Fiscal Simulations with CGE Model

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Presentation structure

⊙ What Do We Know about the Effects of Fiscal Policy?

⊙ Model Overview

⊙ Potential Use

⊙ Fiscal Simulations

What is Known about the Effects of Fiscal Policy?

Theory

Ricardian equivalence – economic agents anticipate future policies → neutrality of fiscal policy

Keynesian approach – multiplier-accelerator models ($\uparrow$ G → $\uparrow$ C and $\uparrow$ I). (short run)
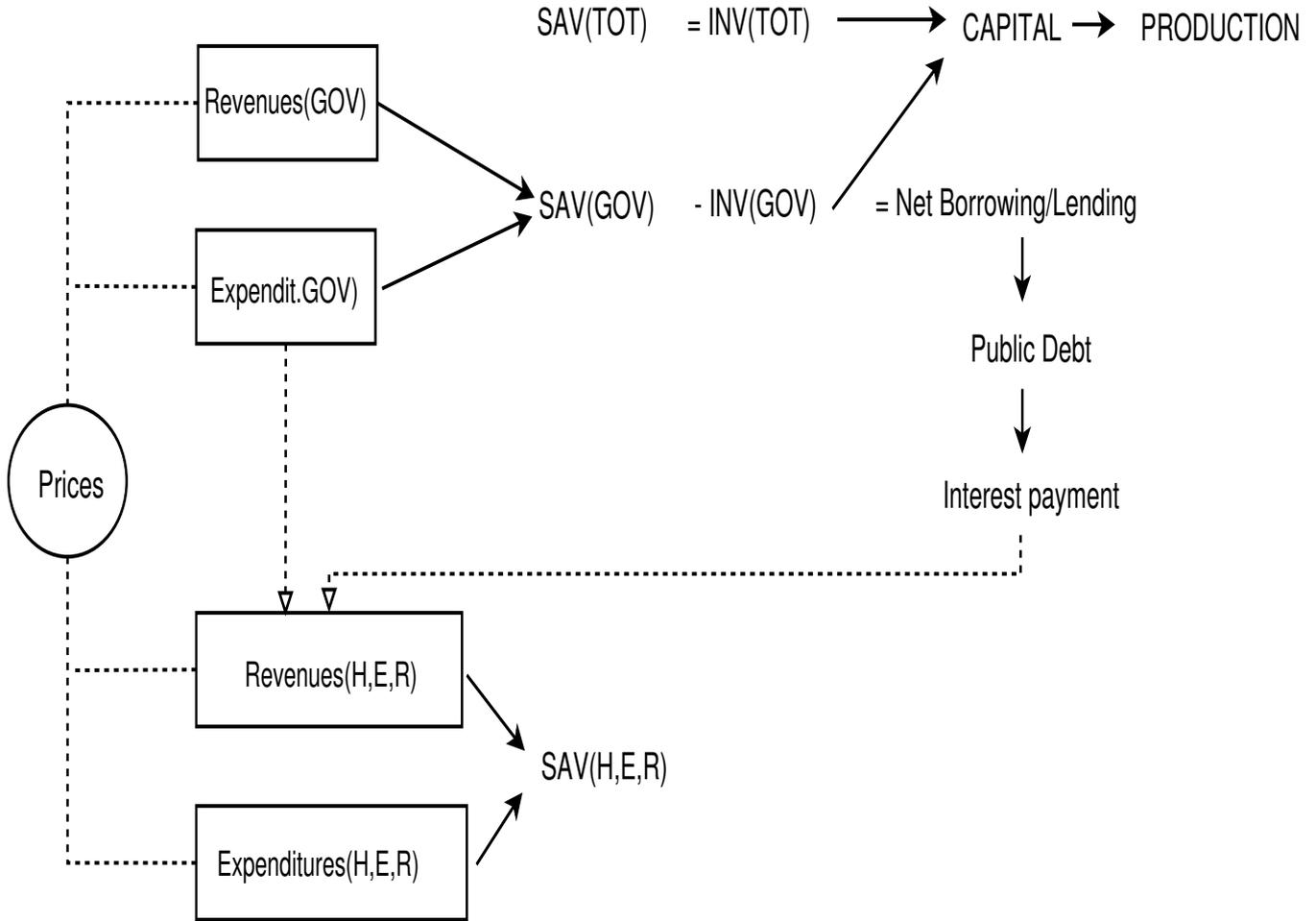
Non-Keynesian approach – expectations, crowding-out effect → reversed effects of fiscal policy. (long run)

Policy

Counter-cyclical policies – active fiscal policy

Fiscal sustainability – medium and long-term effects → fiscal rules

The issue of the impact of fiscal policy remains open . . .

