INVESTING FOR GROWTH:

Economic Impacts of Infrastructure, Sovereign Wealth Fund Sustainability, and Free Nutritious Meals Program

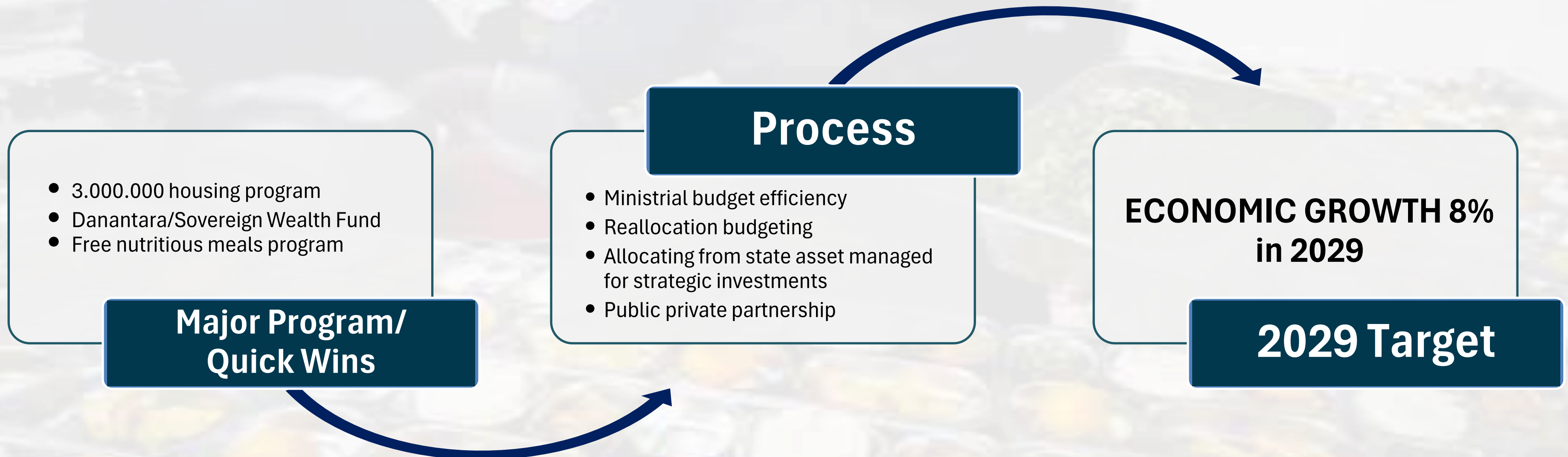**JABBAR – ARRIE – KHALISHAH – UNGGUL – DINDA – VANIA – DIANDRA**

Strategic Investments for 8% Economic Growth
The government has initiated three key programs to drive economic growth to 8%: the development of 3 million houses, investment in the Sovereign Wealth Fund (Danantara), and the provision of free nutritious meals. These programs aim to accelerate infrastructure development, ensure investment stability, and enhance human capital quality as the foundation for long-term growth.

Economic Impact and Multiplier Effects
Housing investment boosts the construction sector and creates jobs, the Sovereign Wealth Fund ensures the sustainability of strategic investments, and the free nutritious meals program improves the future workforce's quality. The synergy of these three programs is expected to accelerate inclusive and sustainable economic growth.

Process

- Ministrial budget efficiency
- Reallocation budgeting
- Allocating from state asset managed for strategic investments
- Public private partnership

Major Program/ Quick Wins

- 3.000.000 housing program
- Danantara/Sovereign Wealth Fund
- Free nutritious meals program

