

Debt Limit

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Abstract

This paper seeks to analyze debt limit brinkmanship, characterizes its properties and its implications for the macroeconomy.

Keywords: US debt brinkmanship, debt

1 Research Proposal

1.1 Literature

1.1.1 Increasing Public Debt

Constantly increasing public debt has been a recent development throughout recent history ([Mitchener & Trebesch 2023](#)). This raises the question of how will governments deal with rising debt burdens going forward. As debt increases, cost of borrowing increases. Will governments internalize the increase of cost of borrowing?

1.1.2 Debt Crisis Without Default

It has also been noted we have debt crisis without default has become more common, wherein there was a near missed payment but never a default, as exemplified in Greece Portugal and Spain during 2010-2012 ([Mitchener & Trebesch 2023](#)). To take this into account, some have proposed to redefine a debt crisis as yield spreads of 1000 basis points, also known as spread spikes ([Broner et al. 2013](#), [Aguiar et al. n.d.](#), [Krishnamurthy & Muir n.d.](#)).

What is interesting is that “debt crisis without default” function as if a default had actually occurred. Output declines associated with a default occur even if a default had not occurred. The anticipation of a potential default was sufficient for output declines. ([Yeyati & Panizza 2011](#)).

The literature analyzes possible channels of said output decline. One channel is higher yields. There are different justifications for this channel namely increased external financing cost to importers ([Mendoza & Yue 2012](#)), decrease in external domestic firm borrow-

ing(Corsetti et al. 2012, Das et al. 2010, Gourinchas et al. 2016) or tightening of credit against losses on bank’s balance sheets(Arellano et al. n.d., Ferrando et al. 2017). Another channel is credit rating downgrades, which reduces leverage and investments (Almeida et al. 2017). These channels were robust even when considering high frequency CDS risk premium data and SME (small and medium sized enterprise) surveys (Brutti & Sauré 2015, Bahaj 2020, Almeida et al. 2017).

Despite the fact that US debt brinkmanship raises yields (Nippani & Parnes 2017), the current literature has yet to consider if US debt ceiling brinkmanship is akin to a debt crisis without default, wherein yield spikes cause US output to decline in anticipation of default.

1.1.3 Safe Asset Shortage

Another pertinent question is the many creditors willing to lend to highly indebted sovereigns. Currently we are in a safe asset shortage, such that we are coming closer to the effective lower bound, wherein central banks could not decrease interest rates any further as needed. This shortage is a key source of fragility in the economy, dubbed the “safety trap” (Caballero et al. 2017) . Similarly, the current literature has yet to consider if US debt ceiling brinkmanship contributes to this phenomenon.

1.1.4 Advanced Economy Debt

US debt to GDP ratios are approaching levels seen in World War II. With projections expecting further increases (Congressional-Budget-Office n.d.). Such debt levels are unexplained by current macroeconomic theories such as tax-smoothing, provision of safe assets and sustaining of dynamic efficiency and thus would theoretically result in negative out-

comes such as diminished economic activity and constrained credit, which increases default risk (Yared 2019, Battaglini & Coate 2016, Romer & Romer 2018, Obstfeld n.d.). With this said debt levels are more explained by political economy theories, such as a increasingly , older population, rising political polarization and rising electoral uncertainty.

Younger households place a larger value on fiscal responsibility (patience) than older households (Wolter et al. 2013). Such that as the older population increases , government deficits and debt accumulation increase (Jackson & Yariv 2014, 2015, Cukierman & Meltzer 1989, Tabellini 1991, Yared 2019). Rising political polarization has exacerbated the tragedy of the commons, such that larger deficits are observed with greater polarization (Hertzberg 2016). The US has had increasing polarization since the 1960s. Furthermore There is decline in centrist parties and and increase in extreme left and right parties (Funke et al. 2016, Azzimonti 2018). Another consideration is electoral uncertainty. Rising electoral uncertainty decreases incentive for long term fiscal responsibility (Drazen 2000, Alt & Lassen 2006). The US election margin of victory has been decreasing since the 1980s incumbency advantage has also declined (Jacobson 2015). We investigate these factors and its relationship to debt brinkmanship.

