SOUTHMOD

Country report

Viet Nam

VNMOD v3.3
2013–2022

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About the project

SOUTHMOD – simulating tax and benefit policies for development

SOUTHMOD is a joint project between the United Nations University World Institute for Development Economics Research (UNU-WIDER), Southern African Social Policy Research Insights (SASPRI), and the International Inequalities Institute at the London School of Economics and Political Science (LSE) in which tax–benefit microsimulation models for selected developing countries are being built. These models enable researchers and policy analysts to calculate, in a comparable manner, the effects of taxes and benefits on household incomes and work incentives for the population of each country.

SOUTHMOD models are currently available for Bolivia (BOLMOD), Colombia (COLMOD), Ecuador (ECUAMOD), Ethiopia (ETMOD), Ghana (GHAMOD), Mozambique (MOZMOD), Peru (PERUMOD), Rwanda (RWAMOD), Tanzania (TAZMOD), Uganda (UGAMOD), Viet Nam (VNMOD), and Zambia (MicroZAMOD). SOUTHMOD models are updated to recent policy systems using national household survey data. This report documents VNMOD, the SOUTHMOD model developed for Viet Nam. This work has been carried out by the Central Institute for Economic Management (CIEM) in collaboration with UNU-WIDER and SASPRI.

The results presented in this report are derived using VNMOD version 3.3 running on EUROMOD software. The report describes the different tax-benefit policies in place, how the microsimulation model picks up these different provisions, and the database on which the model runs. It concludes with a validation of VNMOD results against external data sources. For further information on access to VNMOD and other SOUTHMOD models, see the SOUTHMOD page.

The VNMOD model and its documentation in this country report has been prepared within the UNU-WIDER project SOUTHMOD – simulating tax and benefit policies for development (Phase 2), which is part of the Domestic Revenue Mobilization programme. The programme is financed through specific contributions by the Norwegian Agency for Development Cooperation (Norad). For more information, see the SOUTHMOD project page.

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Acronyms

COVID-19	Coronavirus pandemic
CPI	Consumer price index
FYA	Full Year Adjustment
GDP	Gross domestic product
GSO	General Statistics Office
MDG	Millennium Development Goal
SST	Special sales tax
VAT	Value-added tax
VHLSS	Viet Nam Household Living Standard Survey
VND	Vietnamese dong
WTO	World Trade Organization

1 Basic information

Since 1986, Viet Nam has embarked on comprehensive reforms in three main streams, namely: (i) institutional reforms for a market economy, (ii) macroeconomic stabilization, and (iii) pro-active economic integration.[1] Thanks to these reforms and contextual developments, Viet Nam made various socio-economic achievements in the past decades. Growth in gross domestic product (GDP) has been continuous, averaging more than 7.4 per cent per annum in 1990–2010, 6.1 per cent per annum in 2011–17, 7.1 per cent in 2018, and over 7.0 per cent in 2019. Even under consequences of the COVID-19 pandemic in the first nine months of 2020, Viet Nam managed to obtain GDP growth of 2.1 per cent (year-on-year). From the expenditure side, GDP growth rested largely on expansion of both investment and exports. From the supply side, GDP structure shifted away from agriculture, forestry, and fishery towards industry and construction, thanks to the strong growth of the latter. Moreover, Viet Nam's growth process has been more inclusive. With better participation in economic activities, income across the income distribution has increased significantly. Consequently, poverty incidence fell sharply from 37.4 per cent in 1998 to just over 12 per cent in 2010. Poverty continued to decrease throughout the 2010s, reaching around 5.7 per cent in 2019 and 4.4 per cent in 2021.[2]

Meanwhile, the increasing participation in regional and world economies has made Viet Nam's economy more vulnerable to adverse developments in the international markets. On the one hand, the reduction of important tariffs in the absence of replacing domestic tax instruments actually caused increasing concern over declining budget revenues and the fear that it would drain budgetary resources available for direct transfer to households. On the other hand, more direct exposure to international market shocks also increased the vulnerability of domestic households, which in turn requires more transfer-type support from the government budget.

The COVID-19 pandemic in 2020–21, which led to unprecedented measures to alleviate the resulting economic disruption, is also expected to have long-term implications. The impact of COVID-19 also attracts attention due to its differential magnitude on different groups of households—while Viet Nam emphasizes the importance of preserving progress in poverty reduction. In 2020, over 32 million people of working age were negatively affected by COVID and related lockdowns, including those who lost their jobs, were temporarily laid off, and experienced reductions in working hours and incomes. Statistics from MOLISA showed that 69.2 per cent had their income reduced, 39.9 per cent had their working hours cut or were laid off, and another 14 per cent were forced to take temporary leave or suspended production and business. The service sector was impacted the most, with 71.6 per cent of employees affected, followed by the industry and construction sector with 64.7 per cent of employees affected, and the agriculture, forestry, and fishery sector with 26.4 per cent of employees affected. This was the first time in the last ten years that the labour market saw a sharp decrease of 1.2 million workers. In contrast, during 2016–19, the labour force increased by 0.8 per cent per year.

In 2021, particularly during the fourth wave of the epidemic in the second quarter, the labour market experienced severe impacts after prolonged social distancing and isolation regulations. According to a report by the GSO, about 28.2 million working-age people were negatively affected by the COVID-19 epidemic. Of these, 16.5 per cent lost their jobs, 51.1 per cent had to take temporary leave or suspend production and business, and another 42.7 per cent of the labour force had their working hours reduced or were laid off. Additionally, 67.2 per cent witnessed a reduction in income. The Southeast

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[1] For more details, see Dinh et al. (2009) and Central Institute for Economic Management (2013).

[2] Viet Nam has used a measure of multi-dimensional poverty since 2016. The poverty line used was the same in 2016–21. For 2022–25, Viet Nam adopted a new income poverty line of VND 1.5 million and VND 2.0 million per person per month for rural and urban areas, respectively (Decree 27/2021/ND-CP on multidimension poverty for 2021–25).

region and the Mekong River Delta were the two most affected regions, with the highest rates of negatively affected workers at 59.1 per cent and 44.7 per cent, respectively. The labour force continued to decline significantly, reaching a low of 49.1 million people, a decrease of 2.2 million compared to 2020.

As one direction of work to address the above issues, Viet Nam needs to improve its capacity of undertaking *ex ante* policy impact assessments, particularly with respect to how various tax instruments and transfers affect the households. This issue becomes even more important when household incomes have been more vastly diversified in terms of level, source, exposure to tax, and reliance on transfer, where the use of a representative household no longer suits. In addition, trial and error approach to such policy changes can be more costly, as impacts on the poor and other social groups can hardly be reversed. A modelling approach, with its capacity to quantify the possible macro and/or micro impacts of price changes on certain groups, can help fill in this gap.

This report attempts to update the technical aspects of microeconomic simulation models of various tax instruments in Viet Nam. In doing so, the report adopts a combination of approaches, namely: (i) the review of existing literature and information on household characteristics and related policy information in Viet Nam, and (ii) the use of an adapted EUROMOD-based model for microsimulation for the case of Viet Nam.

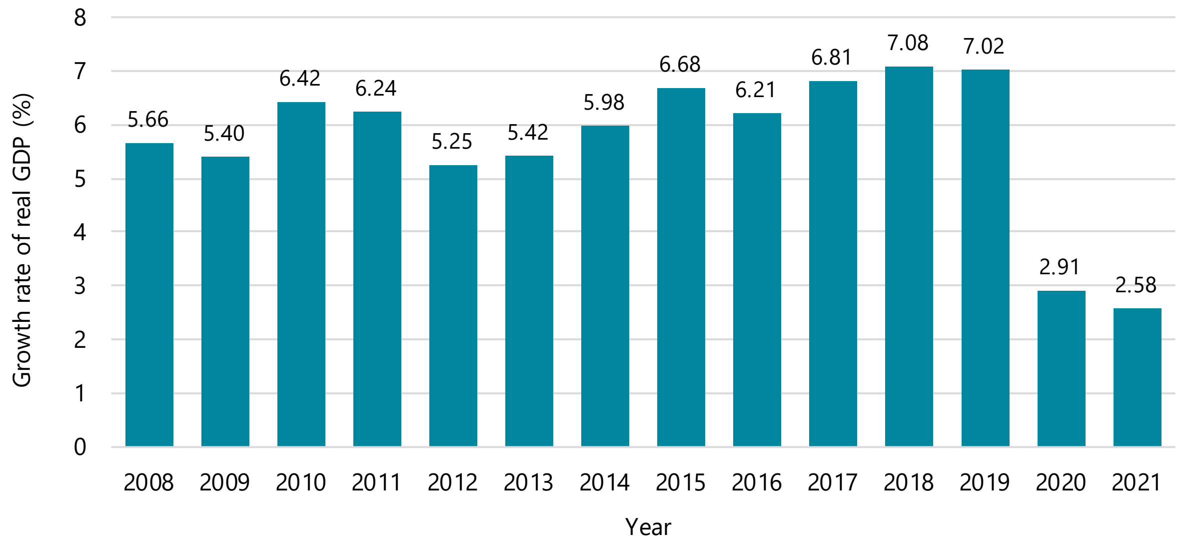
The remainder of this report is structured as follows. The rest of this section gives an update on the general policy setting in Viet Nam. Section 2 describes the simulations of taxes, social insurance contributions, and transfers in Viet Nam. Section 3 then covers the data and related adjustment under VNMOD v2.3. Section 4 discusses some caveats in interpreting the model results.

1.1 Selected macroeconomic indicators

1.1.1 Economic growth

Since the accession to the World Trade Organization (WTO) in 2007, Viet Nam experienced more volatility in economic growth. Such volatility resulted from the increasing uncertainty following the global financial crisis, and Viet Nam's switches between macroeconomic policy stances (specifically between growth stimulus and inflation control). In the aftermath of the global financial crisis, economic growth decelerated from 8.5 per cent in 2007 to 5.4 per cent in 2009, before recovering to 6.4 per cent in 2010. With more focus on inflation control which required tightening of both monetary and fiscal policies, Viet Nam generally experienced slower economic growth in 2011–17 (compared with the pre-2007 period). As a positive sign, however, economic growth exhibited a modest recovery from 6.2 per cent in 2011 to 6.7 per cent in 2015. The average GDP growth of 2016–19 was relatively high, 6.8 per cent per annum. However, the country experienced a slowdown while suffering from the adverse impacts of the COVID-19 pandemic. GDP growth was only 2.9 per cent in 2020 and 2.6 per cent in 2021 (Figure 1.1), a notable reduction compared to 2019 but still higher than in many other countries around the world.

Figure 1.1: Annual growth rate of Viet Nam's real gross domestic product (GDP), 2008–21 (%)

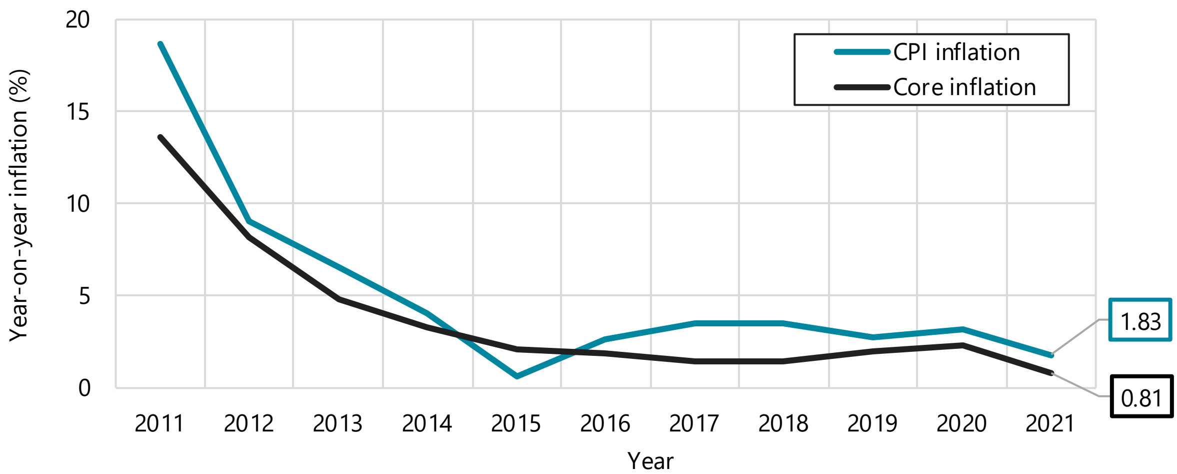


Source: Authors' compilation.