ECONOMIC GROWTH 8% in 2029

2029 Target

Research Question 1
What is the effect of developing 3 million houses infrastructure project and allocating investment budget of the Sovereign Wealth Fund (Danantara) in 5 years on Indonesia's macroeconomic indicators?
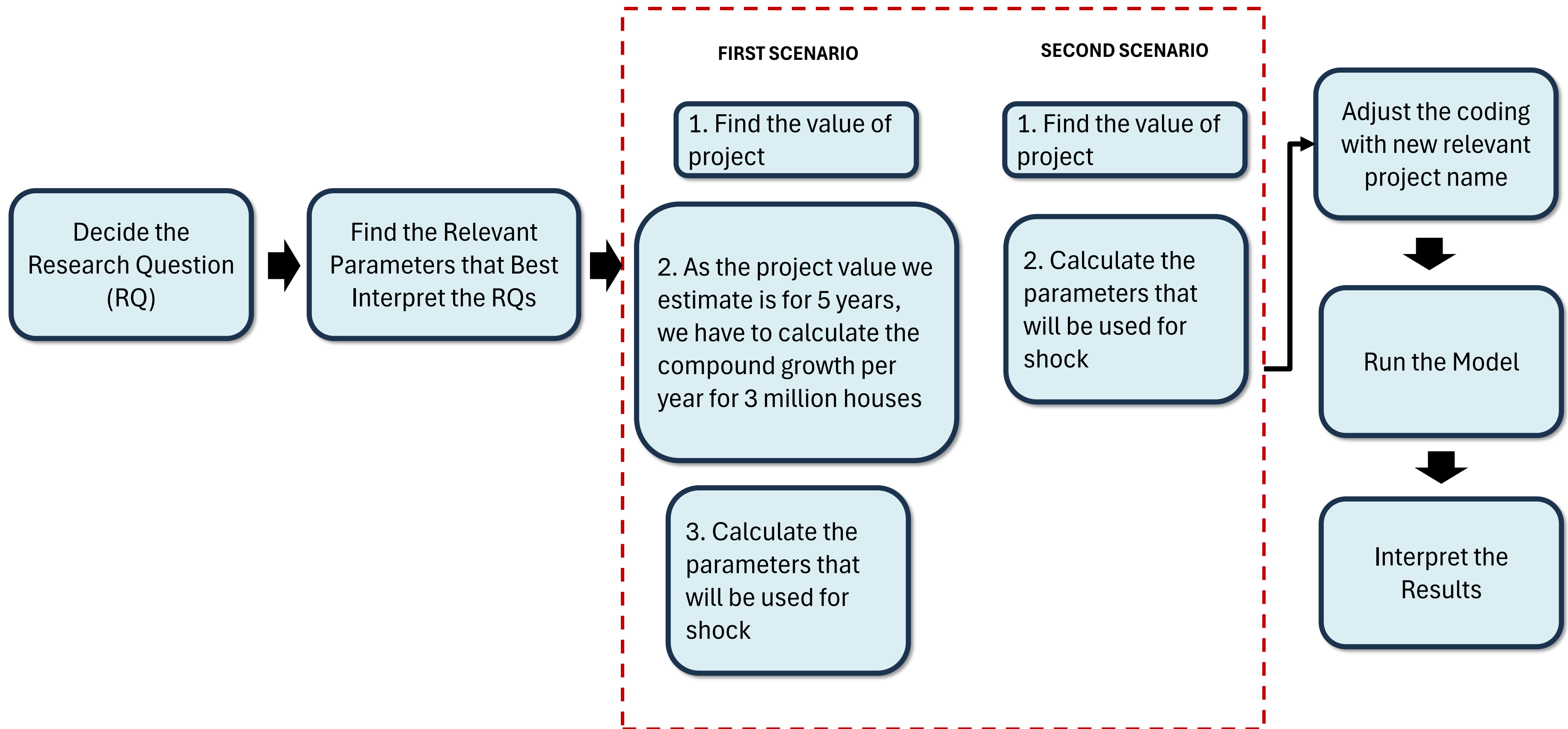
Research Question 2
What is the impact of the free nutritious meals program on Indonesia's macroeconomic indicators?

FIRST SCENARIO

SECOND SCENARIO

Decide the Research Question (RQ)

Find the Relevant Parameters that Best Interpret the RQs

1. Find the value of project

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2. As the project value we estimate is for 5 years, we have to calculate the compound growth per year for 3 million houses

2. Calculate the parameters that will be used for shock

3. Calculate the parameters that will be used for shock

Adjust the coding with new relevant project name

Run the Model

Interpret the Results

First Scenario:
Developing 3 million houses infrastructure project and allocating investment budget for the Sovereign Wealth Fund

Assumption:
GDP Nominal (as of 2024): Rp 22.139 T
3 million houses project value: Rp 1.452 T (0.066 or 6.6% of GDP)
Compound Growth per year:
$= (1+x)^5 = 1.066 = 1+x = (1.066)^5 = x = ((1.066)^{1/5}) - 1$
$= x = 0.013$

Parameters changed
- alpha_I → Exogenous fraction of GDP that goes towards government investment in infrastructure (public capital) when a balanced budget is false.
- We changed the alpha_I baseline from 0.003 to 0.20 (we use the realization of GFCF for Buildings component

GFCF (as of 2024): Rp 6453 T
Building component: Rp 4806 T (0.2 or 21.7% of GDP)
Therefore, the parameters is: 0.2 (Gov investment in infrastructure) + 0.013 (3-million houses) + 0.02 (Investment/Danantara) = **0.233**

Parameters:
```
  # Increase in infrastructure spending
  # 1. Temporary increase in housing investment, 1.3% of GDP for 5 years (6.6% of GDP)
  #   total over 5 years)
  # 2. Temporary increase in sovereign wealth fund infrastructure investment
  #   of 2% of GDP in first five years
  updated_params_ref = {
    "alpha_I": [[0.233, 0.233, 0.233, 0.233, 0.233, 0.20]],
  }
  p2.update_specifications(updated_params_ref)
```

