The Economics of Sovereign Debt, Bailouts and the Eurozone Crisis

Pierre Olivier Gourinchas, Philippe Martin, and Todd Messer

Discussion:

Fernando Broner
CREI, Universitat Pompeu Fabra, and Barcelona GSE
November 2017

Question

- What is the role of bailouts within a monetary union?

Question

- What is the role of bailouts within a monetary union?

Methodology

- Estimate implicit transfers in official lending to Euro periphery
- Develop simple, transparent, flexible model to address this and other related questions

Main ingredients

- Non-contingent borrowing by Euro periphery governments
- Private lenders from Euro core
- Bailouts from core to periphery governments

Main ingredients

- Non-contingent borrowing by Euro periphery governments
- Private lenders from Euro core
- Bailouts from core to periphery governments

Main forces

- Bailouts allow for "orderly partial defaults"
- Private lenders do not internalize cost of bailout by their governments

Results

- Estimated bailouts are sizable

Results

- Estimated bailouts are sizable
- *Southern View*: Ex post bailouts are efficient
  - creditors appropriate surplus

Results

- Estimated bailouts are sizable
- *Southern View*: Ex post bailouts are efficient
  - creditors appropriate surplus
- *Northern View*: Ex ante bailouts may or may not be efficient
  - excessive borrowing due to risk shifting
  - transfer from lender to borrower

Results

- Estimated bailouts are sizable
- *Southern View*: Ex post bailouts are efficient
  - creditors appropriate surplus
- *Northern View*: Ex ante bailouts may or may not be efficient
  - excessive borrowing due to risk shifting
  - transfer from lender to borrower
- Overall, bailouts
  - benefit periphery
  - may benefit core, but only if they avoid default on pre-existing debt