1.1.2 Inflation

The years 2007–20 also witnessed major fluctuations in Viet Nam's inflation rate. Inflation as measured by the consumer price index (CPI) inflation rose from 8.3 per cent in 2007 to a peak of 23 per cent in 2008, then cooled down before climbing again to 18.6 per cent in 2011. During 2012–15, due to more comprehensive measures to restructure the economy and control inflation, the figure fell continuously to 9.2 per cent in 2012 and 0.6 per cent in 2015. Inflation then recovered to 2.7 per cent in 2016 and became consistently below the ceiling imposed by the National Assembly (4.0 per cent per annum). Inflation was 3.2 per cent in 2020 in the context of stabilizing macroeconomic policy for controlling COVID-19, reducing to 1.8 per cent in 2021 (Figure 1.2). Not shown in the figure, the first ten months of 2022 suggest an increase in CPI inflation to around 2.8 per cent.[3]

Figure 1.2: Year-on-year inflation, 2011–21 (%)



Note: Inflation rate is calculated using the average of monthly CPIs for the given year (adopted in 2017).

Source: Authors' compilation.

[3] See Central Institute for Economic Management (2013, 2018) for more detailed analysis.

1.1.3 Government budget

Government budget revenues have been increasing continuously. During the years 2012–18, inflation-adjusted budget revenues rose by 8.0 per cent per annum on average. The ratio of budget revenues over GDP increased slightly from 22.7 per cent in 2012 to 25.7 per cent in 2019. By item, crude oil and corporate income tax constituted major sources of revenues, though their shares have been decreasing during 2012–18. Revenues from trade fluctuated in the range between 14.1 per cent and 19.7 per cent. The country then had to rely more on revenues from other sources. Personal income tax is relatively new in Viet Nam, although the share in revenues climbed from 6.1 per cent in 2012 to 7.1 per cent in 2019, 7.6 per cent in 2020, and an estimate of 8.1 per cent in 2021 (Table 1.1).

Table 1.1: Structure of budget revenues, final account, 2012–21 (%)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Revenues from trade	14.6	15.6	19.7	17.0	15.5	15.2	14.1	13.8	11.8	13.8
Revenues from crude oil	19.1	14.5	11.4	6.8	3.6	3.8	4.6	3.6	2.3	2.9
Proceedings from land	7.6	6.7	6.5	8.8	11.4	12.3	12.6	12.4	14.1	14.6
Personal income tax	6.1	5.6	5.5	5.7	5.9	6.1	6.6	7.1	7.6	8.1
Corporate income tax	29.4	27.9	23.7	20.0	17.0	16.3	17.5	17.4	19.3	20.3
Other revenues	23.3	29.6	33.3	41.7	46.5	46.2	44.5	45.7	44.9	48.4

Note: As of December 2022, Viet Nam has finalized budget figures for year 2020 only. The 2021 estimates use the second settlement of budget revenues.

Source: Authors' compilation.

Viet Nam has been running a prolonged budget deficit. Budget expenditures kept expanding and remained in excess over budget revenues. Total expenditures (adjusted for inflation) rose on average by 0.9 per cent per annum in 2012–18. The ratio of budget expenditures over GDP decreased from 34.1 per cent in 2012 to 26.3 per cent in 2018. Over the period 2012–20, Viet Nam provided relatively more expenditures from the state budget for education and training, health, and pension and social security. Among them, expenditure on education and training accounted for the largest share. Development investment from the state budget remained relatively stable from 2012 to 2019, at 27.5 per cent in 2012 and 27.6 per cent still in 2019. It increased however to 38.2 per cent in 2020 (Table 1.2).

Table 1.2: Structure of budget expenditures, final account, 2012–20 (%)

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Development investment	27.5	25.0	22.5	31.5	28.2	27.5	27.4	27.6	38.2
Expenditure on education and training	13.0	14.3	15.8	13.9	13.7	15.1	15.4	15.6	14.2
Expenditure on health	4.0	4.2	4.6	3.9	5.6	5.8	N/A	N/A	N/A
Expenditure on pension and social security	8.8	9.2	9.7	8.3	9.0	9.0	N/A	N/A	N/A
Other expenditures	46.8	47.3	47.4	42.4	43.5	42.6	N/A	N/A	N/A

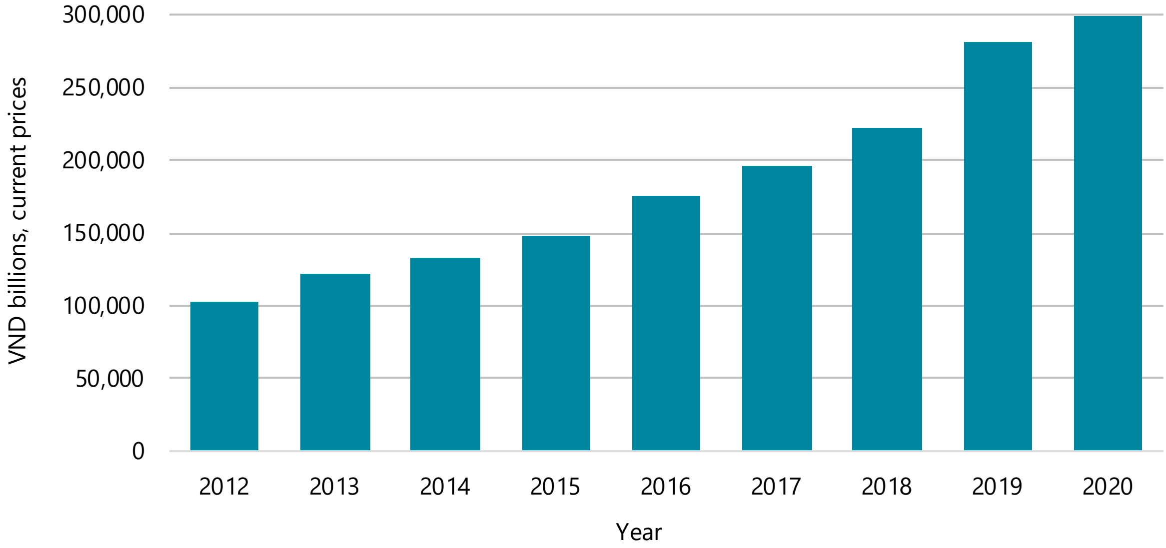
Note: As of December 2022, Viet Nam has finalized budget figures for 2020 only.

Source: Authors' compilation from GSO data.

1.1.4 Social contributions

Contributions to social insurance funds—including social insurance, health insurance, and unemployment insurance—depicted an upwards trend over time (Figure 1.3). Total contributions to social insurance fund (at current prices) rose on average by 17.4 per cent per annum during 2010–19. Adjusted for inflation, the average growth rate would be 12.6 per cent per annum. As noted in Nguyen et al. (2016), the majority of contributions were made on a compulsory basis.

Figure 1.3: Social insurance contributions, 2012–20 (VND billion, current prices)



Source: Authors' compilation of data from GSO.

1.2 General policy framework in Viet Nam

Viet Nam adopts the convention of calendar year as the fiscal year. Under Viet Nam's system, policies are implemented by ministries, ministerial-level agencies, and line authorities. The policies generally assign the tasks to these agencies and authorities, and they have to prepare their own plans for implementation. The local authorities at the provincial and district levels have a similar structure as the ministries at the central government level, with specific bodies responsible for trade and industry, agriculture and rural development, labour affairs, education and training, etc.

Resources for these ministries and line authorities are largely from the corresponding levels of state budget, although official development assistance, state credit, proceedings from government bonds or city bonds can be used to finance specific programmes. Apart from that, there might be some charity activities by various social groups and enterprises, and livelihood programmes implemented by non-governmental organizations under the permission of relevant central and local authorities.

The pension system in Viet Nam solely relies on Social Security of Viet Nam, the state organization with a mandate to manage social insurance funds (including health insurance). No private provider of pension is present. In general, the state applies the pension age of 60 years for men and 55 years for women. Not all people, however, are entitled to pensions.[4] This was due to two reasons. First, the employees may have inadequate period of social insurance contribution during their work tenure. Second, mandatory social insurance contributions were only legalized for formally employed labourers. Meanwhile, labourers in the informal sectors or self-employed in agriculture, forestry, and fishery made limited social insurance contributions.

Together with economic reforms in the past decades, Viet Nam has also emphasized various aspects of social developments. During the years from 2000 to 2015, the country has committed to the Millennium Development Goals (MDGs). Under the MDGs, Viet Nam was committed to: (i) eradicate extreme poverty and hunger; (ii) achieve universal primary education; (iii) promote gender equality and empower women; (iv) reduce child mortality; (v) improve maternal health; (vi) combat HIV/AIDS, malaria, and other diseases; (vii) ensure environmental sustainability; and (viii) promote a global partnership for development. Under the themes from (i) to (vii), the country dedicated its own public

[4] For more details, see Section 3.

resources and/or mobilized support from international donors. Such resources were for building knowledge and empowerment of local people, technical assistance, and upgrading relevant physical infrastructures. Since 2015, Viet Nam joined the Sustainable Development Goals (also known as the Global Goals), which comprise 17 areas and carry the MDG work forward until the year 2030.

Related to education, Viet Nam's schooling system consists of three levels, namely: primary school, lower secondary school, and upper secondary school. Pupils generally finish primary school aged 11 years, lower secondary school aged 15 years, and upper secondary aged 18 years. After finishing upper secondary school, pupils may choose to go to university, technical college, or vocational school should they want to pursue higher education. Viet Nam's education system remains dominated by state providers at all levels. Nonetheless, the presence of non-state providers has been increasing over time. Since accession to the WTO in 2007, in particular, various foreign educational institutions have established their presence in Viet Nam. However, budgetary support to education is only provided for pupils and students at state-owned education institutions.

In terms of health, the dominance of state providers is even more profound than in the education system. The health system is generally divided into three levels, namely: (i) central level, (ii) provincial level, and (iii) local level. Central-level institutions include the Ministry of Health, and all central government hospitals and institutes. The provincial- and local-level institutions include local branches of the Ministry of Health (responsible for health care, food safety, birth control), local hospitals, and health care centres. Most of the health system's expenditures have been assumed by the state, either directly from the state budget or via the health insurance fund (under Social Security of Viet Nam). Only a modest share of expenditures on health care at these public institutions were financed by patients themselves, largely on a voluntary basis as the cost went beyond the insurance limit. In addition, the state regulates the prices and fees of an array of health care services and pharmaceutical products and makes decisions to increase such prices and fees at times. In private hospitals, patients usually have to pay higher prices, mostly afforded by those with higher incomes or via private insurance schemes.

Due to highly emphasized targets on sustainable developments and deep involvement in the health and education sectors, the state has to allocate significant resources for relevant household- or sector-targeted programmes. Such programmes may range from direct subsidy for the poor in using health and education sector, to promoting reduction of general poverty and hunger incidence.

1.3 Social benefits

1.3.1 Standard benefits

Under compulsory social insurance, the types of contributory provisions include: (i) sickness support, (ii) maternal support, (iii) support to work-related injuries or occupational hazard, (iv) pension, and (v) death gratuity.

Benefit 1: Sickness support is provided to the employee in the period of 30 days per year (if the employee has contributed to a social insurance fund for less than 15 years), or 45 days[5] (if the period of contribution is between 15 and 30 years), or 60 days (after at least 30 years of contribution) in the case of ordinary diseases. Under paid sick leave, the employee can receive 75 per cent of the salary of the previous month prorated on a daily basis. After the period of sick leave, if the employee remains weak, s/he can have at most 10 days for recovery, with the benefit equal to 25 or 40 per cent of the

[5] This is changed to 40 days in the amended Law on Social Insurance in 2014 (National Assembly 2014).

minimum wage,[6] if staying at home or at a medical centre, respectively. With diseases in the stipulated list that requires long-term treatment, the employee is entitled to a maximum of 180 days of sick leave, which can be extended with lower-level payments. The monthly benefit is then equal to 65, 55, or 45 per cent[7] of salary for the last month (before leave) if the period of contribution is at least 30 years, between 15 and 30 years, or less than 15 years, respectively. In case a child is sick, each parent under social insurance is entitled to a leave of maximum 20 days if the child is aged less than 3 years, or maximum 15 days if the child is aged between 3 and 7 years.

