A nexus between fiscal policy and inflation: a case study of Indonesia using SVAR model

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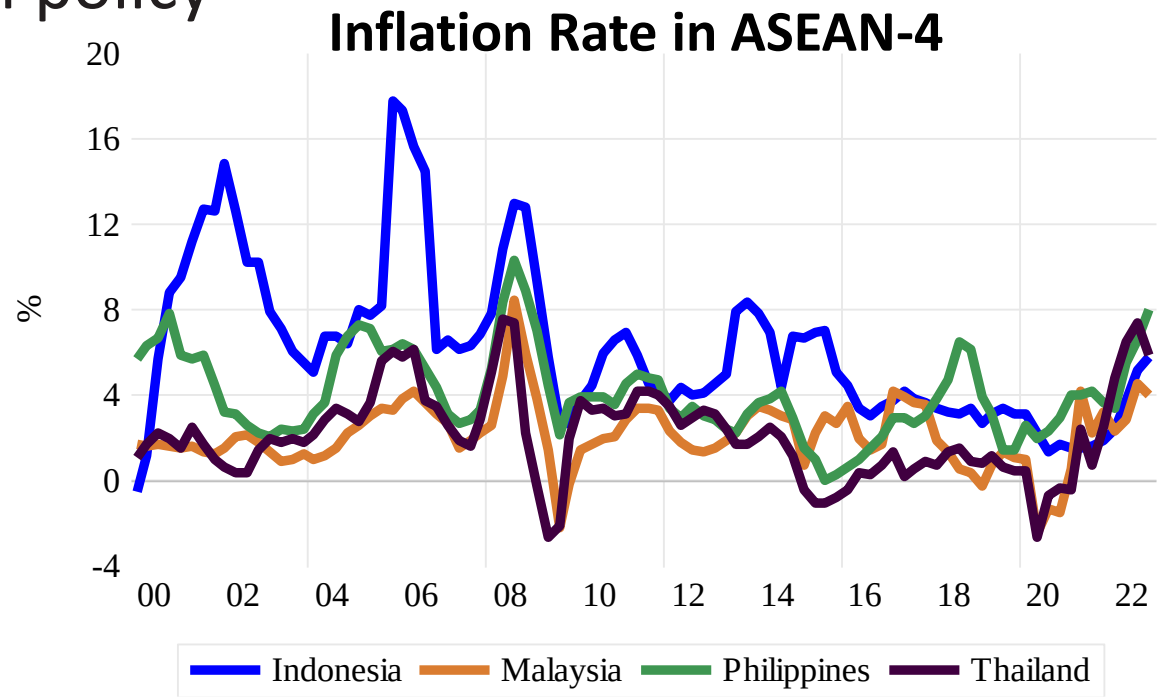
A nexus between fiscal policy and inflation: … Some clarifications

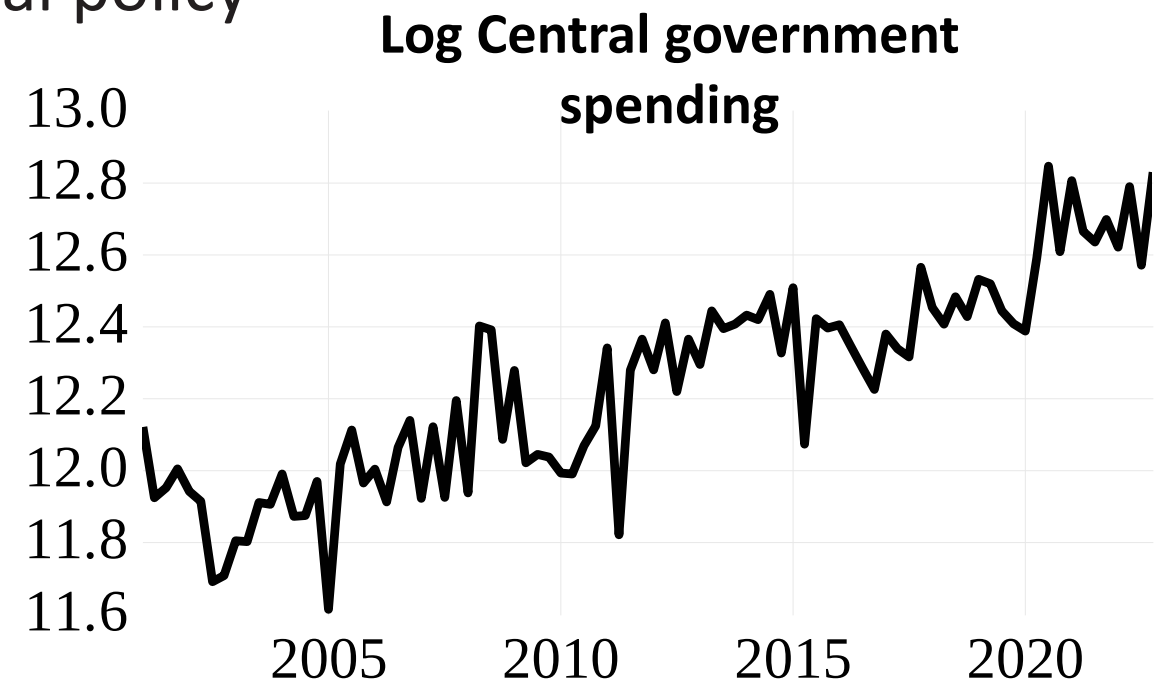
- Monetary policy vs fiscal policy
  - Indonesia: weakening of monetary policy transmission
- Focus on the expenditure side of fiscal policy
- Government spending → inflation



Source: Bank for International Settlements

A nexus between fiscal policy and inflation: … Some clarifications

- Monetary policy vs fiscal policy
  - Indonesia: weakening of monetary policy transmission
- Focus on the expenditure side of fiscal policy
- Government spending → inflation
- Fiscal expansion



