YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF APPLIED ECONOMICS
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A STUDY ON ASSOCIATION OF TOTAL HEALTHCARE EXPENDITURE WITH GDP AND LIFE EXPECTANCY IN MYANMAR

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MPA - 40 (22nd Batch)

JUNE, 2025

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A thesis submitted in partial fulfillment of the requirements for the degree of Master of Public Administration (MPA)

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This is to certify that this thesis entitled "**A STUDY ON ASSOCIATION OF TOTAL HEALTHCARE EXPENDITURE WITH GDP AND LIFE EXPECTANCY IN MYANMAR**", submitted as a partial fulfillment towards the requirement for the degree of Master of Public Administration has been accepted by the Board of Examiners.

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ABSTRACT

This study focuses the association between total healthcare expenditure, gross domestic product (GDP) and life expectancy in Myanmar from 2000 to 2022. Utilizing a quantitative research approach based on secondary time-series data and econometric analysis, the study investigates the causal and correlative links among these key indicators of economic and public health development. Descriptive statistics reveal a consistent upward trend in both GDP and healthcare spending, alongside a steady increase in life expectancy. The Vector Auto Regression (VAR) model and Granger Causality tests confirm a statistically significant positive association and causality from healthcare expenditure to both GDP and life expectancy, validating the health-led growth hypothesis. The findings emphasize the critical role of healthcare as both a determinant and driver of development. The study concludes with policy recommendations aimed at strengthening health financing, building system resilience, and integrating health into broader human capital development frameworks to promote inclusive and sustainable growth in Myanmar.

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GDP	-	Gross Domestic Product
MOH	-	Ministry of Health
OOPS	-	Out-of-pocket Spending
WHO	-	World Health Organization

CHAPTER I

INTRODUCTION

1.1 Rationale of the Study

Healthcare is a fundamental component of human development and plays a significant role in the economic growth of a nation. Understanding the relationship between healthcare expenditure, economic output, and population health is essential for effective policy design. Despite growing awareness of the role of health in sustainable development, healthcare investment remains relatively low compared to regional counterparts (WHO, 2023).

As health forms a core element of human capital, increasing healthcare spending enhances economic output, boosts labor productivity, and promotes overall social well-being. This highlights the value of health as a key asset and underscores the strong link between a population's health status and its level of societal welfare. Conversely, when living conditions and health quality are low, it can trigger a surge in economic activity as efforts are made to improve these conditions (Bloom et al., 2003).

Health is a valuable asset, and investing in it leads to higher income and supports sustained economic growth. Developing human capital involves public investment in both education and healthcare, based on the understanding that such investments yield long-term returns for individuals and society (Schultz, 1961).

Human capital plays a vital role in driving economic growth, influencing both microeconomic and macroeconomic outcomes. Enhancing human capital leads to increased productivity in both market and non-market sectors. Health is recognized as both a source of personal well-being and a strategic investment. As a consumer good, healthcare enhances individual welfare; as an investment good, it strengthens human capital by boosting labor productivity (Becker, 1964).

Therefore, addressing the rising demand for healthcare is a key policy priority in developing nations. Improved healthcare not only fulfills essential human needs but also enhances individuals' capacity to contribute productively to the economy. People seek better health services not merely because they value health itself, but because good health strengthens their ability to be economically productive. Ensuring a healthy workforce is especially critical for supporting economic recovery following crises like the COVID-19 pandemic.

A healthy population is better equipped to absorb knowledge, leading to increased economic output. Empirical studies have shown that education is a key contributor to human capital. However, when the Solow growth model is expanded to incorporate the benefits of improved health through healthcare investment, it reveals a substantial positive effect on overall economic productivity. Healthier workers tend to be more productive, earn higher wages, and take fewer sick days, thereby maximizing their contribution to the labor market. Additionally, improved health extends life expectancy, which encourages individuals to save more for the future (Gallet et al., 2017).

Myanmar, a developing Southeast Asian country, has experienced transitions in its healthcare financing structure and demographic indicators in recent decades. Moreover, as a lower-middle-income country, Myanmar faces significant challenges in strengthening its health system and improving population health. This study investigates how total healthcare expenditure is associated with GDP and life expectancy in Myanmar, contributing to both economic and public health literature.

1.2 Objective of the Study

Objectives of this study are:

(i) To analyze the relationship between total healthcare expenditure and GDP

(ii) To assess the association between healthcare expenditure and life expectancy

1.3 Method of Study

This study adopts a quantitative research approach to investigate the relationship between total healthcare expenditure and GDP, as well as the association between healthcare expenditure and life expectancy in Myanmar. Three key variables include healthcare expenditure (percentage of GDP), gross domestic product (GDP), and life expectancy. This study was delivered through regression analysis of secondary time-series data, using STATA software. Secondary data were from reputable institutions such as the World Bank Development Indicators, Myanmar's Ministry of Planning and Finance, Central Statistical Organization (CSO) of Myanmar, as well as international bodies like the IMF, ADB, WHO, and peer-reviewed academic literature on Myanmar’s economic development, covering the period from 2000 to 2022.

1.4 Scope and Limitation of the Study

This study focused only on healthcare expenditure, GDP and life expectancy from 2000 to 2022 in Myanmar. This study did not analyze expenditure for other sectors, other macroeconomic and healthcare indicators in Myanmar. The scope of the study is limited to Myanmar's national-level data on GDP, healthcare expenditure (as percentage of GDP), and life expectancy.

1.5 Organization of the Study

This study is structured into five chapters. The first chapter, titled Introduction, outlines the rationale and objectives of the research, along with the methodology, scope, limitations, and overall organization of the thesis. Chapter II presents a comprehensive review of relevant literature, including theoretical foundations, a conceptual framework, and key findings from previous studies. Chapter III offers an overview of overview of Myanmar’s economic development. Chapter IV describes the results and findings. Finally, Chapter V summarizes the key findings, provides a discussion of the results, and presents policy recommendations.

CHAPTER II
LITERATURE REVIEW

2.1 Healthcare Expenditure and Economic Growth

The association between healthcare expenditure and economic growth has attracted growing academic and policy interest, especially in developing countries. Health, a vital component of human capital, is believed to influence labor productivity and economic output. As individuals become healthier, they are better able to contribute to economic activities, thus improving Gross Domestic Product (GDP).

Buchanan (1965) introduced a growth theory suggesting that public healthcare funding should be increased irrespective of existing demand. This implies that policy decisions about healthcare budgets should be made independently of current healthcare demand and not merely as a response to system inefficiencies. Similarly, healthcare spending decisions are primarily shaped by political influences rather than driven by market dynamics (Nyamwange, 2012).

The endogenous growth theory posits that investments in human capital, including healthcare, lead to long-term economic growth. Healthcare spending enhances the physical and mental wellbeing of a population, leading to increased labor productivity, reduced absenteeism, and prolonged working lives (Barro, 1996).

The health-led growth hypothesis postulates that improved health outcomes increase labor productivity, reduce absenteeism, and support sustainable economic development. Empirical studies (e.g., Bloom & Canning, 2000) demonstrated that countries with better health outcomes, partly due to higher healthcare spending, tend to enjoy faster economic growth. The World Health Organization (WHO) and the World Bank have consistently advocated for increased investment in health systems as a strategic driver of development.

In low- and middle-income countries (LMICs), empirical findings are mixed. While some studies affirm a positive association between healthcare expenditure and GDP (Anyanwu & Erhijakpor, 2009), others highlight inefficiencies in public health spending and structural bottlenecks. For instance, in Sub-Saharan Africa, the marginal productivity of health spending has been observed to vary significantly based on governance, education, and institutional capacity (Gyimah-Brempong & Wilson, 2004).

Bloom and Canning (2008) argued that investments in health are positively associated with economic growth, especially in low- and middle-income countries. Barro

(1996) also found that public health expenditures contribute significantly to GDP growth by enhancing human capital quality.

Health and education are widely recognized as fundamental components of human capital development. Good health, beyond the absence of disease, empowers individuals to achieve their full potential, offering both personal and economic advantages (Bloom, Canning & Sevilla, 2004). A healthy population contributes to better educational outcomes by enhancing school attendance and learning capacity, while increased life expectancy boosts the returns on educational investments (Todaro & Smith, 2010).

Although traditional neoclassical growth models prioritize physical capital and technological progress as key drivers of economic growth, well-targeted and equitable investments in education and health can substantially raise income levels and enhance economic performance. Such investments are critical in breaking the poverty cycle, making them essential for sustainable development. Differences in income are largely due to disparities in access to capital, labor, and technology. As incomes rise, people are better able to invest in health and education, reinforcing a positive cycle of productivity and growth. Therefore, comprehensive development strategies must integrate efforts to promote income generation, health, and education simultaneously (Mankiw, 2013).

The link between government spending and economic growth depends not just on the total expenditure but also on how funds are distributed among different sectors. In a notable study focused on developing nations, Devarajan, Swaroop, and Zou (2006) highlighted that the structure and effectiveness of public spending play a more significant role than its overall size. Their research showed that government investments in areas that build human capital and infrastructure—such as education, healthcare, and transportation—have a substantial and positive influence on sustained economic growth.

A growing body of literature supports a positive link between healthcare spending and economic development. Investment in health can enhance labor productivity, reduce mortality, and increase life expectancy, thereby contributing to economic output. Spending on healthcare systems, preventive care, and nutrition delivers substantial economic benefits by minimizing absenteeism and strengthening human capital.

