

# **The MADRE Plan**

## **Mutually Agreed Debt Restructuring in the Eurozone**

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# Can public debts be too high?

- Reinhart-Rogoff and others
  - The 90% threshold
  - Some debate (exogeneity and instruments)
  - Good reasons
- Theory
  - Tax burden
  - Financial risk, borrowing costs, shocks and multiple equilibria
  - Policy constraint

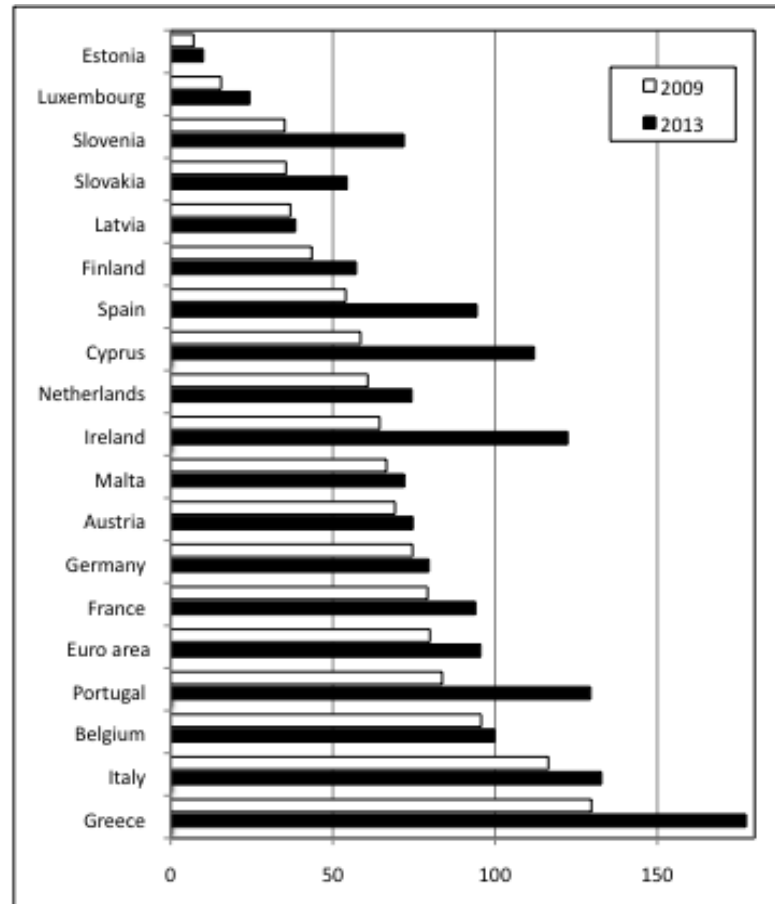
# The special case of Eurozone countries

- The diabolic loop (Brunnermeier et al., 2011)
  - Governments at risk borrow from banks
  - Banks are at risk: need government rescue
  - ECB is not lender in last resort
- More generally: governments borrow in foreign currency (De Grauwe, 2012)
- Both are sources of multiple equilibria
- Eurozone countries like developing countries
  - Lower public debt thresholds (R&R, Cecchetti et al.)

# The situation

- Eurozone public debts  $\approx$  € 9400 bn. (96% GDP)
  - Wide variations from country to country
    - Greece = 177%      Estonia = 10%
    - Above 90%: Belgium, Ireland, Spain, France, Italy, Cyprus, Portugal
- Before crisis (2007)
  - Above 90%: Greece (107%), Italy (103%)
  - Total Eurozone = 66%
- Crisis: a strong case of multiple equilibria

