# "EXTERNAL AND PUBLIC DEBT CRISES" ARELLANO, ATKESON, WRIGHT

Ricardo Reis
Columbia University

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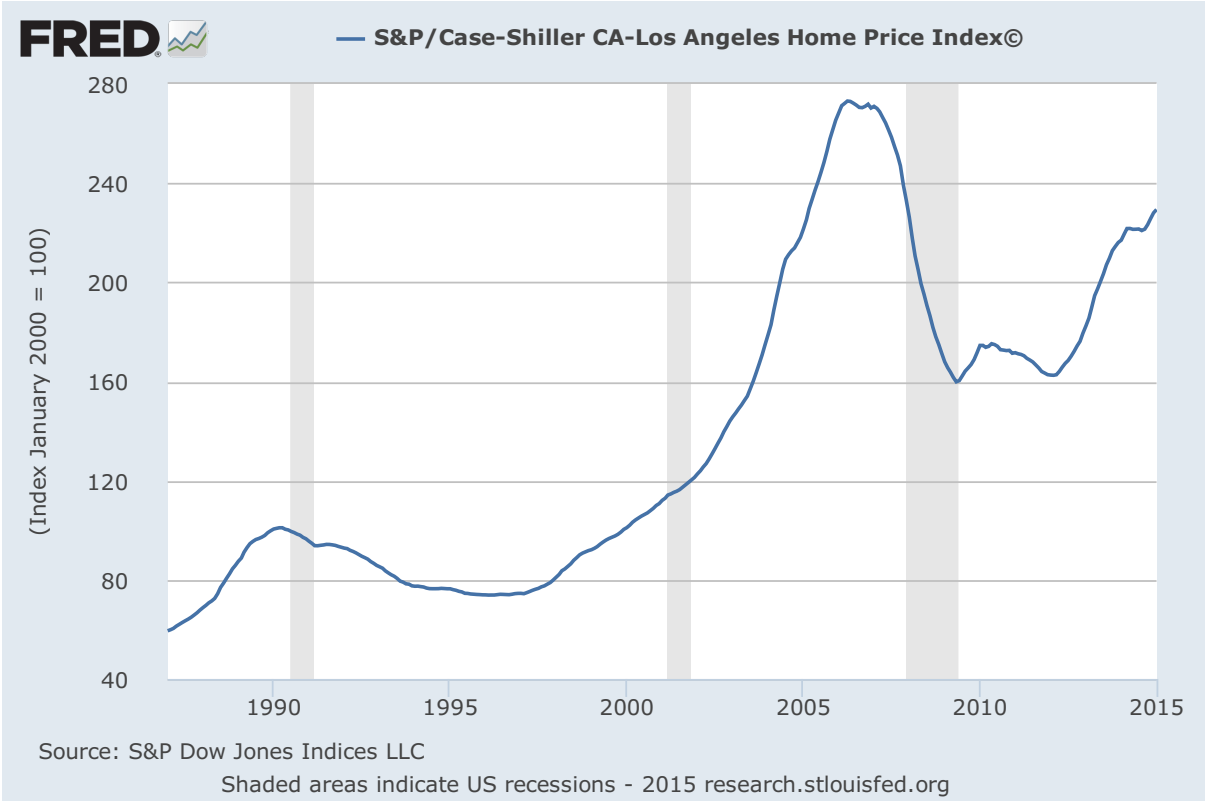
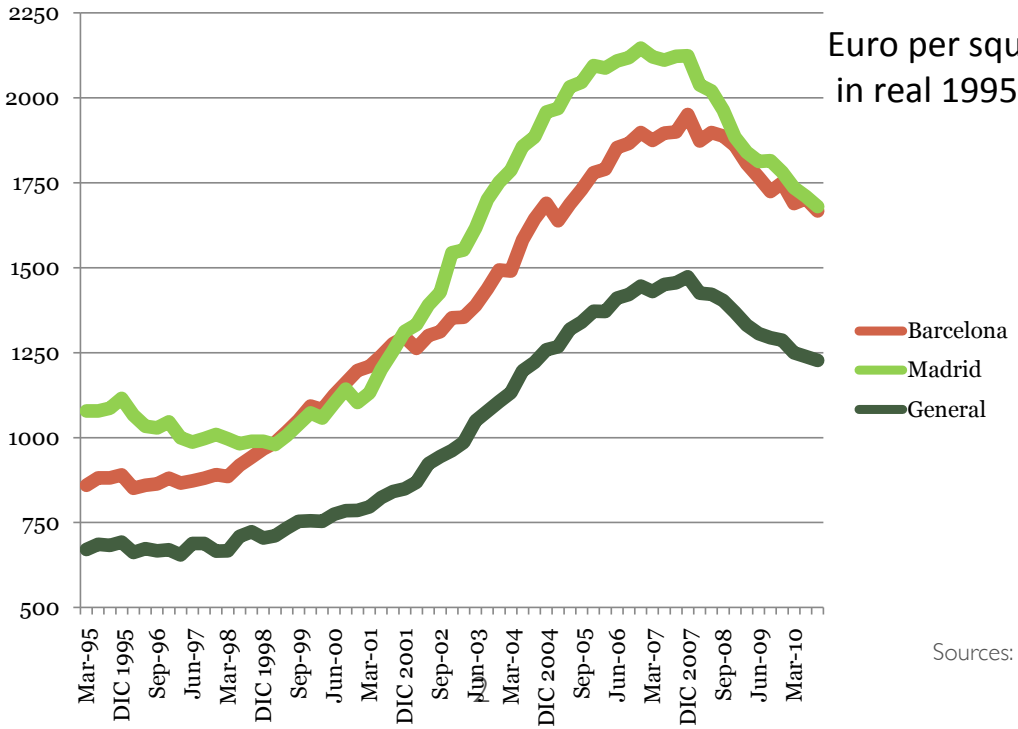







Sources: FRED, Economist, Garicano and Santos (2012)

