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# Public Expenditure on Health in Vietnam: A Narrative Summary

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### Suggested citation

JLN DRM Collaborative. Public Expenditure on Health in Vietnam: A Narrative Summary. Domestic Resource Mobilization Collaborative. Joint Learning Network for Universal Health Coverage, 2021.

# Public Expenditure on Health in Vietnam: A Narrative Summary

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This Narrative Summary on Public Expenditure for Health was co-produced by the Vietnam-based members of the DRM collaborative including Hoang Thi Phuong and Nguyen Khanh Phuong, with members of the World Bank including Sarah Bales, Jewelwayne Salcedo-Cain, Hui Sin Teo, and Dao Lan Huong. Additional support was provided by the DRM collaborative facilitation team in the World Bank comprising Aditi Nigam, Danielle Elena Bloom, and Lauren Hashiguchi.

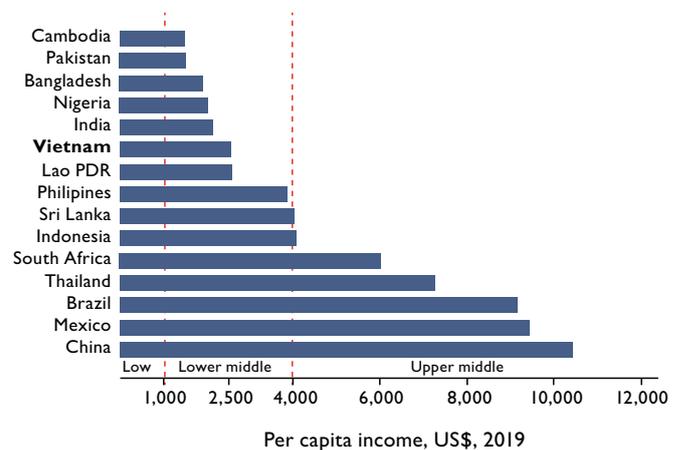
The purpose of this narrative summary is to analyze trends in revised estimates of public spending on health in Vietnam to demonstrate how policymakers can use historical health financing data to have a more informed within-country dialogue on issues related to domestic resource mobilization (DRM) for health. The analysis reported in the narrative summary is meant to be illustrative, to demonstrate how such information can form the basis for setting the stage for assessing DRM options for health by understanding better where the country is and where it has come from in terms of broader health financing trends and how these trends have interacted with the overall macro-fiscal context in the country.

## BACKGROUND

With a population of 96 million<sup>1</sup>, Vietnam is the fifteenth most-populated country in the world, and the fifth most-populated – following China, Indonesia, Japan and the Philippines – in East Asia and the Pacific. The latest estimate of its per capita gross national income (GNI) was US\$2,540, comparable to that of Nigeria, India, Lao PDR and the Philippines. Vietnam is classified as a lower middle income (LMI) country (Figure 1<sup>2</sup>). About 7% of the country's population is estimated to live below US\$3.20-per-day and 24% lives below \$5.50-per-day.

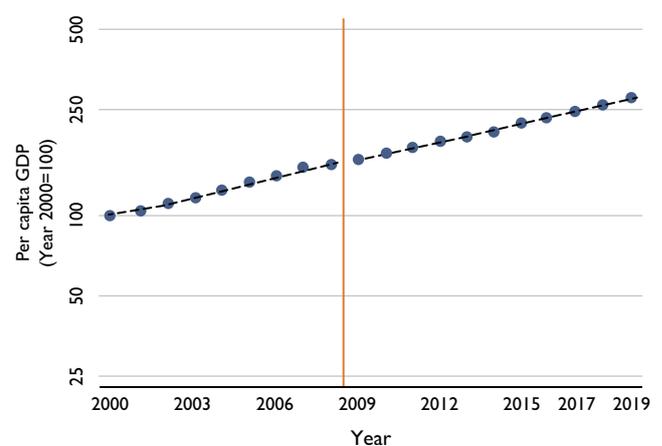
Per capita Gross Domestic Product (GDP) has grown steadily in the country in recent decades: annual economic growth rates have fluctuated between 4 and 7% in per capita terms during the period 2000-2019, averaging 5.5% over the period (Figure 2<sup>3</sup>). Despite the COVID pandemic, Vietnam is projected to achieve positive real GDP growth in 2020.<sup>4</sup> The 'Pritchett Landscape' of Vietnam's per capita growth trajectory can be categorized as a 'hill' with growth rates exceeding 3% per year before and after a statistically-determined break<sup>5</sup> in trend in 2009.<sup>4</sup> As a result, in cumulative per capita terms, the size of Vietnam's economy increased 2.8 times over the period 2000-2019.

Figure 1. Per capita income (US\$), Vietnam and comparator countries



Source: Estimates are from the World Development Indicators 2019.

Figure 2. Per capita GDP, Vietnam



Source: Estimates are from the IMF World Economic Outlook (2019).

<sup>1</sup> Estimate is from the World Development Indicators (2019).

<sup>2</sup> Estimates are from the World Development Indicators 2019.

