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Project Report
Data Visualization

Comprehensive Analysis of Macroeconomics Dynamics and Trade Performance

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ABBREVIATIONS AND SYMBOLS

- GDP : Gross Domestics Product
- GNP : Gross National Product
- ASEAN : Asian Southeast Association Nation
- FDI : Foreign Direct Investment
- SME : Small Meduim Enterprise
- CDC : Council for Development of Cambodia
- IDP : Industrial Development Policy
- RGC : Royal Government of Cambodia
- EDS : Cambodia Economics Diplomacy Strategy
- COVID-19 : Coronavirus Disease 2019
- Power BI : Power Business Intelligence
- PPP : Power Purchasing Parities
- US : United State
- VAT : Value-Added Tax
- AUD : Australian Dollar
- HKD : Hong Kong Dollar
- KRW : Korean Won
- JPY : Japanese Yen
- SDR : Special Drawing Right
- AFTA : ASEAN Free Trade Area
- GSP : Generalized System of Preferences
- WTO : World Trade Agreement
- CPI : Consumer Price Index

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ABSTRACT

This study presents a comprehensive analysis of Cambodia's macroeconomic and trade performance, identifying key challenges and opportunities that shape the nation's economic landscape. The analysis highlights significant hurdles, such as rising inflation, slow growth in government taxation revenue, high unemployment rates, currency depreciation, and Cambodia's classification as a lower-middle-income country. These challenges necessitate targeted policy interventions aimed at stabilizing inflation, enhancing revenue collection, creating jobs, stabilizing the currency, and fostering inclusive economic development.

Conversely, the study identifies promising opportunities arising from Cambodia's active participation in multiple trade agreements and notable growth across agriculture, industry, and services sectors. The reduction in tariffs and increased investment from these agreements can enhance export competitiveness and attract foreign direct investment, driving economic expansion. Additionally, the observed decrease in the inflation rate at the start of 2024 indicates improving economic stability, which can boost consumer and business confidence.

The study also acknowledges several limitations, including insufficient data availability, limited understanding of domain knowledge, a short-term timeframe, challenges in integrating multiple time series data into Power BI dashboards, and limited insights derived from data visualization and analysis. Addressing these limitations in future research will enhance the robustness and comprehensiveness of the analysis, leading to more accurate and actionable conclusions.

Based on the findings, the study provides detailed recommendations and strategies for both the government and businesses to address the identified challenges and leverage the opportunities. For the government, these include implementing monetary policies to control inflation, reforming the tax code, creating job programs, stabilizing the currency, and promoting economic diversification. For businesses, recommended strategies include cost management, effective tax planning, skill development, local sourcing, and exploring export opportunities.

In conclusion, while Cambodia faces several economic challenges, the opportunities available through strategic trade participation and sectoral growth provide a solid foundation for future economic development. By addressing the existing challenges and capitalizing on the opportunities, Cambodia can achieve sustainable economic growth and improve the living standards of its population.

CHAPTER 01: INTRODUCTION

1.1.) Background Information

Macroeconomics is a branch of economics that studies the behavior of an overall economy, which encompasses markets, businesses, consumers, and governments. Macroeconomics examines economy-wide phenomena such as inflation, price levels, rate of economic growth, national income, gross domestic product (GDP), and changes in unemployment.

There are several key takeaways of macroeconomics such following:

- Macroeconomics is the branch of economics that deals with the structure, performance, behavior, and decision-making of the whole, or aggregate, economy.
- The two main areas of macroeconomic research are long-term economic growth and shorter-term business cycles.
- Macroeconomics in its modern form is often defined as starting with John Maynard Keynes and his theories about market behavior and governmental policies in the 1930s; several schools of thought have developed since.
- In contrast to macroeconomics, microeconomics is more focused on the influences on and choices made by individual actors—such as people, companies, and industries—in the economy.

As the term implies, macroeconomics is a field of study that analyzes an economy through a wide lens. This includes looking at variables like unemployment, import, export, exchange rate, GDP, and inflation. In addition, macro-economists develop models explaining the relationships between these factors.

These models, and the forecasts they produce, are used by government entities to aid in constructing and evaluating economic, monetary, and fiscal policy. Businesses use the models to set strategies in domestic and global markets, and investors use them to predict and plan for movements in various asset classes.

Properly applied, economic theories can illuminate how economies function and the long-term consequences of particular policies and decisions. Macroeconomic theory can also help individual businesses and investors make better decisions through a more thorough understanding of the effects of broad economic trends and policies on their own industries.

While the term "macroeconomics" dates back to the 1940s, many of the field's core concepts have been subjects of study for much longer. Topics like unemployment, prices, growth, and trade have concerned economists since the beginning of the discipline in the 1700s. Elements of earlier work from Adam Smith and John Stuart Mill addressed issues that would now be recognized as the domain of macroeconomics.

In its modern form, macroeconomics is often defined as starting with John Maynard Keynes and his book *The General Theory of Employment, Interest, and Money* in 1936. In it, Keynes explained the fallout from the Great Depression, when goods went unsold and workers were unemployed. Throughout the 20th century, Keynesian economics, as Keynes' theories became known, diverged into several other schools of thought. Before the popularization of Keynes' theories, economists generally did not differentiate between microeconomics and macroeconomics. The same microeconomic laws of supply and demand that operate in individual goods markets were understood to interact between individual markets to bring the economy into a general equilibrium, as described by Leon Walras.

The link between goods markets and large-scale financial variables such as price levels and interest rates was explained through the unique role that money plays in the economy as a medium of exchange by economists such as Knut Wicksell, Irving Fisher, and Ludwig von Mises.

Macroeconomics differs from microeconomics, which focuses on smaller factors that affect choices made by individuals. Individuals are typically classified into subgroups, such as buyers, sellers, and business owners. These actors interact with each other according to the laws of supply and demand for resources, using money and interest rates as pricing mechanisms for coordination. Factors studied in both microeconomics and macroeconomics typically influence one another.

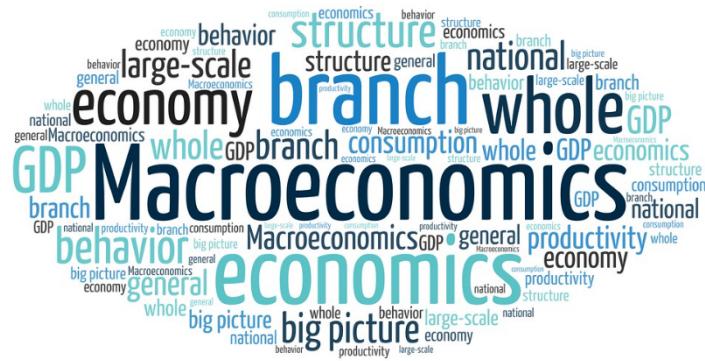


Figure 1: Wordcloud of Macroeconomics



Figure 2: Macroeconomics Elements

A key distinction between microeconomics and macroeconomics is that macroeconomic aggregates can sometimes behave in very different ways or even the opposite of similar microeconomic variables. For example, Keynes referenced the so-called Paradox of Thrift, which argues that individuals save money to build wealth on a microeconomic level. However, when everyone tries to increase their savings at once, it can contribute to a slowdown in the economy and less wealth in the aggregate, macroeconomic level. This is because there would be a reduction in spending, affecting business revenues, and lowering worker pay.

Likewise, it can be invaluable to understand which theories are currently in favor, and how they may be influencing a particular government administration. Such economic theories can say much about how a government will approach taxation, regulation, government spending, and similar policies. By better understanding economics and the ramifications of economic decisions, investors can get at least a glimpse of the probable future and act accordingly with confidence.

The field of macroeconomics is organized into many different schools of thought, with differing views on how the

markets and their participants operate.

- **Classical:** Classical economists held that prices, wages, and rates are flexible and markets tend to clear unless prevented from doing so by government policy; these ideas build on Adam Smith's original theories. The term "classical economists" is not actually a school of macroeconomic thought but a label applied first by Karl Marx and later by Keynes to denote previous economic thinkers with whom they disagreed.
- **Keynesian:** Keynesian economics was founded mainly based on the works of John Maynard Keynes and was the beginning of macroeconomics as a separate area of study from microeconomics. Keynesians focus on aggregate demand as the principal factor in issues like unemployment and the business cycle. Keynesian economists believe that the business cycle can be managed by active government intervention through fiscal policy, where governments spend more in recessions to stimulate demand or spend less in expansions to decrease it. They also believe in monetary policy, where a central bank stimulates lending with lower rates or restricts it with higher ones. Keynesian economists also believe that certain rigidities in the system, particularly sticky prices, prevent the proper clearing of supply and demand.
- **Monetarist:** is a branch of Keynesian economics credited mainly to the works of Milton Friedman. Working within and extending Keynesian models, Monetarists argue that monetary policy is generally a more effective and desirable policy tool to manage aggregate demand than fiscal policy. However, monetarists also acknowledge limits to monetary policy that make fine-tuning the economy ill-advised and instead tend to prefer adherence to policy rules that promote stable inflation rates.
- **New Classical:** is a school along with the New Keynesians, is mainly built on integrating microeconomic foundations into macroeconomics to resolve the glaring theoretical contradictions between the two subjects. The New Classical school emphasizes the importance of microeconomics and models based on that behavior. New Classical economists assume that all agents try to maximize their utility and have rational expectations, which they incorporate into macroeconomic models. New Classical economists believe that unemployment is largely voluntary and that discretionary fiscal policy destabilizes, while inflation can be controlled with monetary policy.
- **New Keynesian:** The New Keynesian school also attempts to add microeconomic foundations to traditional Keynesian economic theories. While New Keynesians accept that households and firms operate based on rational expectations, they still maintain that there are a variety of market failures, including sticky prices and wages. Because of this "stickiness," the government can improve macroeconomic conditions through fiscal and monetary policy.
- **Austrian:** The Austrian School is an older school of economics that is seeing some resurgence in popularity. Austrian economic theories mainly apply to microeconomic phenomena. However, like the so-called classical economists, they never strictly separated microeconomics and macroeconomics. Austrian theories also have important implications for what are otherwise considered macroeconomic subjects. In particular, the Austrian business cycle theory explains broadly synchronized (macroeconomic) swings in economic activity across markets due to monetary policy and the role that money and banking play in linking (microeconomic) markets to each other and across time.

In summary, macroeconomics and trade performance studies the behavior of entire economies, including markets, businesses, consumers, and governments. It focuses on broad economic indicators such as inflation, GDP, national income, and unemployment. The field aims to understand and improve economic performance through models that influence government policies, business strategies, and investment decisions. The modern study of macroeconomics began with John Maynard Keynes in the 1930s, who introduced theories on market behavior and government

intervention. Various schools of thought have since developed, including Classical, Keynesian, Monetarist, New Classical, New Keynesian, and Austrian, each offering different perspectives on economic management. Macroeconomics differs from microeconomics, which examines individual economic actors and their decisions. However, both fields are interconnected, and insights from macroeconomics help explain the broader economic context in which individual decisions are made.

1.2.) Objectives

There are several key objective points that we aim to construct and provide any benefits to the reader after seeing and reading this research papers in macroeconomics field such following:

- Examine the relationship between macroeconomic variables and trade performance indicators.
- Identify the drivers of trade performance within broader macroeconomic dynamics.
- Assess the impact of macroeconomic policies on trade flows and competitiveness.
- Analyze the effects of trade agreements and policies on economic outcomes.
- Explore the role of stability, financial markets, and regulations in shaping trade dynamics.
- Assess the impact of macroeconomic policies on trade flows and competitiveness.

1.3.) Research Problem

The global economy is intricately woven with the threads of macroeconomic dynamics and trade performance, each influencing the other in a continuous feedback loop. Here are several research question that we are going to explore the solution such following:

- How do key macroeconomic indicators such as GDP growth, inflation rate, and unemployment rate influence Cambodia's international trade performance?
- What is the relationship between exchange rate fluctuations and Cambodia's trade balances?
- To what extent do changes in international trade (imports and exports) impact Cambodia's overall economic growth?
- How do trade balances reflect the broader economic health of Cambodia in the context of its macroeconomic indicators?
- What are the short-term and long-term effects of macroeconomic shocks on Cambodia's trade performance?

1.4.) Significance of Research

In this research paper, there are several significance key points that we can deduce from this paper after reading such following:

- **Informs Government Policies (Fiscal & Monetary):** Research in macroeconomics is crucial for shaping effective government policies. Fiscal policies, which involve government spending and taxation, are designed based on macroeconomic research to stimulate economic growth, control inflation, and reduce unemployment. Similarly, monetary policies, which are managed by central banks through the regulation of money supply and interest rates, rely on macroeconomic insights to maintain economic stability. For example, during a recession, research can inform decisions to lower interest rates or increase government spending to boost economic activity.

- **Guides Business Decisions (Investment & Strategy):** Businesses depend on macroeconomic research to make informed decisions about investments and strategic planning. Understanding the broader economic environment helps companies forecast demand, assess risks, and identify growth opportunities. For instance, if research indicates an upcoming economic downturn, businesses might delay expansion plans or focus on cost-saving measures. Conversely, signs of economic growth can lead to increased investment in new projects and hiring.
- **Understanding Economic Trends & Patterns:** Macroeconomic research helps identify and analyze trends and patterns within the economy, such as inflation rates, employment levels, and GDP growth. By understanding these trends, policymakers and business leaders can make better-informed decisions. For example, tracking inflation trends helps central banks set appropriate interest rates, while understanding employment patterns can guide workforce development programs.
- **Assesses a Country's Competitiveness in Global Markets:** Macroeconomic research evaluates a country's position in the global marketplace by examining factors such as trade balances, exchange rates, and productivity levels. This assessment helps policymakers develop strategies to enhance competitiveness, such as investing in technology, education, and infrastructure. For businesses, understanding global competitiveness informs decisions about entering new markets and adjusting strategies to remain competitive.
- **Identifies Opportunities for Economic Growth:** Research in macroeconomics highlights potential areas for economic expansion by identifying sectors with growth potential, technological innovations, and emerging markets. Governments can use this information to create policies that encourage investment and development in these areas. Similarly, businesses can leverage this research to enter new markets, develop new products, or adopt innovative technologies that drive growth.
- **Addresses Imbalances in Trade Relationships:** Macroeconomic research can identify imbalances in trade relationships, such as trade deficits or surpluses, and suggest measures to address them. Understanding the causes and consequences of these imbalances enables policymakers to negotiate better trade deals, implement tariffs or subsidies, and take other actions to ensure fair and balanced trade. For businesses, this research helps in strategizing export and import activities to mitigate risks associated with trade imbalances.

In summary, this research plays a vital role in shaping government policies, guiding business decisions, understanding economic trends, assessing global competitiveness, identifying growth opportunities, and addressing trade imbalances. Its insights are essential for fostering economic stability, growth, and overall well-being.

CHAPTER 02: LITERATURE REVIEWS

2.1.) Relevant Journal Papers

The literature on comprehensive analysis of macroeconomics and trade performance encompasses a broad array of themes and methodologies, addressing the intricate relationships between economic policies, growth, trade dynamics, and global integration. This review seeks to provide a comprehensive analysis of the key theoretical frameworks, empirical findings, and contemporary debates in these domains. Here are some relevant literature reviews of the researchers related to these topics such as:

First research paper which focusing on topic The 2021-22 Cambodia Development Program Progress Report outlines Australia's efforts in supporting Cambodia's recovery from the COVID-19 pandemic. Key initiatives included a successful vaccination campaign, with nearly 98% of the targeted adult population vaccinated by the end of 2021, which alleviated pressure on the healthcare system. The pandemic severely impacted Cambodia's economy, but increased lending in agriculture and agro-processing fostered diversification. Australia's support also enabled Cambodia's first nationwide cash transfer program, benefiting 686,992 households and contributing to GDP growth and poverty reduction. Additionally, Australia's \$35.7 million commitment to vaccine access included significant vaccine deliveries and infrastructure support. The program also improved agricultural technology adoption, food security, social services for vulnerable populations, and access to clean water and electricity. Through technical advice and infrastructure investments, Australia played a crucial role in informing Cambodia's long-term economic recovery policies and promoting sustainable growth.

Second research paper which focusing on topic Cambodia Industrial Development Policy 2015 – 2025 shows that the Royal Government of Cambodia (RGC) has initiated the Industrial Development Policy (IDP) to achieve sustainable and inclusive economic growth by 2030. This policy aims to diversify the economy, enhance competitiveness, and improve productivity. Key motivations include leveraging favorable regional economic conditions, the potential of the industrial sector to drive growth and job creation, and the necessity of structural and governance reforms to avoid the "middle-income trap." Currently, Cambodia's industrial sector is limited to garments and food processing, with significant challenges such as a lack of diversity, weak entrepreneurship, and low technological application. The policy addresses these issues by setting targets to increase the industrial sector's GDP share to 30% by 2025, diversify exports, and formalize small and medium enterprises (SMEs). The IDP's strategies include attracting investments, developing SMEs, improving the regulatory environment, and coordinating supporting policies. It focuses on integrating Cambodia into regional and global value chains, developing industrial zones and economic corridors, and supporting industries linked to agriculture, tourism, and global production networks. Key measures to be achieved by 2018 include reducing electricity prices, developing a multimodal transport system, managing the labor market, and transforming Sihanoukville Province into a multi-purpose Special Economic Zone. The RGC will lead the IDP implementation through the reformed Council for Development of Cambodia (CDC), ensuring effective coordination and addressing challenges through regular monitoring and evaluation mechanisms.

Third research paper which focusing on topic Cambodia's Economic Diplomacy Strategy (EDS) for 2021-2023 aims to bolster national development through targeted initiatives. Key focuses include enhancing human capital through education and technical training, strengthening communication networks for seamless information sharing, and fostering public-private partnerships to drive economic growth. The strategy outlines a phased implementation plan spanning capacity building, partnership development, and performance enhancement over three years. Financially supported by a budget of approximately 13,700 million Riel, sourced from national funds, grants, and private contributions, the EDS incorporates robust monitoring and evaluation mechanisms to ensure effective strategy execution. It aligns Cambodia's foreign policy with economic priorities, promoting trade, investment,

tourism, and cultural diplomacy to advance national interests and support socio-economic recovery post-COVID-19.

Fourth research paper which focusing on topic High but Fragile Growth: Fostering SMEs development to improve Cambodia's economic resilience show that Cambodia has recorded an impressive growth over the last two decades at around 8% per annum, but this progress remains fragile due to its export-led growth strategy with a narrow economic base, making the country highly exposed to external shocks as seen during the global financial crisis in 2008-2009 and recent Covid-19 shock. This fragility can be costly for a sustainable development that requires a discussion of how to boost the resilience of the economy. Using data from various sources, this paper presents Cambodia's economic achievements since 1999, why the kingdom is highly exposed to external risks, and suggests the development of SMEs as a key element to improve the economic resilience because a strong SME sector would stimulate domestic demand through job creation, attract FDI in higher value added sectors and assure equitable income distribution. Conditional correlation analysis has proven, among ASEAN countries, a significant negative correlation between SME sectoral development and economic volatility, while a positive correlation with economic growth is also found, suggesting that SMEs development can promote a strong and resilient growth. To boost SMEs development, Cambodia has to put more efforts, among other factors, in the formalization of SMEs, skills development for youth, infrastructure development, digital transformation process, and promotion of national savings and riel usage, as discussed and demonstrated in this paper.

Fifth research paper which focusing on topic ASEAN Key Figures 2023 show that In 2022, the global economy saw a gradual recovery from COVID-19, marked by a 3.5% growth, following a 6.3% rebound in 2021. The ASEAN region experienced accelerated growth from 3.4% in 2021 to 5.6% in 2022, with its combined nominal GDP reaching US\$3.6 trillion, making it the world's fifth-largest economy. ASEAN's GDP per capita and overall GDP showed a positive trend from 2005 to 2022, surpassing pre-pandemic levels. Indonesia led the region's GDP contribution at 36.4%, followed by Thailand, Singapore, Viet Nam, Malaysia, and the Philippines. Economic growth varied among ASEAN countries, with Malaysia, Viet Nam, and the Philippines showing the highest growth rates in 2022. The region's economy is primarily driven by the tertiary sector, which contributed 50.5% to GDP in 2022.

