Brief history of US debt limits before 1939

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Between 1776 and 1920, the US Congress designed more than 200 distinct securities and stated the maximum amount of each that the Treasury could sell. Between 1917 and 1939, Congress gradually delegated all decisions about designing US debt instruments to the Treasury. In 1939, Congress began imposing a limit on the par value of total federal debt outstanding. By summing Congressional borrowing authorizations outstanding each year for each bond, we construct a time series of implied federal debt limits before 1939.

debt ceiling | debt management | fiscal policy

Article 1, Section 8 of the US Constitution assigns Congress authority to incur and manage federal debt. Before 1917, Congress designed all federal securities. After 1939, Congress delegated authority to design securities and manage the composition of total federal debt to the Treasury but put a limit on the par value of total outstanding federal debt. Since 1939, the debt limit has been raised 98 times and lowered 5 times.* Before 1939, a synthetic aggregate debt limit implied by Congress's decisions fell about as often as it rose. This paper synthesizes a pre-1939 aggregate debt limit, explains the data that underlie it, and describes its evolution from 1776 to 1939.

Before 1939, Congress explicitly imposed no limit on the aggregate amount of federal debt outstanding. Instead, it restricted issues of individual securities or sets of securities and gave the Secretary of Treasury little authority to conduct debt management operations. Congress designed each bond and note and prescribed a purpose for the revenue raised by selling it (e.g., to finance a war, to redeem an outstanding bond, or to pay for infrastructure, such as the Panama Canal). Between 1776 and 1920, Congress designed more than 200 different securities. In a typical year, between zero and eight federal securities were outstanding. For each bond and note, Congress set the coupon rate, minimum denomination, term to maturity, unit of account, tax exemptions, and call features. Congress usually directed that a security could not be reissued after it had been redeemed. The main exceptions occurred during wars when, by placing limits on quantities of short-term notes outstanding instead of issued, Congress temporarily permitted the Treasury to roll over its short-term debt. Depreciations and repudiations of government-issued currencies during and after the War for Independence created an enduring distrust of paper money that, until 1913, caused Congress to keep a tight rein on the Treasury's authority to issue short-term currency-like liabilities.

From records of Congress's decisions about security design and debt management, we have constructed an implied aggregate federal debt limit before 1939.† We summed security-by-security limits stated in the authorizing legislation and tracked quantities of each security issued and retired. The debt limits are stated in units of Spanish dollars before 1791 and US dollars after 1791. We plot the implied aggregate debt limit series (blue lines in Figs. 1–3) along with the outstanding gross federal debt (red lines in Figs. 1–3).

In 1790, the first US Congress assumed state governments' debts and debts that it had inherited from the Confederation Congress and refinanced them by issuing three consols. After issuing those three securities of indefinite maturity, the US Congress issued only bonds of limited maturities and set limited timespans for selling them. After a security had been redeemed, either because it had matured or been refinanced, it could not be reissued.‡ If no new loans had been authorized in the meantime, our synthesized debt limit declined. For example, as outstanding loans were repaid on schedule or earlier, the overall limit declined after the War of 1812 and again, after the Civil War.§

A consequence of these arrangements and policies was that, before 1930, at least during peace times, the debt limit functioned as an upper bound on total debt to be anticipated over medium to long horizons, making it an informative signal about an important feature of federal fiscal policy, namely the present

Significance

Since 1939, the US Congress has imposed a limit on aggregate federal debt and left the Treasury free to design its securities and manage its portfolio of debts. Congress has increased the aggregate debt limit whenever it threatened to bind. Before 1939, Congress arranged things differently. Congress designed each security and put limits on the amount that could be issued. We construct an implied limit on aggregate debt before 1939 by summing bond-by-bond limits at each date. Before 1939, this implied aggregate limit often declined and led to Congressional actions that produced net-of-interest surpluses that enabled it to reduce federal debt, outcomes rarely observed after 1939.

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*Four additional times, Congress failed to renew temporary increases in the limit before their expiration dates. In each of these cases, Congress raised the limit shortly thereafter.

†We provide details in *Constructing an Aggregate Debt Limit Before 1939*.

‡During the War of 1812 and the Civil War, Congress widened the Treasury's latitude to choose which debt instruments to sell. However, after those wars, Congress quickly reasserted control over both the size and design of the debt.

