

Perceptions & Misperceptions of Fiscal Inflation

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Overview

- ▶ Advanced economies face
 - ▶ *small* short-run fiscal stress

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- ▶ How long-run fiscal stress can undermine monetary control of inflation

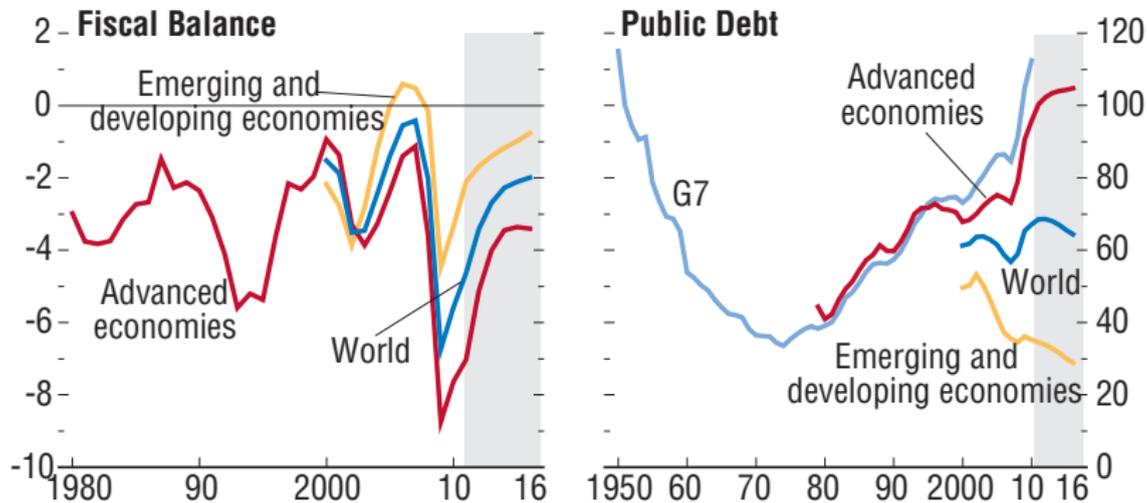
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- ▶ Describe inherent symmetry: Regimes M & F
- ▶ How long-run fiscal stress can undermine monetary control of inflation
 - ▶ introduce idea of a “fiscal limit”—point at which taxes & spending no longer adjust to stabilize debt
 - ▶ can arise for economic or political reasons