Benefit 2: Maternity leave is provided to: (i) pregnant employees, (ii) female employees giving birth to their children, (iii) employees who adopt children aged less than 4 months,[8] and (iv) employees who undertake sterilization. Pregnant employees are entitled to a maximum of five times of 1-day leave for medical check-ups. After giving birth to a child, the employee can take leave of 4, 5, or 6 months[9] depending on normal occupations, hazardous occupations, or status of disability. The employee giving birth to a child is also entitled to: (i) a one-time payment of 2 months of minimum salary, and (ii) monthly payment equal to the average of the 6 months preceding maternity leave. Those adopting children aged 4 months or younger can take leave until the children turn 4 months old, with a one-time payment of 2 months minimum salary. Those undertaking sterilization can take leave of 7 or 15 days depending on the type of measures.

Benefit 3: Support for work-related injuries or occupational hazards is dependent upon the loss of work capacity. Those losing 5–30 per cent of work capacity are entitled to two payments. The first payment is equal to (i) 5 months of minimum salary for the first 5 per cent of work capacity lost, and (ii) one-half of monthly minimum salary for each additional 1 per cent of work capacity lost. The second payment is equal to: (i) 0.5 per cent of monthly salary of the last month before leave if contributing to social insurance for less than 1 year, and (ii) an additional 0.3 per cent of monthly salary of the last month before leave for every year of social insurance contribution. Those losing at least 31 per cent of work capacity are entitled to two monthly payments. The first monthly payment is equal to: (i) 30 per cent of monthly minimum wage if loss at 31 per cent, and (ii) an additional 2 per cent of monthly minimum wage for each additional 1 per cent of work capacity loss. The second monthly payment is equal to: (i) 0.5 per cent of monthly salary of the last month before leave if contributing to social insurance for less than 1 year, and (ii) an additional 0.3 per cent of monthly salary of the last month before leave for every year of social insurance contribution. Under exceptional cases, a social insurance fund may provide support in the form of facilities and payment to servants to the employee. In the case of death due to work-related injuries or occupational hazard, the family members are entitled to one-time payment of 36 months of minimum salary.[10]

Benefit 4: Pension is provided to employees upon retirement, subject to their meeting requirements in terms of age, period of social insurance contribution, etc. Under the Law on Social Insurance in 2006 (effective since 1 January 2007; National Assembly 2006), employees eligible for pension after 20 years of social insurance contribution are either: (i) male labourers retiring at 60 years or female labourers retiring at 55 years, or (ii) male labourers between 55 and 60 years and female labourers between 50 and 55 years who have been working in toxic or dangerous areas (under the list to be identified by the Ministry of Labour, Invalids and Social Affairs and the Ministry of Health; National Assembly 2006) for

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[6] This benefit is combined into a single rate of 30 per cent in the amended Law on Social Insurance in 2014 (National Assembly 2014).

[7] This last is changed to 50 per cent in the amended Law on Social Insurance in 2014 (National Assembly 2014).

[8] This was changed to 6 months in the amended Law on Social Insurance in 2014 (National Assembly 2014).

[9] This is combined into a single period of 6 months under the amended Law on Social Insurance in 2014 (National Assembly 2014).

[10] This description is adapted from National Assembly (2006).

at least 15 years, or with regional wage-supplementary ratio of at least 0.7 for at least 15 years. For those serving in the army or security forces, the corresponding retirement ages are 55 years for male labourers and 50 years for female labourers under group (i), and between 50 and 55 years for male labourers and between 45 and 50 years for female labourers under group (ii). These conditions for state pension age are retained in the new Law on Social Insurance in 2014 (effective since 1 January 2016; National Assembly 2016). The monthly pension is calculated as follows: (i) 45 per cent of referenced salary for the first 15 years of social insurance contribution, and (ii) an additional 2 per cent for male employees and 3 per cent for female employees for each additional year of social insurance contribution (to the maximum ratio of 75 per cent).[11] A once-off payment is also provided to the retirees in addition to the monthly pension, with the value being 0.5 per cent of referenced monthly salary for each year of social insurance contribution beyond threshold (30 years for males and 25 years for females). For those ineligible for monthly pension, a once-off payment is made with the value of 1.5 months of referenced salary for each year of social insurance contribution (Table 1.3).[12]

Benefit 5: Death gratuity is provided to family members (including children, spouse, mother, father, mother-in-law, father-in-law, and other dependent people subject to eligibility) if the employee or retiree passes away. The monthly payment is equal to 50 per cent of minimum salary (in the presence of other employees/retirees as supporters to those members) or 70 per cent of minimum salary (in the absence of other employees/retirees as supporters to those members). For those ineligible for monthly payment, a once-off payment is made at the value of: (i) 1.5 months of referenced monthly salary for each year of social insurance contribution, with the minimum being 3 months, if the employee passes away; and (ii) 48 months of pension in the first 2 months after retirement, which will be reduced by 0.5 months for each additional month under pension, if the retiree passes away. In addition, the family is entitled to support to organize the funeral, equal to 10 months of minimum salary.

Table 1.3: Formula for referenced salary

Starting point of social insurance contribution	Referenced monthly salary
Before 1 January 1995	Average monthly salary for the last 5 years of work (under the state payroll) or for all years of work (outside the State payroll)
Between 1 January 1995 and 31 December 2000	Average monthly salary for the last 6 years of work (under the state payroll) or for all years of work (outside the state payroll)
Between 1 January 2001 and 31 December 2006	Average monthly salary for the last 8 years of work (under the state payroll) or for all years of work (outside the state payroll)
Between 1 January 2007 and 31 December 2015	Average monthly salary for the last 10 years of work (under the state payroll) or for all years of work (outside the state payroll)
Between 1 January 2016 and 31 December 2019	Average monthly salary for the last 15 years of work (under the state payroll) or for all years of work (outside the state payroll)
Between 1 January 2020 and 31 December 2024	Average monthly salary for the last 20 years of work (under the state payroll) or for all years of work (outside the state payroll)
Since 1 January 2025 onwards	Average monthly salary for all years of work

Source: Authors' compilation (2021).

[11] In the amended Law on Social Insurance in 2014, since 2018, the threshold of 45 per cent of referenced salary will be 15 years of social insurance contribution for female employees. For male counterparts, the corresponding period will be 16, 17, 18, 19, and 20 years for those retiring in 2018, 2019, 2020, 2021, and 2022, respectively. After the threshold, the proportion increases by 2 percentage points for each additional year of social insurance contribution, applicable for both male and female employees (National Assembly 2014).

[12] In the amended Law on Social Insurance in 2014, 1.5 months of referenced salary apply to the years of social insurance contribution before 2014; since 2014 onwards, each year of social insurance contribution will be converted into two months of referenced salary (National Assembly 2014).

Benefit 6: Support in the form of educational expenses is provided to students in the areas of hardship, ethnic minorities, remote areas. Specifically, under Decree 86/2015/ND-CP of the Government of Viet Nam, a monthly value of VND 100,000 is provided to eligible pupils.

Benefit 7: Electricity subsidy is provided to poor households. Specifically, under the Decision 28/2014/QD-TTg of the Prime Minister of Viet Nam, each eligible poor household would receive a monthly electricity subsidy equivalent to the first 30 kilowatt-hours (kWh) (i.e. about VND 46,000 per month).

1.3.2 Benefits during the COVID-19 pandemic in 2020

During the period of the consequences of the COVID-19 pandemic (see Section 1), the Government of Viet Nam provided supports to various social groups through the promulgation of various policy measures. Under Decision 15/2020/QD-TTg of the Prime Minister, a worker will be eligible for assistance if the following conditions are fully satisfied: (i) the duration of contract suspension or unpaid leave during the effective period of the employment contract is at least one consecutive month during the period from 1 April to 30 June 2020, and the suspension or unpaid leave begins during the period from 1 April to 1 June 2020; (ii) he/she is participating in social insurance right before the beginning date of suspension or unpaid leave; and (iii) the enterprise for which he/she is working is not making any revenue or does not have sufficient funds to pay the wages (after the backup wage fund, post-tax profits, and other lawful sources have been used according to the records on 31 March 31 2020) due to the impact of the COVID-19 pandemic.

Household businesses are eligible for assistance if: (i) the revenue of the household business in 2020 as determined by its supervisory tax authority is under 100 million according to the records on 15 January 2020; and (ii) the household business has been suspended since 1 April 2020 under a decision of the President of the People's Committee of the province in furtherance of the Prime Minister's Directive 15/CT-TTg dated 27 March 2020.

For workers whose employment contracts are terminated without unemployment benefits, eligibility conditions for assistance are that: (i) he/she has an employment contract (or public employee contract) before 1 April 2020 and is participating in compulsory social insurance; (ii) the employment contract is terminated during the period from 1 April to 15 June 2020; (iii) he/she is not eligible for unemployment benefits; and (iv) he/she does not have any income or has an income that is lower than the near-poverty standard according to Decision 59/2015/QD-TTg.

For unemployed workers without employment contracts: the following conditions are fully satisfied for assistance: (i) he/she is laid off and has an income lower than the near-poverty standard according to Decision 59/2015/QD-TTg during the period from 1 April to 30 June 2020; (ii) he/she has lawful residence; and (iii) he/she is doing one of the following non-agriculture jobs: street vendors and hawkers, waste and/or scrap collectors, carriers (porters), bike taxi and pedicab drivers, street lottery ticket sellers, self-employed workers or employees of household businesses in food and drink, lodging, healthcare industries.

Assistance to mitigate impacts of the COVID-19 pandemic is also provided to: (i) people with meritorious services who are receiving monthly benefits (including their relatives who are receiving monthly benefits, war invalids who are receiving monthly invalidity pension); (ii) people in households on official lists of poor and near-poor households by 31 December 2019, which are compiled according to poverty and standards in Decision 59/2015/QD-TTg; and (iii) social protection beneficiaries who are receiving monthly benefits and included in the list of beneficiaries of April 2020.

The government extended these measures into 2021 under the government's Resolution 68/NQ-CP dated 1 July 2021 on certain policies supporting employees and employers due to COVID-19 and

Decision 23/2021/QD-TTg dated 7 July 2021 on implementing certain policies to support employees and employers affected by COVID-19. Specific measures include:

(i) Support for employees with temporary suspension of employment contracts or unpaid leave with lump-sum support of those working for enterprises, cooperatives, selected public sector entities, private pre-schools, kindergartens, primary schools, junior high schools, high schools, and vocational schools. The benefit is VND 1,855,000 per person (US$82) for those suspended from 15 consecutive days to less than 1 month. The benefit is VND 3,710,000 per person (US$138) for those suspended for 1 month or more. Additional support of VND 1,000,000 per person is provided to pregnant employees and those raising children under the age of six (only for the mother, father, or the caregiver).

(ii) Support for employees with terminated employment contracts in the form of a one-time lump sum payment of VND 3,710,000 per person for people working for same organizations as specified above, from 1 May 2021 to 31 December 2021. Again, additional support of VND 1,000,000 per person is provided to pregnant employees and those raising children under the age of six.

(iii) Support of VND 1,000,000 per person for laid-off employees, either under a labour contract, being quarantined or in a locked-down area for 14 days or more, from 1 May 2021 to 31 December 2021.

(iv) Cash support of VND 3,710,000 per person for workers in entertainment and tourism, including art directors, actors, painters of public units, and tour guides, who have stopped working for 15 days or more between 1 May 2021 and 31 December 2021.

(v) Support for informal labour in the form of a one-time lump-sum payment of VND 1,500,000 per person, or VND 50,000 per person per day, up to 30 days.

(vi) Job retention training programmes for employees, with the maximum monthly assistance of VND 1,500,000 per employee and a maximum support term of six months. Applications for support need to be submitted between 1 July 2021 and 30 June 2022.