SAV(TOT) = INV(TOT) $\longrightarrow$ CAPITAL $\rightarrow$ PRODUCTION

Revenues(GOV)

Expendit.GOV)

SAV(GOV) - INV(GOV) = Net Borrowing/Lending

Prices

Public Debt

Interest payment

Revenues(H,E,R)

SAV(H,E,R)

Expenditures(H,E,R)

Government Revenues

- ⊙ Taxes on Production
- ⊙ Taxes on Commodities
- ⊙ Personal income Tax
- ⊙ Corporate Tax
- ⊙ Social Security Contributions
- ⊙ Import Duties

Government Expenditure

⊙ Public Consumption

⊙ Public Investment

⊙ Production Subsidies

⊙ Commodity Subsidies

Potential Use of the Model

Different Industries

⊙ Simulation of different types of tax/subsidy policies

⊙ Simulation of different wage policies

Different Commodities

⊙ Simulation of different VAT and Duty rates

⊙ Simulation of price effects

Different Factors

⊙ Simulation of different direct tax rates (Flat tax rate)

Detailed structure of Consumption

  ⊙ Simulation of composition change in private/public consumption

Detailed structure of Investments

  ⊙ Simulation of composition change in private and public investment

Simulations

Budget targeting can be financed by

- ⊙ reduction in public investments or
- ⊙ reduction in public consumption or
- ⊙ increase of taxes.

These variants have different implications for the rest of the economy.

Moreover, *different adjustment paths* play an important role.

Simulation I

Task

In our year 0 (situation of 2000) the *deficit equals ca 75 bln.* CZK. All the following variants enforce a path for the deficit and assume that *government investment adjusts.*

Fast decline of the deficit by 50 % a year.

Slow decline of the deficit by 10 % a year.

