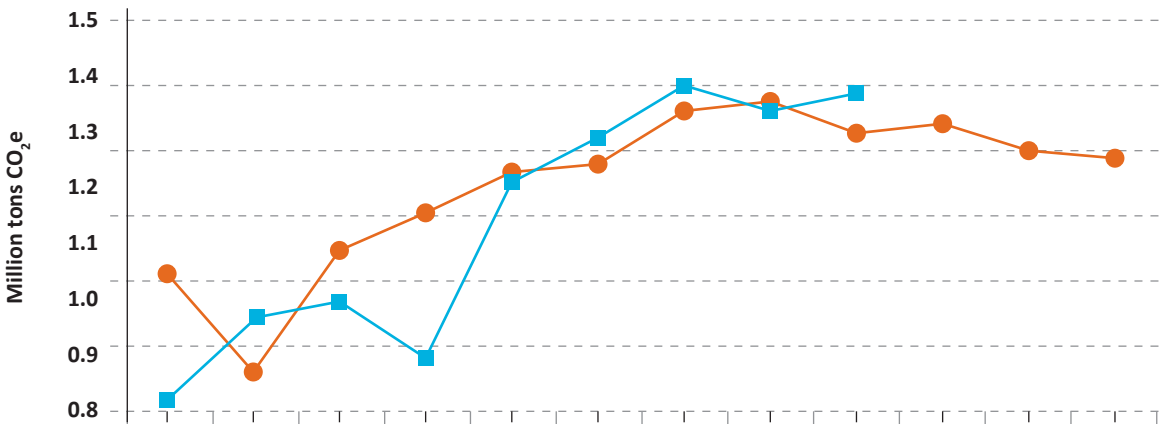
Figure 19: Greenhouse gas emissions from energy consumption in 2019 and 2020 (medium scenario)

CO_2e emissions from oil consumption



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	2.93	2.56	3.19	3.39	3.52	3.66	3.61	3.62	3.66	3.77	3.78	3.84
2020	2.99	2.80	3.50	3.12	3.54	3.68	3.70	3.65	3.76			

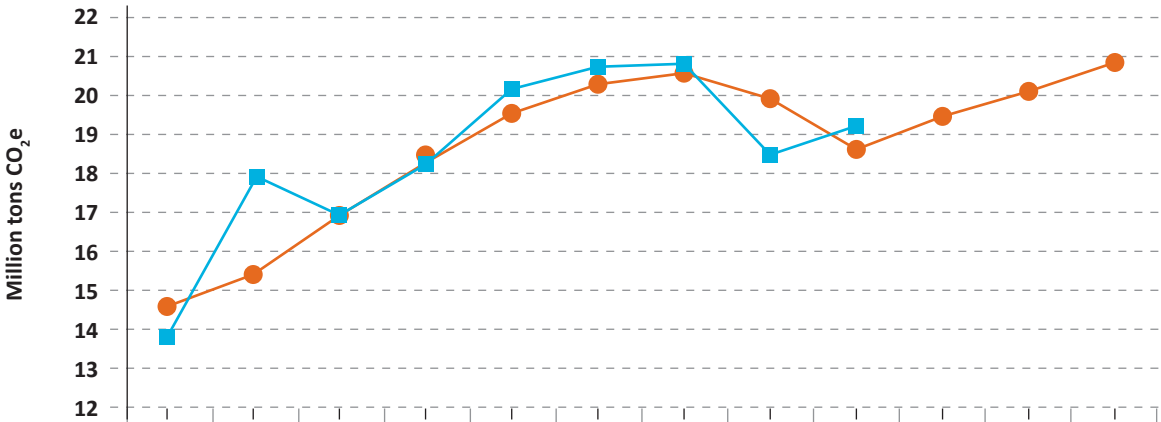
CO_2e emissions from gas consumption



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	1.05	0.88	1.09	1.16	1.23	1.24	1.34	1.35	1.30	1.31	1.26	1.26
2020	0.82	0.97	1.00	0.90	1.21	1.29	1.38	1.33	1.37			

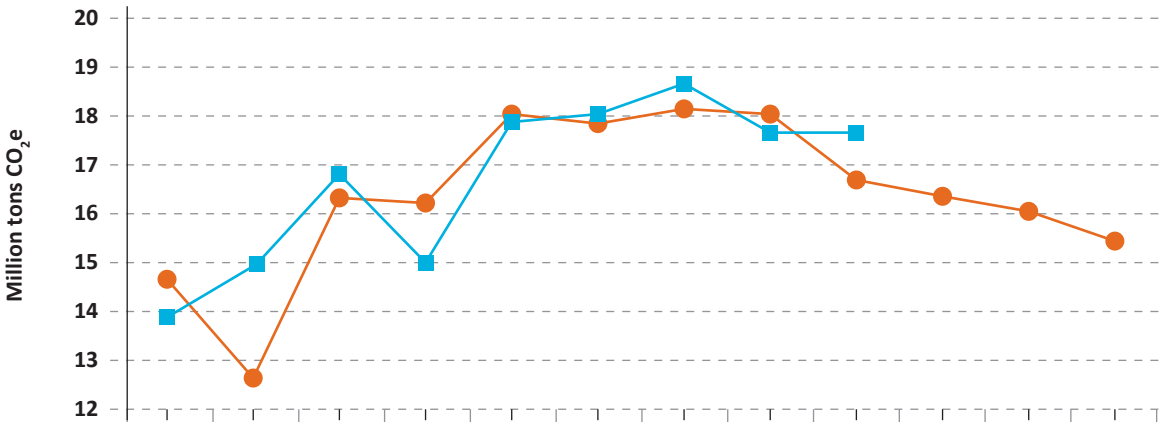
Figure 19: Greenhouse gas emissions from energy consumption in 2019 and 2020 (medium scenario) *(continued)*

CO_2e emissions from coal consumption



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	14.64	15.48	17.00	18.53	19.61	20.35	20.57	19.93	18.68	19.55	20.17	20.85
2020	13.88	17.93	16.94	18.29	20.24	20.76	20.81	18.47	19.26			

CO_2e emissions from electricity consumption



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	14.69	12.71	16.32	16.27	18.05	17.88	18.17	18.08	16.72	16.43	16.11	15.49
2020	13.90	15.01	16.83	15.00	17.95	18.02	18.75	17.68	17.68			

Figure 19: Greenhouse gas emissions from energy consumption in 2019 and 2020 (medium scenario)

Source: Calculated by the authors based on GSO data

The duration of social distancing in Viet Nam was approximately 1 month. During social distancing, only unnecessary services were closed or restricted, while other business/production activities continued as usual. For this reason, social distancing did not have much direct impact on energy consumption in the first 9 months of 2020.

Table 12 below shows slight differences in terms of CO_2e emissions structure in 2019 and 2020. Except for April, when with the nationwide lockdown and a strong decline in fossil fuel consumption, the share of CO_2e emissions from petroleum and oil decreased from 3.45% and 13.97% in 2019 to 3.20% and 13.34% in 2020.

Table 12: Structure of CO_2e emissions by energy type

Scenario	Month	Petroleum		Oil		Gas		Coal		Electricity/ Fossil fuel	
		2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Normal	Jan.	3.65	3.77	14.94	16.03	5.24	4.32	76.17	75.87	57.52	57.17
	Feb.	3.25	3.15	12.92	12.29	4.33	4.18	79.49	80.38	49.10	50.62
Partial social distancing	Mar.	3.60	3.81	14.23	15.48	4.79	4.33	77.38	76.38	55.89	57.10
Nationwide lockdown	Apr.	3.45	3.20	13.97	13.34	4.69	3.76	77.89	79.69	51.45	49.21
New normal	May	3.45	3.65	13.74	13.45	4.71	4.51	78.10	78.39	54.10	52.30
	Jun.	3.31	3.67	13.81	13.58	4.60	4.67	78.28	78.07	51.74	50.99
	Jul.	3.54	3.59	13.46	13.57	4.88	4.96	78.13	77.88	51.91	52.80
	Aug.	3.58	3.71	13.82	14.77	5.07	5.30	77.54	76.22	52.93	54.91
	Sep.	3.57	3.64	14.72	14.65	5.12	5.23	76.60	76.48	51.59	52.83
9 months		3.49	3.58	13.96	14.13	4.83	4.58	77.73	77.71	52.91	53.10

Source: Calculated by the authors based on GSO data

3.2.2.3. Impacts of social distancing policies on greenhouse gas emissions by economic sector

Social distancing policies have different impacts on different economic sectors, depending on their respective structure of fuel consumption. Figure 20 shows that, given the nationwide lockdown, the total greenhouse gas emissions by economic sector in April was still higher than in January. This is because most production and business activities during Tet were suspended or greatly reduced, while social distancing in April only limited travel and stopped unnecessary services.

Energy industry

In the first 9 months of 2020, the consumption of coal, oil and gas by the energy sector was 65.0%, 7.8% and 6.7%, respectively. Because of this, greenhouse gas emissions from the energy sector were also the largest. In 2019, the total CO_2e emissions were 158.47 million tonnes in the high

scenario, 152.54 million tonnes in the medium scenario, and 146.25 million tonnes in the low scenario. In the first 9 months of 2002, the total CO_2e of the energy sector was 111.79 million tons under the medium scenario, accounting for 51.6% of total CO_2e emissions. Due to the pandemic and droughts, the cycle of greenhouse gas emissions in the energy sector was several months earlier than in 2019. Specifically, the lowest level of emissions was recorded in March instead of April as was the case for other sectors. CO_2e emissions started to go down in June and increase again in September, instead of August and October as was the case in 2019. CO_2e emissions went down in March 2020 because both coal- and oil-fired thermal power decreased from 13.52 billion kWh and 3.63 billion kWh in February to 10.20 billion kWh and 2.29 billion kWh thanks to the recovery in hydropower generation to 3.07 billion kWh from 0.3 billion kWh in February.

Manufacturing Industries and construction sector

In the first 9 months of 2020, the consumption of gas, coal and oil by the industry and construction sector was 62.0%, 29.2% and 9.1%, respectively, making this sector the second largest CO_2e emitter after energy. In 2019, the total CO_2e emissions were 81.06 million tonnes in the high scenario, 77.13 million tonnes in the medium scenario, and 73.60 million tonnes in the low scenario. In the first 9 months of 2002, total CO_2e of the industry and construction sector was 111.79 million tons under the medium scenario, accounting for 51.6% of total CO_2e emissions. In the first 9 months of 2020, the total CO_2e was 57.69 million tons under the medium scenario, accounting for 26.8% of total CO_2e emissions.

In April 2020, because of social distancing, CO_2e emissions went down by 7.0% to 5.81 million tonnes from 6.24 million tonnes in April 2019. Upon entering the "new normal" phase, CO_2e emissions increased strongly again in June and July by 14.3% and 18.0% over the same period in 2019. In August and September 2020, CO_2e emissions decreased by 2.2% and 4.4% against the same period in 2019 due to the second wave of the pandemic occurring in Da Nang, Hoi An and Hai Duong.

Transport sector

The transport sector was directly affected by social distancing as this sector consumes 97.3% of the total petroleum and 73.5% of the total oil in the whole economy. In 2019, total CO_2e emissions by this sector was 42.91 million tonnes in the high scenario, 40.92 million tonnes in the medium scenario, and 38.02 million tonnes in the low scenario. The total emissions in the first 9 months of 2020 was 30.87 million tons of CO_2e under the medium scenario, accounting for 14.3% of total CO_2e emissions. In April 2020, because of social distancing, CO_2e emissions went down to 3.07 million tonnes from 3.37 million tonnes in April 2019, meaning a decline of 9.0% against the same period in 2019 and of 12.1% over March 2020. In August, CO_2e emissions by the sector remained unchanged against the same period but went down by 2.7% compared with July 2020.

Service sector

In this sector, greenhouse gas emissions were limited, accounting for 2.3% of total CO_2e in the first 9 months of 2020 because the share of fossil fuels consumed by the sector is only 5.6% of the total oil consumed, 0.2% of the total gas, and 1.9% of the total coal. In April 2020, because of social distancing, CO_2e emissions fell to 0.51 million tonnes, compared with 0.54 million tonnes in April 2019, a decline of 4.7%.

Agriculture sector

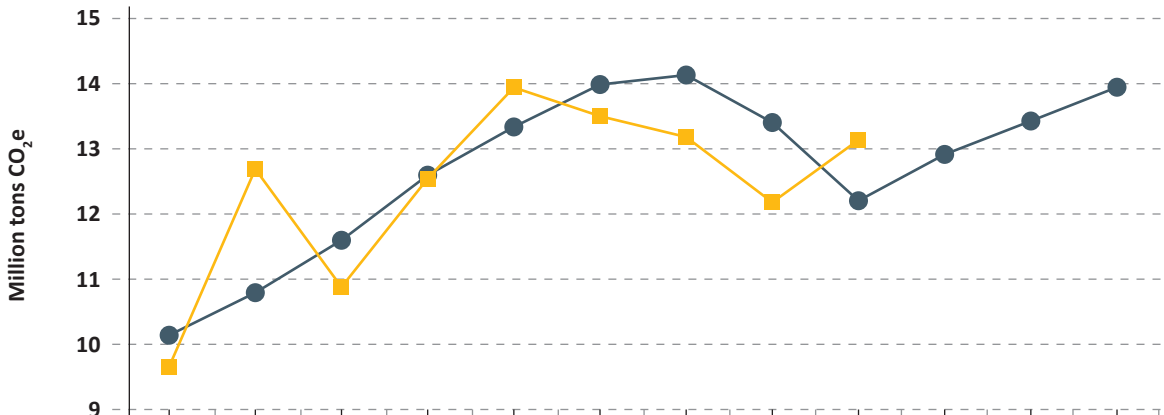
GHG emissions by the agricultural sector are insignificant, accounting for only 0.7% of the total CO_2e in the first 9 months of 2020, because this sector only used 2.7% of the total petroleum consumed, and 3.7% of the total gas. In April 2020, because of social distancing, CO_2e emissions decreased to 0.150 million tonnes, compared with 0.153 million tonnes in April 2019, a decline of 2.0%.

Households

Greenhouse gas emissions by households accounted for 4.4% of the total CO_2e in the first 9 months of 2020. Gas is the fossil fuel most consumed by the sector, while its emissions factor

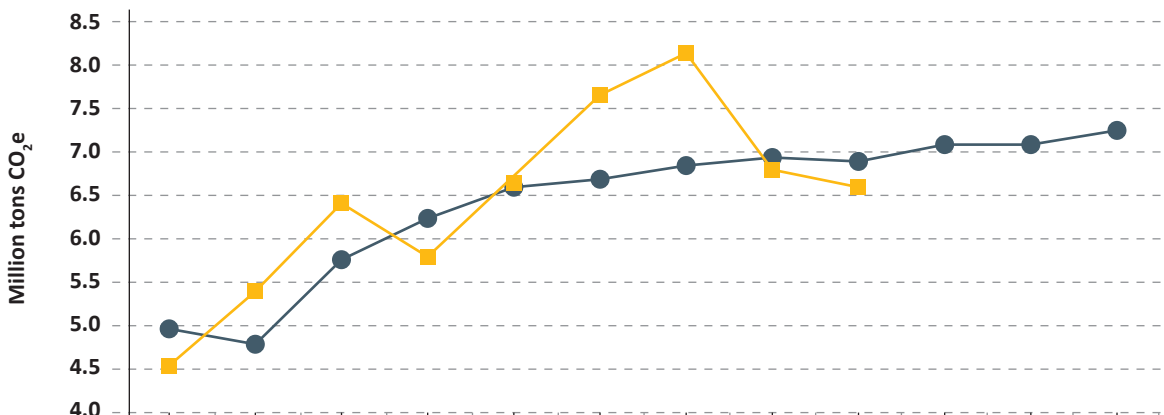
is the lowest. Specifically, the share of gas consumption by households is 28.5% of the total gas consumption in the economy, with shares of oil and coal at 0.2 % and 3.9%, respectively. Unlike other economic sectors, in April 2020, due to the implementation of social distancing, people spent more time at home, leading to an increase of the total CO_2e from households to 1.05 million tonnes compared with 1.03 million tonnes in April 2019, equal to a 1.4% rise.

CO_2e emissions of the energy sector



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	10.13	10.83	11.60	12.62	13.33	13.98	14.14	13.41	12.20	12.92	13.44	13.94
2020	9.68	12.67	10.87	12.58	13.95	13.51	13.19	12.18	13.17			

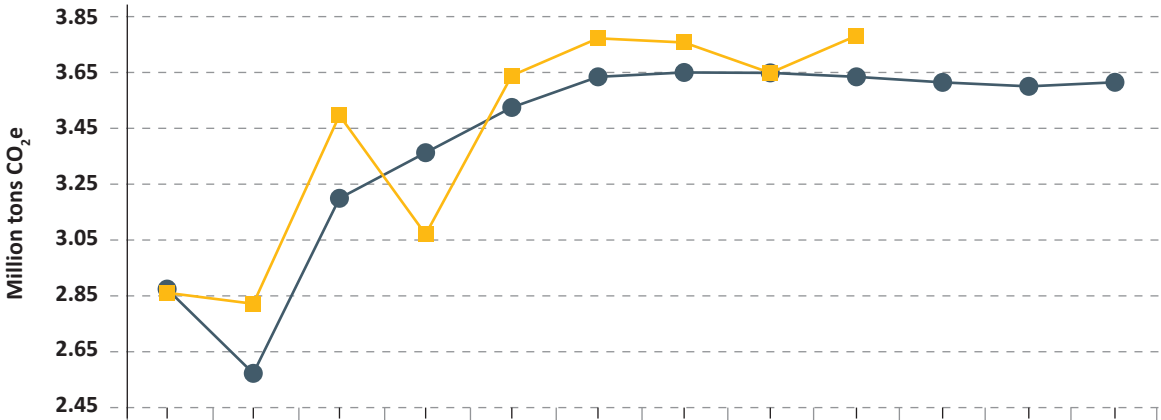
CO_2e emissions of the industry and construction sector



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	4.98	4.79	5.76	6.24	6.59	6.69	6.85	6.95	6.91	7.07	7.06	7.22
2020	4.54	5.41	6.39	5.81	6.63	7.64	8.12	6.80	6.61			

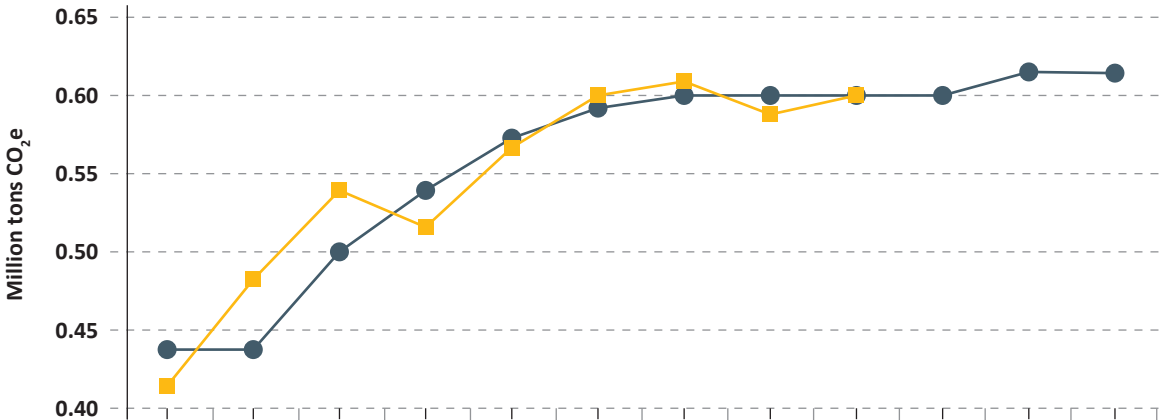
Figure 20: Greenhouse gas emissions by economic sector (medium scenario)

CO_2e emissions of the transport sector



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	2.86	2.57	3.20	3.37	3.52	3.63	3.65	3.65	3.63	3.62	3.60	3.61
2020	2.88	2.82	3.49	3.07	3.65	3.78	3.76	3.65	3.78			

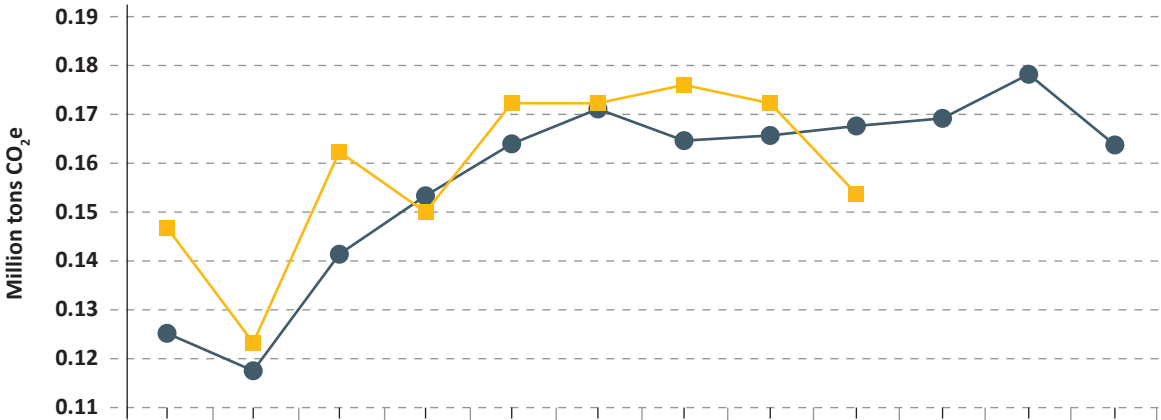
CO_2e emissions of the service sector (excluding transport)



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	0.44	0.44	0.50	0.54	0.57	0.59	0.60	0.60	0.60	0.60	0.62	0.62
2020	0.42	0.48	0.54	0.51	0.57	0.60	0.61	0.59	0.60			

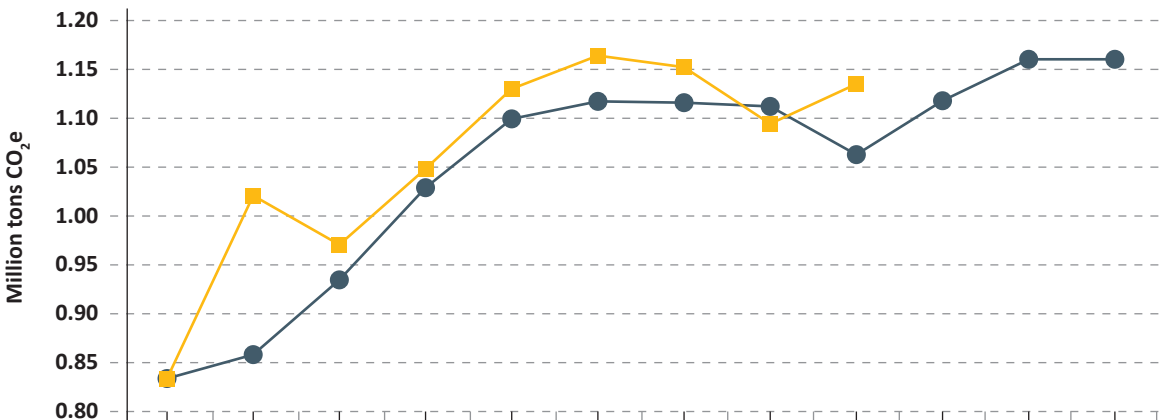
Figure 20: Greenhouse gas emissions by economic sector (medium scenario) *(continued)*

CO_2e emissions of the agriculture sector



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	0.125	0.118	0.141	0.153	0.164	0.171	0.165	0.166	0.168	0.169	0.178	0.163
2020	0.146	0.123	0.162	0.150	0.172	0.172	0.176	0.172	0.154			

CO_2e emissions of the houshold sector (excluding transport)



	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019	0.83	0.86	0.93	1.03	1.10	1.12	1.11	1.11	1.06	1.12	1.16	1.16
2020	0.83	1.02	0.97	1.05	1.13	1.16	1.15	1.09	1.13			

Figure 20: Greenhouse gas emissions by economic sector (medium scenario)

Source: Calculated by the authors based on GSO data

3.2.2.4. Impacts of social distancing policies on greenhouse gas emissions by risk groups

Table 13 below illustrates changes in CO_2e emissions in April 2020 by type of energy and risk group. It is possible to observe a clear difference in the extent of impacts of the nationwide lockdown between the group of high-risk localities (12 provinces, cities) and the moderate-risk (15 provinces) and low-risk groups (35 provinces). However, the distinction is not so obvious with regards to the moderate and low-risk groups, because of the different number of provinces in each group (15 vs. 35) and the insignificant variations in their respective social distancing requirements, specifically:

Total CO_2e emissions in April 2002 were 23.1 million tonnes, equivalent to a decline of 0.87 million tonnes over the same period in 2019, of which the share of the high-risk group was 61.4%, the moderate-risk group 1.8%, and the low-risk group 36.8%. In particular, CO_2e emissions from petroleum were down by 10.5% to 0.79 million tonnes in April 2020 compared to 0.89 million tonnes in April 2019, of which the high-risk group contributed 61.4%, with the numbers for the remaining two groups 15.6% and 15.9%, respectively.

Compared to April 2019, total CO_2e emissions from petroleum in April 2020 by the high-risk group were down by 12.7%, and the corresponding numbers for moderate and low-risk groups were 7.09% and 8.90%. Over the same period, total CO_2e emissions from oil by the three groups decreased by 9.64%, 3.44% and 7.99%. The differences between emissions from petroleum and oil were attributable to the fact that 97.3% of petroleum was used in the transport sector, while the number for oil was 73.5%.

Amongst fossil fuels, gas experienced the biggest drop despite being indirectly affected by social distancing policies. However, as emissions from gas consumption account for only 4.8% of total greenhouse gas emissions, the changes did not have a significant effect. In April 2020, CO_2e emissions from gas were 0.9 million tonnes, which was down by 0.26 million tonnes over April 2019. Out of the decreased amount, the share of the high-risk group was 44.1%, the moderate group 23.6% and the low-risk group 32.3%.

Table 13: CO_2e emissions by type of energy and risk group

No.	Risk groups	Fossil fuel					Electricity grid
		Total	Petroleum	Oil	Gas	Coal	
I	**Total emissions in April 2019 (million tonnes of CO_2e)**						
1.1	Nationwide	23.97	0.89	3.39	1.16	18.53	16.27
1.2	Group of high-risk localities (12 provinces)	10.13	0.52	1.98	0.50	7.14	5.38
1.3	Group of moderate localities (15 provinces)	6.62	0.20	0.77	0.29	5.35	3.84
1.4	Group of low-risk localities (35 provinces)	7.22	0.17	0.64	0.37	6.04	7.05
II	**Total emissions in April 2020 (million tonnes of CO_2e)**						
2.1	Nationwide	23.10	0.79	3.12	0.90	18.29	15.00
2.2	Group of high-risk localities (12 provinces)	9.60	0.45	1.79	0.39	6.97	4.99
2.3	Group of moderate localities (15 provinces)	6.60	0.19	0.75	0.23	5.44	3.55
2.4	Group of low-risk localities (35 provinces)	6.90	0.15	0.59	0.29	5.87	6.46
III	**Comparison of emissions in April 2019 and April 2020 (%)**						
3.1	Nationwide	-3.63	-10.45	-7.92	-22.61	-1.33	-7.76
3.2	Group of high-risk localities (12 provinces)	-5.27	-12.27	-9.64	-23.11	-2.30	-7.17
3.3	Group of moderate localities (15 provinces)	-0.24	-7.09	-3.44	-21.45	1.63	-7.55
3.4	Group of low-risk localities (35 provinces)	-4.43	-8.90	-7.99	-22.82	-2.81	-8.32

Source: Calculated by the authors based on GSO data

PART 4

Policy recommendations for the "new normal" phase

4.1. Experiences of green growth-oriented policy responses in other global crises

There are numerous approaches to achieve the objective of transforming towards a green and sustainable growth model. Enhanced green investment and green public procurement are viewed as important measures by many countries to implement their commitments on greenhouse gas emissions reduction, aiming at a green and sustainable economy.

When the Covid-19 pandemic struck, social distancing and lockdowns were implemented by all countries, which led to disruptions in global value chains, and negative impacts on international trade and socio-economic conditions. In this context, different stimulus packages have been promoted in different countries to foster economic recovery and support people impacted by the pandemic. As the dominant buyer in the market, green procurement by governments lead the process of green market formulation and development. For this reason, economic recovery packages implemented by governments should focus on fostering green public procurement and let the market make appropriate decisions on investment in manufacturing and supplying green products. In fact, prices of renewable energy are trending downwards and thus becoming more competitive. Because of this, it is quite appropriate and practical for governments to channel investment and support from economic stimulus packages to the prioritised sector of renewable energy.

Unlike other previous economic crises, the prevailing crisis is caused by shocks from disruptions to global supply chains. However, experiences in designing economic recovery packages show that green stimulus measures normally have greater advantages over traditional fiscal stimulus packages both in the short and long run, as they help to boost green and sustainable economic growth and job creation while contributing to a reduction in greenhouse gas emissions. A number of studies have verified the economic benefits of green transformation,

including impacts on jobs and employment. According to Garret-Peltier (2017)[53], in the US, 2.65 new jobs are created for every USD 1 million invested in fossil fuel projects, while the numbers for renewable energy and energy efficiency projects are 7.49 and 7.72, respectively. This also means that investment in renewable energy could create as much as 3 times more new jobs than investment in fossil fuels. Another study by Nair and Rutt (2009)[54] estimated that from 500 to 1,000 new jobs are created for every USD 1 million invested in the forestry sector in less developed countries.

Green economic recovery packages that focus on renewable energy could bring huge benefits in short and long run while ensuring commitments to reduce greenhouse gas emissions are met.

In the short term, renewable energy creates more direct jobs during manufacturing and distribution, and construction and installation stages. Thus, investment in renewable energy sectors would increase the demand for goods and services by other industries/sectors in the supply chain that support the creation of indirect jobs and a short-term increase in GDP multiplier. In the long term, renewable energy requires less labour for operation and maintenance compared to fossil fuels. Labour is freed up as the economy returns to capacity, allowing for more efficient use of labour in the long term. Experiences from previous policy responses to health crises and natural disasters also show that investment in infrastructure, health care services, clean water, and sanitation are effective in immediate job creation during crises. The USD 21 billion invested as part of the U.S. green recovery package during the 2008-2009 global financial crisis produced an economic output equivalent to 1.2 to 2.1 times the value for the period 2009–2011. (GGGI, 2020)[55].

Green recovery is the key to ensuring growth and sustainable development after the Covid-19 pandemic. Global examples show that climate change and other green themes should be at the centre of Covid-19 policy responses in order to facilitate economic recovery.

A recent study by Dagnet and Jaeger (2020)[56] classified countries that are greening their economic recovery plans into 3 groups, specifically:

- The European Union is at the greener end of the spectrum. About 30% of its EUR 750 billion (USD 891 billion) EU-wide stimulus plan and its EUR 1.1 trillion (USD 1.3 trillion) 2021-2027 budget will be dedicated to climate-friendly investments. Among individual EU countries, France and Germany have announced the green measures.

- The United States is at the polluting end of the spectrum. It announced around USD 3 trillion in fiscal support - the most of any country - without any consideration of sustainability. Instead, the Trump administration has provided support to the fossil fuel industry and pushed back efforts for environmental protection.

- Most other economies are somewhere in between. For example, South Korea, China and India are all making green investments but are also supporting coal as part of their economic recovery plans. Even some countries in Europe provided early bail-out funds (e.g. to the aviation sector) without any conditions.

To date, most funds have been spent and committed in developed economies. In June 2020, UNCTAD warned that developing countries would need an additional USD 2.5 trillion in overall economic support to overcome the coronavirus crisis. The pandemic has impacted least developed countries (LDCs) and small island states

[53] Garret-Peltier. H. (2017). Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model. Economic Modelling 61, (February 2017): 439-447, https://doi.org/10.1016/j.econmod.2016.11.012

[54] C.T.S. Nair and R. Rutt. Creating forestry jobs to boost the economy and build a green future, 20 March 2009, http://www.fao.org/3/i1025e/i1025e02.htm

[55] GGGI (2020). Achieving Green Growth and Climate Action Post-Covid-19. GGGI Technical Report No. 13.

