

Perceptions & Misperceptions of Fiscal Inflation

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Indiana University

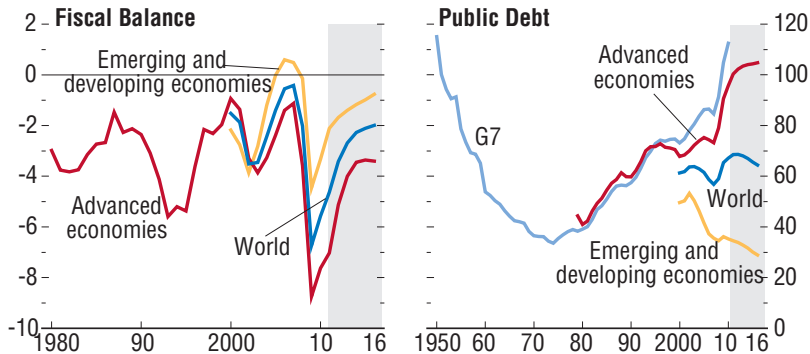
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“Fiscal Policy and Its Implications for Monetary and
Financial Stability”
Lucerne, Switzerland

Era of Fiscal Stress

- ▶ Short-run imbalances

Short-Run Fiscal Stress



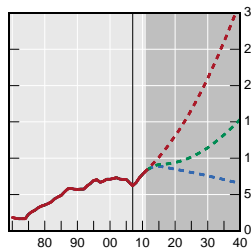
Shares of GDP. Source: IMF, WEO

Era of Fiscal Stress

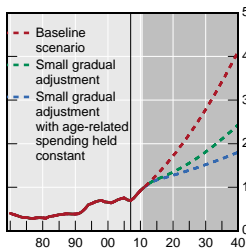
- ▶ Short-run imbalances
- ▶ Long-run imbalances

Long-Run Fiscal Stress

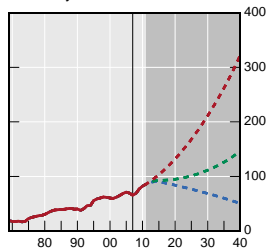
Austria



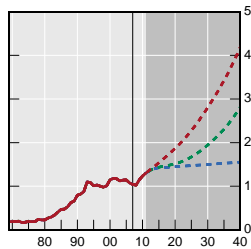
France



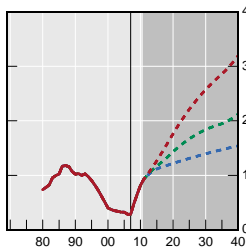
Germany



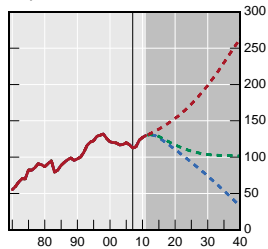
Greece



Ireland



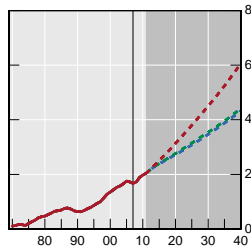
Italy



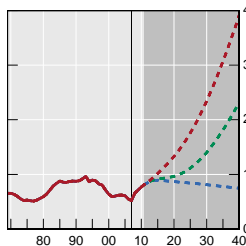
Debt-GDP. Source: BIS

Long-Run Fiscal Stress

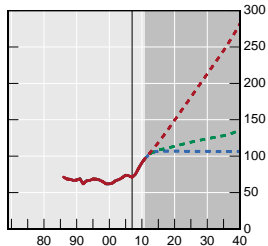
Japan



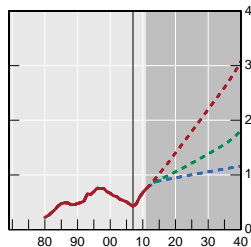
Netherlands



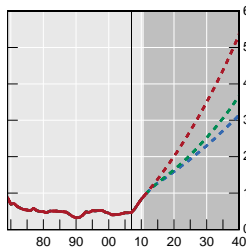
Portugal



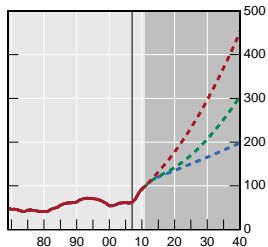
Spain



United Kingdom



United States



Debt-GDP. Source: BIS

Message in Long-Run Projections

- ▶ These projections cannot happen
- ▶ Some assumptions underlying projects cannot hold
 1. economies will grow out of projected deficits
 2. governments will default outright on debt
 3. fiscal policies will adjust surpluses to stabilize debt
 4. paths of inflation will turn out different from assumed
 5. some combination of the four
- ▶ Only Dr. Pangloss could believe 1
- ▶ Europe makes clear how onerous is 2
- ▶ Most central bankers hope for 3

Prospects for Entitlements Reform



The level of public fiscal discourse in Greece

Prospects for Entitlements Reform



The level of public fiscal discourse in U.S.

