

Discussion of:

“A Gravity Model of Sovereign Lending: Trade,
Default, and Credit”

by Andrew K. Rose and Mark M. Spiegel

and

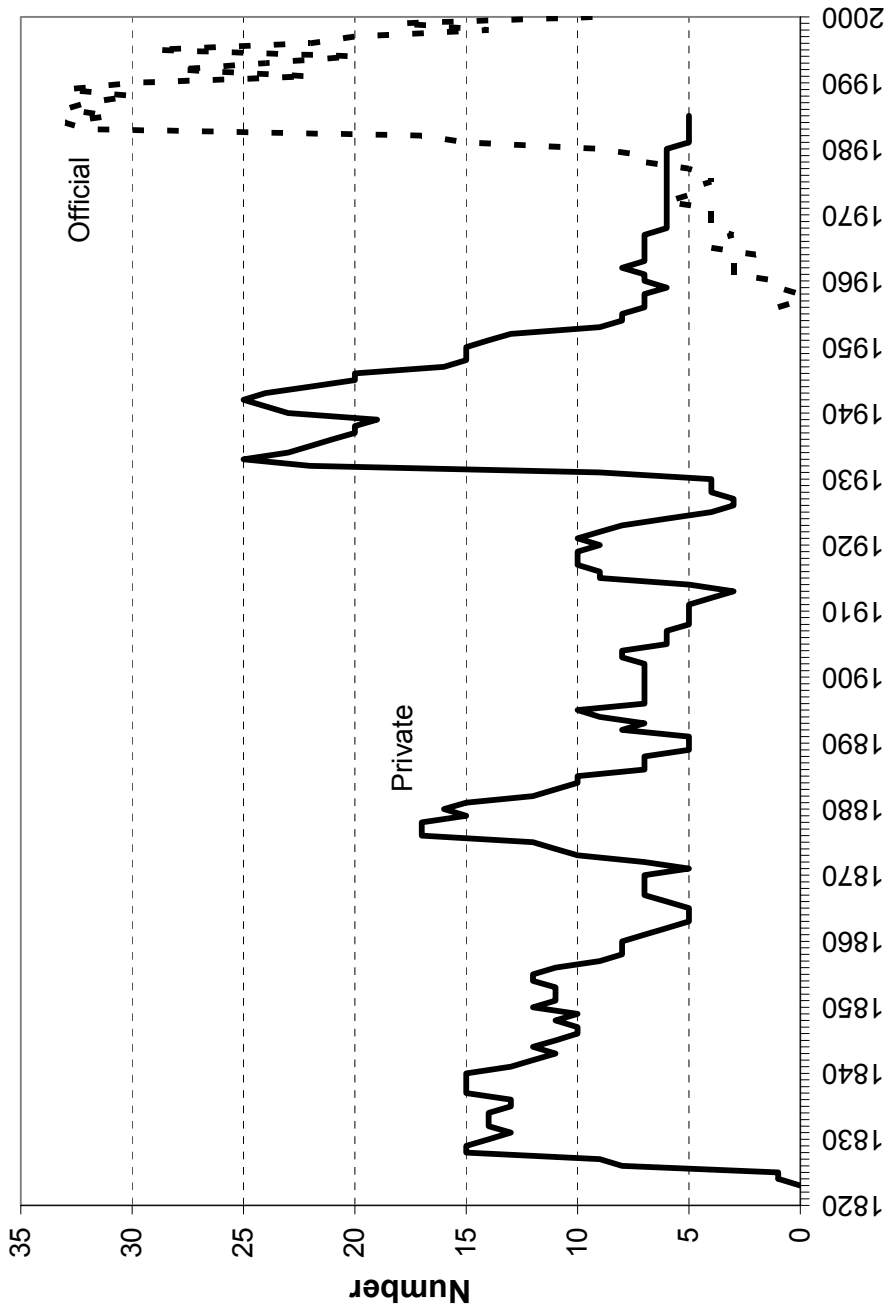
“How Private Creditors Fared in Emerging Debt
Markets, 1970-2000”

by Christoph Klingen, Beatrice Weder
and Jeromin Zettelmeyer

Mark L. J. Wright
Stanford University

IMF Research Conference, November 2003

Two Centuries of Default



Sovereign Default

- Sovereign default is not uncommon
 - default episodes occur with surprising regularity (50 year cycles ...?!)
- Default appears to be very costly, both to country itself and creditors
 - can we do better?
- In order to talk sensibly about “reforming the international financial architecture,” we need a clear understanding of
 - the forces governing the incentives of both creditors and defaulting countries
 - the way institutions and governments affect these incentives