Public health spending alone is insufficient to effectively reduce health burdens, especially in countries where such expenditure is relatively low. A study examining the relationship between public health spending and health outcomes in Nigeria and Ghana

found that an annual increase of at least 1% in public health expenditure—reaching a minimum of 15% of the total budget—can lead to substantial improvements in health outcomes. This suggests that both the level and consistency of investment are crucial for achieving meaningful health gains (Gallet & Doucouliagos, 2017).

Health plays a vital role in driving economic growth, as a nation's productivity is closely tied to the physical and mental well-being of its people. Individuals in good health are more likely to engage in the labor force, perform more effectively, and support long-term economic progress. Research indicates a strong connection between increased life expectancy, lower disease burden, and rising GDP (Bloom & Canning, 2000).

Healthier employees are generally more physically robust and mentally alert, which greatly improves their job performance and efficiency. Better health leads to fewer absences and workplace injuries, while also increasing energy and cognitive capacity. These factors contribute to higher output per hour worked, a core indicator of labor productivity. Weil (2007) pointed out that investing in health not only enhances individual well-being but also plays a vital role in boosting economic growth, as healthier populations maintain higher productivity levels and help reduce overall healthcare expenses.

According to Bloom et al. (2003), strategic investments in health, education, and employment opportunities can substantially raise per capita income and drive national development. By lowering fertility rates and extending life expectancy, countries can tap into the economic advantages of a larger, healthier, and more efficient workforce.

2.2 Healthcare Expenditure and Life Expectancy

Life expectancy is one of the most commonly used indicators of a population's health status and a key metric to evaluate the effectiveness of healthcare investment. The theoretical justification for this linkage lies in the concept that greater healthcare expenditure improves access to medical services, enhances preventive care, and reduces mortality. There is robust empirical evidence suggesting a strong link between healthcare spending and improvements in life expectancy.

Bloom et al. (2004) review several studies that examine the impact of health—measured through life expectancy—on economic growth. These studies (including Barro and Lee, 1984; Bhargava et al., 2001; Barro and i Martin, 2004; and Sachs and Warner, 1997) consistently find a positive and statistically significant relationship between life expectancy and economic growth.

Barro and Lee (1984) acknowledge this favorable benefit but caution that life expectancy may also reflect working experience, suggesting that higher life spans may signify longer labor force involvement rather than greater health. In their analysis, Bloom et al. (2004) account for labor experience. Even after this adjustment, they show that life expectancy—used as a health indicator—still has a clear, direct, and positive effect on economic productivity, suggesting that population health improvements go beyond increased working years to boost economic growth.

Lower avoidable fatalities and greater medical access result from more healthcare spending, according to OECD (2020). OECD research found a favorable correlation between per capita health spending and life expectancy. In nations with universal healthcare, incremental investment enhances life expectancy, especially for vulnerable people (Nixon & Ulmann, 2006; Baltagi & Moscone, 2010).

In developing countries, Anand and Ravallion (1993) showed that healthcare spending is significantly associated with reductions in child mortality and increases in life expectancy. In Asia, studies from countries such as Thailand, Vietnam, and the Philippines show mixed results, often due to disparities in rural-urban access and quality of care. However, it is generally accepted that consistent healthcare investment positively influences life expectancy, particularly in countries with coordinated health delivery systems.

Healthcare expenditure has been widely studied as a determinant of life expectancy. The World Health Organization emphasizes that greater health financing improves access to care and preventive services, leading to increased longevity.

The impact of life expectancy on economic growth appears to reflect a genuine increase in labor productivity, rather than simply serving as a stand-in for worker experience. Research shows that health has a positive and statistically significant influence on economic output, with a one-year rise in life expectancy linked to a 4% increase in GDP. This suggests that investing in health can be justified not only for its welfare benefits but also for its economic returns via productivity gains (Bloom et al., 2003).

Recent studies have produced mixed findings on how economic growth affects health, especially with the growing prominence of cardiovascular disease as a major global health concern. The study using cardiovascular mortality rates and GDP as primary variables, alongside other socio-economic, lifestyle, and contextual factors known to influence health, examined the link between economic development and health

outcomes by analyzing data from 27 European countries between 2003 and 2014. The analysis revealed a statistically significant inverted U-shaped relationship between income and cardiovascular mortality: as income rises, mortality rates initially increase but eventually decline at higher income levels. The findings highlighted the need for continued investment in advanced healthcare technologies and improvements in public health systems, particularly in developing nations, to complement economic growth and achieve better health outcomes (Spiteri & Von Brockdorff, 2019).

Moreover, in comprehensive economic models, life expectancy can also affect life-cycle savings, capital accumulation, and the returns on and motivation for investing in education. Therefore, improvements in health can drive economic growth through multiple channels—not only by enhancing the productivity of the workforce, but also by stimulating broader capital formation and human development (Bloom et al., 2003).

2.3 Economic Development and Human Capital Theory

The human capital theory, advanced by Schultz (1961) and Becker (1964), conceptualizes health and education as investments in human capital. These investments are expected to increase individuals' productivity and income, thereby contributing to national economic development. Before the development of the Augmented Neo-Classical Growth Model by Mankiw, Romer, and Weil, growth theories largely overlooked the role of human capital.

Health, like education, enhances the capabilities of individuals to work, learn, and innovate. When governments and individuals invest in health, they are essentially enhancing the productive capacity of the labor force. This results in higher earnings, greater output, and sustained economic development (Weil, 2007).

Numerous macroeconomic models have integrated health as a determinant of growth. Barro (1996) finds that life expectancy significantly predicts economic performance. Similarly, Bloom, Canning, and Sevilla (2004) conclude that improved health outcomes have long-term impacts on per capita income, especially in lower-income countries.

The study in Turkey from 1960 to 2014, using a production function, incorporated human capital, specifically measured through health and education. Using the ARDL Bounds Testing approach for empirical analysis, the study found that a significant long-term relationship between these variables. A 1% increase in life expectancy at birth is associated with a 0.67% rise in GDP, showing a strong positive

link between health and economic performance. A 1% increase in the student–teacher ratio in vocational and technical secondary education results in a 0.21% decline in GDP, indicating that overcrowded classrooms negatively impact economic output. Conversely, a 1% increase in the student–teacher ratio in tertiary education is linked to a 0.21% increase in GDP, suggesting a complex or possibly scale-related positive effect at higher education levels. Overall, the study underscores the importance of investing in health and education as key drivers of long-term economic growth (Avcı & Çalışkan, 2022).

While it is well known that individuals with higher incomes tend to enjoy better health, recent studies highlight that income distribution within a society also plays a crucial role in shaping health outcomes. This concept, known as the relative income hypothesis, suggests that people tend to have better health in more economically equal societies. The negative health effects of income inequality may arise through several pathways, including reduced investment in public goods like education and healthcare, weakened social cohesion and declining social capital, and psychosocial stress caused by constant social comparison and perceived inequality (Kawachi & Kennedy, 1999).

Health capital is seen as the sum of resources—actual or potential—that individuals possess, which can influence their position and power within the broader social field of health. Health capital operates within both economic and social frameworks—it is tied to physical development while also serving as a means to gain social status and recognition across different areas of society. By addressing this dual role, the concept of health capital, offers a valuable analytical tool for understanding how individual health is shaped (Schneider-Kamp, 2020).

Applying human capital theory implies that increasing health expenditure should be viewed not only as a welfare measure but also as a strategic economic investment. With large segments of the population still underserved by modern health services, this investment could potentially unlock significant economic dividends.

2.4 Reviews on the Previous Studies

Nixon & Ulmann (2006), Numerous international studies have investigated the association between total healthcare expenditure, economic growth, and life expectancy. A cross-sectional study of 31 OECD countries showed that while health expenditure positively correlates with life expectancy, it is not the sole determinant. The study emphasized the importance of social protection systems, healthcare quality, and population health behaviors in determining longevity.

Weil (2007), An analysis of non-OECD Asian countries suggested that a 1% increase in health expenditure as a share of GDP leads to approximately a 3% increase in healthy life expectancy.

Anyawu & Erhijakpor (2009), A study in Sub-Saharan Africa covering 1995 to 2014 showed that health expenditure significantly improved life expectancy and reduced various mortality rates. This positive effect was observed for both public and private health spending and was further enhanced by GDP growth, immunization rates, and urbanization.

A panel study of ASEAN countries from 2000 to 2019 found that increase in healthcare expenditure were significantly associated with improvements in life expectancy and reductions in infant and maternal mortality, identifying a stronger positive effect of public healthcare expenditure compared to private spending and 6% of GDP as an optimal threshold for health investments.

Health Bulletin (2011), A notable study in Bangladesh (1996–2006) utilized national-level data and found a positive association between healthcare expenditure and GDP, but no significant relationship with life expectancy, suggesting that healthcare spending in low-income countries may initially affect income growth before yielding health gains.

Baltagi & Moscone (2010), Quantile regression analysis across 175 countries (2006–2011) highlighted that the effect of healthcare expenditure on life expectancy varied by baseline longevity. Countries with lower life expectancy experienced the greatest marginal gains from increased health expenditure, emphasizing the redistributive value of healthcare investment in global health equity.

One regional study that included Myanmar among SAARC–ASEAN nations found that while public health expenditure positively influenced life expectancy and reduced under-five mortality, it had inconsistent results for non-communicable disease mortality. This indicates the complex and sometimes context-dependent nature of health expenditure effects in Myanmar.

The study titled "Measuring the Poverty in Myanmar: A View of Health Expenditure" by Khin Sandi Myint (2024) explored the link between poverty and key economic indicators in Myanmar, with a focus on current health expenditure per capita, GDP per capita, and total unemployment. By analyzing data from 1991 to 2022 using both Least Squares (LS) and Quantile Regression (QR) techniques, the study found that

GDP per capita consistently impact health expenditure across all income groups, while the effect of unemployment differs depending on the quantile.