International merchandise trade in ASEAN increased by 14.9% in 2022, with Singapore being the largest contributor, showcasing the region's robust economic activities and global trade relationships. However, in the first half of 2023, merchandise trade declined by 8.7%, reflecting global economic uncertainties. Intra-ASEAN trade maintained a significant share, contributing 22.4% to the region's total merchandise trade, highlighting the importance of regional integration. The agricultural sector played a crucial role, with trade in agricultural products growing by 11.3% in 2022, underlining the sector's resilience and importance to food security and rural livelihoods.

Trade in services also rebounded, surpassing pre-pandemic levels and reaching US\$935.6 billion in 2022, driven by increased demand in travel, business, and financial services. This resurgence in services trade underscores the sector's critical role in the region's economic recovery. Furthermore, ASEAN's continued focus on digital transformation and sustainability initiatives has positioned it as a competitive and resilient economic bloc, capable of navigating global challenges and seizing new growth opportunities. The comprehensive economic performance of ASEAN in 2022 exemplifies the region's dynamic and diverse economic landscape, laying a strong foundation for future growth and development.

2.2.) Summary Literature Reviews

The literature on macroeconomics and trade performance explores the interplay between economic policies, growth, trade dynamics, and global integration. The following research papers offer comprehensive insights into these themes:

Cambodia Development Program Progress Report (2021-22): This report highlights Australia's support in Cambodia's COVID-19 recovery, including a successful vaccination campaign, increased agricultural lending, and the launch of a nationwide cash transfer program benefiting nearly 687,000 households. Australia's initiatives helped boost GDP growth, reduce poverty, and improve infrastructure, agricultural technology adoption, food security, and social services.

Cambodia Industrial Development Policy (2015-2025): The Royal Government of Cambodia's policy aims for sustainable economic growth by 2030 through economic diversification, enhanced competitiveness, and productivity improvements. It addresses the limited industrial sector, focusing on attracting investments, developing SMEs, and integrating into global value chains. The policy targets a 30% GDP share for the industrial sector by 2025 and includes measures like reducing electricity prices and developing transport systems.

Cambodia's Economic Diplomacy Strategy (2021-2023): This strategy seeks to enhance national development through education, technical training, improved communication networks, and public-private partnerships. Financially supported by national funds and private contributions, the strategy emphasizes trade, investment, tourism, and cultural diplomacy to support socio-economic recovery post-COVID-19.

High but Fragile Growth: Fostering SMEs Development: Despite Cambodia's impressive 8% annual growth over two decades, its export-led strategy makes it vulnerable to external shocks. The paper argues that developing SMEs is crucial for economic resilience, as a robust SME sector can stimulate domestic demand, attract FDI, and ensure equitable income distribution. The study suggests formalizing SMEs, enhancing youth skills, and promoting digital transformation and national savings.

ASEAN Key Figures (2023): In 2022, ASEAN's economy grew by 5.6%, with a combined GDP of US\$3.6 trillion. The region showed strong economic performance, with significant contributions from Indonesia, Thailand, Singapore, Viet Nam, Malaysia, and the Philippines. International merchandise trade increased by 14.9%, and the tertiary sector remained a key GDP driver. However, trade declined by 8.7% in early 2023 due to global uncertainties. The agricultural sector's trade growth and a resurgence in services trade highlighted the region's economic recovery and resilience, supported by digital transformation and sustainability initiatives.

These studies collectively underscore the importance of strategic economic policies, regional integration, and sustainable development practices in fostering resilient and inclusive growth.

CHAPTER 03: METHODOLOGY

3.1.) Research Design

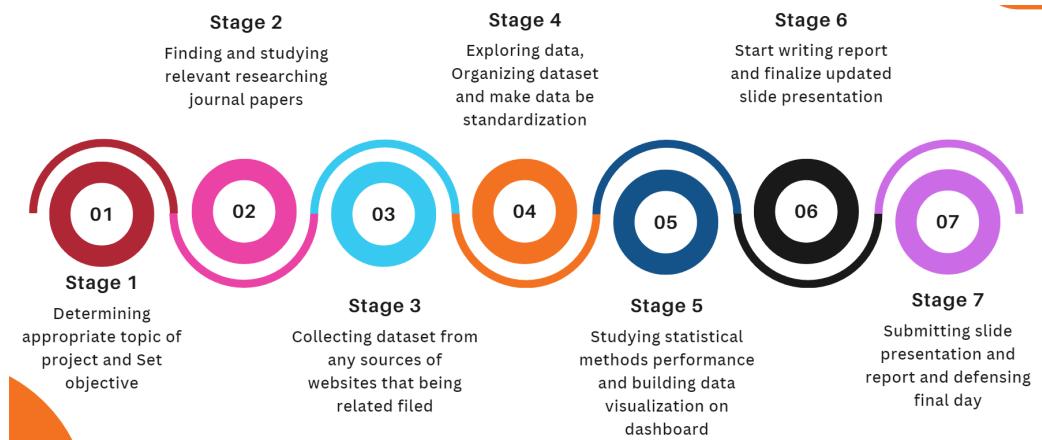


Figure 3: Flow Chart of Researching

Certainly! Let's delve into each stage of the research design outlined in the Project Planning flowchart:

1. Determining Appropriate Topic and Objective

In this initial stage, researchers identify the subject of their study and set clear objectives. It's crucial to choose a relevant and meaningful topic that aligns with the research goals. Consider the following steps:

- Brainstorm potential research topics.
- Evaluate the feasibility and significance of each topic.
- Define specific research objectives or questions.
- Ensure that the chosen topic is well-defined and manageable.

2. Finding and Studying Relevant Research Papers:

Researchers review existing literature and research articles related to their topic. Here's how this stage unfolds:

- Conduct a comprehensive literature search using databases, academic journals, and other relevant sources.
- Read and analyze relevant research papers, noting key findings, methodologies, and gaps in the literature.
- Synthesize information from various sources to build a foundation for your own study.

3. Collecting Dataset:

Data collection is a critical step in any research project. Follow these guidelines:

- Determine the type of data needed (quantitative, qualitative, or mixed).
- Identify suitable sources (surveys, experiments, observations, etc.).
- Ethically collect and organize the data, ensuring its quality and reliability.

4. Exploring Data and Organizing:

Once you have the dataset, explore and organize it effectively:

- Clean and preprocess the data (handle missing values, outliers, etc.).
- Perform descriptive statistics and data visualization to understand its characteristics.
- Organize the data in a structured format for analysis.

5. **Studying Statistical Methods and Data Visualization:**

Researchers need to choose appropriate statistical methods and visualize the data. Here's how:

- Study statistical techniques relevant to your research question (e.g., regression, hypothesis testing, clustering).
- Create data visualizations (charts, graphs, dashboards) to communicate insights effectively.
- Ensure that the chosen methods align with the research objectives.

6. **Writing Report and Finalizing Presentation:**

Document your research findings and insights:

- Write a comprehensive report that includes an introduction, literature review, methodology, results, and discussion.
- Ensure clarity, coherence, and proper citation.
- Prepare a slide presentation summarizing key points for dissemination.

7. **Submitting Presentation and Defending Analysis:**

The final stage involves submitting your work and defending your analysis:

- Submit your report and presentation to relevant stakeholders (e.g., supervisors, conference organizers).
- Be prepared to defend your research during presentations, seminars, or viva voce examinations.
- Remember that effective project planning ensures a systematic and well-organized approach to research, leading to meaningful outcomes.

3.2.) Framework and Tools Technologies

The research utilizes several software and analytical tools to facilitate data collection, analysis, and visualization. These tools are chosen for their robustness, versatility, and ability to handle large datasets effectively. The key technologies used in the research include:

- **Excel Programming:** Used for preliminary data cleaning, exploratory data analysis, and visualization. It is particularly useful for handling smaller datasets and performing quick calculations and charting.



Figure 4: Excel Programming

- **R Programming:** Employed for advanced statistical analysis, including regression models, hypothesis testing, and data visualization. Packages like ggplot2, dplyr, and tidyr are utilized for data manipulation and visualization.



Figure 5: R programming

- **Python Programming:** Used for data processing, statistical analysis, and machine learning. Libraries such as pandas, NumPy, scikit-learn, and Matplotlib are utilized for data manipulation, statistical modeling, and creating visualizations.
- **Power BI:** Used to create dynamic and interactive dashboards that help in visualizing trends and patterns in the macroeconomic and trade performance data. It allows for real-time data monitoring and in-depth analysis through its robust visualization tools.



Figure 6: Python Programming



Figure 7: Power BI programming

3.3.) Data Source and Data Organizations

3.3.1.) The Domestic Data Sources

ល.រ	ឈ្មោះទីផ្សារ	បំណែងដែកចែកទីផ្សារ	អ្នកចាយតម្លៃទីផ្សារ	ប្រព័ន្ធលើក
1	Consumer Price Index and Inflation Rate	សន្តសញ្ញាណថ្មីនៃតម្លៃ និងអគ្គនភ័យជាប្រចាំខែ	នគរាល់នគរោង	https://www.nbc.gov.kh/english/economic_research/monetary_and_financial_statistics_data.php
2	Contribution to Inflation	អង្គភ័យសាធារណមន្ត្រី	នគរាល់នគរោង	https://www.nbc.gov.kh/english/economic_research/monetary_and_financial_statistics_data.php
3	Exchange Rate of Cambodia	អង្គយុទ្ធផលសកម្មភាព	នគរាល់នគរោង	https://www.nbc.gov.kh/english/economic_research/monetary_and_financial_statistics_data.php
4	Export	ទីផ្សារក្រុងក្រុងប្រទេស	អន្តរយកត្រូវនគរាល់នគរោង MEF	https://gdp.mef.gov.kh/SEAD/statistics-by-merchandise-trade
5	Export	ទីផ្សារក្រុងក្រុងប្រទេស	អន្តរយកត្រូវនគរាល់នគរោង	https://stats.customs.gov.kh/
6	Import	ទីផ្សារក្រុងក្រុងប្រទេស	អន្តរយកត្រូវនគរាល់នគរោង MEF	https://gdp.mef.gov.kh/SEAD/statistics-by-merchandise-trade
7	GDP	កសែរសម្រួលកម្មុជាប្រចាំឆ្នាំ	អន្តរយកត្រូវនគរាល់នគរោង MEF	https://gdp.mef.gov.kh/SEAD/statistics-by-national-account

Figure 8: Domestic Data Sources

3.3.2.) The International Data Sources

No	යපයාර්ථය	ජ්‍යෙයාර්ථය	ජ්‍යෙගිවාර්ථය	ඡුණාලි(Link)
1	Import	භූම්‍යාර්ථයක්තිය	International Trade Center	https://www.trademap.org/Country_SelProduct_TS.aspx?nvpmt-1%7C%70%7C%7C%7CTOTAL%7C%7C%7C%7C1%7C1%7C2%7C2%7C2%7C1%7C1%7C1%7C1%7C1%7C1
2	Export	භූම්‍යාර්ථයක්තිය	International Trade Center	https://www.trademap.org/Country_SelProduct_TS.aspx?nvpmt-1%7C%70%7C%7C%7CTOTAL%7C%7C%7C%7C1%7C1%7C2%7C2%7C2%7C1%7C1%7C1%7C1%7C1
3	Import	භූම්‍යාර්ථයක්තිය	EuroStat	https://ec.europa.eu/eurostat/database
4	Export	භූම්‍යාර්ථයක්තිය	EuroStat	https://ec.europa.eu/eurostat/database
5	Import	භූම්‍යාර්ථයක්තිය	DataWeb	https://dataweb.usitc.gov
6	Export	භූම්‍යාර්ථයක්තිය	Dataweb	https://dataweb.usitc.gov
7	Export by Sri Lanka	භූම්‍යාර්ථයක්තිය	Central bank of Sri Lanka	https://www.cbsl.gov.lk/en/statistics/statistical-tables/external-sector
8	Export by Vietnam	භූම්‍යාර්ථයක්තිය	General Statistics office of Vietnam	https://www.gso.gov.vn/en/data-and-statistics/2023/03/exports-and-imports-value-by-months-of-2023/
9	Exchange Rate	භූම්‍යාර්ථය	International Monetary Fund	International Financial Statistics - IMF Data
10	GDP	ගණනාධිකාරීතියක්තිය	සංගමීක පොදුකිරීමක	https://www.worldbank.org/en/home
11	GDP	ගණනාධිකාරීතියක්තිය	සංගමීක පොදුකිරීමක	https://www.adb.org/
12	GDP	ගණනාධිකාරීතියක්තිය	බහුරුෂ්‍ය පැවත්තුකිරීමක	https://www.imf.org/en/Data
13	GDP	ගණනාධිකාරීතියක්තිය	Organisation of Economic Co-Op	https://data.oecd.org/gdp/real-gdp-forecast.html#indicator-chart
14	Inflation	අඟහර්තිකතාව	International Monetary Fund	https://www.imf.org/en/Data
15	Opec	ප්‍රාග්‍යාමනය	OPEC Basket Price	https://www.opec.org/opec_web/en/data_graphs/oip.htm
භූම්‍යාර්ථයක්තිය කොටසුයාමෙන් නොවූ අංශයක්තියක්				
16	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	ස්ථානික	https://www.bb.org.bd/en/index.php/econdata/exchangerate
17	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	සිං	https://www.boc.cn/sourcedb/wphj/enindex.htm
18	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	රුපා	https://rb.org.in/scripts/ReferenceRateArchive.aspx
19	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	බුරුසු	https://www.bi.go.id/en/statistik/informasi-kurs/transaksi/bi/Default.aspx
20	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	දුර	https://www.bot.gov.la/en/ExchangingRate
21	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	ඩාලුස්	https://www.bn.mv/my/exchange/rates
22	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	යුනිලි	https://forex.cbn.gov.ng/index.php/fxrate/history
23	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	ලිංගුව	https://www.nbp.com.pk/RATESHEETIndex.aspx
24	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	ඩුර්ගිල	https://www.bsp.gov.ph/SitePages/Statistics/Daily-HERB.aspx
25	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	ලැංඩ්	https://www.cbsl.gov.lk/en-data-and-indicators/exchange-rates/daily-indicative-usd-spot-exchange-rates
26	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	රු	https://www.bot.lh/en/statistics/exchange-rate.html
27	අග්‍රාධිකර්තාවක්තිය	අප්‍රේසිං පෝ	ඩුර්ගාය	https://www.sbv.gov.ni/cialafaces/Alier_jspv_afrLoop-277941064008966_afrWindowMode=ok_afr.ctrl.state=jpon&q_1

Figure 9: International Data Sources

3.4.) Significance Indicators of Macroeconomics Description

There are 7 significant indicators of macroeconomics and trade performance which we take to study such including, GDP, Import, Export, Inflation, Exchange Rate and Unemployment.

3.4.1.) GDP(Gross Domestic Product)

GDP is a key economic indicator that measures the total value of goods and services produced within a country's borders in a specific period, usually annually or quarterly. It serves as a comprehensive measure of a nation's economic performance and is widely used to assess the size and health of an economy. Here's a detailed overview of GDP:



Figure 10: GDP wordcloud



Figure 11: GDP

a.) Components of GDP:

- *Consumption (C)*: refers to spending by households on goods and services, including durable goods (like cars and appliances), nondurable goods (like food and clothing), and services (like healthcare and education). Consumer spending is a critical driver of economic growth, as it reflects overall demand in the economy.
- *Investment (I)*: Investment includes spending by businesses on capital goods (like machinery and equipment), construction of buildings, and changes in business inventories. Investment contributes to future production capacity and economic expansion.
- *Government Spending (G)*: Government spending includes expenditures on goods and services by all levels of government (federal, state, and local), including defense, education, infrastructure, and public services. Government spending influences overall demand and can affect economic stability and growth.
- *Net Exports (Exports - Imports) (X - M)*: represent the value of a country's exports minus its imports. Exports are goods and services produced domestically and sold abroad, while imports are goods and services produced abroad and purchased domestically. Net exports indicate the balance of trade and the extent to which a country relies on foreign markets or domestic production for its consumption.

b.) Types of GDP:

- *Nominal GDP*: measures the total economic output at current market prices without adjusting for inflation. It reflects the actual value of goods and services produced. The formula for Nominal GDP is typically calculated using the current year prices:

$$\text{Nominal GDP} = C + I + G + X - M$$

Where

$$\begin{cases} C & : \text{Household consumption expenditure at current year} \\ I & : \text{Gross private domestic investment (including business investment in machinery, equipment, and construction at current year)} \\ G & : \text{Government consumption and gross investment expenditure at current year} \\ X & : \text{Exports of goods and services at current year} \\ M & : \text{Imports of goods and services at current year} \end{cases}$$

- **Real GDP:** adjusts nominal GDP for inflation or deflation, providing a more accurate measure of economic growth over time by accounting for changes in price levels. The formula for Real GDP is typically calculated using the base year prices:

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{Deflator}}$$

Where Deflator is a measure of the level of prices of all new, domestically produced, final goods and services in an economy. It is a broader measure of inflation compared to the Consumer Price Index (CPI) because it includes prices of capital goods and services purchased by the government.

c.) Importance of GDP:

- **Economic Health:** GDP growth indicates whether an economy is expanding or contracting. Positive GDP growth is generally associated with improved living standards and employment opportunities.
- **Policy Implications:** Governments and policymakers use GDP data to formulate economic policies, such as fiscal and monetary policies, aimed at stabilizing the economy, promoting growth, and addressing economic challenges.
- **International Comparisons:** GDP allows for comparisons of economic performance among countries, providing insights into relative strengths and weaknesses in different economies.

d.) Limitations of GDP:

- **Quality of Life:** GDP does not directly measure factors such as income distribution, quality of education, healthcare, environmental quality, or overall well-being.
- **Informal Economy:** GDP may underestimate economic activity in informal sectors and fail to capture the value of unpaid work, volunteerism, or non-market transactions.
- **Environmental Impact:** GDP growth may not account for environmental degradation or natural resource depletion associated with economic activity.

In conclusion, GDP is a fundamental indicator for assessing economic performance and guiding policy decisions, but it should be interpreted alongside other measures to provide a comprehensive understanding of a nation's economic well-being and sustainability.

3.4.2.) Export

Export refers to the process of selling goods and services produced in one country to other countries. Exports are a critical component of a country's economy, contributing to its Gross Domestic Product (GDP) and influencing its trade balance.



Figure 12: Export Goods



Figure 13: Export Goods

Here are key aspects of exports: **a.) Importance of Exports**

- **Economic Growth:** Exports are a significant driver of economic growth. By selling goods and services to international markets, countries can increase their production levels, create jobs, and boost incomes.
- **Trade Balance:** Exports help determine a country's trade balance. A trade surplus occurs when the value of exports exceeds the value of imports, contributing positively to the country's GDP. Conversely, a trade deficit occurs when imports exceed exports.
- **Foreign Exchange:** Exporting goods and services brings foreign currency into the country, which can be used to pay for imports, invest abroad, and build foreign exchange reserves.
- **Market Diversification:** By exporting, companies can diversify their markets, reducing dependency on domestic markets and spreading risks associated with economic downturns in any single country.

b.) Types of Exports

- **Goods:** Tangible products such as machinery, electronics, vehicles, agricultural products, and raw materials.
- **Services:** Intangible offerings such as financial services, tourism, education, software, and consulting.

c.) Factors Influencing Exports

- **Exchange Rates:** Fluctuations in currency values affect export competitiveness. A weaker domestic currency makes exports cheaper for foreign buyers, potentially increasing demand.
- **Trade Policies:** Tariffs, quotas, and trade agreements impact export levels. Free trade agreements can boost exports by reducing barriers, while protectionist policies can restrict them.
- **Global Demand:** Economic conditions in importing countries influence demand for exports. Strong economic growth in these countries typically leads to increased demand for foreign goods and services.
- **Product Competitiveness:** Quality, price, and innovation determine how well a country's exports compete in the global market. Countries that can produce high-quality goods at competitive prices are likely to have higher export levels.

d.) Export Process

- **Market Research:** Identifying potential markets, understanding consumer needs, and analyzing competition.
- **Compliance:** Adhering to export regulations, obtaining necessary licenses, and ensuring products meet the standards of the importing country.
- **Logistics:** Managing transportation, warehousing, and delivery of goods to foreign buyers.
- **Payment:** Ensuring secure payment through methods like letters of credit, advance payments, or open accounts.

e.) Benefits of Exports

- **Economic Diversification:** Reduces reliance on domestic markets and fosters economic resilience.
- **Increased Revenue:** Access to larger markets can lead to higher sales and profits for businesses.
- **Innovation and Efficiency:** Exposure to international competition encourages companies to innovate and improve efficiency.
- **Job Creation:** Expanding production to meet export demand can create new jobs and improve living standards.