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- ▶ Most central bankers hope for 3
- ▶ I'll focus on ways that 4 might arise

Primer on Monetary-Fiscal Interactions

- ▶ Monetary & fiscal policy have two tasks: (1) control inflation; (2) stabilize debt
- ▶ Beautiful symmetry: two different policy mixes that can accomplish these tasks

Regime M: conventional assignment—MP targets inflation; FP targets real debt (called **active MP/passive FP**)

Regime F: alternative assignment—MP maintains value of debt; FP controls inflation (called **passive MP/active FP**)

- ▶ **Regime M:** normal state of affairs
- ▶ **Regime F:** can arise in an era of fiscal stress

Monetary-Fiscal Interactions: Regime M

- ▶ MP behavior completely familiar: target inflation by aggressively adjusting nominal interest rates
- ▶ FP adjusts future surpluses to cover interest plus principal on debt
- ▶ What is FP doing?
 - ▶ any shock that changes debt must create the *expectation* that future surpluses will adjust to stabilize debt's value
 - ▶ people must believe adjustments will occur eventually
 - ▶ eliminates wealth effects from government debt
 - ▶ for MP to target inflation, fiscal expectations must be **anchored** on FP adjusting to maintain value of debt
- ▶ How firmly are expectations so anchored?

An Equilibrium Condition

$$\frac{M_{t-1} + Q_t B_{t-1}}{P_t} =$$

Expected present value primary surpluses + seigniorage

Regime M imposes restrictions on $E_t PV$

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- ▶ Regime F arises in two ways
 1. **Sargent & Wallace's unpleasant monetarist arithmetic**

Common Perception of Fiscal Inflation

- ▶ Arises from unpleasant arithmetic mechanism
 - ▶ hit fiscal limit; surpluses unresponsive to debt
 - ▶ seigniorage adjusts to stabilize debt
- ▶ A central banker's take on this:

“... the proposition is of little current relevance to the major industrial countries. This is for two reasons. First, seigniorage—financing the deficit by issuing currency rather than bonds—is very small relative to other sources of revenues. Second, over the past decade or so, governments have become increasingly committed to price stability... This sea change in the conventional wisdom about price stability leaves no room for inflation to bail out fiscal policy.”

—Mervyn King (1995)

I agree

Misperception of Fiscal Inflation

- ▶ King reflects the common perception of fiscal inflation
 - ▶ arises if and only if monetary policy monetizes deficits
- ▶ But it is a *misperception* that monetizing deficits is the *only* channel for fiscal inflation
- ▶ Let's take direct monetization off the table and equate Regime F to the fiscal theory

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 2. **fiscal theory of the price level**

Monetary-Fiscal Interactions: Regime F

- ▶ Governments issue mostly nominal bonds
 - ▶ 90% U.S. debt; 80% U.K. debt; 95% Euro-area debt; most of Australian, Japanese, Korean, New Zealand, & Swedish debt
- ▶ In Regime F:
 - ▶ FP sets primary surpluses independently of debt
 - ▶ MP prevents interest payments on debt from destabilizing debt
 - ▶ both FP & MP have been doing this for some years
- ▶ Nominal debt is revalued to align its value with expected surpluses
- ▶ Lower current or expected surpluses reduce value of outstanding debt: raises aggregate demand
⇒ higher current and expected inflation

An Equilibrium Condition

$$\frac{M_{t-1} + Q_t B_{t-1}}{P_t} =$$

Expected present value primary surpluses + seigniorage

Regime F imposes restrictions on Q_t & P_t

Using an Equilibrium Condition: Regime F

$$\frac{M_{t-1} + Q_t B_{t-1}}{P_t} =$$

Expected present value primary surpluses + seigniorage

- ▶ Increase in current or expected transfers
 - ▶ no offsetting taxes expected, household wealth rises
 - ▶ lower expected path of surpluses reduces “cash flows,” lowers value of debt
 - ▶ individuals shed debt in favor of consumption, raising aggregate demand
 - ▶ higher current & future inflation and economic activity
 - ▶ long bonds shift inflation into future
- ▶ Demand for debt \Leftrightarrow aggregate demand (Cochrane)