Era of Fiscal Stress

- ▶ Short-run imbalances

Short-Run Fiscal Stress

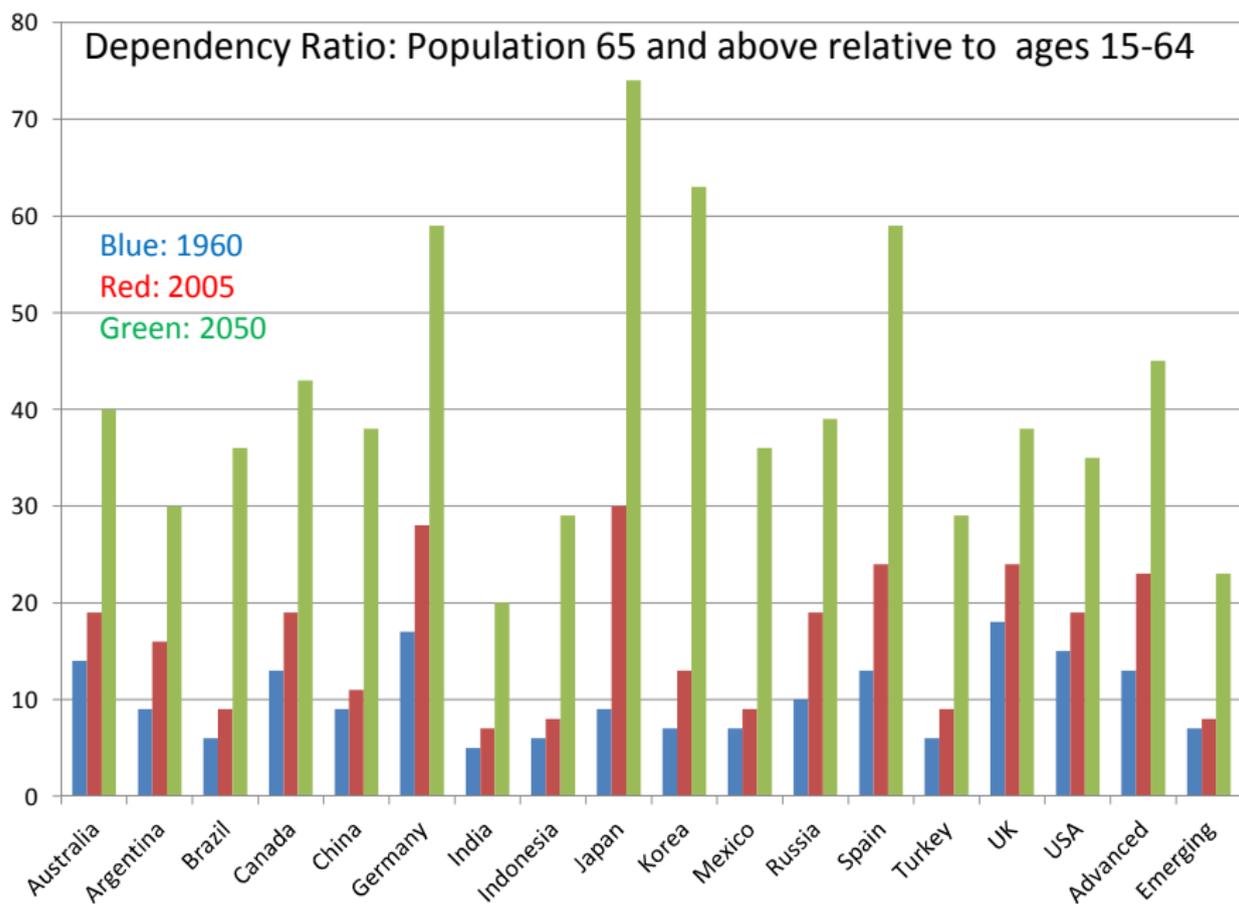


Shares of GDP. Source: IMF, WEO

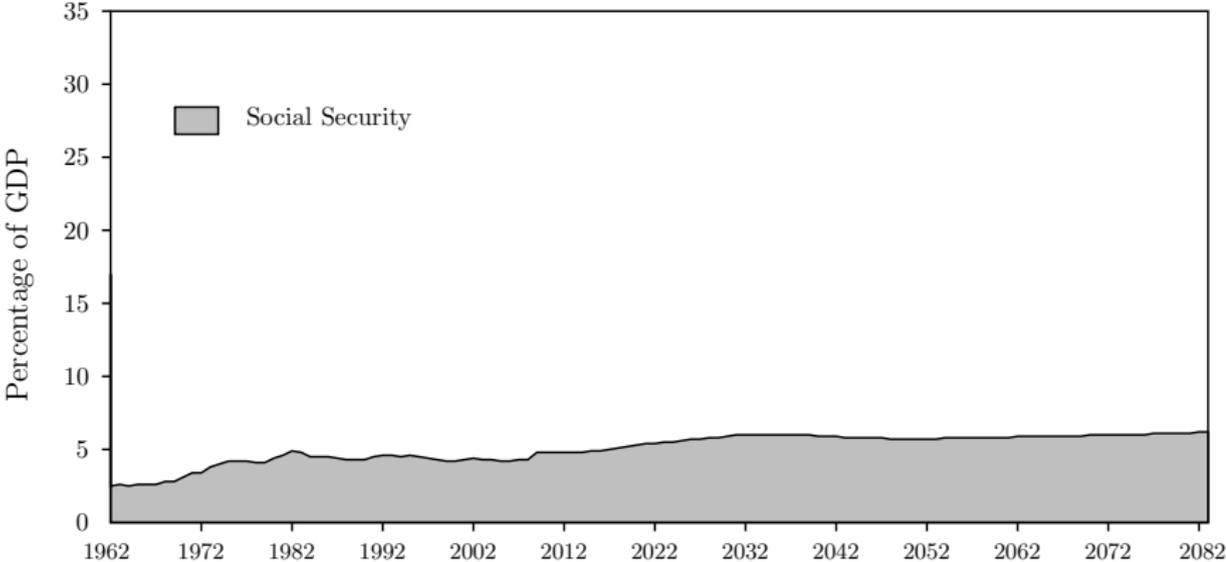
Era of Fiscal Stress

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

Long-Run Fiscal Stress: Aging Populations

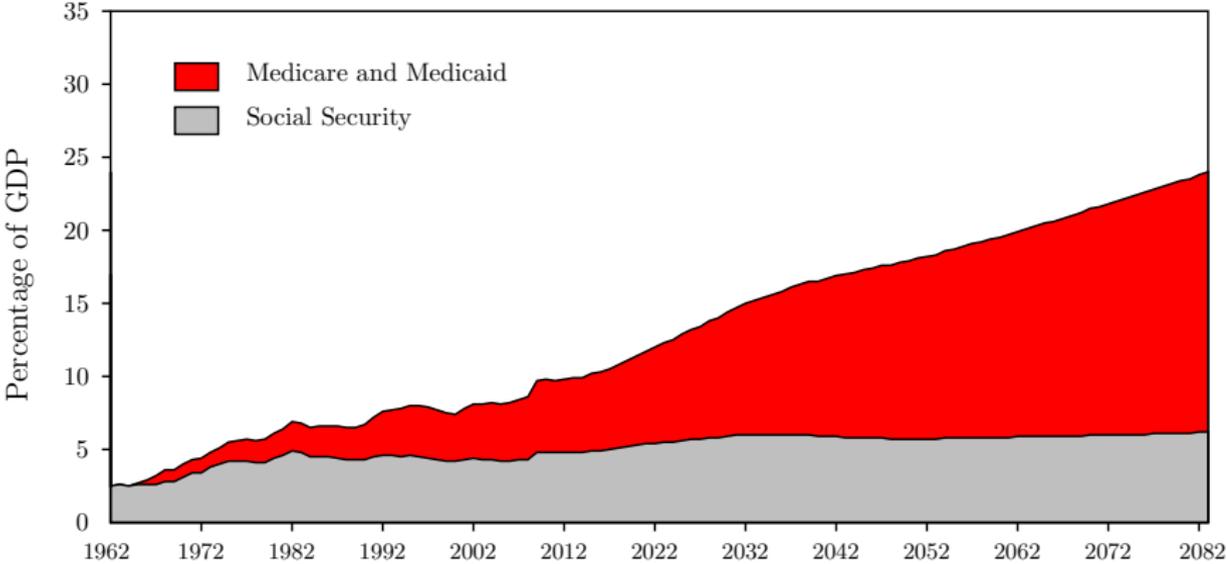


U.S. “Unfunded Liabilities”