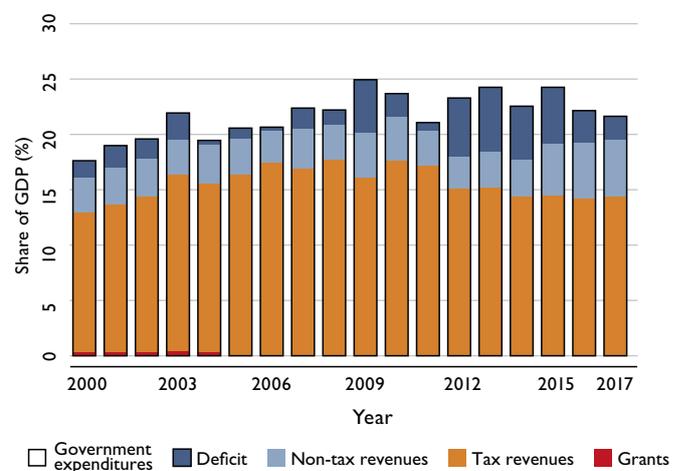
<sup>3</sup> Estimates are from the IMF World Economic Outlook 2019.

<sup>4</sup> Estimates are from the IMF Data Mapper October and 2020.

<sup>5</sup> While some countries have experienced consistently steady linear growth in per capita GDP, others show systematic variations in the growth rates over 2000-2019. These large shifts in trends can be captured statistically and a policy-relevant "break-point"—a year when a break in trend for per capita public spending on health—can be identified. Capturing this instability in the growth rates is important in understanding the growth dynamics of public spending for health.

At 23%, total government expenditures as share of GDP are relatively high in Vietnam (Figure 3<sup>6</sup> and Table 1<sup>7</sup>) – driven to some extent by high government revenues (20% of GDP), as well as high taxes (15% of GDP), with the government budget deficit in 2019 estimated at 3% of GDP. Vietnam’s tax revenues have long exceeded the 15% benchmark that has recently been highlighted in a study by the International Monetary Fund (IMF) as being necessary for sustaining economic growth.<sup>8</sup> Vietnam’s total government expenditure has remained in the range of 17–25% of GDP over 2000-2017.

Figure 3. Government Revenues and Expenditure in Vietnam



Source: Estimates are from the IMF World Economic Outlook and IMF World Revenue Longitudinal Database 2019.

Table 1. Comparison of government expenditures, revenues, deficit, and surplus (as share of GDP), 2019.

Country	Government expenditures	Government revenues		Government deficit/surplus
		Total	Tax	
<b>Vietnam</b>	<b>23</b>	<b>20</b>	<b>15</b>	<b>-3</b>
Bangladesh	15	10	8	-5
Brazil	38	32	21	-6
Cambodia	23	26	17	3
China	34	28	16	-6
India	28	19	17	-8
Indonesia	16	14	11	-2
Lao PDR	20	15	11	-5
Mexico	26	24	14	-2
Nigeria	13	8	5	-5
Pakistan	22	13	13	-9
Philippines	22	20	16	-2
South Africa	35	29	25	-6
Sri Lanka	21	13	12	-8
Thailand	22	21	16	-1
EAP average	42	42	18	-2
LMI average	30	27	17	-3

Source: Estimates are from the IMF World Economic Outlook and IMF World Revenue Longitudinal Database. Data is for 2019 with the exception of tax revenue, for which the latest year of available data is used.

<sup>6</sup> Estimates are from the IMF World Economic Outlook and IMF World Revenue Longitudinal Database 2019.

<sup>7</sup> Estimates are from the IMF World Economic Outlook and IMF World Revenue Longitudinal Database. Data is for 2019 with the exception of tax revenue, for which the latest year of available data is used.

<sup>8</sup> Gaspar, V., L. Jaramillo, and P. Wingender. 2016. “Tax Capacity and Growth: Is there a Tipping Point?” IMF Working Paper WP/16/234, Washington, DC: International Monetary Fund.

## HEALTH SYSTEM

Vietnam has a mixed model of public-private provision of health care services with the public sector taking a dominant role in service provision, and the private sector largely consisting of for-profit entities. The health system is decentralized with the provinces managing public providers and regulating private providers, although the MOH still sets policy and manages a small number of central facilities, it is estimated that the MOH only controls about 10% of state budget spending on health consisting mainly of administration, regulation, prevention, public health, training, and research expenditures.<sup>9</sup>

With a life expectancy of 75 years and an under-five mortality rate of 21 per 1,000 live births (Table 2<sup>10</sup>), population health outcomes in Vietnam are better than expected for its income level. Fertility rates are slightly below replacement level, but Vietnam faces a significant challenge with the sex ratio at birth being the third highest in the world at 112 boys for every 100 girls. Additionally, childhood stunting remains relatively high, the population is aging rapidly and the non-communicable disease burden is growing. Vietnam scored 0.69 on the World Bank's human capital index (HCI) indicating that a child born in Vietnam today will be 69% as productive as s/he could have been, and GDP per worker could reach 145% of current levels with complete education and full health.<sup>11, 12</sup>

Table 2. Comparison of Health Outcomes

Country	Population (millions)	Life expectancy	Fertility	Under-five mortality	Adult survival	Maternal mortality	Childhood stunting
<b>Vietnam</b>	<b>96</b>	<b>75</b>	<b>2.0</b>	<b>20</b>	<b>79</b>	<b>43</b>	<b>24</b>
Bangladesh	161	72	2.0	31	77	173	31
Brazil	209	76	1.7	14	79	60	7
Cambodia	16	70	2.5	27	73	160	32
China	1,428	77	1.7	8	86	29	8
India	1,353	69	2.2	34	72	145	35
Indonesia	268	72	2.3	24	76	177	31
Lao PDR	7	68	2.7	46	70	185	33
Mexico	126	75	2.1	14	79	33	10
Nigeria	196	54	5.4	117	49	917	37
Pakistan	212	67	3.5	67	71	140	38
Philippines	107	71	2.6	27	72	121	30
South Africa	58	64	2.4	35	58	119	27
Sri Lanka	21	77	2.2	7	84	36	17
Thailand	69	77	1.5	9	81	37	11
EAP average	2,091	71	2.9	26	74	97	24
LMI average	3,018	68	3.2	40	69	216	25

Source: All data are from the World Development Indicators and from the latest year of availability.

