Executive Summary

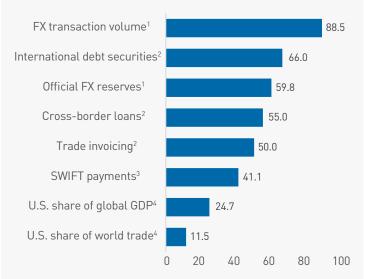
- From its use in foreign exchange (FX) transactions, trade invoicing, cross-border loans, international debt and more, the U.S. dollar has long reigned supreme as the world's top reserve currency.
- The dollar's position is supported by the significant size of the U.S. economy as well as its deep, liquid, integrated capital markets and well-established legal system.
- We believe the dollar's position comes with a catch for the U.S. economy: structural budget and trade deficits that exert downward pressure on growth.
- While the euro and the yuan are the dollar's stiffest competitors, we believe there are challenges that impede their progress in replacing the dollar.
- In our view, the complex financial infrastructure built around the U.S. dollar and the political influence the U.S. continues to wield globally, all support the dollar's position for the foreseeable future.

A brief history

In 1944, during World War II, representatives from 44 countries met in Bretton Woods, New Hampshire to develop a new financial system for the global economy. One of the most important outcomes of the conference was a new role for the U.S. dollar as the international reserve currency. Per the arrangement, the dollar's value was fixed to a certain quantity of gold. Despite this agreement, not all nations have been content with the critical global role the dollar plays. In the 1960's, French Finance Minister Valery Giscard d'Estaing coined a term to sum up his displeasure: the U.S. dollar, he said, had an "exorbitant privilege."

The United States abandoned the gold standard in 1971, but the dollar remains the top international reserve currency to this day. Since Bretton Woods, it has served as the dominant currency in all aspects of international transactions, from trade invoicing to international debt issuance and central bank reserves (Figure 1). Of the \$12 trillion in total foreign currency reserves held by global central banks as of the end of March 2023, the U.S. dollar accounts for about 60%. Additionally, 89% of FX transaction volume is consummated in dollars as well as 50% of trade invoicing — all despite the United States constituting only 11% of global trade and 25% of GDP.

Fig. 1 International Role of the U.S. Dollar, % The dollar is a significant player in many aspects of international transactions



Source: Bloomberg, L.P.

As of: 1-9/30/2022, 2-4/30/2022, 3-2/28/2023, 4-12/31,2022



Where we stand today: Currency controversy continues

More recently, many nations, including China, Russia and Brazil, have voiced concerns that the dollar's privilege might be weaponized to inflict economic and financial pain on nations the United States views as adversarial. Several alternative and small-scale agreements between nations have been proposed. For example, Brazil and

IF THE WORLD MOVED AWAY FROM THE DOLLAR AS ITS RESERVE CURRENCY, HOW WOULD IT AFFECT THE U.S. ECONOMY?



Argentina have discussed creating a common currency, Saudi Arabia has showed openness to the idea of trading oil in non-dollar currencies, and the UAE and India are currently in discussions about using the rupee to trade nonoil commodities. Many worry these arrangements mark the beginning of a profound move away from the dollar and toward the euro, yuan or a basket of other currencies.

If the world were to move away from the U.S. dollar as its reserve currency, how would this affect the U.S. economy, and which countries are likely to benefit most? There are several considerations worth noting.

The importance of trade

From China to India and South Africa, many economies around the world have capital controls in place to maintain tight control over their domestic financial systems. Capital controls are restrictive measures designed to limit the inflow and outflow of capital from a country, often capping potential foreign investment. While China aspires to have a global currency that rivals the dollar, we do not believe this is compatible with a continued desire to manage foreign direct investment through capital controls.

From an international perspective: When global central banks use capital controls or other tools to intervene in their domestic monetary or financial systems with the aim of making their nation more competitive in international trade, they effectively make imported goods more expensive. This in turn lowers household consumption and increases the domestic savings rate. As the savings rate rises, excess savings must be housed somewhere and often take the form of central bank purchases of U.S. or European government bonds.