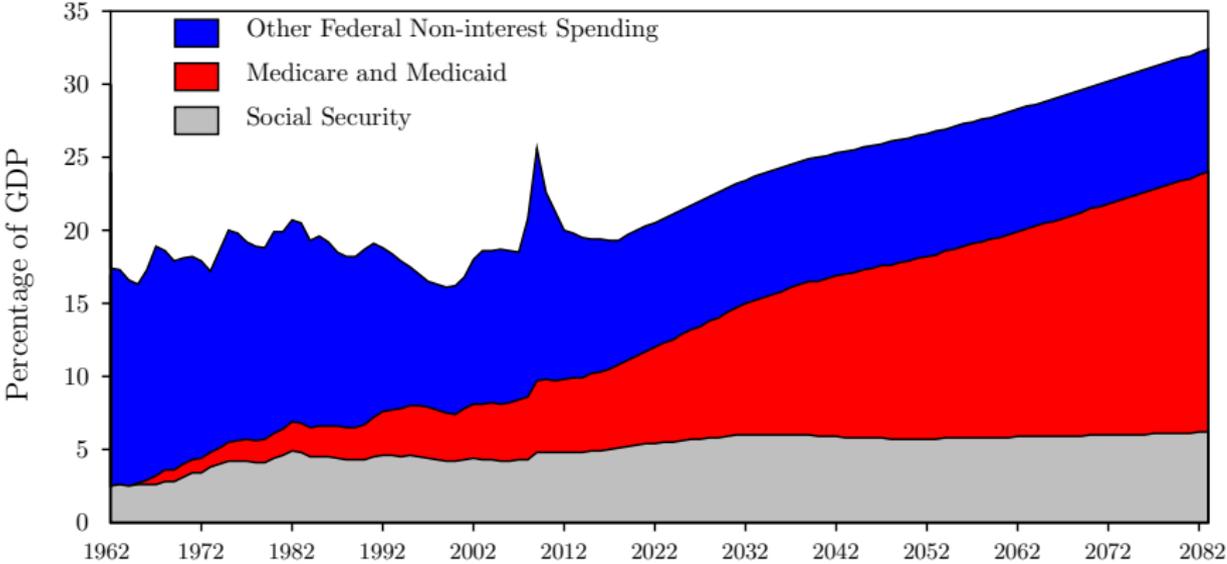
Source: CBO Long-Term Budget Outlook

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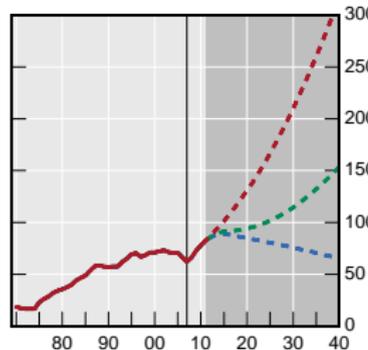
Spending Commitments to the Aged

Country	Aging-Related Spending
Australia	482
Canada	726
France	276
Germany	280
Italy	169
Japan	158
Korea	683
Spain	652
United Kingdom	335
United States	495
Advanced G-20 Countries	409

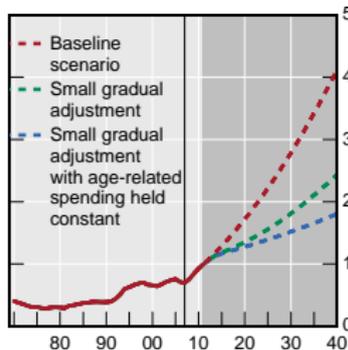
Worldwide “Unfunded Liabilities.” Net present value of impact on fiscal deficit of aging-related spending, in percent of GDP. Source: IMF

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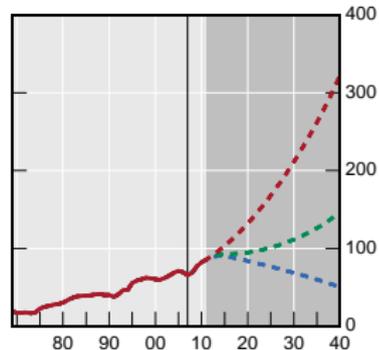
Austria



