

What Went Wrong?: The Puerto Rican Debt Crisis and the 'Treasury Put'

Bob Chirinko -- UIC, CESifo

Ryan Chiu – UIC

Shaina Henderson – UIC

For Presentation At The
7th Annual Municipal Finance Conference
Brookings Institution
July 17, 2018

The standard caveat about conclusions etc. applies.

Failing Financial Markets

- [Puerto Rico's] economic and financial woes don't appear to be reflected in its bond yields.

Barron's (August 27, 2012)

Failing Financial Markets

- Offering of a set of bonds, April 3, 2012
- One uninsured bond: \$32 million
- Paired insured bond: \$20 million
- Exact same maturity date

- Implied risk premia = $\sigma = 1.46$

Failing Financial Markets

- Risk Premia, April 3, 2012
 - Corporate Aaa 1.05
 - **Puerto Rican 1.46**
 - Corporate Baa 2.31

Failing Financial Markets

- Why Were Risk Premia So Low???
- Risk Premium – The Equilibrating Financial Mechanism
- Why Did Financial Markets Fail To Allocate Capital Appropriately???
- Answer: The “Treasury Put”

Failing Financial Markets

The Inevitable Outcomes

- January 4, 2016, Default On Some Debt Commitments
- June 30, 2016, Bankruptcy Was Effectively Declared

This Paper

- Myopic/misinformed investors
- VS.
- The “Treasury Put”?
- This paper attempts to identify and quantify the latter.
- Three research windfalls that turn this inquiry from a curiosity to an academic study:

This Paper

- Three research windfalls that turn this inquiry from a curiosity to an academic study:
 - Dire fiscal and economic situation
 - Simultaneous issuance of insured and uninsured bonds \rightarrow estimate σ
 - “Seismic shock” that extinguished the Treasury Put (event study) $\rightarrow \Delta\sigma$