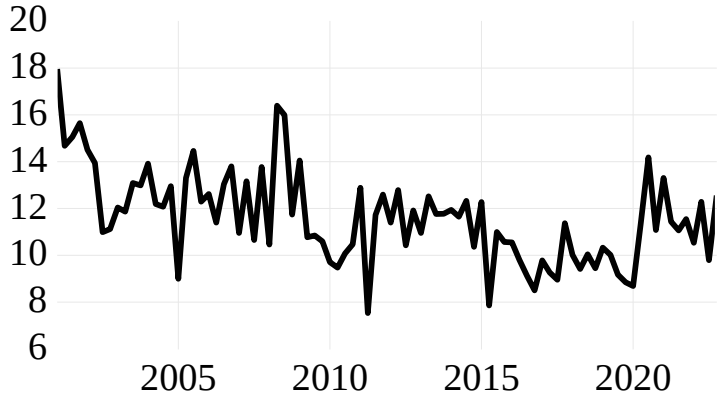
Source: Ministry of Finance

General findings from the literature

- Asian EMEs tend to be fiscally conservative in normal times.
- Fiscal expansions in EMEs tend to have significant effects on inflation depending on fiscal space and economic conditions (Cevik and Miryugin, 2023; IMF, 2023).
  - Asymmetric effect of fiscal policy on inflation in both short and long run in Indonesia (Sriyana and Ge, 2019)
- The importance of supply-side effects of government spending
  - Public investment vs public consumption vs transfers to household
- The role of monetary policy for the transmission of fiscal expansion
  - Higher public transfers multiplier when monetary policy was less responsive to inflation (e.g., by Bayer et al., 2020)
  - Fiscal policy shocks generated less inflation in the long run than monetary policy shocks (Budiman et al., 2022).

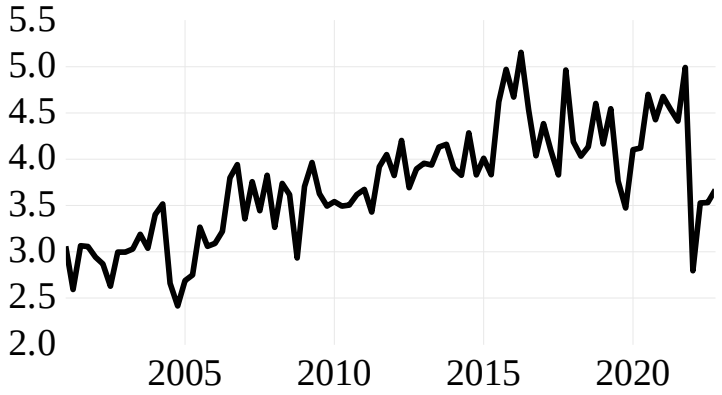
Why the decomposition?

