Debt Ceiling Brinkmanship and Global Financial Diversification

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Abstract

Below is an attached research proposal. It starts with an introduction. Followed by relevant data sets along with proposed methodology. Lastly, a game theory model of debt ceiling brinkmanship is proposed.

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1 Previously

Previously, we discussed some points for improvement. Mainly, what exactly is a risk free rate and weather debt ceiling brinkmanship is a random process. We also noted to consider ex ante situations in contrast to ex post debt ceiling raises. The sections below consist of additions that incorporate feedback and improvements.

2 Introduction

It is well established that in times of uncertainty, demand for US dollar denominated assets increase. This is so because the US has a history of being a safe haven for asset. What challenges this notion is the constant US debt ceiling brinkmanship. We investigate if parties internalize US debt ceiling brinkmanship risk.

3 Dataset

We introduce a comprehensive IMF COFER data. This would allow us to run a regression that differentiates between advanced and developing economies.

$$\Delta_{UsdShare,t} = \beta_0 + \beta_1 * D_{DebtCeiling,t-1} + \beta_2 * D_{CeilingSuspension,t-1} \beta_3 * D_{Advanced,t-1} + \beta_4 * D_{Emerging/Developing,t-1}$$

We are able to make use of the aggregate world currency apply it to our existing regressions and charts.

4 Model

The long run model stays the same. Given a long enough time horizon, both parties have internalize all preferences and reservations.

		Party R	
		Raise	*NotRaise*
Party L	*Raise*	$(1/2 * Y, 1/2 * Y, S)$	$(1/2 * Y - C_d, 1/2 * Y - C_d, S - C_d)$
	NotRaise	$(1/2 * Y - C_d, 1/2 * Y - C_d, S - C_d)$	$(1/2 * Y - C_b, 1/2 * Y - C_b, S - C_b)$

Table 1. Game Theory Table

. **This suggest that in the long run, assuming no future shocks occur,**

diversification is unnecessary.

$*$ We consider the short run wherein P_i will always first proposes $\pi_i = 1/2 * Y + \epsilon_i$, where ϵ_i represents some random positive markup. This is the case because

$$\mathbb{E}[\pi_i] = \sigma * (1/2 * Y + \epsilon_i) + (1 - \sigma) * (1/2 * Y)$$

where σ represents the probability of P_{-i} accepting the deal with markup, ϵ_i. We assume $\sigma \approx 0.00001$ such that

$$\mathbb{E}[\pi_i] > 1/2 * Y$$

Likewise, P_{-i} follows a similar strategy. Given this both parties proposals results in

$$Y < 1/2 * Y + \epsilon_r + 1/2 * Y + \epsilon_d$$

This of course is impossible as such parties will always reject in the short run. Following the argument from earlier, if a proposal is rejected the maximum payoff must be

$$\pi_{i,pass} = 1/2 * Y - C_d + \lambda_i, \forall i \in \{l, r\}$$

where λ_i represents a positive payoff from party constituents. If both parties reject proposals to default, maximum payoff would be

$$\pi_{i,default} = 1/2 * Y - C_b + \lambda_i, \forall i \in \{l, r\}$$

Because $C_b > C_d$ then

$$\pi_{i,pass} > \pi_{i,default}, \forall i \in \{l, r\}$$

Given this both parties will always reject the first proposal but will always accept future proposals. We know consider total welfare.

$$W_{with} = Y - 2C_d + 2\lambda_i + S = 2 * \pi_{i,pass} + S$$

$$W_{without} = Y - C_{ins} + S$$

We know $C_{ins} > C_d$ Furthermore, intuitively $C_{ins} > 2 * C_d$. Then, suppose $C_{ins} =$

$2 * C_d + \theta$ where θ represents some markup. Then,

$$W_{with} = Y - 2C_d + 2\lambda_i + S = 2 * \pi_{i,pass} + S$$

$$W_{without} = Y - 2C_d - \theta + S$$

We know $2 * \lambda_i + \theta > 0$. Therefore,

$$W_{with} > W_{without}$$

This suggest the debt ceiling brinkmanship is welfare optimal in the short run as well and therefore **there should be no financial diversification associated with brinkmanship, in the short run and the long run.** This will be verified with our data sets.

5 Literature

Related work has been done on said topic. Herrera explores US debt ceiling brinkmanship as a stochastic process (Herrera et al., 2023). Aye's work not only takes into account debt ceiling, but also governments shutdowns in forecasting US risk premium(Aye et al., 2016). Another paper from Herrera analyzes brinkmanship from a simpler "do or die" situation(Herrera et al., 2021).

References

Aye, Goodness C., Frederick W. Deale, and Rangan Gupta, "Does Debt Ceiling and Government Shutdown Help in Forecasting the US Equity Risk Premium?," http://panoeconomicus.org/index.php/jorunal/article/view/25, Panoeconomicus 2016.

Herrera, Helios, Antonin Mace, and Matıas Nunez, "Brexit: Brinkmanship and Compromise," https://shs.hal.science/halshs-03225030/, HAL SHS 2021.

_ , _ , and _ , "Political Brinkmanship: US Debt Ceiling," https://www.heliosherrera.com/Brexit.pdf, University of Warwick CEPR 2023.