

Sovereign Default: Empirical Facts

Debt-to-GNP Ratios and Country Premiums Among Defaulters

Country	Average Debt-to-GNP Ratio	Debt-to-GNP Ratio at Year of Default	Average Country Spread
Argentina	37.1	54.4	1756
Brazil	30.7	50.1	845
Chile	58.4	63.7	186
Colombia	33.6		649
Egypt	70.6	112.0	442
Mexico	38.2	46.7	593
Philippines	55.2	70.6	464
Turkey	31.5	21.0	663
Venezuela	41.3	46.3	1021
Average	44.1	58.1	638

Source: Own calculations based on Reinhart, Rogoff, and Savastano (2003).

Probability of Default and Length of Default State 1824-1999

Country	Probability of Default per year	Years in State of Default per Default Episode
Argentina	0.023	11
Brazil	0.040	6
Chile	0.017	14
Colombia	0.040	10
Egypt	0.011	11
Mexico	0.046	6
Philippines	0.006	32
Turkey	0.034	5
Venezuela	0.051	7
Average	0.030	11

Source: Own calculations based on Reinhart, Rogoff, and Savastano (2003).

The Cost of Default I

Sturzenegger (2003): cumulative GDP cost of 4 percent over 4 years.

The Costs of Default II

(A. K. Rose, *JDE*, 2005)

A Gravity Model

$$\ln T_{ijt} = \beta_0 + \beta X_{ijt} + \sum_{m=0}^M \phi_m ACRED_{ijt-m} + \epsilon_{ijt},$$

Definitions: T_{ijt} = real value of trade between countries i and j in year t ; X_{ijt} = usual gravity variables; $ACRED_{ijt} = 1$ if one country is a restructuring debtor and the other a negotiating creditor, 0 otherwise.

Sample: 1948-1997 annual, 217 countries.

Finding: $\sum_{m=0}^{15} \phi_m = -1.12$

Implication: The cumulative cost of default is over one year of trade over 16 years. But is it sanctions or general economic stress around default episodes? Keep reading...

The Cost of Default III

(J. V. Martínez and G. Sandleris, 2008)

Gravity Model Variant 1

$$\ln T_{ijt} = \beta_0 + \beta X_{ijt} + \sum_{m=0}^M \phi_m ACRED_{ijt-m} + \sum_{m=0}^M \gamma_m DEBTOR_{ijt-m} + \epsilon_{ijt},$$

Definition: $DEBTOR_{ijt} = 1$ if either country is a restructuring debtor, 0 otherwise.

Finding: $\sum_{m=0}^{15} \phi_m = 0.01$ and $\sum_{m=0}^{15} \gamma_m = -0.41$.

Implication: It might not be trade sanctions to defaulters, but general economic stress around default episodes.

Gravity Model Variant 2 (Martínez and Sandleris, cont'd)

$$\ln T_{ijt} = \beta_0 + \beta X_{ijt} + \sum_{m=0}^M \phi_m CRED_{ijt-m} + \sum_{m=0}^M \gamma_m DEBTOR_{ijt-m} + \epsilon_{ijt}$$

Definition: $CRED_{ijt} = 1$ if one country is a renegotiating debtor and the other is a (not necessarily renegotiating) creditor.

Finding: $\sum_{m=0}^M \phi_m$ positive at horizons 0, 5, and 10, and negative at horizons 15 or longer.

Interpretation: No sanction effect, unless creditors have very long memories (at least 15 years) and are willing or have reasons to delay punishment.

Gravity Model Variant 3 (Martínez & Sandleris, cont'd)

$$\begin{aligned} \ln T_{ijt} &= \beta_0 + \beta X_{ijt} + \sum_{m=0}^M \phi_m ACRED_{ijt-m} + \sum_{m=0}^M \xi_m NACRED_{ijt-m} \\ &+ \sum_{m=0}^M \gamma_m NOTCRED_{ijt-m} + \epsilon_{ijt}. \end{aligned}$$

Definitions: $NACRED_{ijt} = 1$ if one country is a renegotiating debtor and the other a nonrenegotiating creditor, 0 otherwise. $NOTCRED_{ijt} = 1$ if one country is a renegotiating creditor and the other is not a creditor.

Finding: $\sum_{m=0}^M \xi_m < 0$, but $\sum_{m=0}^M \phi_m > 0$ at horizons 0, 5, 10, and negative only at horizon 15.

Interpretation: Again, no sanction effect, unless creditors have very long memories (at least 15 years) and are willing or have reasons to delay punishment.