GDP rule says that $\frac{\text{Deficit}}{\text{GDP}} = 3\,\%$.
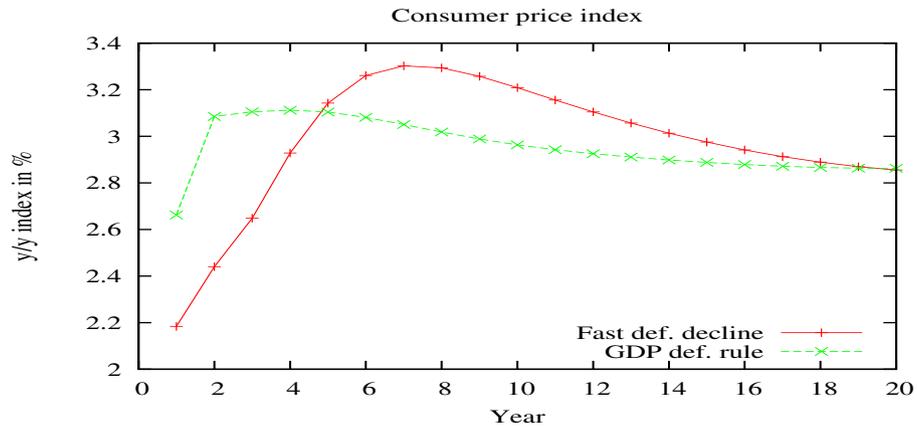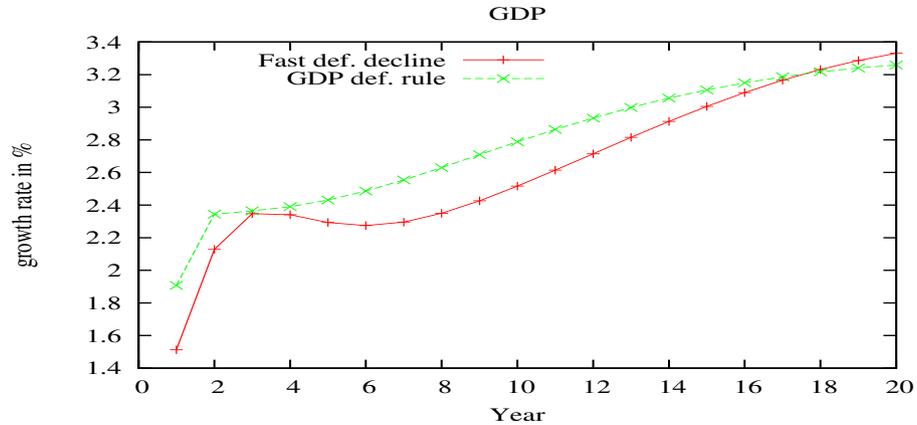
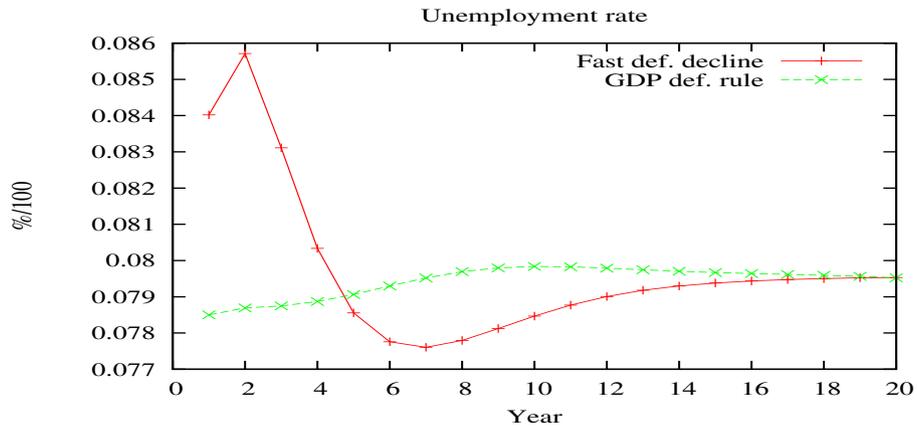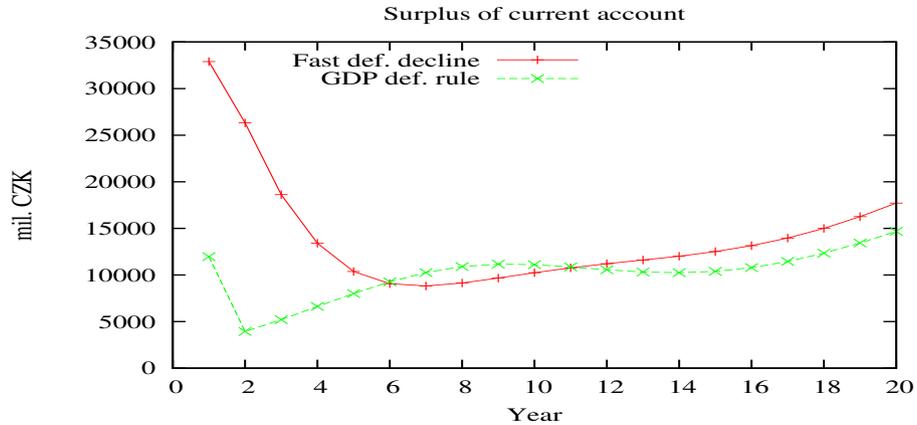# Deficit – Fast ⊗ Slow
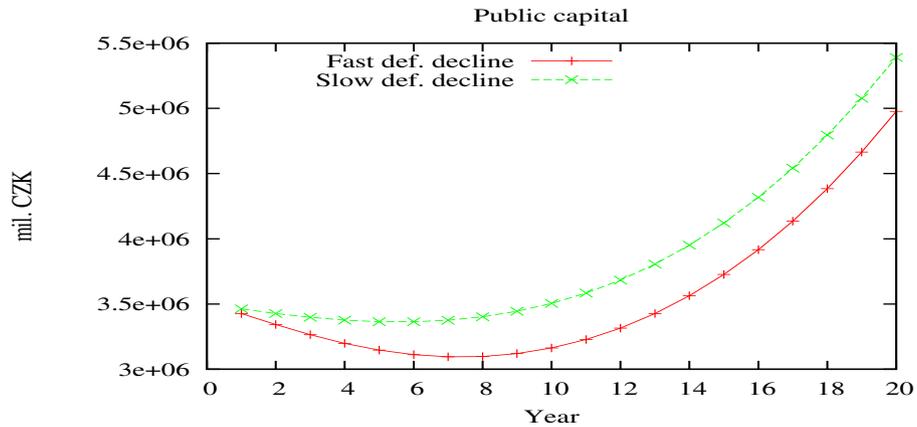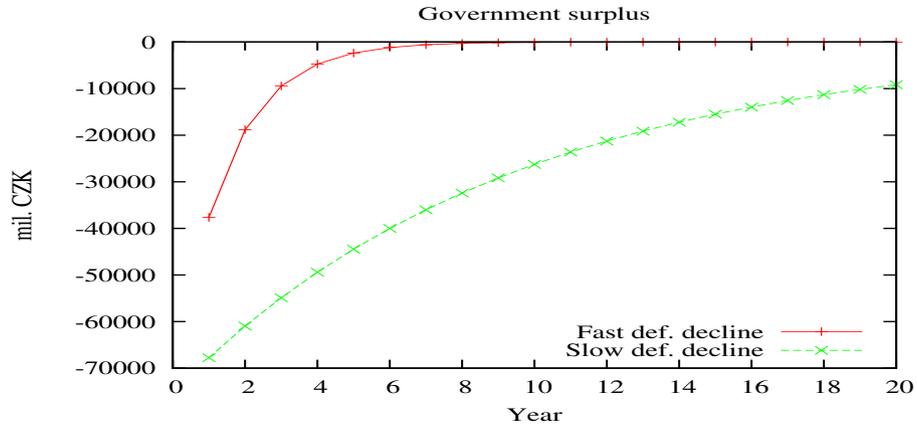
Deficit – Fast ⊗ Slow II