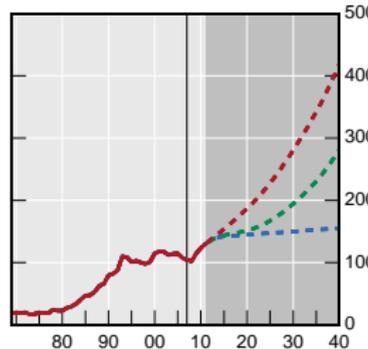
France



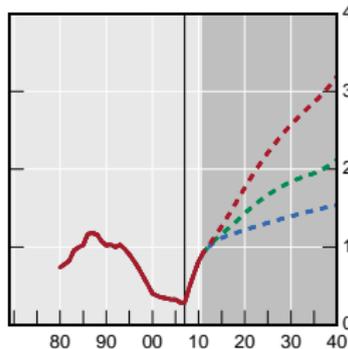
Germany



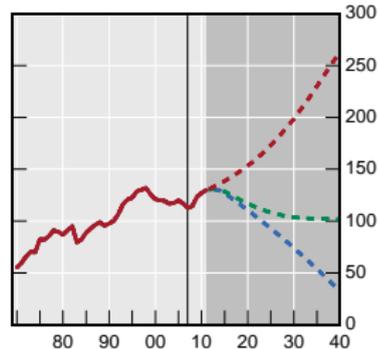
Greece



Ireland



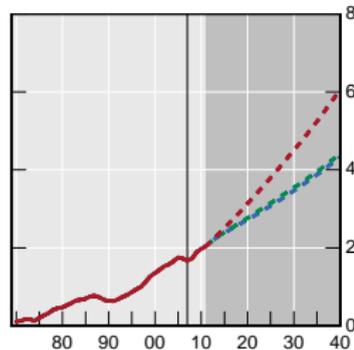
Italy



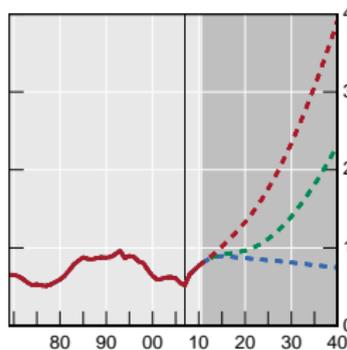
Debt-GDP. Source: BIS

Long-Run Fiscal Stress

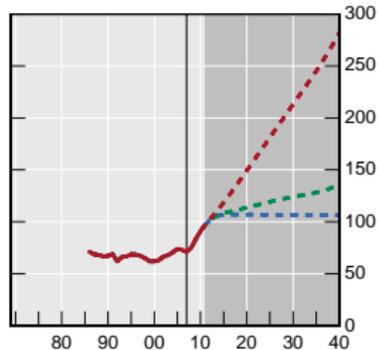
Japan



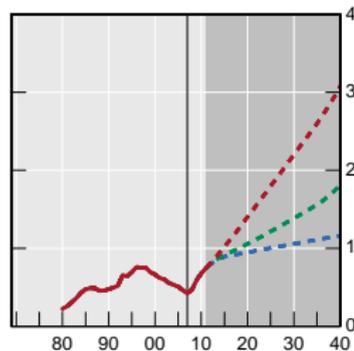
Netherlands



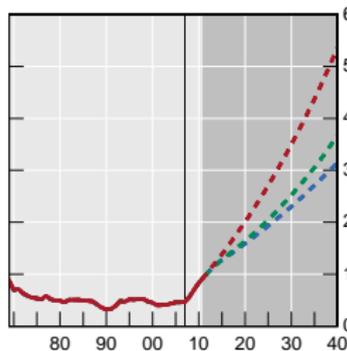
Portugal



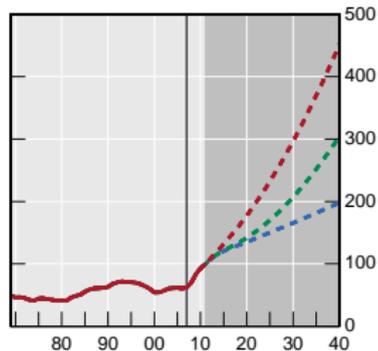
Spain



United Kingdom



United States



Debt-GDP. Source: BIS

Message in Long-Run Projections

- ▶ These projections cannot happen
- ▶ Some assumptions underlying projections
 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

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- ▶ Europe makes clear how onerous is 2
- ▶ Most central bankers hope for 3
 - ▶ what are the prospects for significant entitlements reform?

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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- ▶ We focus on ways that 4 might arise

Unresolved Fiscal Stress

- ▶ Spending promises without financing plans create unresolved fiscal stress
- ▶ Raises possibility economy will hit its **fiscal limit**—point at which, for economic or political reasons, surpluses can no longer adjust to stabilize debt
- ▶ Many questions to address

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 1. **How might unresolved fiscal stress affect inflation/aggregate demand?**

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 1. **How might unresolved fiscal stress affect inflation/aggregate demand?**
 2. **Can central banks retain control of inflation/aggregate demand?**

Asymmetric Perceptions of Macro Policies

- ▶ Policy boxing: place monetary & fiscal policy in separate boxes
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 - ▶ integrate academic research with practical policy
 - ▶ Fiscal policy:
 - ▶ utterly political without clear economic objectives
 - ▶ little input from economists
 - ▶ essentially no connection between research and policy