In summary, exports play a vital role in the global economy by promoting economic growth, enhancing competitiveness, and fostering international trade relationships. They provide countries with opportunities to leverage their comparative advantages and participate in the global market.

3.4.3.) Import

Import refers to the process of bringing goods and services into a country from abroad for consumption, use, or resale. Imports are an essential aspect of international trade and significantly impact a country's economy, trade balance, and consumer choices.



Figure 14: Import



Figure 15: Import and Export

Here are key aspects of imports:

a.) Importance of Imports

- *Consumer Choice and Variety*: Imports increase the range of goods and services available to consumers, often providing access to products that are not produced domestically.
- *Economic Growth*: While exports drive economic growth, imports can also contribute by providing necessary inputs for domestic industries, enhancing productivity, and fostering innovation.
- *Trade Balance*: Imports are a crucial component of a country's trade balance. A trade deficit occurs when the value of imports exceeds the value of exports, which can impact a country's GDP and foreign exchange reserves.

- **Foreign Exchange:** Imports require payment in foreign currency, which affects a country's foreign exchange reserves. Managing the balance between imports and exports is essential for maintaining economic stability.

b.) Types of Imports

- **Consumer Goods:** Products purchased for personal use, such as electronics, clothing, and household items.
- **Capital Goods:** Equipment and machinery used for production, such as manufacturing machinery, tools, and computers.
- **Raw Materials:** Basic materials needed for manufacturing, such as crude oil, metals, and agricultural products.
- **Services:** Intangible products such as consulting, tourism, financial services, and software.

c.) Factors Influencing Imports

- **Exchange Rates:** The value of a country's currency relative to others affects the cost of imports. A stronger domestic currency makes imports cheaper, while a weaker currency makes them more expensive.
- **Trade Policies:** Tariffs, quotas, and import regulations impact the volume and cost of imports. Trade agreements can reduce barriers and facilitate easier importation of goods and services.
- **Economic Conditions:** Domestic economic health influences import levels. Strong economic growth and consumer confidence typically increase demand for imported goods and services.
- **Domestic Production:** The availability and competitiveness of domestically produced goods affect import levels. When domestic products cannot meet consumer demand or quality standards, imports become necessary.

d.) Import Process

- **Market Research:** Identifying sources of products, assessing quality, and comparing prices from different suppliers.
- **Compliance:** Ensuring that imported goods meet domestic regulatory standards, obtaining necessary import licenses, and adhering to customs regulations.
- **Logistics:** Managing transportation, warehousing, and distribution of goods from foreign suppliers to domestic markets.
- **Payment:** Arranging secure payment methods, such as letters of credit, advance payments, or trade credit.

e.) Benefits of Imports

- **Access to Technology and Innovation:** Imports allow countries to acquire advanced technology and innovative products, promoting industrial and technological advancement.
- **Cost Efficiency:** Importing goods that are cheaper to produce abroad can reduce production costs for domestic businesses, leading to lower prices for consumers.
- **Quality and Specialization:** Imports provide access to high-quality goods and services that may not be available domestically, supporting specialized industries and consumer needs.

- *Economic Integration*: Engaging in international trade through imports fosters economic relationships and cooperation between countries, enhancing global economic stability.

f.) Challenges of Imports

- *Trade Deficits*: Persistent trade deficits can lead to economic imbalances and affect a country's financial stability.
- *Domestic Industry Impact*: Excessive reliance on imports can harm domestic industries by increasing competition and potentially leading to job losses.
- *Regulatory Barriers*: Navigating complex customs regulations, tariffs, and trade barriers can increase the cost and difficulty of importing goods.
- *Quality Control*: Ensuring that imported goods meet domestic quality and safety standards can be challenging, requiring robust regulatory frameworks.

In summary, imports are a vital component of international trade, providing countries with access to a broader range of goods and services, promoting economic growth, and enhancing consumer choice. Balancing the benefits and challenges of imports is essential for maintaining a healthy and stable economy.

3.4.4.) Inflation

Inflation refers to the rate at which the general level of prices for goods and services rises, eroding purchasing power. It is a key economic indicator and can have significant impacts on an economy, affecting everything from consumer spending to investment decisions.



Figure 16: Inflation figure



Figure 17: Inflation of goods

Here's a comprehensive look at inflation:

a.) Causes of Inflation

- **Demand-Pull Inflation:** Occurs when the demand for goods and services exceeds their supply. This can be due to increased consumer spending, government expenditure, or investment, leading to higher prices.
- **Cost-Push Inflation:** Arises when the costs of production increase, leading businesses to raise prices to maintain profit margins. This can be due to higher wages, increased raw material costs, or supply chain disruptions.
- **Built-In Inflation:** Results from adaptive expectations. If workers expect prices to rise, they demand higher wages, which in turn increases production costs and leads to higher prices.
- **Monetary Inflation:** Caused by an excessive supply of money in the economy. When there is more money chasing the same amount of goods and services, prices tend to rise.

b.) Measurement of Inflation

- *Consumer Price Index (CPI)*: Measures the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. It is the most commonly used indicator of inflation.
- *Producer Price Index (PPI)*: Measures the average change over time in the selling prices received by domestic producers for their output. It reflects inflation from the perspective of the seller rather than the consumer.
- *GDP Deflator*: A broader measure that reflects the prices of all goods and services produced domestically. It is the ratio of nominal GDP to real GDP.

c.) Effects of Inflation

- *Decreased Purchasing Power*: As prices rise, the purchasing power of money decreases, meaning consumers can buy less with the same amount of money.
- *Cost of Living*: Increased prices lead to a higher cost of living, affecting households' ability to afford goods and services.
- *Interest Rates*: Central banks may raise interest rates to control high inflation, which can increase borrowing costs for businesses and consumers.
- *Savings and Investments*: Inflation erodes the value of money over time, impacting savings and fixed-income investments. Investors may seek assets that offer inflation protection, such as real estate or commodities.
Income Redistribution: Inflation can have uneven effects across different groups. For example, borrowers may benefit from inflation if they repay loans with money that is less valuable, while lenders may lose out.

d.) Managing Inflation

- *Monetary Policy*: Central banks, like the Federal Reserve, use tools such as interest rates and open market operations to control the money supply and manage inflation. Raising interest rates can help reduce inflation by cooling economic activity.
- *Fiscal Policy*: Government can influence inflation through taxation and public spending. Reducing public spending or increasing taxes can help lower inflation by decreasing aggregate demand.
- *Supply-Side Policies*: Measures aimed at increasing productivity and efficiency in the economy can help control cost-push inflation by reducing production costs.

e.) Types of Inflation

- *Creeping Inflation*: Low, gradual, and predictable inflation, usually below 3% annually. It is often considered manageable and can stimulate economic activity.
- *Walking Inflation*: Moderate inflation, typically between 3% and 10% per year. It can be a concern as it may start affecting economic stability.
- *Galloping Inflation*: High inflation, ranging from 10% to several hundred percent annually. It can severely disrupt economic activity and erode consumer confidence.
- *Hyperinflation*: Extremely high and typically accelerating inflation, often exceeding 50% per month. It leads to a collapse of the currency's value and a breakdown of the normal economy.

f.) Historical Examples of Inflation

- *Germany (Weimar Republic, 1920s)*: Hyperinflation led to extreme currency devaluation, with prices doubling every few days at its peak.

- *Zimbabwe (2000s)*: Hyperinflation reached astronomical levels, with prices doubling every 24 hours at one point, leading to the abandonment of the Zimbabwean dollar.
- *United States (1970s)*: Experienced high inflation due to a combination of oil price shocks and loose monetary policy, leading to stagflation, a combination of high inflation and unemployment.

In summary inflation is a complex and multifaceted economic phenomenon with wide-ranging impacts on an economy. Understanding its causes, measurement, effects, and management is crucial for policymakers, businesses, and consumers to navigate and mitigate its challenges effectively. By balancing demand and supply, controlling the money supply, and implementing sound fiscal and monetary policies, economies can strive to maintain stable and manageable inflation rates.

3.4.5.) Exchange Rate

The exchange rate refers to the value of one currency in terms of another currency. It represents the price at which one currency can be exchanged for another currency. It is expressed as the amount of one currency required to purchase a unit of another currency. It plays a crucial role in international trade and finance, influencing the flow of goods, services, and capital across borders. Here's an in-depth look at exchange rates:



Figure 18: Khmer Currency Vs Others

	GBP	KHR	VND	USD	CNY	AZD
		40.26	42.1			
		0.2827	0.1			
			4.56	0.1		
				7.01	0.1	
					3.55	0.1
					23.07	0.1

Figure 19: Table of exchange rates

a.) Types of Exchange Rates

- **Fixed Exchange Rate:** Also known as a pegged exchange rate, this system involves a country's currency being tied to another major currency, like the U.S. dollar, or a basket of currencies. The central bank maintains the currency's value within a narrow band.
- **Floating Exchange Rate:** In this system, the currency's value is determined by market forces of supply and demand relative to other currencies. It can fluctuate widely based on economic conditions, interest rates, and market speculation.
- **Managed Float:** Also called a dirty float, this system combines elements of both fixed and floating rates.

While the currency value primarily moves according to market forces, the central bank may intervene to stabilize or increase the currency's value.

b.) Determinants of Exchange Rates

- *Interest Rates*: Higher interest rates offer lenders a better return relative to other countries. Therefore, higher interest rates attract foreign capital and cause an appreciation of the currency.
- *Inflation Rates*: Lower inflation rates typically see an appreciation in their currency value because their purchasing power increases relative to other currencies.
- *Economic Indicators*: GDP growth, employment rates, and manufacturing output are crucial in determining a currency's value. Strong economic performance generally boosts a currency's value.
- *Political Stability and Economic Performance*: Countries with less risk for political turmoil are more attractive to foreign investors. This increased investment can cause an appreciation of the country's currency.
- *Speculation*: If investors believe a currency will strengthen in the future, they will buy more of that currency now, driving up its value.
- *Balance of Payments/Currency Reserves*: A country with a surplus in its current account or significant reserves of foreign currency will generally have a stronger currency.

c.) Effects of Exchange Rates

- *On Trade*: A stronger currency makes exports more expensive and imports cheaper, potentially leading to a trade deficit. Conversely, a weaker currency makes exports cheaper and imports more expensive, potentially leading to a trade surplus.
- *On Inflation*: A depreciating currency can lead to higher inflation as the cost of imported goods and services rises. Conversely, an appreciating currency can help keep inflation low by making imports cheaper.
- *On Foreign Investment*: A stable and appreciating currency attracts more foreign investment, as investors seek to gain from both the investment returns and currency appreciation.
- *On Economic Growth*: Exchange rates impact the cost of goods and services internationally, influencing the competitive position of a country's economy. Exchange rate stability is often sought to ensure steady economic growth.

d.) Exchange Rate Regimes

- *Free-Floating System*: The currency's value is allowed to fluctuate according to the foreign exchange market. Examples include the U.S. dollar, euro, and Japanese yen.
- *Pegged (Fixed) System*: The currency's value is fixed against another major currency. Examples include the Hong Kong dollar pegged to the U.S. dollar.
- *Crawling Peg*: The currency is adjusted periodically at a fixed rate or in response to changes in a basket of currencies. This provides some flexibility while maintaining stability.
- *Currency Board Arrangement*: A country maintains a fixed exchange rate with another currency and holds reserves of that currency to ensure it can meet all demands for conversion. Examples include Bulgaria and Estonia.

e.) Historical Examples

- *Bretton Woods System (1944-1971)*: An international monetary system where currencies were pegged to the U.S. dollar, which was convertible to gold. The system collapsed in 1971, leading to floating exchange rates for many major currencies.
- *Euro Introduction (1999)*: The adoption of a single currency by many European Union countries, eliminating exchange rate fluctuations among member states.
- *Asian Financial Crisis (1997-1998)*: Triggered by the collapse of the Thai baht, leading to severe devaluations in several Asian currencies, which had been pegged or closely managed.

f.) Managing Exchange Rates

- *Intervention*: Central banks may buy or sell their own currency to influence its value.
- *Monetary Policy*: Adjusting interest rates can influence currency value. Higher interest rates can attract foreign capital, appreciating the currency.
- *Capital Controls*: Restrictions on the flow of foreign capital in and out of the country can help stabilize the currency.
- *Foreign Exchange Reserves*: Holding large reserves of foreign currencies can provide a buffer against currency fluctuations.

In summary exchange rates are a fundamental aspect of the global economy, affecting trade, investment, and economic stability. Understanding the determinants and effects of exchange rates helps policymakers, businesses, and investors make informed decisions in an interconnected world.

3.4.6.) Unemployment

Unemployment is a critical economic indicator reflecting the number of people who are actively seeking work but are unable to find employment. It is a significant concern for policymakers and economists because it affects economic growth, social stability, and individual well-being. Here's a comprehensive overview of unemployment:



Figure 20: Unemployment Worldcloud



Figure 21: Unemployment Challenges

a.) Types of Unemployment

- *Frictional Unemployment*: This type of unemployment occurs when workers are between jobs or are entering the workforce for the first time. It is usually short-term and a natural part of the job search process.
- *Structural Unemployment*: This arises when there is a mismatch between the skills of the unemployed workers and the skills needed for available jobs. It can be caused by technological changes, shifts in consumer demand, or other factors that alter the labor market structure.
- *Cyclical Unemployment*: This type of unemployment is related to the economic cycle. During periods of economic downturn or recession, demand for goods and services decreases, leading to a reduction in workforce needs.
- *Seasonal Unemployment*: Certain industries experience seasonal fluctuations in employment, such as agriculture, tourism, and retail. Workers in these sectors may face unemployment during off-peak seasons.
- *Long-term Unemployment*: Individuals who have been unemployed for an extended period, typically 27 weeks or more, face this type of unemployment. Long-term unemployment can lead to skill erosion and decreased employability.

b.) Measuring Unemployment

The most common measure of unemployment is the unemployment rate, calculated as:

$$\text{Unemployment Rate} = \frac{\text{Number of Unemployed People}}{\text{Labor Force}} \times 100$$

The labor force includes individuals aged 16 and older who are either employed or actively seeking employment. It excludes those who are not seeking work, such as retirees, students, and discouraged workers.

b.) Causes of Unemployment

- *Economic Conditions*: Recessions, economic downturns, and slow economic growth can lead to increased unemployment.
- *Technological Advancements*: Automation and technological changes can make certain jobs obsolete, leading to structural unemployment.
- *Globalization*: Shifts in global trade and production can result in job losses in certain industries while creating opportunities in others.
- *Government Policies*: Regulations, labor laws, and tax policies can impact job creation and unemployment rates.
- *Education and Training*: A lack of education or skills that match job market demands can contribute to structural unemployment.

c.) Effects of Unemployment

- *Economic Impact*: High unemployment leads to lower consumer spending, which can slow economic growth. It also increases the burden on social welfare systems.
- *Social Impact*: Unemployment can lead to increased poverty, social unrest, and inequality. It affects mental health and can lead to a decline in overall life satisfaction.
- *Individual Impact*: Unemployment affects individuals' financial stability, self-esteem, and career prospects. Long-term unemployment can erode skills and reduce future employability.

d.) Policies to Address Unemployment

- *Monetary Policy*: Central banks can use interest rate adjustments and other monetary tools to stimulate economic growth and reduce cyclical unemployment.
- *Fiscal Policy*: Government spending and tax policies can boost economic activity and job creation. Infrastructure projects and public services can create employment opportunities.
- *Education and Training*: Investing in education and vocational training can help workers acquire the skills needed for available jobs, addressing structural unemployment.
- *Labor Market Policies*: Policies that promote job creation, such as subsidies for businesses, and those that support job seekers, such as unemployment benefits and job placement services, can reduce unemployment.
- *Encouraging Entrepreneurship*: Supporting small businesses and startups can create new job opportunities and stimulate economic growth.

e.) Historical Examples

- *The Great Depression (1930s)*: The global economic downturn led to extremely high unemployment rates, reaching 25% in the United States.
- *Oil Crisis (1970s)*: The oil price shocks led to stagflation, with high unemployment and inflation rates in many countries.
- *Global Financial Crisis (2008-2009)*: The economic recession following the financial crisis resulted in significant job losses worldwide.
- *COVID-19 Pandemic (2020-2021)*: The pandemic caused widespread economic disruptions, leading to unprecedented levels of unemployment as businesses closed and economic activities halted.

In summary unemployment is a multifaceted issue with wide-ranging implications for individuals, economies, and societies. Understanding its types, causes, and effects is crucial for developing effective policies to mitigate its impact and promote economic stability and growth. Addressing unemployment requires coordinated efforts from governments, businesses, and educational institutions to create a resilient and adaptable workforce.

3.4.7.) Taxation

Taxation is the process by which a government or its authorized body imposes and collects financial charges or levies on individuals, businesses, and other entities. Taxes are mandatory contributions required by law and are used to fund public services, infrastructure, and government operations.



Figure 22: Taxation wordcloud



Figure 23: Cambodia General Department of Taxation

Here's a comprehensive overview of taxation:

a.) Types of Taxes

- *Income Tax*:

- *Personal Income Tax*: Levied on the income of individuals, including wages, salaries, and other forms of income.
- *Corporate Income Tax*: Imposed on the profits of corporations.

- **Sales Tax:** A consumption tax imposed by the government on the sale of goods and services. It is usually calculated as a percentage of the price paid by the consumer.
- **Value-Added Tax (VAT):** A type of consumption tax placed on a product whenever value is added at each stage of the supply chain, from production to the point of sale.
- **Property Tax:** A tax assessed on real estate by the local government. The amount of tax is determined by the property's value.
- **Estate Tax:** Levied on the estate of a deceased person before distribution to the heirs.
- **Excise Tax:** Imposed on specific goods and services, such as alcohol, tobacco, and gasoline. Often included in the price of the product.
- **Payroll Tax:** Taxes imposed on employers or employees, usually calculated as a percentage of the salaries that employers pay their staff. These include Social Security and Medicare taxes in the United States.
- **Tariffs:** Taxes on imported goods, designed to protect domestic industries from foreign competition.

b.) Purposes of Taxation

- **Revenue Generation:** The primary purpose of taxation is to raise revenue for government expenditures, including public goods and services such as education, healthcare, infrastructure, and defense.
- **Redistribution of Wealth:** Taxes are used to redistribute wealth from the richer sections of society to the poorer sections through welfare programs, social security, and other benefits.
- **Economic Stabilization:** Governments use taxation to control inflation and stabilize the economy by managing aggregate demand.
- **Regulation and Incentivization:** Taxes can be used to discourage undesirable behaviors (e.g., smoking, excessive alcohol consumption) through excise taxes. They can also incentivize certain activities (e.g., investment in renewable energy) through tax credits and deductions.

c.) Principles of Taxation

- **Equity:** Taxes should be fair and based on the taxpayer's ability to pay. This can be achieved through progressive taxation, where higher-income individuals pay a higher percentage of their income in taxes.
- **Efficiency:** The tax system should not significantly distort economic decisions or reduce the efficiency of the economy. It should aim to collect the necessary revenue with the least cost to taxpayers and the government.
- **Simplicity:** The tax system should be simple to understand and administer, reducing compliance costs and administrative burdens.
- **Certainty:** Taxpayers should be certain about how much tax they owe, when it is due, and how to pay it. This helps in planning and compliance.
- **Flexibility:** The tax system should be able to adapt to changes in the economy and the needs of the government.

d.) Effects of Taxation

- **Economic Impact:** Taxes influence economic behavior, affecting labor supply, savings, investment, and consumption. High taxes on labor can discourage work, while taxes on savings can reduce investment.
- **Income Distribution:** Progressive taxes can reduce income inequality by transferring resources from higher-income to lower-income individuals.
- **Government Budget:** Tax revenue is essential for government budgets, funding essential public services and infrastructure projects.
- **Market Distortions:** Taxes can create distortions in the market by changing the relative prices of goods and services. For example, high taxes on tobacco can reduce consumption but also create black markets.

e.) Tax Policy and Administration

- **Tax Policy:** refers to the government's approach to taxation, including the choice of which taxes to levy, the rates, and the bases for those taxes. It is influenced by economic theories, political ideologies, and social goals.
- **Tax Administration:** The implementation and enforcement of tax laws by tax authorities. Efficient tax administration ensures compliance, reduces evasion, and maximizes revenue collection.

f.) Global Perspectives on Taxation

- **Tax Havens:** Some countries offer very low or zero tax rates to attract foreign businesses and individuals, leading to debates on tax fairness and avoidance.
- **International Taxation:** Deals with cross-border tax issues, including transfer pricing, double taxation treaties, and efforts to combat tax evasion and avoidance by multinational corporations.
- **Digital Economy:** The rise of the digital economy presents new challenges for taxation, as traditional tax rules are often inadequate for digital transactions and businesses operating across multiple jurisdictions.