[56] Dagnet. Y, and Jaeger. J. (2020), Not Enough Climate Action In Stimulus Plans. Https://www.wri.org/Blog/2020/09/Coronavirus-Green-Economic-Recovery

disproportionately. Despite the emergence of regional and international relief funds, more must be done. UN Secretary-General, Antonio Guterres, has urged the world's richest countries to show more solidarity.

Below are some examples of support packages implemented by countries and regions around the world[57].

+ The European Union

Of the total budget of EUR 1,824.3 billion for the Multiannual Financial Framework 2021-2027, the EU plans to spend EUR 750 billion on the recovery package "NextGenerationEU", equivalent to 41.1%. The NextGenerationEU is a temporary recovery instrument, the centre of which is the Recovery and Resilience Facility (RRF). The RRF is allocated EUR 672.5 billion, of which EUR 360 billion is in loans and EUR 321.5 billion in grants. The RRF plays a vital role in mitigating the economic and social impact of the coronavirus pandemic and in making European economies and societies more sustainable, resilient and better prepared for the green and digital transitions. Moreover, the NextGenerationEU also contributes additional funds to other European programs or funds such as ReactEU (EUR 47.5 billion), Horizon Europe (EUR 5 billion), InvestEU (EUR 5.6 billion), Rural Development (EUR 7.5 billion), the Just Transition Fund – JTF (EUR 10 billion) and RescEU (EUR 1.9 billion) (EU, 2020)[58].

+ Germany

A EUR 80 billion (USD 90.4 billion) recovery program focuses on innovation, sustainability, and support for municipalities. The German program targets clean energy infrastructure digitalisation and green recovery in municipalities, for example, supporting public transport and cycle paths.

+ Norway

A NOK 3.6 billion (USD 370 million) package for green industries has been introduced to support projects implementing green technologies, including hydrogen, battery technology, offshore wind and low-emissions shipping.

+ Luxembourg

Green subsidies for households and the auto industry are provided by the government up to EUR 30,000/household (USD 33,800) and EUR 8,000/electric car (USD 9,017). The government also helps households willing to make homes more energy efficient, supporting the installation of insulation and the use of renewable energies. In addition, the government subsidises the purchase of electric vehicles.

+ The United Kingdom

The Clean Growth Fund aims to mobilise private sector funds to support green start-ups, develop clean technology, and achieve net zero emissions by 2050. With a budget of GBP 40 million (USD 50.54 million), the Clean Growth Fund is quipped to "drive a green and resilient economic recovery".

In addition, a GBP 283 million (USD 357.57 million) stimulus package for the transport sector provides support to restore bus and tram services and improve safety during the pandemic.

+ Republic of Korea

New Deal Korean style valued at W 76 trillion (USD 62 billion).

The government's plans include a Digital New Deal, a Green New Deal and measures to boost job creation. The "Green New Deal" will invest W 12.9 trillion (USD 10.5 billion) from 2020-2022 to support the development of green infrastructure, energy efficiency, and renewable energy (ASEAN Catalytic Green Finance Facility, 2020).

[57] Asean Catalytic Green Finance Facility. (2020). Responses to Post-Covid-19 Green Recovery

[58] EU. (2020). Recovery plan for Europe. Retrieved from https://ec.europa.eu/info/strategy/recovery-plan-europe_en#nextgenerationeu

Table 14: 10 major projects to enhance post Covid-19 recovery in the Republic of Korea

Projects	Total investment (fiscal investment) (trillion won)		Jobs created (thousand)
	2020 - 2022	2020 - 2025	2020 - 2025
Total (10 projects)	43.4 (29.5)	100.9 (68.7)	1.110
I. Digital New Deal			
1.1. Data dam	8.5 (7.1)	18.1 (15.5)	389
1.2. AI	2.5 (2.5)	9.7 (9.7)	91
1.3. Smart healthcare	0.1 (0.1)	0.2 (0.1)	2
II. Digital-Green Industrial Convergence			
2.1. Green and smart schools	5.3 (1.1)	15.3 (3.4)	124
2.2. Digital twins	0.5 (0.5)	1.8 (1.5)	16
2.3. Make SOC digital	8.2 (5.5)	14.8 (10.0)	143
2.4. Smart and green industrial complexes	2.1 (1.6)	4.0 (3.2)	33
III. Green New Deal			
3.1. Green remodelling	3.1 (1.8)	5.4 (3.0)	124
3.2. Green energy production	4.5 (3.7)	11.3 (9.2)	38
3.3. Eco-friendly vehicles	8.6 (5.6)	20.3 (13.1)	151

Source: Ministry of Economy and Finance, South Korea (2020)[59]

It is possible to notice a clear distinction between developed and developing countries in terms of their solutions to promote green investment as part of their economic recovery stimulus packages. Developed countries support green investment in various sectors/fields, focusing on prioritised sectors, such as energy efficiency, renewable electricity, automobiles, public transportation, electric vehicles, hydrogen, etc. Developing and less developed countries tend to channel their support into selected sectors/fields only; e.g. tree planting, renewable electricity, automotive, oil and gas (Table 15).

[59] Ministry of Economy and Finance, South Korea. (2020). Government Announces Overview Of Korean New Deal. Accessed on 14.07.2020 at https://english.moef.go.kr/pc/selectTbPressCenterDtl.do?boardCd=N0001&seq=4940

Table 15: Prioritised sectors/fields in green economic recovery stimulus packages by selected

No.	Sector/sub-sector	Developed countries														Developing countries				
		Denmark	EU	Finland	France	Germany	Ireland	Italy	Norway	Spain	Sweden	UK	Canada	New Zealand	South Korea	India	Viet Nam	Chile	Colombia	Nigeria
I	**Energy**	**x**	**x**	**x**	**x**	**x**	**x**		**x**			**x**	**x**		**x**				**x**	**x**
1	Renewable electricity	x	x	x	x	x	x		x			x	x		x				x	x
2	Carbon capture and storage	x																		
3	Hydrogen	x			x	x			x			x			x					
4	Nuclear											x								
II	**Agriculture**		**x**		**x**													**x**		
III	**Buildings**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**		**x**	**x**	**x**	**x**	**x**			**x**		
1	Energy efficiency	x	x	x	x	x	x	x			x	x	x	x				x		
2	Adaptation					x												x		
3	Construction			x																
4	Heating			x																
IV	**Green jobs**		**x**											**x**						
V	**Industry**	**x**		**x**	**x**						**x**	**x**								
1	Circular economy	x		x	x						x									
2	Steel											x								
VI	**Nature**			**x**		**x**	**x**				**x**	**x**				**x**	**x**		**x**	
VII	**R & D**		**x**			**x**	**x**		**x**	**x**										**x**
VIII	**Transport**				**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**		**x**	**x**	**x**				**x**
1	Automotive				x	x	x	x	x	x	x	x		x		x				x
2	Aviation				x	x														
3	Cycling and walking				x		x	x												
4	Electric vehicles				x	x		x	x	x	x	x								
5	Car tax					x														
6	Public transport				x	x	x	x		x	x			x	x					
7	Shipping					x			x											
8	Oil and gas															x				x
9	Adaptation						x													
10	R & D									x										

Source: Compiled by the authors from the Carbon Brief Ltd (2020)[60]

[60] Carbon Brief Ltd. (2020). The world's 'green recovery' plans to cut emissions after coronavirus

4.2. Policy recommendations to ensure crisis adaptation and green growth

The experiences of countries around the world show that green factors have been integrated into economic recovery stimulus packages in accordance with a strategic approach, focusing on solutions to promote renewable energy development, energy efficiency improvement, public transportation, electric vehicles, hydrogen fuel and tree planting, etc. This will help to ensure the realisation of the dual goals of fostering economic recovery and creating green jobs and reducing greenhouse gas emissions. Accordingly, the solutions that the government should consider are as follows:

- The government should give priority to channelling its economic recovery support packages to investment in renewable energy and energy efficiency. This approach will contribute to enhancing production and trade recovery, boost consumption of goods and services, create direct and indirect jobs, increase GDP in the short run, and at the same time facilitate a switch to greener production and consumption, thus meeting Viet Nam's GHG reduction commitments. In particular, this would help to achieve the objective of increasing the share of RE in the total primary energy supply to around 15%-20% in 2030, and to 25%-30% in 2045 as mentioned in Resolution No. 55-NQ/TW dated 11 February 2020 by the Politburo on the orientation of the National Energy Development Strategy of Vietnam to 2030, with a vision to 2045. Given the context of RE prices decreasing sharply and RE becoming more competitive thanks to continuous technological upgrades, the recommendation to target economic recovery stimulus packages on RE is relevant to support both post Covid-19 economic recovery and implementation of the Paris Agreement.

- Mechanisms designed to support economic recovery should aim at long-term goals of green and inclusive growth and should especially focus on vulnerable groups instead of providing widespread support. It is also recommended that subsidies reducing environment tax levied on aviation fuel or electricity prices for all end-users be replaced with greener alternatives, such as interest rate subsidies, loan extensions, or vouchers/coupons for people to buy essential items, especially people from groups vulnerable to the impacts of the pandemic. Although subsidies through petroleum and electricity prices have little impact on the increase in consumption, they are contrary to efforts and commitments to reduce greenhouse gas emissions that Vietnam has agreed to.

- Policies on deferral of tax and land should also focus more on green production and consumption instead of being applicable without any "green" conditions to all enterprises, households and individuals directly affected by Covid-19 according to existing stipulations[61].

- To accelerate implementation of the 1 Billion Green Trees Program announced by the Prime Minister.

In addition to the green support packages, institutional modernisation would also contribute to the development of green energy.

- To mainstream elements of the environment and climate change in public investment projects with a focus on projects that promote sustainable development and green growth. To prioritise budget allocation for sustainable development and green growth objectives.

- To foster development of the competition-based electricity market and to promote an auctioning

[61] Decree No. 41/2020/ND-CP dated 08.04.2020 on tax and land rent deferral is widely applicable to almost all enterprises, organisations, households and individuals engaged in business and production activities which are directly affected by the Covid-19 pandemic; Decree No. 114/2020/ND-CP on detailing implementation of the National Assembly's Resolution No. 116/2020/QH14 on reduction of enterprise income tax payable in 2020 for enterprises, cooperatives, non-business units and other organisations; Directive No. 11/CT-TTg dated 04.03.2020 by the Prime Minister on urgent tasks and solutions to remove difficulties in business activities to ensure social security and response to the Covid-19 pandemic, according to which a credit package of VND 250,000 billion has been assigned to support enterprises affected by Covid-19 with preferential rates 0.5%-1.5% lower than normal lending rates (Circular No. 01/2020/TT-NHNN by the State Bank of Viet Nam on debt rescheduling, exemption or reduction of interest and fees, retention of debt category by credit institutions and foreign bank branches to assist borrowers affected by Covid-19.

mechanism for renewable energy in order to formulate a competitive green power market.

- To enhance implementation of solutions to develop green bonds and green securities. To publish a manual on environmental and social risk assessment, technology evaluation, and green credit assessment procedures to promote green banking with focus on renewable energy and energy efficiency.

- To enhance the development of e-government, application of the internet, AI, IT, Big data, and IoT in the provision of public services (e.g. online public services, online conferencing, remote medical examinations through Telehealth, etc.); to encourage the new approach of the circular economy (e.g. fostering of eco-industrial parks, re-using sewage, waste-to-energy, material management).

- Promote information exchange among countries in the region to better respond to future crises similar to the COVID-19 pandemic or clean water shortages (information sharing between countries of the Mekong basin); to comply with international commitments, especially the Paris Agreement on GHG emissions reduction, the United Nations Framework Convention on Climate Change, cross-border pollution, and international conventions on protection of the Earth's atmosphere, oceans and biodiversity.

However, the economic recovery stimulus packages implemented by many countries are to some extent only temporary solutions. The most fundamental and vital solution would be to prevent and control outbreaks of pandemics. Viet Nam's response to the COVID-19 pandemic shows that it is necessary to have decisive and aggressive policies to control outbreaks from an early stage in order to limit the impacts on socio-economic development and the objectives of green and sustainable growth. Thanks to this approach, Viet Nam has successfully controlled two waves of Covid-19 and is one of the few countries that has achieved positive GDP growth in the first nine months of 2020, although this is the lowest growth recorded in the past 10 years due to disrupted global value chains. At the same time, despite launching huge economic recovery packages, many other countries are experiencing negative economic growth as the result of ineffective pandemic control. For this reason, the most fundamental solution for all countries is to prevent and control pandemics so that there will be no need for further stimulus packages in the future.

ANNEXES

Annex 1. Output and structure of energy consumption by sector

a) Energy sector

	Energy	Unit	Q1	Q2	Q3	Q4	Total
2019	Gasoline	*1000 m³*					
	Oil	*1000 tonnes*	211	258	266	268	1,002
	Gas	*million m³*	158	191	211	204	764
	Coal	*1000 tonnes*	10,938	13,423	13,341	13,533	51,235
	Electricity	*million kWh*	1,154	1,371	1,392	1,257	5,174
2020	Gasoline	*1000 m³*					
	Oil	*1000 tonnes*	227	257	269		753
	Gas	*million m³*	145	163	200		509
	Coal	*1000 tonnes*	11,111	13,417	12,867		37,396
	Electricity	*million kWh*	1,206	1,332	1,411		3,948
Y.O.Y growth rate	Gasoline	*%*					
	Oil	*%*	7.63	-0.47	1.37		2.84
	Gas	*%*	-7.23	-14.69	-5.36		-9.09
	Coal	*%*	1.62	0.02	-3.14		-0.50
	Electricity	*%*	5.25	-3.01	1.96		1.40

b) Industry

	Energy	Unit	Q1	Q2	Q3	Q4	Total
2019	Gasoline	*1000 m³*					
	Oil	*1000 tonnes*	262	296	311	354	1,224
	Gas	*million m³*	1,399	1,720	1,916	1,780	6,815
	Coal	*1000 tonnes*	4,428	5,619	5,921	6,161	22,129
	Electricity	*million kWh*	26,218	31,429	31,766	28,903	118,316
2020	Gasoline	*1000 m³*					
	Oil	*1000 tonnes*	283	282	312		877
	Gas	*million m³*	1,217	1,558	1,957		4,733
	Coal	*1000 tonnes*	4,749	5,876	6,160		16,785
	Electricity	*million kWh*	27,484	30,665	33,197		91,347
Y.O.Y growth rate	Gasoline	*%*					
	Oil	*%*	8.03	-4.69	0.23		1.19
	Gas	*%*	-11.00	-9.85	2.23		-6.21
	Coal	*%*	6.77	4.37	4.14		5.09
	Electricity	*%*	5.44	-2.60	4.61		2.48

c) Transportation

	Energy	Unit	Q1	Q2	Q3	Q4	Total
2019	Gasoline	*1000 m³*	987	1,183	1,263	1,080	4,512
	Oil	*1000 tonnes*	1,982	2,431	2,501	2,594	9,508
	Gas	*million m³*	54	66	75	78	273
	Coal	*1000 tonnes*					
	Electricity	*million kWh*	809	961	970	885	3,625
2020	Gasoline	*1000 m³*	1,039	1,233	1,288		3,560
	Oil	*1000 tonnes*	2,123	2,387	2,557		7,067
	Gas	*million m³*	45	64	89		198
	Coal	*1000 tonnes*					
	Electricity	*million kWh*	843	940	979		2,762
Y.O.Y growth rate	Gasoline	*%*	5.41	3.98	2.10		3.83
	Oil	*%*	7.11	-1.94	2.23		2.46
	Gas	*%*	-16.25	-4.74	19.35		-0.55
	Coal	*%*					
	Electricity	*%*	4.78	-2.34	1.20		1.21

d) Service sector (excluding transportation)

	Energy	Unit	Q1	Q2	Q3	Q4	Total
2019	Gasoline	*1000 m³*	987	1,183	1,263	1,080	4,512
	Oil	*1000 tonnes*	1,982	2,431	2,501	2,594	9,508
	Gas	*million m³*	54	66	75	78	273
	Coal	*1000 tonnes*					
	Electricity	*million kWh*	809	961	970	885	3,625
2020	Gasoline	*1000 m³*	1,039	1,233	1,288		3,560
	Oil	*1000 tonnes*	2,123	2,387	2,557		7,067
	Gas	*million m³*	45	64	89		198
	Coal	*1000 tonnes*					
	Electricity	*million kWh*	843	940	979		2,762
Y.O.Y growth rate	Gasoline	*%*	5.41	3.98	2.10		3.83
	Oil	*%*	7.11	-1.94	2.23		2.46
	Gas	*%*	-16.25	-4.74	19.35		-0.55
	Coal	*%*					
	Electricity	*%*	4.78	-2.34	1.20		1.21

e) Agriculture

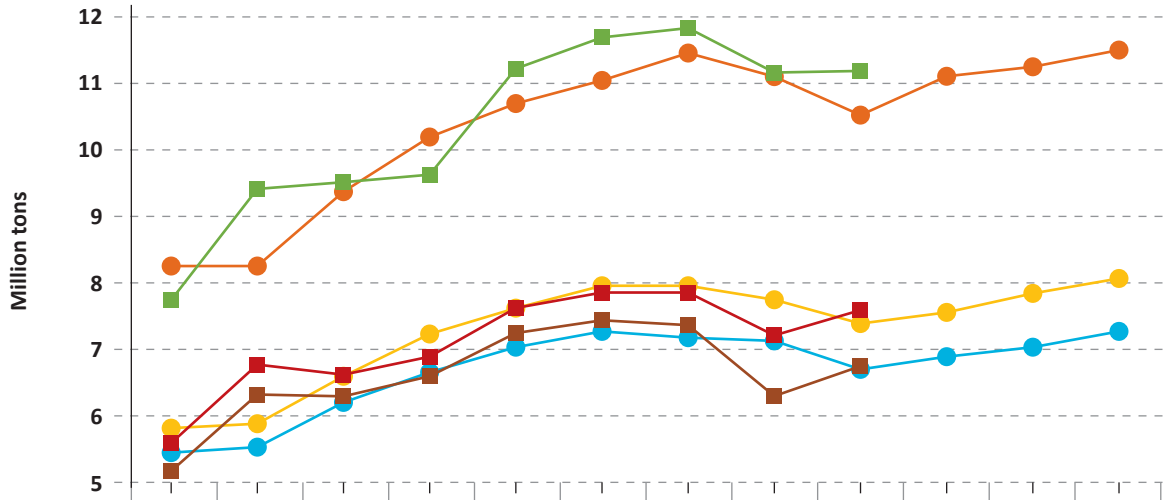
	Energy	Unit	Q1	Q2	Q3	Q4	Total
2019	Gasoline	*1000 m³*	28	33	35	30	126
	Oil	*1000 tonnes*	97	123	123	131	474
	Gas	*million m³*					
	Coal	*1000 tonnes*	4	7	9	9	29
	Electricity	*million kWh*	1,115	1,332	1,343	1,217	5,007
2020	Gasoline	*1000 m³*	29	34	36		99
	Oil	*1000 tonnes*	110	124	124		358
	Gas	*million m³*					
	Coal	*1000 tonnes*	5	7	9		21
	Electricity	*million kWh*	1,161	1,302	1,390		3,852
Y.O.Y growth rate	Gasoline	*%*	5.25	2.84	2.00		3.36
	Oil	*%*	13.41	0.67	0.71		4.93
	Gas	*%*					
	Coal	*%*	13.28	-1.42	0.83		4.23
	Electricity	*%*	4.70	-2.47	4.21		2.15

f) Households

	Energy	Unit	Q1	Q2	Q3	Q4	Total
2019	Gasoline	*1000 m³*					
	Oil	*1000 tonnes*	6	7	8	7	28
	Gas	*million m³*	628	717	756	781	2,881
	Coal	*1000 tonnes*	608	781	776	815	2,979
	Electricity	*million kWh*	16,687	19,832	20,285	18,273	75,077
2020	Gasoline	*1000 m³*					
	Oil	*1000 tonnes*	6	7	8		21
	Gas	*million m³*	662	736	781		2,178
	Coal	*1000 tonnes*	656	800	794		2,250
	Electricity	*million kWh*	17,424	19,385	20,103		56,913
Y.O.Y growth rate	Gasoline	*%*					
	Oil	*%*	4.25	1.54	-0.34		1.82
	Gas	*%*	5.45	2.58	3.26		3.76
	Coal	*%*	7.89	2.46	2.47		4.27
	Electricity	*%*	5.19	-2.42	-0.92		0.62

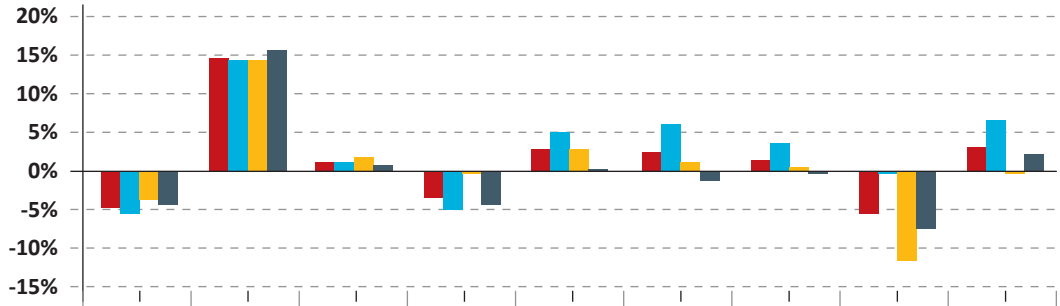
Annex 2. GHG emissions by risk groups

CO_2e emissions by risk groups



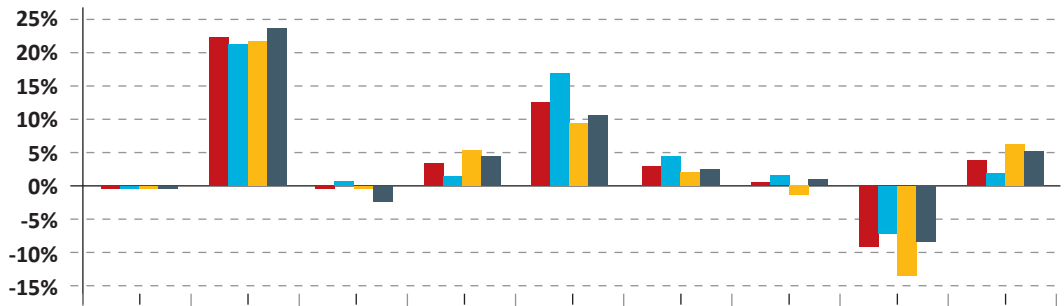
	Jan. (Tết)	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Normal		Limited social distancing	National social distancing	New normal							
2019 High-risk	8.22	8.21	9.38	10.13	10.68	11.03	11.42	11.04	10.47	11.10	11.21	11.48
2019 Moderate-risk	5.39	5.52	6.18	6.62	7.03	7.27	7.22	7.11	6.71	6.84	7.06	7.23
2019 Low-risk	5.76	5.87	6.58	7.22	7.58	7.89	7.89	7.75	7.40	7.57	7.79	8.03
2020 High-risk	7.75	9.37	9.46	9.60	11.19	11.67	11.81	10.98	11.16			
2020 Moderate-risk	5.19	6.31	6.28	6.60	7.21	7.34	7.25	6.28	6.68			
2020 Low-risk	5.49	6.78	6.61	6.90	7.61	7.78	7.86	7.16	7.55			

Comparing the growth rate of CO_2e emissions in 2020 with the same period in 2019



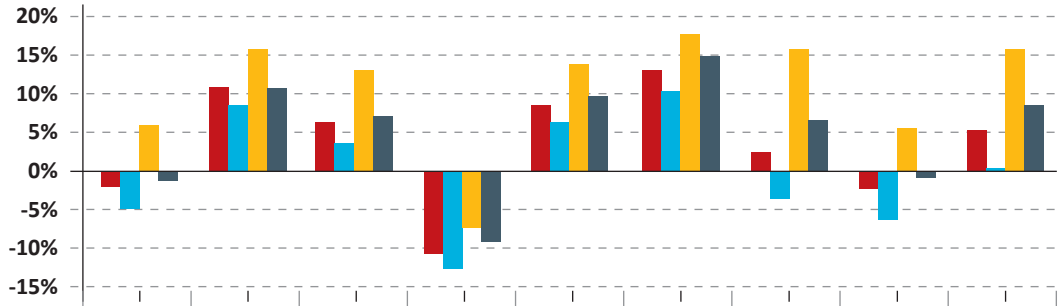
	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	-4.8	14.6	1.0	-3.6	2.9	2.3	1.5	-5.7	3.3
High-risk (12 provinces)	-5.7	14.1	0.9	-5.3	4.8	5.9	3.4	-0.5	6.7
Moderate-risk (15 provinces)	-3.7	14.3	1.6	-0.2	2.6	0.9	0.5	-11.7	-0.5
Low-risk (35 provinces)	-4.7	15.5	0.5	-4.4	0.4	-1.4	-0.4	-7.6	2.1

CO_2e emission growth rate in months in 2020



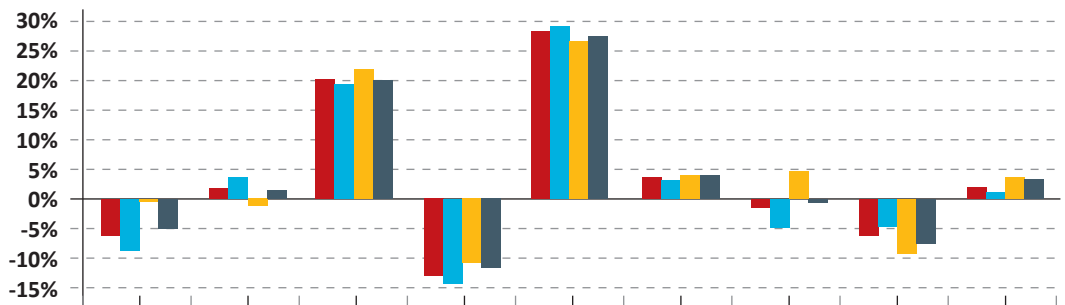
	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	-0.3	21.8	-0.4	3.3	12.6	3.0	0.5	-9.3	3.9
High-risk (12 provinces)	-0.3	20.9	1.0	1.4	16.6	4.3	1.2	-7.1	1.7
Moderate-risk (15 provinces)	-0.3	21.5	0.4	5.1	9.3	1.8	-1.3	-13.4	6.4
Low-risk (35 provinces)	-0.3	23.3	-2.5	4.4	10.3	2.2	1.0	-8.9	5.5

Comparing the growth rate of CO_2e emissions of petroleum in 2020 with the same period in 2019



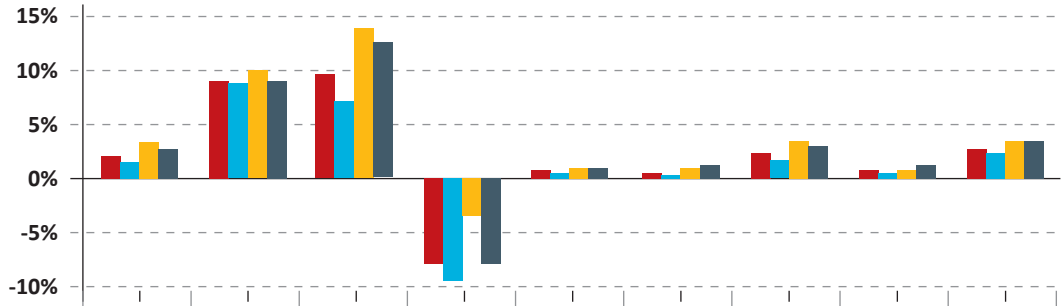
	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	-1.7	11.1	6.8	-10.5	9.0	13.4	3.0	-2.2	5.4
High-risk (12 provinces)	-4.9	9.1	4.1	-12.3	6.6	11.0	-3.2	-5.8	0.3
Moderate-risk (15 provinces)	6.3	16.3	13.6	-7.1	14.3	18.2	16.3	5.7	16.2
Low-risk (35 provinces)	-1.0	11.4	7.3	-8.9	10.1	14.9	7.1	-0.3	8.8

The growth rate of CO_2e emissions of petroleum in 2020



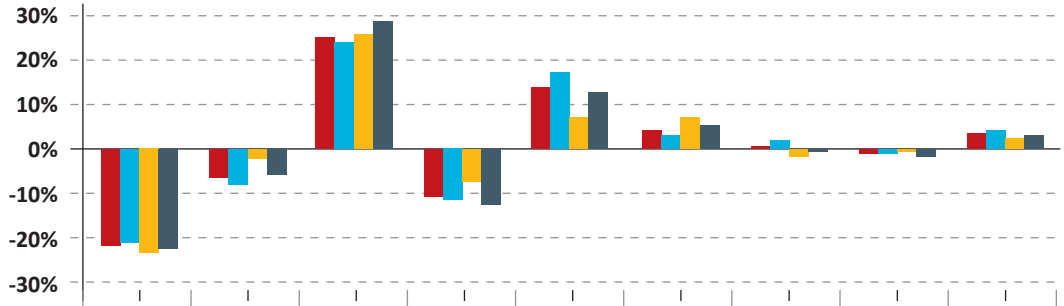
	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	-6.2	1.9	20.1	-13.1	28.4	3.6	-1.8	-6.3	2.0
High-risk (12 provinces)	-8.7	3.4	19.3	-14.4	29.4	3.2	-4.8	-4.4	1.0
Moderate-risk (15 provinces)	-0.5	-1.1	22.0	-11.1	26.9	4.1	4.2	-9.4	3.5
Low-risk (35 provinces)	-5.2	1.4	20.5	-11.8	27.4	3.9	-0.4	-7.6	2.9

Comparing the growth rate of CO_2e emissions of oil in 2020 with the same period in 2019



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	2.2	9.0	9.8	-7.9	0.7	0.6	2.3	0.7	2.8
High-risk (12 provinces)	1.5	8.7	7.3	-9.6	0.5	0.3	1.7	0.5	2.4
Moderate-risk (15 provinces)	3.4	9.8	14.0	-3.4	1.0	1.0	3.3	0.8	3.4
Low-risk (35 provinces)	2.7	8.9	12.6	-8.0	1.1	1.1	3.0	1.3	3.5

The growth rate of CO_2e emissions of oil in 2020



	Jan. (Tết)	Feb.	Mar.	Arp.	May	Jun.	Jul.	Aug.	Sep.
	Normal		Limited social distancing	National social distancing	New normal				
Total	-22.0	-6.5	25.2	-10.8	13.4	4.0	0.4	-1.3	3.1
High-risk (12 provinces)	-21.3	-8.2	23.9	-11.6	16.7	2.6	1.4	-1.6	3.7
Moderate-risk (15 provinces)	-23.7	-2.5	25.9	-7.5	6.5	6.9	-1.9	-0.3	2.1
Low-risk (35 provinces)	-22.3	-6.0	28.4	-12.6	12.3	5.2	-0.1	-1.7	2.5

Note: Growth rate in January 2020 against December 2019.

Source: Calculated by the authors from GSO data

Report

03

THE IMPACT OF TRAVEL RESTRICTION MEASURES IMPOSED DURING THE COVID-19 PANDEMIC ON THE VIETNAMESE ECONOMY

Consultants:

Dr. Nguyen Thi Luyen
MA. Pham Duc Trung
MA. Trinh Duc Chieu
MA. Pham Thi Thanh Hong
MA. Nguyen Van Thinh
MA. Nguyen Thi Minh Thu
MA. Pham Phu Minh

Hanoi, 12/2020

TABLE OF CONTENTS

LIST OF TABLES

LIST OF BOXES

TABLE OF FIGURES

INTRODUCTION

1. Background

The COVID-19 pandemic first appeared in China with the first suspected cases in Wuhan at the end of December 2019. It then spread to other countries in Asia, Europe and the rest of the world, evolving into a global pandemic.