Through the implementation of several significant health financing reforms in recent decades, such as the enforced compliance of compulsory contributions and the expansion of entitlements to government premium subsidies, Vietnam has moved closer to achieving universal health coverage (UHC) Following the introduction of social health insurance (SHI) in 1992, Vietnam gradually expanded coverage to 83.5 million people (88%

<sup>9</sup> Author's calculation based on available statistics.

<sup>10</sup> All data are from the World Development Indicators and from the latest year of availability.

<sup>11</sup> The World Bank. 2020. Human Capital Index Vietnam. The Human Capital Project – October 2020.

<sup>12</sup> World Bank. 2020. The Human Capital Index 2020 Update: Human Capital in the Time of COVID-19. World Bank, Washington, DC.

population coverage) by 2018.<sup>13</sup> State regulations have also gradually clarified the assignment of responsibility for different components of health spending between the central and provincial budgets and SHI. Curative care facilities have been weaned off state subsidies and earn revenues from service provision, with payment from SHI and OOP. The state budget is prioritized for subsidizing premiums of vulnerable groups, such as the poor and children under age 6, and for preventive medicine, public health and governance and regulatory functions.<sup>14</sup>

Vietnam's per capita spending on health (Table 3<sup>15</sup>) is roughly US\$152 per capita, about 6% of GDP, which is slightly higher than the LMI average. Slightly less than half of this is publicly sourced. Among public funding sources, 53% comes from the government budget and 44% from SHI contributions. External financing for health flowing through public health channels accounts for 3% of public spending.<sup>16</sup> Out-of-pocket (OOP) spending at 45% of health spending is high compared to EAP and LMI averages.

## DOMESTIC RESOURCE MOBILIZATION FOR HEALTH EFFORTS

Domestic public resource mobilization (DRM) for health efforts have focused on three areas: (i) collection of contributions for SHI; (ii) a National Assembly resolution (2008) calling for increasing public spending on health at a rate faster than the increase in overall public spending; and (iii) as of 2013, a surcharge on cigarette sales to fund activities for the prevention and control of harm from tobacco use, increasing to 2% of the excise tax base by 2019.

Table 3. Comparison of Health Spending Across Countries, 2017.

Country	Health spending		Public spending on health				OOP share of health spending
	Per capita (US\$)	Share of GDP	Per capita (US\$)	Share domestic government	Share SHI	Share external	
<b>Vietnam</b>	<b>130</b>	<b>6</b>	<b>65</b>	<b>51</b>	<b>45</b>	<b>3</b>	<b>45</b>
Bangladesh	36	2	7	89	0	11	74
Brazil	929	9	390	100	0	0	27
Cambodia	82	6	20	98	2		60
China	441	5	250	51	49		36
India	69	4	19	86	13	1	62
Indonesia	115	3	56	73	26	1	35
Lao PDR	62	3	24	85	6	9	46
Mexico	495	6	255	55	45	0	41
Nigeria	74	4	11	93	5	2	77
Pakistan	45	3	14	97	3		60
Philippines	133	4	46	82	10	8	53
South Africa	499	8	268	100	0	0	8
Sri Lanka	159	4	71	96	1	3	50
Thailand	247	4	188	92	8	0	11
EAP average	262	6	198	75	11	16	24
LMI average	130	5	71	77	14	10	39

All estimates are from the WHO Global Health Expenditure Database, of which the latest available year for all countries is 2017.

<sup>13</sup> General Statistics Office. 2020. Vietnam Statistical Yearbook 2019. pp. 99 and 215.

<sup>14</sup> Prime Ministerial Decision 1387/QĐ-TTg (2016) issuing the list of public services provided using state budget funding in the health and population sectors.

<sup>15</sup> All data are from the WHO Global Health Expenditure Database, of which the latest available year for all countries is 2017.

<sup>16</sup> This refers to current health expenditures only and excludes capital expenditures.