In summary taxation is a complex but essential component of modern economies, providing the necessary revenue for governments to function and meet their obligations to society. A well-designed tax system balances equity, efficiency, simplicity, certainty, and flexibility, ensuring that the burdens and benefits of taxation are distributed fairly and that economic growth and stability are promoted.

3.5.) Data Collection and Cleaning

In the initial stage, we gather relevant datasets from various websites by visiting the provided data organization links on the table of excel above then locating the target folders we intend to collect. After then we have to clean dataset to get data standardization by determining the necessary feature and handling missing values or duplicate value rows which make ease for data visualization stage

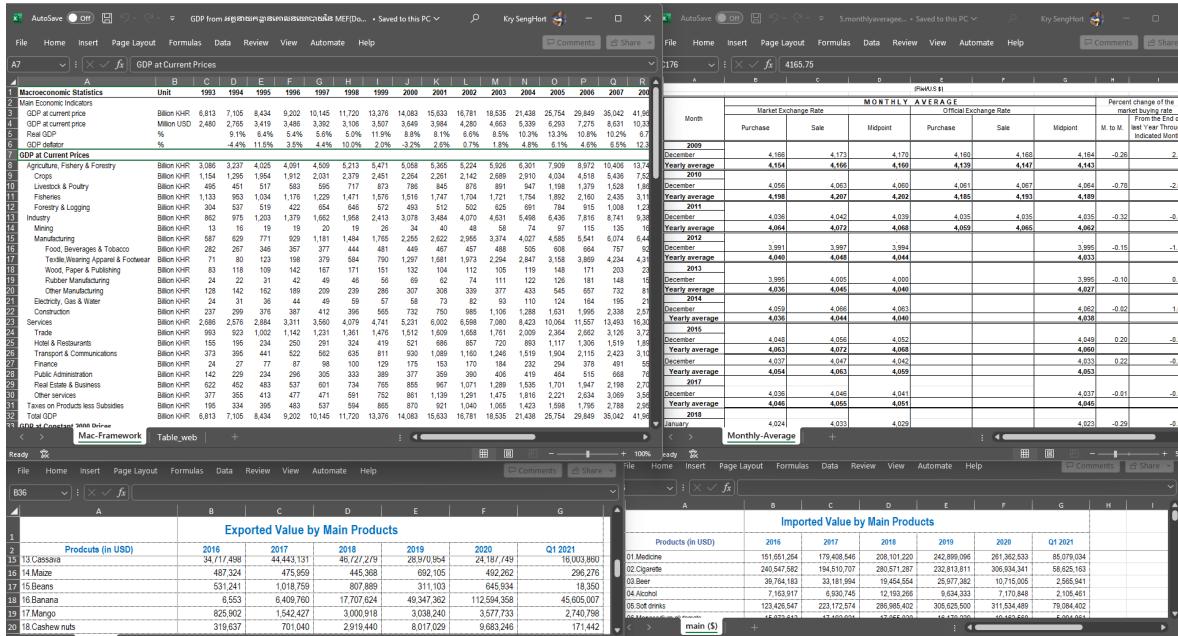


Figure 24: Domestics Dataset

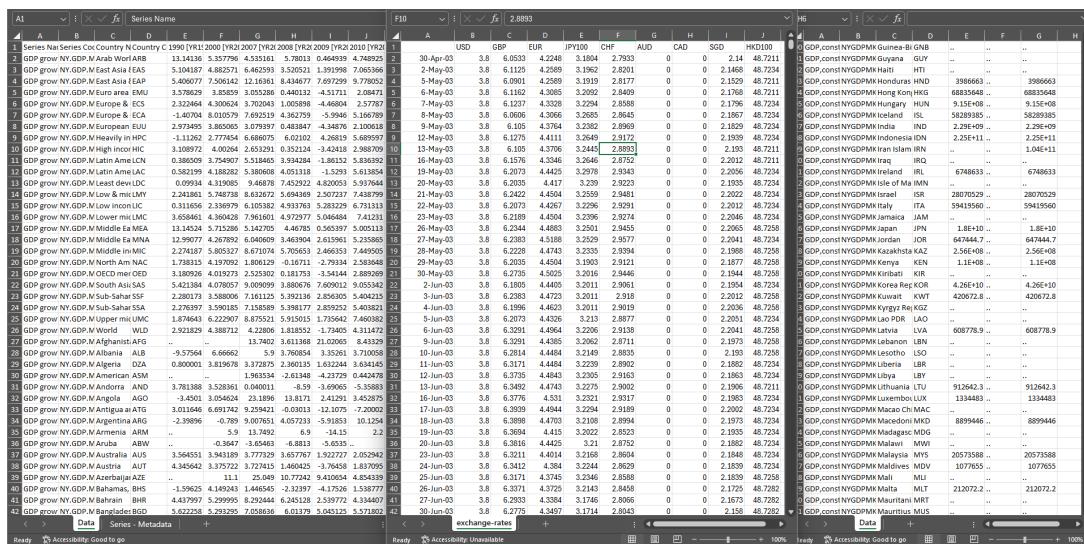


Figure 25: International Dataset

3.6.) Data Visualization

3.6.1.) GDP

Macroeconomic Statistics	Unit	1993	1994	1995	1996	1997	1998	1999	2000	...	2009	2010	2011	2012	2013	2014	2015	
Agriculture, Fishery & Forestry	Billion KHR	3.085994e+03	3.236894e+03	4.024950e+03	4.091457e+03	4.509316e+03	5.213193e+03	5.471329e+03	5.058301e+03	...	1.442001e+04	1.593292e+04	1.799354e+04	1.899944e+04	1.937628e+04	1.946988e+04	1.951602e+04	2.01014
Crops	Billion KHR	1.154034e+03	1.295341e+03	1.954379e+03	1.911659e+03	2.031161e+03	2.379223e+03	2.451207e+03	2.263628e+03	...	7.909214e+03	8.953230e+03	1.070922e+04	1.137258e+04	1.146083e+04	1.156693e+04	1.161257e+04	1.18538
Livestock & Poultry	Billion KHR	4.947259e+02	4.511528e+02	5.169904e+02	5.826342e+02	5.952986e+02	7.171058e+02	8.728353e+02	7.857495e+02	...	1.955749e+03	2.112209e+03	2.171119e+03	2.195702e+03	2.204213e+03	2.204875e+03	2.30088	
Fisheries	Billion KHR	1.133212e+03	9.532158e+02	1.034432e+03	1.175590e+03	1.229092e+03	1.470601e+03	1.575705e+03	1.515910e+03	...	3.301458e+03	3.549068e+03	3.742917e+03	4.055015e+03	4.318551e+03	4.328539e+03	4.351092e+03	4.54055
Forestry & Logging	Billion KHR	3.040224e+02	5.371836e+02	5.191480e+02	4.215738e+02	6.537646e+02	6.461836e+02	5.715824e+02	4.930134e+02	...	1.253587e+03	1.323788e+03	1.370287e+03	1.378311e+03	1.401198e+03	1.370195e+03	1.347483e+03	1.40615
Industry	Billion KHR	8.616130e+02	9.750045e+02	1.202819e+03	1.379236e+03	1.662387e+03	1.958358e+03	2.413020e+03	3.077994e+03	...	9.326838e+03	1.028875e+04	1.152895e+04	1.302342e+04	1.475995e+04	1.726845e+04	2.032309e+04	2.39273
Mining	Billion KHR	1.308868e+01	1.592588e+01	1.935014e+01	1.946743e+01	2.042166e+01	1.921258e+01	2.641868e+01	3.354449e+01	...	1.958526e+02	2.794816e+02	3.296976e+02	4.389171e+02	5.413762e+02	7.748998e+02	9.832309e+02	1.23900
Manufacturing	Billion KHR	5.871082e+02	6.290665e+02	7.713103e+02	9.289642e+02	1.180862e+03	1.483928e+03	1.765235e+03	2.254750e+03	...	6.207566e+03	6.913174e+03	7.900171e+03	8.552039e+03	9.499896e+03	1.038363e+04	1.175774e+04	1.29950
Food, Beverages & Tobacco	Billion KHR	2.817330e+02	2.673822e+02	3.458180e+02	3.574936e+02	3.773726e+02	4.437981e+02	4.814764e+02	4.494126e+02	...	9.780470e+02	1.070961e+03	1.162971e+03	1.276269e+03	1.369444e+03	1.529587e+03	1.710864e+03	1.87600
Textile, Wearing Apparel & Footwear	Billion KHR	7.087367e+01	7.960200e+01	1.232249e+02	1.578205e+02	3.792680e+02	5.840679e+02	7.903408e+02	1.297079e+03	...	3.930868e+03	4.402760e+03	5.192251e+03	5.580082e+03	6.264197e+03	6.795312e+03	7.776162e+03	8.55487
Wood, Paper & Publishing	Billion KHR	8.283938e+01	1.182034e+02	1.086544e+02	1.421610e+02	1.665790e+02	1.709180e+02	1.513734e+02	1.324056e+02	...	2.517084e+02	2.731036e+02	2.962565e+02	3.143777e+02	3.319666e+02	3.620923e+02	3.898683e+02	4.17000
Rubber Manufacturing	Billion KHR	2.353987e+01	2.225634e+01	3.135731e+01	4.236445e+01	4.876715e+01	4.636113e+01	5.574390e+01	6.916500e+01	...	1.675486e+02	2.189860e+02	2.428988e+02	2.6866398e+02	2.939612e+02	3.571656e+02	3.893206e+02	4.52000
Other Manufacturing	Billion KHR	1.2811223e+02	1.416225e+02	1.622557e+02	1.891246e+02	2.088749e+02	2.387826e+02	2.863005e+02	3.066885e+02	...	8.721937e+02	9.473634e+02	1.005794e+03	1.111950e+03	1.220327e+03	1.339468e+03	1.491509e+03	1.69514
Electricity, Gas & Water	Billion KHR	2.408523e+01	3.083400e+01	3.599419e+01	4.400260e+01	4.918903e+01	5.922147e+01	5.681942e+01	5.810317e+01	...	2.297358e+02	2.515607e+02	2.698489e+02	2.942861e+02	3.190588e+02	3.602062e+02	4.037711e+02	4.50000
Construction	Billion KHR	2.373309e+02	2.991781e+02	3.761644e+02	3.868017e+02	4.119140e+02	3.959958e+02	5.645473e+02	7.315956e+02	...	2.693684e+03	2.844531e+03	3.029324e+03	3.738174e+03	4.399622e+03	5.749714e+03	7.178344e+03	9.24330
Services	Billion KHR	2.686031e+03	2.575986e+03	2.883618e+03	3.310949e+03	3.559769e+03	4.079143e+03	4.740727e+03	5.230891e+03	...	1.670161e+04	1.802192e+04	1.952782e+04	2.140863e+04	2.361551e+04	2.677500e+04	2.924622e+04	3.24041
Trade	Billion KHR	9.929953e+02	9.231520e+02	1.002346e+03	1.141716e+03	1.230558e+03	1.361339e+03	1.476141e+03	1.512026e+03	...	3.870081e+03	4.378359e+03	4.763255e+03	5.107229e+03	5.561156e+03	6.317936e+03	6.940290e+03	7.69246
Hotel & Restaurants	Billion KHR	1.546020e+02	1.954459e+02	2.336610e+02	2.504199e+02	2.914019e+02	3.238907e+02	4.191921e+02	5.209333e+02	...	1.933510e+03	2.101725e+03	2.250765e+03	2.614983e+03	3.081916e+03	3.437413e+03	3.561806e+03	3.80934