Central government/ GDP



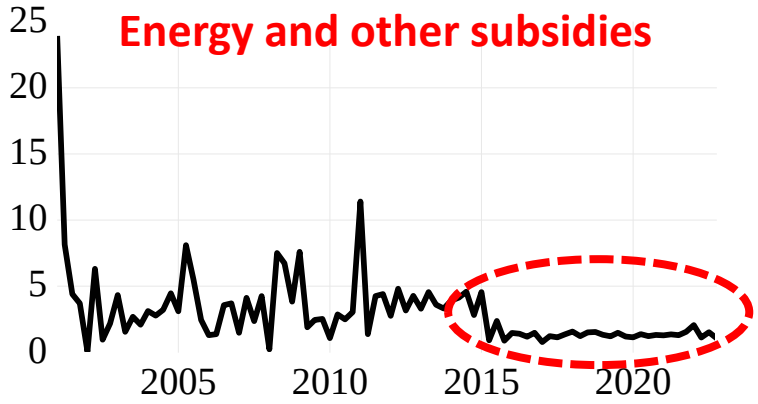
Government consumption/ GDP

Public Sector Wages
and Purchase of Goods and Services



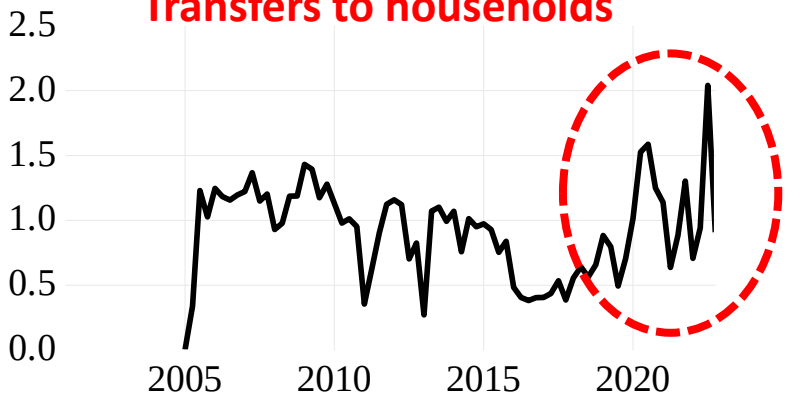
Subsidy/ GDP

Energy and other subsidies



Social protection/ GDP

Transfers to households



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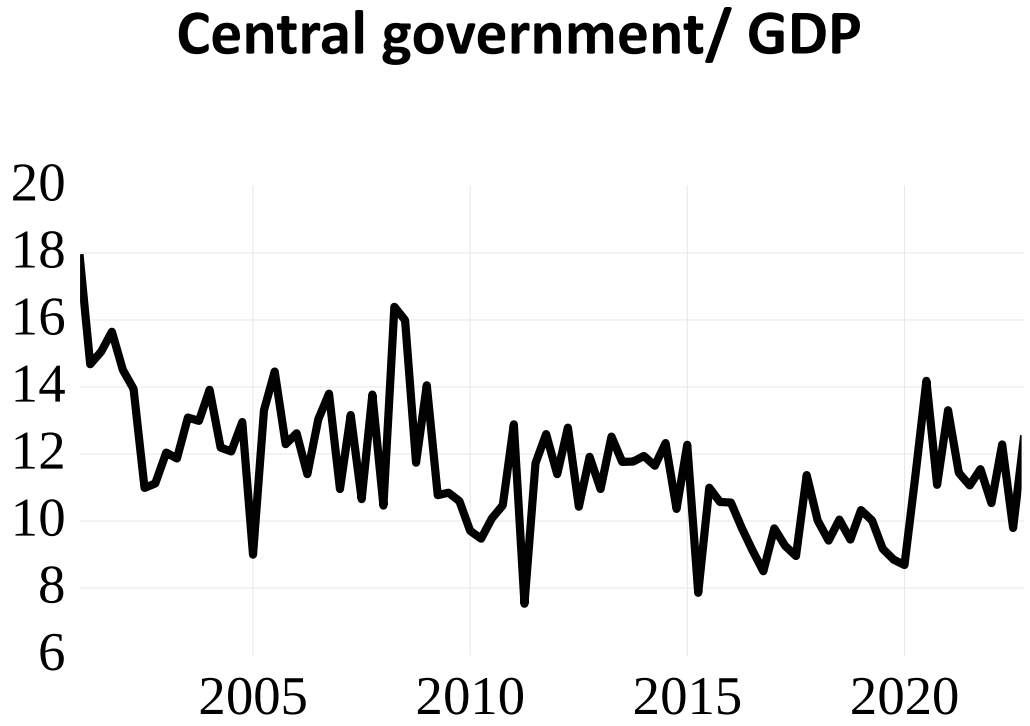
Why the decomposition?



- Government consumption - 34% on average but surges to more than 50% during Covid pandemic
- Transfers to households – 9%
- Subsidy – 22% on average but shrinks to 13% after 2014-2015 reform

SVAR Model

"AB" model (Amisano and Giannini, 1997)

$$\boldsymbol{A u_t = B \varepsilon_t} \qquad \boldsymbol{\varepsilon_t \sim (0, I_K)}$$

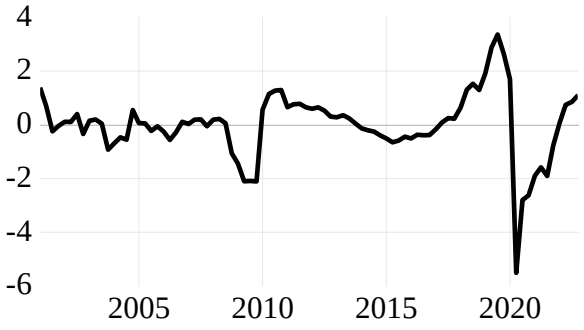
$$\begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ a_{21} & 1 & a_{23} & a_{24} & 0 & 0 & 0 & 0 \\ 0 & a_{32} & 1 & a_{34} & 0 & a_{36} & a_{37} & 0 \\ 0 & 0 & 0 & 1 & 0 & a_{46} & 0 & 0 \\ a_{51} & a_{52} & a_{53} & a_{54} & 1 & 0 & 0 & 0 \\ a_{61} & 0 & 0 & a_{64} & a_{65} & 1 & a_{67} & 0 \\ a_{71} & a_{72} & a_{73} & a_{74} & a_{75} & 0 & 1 & 0 \\ a_{81} & a_{82} & a_{83} & a_{84} & a_{85} & a_{86} & a_{87} & 1 \end{bmatrix} \begin{pmatrix} u_t^{ER} \\ u_t^{GAP} \\ u_t^{TAX} \\ u_t^{GOV} \\ u_t^{INF} \\ u_t^{DEBT} \\ u_t^{INT} \\ u_t^{PC} \end{pmatrix} = \begin{bmatrix} b_{11} & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & b_{22} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & b_{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & b_{44} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & b_{55} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & b_{66} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & b_{77} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & b_{88} \end{bmatrix} \begin{pmatrix} \varepsilon_t^{ER} \\ \varepsilon_t^{GAP} \\ \varepsilon_t^{TAX} \\ \varepsilon_t^{GOV} \\ \varepsilon_t^{INF} \\ \varepsilon_t^{DEBT} \\ \varepsilon_t^{INT} \\ \varepsilon_t^{PC} \end{pmatrix}$$

FP rule (Railavo, 2004): $\boldsymbol{\tau_t = \tau_{t-1} + \{\Omega[(g_t - \tau_t y_t + R_t B_{t-1}) - \Psi_1 y_t] + \phi[B_{t-1} - \Psi_2 y_t]\}/y_t}$

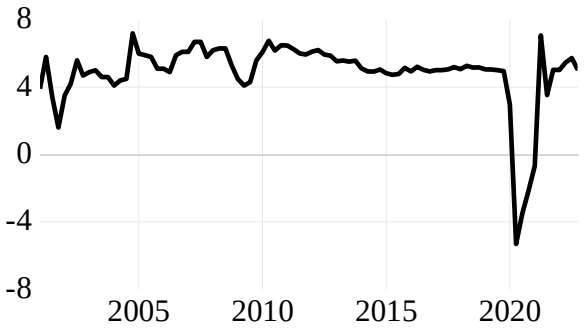
MP rule: (Taylor, 1993): $\boldsymbol{i_t^T = \bar{r} + \pi^* + \alpha_1(\pi_t - \pi^*) + \alpha_2(y_t - y_t^*)}$