Second Scenario:
Free Meals Program

Assumption:

GDP Nominal (as of 2024): Rp 22.139 T
Free nutritious meals project value: Rp 171 T (0.008 or 0.8% of GDP)

Parameters we used for Free Nutritious Meals
alpha_T → Exogenous ratio of government transfers to GDP when budget balance is false.
We changed the alpha_T baseline from 0.013 to 0.01

Parameters:
```
 # Increase in nutritious meals program spending
   # 1. Temporary increase in government spending on free meals program, 0,8% of GDP for 5 years
   updated_params_ref = {
     "alpha_T": [0.018, 0.018, 0.018, 0.018, 0.018, 0.01],
   }
   p3.update_specifications(updated_params_ref)

   # Run model
   start_time = time.time()
   runner(p3, time_path=True, client=client)
   print("run time = ", time.time() - start_time)
   client.close()
```
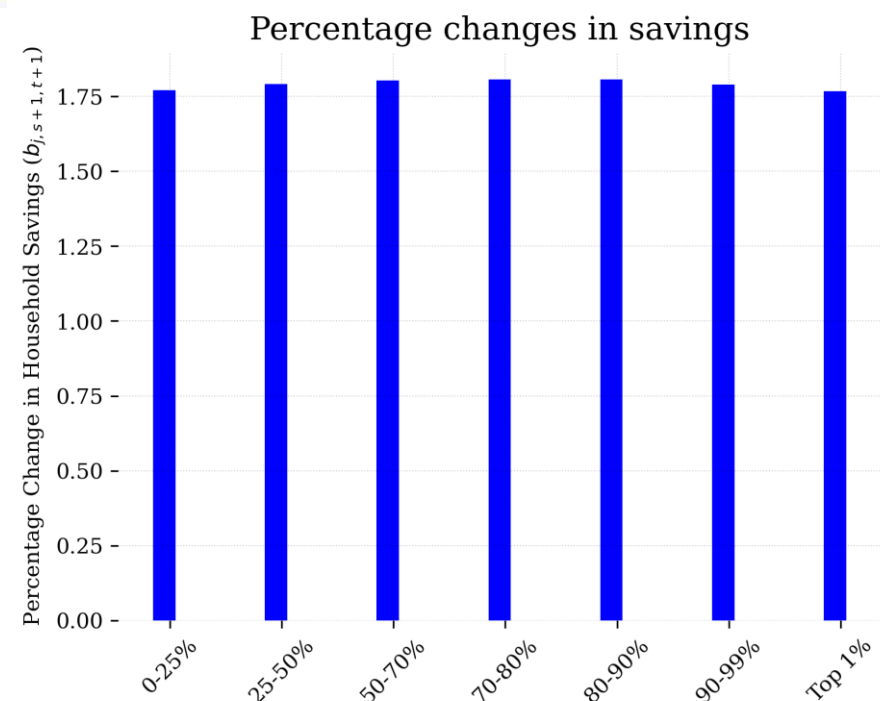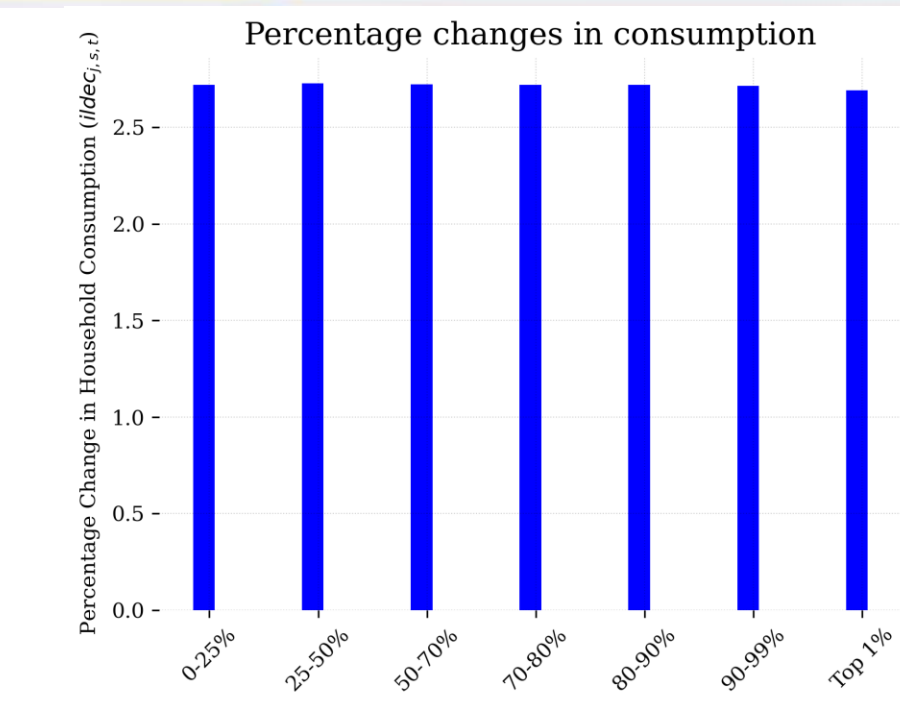
Percentage changes in savings