From the U.S. perspective: As foreign purchases of the U.S. dollar inflate its value, U.S. exports become more expensive. This reduces foreign consumption of U.S. goods, which is detrimental to U.S. manufacturing. To prevent an associated rise in domestic unemployment from foreign purchases of the dollar, the supply of U.S. dollars must also rise, either through increased consumer or government borrowing. In our view, this is a key reason the U.S. has been running constant fiscal and current account "twin" deficits. In our view, the need to run a twin deficit puts the United States in a perpetually delicate position.

The world's storage unit: U.S. government debt

U.S. government debt has long served as the preferred instrument of global central banks to store reserves due to the depth and liquidity of the U.S. fixed income market. This is evidenced by the U.S. dollar's 40% share of the total market value of the Bloomberg Global Aggregate Index, which is more than China's and Europe's shares combined, despite their economies representing more than 33% of global GDP (Figure 2).

Only the U.S. economic and financial system is large, open, integrated and flexible enough to accommodate such trade deficits. However, the badge of honor associated with being a reserve currency comes at a cost to a nation's economic growth and its ability to manage its debt level.

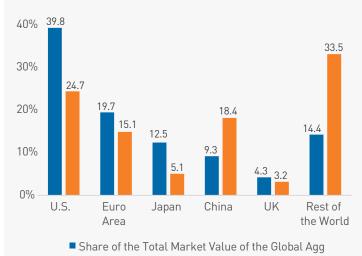


Fig. 2. Share of Bloomberg Global Aggregate Index vs. GDP The U.S. bond market remains the preferred destination for global capital

As of 3/31/2023. Source: Bloomberg, L.P.

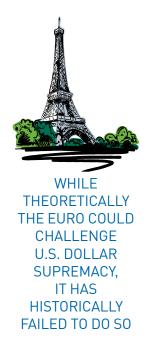
Share of Global GDP

Does the Buck Stop Here?

We believe concerns about the U.S. debt limit are legitimate but that the size of the U.S. debt market (approximately \$30 trillion) is unparalleled, and without which, countries would be severely limited in the diversification of their currency holdings.

Can the euro challenge the U.S. dollar's currency reserve status?

While theoretically the euro could challenge U.S. dollar supremacy, it has historically failed to do so due to the lack of a European banking and fiscal union. Should a union emerge, we believe the euro's prominence could rise. However, the Eurozone faces monumental hurdles in doing so. The Eurozone lacks the depth and breadth of the U.S. credit and equity markets. Additionally, Eurozone capital markets are still small compared to the U.S. and are dominated by local bank lending. Beyond the U.S. dollar's role as a reserve currency, when looking

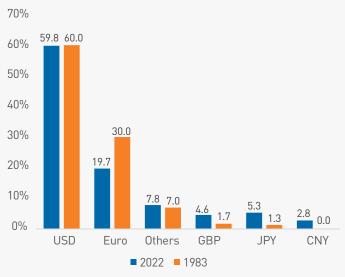


at international payments, daily foreign exchange turnover, and international banking loans and debt, U.S. dollar supremacy remains unchallenged. The euro ranks a distant second, while the yuan lags far behind (Figure 3).

What to make of the yuan?

Despite China having the second largest economy in the world in terms of GDP and a higher economic growth rate than the United States, we believe several hurdles to the internationalization of China's currency keeps the country at bay in the reserve currency fight.

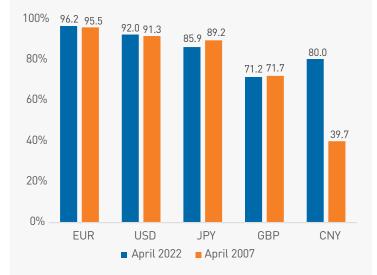
While capital controls and the lack of convertibility are limiting factors, most importantly, in our view, is the opacity of China's financial system. That said, we note the yuan's foreign exchange trading continues to expand, as evidenced by the currency's sharp rise in offshore and cross-border trading since 2007 (Figure 4). As of April 2022, the yuan was the fifth largest traded currency in the world, up from the number eight spot in 2019, due to the inaugural inclusion of local currency bonds in global bond indices. Trading expanded as a result, mainly by qualified investors, such as large institutions and banks (Figure 5, page 4). To support the internationalization of the yuan, we believe it needs to establish greater dominance within Asia first, where its trade linkages are the strongest.





