



UNDESA



BAPPENAS
Kementerian Perencanaan Pembangunan Nasional/
Badan Perencanaan Pembangunan Nasional

Energy Tax Reform: Macroeconomic, Fiscal, and Distributional Impact

GROUP 7 - Policy Analysis Presentation

Bandung, 21 Maret 2025



GROUP 7

Member



1. Setyo Tri Wahyudi
2. Yeshri Rahayu
3. Jaka Aminata
4. Redho Andesa Putra



Background & Research Question

Background

Energy tax reforms, particularly taxing fossil fuels, aim to reduce carbon emissions while impacting GDP. This presentation explores the macroeconomic, fiscal, and distributional effects of energy tax reforms.

Research Question

How do energy tax reforms affect GDP, and how can they generate revenue while driving economic adjustments?

Macroeconomic Effects

1. Debt-to-GDP Ratio

Initial increase, then stabilization.



2. Interest Rates

Short-term rise, then decline



3. GDP & Capital Stock

Initial increase, then stabilization.



4. Consumption

Steady increase



5. Labor Supply

Slight decline, likely due to sectoral shifts

Fiscal Effects



1. Government Debt

- ✓ Initial sharp increase, then stabilization



2. Government Transfers

- ✓ Increase, indicating revenue redistribution



3. Tax Revenue-to-GDP

- ✓ Short-term decline but gradual recovery



4. Government Spending-to-GDP

- ✓ Declines under reform, indicating efficiency improvements



Distributional Effects

1. Household Consumption

Increases uniformly across income groups

2. Household Savings

Increase across all deciles, especially for higher-income groups

3. Before-Tax Income

Growth across all income levels

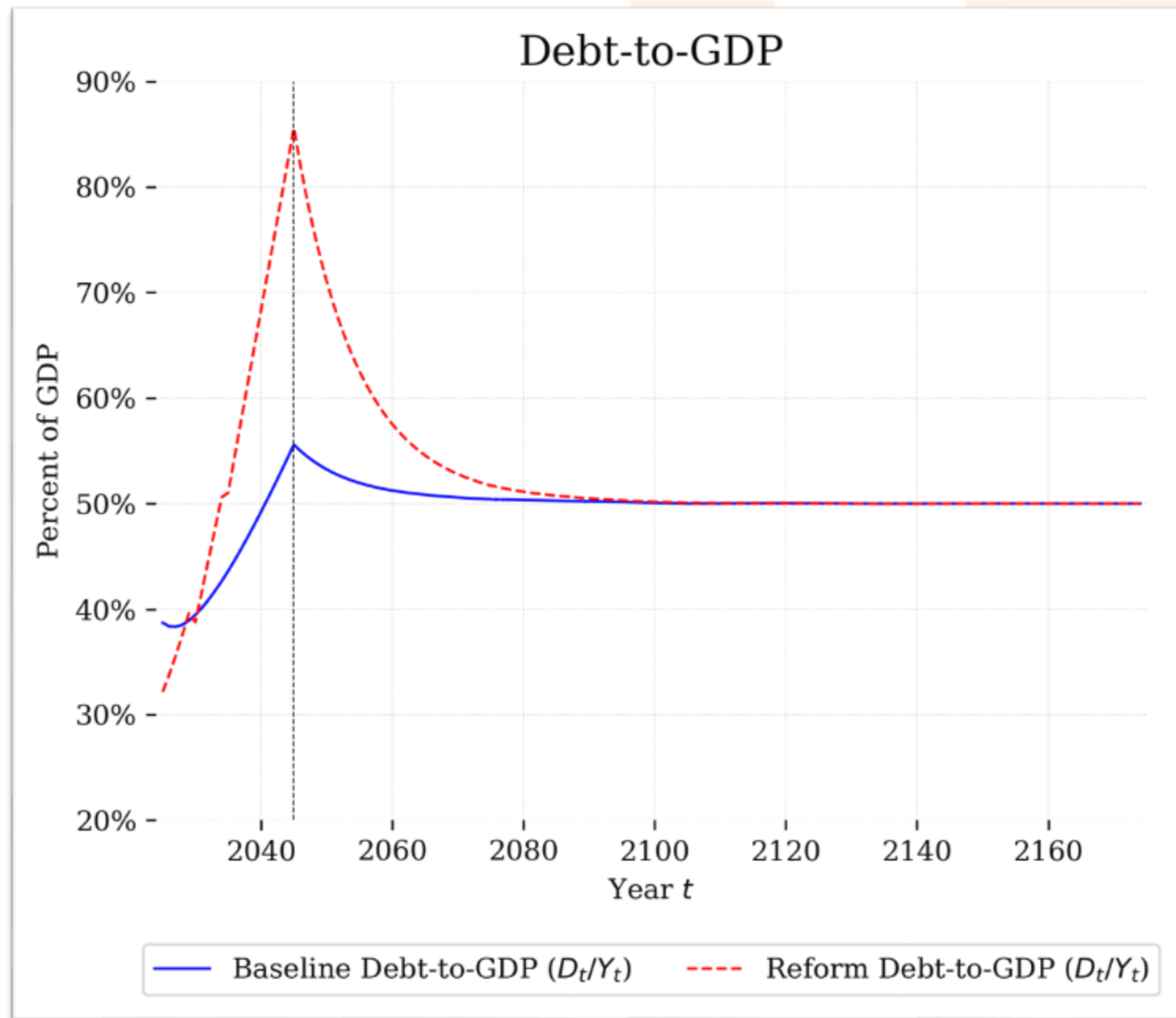
4. Labor Supply

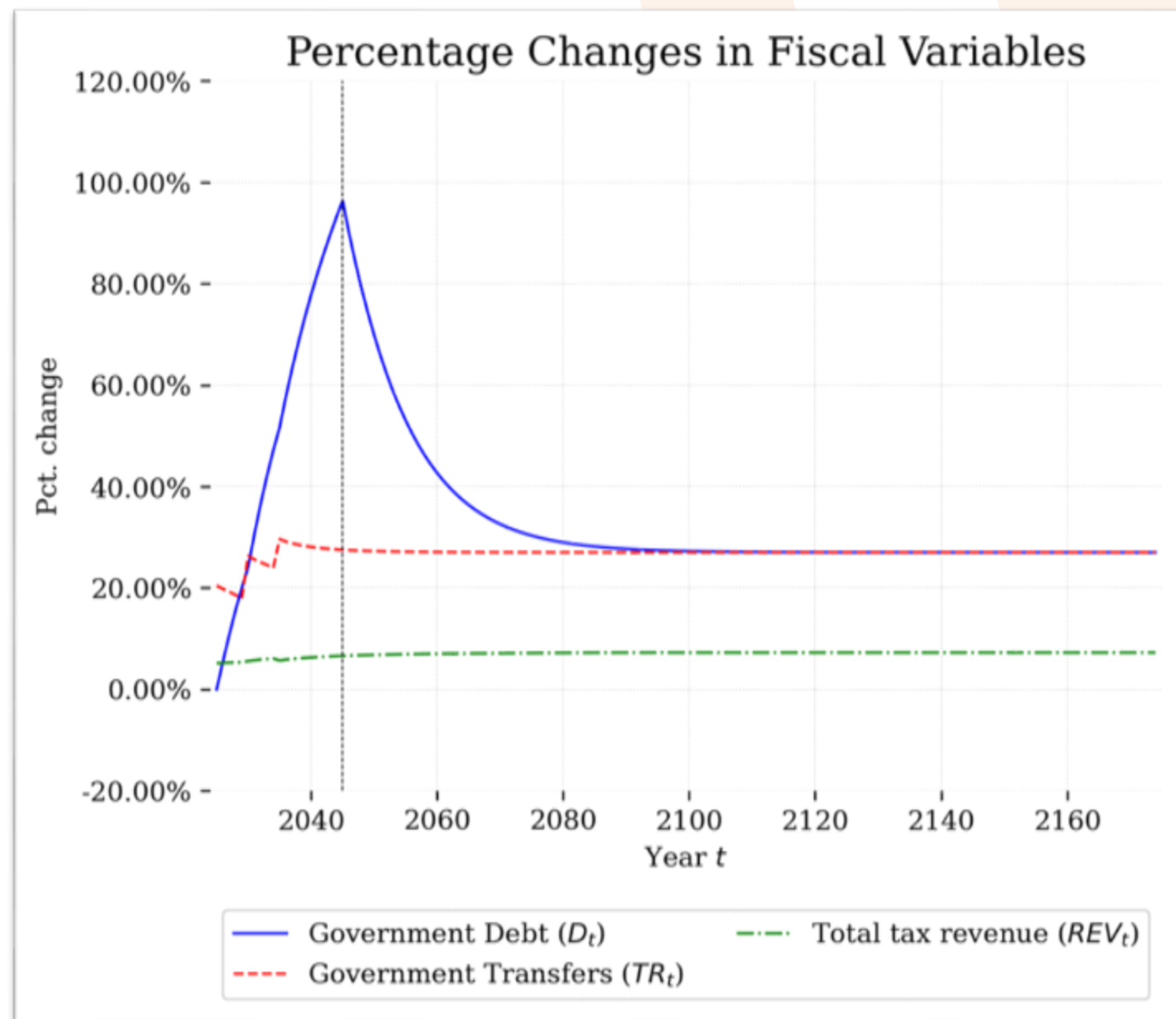
Slight decline due to changing incentives