§Ever since the United States issued its first bond in 1776, debt limits have been presented and measured in terms of face values. Fluctuating interest rates have driven market values away from face values (1, 2). (Market interest rates occasionally included premia for default risk and exchange rate risk.) Congress often paid attention to gaps between market and par values of both directions. Before the introduction of zero-coupon Treasury Bills in 1929, Congress prohibited the Treasury from selling securities for less than their par values. The fact that market values of bonds issued during the Mexican War rose above par motivated Congress to make the famous 5–20s issued during the Civil War callable at the government's discretion after 5 years at par values. For the period after 1945, ref. 2 presents measures of the marketable US Treasury obligations both marked to market and in terms of face value. We have extended these series back to 1776. Especially after 1880 but also before, the Treasury managed federal debt in ways that made the par value of the debt closely approximate its market value (3).

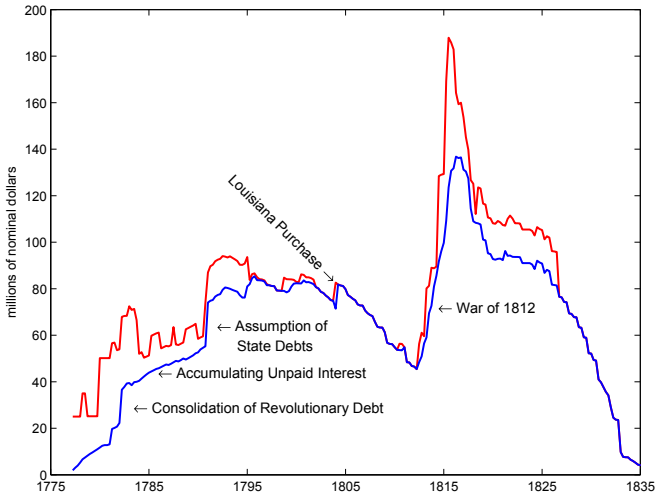

Fig. 1. Par value of outstanding debt and the debt limit from 1776 to 1835. Nominal debt is the blue line. The red line is the nominal debt limit constructed by summing limits on individual securities.

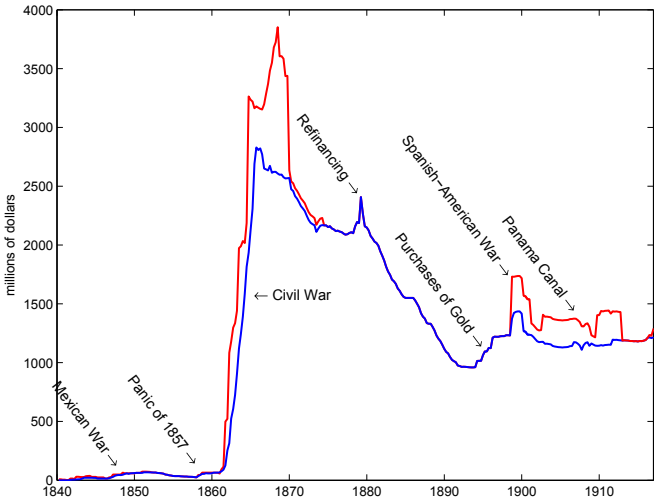

Fig. 2. Par value of outstanding debt and the debt limit from 1840 to 1916. Nominal debt is the blue line. The red line is the nominal debt limit constructed by summing limits on individual securities.

values of prospective surpluses of federal revenues over net-of-interest expenditures that would be required to service federal debts.

In the next three sections, we briefly describe events that propelled notable movements in our synthetic pre-1939 aggregate debt (i.e., red lines in Figs. 1–3), and an associated par value of the debt subject to the aggregate limit is depicted in blue lines in Figs. 1–3.

1776–1935

Fig. 1 shows (*i*) that the Continental Congress and then, the Confederation Congress issued over $40 million in interest-bearing securities between 1776 and 1783 to help pay for the War of Independence, including a big jump in registered and coupon debt that accompanied the Confederation Congress's recognition and consolidation of debts to soldiers and contractors in 1783; (*ii*) between 1783 and 1789, the Confederation Congress's issues of zero interest-bearing securities called indents in lieu of unpaid interest on Continental debt; (*iii*) a jump in federal debt that occurred when the First US Congress nationalized (or "assumed") state governments' debts in 1790; (*iv*) a policy of making interest payments on outstanding debt and adding debt by borrowing to finance federal purchases of shares in the Bank of the United States and to build ships during the "big government" Federalist administrations of George Washington and John Adams from 1790 to 1801; (*v*) the Jefferson and Madison administrations' "small government" policy of retiring debt until 1812;[¶] (*vi*) the huge increase in debt that the Madison administration issued to finance the War of 1812; and (*vii*) a postwar policy of gradually retiring federal debt that, by 1836, had driven it to zero.

