Sovereign Default and Government Reputation by S. Fourakis

Francisco Roldán IMF

Fiscal Policy in an Era of High Debt IMF, November 2023

The views expressed herein are those of the authors and should not be attributed to the IMF, its Executive Board, or its management.

The want operator

A **theory** that

- reminds you of how people outside the model talk about sovereign risk
 ... Reinhart, Rogoff & Savastano (2003): countries differ in their 'debt tolerance'
- · features information and inference about sovereign default
 - ... Hamilton: assume the states' debts and pay them to ensure better terms
- · does not rely on failures of rationality or optimization
 - ... Discipline: agents apply Bayes' rule on equilibrium strategies

Reputation and sovereign risk

Standard model of sovereign debt, default, renegotiation

- · Two types for the government
 - One of them will face better borrowing terms ...call it a responsible type
 - ... Signalling target for the other type
 - Both types optimize
 - ... Responsible wants to separate, Irresponsible wants to pool
 - · Reputation is the *investors*' belief that the government is responsible
- Types alternate, information never revealed
 - ... $0 < \underline{\pi} \le \text{Reputation} \le \bar{\pi} < 1$
- · Preference shocks everywhere, no observation is perfectly revealing
 - ... Reputation is a continuous variable
 - ... Cannot fully separate, cannot fully pool

Reputation and sovereign risk

Standard model of sovereign debt, default, renegotiation

- · Two types for the government
 - · One of them will face better borrowing terms ...call it a responsible type
 - ... Signalling target for the other type
 - Both types optimize
 - ... Responsible wants to separate, Irresponsible wants to pool
 - · Reputation is the *investors*' belief that the government is responsible
- · Types alternate, information never revealed
 - ... $0 < \underline{\pi} \le Reputation \le \overline{\pi} < 1$
- · Preference shocks everywhere, no observation is perfectly revealing
 - ... Reputation is a continuous variable
 - ... Cannot fully separate, cannot fully pool

Choosing the types

Who pretends to be which type?

- · Size of past haircut
 - ... does not affect spreads in first three years
 - ... correlates with higher spreads later on
- Higher β with higher cost of default
- → debt paths do not cross
- → debt choice reveals type

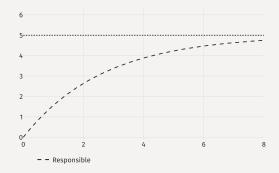
Choosing the types

Who pretends to be which type?

- Size of past haircut
 - ... does not affect spreads in first three years
 - ... correlates with higher spreads later on
- · Higher β with higher cost of default
- ⇒ debt paths do not cross
- ⇒ debt choice reveals type

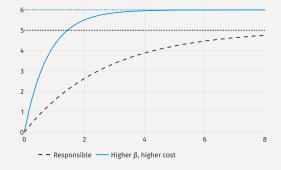
Who pretends to be which type?

- · Size of past haircut
 - ... does not affect spreads in first three years
 - ... correlates with higher spreads later on
- · Higher β with higher cost of default
- ⇒ debt paths do not cross
- → debt choice reveals type



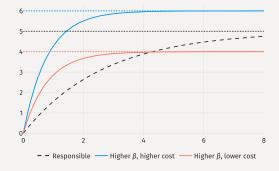
Who pretends to be which type?

- · Size of past haircut
 - ... does not affect spreads in first three years
 - ... correlates with higher spreads later on
- Higher β with higher cost of default
- ⇒ debt paths do not cross
- ⇒ debt choice reveals type



Who pretends to be which type?

- · Size of past haircut
 - ... does not affect spreads in first three years
 - ... correlates with higher spreads later on
- Higher β with higher cost of default
- ⇒ debt paths do not cross
- ⇒ debt choice reveals type



Reputation

Theory

Models with types

Rational expectations

- · If I want to convince you that I am of type au, type au must have a prior probability
- Need to think about each type's behavior
- · Signalling style is a hybrid of two polar styles

Political economy

- Alternating protagonists
- Full information
- Observe when the type changes
 - · Elections natural counterpart
- Evaluate other type's strategy with owr preferences

Game theory

- Multitude of behavioral types
- Prior > 0 but do not try to separate
- · One rational type (protagonist)
- · Often rely on announcements
- · Who to include?
 - ... lower types to separate
 - ... higher types to disguise