Why Regime F is Not Unpleasant Arithmetic

- ▶ Equilibrium conditions for nominal and real debt

$$\text{Nominal: } B_{t-1} = P_t \times E_t PV(\text{surpluses}, \text{seigniorage})$$

$$\text{Real: } v_{t-1} = E_t PV(\text{surpluses}, \text{seigniorage})$$

- ▶ Hypothetical increase in P_t , all else fixed
 - ▶ raises *nominal* backing: support more nominal debt with no change in surpluses or seigniorage
 - ▶ lowers *real* backing: reduces seigniorage revenues
- ▶ **Regime F is not about seigniorage:** even if real money balances tiny, higher P_t raises backing of nominal debt but does nothing to backing of real debt

Debt Maturity & Regime F

- ▶ One- and two-period nominal debt: $B_t(t+1), B_t(t+2)$
- ▶ Equilibrium condition

$$\frac{B_{t-1}(t)}{P_t} + \beta B_{t-1}(t+1) E_t \frac{1}{P_{t+1}} = E_t PV(\text{surpluses}, \text{seigniorage})$$

- ▶ News reduces expected surpluses, seigniorage
- ▶ MP determines the timing of inflation
 - ▶ stabilize expected inflation: forces adjustment in P_t
 - ▶ lean against current inflation: forces adjustment in $E_t(1/P_{t+1})$
 - ▶ tradeoff depends on maturity structure, $B_{t-1}(t+1)/B_{t-1}(t)$
- ▶ Message: MP not impotent, but it cannot control both actual & expected inflation

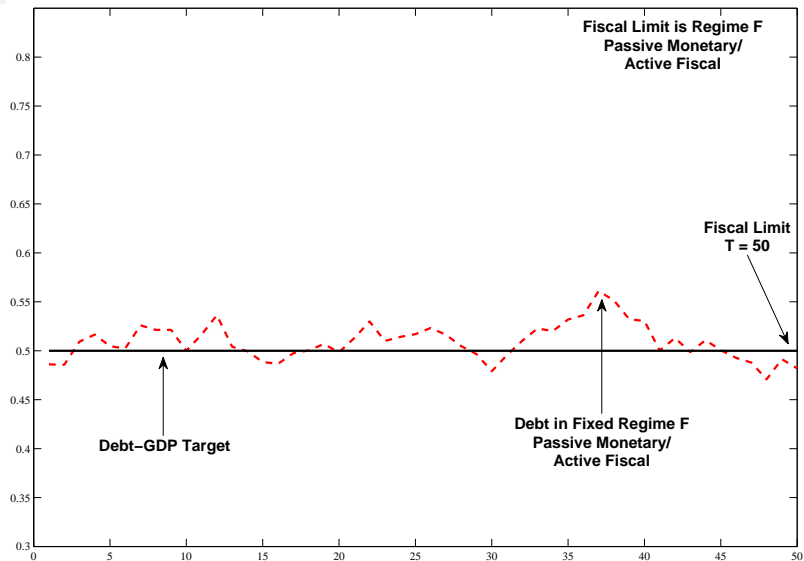
Undermining Monetary Control of Inflation: I

- ▶ Policy starts in Regime M: active MP/passive FP
- ▶ Agents begin to doubt necessary fiscal adjustments will be forthcoming
 - ▶ consolidation progresses in fits & starts
 - ▶ domestic politics grow more polarized
- ▶ Simplest case: people believe at future date T economy hits the **fiscal limit** and Regime F adopted
- ▶ From T on, inflation determined by fiscal expectations
 - ▶ value of debt & price level at date $T - 1$ pinned down
- ▶ Forward-looking agents bring those effects into period before the **fiscal limit**