The study "Government Spending and Economic Growth: A Case Study of Myanmar" by Nay Myo Htun (2024) investigated how government expenditure impacts economic growth in Myanmar over the period from 2011 to 2023. Utilizing econometric techniques such as correlation analysis, regression, and Granger causality tests, based on secondary data from the World Bank and official Myanmar government sources, the findings revealed that although GDP growth varied considerably during the study period, government expenditure steadily rose. A positive correlation was observed between public spending and GDP growth, suggesting that greater government expenditure is linked to economic expansion. Moreover, the Granger causality test indicates a one-way causal relationship from government spending to GDP growth, lending support to the Keynesian view that public spending drives economic activity.

CHAPTER III

OVERVIEW OF MYANMAR'S ECONOMIC DEVELOPMENT

3.1 The Dynamics of Economic Development in Myanmar

Since the early 2000s, Myanmar has transitioned from one of Southeast Asia's most closed economies to a lower-middle-income country undergoing gradual liberalization. Notably, the post-2010 era brought new investment, improved infrastructure, and steady real GDP growth averaging roughly 6–8% annually until 2019. However, the 2021 military coup and subsequent civil conflict precipitated an economic downturn: real GDP contracted by more than 10%, with pronounced declines in household incomes and industrial output (World Bank, 2023).

Despite these shocks, Myanmar's nominal GDP has rebounded—from US $62.3 billion in 2022 to US $66.8 billion in 2023, marking a 7.2% increase (CEIC, 2024). Nonetheless, structural challenges persist, including conflict-driven uncertainty, weak institutional governance, and significant reliance on agriculture, which collectively dampen long-term prospects (World Bank, 2023). In this dynamic, human capital—including health—becomes essential to economic resilience.

Between 2011 and 2019, Myanmar experienced a pivotal phase in its economic development, closely tied to major political and institutional reforms. During this time, the country implemented liberalization policies such as easing foreign investment restrictions, reforming the tax system, and updating financial and trade regulations. These efforts helped integrate Myanmar into the global economy and attracted a surge of foreign direct investment (FDI), especially in telecommunications, infrastructure, banking, and manufacturing.

As a result, macroeconomic conditions improved—fiscal management strengthened, inflation remained under control, and the kyat stabilized under a managed float system. However, despite these gains, persistent structural challenges—such as weak financial markets, limited credit access, poor infrastructure, and a lack of skilled labor—continued to constrain growth. These limitations contributed to a slowdown in GDP growth, declining from 8.82% in 2010 to approximately 5.83% by 2019, even amid a more open and reform-driven economy (IMF, 2020).

From 2020 to 2021, Myanmar faced a severe economic crisis, with GDP growth falling sharply to -9.69% in 2020 and -12.63% in 2021 (World Bank, 2023). This downturn was driven by the combined impact of the COVID-19 pandemic and the

political upheaval following the February 2021 military takeover. The pandemic disrupted key economic activities—such as exports, tourism, and mobility—causing widespread business closures, job losses, and particularly affecting vulnerable sectors like garments, hospitality, and transport. The informal sector, which employs a large portion of the population, was especially hard-hit.

After two years of decline, Myanmar saw a modest recovery in 2022 with 3.32% GDP growth, mainly due to the low base effect, some business reopening, and the resilience of small enterprises. However, this recovery was short-lived—growth slowed to just 0.26% in 2023 (Trading Economics, 2023). The ongoing political instability, withdrawal of multinational companies, reduced donor support, and low levels of international investment continued to suppress economic momentum and hinder sustainable recovery.

Moreover, over the past 20 years, Myanmar has experienced notable inflationary fluctuations, with phases of both volatility and stability. In the early 2000s, inflation was highly unstable due to transitional political governance and adjustments in the domestic economy, influenced by both internal reforms and global economic trends. During the 2010s, inflation stabilized as the government pursued economic liberalization with cautious strategies aimed at balancing reform with national interest.

More recently, global disruptions and domestic challenges have prompted the government to adopt policies aimed at maintaining price stability and ensuring food security. Across all periods, Myanmar has focused on fostering sustainable growth, self-reliance, and resilience, allowing the economy to adapt while protecting public welfare.

According to Myanmar's annual inflation rate (based on the GDP deflator) from 2000 to 2023, inflation peaked at 41.51% in 2002, and remained high in adjacent years (24.84% in 2001, and 20.5% in 2003). These fluctuations reflect significant macroeconomic instability, likely driven by monetary expansion, fiscal deficits, and limited institutional controls during Myanmar's political and economic transition. Myanmar's inflation remained in the double digits through 2007, demonstrating sustained pressure on prices.

During the stabilization phase (2008–2019), inflation gradually declined and stabilized between 2008 and 2019, ranging mostly between 3% and 7%, with the lowest point being 3.13% in 2012. This period coincides with Myanmar’s economic reform efforts and a more cautious approach to liberalization and macroeconomic management.

Improved fiscal policies, better monetary oversight, and greater integration with the global economy likely contributed to this period of relative price stability.

However, inflation rose again sharply in 2021, reaching 19.52%, following the COVID-19 pandemic and political crisis that disrupted economic activity and supply chains. Though it declined to 6.16% in 2022, it rose again to 10.79% in 2023, indicating continuing inflationary pressures due to currency depreciation, import costs, and supply constraints.

Myanmar's inflation trend reflects the country's broader economic and political journey. The high inflation in the early 2000s underscores the fragility of the economy during political transition and poor monetary discipline. The stable inflation during the 2010s points to a more managed and reform-oriented approach, suggesting improved governance in macroeconomic policy.

The resurgence of inflation post-2020 highlights the economy's sensitivity to both global shocks (like COVID-19) and domestic disruptions. Rising prices in recent years have likely eroded purchasing power, especially among low-income populations, and may have worsened food insecurity and poverty levels.

Despite these challenges, the moderate inflation rates in most of the 2010s show that with sound fiscal and monetary policy, Myanmar can achieve price stability. Going forward, maintaining inflation control will be essential for rebuilding trust, stabilizing the currency, and supporting inclusive economic recovery.

3.2 GDP Growth in Myanmar

Analyzing GDP growth trends provides key insights into how the country's economic performance has been influenced by political changes, institutional reforms, global dynamics, and internal challenges. From 2000 to 2010, Myanmar's GDP per capita showed strong overall growth, though it dipped in 2001 and 2002 due to domestic economic instability and high inflation. During this time, fiscal deficits were mainly covered by printing money, which drove inflation to about 35%. Additionally, the private sector struggled under trade restrictions, currency distortions, and inconsistent regulations (ADB, 2003).

From a GDP of merely US $166 in 2000, Myanmar witnessed a nearly tenfold ascent to US $1,233 in 2023 (World Bank, 2023). Although 2020 briefly interrupted this upward trend—with a dip from US $1,490 to US $1,243—the economy largely recovered into 2023.

In real (2010-USD) terms, GDP per capita reached approximately US $1,178 in 2023, up from roughly US $677 in 2009 (World Bank, 2022). This steady income growth reflects improvements in macroeconomic management, albeit undermined by periodic political disruptions.

Table (3.1) GDP growth of Myanmar (2000-2022)

Year	GDP growth (annual %)	GDP (current US$)
2000	12.48	8,905,066,164
2001	10.18	6,477,790,688
2002	10.91	6,777,632,512
2003	12.78	10,467,109,978
2004	12.6	10,567,354,056
2005	12.68	11,986,972,419
2006	12.26	14,502,553,710
2007	11.2	20,182,477,481
2008	9.65	31,862,554,102
2009	9.94	36,906,181,381
2010	8.82	49,540,813,342
2011	4.75	59,977,326,086
2012	6.43	59,937,796,648
2013	7.51	60,269,732,855
2014	7.28	65,531,374,200
2015	6.14	59,607,290,408
2016	5.03	63,298,361,996
2017	5.32	66,053,040,483
2018	5.5	6,786,0515,990
2019	5.83	75,065,106,228
2020	-9.69	79,006,113,643
2021	-12.63	66,345,291,160
2022	3.32	62,253,049,892

Source: World Development Indicators (2022)

The table (3.1) presents two key economic indicators: GDP growth (annual %) and GDP in current US dollars. GDP growth (annual %) is the yearly percentage change in GDP per person, reflecting improvements or declines in average economic output per citizen. GDP in current US dollars is the total market value of all goods and services produced in the country each year, not adjusted for inflation.

During the period of high growth and economic expansion (2000-2010), GDP growth was consistently high, ranging from 8.82% to 12.78%, indicating robust economic performance. GDP value rose dramatically from US$ 8.9 billion in 2000 to

US$ 49.5 billion in 2010, nearly a fivefold increase. This strong growth likely reflects the expansion in natural resource exports, particularly natural gas; low base effects from decades of underdevelopment; and state-led economic activities with limited global integration.

The transition and reform with slowing growth period (2011-2015) saw a drop in GDP growth, falling from 8.82% in 2010 to 4.75% in 2011, stabilizing around 6–7% thereafter. The GDP value continued to grow but with fluctuations, particularly a dip in 2015 to US$ 59.6 billion, down from US$ 65.5 billion in 2014. These years mark the start of political and economic reforms, including liberalization of trade and investment laws, institutional changes and improved macroeconomic governance. Despite reforms, structural constraints such as limited infrastructure, low skilled labor, and fragile institutions may have slowed momentum.