(vii) Cash support from the excess of unemployment fund for workers affected by COVID-19, based on the beneficiary's contribution period to the unemployment fund. The associated lump-sum payments depend on the unemployment insurance contribution period as follows:
   - Less than 12 months: VND 1,800,000 per person;
   - From 12 months to less than 60 months: VND 2,100,000 per person;
   - From 60 months to less than 84 months: VND 2,400,000 per person;
   - From 84 months to less than 108 months: VND 2,650,000 per person;
   - From 108 months to less than 132 months: VND 2,900,000 per person; and
   - At least 132 months: VND 3,300,000 per person.

(viii) Reduction of electricity bills for households suffering from social distancing under Directive 16 (the fourth time this measure is applied), with a reduction of 15 per cent of the bill before tax for households using up to 200 kWh per month, and a reduction of 10 per cent before tax for households using more than 200 kWh per month.

(ix) Additional support policies for enterprises, such as electricity fee waivers; tax policies on goods imported to support COVID-19 prevention and control; suspension of employers' contributions to the retirement and survivorship fund; a loan policy for wage payments for employers and firms; and the reduction of the contribution rate to the unemployment fund by employers affected by COVID-19.

1.3.3 Not strictly benefits

Not strictly benefit 1: Voluntary social insurance covers contributory support in the forms of: (i) pension, and (ii) death gratuity. The value and eligibility of pension and death gratuity are similar to those under compulsory social insurance, except that the referenced salary is calculated based on actual income as basis for contribution.

Not strictly benefit 2: Benefits from unemployment insurance include: (i) unemployment benefits, (ii) support for vocational training, and (iii) support in job-seeking. By nature, these benefits are contributory.

Unemployment benefits are paid to the unemployed person subject to the conditions that: (i) s/he has paid unemployment insurance for at least 12 months in the last 24 months before unemployment, (ii) s/he has registered unemployment with Social Security of Viet Nam fund, and (iii) s/he has been unable to find jobs within 15 days after registration of unemployment. The monthly unemployment benefit is equal to 60 per cent of average salary in the last 6 months before unemployment. The period for receiving unemployment benefits is: (i) 3 months if unemployment insurance is paid for 12–36 months, (ii) 6 months if unemployment insurance is paid for 36–72 months, (iii) 9 months if unemployment insurance is paid for 72–144 months, and (iv) 12 months if unemployment insurance is paid for more than 144 months. Apart from that, subject to eligibility, the unemployed person can receive financial support for vocational training, job searches, and health insurance during the period of unemployment.

Not strictly benefit 3: Apart from the above benefits, Viet Nam also provides non-contributory payments to support: (i) invalids, families of soldiers killed during the national struggle or national unification, and those merited for supporting the national struggle/national unification; (ii) poor and disadvantaged people; and (iii) selected elderly people. For those under group (i), the death gratuity or other supportive payments are made on both once-off and monthly basis, with the value to be determined in each period by relevant regulations (National Assembly 2006). Other forms of support include education and training, vocational training, and assistance with job searches. In accordance with Decree No. 99/2018/ND-CP in 2018 (effective 27 August 2018; Government of Viet Nam 2018), the referenced value is VND 1.515 million, which helps identify monthly and one-time payments to various groups of beneficiaries under group (i). Support for the poor and disadvantaged people in group (ii) depends upon the type of programmes to help these people, scale and coverage of the programme, as well as resource availability. Support for these people includes provision of health insurance, fee exemption for education and training, agricultural training, and emergency relief during crop loss. Under (iii), a monthly payment is paid to elderly people (aged more than 60 years) having no income supporters, and elderly people (aged more than 80 years) ineligible for social insurance benefits. As of 2018, the monthly payment is valued at VND 270,000 (or US$11.7)[13] per person.

1.4 Social contributions

The system of social insurance also underwent significant change since 2006. There have been minor changes since then (see Section 2.3 for the specific rates since 2013). The Law on Social Insurance in 2006 identified the contributors of compulsory social insurance as: (i) those with labour contracts without predetermined term or with predetermined term of at least 3 months; (ii) public servants and staff; (iii) staff in national defence and security areas; and (iv) employers of employees under (i), (ii), and (iii) and other business households.

Apart from the statutory contributions for eligibility for pension (Benefit 4 in Section 1.3), households in Viet Nam often have to make a range of contributions, which are either fixed or variable (in terms of percentage or monetary value). These contributions can be to support schools, medical centres, or donations to disadvantaged groups. By nature, these contributions are voluntary, but households often feel such contributions are unavoidable.

[13] Exchange rate for the first 11 months of 2018: US$1=VND 23,047.

1.5 Tax system

As of 2021, Viet Nam's tax system is still under renovation. The changes were more dramatic since 2007, as Viet Nam had to revert to domestic revenues as replacement for revenues from trade (following drastic tariff reduction under the WTO). All economic activities are subject to the following types of taxes:

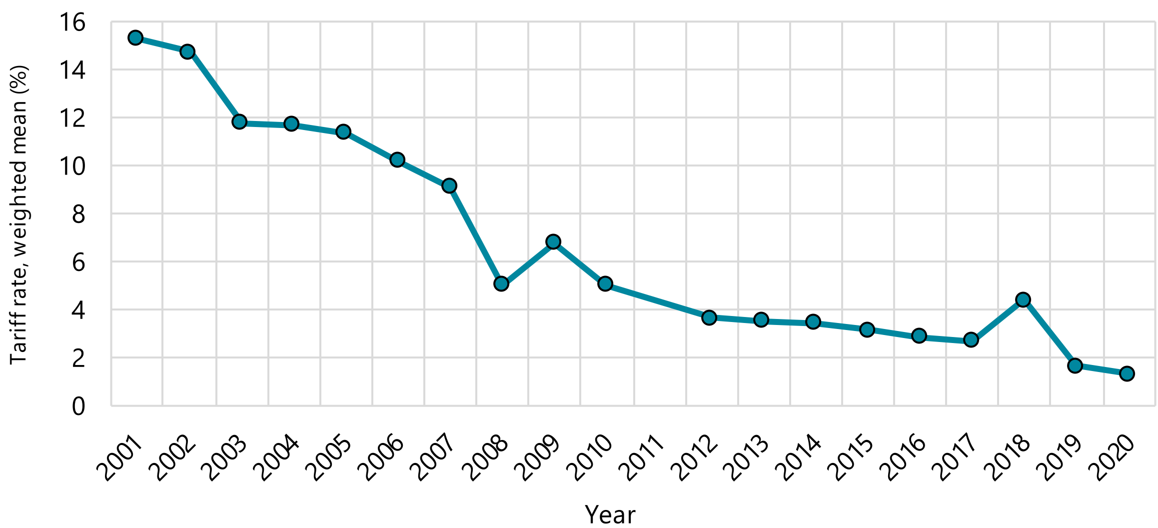
Tax 1 (*Corporate income tax*): This is the ad valorem tax levied on income of business entities, at the rate of 25 per cent (before 2014), 22 per cent (for 2014 and 2015), and 20 per cent (since 2016). The exception is with oil and gas extraction where the rate ranges from 32 to 50 per cent, depending on the locality and actual project condition. To promote investment in some sectors or areas, the government may waive and/or reduce corporate income tax. Since April 2020, a 6-month deferral of corporate income tax payment was enacted to help firms of selected sectors (construction, warehousing, accommodation and catering, etc.) mitigate the impacts of the COVID-19 pandemic.

Tax 2 (*Foreign contractor tax*): This is the tax applicable on payment to foreign contractors, which includes interest rate payment, copyright fee, service fees, insurance premium, and transportation fees.

Tax 3 (*Value-added tax, VAT*): This ad valorem tax applies to all goods and services that are produced, sold, and consumed in Viet Nam. Viet Nam has three VAT tax rates, namely, 0, 5, and 10 per cent. Only selected goods and services are subject to the tax rates of 0 or 5 per cent (see Section 2.7.1 for details). VAT is calculated after including all other taxes (including import tariff and special sales taxes, if any) and fees (including costs of sales). Similar to corporate income tax, since April 2020, a 6-month deferral of value-added tax payment was enacted to help firms of selected sectors (construction, warehousing, accommodation and catering, etc.) mitigate the impacts of the COVID-19 pandemic. In 2022, the rate for most consumption items subject to the 10 per cent rate was reduced to 8 per cent to support households and businesses in the context of high energy costs and rapid inflation.

Tax 4 (*Import tariff*): This is the tax applicable on imported products. The actual tax rate varies depending on the classification of product, exporting country, and satisfaction of rule of origin. As discussed later, this constitutes an important source of revenue for the government, despite smaller share over time due to the trade-liberalization-induced process of phasing out tariffs (Figure 1.4).

Figure 1.4: Trade-weighted import tariff of Viet Nam, 2001–20 (%)



Source: Authors' compilation based on import tariff data from World Bank, available at: https://data.worldbank.org/indicator/TM.TAX.MRCH.SM.AR.ZS?end=2020&locations=VN&start=2001&view=chart.

Tax 5 (*Special sales tax*): This is the tax applicable only to the sale and import of a selection of products and services. The products subject to special sales tax include automobiles (of less than 24 seats), beer, cigars, cigarettes, wine and alcohol, motorbikes (of more than 125 cubic centimetres in cylinder), aircraft, yachts, petrol (of all kinds), air conditioners (of less than 90,000 BTU in capacity), playing cards, and joss papers. Services subject to special sales tax include discotheques, massage, karaoke, casinos, jackpots, slot machines, betting, lottery, and golf. The tax base is the domestic producer price before VAT (for domestically produced goods) or import price plus import tariff (for imported products). See Section 2.7.2 for details.

Tax 6 (*Natural resource tax*): This is the tax levied on the extraction of natural resources such as oil, gas, minerals, products from natural forest, natural aquatic products, and natural water.

Tax 7 (*Real estate tax*): This is the tax payable for the use of land/real estate by individuals and business entities.

Tax 8 (*Export tax*): This is the tax applicable on some export products. However, the number of products subject to export tax is limited.

Tax 9 (*Environment protection tax*): This is the indirect tax levied on the products of which the production and/or import may cause adverse impacts on the environment.

Tax 10 (*Personal income tax of Vietnamese residents, including foreigners earning income in Viet Nam who are considered as Vietnamese residents for tax purpose*): This is the tax applicable on taxable income of Vietnamese employees and foreign staff working in Viet Nam. Prior to 2007, Viet Nam focused mainly on collecting income from high-income earners. It was only since 2007 that Viet Nam began to implement personal income tax on a broader group of income earners. The actual brackets and tax rates are discussed later with simulations (see Section 2.6.5 for details). All income sources are taxed equally and the income earner has to file the tax declaration individually. As stipulated, the base tax deduction and/or tax brackets can be changed subject to the decision of the Standing Committee of the National Assembly when the CPI has increased by a total of more than 20 per cent from the base level in July 2013 (see National Assembly 2013). Accordingly, the base tax deduction was increased in July 2020.

1.5.1 Changes in taxes and fees during the COVID-19 pandemic in 2020–21

In 2020–21, the Vietnamese Government enacted several amendments and reliefs for different taxes and fees to address the effects of the COVID-19 pandemic, discussed briefly in Table 1.4 below.