Undermining Monetary Control of Inflation: I

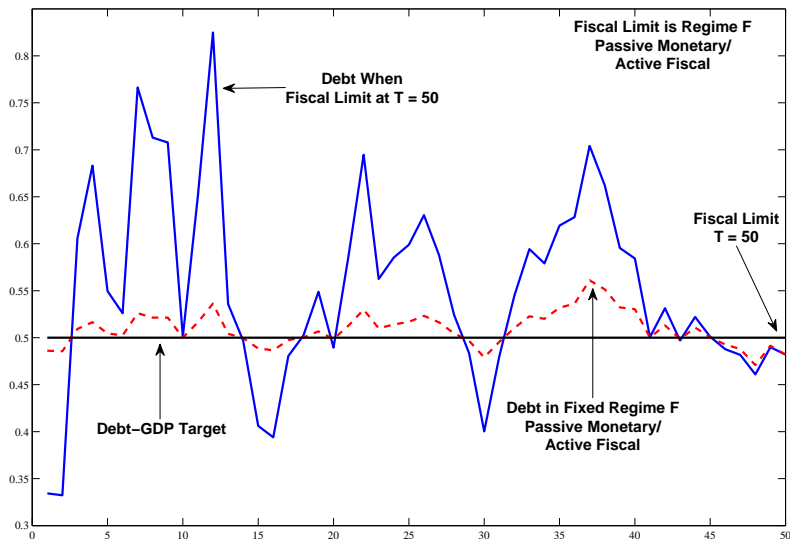
- ▶ What happens before the fiscal limit?
 - ▶ Regime M policies do not determine inflation
 - ▶ Ricardian equivalence breaks down
 - ▶ Lower expected surpluses *reduce* debt-output
 - ▶ Regime M MP *destabilizes* expected inflation
 - ▶ leaning against inflation raises interest on debt, wealth, future inflation
- ▶ Messages:
 1. Price level determined by beliefs about policy in the long run
 2. Inappropriate or uncertain FP makes MP unable to anchor inflation expectations
- ▶ All this generalizes to more plausible scenarios

Government Debt Before the Fiscal Limit



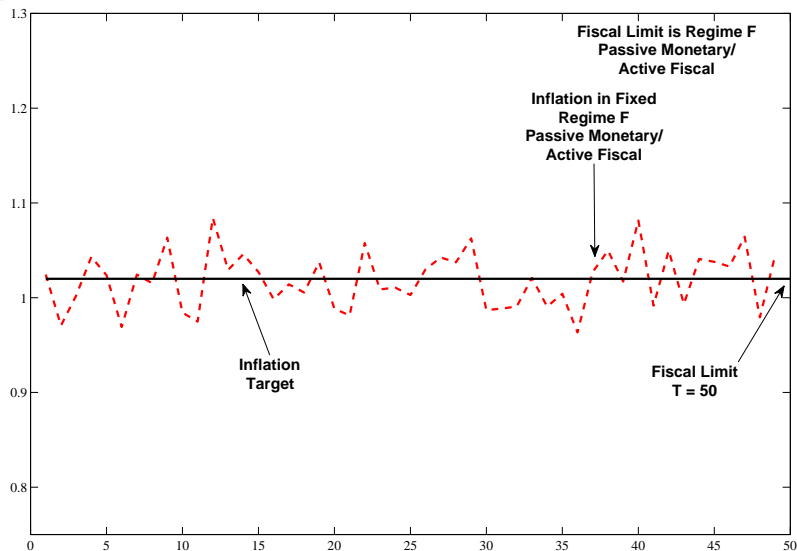
Fluctuating Transfers: Always Regime F

Government Debt Before the Fiscal Limit



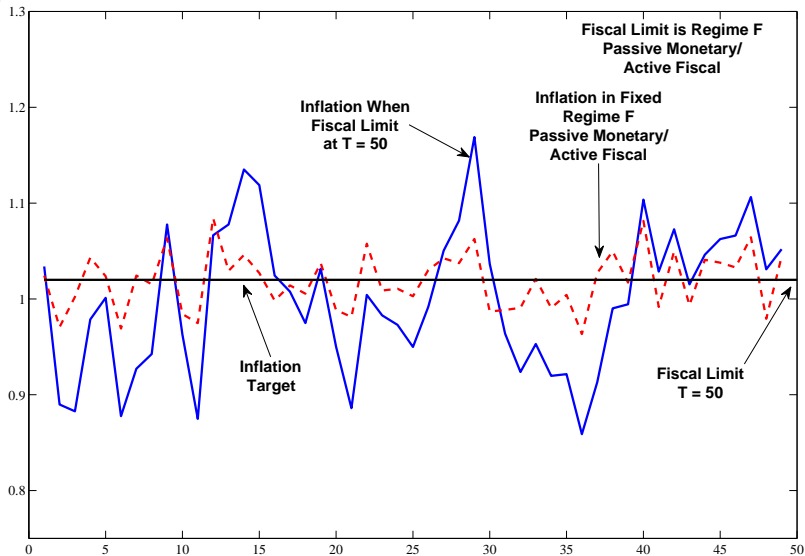
Fluctuating Transfers: Regime M Before Fiscal Limit