Deficit – Fast ⊗ Slow III

Surplus of current account

Unemployment rate
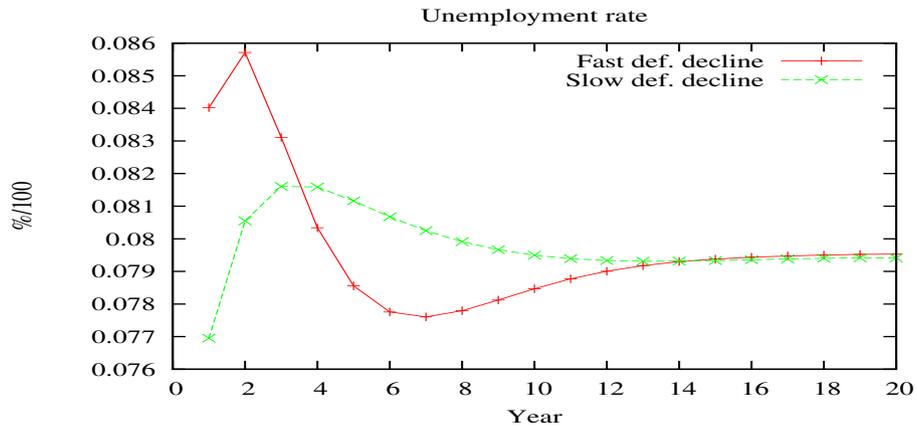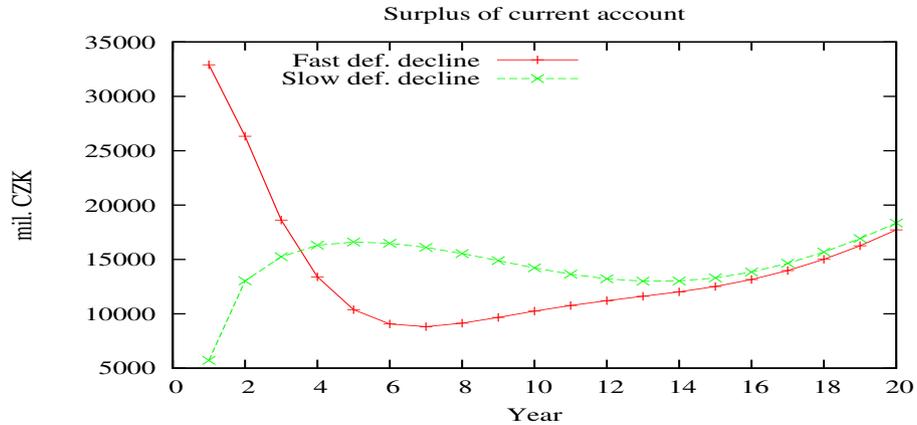
Deficit – Fast $\otimes$ GDP rule
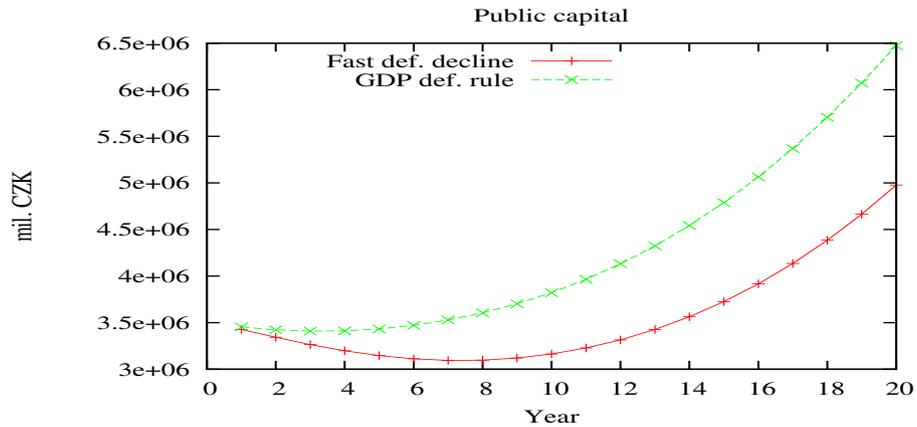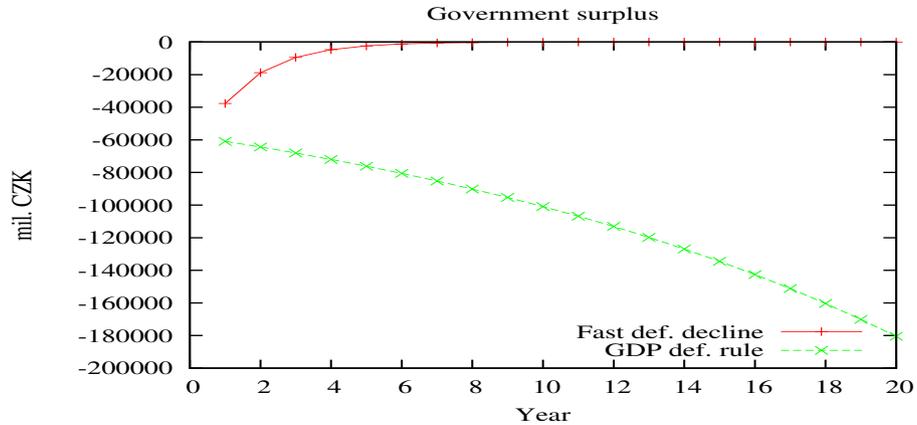
Deficit – Fast $\otimes$ GDP rule II