Models with types

Rational expectations

- · If I want to convince you that I am of type au, type au must have a prior probability
- Need to think about each type's behavior
- · Signalling style is a hybrid of two polar styles

Political economy

- Alternating protagonists
- Full information
- · Observe when the type changes
 - · Elections natural counterpart
- Evaluate other type's strategy with own preferences

Game theory

- Multitude of behavioral types
- Prior > 0 but do not try to separate
- One rational type (protagonist)
- · Often rely on announcements
- · Who to include?
 - ... lower types to separate
 - ... higher types to disguise

Models with types

Rational expectations

- · If I want to convince you that I am of type au, type au must have a prior probability
- Need to think about each type's behavior
- · Signalling style is a hybrid of two polar styles

Political economy

- · Alternating protagonists
- Full information
- · Observe when the type changes
 - · Elections natural counterpart
- Evaluate other type's strategy with own preferences

Game theory

- Multitude of behavioral types
- · Prior > 0 but do not try to separate
- One rational type (protagonist)
- · Often rely on announcements
- Who to include?
 - ... lower types to separate
 - ... higher types to disguise

Reputation

Applications

How to do transparency?

- Evaluation of transparency initiatives
 - ... through making the types common knowledge
- Both types worse off!
 - \cdot No confusion between types \implies Irresponsible cannot enjoy low spreads
 - \cdot Debt dilution with perfect info \implies separation curbs overborrowing
- Model has a more direct way to do this
 - Just reduce the variance of preference shocks
 - Lower cover means:
 - ... actions are more revealing
 - ... higher incentives to mimic
 - · Often reputation models have a discontinuity at zero reputation
 - ... Here Reputation $\geq \pi > 0$...

How to do transparency?

- Evaluation of transparency initiatives
 - ... through making the types common knowledge
- Both types worse off!
 - \cdot No confusion between types \implies Irresponsible cannot enjoy low spreads
 - \cdot Debt dilution with perfect info \implies separation curbs overborrowing
- Model has a more direct way to do this
 - Just reduce the variance of preference shocks
 - · Lower cover means:
 - ... actions are more revealing
 - ... higher incentives to mimic
 - · Often reputation models have a discontinuity at zero reputation
 - ... Here Reputation $\geq \underline{\pi} > 0$...

How to do transparency?

- Evaluation of transparency initiatives
 - ... through making the types common knowledge
- Both types worse off!
 - \cdot No confusion between types \implies Irresponsible cannot enjoy low spreads
 - \cdot Debt dilution with perfect info \implies separation curbs overborrowing
- · Model has a more direct way to do this
 - Just reduce the variance of preference shocks
 - · Lower cover means:
 - ... actions are more revealing
 - ... higher incentives to mimic
 - · Often reputation models have a discontinuity at zero reputation
 - ... Here Reputation $\geq \pi > 0$...

How to do fiscal rules?

If fiscal rules disrupt signalling motives, they could lead to higher borrowing!

· Different angle for the reputationally-minded

Game Theory style (blueprint from Kostadinov & Roldán, 2023)

- · Conceptualize fiscal rules as b'(b,z), proliferate behavioral types
- · Add preference or control shocks
- · Announce optimally one type/rule. Take limit as probability of rational to 1
- · How closely does the rational type mimic the rule? measure of credibility
- · Tradeoff between literal promise and credibility

How to do fiscal rules?

If fiscal rules disrupt signalling motives, they could lead to higher borrowing!

· Different angle for the reputationally-minded

Game Theory style (blueprint from Kostadinov & Roldán, 2023)

- · Conceptualize fiscal rules as b'(b,z), proliferate behavioral types
- · Add preference or control shocks
- · Announce optimally one type/rule. Take limit as probability of rational to 1
- · How closely does the rational type mimic the rule? measure of credibility
- · Tradeoff between literal promise and credibility

Concluding remarks

- Fantastic work pushing the boundary on a first-order question ... Should there be an extra state in sovereign debt models?
- · Smart reinterpretation of elements in the literature
 - ... Especially on the data front to determine the types
- · Nascent literature on applications of reputation in macro
 - ... many open questions:
 - ... Loose reputations?
 - ... Global reputations?