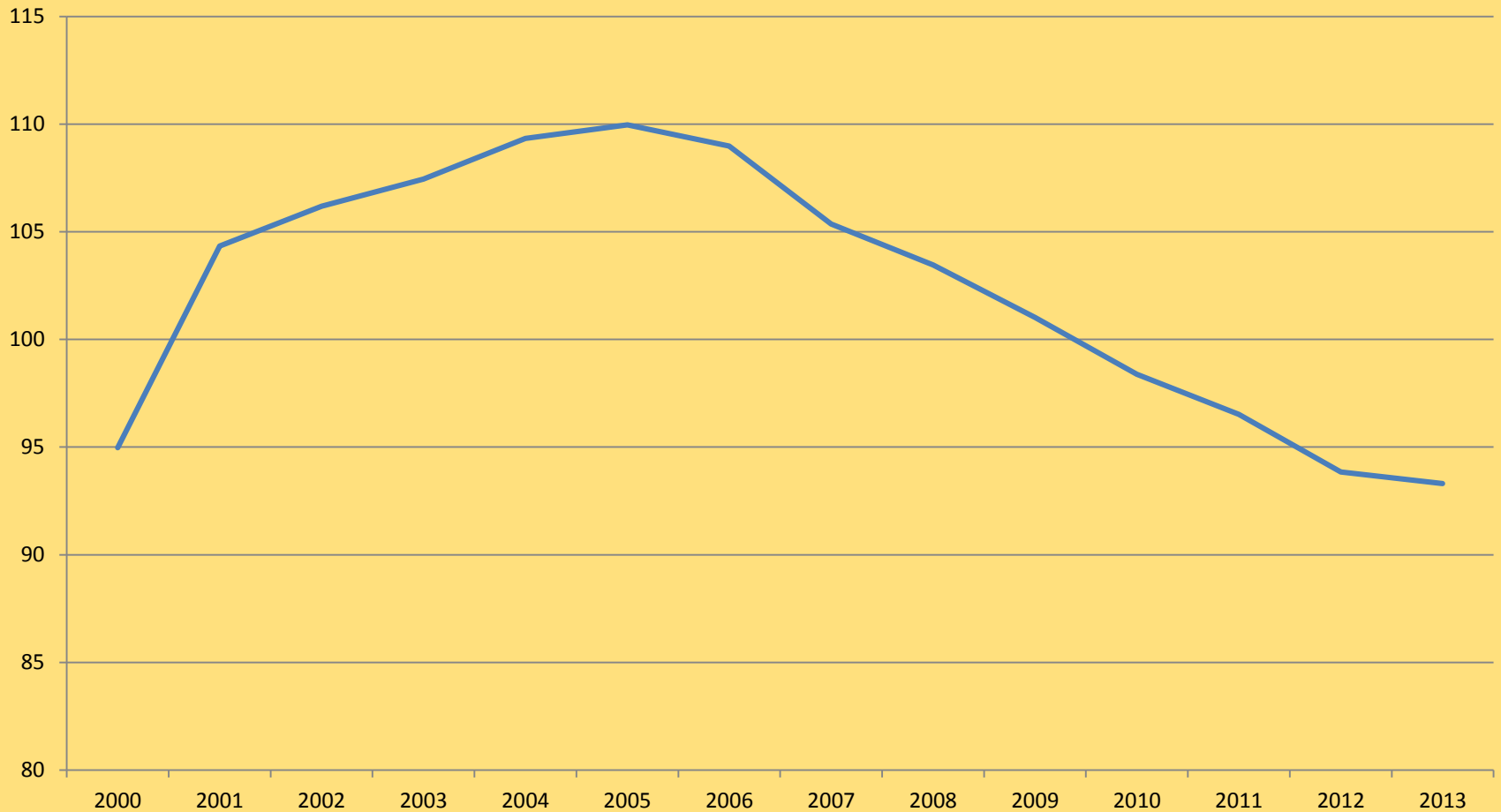
Outline

1. Macroeconomic Fundamentals Dismal
2. Default Risk Too Low
3. The “Treasury Put” Alive
4. The “Treasury Put” Extinguished
5. Default Risk Rises

Outline

1. **Macroeconomic Fundamentals Dismal**
2. Default Risk Too Low
3. The “Treasury Put” Alive
4. The “Treasury Put” Extinguished
5. Default Risk Rises