In Viet Nam, the first two cases of COVID-19 - a Chinese father and son from Wuhan (China) - were detected in Cho Ray Hospital (Ho Chi Minh city) on 23 January 2020. Additional cases of Covid-19 were detected in Son Loi commune, Binh Xuyen district, Vinh Phuc province involved links to Wuhan. In response to the complicated developments of the Covid-19 pandemic in China, the Government of Viet Nam has imposed numerous drastic preventive measures. The Prime Minister issued Directive No. 05/CT-TTg (dated 28 January 2020) and Directive No. 06/CT-TTg (dated 31 January 2020) on measures to prevent and control development of the pandemic. Travel restrictions have been implemented, in particular the temporarily closing of border crossings and openings, and the suspension of licenses for all flights to and from Covid-19 infected areas in China. On 1 February 2020, the Prime Minister issued Decision No. 173/QD-TTg declaring the acute respiratory disease caused by the new coronavirus (nCOV) an epidemic in Viet Nam. The scope of the epidemic was identified in three provinces: Khanh Hoa, Vinh Phuc, and Thanh Hoa. Movement into and out of epidemic zones was controlled drastically. Since 7 March 2020, after the 17th case was confirmed, the number of new SARS-CoV-2 patients has been rising rapidly, causing serious concern. On 1 April 2020, Decision No. 447/QD-TTg signed by the Prime Minister declared Covid-19 a nationwide epidemic and identified the contagious disease type A caused by the novel coronavirus (SARS-CoV-2). A set of measures to prevent and counter the spread of the disease have been implemented, including travel restrictions, especially nationwide social distancing implemented in the first 15 days of April. Like many other countries, travel restrictions have become a key strategy for Viet Nam to control Covid-19.

In practice, the implementation of travel restrictions has brought positive results in disease prevention and control, helping to slow down the spread of Covid-19 in the community and shorten the duration of its economic impact. However, travel restrictions have also significantly affected socio-economic activities, especially activities that require face-to-face interaction. They hinder the organisation of production and business, interrupt supply/value chains and output markets, delay transactions, disrupt labour supply, and prevent travel, transportation and related services. All of these impacts will affect the economy as a whole.

With the global pandemic still serious and the number of deaths increasing every day, the risk of further Covid-19 outbreaks in Viet Nam is very high; however, the application of travel restrictions is not inevitable if the disease recurs. Conducted by commission of the Macroeconomic Reform/Green Programme (GIZ), this study on the "Impact of travel restrictions imposed during the Covid-19 pandemic on the Vietnamese economy" is necessary in the current context.

2. Objectives of the Study

The overall objective is to formulate a comprehensive report on the "Impact of travel restrictions imposed during the Covid-19 pandemic on the Vietnamese economy" in order to provide useful inputs for future policy discussion, consultation and adjustments to minimise the negative impacts of travel restriction measures as well as to support the Vietnamese economy to recover and grow in the post-pandemic period.

The specific objectives are: Firstly, to systematise Viet Nam's travel restriction measures; Secondly, to evaluate the current impacts of travel restrictions on the whole economy and selected economic sectors; Thirdly, to estimate the future impacts of travel restrictions on the whole economy and selected economic sectors; and Fourthly, to provide policy recommendations to minimise the negative impacts of travel restrictions in the coming time.

3. Scope of the Study

In terms of geographical location: Viet Nam.

In terms of time: the current impacts in the first 9 months of 2020 and estimates for the whole of 2020.

In terms of content: This study focuses on the channels and mechanisms through which travel restrictions have impacted the whole economy, focusing on selected economic sectors (manufacturing, agriculture, import/export, investment, transportation and tourism).

4. Approach and Methodology

Due to limited time and data, the impacts of travel restrictions will be explained through a review and comparison of data for the same period in 2020 and 2019.

The main study method includes a desk study and qualitative research. Case studies are used in specific economic sectors.

The databases used in this report are mainly from the General Statistics Office and relevant state agencies. The report uses relevant research results from various organisations, individuals and agencies.

5. Structure of the Report

In addition to an introduction and conclusion, the report consists of three parts, as follows:

Part 1. Overview of travel restriction measures taken by the Vietnamese Government during the Covid-19 epidemic.

Part 2. Impacts of imposed travel restrictions on selected economic sectors and on the economy as a whole.

Part 3. Estimation/projection of impacts of travel restriction measures in the coming time and policy recommendations.

PART 1

OVERVIEW OF TRAVEL RESTRICTION MEASURES TAKEN BY THE VIETNAMESE GOVERNMENT DURING THE COVID-19 EPIDEMIC

1.1. General picture of the Covid-19 epidemic in Viet Nam and across the world

The Covid-19 pandemic has been caused by a coronavirus named SARS-CoV-2. The first cases of Covid-19 were identified in Wuhan City, Hubei Province, China, in December 2019. The World Health Organisation (WHO) declared the Covid-19 outbreak a pandemic on 11 March 2020.

In the past 10 months, the Covid-19 pandemic has expanded in a complicated and unpredictable manner. Initially, Covid-19 broke out in China and neighbouring Asian countries, after which it spread strongly in Europe and North America.

As of 7 p.m. 31 October 2020, according to the Electronic Health Administration, 46,018,022 people have been infected by Covid-19 globally

and 1,196,616 have died in 216 countries and territories (Viet Nam Ministry of Health, 2020). The United States is the country most severely affected by the Covid-19 pandemic with 235,182 deaths out of 9,318,653 infections, followed by India with 8,137,119 infections and 121,681 deaths. The third most affected country is Brazil with 5,519,528 infections and 159,562 deaths. In ASEAN, Indonesia has been impacted the most with 410,088 infections and 13,869 deaths, followed by the Philippines with 380,729 infections and 7,221 deaths with Singapore next with 58,015 infections and 28 deaths.

In Viet Nam, the Covid-19 outbreak can be divided into three stages. The first stage began on 23 January 2020 (when the first case from China was reported), with Viet Nam recording 16 Covid-19 cases, all of whom completely recovered. The second stage was from 6 March 2020 with one case from Europe and 124 infections in the community. On 1 April 2020, the Prime Minister declared Covid-19 a nationwide epidemic (Decision No. 447/QD-TTg). All confirmed cases have completely recovered with zero deaths. From 22 April 2020, Viet Nam had not recorded any Covid-19 cases in the community. Viet Nam was considered one of the countries to have succeeded in combating Covid-19. However, after 100 days of zero infections in the community (from 22 April to 24 July 2020), the third stage began in Da Nang on 25 July and within just two weeks, more than 400 infections in the community were recorded. Within 45 days, there were 636 infections in the community and 35 deaths. As of 31 October, 2020, Viet Nam had confirmed 1,180 cases of Covid-19, including 523 cases of entry from abroad, 657 cases of community infection, and 35 deaths. Viet Nam is considered to be one of a few countries that has succeeded in preventing the spread of Covid-19.

1.2. Travel restriction measures imposed in Viet Nam

1.2.1. Definition

'Travel restrictions' or 'movement restrictions' are urgent measures to prevent an outbreak in the early stages of a flu pandemic (WHO, 2007). Travel restrictions are measures to limit a citizen's freedom of movement.

To curb the Covid-19 pandemic, many countries and territories have applied travel restrictions, such as quarantines, entry bans, temporary closure of borders, or other restrictions for citizens or recent travellers to the most affected areas. Many countries and territories have imposed global restrictions that apply to all foreign countries and territories, and/or prevent their own citizens from travelling overseas.

In Viet Nam, in the context of Covid-19 prevention, the term "travel restrictions" first appeared in a steering document, namely the Prime Minister's Directive No. 05/CT-TTg dated 28 January 2020 on preventing and controlling the nCOV epidemic. According to Directive No.05/CT-TTg, movement restrictions or travel restrictions is one of the recommended measures for Chinese tourists present in Viet Nam, which aimed at managing and closely monitoring these tourists to detect and limit infections.

In this Study, travel restrictions or movement restrictions are used interchangeably with a common meaning. They are measures that aim at limiting the freedom of movement for a person or a group of people to prevent the spread of the Covid-19 epidemic. Travel restrictions may consist of quarantines, entry bans, border closures, lockdown, limited crowds, social distancing/isolation, as well as non-essential business and school closure.

1.2.2. Classification

According to UNWTO, there are four key types of restrictive measures: (i) complete or partial closure of borders to tourists; (ii) destination-specific travel restrictions (including transit); (iii) the total or partial suspension of flights; and (iv) different measures, including requirements for quarantines or self-isolation, medical certificates, invalidation or suspension of visa issuances, etc. The extent of restrictions depends on the Covid-19 outbreak situation in each country or territory.

In Viet Nam, Article 23 of the 2013 Constitution regulates that citizens have the right to free movement and that exercise of this right shall be prescribed by law. In the context of the Covid-19 outbreak globally, the restriction on freedom of movement was applied by Viet Nam very early to prevent the spread of the epidemic. Travel restriction measures can be classified by their characteristics and applicable scale.

By their characteristics, there are four main groups of restrictive measures:

- Entry ban: suspend visa issuance, close borders, refuse immigration, limit or prohibit transit, temporarily suspend flights.

- Lockdown and quarantines: control the entry and exit of epidemic areas, centralised quarantines/isolation, family isolation, social isolation.

- Limited crowds: closure of schools, temporary suspension of religious festivals, temporary suspension of some non-essential businesses, a ban on gatherings of more than 20 people in a room at offices and more than 10 people in outdoor areas.

- Movement restrictions: Limit outside activities, restrict movement between provinces/cities, especially from provinces with outbreaks, cancel or reorganise public transport.

By applicable scale, travel restriction measures can be classified in 4 levels:

- Isolation at quarantine camps (hospitals, military bases): High-risk groups such as immigrants, repatriates, and returnees will be placed in quarantine areas for a given time (minimum 14 days) and undergo tests for Covid-19.

- Quarantines, social isolation, lockdown at provincial level. For example, the blockade of areas, residential districts, villages, districts, and even cities. People are not allowed to go outside of quarantine areas, except for special circumstances, such as to buy food and essential goods, or to attend hospitals in emergency cases. In some special cases, such as the lockdown of the entire Truc Bach Street, people were not even allowed to go out to buy food – officials distributed food to people in their homes.

- Nationwide social isolation/distancing: travel/movement restrictions, ban on crowds in all provinces/cities; temporary closure of non-essential businesses; maintaining a minimum distance of two meters in public places.

- International isolation/quarantines: border closure, entry and exit restrictions, ban on transit, suspension or delay of repatriations.

1.2.3. Application of travel restrictions in practice

Viet Nam is considered as one of the few countries to have succeeded in preventing and controlling the Covid-19 pandemic. During two waves, Viet Nam quickly prevented the spread of the pandemic. To achieve this success, a series of measures have been implemented since the epidemic began after Viet Nam detected its first two Covid-19 cases. The government, Prime Minister, ministries, and provinces issued and implemented numerous measures on preventing and controlling the epidemic. From January to October 2020, about 90 documents were issued in response to Covid-19. In particular, during the peak period (in March and April), 36 documents were issued to promote the participation of the entire political system, ministries, provinces and the people to prevent the pandemic. In the spirit of “anti-epidemic like anti-enemy”, the government applied lockdown measures, quarantines, isolation, travel restrictions, and contact tracing to prevent Covid-19 transmission. From 15 March 2020, anyone entering Viet Nam is subject to a 14-day quarantine at a government facility. With the declaration of Covid-19 as a pandemic on 1 April 2020, Viet Nam officially applied social distancing/isolation throughout the country by closing all public places, except for places used for the supply of essential goods and services. After three weeks of social distancing/isolation, Viet Nam quickly limited new

cases of Covid-19 and controlled infections in the community; 80% of cases recovered. From 22 April 2020, Viet Nam eased social distancing measures and businesses and schools reopened. However, due to threats of further Covid-19 outbreaks, on 24 April the Prime Minister issued Directive No. 19/CT-TTg in order to maintain social distancing at public places and schools.

In late July, the second wave of Covid-19 returned with much more severity. In a new Covid-19 outbreak in Da Nang city, untraceable cases of community infections appeared and spread to many provinces and cities. Da Nang immediately applied strict social distancing/isolation measures across the city. Many provinces with infected people returning from Da Nang, such as Quang Nam, Dak Lak, Hai Duong, Ha Noi and Ho Chi Minh City, also applied travel restrictions and social distancing/isolation measures but on smaller scales. Since 2 September 2020, Viet Nam has not reported any new Covid-19 infections in the community.

In summary, it can be seen that since January 2020, Viet Nam has applied various types of travel restriction measures. The extent, scale, target group, and timeframe for travel restrictions depend on the epidemiological situation in Viet Nam and globally.

Table 1: Travel restriction measures and legal documents on travel restrictions in Viet Nam from January to September 2020

Time	Contents of the travel restrictions	Documents
23/1/2020	Strictly control passengers at border gates, isolate and manage cases of suspected infection	Telegram No. 121/CD-TTg
	Suspend all flights to Wuhan, China	Civil Aviation Authority of Viet Nam's Instruction
28/1/2020	- Strictly control all passengers immigrating from pandemic zones; - Require travel companies to cancel tours and travel packages, cease organising tour groups to pandemic provinces and cities, stop accepting tourists from epidemic areas into Viet Nam; - Closely manage and monitor the schedules and health situation of Chinese tourists currently in Viet Nam and recommend limits on their movement; - Prohibit travel through crossings and openings in the Viet Nam-China border area and strictly control pedestrians at other border gates.	Directive No. 05/CT-TTg
	Temporarily halt granting permission for new flights from Viet Nam to areas in China that have been affected by the epidemic and cease all flights from those areas to Viet Nam; recommend limiting the number of flights entering or exiting pandemic areas in China.	Directive No. 05/CT-TTg; Directive No. 06/CT-TTg

Table 1 (continued)

Time	Contents of the travel restrictions	Documents
30/1/2020	Temporarily suspend visa issuance to Chinese tourists. Viet Nam also temporarily refused entry for all foreign visitors who had been to mainland China (including transit) in the 14 days prior to their intended arrival in Viet Nam.	Directive No. 05/CT-TTg; Directive No. 06/CT-TTg
	- Limit crowds, especially festivals; suspend all festivals yet to begin; downsize ongoing festivals. - Stop transporting tourists and cease sending Vietnamese labourers to China; strengthen the supervision of Chinese citizens and labourers living and working in Viet Nam who returned home to celebrate Tet and subsequently returned to Viet Nam; - Temporarily close border crossings and openings; discourage trade and exchanges with China during the pandemic.	Directive No. 06/CT-TTg
1/2/2020	Prime Minister declares Covid-19 an epidemic and announces measures to control entry to and exit from epidemic areas. Disease-hit areas and scale of infections are determined, including Khanh Hoa, Vinh Phuc and Thanh Hoa provinces.	Decision No. 173/QD-TTg
2/2/2020	The Ministry of Education and Training allows provinces that are affected by Covid-19 to temporarily close schools based on the epidemic situation.	Directive No. 06/CT-TTg, Telegraph No. 156/CD-TTg
	Implementation of 14-day quarantines for all passengers from epidemic areas.	
4/2/2020	The Ministry of Transport requires Viet Nam Railways Corporation to stop running international passenger trains to China.	Directive No. 06/CT-TTg, Decision No. 173/QD-TTg
6/2/2020	All schools postpone opening after the Tet holidays.	
29/2/2020	Suspend the visa-wavier programme for South Korean nationals. In addition, all incoming travellers from South Korea are required to complete a mandatory 14-day quarantine.	Directive No. 06/CT-TTg, Decision No. 173/QD-TTg
1/3/2020	All flights from South Korea are prohibited from landing at Hanoi and Ho Chi Minh City airports. Instead, they are re-routed to Van Don (Quang Ninh province) and Can Tho airports to undergo mandatory health checks and isolation.	Document No.1637/BGTVT-VT

Table 1 (continued)

Time	Contents of the travel restrictions	Documents
5/3/2020	Vietnam Airlines and low-cost carrier Vietjet Air temporarily halt all flights to and from South Korea.	
7/3/2020	Mandatory medical certificates apply to all travellers.	
8/3/2020	Suspend visa exemptions for Vietnamese people in Italy and South Korea.	
10/3/2020	Temporarily suspend the visa-wavier programme for citizens from Denmark, Norway, Finland, Sweden, the United Kingdom, France, Germany, and Spain, and suspend visa exemption papers granted to overseas Vietnamese citizens and foreigners from the aforementioned 8 countries who are wives, husbands, or children of overseas Vietnamese people.	Notice No. 89/TB-VPCP dated 10 March 2020
14/3/2020	Restrict entry from epidemic countries; limit the number of flights from epidemic areas to Viet Nam.	Notice No. 98/TB-VPCP dated 14 March 2020
15/3/2020	- Stop issuing tourist visas and deny entry for travellers from the United Kingdom and all 26 countries in Europe's Schengen area, including persons who have been in or transited through those countries in the previous 14 days. - Stop issuing new visas for all foreigners to Viet Nam. Anyone who has a visa upon arrival will have to check and isolate carefully.	
18/3/2020	Stop issuing new visas for foreigners for 30 days, starting from 00.00 on 18 March 2020. Continue to restrict flights from epidemic areas to Viet Nam.	Notice No. 102/TB-VPCP dated 17 March 2020
20/3/2020	- Temporarily close border crossings between Viet Nam and Cambodia (not applicable to officials and diplomats). - Vietjet suspend all flights from ASEAN countries. - Vietnam Airlines temporarily suspends all international flights.	
21/3/2020	- Apply a mandatory 14-day quarantine for all passengers from all countries and regions. - Viet Nam cancels all international flights, except for special flights.	
22/3/2020	- Suspend the entry of all foreigners, except for officials and diplomats. - The Ministry of Health requires all arrivals from 1 March to self-isolate at home if they have not been quarantined in a centralised zone in the past 14 days.	

Table 1 (continued)

Time	Contents of the travel restrictions	Documents
26/3/2020	Prohibit crowds of more than 20 people and religious festivals.	
25-31/3	- All Viet Nam carriers have suspended international routes. - International flights carrying overseas Vietnamese people are not allowed to land at Tan Son Nhat Airport to avoid overloading the isolation facility.	
25/3-4/5	Authorities in Hanoi issue a decision to close non-essential businesses like bars, night clubs, movie theatres, and karaoke clubs.	
28/3/2020-15/4/2020	The Prime Minister requests local authorities to restrict crowded gatherings from 00.00 on 28 March until 15 April 2020: - Suspend all meetings and events with more than 20 people in a room; order a ban on gatherings of more than 10 people outside of offices, schools and hospitals; require all residents to maintain a minimum distance of two meters from each other in public places. - Strictly restrict religious rituals with more than 20 people at religious sites; suspend all cultural, sports and recreational activities in public places. - Suspend non-essential services, except for those selling food and essential goods. The Chairman of the Provincial People's Committees decide which non-essential services should be closed. - Restrict the movement of people, especially from epidemic provinces to other provinces. The Ministry of Transport limits the number of flights and passengers from Hanoi and Ho Chi Minh City to other provinces. Suspend or re-route public transportation to restrict travel and large gatherings, except for transporting goods.	Directive No. 15/CT-TTg
1/4/2020-15/4/2020	Apply strict social distancing throughout the country for 15 days, from 00.00 1 April 2020 according to Directive No. 16/CT-TTg on implementing urgent measures to prevent and control the Covid-19 epidemic: - Require all people to stay at home, except for trips to buy essential goods such as food and medicine, for emergencies, and to work at factories and businesses that remain open. Also require people to strictly maintain a minimum distance of two meters when meeting each other; prohibit gatherings of more than two people in all public places and outside workplaces, schools and hospitals. - Require all state agencies to arrange for their staff to work from home; only essential tasks such as combat duty, agency duty, supply of essential goods, handling confidential documents and other necessary tasks upon request will require staff to attend work premises; increase the organisation of online meetings.	Directive No. 16/CT-TTg

Table 1 (continued)

Time	Contents of the travel restrictions	Documents
	- Suspend public transportation services; minimise travel/transport from region to region; suspend travel/transport from epidemic areas to other provinces, except for the purposes of official tasks, provision of food and essential goods, transporting workers and specialists, raw material for production. - Temporarily close border crossings between Viet Nam and Cambodia and Laos.	
8/4/2020	Hanoi imposes a lockdown on Ha Loi village, Me Linh Commune for 14 days due to the outbreak at Bach Mai Hospital.	
15/4/2020-22/4/2020	Extend social distancing for at least one week in 28 risk and high risk provinces, which include Hanoi, Ho Chi Minh, and Da Nang cities and Lao Cai, Quang Ninh, Bac Ninh, Ninh Binh, Quang Nam, Binh Thuan, Khanh Hoa, Tay Ninh, and Ha Tinh provinces.	
23/4/2020	The government loosens social distancing but continues to restrict cross-border entry.	
25/4/2020	The Prime Minister issues Directive No. 19 on measures to prevent Covid-19, continuing the prohibition of religious festivals, sports; and continuing the closure of bars, beauty clinics and karaoke clubs.	Directive No. 19/CT-TTg
11/5/2020	All schools are allowed to reopen, all socio-economic activities resume nationwide.	
5/2020-now	Tens of thousands of overseas Vietnamese people and international experts are isolated in centralised zones.	
26/6/2020	Continue closing borders to international tourists to avoid a second wave of Covid-19.	
6/2020	Viet Nam postpones plans to approve new entrants to the airlines industry until 2022 due to the impact of the pandemic on the country's airline industry.	
28/7/2020	Da Nang applies social distancing throughout the city from 28 July 2020 after detecting Covid-19 cases in the community. People who live in Hai Chau, Thanh Khe, Son Tra, Ngu Hanh Son, Cam Le and Lien Chieu districts are recommended to stay at home, except for trips to buy essential goods. Many streets are locked down. - Flights, buses, taxis, and trains to and from Da Nang are cancelled. - Flights to rescue Vietnamese citizens abroad scheduled to land in Da Nang are cancelled or delayed.	

Table 1 (continued)

Time	Contents of the travel restrictions	Documents
30/7/2020	Ban on gatherings of more than 30 people in Hanoi and Ho Chi Minh City. Prohibit all non-essential services like bars, nightclubs, and karaoke clubs.	
In September	Da Nang, Ho Chi Minh city and Hanoi gradually remove social distancing measures.	
15/9/2020	Postpone international flights to prevent the epidemic (As planned, international flights to Guangzhou, Seoul, Tokyo, Taipei, and Phnom Penh are reopened on September 15).	
7/10/2020	Suspend international commercial flights to wait for new guidelines on quarantines (after two international commercial flights conducted by Vietnam Airlines and Vietjet Air).	

Source: Compiled from various sources

In the first wave of Covid-19 epidemic, social distancing was applied nationwide for the first 15 days of April and extended to certain localities by 22 April 2020. In the second wave, social distancing was applied on a smaller scale in epidemic areas.

Table 2: Localities applying social distancing according to Directive No. 16 in the second wave of Covid-19

Province/ City	District	Starting date	Ending date
Da Nang	Throughout the city	- 28/7/2020 - 12/8/2020	5/9/2020
Quang Nam	Hoi An	- 31/7/2020 - 14/8/2020	28/8/2020
	Dien Ban	- 1/8/2020 - 15/8/2020	28/8/2020
	Dai Loc	- 1/8/2020 - 15/8/2020	22/8/2020
	Duy Xuyen	- 1/8/2020 - 15/8/2020	28/8/2020
	Que Son	- 1/8/2020 - 15/8/2020	20/8/2020
	Thang Binh	- 1/8/2020 - 15/8/2020	20/8/2020
Quang Tri	Dong Ha city	10/8/2020	15/8/2020
Hai Duong	Hai Duong city	14/8/2020	28/8/2020
Dak Lak	Buon Ma Thuot city	4/8/2020	17/8/2020

Source: Compiled from various sources

In sum, thanks to the early application of strict epidemic control measures, Viet Nam's achievements controlling Covid-19 were recognised internationally (World Bank[1], IMF[2]). According to the IMF, the early application of travel restrictions proved to be cost effective. The government estimated the budgetary cost of fighting the pandemic at about 0.2% of GDP, with about 40% on containment activities (IMF, 2020). According to the Oxford Stringency Index, Viet Nam is one of the countries strictly applying travel restrictions.

[1] See https://blogs.worldbank.org/vi/eastasiapacific/viet-nam-ngoi-sao-sang-tren-bau-troi-covid-19-tam-toi

[2] See https://www.imf.org/en/News/Articles/2020/06/29/na062920-vietnams-success-in-containing-covid19-offers-roadmap-for-other-developing-countries

PART 2

IMPACTS OF TRAVEL RESTRICTIONS ON THE ECONOMY AND SELECTED ECONOMIC SECTORS

2.1. Identification of the impact transmission mechanism and channels

The Covid-19 pandemic appeared in Viet Nam in the final half of January 2020. Facing the quick, complicated and unpredictable outbreak, Viet Nam quickly applied a series of decisive measures, even unprecedented measures, such as border closures, social distancing, and travel restrictions.

Travel restrictions have helped Viet Nam effectively control the COVID-19 epidemic. However, travel restrictions have had a major impact on the economy in general and some economic sectors in particular (especially when applying social distancing nationwide in April 2020). The implementation of travel restriction measures like border closures, the suspension of international and domestic flights, and the prohibition/restriction of travel within Viet Nam and between Viet Nam and other countries has reduced the need for travel, reduced transactions due to a decrease in market demand for goods and services, disrupted supply chains and production lines, and affected production and business activities, especially in economic sectors which require face-to-face contact. Travel restrictions increase transaction costs due to increased costs of compliance with travel restriction measures.

The application of lockdown and social isolation in the community, stay at home orders, temporary closure of non-essential businesses, travel restrictions and prohibition immediately disrupted economic activities and value chains, reducing financial and investment flows, and disrupting transportation, especially air transport. Cancelling/ suspending flights and strict control of borders immediately and directly affected transport and tourism industries. The extension of travel restrictions caused unprecedented booking cancellations in the tourism sector, affecting enterprises, labourers and the economy as a whole.

Other travel restriction measures like social distancing and the temporary closure of school, offices, and non-essential businesses impact the economy in very diverse ways, such as halting production and interrupting business activities. Movement restrictions on a large scale damage businesses, resulting in loss of livelihoods and incomes for workers.

In summary, travel restrictions can impact economic activity through three main transmission channels: (i) value chains and trade relationships; (ii) investment and financial flows; and (iii) travel and movement.

The effects of travel restrictions occur not only in the short term but also in the long term. In the short term, travel restriction measures enacted will create uncertainty for manufacturers because they cannot predict developments or change their production plans. However, in the long run, travel restriction measures will reduce uncertainty thanks to epidemic control and early resumption of trade and movement. The epidemic is almost non-destructive to the enterprises' physical facilities and tangible resources; therefore, in the long run, when removing travel restriction measures, transactions will be restored and transaction costs will be reduced. However, some transactions may be lost permanently. Manufacturers that go bankrupt or have to suspend operations due to travel restrictions will take a long time to recover, may withdraw from the market or move to different industry.

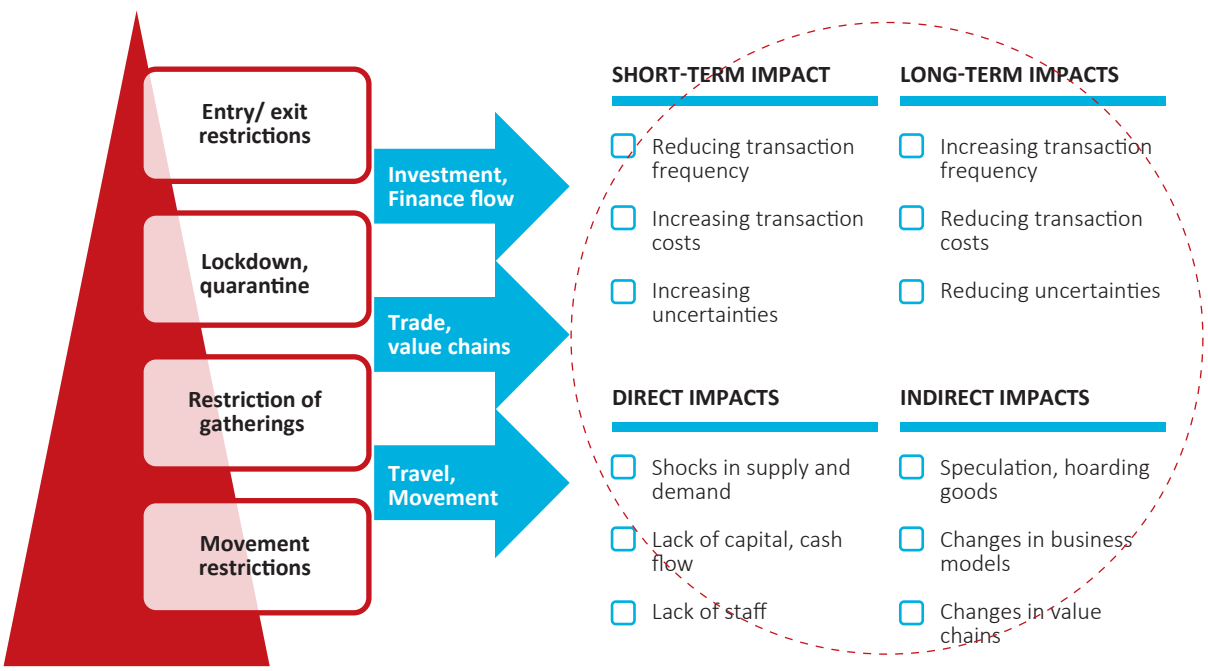


Figure 1: Impact of travel restrictions on transmission channels and mechanisms

The impacts of travel restrictions on manufacturing industries consist of direct effects from value chain breakdowns, supply and demand shocks, decrease in investment, a decline in cash flow, and other indirect effects. When applying travel restriction measures, the hoarding of goods for speculation by individuals, manufacturers, wholesalers, or retailers can occur. Speculation, on the one hand creates a virtual demand that manufacturers can benefit from, but on the other hand it can cause more scarcity of raw materials and intermediate products for production. According to WEF (2020), travel restriction measures will make value chains change in the following ways: narrowing down chain links to minimise the risk of supply loss, and digital transformation to automatic production, minimising the risks associated with losing human resources. In practice, travel restriction policy, particularly social distancing/isolation, is necessary on the health side but can have impacts on sectors and areas beyond the policy's target, thereby affecting the economy as a whole. Economic theory suggests that the initial shock to affected sectors can spill over to unaffected sectors through input-output linkages (Long and Plosser, 1983; Acemoglu et al., 2012). Enterprises in unaffected sectors depend on inputs and demand for products from enterprises in affected sectors. Social distancing may interrupt the ability to produce and sell goods from enterprises in unaffected sectors. Therefore, enterprises that have suppliers and customers in industries and localities affected by lockdown and social distancing will have their operational performance reduced in comparison to similar businesses.

2.2. Real impacts of travel restrictions

2.2.1. On the economy as a whole

The Report on East Asia and Pacific in the Time of COVID-19 by the World Bank (2020) affirmed that the largest immediate impact on economic activities has come from the measures countries have taken to prevent the spread of infection (World Bank, 2020), especially travel restriction measures. In Viet Nam, the impacts of travel restrictions imposed have been illustrated by socio-economic indicators. The increase or decrease in GDP growth rate in the first 9 months of 2020 was associated with the extent of travel restrictions.

According to the General Statistics Office (GSO), GDP growth in the first and second quarters of 2020 was at its lowest level in the period 2011-2020. In the first quarter of 2020, GDP growth was at only 3.82 percent compared to the same period in the previous year, and the lowest level during the same period for the years 2011-2020[3]. The GDP growth rate in the second quarter of 2020 was only 0.39 percent, the lowest level during the same period for the years 2011-2020[4] because the second quarter was most affected when the government strictly implemented nationwide social distancing measures (particularly in the first 15 days of April). Thanks to the relaxation of travel restrictions, GDP growth in the third quarter improved compared to the second quarter; however, the number was still only 2.62 percent, its lowest level during the same period for 2011-2020[5]. This due to the outbreak in Da Nang and other provinces late July, and travel restriction measures applied in epidemic localities.

[3] The GDP growth rate in the 1st quarter of the years 2011-2020 is in turn: 5.9 percent; 4.75 percent; 4.76 percent; 5.06 percent; 6.12 percent; 5.48 percent; 5.15 percent; 7.35 percent; 6.82 percent; and 3.82 percent.

[4] The GDP growth rate in the 2nd quarter of the years 2011-2020 is in turn: 5.93 percent; 5.08 percent; 5.0 percent; 5.34 percent; 6.47 percent; 5.78 percent; 6.36 percent; 6.73 percent; 6.73 percent; and 0.39 percent.

[5] The GDP growth rate in the 3rd quarter of the years 2011-2020 is in turn: 6.21 percent; 5.39 percent; 5.54 percent; 6.07 percent; 6.87 percent; 6.56 percent; 7.38 percent; 6.82 percent; 7.48 percent; and 2.62 percent.