Figure 26: Local GDP dataset

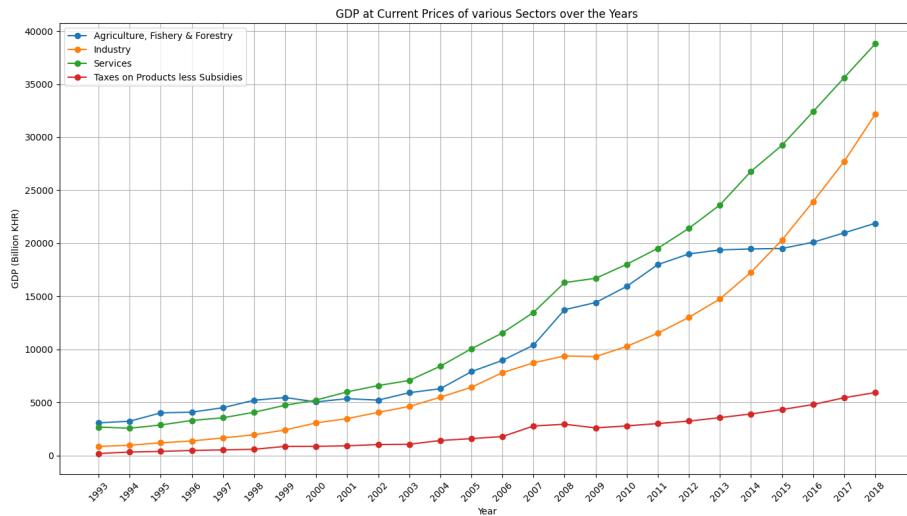


Figure 27: GDP of Each Sectors

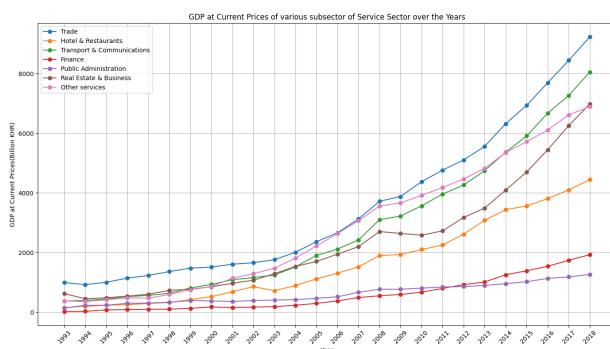


Figure 28: Subsector of Service Sector

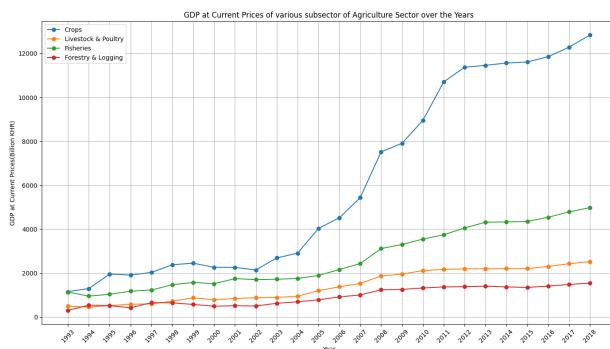


Figure 29: Subsector o Agriculture Sector

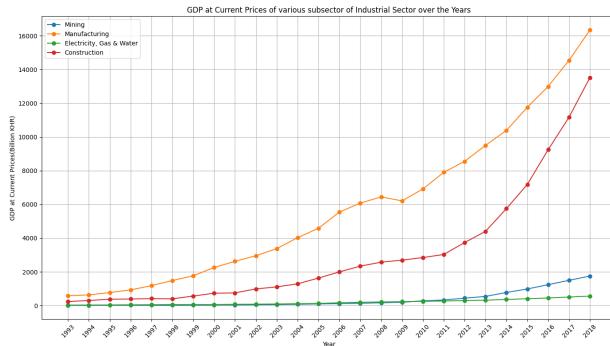


Figure 30: Subsector of Industrial Sector



Figure 31: Total GDP over year

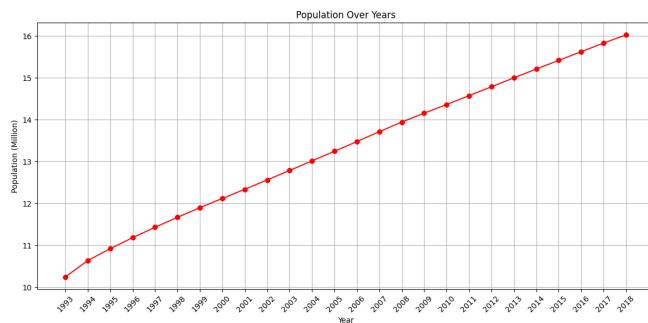


Figure 32: Population over year

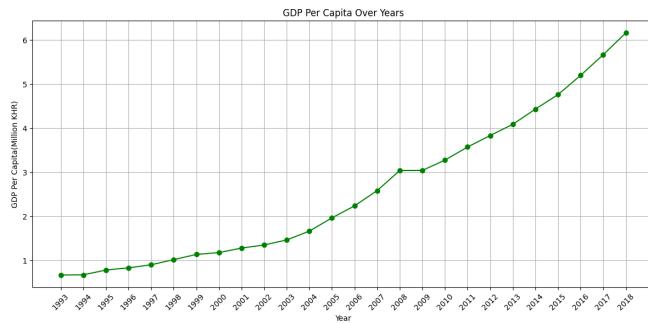


Figure 33: GDP per Capita over year

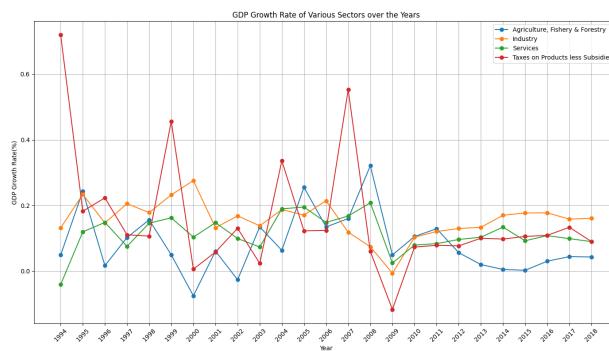


Figure 34: GDP Growth Rate of Various Sectors

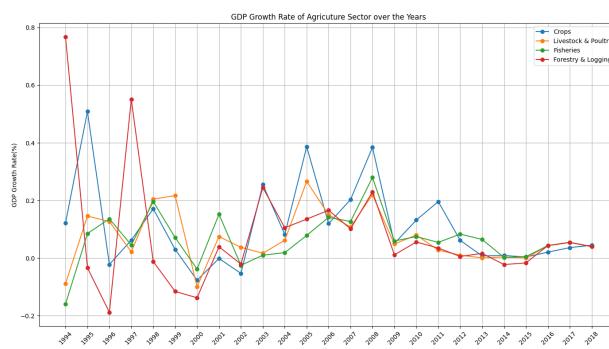


Figure 35: Subsector of Agriculture

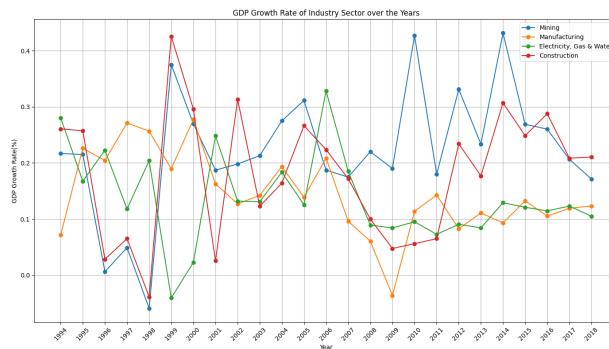


Figure 36: Subsectors of Industry

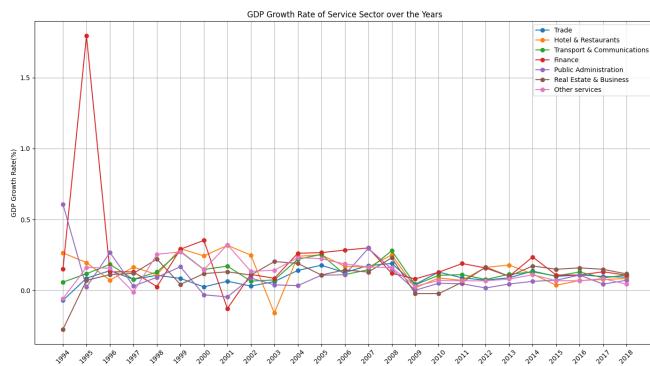


Figure 37: Subsector of Service

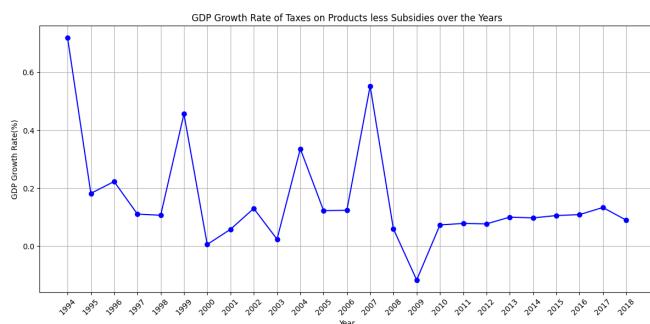


Figure 38: GDP growth rate of taxation

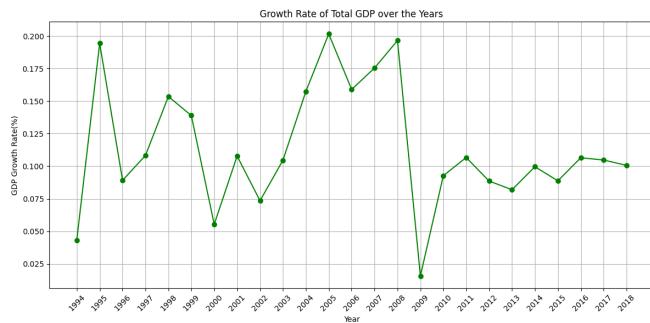


Figure 39: Growth Rate of Total GDP

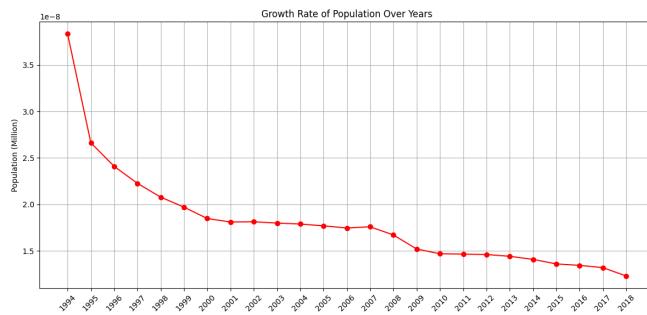


Figure 40: Growth Rate of Population

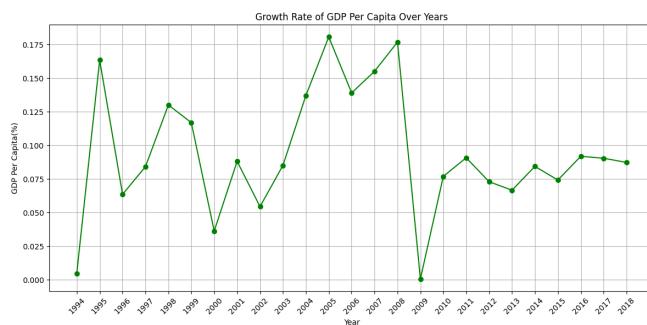


Figure 41: Growth Rate of GDP per Capita

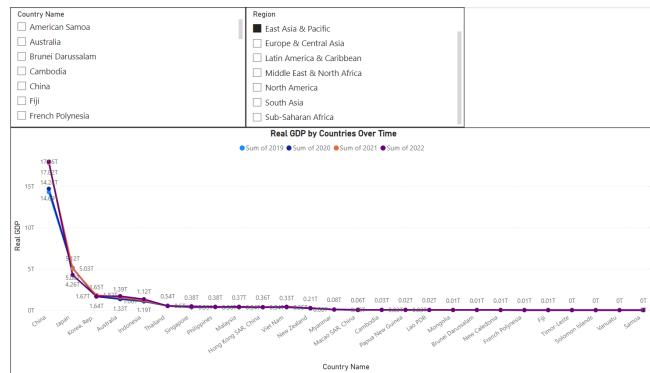


Figure 42: Growth Rate of GDP per Capita

Base on the graph we can gain insight such following:

- All sectors exhibit an upward trend, indicating growth in GDP across all sectors over the years.
- Services (green line) show the most significant growth, especially from the early 2000s onwards, surpassing other sectors.
- Industry (orange line) also demonstrates considerable growth, particularly notable from around 2005 onwards.
- Agriculture, Fishery & Forestry (blue line) has grown but at a much slower rate compared to services and industry.

- Taxes on Products less Subsidies (red line) shows the least growth and remains relatively flat in comparison to the other sectors.
- Manufacturing (orange line) shows the most significant growth, particularly from the early 2000s onwards.
- Construction (red line) also exhibits considerable growth, especially noticeable from around 2005 onwards.
- Electricity, Gas & Water (green line) and Mining (blue line) show growth but at a much slower rate compared to manufacturing and construction.

3.6.2.) Import

	Imported Value by Main Products					
Products (in USD)	2016	2017	2018	2019	2020	Q1 2021
01.Medicine	151,651,264	179,408,546	208,101,220	242,899,096	261,362,533	85,079,034
02.Cigarette	240,547,582	194,510,707	280,571,287	232,813,811	306,934,341	58,625,163
03.Beer	39,764,183	33,181,994	19,454,554	25,977,382	10,715,005	2,565,941
04.Alcohol	7,163,917	6,930,745	12,193,266	9,634,333	7,170,848	2,105,461
05.Soft drinks	123,426,547	223,172,574	286,985,402	305,625,500	311,534,489	79,084,402
06.Monosodium glutamate	15,873,613	17,192,921	17,055,030	16,170,239	19,163,568	5,094,861
07.Sugar	30,985,543	34,649,652	25,517,084	26,921,087	35,110,597	12,403,008
08.Cooking oil	13,418,892	15,893,734	15,551,414	15,919,700	18,442,534	5,054,252
09.Food stuff	206,913,258	255,296,987	330,522,322	424,478,219	454,511,555	131,486,105
10.Construction equipment	448,712,235	564,205,254	699,652,921	1,106,808,136	1,022,176,452	299,174,128
11.Cement	84,570,159	89,571,503	90,184,396	128,857,791	66,248,875	19,173,240
12.Steel	182,023,265	210,894,484	296,364,181	477,263,081	312,398,162	81,230,146
13.Cell phones	30,469,635	40,681,697	61,517,210	51,134,528	27,044,897	5,548,079
14.TV	5,457,655	4,718,362	4,452,954	11,613,562	7,852,997	2,691,828
15.Other electronic equipment	292,688,939	315,833,969	364,363,382	513,490,184	661,195,987	143,734,034
16.Airconditioner	12,625,055	12,492,209	23,484,145	24,210,001	19,864,535	3,049,791
17.Refrigerator	16,520,159	18,010,374	24,519,271	31,453,167	32,531,213	9,034,609
18.Generator	16,648,179	26,613,213	21,402,108	47,398,239	25,359,878	5,151,622
19.Garment(old)	59,951,196	66,573,154	83,890,824	73,908,469	56,043,760	12,965,101
20.Garment products(new)	310,409,160	353,938,956	405,559,645	479,374,644	448,667,736	119,027,725
21.Fabric	3,621,354,119	3,917,229,675	4,422,691,148	4,507,012,887	3,901,635,551	1,036,745,732
22.Motocycle	221,349,526	246,725,324	271,171,050	278,282,448	177,558,169	56,197,712
23.Car	363,633,587	405,780,161	578,885,857	827,445,136	499,322,051	136,319,719
24.Bus	35,850,375	61,767,708	89,324,322	112,747,885	34,270,478	4,131,679
25.Truck	174,293,095	182,455,239	273,672,071	542,267,486	391,457,350	114,222,130
26.Other vehicles	17,634,693	24,176,491	42,510,601	66,332,201	38,254,394	2,335,213
27.Tractor	62,857,629	114,083,465	128,926,685	140,968,998	120,522,734	46,088,717
28.Other heavy duty	37,519,960	113,292,219	107,229,638	94,071,714	78,236,085	16,726,321
29.Vehicle spare parts	71,361,424	101,719,703	110,181,303	107,028,463	44,835,674	6,645,160
30.Gold	234,492,192	227,757,472	500,975,670	92,418,227	864,839,197	2,444,577,102
31.Silver	5	-	23	7,580	-	-
32.Gasoline_EA	-	334,315,573	442,037,851	461,509,665	348,779,320	98,227,972
33.Diesel_DO	459,680,481	636,418,994	870,101,871	993,662,922	701,461,197	210,824,732
34.Jet fuel_ZA1	63	81,249,035	140,363,525	148,344,623	35,064,873	5,433,756
35.Furnace oil_FO	34,786,657	29,185,496	38,155,303	82,076,977	56,569,013	29,200,923
36.Lubricant	17,736,695	21,531,907	21,947,641	24,869,427	25,064,876	7,099,348
37.Gas	75,486,558	99,668,312	142,768,135	160,468,726	143,458,824	41,375,132
38.Fertilizer	164,161,074	177,085,392	222,161,148	216,126,880	208,320,744	46,889,880
39.Other	4,362,617,636	4,781,937,992	5,590,476,706	7,070,218,955	7,164,557,038	2,128,894,370

Figure 43: Import dataset

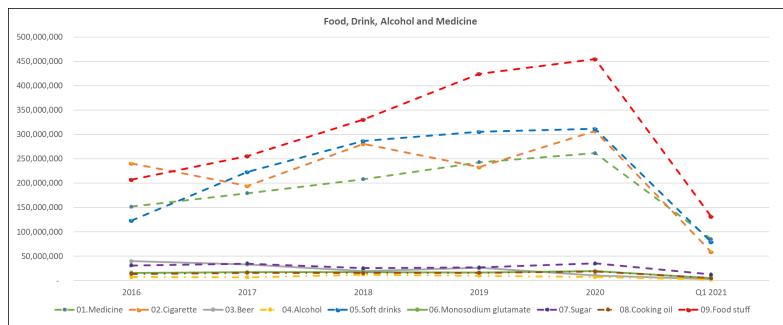


Figure 44: Imported of Food, Drink, Alcohol and Medicine

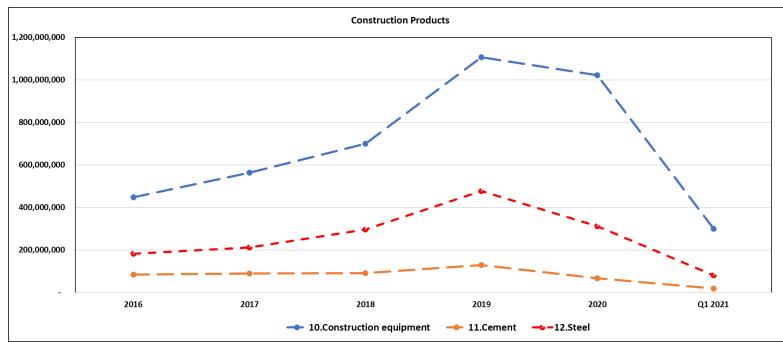


Figure 45: Imported of Construction Products

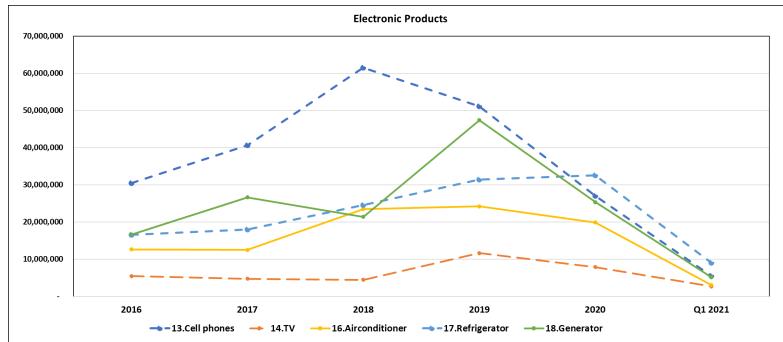


Figure 46: Electronics Products

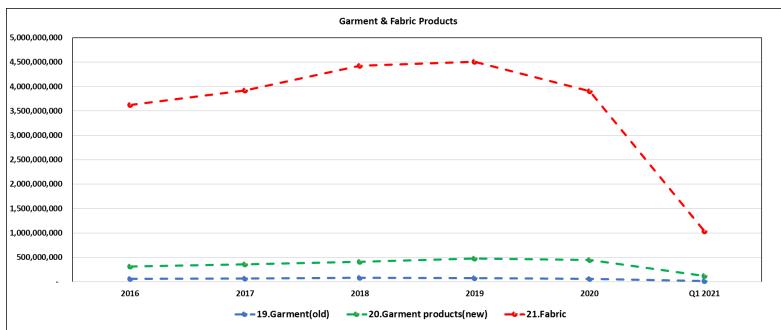


Figure 47: Imported of Garment & Fabric Products

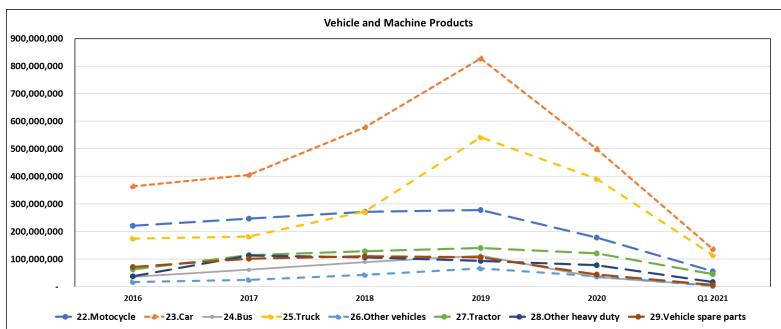


Figure 48: Imported of Vehicle and Machine Products

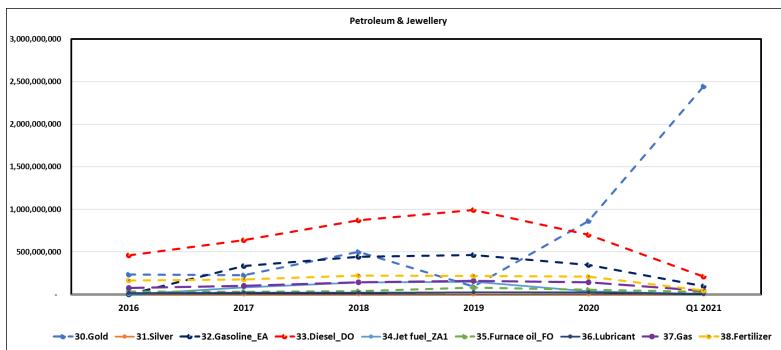


Figure 49: Imported of Petroleum & Jewellery

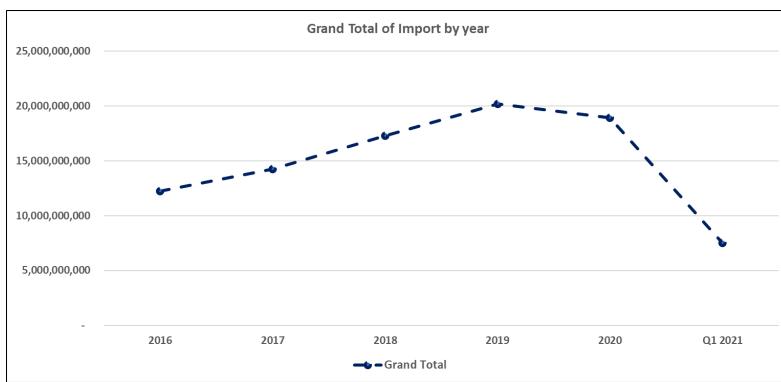


Figure 50: Grand Total of Import over year

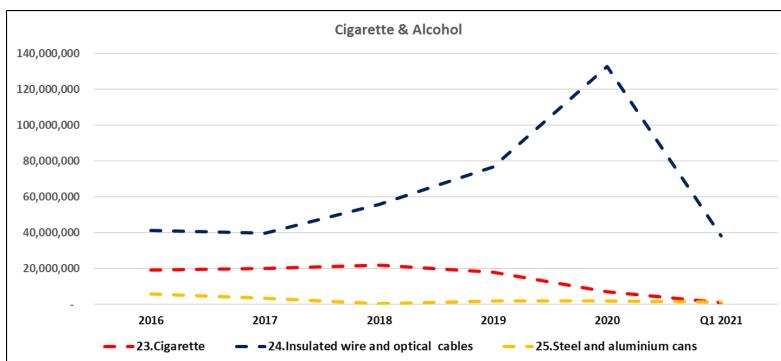


Figure 51: Cigarette & Alcohol

Base on the graph visualization above we can gain insight such following:

- **Food Stuff (Red Line):** Significant upward trend from 2016, peaking in 2020, then a sharp decline in Q1 2021.
- Indicates a high demand for food products which could be attributed to pandemic-induced stocking up, followed by normalization in 2021.
- **Construction equipment (Blue):** Significant upward trend from 2019 and decrease from 2020 because of Covid 19.
- **Cells Phone (Blue):** Significant upward trend from 2018 after decrease from 2019

3.6.3.) Export

Products (in USD)	2016	2017	2018	2019	2020	Q1 2021
01.Clothing	6,566,918,612	7,025,787,029	7,822,201,526	8,266,354,573	7,420,283,074	1,775,156,496
02.Shoes	773,779,060	879,815,058	1,039,567,249	1,264,618,370	1,116,729,538	316,508,787
03.Bags	140,195,188	267,583,459	556,228,083	1,078,892,404	964,701,282	319,789,263
04.Other textile products	155,288,976	156,652,353	172,653,097	230,226,785	266,410,568	68,289,879
05.Electrical part	165,043,610	162,401,332	176,716,136	134,081,472	166,224,664	50,275,119
06.Vehicle spare parts	80,402,630	133,898,060	148,586,473	175,298,560	157,143,953	43,491,112
07.Bicycle	342,642,702	360,523,806	376,016,727	412,492,208	527,082,229	153,916,216
08.Timber	3,288,590	16,400,255	8,045,007	8,267,184	7,309,402	2,906,100
09.Veneer	845,396	260,093	554,085	594,800	2,414,996	1,114,582
10.Plywood	8,036,885	62,123,561	103,572,570	125,506,863	183,402,537	60,721,761
11.Other articles from wood	4,935,195	21,642,624	45,631,250	106,287,658	158,915,338	58,659,728
12.Rice(husked)	300,070,693	334,970,413	418,695,466	420,133,305	468,581,981	109,803,522
13.Cassava	34,717,498	44,443,131	46,727,279	28,970,954	24,187,749	16,003,860
14.Maize	487,324	475,959	445,368	692,105	492,262	296,276
15.Beans	531,241	1,018,759	807,889	311,103	645,934	18,350
16.Banana	6,553	6,409,760	17,707,624	49,347,362	112,594,358	45,605,007
17.Mango	825,902	1,542,427	3,000,918	3,038,240	3,577,733	2,740,798
18.Cashew nuts	319,637	701,040	2,919,440	8,017,029	9,683,246	171,442
19.Rubber	160,552,988	251,077,012	217,993,983	219,321,955	272,072,967	93,037,970
20.Sugar	46,559,963	75,231,323	82,201,373	65,568,782	52,877,270	30,795,671
21.Fishing products	688,260	596,926	796,052	369,867	352,914	102,150
22.Other agricultural products	4,658,246	13,093,895	13,619,064	14,215,620	16,401,741	5,260,310
23.Cigarette	19,114,651	19,994,152	21,879,369	17,901,727	6,893,839	990,680
24.Insulated wire and optical cables	41,339,760	39,743,764	55,676,023	76,653,541	132,796,917	38,244,763
25.Steel and aluminium cans	5,731,437	3,230,159	292,410	1,732,540	1,697,132	1,321,509
26.Gold	187,410,646	211,465,195	31,721,677	387,725,282	3,011,284,884	-
27.Others products	884,905,627	1,130,405,443	1,264,552,475	1,652,118,667	2,130,612,019	610,592,727
Grand Total	9,929,297,270	11,221,486,985	12,628,808,616	14,748,738,952	17,215,370,529	3,805,814,079

