Discussion of A Theory of International Official Lending

by Q. Liu, Z. Liu, and V. Yue

Francisco Roldán IMF

Fiscal Policy and Sovereign Debt IMF, April 2025

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

This paper seeks a theory which

- rationalizes the seniority structure of sovereign debt
 - ... marketable debts: can default, high recovery
 - ... official bilateral (Paris Club) debt: can default, low recovery
 - ... multilateral debt: cannot default
- relates seniority to information and monitoring
 - ... official bilaterals provide debt relief in "justified" defaults
- helps understand and/or design the sovereign debt architecture

Main result

Market + PC + IMF decentralizes a constrained-optimal allocation
 Constraints from information frictions + moral hazard

The want operator

This paper seeks a theory which

- rationalizes the seniority structure of sovereign debt
 - ... marketable debts: can default, high recovery
 - ... official bilateral (Paris Club) debt: can default, low recovery
 - ... multilateral debt: cannot default
- relates seniority to information and monitoring
 - ... official bilaterals provide debt relief in "justified" defaults
- helps understand and/or design the sovereign debt architecture

Main result

- · Market + PC + IMF decentralizes a constrained-optimal allocation
 - ... Constraints from information frictions + moral hazard

1



Decentralization

Constrained-optimal allocation

- State variable: promised utility v
- Goods c(v), m(v) at utility v
- · Values $v^{z,s}(v)$ after TFP z, signal s
 - ... $v^{H,s}(v)$ constant
- · Constraints
 - ... PK: deliver v at state v
 - ... IC: no gambling for A_H
 - ... SUST: no reverting to autarky
 - ... P: non-negative profits
- Timing is key!
 - can cheat before seeing type (IC)
 - can cheat and not export (SUST)
 - cannot cheat after seeing type

Equilibrium with three types of debt

- Taxes to control consumption
- Three types of debt
 - ... to generate three cont. values
- Multilatera
 - ... undefaultable
- Bilateral
 - ... reduction when z = s = L
- Marke
 - ... defaultable (gov't choice after s)
 - ... when *SUST* binds
- Dynamics: $v^H(v) > v \leq v^{L,s}(v)$
- · Gov't and lenders share eta

Decentralization

Constrained-optimal allocation

- State variable: promised utility v
- Goods c(v), m(v) at utility v
- Values $v^{z,s}(v)$ after TFP z, signal s ... $v^{H,s}(v)$ constant
- Constraints
 - ... PK: deliver v at state v
 - ... IC: no gambling for A_H
 - ... SUST: no reverting to autarky
 - ... P: non-negative profits
- Timing is key!
 - · can cheat before seeing type (IC)
 - can cheat and not export (SUST)
 - · cannot cheat after seeing type

Equilibrium with three types of debt

- Taxes to control consumption
- Three types of debt
 - ... to generate three cont. values
- Multilateral
 - ... undefaultable
- Bilateral
 - ... reduction when z = s = L
- Market
 - ... defaultable (gov't choice after s)
 - ... when SUST binds
- Dynamics: $v^H(v) > v \leq v^{L,s}(v)$
- Gov't and lenders share β

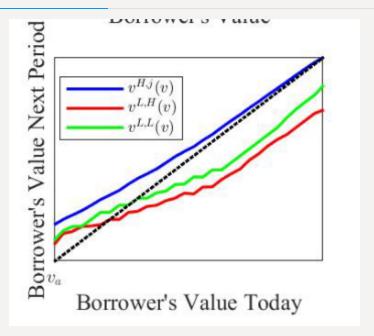
Decentralization

Constrained-optimal allocation

- State variable: promised utility v
- Goods c(v), m(v) at utility v
- Values v^{z,s}(v) after TFP z, signal s
 ... v^{H,s}(v) constant
- Constraints
 - ... PK: deliver v at state v
 - ... IC: no gambling for A_H
 - ... SUST: no reverting to autarky
 - ... P: non-negative profits
- · Timing is key!
 - can cheat before seeing type (IC)
 - can cheat and not export (SUST)
 - cannot cheat after seeing type

Equilibrium with three types of debt

- Taxes to control consumption
- Three types of debt
 - ... to generate three cont. values
- Multilateral
 - ... undefaultable
- Bilateral
 - ... reduction when z = s = L
- Market
 - ... defaultable (gov't choice after s)
 - ... when SUST binds
- Dynamics: $v^H(v) > v \leq v^{L,s}(v)$
- Gov't and lenders share β



Three and a Half Comparisons

Efficient Sovereign Default

- Setup reminiscent of Dovis (2019)
 - ... plus the signals
- · Critical difference in timing: choose action after observing type
 - ... or TFP shock affects the consumption good rather than exports
- Revelation principle: gov't reports A, planner allocates subject to IC, SUST, PK, I
- Decentralize with short debt and consol
- Can give m^* because when v is large, the country wants to keep going
 - ... here it is always tempting to gamble
 - ... empirical predictions about imports?

Efficient Sovereign Default

- · Setup reminiscent of Dovis (2019)
 - ... plus the signals
- · Critical difference in timing: choose action after observing type
 - ... or TFP shock affects the consumption good rather than exports
- · Revelation principle: gov't reports A, planner allocates subject to IC, SUST, PK, P
- · Decentralize with short debt and consol
- Can give m^* because when v is large, the country wants to keep going
 - ... here it is always tempting to gamble
 - ... empirical predictions about imports?