Deficit – Fast ⊗ GDP rule III

Surplus of current account

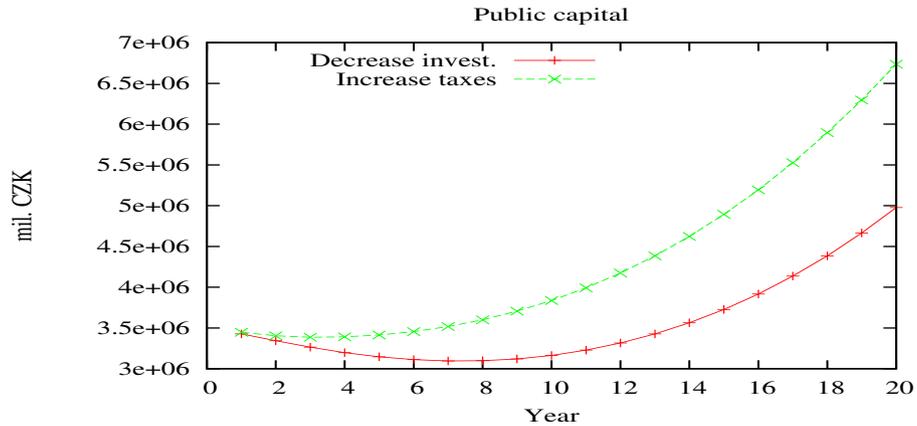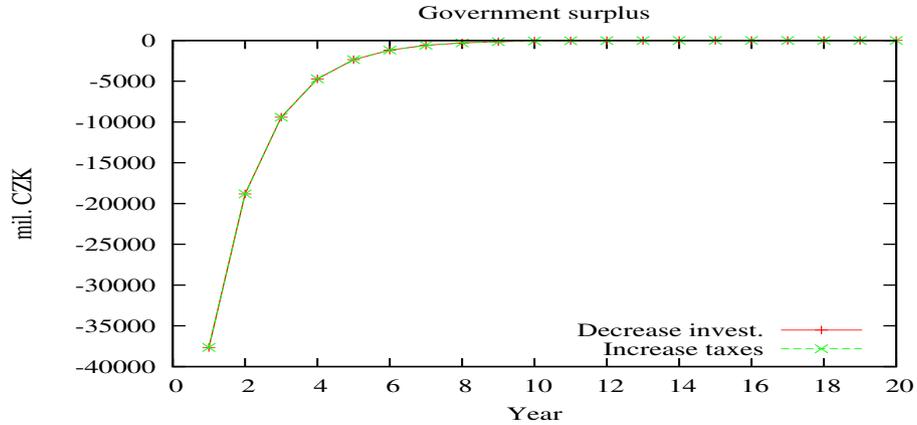Unemployment rate

Simulation II

Task

What happens if we cover the deficit in year 0 by increasing taxes or decreasing government consumption ?