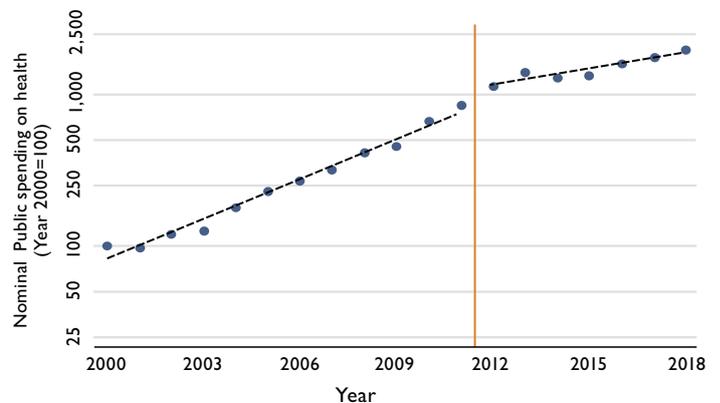
## TRENDS IN PUBLIC SPENDING ON HEALTH

Estimates of public spending in Vietnam from WHO (Figure 4) amounted to 154,287 billion VND (~US\$6,826 million) in 2018, up from 7,849 billion VND (~US\$554 million) in 2000: representing an almost twenty-fold cumulative nominal increase over the period 2000–2018 and an average annual nominal increase of 19%.<sup>17</sup> Public spending as a share of total health expenditure, also increased from 37% in 2000 to 47% in 2018. Within this public spending, worker and employer contributions to SHI rose to 68,329 billion VND in 2018 from 4,254 billion VND in 2000: representing a sixteen-fold cumulative nominal increase over the same period, or an average annual nominal increase of nearly 19%.<sup>18</sup>

Vietnam has faced relatively low levels of population growth and high levels of inflation in recent decades. Over 2000–2019, the inflation rate was 7.5%, higher than the average across all LMI countries over the same period.<sup>19</sup> At 1.1%, population growth was below the average for all LMI countries. Nevertheless, these inflation and population growth numbers imply that nominal budgetary increases would need to exceed at least  $8.6\% = 7.5\% + 1.1\%$  per year to keep levels the same in per capita constant terms.

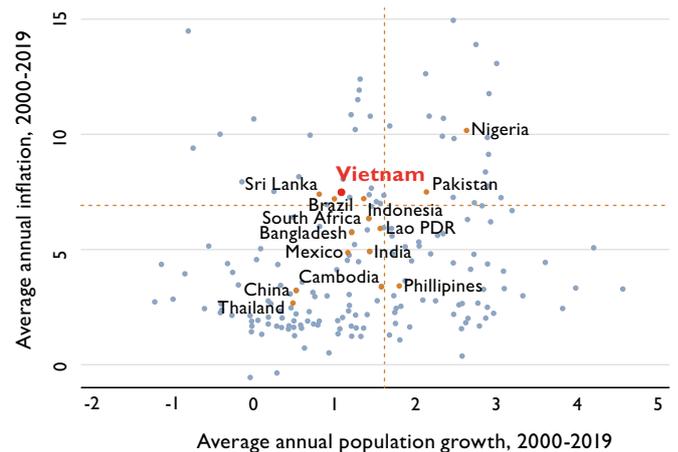
Adjusting for inflation and population growth (Figure 5<sup>20</sup>) shows that, in per capita constant terms, public spending on health in Vietnam has increased 4 times since 2000: averaging an annual growth rate of 8.7% per year, exceeding the cumulative increase in the size of the economy over the same period. In terms of its ‘Pritchett Landscape’, Vietnam remains a bumpy ‘steep hill’ country with annual growth in per capita public spending on health at 10.5% between 2000

Figure 4. Nominal Public Spending on Health, Vietnam



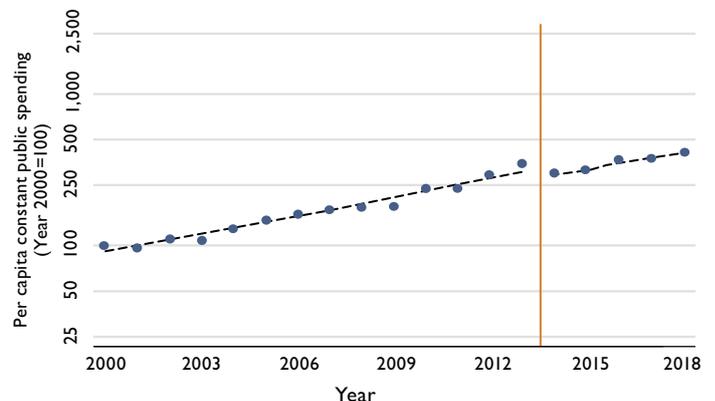
Source: Estimates are from WHO Global Health Expenditure Database.

Figure 5. Average annual inflation against average annual population growth in Vietnam and select countries



Source: Estimates are from the IMF World Economic Outlook database.

Figure 6. Per capita constant public spending on health, Vietnam



Source: Estimates are from the WHO Global Health Expenditure Database.

<sup>17</sup> Authors' calculations using data are from the IMF World Economic Outlook and WHO Global Health Expenditure Database

<sup>18</sup> Authors' calculations using data are from the IMF World Economic Outlook and WHO Global Health Expenditure Database.

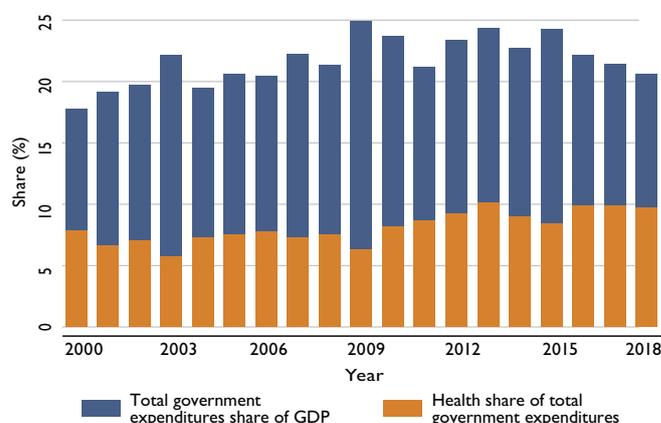
<sup>19</sup> Estimates are from the IMF World Economic Outlook.