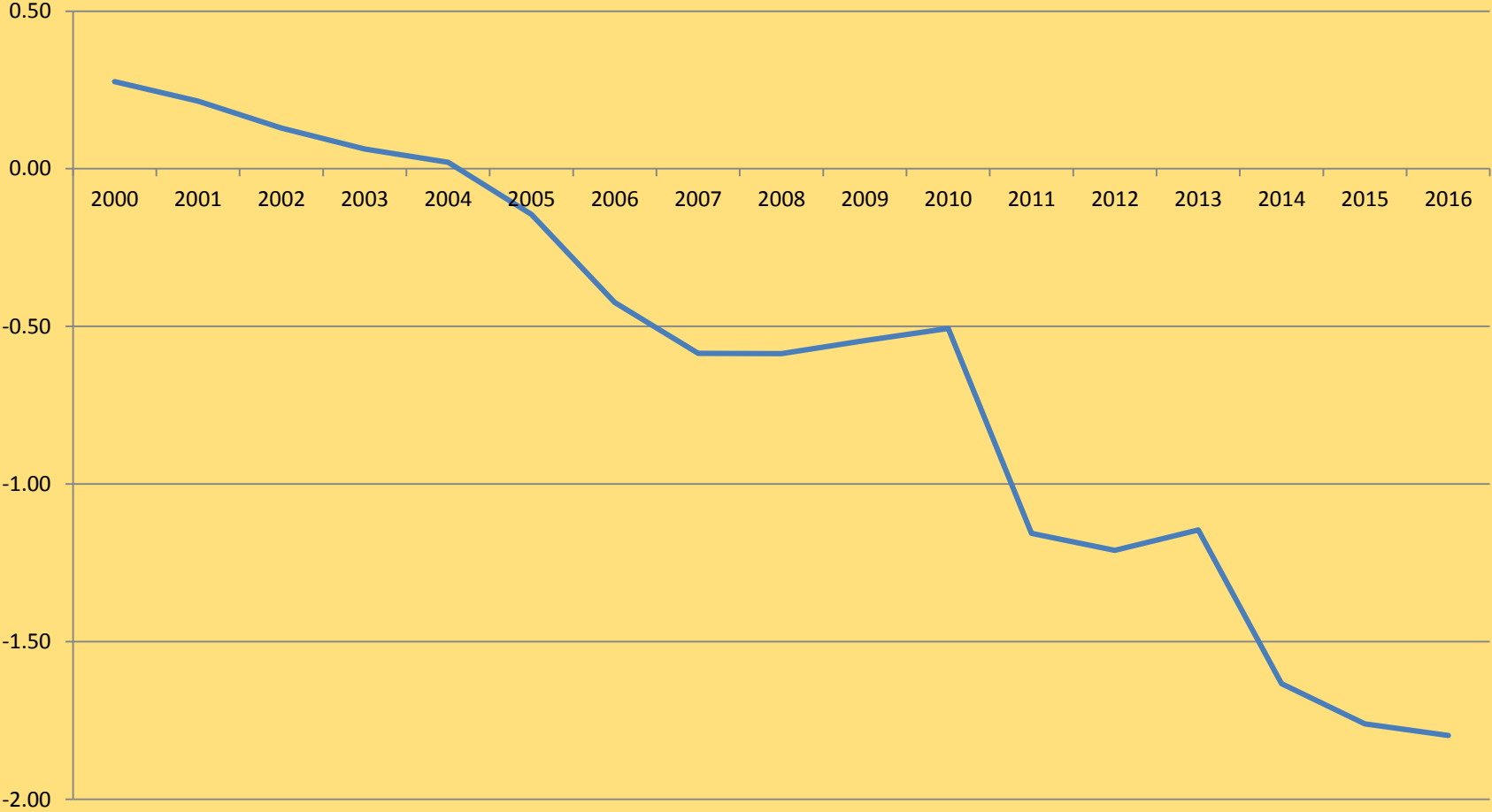
GDP (constant 2010 US\$), 2000-2013



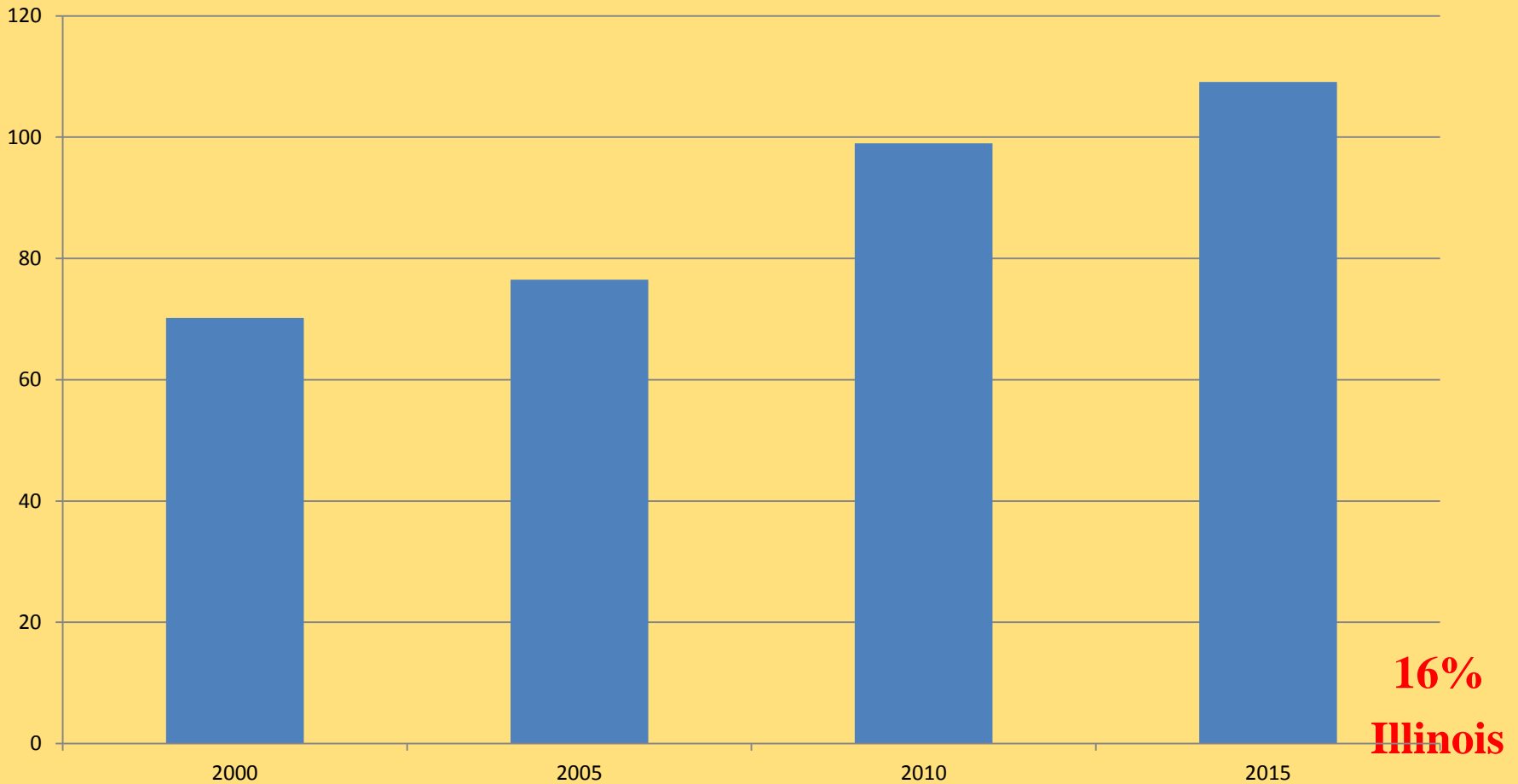
Puerto Rican Factoid

- All Puerto Ricans are U.S. citizens
- They can travel to and work in the U.S.