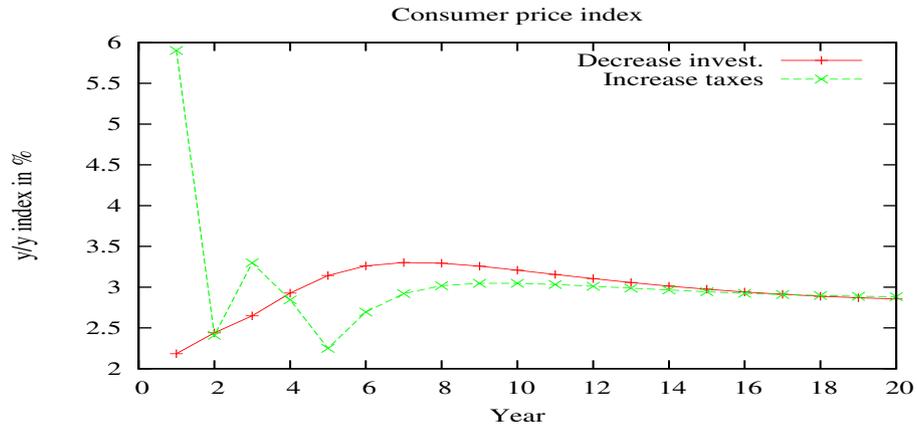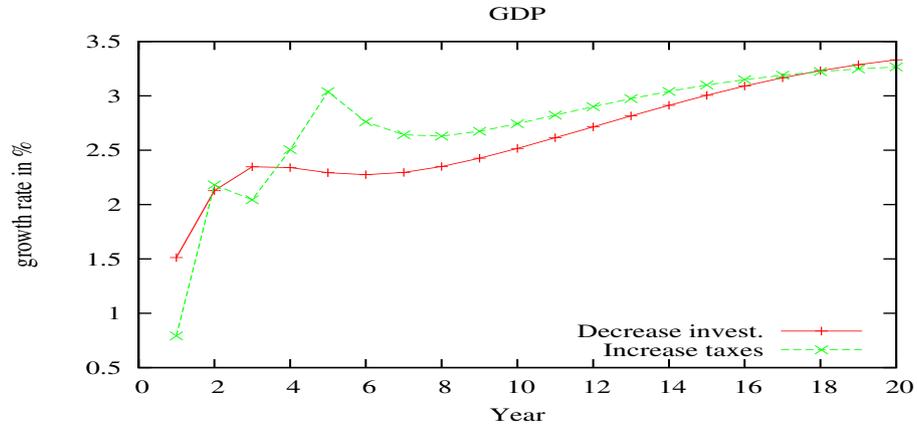**Increasing taxes.** We increase the VAT, excises and household income tax, so that the ex ante revenues cover the deficit. The tax increase is spread over 4 years.