Table 1.4: Selected policy support for the relief of fees and charges

Description of policy support	Date of issuance	Level of support
Deferral of tax payments, including value-added tax and corporate income tax, and land-use rental	8 April 2020 under Decree 41/2020/ND-CP	Deferral of tax payments and land rental for 5 months, starting from April 2020
Reduction of land-use rental	- 29 May 2020 under Resolution 84/2020NQ-CP of the Government - 10 August 2020 under Decision 22/2020/QD-CP	15% reduction of land-use rental in 2020
Reduction of selected fees and charges (road toll rates, fee for business registration, issuance of license for establishment and operation of bank and non-bank institutions, issuance of certificates of eligibility for construction activities, appraisal of construction investment projects, fees for appraisal of granting international travel service licenses, domestic travel service license; fees for appraisal of granting tourist guide cards, etc.)		About 19 circulars to reduce 30 types of fees and 14 types of charges, with the level ranging from 30 to 100% in 2020

Reduction of fees for business registration	5 May 2020 under Circular 35/2020/TT-BTC	50% of payment from 5 May 2020 to 31 December 2020
Supporting electricity tariff and bill reduction for customers affected by COVID-19 (phase 1) for 3 months	- Resolution 41/NQ-CP dated 9 April 2020 - Official Letter 2698/BCT-DTDL dated 16 April 2020	10% reduction of retail electricity tariff from level 1 to level 4 was applied for customers and for tourism, accommodation, storage of goods in circulation; and direct reduction of electricity bills for facilities used for prevention and control of COVID-19
Supporting electricity tariff and bill reduction for customers affected by COVID-19 (phase 2) for 3 months	- Resolution 180/NQ-CP on 17 December 2020 - Official Letter 9764/BCT-DTDL on 18 December 2020	10% reduction of retail electricity tariff from level 1 to level 4 was applied as above
Suspension of contributions to pension and survivorship funds for employers	- Resolution 42/NQ-CP of the Government on 9 April 2020 - Decision 15/2020/QD-TTG guiding the implementation of Resolution 42	Up to a maximum of 12 months, from 1 April 2020
A financial relief package for specific employers that allows for zero-interest loans from the Vietnam Bank for Social Policies	- Resolution 42/NQ-CP of the Government on 9 April 2020 - Decision 15/2020/QD-TTG guiding the implementation of Resolution 42	Up to a maximum of a 12-month loan term, from 1 April 2020
Reduction of corporate income taxes payable in 2020 and exemption of taxes for household business	- 19 June 2020 under Resolution 116/2020/QH14 of the National Assembly and Decree 114/2020/ND-CP dated 25 September 2020 guiding the implementation of Resolution 116/2020/QH14	- 30% reduction in CIT payable in 2020 - Exemption of taxes
Tax policies on imported goods to support COVID-19 prevention and control	Resolution 106/NQ-CP dated 11 September 2021	Goods imported by Vietnamese organizations and individuals to support different organizations in their performance of COVID-19 prevention and control tasks shall be subject to the same policies on import duties and VAT as humanitarian aid or grant aid
Suspension of employers' contributions to the retirement and survivorship fund	- Resolution 116/NQ-CP dated 24 September 2021 - Decision 28/QD-TTg dated 1 October 2021 on supporting policies for employers and employees affected by COVID-19 from unemployment insurance fund	Insurance premiums reduced to 0% for a duration of 12 months, from 1 July 2021 to 30 June 2022
Loan policy for wage payments for employers and firms	- Resolution 116/NQ-CP dated 24 September 2021 - Decision 28/QD-TTg dated 1 October 2021 on supporting policies for employers and employees affected by COVID-19 from unemployment insurance fund	
Reduction of the contribution rate to the unemployment fund for employers affected by COVID-19	- Resolution 116/NQ-CP dated 24 September 2021 - Decision 28/QD-TTg dated 1 October 2021 on supporting policies for employers and employees affected by COVID-19 from unemployment insurance fund	Reduction from 1% to 0% of the monthly wage fund for employees participating in unemployment insurance for 12 months from 1 October 2021 to 30 September 2022

Source: Authors' compilation of relevant legislation.

2 Simulation of taxes and benefits in VNMOD

2.1 Scope of simulation

Similar to the previous versions of the model, the version 3.3 of VNMOD still retains several tax instruments that can be simulated and validated for Viet Nam. These include: (i) employer's and employee's social insurance contribution; (ii) capital income tax; (iii) labour income tax; (iv) value-added tax; and (v) special sales tax.

Meanwhile, this version attempt to introduce simulations of some transfer items, namely: (i) support of school expenses for the purchase of textbooks, notebooks, and other school supplies to disabled pupil, orphan pupil, and pupil of poor households; (ii) electricity subsidy; (iii) pension benefit for poor older people living without family support (i.e. living without anyone of working age); (iv) person-level financial relief package for poor and nearly poor households during the COVID-19 pandemic; and (v) COVID-response policy for households with businesses and low business incomes.

This section briefly discusses all the simulated taxes and benefits, including those related to COVID-19. Due to absence of data from the household questionnaires, a range of other tax instruments are excluded, such as import tariff, contractor tax, export tax, and environment protection tax (Table 2.1).

Despite a range of actual contributions made by the people, the team could only undertake simulation of contributions to social insurance for those who are formally employed. Such contributions are, by legal provisions, made by both employers and employees at different rates. The percentage contributions by employers and employees were different and exhibited some changes over time. Details on these social contributions were discussed in Nguyen et al. (2016).

Table 2.1: Simulation of taxes and transfers in VNMOD v3.3

	Treatment in VNMOD									
	13	14	15	16	17	18	19	20	21	22
Labour income tax	S	S	S	S	S	S	S	S	S	S
Capital income Tax	S	S	S	S	S	S	S	S	S	S
VAT	S	S	S	S	S	S	S	S	S	S
Special sales tax	S	S	S	S	S	S	S	S	S	S
Import tariff	E	E	E	E	E	E	E	E	E	E
Foreign contractor tax	E	E	E	E	E	E	E	E	E	E
Corporate income tax	E	E	E	E	E	E	E	E	E	E
Natural resource tax	E	E	E	E	E	E	E	E	E	E
Real estate tax	E	E	E	E	E	E	E	E	E	E
Export tax	E	E	E	E	E	E	E	E	E	E
Environment protection tax	E	E	E	E	E	E	E	E	E	E
Employer social contribution	S	S	S	S	S	S	S	S	S	S
Employee social contribution	S	S	S	S	S	S	S	S	S	S
Support of school expenses	—	—	—	S	S	S	S	S	S	S
Electricity subsidy	—	—	—	S	S	S	S	S	S	S
Pension benefit for poor older people living without family support	S	S	S	S	S	S	S	S	S	S
2020 COVID benefit for poor or nearly poor households	—	—	—	—	—	—	—	S	E	E
2020 COVID benefit for poor household businesses	—	—	—	—	—	—	—	P	E	E
2020 COVID benefit for suspended employees and those placed in unpaid leave	—	—	—	—	—	—	—	E	E	E
2020 COVID benefit for terminated employees and those without labour contracts who lose their jobs	—	—	—	—	—	—	—	E	E	E
2020 COVID benefit for current social protection beneficiaries	—	—	—	—	—	—	—	E	E	E
2020 COVID benefit for specific meritorious individuals	—	—	—	—	—	—	—	E	E	E

Notes: 'S' policy is *simulated*, although some minor or very specific rules may not be simulated; '—' policy did not exist in that year; 'E' policy is *excluded* from the model as it is neither included in the microdata nor simulated; 'PS' policy is *partially simulated* as some of its relevant rules are not simulated. Note that the 2020 COVID policies are switched 'off' by default in the model in 2020 due to their incomplete modelling.

Source: Authors' compilation.

2.2 Order of simulation and interdependencies

Table 2.2 presents the order of the main elements of systems for 2013–22 for simulations in VNMOD. 'DEF' refers to definitional policies, 'INC' to income policies, 'TAX' to tax policies, and 'BEN' to benefits.

In the beginning of the spine, there are 10 definitional policies, which specify default values for switched-off policies, uprating indices, input data adjustments, income lists, assessment units, and constants. The definitional policies are followed by three income policies, which specify poverty lines, the designations of individuals to poverty, and equivalence scales.

The income policies are followed by the calculation of social contributions by employers and employees. There are no interdependencies between the calculations of these contributions, although both of them occur only for formally employed persons.

After this, payment of capital income tax is computed if the person earns income from rental of property or investment, and payment of labour income tax is computed subject to the condition of formal employment. There are no interdependencies between the two taxes. However, the calculation of labour income tax is performed after the calculation of social contribution by employees, since these contributions are deducted from labour earnings to form the tax base.

Benefits are simulated after direct taxes. The first benefit is support for school expenses, which cover the purchase of textbooks, notebooks, and other school supplies to disabled and orphan pupils, and pupils of poor households. This is followed by the calculation of the electricity subsidy; pension benefits for poor older people living without family support; and two COVID-related benefits for poor or nearly poor households and small household businesses. Note that the COVID policies are switched 'off' by default in the model in 2020 due to their incomplete modelling.

Indirect benefits are calculated after benefits. The amount of VAT paid is simulated based on the specific expenditures on goods subject to VAT and the relevant VAT rates. The computed amount of VAT is subtracted from expenditure items, which form the values for calculating the special sales tax or excise duty. The calculation of special sales tax or excise duty paid is conditional upon the value of VAT paid.

Finally, consumption is adjusted to new disposable income (see Section 3.5 for details), and model output is specified at the individual level.

Table 2.2: VNMOD spine: order of simulation

Name of policy	Contents	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
SetDefault_vn	DEF: Default values for switched-off policies	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	On	*n/a*	*n/a*
uprate_vn	DEF: Uprating factors	On	On	On	On	On	On	On	On	On	On
neg_vn	DEF: Recode negative incomes to zero	On	On	On	On	On	On	On	On	On	On
lma_vn	DEF: COVID-19 transitions and shocks	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
ildef_std_vn	DEF: Standard income lists	On	On	On	On	On	On	On	On	On	On
ildef_non_std_vn	DEF: Model-specific income lists	On	On	On	On	On	On	On	On	On	On
ildef_stats_vn	DEF: Statistics Presenter income lists	On	On	On	On	On	On	On	On	On	On
ildef_exp_vn	DEF: Expenditure income lists (COICOP)	On	On	On	On	On	On	On	On	On	On
tudef_vn	DEF: Define assessment units	On	On	On	On	On	On	On	On	On	On
constdef_vn	DEF: Define constants	On	On	On	On	On	On	On	On	On	On
spl_vn	INC: Poverty lines	On	On	On	On	On	On	On	On	On	On
spl01_vn	INC: Poverty designations	On	On	On	On	On	On	On	On	On	On
ses_vn	INC: Equivalence scales	On	On	On	On	On	On	On	On	On	On
tscer_vn	SIC: Employer social contributions	On	On	On	On	On	On	On	On	On	On
tscee_vn	SIC: Employee social contributions	On	On	On	On	On	On	On	On	On	On
tinkt_vn	TAX: Capital income tax	On	On	On	On	On	On	On	On	On	On
tinna_vn	TAX: Personal income tax	On	On	On	On	On	On	On	On	On	On
bed01_vn	BEN: Support of school expenses	*n/a*	*n/a*	*n/a*	On	On	On	On	On	On	On
bot01_vn	BEN: Electricity subsidy	*n/a*	*n/a*	*n/a*	On	On	On	On	On	On	On
poa01_vn	BEN: Pension benefit for poor older people	On	On	On	On	On	On	On	On	On	On
bsacv01_vn	BEN: COVID support for poor households	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*Off*	*n/a*	*n/a*
bsacv02_vn	BEN: COVID support for household businesses	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*Off*	*n/a*	*n/a*
tva_vn	TAX: Value-added tax (VAT)	On	On	On	On	On	On	On	On	On	On
tex_vn	TAX: Special sales tax and VAT on those items	On	On	On	On	On	On	On	On	On	On
xhhadj_vn	INC: Adjust consumption to new disp. income	On	On	On	On	On	On	On	On	On	On
output_std_vn	DEF: Standard output, individual level	On	On	On	On	On	On	On	On	On	On
output_std_hh_vn	DEF: Standard output, household level	*Off*	*Off*	*Off*	*Off*	*Off*	*Off*	*Off*	*Off*	*Off*	*Off*

Source: Authors' compilation based on the VNMOD model.

2.3 Policy switches

2.3.1 Full-year adjustment of COVID-related policies

The two COVID-19-related benefits modelled in the 2020 policy system were in place only for a limited period of time, for three months from April to June 2020. VNMOD however generally simulates policies at a specific point in time, which is problematic when considering policies of limited duration. Using the standard point-in-time approach, only those policies that were in place at the specific cut-off date (1 July 2020) would be considered, which was not the case for either of the two COVID-related benefits.

In VNMOD v3.3, this is accounted for by applying 'full-year adjustments' to the two COVID benefits. This ensures that average benefit amounts are adjusted to reflect the number of months the two programmes were available during the 2020 calendar year. The adjustments are applied by incorporating an extension switch called 'Full Year Adjustment' (FYA) to the policies (see Gasior et al. 2021 for details). When the switch is set 'on' (the default setting in the 2020 policy system), benefit amounts in the COVID-related policies are automatically adjusted downwards, i.e., multiplied by 3/12. When the switch is set 'off', the policies are not modelled since they were not in place at the cut-off date.

More details on the modelling of the two COVID-related policies are available in the dedicated sub-sections (1.3.2, 2.9.4, and 2.9.5).