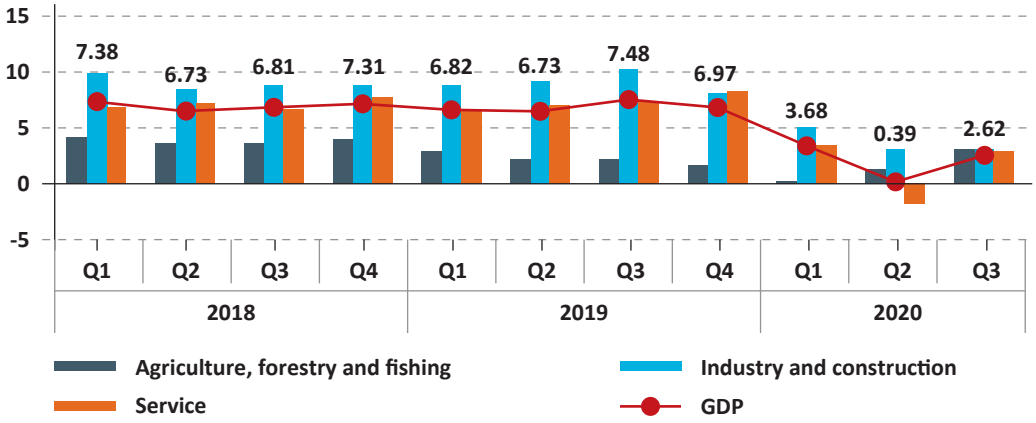


Figure 2: Quarterly GDP growth rate, 2018-2020 (yoy, %)

Source: GSO

The strict social distancing/isolation heavily affected GDP growth in the second quarter of 2020, in which the service sector was the hardest hit with a negative growth (-1.93 percent) compared to the same period of 2019. As a consequence, GDP growth in the first 6 months of 2020 was only 1.81 percent, the lowest level during the same period for the years 2011-2020.

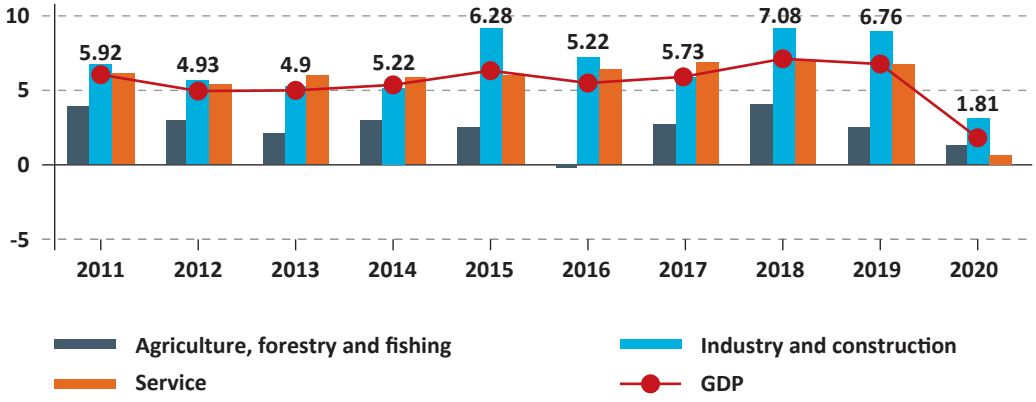


Figure 3: GDP growth rate in first 6 months of the years 2011-2020 (yoy, %)

Source: GSO

Thanks to improvements in the third quarter, the economic situation in the first 9 months of 2020 showed positive signs; however, GDP growth in the first 9 months was at only 2.12 percent, also the lowest level during the same period for the years 2011-2020[6].

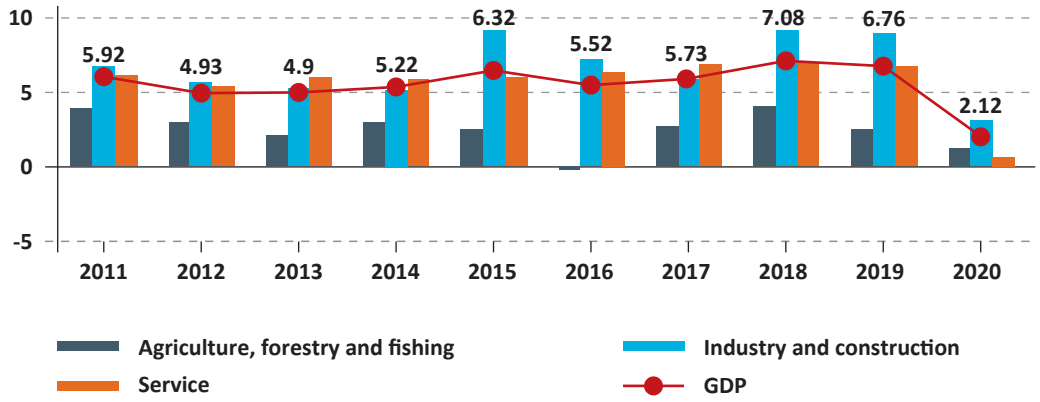


Figure 4: GDP growth rate in the first 9 months of the years 2011-2020 (yoy, %)

Source: GSO

Travel restrictions imposed during the COVID-19 epidemic have stagnated many economic activities, thereby affecting employees in most sectors. In the first wave of COVID-19 in early 2020, the strict implementation of travel restrictions affected 70 percent of workers (in which 38.89 percent lost their jobs/took compulsory unpaid leave alternately, 26.4 percent temporarily stopped work, and 52.9 percent reduced their working hours); and overtime hours have been almost completely cut. Some sectors have had a large proportion of their workforce affected, in which, transport and tourism services have the highest, at 88.8 percent and 84.2 percent, respectively (Nhac Phan Linh, 2020). In the first 9 months of 2020, the COVID-19 pandemic has seriously affected employees working in most sectors, some of which have had a large proportion of their workforce affected. These include, for example, arts, recreation and entertainment (88.6 percent), accommodation and food services (81.7 percent), transportation and storage (79.7 percent), and manufacturing (70.1 percent) (GSO, 2020).

The labour under-utilisation rate increased in 2020 when the COVID-19 pandemic emerged, in line with the application of travel restriction measures. Findings from the GSO's Quarterly Labour Force Surveys for the 2018-2019 period, shows that the labour under-utilisation rate in Viet Nam fluctuates at 4.0 percent. This rate started to increase when COVID-19 occurred from January 2020 and travel restrictions were applied, accounting for 4.6 percent in the first quarter of 2020 and increasing to 5.8 percent in the second quarter when travel restrictions were strictly applied, especially in April. Turning to the third quarter of 2020, when socio-economic activities gradually resumed in line with the relaxation of travel restriction measures or their application on a smaller scale, the proportion of under-utilised

[6] The GDP growth rate in the first 9 months of the years 2011-2020 is in turn: 6.03 percent; 5.1 percent; 5.14 percent; 5.53 percent; 6.53 percent; 5.99 percent; 6.41 percent; 6.96 percent; 7.04 percent; and 2.12 percent.

labour decreased to 5.3 percent. In the first 9 months of 2020, the rate of labour under-utilisation was 5.2 percent, an increase of 1.3 percentage points compared to the same period in the previous year, corresponding to an increase of more than 700,000 people. The working age unemployment rate in the third quarter of 2020 was 2.5 percent, its highest level in the third quarter for the years of 2011-2020, in which the urban unemployment rate increased to 4 percent.

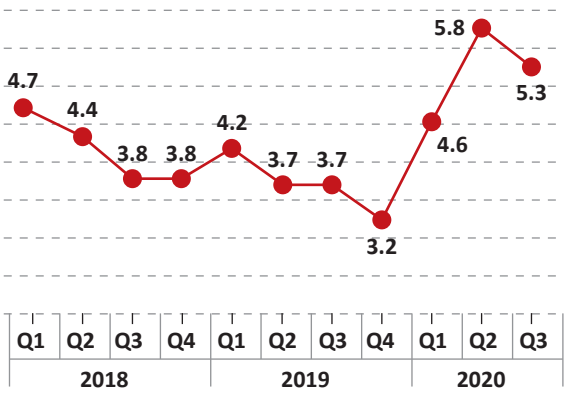


Figure 5: Labour under-utilisation rate quarterly, 2018-2020 (yoy, %)

Source: GSO

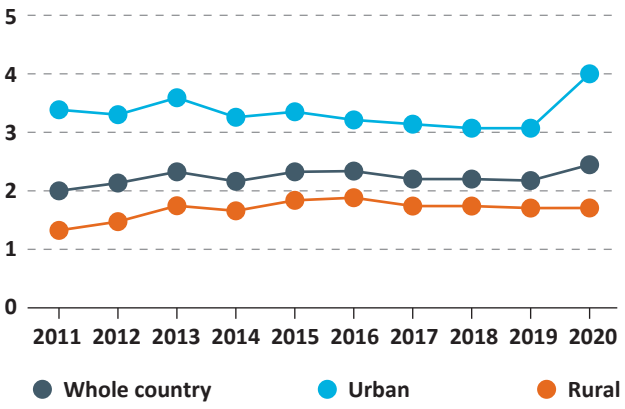


Figure 6: Working-age unemployment rate in the 3rd quarter, 2011-2020 (yoy, %)

As estimated, more than 30 million Vietnamese labourers, accounting for half of the labour force, were affected during the strict social distancing in April 2020. According to the Ministry of Labour, Invalids and Social Affairs, the urban unemployment rate jumped by 33 percent in the second quarter and average monthly revenue by worker declined by about 5 percent. Thanks to the loosening of social distancing by the end of April, most households resumed their operations and workers returned to the workplace (Morisset, 2020).

2.2.2. Impacts on selected sectors

2.2.2.1. Manufacturing sector

Travel restriction measures have strongly affected the manufacturing sector to varying degrees. Immigration restrictions interrupt supply chains, stagnate the import and export of goods and raw materials, and impede labour movement flow (experts, engineers, etc.). Lockdown and isolation (such as controlling the entry to and exit from epidemic areas, centralised isolation, isolation at home, social distancing/isolation) reduce labour supply, disrupt production and obstruct the circulation of goods. However, except for the nationwide social distancing duration (in April), other lockdown and isolation measures took place on a small scale over a short time and in residential areas; therefore, they did not significantly affect production activities in the manufacturing sector. Measures to limit crowds or keep a safe distance, etc., affected the organisation of production at manufacturing enterprises because they had to rearrange personnel, leading to a reduction in productivity and labour. However, restrictions on crowds were applied over a short time so the impact was at a

relatively low level. Movement restrictions (e.g. limiting movement out of doors, movement restrictions between localities, especially from epidemic localities to others, and suspending public transport) disrupted labour movement between localities and to offices and factories. Travel restriction measures have also affected the consumption pattern of manufacturing outputs.

It can be said that all travel restriction measures have affected the manufacturing sector, impeded production and business activities, labour supply and movement, output markets, and have disrupted supply/value chains. The level of impact depends on the extent and duration of travel restriction measures. The more stringent travel restrictions are and the longer their duration, the heavier the impact. In practice, travel restriction measures have affected the supply chains of imported raw materials for manufacturing and processing, causing production stagnation in a number of manufacturing sub-sectors which heavily depend on import and export activities. However, COVID-19 has increased demand for and created opportunities for some manufacturing sub-sectors, such as chemical production, pharmaceuticals and home appliances. In general, the overall impact of travel restrictions on the manufacturing sector are negative.

According to the GSO, in the first 9 months of 2020, the value added of the manufacturing sector increased by 4.6 percent compared to the same period in the previous year (by 7.12 percent in the first quarter, 3.38 percent in the second quarter and 3.86 percent in the third quarter), the lowest 9-month growth rate for the years 2011-2020, and lower than the mean level of the previous eight quarters (11.73 percent).

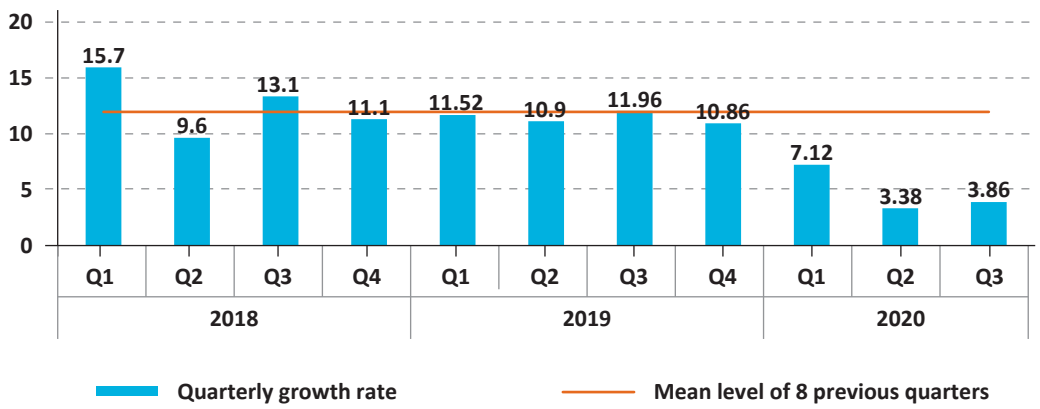


Figure 7: Value added growth rate for the manufacturing sector by quarter, 2018-2020 (yoy, %)

Source: GSO

The COVID-19 pandemic and travel restriction measures have affected the supply chain of imported raw materials for industrial production, especially for the manufacturing sector. In the first 9 months of 2020, secondary industries witnessed a reduction or lower growth rates in the Industrial Production Index (IIP) for some key industrial products, for example: manufacture of motor vehicles (-12.2 percent); manufacture of other transport equipment (-8,9%); repair and installation of machinery and equipment (-7.4 percent); and manufacture of beverages (-7.4 percent). In contrast, some sectors achieved higher growth rates, such as manufacture of pharmaceuticals, medicinal chemical and botanical products (+34.4 percent), manufacture of chemicals (7.9 percent), and the manufacture of computer, electronic and optical products (8.6 percent).

Table 3: IIP of manufacturing sub-sectors in the first 9 months of 2020

Manufacturing sub-sectors	Growth rate in the first 9 months of 2020, compared to the same period in the previous year
Manufacture of motor vehicles	-12.2%
Manufacture of other transport equipment	- 8.9%
Repair and installation of machinery and equipment	- 7.4%
Manufacture of beverages	- 6.6%
Manufacture of wood and wood and cork products	- 5.8%
Manufacture of clothing apparel	- 4.4%
Manufacture of leather and related products	- 3.8%
Manufacture of machinery and equipment n.e.c (not elsewhere classified)	- 2%
Printing and reproduction of recorded media	- 1.9%
Manufacture of basic metals	- 1.1%
Manufacture of electrical equipment	0.4%
Manufacture of textiles	0.6%
Manufacture of pharmaceuticals, medicinal chemicals and botanical products	34.4%
Manufacture of computer, electronic and optical products	8.6%
Manufacture of tobacco products	8.2%
Manufacture of paper and paper products	8.1%
Manufacture of chemicals and chemical products	7.9%
Manufacture of furniture	6.7%

Source: GSO

The Industrial Inventory Index for manufacturing as of 30 September 2020 was estimated to increase by 24.3 percent over the same period in 2019 (it increased by 17.2 percent in 2019). Of this growth, certain manufacturing sub-sectors saw a very high increase. For instance, manufacturing of computers, electronics and optical products increased by 143.7 percent; rubber and plastic products by 80.5 percent; chemicals and chemical products increased by 59.4 percent; tobacco products by 56.3 percent; clothing apparel by 34.8 percent; motor vehicles by 33.6 percent; fabricated metal products by 32.1 percent; and the manufacturing of food products increased by 26.8 percent.

The average Industrial Inventory Index for manufacturing in the first 9 months of 2020

reached quite a high level at 75.6 percent (it was 72.1 percent in the same period of 2019). Of this growth, certain manufacturing sub-sectors witnessed high increases, such as the manufacture of textiles (119.3 percent); wood and wood products; bamboo and cork (108.6 percent); chemicals and chemical products (104 percent); other non-metallic mineral products (97.2 percent); food products (96.5 percent); and the manufacturing of motor vehicles (91.9 percent).

According to the GSO, the results of the business tendency survey of manufacturing enterprises in the third quarter of 2020 showed that 32.2 percent of respondents said that the business production situation in the third quarter of this year was better than previous the quarter; 31.9 percent of enterprises faced difficulties; and 35.9 percent of enterprises said that the situation was stable.

The GSO's business tendency survey also indicated the main reasons hindering the production and business of manufacturing enterprises as: low domestic demand (51.6 percent of enterprises); financial difficulties (35 percent); low international demand (29.4 percent); lack of raw materials (26.5 percent); inability to recruit of required employees; and high loan interest rates (23.9 percent).

2.2.2.2. Agriculture sector

Travel restriction measures may affect the agricultural sector by hindering production activities, labour supply and movement, factor markets – for example, labour, capital and intermediate products, output markets, and by disrupting sectoral value chains. The main transmission channels impacted by travel restriction measures are supply, demand, trade and other factors. Value chain disruption also affects domestic logistics systems, market demand, as well as production factor markets.

According to the Food and Agriculture Organisation of the United Nations (FAO), travel restrictions imposed during the COVID-19 pandemic affect the agriculture sector via certain main transmission channels: factors affecting the supply of agricultural products, including supply of intermediate materials and labour; factors affecting the demand for agricultural products such as reduced demand for food and income elasticity regarding demand for food; trade factors, such as exports and imports of agricultural products; and other factors.

In practice, the strict application of travel restriction measures can create a supply shock to the agricultural sector, cripple supply chains for agricultural production or increase production costs. They can affect input supply chains through transportation systems, temporary closure of selected roads, urban and rural isolation, customs delay or disruption, and disruption of import - export activities, etc.

For intermediate inputs, such as fertilisers, pesticides, and seeds, etc., the disruption of supply chains due to travel restrictions creates scarcity, affecting production. Viet Nam is an importer of many agricultural inputs from China. Meanwhile, it seems that the COVID-19 pandemic first appeared in China and China was the first country where Viet Nam applied travel restrictions. That led to stagnation in the circulation of goods between the two countries.

Travel restriction measures affect market demand for agricultural products. With the complicated epidemic situation and the longer duration and larger scale application of travel restriction measures, the impacts on market demand for agricultural products were greater. Travel restrictions can directly reduce people's purchasing power. Travel restrictions can also indirectly affect consumer behaviour and people's savings.

In sum, it can be seen that travel restriction measures can affect the agricultural sector through many transmission channels and complicated mechanisms, including negative and positive impacts, short-term and long-term impacts, and domestic and international markets.

- In terms of growth, according to the GSO, the growth rate of value added for the agriculture

sector in the first quarter bottomed out, with growth of 0.04 percent due to the influence of many factors, including travel restrictions. Of this growth, the rate for agriculture and related service activities was -1.16 percent. The growth rate significantly improved in the second and third quarters of 2020.

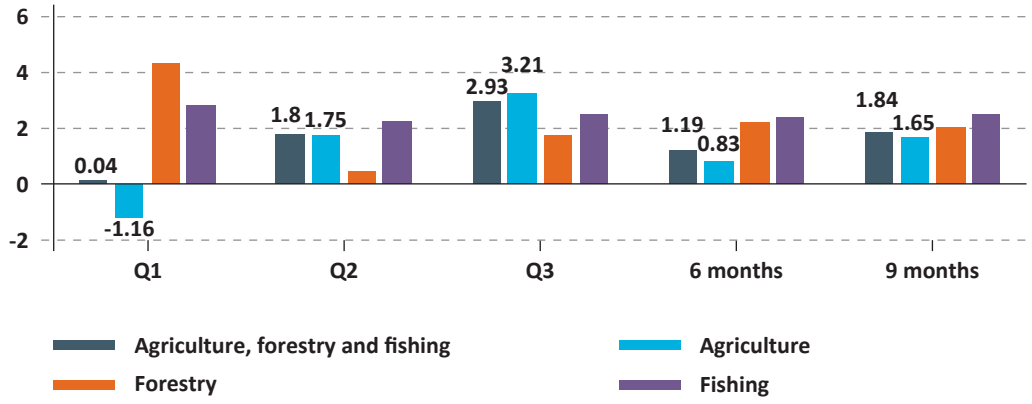


Figure 8: Growth rate of the agricultural sector by quarter and for the first 9 months of 2020 (yoy, %)

Source: GSO

- Regarding the export of agricultural, forestry and aquatic products: Many export products faced difficulties in the first quarter of 2020 due to the COVID-19 pandemic, initially to China, then South Korea, Japan, Europe, America and ASEAN, etc. Travel restrictions, namely blockade orders, border closures, trade restrictions or extended procedures for compliance with epidemic control regulations, etc., affected the export of agricultural, forestry and aquatic products. In the first quarter of 2020, the export turnover of agricultural and forestry products decreased by 4.5 percent and fisheries products by 11.2 percent over the same period in the previous year. In the first 9 months of 2020, export of agricultural and forestry products reached USD 14.63 billion, down 4.7 percent. The seafood group reached USD 6.03 billion, down by 3 percent.

2.2.2.3. Trade sector (imports/exports)

Travel restriction measures, especially social distancing and isolation, have negatively affected import and export activities in different ways.

- For the export of goods, travel restrictions have affected export activities through trade restrictions, more difficult customs clearance procedures and a decline in the demand for goods. Exporters faced more difficulties due to supply chain disruption, labour shortages, and the closure or suspension of their operations to fight the epidemic. Travel restriction measures, especially the temporary closure of immigration activities, limits on gatherings, and limits on shopping and trade centres, etc., reduced demand for consumption. Restrictions/suspension of international flights, the application of social distancing, and warnings to avoid direct contact have also seriously affected transactions, work and exchanges between Vietnamese enterprises and their partners, especially those transactions that require direct contact. Clearance activities also faced more difficulties due to increased inspections and epidemic controls at both input and output terminals.

In fact, travel restriction measures have negatively affected the export of goods. In the second

quarter and first 6 months of 2020, the export growth rate decreased compared to the same period in the previous year. In particular, in the second quarter of 2020 the export growth rate decreased by 6.5 percent compared to the same period in the previous year due to the strict application of travel restriction measures. With the relaxation of travel restriction measures, the export of goods improved in the third quarter of 2020 with an increase of 11 percent over the same period in 2019.

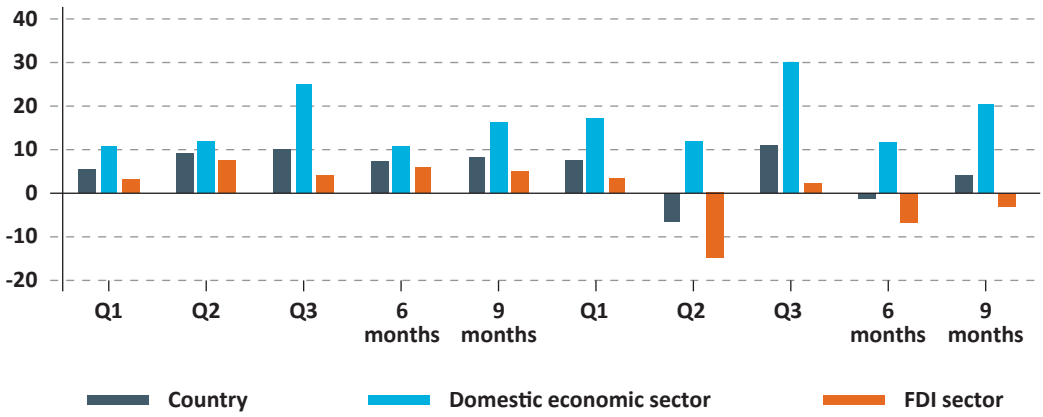


Figure 9: Export growth rate in the first 9 months of 2020 (yoy, %)

Source: GSO

- Travel restrictions also affected import activities, especially the import of raw materials.

Table 4: Value of imported goods in the first 6 months and 9 months of 2020

Commodity	First 6 months of 2020		First 9 months of 2020	
	Value (million USD)	**Compared to the same period in 2019** (%)	**Value** (million USD)	**Compared to the same period in 2019** (%)
1. Petroleum	1,586	56.5	2,534	58.4
2. Chemicals	2,353	92.0	3,576	93.4
3. Fertiliser	519	90.3	722	91.7
4. Paper of all kinds	818	95.8	1,199	91.4
5. Cotton	1,283	86.0	1,794	86.7
6. Textile yarn	972	80.0	1,445	79.5
7. Fabric	5,559	84.7	8,428	86.6
8. Textile, garment and footwear raw materials	2,518	85.8	3,801	86.7
9. Iron and steel	4,032	83.7	6,085	84.5

Source: GSO

As a result, in the second quarter the growth of import value decreased by 9.1 percent compared to the same period in 2019 (in 2019, the growth rate was 9.8 percent), of which the growth of import value contributed by the FDI sector decreased by 14.2 percent. In the third quarter of 2020, the growth of import value had significantly improved; however, in the first 9 months of 2020, it was still negative (-0.8 percent) compared to the same period in 2019.

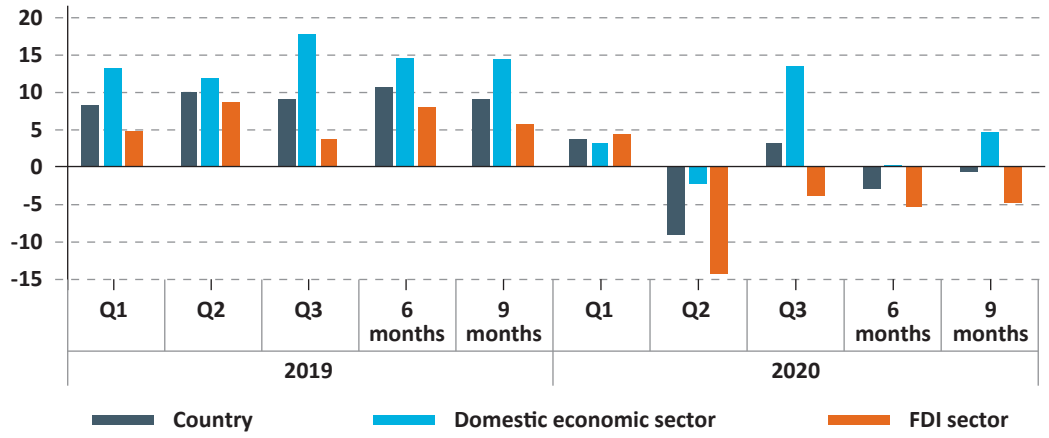


Figure 10: Import growth rate (yoy, %)

Source: GSO

- In terms of import and export of services, due to the COVID-19 pandemic and the implementation of travel restriction measures, both exports and imports witnessed negative growth in all first three quarters of 2020 (meanwhile, in 2019, both imports and exports of services saw a positive growth rate in all quarters).

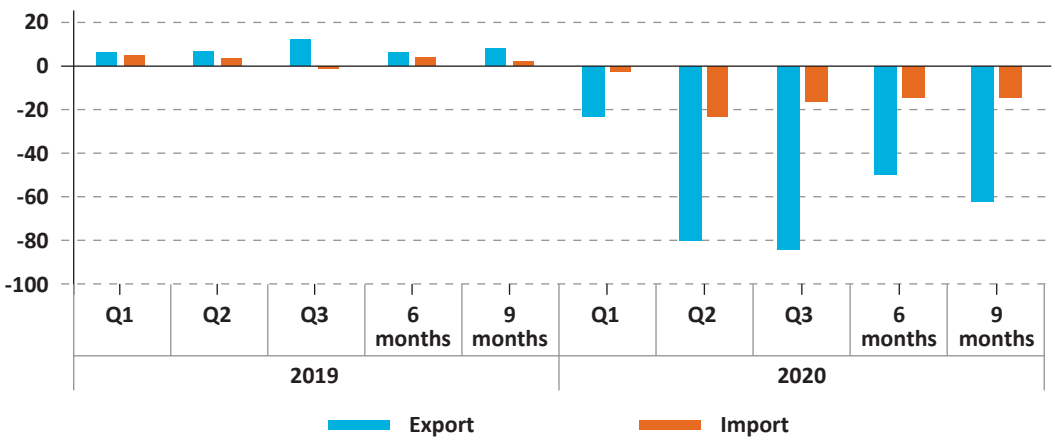


Figure 11: Export of services growth rate (yoy, %)

Source: GSO

2.2.2.4. Investment sector (focus on FDI)

Travel restriction measures have seriously impacted the investment sector and FDI in particular. According to the Foreign Investment Agency (FIA Viet Nam), due to the application of travel restrictions, a large number of experts and investors were unable to enter Viet Nam, causing difficulties for production and business activities as well as for new investment decisions and project expansion.

In practice, travel restraints, entry restrictions, international flight suspension, quarantine, isolation compliance, etc., have forced investors to cancel business trips to Viet Nam, leading to the delay of investment decisions. According to the FIA Viet Nam, there are several giants, such as Apple, ExxonMobil, etc., in the list of foreign investors subjected to delays for their business trips to Viet Nam. Almost no foreign business delegations come to seek investment opportunities in localities.

The real impacts are illustrated, as follows:

- In terms of investment attraction activities:

Due to the impacts of travel restriction measures, the number of newly licensed projects, projects registered for adjustment of investment capital, and capital contributions or share purchases by foreign investors all decreased compared to the same period in 2019. In the first 9 months of 2020, the number of newly licensed projects decreased by 29.4 percent compared to the same period of 2019 and total newly registered capital decreased by 5.6 percent. Total capital contributions or share purchases by foreign investors in the first 9 months of 2020 decreased by 10.5 percent compared to the same period of 2019, and the total value of capital contribution and share purchase decreased by 44.9 percent.

Table 5: FDI in the first 9 months of 2020

Indicators	Unit	First 9 months of 2019	First 9 months of 2020	Compared to the same period of 2019
1. Realised capital	mil. USD	14,220.00	13,760.00	96.8%
2. Registered capital	mil. USD	26,164.38	21,208.00	81.1%
- Newly registered	mil. USD	10,973.39	10,360.37	94.4%
- Adjusted capital	mil. USD	4,789.76	5,116.37	106.8%
- Capital contribution and share purchase	mil. USD	10,401.23	5,731.52	55.1%
3. Number of projects				
- Newly registered	projects	2,759	1,947	70.6%
- Adjusted capital	Number of times projects adjusted investment capital	2,759	1,947	77.0%
- Capital contribution and share purchase	Number of times projects adjusted capital contribution	6,502	5,172	79.5%

Source: FIA Viet Nam

In the first 9 months of 2020, the only month that recorded positive growth in registered foreign capital was January (approximately 2.8 times that of the same period in 2019), all remaining 8 months (from February to September) recorded negative growth. As of September 2020, the total accumulated newly registered capital decreased by nearly 19 percent and realised capital by 3.2 percent compared to the same period in 2019. This suggests that travel restrictions imposed during the COVID-19 pandemic had negative impacts on investment inflows to Viet Nam in 2020.

Table 6: Growth rate of foreign capital and disbursement rates by month, 2016-2020 (%) *

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Growth rate of registered capital compared to the same period in 2019 (%)									
2016	101.20	135.03	119.08	85.01	136.38	105.42	46.91	7.71	-4.24
2017	18.99	21.54	91.49	53.89	19.40	70.40	69.49	62.62	55.10
2018	-20.96	-1.83	-24.75	-23.93	-18.38	5.74	4.62	4.22	-0.43
2019	51.92	153.25	86.25	81.00	69.06	-9.17	-11.88	-7.07	3.12
2020	179.45	-23.63	-20.85	-15.48	-17.04	-15.15	-6.93	-13.65	-18.97
Growth rate of realised capital compared to the same period in 2019 (%)									
2016	58.42	25.00	14.75	10.71	17.17	15.08	15.54	15.29	14.20
2017	6.25	3.33	3.43	3.23	6.03	6.48	5.85	5.10	13.43
2018	23.53	9.68	7.18	6.25	9.76	8.42	8.84	9.22	6.00
2019	47.62	51.76	6.19	11.76	8.15	8.72	7.11	6.31	7.32
2020	3.23	-5.04	-6.55	-9.65	-8.22	-	-4.08	-5.10	-3.23
Disbursement rate (%)									
2016	59.93	53.51	86.93	67.52	57.09	64.25	66.07	68.21	67.07
2017	53.52	45.49	46.95	45.29	50.70	40.15	41.26	44.09	49.05
2018	83.64	50.82	66.88	63.26	68.18	41.16	42.93	46.20	52.22
2019	81.27	30.46	38.13	39.06	43.62	49.27	52.18	52.86	54.35
2020	30.02	37.87	45.02	41.76	48.25	-	53.78	58.09	64.91

Source: Calculated from FIA Viet Nam data

*Note: *: Accumulated values since February*

- For FDI enterprises: The COVID-19 pandemic prevention measures, especially travel restrictions, have disrupted supply chains of inputs and labour. For instance, in the automobile industry, due to the scarcity of input components and the implementation of social distancing, FDI of automobile enterprises, namely Honda, Nissan, Toyota, Ford, Hyundai, etc., had to temporarily stop production. Only when social distancing ended and supply chains were reconnected, were they able to continue their operations. Moreover, many FDI enterprises, especially enterprises with expatriate specialists and workers, have been heavily impacted by COVID-19 because of labour shortages. Many FDI projects from China, Korea, and Japan have faced difficulties because it is difficult for their experts to enter Viet Nam during the application of isolation and travel restrictions. Many enterprises face difficulties in production because their managers are in quarantine or their expatriate experts are unable to return. Labour costs are also high when businesses have to buy masks and disinfectant products, and apply labour safety measures to avoid COVID-19 infection.