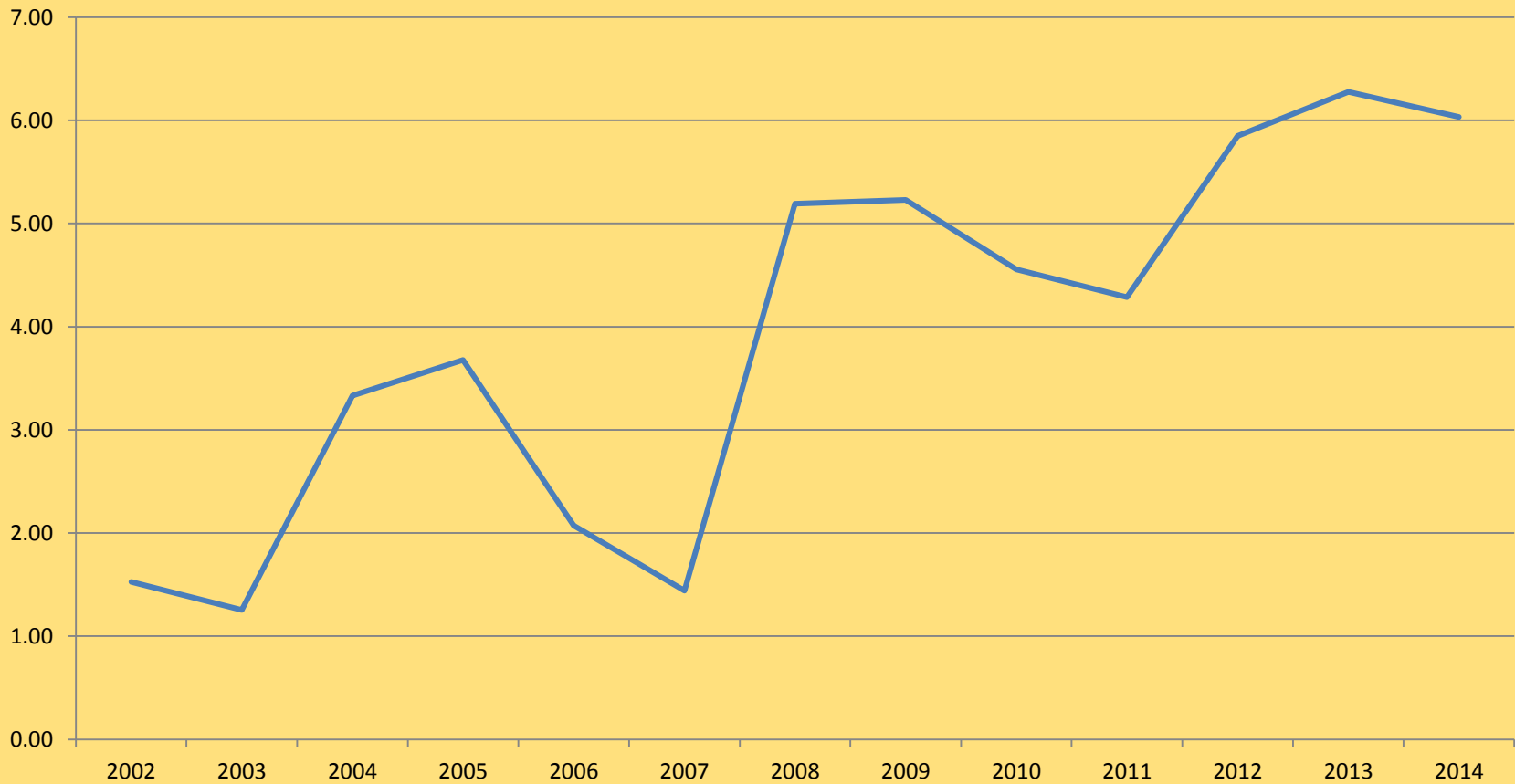
Population Growth, 2000-2016



Public Liabilities To GDP 2000-2015



Government Deficits As A Percentage Of GDP



Limited Fiscal Capacity: Low Income

- Income per capita:
 - U.S. \$55,322
 - Mississippi \$40,528
 - **Puerto Rico \$19,606**

Limited Fiscal Capacity: Dismaying Demographics

Table 1 – Median Age Of the Population

Country	2015	2040	Annualized Growth Rate (%)
	(1)	(2)	(3)
Puerto Rico	36.4	45.8	0.923
Caribbean Region	30.3	37.7	0.878
United States	37.6	41.2	0.366
More Developed Countries	41.1	45.5	0.408
Less Developed Countries	27.8	33.1	0.700

Outline

1. **Macroeconomic Fundamentals Dismal**
2. Default Risk Too Low
3. The “Treasury Put” Alive
4. The “Treasury Put” Extinguished
5. Default Risk Rises

Outline

1. Macroeconomic Fundamentals Dismal
- 2. Default Risk Too Low**
3. The “Treasury Put” Alive
4. The “Treasury Put” Extinguished
5. Default Risk Rises

Estimating The Risk Premium

- Compare uninsured and insured P.R. bonds
- Adjustments
 - Tax-free income
 - Maturity differences
 - Liquidity premia
 - Default premium for insurers
 - Shocks to the market for P.R. munis

Estimating The Risk Premium

Data Collection

- 2000 to 2016
- Only general obligation (GO) bonds
- 45 uninsured bonds matched to insured bonds on the same “issue day” (13 issue days)
 - Maturity matched exactly for 33 bonds
 - Average discrepancy less than 2 years for other 12 bonds; all but one pair had discrepancy of 3 or less
 - Maturities tend to be long
 - Less than 10 years 1
 - 11 to 20 years 18
 - Greater than 20 years 26

Risk Premia

Issue Date	Corporate Aaa	Puerto Rican	Corporate Baa
	(1)	(2)	(3)
March 15, 2000	1.350	1.690	2.050
October 25, 2001	1.680	2.165	2.560
April 4, 2002	0.900	1.245	2.210
August 8, 2002	1.150	1.662	2.390
May 18, 2004	0.590	1.204	1.300
October 7, 2004	0.590	1.170	1.350
October 16, 2007	0.860	1.402	1.690
May 7, 2008	0.990	2.878	2.310
September 17, 2009	0.960	1.928	2.170
February 17, 2011	0.810	1.249	1.700
March 17, 2011	0.890	1.141	1.800
July 12, 2011	1.000	1.804	1.820
April 3, 2012	1.050	1.497	2.310
Average	0.986	1.618	1.974
Differential With Column 2	-0.632	0.000	+0.356

Outline

1. Macroeconomic Fundamentals Dismal
- 2. Default Risk Too Low**
3. The “Treasury Put” Alive
4. The “Treasury Put” Extinguished
5. Default Risk Rises

Outline

1. Macroeconomic Fundamentals Dismal
2. Default Risk Too Low
- 3. The “Treasury Put” Alive**
4. The “Treasury Put” Extinguished
5. Default Risk Rises