2.4 Social contribution for formal employment

Table 2.3 shows the social contribution rates for employers and employees in 2013–22.

Table 2.3: Social contribution rates, 2013–22

Year (July)		Total employer contribution	Pension	Sick leave and maternity leave	Work-related injuries and hazards	Unemp.	Trade union	Health care
2013	*Employee*	**9.5**	7.0	-	-	1.0	-	1.5
	Employer	**23.0**	13.0	3.0	1.0	1.0	2.0	3.0
2014	*Employee*	**9.5**	7.0	-	-	1.0	-	1.5
	Employer	**23.0**	13.0	3.0	1.0	1.0	2.0	3.0
2015	*Employee*	**10.5**	8.0	-	-	1.0	-	1.5
	Employer	**24.0**	14.0	3.0	1.0	1.0	2.0	3.0
2016	*Employee*	**10.5**	8.0	-	-	1.0	-	1.5
	Employer	**24.0**	14.0	3.0	1.0	1.0	2.0	3.0
2017	*Employee*	**10.5**	8.0	-	-	1.0	-	1.5
	Employer	**21.5**	14.0	3.0	0.5	1.0	0.0	3.0
2018	*Employee*	**10.5**	8.0	-	-	1.0	-	1.5
	Employer	**21.5**	14.0	3.0	0.5	1.0	0.0	3.0
2019	*Employee*	**10.5**	8.0	-	-	1.0	-	1.5
	Employer	**21.5**	14.0	3.0	0.5	1.0	0.0	3.0
2020	*Employee*	**10.5**	8.0	-	-	1.0	-	1.5
	Employer	**21.5**	14.0	3.0	0.5	1.0	0.0	3.0
2021	*Employee*	**10.5**	8.0	-	-	1.0	-	1.5
	Employer	**21.0**	14.0	3.0	0.0	1.0	0.0	3.0
2022	*Employee*	**10.5**	8.0	-	-	1.0	-	1.5
	Employer	**20.5**	14.0	3.0	0.5	0.0	0.0	3.0

Notes: During COVID-19 in 2021 and 2022, employer rates were adjusted slightly. In 2021, the total rate was 21.5% in the first half of the year and 21.0% in the second half. The model uses the latter due to the concurrent 1st July time point—not far from the average of 21.25%. In 2022, the total rate was 20.0% in the first half, 20.5% over the next three months, and 21.5% over the final three months of the year. The model uses the 20.5% rate due to the concurrent 1st July time point. Coincidentally, this is the same as the month-weighted mean of the rates in 2022.

Source: Authors' compilation.

The total contributions for employees (10.5 per cent in 2022) include the following components:

- *8 per cent of gross wage to the social insurance fund.* By law, in 2010 employees were required to make monthly compulsory contributions of 5 per cent of gross wage (salary) to the social insurance fund, which sits under the sub-funds for pension and death gratuity. The rate increased by 1 percentage point every other year starting in 2010 until it reached 8 per cent in 2015.

- *1.5 per cent of gross wage to health insurance.*
- *1 per cent for unemployment insurance.*

Altogether, employees originally had their gross wage withheld at 7.5 per cent, and the rate increased by 1 percentage point every two years since 2010, reaching 10.5 per cent in 2015. No changes occurred since then. The calculation is based on income of employees from formal employment (i.e. *yem*).

The total contributions for employers (20.5 per cent in 2022) include the following components:

- *14 per cent of the employee's gross wage to the sub-funds for pension and death gratuity.* The rate was originally 11 per cent in 2010 and increased by 1 percentage point every two years since 2010 until it reached 14 per cent in 2015 (National Assembly 2006).
- *3 per cent to the sub-fund for sickness and maternity leave*, of which 2 per cent is withheld by the employer to make timely payment to the employee.
- *0.5 per cent to the sub-fund for work-related injuries and occupational hazards.* This rate was 1 per cent until 2016, when it reduced to 0.5 per cent. The rate was temporarily reduced to zero in 2021 due to the COVID-10 pandemic.
- *3 per cent of gross wage/salary for health insurance.*

Between 2013 and 2016, employers also paid 2 per cent of the employee's gross wage as a trade union fee. Similarly, until 2022, employers paid 1 per cent for unemployment insurance, which was temporarily reduced to zero in that year. Consistent with the social contribution by employees, the contribution by the employer is also calculated with the base being income of employees from formal employment (i.e. *yem*).

Employees may also make voluntary contributions to a social insurance fund if they are of working age. The rate of contribution is fixed at 16 per cent of gross wage of the employee (since 2010, the rate increased by 2 percentage points every 2 years until it reached 22 per cent). No changes occurred in 2018–20. The employee may choose to contribute on a monthly, quarterly, or half-yearly basis. Nonetheless, the information on voluntary contribution to social insurance funds is unavailable from the VHLSS data, which makes simulation of this instrument impossible at this stage.

Contributors of unemployment insurance are those with labour contracts without predetermined term or with predetermined term of between 12 and 36 months, and the employers (of at least ten employees). The employee contributes 1 per cent of gross wage to the unemployment insurance fund, the employer contributes another 1 per cent of the employee's gross wages, and the government provides budget-financed support of 1 per cent. Again, information on unemployment insurance contribution hardly suffices from the VHLSS data, thereby preventing microsimulation of this instrument.

In general, informal workers are defined as those without stable employment, guaranteed income or access to public services related to workers' rights.[14] Modelling these aspects is, however, no easy task. In this version of VNMOD, formality of employment is satisfied if the worker has a formal contract and social insurance contribution. As a note, such a focus on formal employment may not meet the new working environment, especially after the outbreak of the COVID-19 pandemic. For instance, in the gig economy, such conditions of formality may not be available or confirmed from available data. This presents an area where follow-up attempts to improve VNMOD are required.

[14] Also, for analyses of working conditions in digital platforms, see International Labour Organization (2018).

2.5 Capital income tax

By law, capital income tax is accrued at the time capital income is paid. Capital income tax is calculated on an individual basis. As discussed later, the rate of capital income tax is constant, which effectively leaves no difference in gross tax payment irrespective of the tax unit being household or individual.

In Viet Nam, capital income tax is only applied to rental of property or investment activities. Income from deposits at credit institutions, foreign bank subsidiaries, life insurance, and from government bonds is exempted from capital income tax. Similarly, remittances are not considered for capital income tax.

2.6 Personal income tax

The personal income tax is computed on a monthly basis for formal employees (i.e. on the basis of labour income, excluding capital income). At the end of the fiscal year, each taxpayer files a tax declaration with the tax authority, with a description of a full list of income activities and eligible tax exemptions. That tax declaration forms the basis for calculating the tax payable for the whole year. This total payable tax may differ from the total monthly tax payments (if any) of the person, which might lead to: (i) additional payment (if the sum of monthly tax payments is less than the payable tax for the whole year), or (ii) tax credit for the next year (otherwise).

2.6.1 Tax unit

In tax terms, dependent children are defined as: (i) children younger than 18 years; or (ii) disabled children without capability to work; or (iii) children older than 18 years who are studying at universities, technical colleges, professional schools, or vocational schools. Other dependent people include: (i) spouse without capability to work, (ii) parents who have already retired or have no capability to work, and (iii) those that the taxpayers have to support directly.

In the case of Viet Nam, income tax is calculated on an individual basis. At the end of the fiscal year, each income earner has to file his/her own tax declaration, with his/her own items of income and tax-deductible expenses. The income earners in the family also have to decide to whom the dependent children are assigned. As an example, dependent children can be listed in the tax declaration of the mother to reduce taxable income, without caring about the income level of the father. In the present simulation, the authors assume that the dependent children are assigned to the head of the household for tax deduction purposes.

2.6.2 Exemptions

Following Verbist (2004), we define exemptions as 'income components (that) are part of pre-tax income, but do not have to be declared to the tax authorities, and thus are not included in the concept of taxable income (e.g. child benefits in most countries)'. In the case of Viet Nam, accordingly, such exemptions include:

- income from transfer of real estates between wife and husband, between parent and children (including adopted child), between parent-in-law and daughter-in-law, between parent-in-law and son-in-law, between grandparent and grandson/granddaughter, and between brothers and sisters;
- income from transfer of house, land use rights, and other property associated with the land when the seller has only one house or one land use right in Viet Nam;
- income from inheritance or gifts being real estates between wife and husband, between parent and children (including adopted child), between parent-in-law and daughter-in-law, between

parent-in-law and son-in-law, between grandparent and grandson/granddaughter, and between brothers and sisters;

- income from transformation of agricultural land to rationalize agricultural production;
- income of households and individuals participating in the production of salt and in aquaculture;
- extra income from working on night-shift or additional working hours (compared with normal working hours) (the information on night-shift or additional working hours is not available from the questionnaires);
- pension paid by Social Security of Viet Nam;
- receipt of scholarship;
- receipts of payment under contracts of life insurance and non-life insurance and for occupational accidents;
- receipts from charity by state organizations and from foreign grants for charity purpose.

2.6.3 Tax allowances

Under the Law on Personal Income Tax in 2007, each income earner has a tax allowance of VND 4 million per month (or VND 48 million per year) while the tax allowances for each dependent child/person are set at VND 1.6 million per month (or VND 19.2 million per year). Under the Law on Personal Income Tax in 2012, which took effect since 1 July 2013, the tax allowance for income earners is set at VND 9 million per month (or VND 108 million per year), and the tax allowance for each dependent child/person is increased to VND 3.6 million per month (or VND 43.2 million per year; see National Assembly 2013).

Since the change applies to half of the year 2013, it raises an issue of how this change should be treated in VNMOD for 2013. In previous versions of VNMOD, it is assumed that the allowances for income earners and dependent children/persons in 2013 are only adjusted by half of the statutory changes (i.e. VND 6.5 million per month for income earners and VND 2.6 million per month for each dependent). In VNMOD version 2.0 and later, however, the change is recorded for the full year of 2013 *as if* the policy entered into force at the beginning of the year (i.e. VND 9.0 million per working adult and VND 3.6 million per month for each dependent child/person). Similarly, the increases in tax allowance in mid-2020 is recorded for the whole year of 2020.

As income tax is applied on an individual basis, each dependent child/person can only be registered to one income earner in the household for the purpose of deducting tax allowance. As an example, the tax allowance for a child can be deducted from either the income of the mother or the income of the father, but not both.[15] Within VNMOD, it is assumed that the dependent children/persons will be registered for deducting tax allowance from income of household heads. By law, change in registration of dependent child/person is possible, but modelling such change in VNMOD requires additional information (e.g. change in income over time) which may not be practically available.

2.6.4 Tax base

The earnings are defined as all income from economic activities, including formal employment (i.e. *yem*) and self-employed work (i.e. *yse*), however only for workers who report to work in the formal sector. Further, self-employed income may not accrue in certain months of the year. As such, this paper assumes that total self-employed income within the year is distributed equally across the months. On that basis, the labour income tax base is calculated as the remainders of earnings after making social contributions.

[15] Supposing that both the mother and the father actively earn income.

2.6.5 Tax schedule

Viet Nam applies seven tax rates for different brackets of labour income. The applicable tax rate is dependent upon *taxable labour income*—defined in Vietnamese law as the remainder of labour income after deducting tax allowances[16] for income earners and dependent children/persons (if any). For taxable labour income of up to VND 5 million per month, the income tax is calculated as 5 per cent of taxable income. For those having taxable income of up to VND 10 million per month, the income tax is equal to VND 250,000 plus 10 per cent of the excess taxable income above VND 5 million. Those earning monthly taxable income up to VND 18 million will have to pay income tax of VND 750,000 plus 15 per cent of the excess taxable income above VND 10 million. For those having taxable income of up to VND 32 million per month, income tax is equal to VND 1,950,000 plus 20 per cent of the excess taxable income above VND 18 million. For taxable income of up to VND 52 million per month, income tax is calculated as VND 4,750,000 plus 25 per cent of taxable income in excess of VND 32 million. For those having taxable income of up to VND 80 million per month, income tax is equal to VND 9,750,000 plus 30 per cent of the excess taxable income above VND 52 million. Finally, for taxable income of above VND 80 million per month, income tax is calculated as VND 18,150,000 plus 35 per cent of taxable income in excess of VND 80 million.