Data

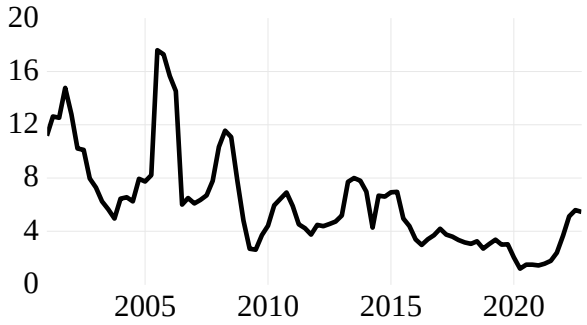
Output gap



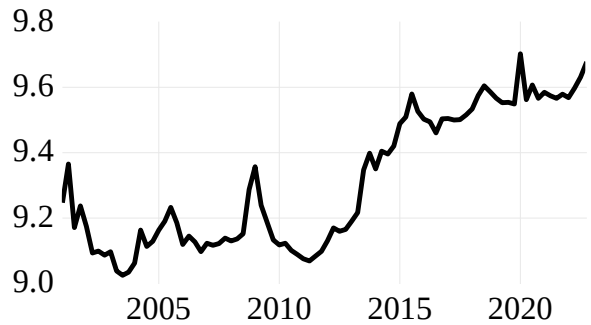
Real GDP growth



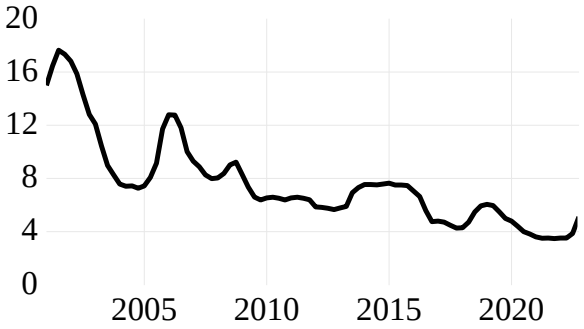
Inflation rate



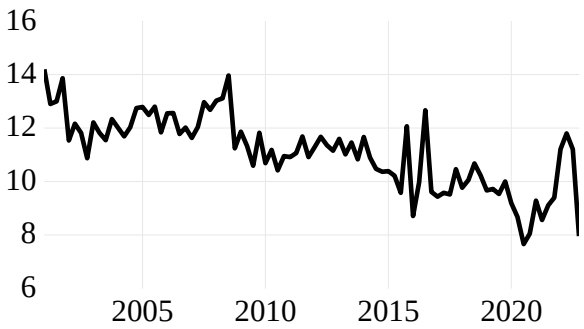
Exchange rate



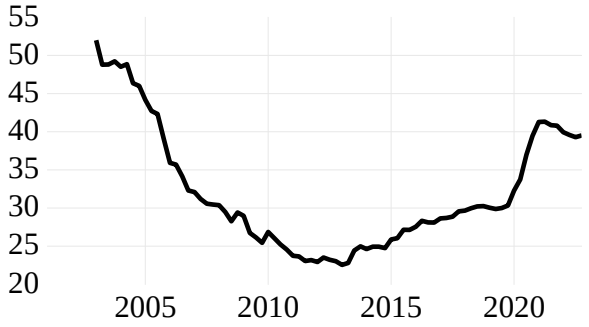
Interest rate



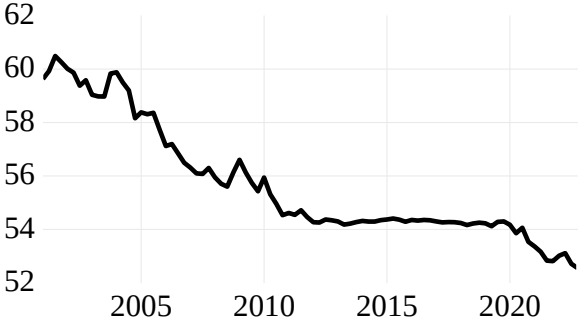
Tax-to-GDP



Debt-to-GDP



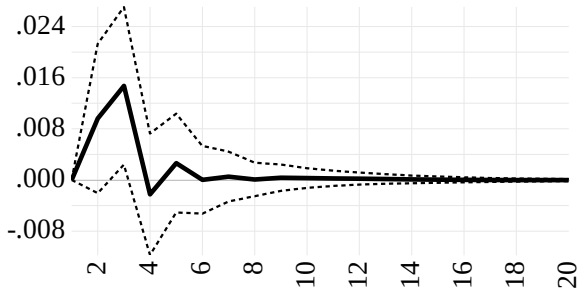
Private consumption/ GDP



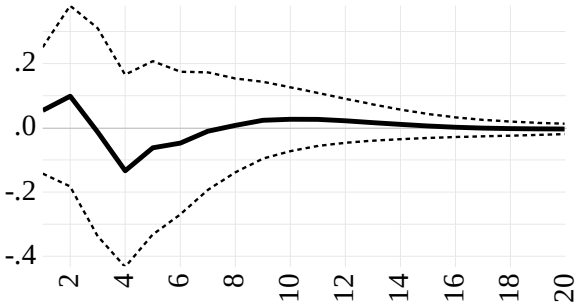
Sources: Various (refer to Appendix Table A1 of the article)

