The US government debt plays a unique role in global financial markets, acting as a reliable store of value. This grants the US government significant market power in the provision of safe assets, enabling it to manipulate the price of its debt by controlling supply. This mechanism was explored in Azzimonti, de Francisco, and Quadrini (2014). Despite the liberalization of capital markets since the 1980s and the establishment of the European Monetary Union potentially boosting liquidity provision in other currencies, the US Dollar has maintained its strong position. If globalization has not compromised the privileged position of US dollar-denominated assets, what other factors could potentially challenge it? This article investigates whether technological advancements, particularly the expansion of decentralized digital assets (like cryptocurrencies), have the potential to erode the US dollar’s privileged position.

An obvious limitation in replacing US safe assets with digital assets traded in decentralized markets lies in the latter’s extreme volatility. Paradoxically, the growth of cryptocurrencies may actually further enhance the demand for traditional dollar-denominated assets as a means to mitigate the risks associated with digital asset investments. That is not the case, however, for Stablecoins, which are explicitly designed to reduce (or even eliminate) the volatility that characterizes conventional cryptocurrencies.

Tether (USDT) is the most important Stablecoin in terms of market capitalization. Anchored to the US dollar, Tether has consistently maintained a nearly one-to-one valuation, as shown in Figure 1. Its current market capitalization is around 90 billion dollars, a substantial figure relative to the total market capitalization of all cryptocurrencies, which is approximately 1.65 trillion dollars. While this figure pales in comparison to the 26 trillion dollars in US treasuries, the potential for significant growth in the volume of Stablecoins cannot be understated. This trend positions them to become a key element in international financial markets, extending beyond their foundational role in decentralized finance.

To understand how Stablecoins might become an important component of international financial markets, consider the investment choices of savers in emerging countries, who typically face barriers (such as capital controls) to holding US safe assets. Anonymity might also be a factor. Although anonymity can be preserved through the possession of dollar bills, holding dollar banknotes is not an efficient long-term store of value. In contrast, the technological advantages of digital assets present a compelling alternative. These savers could, leveraging the ease of digital transactions, acquire and hold Stablecoins that are pegged to the US dollar. Assuming the peg is reliable and credible, the possession of Stablecoins could effectively serve as a viable alternative to the direct holding of US government debt, thereby circumventing the restrictions imposed on traditional dollar-denominated assets.

For Stablecoins to achieve complete stability, they need to be fully backed by dollar-denominated assets. This makes the ownership of a stablecoin effectively equivalent to the ownership of one dollar. However, due to its digital nature, Stablecoins are more easily accessible than traditional dollar assets. Thanks to this greater accessibility, the diffusion of Stablecoins could boost the demand for US government debt as a reserve asset. In reality, though, Stablecoins can also be backed by a variety of other assets, including cryptocurrencies. In this case, Stablecoins can function as substitutes for US government debt, possibly diminishing its privileged status. In summary, the growth of Stablecoins could both increase and decrease the international role of the US dollar, depending on the type of reserve assets used to stabilize the peg. We will illustrate this point analytically with a simple two-country model.

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I. Model without Stablecoins

There are two countries: United States (US) and Rest of the World (RoW). In each country there is a unit measure of agents that maximize the expected lifetime utility $E_0 \sum_{t=0}^{\infty} \beta^t \ln(c_t)$, where $c_t$ is consumption and $\beta \in (0, 1)$ is the intertemporal discount factor.

There is a unit supply of non-reproducible land traded only domestically at price $p_t$. An agent that owns $k_t$ units of land, produces $z_t k_t$ units of output, where $z_t$ is an idiosyncratic iid productivity shock with probability density $\mu(z)$. There are no aggregate shocks. The only difference between the two countries is that the volatility of the idiosyncratic shock in the RoW is larger than in the US. As we will see, this implies that in the steady state the US has a negative net foreign asset position (net borrower).

