

Monetary and Fiscal Policy with High Inflation

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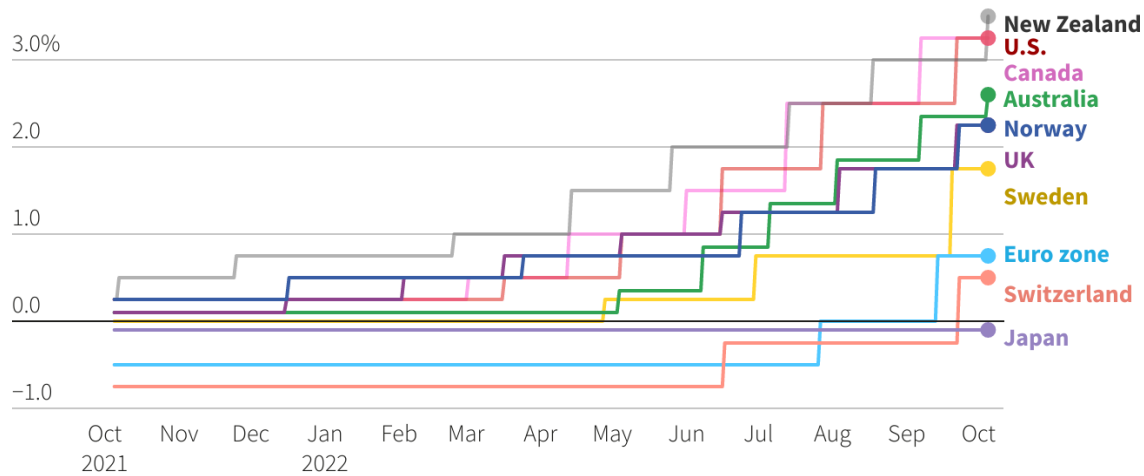
Policy Mix with High Inflation

- How should **monetary** and **fiscal** policy respond to a surge in **inflation**?
- Traditional view: conquering inflation is only a **monetary policy** duty.
- Should **fiscal policy** be a **complement** or a **substitute** to monetary policy?
- Origin of inflation: **monetary** vs **real** vs **fiscal**

Monetary Policy Response to Rising Inflation

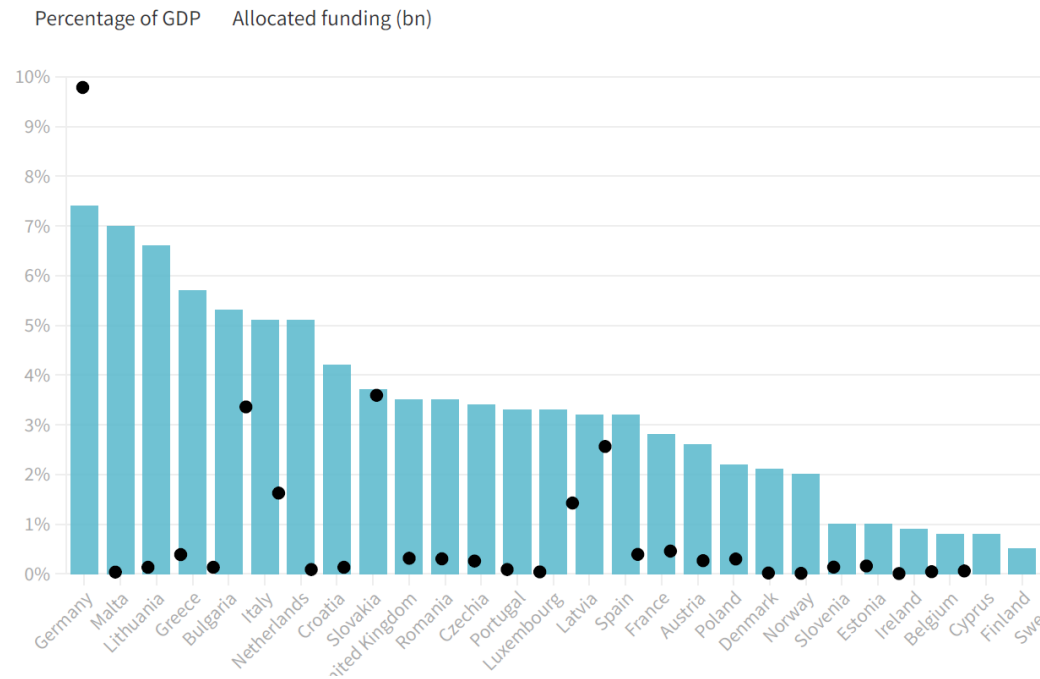
Central banks ramp up fight against inflation