Impulse responses to shock to central government spending

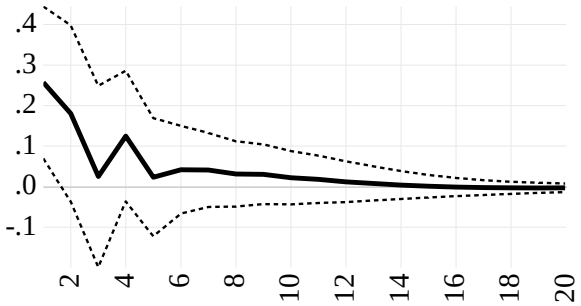
Response of exchange rate



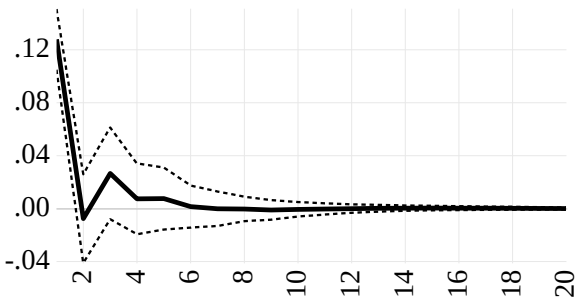
Response of output gap



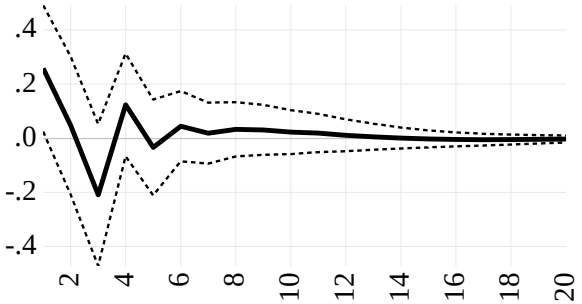
Response of tax



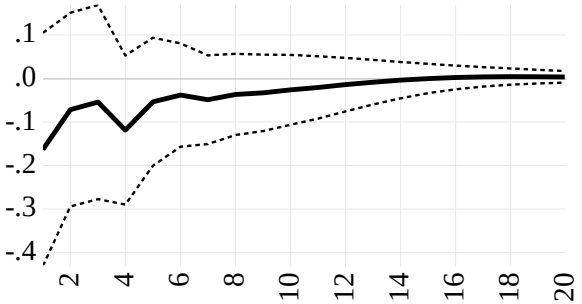
Response of central government spending



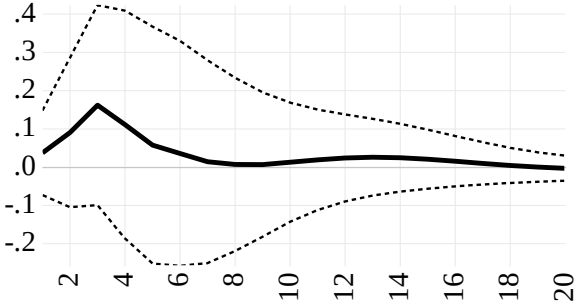
Response of inflation



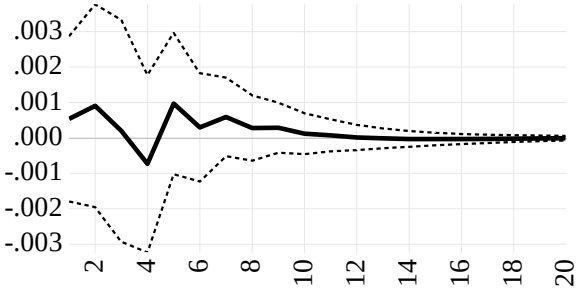
Response of debt



Response of interest rate



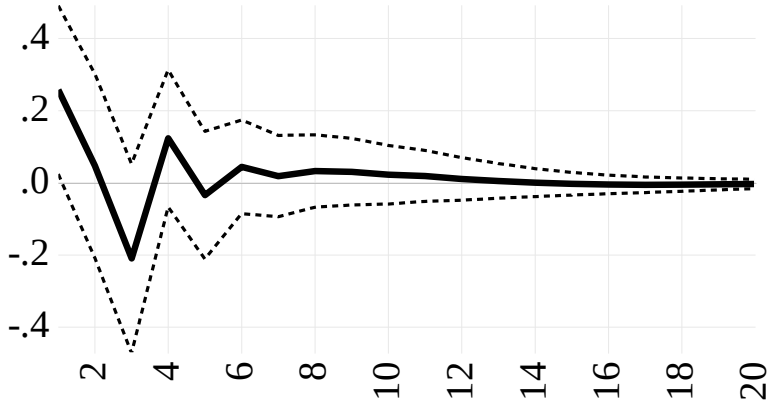