Default: Theory is Ahead of Evidence

- Much theory on the incentives of defaulting country
 - Legal sanctions (post FSI Act)
 - Reputation: loss of future credit market access (Eaton & Gersovitz 1981)
 - Reputation spillovers outside credit market (Cole & Kehoe 1997)
 - Trade & trade credit sanctions (Bulow & Rogoff 1989, Kaletsky 1985, Rose 2002)
- Some theory on incentives of creditors
 - credibility of embargoes (Bulow & Rogoff 1989, Kletzer & B. Wright 2000, M. Wright 2003a)
 - institutions for cooperation amongst creditors (Eichengreen & Portes 1989, Mauro, Sussman & Yafeh 2003, M. Wright 2003b)
- Much less empirical evidence

Contribution of Papers

- RS and KWZ uncover several facts about sovereign lending and default which we can use to, first, discriminate between theories, and second, to build a framework within which potential reforms can be assessed
- RESULT 1 (RS): Bilateral (bank) debt stocks increase with bilateral trade flows
 - Argue that this is evidence in favor of trade sanctions or loss of trade credit as important cost of default
- RESULT 2 (KWZ): From 1970-2000, ex post returns on emerging market debt low (similar to US Treasury securities)
 - driven mostly by 1980s crisis: spreads -3 to -5% from 1970-1989
 - returns very positive in Brady restructurings: spreads $>>10\%$ 1989-1994 (unexpected value added?)
 - returns more modest through end of 1990s: spreads 6% 1994-2000 (imply bailouts not a big factor?)

Result 1: Direction of Debts

- RS add real trade to a gravity equation for financial trade
 - stocks of bank debt by country on consolidated basis (not flows)
- Find a significant effect: a 10% increase in trade increases debt stocks by roughly 5%
- May not be surprising that debt *stocks* are well described by gravity equation
 - Rey and Portes (2002): cross border equity *flows* fit gravity model
- Surprising that trade flows have additional explanatory power

Result 1: Direction of Debts (2)

- Issues in specification:
 - bank debt *versus* bond debt: bank trade finance?
 - Nationality of headquarters? or branch?
- Issues in interpretation:
 - If pattern is driven by default, why is pattern stronger for industrial countries?
 - Why don't we observe trade sanctions? Discrimination in renegotiation?
- Let's punt on these issues and take the results at face value.
- Question: can this fact be explained by a model of credit market reputation? Answer: yes (but it takes some work to avoid counterfactual predictions for gross flows)

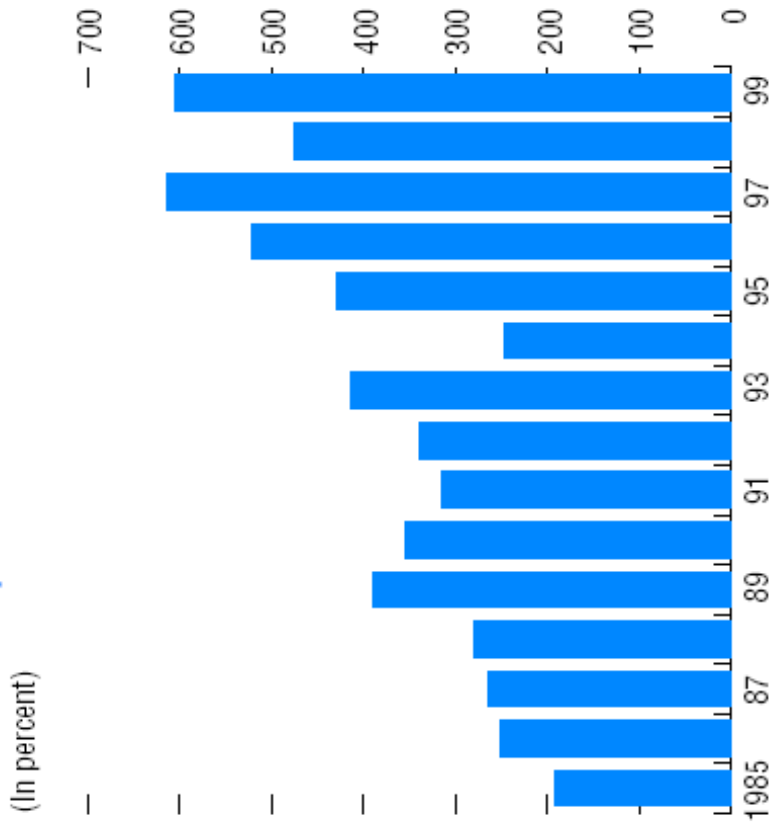
Result 1: Direction of Debts (3)