Decreasing consumption. The government transfers to households decrease and the number of government employees declines.
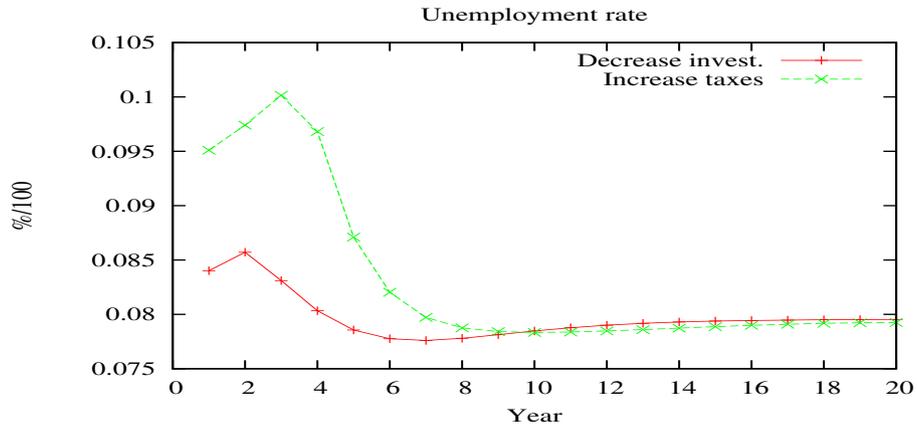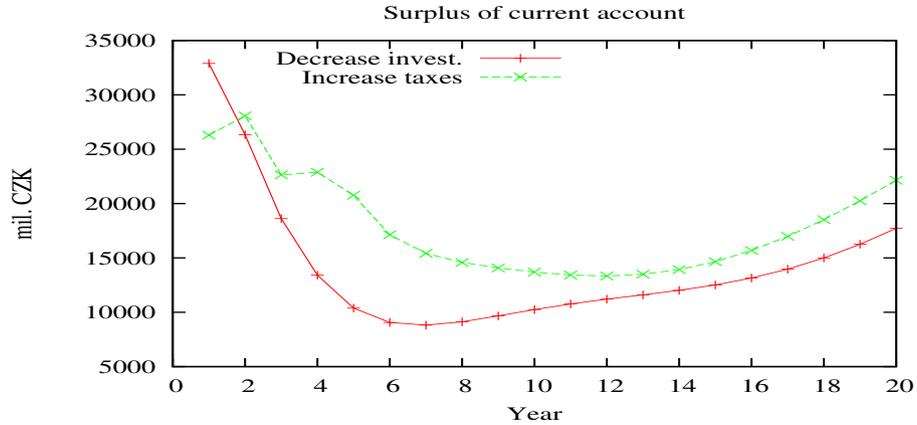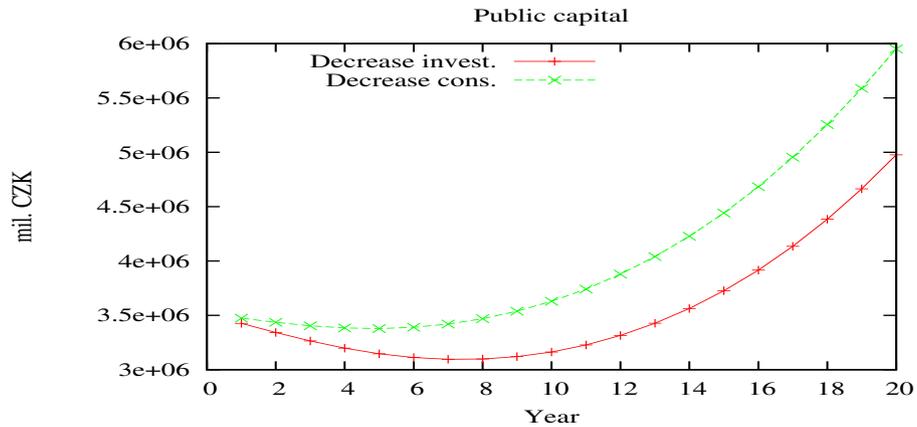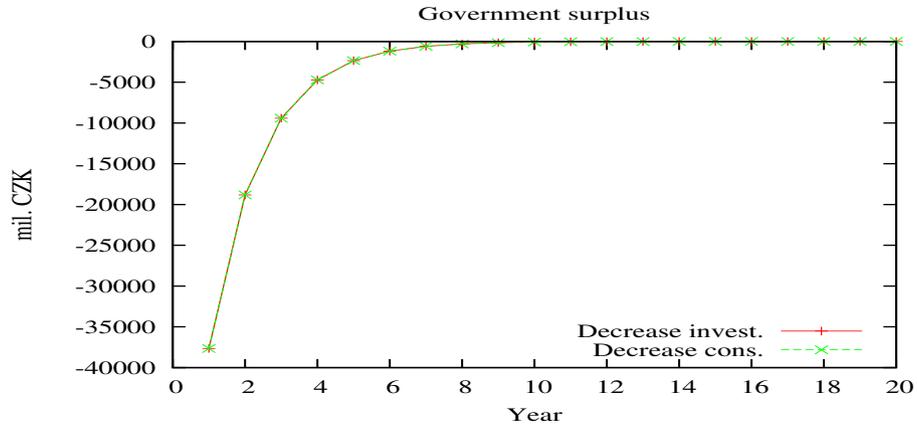
Increasing taxes