1.2 Introduction

The US treasury yield occupies the status as the biggest and most liquid market, wherein its yield is a significant determinant of yields globally. This phenomenon would be described as the “global factor” becoming increasingly more important determinant of yields ,against specific “country” factors (Mauro et al. 2002). Thus, studying the properties of US’ yields would be important. (Rozada & Yeyati 2006, González-Rozada & Yeyati 2008, Longstaff et al. 2011). We shall study yields in the context of US debt ceiling brinkman-

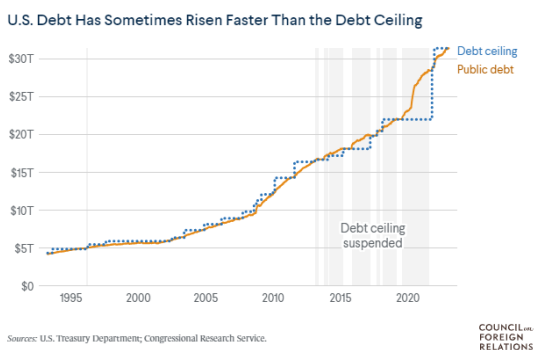
ship. Furthermore, current literature on debt focuses on events like Greece or Argentina, less work has been done with consideration to US debt ceiling.

1.2.0.1 Public Debt and Debt Brinkmanship

Previous literature establishes the recent development of increasing high public debt ([Mitchener & Trebesch 2023](#),). While others note that debt brinkmanship has become more and more worse ([Berman n.d.](#)), evident by the increasing trend of passing debt limit suspension vs raises. Insiders and analyst mention how normalized brinkmanship has become ([Bivens & Sanders n.d.](#)). The causes of this are many. Some mention how the rise of populism made the US government less responsive to business leaders ([Cook 2023](#)). The incentive structures in place have shifted to more financial contributions being raised online in small amounts rather than big donations from prominent interest. The number of moderates currently in congress is significantly less compared to the 1970s ([Desilver 2022](#)). Previous literature also establishes older demographics, rising polarization and electoral uncertainty as factors.

We investigate the link between public debt and debt brinkmanship. As debt brinkmanship intensifies, would this serve to discourage further accumulation of excess debt. There have been instances wherein excess debt has led governments to implement fiscal policies to reduce debt ([Pfeil & Feld n.d.](#), [Yared 2019](#)). On one hand, It could be that the unpleasant effects of brinkmanship are a deterrent to further accumulation of debt. On the other hand, brinkmanship maybe a mere symptom of the current political climate and thus has no direct effect on debt accumulation. If there was a method to stop excess debt accumulation then it would have already been implemented. Following this logic, then excess debt accumulation will persist until the underlying political issues are resolved.

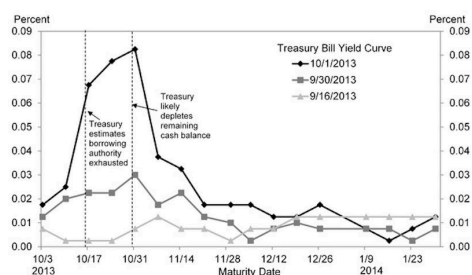
We plot US debt limit increases along with world global change in debt/GDP ratios. We also plot the frequency of debt raises/suspensions to identify trends. We will also take note of rating agency negative outlooks from the top 3 rating agencies. Taking inspiration from



1.2.1 How will governments react to the increasing cost of borrowing?

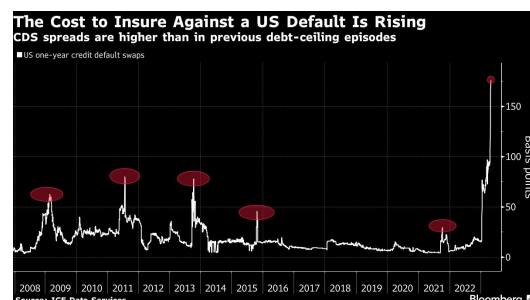
We construct a data set of X-dates, dates where the US government will supposedly run out of money. This is done by analyzing the maximum ex ante yield curves and CDS prices.

An example would be



[Boesler (n.d.)](Steinmetz-Silber & Edelberg n.d.) .

In here we see the peak of the yield curve would correspond to the “x-date”. Similarly,



[Rao et al. (2023)](Benzoni et al. n.d.) .

In here we see the peaks of CDS prices correspond to the “x-date”.