The “Treasury Put” Alive

- In 1975, City of New York Faced Bankruptcy
- Debt (in 2013 \$'s) of \$80-\$95 Billion
- Bailout Initially Refused:
“President Ford to NYC: Drop Dead” (??)
- Eventually, Bailout of \$13-\$16 Billion By A Republican Administration Of A Democratic City

The “Treasury Put” Alive

- **1971 Lockheed**
- **1980 Chrysler**
- **1980’s Savings and Loan crisis**
- **1989 Brady Bonds**
- **1995 Mexican Peso Crisis**
- **2008 T.A.R.P.**
 - **Financial Institutions**
 - **GM and Chrysler**

The “Treasury Put” Alive

- **Geithner Doctrine:** “no significant financial institution would be allowed to fail”

Kay (2015, p. 256)

- Lehmann Brothers Catastrophe When Geithner Doctrine not followed.

The “Treasury Put” Alive

- **2009-present Euro Crisis**

- **Mario Draghi, ECB (2012)**

“But there is another message I want to tell you. Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough.”

The “Treasury Put” Alive

- **2007 Northern Rock**
- Bank of England initially takes a firm stand on NOT bailing-out Northern Rock
- Reverses course 24 hours later and offers a bailout
- Moral hazard writ large
- “Swervyn Mervyn” King, head of the BoE

Outline

1. Macroeconomic Fundamentals Dismal
2. Default Risk Too Low
- 3. The “Treasury Put” Alive**
4. The “Treasury Put” Extinguished
5. Default Risk Rises

Outline

1. Macroeconomic Fundamentals Dismal
2. Default Risk Too Low
3. The “Treasury Put” Alive
- 4. The “Treasury Put” Extinguished**
5. Default Risk Rises

The “Treasury Put” Extinguished

- The “Seismic Shock”
- Detroit Bankruptcy, July 18, 2013
- \$18-\$20 Billion Of Liabilities
- Federal assistance sought by Detroit Mayor Bing:
 - In talks with the Obama Administration
 - Noted Chrysler and GM bailouts

The “Treasury Put” Extinguished

No federal assistance offered or in the offing

- “...the Obama Administration made it clear it would not seek a bailout...” [*Rollcall*, 7-24-13]
- Legislation to prohibit the federal government from coming to the aid of financially strapped American cities came before the Senate (Lindsay Graham).
- The legislation failed by only two votes

The “Treasury Put” Extinguished

No federal assistance offered or in the offing

- Other legislation introduced in July 2013 to specifically exempt the federal government from liability for state and local pensions.
- “[g]iven the current political climate in Washington, D.C., we also think it is unlikely that the federal government will offer any sort of financial bailout for Puerto Rico.”

