The U.S. Fiscal Limit

Eric M. Leeper

Indiana University

2 November 2012

Financial Frontiers Panel
Overview of Argument

1. It is extremely unlikely the U.S. will default outright on its debt
   ▶ largely for historical & constitutional reasons

2. But it is increasingly likely the U.S. will rapidly approach its fiscal limit

3. Because U.S. debt is 90% nominal & U.S. controls its own monetary policy...
   ▶ the U.S. has available channels of debt revaluation that Euro-zone members do not
An Economy’s Fiscal Limit

- Every economy has a *fiscal limit*
  - point at which surpluses can no longer adjust to stabilize government debt
  - economic limits: Laffer curves, minimum size of government
  - political limits: electorate’s tolerance for taxes & demand for government services

- I’ll use fiscal limits framework to discuss
  1. fiscal issues in Europe
  2. nominal government debt & fiscal inflation
The Fiscal Limit & Sustainability

- Delivers maximum expected present value of all future primary surpluses (or “cash flows”)
  - government debt derives its value from future surpluses
  - fiscal limit implies maximum sustainable debt-GDP ratio

- Fiscal limit
  1. uncertain: a probability distribution—not a point
  2. forward-looking: hinges on expected policies & their credibility
  3. depends on: private & government behavior; shocks hitting economy
  4. country-specific: no “one-size-fits-all” limit
What Happens at the Fiscal Limit?

- Default is ultimately a *political* decision
  - about a government’s *willingness*, rather than its *ability*, to honor debt obligations
  - natural to treat default as a random draw from the fiscal limit distribution
  - yields “effective fiscal limit”: when debt exceeds this threshold, default occurs

- As debt approaches fiscal limit, probability rises that
  1. government defaults outright ⇒ raises risk premia
  2. debt-stabilizing policies occur ⇒ reduces risk premia
Greece’s Fiscal Limit

- Quantifying Greece’s fiscal limit
  - use formal economic model
  - non-monetary model: Greece does not control Euro Area price level
  - connect model’s parameters & policy specification to Greek data
  - How do changes in economic conditions & policies shift fiscal limit and alter risk premia?
Greece’s Fiscal Limit: Shocks & Policies

Fiscal limit computed using peak of labor Laffer curve, constant government purchases, current transfers regime, no seigniorage revenues

- Low (High) Productivity Can Reduce (Raise) Country’s Sustainable Debt Level
- Unstable (Stable) Growth in Transfers Can Reduce (Raise) Country’s Sustainable Debt Level
Empirical Work & Fiscal Limits

- It is popular to claim that European risk premia are not rational

- DeGrauwe-Ji claim premia are “disconnected from fundamentals”

- Regress premia against debt-GDP, output growth, etc.
  - poor fit taken as evidence that fundamentals not driving asset prices

- Some commentators describe ECB’s sovereign-debt purchases as effort to bring risk premia into line with fundamentals
Risk Premia and “Fundamentals”

Claim: Spreads "disconnected" from fundamentals

Source: Paul De Grauwe and Yuemei Ji, “Mispricing of Sovereign Risk and Multiple Equilibria in the Eurozone”
Empirical Work & Fiscal Limits

- Analysis misses a critical state variable: the fiscal limit
- High debt-GDP a problem for some economies, but not for others
- It is debt-GDP relative to the fiscal limit that matters
- Theoretical work shows debt-GDP plus fiscal limit explain risk premia
- Policy implication: risk premia may well be consistent with fundamentals
  - but need to get the fundamentals straight
The U.S. Fiscal Limit

1. Surely, the United States $\neq$ Greece

2. The United States must be very far from its fiscal limit

3. Perhaps not
This Time *Is* Different for United States

- Past debt run-ups were temporary, due to wars
  - national consensus to retire debt
  - willingness to accept shared sacrifice
- Going forward, debt driven by aging populations & medical costs
  - persistent & worsening in coming decades
  - spending cuts have substantial distributional effects on an ever-growing segment of population
- Opposition to taxes is strong and deeply ingrained
  - at a time when tax rates & revenues unusually low
- Political polarization at all-time high
This Time Is Different for United States

- Given these economic & political realities...

- From where will the consensus to cut spending or raise taxes come?

- These realities conspire both to shift the fiscal limit down & to push debt toward the limit

- Some data
Spending Commitments Grow Relentlessly

Source: Congressional Budget Office
Federal Tax Receipts Historically Low

Federal Tax Receipts Less Social Insurance

Source: Tax Policy Center
Income Tax Rates Historically Low

Federal Income Tax Rates for Four-Person Family with Median Income (in percent)

Marginal Tax Rate (right scale)

Average Tax Rate (left scale)

Source: Tax Policy Center
Capital Income Tax Rates Historically Low

Total Marginal Effective Tax Rates on Capital Income

Source: Tax Policy Center
Political Polarization at All-Time High

U.S. Political Party Polarization: 1879-2011

Source: Howard Rosenthal and Keith Poole, http://voteview.com/about.asp
Fiscal Consolidation & Debt Service

- Historically, tax-based fiscal consolidations in the United States occur when debt service is a large fraction of government outlays.

- Despite high debt, debt service now at post-World War II low.

- Broad-based fiscal consolidation unlikely until interest rates rise.