FDI enterprises' imports and exports have been impacted. In the second quarter of 2020, FDI enterprises' export value decreased by 14.8 percent compared to the same period in 2019. In the third quarter of 2020, their exports significantly improved; however, in the first 9 months of 2020, their export value decreased by 2.9 percent compared to the same period in the previous year. Similarly, in both the second and third quarters of 2020, FDI enterprises' import value decreased by 14.2 percent and 4 percent, respectively. Thereby, in the first 9 months of 2020, their import value decreased by 4.8 percent compared to the same period of 2019.

2.2.2.5. Tourism sector

According to UNWTO, tourism has been the hardest hit of all the major sectors as countries lockdown and people stay at home. In Viet Nam, the tourism sector has also been seriously impacted by travel restrictions imposed during the COVID-19 epidemic.

The main travel restriction measures that have directly impacted on the tourism sector include: temporary suspension of visa issuance for foreigners entering Viet Nam for 30 days, starting from 00:00 on 18 March 2020; suspension of entry for all foreign visitors from 22 March 2020 until further notice; and implementation of social distancing throughout Viet Nam for 15 days from 00:00 on 1 April 2020. The entire population was ordered to stay at home, domestic flights were basically suspended, and residents were recommended not to move between localities during the outbreak.

The implementation of travel restriction measures has reduced demand for tourism services. For instance, border closures and the temporary suspension of domestic and international flights have directly reduced the number of both foreign arrivals in Viet Nam and domestic tourists. Due to the decline in the number of tourists, tourism-related services have been negatively affected. Many businesses, restaurants, hotels, amusement, entertainment, and dining areas have been temporary suspended. In addition, many activities to attract tourists have also been halted, significantly affecting the operation of tourism business units and related services. Festivals and major events were postponed; for example, Hue Festival 2020 has been postponed to 2021, the F1 Viet Nam Grand Prix is postponed; the Da Lat SufferFest 2020 was moved to 2021, and the Da Nang International Fireworks Festival 2020 was cancelled.

The impacts of travel restrictions on the tourism sector are illustrated as follows:

- The number of international visitors to Viet Nam has decreased. Before COVID-19, the number of international visitors to Viet Nam always witnessed a positive growth rate. In 8 continuous quarters of 2018-2019, the number of international visitors to Viet Nam increased

significantly. In the fourth quarter of 2019, the number of international visitors reached more than 5.1 million, an increase of 32.4 percent compared to the same period in 2018. However, due to the COVID-19 pandemic and the application of travel restrictions, the number of international visitors to Viet Nam has plummeted, with a negative growth rate compared to the same period of 2019 in all three first quarters (-18.1 percent, -98.6 percent and -99.0 percent, respectively). The sharp decline in the number of international visitors resulted from the application of travel restrictions such as flight suspensions from/to some countries/areas, centralised quarantine/isolation (first quarter), and the closure of borders to international visitors (since the second quarter of 2020).

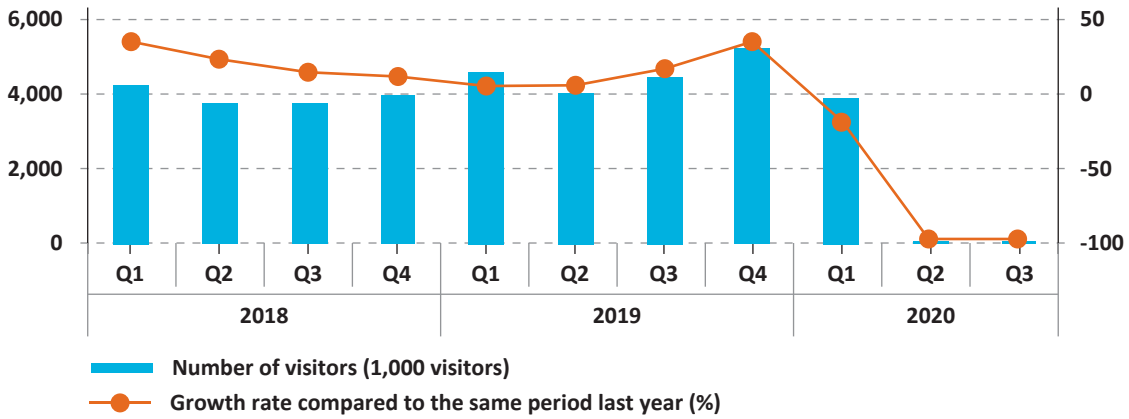


Figure 12: The number of international visitors to Viet Nam by quarter and growth rate compared to the same period in 2019

Source: GSO

A monthly review of the impacts of travel restrictions found that the number of international visitors to Viet Nam is declining and that the degree of reduction corresponds to the application of travel restrictions. The number of international visitors to Viet Nam started to decline in the first quarter and since April 2020 this number of visitors has decreased by around 98-99 percent compared to the same period in 2019. In April, only 26,200 international visitors arrived Viet Nam; in May, the number was 22,900 and in June, the number was only 8,780 visitors, the lowest level in many years, a reduction of 61.3 percent compared to the previous month and 99.3 percent compared to the same period in 2019. Viet Nam continues to implement measures to prevent COVID-19 and remains closed to foreign tourists. International arrivals in Viet Nam are mainly foreign experts and technical workers (there are almost no international tourists).

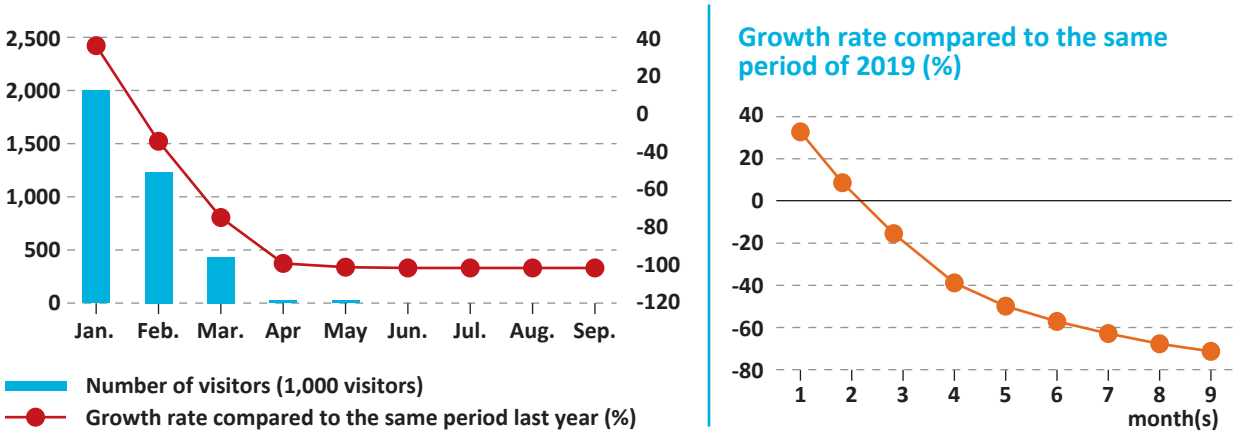


Figure 13: The number of international visitors in the first 9 months of 2020 and growth rate compared to the same period of 2019

Source: GSO

In first 9 months of 2020, the total number of international visitors to Viet Nam was only 3.79 million, a decrease of 70.6 percent compared to the same period of 2019 (a decline in visitors from all continents). According to an evaluation of the international tourism market in the first quarter of 2020 by the Institute for Tourism Development Research (2020), international tourists from Northeast Asia, China and South Korea declined by more than 90 percent; international tourists from North America and Australia witnessed a sharp decrease; and international tourists from Southeast Asia and South Asia saw a slight decrease. The number of international visitors to Viet Nam declined in the second quarter of 2020. The downtrend continued in the third quarter and the first 9 months of the year. The number of visitors from Asia witnessed the biggest decrease (72.7 percent compared to the same period of 2019).

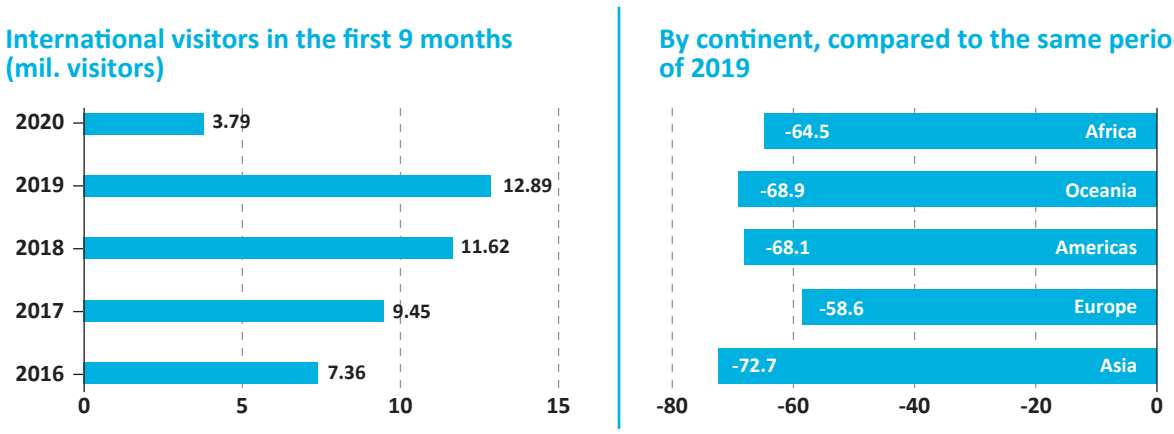


Figure 14: International visitors to Viet Nam in the first 9 months, 2016-2020

Source: GSO

- The number of domestic tourists also decreased significantly. During 2015-2019, the number increased from 57 million (2015) to 86 million (2019), an increase of over 50 percent. However, in the first 9 months of 2020, the total number of domestic tourists was only 37.5 million, a decrease of 43.2 percent compared to the same period in the previous year, including 19.2 million visitors using accommodation services.

During 2015-2019, the total revenue from tourism increased from VND 335,000 billion to VND 755,000 billion (an increase of 2.1 times). In the first 9 months of 2020, due to the decrease in the number of tourists, the total revenue from visitors was only about VND 233,000 billion, a decrease of 54 percent compared to the same period in 2019.

- Travel restrictions have seriously affected travel services. Almost all travel activities have been halted, with no visitors. Accordingly, travel service revenue has decreased significantly. For instance, in April, travel service revenue decreased by 93.2 percent over the previous month and 97.5 percent over the same period in 2019. In May, thanks to the end of strict social isolation under Directive No. 16 and the relaxation of social distancing and other measures in the 'new normal', travel activities showed signs of improvement in June compared to April 2020. However, the reappearance of COVID-19 in Da Nang and re-application of social isolation and social distancing in certain localities, especially in tourist centres like Da Nang and Hoi An, has heavily impacted travel services. Revenue in July was lower than in June and in August was lower than in July. In August, the proportion of tourists cancelling their tours was up to 95 or 100 percent. In September, travel services revenue improved compared to August.

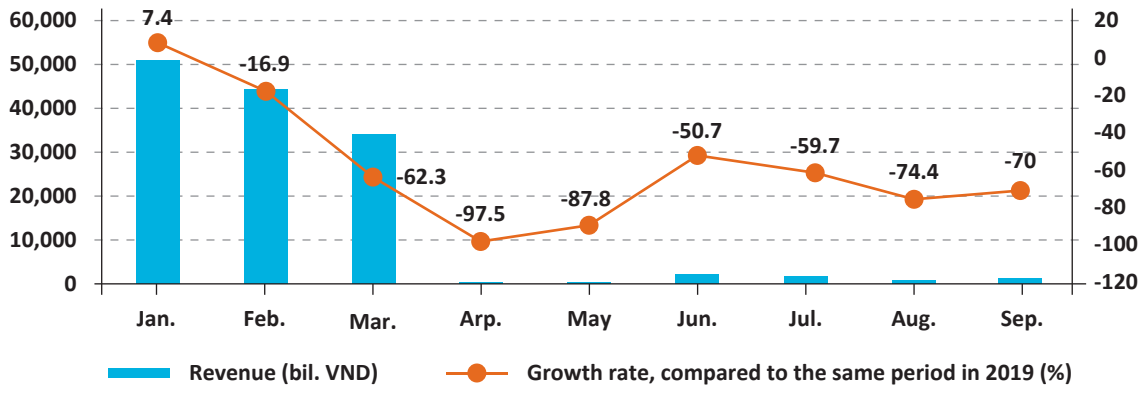


Figure 15: Revenue of travel services in the first 9 months of 2020 and growth rate compared to the same period in 2019

Source: GSO

In the first quarter of 2020, revenue from travel services decreased by 27.8 percent compared to the same period in 2019 (revenue increased by 13.2 percent in the same period in 2019 and 30.8 percent in 2018). In the second quarter, revenue decreased by 83.5 percent compared to the same period in 2019 (revenue increased by 13.3 percent in the same period in 2019 and 9 percent in 2018). In the first half of 2020, revenue decreased by 53.2 percent compared to the same period in 2019 due to not receiving international visitors and strict social isolation in April. In the third quarter of 2020, revenue improved; although social isolation measures were applied it was on a smaller scale. In the first 9 months of 2020, revenue decreased by 56.3 percent compared to the same period in 2019.

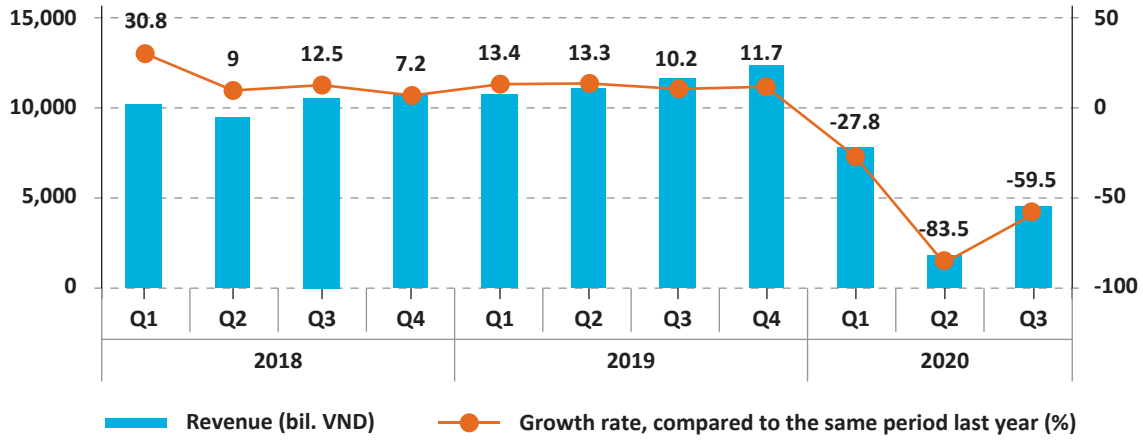


Figure 16: Revenue of travel services by quarter and growth rate compared to the same period in 2019

Source: GSO

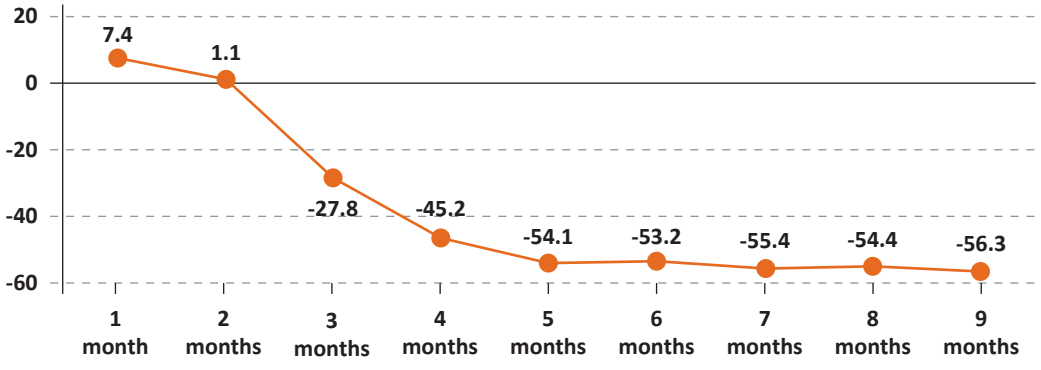


Figure 17: Growth rate of travel services revenue compared to the same period in 2019 (%)

Source: GSO

- Accommodation, and food and beverage services have also been significantly impacted. Similarly, the revenue of accommodation, food and beverage services sharply decreased since February, especially in April during the nationwide 15-day social isolation. In April, revenue decreased by 64.7 percent compared to the same period in the previous year and by 50.4 percent compared to March. Along with the relaxation of domestic travel restrictions since the end of April and the new normal situation, revenue significantly improved since May; although decreasing by 25.8 percent compared to the same period in 2019, it increased by 93.1 percent compared to April. However, because of the epidemic outbreak in Da Nang in late July and then in other localities, travel restriction measures continued to be implemented in certain localities, especially in Da Nang – a famous tourist centre – the number of tourists fell sharply. In August, revenue decreased by 14.2 percent compared to July. In September, when domestic travel restrictions were removed, revenue increased by 5.6 percent compared to August 2020.

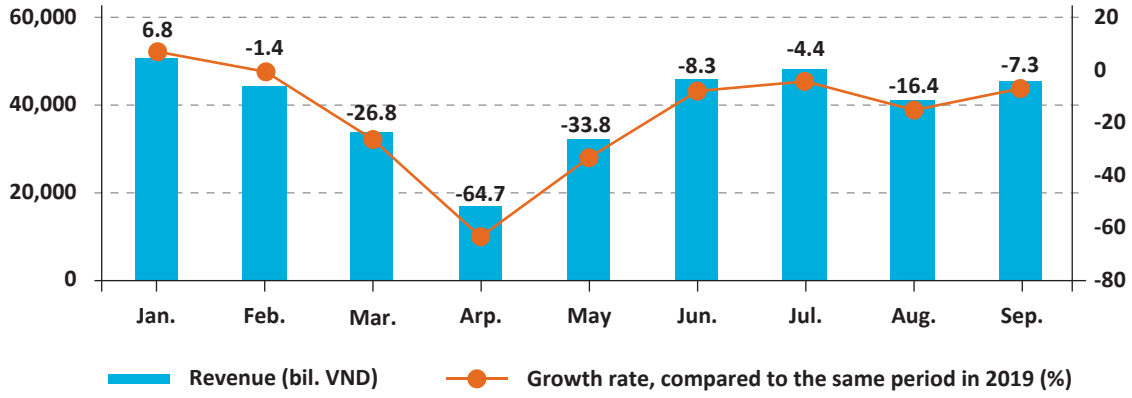


Figure 18: Revenue of accommodation, food and beverage services in the first 9 months of 2020 and growth rate compared to the same period in 2019

Source: GSO

In the first quarter of 2020, revenue of accommodation, food and beverage services decreased by 9.6 percent (meanwhile, in the same period in 2019 and 2018, revenue increased by 8.9 percent and 8.4 percent respectively). In the second quarter of 2020, revenue decreased by 26.1 percent (in the same period in 2019 and 2018, revenue increased by 9.3 percent and 10.8 percent, respectively) because social isolation in April caused a decline in both domestic and international tourists. In the third quarter of 2020, revenue improved compared to the second quarter of 2020; however, it witnessed a negative growth rate (-7.8 percent) compared to the same period in 2019.

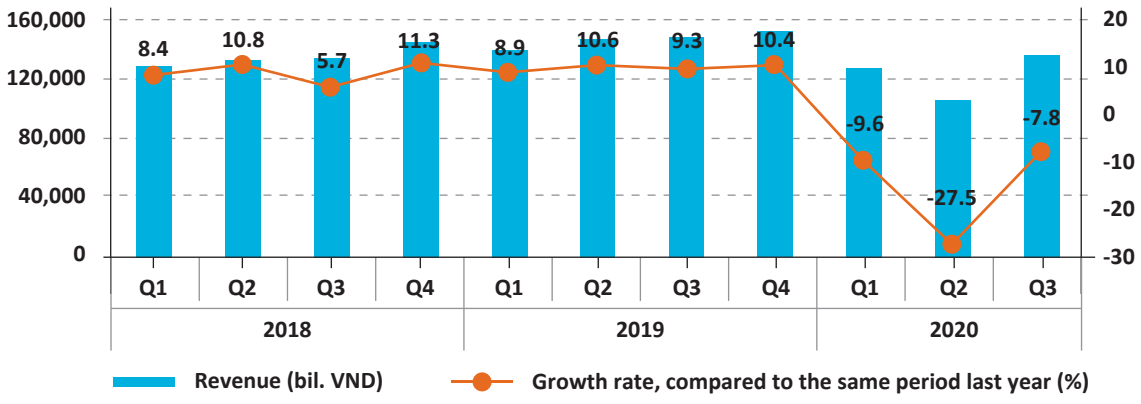


Figure 19: Revenue of accommodation, food and beverage services by quarter and growth rate compared to the same period in 2019

Source: GSO

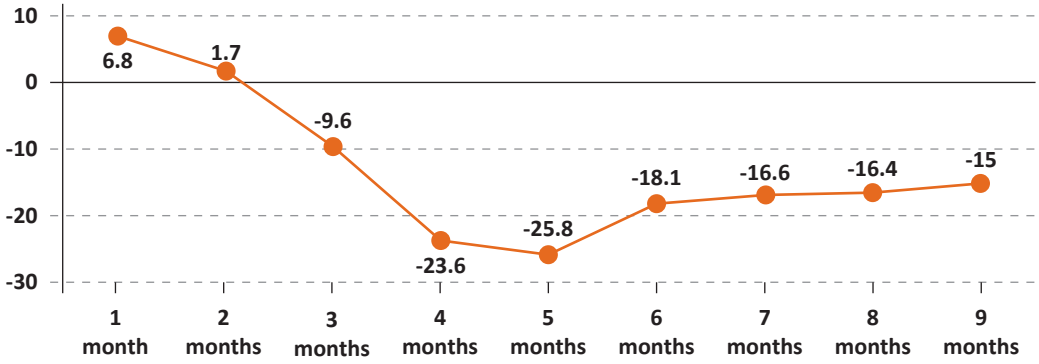


Figure 20: Growth rate of revenue of accommodation, food and beverage services, compared to the same period in 2019 (%)

Source: GSO

Almost no accommodation providers recorded profits, many even witnessed large losses. The accommodation occupancy rate and prices fell sharply. According to Savills Viet Nam, in Ho Chi Minh city, the average hotel occupancy rate hit a record low, reaching only 12 percent in the second quarter of 2020, down 36 percentage points compared to the previous quarter and 51 percentage points compared to the same period in 2019. The average room rate also fell sharply. The average rate of five-star hotels was only USD 96 (a decrease of 20 percent), for four-star hotels it was USD 51 (a decrease of 20 percent) and three-star hotels witnessed the deepest drop with an average room rate of only USD 29 (a decrease of 32 percent) (Nguyen Son, 2020). Meanwhile, the hospitality industry is characterised by high fixed costs. In the case of no guests, hotel operators still have to pay certain costs like depreciation of construction works, machinery and equipment, land rent, internet fees, maintenance costs, and in particular interest on outstanding loans. Similar to Ho Chi Minh city, in Hanoi the hotel occupancy rate was also low, at only 10.6 percent for 1-5 star hotels, a decrease of 53.4 percent compared to the same period in 2019.

Due to the sharp decline in domestic and international visitors, a number of businesses in the industry had to close. The number of businesses that temporarily stopped operations also significantly increased. In the first 9 months of 2020, 2,414 accommodation and food service enterprises temporarily suspended operations, an increase of 120.3% over the same period in 2019. Accordingly, millions of labourers lost their jobs and have to do all kinds of work to earn an income. The proportion of workers with informal jobs increased. In the first 9 months of 2020, the proportion of workers with informal jobs in accommodation and food services was 81.8 percent.

2.2.2.6. Transportation sector

- Travel restriction measures have heavily impacted the transportation sector, and passenger transport services in particular. Travel restriction measures, especially social distancing, have affected activities. Implementing 'work from home' policies for non-essential workers and cancelling most outdoor activities (leisure, etc.) significantly reduced the need for transportation services, thereby affecting transport businesses, especially passenger transport. Measures to limit tourism from epidemic areas to Viet Nam, for example, temporarily suspending domestic flights during the outbreak and all international flights, etc., have heavily affected transportation activities, especially airlines.

Travel restriction measures also affect travel behaviour: The implementation of social distancing reduced the demand for travel due to an increase in working from home, online learning and a decrease in social activities and events. Social distancing affects the way people travel. For example, people avoid using public transport and regulations on safe distancing on buses, trains, and planes, etc., affect operating capacity, reducing the number of passengers.

In practice, travel restriction measures have heavily affected passenger numbers. In the first 4 months of 2020, the number of passengers decreased in line with the status of COVID-19 and the extension of travel restrictions. Particularly, in April 2020, when Viet Nam strictly implemented nationwide social distancing for 15 days, the number of passengers was only 99.802 million, a decrease of 76.8 percent compared to the same period in 2019. In the first 4 months of 2020, the number was 1,231.28 million, a decrease of 27.5 percent compared to the same period in 2019.

The number of passengers increased in May, June and July when Viet Nam eased travel restrictions and went into the new normal situation. However, compared to the same period in 2019, the number of passengers in May, June and July decreased sharply by 33.1 percent, 26.2 percent and 21.8 percent, respectively. By the end of July, due to the outbreak of COVID-19 in Da Nang and other localities, and the re-implementation of travel restriction measures, the number of passengers in August was only around 238 million, a decrease of 25.2 percent compared to July and 42.3 percent compared to the same period in 2019. In September, although passenger numbers improved, the number of passengers still decreased by 45.5 percent compared to the same period in 2019. In the first 9 months of 2020, the total number of passengers was estimated at around 2.626 billion, down 29.6% compared to the same period in 2019. This clearly illustrates the impact of travel restrictions on passenger numbers.

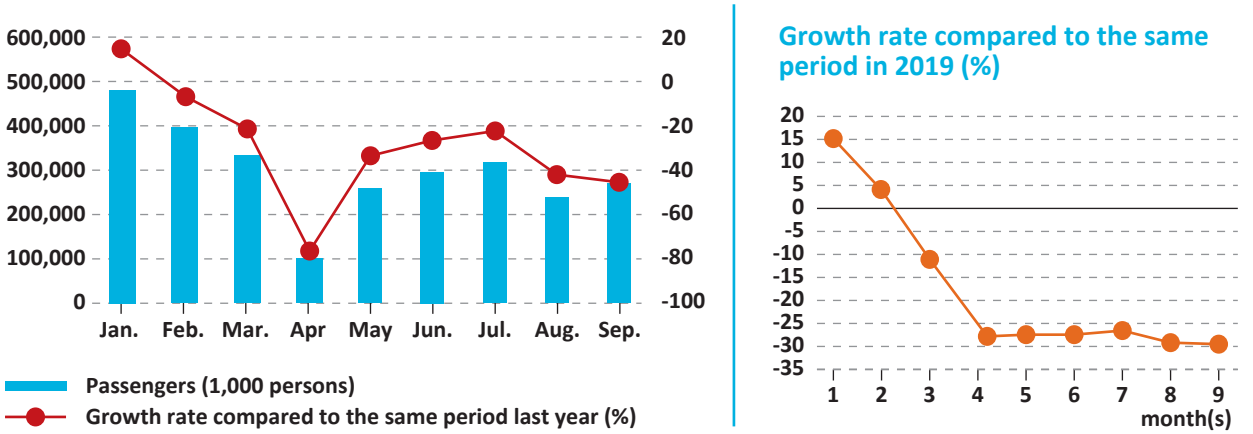


Figure 21: Passengers carried in the first 9 months of 2020 and growth rate compared to the same period in 2019

Source: GSO

In comparison to 2018 and 2019, the number of passengers declined sharply, especially in the second quarter of 2020 when Viet Nam implemented nationwide social isolation in the first half of April. In the first three quarters, the number of passengers witnessed a negative growth rate: -10.8 percent, -44.4 percent, and -34 percent, respectively.

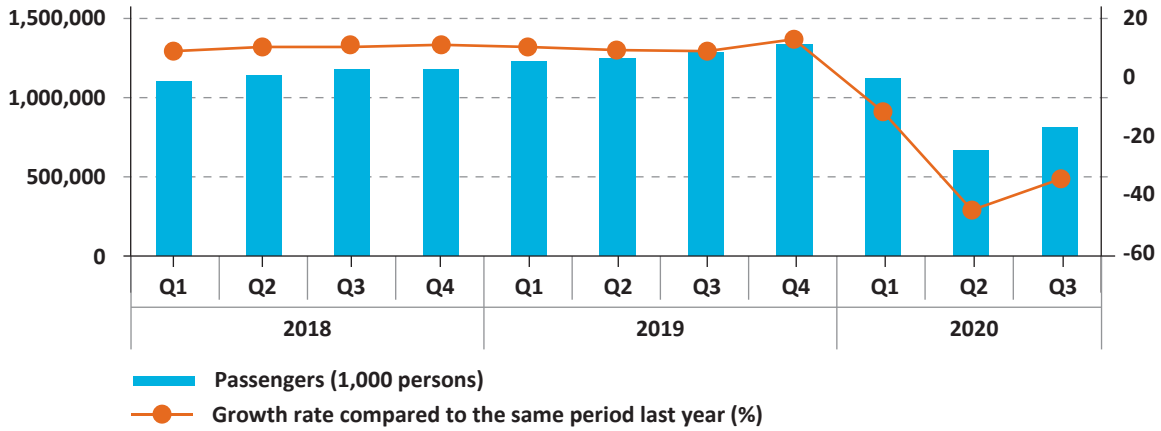


Figure 22: Passengers carried by quarter and growth rate compared to the same period in 2019

Source: GSO

Travel restriction measures have had different impacts on the number of passengers carried by the transport sector. The passengers carried overseas has hardly increased since April and reduced by 99 to 100 percent compared to the same period of 2019. This is consistent with the extent of overseas travel restrictions. The changes in the number of passengers carried domestically have also been dependent on the extent of domestic travel restrictions.