Policy Boxes: Historical Rationales

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 - ▶ central bank pressured to print money to finance government spending and keep government solvent
2. Inflation bias
 - ▶ central bank tempted to err on side of excessive accommodation
 - ▶ Solution:
 - ▶ create an independent central bank
 - ▶ give central bank clear objectives
 - ▶ permit central bank to “move first”—before fiscal policy
 - ▶ force fiscal authority to adopt policies that ensure solvency

Policy Boxes: A Peculiar Arrangement

- ▶ Institutions treat monetary & fiscal policy asymmetrically
- ▶ This denies intrinsic *economic symmetry* between the policies

Primer on Monetary-Fiscal Interactions

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- ▶ Two different policy mixes that can accomplish these tasks

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 - ▶ people must believe adjustments will occur eventually
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 - ▶ for MP to target inflation, fiscal expectations must be **anchored** on FP adjusting to maintain value of debt
- ▶ Any reason to believe expectations are now so anchored?

An Equilibrium Condition

$$\frac{M_{t-1} + Q_t B_{t-1}}{P_t} = \sum_{j=0}^{\infty} \beta^j E_t \left[\tau_{t+j} - z_{t+j} + \frac{M_{t+j} - M_{t+j-1}}{P_{t+j}} \right]$$

Market value government liabilities =
Expected present value primary surpluses + seigniorage

- ▶ In Regime M...
 - ▶ MP delivers equilibrium inflation process
 - ▶ taking inflation as given, FP must choose compatible surplus policy
 - ▶ “compatible” means: stabilizes debt
 - ▶ **imposes restrictions on $E_t PV$**

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

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- ▶ Regime F arises in two ways
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- ▶ A central banker's take on this:

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 - ▶ Regime F necessarily brings high inflation
- ▶ Beliefs underlie monetary reforms without corresponding fiscal reforms
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 - ▶ Europe shows us how how well that works
- ▶ There is another channel through which fiscal policy can affect inflation and aggregate demand

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

Monetary-Fiscal Interactions: Regime F

- ▶ Governments issue mostly nominal (non-indexed, local currency) bonds
 - ▶ 90% U.S. debt; 80% U.K. debt; 95% Euro-area debt; most of Australian, Japanese, Korean, New Zealand, & Swedish debt
 - ▶ increasing important in Latin America: Chile (92%), Brazil (89%), Colombia (77%), Mexico (75%)

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- ▶ In Regime F:
 - ▶ FP sets primary surpluses independently of debt
 - ▶ MP prevents interest payments on debt from destabilizing debt
- ▶ Nominal debt is revalued to align its value with expected surpluses
- ▶ Lower current or expected surpluses reduce value of outstanding debt: raises aggregate demand

Fiscal Transmission in Regime F

$$\frac{M_{t-1} + Q_t B_{t-1}}{P_t} = \sum_{j=0}^{\infty} \beta^j E_t \left[\tau_{t+j} - z_{t+j} + \frac{M_{t+j} - M_{t+j-1}}{P_{t+j}} \right]$$

- ▶ Increase in current or expected transfers

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 - ▶ 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

An Equilibrium Condition

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Debt Maturity & Regime F

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

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

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 - ▶ 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, $B_{t-1}(t+1)/B_{t-1}(t)$
 - ▶ richer maturity structure \Rightarrow any pattern of inflation

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 - ▶ richer maturity structure \Rightarrow any pattern of inflation
- ▶ Message: MP not impotent, but it cannot control both actual & expected inflation

Undermining Monetary Control of Inflation

- ▶ 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**

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	Regime 1 $t = 0, 1, \dots, T - 1$
Monetary Policy	$R_t^{-1} = R^{*-1} + \alpha \left(\frac{P_{t-1}}{P_t} - \frac{1}{\pi^*} \right)$
Tax Policy	$\tau_t = \tau^* + \gamma \left(\frac{B_{t-1}}{P_{t-1}} - b^* \right)$

Undermining Monetary Control of Inflation

At a known date T economy reaches fiscal limit

	Regime 1 $t = 0, 1, \dots, T - 1$	Regime 2 $t = T, T + 1, \dots$
Monetary Policy	$R_t^{-1} = R^{*-1} + \alpha \left(\frac{P_{t-1}}{P_t} - \frac{1}{\pi^*} \right)$	$R_t^{-1} = R^{*-1}$
Tax Policy	$\tau_t = \tau^* + \gamma \left(\frac{B_{t-1}}{P_{t-1}} - b^* \right)$	$\tau_t = \tau^{\max}$