As of 9/30/2022. Source: Bloomberg, L.P.

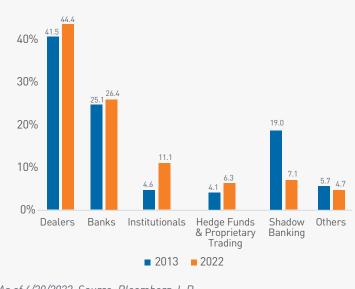
Fig. 4. Cross-border FX Trading as a Percentage of FX Turnover In the 15-year period since the Financial Crisis, the yuan's representation more than doubles



As of 4/30/2022. Source: Bloomberg, L.P.

Does the Buck Stop Here?

Fig. 5. Change in Yuan Trading Activity More institutional investors embrace the yuan



As of 4/30/2022. Source: Bloomberg, L.P.

Overall, we believe the yuan currently lacks the prerequisites to be an alternative to the U.S. dollar. While there are several secular forces that may play in the yuan's favor over the long run, we believe it still has a long way to go before it can pose a real threat to the U.S. dollar.

Challenges to U.S. dollar dominance

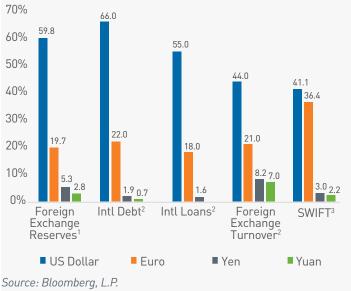
Given the significant changes that have taken place in the global economy over the last 50 years and the rise of economies like the Euro area, China, South Korea and Brazil, it might seem surprising that the U.S. dollar is still supreme across the financial world. Yet, for the time being, we believe there is no real alternative in other currencies.

The U.S. dollar's percentage of global reserves today is roughly the same as it was 40 years ago (Figure 6). From our perspective, as long as the United States maintains sound macroeconomic policies and deep, liquid and open financial markets, the dollar will continue to be the major reserve currency of the world.

The geopolitical angle

Following Russia's invasion of Ukraine in 2022, the United States seized U.S. dollar-denominated Russian assets and barred several Russian companies from the global payment system known as SWIFT. This has raised concerns that the United States may be taking advantage of the dollar's privilege.

Fig. 6. Nation Share of International Transactions The U.S. dollar's role in the global monetary system remains unchallenged



As of: 1-9/30/2022, 2- 4/30/2022, 3-2/28/2023

To this end, China has taken action to "de-dollarize" its economy to shield itself from perceived politically motived adverse financial outcomes and to further establish its economic leadership. China recently led negotiations for the brokered deal between Saudi Arabia and Iran, two of its largest oil suppliers, demonstrating that Beijing is looking to show greater political goodwill. Some purport China's government was also using the deal as an opportunity to convince other commodity heavyweights to settle their oil and natural gas sales in yuan.

Concerns about a move toward settling commodities in yuan instead of the U.S. dollar are, in our view, exaggerated. The trading and hedging complex built around the U.S. dollar has a very high barrier to entry. Furthermore, Saudi Arabia and other Middle Eastern economies peg their currencies to the dollar. Thus, moving toward an alternative currency with low volume, capital control and lack of convertibility remains economically unappealing.



Concerns about a move toward settling commodities in yuan instead of the U.S. dollar are exaggerated.

Does the Buck Stop Here?