Government surplus

Public capital

Increasing taxes II

GDP

Consumer price index

Increasing taxes III

Surplus of current account

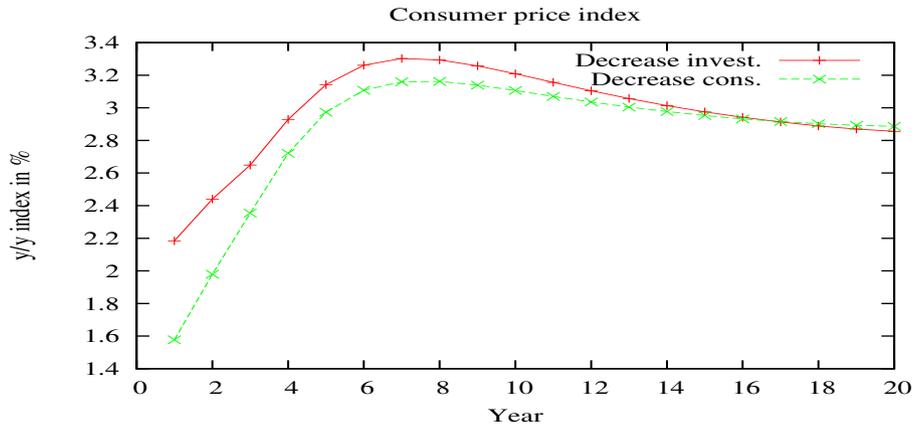Unemployment rate

Decreasing consumption I

Government surplus

Public capital

Decreasing consumption II

Decreasing consumption III

Surplus of current account

Unemployment rate
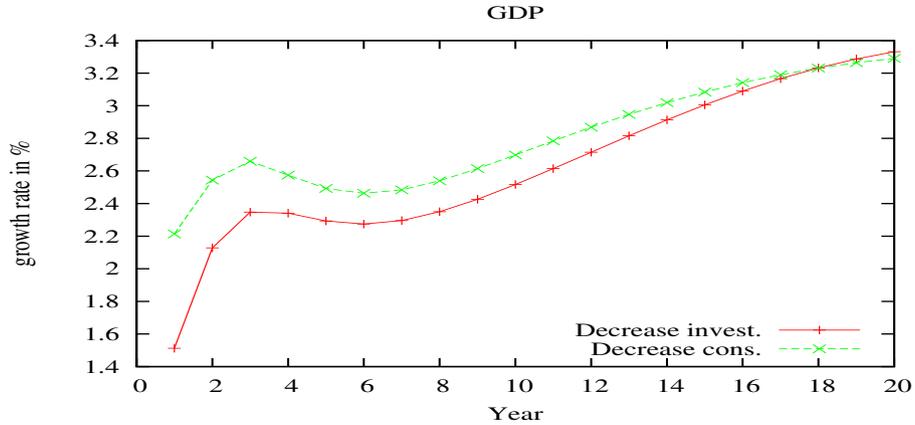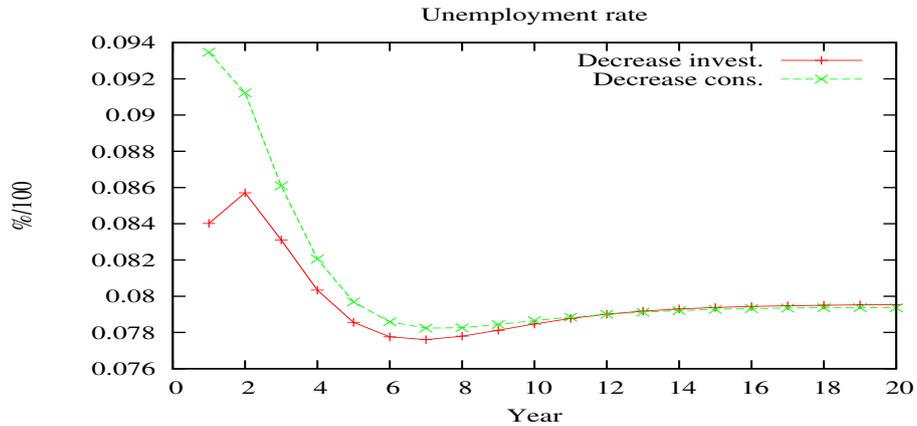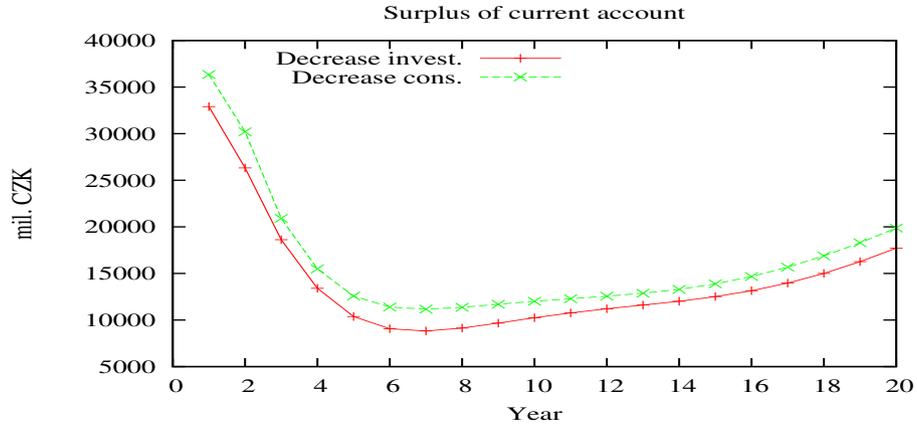
Thank you for your attention !