4
6
8
10
12
14
16

Tax-Based Consolidations and Net Interest Payments

- Revenue Act of 1950
- Excessive Profits Tax Act of 1950
- Revenue Act of 1951
- Extend Excessive Profits Tax Act of 1950
- Internal Revenue Code of 1954
- Tax Equity & Fiscal Responsibility Act of 1982
- Deficit Reduction Act of 1984
- Omnibus Budget Reconciliation Act of 1990
- Omnibus Budget Reconciliation Act of 1993

U.S. Tax Adjustments to Reduce Debt Occur When Debt Service is High
These facts suggest the U.S. fiscal limit may be lower than in past.
- expected present value of surpluses may not be consistent with higher projected debt-GDP ratios.

There is no reason to believe outright default is around the corner.

A country whose debt is denominated in home currency permits other outcomes.
Misperceptions of Fiscal Inflation

- General perception: at the fiscal limit, monetization of debt is sole source of fiscal inflation
  - a central bank, committed to low & stable inflation, can always prevent fiscal inflations
  - the perception implies fiscal inflations due to insufficient central bank resolve

“...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)
Misperceptions of Fiscal Inflation

- I agree with King: seigniorage is no big deal

- Belief that seigniorage is the only source of fiscal inflation is a common *misperception*

- Economies with nominal government debt offer another channel for fiscal inflation

- At the fiscal limit, it may be impossible for monetary policy to prevent fiscal inflation
Nominal Debt Changes Things

- Vast majority of government debt in advanced economies is nominal—denominated in home currency
  - 90% U.S. debt; 80% U.K. debt; 95% Euro Area, Australian, Japanese, Korean, New Zealand, & Swedish debt
  - increasingly important in Latin America: Chile (92%), Brazil (89%), Colombia (77%), Mexico (75%)
Suppose for the U.S. we take outright default off the table. . .

Three things determine value of outstanding nominal debt

1. expected future real surpluses
2. expected future real discount rates
3. current & future price levels
Framework for Fiscal Analysis

- Government sells nominal bonds, $B_{Mt}$, with average maturity $\rho$; faces budget constraint

$$\frac{P_{Mt}B_{Mt}}{P_t} + s_t = \frac{(1 + \rho P_{Mt})B_{Mt-1}}{P_t}$$

- \{s_t\} obeys some (known) stochastic process

- Asset-pricing relations ($q$; real discount factor)

$$P_{St} = \frac{P_t}{P_{t+1}}q_{t,t+1} \quad \text{(No Arbitrage)}$$

$$P_{Mt} = P_{St}E_t(1 + \rho P_{Mt+1}) \quad \text{(Term Structure)}$$

- Bond valuation equation

$$\frac{(1 + \rho P_{Mt})B_{Mt-1}}{P_t} = E_t \sum_{T=t}^{\infty} q_{t,T}S_T$$
Pricing Nominal Bonds

\[
\frac{(1 + \rho P_{Mt}) B_{Mt-1}}{P_t} = E_t \sum_{T=t}^{\infty} q_{t,T} s_T
\]

- Note that $B_{Mt-1}$ is fixed, inherited from past
- At fiscal limit: surpluses, $\{s_t\}$, determined by politics—not economics—indeed, independent of debt
- Lower $E_t PV(s)$: mix of higher $P_t$ & lower $P_{Mt}$ (higher future $P$)
- Higher real interest rates—lower $q_{t,T}$—reduce $E_t PV(s)$
  - mix of higher $P_t$ & lower $P_{Mt}$ (higher future $P$)
Fresh Implications of Fiscal Limits

1. Fiscal policy & aggregate demand
   - debt increases not backed by expectation of higher surpluses *must be expansionary*
   - expectations of lower surpluses not matched by current debt reduction *must be expansionary*
2. What *does* monetary policy do at the fiscal limit?

- monetary policy prevents debt service from exploding by ensuring that fiscal expansions do *not* raise real interest rates
- Fed did this in the pre-Treasury Accord era
- major central banks are doing this now, but for different reasons
3. What *can* monetary policy do at the fiscal limit?

- can shift fiscal limit by changing real discount rates
  - higher real interest rates, shift fiscal limit distribution down to center on lower debt-GDP ratios
  - raises probability of hitting limit, given current debt

- can makes things worse: higher interest rates cannot prevent fiscal inflation and *is likely to exacerbate it*
Prepare for More Uncertainty

- Fiscal limits are subversive to conventional monetary policy
  - at the limit, monetary policy loses its ability to affect the economy in the usual ways
  - little is known about how economies operate as they approach the fiscal limit
    - ECB functioning in an unstudied world
    - looming fiscal stress presents another relatively unstudied world
- How should central banks conduct policy in the face of a fiscal limit?
  - the question central bankers should—but aren’t—asking
Framers Faced Vigorous Opposition to Taxes

“... No pecuniary consideration is more urgent than the regular redemption and discharge of the public debt: on none can delay be more injurious, or an economy of the time more valuable.”

—George Washington, 1793

▶ “... proper funding of... debt [is]... a national blessing ...”
▶ “... public debts are public benefits ...”
▶ “... creation of debt should always be accompanied with the means of extinguishment.”
▶ “... arguments for [honoring debt] rest on the immutable principles of moral obligation.”

—Alexander Hamilton, 1790