Result:
- The savings percentage change is **fairly consistent** across all income groups, hovering around **1.75%**.
- **No drastic fluctuations** are present, suggesting that the change in savings is relatively uniform across income levels..
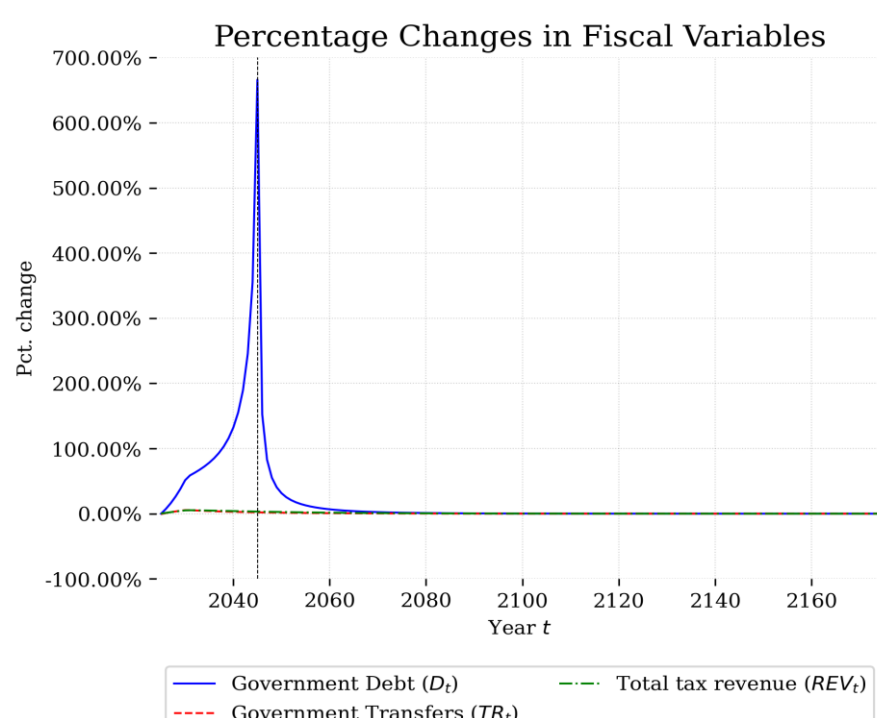
Percentage changes in consumption

Result:
- **all income groups** experienced an **increase** in **consumption**, with relatively uniform increases across all percentiles.
- This suggests that the **impact** of **infrastructure projects** and **SWF investments** is **driving economic growth broadly,** not just in specific groups.
- The 3 million houses project is likely to increase people's purchasing power through increased employment, trickle-down effect, and access to better housing

Percentage Changes in Macro Aggregates

Legend: GDP (Y_t), Labor (L_t), Capital Stock (K_t), Consumption (C_t)
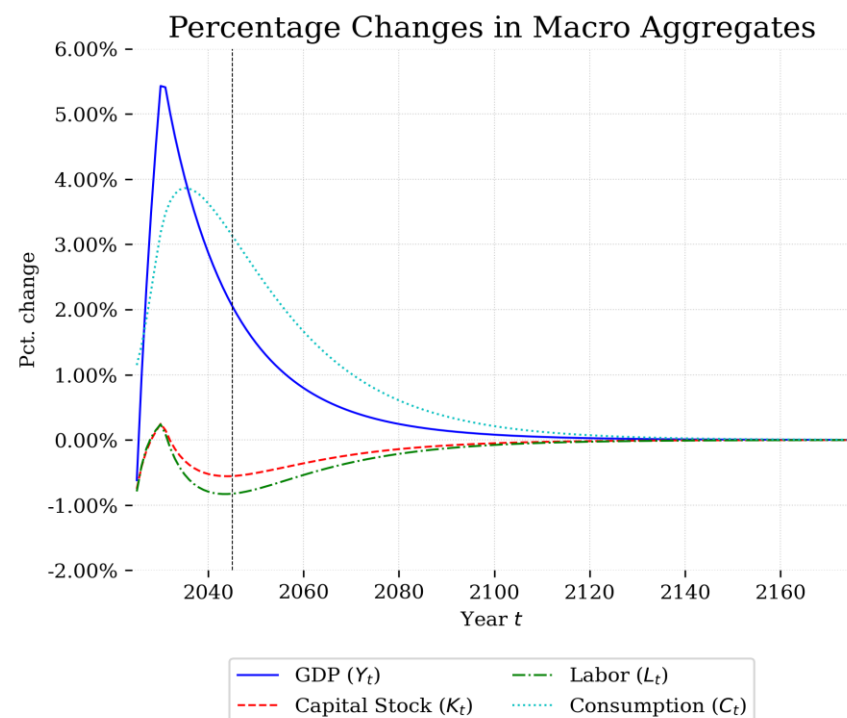
Result:
- **This suggests that infrastructure and SWF** projects provide a **big boost to the economy in the short term**, likely due to increased investment, government spending, and consumption multiplier effects.
- After the initial spike, **GDP and consumption gradually declined** but remained above the baseline, **signaling** that **the project** had a **long-term positive effect** on the economy.