An example of the income tax schedule for the case of no dependent children or other persons is tabulated in Table 2.4.

Table 2.4: Marginal tax rate on labour income, no dependents

Marginal tax rate (%)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
0	4.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	11.0	11.0	11.0
5	9.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	16.0	16.0	16.0
10	14.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	21.0	21.0	21.0
15	22.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	29.0	29.0	29.0
20	36.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	43.0	43.0	43.0
25	56.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	63.0	63.0	63.0
30	84.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	91.0	91.0	91.0
35	Above 84.0	Above 89.0	Above 89.0	Above 89.0	Above 89.0	Above 89.0	Above 89.0	Above 89.0	Above 91.0	Above 91.0	Above 91.0

Note: US$1 = VND 23,224 as of 2020. Income threshold is measured in millions of Vietnamese dong. It is assumed that the income earner has no dependent child/person. In the presence of a dependent child/person, the threshold will be increased with the statutory allowance for them (see Sub-section 2.5.3).

Source: Authors' calculations based on National Assembly (2013) and National Assembly (2020).

2.7 Indirect taxes

2.7.1 VAT

VAT is the ad valorem tax applicable on all goods and services that are produced, sold, and consumed in Viet Nam. Most of the goods and services are subject to the standard rate of 10 per cent (and 8 per cent in 2022). However, a limited number of goods and services are subject to the tax rate of 0 or 5 per cent (see Table 2.5).

[16] See Sub-section 2.5.3.

Table 2.5: List of products subject to VAT rates of 0 and 5 per cent

Tax rate	Products
0%	Exported goods and services
	Construction and assembly activities in foreign countries and free trade zone
	Outbound transport
5%	Clean water for production and household use
	Fertilizer, ores to produce fertilizer, insecticides and other animal and vegetable-promoting compounds
	Animal feeds and poultry feeds, processed or unprocessed
	Building and draining services for canals, ponds to support agriculture, planting and preventing insects on plants, preliminary processing and storage for agricultural products
	Products of cultivation, breeding, fishery, unprocessed or only preliminarily processed
	Raw rubber
	Threads for fishing nets
	Fresh foodstuff products
	Unprocessed forestry products
	Sugar, additives in sugar production
	Products from bamboo or rattan or similar materials
	Agricultural machinery
	Medical equipment and tools
	Teaching aids
	Cultural, exhibition, sport activities, artistic shows, film
	Children toys
	Science and technology activities
	Sale, lease of social houses under the Law on Housing

Source: Ministry of Finance (2013).

2.7.2 Special sales tax

Special sales tax is the tax applicable only to the sale and import of some special products and services (Table 2.6). There are several reasons for the application of special sales tax. First, the products or services are non-essential to consumers. The consumption of some products—such as wine and cigarettes—is even discouraged. Second, special sales tax applies if the products or services are of large value. This may hold for automobiles, yachts, aircrafts, etc. Third, special sales tax is likely to apply to the products of which the consumption is relatively inelastic to the increase in prices/taxes. In particular, cigarettes, beer, and alcohol are characterized by low elasticities.

Table 2.6: List of products subject to special sales tax

No.	Products and services	Tax rate (%)
A	Products	
1	Cigarettes, cigars and other products from tobacco leaves	65
2	Alcohol	
	(a) Concentration of at least 20 degrees	
	Till the end of 2012	45
	2013–15	50
	(b) Concentration of up to 20 degrees	25
3	Beer	
	Till the end of 2012	45
	2013–15	50
4	Automobiles of up to 24 seats	
	(a) Passenger motor vehicles of up to 9 seats	
	Cylinder of up to 2,000 cm^3	45
	Cylinder of between 2,000 and 3,000 cm^3	50
	Cylinder of over 3,000 cm^3	60
	(b) Passenger automobiles of 10–16 seats, except those in groups (e), (f), (g)	30
	(c) Passenger automobiles of 16–24 seats, except those in groups (e), (f), (g)	15
	(d) Automobiles for both passengers and goods, except those in groups (e), (f), (g)	15
	(e) Hybrid cars, of which the use of petrol is up to 70% of consumed energy	70% of corresponding rates for groups (a), (b), (c), and (d)
	(f) Automobiles using bio-diesel	50% of corresponding rates for groups (a), (b), (c), and (d)
	(g) Electric car	
	Up to 9 seats (passenger)	25
	10–16 seats (passenger)	15
	16–24 seats (passenger)	10
	For both passengers and goods	10
5	Motorcycles with cylinder of over 125 cm^3	20
6	Aircrafts	30
7	Yachts	30
8	Petrol and other products to produce petrol	10
9	Air conditioners (capacity of lower than 90,000 BTU)	10
10	Playing cards	40
11	Joss paper	70
B	Services	
1	Bar, discotheque	40
2	Massage, karaoke	30
3	Casino	30
4	Gambling	30
5	Golf	20
6	Lottery	15

Source: Authors' calculations from various legal documents.

Since 2016, special sales tax rates are adjusted under the revised Law on Special Sales Tax (Table 2.7). These adjustments are applied to some products such as cigarettes, beer, and alcohol. More importantly, the adjustments reflect the roadmap to increase special sales tax rates for these products till 2018 and beyond. For instance, the special sales tax rate on cigarettes, cigars, and products from tobacco leaves is set to increase to 70 per cent during 2016–20, and 75 per cent after 2018. Similarly, the special sales tax rate on beer rises to 55 per cent in 2016, 60 per cent in 2017–18, and 65 per cent after 2018.

Table 2.7: Amended special sales tax rates for some products, 2016–22

No.	Products and services	Tax rate (%)
1	Cigarettes, cigars, and other products from tobacco leaves	
	2016–18	70
	After 2018	75
2	Alcohol	
	(a) Concentration of at least 20 degrees	
	2016	55
	2017	60
	Since 2018	65
	(b) Concentration of up to 20 degrees	
	2016–17	30
	Since 2018	35
3	Beer	
	2016	55
	2017	60
	Since 2018	65

Source: Authors' calculations from various legal documents.

Incorporation of special sales tax in VNMOD is no straightforward task, largely due to the issue of classification. For instance, it is very hard to distinguish passenger motor vehicles purchased by households/individuals by number of seats. Therefore, the model assumes that the purchase of automobiles is completely for transportation of the buyer and/or their family, rather than for any other type of commercial purpose. In this regard, passenger motor vehicles of up to nine seats are chosen as representatives for automobiles. Similarly, alcohol of at least 20 degrees in concentration is assumed to be representative of alcohol products consumed by the households.

2.8 Poverty line

Viet Nam officially uses a multi-dimensional measure of poverty. For the purpose of modelling, nevertheless, we rely on a General Statistics Office (GSO)-adapted monetarized poverty line—stipulated poverty lines for urban and rural areas, which are measured at current Vietnamese dong-denominated prices (Table 2.8). As a note, an alternative to these measures includes the World Bank's internationally comparable poverty line of US$1.90 per day (in purchasing power parity terms, 2011).

Table 2.8: Poverty lines in Viet Nam (in VND 1,000 per month): 'lower poverty lines'

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Urban areas	579	750	781	900	935	975	1,002	1,044	1,062	1,092
Rural areas	601	605	630	700	725	755	776	809	823	846

Source: Authors' compilation from GSO data.

Recently, the multi-dimensional poverty standard for 2021–25 has been identified under Decree 07/2021/ND-CP on 2 January 2021, used as an 'upper' poverty line in VNMOD (Table 2.9). Note that the upper poverty lines for 2013–22 in urban and rural areas are calculated by adjusting the 2021 poverty lines (1,500 and 2,000 thousand VND per month, respectively) using overall CPI. The multi-dimensional poverty definition also relies on non-income-related scores assigned to households, which are not readily available to be used in VNMOD due to data limitations.

Table 2.9: Multi-dimensional poverty lines in Viet Nam (in VND 1,000 per month): 'upper poverty lines'

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Urban areas	1,606	1,672	1,682	1,727	1,788	1,851	1,903	1,964	2,000	2,064
Rural areas	1,205	1,254	1,262	1,295	1,341	1,388	1,427	1,473	1,500	1,586

Source: Authors' compilation from Decree 07/2021/ND-CP and CPI data from GSO data.

2.9 Modelled benefits

2.9.1 Benefit 1: Education expenses to eligible pupils

Support in the form of educational expenses is provided to students in the areas of hardship, ethnic minorities, remote areas. Specifically, under Decree 86/2015/ND-CP of the government of Viet Nam, a monthly value of VND 100,000 is provided to eligible pupils.

2.9.2 Benefit 2: Electricity subsidy

Electricity subsidy is provided to poor households. Specifically, under the Decision 28/2014/QD-TTg of the Prime Minister of Viet Nam, each eligible poor household would receive a monthly electricity subsidy equivalent to the first 30 kWh (i.e. about VND 46,000 per month).

2.9.3 Benefit 3: Pension benefit for poor older people living without family support

Pension benefits are provided to eligible poor elderly people without family support. From 2013 to 2020, there were two types of benefits. The first one is provided for those aged between 60 and 80 years in poor households that either do not have any person with obligations and rights to serve them or have a person with obligations and rights to serve them, but this person is receiving monthly social allowance. The second benefit applies to those aged over 80 years, with other conditions the same as those in the first type. According to Article 5 and Article 6 of Decree 136/2013/ND-CP, from 2013 to 2020, the monthly benefit amounts for these groups were VND 270,000 (the standard social support rate) and VND 540,000 (two times the standard support rate), respectively. In 2021, with Articles 5 and Article 6 of Decree 20/2021/ND-CP, the benefits were increased to VND 540,000 (1.5 times the new standard support rate of 360,000) and VND 720,000 (two times the standard support rate), respectively. Additionally, as per the Decree, those of 75 to 80 years of age living in poor or near-poor households in ethnic minorities in communes, hamlets, and mountainous regions, to which the above conditions do not apply, receive VND 360,000 per month in assistance. In the model, this latter part of the benefit is modelled for all 'non-kinh' (minority) individuals.

2.9.4 COVID benefit 1 for 2020: Financial relief for poor or nearly-poor households

In 2020, assistance to mitigate the impacts of the COVID-19 pandemic was provided, among others, to people in households on official lists of poor and near-poor households by 31 December 2019. Individuals in households that are defined either poor or near-poor were supported with an additional lump sum payment of VND 250,000 per person per month. The modelling relies on a minimum living standard index for households in rural and urban areas. The benefit was provided for three months, from 1 April 2020, and modelled as such by re-scaling benefit amounts using full-year adjustment. In VNMOD v3.3, the benefit is turned 'off' by default due to incomplete modelling.

2.9.5 COVID benefit 2 for 2020: Financial relief for poor household businesses

Financial relief was also provided to temporarily suspended household businesses, with annual revenue less than VND 100 million per business per year. The benefit was provided for three months, from 1 April 2020, and modelled as such by re-scaling benefit amounts using full-year adjustment. This benefit was partially modelled, since it was assumed that all household businesses that satisfy the revenue condition received the relief. In VNMOD v3.3, the benefit is turned 'off' by default due to incomplete modelling.

3 Data

3.1 General description

The Vietnam Household Living Standards Survey is used as the input data for VNMOD. It is a sample-based survey, not a census one. This survey is carried out on a biennial basis since 2002. To date, the survey has been conducted every other year between 2002 and 2020. The model uses datasets from 2016 (to underpin the 2013–17 systems), 2018 (for 2018–19 systems), and 2020 (for 2020–22 systems).

VHLSS aims to collect information as background for assessing the living standard, poverty incidence, and the income gap, which in turn serve as inputs for the policy-making process of the Government of Viet Nam. The respondents of VHLSS include: (i) households, (ii) members of surveyed households, and (iii) communal governments of surveyed households. The survey is designed to cover 63 provinces and cities directly under the central government. The surveyed information seeks to reflect the living standard of the households and includes:

- household income, including level of income and income disaggregated by source (wage, salary; self-employed activities in agriculture, forestry, and fishery; production and business activities in non-agriculture-forestry-fishery areas; other proceedings);
- household expenditure, including level of expenditure and expenditure items (food, clothes, accommodation, transport, education, health, culture, etc.); and
- other information on the household and members of the household to help analyse the causes and differences of living standards, including key demographic aspects (age, gender, ethnicity, marital status); education level; sickness, diseases, and use of health services; employment; use of facilities (electricity, water, sanitary condition); participation in hunger eradication and poverty reduction; and impacts of migration on household income.