- Consider a version of the simplest reputation model of sovereign debt (Eaton and Gersovitz (1981))
 - results hold much more generally
- There are two risk neutral creditor countries and one risk averse debtor country
- Lending occurs to smooth consumption
- Lending patterns will be designed to reduce (eliminate) the possibility of default

Result 1: Direction of Debts (4)

- Default possibilities are minimized by keeping gross flows as small as possible (equal to net flows)
 - Loosely speaking, if gross flows are larger than net flows, the debtor can strategically default at the point when the most resources are under its control
- This implies that financial flows (and hence their corresponding stocks) should follow trade flows
- BUT, it also implies we should observe small gross flows: reputation model inconsistent with large gross flows
 - in the data, gross flows are much larger than net flows
 - (this is a common criticism of reputation models: Obstfeld and Rogoff)

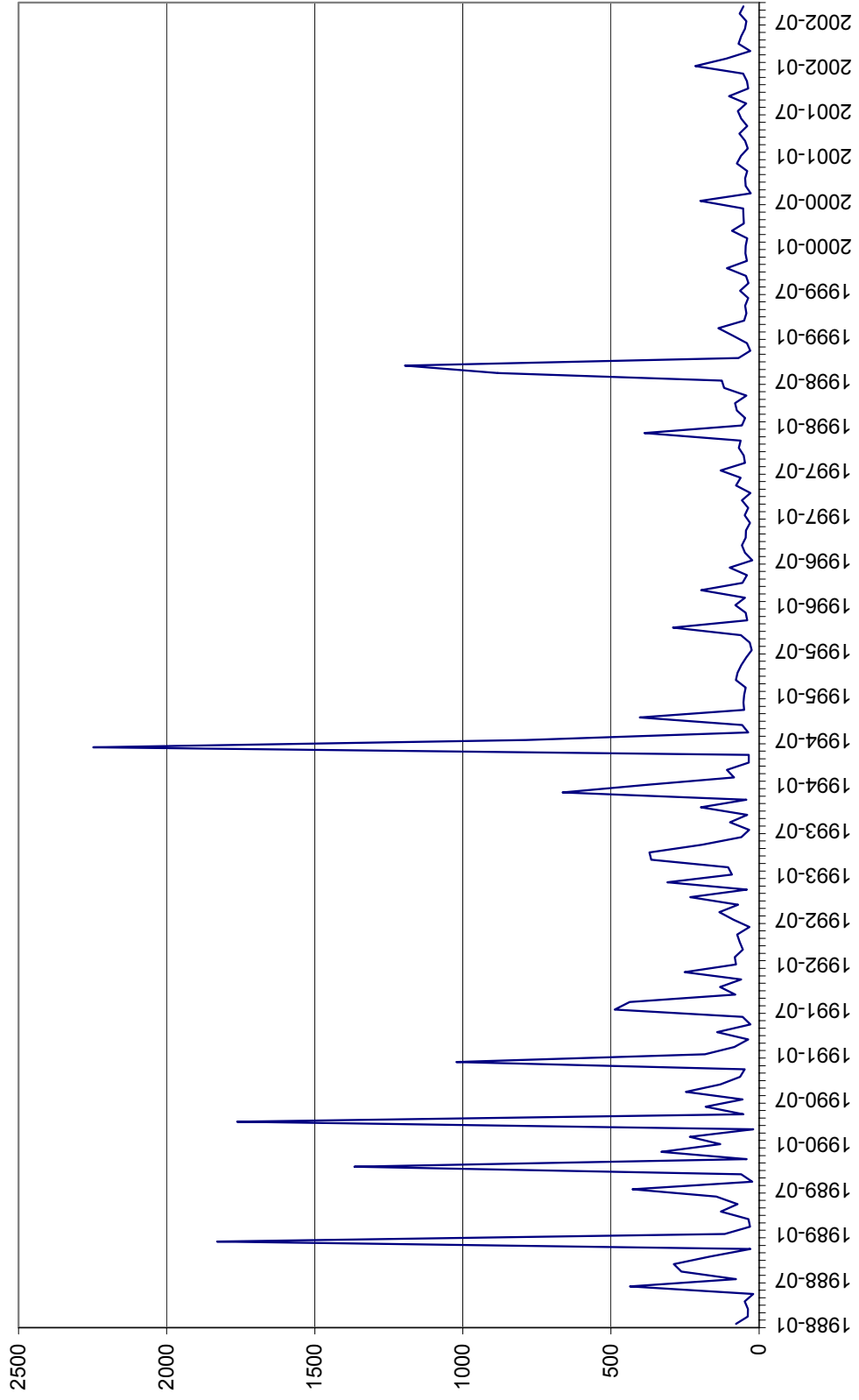
Figure 2.3. Gross Global Capital Flows Relative to Net Global Capital Flows¹
(In percent)