# The situation



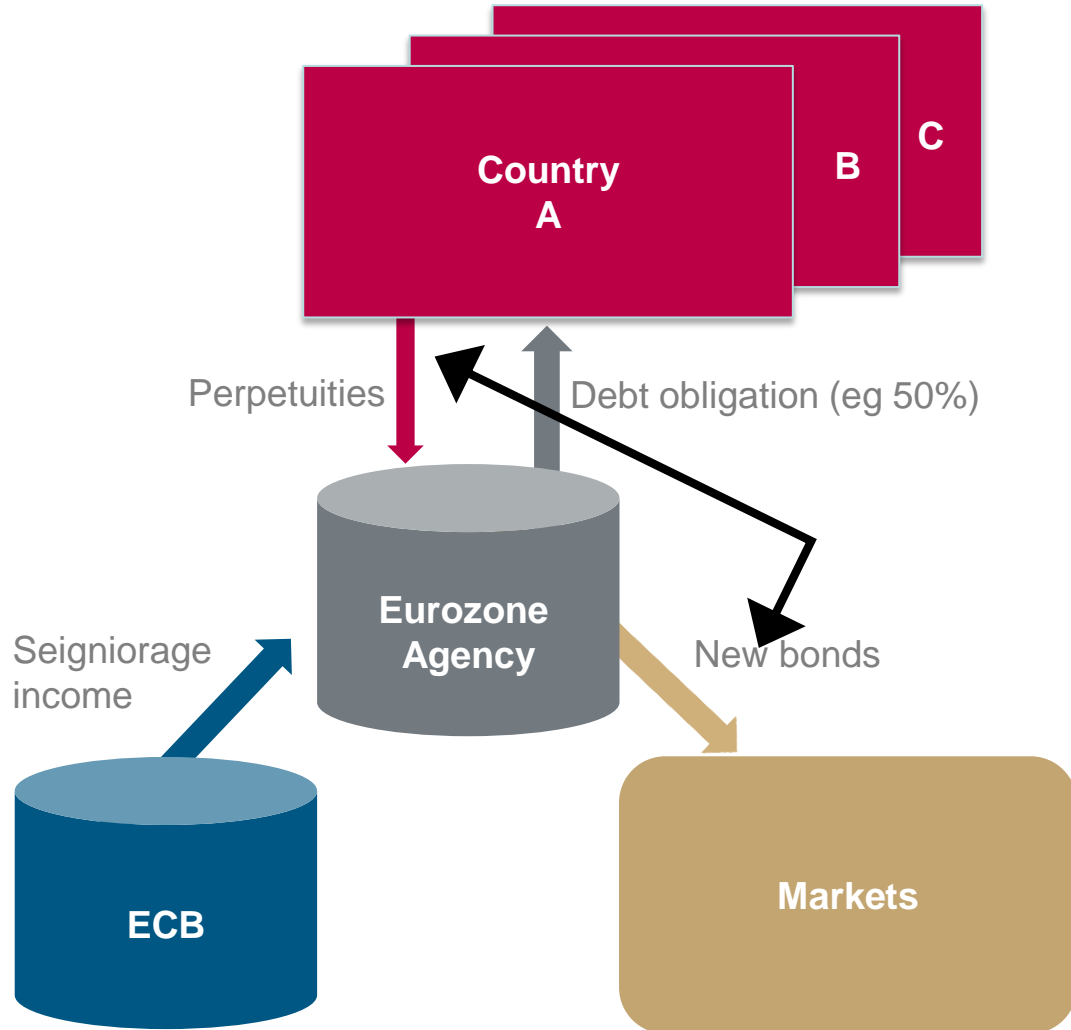
# Implications

- Debts must be reduced, as fast as possible
- Choice is:
  - Budget surpluses                      Expected duration: 35 years
  - Inflation                                      Ruled out
  - Restructuring                                The best solution
- Default can destroy banks
- Other countries won't pay

Mission impossible? No, this is MADRE

# PADRE: a 4-step process

- ① An agency agrees to redeem at maturity 50% of outstanding debts at nominal price  
About € 4700 billion
- ② The agency receives zero-interest perpetuities in exchange of bonds repayment commitment
- ③ The agency borrows from markets  
Carry trade costs: about € 160 billion p.a.
- ④ Who pays?  
Each country waives its ECB's seigniorage income to the agency, until full repayment of perpetuities