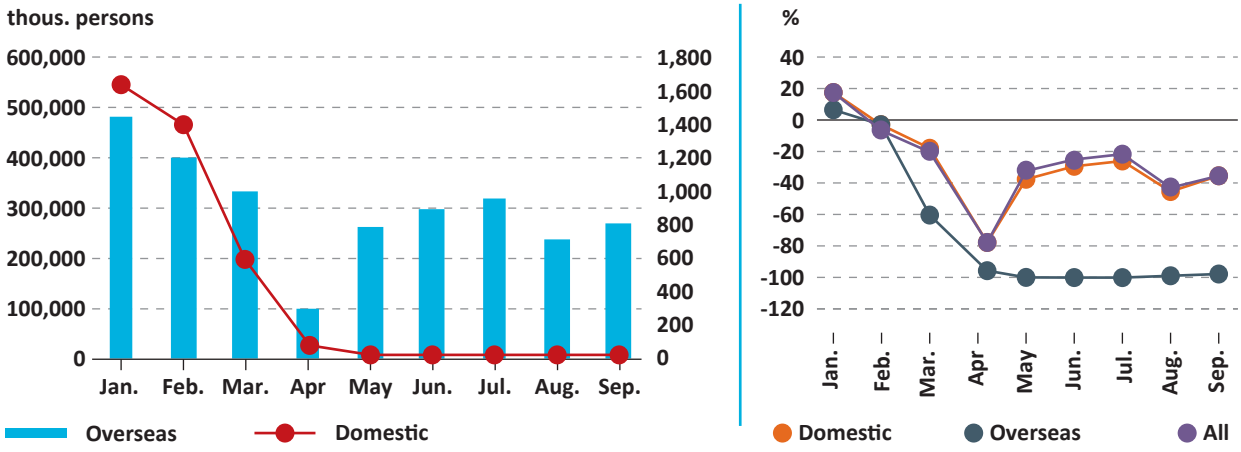


Figure 23: The number of passengers carried in the first 9 months of 2020 and growth rate compared to the same period of 2019 by transport sector

Source: GSO

- Similarly, travel restrictions have huge impacts on freight transport services. For instance, in sea freight transport, sea container supply chains consist of processes related to personal contacts, clerical work, and data access, in which there are many stages of mass gatherings and large scale human interaction, such as the packaging of goods, etc.

In practice, from February to September 2020, the volume of freight carried witnessed a negative growth rate compared to the same period in 2019.

In particular, in April, the total volume of freight carried was only about 105,7 million tons, a decrease of 27.2 percent compared to the same period of 2019. From May to September 2020, although the volume of freight carried significantly improved, the growth rate was -4 percent, -8.5 percent; -4.2 percent, -7.6 percent, and -11.8 percent, respectively, much lower than the same period in 2019. In the first 9 months of 2020, the total volume of freight was 1,264,560.5 thousand tons, a decrease of 7.3 percent compared to the same period of 2019.

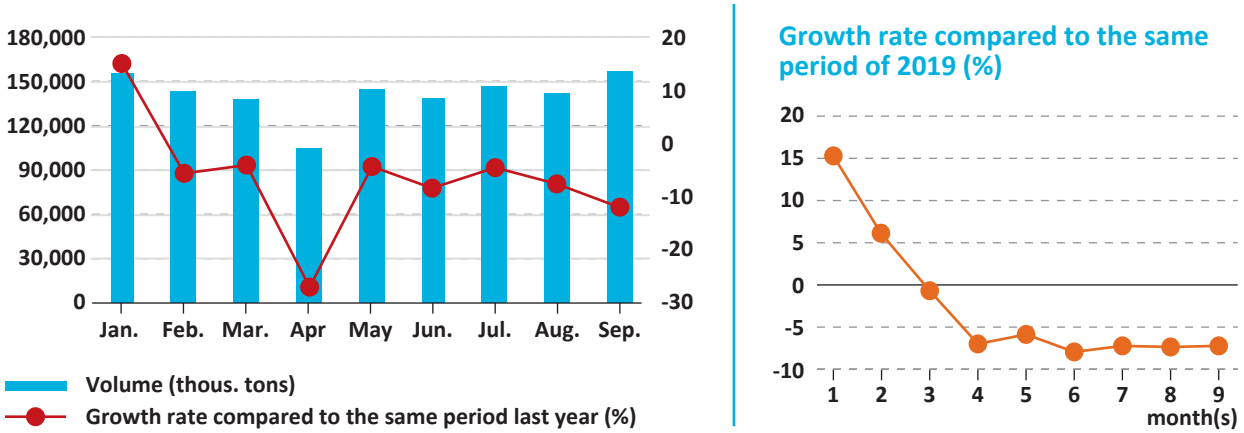


Figure 24: Freight transport in the first 9 months of 2020 and growth rate compared to the same period of 2019

Source: GSO

If calculated quarterly, the volume of freight carried in the second quarter of 2020 significantly decreased compared to the first quarter of 2020 and the second quarter of 2018 and 2019. In the second quarter of 2020, the total volume of freight was roughly 379.1 million tons, a decrease of 0.5 percent compared to the first quarter of 2020 and a decrease of 15.4 percent compared to the same period of 2019. In the third quarter of 2020, although the volume of freight carried improved, it was only equal to 93.6 percent compared to the same period of 2019 (a decrease of 6.4 percent).

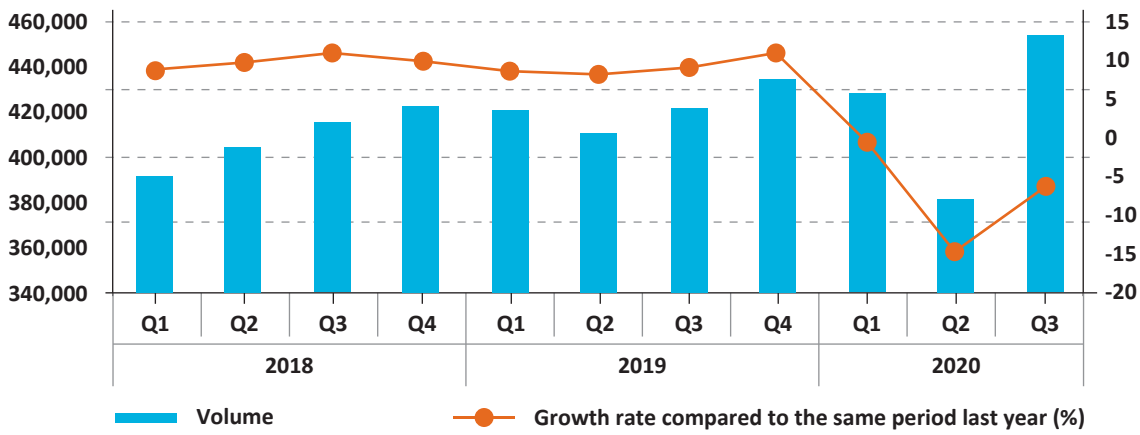


Figure 25: Growth rate for freight by quarter (yoy)

Source: GSO

Both domestic and overseas freight transport sectors have been affected by travel restrictions, especially in April when travel restriction measures were strictly applied. The volume of domestic and overseas freight carried decreased compared to the same period of 2019, by -27.2 percent and 26.3 percent, respectively. The relaxation of travel restrictions improved the volume of freight; however, the growth rate was much lower than the same period of 2019. In the first 9 months of 2020, the total volume of domestic freight carried decreased by 7.2 percent compared to the same period of 2019 and the total volume of overseas freight reduced by 4.9 percent compared to the same period of 2019.

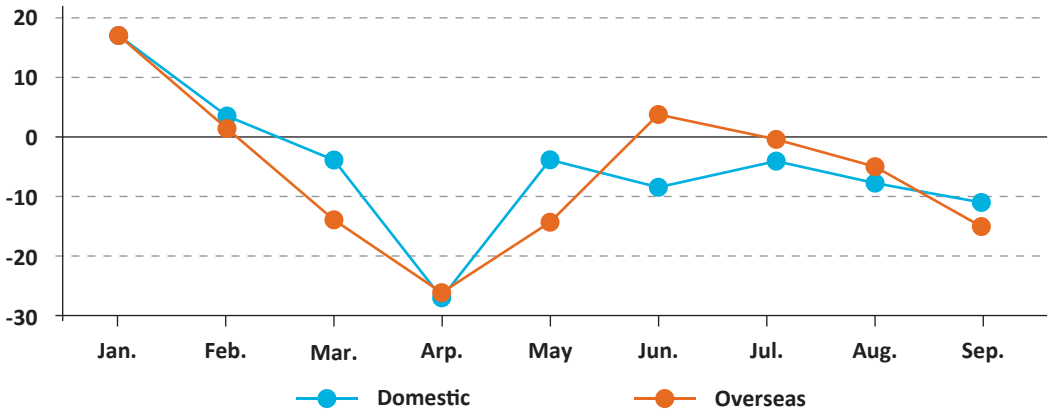


Figure 26: Growth rate for freight carried in the first 9 months of 2020 by transport sector

Source: GSO

- All types of transport have been negatively affected by travel restriction measures. According to the GSO, since February 2020, the number of passengers carried by all types of transport decreased compared to the same period of 2019, especially in April when Viet Nam applied 15 days of social isolation throughout the country. Thanks to the relaxation of travel restrictions since May, the number of passengers improved for all types of transport. By the end of July and August, 2020, when travel restriction measures were applied in certain localities, the number of passengers decreased in August compared to the previous month and to the same period of 2019.

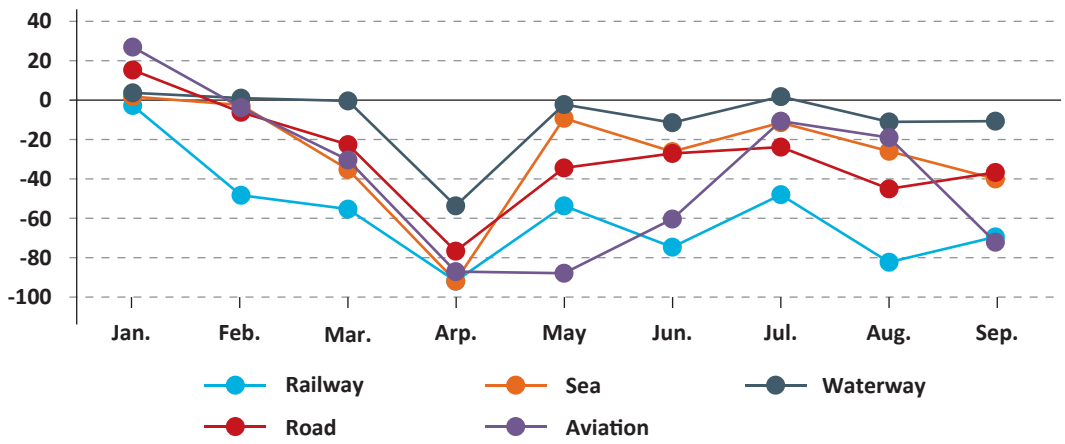


Figure 27: Growth rate of passenger numbers in the first 9 months of 2020

Source: GSO

In terms of the volume of freight carried in the first 9 months of 2020, travel restriction measures hit the aviation industry the hardest.

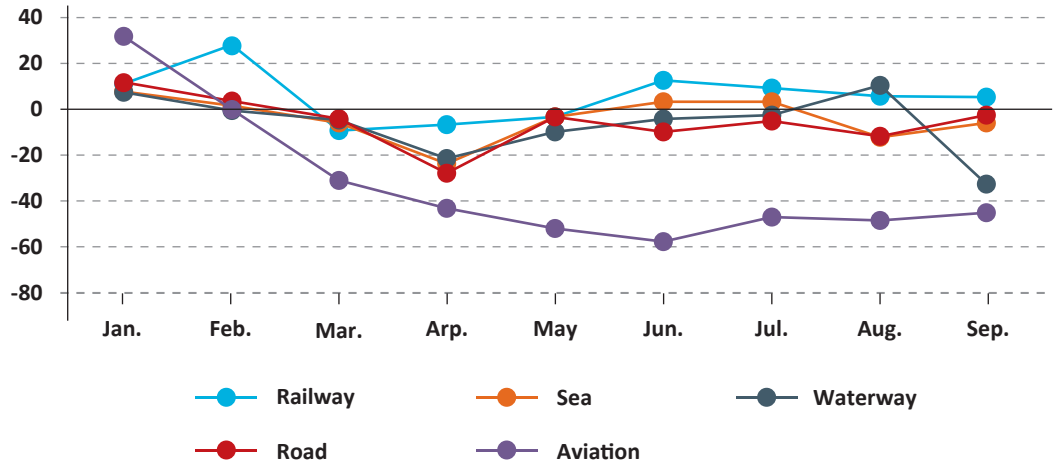


Figure 28: Growth rate of freight carried in 2020

Source: GSO

Table 7: Negative effects by type of transport in the first quarter of 2020

Aviation	Sea	Local waterways	Road	Railway
The initial loss of Viet Nam's airlines caused by the suspension of flights was estimated at around VND 30,000 billion.	The number of hips using Viet Nam's seaports reduced by 15 percent. In particular, international passenger cruise ships decreased by 30 percent compared to the same period of 2019.	In January 2020, the total volume of freight carried decreased by 10.7 percent and the number of passengers carried decreased by 2 percent.	As estimated, the total volume of freight and the number of passengers decreased by 40-80 percent compared to the same period of 2019 and to the period prior to the COVID-19 pandemic.	152 passenger train lines were halted, leading to a decrease of VND 84 billion in revenue; freight transport revenue decreased by VND 6 billion.

Source: Australia Aid, LIRC and VCCI (2020)

Table 8: Passenger transport and freight transport in the first 3 quarters and the first 9 months of 2020

	Q1/2020	Compared to Q1/2019	Q2/2020	Compared to Q2/2019	First 6 months of 2020	Compared to the first 6 months of 2019	Q3/2020	Compared to Q3/2019	First 9 months of 2020	Compared to the first 9 months of 2019
Passenger transport										
Railway	1,340.8	65.3	676.6	30.5	2,017.4	47.5	891.2	38.4	2,908.6	44.1
Sea	1,306.1	75.7	1,531.5	70.2	2,837.6	74.3	2,165.4	74.0	5,003.1	73.2
Local waterway	44,705.3	92.5	47,227.5	87.1	91,932.8	90.5	59,551.7	93.5	151,484.4	91.1
Road	1,073,583.3	89.2	624,301.4	54.1	1,697,884.7	72.0	746,007.2	64.8	2,443,891.9	69.6
Aviation	10,542.9	81.4	5,328.0	37.8	15,870.9	58.7	6,661.2	46.4	22,532.1	54.5
Freight transport										
Railway	1,191.8	96.1	1,267.3	94.7	2,459.1	95.1	1,247	105.6	3,706.1	98.6
Sea	19,404.9	96.7	18,964,1	93.2	38,369.0	96.2	20,316.3	95.5	58,685.3	95.1
Local waterway	72,212.8	97.7	71,382.1	90.4	143,594.9	97.1	94,522.2	90.3	238,117.1	92.4
Road	335,915.7	100.1	289,852.3	83.4	625,768.0	98.9	338,087.4	94.4	963,855.4	92.6
Aviation	89.0	94.8	54.0	47.5	143.0	69.1	53,5	45.9	196.6	60.6

Source: Author's calculation from GSO data

In practice, since the onset of the COVID-19 pandemic, despite occasional delays, sea and road transport have operated normally. Air transport has been severely disrupted and air transport capacity has decreased sharply.

Air transport services are heavily affected by the cutting of routes and the reduction and suspension of flights domestically and internationally. The majority of aircraft of all Viet Nam's airlines have been grounded. Thereby, the number of passengers carried by air transport sharply declined, especially in April and May. The relaxation and gradual removal of domestic travel restrictions and the resumption of domestic flights in June and July helped air transport recover. However, with the outbreak of COVID-19 in Da Nang in late July 2020 and the re-application of domestic travel restriction measures, particularly the suspension of flights from/to Da Nang (a famous tourist centre), the number of passengers carried by air transport in August decreased by 20.9 percent compared to July 2020 and 32.1 percent compared to the same period of 2019.

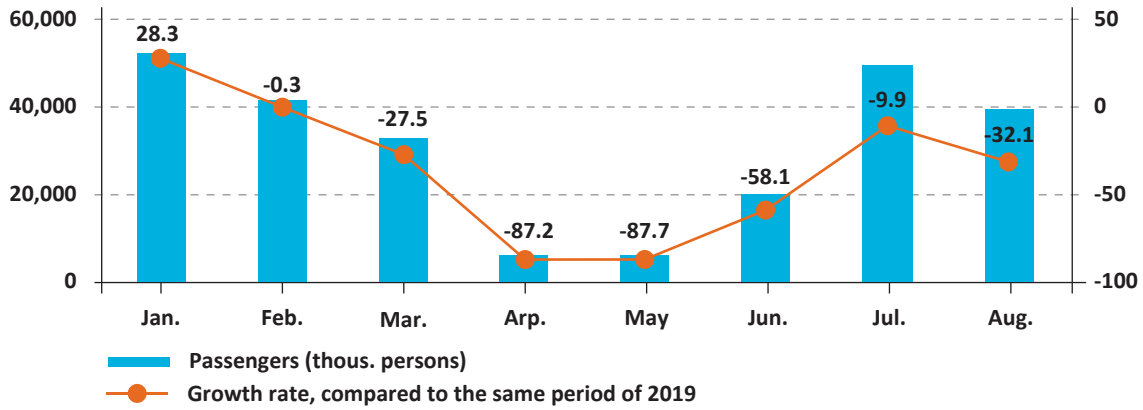


Figure 29: The number of passengers carried by air transport in the first 8 months of 2020 and growth rate compared to the same period of 2019

Source: GSO

All Viet Nam's airlines have been severely affected by the suspension of flights.

Box 1. Assessment of the Viet Nam Civil Aviation Administration

Right at the end of February, due to the suspension of flights to epidemic areas, all Viet Nam's airlines have been heavily affected. Due to the suspension of flights to China, Viet Nam's airlines have lost a large market - 5.1 million passengers arrived in 2019 - accounting for 62 percent of this market (8.1 million passengers). In other markets, Viet Nam's carriers have cut 92 percent of flights to Hong Kong (only Vietnam Airlines serves Hong Kong with 4 flights per week), meanwhile in 2019, Viet Nam's airlines carried 554,000 passengers, accounting for 32 percent of the market share. Regarding Taiwan, Viet Nam's airlines have cut 34% of their flights to 99 flights per week. In 2019, Viet Nam's airlines carried 1.7 million passengers, accounting for 52 percent of the market share on Viet Nam - Taiwan routes. Regarding Korea, Viet Nam's airlines cut 41 percent of their flights to 116 flights per week. In 2019, Viet Nam's airlines carried 3.1 million passengers, accounting for 33 percent of the market share.

Source:
https://tuoitre.vn/hang-khong-viet-nam-co-the-mat-25000-ti-doanh-thu-theo-kich-ban-nao-20200227184953707.htm, (February 27, 2020)

Similarly, there was a downward trend in air freight volume from January to April, of which in April, total air freight volume decreased by 80.5 percent compared to the same period of 2019.

When domestic travel restriction measures were loosened, air freight volume witnessed signs of improvement but still fell sharply compared to the same period of 2019.

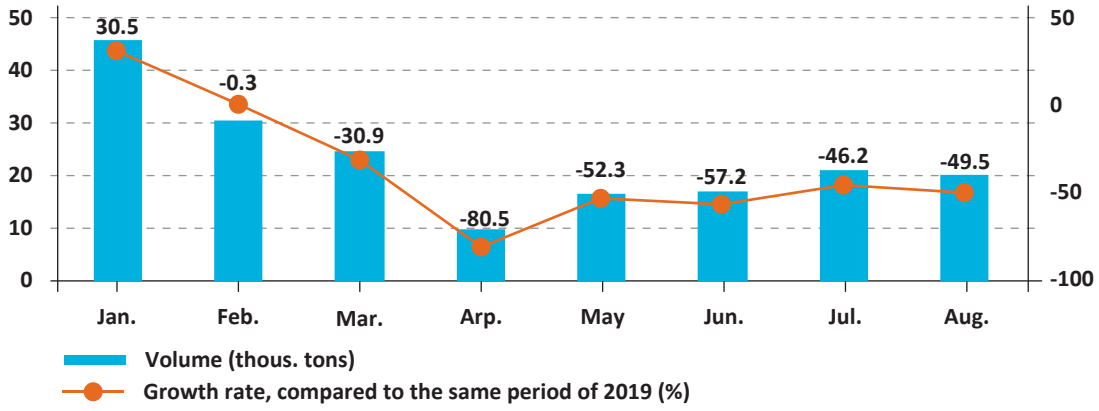


Figure 30: Air freight volume in the first 8 months of 2020 and growth rate compared to the same period of 2019

Source: GSO

The tracking chart of international and domestic flight trends for Viet Nam from January to now indicates that the number of international and domestic flights is inversely proportional to the stringency index. When Viet Nam began to impose travel restriction measures, the number of domestic and international flights gradually decreased. When Viet Nam applied strict social isolation in April, the number of both domestic and international flights was close to zero. When the government eased domestic travel restriction measures, the number of domestic flights tended to increase. International flights are mainly humanitarian flights to rescue overseas Vietnamese people and take foreigners home (there are no commercial flights).

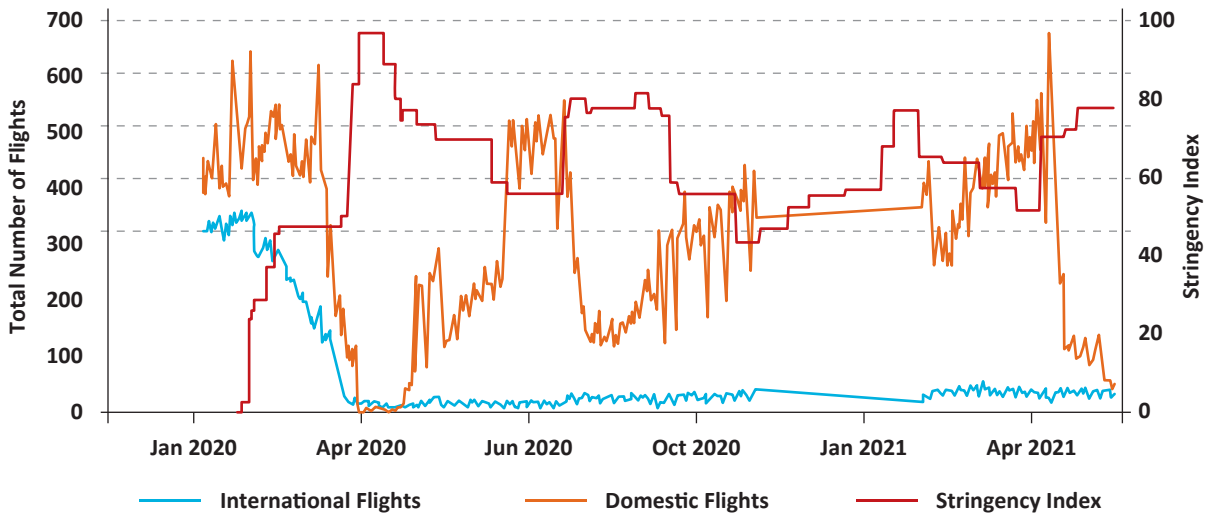


Figure 31: Trends in international and domestic flights and the policy stringency index for Viet Nam

Source: https://blogs.worldbank.org/

The figure below indicates that in the second quarter of 2020, the number of passengers carried by air reduced by 62.2 percent compared to the same period of 2019 (in 2018 and 2019, the numbers grew by 20.1 percent and 9.9 percent, respectively). In the third quarter of 2020, the number of passengers carried by air was higher than the previous quarter but still witnessed negative growth (53.6 percent).

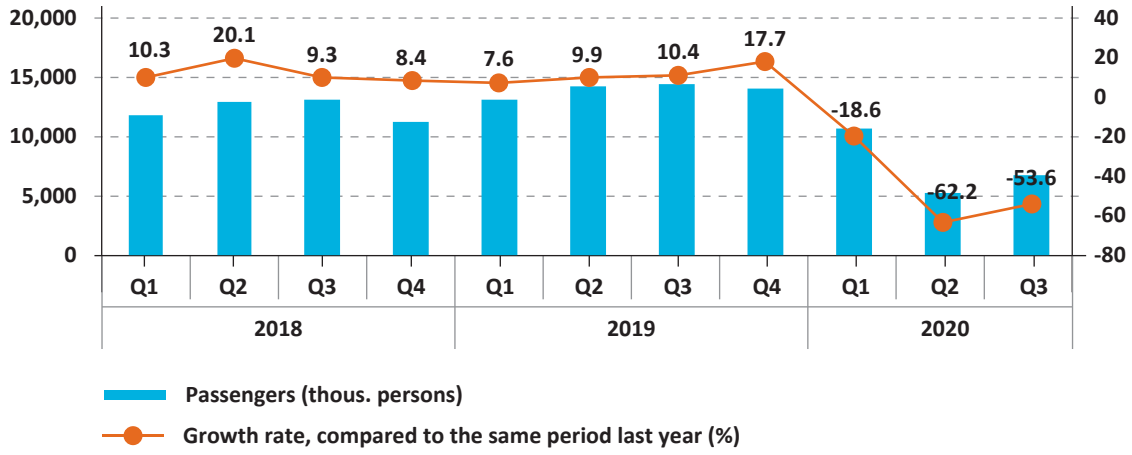


Figure 32: The number of passengers carried by air by quarter and growth rate compared to the same period in 2019

Source: GSO

According to reports from Viet Nam's airlines, in the first 6 months of 2020, business was at its lowest ever level.

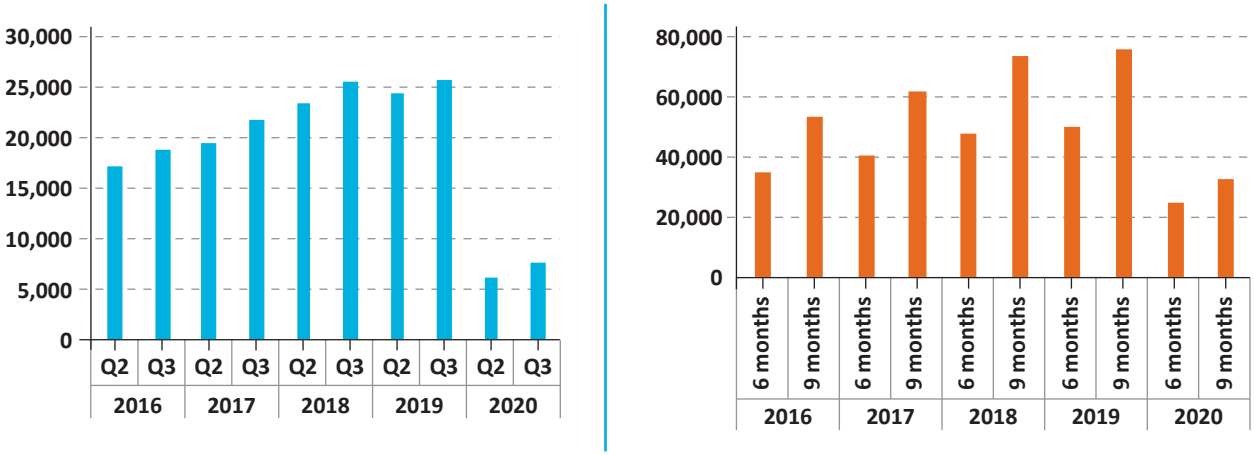


Figure 33: Vietnam Airlines' gross revenue from goods sold and services provided (Unit: billion VND)

Source: Compiled from Vietnam Airlines' Consolidated Financial Statement

For Vietnam Airlines, in March and April alone output decreased by 75 percent and the total available seat-kilometres (ASK) reduced by 42.7 percent compared to its target. Passengers decreased by 8.9 million and revenue by VND 33,500 billion. Profits decreased by VND 11,200 billion. In the second quarter, gross revenue from goods sold and services rendered reached only VND 6,006 billion, just 25 percent compared to the same period of 2019 (VND 24,363 billion). In the third quarter, gross revenue from goods sold and services rendered was only VND 7,620.7 billion, equivalent to only 29.7 percent of the third quarter of 2019. In the first 6 months of 2020, it was VND 24,934 billion, only half as much as the same period of 2019. In the first 9 months of 2020, the figure reached VND 32,564 billion, nearly 43 percent compared to the same period in 2019.

In the second quarter of 2020, total pre-tax profits were VND -3,981 billion compared to VND 206.7 billion in the same period of 2019. In the first 6 months of 2020, total pre-tax profits were VND -6,542 billion compared to VND 1,785.7 billion in the same period of 2019. In the third quarter of 2020, total pre-tax profits continued at a negative level at VND -3,942.4 billion (in the same period of 2019, total pre-tax profits were VND 1,506 billion). In the first 9 months of 2020, total pre-tax profits were VND -10,505 billion while in the first 9 months of 2019, Vietnam Airlines achieved VND 3,291.8 billion in total pre-tax profits.

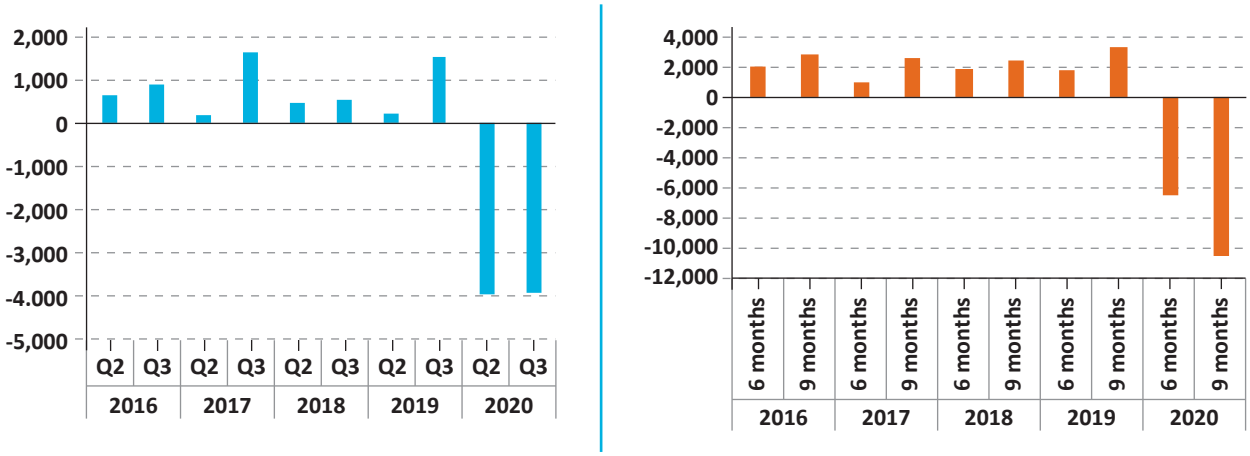


Figure 34: Vietnam Airlines' total pre-tax profits (Unit: billion VND)

Source: Compiled from Vietnam Airlines' Consolidated Financial Statement

Similarly, for Vietjet Air, in the second quarter of 2020 the Vietjet Aviation Joint Stock Company (parent company) recorded revenue of VND 1,970 billion from passenger transportation and air transport auxiliary services, a decrease of 80 percent compared to the same period in 2019. Lower capital costs caused a loss of VND 1,926 billion (in the same period in 2019, the parent company earned profits of more than VND 1,102 billion). In the first 6 months of 2020, Vietjet recorded VND 9,194 billion in revenue, a decrease of 54 percent compared to the same period of 2019 and the net loss after tax was VND 2,112 billion. In the first 9 months of 2020, Vietjet recorded VND 12,030 billion in revenue, a decrease of nearly 61 percent compared to the same period of 2019 and a net loss of VND 2,366 billion after tax.