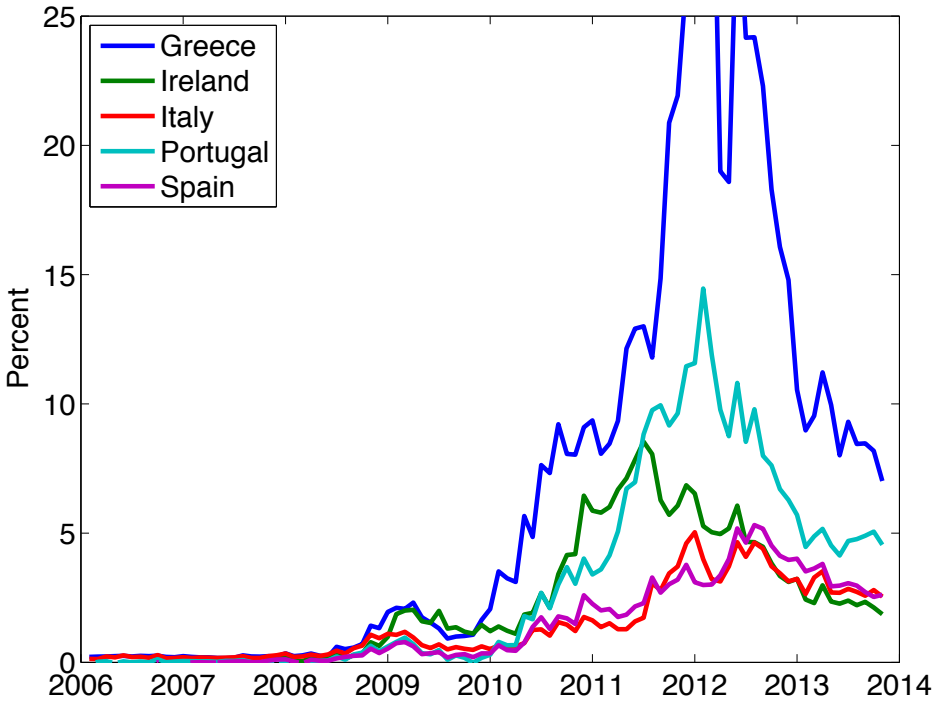



**Figure 1:** Spreads on Government Bonds for Eurozone Countries

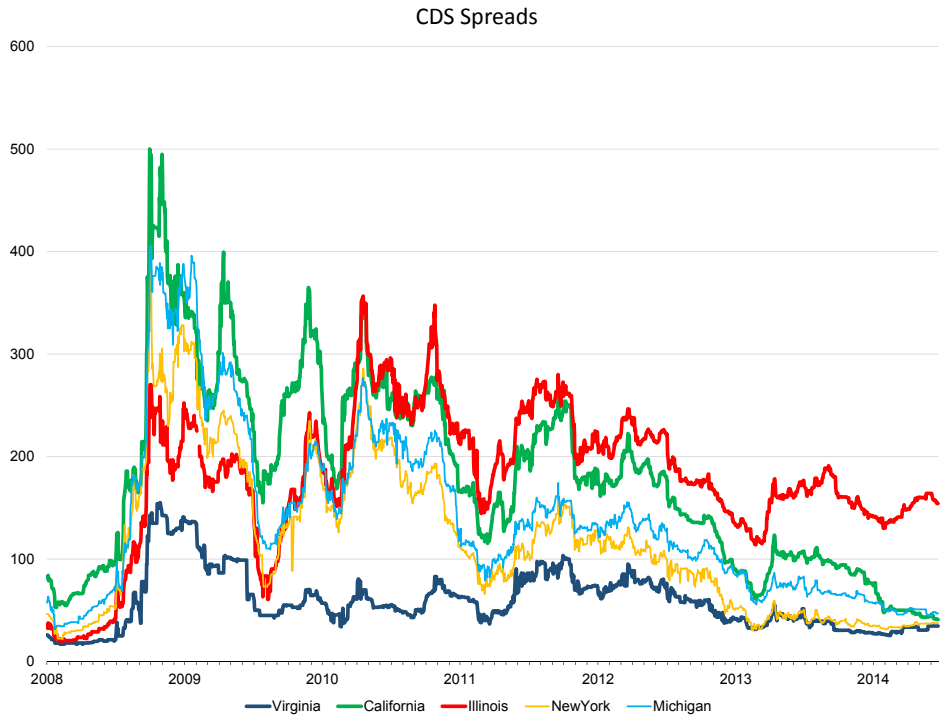



**Figure 2:** Credit Default Swap Spreads for U.S. States

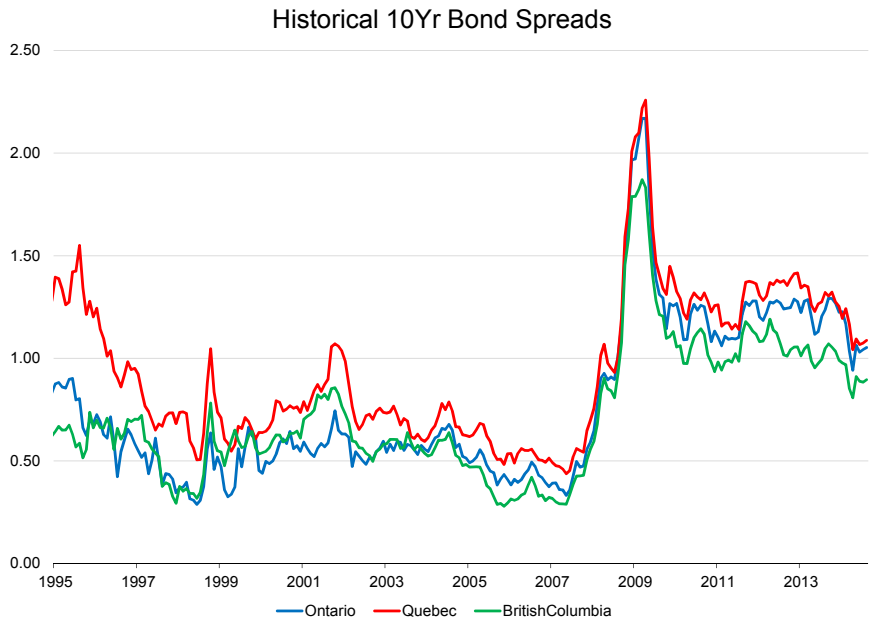



**Figure 4:** Spreads on Government Bonds for Canadian Provinces

# SUMMARY 1: NEW VARIABLES

1. Flexibility of fiscal institutions
   - In words: "ability to change taxes and borrow".
   - In model: whether can choose $\tau_2$ given that cannot commit not to default.
   - In data: (i) response of primary surplus to debt, (ii) legal and political restrictions, (iii) views of credit ratings agencies.
   - Three data points: US states low, Canada provinces and Eurozone countries high.