Efficient Sovereign Default

- Setup reminiscent of Dovis (2019)
 - ... plus the signals
- · Critical difference in timing: choose action after observing type
 - ... or TFP shock affects the consumption good rather than exports
- · Revelation principle: gov't reports A, planner allocates subject to IC, SUST, PK, P
- · Decentralize with short debt and consol
- · Can give m^* because when v is large, the country wants to keep going
 - ... here it is always tempting to gamble
 - ... empirical predictions about imports?

Non-Defaultable Debt and Sovereign Risk

- Decentralization reminiscent of Hatchondo, Martinez, and Onder (2017) ... plus the bilateral lender (signals)
- · Critical difference: restriction to Markov-perfect equilibrium

Non-Defaultable Debt and Sovereign Risk

- Decentralization reminiscent of Hatchondo, Martinez, and Onder (2017)
 ... plus the bilateral lender (signals)
- · Critical difference: restriction to Markov-perfect equilibrium
- · Multilateral lender increases gov't welfare, but only for a while
- In MPE, pecking order of lending sources
 - · First max out risk-free lending, may take longer depending on β
 - · When m is exhausted, model isomorphic to one-lender, $\tilde{y}(z) = y(z) rm$
- Best equilibrium stipulates borrowing pattern from Multilateral
 ... With uninformative signals, how different is borrowing from M

Non-Defaultable Debt and Sovereign Risk

- · Decentralization reminiscent of Hatchondo, Martinez, and Onder (2017)
 - ... plus the bilateral lender (signals)
- · Critical difference: restriction to Markov-perfect equilibrium
- · Multilateral lender increases gov't welfare, but only for a while
- In MPE, pecking order of lending sources
 - · First max out risk-free lending, may take longer depending on β
 - · When *m* is exhausted, model isomorphic to one-lender, $\tilde{y}(z) = y(z) rm$
- Best equilibrium stipulates borrowing pattern from Multilateral
 - \dots With uninformative signals, how different is borrowing from M

The Perils of Bilateral Sovereign Debt

- · Roldán and Sosa-Padilla (2025) has market + bilateral lender
 - · Bilateral lender is undefaultable but bargains over borrowing terms
 - · Key result: bilateral interest rate aggressively decreasing in market spreads
 - · Welfare is hurt by the presence of the bilateral lender

- Here adding both IMF and PC help
 - In best SPE, should be obvious
 - What about worst SPE? (as in Dovis and Kirpalani, 2025)

The Perils of Bilateral Sovereign Debt

- · Roldán and Sosa-Padilla (2025) has market + bilateral lender
 - · Bilateral lender is undefaultable but bargains over borrowing terms
 - · Key result: bilateral interest rate aggressively decreasing in market spreads
 - · Welfare is hurt by the presence of the bilateral lender

- Here adding both IMF and PC help
 - · In best SPE, should be obvious
 - · What about worst SPE? (as in Dovis and Kirpalani, 2025)

Questions and Comments

Comments

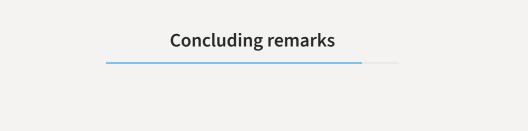
- · How different is the best SPE from an MPE here? With two lenders, quite different
- · Would like to see much more the issuance decisions and tradeoffs in equilibrium
 - ... how much myopic losses are there for the government?
- Quibble: is $L(v) = \max_{\sigma \in \Sigma} L(\sigma)$ subject to $v(\sigma) = v$ important?
- Clarification of timing
 - ... Mapping to untargeted features of the data?
 - When does official debt relief come? How does it correlate with default?
- What is the incentive constraint of the bilateral lender?
- · How do the three interest rates compare? Is $r^{\sf OM} < r^{\sf OB} < r^{\sf M}$?

Comments

- · How different is the best SPE from an MPE here? With two lenders, quite different
- · Would like to see much more the issuance decisions and tradeoffs in equilibrium
 - ... how much myopic losses are there for the government?
- Quibble: is $L(v) = \max_{\sigma \in \Sigma} L(\sigma)$ subject to $v(\sigma) = v$ important?
- Clarification of timing
 - ... Mapping to untargeted features of the data?
 - ... When does official debt relief come? How does it correlate with default?
- What is the incentive constraint of the bilateral lender?
- · How do the three interest rates compare? Is $r^{\sf OM} < r^{\sf OB} < r^{\sf M}$?

Comments

- · How different is the best SPE from an MPE here? With two lenders, quite different
- Would like to see much more the issuance decisions and tradeoffs in equilibrium
 - ... how much myopic losses are there for the government?
- Quibble: is $L(v) = \max_{\sigma \in \Sigma} L(\sigma)$ subject to $v(\sigma) = v$ important?
- Clarification of timing
 - ... Mapping to untargeted features of the data?
 - ... When does official debt relief come? How does it correlate with default?
- What is the incentive constraint of the bilateral lender?
- How do the three interest rates compare? Is $r^{OM} < r^{OB} < r^{M}$?



A Theory of International Official Lending

- Very nice paper!
- Market + IMF + PC decentralizes a best equilibrium
 ... if the moral hazard + signal structure is the relevant friction
- Who is the bilateral lender? What are we asking of them?