Discussion of
“Trade Credit, International Reserves
and Sovereign Debt”
by E. Kohlscheen and S. O’Connell

Alberto Martin
CREI and UPF
March 2008
Why do countries repay their debts?

- View recently emphasized: decline in trade
- Why does trade decline? Fall in trade credit

Goal: provide unified view of debt, trade credits, and reserves

Main idea:

- At time of repayment: renegotiation
- During renegotiation: no access to trade credit
- Reserves are substitutes for trade credit
- Renegotiation is less costly if country has reserves

These predictions are contrasted with data on “haircuts”
Sketch of model (No Trade Credit)

- Infinite periods, Today \((t = 0)\), Tomorrow \((t = 1)\) and Beyond \((t > 1)\)

- Small, open economy (Debtor)
  - No endowment Today
  - Utility: linear and monotonic in expected consumption Tomorrow and Beyond
    - Discount rate \(d\)
  - Investment opportunity: 1 unit of investment Today yields random output \(Q\) Tomorrow
    - Need for borrowing

- Debtor can borrow from the international financial market to
  - Invest in project
  - Buy reserves: one-period international bonds that pay \(1 + r\), where \(r < d\)

- Today, Debtor borrows \(B\) units \(\begin{cases} 1 & \text{for investment project} \\ \frac{R}{1+r} & \text{for reserves} \end{cases}\)
Repayment

- Problem: Debtor cannot commit to repay

- In the absence of default penalties, Debtor never repays Tomorrow
  - Anticipating this, international market does not lend
  - Consumption and welfare are zero

- What if the international market can impose sanctions?
  - If Debtor does not repay, creditors seize $\alpha \cdot Q$
    - Debtors lose $\alpha \cdot Q$
    - Creditors collect $(1 - \mu) \cdot \alpha \cdot Q$

- Deadweight loss of $\mu \cdot \alpha \cdot Q$

In equilibrium, deadweight losses are renegotiated away:

- Rubinstein alternating offers
  - Debtor and Creditors alternate offers from Tomorrow onwards
  - Renegotiation costly: Debtor cannot consume until dispute is resolved
Equilibrium with renegotiation

- Since either Debtor or the creditors can repudiate and walk away:
  - Debtor gets \( (1 - \alpha) \cdot Q + R \cdot (1 + r) \)
  - at least \( (1 - \alpha) \cdot Q + R \cdot (1 + r) \)
  - at most \( (1 - \alpha + \mu \cdot \alpha) \cdot Q + R \cdot (1 + r) \)

- Question: how is the surplus divided in equilibrium?

- In equilibrium
  - No delay: dispute resolved Tomorrow
  - Division of surplus depends on relative impatience: Debtor gets
    \[ \frac{r}{r + d} \cdot Q \]
    as long as the repudiation constraints are not binding
  - No incentive for the country to hold reserves, \( R = 0 \)
In model without trade credit

- Predictions on “Haircuts”:
  - Increase with initial debt $B$
  - Increase with lender’s relative impatience $\frac{r}{r + d}$
  - Decrease with output $Q$

- 3 of the 4 predictions tested empirically by the authors do not rely on trade credit
Simple model with trade credit

- As before, but: from Tomorrow onwards, Debtor receives \( y \) of exportable good in every period

- Assumption 1: Debtor needs trade credit in order to export \( y \)

- Assumption 2: During renegotiation, no access to trade credit
  - In this case, Debtor looses a fraction \( T \left( \frac{R}{y} \right) \) per unit exported
  - \( T \left( \frac{R}{y} \right) \) is inversely related to “liquidity”, so that \( T' \left( \frac{R}{y} \right) < 0 \)

- Clearly, this makes delay in renegotiation more costly
  - In the absence of reserves, the Debtor gets
    \[
    \frac{r}{r + d} \cdot Q - \frac{1}{r + d} \cdot T \left( \frac{0}{y} \right) \cdot y
    \]
    - Reserves decrease cost of renegotiation: Debtor extracts better deal

- New predictions on “Haircuts”:
  - Decrease with exports
In my view, the paper attempts to analyze two things

1. Relationship between reserves and foreign debt
   - Why would countries borrow to accumulate reserves?
   - Indeed, the paper claims its main findings are:
     - Reserves provide liquidity under debt distress
     - Reserves allow borrower to extract a better deal (decrease impatience)
     - Reserves shift bargaining power towards borrower in negotiation

2. Relationship between repayment and trade credit
   - What is the importance of trade credit in determining repayment?
Relationship between reserves and foreign debts

- We know that reserve accumulation might be relevant under sovereign risk
  - If default leads to autarky, reserves might be useful for
    - consumption smoothing
    - investment financing
  - More generally, span of domestic and foreign bonds (i.e., reserves) differ under potential default
  - Hence, reserves are certainly relevant when default is a possibility

- This point: Alfaro and Kanczuk (2006)
  - Output is stochastic
  - Default leads to autarky
  - Reserves are valuable for consumption smoothing
General point made by the authors is not new

- New ingredient: trade credit component
- Also, use of reserves during renegotiation: Alfaro and Kanczuk focus on autarky
  - Role of patience?
  - Is Rubinstein bargaining reasonable in this setting?
What would we want to learn from such a paper?

- Why is trade credit disrupted after a default? How crucial is this?
- What are the empirical implications?

The model is silent on the relevance of trade credit:

- It is assumed to be necessary for trade
- It is assumed to be interrupted once the country defaults
  - All trade credit is interrupted, not only between defaulter/defaultee

On empirics

- Most empirical results do not require trade credit channel
- Only the link between exports and haircuts seem specific to the model:
  - On this, there could be other channels (for example, some exports can be seized)
  - What particular predictions could be unique to the trade credit channel?
**Conclusions**

- Interesting paper on relevant topic
- Combines many ingredients, but main message is unclear
- In my view, could benefit from more focused message and empirics