# Financing details

- Capital shares of ECB = seigniorage costs to member countries

Austria	Belgium	Cyprus	Estonia	Finland	France
2.77%	3.46%	0.19%	0.25%	1.78%	20.24%
Germany	Greece	Ireland	Italy	Latvia	Luxembourg
26.86%	2.79%	1.59%	17.84%	0.39%	0.25%
Malta	Netherlands	Portugal	Slovakia	Slovenia	Spain
0.09%	5.68%	2.53%	0.99%	0.47%	11.82%

- Bond purchases and swaps = benefits
  - In proportion of capital shares
- Costs = benefits, **country by country**



# Results

- No transfers
  - PV (seigniorage abandoned) = Value of debt restructured
    - In the aggregate
    - Country by country (transfer across generations)
- No losses to bondholders
  - Bonds purchased at maturity
  - Instantaneous capital gains (Bulow-Rogoff, 1988)
    - Can be taxed away
- No inflation
  - Debts are not monetized

# The outcome

	Initial debt (2014)		Debt reduction		Post-restructuring debt	
	€ billion	% of GDP	€ billion	% of GDP	€ billion	% of GDP
Austria	241	74.2	131	40.3	110	33.8
Belgium	394	100.5	163	41.6	231	58.9
Cyprus	19	121.1	9	57.0	10	64.1
Estonia	2	10.2	12	62.2	-10	-52.1
Finland	121	61.3	84	42.7	37	18.6
France	2026	96.2	954	45.3	1072	50.9
Germany	2186	77.2	1267	44.7	920	32.5
Greece	322	177.0	132	72.3	190	104.7
Ireland	204	120.8	75	44.4	129	78.3
Italy	2117	133.7	841	53.1	1276	80.6
Latvia	10	39.1	19	75.2	-9	-36.1
Luxembourg	12	25.4	12	24.5	0	0.9
Malta	5	71.7	4	57.2	1	14.4
Netherlands	464	75.2	268	43.4	196	31.8
Portugal	213	126.0	119	70.5	94	55.6
Slovakia	43	57.9	46	62.7	-4	-4.8
Slovenia	27	74.6	22	61.5	5	13.1
Spain	1024	98.7	557	53.7	466	45.0
Eurozone	9430	95.9	4715	47.9	4715	47.9

# Easy, but...

- Can we afford it?
- Moral hazard is huge because it's so painless
- Variants

# Is seigniorage income sufficient?

- Simple calculation over infinite horizon (Buiter and Rahbari, 2012)

- Annual seigniorage

$$S_t = C_t - C_{t-1}$$

- PV

$$R_t = \sum_{j=0}^{\infty} \frac{S_{t+j}}{(1+i)^j} \quad \left. \vphantom{\sum_{j=0}^{\infty}} \right\} R_t = \frac{1+i}{i-\mu} \mu C_0$$

- Future supply of money

$$C_{t+j} = (1+\mu)^{j+1} C_0$$

- Future demand for money

$$C_t = kY_t^\alpha P_t \longrightarrow 1 + \mu = (1 + \pi)(1 + \gamma)^\alpha$$

- Seigniorage flow

$$S_t = [(1 + \pi)(1 + \gamma)^\alpha - 1](1 + \mu)^t C_0$$

# Is seigniorage income sufficient?

- Financing need: € 4700 billion
- Assumptions:
  - Inflation always remains 2%
  - Elasticity = 0.8

		Annual real growth rate		
		1%	1.5%	2%
Nominal interest rate	3%	14380	Infinite	Infinite
	3.5%	3899	11001	Infinite
	4%	2265	3949	9317

# Country moral hazard: the covenant

- Each country signs a covenant
  - Includes a country by country debt/GDP limit
  - Ex.: Post-restructuring + 10% of GDP Cyprus: 64% + 10%
- When limit reached by 1%: reverse swap
  - Agency converts perpetuities worth 1% of GDP back into bonds 74%
  - Not discretionary 75%
- Any further 1% excess: further conversion 76%
- Immediate market sanctions 77%
- Immediate market sanctions Etc.

