Slow Moving Debt Crises
by Guido Lorenzoni and Ivan Werning

Discussion by: Fabrizio Perri
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The contribution

• New model of dynamic default crisis driven by non fundamental change in expectations (SSE) about future repayment
• Argue recent episodes of turbulence in sovereign markets (Euro 2011) explained by this mechanism
• Elegant paper on a topic important policy relevant
Outline

- The paper in context (SunSpotsEquilibria in international macro)
- A brief summary
- Was the Euro crisis Slow Moving Debt Crisis?
## Currency v/s Sovereign debt crises

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1st Generation: Krugman Eaton Gersowitz, Arellano
2nd Generation: Obstfeld Calvo, Cole and Kehoe, SSE Lorenzoni and Werning ...

Aguiar et al. (macro handbook chpt.)
Boccola and Dovis
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The key elements

- Government today needs to borrow $g$ facing debt price $q$
- Financing equation: $g = bq$
- Default pricing equation $q = f(b), f' < 0$
- Example: future surplus $s \sim U[0, 1]$, defaults if $s < b$

\[
q = 1 - b \\
q = \frac{g}{b}
\]
A Calvo debt crisis

Low rate, low debt, low def. risk
A Calvo debt crisis

- Low rate, low debt, low def. risk
- High rate, high debt, high def. risk
A slow moving Calvo debt crisis

- Long term debt
- Expectations of default at some future date \( T \)
- Expectations reduces prices of new debt issuances, leading to faster debt accumulation
- Increase in debt validates the initial default expectations
Long bond price dynamics in crisis
Long bond price dynamics in crisis

![Graph showing long bond price dynamics in crisis]
Long bond price dynamics in crisis

Initial Jump

Slow moving crisis
Dynamics of long term debt pricing (eq. 8)
Dynamics of long term debt pricing (eq. 8)
Why do interest rates go up along the crisis?

- At the risky equilibrium, prob. of (terminal) default unchanged
- Interest rates climb due to the structure of long term debt.
- Long term debt with future default has two parts:
  - Safe(early) coupon part, risky(final) payment.
  - As $t$ increases the safe part shrinks, interest rates increase, price falls, but short term risk not changed.
Implications

- Increase in risk concentrated in long term debt:
- Progressive steepening of the yield curve at the onset and during the crisis
Italian Spreads at different maturities

- Short rates increase (and fall) as much (if not more) as long rates!
Slow moving debt crisis?

• Large increase of short run spreads hard to reconcile with the idea that the bulk of crisis driven by expectation of future default risk

• Alternative/complementary explanations

• Rollover risk?

• Currency crisis: expectation of collapse of the Euro?

• Fundamentals?
In favor of a currency crisis: 1

- Economist cover, November 2011
In favor of a currency crisis: 2

- Very similar spreads in 2 countries with very different fiscal positions
Figure 6: Decomposition of Italian Spreads

- The risk premium accounts for 170 basis points, roughly 35% of the observed spread. This is mainly driven by the behavior of the lenders' risk aversion estimated earlier: risk premia were sizable for most securities at the time, and this had adverse implications on the price of Italian bonds.

- Movements in default risk account for the remaining fraction of spreads. Rollover risk (green shaded area) represented a sizable component of the default probability in our sample. In 2011:Q3, it was responsible for 120 basis points, roughly 30% of the yields differential between Italian and German bonds at the time. From that point on, though, it gradually declined and became negligible toward the end of the sample. Note that this decline in rollover risk is not coming from a reduction in $\{p_t\}$. Rather, it is the result of a decline in the probability of falling into the crisis zone in the future generated by a decline in the debt issuance of the government. Alongside rollover risk, the probability of a fundamental default (blue shaded area) is the key contributor to the spreads in our sample.

- Overall, our findings suggest that expectations of future coordination failures among bondholders were an important determinant of Italian spreads during the second half of 2011. Their role, however, became negligible toward the end of our sample. Our calculations imply that bad domestic fundamentals and high risk aversion in European financial markets accounted for the bulk of the observed variation in Italian spreads.

- Bocola and Dovis, 2015
Conclusions

- Elegant model of a dynamic slow moving self-fulfilling debt crisis
- Not yet clear whether this mechanism is the leading cause of the Euro crisis