Response of private consumption



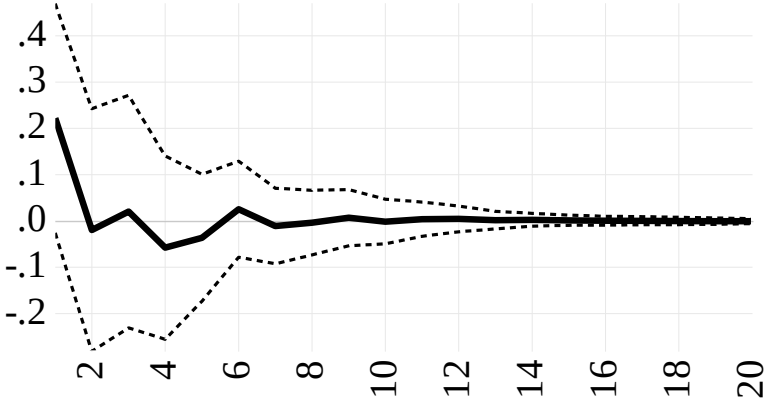
Lag length = 2

Impulse response of inflation to shock to

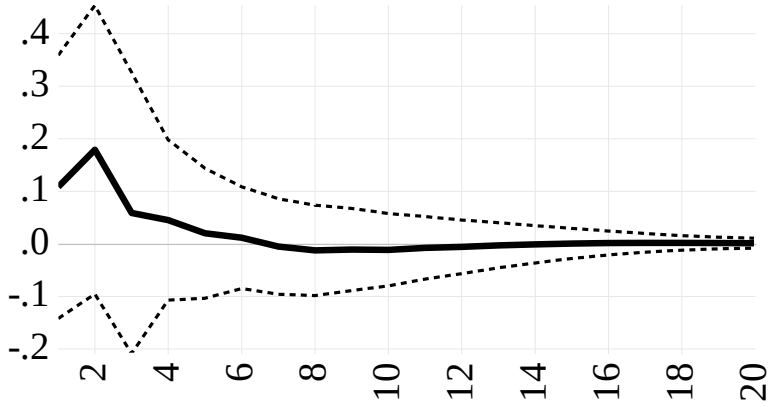
Total central government spending



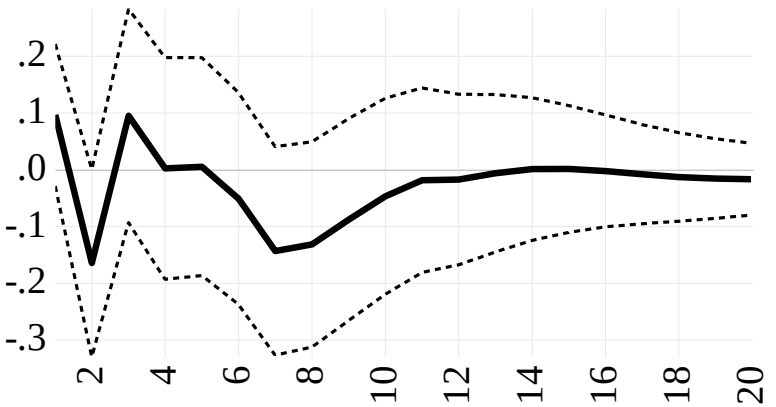
Government consumption



Subsidy spending



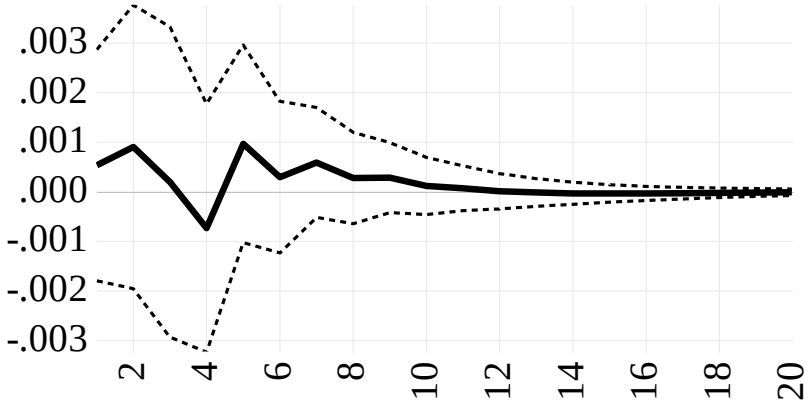
Social protection spending



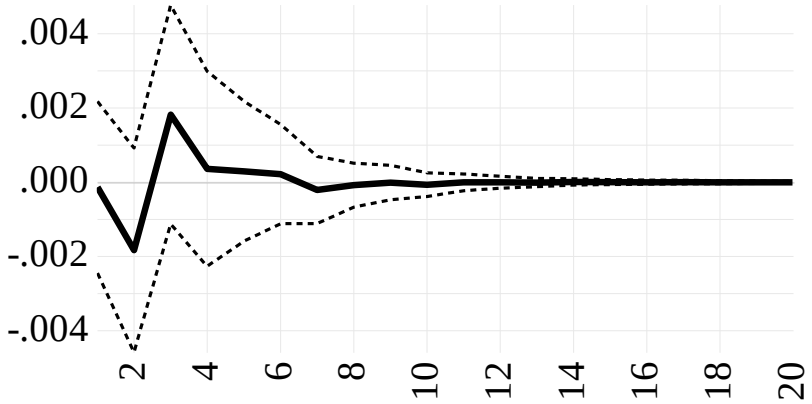
Lag length is 2 across government spending components, except for social protection, where lag length is 3.