1840–1916

Fig. 2 shows (*i*) no big jump in federal debt during the early 1840s when huge state debts that many states had defaulted on in response to adverse macroeconomic shocks of the late 1830s and early 1840s led European creditors and many state governments to pressure the US Congress again to nationalize state governments' debts, pressure that Congress resisted in several narrowly decided votes; (*ii*) a moderate increase of federal debt during the Mexican War; (*iii*) the Buchanan administration's 1857 reversal of the Taylor and Pierce administrations' policies of gradually retiring debt, possibly as part of a Southern Democrat strategy to impair the federal government's fiscal situation at the start of the Civil War in 1861; (*iv*) a massive increase of federal debt during the Civil War followed by almost 30 years of net-of-interest surpluses that, by the early 1890s, had reduced nominal debt by almost 50% of its 1865 level; (*v*) a moderate increase in government debt during the 1890s partly coming from the Cleveland administration's efforts to defend the US gold standard against speculative attacks and partly coming from adverse macroeconomic, tariff, and tax policy shocks; and (*vi*) a policy of rolling over federal debt at a roughly constant level from the end of the Spanish American War of 1898 until the US entry into World War I in 1917. This period saw episodes in which debt limits set by earlier Congresses constrained subsequent Congresses and Secretaries of Treasury. For example, in the 1890s, debt limits nearly forced the Secretary of Treasury to take the United States off the gold standard, a goal

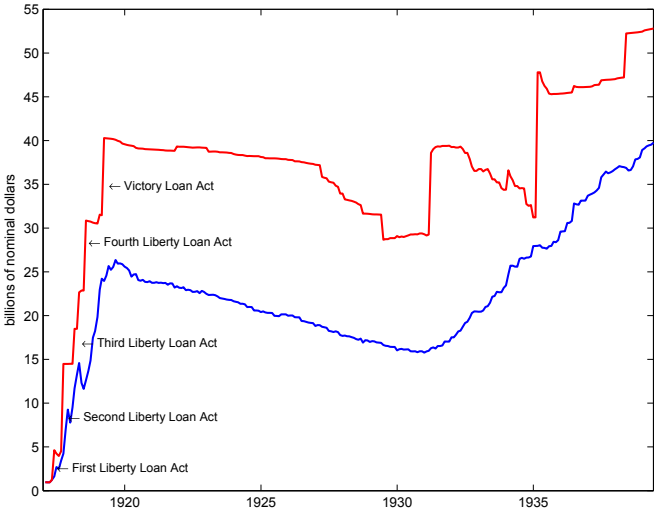

Fig. 3. Par value of outstanding debt and the debt limit from 1917 to 1939. Nominal debt is the blue line. The red line is the nominal debt limit constructed by summing limits on individual securities.

[¶] A notable exception to this debt pay-down policy was the $11.25 million borrowed to finance the Louisiana Purchase in 1803.

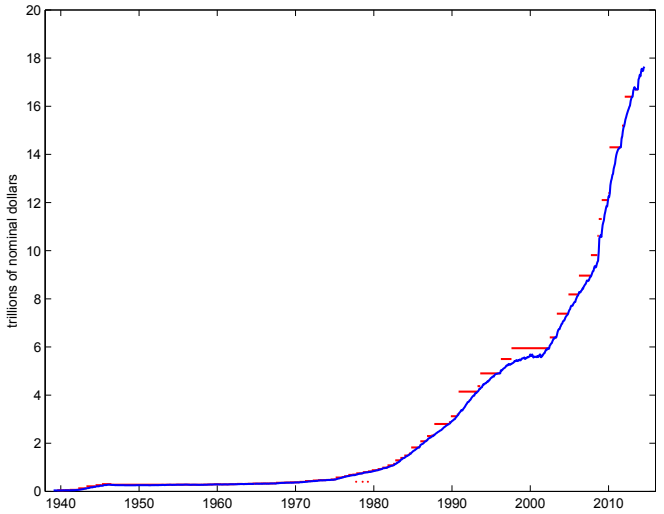

Fig. 4. Par value of outstanding debt and the debt limit from 1939 to 2014. Nominal debt is the blue line. The red line is the statutory debt ceiling.

that Friedman (4) said was supported by substantial minorities and at times, majorities of members of Congress.