The future of global currency: Dollar d(en)ominated

Looking forward, we believe the network effect of the U.S. dollar and the greater transparency and credibility of the U.S. financial system will continue to solidify the dollar's place as the top horse in the reserve currency race. However, we expect China, by virtue of economic size and potential growth, to continue to gain ground, particularly in Asia. We believe this could come at the expense of other developed market economies, such as Japan and the United Kingdom. This evolution will be slow, in our view, and as long as the U.S. monetary system remains sound, flexible and open, the odds remain in favor of the mighty dollar.

PNC INVESTMENT STRATEGY TEAM

Marc Dizard, CFA, CFP Chief Investment Strategist

Daniel J. Brady Managing Director, Investment Strategy

Marc A. Wenhammar Managing Director, Investment Strategy

> Yasin Bentiss, CFA Director, Investment Strategy

> Bethany A. Stein, CFA Director, Investment Strategy

Rebekah M. McCahan Sr Investment & Portfolio Strategist

Ian Bell, CFA Investment & Portfolio Strategist

Arpit Shah Investment & Portfolio Strategist

Karissa Swartz Investment & Portfolio Strategist

These materials are furnished for the use of PNC and its clients and do not constitute the provision of investment, legal, or tax advice to any person. They are not prepared with respect to the specific investment objectives, financial situation, or particular needs of any person. Use of these materials is dependent upon the judgment and analysis applied by duly authorized investment personnel who consider a client's individual account circumstances. Persons reading these materials should consult with their PNC account representative regarding the appropriateness of investing in any securities or adopting any investment strategies discussed or recommended herein and should understand that statements regarding future prospects may not be realized. The information contained herein was obtained from sources deemed reliable. Such information is not guaranteed as to its accuracy, timeliness, or completeness by PNC. The information contained and the opinions expressed herein are subject to change without notice. Forward looking projections are based on historical trends, actual results will differ. **Past performance is no guarantee of future results.** Neither the information presented nor any opinion expressed herein constitutes an offer to buy or sell, nor a recommendation to buy or sell, any security or financial instrument. Accounts managed by PNC and its affiliates may take positions from time to time in securities recommended and followed by PNC affiliates.

Indices or Benchmarks. Indices are unmanaged, are not available for direct investment, and are not subject to management fees, transaction costs or other types of expenses that an account may incur. Indices performance results do not represent, and are not necessarily indicative of, the results that may be achieved in accounts investing in the corresponding investment strategy; actual account returns may vary significantly. For definitions of Indices/Benchmarks used herein, please refer to www.pnc.com/indexdefinitions.

The PNC Financial Services Group, Inc. ("PNC") provides investment consulting and wealth management, fiduciary services, FDIC-insured banking products and services, and lending of funds to individual clients through PNC Bank, National Association ("PNC Bank"), which is a **Member FDIC**, and provides specific fiduciary and agency services to individual clients through PNC Delaware Trust Company or PNC Ohio Trust Company. PNC provides various discretionary and nondiscretionary investment, trustee, custody, consulting, and related services to institutional clients through PNC Bank. Securities products, brokerage services as well as managed account advisory services to US based clients may be offered by PNC Investments, LLC, ("PNCI") a registered broker-dealer and a registered investment adviser and Member FINRA and SIPC. Managed account advisory services for non-US based clients may be offered by PNC Insurances Services, LLC, a licensed insurance agency. This material is produced by PNC; if it has been provided to you by PNCI it has been done so as a courtesy. PNCI relies on PNC's investment strategists and economists for market and/or economic insights. PNCI is an indirect, wholly owned subsidiary of PNC.

PNC does not provide legal, tax, or accounting advice unless, with respect to tax advice, PNC Bank has entered into a written tax services agreement. PNC Bank is not registered as a municipal advisor under the Dodd-Frank Wall Street Reform and Consumer Protection Act.

"PNC" is a registered mark of The PNC Financial Services Group, Inc.

Investments, Brokerage and Insurance Products: Not FDIC Insured. No Bank Guarantee. Not a Deposit. Not Insured By Any Federal Government Agency. May Lose Value.

©2023 The PNC Financial Services Group, Inc. All rights reserved.