Policy rates of central banks overseeing the 10 most traded currencies, last 12 months



Source: Refinitiv Datastream | Reuters, Oct. 5, 2022 | By Pasit Kongkunakornkul

Fiscal policy response to the energy crisis



Governments earmarked and allocated funding (Sep 2021 - Nov 2022) to shield households and businesses from the energy crisis.

Allocated funding to energy crisis (% GDP)

Germany	7.4
Greece	5.7
Italy	5.1
UK	3.5
Spain	3.2
France	2.8

The IMF View

Monetary policy should stay the course to restore price stability, and fiscal policy should aim to alleviate the cost-of-living pressures while maintaining a sufficiently tight stance aligned with monetary policy (IMF WEO, October 2022)

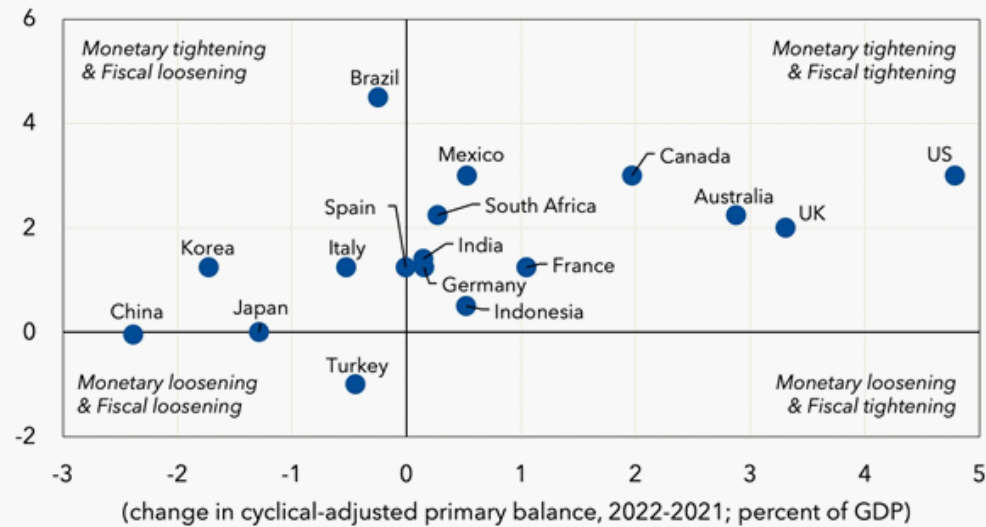
Policy Mix around the World

Fiscal-policy conundrum

The cost-of-living crisis complicates fiscal policy formulation.

G-20 fiscal and monetary policy mix*

(change in policy rates, Jan. 22 - latest, percentage points)



Some Fiscal Policy Principles from the IMF

1. Fiscal policy should **not work at cross-purpose** with monetary authorities' efforts to bring down inflation.
2. Price controls, untargeted subsidies, or export bans are fiscally costly and lead to excess demand, undersupply, misallocation, and rationing. They rarely work. Fiscal policy should instead **aim to protect the most vulnerable** through targeted and temporary transfers.
3. Fiscal policy can help economies adapt to a more volatile environment **by investing in productive capacity**: human capital, digitalization, green energy, and supply chain diversification.