Percentage Changes in Fiscal Variables

Legend: Government Debt (D_t), Government Transfers (TR_t), Total tax revenue (REV_t)

Result:
- **This suggests** that **funding infrastructure projects and allocating funds to SWFs** requires substantial financing, possibly through loans or government bond issuance
- **Government debt is gradually declining after decades**, suggesting that the benefits of infrastructure investment and SWFs are helping to rebalance the country's fiscals

Gov't Spending-to-GDP

Baseline Gov't Spending-to-GDP (G_t/Y_t), Reform Gov't Spending-to-GDP (G_t/Y_t)
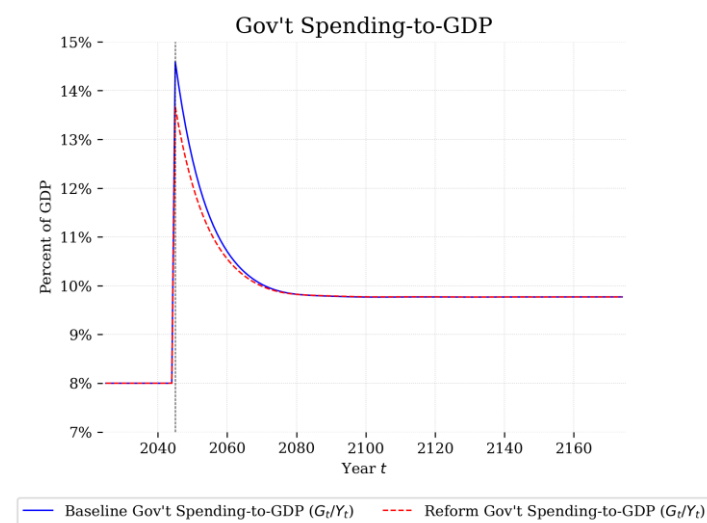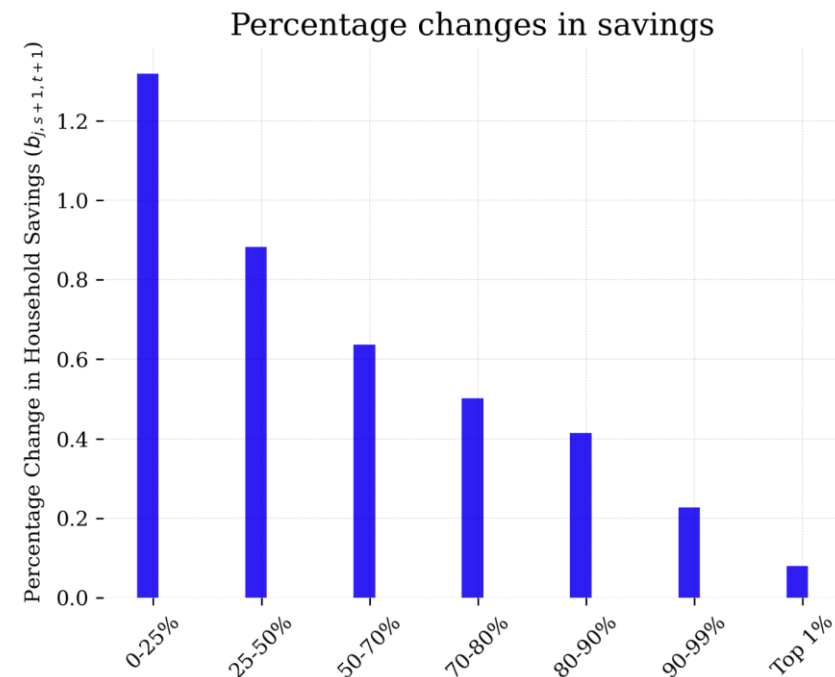
Result:
- There was a sharp jump in government spending as a percentage of GDP, which rose **from around 8% to over 14%**.
- After its peak, government **spending to GDP began to fall** gradually and **approached 10%** after a few decades
- This suggests that infrastructure projects and SWFs have a temporary impact on fiscal spending but do not burden the economy in the long run.