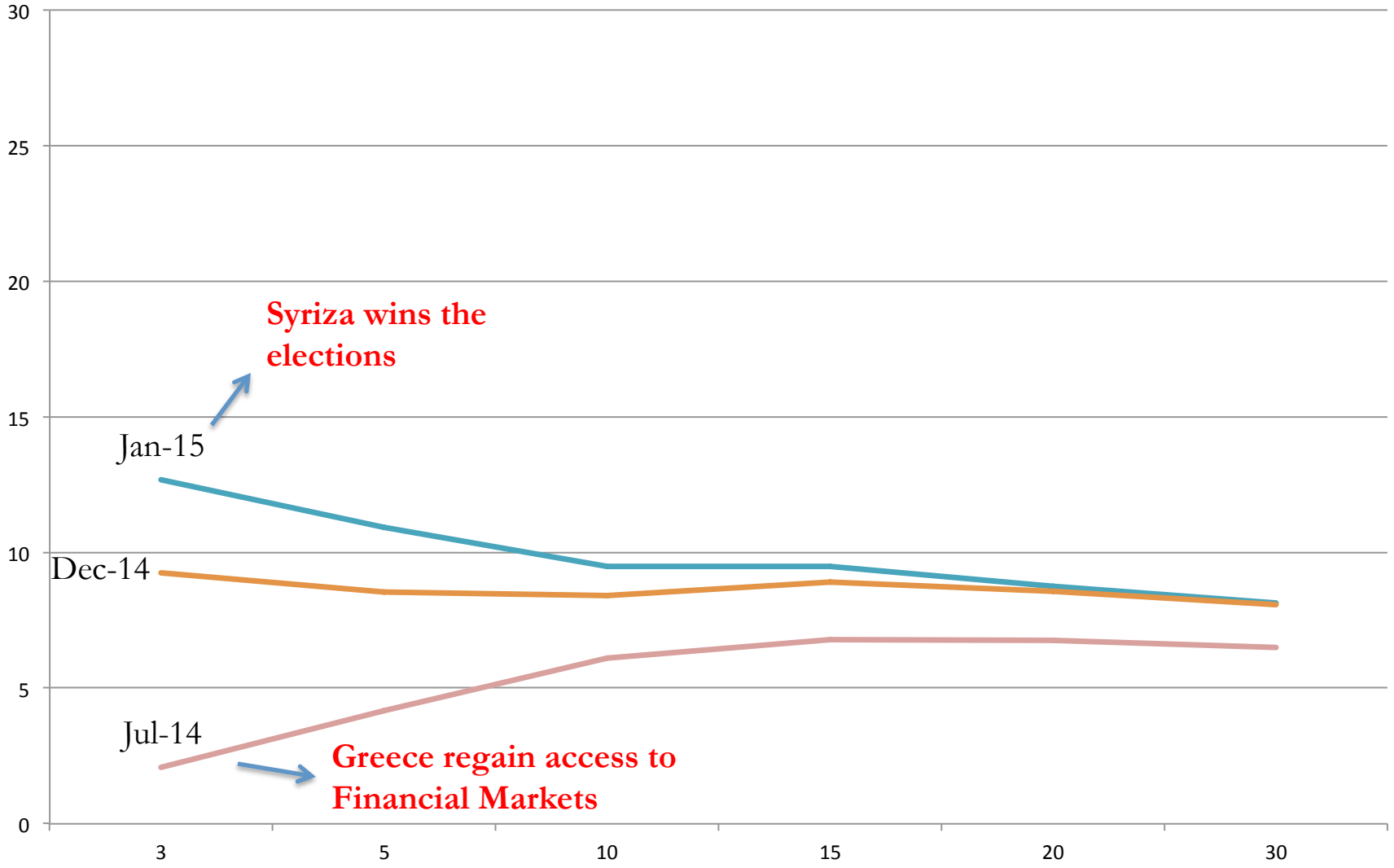
Results

- Estimated bailouts are sizable
- *Southern View*: Ex post bailouts are efficient
  - creditors appropriate surplus
- *Northern View*: Ex ante bailouts may or may not be efficient
  - excessive borrowing due to risk shifting
  - transfer from lender to borrower
- Overall, bailouts
  - benefit periphery
  - may benefit core, but only if they avoid default on pre-existing debt
- Extensions
  - default vs. exit, debt monetization