We then analyze changes in CDS prices and yields, using data from Bloomberg. We use official white-house data to get dates of debt limit increase. We build on prior work which uses the 1000 basis points as a benchmark. We isolate brinkmanship with a 1000 basis point increase against those without. An example would be

Negotiation					
		length=(X-	CDS1000(1000		
Date of		date)-Date	basis points		
X-date	Increase	of Increase	CDS	or more)	Yields
x_1	d_1	$n_{1,yes} =$ $x_1 - d_1$	c_1	yes	y_1
x_2	d_2	$n_{1,no} =$ $x_2 - d_2$	c_2	no	y_2
...

We investigate if debt ceiling negotiations settle faster given a sharp increase in cost. We compute \bar{n}_y , average negotiation length with a spread spike and compare this to \bar{n}_n , negotiation length with no spike.

We also run regression $NegoLength = \beta_1 \Delta CDS + \beta_2 \Delta Yield + \beta_3 D_{neg-outlook}$, such that we investigate whether debt ceiling negotiations will settle earlier given a bigger increased in cost of capital. We split cost of capital into three components CDS prices, yields and rating agency downgrades.

We investigate trends overtime by **plotting** negation length on the y axis against date of

increase on the x axis.

We study how brinkmanship affects country yield spreads. we take inspiration from the data set by (Meyer et al. 2022) as it relates data on debt ceiling brinkmanship (Reinhart & Rogoff 2008).

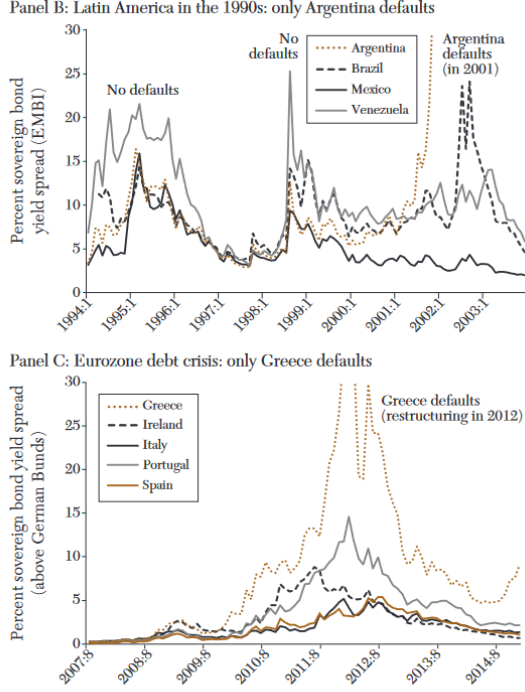


Figure 8. Selected Episodes of Debt Crises without Default

Does intense brinkmanship discourage the accumulation of debt? We create a variable of brinkmanship intensity.

$$BrinkIntensity = \alpha_1 \Delta CDS + \alpha_2 \Delta Yield + \alpha_3 D_{neg-outlook} + \alpha_4 NegoLength$$

where α_n are weights. We then graph brinkmanship intensity across time. We overlay a graph of change in debt and debt to GDP.

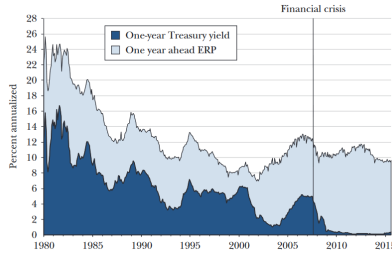
Previous literature establishes that polarization and electoral uncertainty are causes of increase in debt. Using polarization measures created by Funke and Azzimoti (Funke et al. 2016, Azzimonti 2018), we investigate if rising polarization and electoral uncertainty coincide with brinkmanship intensity. We graph all these variables together. These analysis

would be important into the understanding of how US debt will potentially develop.