Percentage changes in labor supply
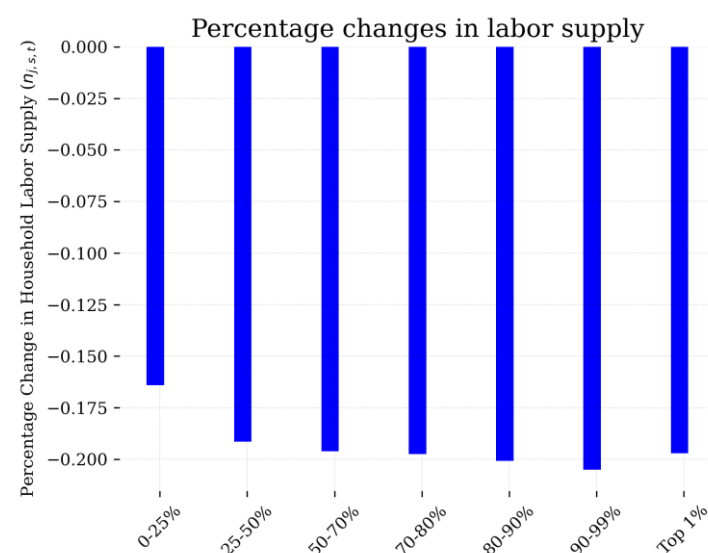
Result:
- **These reforms led** to a **decline in employment** across all groups, possibly due to the increasing in interest rate as the effect of the increasing of Govt's debt. Because the cost of production is increasing, the firms tend to lay off their labors.
- Infrastructure policies and SWF investments reduce labor supply equally across income groups

Percentage changes in savings

Percentage changes in consumption

Percentage Changes in Macro Aggregates

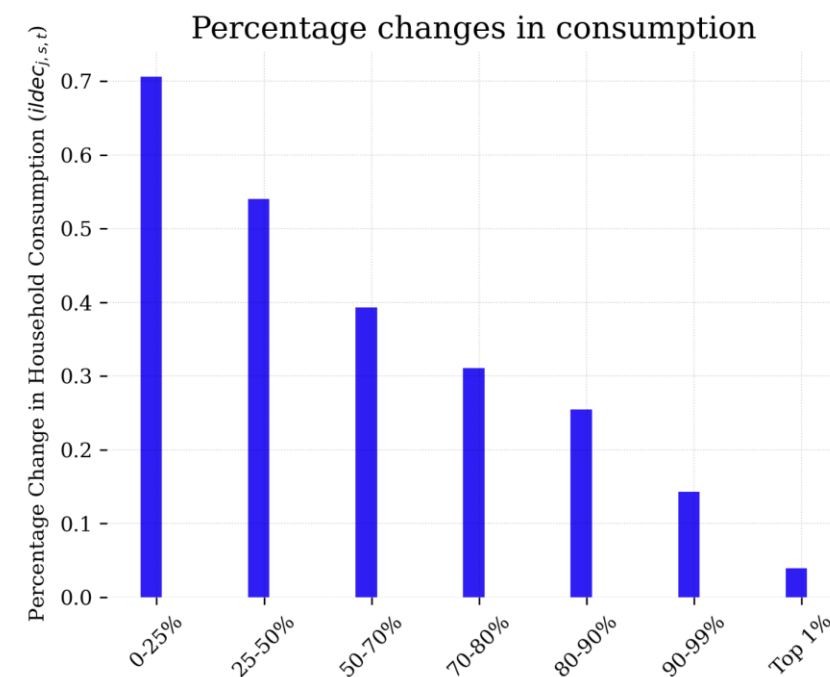Percentage Changes in Fiscal Variables

Result:
Household savings increased more significantly among low-income groups compared to high-income groups.

