

OG-ETH: Examples Running the Model

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Simulations

- Tax Diesel Fuel: 15% VAT + 15% excise tax
- Temporary increase in immigration (20-40 year olds)

Diesel Tax Simulation: Model Structure

	Primary	Energy	Tertiary	Secondary
Food	0.49	0.00	0.14	0.38
Energy and extraction	0.18	0.01	0.34	0.47
Fuels	0.25	0.01	0.45	0.29
Non-durables	0.00	0.01	0.75	0.24
Durables	0.00	0.04	0.52	0.44
Services	0.13	0.04	0.58	0.25

Food	Energy	Fuels	Non-Durables	Durables	Services
0.50	0.09	0.02	0.03	0.03	0.34

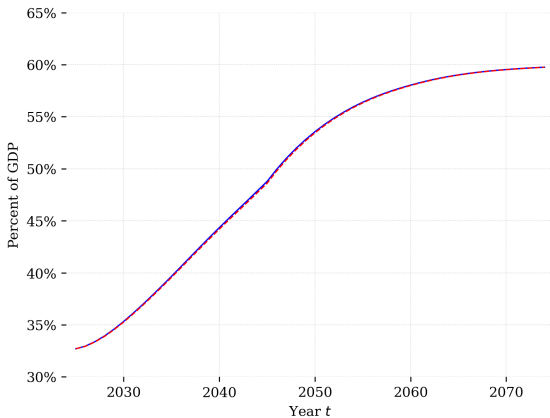
Model Parameterization

- Implement a 15% VAT + 15% excise tax on diesel fuel
- Revenue is used to offset deficits

Effects on Tax Revenue

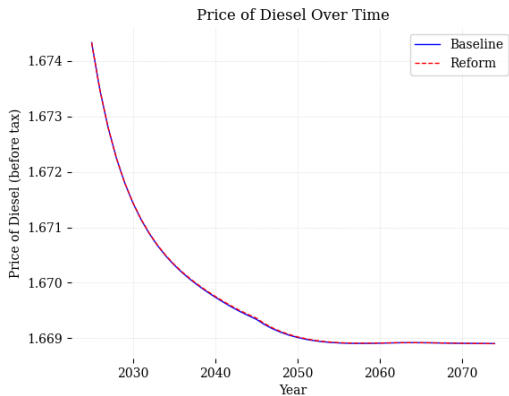
Variable	2025	2026	2027	2028	2029	2025-2039	SS
CIT rev	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PIT rev	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VAT + Excise rev	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Total tax rev	0.11	0.11	0.11	0.11	0.11	0.11	0.10

Debt to GDP Ratio

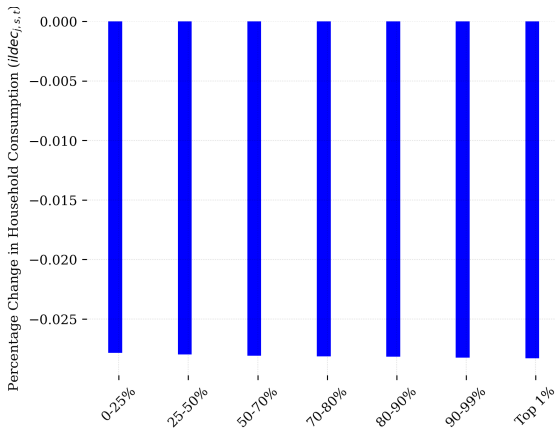


— Baseline Debt-to-GDP (D_t/Y_t) - - - Reform Debt-to-GDP (D_t/Y_t)

Price of Diesel Fuel



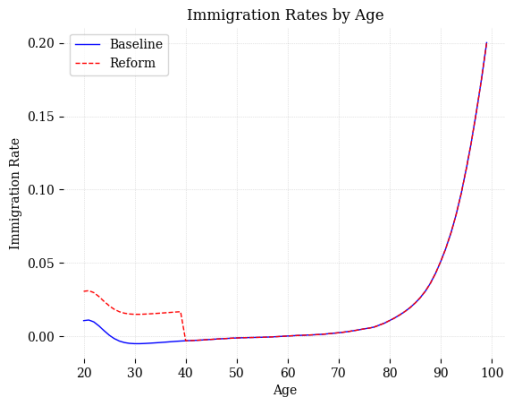
Consumption Effects



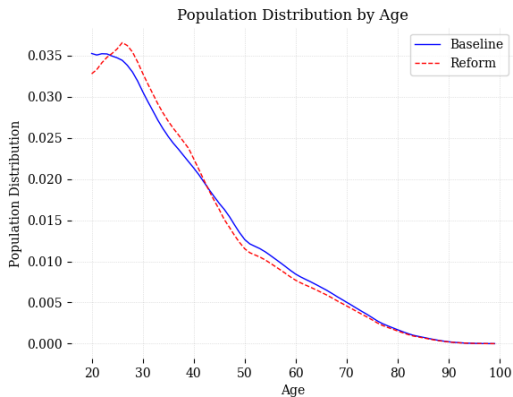
Parameterization

```
1 adj_imm_rates = imm_rates
2 adj_imm_rates[0, 20:40] += 0.0
3 adj_imm_rates[1, 20:40] += 0.005
4 adj_imm_rates[2, 20:40] += 0.01
5 adj_imm_rates[3, 20:40] += 0.015
6 adj_imm_rates[4:24, 20:40] += 0.02
7 adj_imm_rates[24, 20:40] += 0.015
8 adj_imm_rates[25, 20:40] += 0.01
9 adj_imm_rates[26, 20:40] += 0.005
10
```

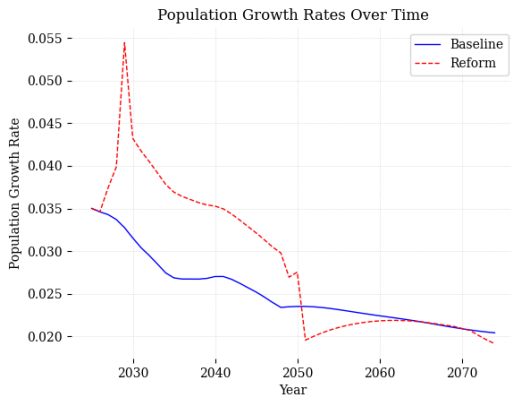
Immigration Rates



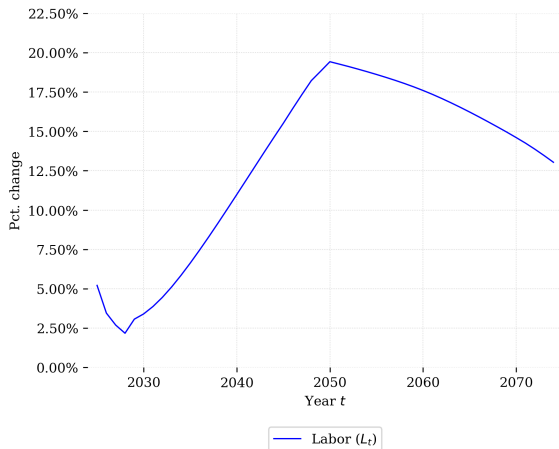
Population Distribution



Population Growth



Labor Supply



GDP