<sup>20</sup> Estimates are from the WHO Global Health Expenditure Database (GHED).

and 2013, then slowing at 3.9% annually between 2014 and 2018 (Figure 6<sup>21</sup>). In 2018, per capita public spending on health amounted to 1,615 thousand VND (~US\$71 per capita), up from only 393 thousand VND (~US\$17 per capita) in 2000.<sup>22</sup>

Over 2000-2017, the 7.7% increase in real per capita public spending on health (Figure 7) was primarily due to economic growth (5.3%). The increase in the share of total government expenditure in the economy (1.1%) and the increase in the health share of total government spending (1.3%) contributed equally to the remaining part of this growth (Hence: 7.7%=5.3%+1.1%+1.3%). The rising orange section of the bar reflects the success of the second domestic resource mobilization strategy mentioned above.

Figure 7. Total government expenditure as share of GDP compared to health share of total government expenditures, Vietnam, 2000-2018

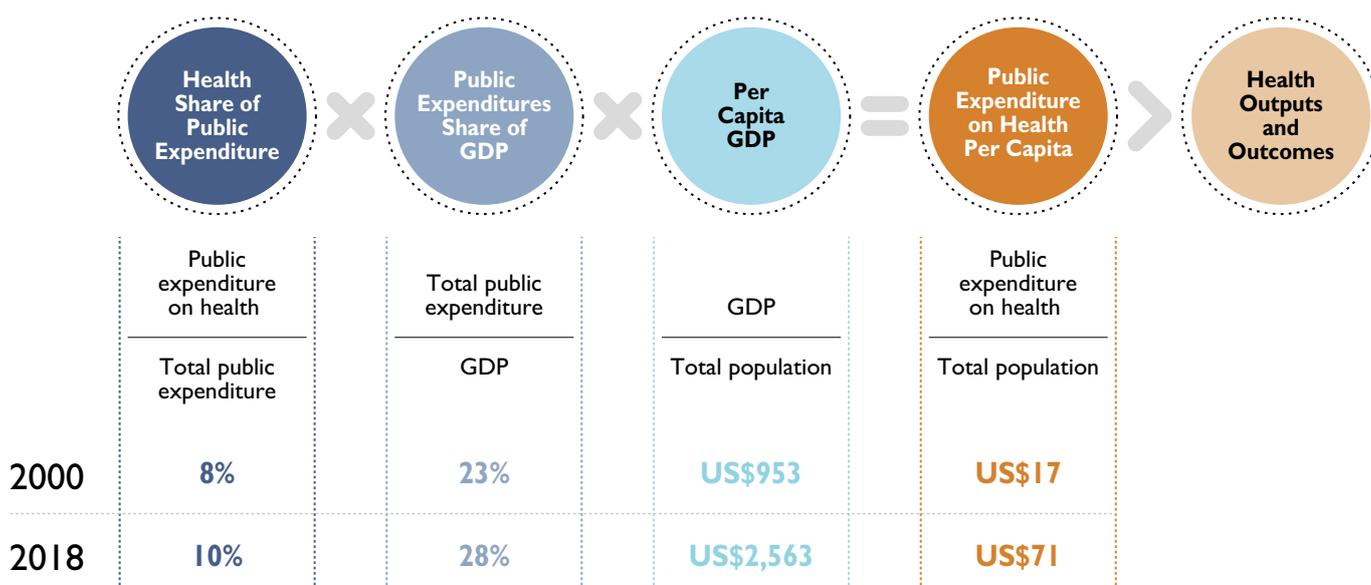


Source: Estimates are from WHO Global Health Expenditure Database.

## BROADER TRENDS IN HEALTH FINANCING AND UHC

Per capita public spending is the product of three variables (Figure 8): health’s share of total government spending (prioritization), total government spending share of GDP, and per capita GDP. In 2018, Vietnam’s per capita GDP amounted to US\$2,563. Of this, 28% was total government spending (representing spending across all sectors, including for health) and 10% of total government spending represented health’s share

Figure 8. Calculation of Per Capita Public Expenditure on Health, Vietnam



Source: Authors’ estimates using data from IMF World Economic Outlook 2019 and WHO Global Health Expenditure Database 2019

<sup>21</sup> Estimates are from the IMF World Economic Outlook database.

<sup>22</sup> These expenditures include both capital and current spending and are reported in constant 2017 terms; estimates are from the WHO GHED.

(amounting to ~US\$71 per capita, as noted above). In 2000, Vietnam's per capita GDP was US\$953 with 23% representing total government spending of which 8% was the share spent on health (amounting to ~US\$17 per capita).

With regard to financial protection, despite a relatively high and growing OOP share in current health spending, the proportion of households for whom OOP spending was 10% or higher of consumption has been declining, reaching 9.4% in 2016, while impoverishment due to health spending has declined to only 1.2%<sup>23</sup> (Figure 9).<sup>24</sup>

Vietnam's nearly 10% share of health in total government expenditure is similar to that of Brazil and the EAP average, and slightly higher than the LMI average, but substantially lower than Thailand (Table 4<sup>25</sup>). The share of total government expenditures<sup>26</sup> on education is higher than on health, while the shares spent on military and debt service are somewhat lower.