Previous Research (Haushofer & Shapiro, 2016)
Cash transfers often increase consumption but also encourage savings growth, especially among low-income groups.
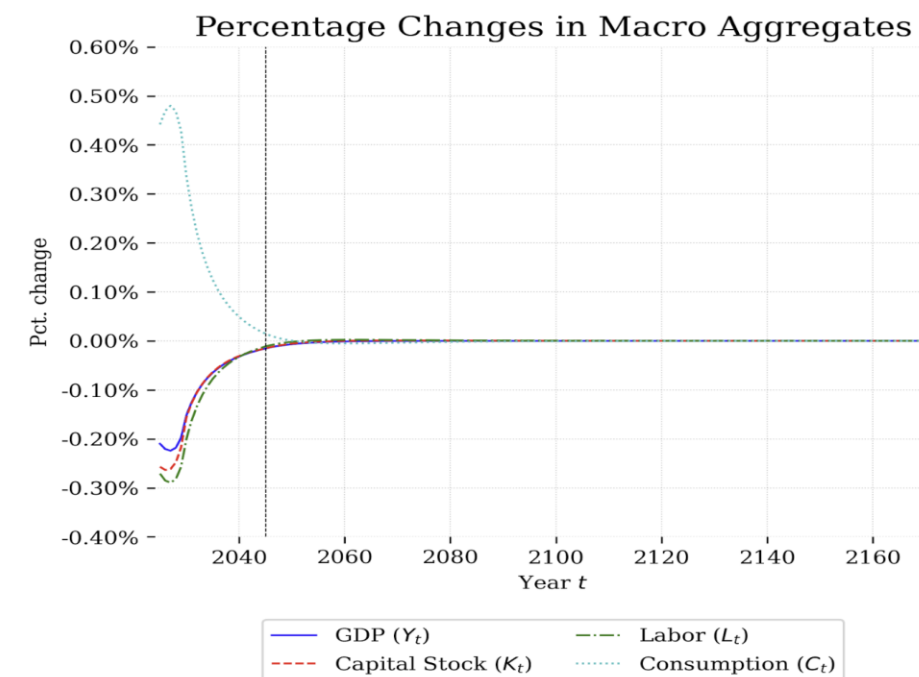
Result:
Consumption experienced a more significant increase among low-income groups compared to higher-income groups.

Previous Research (Auerbach & Gorodnichenko, 2012)
Shows that fiscal policy has a greater impact in weak economic conditions.

Result:
- There is a slight contraction in GDP, capital stock, and labor in the beginning.
- **In the short term,** tax increases raise production costs for businesses, triggering a contraction in capital and labor. If the budget reduces infrastructure spending, economic growth may be constrained.
- **However in the medium term,** purchasing power for other goods and services will improve, and employment will expand.
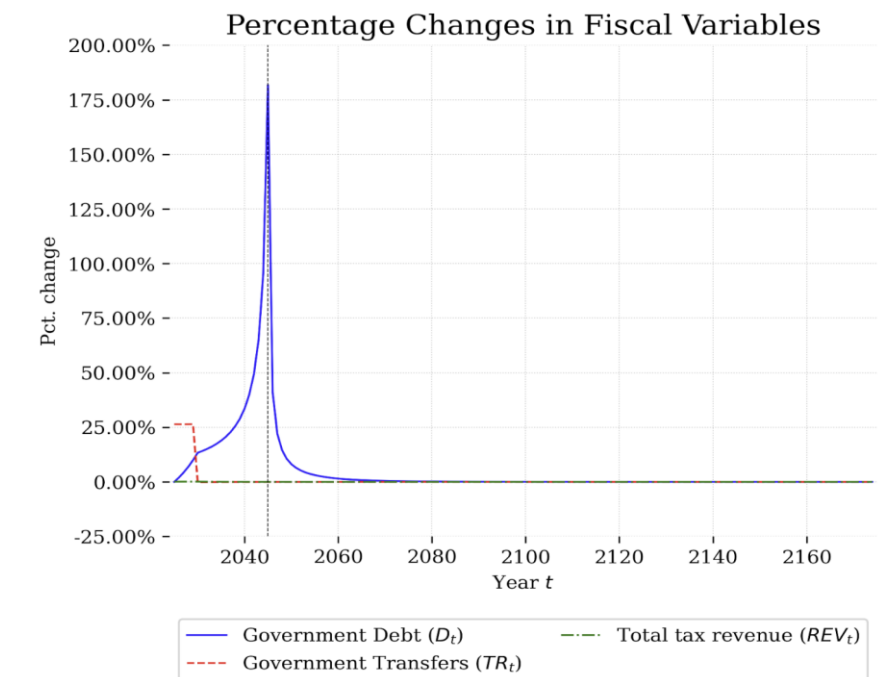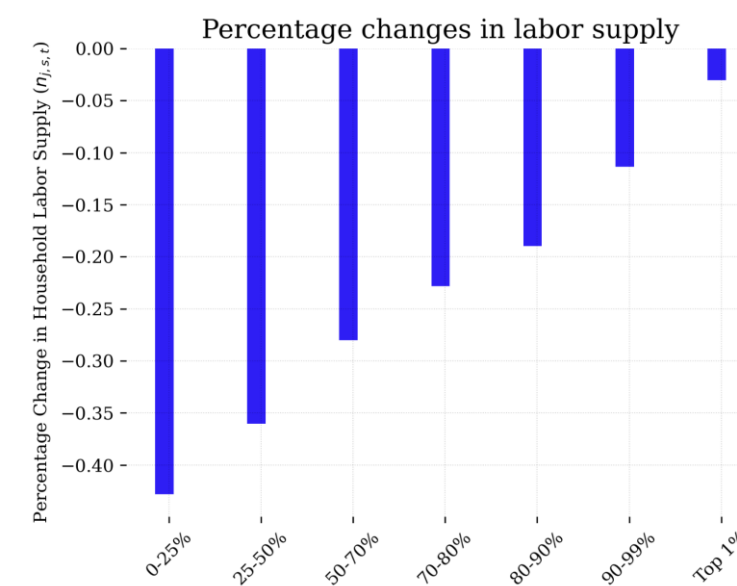
Result:
- Although budget efficiencies are implemented to fund priority programs, ongoing projects must continue.
- As a result, government debt may increase to finance other programs.