1917–1939

This transition period saw (*i*) a huge increase in federal debt between 1917 and 1920 to finance US war expenditures and loans to European allies and associates; (*ii*) a post war decade of gradual reductions in nominal federal debt until about 1931; (*iii*) a decade long increase in federal nominal debt caused by an unprecedented sequence of peace time deficits engineered by the Hoover and Roosevelt administrations as consequences of their policies to fight an economic depression as if it were a war; (*iv*) Congress's acceptance of the recommendations by Treasury Secretary Mellon during the 1920s and Morgenthau during the 1930s to delegate authority to design and manage securities to the Treasury; (*v*) some of the last times in US history during which nominal debt limits declined; and (*vi*) the first times in US history in which declines in our implied federal debt limit failed to be informative about prospective federal debts.

End of Project Finance

Beginning with the Second Liberty Bond Act of 1917, Congress allowed debt to be issued without being tied to a specific project. Consequently, during the 1920s and 1930s, the Treasury acquired, in Andrew Mellon's words, "freedom in determining the character of securities to be issued." The Treasury could market securities that were, according to Henry Morgenthau, "best suited to the needs of the investors to whom they are sold." Congress also gave the Treasury greater control over the maturity structure of the debt. Decoupling of debt issuance from spending coincided with shortening the average maturity of the debt and smoothing the Treasury's debt service profile.

Epilogue

Fig. 4 shows the counterpart of Figs. 1–3 drawn with the aggregate debt limit mandated by Congress instead of the synthetic limit depicted in the earlier figures. A comparison of Fig. 4 with Figs. 1–3 confirms that something about Congress's attitudes about nominal government debt changed after the 1930s. Understanding those changes is a project for political economy and economic history. Our purpose has been to construct data that contribute to framing patterns and providing clues.

Constructing an Aggregate Debt Limit Before 1939

To construct a limit on total federal debt before World War I, we summed limits on outstanding quantities of each security stated in authorizing legislation. During World War I, Congress began to place limits on classes of Treasury securities. When those limits were in place, we summed them.

Between 1776 and 1916, the US Congress authorized the Treasury to issue a total of approximately 200 distinct securities, with no more than 8 distinct ones being authorized in any particular year. Authorizing legislation for each security expressed Congress's reason for borrowing, a sum to be borrowed, a security's length, and its coupon rate. Other characteristics, restrictions, and terms, such as tax exemptions and call features, might also be stated. In most cases, Congress expressed a quantity in terms of the par value of the security that could be issued. It also restricted the period during which the security could be issued.

Let $b(\ell)^t$ denote the par value of a particular security called ℓ outstanding at date t. Suppose that, at time t, there are N_t