Figure 52: Export Dataset

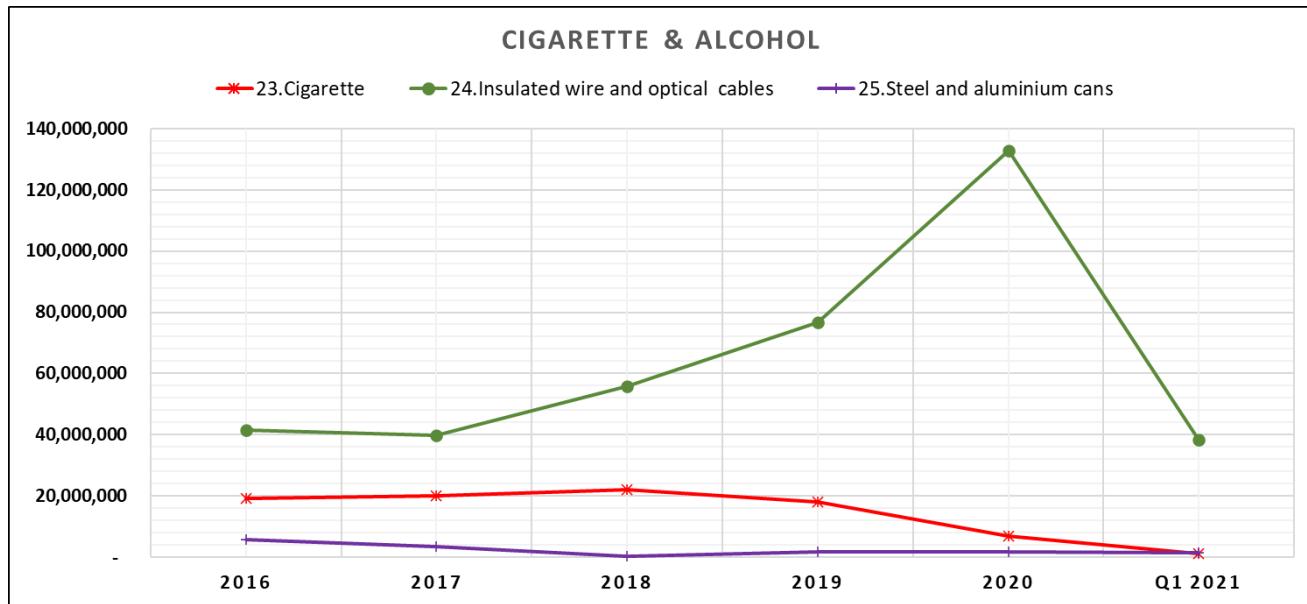


Figure 53: Export Goods in Cigarette & Alcohol

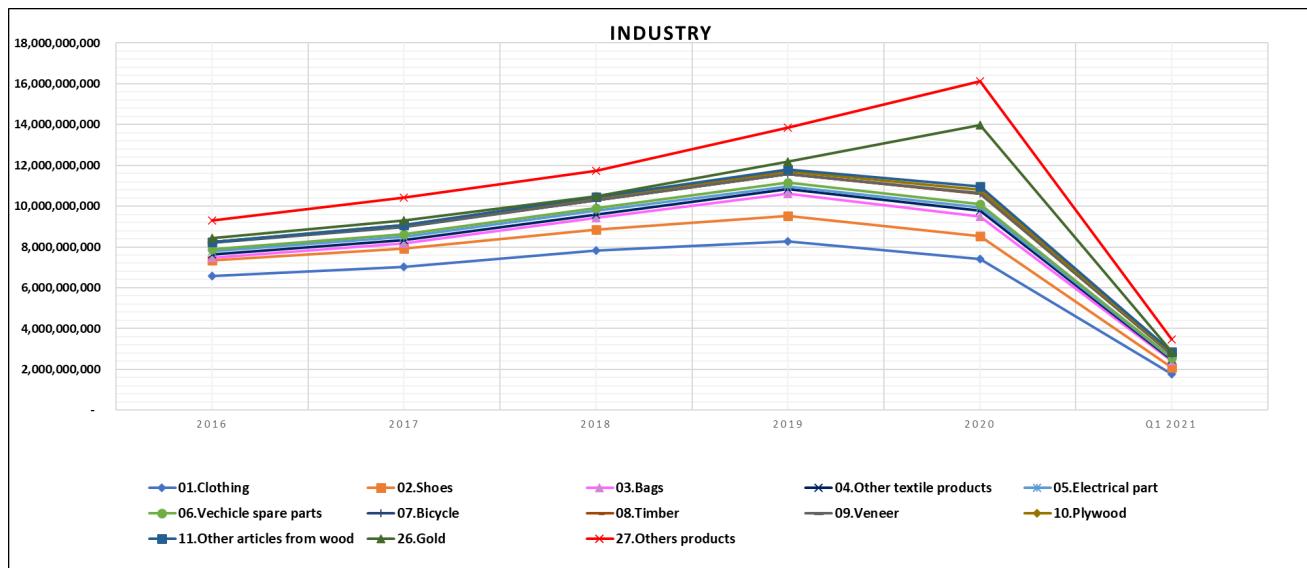


Figure 54: Export Goods in Industry

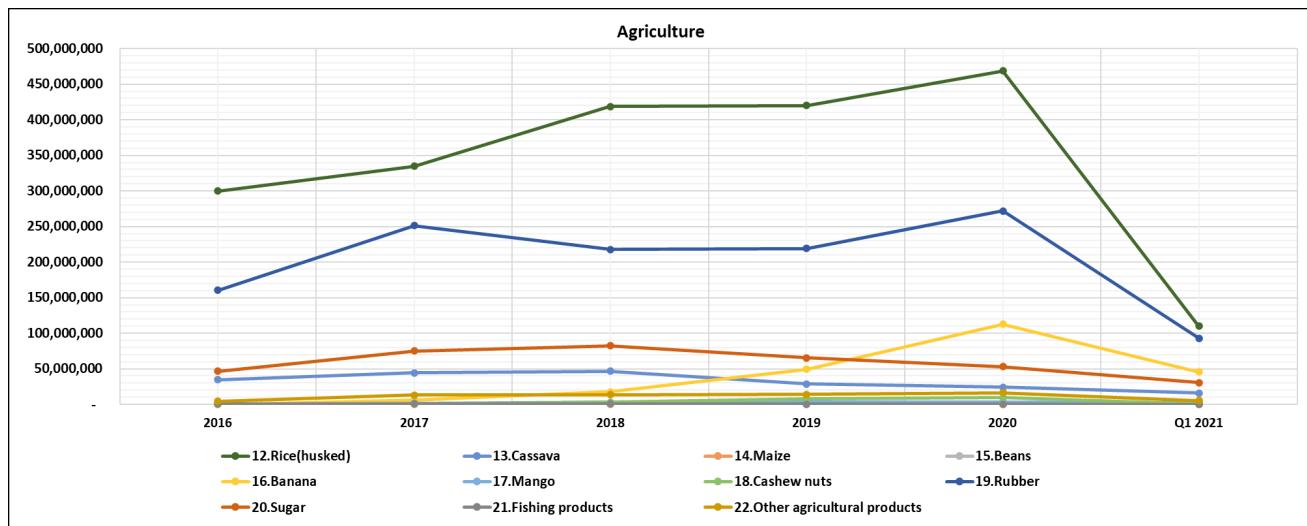


Figure 55: Exported Goods in Agriculture

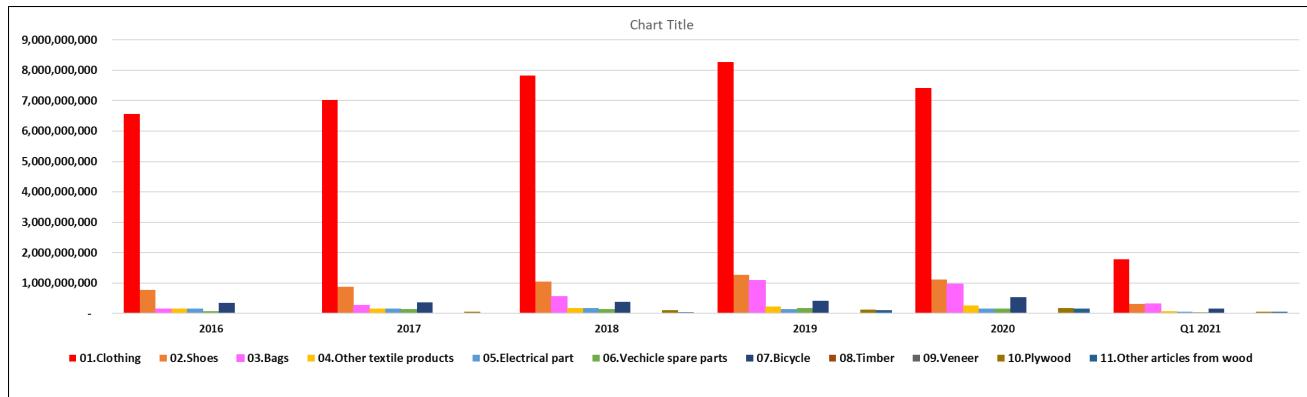


Figure 56: Exported Goods by various products

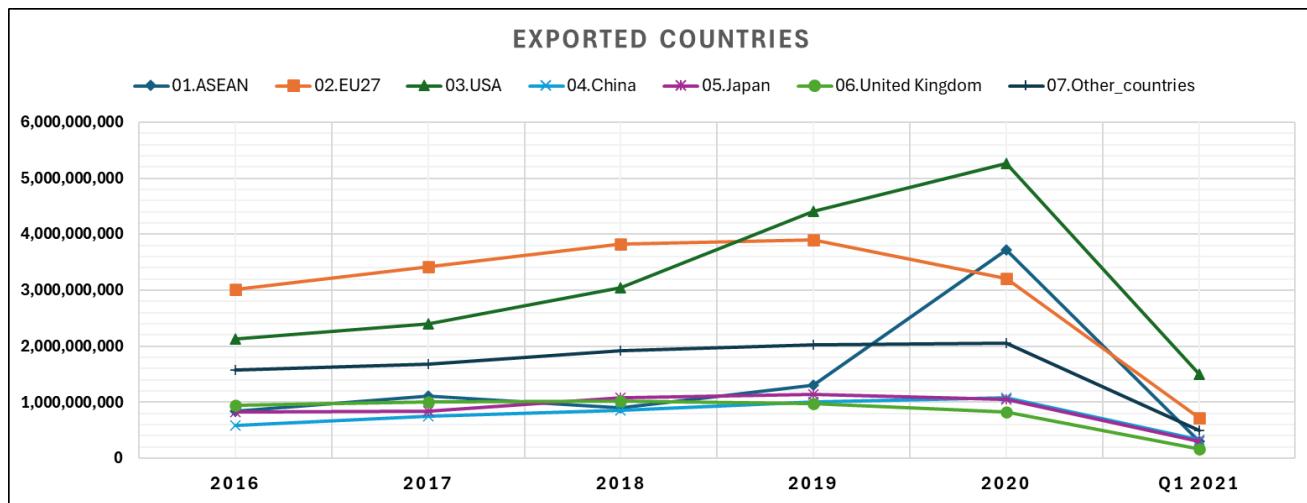


Figure 57: Export Countries over year

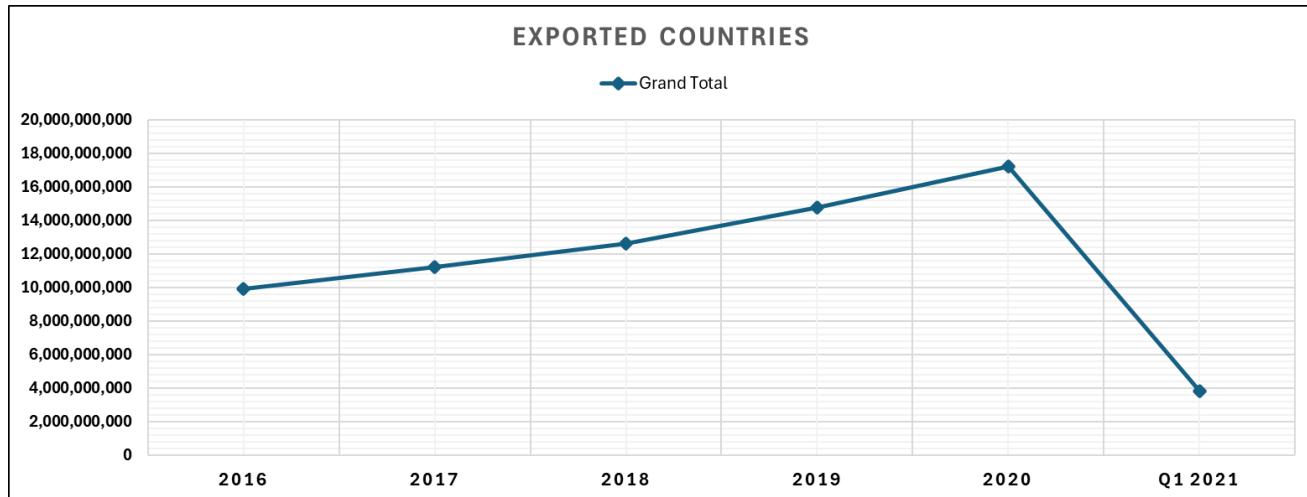


Figure 58: Total Exported over year

3.6.4.) Inflation

National Bank of Cambodia											
Statistics Department											
Contribution Inflation (Year on Year)											
Oct, Dec. 2006 = 100	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
Inflation (All Items) Year on Year %Change	3.70	4.08	6.33	7.19	7.25	7.17	7.85	5.38	4.94	4.44	3.64
Food and Non-Alcoholic Beverages	1.55	2.01	3.24	3.15	3.46	3.08	3.60	2.74	2.39	2.52	2.39
Alcoholic Beveraged, Tobacco and Narcotics	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Clothing and Footwear	0.17	0.19	0.24	0.24	0.26	0.25	0.24	0.19	0.16	0.17	0.15
Housing, Water, Electricity, Gas and other Fuels	0.68	0.77	0.83	1.16	1.00	1.05	1.05	0.71	0.59	0.54	0.38
Furnishings, Household Household Maintenance	0.07	0.07	0.09	0.10	0.10	0.11	0.10	0.08	0.08	0.08	0.07
Health	0.09	0.12	0.16	0.15	0.14	0.13	0.13	0.08	0.06	0.05	0.08
Transportation	0.83	0.56	0.85	1.32	1.19	1.42	1.45	0.58	0.68	0.41	0.12
Communication	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreation and Culture	0.05	0.07	0.09	0.11	0.12	0.13	0.14	0.12	0.13	0.11	0.08
Education	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.02
Restaurants	0.17	0.19	0.72	0.84	0.84	0.86	0.99	0.77	0.76	0.47	0.29
Miscellaneous Goods and Services	0.10	0.08	0.08	0.09	0.10	0.10	0.10	0.06	0.05	0.05	0.03