Estimation of bailouts: Comments

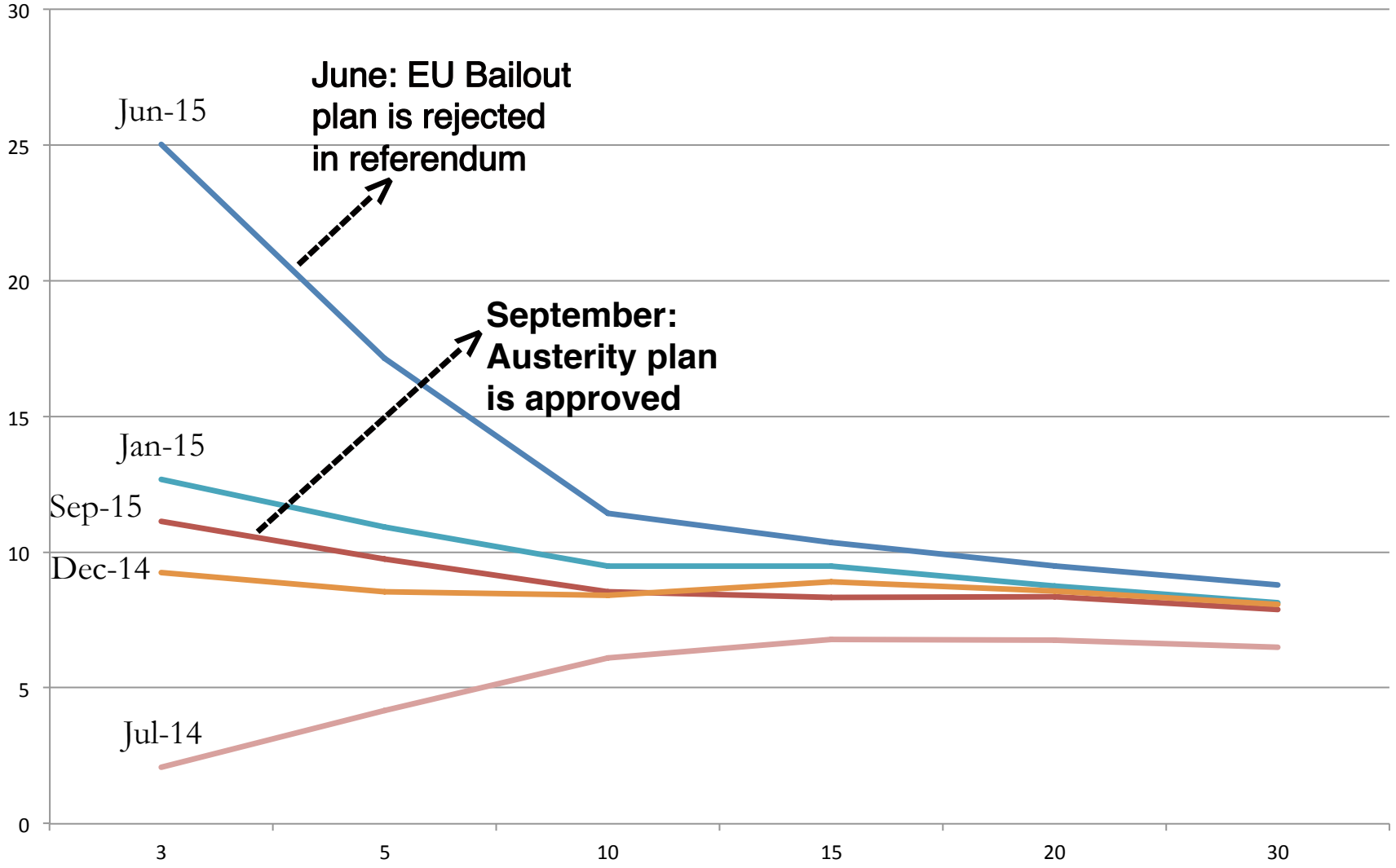
- Very informative description of role of official lenders
- Estimate size of transfers from difference in interest rates between loans from
  - IMF (assumed to not imply any transfer)
  - Euro sources
- A caveat
  - IMF loans on average shorter maturity
  - yield curve often inverts during crises
  - might overestimate transfers

The Yield Curve in 2015



Source: Bank of Greece

The Yield Curve in 2015



Source: Bank of Greece

A simple model

- Two periods $t \in \{0, 1\}$, two countries $c \in \{i, g\}$
- Technology

$$y^g = (y + \varepsilon, y - \varepsilon)$$
$$y^i = (y - \varepsilon, y + \varepsilon - \phi_1 \cdot I_{def})$$
$$\phi_1 = \begin{cases} \phi & \text{w.p. } p \\ \infty & \text{w.p. } 1 - p \end{cases}$$

  where $\phi < \varepsilon$

- Preferences

$$U^i = u\left(c_0^i\right) + u\left(c_1^i\right) \quad \text{and} \quad U^g = c_0^g + c_1^g$$

- Governments $G^c \in \left\{G^i, G^g\right\}$ maximize domestic utility
  - G^i can force i residents to repay g residents
  - G^g can pay τ_1 to G^i to encourage enforcement

A simple model

- Assume $p = 0$
- Full enforcement

$$\tau_1 = 0$$
$$\frac{1}{R^i} = q = 1$$
$$b = \varepsilon$$
$$c_0^i = c_1^i = c_0^g = c_1^g = y$$

- Efficient trade
- Assume $p < 1$ from now on

A simple model

- Assume
  - $p = 0.5$
  - there are contingent assets
  - no bailouts

- No default and no "wasted liquidity"

$$b_{low} = \phi \quad \text{and} \quad b_{high} = \varepsilon + 0.33 \cdot (\varepsilon - \phi)$$

$$q_{low} = q_{high} = 0.5$$

$$c^i_{low} = y + \varepsilon - \phi \quad \text{and} \quad c^i_0 = c^i_{high} = y - 0.33 \cdot (\varepsilon - \phi)$$

$$c^g_{low} = y - \varepsilon + \phi \quad \text{and} \quad c^g_0 = c^g_{high} = y + 0.33 \cdot (\varepsilon - \phi)$$

