Debt to GDP Ratios & Future Economic Growth

Brad Delong, Laura Tyson, & Owen Zidar

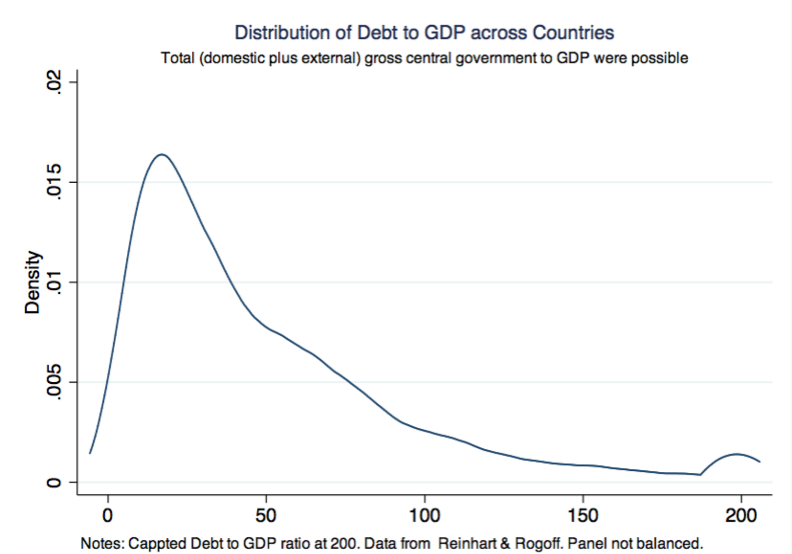
University of California, Berkeley

March 8, 2013

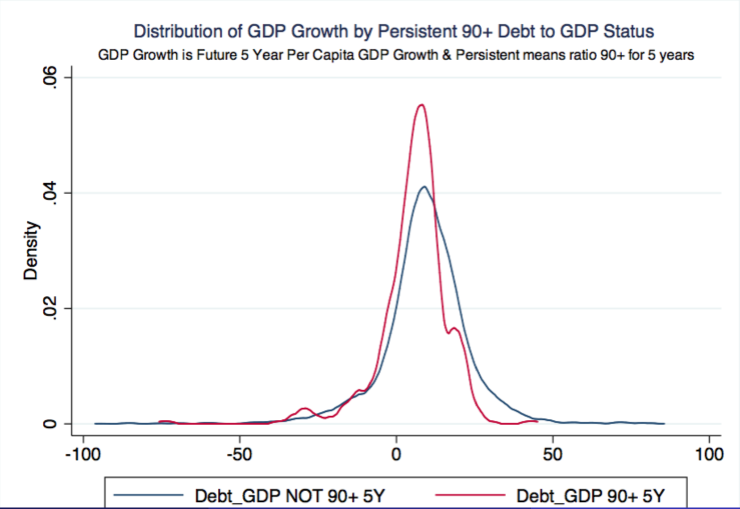
Outline

1. **Distribution of Debt to GDP**
2. **Distribution of 5 Year Growth:** by Persistently High Debt to GDP Status
3. **Nonparametric Means with Best Fit Line:** Do we see a break in GDP growth at 90?
4. **Simple Regression Results:** GDP Growth on Dummy for Debt Persistently above 90. Also include Decade and Country Fixed Effects.

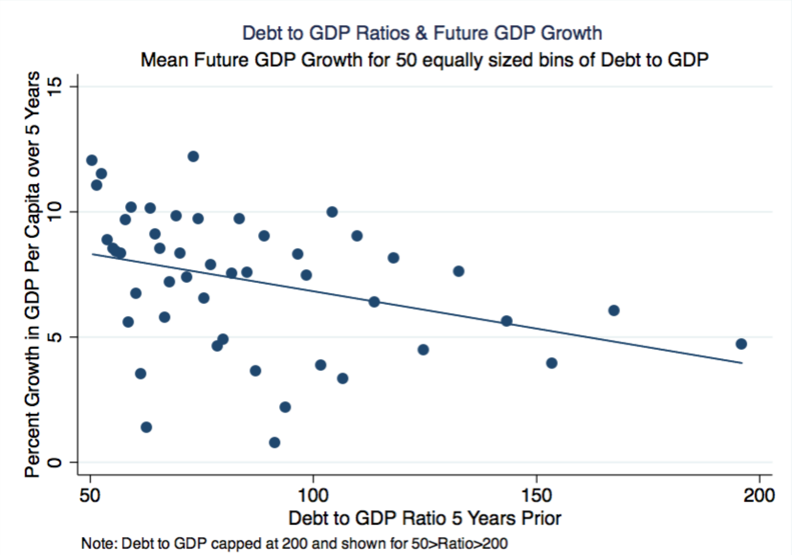
Substantial Variation in Debt to GDP Ratios in Historical Cross-Country Data



Persistently 90+ countries tend to grow less quickly over next 5 years, but disaster scenarios less common than modestly slower 5 year growth



No clear break at 90, but best fit line shows higher Debt to GDP is correlated with slower future growth



Growth tends to be lower when 90+, but controlling for decade cuts magnitude more than in half

Dependent Variable:	$lnGDP_{PERCAPITA,t} - lnGDP_{PERCAPITA,t-5}$						
$\mathbb{I}(\frac{Debt}{GDP}_t > 90 for Prior 5 Years)_{t-5}$	-4.9***	-3.3**	-3.7**	-2.0*	-1.83	-1.65	-1.80
	(1.4)	(1.3)	(1.4)	(1.1)	(2.16)	(2.02)	(1.74)
$\frac{Debt}{GDP}_{t-5}$					-0.03*	-0.02	0.01
					(0.02)	(0.01)	(0.02)
Constant	9.3***	8.3***	5.5*	1.8	10.58***	6.83*	1.28
	(0.4)	(0.2)	(2.8)	(3.0)	(0.83)	(3.70)	(3.20)
Country Fixed Effects	N	Y	N	Y	N	Y	Y
Decade Fixed Effects	N	N	Y	Y	N	N	Y
Observations	5,594	5,594	5,594	5,594	5,069	5,069	5,069
R-squared	0.008	0.094	0.102	0.191	0.016	0.102	0.211

Robust standard errors clustered by country in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

This regression shows that per capita GDP in 5 years will be 4.9 percentage points lower on average for countries whose the Debt to GDP ratio was above 90 for each of the last 5 years (this is the R&R definition). Note that this is a correlation. This effect gets smaller when absorbing decade and country effects or when controlling for Debt to GDP explicitly.