Source: National Institute of Statistics, Ministry of Planning

Figure 59: Inflation Dataset

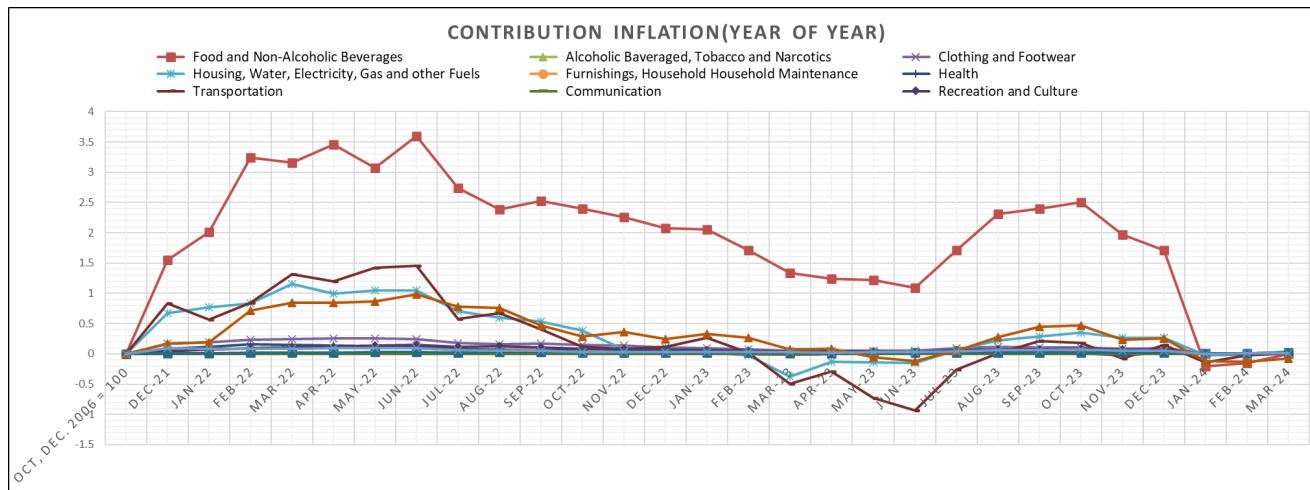


Figure 60: Inflation Graph Visualization

3.6.) Data Visualization

Country Name	Indicator Name	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Afghanistan	Inflation, consumer prices (annual %)	12429791398	1767680026	161676124	131356077	1485281496	1228859126	9705853203	1024959874	749525607	7.9884674	8.60148549	5.64035396	8.73735362	7.44977004	5.02342068	8.55803802	8.898163802	8.40774806
Africa Eastern and Southern	Inflation, consumer prices (annual %)	1057361395	1741687789	-0.06299000	0.55345572	318401684	1056328867	4914239726	3.99714704	4.471125439	0.37226617	2.530775167	4.36152914	3.188893302	1.76090410	0.694383605	5.631633514	4.471599842	3.60738768
Africa Western and Central	Inflation, consumer prices (annual %)	225.0054213	85.00475125	22.65505269	7.792182538	12.72547781	33.18027488	20.64268587	0.38943754	0.500218136	3.10758827	7.705273997	2.880017969	2.366581957	2.37072831	2.932682482	1.22020168	2.386581957	2.37072831
Albania	Inflation, consumer prices (annual %)	16.65253439	25.88838693	31.66966191	20.54026216	29.04765612	29.77965649	16.67097586	5.735322754	4.950161638	2.645511134	3.39173189	4.225988349	1.418301923	4.268953958	3.96180303	3.214919185	3.678955747	3.678955747
Algeria	Inflation, consumer prices (annual %)	83.78378378	299.5098039	1378.527607	949.792331	2666.450393	4145.105982	219.1767212	107.2846215	245.195902	3.121287996	0.771779797	1.402796636	2.030077579	2.098751967	1.778785374	1.41605254	1.41605254	
Angola	Inflation, consumer prices (annual %)	84.451462408	9	9.35975159	9.37034416	9.157259804	6.5437905865	4.68130629	3.601161033	3.41731949	2.669373961	1.833299889	1.832299889	1.832299889	1.832299889	1.832299889	1.832299889	1.832299889	
Antigua and Barbuda	Inflation, consumer prices (annual %)	3373.759442	5.1551255	16.68118564	13.9607612	8.67246824	6.64824575	-0.790838769	3.145904647	4.271553365	9.61261359	0.638924803	2.88235625	4.407368086	4.407368086	4.407368086	4.407368086	4.407368086	
Arab World	Inflation, consumer prices (annual %)	5.836867752	5.555555556	3.87373537	5.21555984	6.317079713	3.361391073	3.225287297	2.999848025	1.894948856	2.280371983	4.04021712	2.883804925	3.352467989	3.653682507	2.529179469	3.897786774	3.608023488	5.352567845
Armenia	Inflation, consumer prices (annual %)	7.3330201952	3.176673445	1.966934791	4.6277666	2.615384615	0.224687556	0.86013463	1.483129043	4.457435148	2.091574539	2.72359569	2.34325525	2.691831683	3.555287737	2.32761289	2.32761289	2.32761289	
Aruba	Inflation, consumer prices (annual %)	3.261872319	3.373427035	-10.63009716	112.800024	166.215949	411.7596418	19.7948281	3.674348097	-0.772697886	0.55889373	2.34462653	1.447159502	2.77116472	2.23386493	0.679507819	1.447159502	1.447159502	
Australia	Inflation, consumer prices (annual %)	10.12231126	1.75363445	1.966934791	4.6277666	2.615384615	0.224687556	0.86013463	1.483129043	4.457435148	2.091574539	2.72359569	2.34325525	2.691831683	3.555287737	2.32761289	2.32761289	2.32761289	
Austria	Inflation, consumer prices (annual %)	6.466931912	7.114681202	5.738198862	2.72289767	1.39833237	2.06994954	1.379137412	0.54415038	1.36613368	1.25424626	2.044988775	1.825553703	2.01620618	2.293917851	1.447159502	2.168552588	2.168552588	
Azerbaijan	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Bahamas, The	Inflation, consumer prices (annual %)	6.12671847	6.3573626123	6.0938003	1.11349333	0.07204388	1.878682704	2.38615228	7.71053679	-1.26886607	1.5000402	2.435919035	2.577834904	0.125249458	1.619432198	1.394423231	6.021817295	1.207662638	1.042329829
Bahrain	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Bangladesh	Inflation, consumer prices (annual %)	11.1718746	21.44706682	12.0603238	8.327876919	7.874042195	4.70844636	12.42548662	4.70844636	7.67328957	2.15951688	4.68032996	1.396633797	0.802638852	3.327214997	4.417368081	5.393210861	4.263960404	8.705692326
Barbados	Inflation, consumer prices (annual %)	11.39634612	11.78501608	16.1676124	14.3003032	10.54202099	10.1254608	10.08285807	8.79917391	6.661198657	7.749619712	8.617485149	6.539037965	9.4570637	6.1022626	11.35521879	7.060994872	11.35521879	7.060994872
Belarus	Inflation, consumer prices (annual %)	119.0239233	221.01657	70.9400321	52.71207675	63.93776634	29.6797509	163.6203239	61.13493216	42.33754812	28.39763991	18.1024249	10.23887945	6.957192035	4.82757375	1.713877713	2.18082746	1.820562	
Belgium	Inflation, consumer prices (annual %)	3.44881218	3.215310693	2.427955672	2.75442645	2.377540845	1.467966091	2.077201704	1.638160495	0.949350288	1.234462334	1.64521462	1.588964	2.072383172	1.791207701	1.820562	1.820562	1.820562	
Belize	Inflation, consumer prices (annual %)	0.35907173	0.761951501	2.39670073	1.47295947	2.56934204	2.88915844	5.965200795	1.490237568	2.1952625	2.621395246	3.067439669	3.651417966	2.42026607	2.318023747	3.694420997	1.104310444	7.113777113	2.18082746
Benin	Inflation, consumer prices (annual %)	0.440599217	28.353086617	14.46254822	4.914239726	3.466295906	5.733145484	0.326722893	4.164504426	3.984295478	4.897102811	4.052403270	5.364520585	3.782179695	12.98069133	1.364520585	1.364520585	1.364520585	
Bhutan	Inflation, consumer prices (annual %)	10.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Bolivia	Inflation, consumer prices (annual %)	11.1718746	21.44706682	12.0603238	8.327876919	7.874042195	4.70844636	12.42548662	4.70844636	7.67328957	2.15951688	4.68032996	1.396633797	0.802638852	3.327214997	4.417368081	5.393210861	4.263960404	8.705692326
Botswana	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Brazil	Inflation, consumer prices (annual %)	2947.32772	432.7866619	95.1962037	19.738079	20.8788396	66.0070353	15.7376858	6.926712516	3.195076293	4.638474499	7.044714077	6.640359265	8.450764377	14.747491792	6.59717851	6.89537209	14.6356129	3.641272991
Brunei Darussalam	Inflation, consumer prices (annual %)	2.138660932	1.74527595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	4.25172595	
Cambodia	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
China	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Fiji	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Lao PDR	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Cambodia	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Japan	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Samoa	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Korea Rep.	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Philippines	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969
Timor-Leste	Inflation, consumer prices (annual %)	1.00718832	12.27517294	15.97521738	11.19801659	7.00993535	9.48754938	8.79031819	6.505487183	0.58538999	6.776993936	1.01720473	2.08262029	2.077173742	3.32354933	5.785736865	7.046618162	6.75621171	9.109894969

3.6.5.) Exchange Rate



Figure 63: Dataset and Graph Visualization of Exchange Rate



Figure 64: Exchange Rate in ASEAN Countries

According to the graph visualization above we can gain insight such following:

- Key Observations

- **Stability:** The HKD and KRW show high stability over the observed period, indicating strong control or pegging mechanisms in place.
- **Volatility:** The AUD and JPY show significant volatility, particularly around the global financial crisis of 2008.

- **Trend:** The SDR shows a clear upward trend in the early part of the observed period, stabilizing at a higher value in the later years.
- Potential Influences
 - **Global Financial Crisis (2008):** The spikes in the exchange rates for AUD and JPY around 2008 suggest significant impact from the financial crisis, affecting global currency markets.
 - **Economic Policies:** The stability of the HKD indicates effective pegging to the USD, while the SDR's value reflects its composite nature based on a basket of international currencies.
 - **Market Dynamics:** Fluctuations in the AUD reflect its sensitivity to commodity prices and economic conditions in Australia.

3.6.6.) Unemployment

Region	IncomeGroup	Country Name	date	Population	Annual % Change
Latin America & Caribbean	High income	Aruba	Tuesday, December 31, 1991	9259362	3.91
South Asia	Low income	Afghanistan	Thursday, December 31, 1992	9718215	4.96
Sub-Saharan Africa	Lower middle income	Angola	Friday, December 31, 1993	10243550	5.41
Europe & Central Asia	Upper middle income	Albania	Saturday, December 31, 1994	10636353	3.83
Europe & Central Asia	High income	Andorra	Sunday, December 31, 1995	10919528	2.66
Middle East & North Africa	High income	United Arab Emirates	Tuesday, December 31, 1996	11182612	2.41
Latin America & Caribbean	Upper middle income	Argentina	Wednesday, December 31, 1997	11431569	2.23
Europe & Central Asia	Upper middle income	Armenia	Thursday, December 31, 1998	11669077	2.08
East Asia & Pacific	High income	American Samoa	Friday, December 31, 1999	11899006	1.97
Latin America & Caribbean	High income	Antigua and Barbuda	Sunday, December 31, 2000	12118841	1.85
East Asia & Pacific	High income	Australia	Monday, December 31, 2001	12338192	1.81
Europe & Central Asia	High income	Austria	Tuesday, December 31, 2002	12561779	1.81
Europe & Central Asia	Upper middle income	Azerbaijan	Wednesday, December 31, 2003	12787710	1.8
Sub-Saharan Africa	Low income	Burundi	Friday, December 31, 2004	13016371	1.79
Europe & Central Asia	High income	Belgium	Saturday, December 31, 2005	13246583	1.77
Sub-Saharan Africa	Lower middle income	Benin	Sunday, December 31, 2006	13477779	1.75
Sub-Saharan Africa	Low income	Burkina Faso	Monday, December 31, 2007	13714791	1.76
South Asia	Lower middle income	Bangladesh	Wednesday, December 31, 2008	13943888	1.67
Europe & Central Asia	Upper middle income	Bulgaria	Thursday, December 31, 2009	14155740	1.52

Figure 65: Global Income Group and Cambodian Population Dataset

Country Name	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Afghanistan	7.942	7.94	7.945	7.947	7.942	7.934	7.939	7.942	7.94	7.944	7.942	7.93	7.929	7.928	7.925	7.924	7.928	7.923	
Africa Eastern and Southern	7.637951136	7.991724772	7.980381768	7.841372465	7.56219535	7.444471103	7.38546719	7.444383003	7.516038038	7.47091097	7.347151318	7.3080994	7.264895844	7.063270066	6.878496998	6.802394227	6.746265679	6.736780603	6.859294436
Africa Western and Central	4.325942352	4.445919274	4.590287102	4.62285417	4.671334759	4.614581494	4.470926934	4.482158233	4.70955173	4.767678866	4.692619302	4.470716103	4.372864532	4.206412643	4.335384372	4.218898665	4.159594767	4.21853979	4.252491146
Albania	10.307	30.015	25.258	20.84	14.611	13.931	16.876	20.047	20.84	19.028	18.575	17.895	16.889	16.31	15.97	15.63	15.97	13.67	
Algeria	20.6	24.38	26.23	27.74	31.84	28.32	25.43	26.65	28.542	29.77	27.3	25.9	23.72	17.65	15.27	12.27	13.79	11.33	10.16
Angola	16.668	16.857	17.46	17.483	16.924	15.967	15.84	16.117	16.43	16.562	16.597	16.317	16.34	16.187	16.173	15.969	15.905	16.013	16.298
Arab World	11.67384912	11.9046487	12.6295252	12.75006712	12.21112042	12.22211423	11.73452623	11.70088005	11.86029532	12.34609238	12.22806357	12.24775038	12.20914943	11.23530829	11.06011195	10.35228803	9.964707404	9.677903752	9.307563346
Argentina	5.44	6.38	10.1	11.76	18.8	17.11	14.82	12.65	14.05	15	17.32	19.59	15.36	13.52	11.51	10.08	8.47	7.84	8.65
Armenia	1.6	1.8	5.3	6.6	6.7	9.3	10.8	9.4	11.2	11.023	10.848	10.651	10.463	10.3	10.137	9.979	9.81	10.126	10.512
Australia	9.59	10.73	10.88	9.72	8.47	8.51	8.37	7.68	6.88	6.29	6.75	6.38	5.93	5.4	5.04	4.79	4.38	4.24	5.57
Austria	3.42	3.59	4.25	3.54	4.35	5.28	5.15	5.52	4.7	4.69	4.01	4.85	4.78	5.97	5.68	5.32	4.91	4.2	5.37
Azerbaijan	0.9	1.8	4.5	6.3	7.2	8.1	9.1	10	10.9	11.78	10.91	10.04	9.17	7.99	7.26	6.62	6.33	5.86	5.74
Bahamas, The	12.17	14.81	12.72	13.83	10.83	11.46	9.76	7.65	7.45	7.238	6.87	9.05	10.84	10.2	10.2	7.54	7.88	8.18	14.25
Bahrain	1.144	1.059	0.963	1.094	1.129	1.258	1.202	1.186	1.145	1.176	1.169	1.101	1.052	1.046	1.027	1.03	1.077		
Bangladesh	2.2	2.26	2.323	2.385	2.448	2.51	2.7	2.89	3.081	3.27	3.617	3.968	4.32	4.288	4.25	3.59	4.055	4.525	5
Barbados	22.318	22.94	24.54	22.98	19.66	14.71	14.61	12.4	9.35	9.85	10.32	11	9.57	9.08	8.73	7.41	8.12	10.02	
Belarus	0.6	3.1	8.5	12.8	17.7	24.4	17.1	14	12.8	11.519	10.832	10.149	9.436	8.742	8.059	7.404	6.732	6.1	
Belgium	6.98	6.7	8.08	9.65	9.34	9.48	8.95	9.32	8.65	6.59	6.18	6.91	7.68	7.36	8.44	8.25	7.46	6.98	7.91
Belize	9.643	9.659	9.78	11.1	12.48	13.82	12.68	14.31	12.84	10.808	9.07	10.04	10.363	10.601	10.91	9.39	8.51	8.18	8.335
Benin	1.691	1.51	1.517	1.495	1.32	1.273	1.1	1.06	0.955	0.868	0.763	0.69	0.752	0.796	0.877	0.898	0.9	0.872	0.93
Bhutan	1.382	1.385	1.39	1.391	1.393	1.395	1.397	1.4	1.4	1.65	1.9	1.85	1.8	2.49	3.13	3.7	3.831	3.96	
Bolivia	2.934	3.032	3.051	3.08	2.665	2.375	2.08	2.122	2.299	2.439	2.622	2.603	2.653	2.615	2.597	2.574	2.612	2.27	2.97
Bosnia and Herzegovina	17.55	18.511	19.451	20.289	21.066	21.838	22.699	23.596	24.554	25.483	26.489	27.432	28.416	29.293	30.213	31.11	28.98	23.41	24.07
Botswana	13.82	16.35	18.772	21.2	21.393	21.59	20.976	20.86	18.182	15.88	18.54	21.308	23.8	21.739	19.865	17.78	16.901	16.18	16.17
Brazil	6.254	6.42	6.03	6.577	7.09	8.03	9	10.15	11.13	10.894	10.65	10.64	11.17	10.07	10.55	9.69	9.28	8.27	9.42
Brunei Darussalam	4.7	4.792	4.889	4.985	5.081	5.174	5.273	5.371	5.465	5.554	5.643	5.734	5.826	5.92	6.015	6.106	6.198	6.293	6.393
Bulgaria	11.1	15.3	16.4	12.8	11.1	12.5	13.7	12.2	14.1	16.22	19.92	18.11	13.73	12.04	10.08	8.95	6.88	5.61	6.62
Burkina Faso	2.431	2.481	2.38	2.58	2.53	2.428	2.394	2.44	2.565	2.721	2.78	2.91	2.78	3.308	4	3.676	3.3	3.525	3.779
Burundi	3.195	3.252	3.381	3.347	3.391	3.399	3.307	3.212	3.29	3.285	3.202	3.281	3.19	3.244	3.18	2.424	1.63	1.625	
Cabo Verde	13.749	13.61	13.394	12.915	12.888	12.777	13.001	13.056	12.989	13.278	13.452	13.752	13.524	13.481	13.376	13.24	13.252	13.52	
Cambodia	19.98	19.984	20.07	20.403	20.351	20.136	19.944	19.962	20.252	19.913	19.912	19.629	19.908	19.925	19.8	19.516	19.928	19.995	19.851
Cameroun	9.348	9.452	9.597	9.203	8.807	8.06	7.829	7.649	7.556	7.516	7.46	7.615	5.988	5.058	4.4	3.727	3.06	3.373	3.735
Canada	10.32	11.2	11.38	10.4	9.49	9.62	9.1	8.28	7.58	6.83	7.22	7.66	7.57	7.19	6.76	6.48	6.16	6.28	8.46
Caribbean small states	11.8040212	12.28515865	12.1290693	11.80491899	11.0250673	10.90517865	10.63973968	10.4027246	10.08867938	9.650441001	9.27998257	9.347788191	9.457607061	8.745479399	8.563909275	7.815705503	7.525540662	7.351127084	8.390323663
Central African Republic	5.73	5.859	5.926	5.953	5.877	5.82	5.746	5.72	5.719	5.675	5.713	5.745	5.766	5.704	5.684	5.623	5.584	5.537	5.644
Central Europe and the Balti	9.526072377	10.13685426	11.39520423	11.24422969	10.72034656	10.08043629	9.212947694	9.01866741	10.41779554	12.41220269	13.2345833	13.75991554	13.00497967	12.92634248	12.06176788	10.1049764	7.81158468	6.608146601	8.487734842
Chad	0.662	0.649	0.7	0.708	0.756	0.686	0.72	0.708	0.735	0.782	0.772	0.742	0.691	0.637	0.63	0.671	0.795	0.885	0.878
Channel Islands	5.681	6.121	7.073	7.251	6.999	6.928	6.72	6.316	5.949	5.391	5.082	5.351	5.678	5.876	5.806	5.511	5.209	5.277	6.622
Chile	5.23	4.35	4.49	5.87	4.7	7.41	7.14	7.31	11.16	10.49	10.39	10.17	9.77	10.16	9.34	9.02	8.43	9.29	11.31