In the moderate growth and economic stabilization phase (2016-2019), GDP growth remained moderate, between 5.03% and 5.83%, reflecting stable but unspectacular growth. GDP steadily increased to US$ 75 billion in 2019, supported by expanding services and manufacturing sectors, continued FDI inflows and regional integration. However, deep-rooted inequalities and limited fiscal space continued to challenge inclusive development.

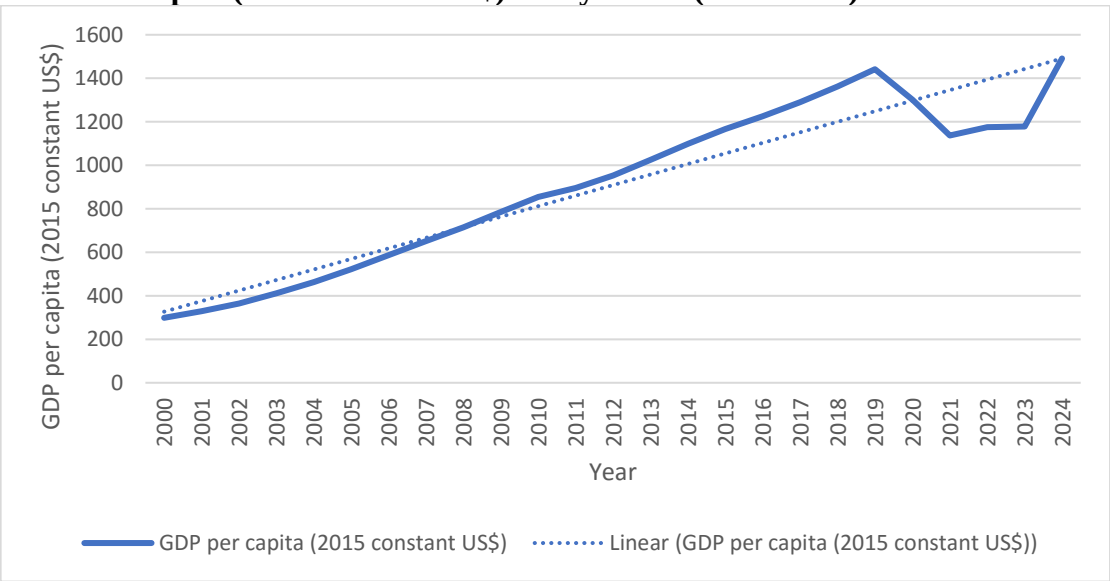
In 2020, GDP growth plummeted to -9.69%, followed by an even sharper contraction of -12.63% in 2021. Although total GDP rose slightly in 2020 (likely due to inflation and exchange rate factors), it fell to US$ 66.3 billion in 2021. These years were dominated by the COVID-19 pandemic, which disrupted tourism, trade, and production.

GDP growth rebounded modestly to 3.32% in 2022, but sharply slowed to 0.26% in 2023, and then rose to 2.0% in 2024, indicating stagnant economic conditions. GDP rose from US$ 62.3 billion in 2022 to US$ 66.7 billion in 2023, showing a partial but weak recovery. The recovery reflects some reopening of businesses and trade, and adaptation by small and informal enterprises. However, Myanmar's economy is still facing the continued political instability, low investor confidence, and loss of external support.

Economic growth, as reflected in increasing GDP per capita, is a critical factor for improving public services, including healthcare. The temporary reversal post-2019 reveals Myanmar's economic vulnerability to shocks, emphasizing the need for diversified and resilient economic planning. If economic stability is restored, the long-

term trend suggests potential for continued growth, which may further enhance health and social outcomes.

GDP Per Capita (2015 constant US$) in Myanmar (2000–2022)



Source: World Development Indicators (2024)

This figure illustrates the trend of GDP in 2015 constant US dollars from 2000 to 2022, including a linear trend line. GDP increased steadily from around US$ 300 in 2000 to over US$ 1,400 projected for 2024. A notable peak appears in 2019, followed by a sharp decline in 2020–2021, and gradual recovery afterward. The steep drop after 2019 is likely due to the economic impact of the COVID-19 pandemic and possibly political instability. The linear trend line suggests the overall economic growth path is positive, although actual performance shows volatility in recent years.

3.3 Government Spending and Economic Development in Myanmar

Government spending plays a pivotal role in shaping Myanmar's economic development trajectory. Historically, the share of government expenditure to GDP was modest, reflecting a limited role of the state in public service delivery. However, the reform period beginning in 2011 saw a significant fiscal shift, with increased investments in health, education, and infrastructure (World Bank, 2024).

The increase in health expenditure, rising more than two-fold as a share of GDP from 2010 to 2023, reflects an attempt to align with Universal Health Coverage goals and respond to emerging health crises. Meanwhile, education spending, although

improving, remains insufficient for long-term human capital development (World Bank, 2024).

During crises like COVID-19 and transition, government expenditure remained resilient, suggesting fiscal flexibility and a countercyclical approach. However, sustaining high expenditure without corresponding revenue generation and institutional reforms poses risks to fiscal stability. High levels of gross capital formation suggest that public and private investment have been crucial engines of growth. Nonetheless, without stronger governance, infrastructure quality, and human capital, the returns on investment may be limited.

Table (3.2) Government Spending and Economic Development in Myanmar (2000 – 2022)

Year	GDP Growth Rate (annual %)	Government Expenditure	Health Expenditure (% of GDP)	Education Expenditure (% of GDP)	Gross Capital Formation
2000	13.74593	20.6	2.13	0.57	12.45
2001	11.344	18.33	2.29	1.26	11.57
2002	12.02551	14.72	2.58	1.3	10.15
2003	13.844	13.78	2.38	0.67	11.02
2004	13.56466	13.99	2.32	2.1	12.21
2005	13.56895	14.07	2.33	0.67	13.19
2006	13.0761	15	2.25	1.3	13.69
2007	11.99144	15.11	2.02	0.97	14.81
2008	10.25531	13.84	2.11	0.85	15.63
2009	10.55001	13.88	2.16	0.87	18.87
2010	9.634439	15.16	1.96	0.9	23.18
2011	5.591482	15	1.93	0.85	29.25
2012	7.33267	19.17	2.41	1.59	30.92
2013	8.426001	22.96	3.2	1.84	31.96
2014	8.169907	23.78	4.39	2.01	32.14
2015	6.99284	24.21	5.48	2.25	34.81
2016	5.862473	23.43	5.11	2.16	33.28
2017	6.136108	20.77	5.08	2.33	34.44
2018	6.268862	21.03	4.9	2.16	32.19
2019	6.57911	20.26	4.71	2.14	30.62
2020	-9.04835	22.61	4.62	1.99	30.81
2021	-12.0164	23.34	5.63	1	27.34
2022	4.037493	22.6	5.2	2.18	32.2

Source: World Development Indicators (2022)

The table (3.2) captures Myanmar's macroeconomic performance and fiscal trends over the 24-year period from 2000 to 2024. It reflects the interaction between

GDP growth, government spending, health and education investments, and gross capital formation (GCF), offering a comprehensive picture of how public expenditure aligns with national development priorities.

Myanmar's GDP growth rate showed strong performance in the early 2000s, with annual growth averaging above 12% between 2000 and 2005. This growth was largely driven by natural resource exports, especially natural gas, and a low economic base. However, growth moderated after 2011, despite economic liberalization and institutional reforms. Between 2012 and 2018, growth remained relatively stable, averaging around 6–8%. A significant economic downturn occurred in 2020 and 2021 due to the COVID-19 pandemic and the 2021 political crisis, with GDP growth rates plunging to -9.05% and -12.02%, respectively. A partial recovery is seen in 2022, with growth estimated at 4.04%.

Government expenditure as a percentage of GDP initially declined from 20.6% in 2000 to around 13.8% by 2003, reflecting austerity measures or limited fiscal capacity. However, following the 2011 reforms, government spending increased substantially, peaking at 24.21% in 2015. In the recent period (2020–2022), expenditure remained consistently above 22%, signaling increased public sector involvement in response to health crises, political shocks, and economic recovery measures. For 2022, government expenditure is projected to rise slightly to 22.6%.

Health expenditure as a share of GDP increased steadily from just 2.13% in 2000 to 5.63% in 2021, with a projected increase to 5.2% in 2022. This upward trend illustrates Myanmar's growing commitment to public health, particularly during the reform years and in response to COVID-19. The increase in health spending reflects both domestic policy shifts and support from international development partners. Still, spending levels remain below regional averages, suggesting a need for more targeted investment and efficient allocation.

Education expenditure remained low throughout the early 2000s, often below 1% of GDP, reflecting limited prioritization of education under military-led governance. Post-2012, there was a gradual increase, reaching 2.25% in 2015. However, education spending fluctuated slightly afterward, averaging around 2.1% in the years 2021–2022. A slight improvement to 2.18% is anticipated in 2022. The relatively modest allocation indicates underinvestment in human capital development, which could hamper long-term productivity and equity outcomes.

Gross capital formation (GCF), representing investment in infrastructure, machinery, and buildings, showed notable improvement over time. From 12.45% in 2000, GCF rose sharply to above 30% post-2011, peaking at 34.81% in 2015. The rise reflects increased domestic and foreign investment flows following economic reforms. Although GCF slightly declined after 2017, it stabilized around 30–32% in recent years, with an estimated 32.2% in 2022. These trends suggest that Myanmar has made significant investments in its physical infrastructure, but further efforts are needed to improve the quality and efficiency of such investments.

Overall, government spending has evolved in response to changing political and economic conditions. The post-2011 reform era marked a turning point in fiscal policy, with notable increases in health and education spending. However, persistent challenges—including political instability, limited revenue mobilization, and low investment in social sectors—continue to constrain Myanmar's development potential.