Morningstar, 10-16-13

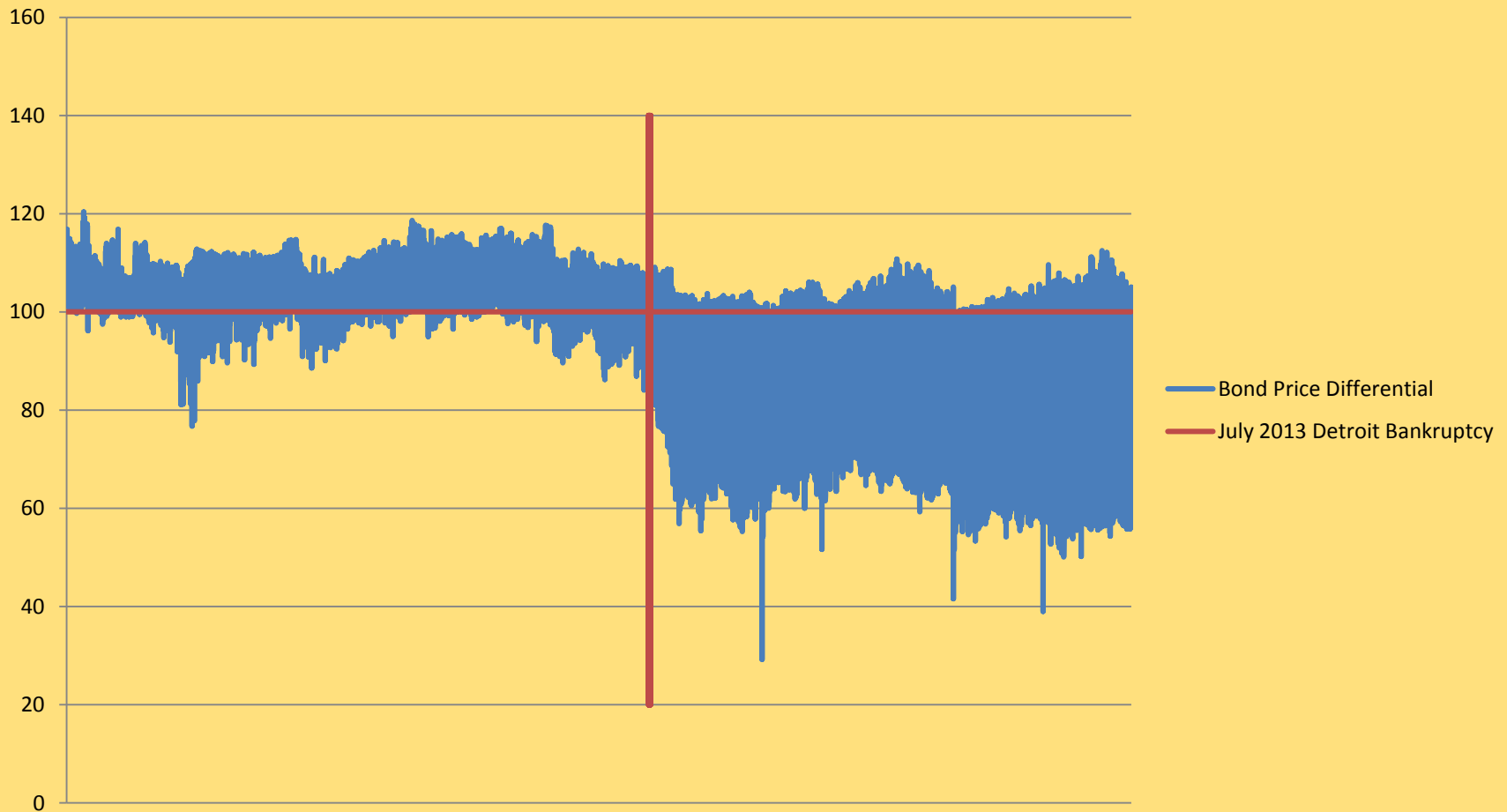
Outline

1. Macroeconomic Fundamentals Dismal
2. Default Risk Too Low
3. The “Treasury Put” Alive
- 4. The “Treasury Put” Extinguished**
5. Default Risk Rises

Outline

1. Macroeconomic Fundamentals Dismal
2. Default Risk Too Low
3. The “Treasury Put” Alive
4. The “Treasury Put” Extinguished
- 5. Default Risk Rises**