Figure 66: Global Unemployment Rate Dataset

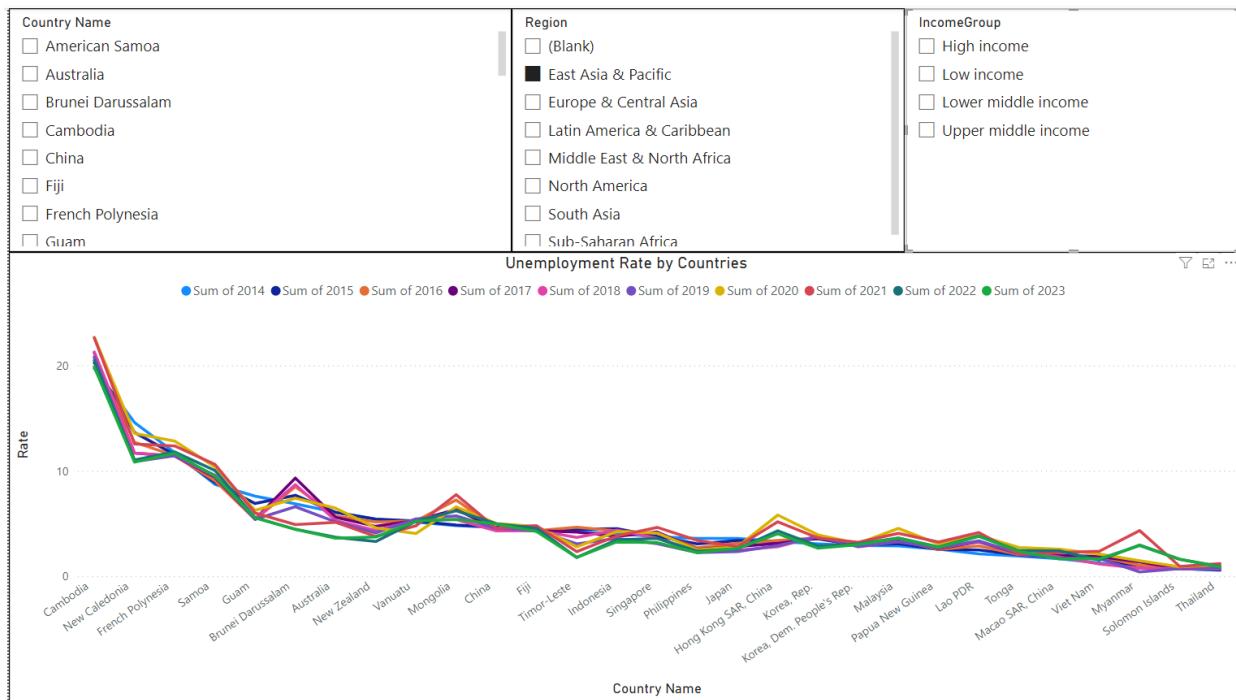


Figure 67: Graph Visualization of Unemployment Rate

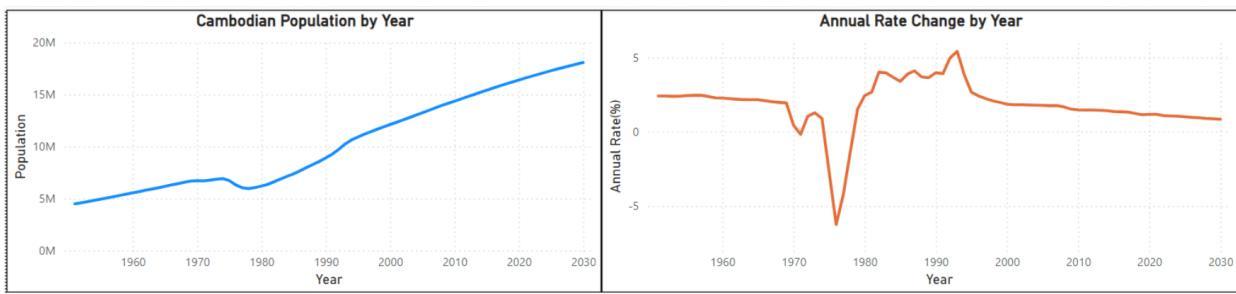


Figure 68: Graph Visualization of Unemployment Rate

3.6.7.) Taxation

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Tax																	
Total tax and non-tax revenue	3134477	3398544	4674253	6199759	5353324	6452084	6350337	9551208	11377454	13443663	14409681	16913325	19386752	23599112	29461178	25527113	23833103
Total tax revenue	2023849	2441236	3398035	4429845	290745	3440971	3940337	7049170	7908759	1045745	11468215	12800088	15192684	18560887	23821776	20881712	19874770
1000 Taxes on income, profits and capital gains	222384	351386	480287	653876	188868	290876	292883	1276049	1561450	1964825	2472094	2952788	3798294	4367432	5467480	6110374	6219331
1100 Taxes on income, profits and capital gains of individuals	50421	69119	89587	131201	186790	197724	235820	299228	377417	484751	753929	835720	1031691	1106117	1296595	1343255	1334585
1110 On income of individuals	50421	69119	89587	131201	186790	197724	235820	299228	377417	484751	753929	835720	1031691	1106117	1296595	1343255	1334585
1200 Taxes on income, profits and capital gains of corporates	171963	262267	390700	522675	22077	93153	57063	976822	1184033	1480074	1718165	2117068	2766603	3261315	4170885	4767119	4884746
1210 On profits of corporates	171963	262267	390700	522675	22077	93153	57063	976822	1184033	1480074	1718165	2117068	2766603	3261315	4170885	4767119	4884746
1300 Unallocable between 1100 and 1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000 Social security contributions (SSC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3000 Taxes on payroll and workforce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4000 Taxes on property	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4100 Recurrent taxes on immovable property	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4200 Recurrent taxes on net wealth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4300 Estate, inheritance and gift taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4400 Taxes on financial and capital transactions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4500 Non-recurrent taxes on property	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4600 Other recurrent taxes on property except 4100 and 4200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5000 Taxes on goods and services	1804997	2101645	2910331	3763492	2799244	3146690	3643991	5496339	6068397	8107073	8550924	9476106	10823127	13388678	17234748	13799113	12728646
5100 Taxes on production, sale, transfer, etc	1804997	2101645	2910331	3746870	1841489	2095323	2618771	5338250	5904515	7968193	8535381	9242602	10552076	1308945	16866195	13337004	1285114
5110 General taxes on goods and services	730329	870492	1157545	1562598	850595	940348	1242053	2335497	2643761	3364630	3639882	4142807	4754680	5581051	7272114	6380770	5752233
5111 Value added taxes	719084	855596	114287	1546131	850595	940348	1242053	2335497	2643761	3364630	3612478	4142115	4736460	5580970	7272100	6380768	5752233
5112 Sales tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5113 Other (than value added and sales tax)	11245	14897	14758	16467	0	0	0	0	0	0	0	0	0	0	0	0	0
5120 Taxes on specific goods and services	1074568	1231153	1752786	2183772	990894	1154975	1376717	3002753	3260754	4605562	4713480	5099795	5817395	7502894	9594081	6956234	6532881
5121 Excises	880007	417638	616660	870553	721169	903667	1035254	1314493	1451779	1966141	2568103	3095077	3832780	5128519	6674530	4750955	4399607
5122 Profits of fiscal monopolies	0	0	0	0	0	7761	261	985	0	0	0	0	0	0	0	0	0
5123 Customs and import duties	551280	616227	880055	1064421	0	0	661	1154268	1275118	1657937	1808836	1957120	1920676	23031196	2848269	2174133	2087208
5124 Taxes on exports	96691	116635	141118	115637	107440	118637	187055	169117	217888	252408	180241	31364	45512	51473	48779	23807	43521
5125 Taxes on investment goods	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 69: Taxation Dataset

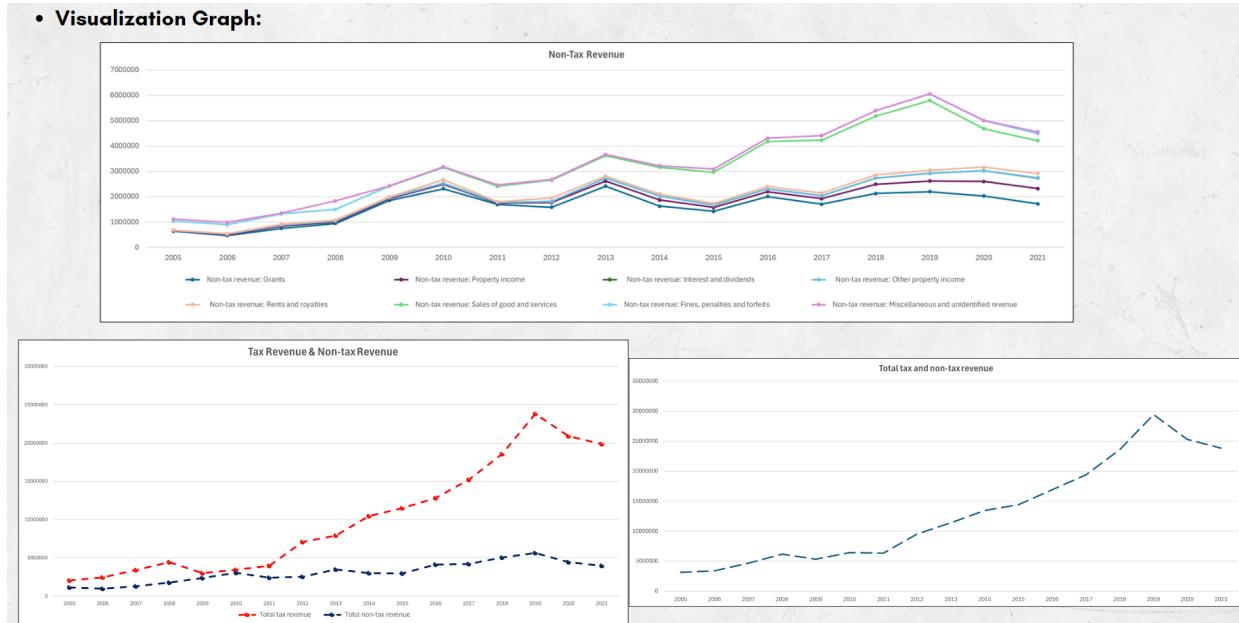


Figure 70: Graph Visualization of Taxations

According to the graph visualization above we can gain insight such following:

- **Overall Growth:** There is a general upward trend in most non-tax revenue categories, reflecting an increase in the government's ability to generate income from non-tax sources over the period.
- **Peaks and Fluctuations:** Certain categories, such as interest and dividends, show notable peaks, indicating years with higher investment returns. Similarly, miscellaneous revenue shows significant growth and peaks, suggesting occasional large influxes of diverse revenues.

- **Consistency in Rents and Royalties:** The steady increase in rents and royalties indicates a reliable income stream from leasing government property and resource extraction activities.
- **Property Income Growth:** The steady rise in property income suggests that the government has been effectively utilizing its property assets to generate revenue.
- **Impact of Economic Events:** The fluctuations in certain categories may reflect broader economic conditions or specific events affecting those revenue streams, such as changes in investment returns or international aid agreements.

3.6.8.) Trade Agreement of Cambodia

There are several trade agreement in which Cambodia have attended to make and enhance relationship between Cambodia with Others. Here are those trade agreements such followin:

- **ASEAN Free Trade Area (AFTA)**: aims to reduce tariffs and non-tariff barriers among ASEAN member countries to enhance economic integration and cooperation. There are several benefits that Cambodia can recieve such below:
 - *Market Access*: Easier access to the ASEAN market with over 600 million consumers.
 - *Tariff Reductions*: Lower tariffs on goods traded within ASEAN, making Cambodian products more competitive.
 - *Investment Attraction*: Increased foreign investment due to improved market access and reduced trade barriers.
 - *Regional Integration*: Enhanced economic cooperation and integration with neighboring countries.



Figure 71: ASEAN Free Trade Area(AFTA)

- **Regional Comprehensive Economic Partnership**: is a comprehensive trade agreement covering goods, services, investment, and other economic activities, promoting regional economic integration. There are several benefits that Cambodia can recieve such below:
 - *Expanded Market*: Access to a larger market including ASEAN countries and major economies like China, Japan, South Korea, Australia, and New Zealand.
 - *Tariff Elimination*: Gradual elimination of tariffs on a wide range of goods, boosting trade.
 - *Supply Chain Integration*: Strengthened regional supply chains and production networks.
 - *Economic Growth*: Increased trade and investment opportunities leading to overall economic growth.



Figure 72: RCEP Trade Agreement

- **Bilateral Trade Agreements:** aims to enhance trade and economic cooperation between Cambodia and South Korea. Eg.) Cambodia China Trade Agreement, Cambodia Korea Trade Agreement,.....
Here are some benefits for Cambodia such as:

- *Tailored Trade Terms:* Specific agreements tailored to Cambodia's economic interests with individual countries.
- *Market Diversification:* Diversification of export markets, reducing dependency on a few trading partners.
- *Increased Exports:* Enhanced opportunities for Cambodian products in partner countries.
- *Investment Opportunities:* Improved bilateral investment flows and business cooperation.



Figure 73: Bilateral Trade Agreement

- **Generalized System of Preferences (GSP):** Cambodia enjoys preferential access to the markets of these countries, allowing duty-free or reduced-duty entry for certain products.
Here are some benefits for Cambodia such as:

- *Preferential Tariffs:* Reduced or zero tariffs on Cambodian exports to developed countries.
- *Export Competitiveness:* Increased competitiveness of Cambodian products in GSP beneficiary countries.
- *Market Expansion:* Enhanced access to markets in developed countries.

- *Economic Development*: Support for economic growth and development through increased export earnings.



Figure 74: GSP Trade Agreement

- **WTO(World Trade Organization)**: aims to reduce tariffs and non-tariff barriers among ASEAN member countries to enhance economic integration and cooperation.



Figure 75: WTO Trade Agreement

CHAPTER 04: RESULTS AND ANALYSIS

Following an in-depth analysis of macroeconomic and trade performance, we have identified three key areas worth highlighting:

1. Challenges:

- *The rising inflation rate is impacting the purchasing power of domestic citizens:*
 - Inflation erodes the value of money, making goods and services more expensive for consumers. This can lead to decreased consumer spending, affecting overall economic growth. Essential items such as food and fuel become costlier, which disproportionately affects low-income households.
- *Government income from taxation is increasing slowly:*
 - Slow growth in tax revenues can limit the government's ability to invest in public services and infrastructure. This can hinder long-term development goals and reduce the government's capacity to respond to economic crises or social needs effectively.
- *The unemployment rate remains high:*
 - High unemployment can lead to social unrest and increased poverty. It reflects underutilized labor resources, which can stunt economic growth. Long-term unemployment can also lead to skill erosion, making it harder for individuals to find employment in the future.
- *The Khmer currency continues to depreciate against the dollar:*
 - Currency depreciation can increase the cost of imports, leading to higher prices for consumers and businesses reliant on foreign goods. It can also increase the burden of foreign debt repayments, affecting the country's financial stability.
- *Cambodia remains classified as a lower-middle-income country:*
 - Remaining in the lower-middle-income category suggests that a significant portion of the population is still experiencing low living standards. It indicates a need for more robust economic policies to promote inclusive growth and improve overall living conditions.

2. Opportunities:

- *Cambodia's participation in numerous trade agreements is attracting investment and reducing tariffs on goods and services:*
 - These trade agreements can open up new markets for Cambodian products, enhancing export opportunities and driving economic growth. Reduced tariffs make Cambodian goods more competitive globally, potentially leading to increased foreign direct investment (FDI).
- *Significant growth in sectors such as agriculture, industry, and services is driving economic expansion:*
 - Diversification and growth across these key sectors can create jobs, increase productivity, and boost GDP. Agriculture's growth can enhance food security and rural livelihoods, while industrial and service sector expansions can lead to urban development and modernization.
- *The inflation rate has begun to decrease at the start of 2024:*
 - A declining inflation rate can restore consumer and business confidence, leading to increased spending and investment. It can also stabilize the cost of living, making it easier for households to manage expenses and for businesses to plan and budget effectively.

CHAPTER 05: CONCLUSIONS

Following the detailed analysis of Cambodia's macroeconomic and trade performance, several key challenges and opportunities have been identified. The challenges, such as rising inflation, slow growth in government taxation revenue, high unemployment rates, currency depreciation, and the classification as a lower-middle-income country, present significant hurdles to the nation's economic stability and growth. Addressing these issues requires targeted policy interventions aimed at stabilizing inflation, enhancing revenue collection, creating jobs, stabilizing the currency, and implementing strategies for inclusive economic development.

Conversely, Cambodia's active participation in multiple trade agreements and the notable growth across the agriculture, industry, and services sectors present promising opportunities for economic advancement. The reduction in tariffs and increased investment from these agreements can enhance export competitiveness and attract foreign direct investment, driving economic expansion. The observed decrease in the inflation rate at the start of 2024 is a positive indicator of improving economic stability, which can boost consumer and business confidence.

In conclusion, while Cambodia faces several economic challenges, the opportunities available through strategic trade participation and sectoral growth provide a solid foundation for future economic development. By addressing the existing challenges and capitalizing on the opportunities, Cambodia can achieve sustainable economic growth and improve the living standards of its population.

CHAPTER 06: LIMITATIONS AND RECOMMENDATIONS

4.1.) Limitations

In our comprehensive analysis of macroeconomic and trade performance, several limitations have been identified:

- **Insufficient Data Availability:** The analysis is constrained by the lack of comprehensive and up-to-date data. This limitation affects the accuracy and reliability of the findings, as key data points may be missing or outdated. Insufficient data availability can lead to incomplete analysis and may result in an inaccurate representation of the current economic situation.
- **Limited Understanding of Domain Knowledge:** The analysis might be hindered by a limited understanding of specific macroeconomic and trade concepts. This can affect the interpretation of data and the ability to draw meaningful conclusions. A deeper knowledge of the domain is essential for accurately analyzing complex economic indicators and trends.
- **Short-term Timeframe:** The analysis is conducted over a short-term period, which may not capture long-term trends and cycles. Short-term data can be influenced by temporary fluctuations and anomalies that do not reflect the overall economic trajectory. This limitation makes it difficult to provide a comprehensive assessment of long-term economic health.
- **Difficulty in Integrating Many Time Series Data into Power BI Dashboard:** Integrating multiple time series datasets into a Power BI dashboard can be challenging due to technical constraints and the complexity of data. Proper integration requires careful handling of data formats, synchronization of time periods, and ensuring consistency across datasets. These challenges can result in delays and potential inaccuracies in the visual representation of data.
- **Limited Insights Derived from Data Visualization and Analysis:** The quality and depth of insights derived from data visualization and analysis may be limited by the tools and techniques used. Effective data visualization requires selecting the right charts and graphs to accurately represent the data. Inadequate visualization can lead to misinterpretation and failure to highlight key trends and patterns.

Despite these limitations, the analysis provides valuable insights into Cambodia's macroeconomic and trade performance. Addressing these limitations in future studies will enhance the robustness and comprehensiveness of the analysis, leading to more accurate and actionable conclusions.

6.2.) Recommendations

6.2.1.) Recommendations and Strategies for the Government

- **Solution of Challenges:**

1. *Rising Inflation Rate:*

- *Monetary Policy:* Implement tighter monetary policies to control inflation. This could include increasing interest rates to reduce money supply.
- *Subsidies:* Provide targeted subsidies on essential goods to help alleviate the burden on domestic citizens.
- *Price Controls:* Temporarily enforce price controls on essential commodities to stabilize prices.

2. *Slow Growth in Government Tax Revenue:*

- *Tax Reforms:* Simplify and reform the tax code to improve compliance and broaden the tax base.

- *Efficient Tax Collection*: Invest in modern tax collection infrastructure and training for efficient tax administration.
- *Tax Incentives*: Provide tax incentives for businesses to encourage investment and economic activities that can boost tax revenue.

3. *High Unemployment Rate*:

- *Job Creation Programs*: Develop and implement job creation programs focused on key sectors such as agriculture, industry, and services.
- *Vocational Training*: Invest in vocational training and education to improve the skills of the workforce and match them with industry needs.
- *Entrepreneurship Support*: Encourage entrepreneurship through grants, loans, and support programs for startups and small businesses.

4. *Depreciation of Khmer Currency*:

- *Foreign Exchange Reserves*: Strengthen foreign exchange reserves to stabilize the currency.
- *Export Promotion*: Boost exports by supporting local industries and improving the trade balance.
- *Currency Management*: Work with international financial institutions to implement strategies for currency stabilization.

5. *Low Income Classification*:

- *Economic Diversification*: Promote economic diversification to reduce dependency on a few sectors and enhance overall growth.
- *Investment in Infrastructure*: Improve infrastructure to attract more foreign direct investment (FDI) and stimulate economic activities.
- *Social Programs*: Implement social programs to reduce poverty and increase the overall standard of living.

• Opportunities:

1. *Trade Agreements and Investment Attraction*:

- *Leverage Trade Agreements*: Maximize the benefits of trade agreements by actively promoting Cambodia as an investment destination.
- *Reduce Bureaucracy*: Streamline administrative procedures to make it easier for foreign investors to set up businesses.
- *Export Facilitation*: Enhance export facilitation services to help local businesses penetrate international markets.

2. *Growth in Key Sectors*:

- *Sectoral Investment*: Focus on investing in the agriculture, industry, and service sectors to sustain and accelerate growth.
- *Innovation Support*: Support innovation and technology adoption in these sectors to increase productivity and competitiveness.
- *Public-Private Partnerships*: Encourage public-private partnerships to develop sector-specific infrastructure and facilities.

3. *Decreasing Inflation Rate*:

- *Monitor and Maintain Stability*: Continue to monitor inflation closely and maintain policies that support stable prices.

- *Strengthen Financial Sector*: Develop a robust financial sector that can support sustainable economic growth and stability.
- *Consumer Protection*: Implement consumer protection policies to ensure that the benefits of decreased inflation reach the general population.

6.2.2.) Recommendations and Strategies for Businesses

- **Challenges:**

1. *Rising Inflation Rate*:
 - *Cost Management*: Implement cost control measures to manage the impact of inflation on business operations.
 - *Price Adjustments*: Strategically adjust prices while maintaining competitiveness and customer loyalty.
 - *Alternative Suppliers*: Explore alternative suppliers and materials to reduce production costs.
2. *Slow Growth in Government Tax Revenue*:
 - *Tax Planning*: Engage in effective tax planning and compliance to minimize tax liabilities.
 - *Government Engagement*: Work with government agencies to understand and leverage available tax incentives and benefits.
 - *Corporate Social Responsibility*: Increase corporate social responsibility activities to contribute positively to the community and economy.
3. *High Unemployment Rate*:
 - *Skill Development*: Invest in employee training and development to build a skilled workforce.
 - *Local Hiring*: Focus on hiring locally to contribute to reducing unemployment and fostering community goodwill.
 - *Internship Programs*: Create internship and apprenticeship programs to provide opportunities for young job seekers.
4. *Depreciation of Khmer Currency*:
 - *Hedging Strategies*: Use hedging strategies to mitigate the impact of currency fluctuations on business transactions.
 - *Local Sourcing*: Increase local sourcing to reduce dependence on imports and currency exchange risks.
 - *Export Opportunities*: Explore export opportunities to benefit from a weaker currency.
5. *Low Income Classification*:
 - *Market Expansion*: Explore new markets and diversify customer bases to increase revenue streams.
 - *Innovation*: Invest in innovation and technology to improve product offerings and operational efficiency.
 - *Corporate Partnerships*: Partner with other businesses and organizations to create synergies and enhance market presence.

- **Opportunities:**

1. *Trade Agreements and Investment Attraction*:

- *Market Research*: Conduct thorough market research to understand the opportunities presented by trade agreements.
- *Strategic Alliances*: Form strategic alliances with international partners to enhance market entry and expansion.
- *Compliance*: Ensure compliance with international standards and regulations to capitalize on trade agreements.

2. Growth in Key Sectors:

- *Sector-Specific Strategies*: Develop targeted strategies for growth sectors such as agriculture, industry, and services.
- *Investment in Technology*: Invest in technology and innovation to stay competitive and increase market share.
- *Government Collaboration*: Collaborate with government agencies to leverage support programs and incentives.

3. Decreasing Inflation Rate:

- *Pricing Strategy*: Review and adjust pricing strategies to align with the decreasing inflation rate.
- *Cost Savings*: Pass on cost savings to consumers to increase market share and customer loyalty.
- *Expansion Plans*: Consider expansion plans or new investments in a more stable economic environment.

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