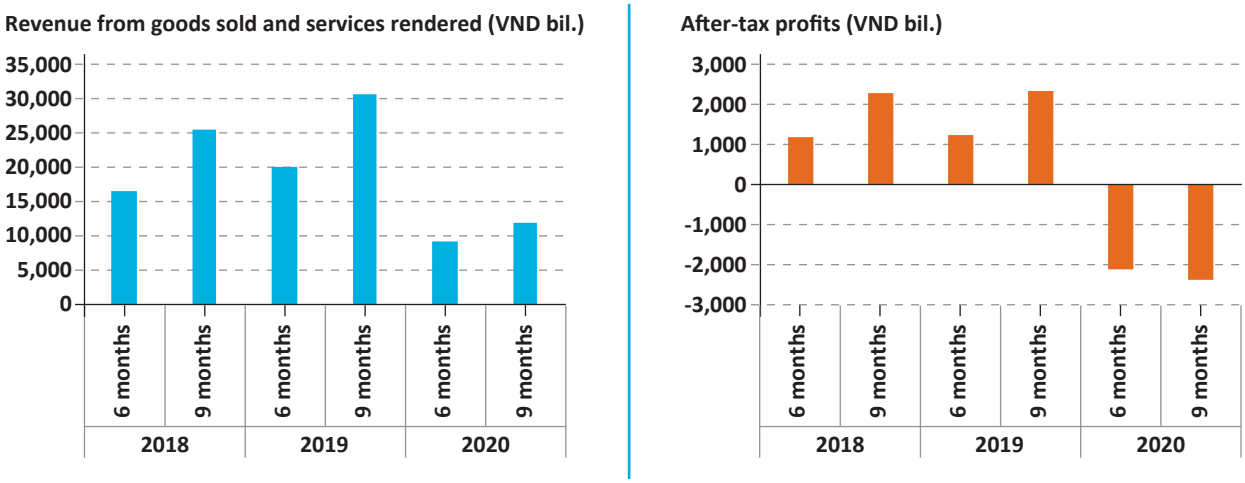


Figure 35: Vietjet Aviation JSC's business performance

Source: Compiled from Vietjet Aviation JSC's financial statement

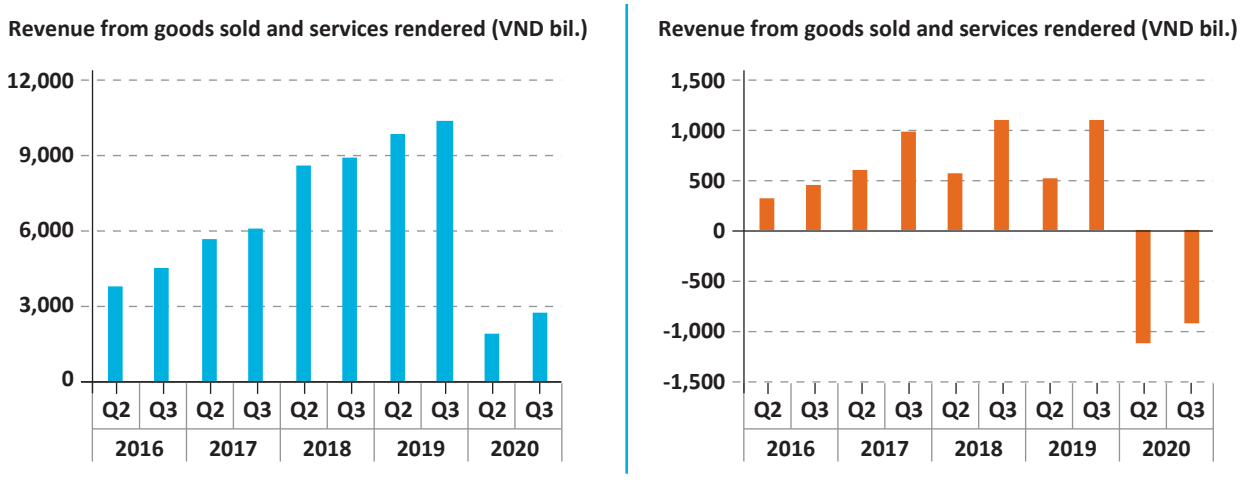


Figure 36: Vietjet Aviation JSC's business performance, by quarter

Source: Compiled from Vietnam Airlines' Consolidated Financial Statement

Vietjet Air's consolidated financial statement shows the same performance. In the third quarter of 2020, after-tax profits were VND -971.2 billion.

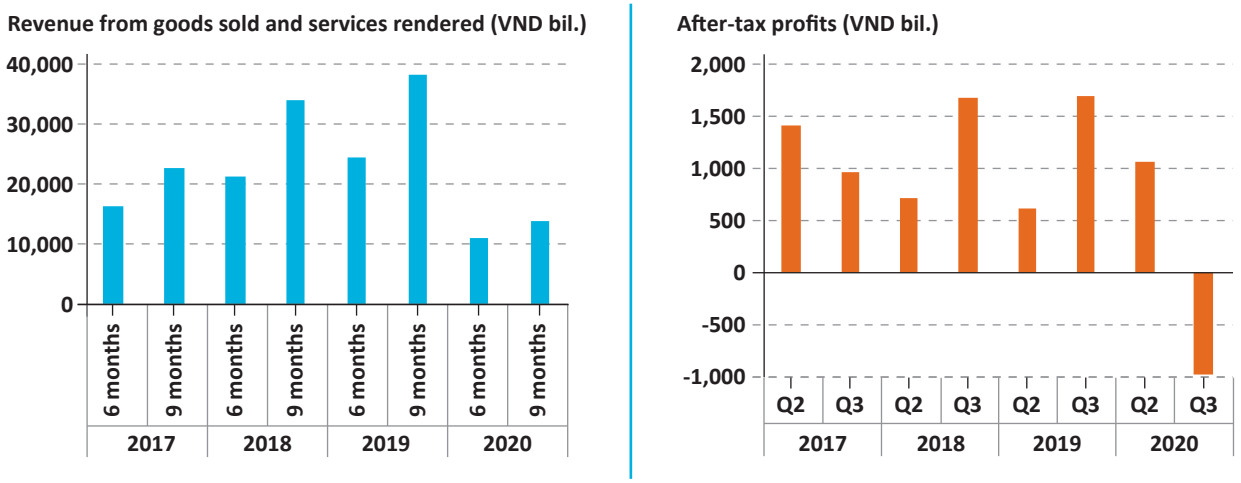


Figure 37: Vietjet Air's consolidated business performance

Source: Compiled from Vietjet's consolidated financial statement

Railway and road transport also witnessed a sharp decline. In the railway sector, Viet Nam Railway Corporation (Viet Nam Railways) announced its consolidated financial statements for the second quarter of 2020 and for the first half of 2020. Accordingly, revenue for goods sold and services rendered was VND 1,567 billion, a decrease of 35 percent compared to the same period of 2019; the after-tax loss was VND 252 billion (in the same period of 2019, after-tax profits were VND 34 billion).

Table 9: Viet Nam Railways' business performance for the first half of 2020

Unit: VND bil.

Indicators	Q2		6 months	
	2019	2020	2019	2020
Revenue of goods sold, and services rendered	2,416.9	1,567.3	4,619.2	2,790.5
Revenue of financial activities and other income	24.4	10.2	53.2	31.5
Accounting profits before tax	38.6	-247.5	165.4	-304.2
Net profit after corporate income tax	33.6	-252.3	141.2	-309.5

Source: Viet Nam Railways' consolidated financial statements

Implementing travel restriction measures decreased demand for travel, leading to a decline in the number of passengers. In the second wave of COVID-19 (late July), dozens of trains temporarily ceased operations following the sharp drop in passenger numbers. The Hanoi Railway Transport JSC ceased the operations of around ten tourist-destination trains, such as Hanoi - Dong Hoi

(Quang Binh), Vinh (Nghe An), Lao Cai. Similarly, the Saigon Railway JSC also temporarily suspended selected trains such as Saigon - Quy Nhon (Binh Dinh) and Saigon - Tra Kieu (Quang Nam). The North-South arterial railway only ran 4 pairs of Hanoi -Saigon trains each day. The railways had to refund about VND 25 billion for train tickets returned by passengers. It is estimated that in the first 7 months of 2020, Viet Nam Railways recorded a loss of VND 725.9 billion[7].

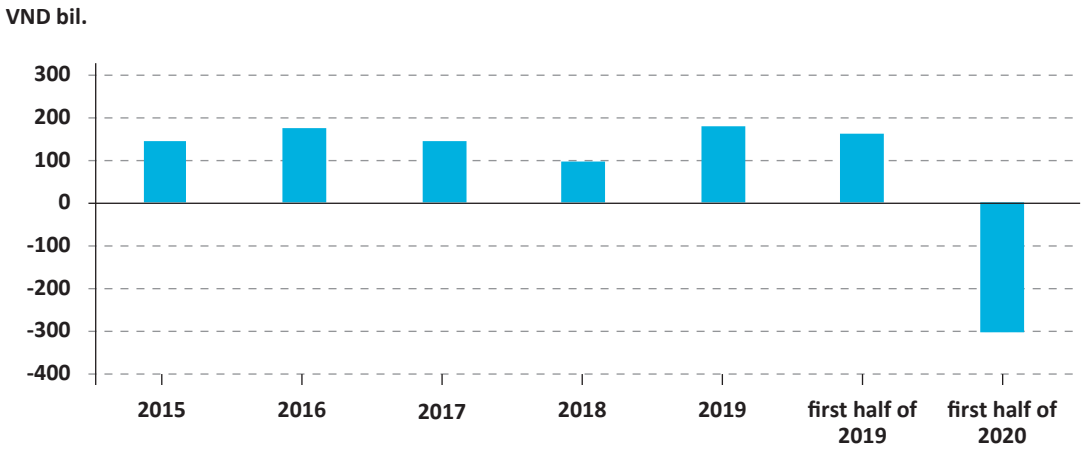


Figure 38: Viet Nam Railways' pre-tax profits

Source: Viet Nam Railways' consolidated financial statements

- Road transport also faced unprecedented difficulties. During the period of February to April, road passenger transport was seriously affected. Almost all road passenger transport had to stop (except for special cases). Road freight transport was also low (from only 60 to 70 percent compared to before the pandemic). Although road freight transport was not banned, the low capacity resulted from the temporary halt of business and production activities. Road freight transport with neighbouring countries was also temporarily halted because border gates were temporarily closed[8].

The number of vehicles in operation and the number of passengers carried both witnessed a sharp decline of between 30 to 50 percent compared to the same period of 2019. According to the Directorate for Roads of Viet Nam, via cruise monitoring equipment, around 20,415 passenger transport businesses, 310,775 vehicles, and 520 inter-provincial bus stations were directly affected. In provinces heavily affected by COVID-19, such as Hanoi, Da Nang, Khanh Hoa, and Quang Ninh, the number of passengers was around 30 to 40 percent of the number for same period of 2019.

- Regarding the local waterways sector, the volume of freight carried decreased because many businesses temporarily stopped operations or because of social distancing/isolation. In the first months of 2020, local waterway faced many difficulties. Waterway tourist transport was most affected. Almost all local waterway passenger transport services were suspended.

[7] Refer to http://thanhnien.vn/tai-chinh-kinh-doanh/van-tai-kiet-suc-vi-covid-19-1262545.html

[8] Border gates with Laos and Cambodia were closed. Vietnam-China border gates still allow road freight transportation with strict regulations to ensure safety and to control COVID-19.

2.3. Overall assessment

From the above analysis, we can see that:

(i) Travel restriction measures have negatively affected both supply and demand, causing a sharp decline in economic activities in the first months of 2020. The decrease in the output illustrates the negative impact of lockdown, quarantine, and social distancing/isolation measures implemented to curb the COVID-19 pandemic. Travel restriction measures have negatively affected economic growth. The economic growth rate hit the 'bottom' in the second quarter of 2020 when Viet Nam applied strict social isolation throughout the country. From the experiences of the first wave, in the second wave (starting in Da Nang), the government did not apply social distancing/isolation or lockdown on a large scale as in April 2020. Lockdown or social isolation measures were applied in epidemic localities to keep the economy running as normally as possible.

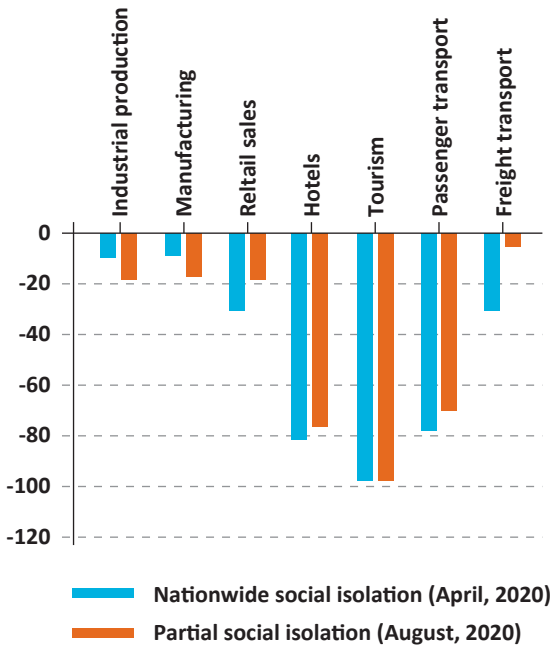


Figure 39: Economic activities in Da Nang (yoy, %)

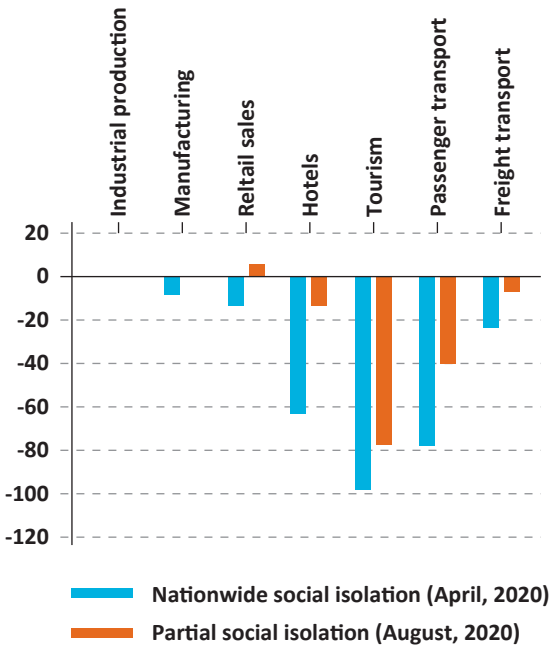


Figure 40: Nationwide economic activities (yoy, %)

Source: RongViet Securities Corporation

(ii) Travel restriction measures have negatively affected all sectors at different levels, in which tourism (including travel, accommodation, food and beverage services) and the transport sector (aviation, in particular) were the hardest hit. Social distancing/isolation have impacted these sectors unlike previous crises.

- The tourism sector has been hardest hit by travel restrictions. Lockdown, travel limitations, epidemic control, etc., have caused a sharp decline in demand for tourism. The number of international visitors decreased by 99 percent compared to the same period of 2019, especially from three traditional markets: China, Korea and Japan, contributing 61.4 percent of total international arrivals in Viet Nam. Similarly, demand for domestic tourism also decreased when the government implemented restrictions on gatherings, cancelled festivals and meetings, and implemented nationwide social isolation/distancing and locality-based quarantines. As a consequence, the number of both international and domestic tourists

decreased significantly. The number of businesses that closed down or suspended operations increased; almost all accommodation establishments, restaurants, and travel agencies had to temporarily close during the social distancing. The number of labourers who lost their jobs or who were forced to join the informal sector increased significantly.

- Travel restrictions, especially social isolation/distancing, have strongly affected the transport sector. Travel restriction measures affect the movement of people, goods and the continuity of transport, disrupting the circulation of people, goods, and services; as a consequence, all transport services are affected. Social distancing/isolation, the closure of tourist sites and the temporary suspension of festivals, etc., have reduced the demand for transport services. All transportation modes have been negatively affected, especially air transportation. The operation of the transport sector and passenger transport in particular, depends heavily on tourism. Tourism has been temporarily frozen and transportation businesses have been affected, most notably airlines. Viet Nam's airlines are facing big losses because of a sharp decline in revenues. Ticket refunds depleted airline companies' working capital. During travel bans and restrictions, labourers in the transport sector were affected first, directly and most dramatically.

- The growth rate of manufacturing sector witnessed a record decline due to the impact of travel restriction measures. The growth rate hit the 'bottom' in the second quarter of 2020, coinciding with the application of strict travel restriction measures. Sub-sectors that depend on import and export markets and cannot control input materials face a greater impact than sub-sectors than can self-supply. In the first 9 months of 2020, 4,759 manufacturing enterprises were temporarily suspended, an increase of 175 percent compared to the same period of 2019. The ratio of negatively affected workers in the manufacturing sector was high (70.1 percent) and average incomes were lower than for the same period of 2019.

- The agriculture sector seems to be more resilient. Most agricultural activities do not appear to have been affected too much, especially in the second quarter of 2020 when the growth rate was close to 2 percent. The most obvious impact of travel restrictions on the agricultural sector was the impact on import and export activities, especially the import of essential agricultural inputs.

- In the trade sector, travel restrictions have negatively affected import and export activities. Travel restrictions, especially the temporary suspension of international flights and warnings to avoid direct contact have affected transactions, work and exchange between Vietnamese enterprises and their partners. Clearance activities also faced more difficulties due to increased inspection and control measures at both input and output terminals. In addition, travel restrictions caused a disruption to supply chains and a lack of labourers hindered the operation of factories, negatively affecting production for export. The resumption of import and export markets and the signing of new contracts faced many difficulties. Therefore, the value of both imports and exports decreased, especially in the second quarter of 2020. Similarly, the value of imports and exports of services also decreased.

- For the investment sector (focusing on foreign direct investment (FDI)), travel restrictions, entry restrictions, international flight suspensions, quarantine, and isolation, etc., forced investors to cancel business trips to Viet Nam, leading to the delay of investment decisions. The indirect impact of travel restrictions was illustrated by the decrease in the number of newly licensed projects, the number of projects registered for adjustment of investment capital and the number of capital contribution or shares purchased by foreign investors compared to the same period of 2019. FDI enterprises were obviously affected when travel restrictions caused the disruption of supply chains and labourers (experts, engineers, etc.).

2.4. Policy responses by the Government of Viet Nam and their initial results

2.4.1. Policy responses by the Government of Viet Nam

The COVID-19 pandemic has severely affected the global economy, including many of Viet Nam's important partners. The implementation of travel restriction measures to prevent the COVID-19 epidemic has impacted many aspects of socio-economic life. All socio-economic activities have been affected, from production, imports and exports, freight and passenger transport to services such as dining, accommodation, and entertainments. Some production sectors temporarily lacked labourers and faced problems regarding input/raw material supply chains, causing delays in production and business activities.

To limit the negative impacts of the COVID-19 epidemic in general and the application of travel restriction measures in particular, the government and the Prime Minister issued several important policies; for example, Decree No. 41/2020/ND-CP dated 8 April 2020 on extension of deadlines for payment of taxes and land rents; Resolution No. 42/NQ-CP dated 9 April 2020 on measures to support those facing hardship due to the COVID-19 pandemic; Resolution No. 84/NQ-CP dated 29 May 2020 on tasks and solutions to continue to remove difficulties in production and business, accelerate the disbursement of public investment and ensure social order and safety in the context of COVID-19, Directive No. 11/CT-TTg dated 4 March 2020 on urgent tasks and solutions for assisting businesses facing difficulties and assuring social welfare amid the COVID-19 pandemic, etc. Directive No. 11/CT-TTg proposed 7 groups of tasks and solutions, including: to remove difficulties and create favourable conditions for accessing capital, credit, finance, tax, trade, and electronic payments; to review and cut cumbersome procedures and costs for businesses; to facilitate manufacturing and trade, exports and imports; to expeditiously recover and develop the tourism and air transport sectors; to speed up the implementation and disbursement of public investment and improve the business environment; to resolve employment difficulties; and to promote COVID-19 prevention in the media.

In the aviation sector, to implement Directive No. 11/CT-TTg, the Ministry of Finance issued Circular No. 46/2020/TT-BTC dated 27 May 2020 on fees and charges in aviation. Accordingly, from 27 May 2020 to 31 December 2020, fees organisations and individuals pay for using airport and airport infrastructure to provide air navigation and airport services are 90 percent of the fee level as regulated in Article 4 of Circular No. 247/2016/TT-BTC[9]. At the same time, the fees that organisations and individuals entering and leaving airports for foreign flights have to pay 90 percent of the fee level regulated in Article 4 Circular No. 194/2016/TT-BTC[10]. Fees for the registration of security transactions for aircraft, and for the appraisal and issuance of certificates and civil aviation licenses; granting of access permits to restricted areas have to pay 80 percent of the fee level regulated in Circular No. 193/2016/TT-BTC.

[9] According to Article 4 Circular No. 247/2016/TT-BTC issued by the Ministry of Finance, fees and charges for air navigation services are VND 165,000 per one turn of landing or taking off; fees and charges for airport operating services are VND 335,000 per one turn of landing or taking off.

[10] Article 4 Circular 194/2016/TT-BTC issued by the Ministry of Finance regulates that fees and charges to enter or exit airports are USD 50 per each arrival flight; the custom fee is USD 50 per one arrival flight.

Box 2. Tasks and solutions to assist people, businesses and organisations under Resolution No. 84/NQ-CP

(i) Tasks and solutions under the government's authority:

- 15% reduction of the 2020 rent for land plots leased directly from the state, applicable to renters making annual rent payments who were forced to suspend their operations due to the COVID-19 pandemic.
- Exemption from guarantees incurred in 2020 for government-guaranteed loans to aviation businesses with outstanding balance as of December 31, 2019.
- 50% reduction of fees for take-off, landing and aircraft operating services for domestic flights from March to the end of September 2020; application of a minimum price of VND 0 for specialised aviation services listed on the state's list of prices from March to the end of September 2020.
- 2% reduction in interest rates on loans disbursed to eligible SMEs from the Small and Medium Enterprise Development Fund.
- 50% reduction of vehicle registration fees until the end of 2020 for cars manufactured or assembled in Viet Nam, to encourage domestic consumption.
- Extension of the time limit for payment of special consumption tax on domestically manufactured or assembled vehicles, for payable accounts arising from March 2020; the extension is until 31 December 2020 at the latest.
- Allow foreign experts, business managers, investors, and high-tech workers at projects/ enterprises in Viet Nam to enter the country to maintain business operations, ensuring compliance with regulations on epidemic prevention and control.
- Extension of work permits for foreign experts, business managers, and technical workers at enterprises/projects; issuance of new work permits for foreign experts, business managers, technical workers replacing those not allowed to enter or return to Viet Nam.
- Contributions to COVID-19-fighting activities can be deductible expenses when calculating corporate income tax.

Etc.

(ii) The Government submits proposals to the Standing Committee of the National Assembly for consideration and decisions on the following issues:

- Impose an environmental protection tax on flight fuel equal to 70 percent of the tax rate specified in Resolution No. 579/2018/UBTVQH14 dated 26 September 2018 to the end of December 2020.
- Exempt fees for granting water rights to enterprises exploiting water for production and business in 2020.
- Reduce 30 percent of the corporate income tax payable for 2020 for small and micro enterprises to support them in the context of the COVID-19 pandemic.

It can be seen that the government made prompt and proactive efforts regarding low-cost epidemic prevention and issuance of supporting policies in March and April. The most important mission is epidemic prevention and Viet Nam has successfully faced down two waves of COVID-19 (in April and late July-early August). In addition to epidemic prevention, many production and business support solutions have been implemented to help businesses maintain their operations and recover.

Table 10: Initial supporting policies

Social security solutions	VND 62,000 billion
Monetary solutions	The State Bank of Viet Nam lowered the interest rate twice (1.5 percentage points); commercial banks rescheduled, postponed and froze debts (VND 2,000,000 billion), provided credit packages (more than VND 700,000 billion) with preferential interest rates from 0.5 to 2.5 percentage points, and reduced fees for services provided.
Fiscal solutions	Reschedule, extend the deadlines for paying taxes and land rents (covering 98 percent of total enterprises at a total value of VND 180,000 billion), exempt certain kinds of taxes and fees.
Solutions to stimulate public investment	Accelerate the disbursement of unspent capital in 2019 and planned capital in 2020 (worth of VND 700,000 billion).
Other solutions	Communication, information transparency, administrative reform, e-government, especially public service portals.

Source: Vo Tri Thanh (2020)

2.4.2. Initial results and issues to be considered

The timely responses from the government have helped limit the negative impacts on production and business activities. However, the implementation of supporting policies is generally slow and enterprises and people face difficulties accessing the supporting packages; therefore, the real impact is limited (Vo Tri Thanh, 2020). According to the survey results of 450 enterprises in Hanoi, Ho Chi Minh City and Thanh Hoa conducted by the National Economics University (Bui Duc Tho, 2020), the proportion of enterprises receiving support packages was quite modest, at only about 21.85 percent. The proportion of enterprises receiving support packages was different depending on the type of support. Enterprises mainly accessed the “Reschedule of tax payments” package; the proportion accessing other packages was very low, even zero; for example, the “Borrow a loan with no requirement of collateral; the maximum loan value is 50% of the regional minimum salary per employee per month” and “Simplify administrative procedures, extend tax payments for import-export activities” packages.

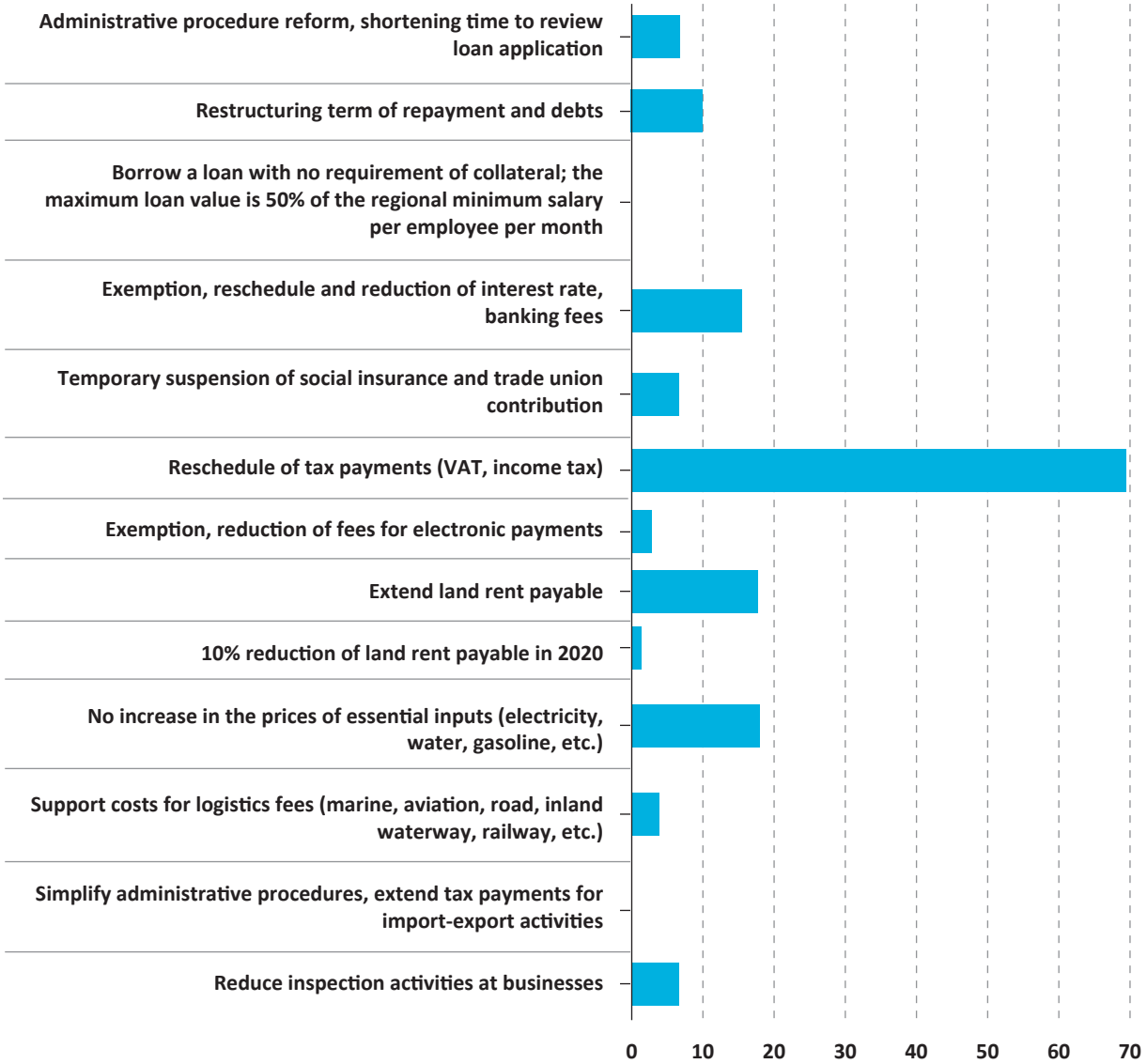


Figure 41: Real situation regarding access to support packages
Source: Bui Duc Tho (2020)

According to the Ministry of Labour, Invalids and Social Affairs, only 28.5 percent of the first supporting package was disbursed by the end of July 2020 (equivalent to about VND 17,500 billion). The main reason was as follows: enterprises did not meet the requirements (54.6 percent), difficulties in procedures (14.75 percent); and 26.26 percent of enterprises do not know about the supporting policies.

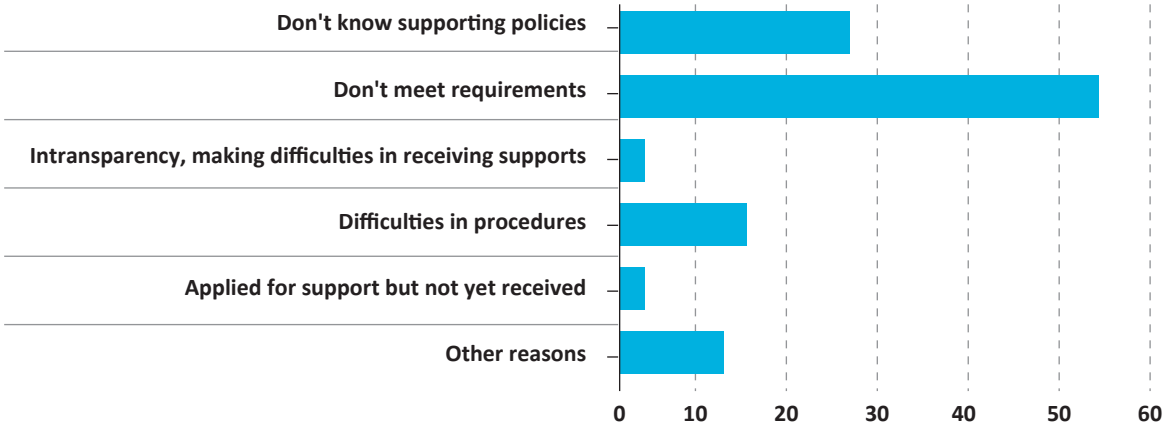


Figure 42: Reasons for not accessing supporting packages
Source: Bui Duc Tho (2020)

In general, supporting policies have positively impacted production and business. However, some were not as positive as expected, such as logistics fee support and administrative procedure reform. Enterprises expect to continue to receive support from the government, especially packages for temporary suspension of social insurance payments, reduction in land rents, and cost support.

PART 3

ESTIMATION OF THE IMPACTS OF TRAVEL RESTRICTION MEASURES IN THE COMING TIME AND POLICY RECOMMENDATIONS

3.1. The Context of the COVID-19 pandemic in Viet Nam and around the world in the coming time

3.1.1. Situation and challenges of the pandemic

The COVID-19 pandemic continues to be complicated and unpredictable. The pandemic has been extremely concerning because some regions in the world and some countries, especially in Europe, are facing unprecedented outbreaks of COVID-19. The number of COVID-19 cases is rising faster than ever. An analysis made by the Centre for Infectious Disease Research and Policy at the University of Minnesota indicates that we don't really know about the future of the pandemic. It could last a few months or more. The pandemic will end only when medicine finds a way to reverse the pandemic with vaccines and herd immunity.

In Viet Nam, the risk of COVID-19 re-emerging is permanent and an outbreak can occur at any time, especially in the winter and spring, which offer favourable conditions for the disease to spread. Therefore, the country must always take precautions and apply anti-epidemic measures until vaccines are available or herd immunity is established.

3.1.2. Ability to continue to apply travel restriction measures

The risk of the epidemic spreading is still great and the continuation or discontinuation of travel restrictions not only depends on domestic conditions, but also on the pandemic situation in the world. Travel restrictions are permanent. However, the measures used to limit travel have changed in accordance with practical requirements to minimise impacts on economic development. According to the statistics of the International Organisation for Migration (IOM), as of 19 October 2020, a total of 218 countries, territories and areas have issued 96,322 travel restrictions. Looking at the whole period from 8 March 2020 to now, the number of travel restrictions imposed worldwide has increased weekly. However, travel restriction measures have been adjusted according to their type and purpose. From the beginning of the pandemic to early August, entry restrictions for passengers from restricted countries/territories/areas accounted for the highest share of total restrictions but have decreased since July 2020. Medical measures have been increasing more than entry restrictions for passengers from restricted countries/territories/areas since 10 August 2020. As of 19 October 2020, entry restrictions for passengers from restricted countries/territories/areas accounted for 29 percent of total restrictions; meanwhile, medical measures are the most common type of restriction representing 64 per cent of the total.