Impulse response of private consumption to shock to

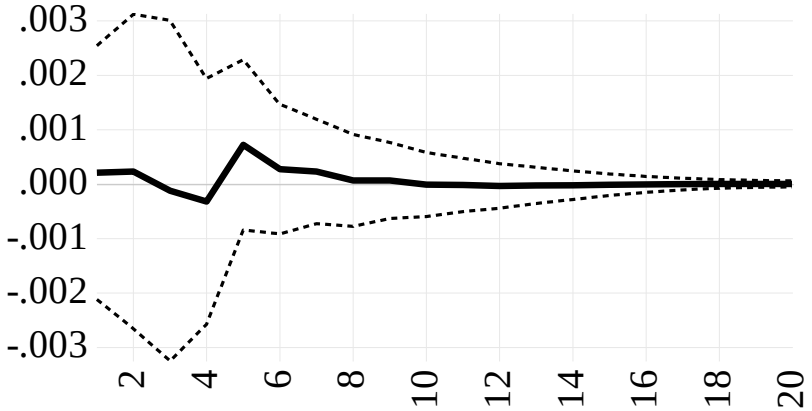
Total central government spending



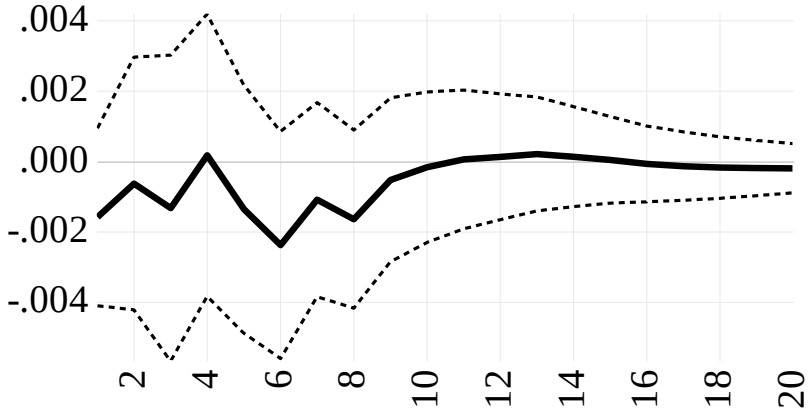
Government consumption



Subsidy spending



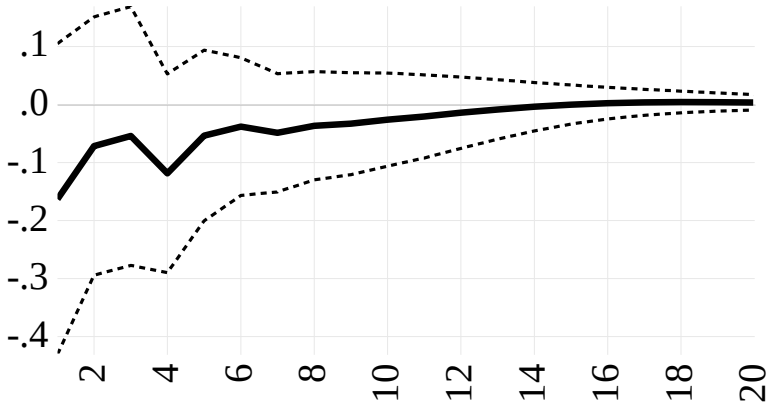
Social protection spending



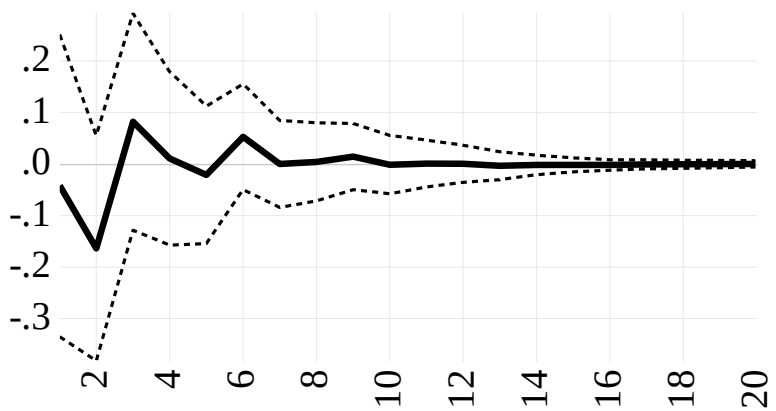
Lag length is 2 across government spending components, except for social protection, where lag length is 3.

Impulse response of debt to shock to

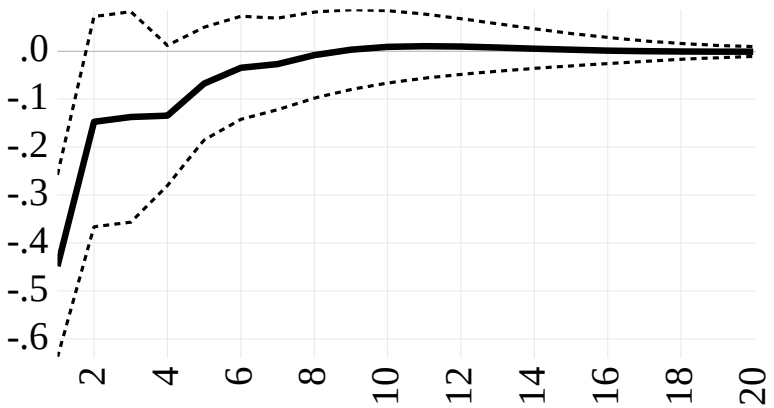
Total central government spending



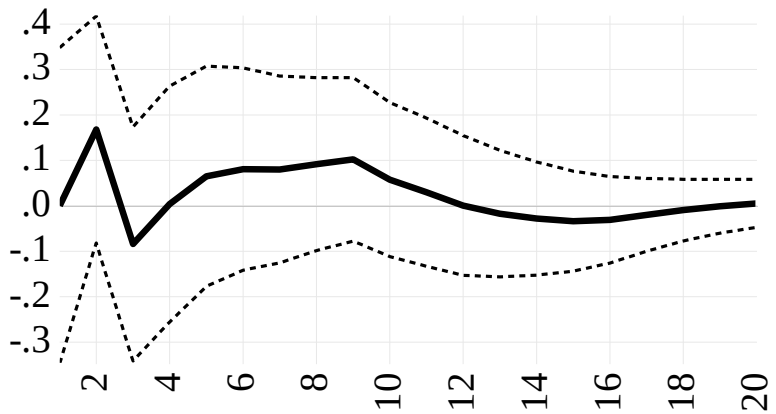
Government consumption



Subsidy spending



Social protection spending



Lag length is 2 across government spending components, except for social protection, where lag length is 3.

Robustness Checks

- First, government spending and private consumption were redefined in terms of percentages of real GDP.
- Second, real private consumption was redefined in terms of real per capita consumption.
- Third,
  - output gap → industrial production gap
  - CPI inflation → GDP deflator inflation
  - BI seven-day policy rate → lending rate

Conclusion (1)

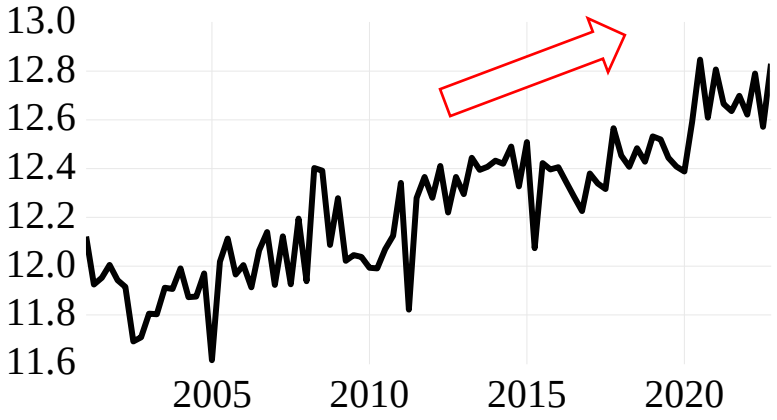
- Overall, transfers to household have the most persistent effects.
- Inflation rate jumps on impact across all shocks to government spending components but impact is not statistically significant.
  - Evidence of persistent effects of higher energy and other subsidies on inflation
- Surprisingly, impact of government spending shocks to private consumption seems to be transitory only.
  - Transfers to households do not seem to stimulate private consumption at all.
- A persistent fall in debt-to-GDP ratio in terms of shocks to total central government spending
  - Transfers to households feed a persistent rise in debt-to-GDP ratio until 12^{th} quarter.