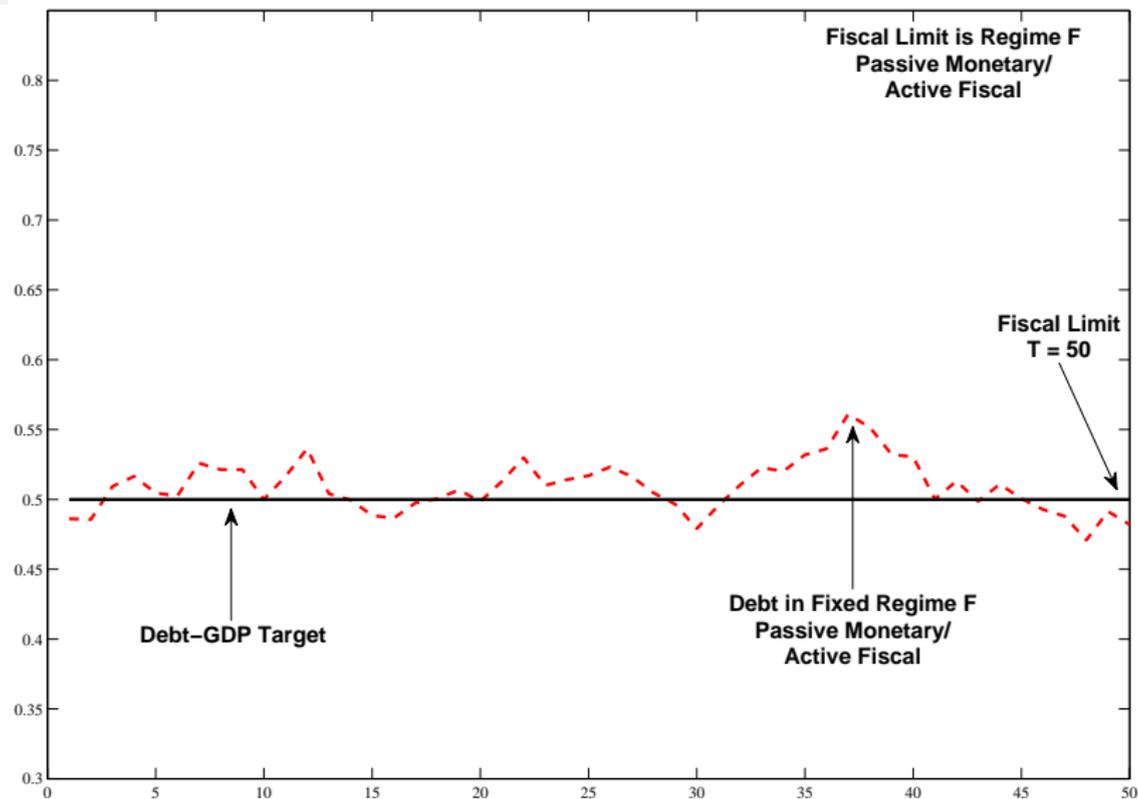
Undermining Monetary Control of Inflation

- ▶ What happens before the fiscal limit?
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 - ▶ Ricardian equivalence breaks down
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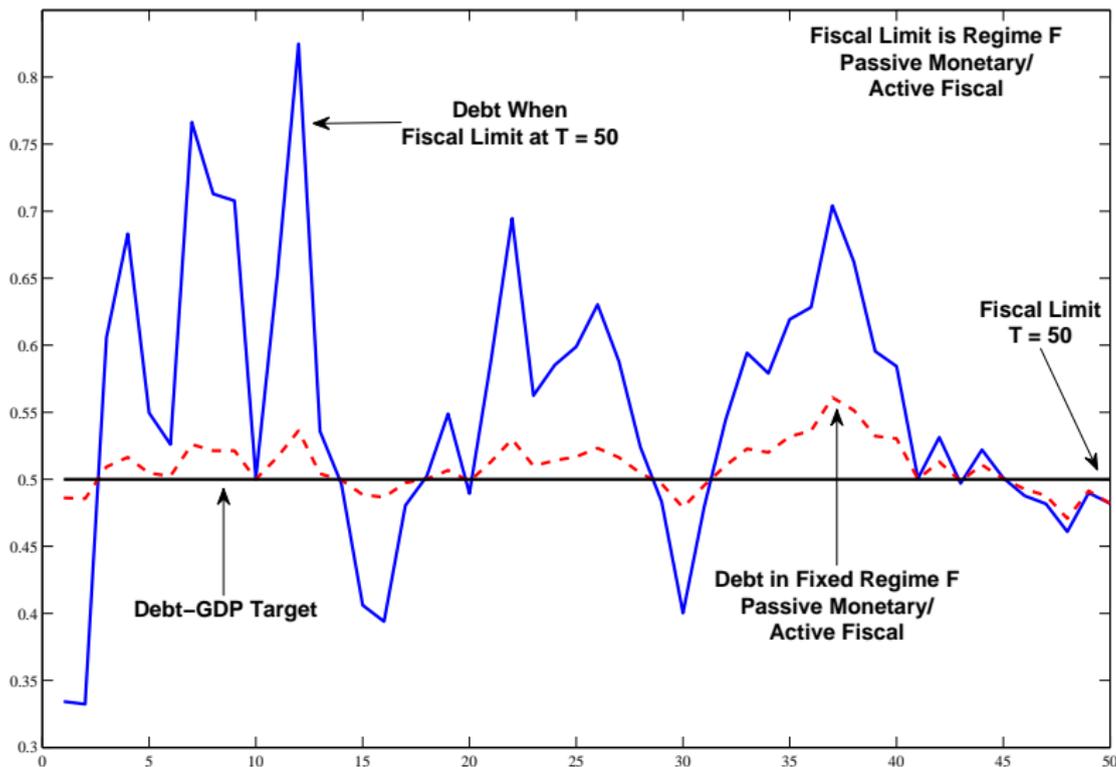
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- ▶ Messages:
 1. Price level determined by beliefs about policy in the long run
 2. Inappropriate or uncertain FP makes MP unable to anchor inflation expectations
- ▶ All this generalizes to more plausible scenarios