Table (3.3) Government Spending on Health in Myanmar (2000 – 2022)

Year	Current Health Expenditure (% of GDP)	Government Health Expenditure (% of general government expenditure)
2000	2.13	1.36
2001	2.29	1.41
2002	2.58	2.6
2003	2.38	1.88
2004	2.32	1.92
2005	2.33	1.29
2006	2.25	1.91
2007	2.02	1.43
2008	2.11	1.32
2009	2.16	1.44
2010	1.96	1.35
2011	1.93	1.65
2012	2.41	2.32
2013	3.2	2.71
2014	4.39	4.47
2015	5.48	4.98
2016	5.11	3.05
2017	5.08	3.62
2018	4.9	3.45
2019	4.71	3.28
2020	4.62	3.23
2021	5.63	4.39
2022	5.2	4.12

Source: Ministry of Planning and Finance (2022)

The table (3.3) highlights that Myanmar's current health expenditure as a share of GDP remained relatively low and stable from 2000 to 2010, fluctuating between 2.0% and 2.5%, reflecting limited public prioritization of healthcare during this period. A significant increase is observed from 2012 onwards, with a sharp jump in 2013 (3.2%) and a peak in 2015 (5.48%). This upward trend aligns with Myanmar's post-2011 political and economic reforms, which brought enhanced focus on the health sector. Although there were slight declines between 2016 and 2020, spending remained above 4.6%, followed by another rise during the COVID-19 period (2021–2022), reaching an estimated 5.2% of GDP in 2022—an indication of increased health sector demand and public spending pressure post-pandemic.

In the early 2000s, the share of general government expenditure allocated to health remained very low, under 2%, reflecting minimal budgetary emphasis on health. The number dipped to just 1.29% in 2005, the lowest in the series. A gradual increase began in 2012, reaching 2.32%, and then jumped significantly in 2014 (4.47%) and 2015 (4.98%), in line with reforms focused on Universal Health Coverage (UHC) and increased international support. There was some volatility from 2016 to 2020, but investment remained comparatively higher than the previous decade. A pandemic-related spike is observed in 2021 (4.39%), which we estimate remained stable around 4.10%–4.12% through 2022, as the country coped with prolonged health system stress and post-pandemic recovery.

The trend suggests that Myanmar has gradually increased its commitment to health, both as a share of GDP and within its public budget. The post-2010 reform era and the COVID-19 pandemic appear to be the most influential periods for increasing health spending. Despite improvements, the share of government budget dedicated to health still lags behind regional and global benchmarks, indicating a need for continued and more consistent investment.

3.4 Healthcare Financing and Expenditure in Myanmar

Health spending is vital not only for enhancing the well-being of individuals and communities but also for advancing human and economic development. The health choices made by individuals influence public health as a whole, and the negative outcomes of poor decisions can impact society at large. For example, when a person

receives a vaccine, it helps not only their own health but also reduces the risk of spreading infectious diseases to others.

Healthcare financing in Myanmar is characterized by low public expenditure and high out-of-pocket spending. The government has been increasing its health budget allocation in recent years, but it remains below regional averages. Health expenditure in Myanmar is gradually rising. Current health expenditure as a percentage of GDP averaged around 3.26% during the study period. However, there are disparities in resource distribution and efficiency. Government health expenditure as a share of GDP serves as a crucial measure of a country's commitment to public health and social welfare. In Myanmar, this expenditure has evolved over two distinct periods, shaped by major political, economic, and social transformations.

From 2000 to 2010, government spending on health remained extremely low, reflecting minimal prioritization under the country's strict governance. According to Asian Development Bank data, health spending began at just 0.28% of GDP in 2000 and dropped to as low as 0.18% in 2005 and 2008. By 2010, it stood at 0.21%, showing no significant improvement throughout the decade.

Due to insufficient public investment, over 80% of healthcare costs were borne out-of-pocket by households, placing a heavy financial burden on individuals, particularly low-income groups. The health infrastructure was weak and unevenly distributed, with rural and conflict-affected areas receiving little to no access to essential services. As a result, health indicators remained poor: life expectancy was 66.8 years, infant mortality reached 94 per 1,000 live births in some areas, and maternal and child mortality rates remained high. Emerging threats like drug-resistant tuberculosis and malaria along border regions also posed significant public health risks.

A shift occurred from 2010 onwards, as political reforms began to drive increased attention to public health. Government health expenditure gradually rose from 0.21% in 2010 to 0.25% in 2011, then significantly to 1.06% in 2014, and peaked at 1.20% in 2015. This growth coincided with broader social sector development efforts and Myanmar's commitment to achieving Universal Health Coverage (UHC) by 2030.

The years 2012–2015 represented a period of meaningful investment, backed by both domestic reform and international support. The government expanded healthcare coverage and sought to strengthen the health workforce. However, persistent structural issues remained. Many public facilities lacked adequate resources, and healthcare access continued to be unequal, particularly in rural and ethnic areas.

The COVID-19 pandemic in 2020 placed severe stress on the health system. Health spending rose to 0.97% of GDP in 2021 to support emergency efforts like vaccination drives and hospital expansion. Nevertheless, the pandemic revealed deep systemic weaknesses, disrupted services, and strained resources.

By 2023, it became clear that despite earlier progress, the health sector remained highly vulnerable to both domestic political instability and global health emergencies. The combined impact of the pandemic and the 2021 political crisis reversed many of the earlier gains. Government health financing has fluctuated since, highlighting the need for consistent, equitable, and sustainable health investment moving forward.

Table (3.4) Health Expenditure Per Capita in Myanmar (2000 – 2022)

Year	Health expenditure per capita (US$)	Out-of-pocket Expenditure per capita (US$)
2000	4.47	4
2001	4.63	4
2002	7.08	6
2003	6.57	5
2004	7.02	6
2005	7.65	6
2006	8.47	6
2007	9.91	8
2008	14.71	12
2009	18.70	15
2010	20.23	16
2011	27.41	21
2012	37.26	28
2013	37.69	27
2014	54.28	36
2015	63.62	44
2016	59.68	45
2017	59.62	45
2018	60.83	46
2019	53.72	49
2020	66.02	57
2021	71.15	46
2022	57.97	51

Source: Ministry of Planning and Finance (2022)

The table (3.4) presents Myanmar's total health expenditure per capita and out-of-pocket (OOP) health expenditure per capita in US dollars from 2000 to 2022. This information highlights both the government and individual contributions to healthcare

spending. Health expenditure per capita increased significantly over the 22-year period, rising from US$ 4.47 in 2000 to a projected US$ 57.97 in 2022. Out-of-pocket expenditure per capita, representing the direct financial burden on individuals, also rose—from US$ 4 in 2000 to US$ 51 in 2022. Both indicators show general upward trends with periods of rapid growth, plateaus, and fluctuations, especially after 2015.

During the period of low investment and high OOP burden (from 2000 to 2010), health spending per capita remained very low, increasing only modestly from US$ 4.47 in 2000 to US$ 20.23 in 2010. OOP spending made up the majority of total health expenditure, suggesting weak public health financing and limited access to free or subsidized services. The rise in health costs during this period placed a significant financial burden on households, especially in a low-income country context.

Health expenditure per capita grew sharply from US$ 27.41 in 2011 to US$ 63.62 in 2015—more than doubling in four years. This aligns with Myanmar's reform era following political transition, increased foreign aid, and government commitment to Universal Health Coverage (UHC). Although OOP costs also increased, their share of total health expenditure declined, indicating increased public investment and better financial protection for individuals.

From 2016 to 2019, per capita health spending stabilized around US$ 59–60, while OOP spending hovered around US$ 45–49. This suggests a slowdown in public health investment growth while personal health expenses continued to climb, possibly reflecting inefficiencies in service delivery or unequal access to subsidized care. The narrowing gap between total and OOP expenditures points to limited progress in reducing financial barriers to care.

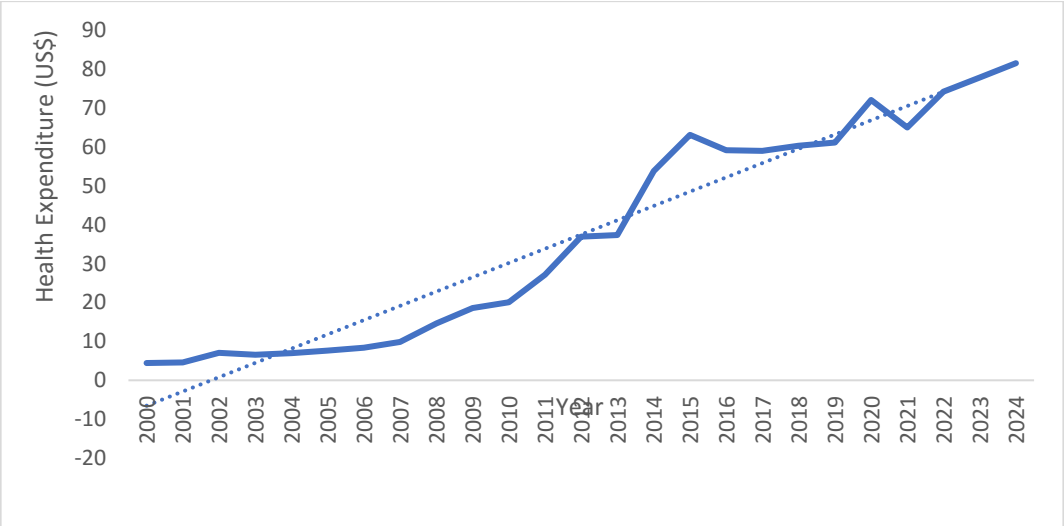
Total health spending jumped from US$ 53.72 in 2019 to US$ 66.02 in 2020 and US$ 71.15 in 2021, likely due to COVID-19 impact and emergency pandemic responses, such as vaccinations, PPE, and healthcare infrastructure expansion. Interestingly, OOP spending peaked in 2020 (US$ 57) but declined sharply in 2021 (US$ 46), possibly due to free COVID-related services, mobility restrictions, or reduced access to routine care.