With Vietnam's successful mobilization of public financing for health and relatively high share of GDP spent on health, Vietnam has made steady progress on its UHC index of essential service coverage over 2000–2019, having improved faster than the average for EAP countries and remaining above the average

<sup>23</sup> These estimates are from the WHO Global Health Expenditure Database 2019 and from the WHO and IBRD/World Bank. 2020. Global monitoring report on financial protection in health 2019. Geneva: World Health Organization and International Bank for Reconstruction and Development / The World Bank.

<sup>24</sup> Teo, Hui Sin; Bales, Sarah; Bredenkamp, Caryn; Cain, Jewelwayne Salcedo. 2019. The Future of Health Financing in Vietnam: Ensuring Sufficiency, Efficiency, and Sustainability. Washington, D.C.: World Bank.

<sup>25</sup> Rounded estimates are from the WHO Global Health Expenditure Database 2019, the World Development Indicators 2020, and the IMF World Economic Outlook 2020.

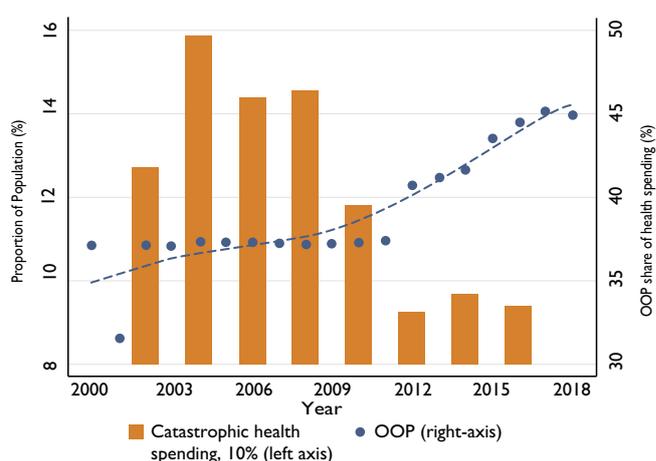
<sup>26</sup> Teo, Hui Sin; Bales, Sarah; Bredenkamp, Caryn; Cain, Jewelwayne Salcedo. 2019. The Future of Health Financing in Vietnam: Ensuring Sufficiency, Efficiency, and Sustainability. Washington, D.C.: World Bank.

Table 4. Comparison by country of share of total government expenditure

Country	Share of total government expenditure			
	Health	Education	Military	Debt Service
<b>Vietnam</b>	<b>10</b>	<b>14</b>	<b>7</b>	<b>5</b>
Bangladesh	3	9	10	14
Brazil	10	17	4	14
Cambodia	6	9	9	1
China	9	13	5	2
India	3	14	9	17
Indonesia	9	21	4	10
Lao PDR	6	12	1	6
Mexico	10	18	2	15
Nigeria	5		4	13
Pakistan	5	15	18	20
Philippines	7	13	4	8
South Africa	13	19	3	11
Sri Lanka	9	11	10	32
Thailand	15	19	6	3
EAP average	10	14	5	5
LMI average	9	16	6	8

Source: Rounded estimates are from the WHO Global Health Expenditure Database 2019, the World Development Indicators (2020), and the IMF World Economic Outlook 2020.

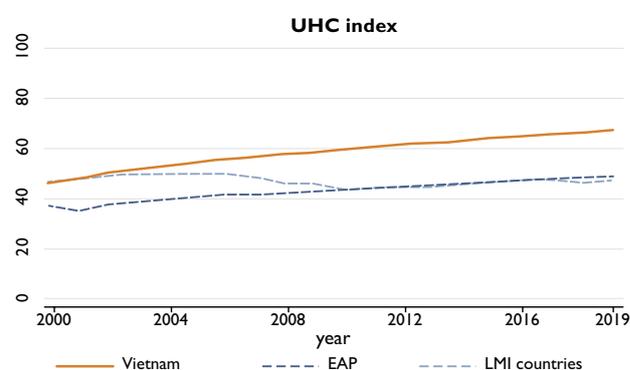
Figure 9. Catastrophic spending on health versus OOP share of health spending, Vietnam, 2000-2018



Source: WHO Global Health Expenditure Database 2019.

for LMI countries over the entire period (Figure 10).<sup>27</sup> Vietnam performs extremely well on immunization coverage and the International Health Regulations core capacity index, which has been evident in its successful containment of the COVID pandemic to only 370 deaths and 71,144 cases by 22 July 2021.<sup>28, 29</sup> However, there is room for improvement, especially in regard to non-communicable disease prevention and management.

Figure 10. UHC Index



Source: Global Burden of Disease Collaborative Network 2018.

<sup>27</sup> Estimates are from the Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2017 (GBD 2017) Health-related Sustainable Development Goals (SDG) Indicators 1990-2030. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018.

<sup>28</sup> WHO 2019. Global Monitoring Report 2019: Primary Health Care on the Road to Universal Health Coverage. Geneva: World Health Organization.

<sup>29</sup> WHO 2020. WHO Coronavirus Disease (COVID-19) Dashboard. Last accessed: July 23, 2021.

# GLOSSARY & METHODS<sup>1</sup>

**Catastrophic Health Expenditure (CHE):** occurs when out-of-pocket health spending exceeds 10% or 25% of total household consumption or income).