# Collective moral hazard: the covenant

- Collective moral hazard
  - Like in 2010: a bailout of some sort for one country?
- Any such decision to be voted upon
  - Countries that refuse a deal: excused from loss
  - Losses shared by those who vote for deal

# Conclusions

- Why does it work?
  - Deals with inefficiencies
    - Growth and policy externalities
    - Multiple equilibria (runs on debts, runs on banks)
    - International externality but political objections to internalization
  - Can strengthen fiscal discipline
- Feasible and many variants
  - A blueprint, not a fully worked out plan
  - Main objection: Eurosystem must absorb temporary losses



# Loose end: Borrowing Cost

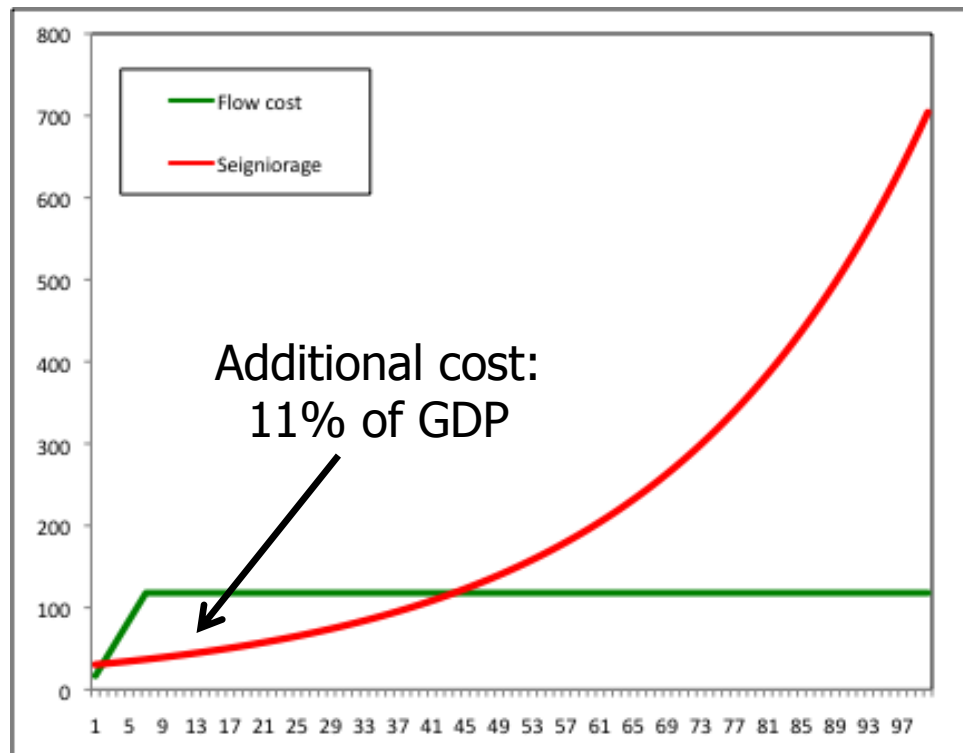
- At what rate can the agency borrow?
  - Risk of inter-country transfers
  - Average?
  - Lowest (best collateral)?
  - Case of ESM: 2.26% vs. 1.62% (Germany)

# Loose ends : time profile

- Time profile
  - Early on: buy debts
  - Seigniorage grows with nominal GDP

# Loose end: Time profile of annual cost and income

- Early on: buy debts
- Seigniorage grows with nominal GDP



# Loose end: Which agency?

- Simplest: Eurosystem
  - ECB buys bond
  - ECB issue own debt instruments to fully sterilize bond purchases
  - ECB losses deducted from seigniorage
  - Loss capacity absorption directly tapped
  - BUT, political acceptability?
- Existing agencies
  - European Stability Mechanism (ESM)?
  - European Investment Bank?
- A new agency?

# Variants

- Just an example
- Myriads of variants possible
  - Smaller debt restructuring
  - Opting out
  - Explicit transfers
  - Limited duration
    - Note that amounts become trivial over time