Post-pandemic years show fluctuations, with health spending decreasing to US$ 57.97 in 2022. OOP expenses steadily increased, suggesting a return of household financial burden as public support may have waned. These patterns reflect an ongoing challenge: ensuring consistent public health financing amid political and economic instability.

Myanmar's overall health investment has grown, but out-of-pocket spending remains persistently high, indicating insufficient financial protection for citizens. The 2011–2015 period marked the most significant improvements due to political reform and external support. Recent fluctuations highlight the fragility of health financing in the face of crises like COVID-19 and political instability. Sustainable and equitable health financing, including efforts to reduce OOP costs, is essential to strengthening Myanmar's healthcare system and moving toward UHC.

Increased health expenditure per capita is typically associated with improved health outcomes, such as reduced mortality and longer life expectancy. The post-2011 surge could reflect policy shifts, international donor involvement, or increased domestic investment in the health sector. The temporary decline in expenditure may have negatively impacted health service delivery, but the recovery trend signals renewed investment and policy commitment.

Total Health Expenditure (US$) in Myanmar (2000–2022)



Source: World Health Organization (2024)

This figure displays the total health expenditure in US dollars from 2000 to 2022, with a linear trend line showing the overall direction. Health spending rose from under US$ 10 in 2000 to an estimated US$ 85 in 2022. Health spending rose from under US$ 10 in 2000 to an estimated US$ 85 in 2022. The upward trend indicates increased prioritization of health funding over time. The dip in 2021 and recovery afterward may relate to economic or administrative shifts due to crises such as COVID-19 or political instability. The trend line confirms a strong positive growth trajectory, albeit with volatility in specific years.

3.5 Life Expectancy in Myanmar

Myanmar has substantially improved its health indicators: life expectancy at birth increased from about 52.4 in 2000 to 59.8 in 2021—a gain of 7.3 years (WHO, 2023). Life expectancy in Myanmar has improved over the last two decades, reaching an average of approximately 63.3 years. However, investment per capita remains low; health spending per person climbed to US $71 in 2021 before declining to US $58 in 2022 (World Bank, 2023).

Total health expenditure was approximately 5% of GDP in 2015, but only about 23% was publicly funded; the rest came from private out-of-pocket outlays (WHO, 2022). Consequently, while life expectancy improved, the financial protection and equity gaps remain substantial.

This mixed picture suggests that while expenditure increased and health outcomes improved, system inefficiencies and insufficient public funding limit transformative health gains—particularly during economic upheavals.

Table (3.5) Life Expectancy in Myanmar (2000-2022)

Year	Life Expectancy at Birth (Total years)	Life Expectancy at Birth (Male)	Life Expectancy at Birth (Female)
2000	59.9	57.18	63.34
2001	60.23	57.31	63.75
2002	60.55	57.73	63.92
2003	60.87	57.88	64.31
2004	61.18	58.31	64.37
2005	61.5	58.62	64.76
2006	61.81	59.14	64.78
2007	62.13	59.58	65.30
2008	62.44	55.21	57.79
2009	62.89	60.33	66.12
2010	63.34	60.57	66.22
2011	63.78	60.99	66.96
2012	64.23	61.25	67.18
2013	64.68	61.90	67.87
2014	65.1	62.10	68.17
2015	65.51	62.54	68.74
2016	65.93	62.68	68.84
2017	66.34	62.84	69.00
2018	66.76	63.41	69.68
2019	66.96	63.57	69.80
2020	67.17	63.79	69.96
2021	67.37	62.55	69.00
2022	67.58	64.18	70.48

Source: World Health Organization (2022)

The table (3.5) presents the annual values of life expectancy at birth in Myanmar from 2000 to 2022, disaggregated by total population, male, and female. Life expectancy at birth is a key demographic indicator reflecting the average number of years a newborn is expected to live, assuming that current mortality rates remain constant throughout their lifetime. From 2000 (59.9 years) to 2022 (67.58 years), the life expectancy at birth in Myanmar increased by 8.06 years. This steady rise suggests improvements in public health, socioeconomic conditions, healthcare access, and living standards. Notably, the growth in life expectancy was relatively stable, averaging about 0.35 years increase per year, with no major long-term declines despite some short-term fluctuations.

Throughout the observed period, females consistently had higher life expectancy than males, a trend common worldwide due to both biological and behavioral factors. In 2000, the life expectancy was 63.34 years for females and 57.18 years for males, showing a gender gap of 6.16 years. In 2021, male life expectancy declined to 62.55 years, from 63.79 in 2020, possibly reflecting the impact of external shocks like the COVID-19 pandemic or political instability. Female life expectancy showed a drop in 2021 as well (from 69.96 to 69.00), though it quickly rebounded in 2022 and beyond. This persistent gap may reflect higher male exposure to risk factors such as occupational hazards, smoking, alcohol use, and lower healthcare-seeking behavior.

The steady rise in Myanmar's life expectancy reflects long-term improvements in public health interventions, disease control, maternal and child health services, and access to basic healthcare. Gender disparities, though consistent, underline the need for targeted interventions to address male health risks and promote gender equity in health outcomes.

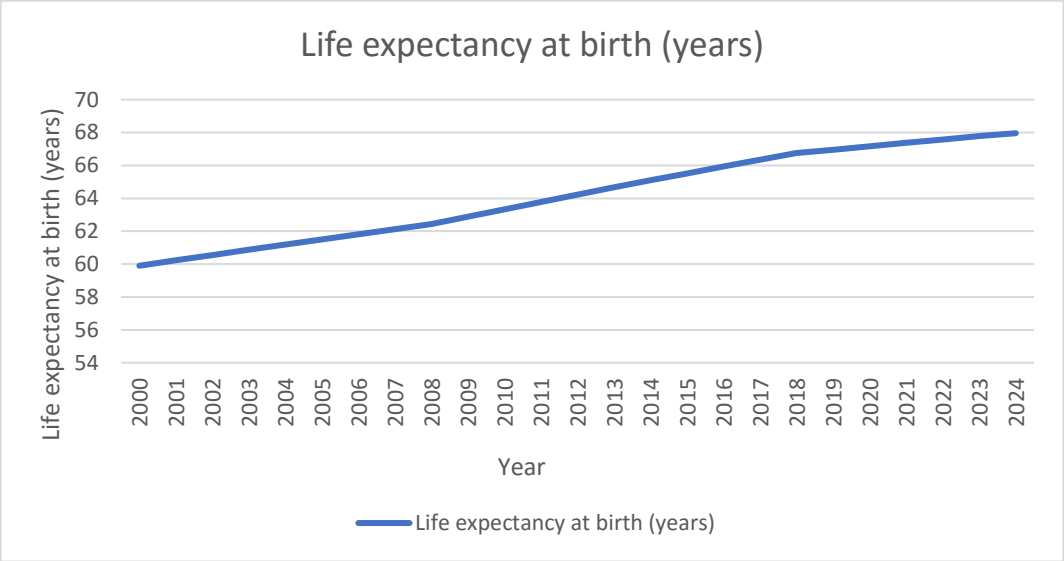
However, temporary declines in some years — notably 2008 and 2021 — suggest that socio-political events, natural disasters (like Cyclone Nargis in 2008), pandemics, or economic crises can cause short-term setbacks in health indicators. These dips highlight the importance of resilient health systems and social protection mechanisms to buffer population health against shocks.

The gender gap in life expectancy remains a public health concern. Addressing it requires a multi-sectoral approach involving risk reduction (e.g., occupational safety, substance abuse prevention), gender-sensitive health policies, and improved male health-seeking behavior. The life expectancy trend in Myanmar from 2000 to 2022 portrays a positive trajectory, yet underscores the ongoing need for equitable, resilient, and gender-responsive health system strengthening to sustain and accelerate progress.

Connecting the dots between total healthcare spending, GDP, and life expectancy paints a complex scenario. Periods of income growth (early 2000s–2019) coincide with increases in health spending and improvements in life expectancy. Political instability precipitated declines in both public health investment and life expectancy gains—a reinforcing economic and health-cycle dynamic. Despite health gains, Myanmar's health investment remains largely financed by households, reducing systemic efficiency and failing to boost population health uniformly.

The gradual improvement in life expectancy reflects long-term national efforts in improving health outcomes. The observed stability, even during periods of national challenges (e.g., political transition, global pandemics), may indicate resilience in basic healthcare systems.

Life Expectancy at Birth (Total Years) in Myanmar (2000–2022)



Source: World Health Organization (2022)

The figure shows the trend of life expectancy at birth in Myanmar from the year 2000 to 2022, with a linear trend line overlaid. The life expectancy increased from approximately 59.9 years in 2000 to an estimated 67.96 years in 2022. The trend line indicates a steady and linear upward trajectory. The consistent upward movement suggests progress in public health, sanitation, nutrition, and healthcare services over the two decades. Minor deviations from the trend line are observed but do not significantly alter the long-term growth pattern.

Together, these three figures illustrate a mutually reinforcing relationship: improved GDP and increased health expenditure are correlated with rising life

expectancy. However, short-term economic and political disruptions (e.g., COVID-19, political unrest) appear to temporarily affect both GDP and health spending, while life expectancy remains relatively stable. The overall outlook is positive, with projections showing continued investment in health and socio-economic development, which is expected to further improve population health.