# SUMMARY 1: NEW VARIABLES

1. Flexibility of fiscal institutions
2. Interference in private contracts
   - In words: "perceived risk of sovereign interference with domiciled private debt contracts".
   - In model: force default on private debts to foreigners at stochastic cost $\Delta^p$.
   - In data: (i) institutional analysis, (ii) views of ratings agencies, (iii) sovereign credit ceiling.
   - Cases: US and Canada high, Eurozone low.

# SUMMARY 2: PREDICTIONS

1. If flexible $\tau_2$, high $\Delta^p$, then no default, public or external debt constraints not binding, public and private spreads are zero. *Use taxes to pay debt.*

2. If flexible $\tau_2$, deterministic $\Delta^p$, then if public debt constraint binds, external debt constraint will bind too. *Use private debt capacity.*

3. If inflexible $\tau_2$, can default on domestically held public debt even if at high private cost. *Out of alternatives.*

# SUMMARY 3: WHO IS WHERE?

## **Canada**: flexible $\tau_2$, high $\Delta^p$: high debt, low spread

**Table 4:** Net Debt to Income in U.S. States and Canadian Provinces 2008-2012

| State | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| California | 4.3% | 4.4% | 5.6% | 6.0% | 6.0% |
| Texas | 1.4% | 1.4% | 1.4% | 1.6% | 1.5% |
| New York | 6.3% | 6.3% | 6.5% | 6.7% | 6.6% |
| Florida | 2.8% | 2.9% | 2.9 % | 3.0% | 3.0% |
| Illinois | 5.2% | 4.6% | 4.4% | 5.7% | 6.0% |
| Pennsylvania | 2.4% | 2.5% | 2.4% | 2.7% | 2.8% |
| Ohio | 2.9% | 2.8% | 2.6 % | 2.8% | 2.8% |
| Georgia | 3.0% | 3.0% | 3.3% | 3.3% | 3.1% |
| Michigan | 2.2% | 2.2% | 2.1% | 2.2% | 2.2% |
| North Carolina | 2.8% | 2.5% | 2.3% | 2.3% | 2.3% |
| Canada | | | | | |
| Alberta | 0.6% | 2.1% | 2.1% | 2.1% | 2.4% |
| British Columbia | 13.4% | 14.7% | 14.9% | 15.6% | 16.8% |
| Ontario | 27.4% | 34.0% | 36.1% | 37.8% | 40.4% |
| Quebec | 43.4% | 45.4% | 47.2% | 47.7% | 48.3% |

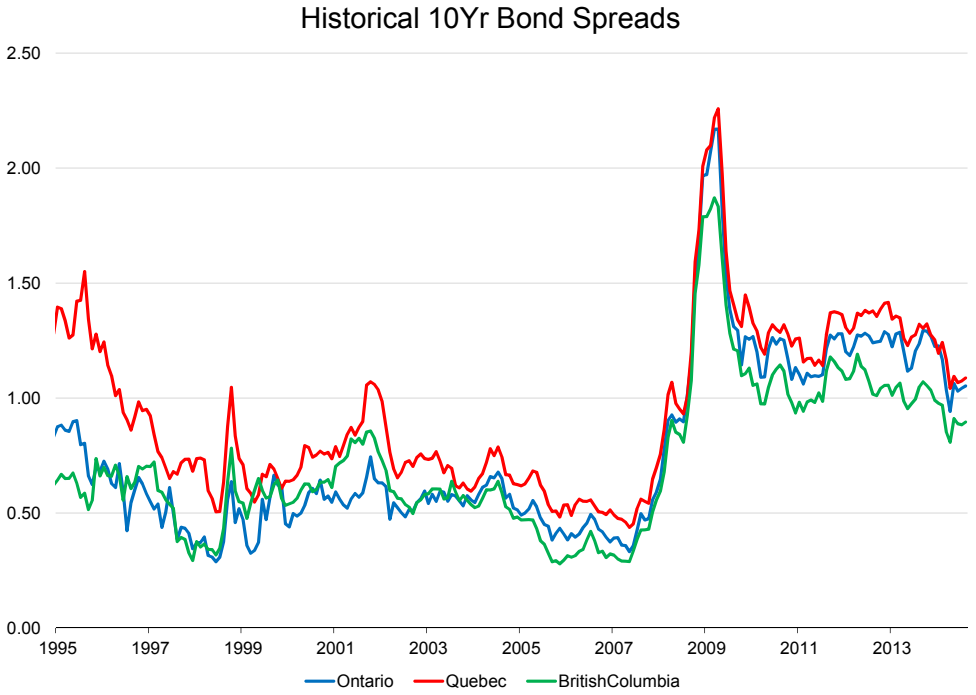
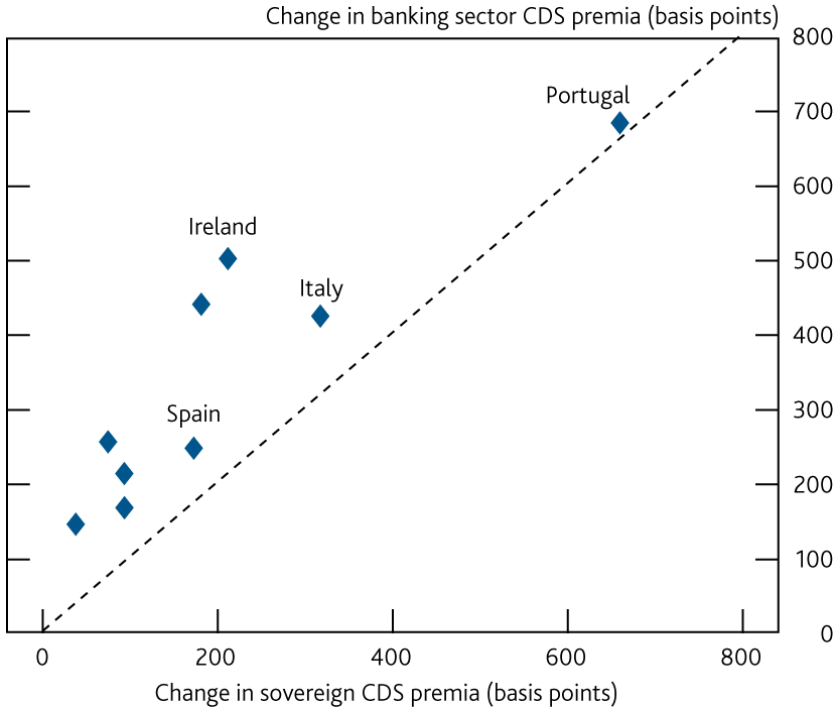
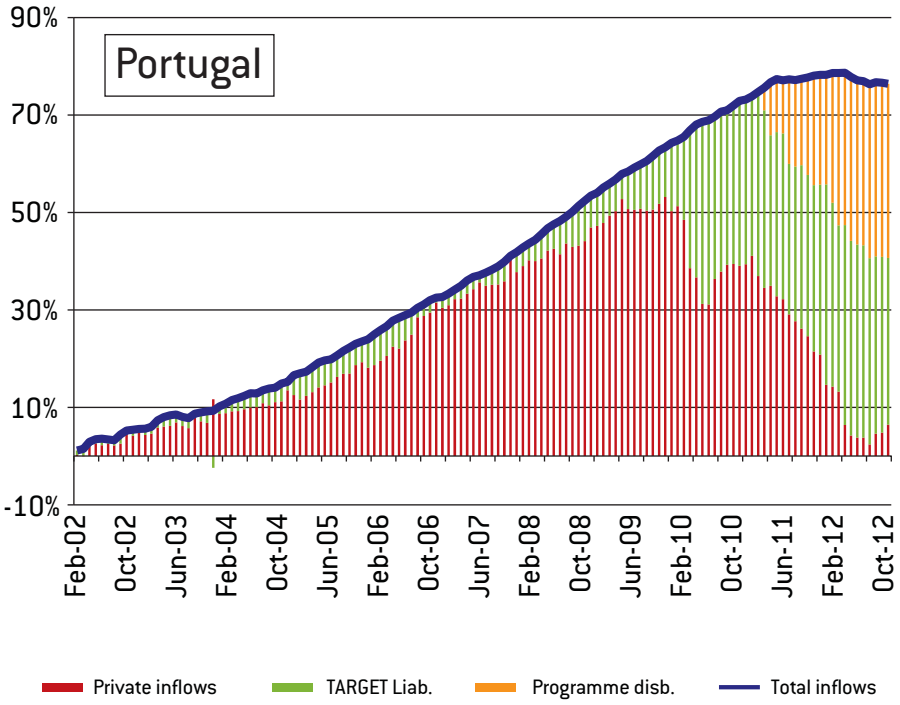



