Conventional wisdom on the Eurozone debt crisis:

- Having lost the ability to inflate away their debts, Eurozone governments are now vulnerable to roll-over crises.
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Question:

- How is vulnerability to roll-over crises affected by the ability to inflate?
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In this paper

- Model limited commitment to repayment and inflation
- Ability to inflate makes
  - Countries more vulnerable if inflation costs are low
  - Opposite if inflation costs are high
Key parameter

Cost of inflation: $\psi$

$\psi$

0
Cost of inflation: $\psi$

Key parameter

With the ability to inflate

Greece  Germany

0
Cost of inflation: $\psi$

Greece
With the ability to inflate

Germany
Without the ability to inflate

$\psi$

∞

0
Model ingredients

- Builds on Cole and Kehoe (00), external debt

\[ \text{Utility: } \int_{0}^{\infty} e^{-r^{\star}t} \left( u(c_t) - \psi \pi_t \right) dt \]

\[ \text{Real value of bonds, } b_t: \dot{b}_t = c_t - y + (r_t - \pi_t) b_t \]

Government lacks commitment vis-a-vis \( \pi \) and debt repayment.

Government chooses \( c, \pi \), and default taking as given an equilibrium interest rate schedule \( r(b) \).
Model ingredients

- Builds on Cole and Kehoe (00), external debt
- Small open economy, world risk free rate: $r^*$
- Constant endowment, $y$; and an initial level of debt
- Benevolent government that issues nominal bonds
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Lack of commitment

A. With the ability to inflate
   - Government can default: value $V$
     - loses access to international financial markets + other costs
   - Government can inflate ex-post: $\psi \pi$ with $\pi \in [0, \bar{\pi}]$
     - does not lose access
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B. Without the ability to inflate
   - Set $\psi = \infty$
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Which scenario (A vs. B) makes a country less vulnerable?
Equilibrium interest rate schedule of lenders

going back to that \( r(b) \)

\[
    r(b) = r^* + \pi(b) + \lambda(b)
\]

- where \( \pi(b) \) is the inflation strategy of the government
- and \( \lambda(b) \) is the default probability (including sunspots)
Equilibrium interest rate schedule of lenders

going back to that $r(b)$

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Coordination problem of the lenders

For high values of debt:
- if each lender thinks all other lenders will roll-over, no crises
- if each lender thinks all other lenders will not roll-over, then debt run
Regions of Multiplicity

Constructing debt runs

- Suppose the government cannot roll over to avoid default, needs to repay within a grace period.

To avoid default, the government may rely heavily on inflation to do this. The value of repayment depends on the cost of inflation and the debt and interest rate. If the value of repayment is below the default value, a roll-over crisis is self-fulfilling.

Properties:

- Vulnerability cutoff level $b \lambda$: Safe for $b \leq b \lambda$, vulnerable for $b > b \lambda$.

Question:

- How does the vulnerability cutoff ($b \lambda$) depend on the ability to inflate?
Regions of Multiplicity
Constructing debt runs

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  - value of repayment depends also on debt and interest rate
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- If the value of repayment is below the default value, $V$
  - roll-over crisis is self-fulfilling: vulnerable to crisis
Regions of Multiplicity

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- Suppose the government cannot roll over.
- To avoid default, needs to repay within a grace period:
  - may rely heavily on inflation to do this.
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Vulnerability Region as a function of $\psi$

Debt

0 $\psi$

Vulnerable

Safe

$b_\lambda$
Vulnerability Region as a function of $\psi$

Two extremes cases: $\psi = 0$ and $\psi = \infty$

In the first: inflate all the time
In the second: never inflate
Same vulnerability: inflation is not state contingent
Vulnerability Region as a function of $\psi$

More generally two **opposite** effects when $\psi$ increases:

- Increases the cost of repaying in case of a run
- It may reduce equilibrium inflation
- Reduces equilibrium interest rate
- Reduces the cost of repaying in case of a run
Vulnerability Region as a function of $\psi$

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A government with low cost of inflation (shaded area) better served without the option to inflate

- It reduces vulnerability region
- Lowers the temptation for inflation
- (And raises the borrowing limit)
Conclusion

A country with low inflation costs
  - is not made less vulnerable to sovereign debt crises by abandoning a monetary union

Inflation is indeed a tool that grants flexibility
  - But can be misused ex-ante
  - Rendering powerless ex-post