1.2.1.1 Contributor to safe asset shortage?

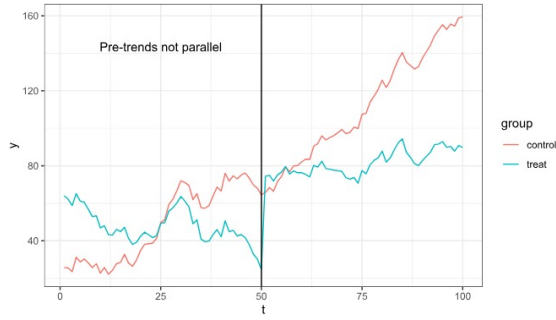
Ever since the 2008 financial crisis risk premiums have not returned to prior levels (Caballero et al. 2017). We investigate if debt brinkmanship contributes to this phenomenon as well. If so then there would be an argument to abolish the system on a global welfare standpoint. It could be the case that a debt brinkmanship reduces the quantity of safe asset, by increasing the risk of US debt default. On the other hand, the US has yet to ever default on its debt. Furthermore, the US dollars has the exorbitant privilege of being the world's reserve currency.

We take inspiration from



We construct a similar graph as above taking debt ceiling dates.

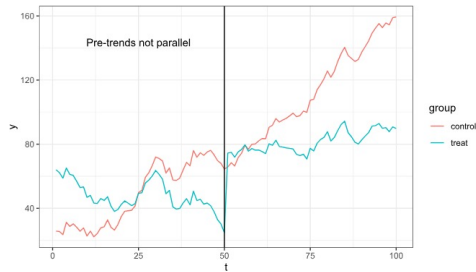
Using time t , as the time of debt increase. We graph a line representing the average change in 1 year expected risk premium. Another line represents the average change in 1 year treasury yields. We construct the graph below with mentioned variables (Duarte & Rosa 2015).



1.2.2 Debt Crisis without Default?

We then investigate if debt ceiling brinkmanship can be characterized as a debt crisis without default, as defined by prior literature. It could very well be that US debt falls under “debt crisis without default” category. But at the same time, the US has characteristics vastly different from other “debt crisis without default” countries like Argentina and Greece.

We graph



the y axis would represent GDP. We then make 3 lines corresponding to the following attributes advanced countries, developing countries and China. We will use IMF definition and its data-set to accomplish this. By doing this, we investigate if the output decline ([Yeyati & Panizza 2011](#)) is present. We construct a synthetic control model using the most recent dates of brinkmanship to answer this question.

We consider China for the following reasons. China’s rise to the world stage has been marked with capital exports that significantly alter global yields ([Alfaro et al. 2014](#), [Gourinchas & Jeanne n.d.](#)). In fact, China’s lending portfolio surpasses that of the World Bank

([Horn et al. 2021](#)) . We use Horn’s data-set. to analyze this.

We also propose a similar graph using imports on the y axis in line with ([Mendoza & Yue 2012](#)). Similarly, We investigate debt/market cap levels by firms ([Corsetti et al. 2012](#), [Das et al. 2010](#), [Gourinchas et al. 2016](#)) and investments ([Almeida et al. 2017](#)).

Lastly, there is work that shows US debt brinkmanship directly increase treasury yields and borrowing cost ([Nippani & Parnes 2017](#)). We investigate and compare the increased cost in borrowing and treasury yield of the US against countries the defaulted or are under the category of “debt crisis without default”. Examples of such countries would be Argentina, Spain, Venezuela, etc. The study would be implemented in a parallel trends assumptions test as shown in the figure above.

1.2.3 Return Reversals

We use the model developed by [Boguth et al. \(n.d.\)](#) to study return reversal, price informativeness, price pressure and fund flows namely,

$$Ret_{i[t1,t2]} = \gamma_0 + \gamma_1 Ret_{i[0,h-1]} + \varepsilon_i$$

$$Ret_{i[4,20]} = \gamma_1 Ret_{i[0,3]} + \gamma_2 Pressure_i \times Ret_{i[0,3]} + \gamma_3 Pressure_i + \varepsilon_i$$

$$Ret_{i[4,20]} = \alpha + \gamma_1 EqtFlow_{i[0,3]} + \gamma_2 BndFlow_{i[0,3]} + \gamma_3 NetFlow_{i[0,3]} + \gamma_4 Ret_{i[0,3]} + \varepsilon_i$$

Using the identification method for debt brinkmanship developed we chart this against the VIX. We document the characteristics of a potential US default by charting our debt brinkmanship identification method against returns on value vs growth stocks, high vs low

beta stocks, defensive vs cyclical. Lastly, we compare our results against similar debt crisis economies and document similarities and differences between a potential US default against other countries.

1.3

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