Policy Mix through the Lens of a TA-NK Model

TA-NK Model

- Minimal deviation from standard RA-NK model to allow for **redistribution**
- Two agents: permanent-income (**S**) vs "hand to mouth" consumer (**H**)
- Imperfect insurance
- NK frictions: monopolistic competition + price rigidity
- A policy tradeoff: **stabilization** vs **redistribution**

Fiscal Policy

- Fiscal policy: *transfers* across agents.
- H agents receive a transfer that is zero in the steady state.

$$t_t^H \equiv - \underbrace{f_t}_{\text{transfer}}$$

- Consumption of H agents

$$c_t^H = \underbrace{\chi c_t}_{\text{elasticity of H income to aggregate income}} + \underbrace{z f_t}_{\text{exogenous redistribution}}$$

Assume

$\chi > 1$
H income reacts
more than proportionally
to aggr. income

- *Inequality* in consumption

$$\underbrace{\gamma_t}_{\text{inequality}} \equiv c_t^S - c_t^H = \underbrace{\frac{1 - \chi}{1 - \lambda} c_t}_{\text{effect of aggregate income on inequality}} - \underbrace{\frac{1}{1 - \lambda} z f_t}_{\text{transfer reduces inequality}}$$

- *Perfect insurance* in the steady state

$$\gamma_t = \gamma = 0$$

Aggregate Demand

$$\underbrace{c_t}_{\substack{\text{aggregate} \\ \text{consumption/output}}} = \mathbb{E}_t c_{t+1} - \sigma \frac{1 - \lambda}{1 - \lambda \chi} (i_t - \mathbb{E}_t \pi_{t+1}) + \underbrace{\frac{\lambda}{1 - \lambda \chi} z (f_t - \mathbb{E}_t f_{t+1})}_{\substack{\text{role of} \\ \text{transfers}}}$$

- In an economy with heterogeneous consumers real interest rates $r_t \equiv i_t - \mathbb{E}_t \pi_{t+1}$ and fiscal transfers are **substitutes** for aggregate-demand management

Flexible Price Allocation

$$\underbrace{c_t^*}_{\text{output gap}} = 0$$

$$\gamma_t^* = -\frac{z}{1-\lambda} f_t$$

- Movements in transfers \rightarrow inequality generates an **inefficiency** *even* under flexible prices

Perfect Insurance Allocation

$$\gamma_t = 0 \equiv \gamma_t^{**} \text{ for all } t$$

$$c_t^{**} = -\frac{z}{\chi - 1} f_t$$

- Transfers generate a **time-varying gap** between the flexible-price c_t^* and the perfect-insurance c_t^{**} level of consumption (output).

Monetary Policy Tradeoff

- Effects of a **transfer**

$$\underbrace{\gamma_t}_{\text{inequality}} \equiv c_t^S - c_t^H = \underbrace{\frac{1 - \chi}{1 - \lambda} c_t}_{\text{effect of aggregate income on inequality}} - \underbrace{\frac{1}{1 - \lambda} z f_t}_{\text{transfer reduces inequality}}$$

1. Decreases inequality directly
2. Affects aggregate demand $c_t \rightarrow$ If income of H agent over-reacts ($\chi > 1$) inequality falls further \rightarrow CB needs to engineer a **recession + deflation**

- **Trade-off** between stabilizing real activity so as to minimize **supply-side** price-stickiness distortions (via a policy of zero inflation) and **demand-side** imperfect-insurance distortions

Welfare Objective

$$\mathcal{L}_t \equiv \frac{1}{2} \left\{ \underbrace{\underbrace{\pi_t^2}_{\text{inflation}} + \underbrace{\frac{\sigma^{-1} + \varphi}{\psi} c_t^2}_{\text{output gap}}}_{\text{RANK model}} + \underbrace{\frac{(\sigma z)^{-1}}{\psi} \lambda (1 - \lambda) \gamma_t^2}_{\text{inequality}} \right\}$$