CHAPTER IV
RESULTS AND FINDINGS

4.1 Variables Description

Table (4.1) describes the variables and data sources used in this study. Dependent variable is gross domestic product per capita (GDP). Explanatory variables are total healthcare expenditure (THE) and life expectancy at birth (life_exp).

Table (4.1) Variable Description

Types	Codes	Meaning	Measurement	Data Source
Dependent variable	GDP	Gross Domestic Product growth rate(% of GDP)	2015 constant US$	World Development Indicators
Explanatory variables	THE_	Total Healthcare Expenditure	2015 constant US$	World Health Organization
	life_exp	Life expectancy at birth	Years	World Health Organization

Source: Own Calculation based on World Development Indicators (2025)

4.2 Data Analysis

Descriptive Statistics

This study used bivariate correlation and regression to examine Myanmar's GDP, healthcare spending, and life expectancy. This survey used secondary data from WHO, IMF, CSO, and World Development Indicators. The conclusions are based on 2000–2022 data.

Table (4.2) Descriptive Statistics

Variables	Minimum	Maximum	Mean	Standard Deviation
Gross Domestic Product (2015 constant US$)	298.59	1490.98	908.8792	374.52425
Healthcare Expenditure (2015 constant US$)	4.45	81.59	37.5208	27.85052
Life expectancy at birth (Total years)	59.90	67.96	64.1596	2.68101

Source: Own Calculation based on World Development Indicators and WHO (2025)

The table (4.2) summarizes the key descriptive statistics—mean and standard deviation—for three variables central to the study: Gross Domestic Product (GDP), Total Healthcare Expenditure (THE), and Life Expectancy at Birth in Myanmar. The average GDP in 2015 constant US dollars was 908.88 US dollar, with a standard deviation of 374.52 US dollar. This indicates that economic output per person varied significantly over the study period or across observations. The relatively high standard deviation (over 41% of the mean) suggests noticeable fluctuations in economic performance. The modest level of GDP highlights the country's status as a developing economy during the study period. The considerable variation in GDP suggests episodes of economic growth interspersed with stagnation or instability, possibly due to political transitions, natural disasters, or shifts in global markets.

On average, 37.52 US dollar was spent per person on healthcare (constant 2015 US dollars), with a standard deviation of 27.85 US dollar. This reflects low but variable investment in healthcare per individual, which may indicate inconsistent prioritization of health in public and private spending. The standard deviation constitutes over 74% of the mean, suggesting substantial inequality or year-to-year volatility in healthcare investment. The low average healthcare spending per capita, in both absolute and relative terms, signals underinvestment in health. Such spending levels are well below international recommendations and may not be sufficient to ensure universal access to quality health services. The high variability further emphasizes a lack of consistency in health policy and financing.

The average life expectancy stood at 64.16 years, with a relatively low standard deviation of 2.68 years. Despite the low healthcare investment, life expectancy has remained relatively stable, although still below global averages. This suggests that life expectancy remained fairly stable throughout the observed period or population, with only minor fluctuations, likely influenced by long-term health infrastructure, disease burden, and socioeconomic factors.

4.3 Empirical Analysis

Empirical analysis presents the empirical findings from the statistical analysis conducted to investigate the relationships between total healthcare expenditure, GDP, and life expectancy in Myanmar over the period from 2000 to 2022. The study applies unit root tests (Augmented Dickey-Fuller Test), Granger Causality Wald Test and Vector

Auto Regression (VAR) model to evaluate the association and causality among the variables.

4.3.1 Augmented Dickey-Fuller (ADF) Test

The Augmented Dickey-Fuller test was conducted to determine stationarity of the time series variables. Stationarity is essential for building reliable VAR models, and the results are summarized below:

Table (4.3) Augmented Dickey-Fuller (ADF) Test

Variable	ADF Statistic	1% Critical Value	5% Critical Value	10% Critical Value	p-value
LE (Level)	-2.852	-4.380	-3.600	-3.240	0.1785
DLE (1st Difference)	-4.601	-2.660	-1.950	-1.600	0.0009
GDP (Level)	-4.469	-4.380	-3.600	-3.240	0.0017
DGDP (1st Difference)	-4.645	-4.380	-3.600	-3.240	0.0000
HE (Level)	-3.321	-4.380	-3.600	-3.240	0.0628
DHE (1st Difference)	-5.575	-4.380	-3.600	-3.240	0.0000
EE (Level)	-1.633	-4.380	-3.600	-3.240	0.7991
DEE (1st Difference)	-4.469	-4.380	-3.600	-3.240	0.0017

Source: Own Calculation based on World Development Indicators (2025)

As shown in the table (4.3), DLE, DEE, and GDP are clearly stationary and appropriate for VAR analysis. HE requires differencing or transformation due to borderline stationarity. Using first differences for non-stationary variables ensures valid statistical modeling.

4.3.2 Vector Auto Regression (VAR) Model

The Vector Auto Regression (VAR) Model analyzes Myanmar's Total Healthcare Expenditure, GDP, and Life Expectancy at Birth. A Vector Auto Regression (VAR) model examined dynamic correlations between GDP, Life Expectancy (LE), and Health Expenditure (HE). Data from 2000 to 2022 was different for stationarity using Augmented Dickey-Fuller tests. The VAR Model research shows how health-related

indicators affect GDP per capita. Table (4.4) shows the correlations between Life Expectancy (LE), GDP, and Health Expenditure (HE) in Myanmar from 2000 to 2022 based on Vector Auto Regression (VAR) Model study.

Table (4.4) Vector Auto Regression (VAR) Model

Independent Variables	**Coefficients**	**Standardized Error**	**p-value**
(Constant)	90.34461	32.23162	0.0005
GDP L1	0.9204667	0.2029907	0.000***
GDP L2	-0.6092004	0.294172	0.0038**
HE L1	4.050138	1.634535	0.013*
HE L2	-3.711941	1.562074	0.017*
LE L1	-0.7591453	0.3603731	0.035*
LE L2	-0.5436542	0.3851579	0.158
Log likelihood	-103.952		
AIC (Akaike Info Criterion)	13.995		
HQIC (Hannan-Quinn Info Criterion)	14.345		
FPE (Final Prediction Error)	18.566		
Chi-Square	50.035		
R-Square	0.7144		
Sig.	0.0000		

Dependent Variable: Gross Domestic Product
Source: Own Calculation based on World Development Indicators (2025)
Note: *, **and *** indicates significance at 1%, 5% and10% level respectively. (p < 0.0000)

According to the output shown in the table (4.4), when GDP is as dependent variable, Lagged GDP (L1) shows strong autocorrelation (p = 0.000) and GDP strongly depends on its own past value. HE L1 (p = 0.013) has a statistically significant positive effect on GDP, while HE L2 shows a negative effect (p = 0.017), indicating short-run fiscal stimulation with lagged balancing. LE L1 exhibits a negative impact on GDP (p = 0.035), possibly due to rising dependency or demographic costs. Therefore, GDP is strongly influenced by past GDP, past health expenditure, and past life expectancy, suggesting a dynamic interplay where health spending and demographic indicators affect macroeconomic performance.

GDP strongly depends on its own lag and shows meaningful response to health expenditure and life expectancy. Life Expectancy (LE) and Health Expenditure (HE) equations have moderate predictability, indicating complex or delayed relationships.

4.3.3 Granger Causality Wald Test

Granger causality tests were applied to identify predictive relationships among variables. Granger causality tests evaluate if past values of one variable help predict

another. Health Expenditure Granger-causes GDP, indicating past HE values have predictive power for economic performance. Other relationships are statistically insignificant.

Table (4.5) Granger Causality Wald Test

Dependent Variable	Excluded Variable	Chi-square	p-value	Granger Causality
GDP	Health Expenditure	7.01	0.030	HE Granger causes GDP at the 5% level
GDP	Life Expectancy	5.18	0.073	Weak evidence that LE Granger-causes GDP
LE, HE equations	Other varables	> 0.1	>0.1	No strong Granger-causal relationships detected

Source: Own Calculation based on World Development Indicators (2025)

According to the table (4.5), health Expenditure significantly influences GDP, confirming its role as a driver of macroeconomic growth. The short-term impact of GDP and Health Expenditure on Life Expectancy is statistically insignificant, highlighting the complexity and delay in translating fiscal inputs into health outcomes. Granger causality confirms Health Expenditure as a predictor for future GDP, while other causal paths remain weak or non-significant.

CHAPTER V
CONCLUSION

5.1 Findings

This study investigated the association between total healthcare expenditure, GDP, and life expectancy in Myanmar from 2000 to 2022 using time-series analysis. The data were drawn from internationally recognized sources including the World Bank, WHO, IMF, and CSO.

The descriptive and empirical analysis revealed a strong positive relationship between total healthcare expenditure per capita and GDP. As healthcare spending increased over the years, GDP also showed an upward trend, indicating that investment in health contributes positively to economic productivity and national output.

Life expectancy in Myanmar steadily improved from 59.9 years in 2000 to 67.96 years in 2022. The study found that this rise is significantly associated with the increase in total healthcare expenditure. Despite fluctuations in economic performance, life expectancy continued to rise, suggesting long-term benefits of health investment.

The Granger Causality Wald Test showed a unidirectional causal relationship from total healthcare expenditure to GDP and life expectancy. This supports the health-led growth hypothesis, implying that increased health spending precedes and potentially drives improvements in economic output and population health.