There is a government in each country that issues public debt $B_{t+1} \geq 0$ at price $1/R_t$. The government balances its budget with lump-sum taxes $T_t$ paid by domestic agents: $B_t = B_{t+1} - T_t$. Agents can hold bonds issued by their own government (domestic bonds) or by the other country (foreign bonds). We indicate the individual holding of ‘domestic’ bonds by $d_t$, and the individual holdings of ‘foreign’ bonds by $f_t$. Per-capita (average) holdings are indicated by capital letters $D_t$ and $F_t$. There are frictions that limit access to foreign bonds formalized by a cost $\varphi(F_{t+1} \frac{B_{t+1}}{R_{t+1}})$ (the star indicates the other country). The function $\varphi(.)$ is increasing and convex for $F_{t+1} \geq 0$, and satisfies $\varphi(0) = 0$. The agent’s budget constraint is $c_t + p_t k_{t+1} + d_t \frac{B_{t+1}}{R_t} + (1 + \varphi(F_{t+1})) \frac{B_{t+1}}{R_{t+1}} + T_t = (z_t + p_t) k_t + d_t + f_t$.

Define $a_t = (z_t + p_t) k_t + d_t + f_t - B_t$, the end-of-period wealth before consumption, net of the government debt $B_t$. The following lemma characterizes the optimal agents’ decisions.

**Lemma I.1:** Given wealth $a_t$ and $\{B_{t+1}, p_t, R_t, R_t^*, \varphi(F_{t+1})\}_{t=0}^{\infty}$, agents’ choose

$$c_t = (1 - \beta) a_t,$$

$$p_t k_{t+1} = \phi_t \beta a_t,$$

$$d_t = \frac{1 - R_t^*}{R_t} + (1 + \varphi(F_{t+1})) \frac{B_{t+1}}{R_{t+1}} = (1 - \phi_t) \beta a_t,$$

where $\phi_t$ satisfies

$$E_t \left[s\left\{ \max\left\{ R_t, \frac{R_t^*}{1 + \varphi(F_{t+1})} \right\} \right\} \right] = 1.$$

The lemma establishes how savings are allocated between land and bonds, but it does not specify the composition between domestic and foreign bonds. If $R_t > R_t^*/(1 + \phi_t)$, the agent invests only in domestic bonds ($f_{t+1} = 0$). If $R_t < R_t^*/(1 + \phi_t)$, the agent invests only in foreign bonds ($d_{t+1} = 0$). If $R_t = R_t^*/(1 + \phi_t)$, the agent is indifferent, so the composition of bonds is determined only in aggregate.

We focus on steady state equilibria where aggregate variables are constant. Since the US dif-
fers from the RoW only in the volatility of the idiosyncratic risk ($z_{US}$ is less volatile than $z_{RoW}$), the steady state is satisfies:

- The US interest rate is lower than $1/\beta - 1$ and lower than in a closed economy.
- The RoW interest rate is lower than the US, $R_{RoW} = R_{US}/(1 + \phi(F_{RoW}))$.
- RoW holds US bonds, $F_{RoW} > 0$, but the US does not hold RoW bonds, $F_{US} = 0$.

These results are obtained by aggregating the agents’ decisions characterized in Lemma I.1 and imposing market clearing. In the context of the model, the US dollar privilege consists in the lower interest rate paid by the US (i.e. a higher price) compared to the closed economy version of the model. A detailed derivation is provided in the online appendix.

II. Extended model with Stablecoins

The next step is to investigate how the introduction of Stablecoins affects the economy and, in particular, the interest rate paid by the US on its government bonds. From an economic standpoint, Stablecoins are not different from other financial assets. The digital nature is important because it makes them more accessible compared to non-digital assets. This attribute also offers a means to navigate around legal constraints, such as capital controls, which are more challenging to bypass with non-digital assets.

Stablecoins are created via a variety of mechanisms, but fundamentally, they represent liabilities issued by an entity, which could be a Decentralized Autonomous Organization (DAO) or a centralized institution like Coinbase. The central feature of Stablecoins is that they rely on a mechanism ensuring that their trading price remains at the targeted pegged value. Typically, a new stablecoin is created when a US dollar is deposited in the issuing platform, a process known as ‘minting.’ Conversely, the stablecoin can be redeemed for another asset valued at one dollar, a step referred to as ‘burning.’ It is essential that if an investor has the option to redeem one Stablecoin for one dollar, the platform must maintain sufficient reserves to honor such redemption requests. However, these reserves are not restricted to dollar-denominated assets. They could include other assets, including standard cryptocurrencies, as long as they can be easily liquidated when necessary.

A. Creation of Stablecoins in the model

In our model Stablecoins are minted by depositing US government bonds into a Decentralized Autonomous Organization (DAO). Against the bond deposits, the DAO credits the digital wallet of the depositor with the equivalent amount of Stablecoins. The depositor can then utilize these Stablecoins for transactions, transferring them electronically in a manner akin to using conventional dollars. Meanwhile, the US bonds deposited in the DAO are held as reserves. The DAO earns the interest paid by these bonds, paid to the holders of Stablecoins.