- Constrained efficient trade

A simple model

- Assume
  - $p = 0.5$
  - no contingent assets
  - no bailouts
- Default

$$q = 0.5$$
$$b = 1.33 \cdot \varepsilon$$
$$c^i_{low} = y + \varepsilon - \phi \text{ and } c^i_0 = c^i_{high} = y - 0.33 \cdot \varepsilon$$
$$c^g_0 = y - \varepsilon \text{ and } c^g_{low} = c^g_{high} = y + 0.33 \cdot \varepsilon$$

  or wasted liquidity

$$q = 1$$
$$b = \phi$$
$$c^i_0 = y - \varepsilon + \phi \text{ and } c^i_{low} = c^i_{high} = y + \varepsilon - \phi$$
$$c^g_0 = y + \varepsilon - \phi \text{ and } c^g_{low} = c^g_{high} = y - \varepsilon + \phi$$

- Inefficient asset trade

A simple model

- Assume
  - $p = 0.5$
  - no contingent assets
  - bailouts financed *by taxing bond holders*

- No default and no "wasted liquidity"

$$b = \varepsilon + 0.33 \cdot (\varepsilon - \phi)$$

$$q = 0.5 + 0.5 \cdot \frac{\phi}{\varepsilon + 0.33 \cdot (\varepsilon - \phi)}$$

$$\tau_{low} = 1.33 \cdot (\varepsilon - \phi) \quad \text{and} \quad \tau_{high} = 0$$

$$c^i_{low} = y + \varepsilon - \phi \quad \text{and} \quad c^i_0 = c^i_{high} = y - 0.33 \cdot (\varepsilon - \phi)$$

$$c^g_{low} = y - \varepsilon + \phi \quad \text{and} \quad c^g_0 = c^g_{high} = y + 0.33 \cdot (\varepsilon - \phi)$$

- Constrained efficient trade

- Bailouts allow for "orderly partial default" in low state
  - ex post: efficient, g appropriates entire surplus
  - ex ante: efficient, i and g both better off

A simple model

- Assume
  - $p = 0.5$
  - no contingent assets
  - bailouts financed *by lump-sum taxes*

- No default and no "wasted liquidity"

$$q = 1$$

$$u'(y - \varepsilon + b) = 0.5 \cdot u'(y + \varepsilon + \tau_{low} - b) + 0.5 \cdot u'(y + \varepsilon - b)$$

$$\tau_{low} = b - \phi \text{ and } \tau_{high} = 0$$

$$c_0^i = y - \varepsilon + b, \; c_{low}^i = y + \varepsilon + \tau_{low} - b \text{ and } c_{high}^i = y + \varepsilon - b$$

$$c_0^g = y + \varepsilon - b, \; c_{low}^g = y - \varepsilon - \tau_{low} + b \text{ and } c_{high}^g = y - \varepsilon + b$$

- But
  - intertemporal trade is distorted: overborrowing
    - $q = 1$ even though i, as a whole, defaults partially in low state
  - ex-ante transfer from g to i

- Ex ante, bailouts
  - benefit i and may benefit or hurt g

Comments

- Paper emphasizes that bailouts may benefit creditors ex ante
  - this is not that surprising given potential benefits discussed above
- Paper assumes pre-existing debt
  - this might not be necessary
  - also, is $t = 0$ truly ex-ante if there is pre-existing debt?
- Even if bailouts hurt g ex ante, there might be better policies than committing not to bailout
  - within model, make τ_0 contingent on default and asset trade at $t = 0$
  - more generally, limits on public debt and macro prudential regulation
- My view: In Euro crisis
  - important liquidity/rollover component
  - transfers were probably not as large
  - official interventions helped both i and g, possibly even from ex-ante point of view

Overall assessment

- Very interesting and informative analysis of Eurozone official lending
- Elegant, rich and flexible theoretical framework
- Look forward to next version of the paper!