**Constant:** Also referred to as ‘real’, refers to the value of a monetary variable with adjustments made to remove the impact of changes in prices of goods and services due to inflation. Constant series show the data for each year in the value of a particular base year. Thus, for example, data reported in constant 2017 prices show data for 2000 to 2017 in 2017 prices. Constant series are important as it is used to measure the true growth of a series (i.e., adjusting for the effects of inflation).

How to Convert a Time Series Variable from Nominal to Constant? Nominal time series data can be converted to constant time series data using a GDP deflator. Constant time series data is calculated by dividing nominal time series data by the GDP deflator (expressed in hundredths term):

$$\text{Constant time series} = \frac{\text{Nominal time series}}{\text{GDP deflator (in hundredths)}}$$

**Debt Service Payments:** Debt service is a type of government expenditure that covers the repayment of interest and principal on a debt or liability by the government for a particular period of time.

**Domestic Resource Mobilization (DRM):** the willingness and ability of countries to increase domestically-sourced public financing for health, ideally in an efficient, equitable, and sustainable manner.

**Government Deficit/Surplus:** The difference between total government revenue and expenditure is called government deficit (if expenditure is greater) or government surplus (if revenue is greater). This is an important fiscal account that measures the extent to which general government is lending financing resources (in the case of government surpluses) or borrowing financial resources from other sectors and nonresidents in order to finance government spending (in the case of government deficits).

**Gross Domestic Product (GDP):** is a monetary measure of the market value of all the final goods and services produced within a country’s borders in a specific time period, often annually.

**Gross National Income (GNI):** is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.

**Health Financing Transition:** An empirically observed phenomenon that shows that as countries grow

<sup>1</sup> This glossary was adapted from “Glossary & Methods,” in the JLN DRM Collaborative. Ministry of Health & Family Welfare Budgetary Spending in Bangladesh. Domestic Resource Mobilization Collaborative. Joint Learning Network for Universal Health Coverage, 2020. Definitions derived from the present text were added. Other sources consulted were the Global Monitoring Report on Financial Protection in Health (2019), the World Health Organization and the International Bank for Reconstruction and Development, and the World Bank World Development Indicators (2019).

and develop there is a rise in health spending but that there is also a change in the composition of health spending with a higher share coming from public and other compulsory prepaid sources and a lower share from external and OOP sources.<sup>2</sup>

How to Account for Changes in Per Capita Public Spending on Health Over Time? There are different ways to account for changes in per capita public spending on health.<sup>3</sup> One way is to focus on uncovering the relative contributions from a sub-set of factors by exploiting a key macroeconomic identity that, in any given years  $t$  and  $t+1$ , the following must hold true:

$$P_t = H_t E_t Y_t$$

$$P_{t+1} = H_{t+1} E_{t+1} Y_{t+1}$$

where  $P$  is per capita public financing for health in constant local currency units (LCUs),  $H$  is health's share of public expenditure,  $E$  is the public expenditure share of GDP, and  $Y$  is real GDP per capita in LCUs. Taking the logarithmic difference in  $t+1$  versus  $t$  (denoted by lowercase with 'hat') of public spending on health must mathematically equal the sum of the logarithmic growth rates in health's share of public expenditures, of aggregate public expenditures as share of GDP, and of GDP per capita:

$$\hat{p}_t = \hat{h}_t + \hat{e}_t + \hat{y}_t$$

In other terms, this implies that the growth rate of public financing for health ( $\hat{p}_t$ ) over a given time period must be exactly accounted for by changes in GDP per capita (that is, by economic growth, or  $\hat{y}_t$ ), changes in aggregated public expenditures as share of GDP ( $\hat{e}_t$ ), and by changes in health's share in aggregate public expenditure ( $\hat{h}_t$ ).

The log-difference method of calculating growth rates is frequently used in economic growth theory and calculates rates that are a very close approximations to the simple growth rates. The advantage of using this method is that it allows a multiplicative decomposition of the growth rate of a variable into the growth rates of its components.

**High Income Countries (HICs):** Are currently defined by the World Bank as those countries that in 2018 had per capita income of US\$12,376 or higher.

**Human Capital Index:** A cross-country benchmarking exercise completed in 2018 by the World Bank Group Human Capital Project.<sup>4</sup> The index measures the amount of human capital that the average child born in 2018 expects to achieve.

**Inflation:** An increase in the prices of goods and services over time (a decline in prices is referred to as 'deflation'). Inflation is typically measured in terms of how prices of a representative basket of goods and services changes over time (referred to as changes in the consumer price index) or changes in the prices of actual goods and services consumed in an economy over time (based on changes in the GDP deflator).

<sup>2</sup> Fan, V. Y., and W. D. Savedoff. 2014. "The Health Financing Transition: A Conceptual Framework and Empirical Evidence." *Social Science and Medicine* 105: 112–121.

<sup>3</sup> Tandon, A., J.S. Cain, C. Kurowski, and I. Postolovska (2018). *Intertemporal Dynamics of Public Financing for Universal Health Coverage: Accounting for Fiscal Space Across Countries*. HNP Discussion Paper. Washington, D.C.: World Bank Group. Available: <http://documents.worldbank.org/curated/en/639541545281356938/Intertemporal-Dynamics-of-Public-Financing-for-Universal-Health-Coverage-Accountingfor-Fiscal-Space-Across-Countries>.

<sup>4</sup> World Bank Group. 2018. *The Human Capital Project*. Washington DC: International Bank for Reconstruction and Development.