Government Debt Before the Fiscal Limit



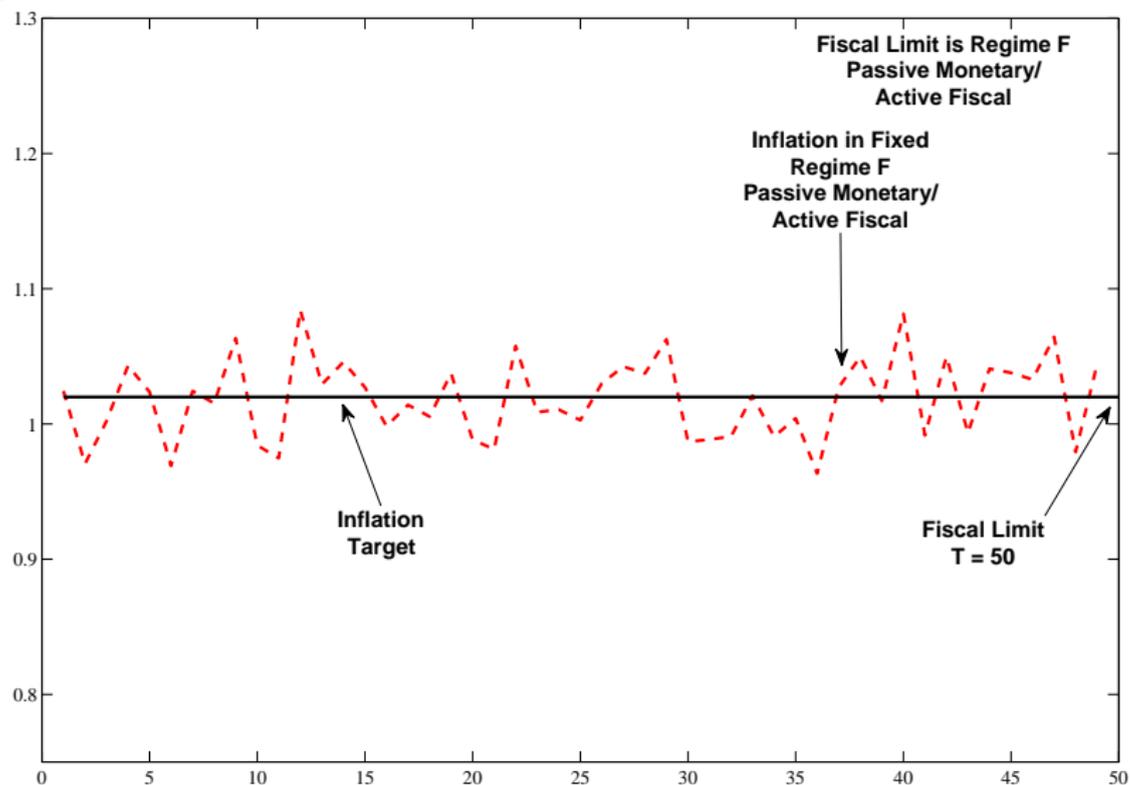
Fluctuating Transfers: Always Regime F

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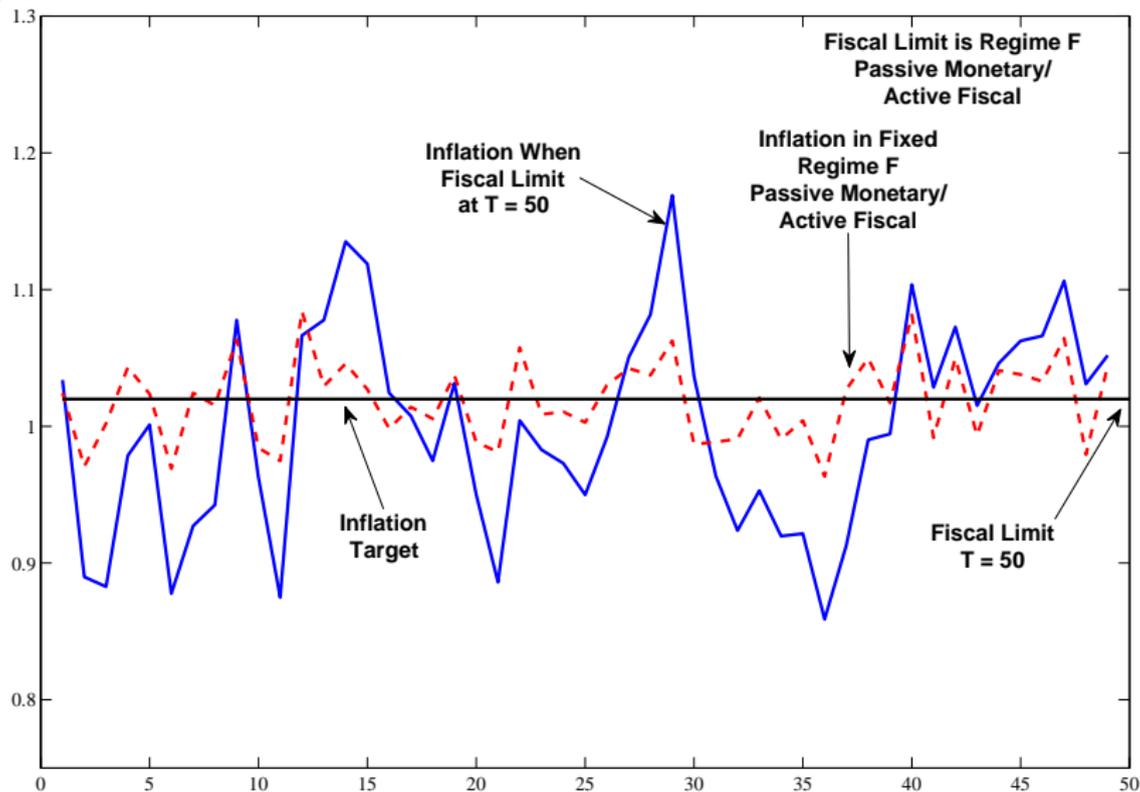
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Inflation Before the Fiscal Limit