Conclusion (2)

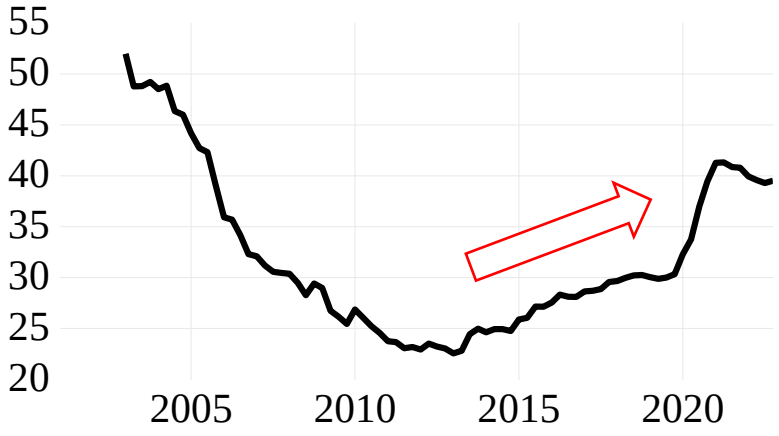
➔ While fiscal expansions in Indonesia may not affect inflation as much as often feared, they do not affect private consumption either.

➔ The main effect of fiscal expansions since the mid-2010s may thus have been a deterioration in public finances.

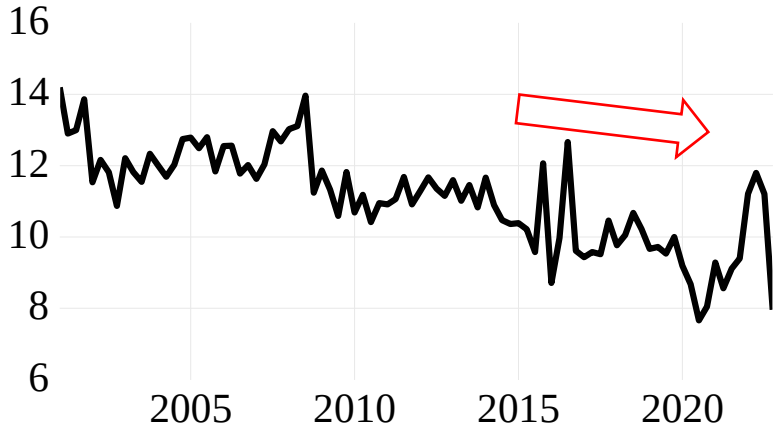
Log Central government spending



Debt-to-GDP ratio

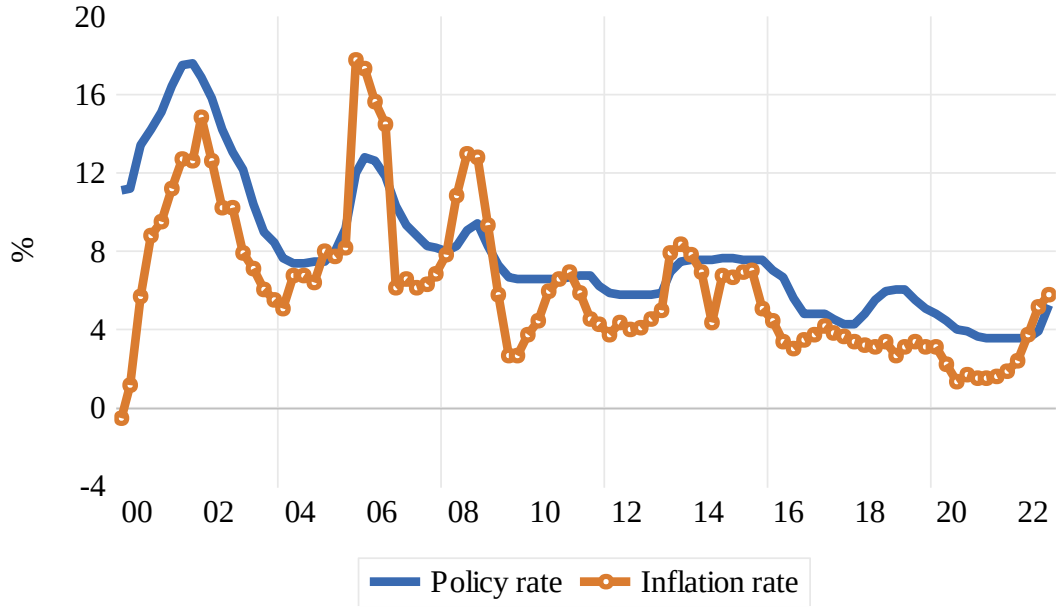


Tax-to-GDP ratio



So what?

- Fiscal and monetary authorities need to consider carefully the composition of changes in public spending when adjusting their countercyclical policy settings.
  - Monetary and fiscal policies in Indonesia often had not been well coordinated (Demid, 2018) and Juhro et al., 2022).
- Use more sophisticated models allowing for household heterogeneity to analyse the impact of public spending on private consumption.



Source: Bank for International Settlements

- Add public investment as a component of government spending to examine its impact on inflation via its indirect effect on productivity.

Thank you

TERIMAKASIH