As for the communal units, the surveyed information seeks to identify factors affecting households' living standard, including: (i) general demographic and ethnic information; (ii) key aspects of socio-economic infrastructures, such as electricity, road, school, medical station, post office, and water source; (iii) economic situation, covering agricultural production (land, trends and reasons for variations of key crops, other conditions such as irrigation and agricultural promotion), and non-agricultural job opportunities; and (iv) some information on social order, environment, credit, and savings.

To ensure consistency in the simulation of various tax and benefit instruments, the current model uses data from the survey on household income and expenditures. For the most updated wave of VHLSS from 2020, 9,389 households and 34,691 individuals were covered (Table 3.1).

Table 3.1: VNMOD database description

VNMOD database	2016	2018	2020
Original name	Viet Nam Household Living Standard Survey	Viet Nam Household Living Standard Survey	Viet Nam Household Living Standard Survey
Provider	General Statistics Office	General Statistics Office	General Statistics Office
Years of collection	2016	2018	2020
Period of collection	1 year	1 year	1 year
Income reference period	2016	2018	2020
Sample size	9,399 households, 35,787 individuals	9,396 households, 35,076 individuals	9,389 households, 34,691 individuals
Response rate	100%	100%	100%

Source: Authors' compilation.

3.2 Data adjustment

As opposed to previous versions of the model, input data is not adjusted on-model to adjust incomes during the COVID-19 pandemic in a separate income policy (previously policy Ima_vn). This is because the VHLSS 2020 dataset, which is used to underpin the 2020–22 systems, reflects incomes in 2020 during the pandemic, and because the economic effects of COVID-19 have also been relatively modest in Viet Nam compared to other countries (and compared to year 2020 in Viet Nam) in 2021 and 2022.

3.3 Updating

To account for any time inconsistencies between the input dataset and the policy year, uprating factors are used. Each monetary variable (i.e. each income component) is updated so as to account for changes in the non-simulated variables that have taken place between the year of the data and the year of the simulated tax-benefit system. Uprating factors are generally based on changes in the average value of an income component between the year of the data and the policy year.

As a rule, uprating factors are provided for both simulated and non-simulated income components present in the input dataset. However, in the case of simulated variables, the actual simulated amounts are used in the baseline rather than the uprated original variables in the dataset. Uprating factors for simulated variables are provided so as to facilitate the use of the model in cases when the user wishes to turn off the simulation of a particular variable. In the model, inflation rates calculated using the average of monthly CPI values over a given year.

3.4 System of weights

The GSO has provided a system of household weights for each VHLSS survey since in 2012. There is no individual-based weight in the dataset. To collect the individual-based weight for validating against the population, the authors multiplied the GSO-provided household weights with the number of members in each household. This multiplication also helps ensure consistency with the individuals being a tax unit as per Viet Nam's regulations. Due to unavailability of household data and weights for the years when survey data are unavailable, the individual-based weights for these years were uprated using corresponding population growth rates. The final weight of each household for each year was the sum of weights of all individuals registered in that household.

For simulating and validating capital income tax, VAT, and special sales tax, however, the original GSO-provided household weights were used. This is because capital income and expenditures were surveyed and compiled at the household level rather than at the individual level. Unlike in version 1.0, the used household weights are no longer uprated using the corresponding year-on-year population growth rates.

3.5 Consumption levels

Consumption levels are based on the original reported consumption levels in the input data (xhh). These levels are uprated from the base year to the policy year and adjusted by absolute changes in disposable income from the base year to the policy year.

The change in disposable income takes into account changes in market incomes (e.g. COVID-related decreases in earnings) as well as changes in benefits and contributions. The underlying assumption is that changes in disposable incomes lead to the same changes in consumption levels. In recognition of the fact that there may be some consumption of own-account-produced food, in cases where the base year disposable income is higher than the disposable income in the policy year, a proportion of the original consumption is assumed to be unaffected. This proportion is assumed to be 25 per cent of the original consumption following Tschirley et al. (2015).

4 Notes on interpreting VNMOD results

There are a number of 'health warnings' to take into account when using VNMOD and interpreting its results. First, as the data are always one or more years older than the policy year of interest, the model adjusts the incomes with an uprate index (for VNMOD the CPI is used). Even though more alternative series are added as uprating indices, investing in finding uprating factors and checking robustness should still be worthwhile.

Second, data and results on unemployment status should be treated with care. The importance of the above-mentioned informal sector, and the migration towards rural areas during certain periods, give rise to difficulties in simulating formal employment, tax payments, and social contribution. At the same time, identifying change in status of surveyed individuals over time—especially in terms of labour participation, employment, health, work capacity, or productivity—is virtually impossible in the absence of extra information.

Finally, as VNMOD is a static model and therefore only models the changes in mechanical effects in tax or social contribution policies, it does not pick up the effects that stem from institutional and behavioural changes that accompany the tax-benefit changes. Hence, the before-and-after approach with VNMOD simulation—by design—produces results that differ from actual ex-post statistics that capture the joint effects of various policies.

It should be acknowledged that VNMOD is subject to certain assumptions. First, income is assumed to be earned uniformly across months of the year. This may not hold in practice due to the possibly short-term nature of contract, seasonal variation, etc. This issue is even more profound in 2020 when the waves of the COVID-19 pandemic affected Viet Nam's economic activities only in some selected months. Second, income effect on consumption is assumed to be invariant across all products. More restrictively, such income effect is assumed to exactly offset the substitution effects due to price increase. Third, the increase in income of any individual is assumed not to crowd out income of others, although the income effect on expenditure of that individual can increase demand and revenues for others' sales. Finally, the changes in policies are fully complied with by the people and enterprises, without compliance costs.

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Annex: External validation

Tables A1–A5 compare simulated model outputs from external statistics. Note that for the years 2020 and 2021, model estimates do not account for the two COVID-related policies incorporated in the model due to limitations in their modelling (see Sections 1.3, 2.3, and 2.9 for details).

Table A1: Population statistics, 2016–22 (in 1,000 persons)

	2016	2017	2018	2019	2020	2021	2022
Population, external (from GSO)	93,251	94,286	95,385	96,484	97,580	98,506	–
Population, simulated (from VNMOD/VHLSS)	93,339	93,339	96,895	96,895	97,298	97,298	97,298
Ratio	1.001	0.990	1.016	1.004	0.997	0.988	–

Notes: Ratios are calculated by dividing the estimate from VNMOD by the corresponding official estimate.

Source: Authors' simulations using VNMOD, which is underpinned by GSO data (VHLSS), and official statistics from GSO. The simulated outcomes for 2016–17 are based on the VHLSS data for 2016, simulated outcomes for 2018–19 are based on the VHLSS data for 2018, and simulated outcomes for 2020–22 are based on the VHLSS data for 2020.

Table A2: Labour statistics, 2016–22 (in 1,000 persons)

	2016	2017	2018	2019	2020	2021	2022
Official statistics (from GSO)							
Total labour force, 15 years old or older, persons	54,483	54,820	55,388	55,767	54,843	50,561	–
Number of economically active labour, 15 years old or older, persons	55,346	53,709	54,283	54,659	53,610	49,072	–
Unemployment rate, %	2.29	2.22	2.19	2.17	2.26	3.20	–
Statistics from VNMOD							
Total labour force, 15 years old or older, persons	56,620	56,620	58,103	58,103	56,009	56,009	56,009
Number of economically active labour, 15 years old or older, persons	55,071	55,071	56,475	56,475	55,891	55,891	55,891
Unemployment rate, %	3.33	3.33	3.15	3.15	0.24	0.24	0.24
Ratios							
Total labour force, 15 years old or older, persons	1.039	1.033	1.049	1.042	1.021	1.108	–
Number of economically active labour, 15 years old or older, persons	0.995	1.025	1.040	1.033	1.043	1.139	–
Unemployment rate, %	1.455	1.501	1.440	1.453	0.106	0.075	–

Notes: Unemployment rate here is approximated by the share of people who are economically inactive (rather than the share of people being unable to find jobs despite active job-seeking efforts). Ratios are calculated by dividing the estimate from VNMOD by the corresponding official estimate.

Source: Authors' simulations using VNMOD, which is underpinned by GSO data (VHLSS), and official statistics from GSO. The simulated outcomes for 2016–17 are based on the VHLSS data for 2016, simulated outcomes for 2018–19 are based on the VHLSS data for 2018, and simulated outcomes for 2020–22 are based on the VHLSS data for 2020.

Table A3: Official and simulated tax statistics, 2016–22

	2016	2017	2018	2019	2020	2021	2022
Official statistics (billion VND)							
Personal income tax	65,235	78,783	94,366	109,401	115,213	127,655	–
VAT	269,627	314,508	344,046	362,674	342,029	330,881	–
SST for domestically produced products	85,853	86,585	96,027	106,753	101,090	96,480	–
Simulated revenues (billion VND)							
Personal income tax	23,394	25,561	33,648	36,242	30,719	32,228	34,784
VAT	83,419	83,710	97,956	101,530	117,929	119,203	106,479
SST from household consumption	16,785	17,817	18,521	19,487	20,361	20,739	21,340
Ratios							
Personal income tax	0.36	0.32	0.36	0.33	0.27	0.25	–
VAT	0.31	0.27	0.28	0.28	0.34	0.36	–
SST from household consumption	0.20	0.21	0.19	0.18	0.20	0.21	–

Notes: VND, Vietnamese dong; VAT, value-added tax; SST, special sales tax. Ratios are calculated by dividing the estimate from VNMOD by the corresponding official estimate.

Source: Authors' simulations using VNMOD, which is underpinned by GSO data (VHLSS), and official statistics from GSO. The simulated outcomes for 2016–17 are based on the VHLSS data for 2016, simulated outcomes for 2018–19 are based on the VHLSS data for 2018, and simulated outcomes for 2020–22 are based on the VHLSS data for 2020. Official statistics for 2016–18 are final figures, while official statistics for 2019 and 2020 are estimates.

Table A4: Poverty rate (%), 2016–22

	2016	2017	2018	2019	2020	2021	2022
Poverty rate, external (from GSO)	9.2	7.9	6.8	5.7	4.8	4.4	–
Poverty rate, simulated (from VNMOD)	12.3	12.4	9.9	9.9	5.0	5.0	5.0
Poverty rate, ratio	1.34	1.57	1.45	1.73	1.05	1.13	–

Notes: Ratios are calculated by dividing the estimate from VNMOD by the corresponding official estimate.

Source: Authors' simulations using VNMOD, which is underpinned by GSO data (VHLSS), and official statistics from GSO. The simulated outcomes for 2016–17 are based on the VHLSS data for 2016, simulated outcomes for 2018–19 are based on the VHLSS data for 2018, and simulated outcomes for 2020–22 are based on the VHLSS data for 2020. Official statistics for 2016–18 are final figures, while official statistics for 2019 and 2020 are estimates.

Table A5: Social insurance statistics, 2016–22

	2016	2017	2018	2019	2020	2021	2022
External statistics (from GSO)							
Number of participants in social insurance (thousand persons)	13,056	13,820	14,732	15,204	15,051	–	–
Total revenues from social insurance (billion VND)	175,611	195,698	222,401	245,748	261,700	–	–
Simulated statistics (from VNMOD)							
Number of participants in social insurance (thousand persons)	10,275	10,275	11,889	11,889	14,151	14,151	14,151
Total revenues from social insurance (billion VND)	111,112	115,006	151,759	155,956	185,505	188,802	194,186
Ratios							
Number of participants in social insurance (thousand persons)	0.79	0.74	0.81	0.78	0.94	–	–
Total revenues from social insurance (billion VND)	0.63	0.59	0.68	0.63	0.71	–	–

Notes: Ratios are calculated by dividing the estimate from VNMOD by the corresponding official estimate.

Source: Authors' simulations using VNMOD, which is underpinned by GSO data (VHLSS), and official statistics from GSO. The simulated outcomes for 2016–17 are based on the VHLSS data for 2016, simulated outcomes for 2018–19 are based on the VHLSS data for 2018, and simulated outcomes for 2020–22 are based on the VHLSS data for 2020.