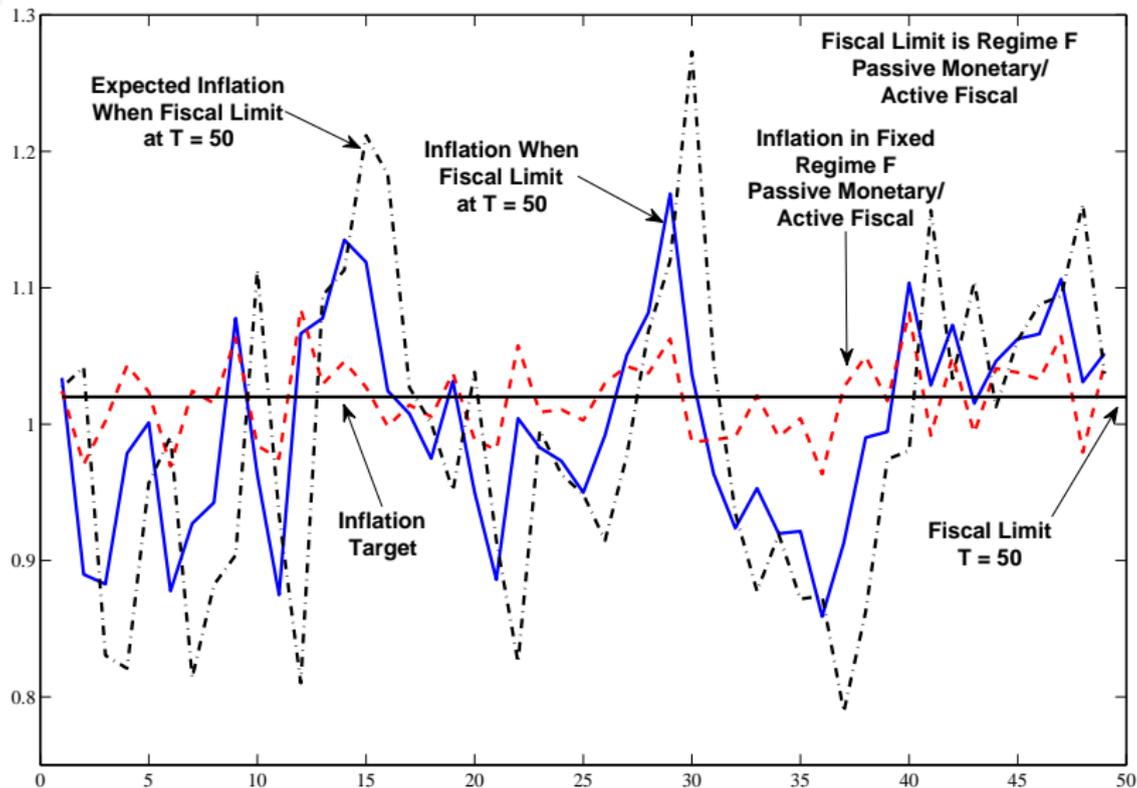
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Fluctuating Transfers: Regime M Before Fiscal Limit

Putting a Sharp Point on the Message

- ▶ Eventually, we hope, the economy will recover and inflation will rise
- ▶ Suppose that to combat inflation, the Fed raises rates to, say, 6% (as in 2006/07 or 2000/01)
- ▶ This will have a big impact on the fiscal deficit

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- ▶ Without this fiscal backing, higher interest rates create *higher* inflation

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3. If inflation has fiscal roots, aggressive MP can exacerbate aggregate demand fluctuations
4. Existing monetary-fiscal frameworks largely silent on how policy tensions get resolved
 - ▶ needs resolution before the big fiscal stress hits
5. Should be thinking about enforceable rules for fiscal behavior or different mandate for the Fed