Inflation Before the Fiscal Limit



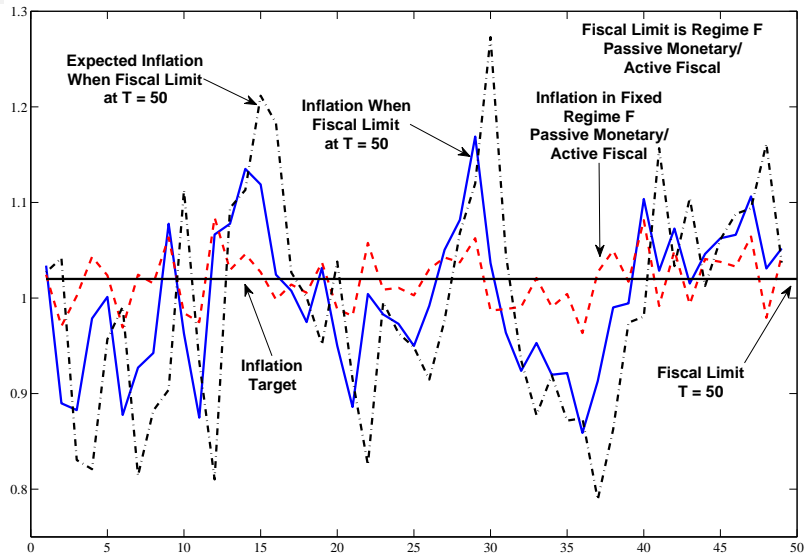
Fluctuating Transfers: Always Regime F

Inflation Before the Fiscal Limit



Fluctuating Transfers: Regime M Before Fiscal Limit

Inflation Before the Fiscal Limit



Fluctuating Transfers: Regime M Before Fiscal Limit

Undermining Monetary Control of Inflation: II

- ▶ Fiscal limits introduce sovereign debt risk
- ▶ Simplest case: exogenous default rate on debt
- ▶ MP controls interest rate on short government debt
- ▶ In Regime M: active MP/passive FP
- ▶ Inflation rises with expected default rates
 - ▶ higher default rate requires higher interest rate to attract bondholders
 - ▶ if MP reacts only to inflation deviation from target, MP raises rate only if inflation rises
 - ▶ bondholders shed debt, increasing aggregate demand, raising inflation
 - ▶ higher inflation induces MP to raise interest rate
- ▶ **Message: Default risk can make inflation control more difficult**

Undermining Monetary Control of Inflation: III

- ▶ A monetary union (Sims, Bergin)
 - ▶ CB pegs nominal rate (as ECB was)
 - ▶ country 1 raises surpluses with debt
 - ▶ country 2 sets surpluses independent of debt
 - ▶ CB rebates portfolio earnings to countries, independent of their debt
- ▶ Results
 1. Union-wide inflation determined by country 2 (one with profligate FP)
 2. News about country 2 surpluses affects inflation & value of debt in both countries
 3. Requires adjustments in country 1's surpluses

Undermining Monetary Control of Inflation: III

- ▶ A monetary union
- ▶ How can CB retain control of inflation?
 - ▶ rebates to countries depend on each nation's debt in the right way
 - ▶ make MP active (ECB in normal times)
- ▶ Efforts by the CB to reduce inflation
 - ▶ raise value of debt in both countries
 - ▶ requires higher rebates from CB to country 2 (backs debt of profligate country)
 - ▶ rebates to country 1 may need to be negative (taxes)
 - ▶ gives CB power to tax and transfer
- ▶ **Message: A fiscal union can support monetary union's efforts to control inflation**

Take Aways

1. Conventional perceptions of inflation miss a channel for fiscal inflation
 - ▶ channel may be important in times of fiscal stress
2. Separation of M & FP maintains assumption that fiscal surpluses stabilize debt
 - ▶ when fiscal limit possible, assumption breaks down
3. Tenuously anchored fiscal expectations threaten ability of MP to control inflation
 - ▶ tenuous anchoring exposes economy to fluctuations caused by fiscal news
4. If inflation has fiscal roots, aggressive MP can exacerbate aggregate demand fluctuations
5. Existing monetary-fiscal frameworks largely silent on how tensions get resolved
 - ▶ needs resolution before the big fiscal stress hits