**Figure 4:** Spreads on Government Bonds for Canadian Provinces

# SUMMARY 3: WHO IS WHERE?

**Euroarea**: flexible $\tau_2$, low $\Delta^p$: high debt, high spreads, correlation of private and public spreads, sudden stop of private capital.




Sources: Capital IQ, Markit Group Limited, Thomson Reuters Datastream and Bank calculations.

(a) The change is measured from 22 November 2010 to 22 November 2011.
(b) The other countries included, in addition to those labelled on the chart, are Austria, Belgium, France, Germany and the Netherlands.
(c) Banking sector CDS premia are asset-weighted.
(d) Five-year senior CDS premia

# SUMMARY 3: WHO IS WHERE?

**California**: inflexible $\tau_2$, high $\Delta^p$. Low debt, high spreads, but no correlation public private, and no private debt crisis.

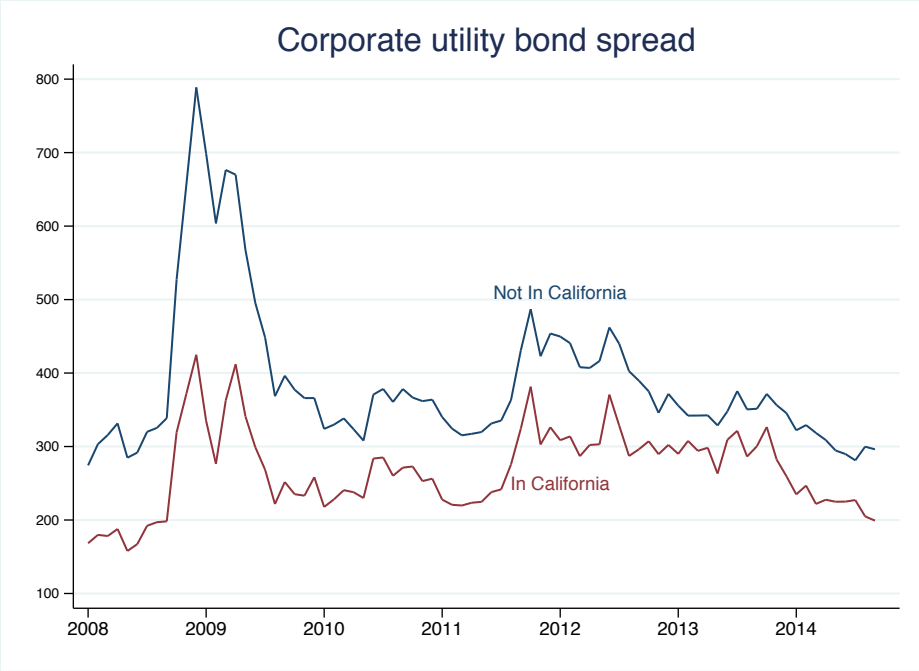



**Figure 11:** Spreads of Utility Companies Bonds

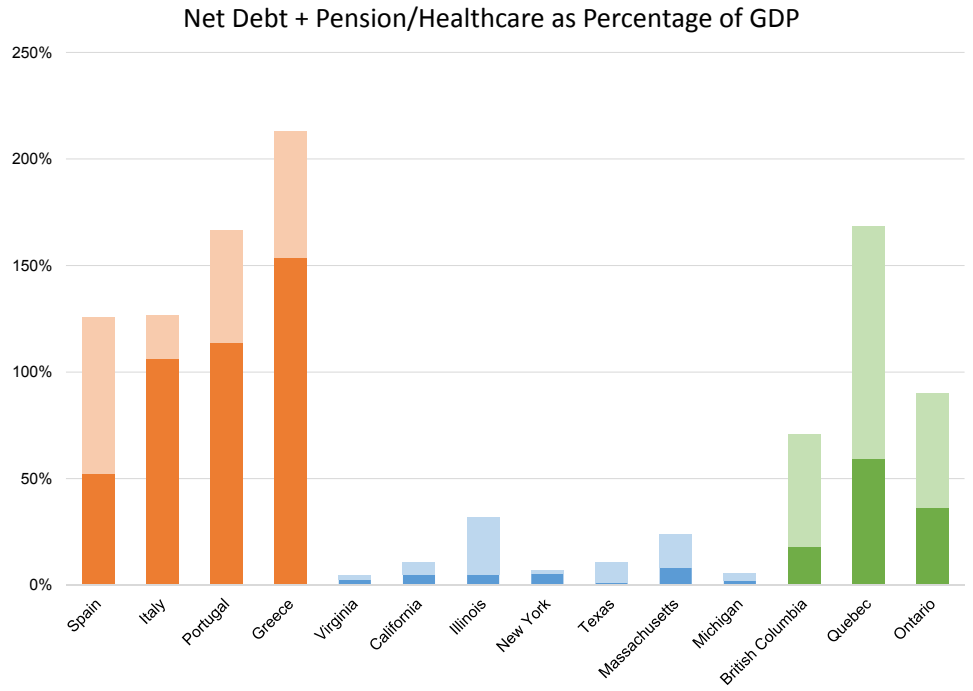



**Figure 5:** Net Debt and Pension/Healthcare Liabilities to GDP

# Comments

# MEASURING FISCAL FLEXIBILITY

Tax (net) revenues, not tax rates.

1. Slope of the Laffer curve?

2. Automatic stabilizers (rules) or discretionary spending? Role of the fiscal union.

3. Ability to absorb large shocks? Deposit insurance.

4. Political/legal constraints? They're there until they're not.

# DEBT CAPACITY…

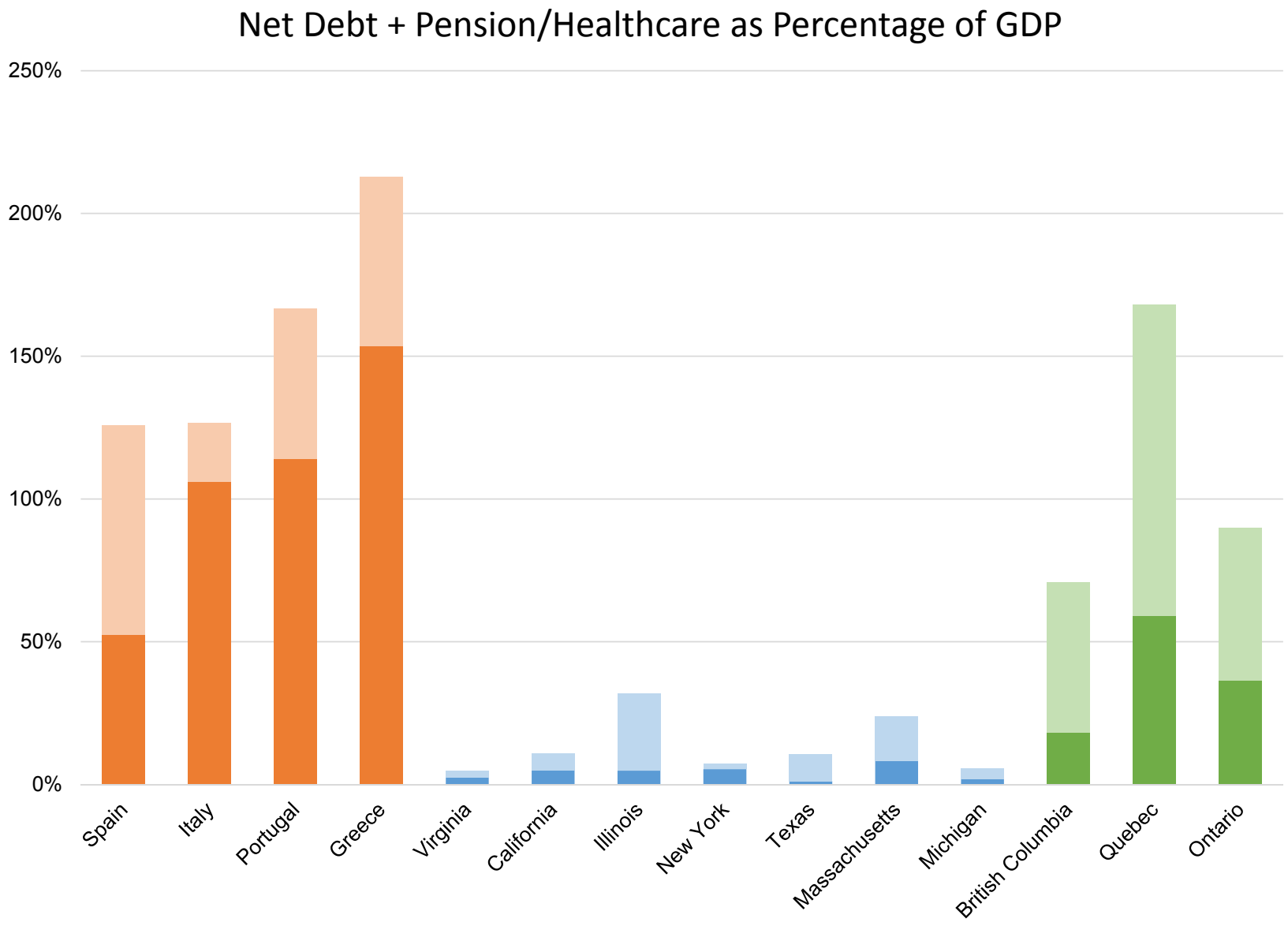
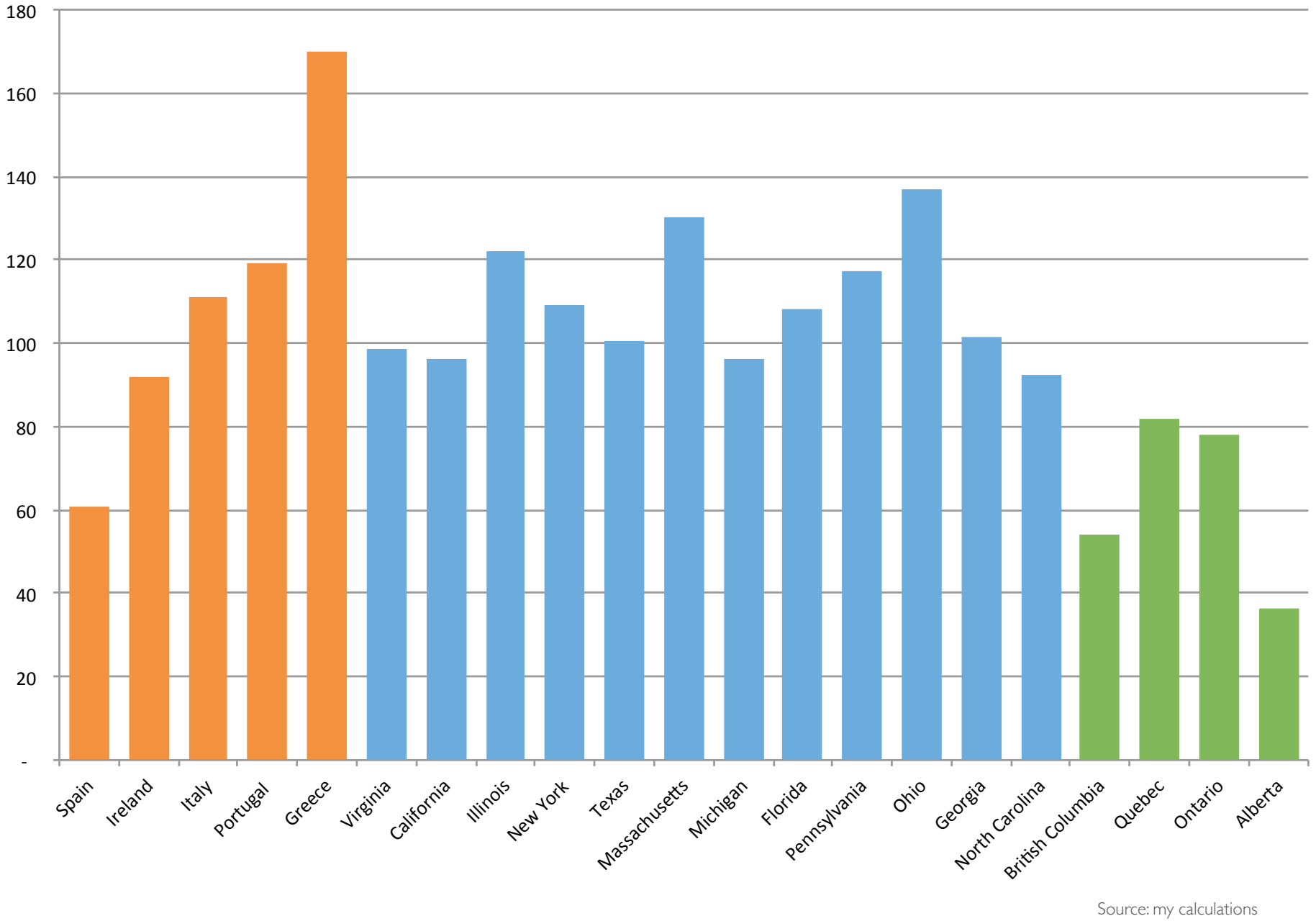