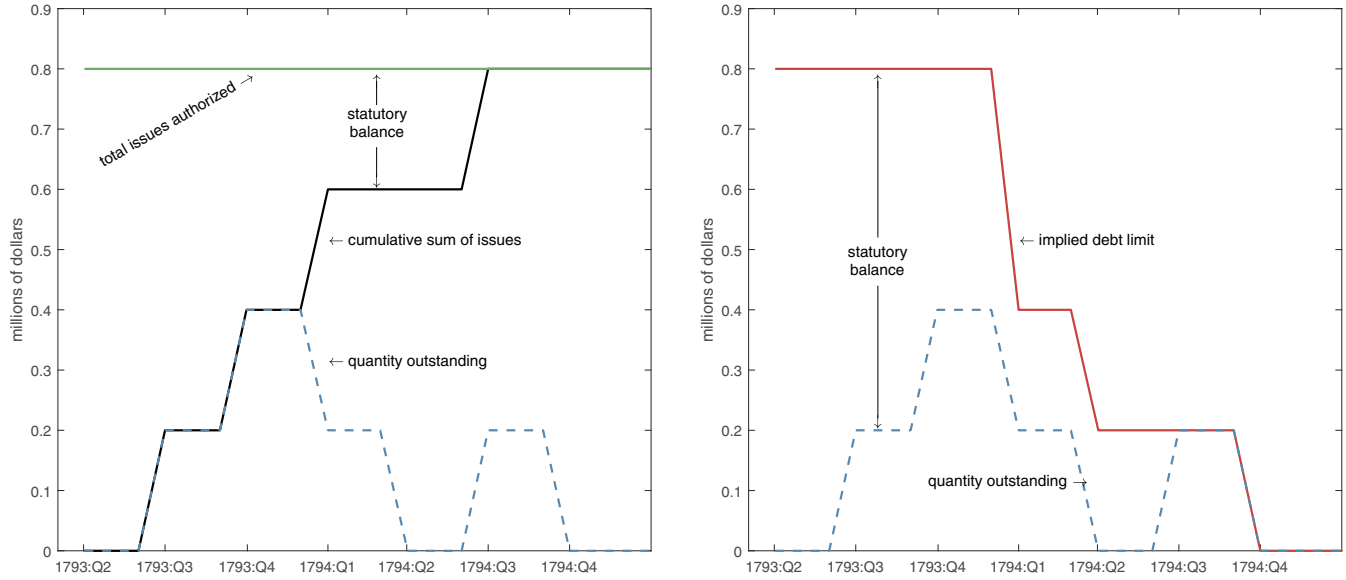

Fig. 5. The Temporary Loan of 1793. (*Left*) Authorization, issuance, and quantity outstanding. (*Right*) Quantity outstanding and implied limit. Q, quarter.

different loans authorized and outstanding. The law of motion of the par value outstanding of security ℓ is

$$b(\ell)^t = b(\ell)^{t-1} + i(\ell)^t - r(\ell)^t,$$

where $i(\ell)^t$ denotes the par value of security ℓ issued at t and $r(\ell)^t$ denotes the par value redeemed.[#]

When Congress authorized the Treasury to issue at most $i(\ell)^*$ of security ℓ, that meant that it placed the following restriction on the cumulative sum of issues:

$$\sum_t i(\ell)^t \leq i(\ell)^*.$$

Let $\bar{i}^t$ denote the time t statutory balance on the quantity of bond ℓ that could be issued. This limit satisfies

$$\bar{i}^t = i(\ell)^* - \sum_{j=1}^{n} i(\ell)^{t-j},$$

where $t-n$ is the date on which the securities were first issued. Let $\tilde{r}(\ell)^t$ be the amount of type ℓ bonds that must be redeemed by virtue of the bond contract. The implied limit on the par value of the quantity outstanding of security ℓ at time t is

$$\bar{b}(\ell)^t = b(\ell)^{t-1} + \bar{i}(\ell)^t - \tilde{r}(\ell)^t.$$

The aggregate debt limit $\bar{B}_t$ is the sum of these individual limits over all outstanding securities:

$$\bar{B}_t = \sum_{\ell=1}^{N_t} \bar{b}(\ell)^t.$$

The Temporary Loan of 1793 provides a good example. The Act of February 28, 1793 spelled out federal spending and revenues for the fiscal year. For example, it appropriated \$143,591 to pay members of Congress and their staffs. Section 3 of the act authorized the government to borrow \$800,000 at 5% interest to cover several of the expenditures listed in earlier sections of the act. Fig. 5, *Left* plots the amount authorized $i(\ell)^*$ as a horizontal green line. Between the second quarter of 1793 and the second quarter of 1794, \$800,000 of loans were issued; we plot the cumulative sum of issues as the black solid line in Fig. 5, *Left*. Due to redemptions, the maximum quantity outstanding on this particular loan at any time was only \$400,000 (blue dashed line in Fig. 5, *Left*). The statutory balance is the vertical distance between the green line in Fig. 5, *Left* (total issues authorized) and the black line in Fig. 5, *Left* (the cumulative sum of issues).

We computed the limit on the quantity outstanding by adding the statutory balance to the quantity outstanding and netting out redemptions. We plot the implied limit in red in Fig. 5, *Right*. As bonds issued as part of the Temporary Loan of 1793 were gradually redeemed, they could not be reissued. Therefore, the debt limit ratcheted down with redemptions. By the third quarter of 1794, the limit on the quantity issue had been reached, the statutory balance hit zero, and the loan was closed.

When aggregating limits across individual securities, we adhered to the following rules.

We excluded any loans issued solely for the purpose of refunding existing debt or purchasing gold or silver.

When authorization dates were not explicitly stated, we assumed that a security could be issued 30 days after authorizing legislation passed Congress and that issuance "closed" (i.e., authorization expired) 365 days after the final issuance.

When Congress limited a quantity outstanding for an authorized security, we recorded $\bar{b}(\ell)^t$ directly from the legislation.

The large quantity and variety of different securities issued to finance World War I made placing limits on individual securities impractical. Therefore, as part of the Second Liberty Bond Act of 1917, Congress began placing limits on different classes of Treasury securities. To impute an aggregate debt limit during this period, we deduced the statutory balance for each class of securities and then, aggregated across the various classes. Over the next two decades, Congress gradually merged and relaxed these sublimits, and by 1939, all of the sublimits had been removed, leaving only the aggregate limit.

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[#] The bond contracts made some redemptions mandatory—we will call these $\tilde{r}(\ell)^t$; others were "early redemptions."

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