- A distinct **inequality** motive

Optimal Policy with Endogenous Transfers

- Introduce **cost-push** shocks in Phillips curve

$$\pi_t = \beta \mathbb{E}_t \pi_{t+1} + \kappa c_t + \underbrace{u_t}_{\text{cost-push shock}}$$

- Generates rise in inflation and fall in real activity

- Targeting rule

$$\kappa\pi_t + \frac{\sigma^{-1} + \varphi}{\psi}c_t + \frac{(\sigma z)^{-1}}{\psi}\lambda(1 - \lambda)\gamma_t^2 = 0$$

- Condition on **optimal transfers**

$$c_t = -\frac{z}{\chi - 1} \underbrace{f_t}_{\text{transfers}}$$

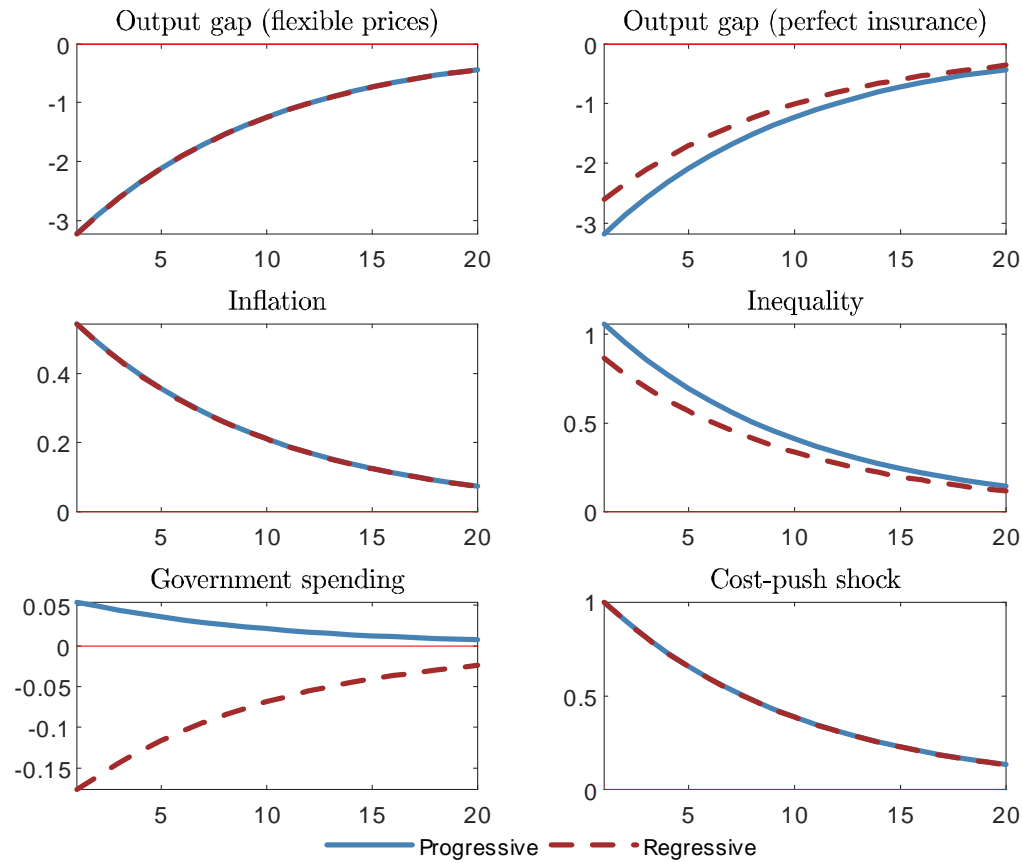
- \downarrow real activity $\rightarrow (\chi > 1) \rightarrow \uparrow$ inequality $\rightarrow \uparrow$ **transfer** towards constrained agents ($\uparrow f_t$) \rightarrow **stabilize inequality**.