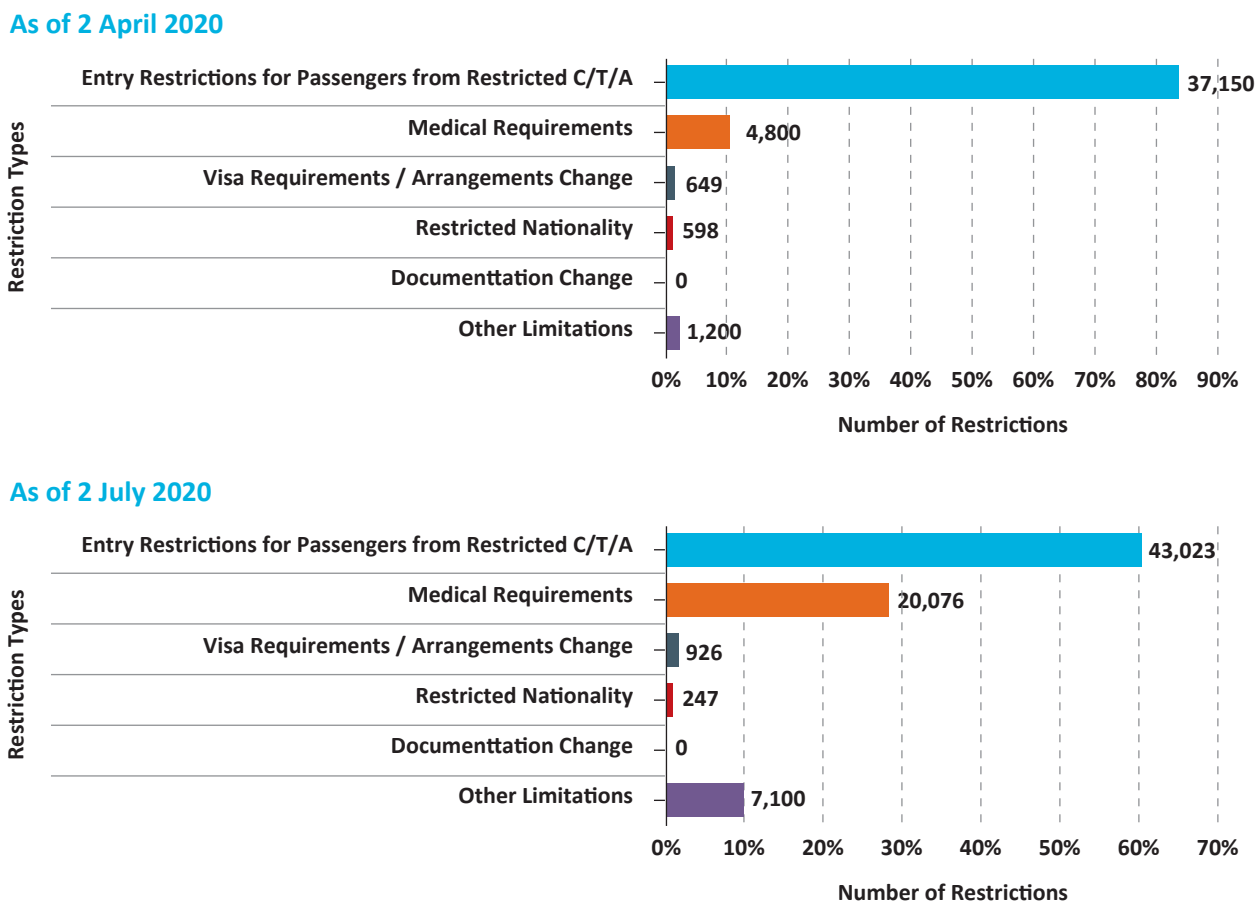
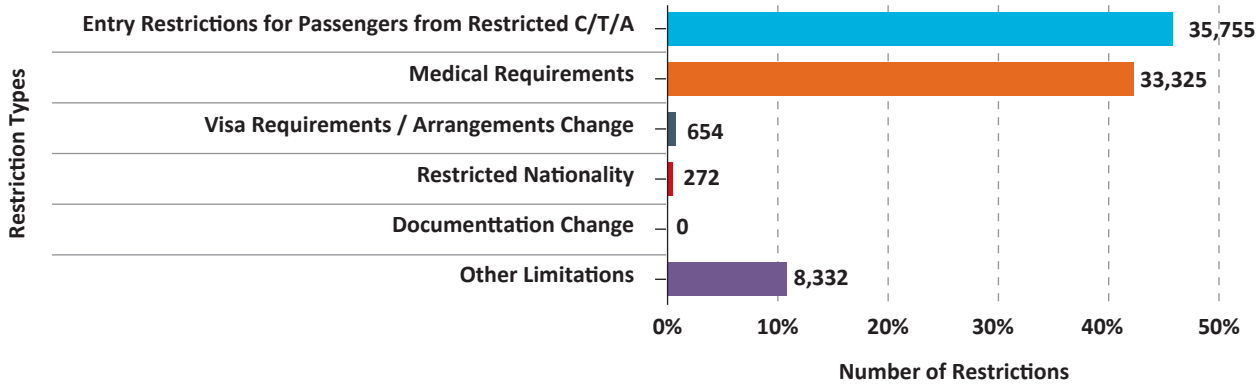


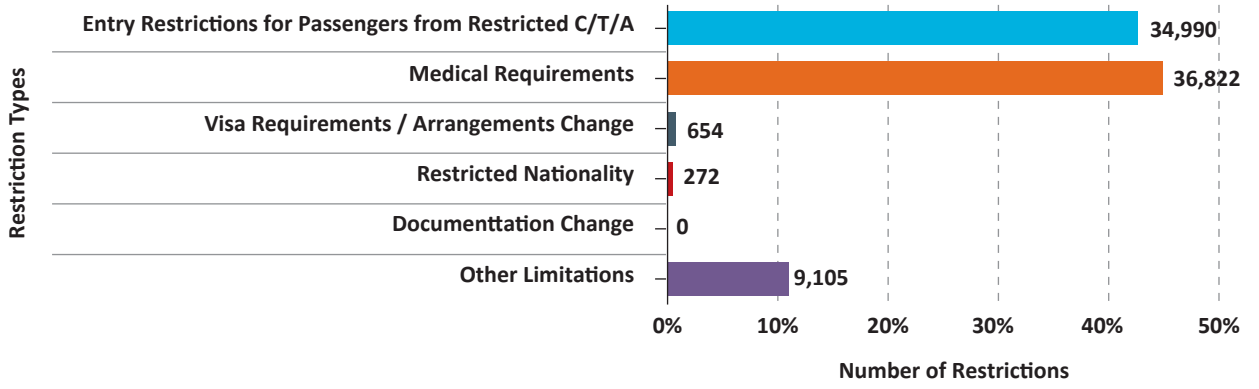
Figure 43: Synthesis of restriction types

Source: Compiled by the author from https://migration.iom.int/reports/Covid-19-travel-restrictions-output

As of August 2020



As of 10 August 2020



As of 12 October 2020

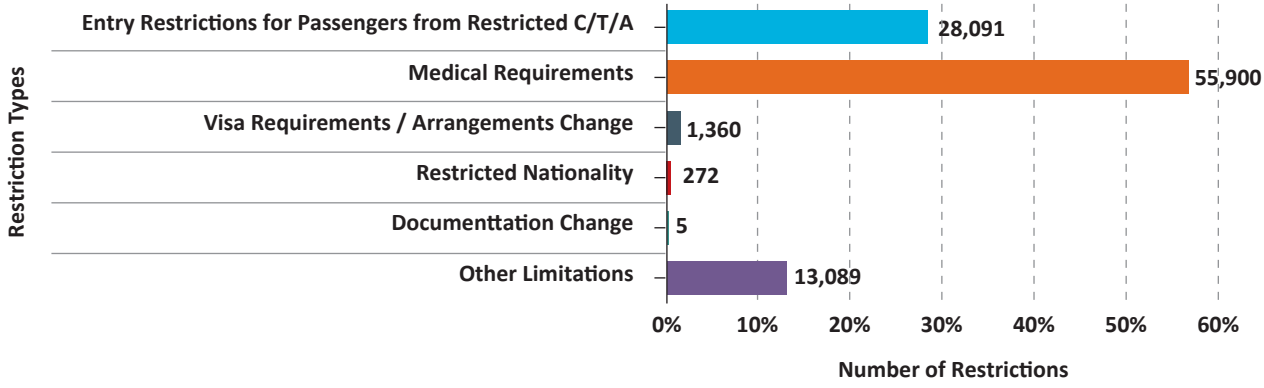


Figure 43: Synthesis of restriction types *(continued)*

Source: Compiled by the author from https://migration.iom.int/reports/Covid-19-travel-restrictions-output

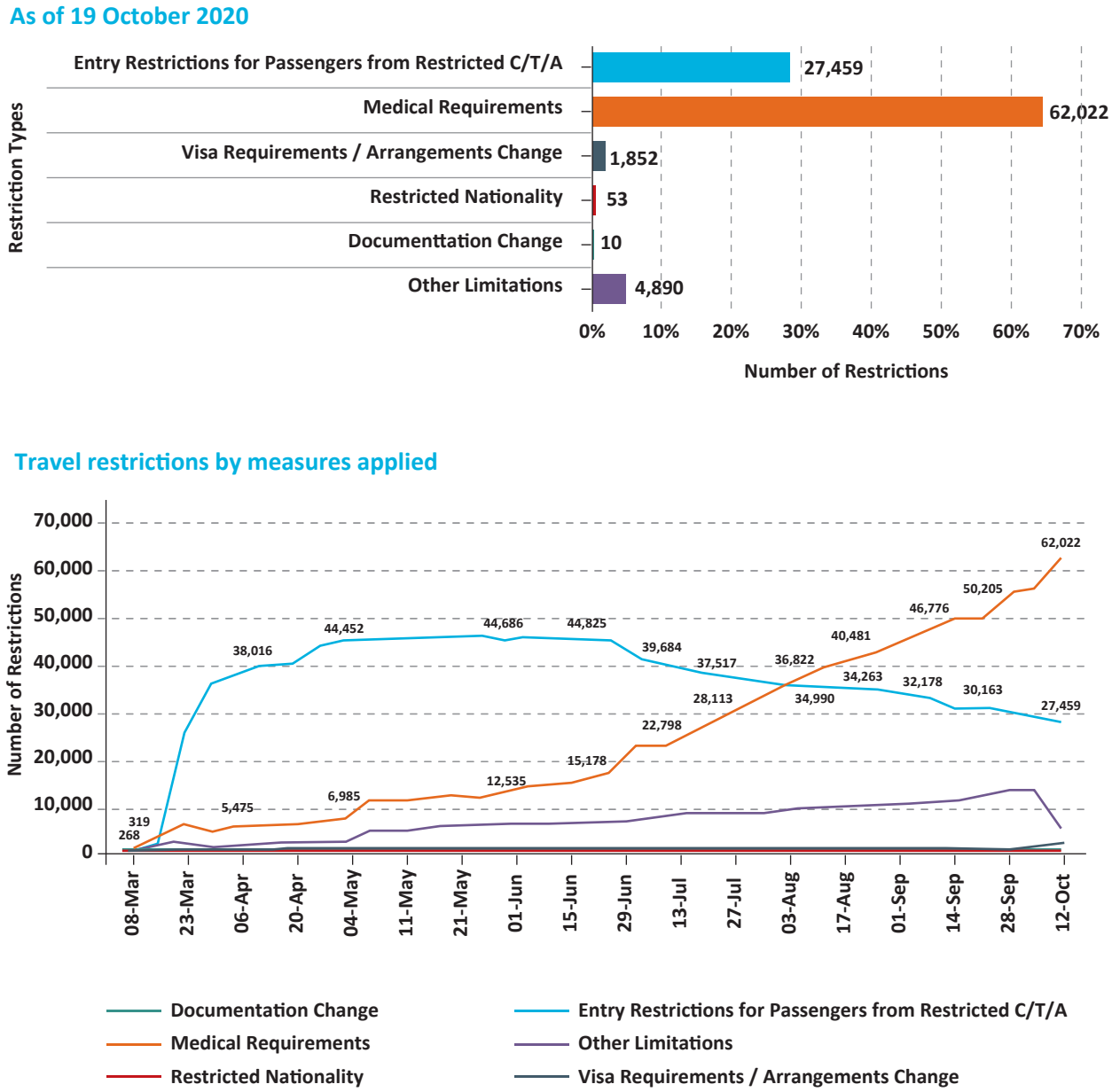


Figure 43: Synthesis of restriction types *(continued)*

Source: Compiled by the author from https://migration.iom.int/reports/Covid-19-travel-restrictions-output

Many countries, territories and areas have eased COVID-19 related travel restrictions. As of 14 October 2020, 24 countries/territories re-opened their borders, 110 partially re-opened (including Viet Nam), and 66 are still temporarily closed[11]. According to the UNWTO, as of 1 September 2020, 115 destinations (53 percent of all destinations worldwide) have eased COVID-19 related travel restrictions (of these, 2 destinations have lifted all restrictions, while the remaining 113 continue to have certain restrictive measures in place). Destinations that have eased travel

[11] http://skyscanner.com.vn/travel-restrictions (accessed on October 14, 2020)

restrictions generally have high or very high levels of health and hygiene infrastructure. Within advanced economies, 79 percent of tourism destinations have already eased restrictions. In emerging economies, just 47 percent of destinations have done so. 93 destinations (43 percent of all worldwide destinations) continue to have their borders completely closed to tourism[12].

In other words, in a context where the COVID-19 pandemic has not been controlled worldwide, the application of travel restrictions is indispensable. However, COVID-19 related travel restrictions are being continuously adjusted by governments according to the epidemiological situation. In the new context of COVID-19, countries/territories have changed their response policies and narrowed the scope of lockdown, social isolation, and social distancing to reasonable levels to minimise negative impacts on the economy.

Similar to the rest of the world, Viet Nam's approach regarding anti-epidemic measures has been flexible, especially during the second wave of COVID-19 in late July and early August. The changes have brought positive results, increasing the feasibility of fulfilling the dual goals of containing the spread of COVID-19 and promoting economic growth. Therefore, although there could be an outbreak of COVID-19 at any time and the consequent travel restrictions inevitable, implementation will be flexible in accordance with the epidemiological situation and Viet Nam's anti-epidemic capabilities.

3.2. Estimation of the impacts of travel restriction measures in the coming time

3.2.1. On the economy as a whole

As mentioned above, travel restrictions and their scope and extent of application, are in accordance with the epidemiological situation in Viet Nam and worldwide. Viet Nam's economic prospects in 2020 depend on the ability to control the epidemic, not only domestically, but also internationally. Many studies have projected Viet Nam's economic growth in 2020 under different scenarios based on the epidemiological situation and the extent of travel restrictions.

According to a study team at the BIDV Training and Research Institute, in a baseline scenario (the pandemic is well controlled globally and in Viet Nam; the government is determined to implement the dual goals; and natural disaster, storms and floods in the Central region are promptly overcome), the economic growth rate in the fourth quarter of 2020 is estimated at 3.28 percent compared to the same period in 2019 and the GDP growth rate for the whole of 2020 is estimated at 2.5 percent. In a positive scenario (the pandemic is controlled globally in the fourth quarter of 2020; countries enter a new normal implementing the dual goals of economic recovery, reopen and maintain trade, business and production; there is effective epidemic prevention with vaccines by the end of 2020; in Viet Nam, the epidemic is controlled and there is positive support from key partners like China, Korea, Japan, EU, US, etc.; post-COVID-19, trading activities resume at the end of the fourth quarter of 2020), production and manufacturing recover to meet the demands of partners and services recover thanks to the increase in consumer belief. Thereby, Viet Nam's GDP growth rate is estimated at 4.82 percent in the fourth quarter of 2020 and 3 percent for the whole of 2020. In the negative scenario (the COVID-19 pandemic has many strong outbreaks in many parts of the world and is difficult to control in winter and spring; in Viet Nam, the epidemic continues to be under control but exports and FDI face difficulties), production and export of agricultural products will face difficulties while tourism, transport, consumption, etc., recover slowly. Accordingly, the GDP growth rate is estimated at 1.74 percent in the fourth quarter of 2020 and at about 2 percent for the whole of 2020.

[12] See https://www.unwto.org/more-than-50-of-global-destinations-are-easing-travel-restrictions-but-caution-remains, (accessed on October 14, 2020)

Table 11: Estimation of GDP growth in Q4/2020 and in 2020

	2019	Q1 2020	Q2 2020	Q3 2020	Q4/2020 (est.)			2020 (est.)		
					Baseline	Positive	Negative	Baseline	Positive	Negative
GDP growth rate	7.02	3.68	0.39	2.62	3.28	4.82	1.74	2.5	3.0	2.0

Source: Compiled from the GSO and the Study team at BIDV Training and Research Institute

The Viet Nam Economic Research and Policy (VERP) has similar estimations. In the baseline scenario (high possibility), the COVID-19 outbreak will not recur in the remaining months of 2020 and domestic economic activities gradually return to normal; meanwhile, small-scale COVID-19 outbreaks will recur in some countries. The impacts on agriculture, manufacturing and service sectors, etc., may not be more serious than at present. Accordingly, Viet Nam's GDP growth rate is estimated at 2.6-2.8 percent. In the adverse scenario (low possibility), the COVID-19 epidemic will be completely controlled in the remaining months of 2020 and domestic economic activities return to normal; however, the COVID-19 pandemic persists globally and many countries apply lockdown measures in the fourth quarter of 2020. Under this scenario, GDP growth for the whole of 2020 is estimated at 1.8- 2.0 percent (Viet Nam Economic Research and Policy, 2020).

Fitch Solutions – a part of the Fitch Group, has revised down its GDP growth forecast for Viet Nam to 2.6 percent from the previous 3.0 percent. Standard Chartered Bank forecasts Viet Nam's GDP growth at 3 percent in 2020. The World Bank forecasts Viet Nam's GDP growth at 2.5-3 percent. IMF, Citibank and the ADB estimate Viet Nam's GDP growth at 1.6 percent, 2 percent, and 1.8 percent, respectively.

In practice, while the COVID-19 pandemic continues to be a complicated issue for the world, the epidemic is being effectively controlled domestically. Viet Nam's economic growth showed signs of a clear V-shaped recovery after having hit the bottom in the second quarter of 2020 and rebounded from the third quarter of 2020 after two waves of COVID-19 were controlled. With the application of travel restriction measures, it will be more flexible and easier to pursue the double target of effective epidemic prevention and socio-economic recovery and development, which will partly reduce the negative impacts of travel restrictions if further outbreaks occur. The scenario with a GDP growth rate of 2.5-3 percent is more feasible for 2020.

3.2.2. In selected sectors

Based on the baseline scenario (the COVID-19 outbreak will not recur in the remaining months of 2020 and domestic economic activities gradually return to normal), all selected sectors are expected to recover in the fourth quarter of 2020 compared to the second and the third quarters.

- *Regarding the manufacturing sector:* The manufacturing sector has achieved a clear recovery since the third quarter of 2020. This is illustrated by the increased growth rate, the number of labourers, and the value of imports and exports, regardless of the COVID-19 outbreak in Da Nang in late July. Results of the business tendency survey of manufacturing enterprises in the third quarter of 2020 showed

manufactures' optimistic expectations. For expected outcomes of the fourth quarter of 2020, 45.6 percent of enterprises said that the situation would get better; 19 percent predicted that it would be more difficult, and 35.4 percent said that the situation would remain stable.

Thanks to the removal of travel restrictions, their application on a smaller scale, and the effective adaptation of manufacturers to changes in value chains, the manufacturing sector will recover and grow in the coming time. Based on the sector's structure and international organisations' forecasts, growth is estimated at 4.05 percent in the fourth quarter of 2020 and 4.6 percent for the whole of 2020.

- *Regarding the agriculture sector:* The agriculture sector has rapidly recovered in the second and third quarters of 2020, illustrated by the growth rate compared to same period in 2019. The growth rate (including agriculture, forestry, and fisheries) is estimated at 3.6 percent in the fourth quarter of 2020 and 2.1 percent in 2020.

- *Regarding the trade sector (focusing on import and export activities):* With the trend of the third quarter of 2020 (compared to the second quarter of 2020) and the flexible application of travel restriction measures, the growth of exports will be higher than imports. The trade balance in 2020 is estimated at USD 16-18 billion. In 2021, the growth of both imports and exports is expected to be higher thanks to the gradual recovery in global trade. The growth of exports is estimated at 5 percent and imports 7 percent compared to the same period in 2019. The trade balance is estimated at USD 10-15 billion.

- *Regarding investment (focusing on FDI):* In the remaining months of 2020, the FDI sector continues to be affected by COVID-19 related travel restrictions. Total registered FDI capital is estimated at about USD 33-34 billion and realised FDI capital at about USD 19-20 billion, a reduction of 12 percent and 5 percent, respectively, compared to 2019. In 2021, FDI attraction is expected to gain positive growth at around USD 36-38 billion, which is equivalent to 2019 levels (before the COVID-19 pandemic) thanks to the trend of production and supply chain shifts, and positive improvement in business environment.

- *Regarding the tourism sector:* The COVID-19 pandemic continues to be complicated and unpredictable and many countries have re-applied lockdown and social distancing measures. To limit COVID-19 threats, the Government of Viet Nam has decided not to open borders for international tourists; therefore, the number of international tourists cannot recover in the fourth quarter of 2020. The number of international visitors is estimated at 3.8-3.9 million, a decrease of 79 percent compared to 2019[13]. For domestic tourists, thanks to quite effective epidemic control and preventative measures, the number is expected to increase rapidly in the last two months of 2020. However, in 2020, the number of domestic visitors is estimated at only about 60-65 million, a decrease of 23.5 percent compared to 2019.

Thanks to the recovery of domestic tourism in late 2020, revenues for travel, accommodation, food and beverage services will rapidly recover in late 2020. Accordingly, revenues for accommodation, food, and beverages is estimated at about VND 538.02 thousand billion, a decrease of 9.3 percent compared to 2019. Revenues for travel services is estimated at VND 31,914 thousand billion, a decrease of about 30.1 percent compared to 2019.

- *Regarding the transport sector:* Viet Nam has experienced and controlled two waves of the COVID-19 epidemic and travel restriction measures have been gradually removed.

[13] Previously, the Vietnam National Administration of Tourism also gave scenarios and showed that any scenario showed negative growth. If the pandemic ends at the end of June, international arrivals in Viet Nam in 2020 may be reduced by around 70 percent compared to 2019, at only around 5.5 million. If COVID-19 ends at the end of September, international arrivals in Viet Nam will be reduced by approximately 75 percent, at around 4.6 million. If the COVID-19 situation gets worse until December, there will be almost no international arrivals from April to December. Accordingly, total international visitors will decrease by 80 percent compared to 2019, at 3.7 million as at March.

Domestic transport services have been operating normally (with strict COVID-19 prevention procedures in place) since early September. However, the partial or complete removal of travel restriction measures to/from Viet Nam depends on the epidemiological situation globally. Even if removed, it is difficult for the international transport service sector to return to pre-COVID-19 levels in 2020 or even in 2021. Therefore, in passenger transport, the number of passengers is estimated at 1,510.354 million persons in the fourth quarter of 2020 and in the whole of 2020, the number is estimated at 4,136.175 million, a decrease of 19.5 percent compared to 2019. The volume of freight carried is estimated at 476,893.9 thousand tons and in 2020, the total volume of freight is estimated at 1,741,454 thousand tons, an increase of 3.05 percent compared to 2019.

In the fourth quarter of 2020, aviation continues to be seriously affected by travel restriction measures. In practice, the resumption of international flights depends on the epidemiological situation not only in Viet Nam but also in other countries. As estimated by the Viet Nam Civil Aviation Administration, Vietnamese carriers could lose about VND 30,000 billion in revenue in 2020. Of this figure, Vietnam Airlines' revenue is estimated to drop by VND 12,500 billion, and Jetstar Pacific by VND 732.8 billion. However, domestic flights will resume.

3.3. Policy recommendations to minimise the negative impacts of travel restrictions

3.3.1. Identifying opportunities resulting from the COVID-19 pandemic

- The COVID-19 pandemic is an opportunity to encourage domestic enterprises to apply new technologies and digitalise and upgrade their business models. For example, social isolation/distancing creates strong incentives for enterprises to apply automation and to digitalise and apply online platforms. Travel restriction measures encourage online sales and promote e-commerce, allowing businesses to bring goods and services to new customers. Travel restrictions promote the application of technology in industry and business sectors, including healthcare (online check-ups, tele-medicine, video conferencing), and education (online learning), etc.

- Thanks to effective responses to the COVID-19 pandemic, Viet Nam is viewed as a safe country/destination, opening up many opportunities to attract and restore investment, production, business and tourism.

3.3.2. Policies on minimising the negative impacts of COVID-19 travel restrictions to support economic recovery and growth

- The effective prevention and control of the COVID-19 pandemic remains utmost priority. This is because effective prevention and control of the pandemic will contribute to minimising the extent of travel restrictions, shorten the impact time, and see the prompt restoration of production and business activities, significantly contributing to socio-economic stability and economic growth

- The approval process and implementation of supporting packages should be faster, especially for the financial assistant package (under Decree No. 41/2000/ND-CP dated 8 April 2020), the monetary-credit assistant package (providing new loans, restructuring debts; rescheduling, postponing debts, and reducing interest rates/fees on loans); and social security support packages, etc. Administrative procedures to support businesses and people to access assistance packages effectively should be simplified.

- Authorities should continue to effectively implement supporting policies and additional measures such as extending debt settlement periods and tax and fee payment terms; reducing taxes and fees; and supporting some large companies, groups.

- A second stimulus/support package on a large

enough scale and time frame to support enterprises and the economy to recover and grow should be considered. According to survey results of the National Economics University, enterprises expect to receive a second support package, focusing on support for reducing production costs, trade costs, administrative costs, and extending land rent reduction periods.

However, it is necessary to extend the time frame of the support packages so that businesses have enough time to refund the delayed payments from the previous period to restore production and business in a sustainable way. The supporting policies should be clear and transparent in terms of procedures and beneficiaries. It is necessary to minimise procedures for accessing support packages, especially requirements for financial evidence .

- To support enterprises to maintain their traditional raw material supply market, look for alternative markets and promote the exploitation of domestic resources. Supporting policies must create stimulus; thereby, stimulating production capacity, helping enterprises to restore production, and gradually overcoming difficulties for more sustainable development.

- To study and design domestic supply chains where Viet Nam has advantages to minimise external negative impacts and improve autonomy for the economy.

- To develop policy on domestic market development, especially in the tourism sector. The development of domestic tourism should be identified as a strategic orientation to ensure its sustainable development. Domestic tourism should be prioritised and encouraged. It is necessary to have a synchronous solution to grow domestic tourism, boost demand for domestic tourism services, and create demand for domestic travel. There should be a focus on marketing, promotion and financial support packages to recover this important market as quickly as possible.

3.3.3. Recommendations for enterprises

Businesses should actively respond and adapt to global uncertainties, especially in the context of the COVID-19 pandemic.

- Enterprises should actively transform their production and supply systems to adapt to changes in customer behaviour and consumption patterns. Travel restrictions imposed during COVID-19 could change customers' behaviour from offline shopping to online shopping. Enterprises can follow this trend by taking action, such as digital transformation in production and business, and connecting with value chain partners. Simultaneously, enterprises should focus on the development of e-commerce and the application of platforms to minimise costs, for example, regarding distribution and customer surveys. Digital transformation is a core factor that helps enterprises to strengthen their logistical coordination ability and resist negative changes in global value chains.

- Tourism sector enterprises should review their activities before and during the outbreak, develop their post-COVID-19 operations, and actively upgrade tourism related infrastructure at tourist destinations, tourism service providers, stations, ports, border gates, and areas that witness a high concentration of tourists, etc.

- In the transport sector, enterprises should apply solutions that change existing processes and apply technology to allow employees, customers and suppliers to maintain reasonable social distancing and limit the need for face-to-face contact towards paperless transactions. In the aviation sector, airlines and airports should coordinate to monitor risk, implement distancing measures, and minimise the need for passengers to directly contact infrastructure or equipment.

CONCLUSION

Like many countries in the world, Viet Nam has applied travel restriction measures to limit the spread of the COVID-19 pandemic. Due to the country's strict implementation of travel restriction measures, Viet Nam is considered as one of the few countries to succeed in preventing the spread of COVID-19. However, travel restriction measures have negatively impacted all economic sectors and the economy as a whole.

This report has reviewed all travel restriction measures applied in Viet Nam during the COVID-19 pandemic and identified the impact transmission mechanisms and channels. It has evaluated the real impacts on economic growth and selected sectors in the first 9 months of 2020, as well as the government's responses and their initial results. The report also provides forecasts on economic growth, including selected sectors, in the fourth quarter of 2020 and in the whole of 2020, and proposes policy recommendations on minimising the negative impacts of travel restrictions.

Due to time and data constraints, the impacts of each travel restriction measure on the economy and selected economic sectors could not be analysed independently. This is also the case for the impact of travel restriction measures on socio-economic indicators and the development of selected economic sectors. The main data used for the report is secondary data collected from the General Statistics Office and relevant agencies.

REFERENCES

Australia Aid., LIRC., & VCCI. (2020). *Report on the Impact of COVID-19 on the skill demands of workers and human resources training activities in Logistics in Viet Nam.*

Private Economic Development Research Board. (2020). *The second survey report on the impact of the COVID-19 outbreak on enterprises.* August 2020. (In Vietnamese: Ban Nghiên cứu Phát triển Kinh tế tư nhân – Báo cáo Tác động của Bùng phát dịch Covid-19 lần 2 đối với doanh nghiệp)

Bui Duc Tho. (2020). *Evaluation of the impact of the COVID-19 and effectiveness of COVID-19 policy responses on enterprises.* Presented at the Workshop on Policies to overcome the impact of COVID-19 to recover and grow organized by the National Economic University on October 15, 2020 at Hanoi. In Vietnamese.

Electronic Health Administration. (2020). *COVID-19 Update (19:00 October 31, 2020)*. Retrieved from http://ehealth.gov.vn/?action=News&newsld=52996

Morisset, J., Dinh, Viet Tuan., Doan, Quang Hong., Pham, Duc Minh., Mandani, D., Pimhidzai, O., Kaiser, K., Do, Dung Viet., Alatabani, A. F., Yang, J. (2020). Taking Stock: What will be the New Normal for Viet Nam? - The Economic Impact of COVID- 19 (Vietnamese). *Vietnam Taking Stock.* Washington, D.C.: World Bank Group.

Nguyen Son. (2020). M&A wave of hotels has emerged. *Nhịp cầu Đầu tư.* No. 693, August 24-30, 2020.

Nhac Phan Linh. (2020). *Working conditions under the first stage of COVID-19 epidemic early 2020.* Retrived from https://cuocsongantoan.vn/nhin-lai-dieu-kien-lao-dong-duoi-tac-dong-cua-dot-dich-Covid-19-thu-nhat-dau-nam-2020-60796.html

General Statistics Office. (2020). *Report on the impacts of COVID-19 epidemic on labor in the third quarter of 2020.*

General Statistics Office. (2020). *Report on socio-economic situation in the first quarter and 3 months of 2020.*

General Statistics Office. (2020). *Report on socio-economic situation in the second quarter and the first 6 months of 2020.*

General Statistics Office. (2020). *Report on socio-economic situation in the third quarter and 9 months of 2020.*

Trinh Duc Chieu. (2020). *Impact by travel restrictions imposed during the COVID-19 pandemic on Viet Nam's investment sector.*

Viet Nam Economic Research and Policy. (2020). *Report on Viet Nam's macroeconomic situation in the third quarter of 2020.*

Central Institute for Economic Management. (2020). *Viet Nam's economy in the first 6 months of 2020 – Developmental spirit in the context of new normal. In Vietnamese.*

Vo Tri Thanh. (2020). The COVID-19 pandemic: *Viet Nam's economy.* Presented at the Workshop on Policies to overcome the impact of COVID-19 to recover and grow organized by the National Economic University on October 15, 2020 at Hanoi. In Vietnamese.

World Bank. (2020). *East Asia and Pacific in the Time of COVID-19. East Asia and Pacific Update (April).* World Bank. Washington, DC

Macroeconomic Reforms/Green Growth Programme
68 Phan Dinh Phung Street, Ba Dinh District, Ha Noi, Viet Nam

T + 84 24 3734 5197
F + 84 24 3734 5194

www.giz.de/viet-nam