**Figure 5:** Net Debt and Pension/Healthcare Liabilities to GDP

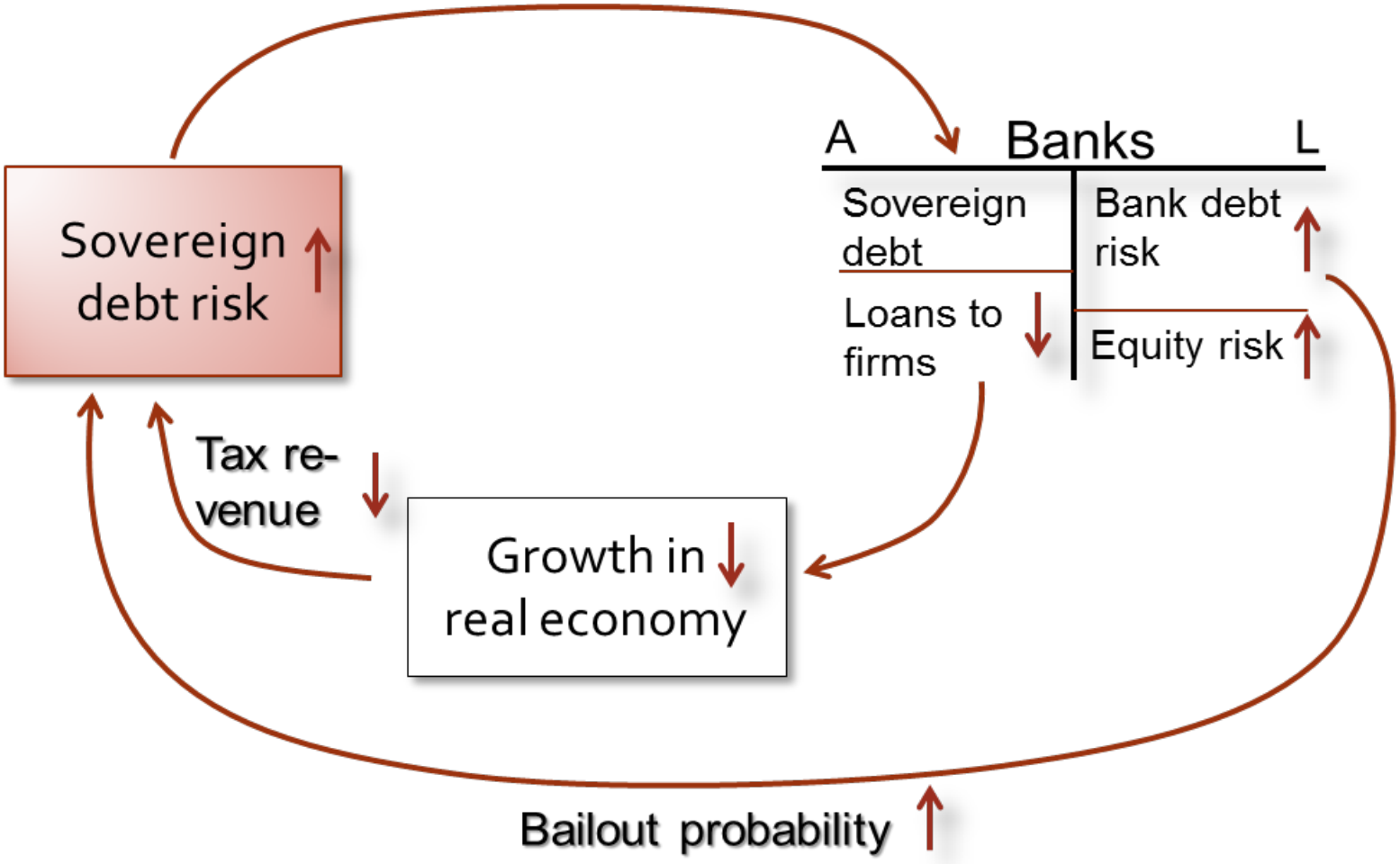
# DEBT CAPACITY…




Source: my calculations

# WHY THE SPREAD CORRELATION?

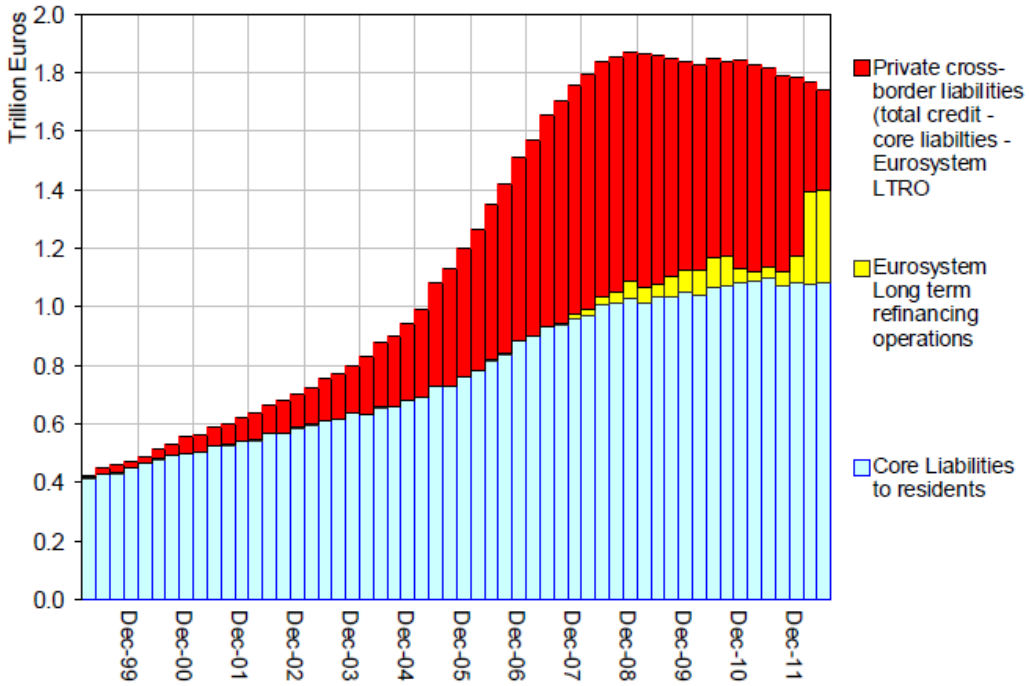
## Alternative story: the diabolic loop.

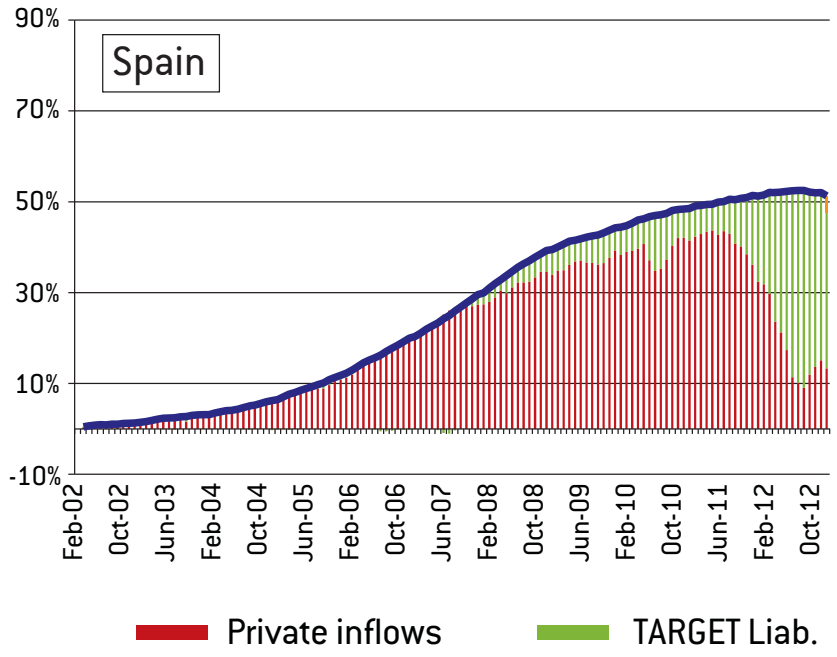



Source: Brunnermeier Reis (2014)

# WHY ARE EZ BANKS DIFFERENT?

1. US banks don't hold state bonds as safe asset.
2. Federal deposit insurance and regulation.
3. Banks intermediate capital flows
4. Target II operation.



# BAILOUTS

In model: pay cost $\Delta^p$ to force private debt to renege on its debts. U.S. contract clause.

Alternative: ***bailouts***

1. Support: not illegal, have definitely been done.
2. New strategy: public sector taking on private debt, and then defaulting.
3. In the model: public = private spreads, will never have a private debt crisis.