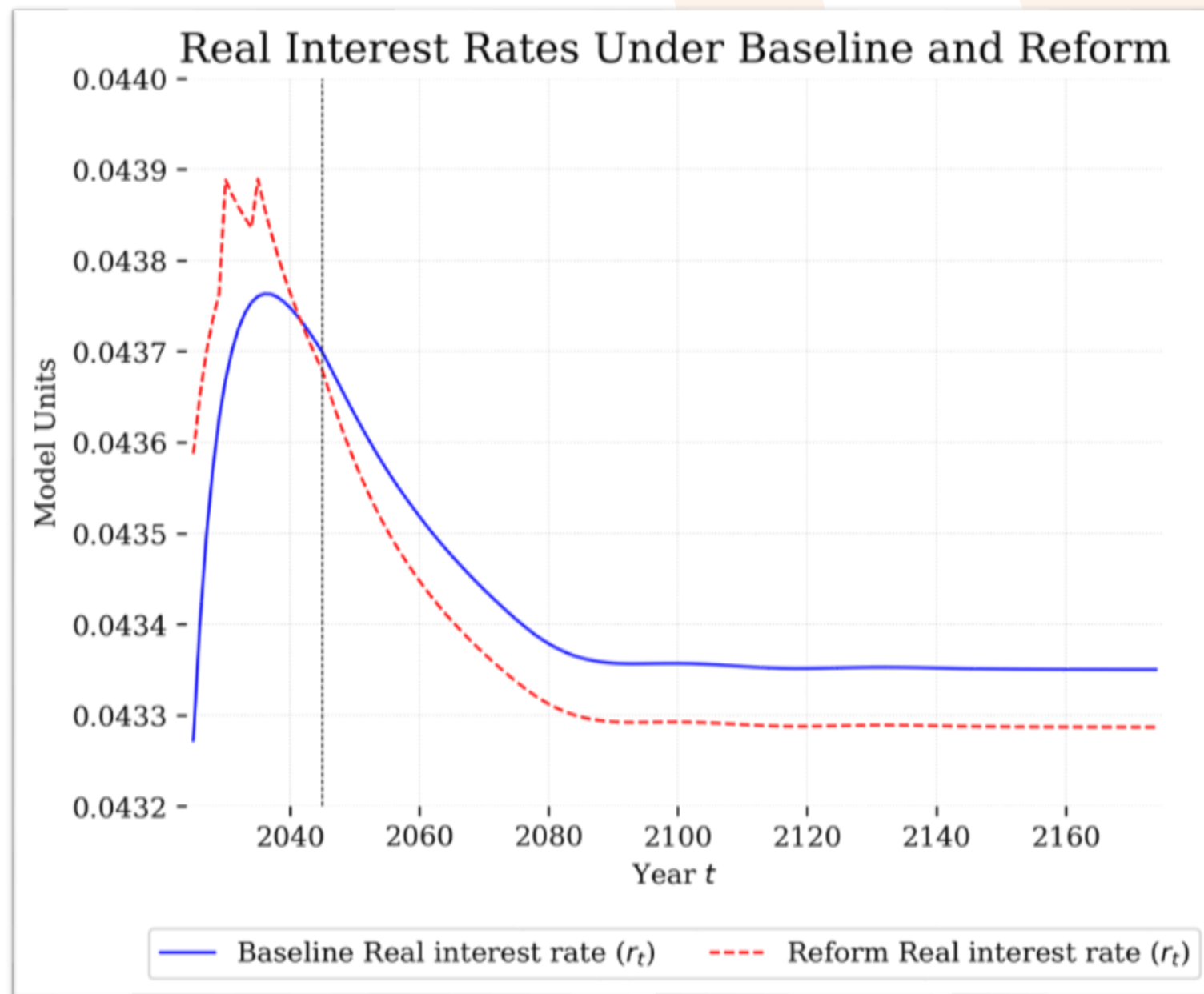
5. Wage Rates

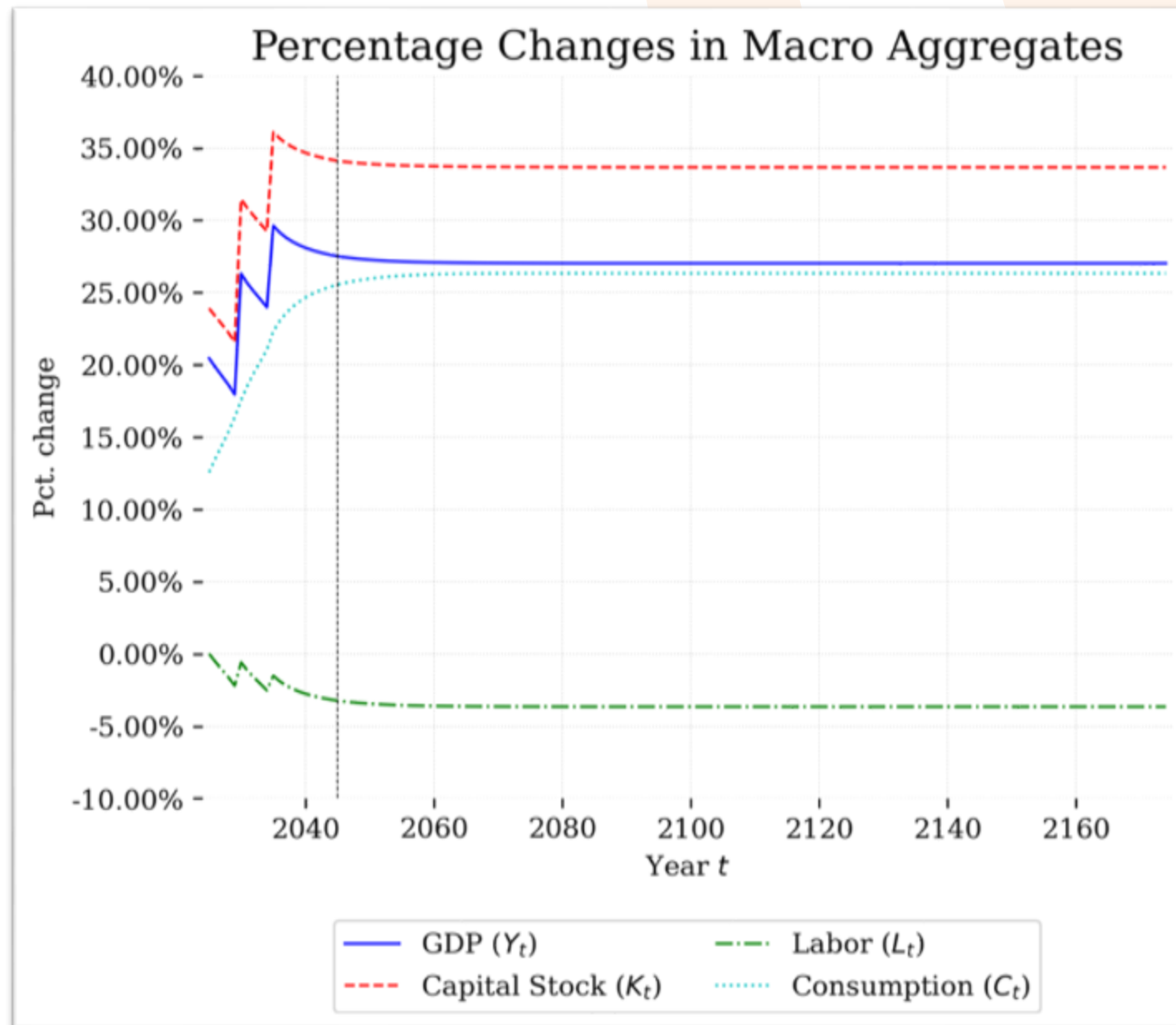
Significant increase, indicating labor productivity gains.