Gov't Spending-to-GDP
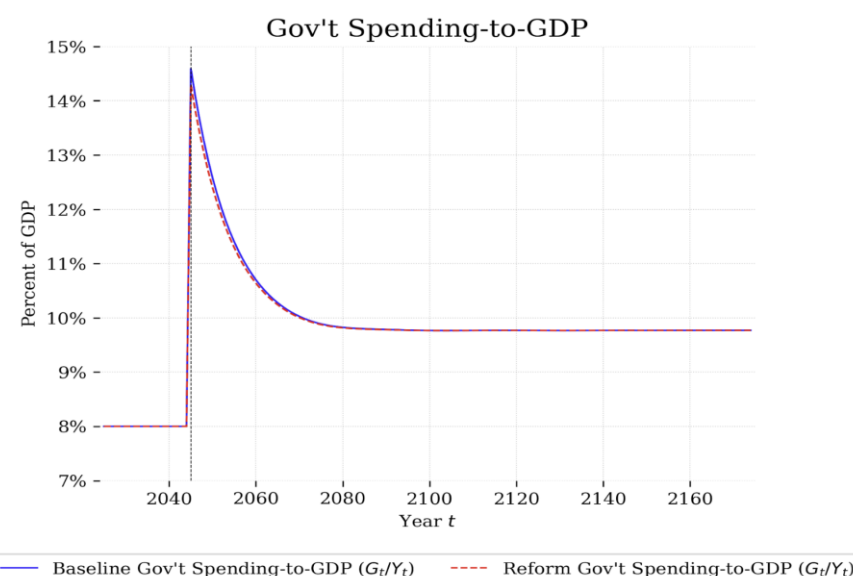
Result:
- The free meals program causes an increase in government spending to GDP at the beginning and then decreases gradually until it returns to a stable level in the long term.
- This suggests that free meals program have a temporary impact on fiscal spending but do not burden the economy in the long run.

Percentage changes in labor supply

Result:
- With their basic needs met, they may choose to reduce working hours and increase leisure time.
- **The low-income group (0-70%)** experiences a significant decline, as they have higher labor elasticity in response to income changes.
- **The upper-income groups (90-99% and the top 1%)** are barely affected, as food consumption constitutes only a small portion of their total expenses.

Developing 3 million houses infrastructure project and allocating investment budget for the Sovereign Wealth Fund

1 Infrastructure investment and the SWF drive short-term economic growth by boosting investment and consumption, with a balanced impact across all income groups

2 Although debt initially rises, fiscal balance improves over time

3 Government spending increases temporarily before stabilizing, while tax revenues recover after reforms

4 Although the GDP growth is increasing, the Govt should be aware of the negative impact of this policy, especially on the labor supply and financial market

5 **Recommendation:** Needs to optimize PPP. If tax increases are necessary, should be implemented gradually. Evaluating the impact of fiscal reforms is essential to maintain purchasing power and growth
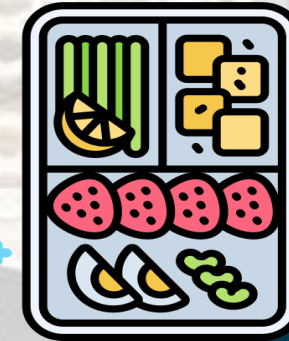
Free nutritious meals program

1 Free meals program increases economic capability (consumption and saving), especially for the lower income groups

2 Low-income groups tend to reduce working hours as their basic needs are met

3 Although free meals program can increase the household's economy, the program doesn't affect the national macroeconomic indicators significantly in the short term

4 In the medium term, purchasing power for other goods and services will improve, and employment will expand

5 **Recommendation:** The government needs to provide incentives for businesses to mitigate the impact of rising production costs and promote skill training for low-income groups to maintain productivity

Limitation:
- These simulations use simple assumptions, therefore more thorough and further comprehensive analysis is needed to calculate the shock value.
- 3-million houses haven't put into consideration the location aspects for the cost of house development..
- Free Nutritious Meals haven't put into consideration the price of each meals, and number of beneficiaries

In efforts to reach the 8% economic growth, through this simulation, the 3 programs don't affect the Indonesia's economic growth significantly,

THANK YOU!