Sources: IMF, *World Economic Outlook* database; and IMF, *International Financial Statistics*.

¹Ratio of the sum of absolute values of gross inflows and gross outflows to the sum of absolute values of current account balances.

Gross Flows Relative to Net Flows



Result 1: Direction of Debts (5)

- These two implications are tied together: if trading environment restricts gross flows, trade in assets necessarily follows trade in goods.
- Good news: the feature of the theory that drives the result is the assumed trading environment (all trade occurs simultaneously at start of period)
- Suppose, alternatively, that trade occurs continuously throughout the period
 - then we can generate arbitrarily large gross flows for a given level of net flows
 - loosely speaking, the rate at which trade occurs limits ability to gain from strategic default
- BUT, now nothing ties asset flows (and hence stocks) to trade flows

Result 1: Direction of Debts (6)

- To get large gross flows that follow the pattern of trade, need to introduce a friction that gives trading partners an advantage in the event of a default:
- Suppose trading partners find out about a default (and hence can cut off credits) faster than other countries
 - can get arbitrary gross flows with trading partners, but not with any other creditor
- Success! We now can match both facts with a reputation model
- BUT, does anyone really believe that trading partners observe a default much in advance?

Result 2: Returns to Investors

- KWZ construct estimates of transfers to/from, and the value of outstanding debt stocks, for 22 emerging market countries from 1970-2000
- Main source is World Bank GDF data
- Advantages:
 - readily available comprehensive data
 - avoids the dirty work of interpreting and coding renegotiation outcomes

Result 2: Returns to Investors (2)

- Disadvantages:
 - cannot compare returns by type of security (terms and place of issue)
 - cannot compare ex ante and ex post returns
 - (in an ideal world, we would have data by creditor nationality to compare with predictions of RS)
- Is it surprising that average ex post returns were low?
 - survey evidence indicates default of 80s was entirely unexpected
 - 30 years is a short time: 20 more years of 6% spreads would help (debt crises every 50 years ...?)

Result 2: Returns to Investors (3)

- Why were returns to Brady deals so big? Why not capitalized into debt prices?
 - Were investors very pessimistic about Brady plan?
 - Did Brady plan add even more value than expected? Role for some institution (private or public) in solving collective action problems?
- Can we tell anything about intervention from such a short sample? Institutions change slowly, so need data over centuries ...? See Tomz and Wright (2004!) for evidence since 1880.

Another use for the Returns Data

- Can we use the transfer data to measure the cost to creditors of the different debt regimes?
 - If debtors gain when creditors lose, just transfers? If both gain during restructurings, value added?
- Important to note that sovereign default possibilities implies market incompleteness
- Debtors are borrowing constrained (but never savings constrained) and hence value transfers at least as much as foreign creditors
- This implies that the cost to debtors is at least as big as the return to creditors.
- To calculate value of transfers to the country, need domestic pricing kernel.
 - can we get (reliable) consumption data to use CCAPM? Other pricing methods?

Conclusion

- What determines the incentives of debtors and creditors in a default?
How would policy interventions alter debt outcomes?
- Theory is still ahead of evidence in providing answers to these questions
... but thanks to RS and KWZ empirics is catching up.
- RS present new evidence on costs of default
 - direction of debt result, *should it prove to be robust*, is potentially very challenging for the reputation story to explain
- KWZ present evidence on returns to creditors
 - consistent with idea that official intervention to solve collective action problems can add value ...
 - but can we really be sure with so little data?

More work (and funding) needed!