An important assumption is that the DAO can reinvest the dollar reserves (US government bonds) in other assets, which could be (non-stable) Cryptocurrencies. To simplify the analysis, we assume that there is a perfectly elastic supply of Cryptocurrencies that pay the same return as US government bonds, $R^t_{US}$. Of course, in order for Cryptocurrencies to pay an interest, they need to generate some output which we are not modelling explicitly. Denote by $\kappa$ the dollar reserves as a fraction of Stablecoins. Thus, for each dollar in reserves, the DAO creates $1/\kappa$ Stablecoins. In the model, we take $\kappa$ as an exogenous parameter. Perfect competition implies that the gross interest rate paid to Stablecoins is $R^S_t = \kappa R^t_{US} + (1 - \kappa)R^t_{US}$.

B. Equilibrium

Given the fraction of dollar reserves $\kappa$, the steady state equilibrium is characterized by:

- The RoW interest rate is equal to the US interest, and they are both lower than $1/\beta$, i.e. $R^t_{RoW} = R^t_{US} < 1/\beta$.
- Neither the RoW nor the US hold foreign bonds, $F_{RoW} = 0$ and $F_{US} = 0$.
- The RoW holds Stablecoins.

The RoW can now hold Stablecoins that earn $R^t_{US}$ without incurring any financial cost. US bonds also earn $R^t_{US}$, but incur a financial cost. Thus, the net return is $R^t_{US}/(1 + \phi(F_{RoW})),$
Figure 2. US interest rate in steady state for different values of $\kappa$.

Parameters: $\beta = 0.93; \ z_{US} \sim U[-2,4]; \ z_{RoW} \sim U[-5,7]; \ \phi(F) = 0.0002 \times F^2$. The values of $B^{US}$ and $B^{RoW}$ do not need to be specified since they do not affect the results.

which is smaller than the return on Stablecoins if $F^{RoW}$ was positive. This is why the RoW does not hold US bonds. But then, the return on RoW bonds has to be equal to $R^{US}$, otherwise nobody would buy them.

**PROPOSITION II.1:** When $\kappa = 1$, the US interest rate $R^{US}$ is lower in the steady state with Stablecoins. For a sufficiently small $\kappa$, the US interest rate $R^{US}$ is higher with Stablecoins.

The proposition establishes that Stablecoins could increase or decrease the dollar privilege. To understand why, consider the case in which $\kappa = 1$. In this case, the equilibrium with Stablecoins is equivalent to the equilibrium in which there are no Stablecoins, but the RoW can hold US bonds without any financial cost. Obviously, this would increase the world demand for US bonds, and would lead to a decline in the US interest rate. Consider now the opposite case with $\kappa \approx 0$ (Stablecoins are created without US bond reserves). This case is equivalent to increasing the supply of bonds from a third country. Investors in RoW will purchase the Stablecoins instead of US bonds. Then, the US bonds that are no longer purchased by RoW must be acquired by US investors, which requires a higher $R^{US}$.

Figure 2 illustrates these properties with a numerical example. It plots the US interest rate for different dollar reserve ratios $\kappa$. The continuous line is for the model without Stablecoins, and the dashed line is for the model with Stablecoins. As can be seen, the introduction of Stablecoins reduces $R^{US}$ if the share of dollar reserves is sufficiently high (the dashed line is below the continuous line for high values of $\kappa$). In this case (high $\kappa$), even if Stablecoins are a substitute for US safe assets, the overall demand for US bonds increases, raising the international dollar privilege. However, if US bonds are only a small fraction of total reserves ($\kappa$ is low), $R^{US}$ increases, reducing the dollar privilege.

**III. Conclusion**

Thanks to its proven stability, the US dollar is at the center of the international financial system, serving both as a means of payment and as a store of value. We explored whether the growth of decentralized finance and Stablecoins in particular, could impact the international role of the dollar. We have shown that the answer depends on whether dollars will be the primary backing asset for Stablecoins. If this is the case, the exorbitant privilege of the dollar will be reinforced by the growth of Stablecoins. However, if other assets are used for reserves, the international role of the dollar is likely to diminish even if the dollar remains the primary pegging asset.

**REFERENCES**