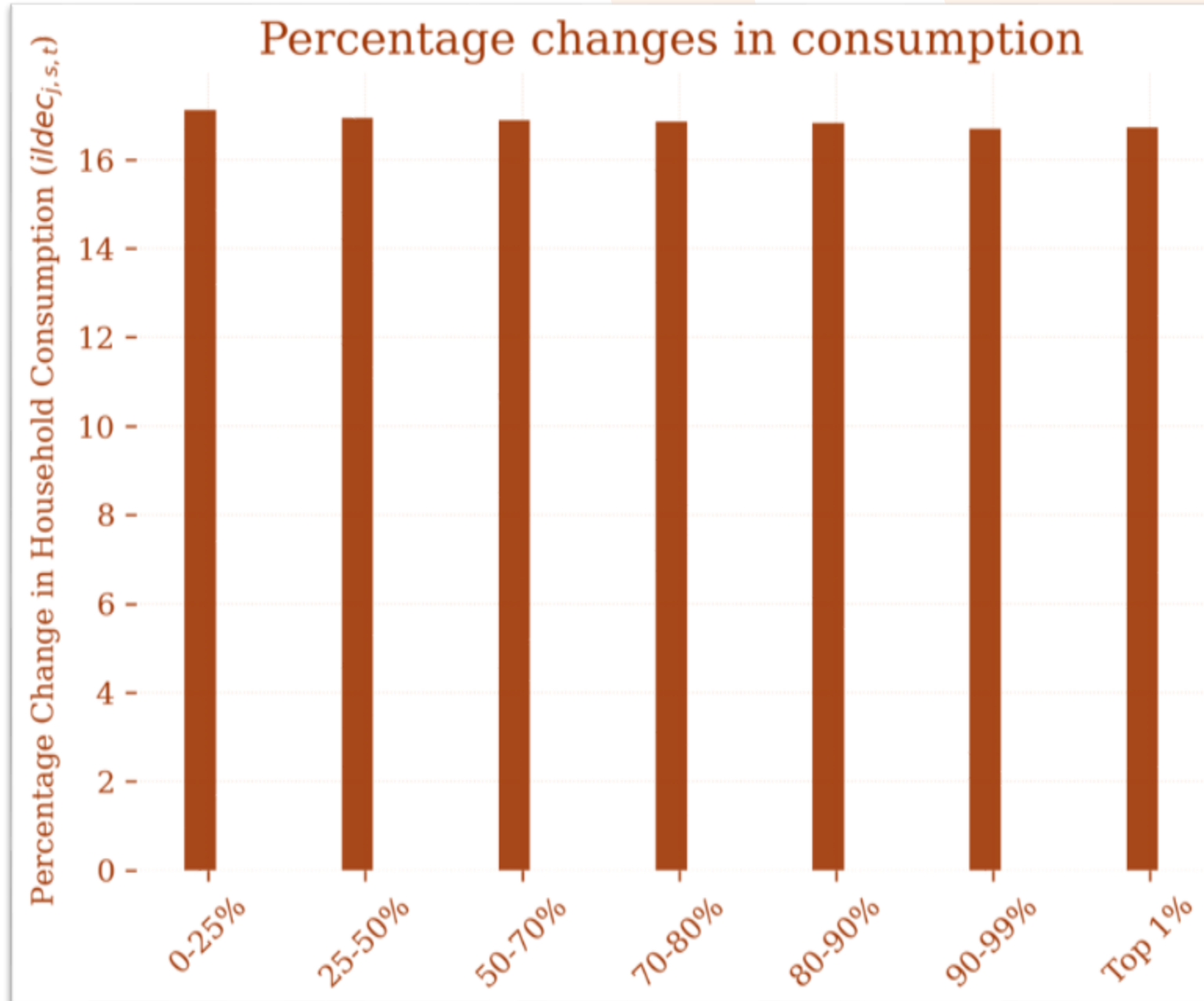














Key Insights & Policy Implications



1.

Short-term fiscal stress but long-term economic benefits.

2.

Energy tax reform leads to higher GDP, investment, and wages

3.

Consumption and savings increase, but labor supply slightly declines.

4.

Policy must ensure fairness in savings and social security adjustments.

5.

Effective recycling of tax revenues can balance economic outcomes.





Incorporate with Political Economy

The model does not account for political resistance or the **challenges of implementing and maintaining energy tax reforms.**



Integration with Climate Models

Integrate the economic model with climate models to assess **the broader environmental and economic impacts of energy tax reforms.**



Cross-Country / Open Economy

Conducting a cross-country/Open Economy analysis could provide insights into how **different policy environments influence the outcomes of energy tax reforms.**



Behavioral Economics

Incorporating insights from behavioral economics could improve the model's realism by accounting for **how firms and consumers actually respond to energy taxes.**

Thank you



“The best public policy is made when you are listening to people who are going to be impacted.”

— Elizabeth Dole