Simulation of Capital Gains Tax and VAT reform using OG-PHL

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Outline of Presentation

1. Policy Question
2. Background
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Policy Question

What is the implication of a reduction of capital gains tax and value-added tax on the GDP and debt-to-GDP ratio of the Philippines?

Background of the Study

- The Philippines is currently implementing various legislative reforms aimed at overhauling its tax system to address financing gaps and enhance its appeal to foreign investors.
- The prevailing consensus in the literature suggests that reducing both consumption and corporate taxes promotes economic growth and incentivizes firm's investment.
- What constitutes the optimal tax rate is a key question in economic policy. This study aims to contribute empirical evidence to this question by drawing insights from policy simulations conducted using an Overlapping Generations (OG) model.

Relevance

1. Policy research for future tax reforms
2. Evaluate impacts of proposed legislative measures

Model: OG-PHL

Macroeconomic model:

$$\mathbf{Y = C + I + G + NX + (Tx - Tr)}$$

Government budget constraint:

$$D_{t+1} + Rev_t = (1 + r_{gov,t})D_t + G_t + I_{g,t} + Pensions_t + TR_t + UBI_t \quad \forall t \tag{88}$$

Calibration of Wealth Distribution

- We thought of calibrating wealth distribution to produce a more relevant baseline and reform scenario for the Philippines, especially for the capital gains tax.
- We used (external) data from the World Inequality Database (https://wid.world/) to calibrate the share of wealth held by each percentile group.

Calibration of Wealth Distribution

- Statistics for PHL wealth distribution:

Percentile	Percent share of net private wealth holdings
Top 1 percent	32.26
90 to 99th percentile	31.25
80th to 90th percentile	14.07
70th to 80th percentile	8.62
50th to 70th percentile	9.71

Model: OG-PHL [Baseline]

From the OG-CORE model, we made the following changes in the run script:

1. Updated discount factor (beta_j) to approximate the PH wealth distribution statistics.
2. Added distribution of wealth (bss_j; bss_j_pct)
3. Tax bases:
    a. CGT: all households
    b. VAT: exempt vs non-exempt sectors
4. Updated tax rates
    a. effective tax rate for individual income and corporate income (etr; cit_rate)
    b. marginal tax rate of capital income (mtry)
    c. value-added tax (tau_c)

Model: OG-PHL [Reform]

From the OG-PHL baseline script, we updated the following:

Reduction of capital gains tax from 6% to 5% and value-added tax from 12% to 10%

- Updated tax rates
    a. marginal tax rate of capital income (mtry)
    b. value-added tax (tau_c)

Results

1. GDP impact
2. Debt impact

Conclusion / Next Steps

1. Strength
   - Reflects wealth distribution in the Philippines and updated variables “beta_j” and “bss_j_pct” in the OG-PHL model
2. Limitations
   - Utilize 2 sector model to reflect “Exempt” and “Non-Exempt” from tax
   - Calibration accuracy could significantly impact computational speed.

Conclusion / Next Steps

3. Next steps

- Further improve wealth distribution and discount factor calibration
- Incorporate progressive taxation on personal and corporate income

Thank you.