The GDP deflator is defined as the ratio of the GDP at market prices in current U.S. dollars to the GDP at market prices in constant (2000) U.S. dollars.<sup>5</sup>

**Low Income Countries (LICs):** Are currently defined as those countries that in 2018 had per capita income of US\$1,025 or less.

**Lower Middle Income (LMI) Countries:** Are currently defined by the World Bank as those countries that in 2018 had per capita income between US\$1,026 and US\$3,995.

**Nominal:** Also referred to as ‘current’, refers to the value of a monetary variable without any adjustments made for changes in prices of goods and services due to inflation.

**Non-Tax Revenue:** Revenue received by the general government from other revenue sources other than taxes. These include social contributions, grants, and other revenue such as property income, sales of goods and services, and fines, penalties, and forfeits.

**Out-of-Pocket (OOP):** Households’ out-of-pocket expenditure is a direct payment for health care goods and services from the household primary income or savings (no third-party payer is involved). The payment is made by the user at the time of the purchase of goods or use of services.

**Pritchett Landscape:** is a way of classifying trend patterns in growth rates of any variable inspired by and building upon Pritchett (2000).<sup>6</sup> Statistically identifiable policy-relevant ‘break points’ are determined using Pritchett’s method as the year when a break in trend for a variable can be identified by estimating the equation below and finding the breakpoint year ( $t^*$ ) that minimizes the sum of squared errors over all  $t$ :

$$Y_t = a_1 * I(t \leq t^*) + b_1 t * I_1(t \leq t^*) + a_2 * I(t > t^*) + b_2 t * I(t > t^*) + \varepsilon_t$$

where  $Y$  is any variable of interest such as per capita GDP or per capita public spending on health,  $I()$  is an indicator function (1 if the argument holds; 0 otherwise),  $t = [t_0, \dots, T]$  where  $t_0$  is 2000,  $T$  is 2017,  $t^*$  is the breakpoint year that is chosen subject to the constraint that each segment of the trend covers a minimum of three years (that is,  $t^* - t_0 \geq 3$  and  $T - t^* \geq 3$ ) and  $a$  and  $b$  are the intercept and time-trend slope, respectively, where the suffix 1 or 2 represent the estimates before and after the estimated breakpoint. Once the breakpoint is determined, the landscape of growth patterns is classified as follows:

Pattern	Growth rate	
	Before break	After break
Steep Hill	$\geq 5$ percent	$\geq 5$ percent
Hill	$\geq 3$ percent	$\geq 3$ percent
Accelerator	0 percent $\geq$ & $< 3$ percent	$\geq 3$ percent
Steep Valley	$< 0$ percent	$\geq 5$ percent
Plateau	$\geq 3$ percent	0 percent $\geq$ & $< 3$ percent
Valley	$< 0$ percent	0 percent $\geq$ & $< 3$ percent
Plain	0 percent $\geq$ & $< 3$ percent	0 percent $\geq$ & $< 3$ percent
Mountain	$\geq 3$ percent	$< 0$ percent
Cliff	0 percent $\geq$ & $< 3$ percent	$< 0$ percent
Slippery Slope	$< 0$ percent	$< 0$ percent

<sup>5</sup> World Bank Group Data Catalog. <https://datacatalog.worldbank.org/gdp-deflator-index-2000100-us-series>.

<sup>6</sup> Pritchett, Lant. 2000. “Understanding patterns of economic growth: searching for hills among plateaus, mountains, and plains (English)”. The World Bank economic review. -- Vol. 14, no. 2 (May 2000), pp. 221-250.

**Social Health Insurance (SHI):** Social health insurance is a mandatory financing arrangement that ensures access to health care based on a compulsory payment of a non-risk-related contribution by or on behalf of the eligible person. Contributions are raised mainly through wage-related (and occasionally income-related) contributions that are shared between employers and employees. The social health insurance scheme is established by a specific public law, defining, among others, the eligibility, benefit package and rules for the contribution payment.

**Tax Revenue:** Revenue received by the general government from taxes. Taxes are compulsory, unrequited amounts receivable by government units from individuals, public enterprises, trade, royalties on natural resources and/or foreign aid.

**Total Government Expenditure:** Total expense and the net acquisition of nonfinancial assets by the government in order to fulfill their role of providing public goods and services and redistribution of income and wealth.

**Total Government Revenue:** Taxes, social contributions, grants receivable, and other revenue received by the government. Governments collect revenue in order to finance selected public goods and services that they provide to their citizens and to redistribute income and wealth by means of transfers.

**Universal Health Coverage (UHC):** As defined by the World Health Organization,<sup>7</sup> means that all people and communities can use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship.<sup>8</sup>

**Universal Health Coverage (UHC) Service Coverage Index:** Measures the average coverage of essential services that include reproductive, maternal, newborn and child health, infectious diseases, noncommunicable diseases and service capacity and access, among the general population (as well among the most disadvantaged population).

**Upper Middle Income (UMI) Countries:** Are currently defined by the World Bank as those countries that in 2018 had per capita income between US\$3,996 and US\$12,375.

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<sup>7</sup> World Health Organization 2019. "Universal Health Coverage" Accessed September 2020. Last updated January 2021.

<sup>8</sup> World Health Organization 2021. WHO Universal Health Coverage data portal. Accessed September 2020. Last updated January 2021.

The World Bank's support to the Joint Learning Network for UHC  
is made possible with financial contributions from the following partners:



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