Separation principle

- **Monetary** policy stabilizes cost-push shock, while **fiscal transfer** is chosen so as to achieve **perfect insurance**.
- Isomorphic to RANK economy
- **Fiscal policy (transfers) is expansionary**

Government Spending

$$\mathcal{L}_t \equiv \frac{1}{2} \left\{ \underbrace{\pi_t^2}_{\text{inflation}} + \underbrace{\frac{\sigma^{-1} + \tilde{\varphi}}{\psi} (c_t + \tilde{z}\tilde{g}_t)^2}_{\text{output gap}} + \underbrace{\frac{\sigma^{-1}\tilde{z} + \tilde{\sigma}_G^{-1}}{\psi} \tilde{g}_t^2}_{\text{govt. spending}} + \underbrace{\frac{(\sigma\tilde{z})^{-1}}{\psi} \lambda(1-\lambda)\gamma_t^2}_{\text{inequality}} \right\}.$$



Counter-cyclical government spending

Counter-cyclical Government Spending

- Optimal government spending in the face of cost-push shocks is **counter-cyclical** (if taxation progressive)
- Fiscal policy should be **expansionary** in periods of high **supply-side inflation**

Ricardian Fiscal Regime

- Is fiscal policy then a **substitute** of monetary policy?
- In the background of NK model fiscal policy is **Ricardian**, i.e., contractionary in the long-run
- Short run expansion in government spending **co-exists** with **expectations** that government will engineer a **fiscal contraction** in the future to stabilize government **debt**
- Monetary and fiscal policy are **substitutes** in the **short-run** but **complements** in the **long-run**

Non-Ricardian Fiscal Regime

- Sargent and Wallace (1981) *Unpleasant Monetarist Arithmetic*: without **fiscal backup**, monetary policy eventually loses traction
- Higher interest rates become **inflationary**, not disinflationary → Government borrows more to pay rising debt-service costs.

→ If monetary tightening is not supported by the **expectation** of appropriate fiscal adjustments, the deterioration of fiscal imbalances leads to even higher inflationary pressure

- **Fiscal stagflation** (Bianchi-Melosi 2022): a vicious circle of rising nominal interest rates, rising inflation, economic stagnation, and increasing debt.

→Caused by progressive deterioration of the fiscal authority's credibility to stabilize its large debt

- **Persistent high inflation** is always and everywhere a *fiscal phenomenon* (Bianchi-Melosi 2022, Sargent, 2013).

Conquest of Great Inflation of '70s: a Fiscal Policy Success?

- Steady increase in **trend inflation** in the 1960s and 1970s: **fast-growing government spending**, needed to support long-lasting welfare programs associated with President Lyndon Johnson' Great Society initiatives + war in Vietnam.
- **Cost-push shocks** associated to **oil** crises only account for the spikes in inflation *not* for the **trend**
- Fed Chairman Arthur Burns was **pressured repeatedly** by the Johnson and Nixon administrations to **keep interest rates low** (Bernanke 2022)

- In 1980 Carter lost the presidential race against Reagan, who ran on a **strong anti-inflation** platform.
- Volcker kept interest rates high for a prolonged period of time with **no interference** by the Reagan administration.
- Paul Volcker said that “[u]nlike some of his predecessors, [President Reagan] had a strong visceral aversion to inflation.” (Bernanke 2022)
- This fiscal backing did not have to result in an immediate increase in primary surpluses. What is required to reduce fiscal inflation is that agents **expect** that primary surpluses will **increase** over time.

- Tax cut contained in the Economic Recovery Tax Act of August 1981 led to an immediate fiscal deficit, quickly followed by partially compensating deficit-reducing measures. These were aimed at increasing tax revenues, either through higher tax rates or through expanding the tax base. These changes included the Tax Equity and Fiscal Responsibility Act of 1982, the Social Security Amendments of 1983, and the Deficit Reduction Act of 1984.
- Romer and Romer (2009): Reagan strong advocate of **spending reductions**. Viewed tax cuts as the most effective way to reduce the size of the government, following the “starve-the-beast” hypothesis.

Summing up

- High trend inflation of the '70s was conquered by **fiscal policy** stabilization
- Long-run expectations of debt stabilization is key
- US and Eurozone today?