# BAILOUTS IN THE MODEL

## Canada case, with deterministic costs, but bailouts

- Baseline:

$$C_2 + G_2 \leq Y_2 - D^p - I^g D^g + (1 - I^g)\Delta^g$$

Never default on private debt, default on public debt if $D^g > \Delta^g$. Ex ante, let the private sector borrow, and tax the private sector at date 1 to fund expenditure.

- Costly default:

$$C_2 + G_2 \leq Y_2 - I^b D^p - I^g(D^g + (1 - I^b)D^p) - (1 - I^g)\Delta^g - (1 - I^b)\Delta^b$$

| Action | Cost |
|---|---|
| Bailout and default | $\Delta^b + \Delta^g$ |
| Default, no bailout | $D^p + \Delta^g$ |
| No default, no bailout | $D^p + D^g$ |

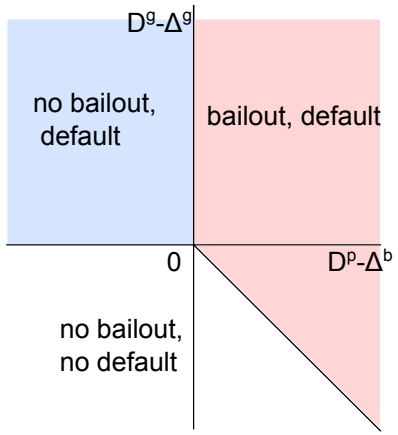



Figure 1: Optimal policy

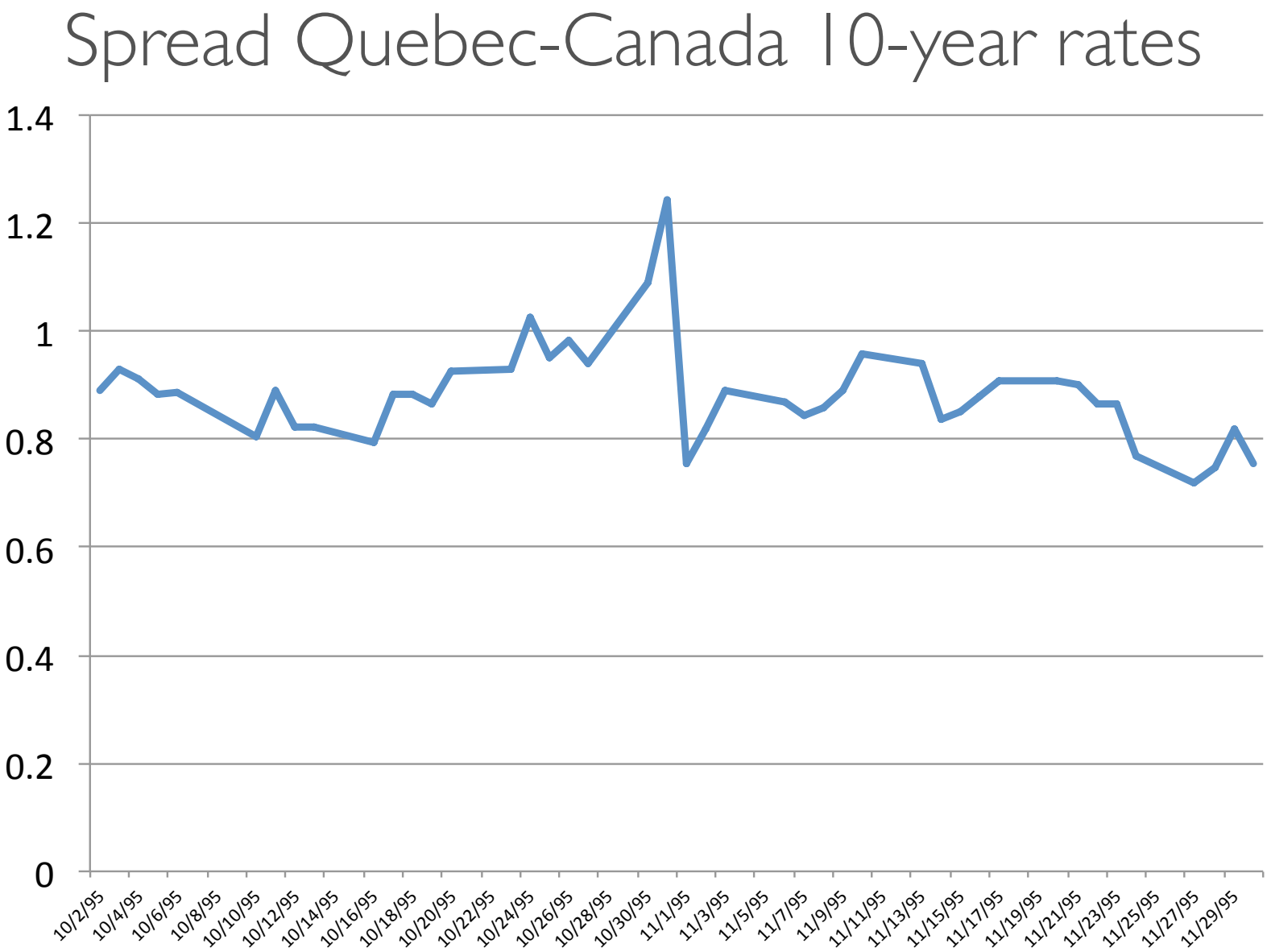
# WHAT CAME BEFORE?

Greece, Ireland, Spain 2000-2008:

- Very large capital inflows, via debt contracts.
- TFP growth plunges, huge growth in nontradables.
- Increasing misallocation of capital within and across sectors, flows go to low productivity projects.
- Financial integration without financial deepening (Reis, 2013).
- Private sector crisis before debt crisis

*versus* California 2000-2008.

# LOOK FOR MORE DATA POINTS




Source: my calculations

# CONCLUSION

Provocative and stimulating paper. Praise comparative approach and new hypothesis.

My comments:

- Hard to measure fiscal flexibility or capacity
- Alternative hypothesis: banks and the diabolic loop
- Introduced bailouts in the model.
- Misallocation in Europe before the crisis
- Need more data points: Quebec?