

Discussion of: Estimating Sovereign Default Risk by Huixin Bi and Nora Traum

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Summary

- Thought provoking paper to read on a topical issue
 - ▶ What is the probability that Greece or Italy will default?
 - ▶ Important question as EMU eliminated the old fashioned solution to sovereign debt problems
- Novel contribution to the sovereign default literature
 - ▶ Paper develops a RE framework to extract model based probabilities
 - ▶ Difficult because we don't observe default in this dataset
 - ▶ Solution is to use RE model to infer default probabilities

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Summary Suggestions

- Explain and justify the choices made in developing the model
- Default probabilities are model dependent
 - ▶ Issue 1: Are we convinced that the choices here are the best ones?
 - ▶ Issue 2: Are we convinced that the model fits the data?
 - ▶ Are we to take the empirical results seriously, or is this just introducing a methodology?

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Model Structure

- Two separate closed economies
- Government taxes, borrows (and defaults) from its own citizens
 - ▶ This is a departure from most of the literature
 - ▶ Borrowing is usually from abroad
 - ▶ Small open economy structure is usually used
 - ▶ In the data, much of Greece's debt is held abroad
 - ▶ The model treats Greece's debt as domestic
- Doesn't the probability of default/fiscal limit depend on who you owe and the penalty for default?
- While a small open economy is a different paper, the choice needs to be discussed

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Production and Preferences

- Production uses only labor and not capital
 - ▶ This may be to limit the number of state variables used in the nonlinear estimation
- But preferences use habit formation, which adds a state variable
- Dropping habit and adding capital is a better choice
 - ▶ We know from the asset pricing literature that habit formation yields excessively volatile bond prices
 - ▶ The absence of capital means that consumption smoothing only happens through government debt
 - ▶ Both issues affect the pricing kernel and hence the default probability/fiscal limit

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Government

- Distortionary taxation is stochastic
- Government spending is stochastic
- The fiscal limit and hence defaults are stochastic
- Debt is the data
- These assumptions make the model tractable
 - ▶ Greece faces a choice of default, cut g , or increase τ
 - ▶ Are the probabilities/fiscal limit upper bounds?

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Econometric Procedure

- Nonlinear solution with particle filter
- Computational expensive, but needed for this type of model
- Do we trust the Monte Carlo results?
 - ▶ Convergence checks for the MCMC algorithm
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How well does the model fit the data?

- Government variables seem to match the data
 - ▶ But these are stochastic processes designed to do this
- Output doesn't fit as well (potentially a problem as the G part does, there is no I or NX, so C is probably bad)
- C is in the pricing kernel so getting it right is important
- What about second moments for endogenous variables?

Conclusion

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- Novel contribution to the Sovereign default literature
- Suggested 'to do' list
 - ▶ Justify better the government and closed economy setups
 - ▶ Try dropping habit and adding capital
 - ▶ Report some more information on the econometric procedure so we can better trust the results
- Paper should become a standard reference in this literature

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