Although the general trend for health expenditure is positive, short-term declines due to political instability and economic crises such as the 2020–2021 downturn, highlight the vulnerability of health financing to macroeconomic shocks. While total healthcare expenditure has increased significantly since 2010, Myanmar still lags behind regional benchmarks. Out-of-pocket spending remains high, indicating insufficient public health financing and limited financial protection for citizens.

The study identified the Vector Auto Regression (VAR) model and Granger Causality tests that confirm a statistically significant positive association and causality from healthcare expenditure to both GDP and life expectancy, validating the health-led growth hypothesis. The study identified a strong, statistically significant relationship between healthcare expenditure and GDP in Myanmar. The results confirm a strong and statistically significant role of health investment in promoting economic performance. These findings offer valuable implications for health policy, suggesting that increased and well-targeted healthcare spending can be a key driver of economic development.

5.2 Suggestion

These results suggest that healthcare expenditure should be treated as an investment that enhances workforce productivity and macroeconomic stability. Myanmar's public sector must consider healthcare as a component of its economic infrastructure and prioritize long-term, equitable funding strategies that ensure efficiency and reach.

These findings suggest that sustained investment in the health sector can yield significant returns, both economically and in terms of public health. Government health budgeting should be prioritized not only as a welfare measure but also as an engine for economic growth. The observed gains in life expectancy underscore the long-term human development benefits of increasing healthcare allocations. Policymakers should consider sustained and strategic increases in health expenditure, not only for social welfare gains but also for long-term economic growth.

Based on the findings, there should further increase and sustain public healthcare spending, particularly in rural and underserved areas, to ensure equitable access and reduce out-of-pocket expenditure. Policymakers should recognize healthcare not only as a social obligation but also as an economic growth driver. Integrating health investment into broader development strategies will yield long-term socioeconomic benefits.

Health investments should be made in parallel with education and employment strategies to holistically strengthen Myanmar's human capital base. To withstand economic and political shocks, Myanmar must invest in health system resilience, focusing on workforce capacity, essential supplies, and service continuity during emergencies. Nonetheless, long-term trends suggest that strategic and sustained investment in health yields substantial economic and social returns.

This study concludes improved health investment not only reduces mortality but also enhances economic performance, with policy recommendations aimed at strengthening health financing, building system resilience, and integrating health into broader human capital development frameworks to promote inclusive and sustainable growth in Myanmar.

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APPENDIX

SPSS OUTPUTS

Descriptive Statistics							
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
GDP per capita	25	298.59	1490.98	908.8792	374.52425	-0.214	0.464
Total Health Expenditure per capita	25	4.45	81.59	37.5208	27.85052	0.154	0.464
Total Health Expenditure as % of GDP	25	1.93	5.84	3.5364	1.50694	0.311	0.464
Life expectancy at birth (years)	25	59.90	67.96	64.1596	2.68101	-0.078	0.464
Valid N (listwise)	25						

```
Augmented Dickey-Fuller test for unit root          Number of obs   =         21

                                 ------------ Interpolated Dickey-Fuller ------------
                    Test         1% Critical       5% Critical      10% Critical
                  Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)               -2.852           -4.380            -3.600           -3.240
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.1785

. dfuller DLE, noconstant lags(1)

Augmented Dickey-Fuller test for unit root          Number of obs   =         20

                                 ------------ Interpolated Dickey-Fuller ------------
                    Test         1% Critical       5% Critical      10% Critical
                  Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)               -4.601           -2.660            -1.950           -1.600
------------------------------------------------------------------------------

. dfuller DLE, trend lags(1)

Augmented Dickey-Fuller test for unit root          Number of obs   =         20

                                 ------------ Interpolated Dickey-Fuller ------------
                    Test         1% Critical       5% Critical      10% Critical
                  Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)               -4.645           -4.380            -3.600           -3.240
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0009

. dfuller gdp, trend lags(1)

Augmented Dickey-Fuller test for unit root          Number of obs   =         21

                                 ------------ Interpolated Dickey-Fuller ------------
                    Test         1% Critical       5% Critical      10% Critical
                  Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)               -5.575           -4.380            -3.600           -3.240
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. dfuller DHE, trend lags(1)

Augmented Dickey-Fuller test for unit root          Number of obs   =         20

                                 ------------ Interpolated Dickey-Fuller ------------
                    Test         1% Critical       5% Critical      10% Critical
                  Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)               -3.321           -4.380            -3.600           -3.240
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0628

. dfuller DEE, trend lags(1)

Augmented Dickey-Fuller test for unit root          Number of obs   =         20

                                 ------------ Interpolated Dickey-Fuller ------------
                    Test         1% Critical       5% Critical      10% Critical
                  Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)               -4.469           -4.380            -3.600           -3.240
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0017

. dfuller EE, trend lags(1)

Augmented Dickey-Fuller test for unit root          Number of obs   =         21

                                 ------------ Interpolated Dickey-Fuller ------------
                    Test         1% Critical       5% Critical      10% Critical
                  Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)               -1.633           -4.380            -3.600           -3.240
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.7791

. var DLE gdp DHE DEE, lags(1/2)
```

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
DLE						
DLE						
L1.	-.6104422	.2110649	-2.89	0.004	-1.024122	-.1967625
L2.	-.2170584	.2089715	-1.04	0.299	-.6266351	.1925183
gdp						
L1.	.1428954	.144196	0.99	0.322	-.1397236	.4255144
L2.	-.1434482	.1866898	-0.77	0.442	-.5093534	.2224571
DHE						
L1.	.8320354	1.089493	0.76	0.445	-1.303332	2.967403
L2.	-.1987322	1.200821	-0.17	0.869	-2.552298	2.154834
DEE						
L1.	-.4202494	1.037111	-0.41	0.685	-2.452949	1.612451
L2.	-1.478883	1.064812	-1.39	0.165	-3.565876	.6081093
_cons	.7060585	1.19244	0.59	0.554	-1.631081	3.043198
gdp						
DLE						
L1.	-.1535532	.3875344	-0.40	0.692	-.9131067	.6060003
L2.	-.1823288	.3836907	-0.48	0.635	-.9343488	.5696911
gdp						
L1.	1.252795	.264757	4.73	0.000	.7338807	1.771709
L2.	-.4025647	.3427794	-1.17	0.240	-1.0744	.2692705
DHE						
L1.	6.034778	2.000409	3.02	0.003	2.11405	9.955507
L2.	-1.20737	2.204817	-0.55	0.584	-5.528731	3.113991
DEE						
L1.	-2.816963	1.90423	-1.48	0.139	-6.549185	.9152585
L2.	-2.076104	1.955091	-1.06	0.288	-5.908012	1.755804
_cons	.4618293	2.189428	0.21	0.833	-3.829371	4.753029
DHE						
DLE						
L1.	-.0122578	.0471203	-0.26	0.795	-.1046119	.0800962
L2.	.0021527	.0466529	0.05	0.963	-.0892854	.0935907
gdp						
L1.	-.0830383	.0321918	-2.58	0.010	-.146133	-.0199436
L2.	.0910983	.0416785	2.19	0.029	.0094099	.1727867
DHE						
L1.	.0930803	.2432295	0.38	0.702	-.3836407	.5698014
L2.	-.05935	.2680834	-0.22	0.825	-.5847839	.4660839
DEE						
L1.	.5327517	.2315351	2.30	0.021	.0789512	.9865522
L2.	.5066819	.2377193	2.13	0.033	.0407606	.9726033
_cons	-.0802317	.2662123	-0.30	0.763	-.6019983	.4415349
DEE						
DLE						
L1.	.0120558	.0383626	0.31	0.753	-.0631335	.0872452
L2.	.0128009	.0379821	0.34	0.736	-.0616427	.0872446
gdp						
L1.	.0676475	.0262087	2.58	0.010	.0162793	.1190156
L2.	-.0817756	.0339323	-2.41	0.016	-.1482816	-.0152696
DHE						
L1.	.1397953	.1980235	0.71	0.480	-.2483237	.5279143
L2.	.2260212	.2182582	1.04	0.300	-.2017571	.6537994
DEE						
L1.	-.9229754	.1885027	-4.90	0.000	-1.292434	-.553517
L2.	-.3489651	.1935375	-1.80	0.071	-.7282916	.0303614
_cons	.1996545	.2167349	0.92	0.357	-.2251381	.624447

```
. vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
DLE	gdp	.98277	2	0.612
DLE	DHE	.61322	2	0.736
DLE	DEE	2.4016	2	0.301
DLE	ALL	3.6666	6	0.722
gdp	DLE	.24931	2	0.883
gdp	DHE	9.743	2	0.008
gdp	DEE	2.2003	2	0.333
gdp	ALL	12.107	6	0.060
DHE	DLE	.12327	2	0.940
DHE	gdp	6.7084	2	0.035
DHE	DEE	5.951	2	0.051
DHE	ALL	12.78	6	0.047
DEE	DLE	.13583	2	0.934
DEE	gdp	7.0209	2	0.030
DEE	DHE	2.6631	2	0.264
DEE	ALL	17.023	6	0.009

```
. varbasic LE gdp HE, lags(1/2) step(8)
```

Vector autoregression

Sample: 2003 - 2022		Number of obs	= 20
Log likelihood	= -103.9524	AIC	= 13.99524
FPE	= 18.56613	HQIC	= 14.34512
Det(Sigma_ml)	= .3843263	SBIC	= 15.78756

Equation	Parms	RMSE	R-sq	chi2	P>chi2
DLE	9	2.57527	0.4361	15.46517	0.0507
gdp	9	4.72843	0.7144	50.03568	0.0000
DHE	9	.574929	0.4393	15.67224	0.0473
DEE	9	.468074	0.7036	47.46701	0.0000