Price Differences, Traded Matched Bonds, Jan 2008 to Dec 2016



Default Risk Rises

- Price change corresponds to a 350 bp \uparrow in the risk premium from

2.56 \rightarrow 4.23 \rightarrow 6.06

Treasury Put = 350 basis points

- Compare 350 b.p. risk premium to average “junk” premium 582 basis points

Summary

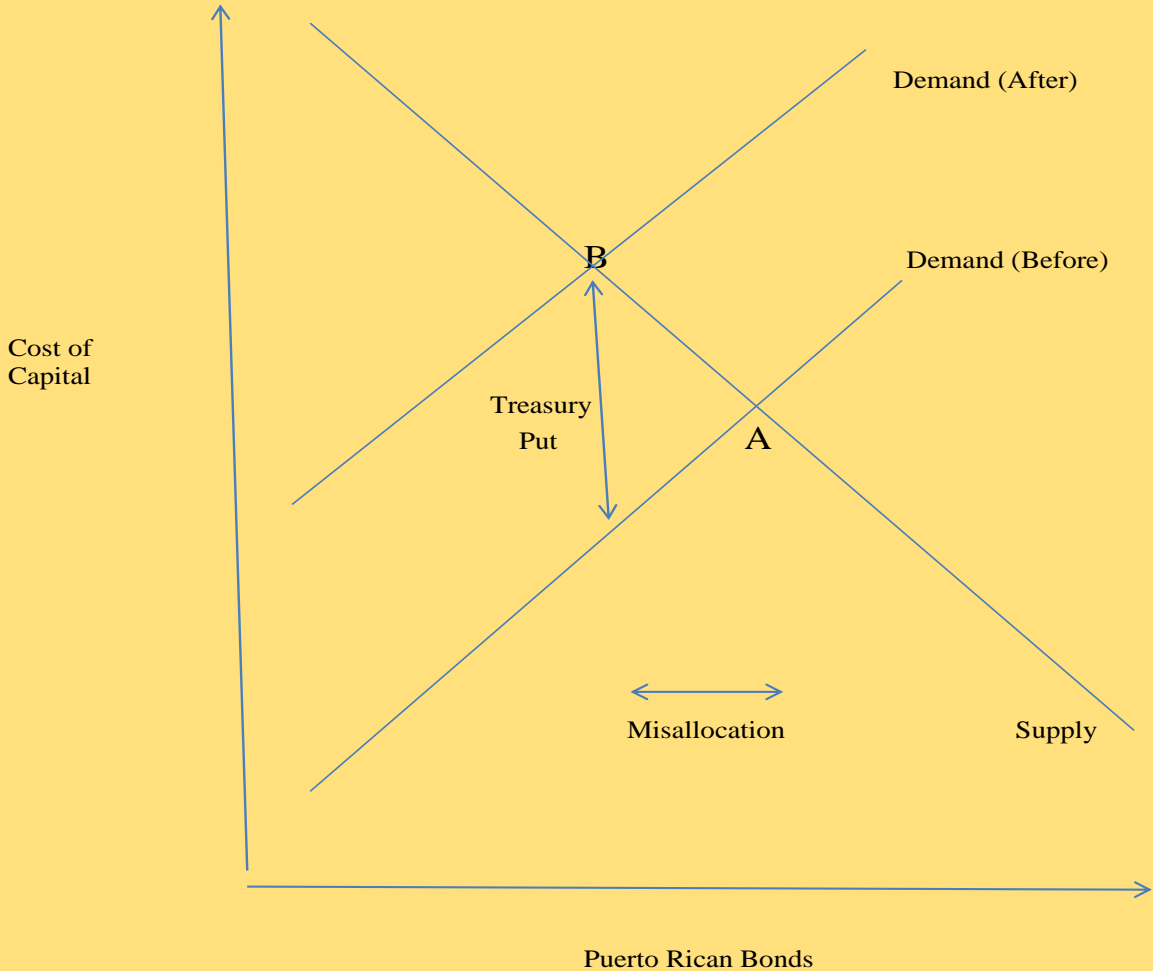
1. Macroeconomic Fundamentals Dismal
2. Default Risk Too Low
3. The “Treasury Put” Alive
4. The “Treasury Put” Extinguished
5. Default Risk Rises
- 6. Policy Implications**

Policy Implication 1

Capital Misallocation

- Removal of the Treasury Put →
 - 350 bp ↑ in risk premium, or
 - 45% ↑ in the cost of capital

Capital Misallocation



Policy Implication 1

Capital Misallocation

- Supply elasticity = 0.365
(Joulfaian and Matheson, *NTJ*, 2009)
- 45% ↑ in the cost of capital
 - 15% ↓ in the stock of bonds
 - Misallocated capital;
\$15 billion in Puerto Rico

Policy Implication 1

Potential Capital Misallocation

- Puerto Rico \$100 billion
- Illinois \$230
- New Jersey \$200
- Massachusetts \$90
- Connecticut \$70
- Kentucky \$55
- Total \$745 billion

Policy Implication 2

Myopia/Misinformation??

- Alternative hypothesis for the excessive flow of debt to Puerto Rico:
 - Investors were misinformed
- GAO, 2018
- Recommendation: better reporting
- Radical increase in yields post-Detroit??

Policy Implication 3

How To Extinguish the “Treasury Put”?

- Bailout History Noted Above
- The Euro Crisis
- The Maastricht Treaty no-bailout clause
- Chancellor Kohl

Policy Implication 3

How To Extinguish the “Treasury Put”?



Thank You
Muchas Gracias