
ROBERT NEIL MCCAULEY

Panel: Implications of Declining Treasury Debt

International Market Implications of Declining Treasury Debt

This article argues that international financial markets could take declining net U.S. Treasury debt in stride under normal circumstances. First, declining net U.S. government debt does not force U.S. Treasuries to be retired. Instead, Asia-Pacific governments have established or sustained government securities markets despite fiscal surpluses. Second, developments in the U.S. dollar money market show that fixed income markets can generate their own private benchmarks. Finally, the world's central banks are well along in shifting their portfolios away from U.S. Treasury to other instruments. Questions remain about market functioning under stress without the typhoon harbor that Treasury securities have provided.

IN ALTERING THE OUTLOOK for the U.S. budget, the horrors of September 2001 have provided an opportunity for reasoned debate about policy in the event that chronic surpluses return. Prior to September, paying down the debt had almost come to define good policy rather than to be a consequence of good policy.

The previous discussion had confused three separate, or at least separable, issues. First, there was a macroeconomic question about the appropriate path of underlying fiscal surpluses and deficits. Second, there was a financial question of the optimal Treasury debt policy, that is, the appropriate path of Treasury debt outstanding and its mix between straight and indexed debt and its maturity profile. Finally, there were financial and governance questions regarding the appropriate financial assets for the U.S. official sector to accumulate, whether the Treasury, the Federal Reserve, and/or some new Asset Management Corporation (AMCO).

Working in the Asia-Pacific region, which contains some of the financially wealthiest governments on earth, it is appropriate for me to focus on the international aspects of these questions. The Asia-Pacific region offers examples of governments with chronic surpluses that nevertheless have government securities markets and of governments that are paying down their net debt while maintaining their government securities markets.

The author has benefitted from discussions with Robert Aliber, Claudio Borio, Ben Fung, Guy Henriques, and Bob Sleeper. The views expressed are those of the author and not necessarily those of the Bank for International Settlements.

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What follows attempts to answer these questions: What lessons can be learned in Asia and the Pacific about the reconciliation of budget surpluses and a government debt market? How well can the fixed income markets do without Treasury obligations? How can foreign central banks manage their portfolios without Treasury securities?

MAINTAINING GOVERNMENT BOND MARKETS BY ACCUMULATING INTERNATIONAL ASSETS

One thinks in this connection of countries enjoying a windfall of oil revenues, which often set up special funds to manage a fund for a future generation. Resource-poor but locationally rich Hong Kong and Singapore have each cumulated fiscal surpluses into more than \$15,000 in foreign assets for every man, woman, and child.

Hong Kong and Singapore: Building Debt Markets in the Presence of Surpluses

The Hong Kong and Singapore governments have found it convenient to issue debt securities, notwithstanding their chronic fiscal surpluses. In Hong Kong the Monetary Authority has issued bills and notes in the amount of \$14 billion, equivalent to less than a tenth of GDP. Singapore has issued S\$50 billion (about \$30 billion) of government securities, equivalent to almost a third of GDP, in a bid to build a government yield curve to serve as a base of pricing for corporate issues, swap yields, and so on. These wealthy governments have chosen to build up a stock of government debt notwithstanding surpluses by further building up foreign assets.

These governments entrust their foreign assets with various institutions. In Singapore there are three. The Monetary Authority of Singapore manages some of the Lion City's foreign assets, and it distinguishes between a liquidity portfolio and an investment portfolio. Then there is the Government Investment Corporation, which invests in foreign bonds and equities. Finally, there is Temasek, which holds the government's equity stakes in Singaporean firms and also stakes in real estate and companies abroad. Hong Kong formerly divided its foreign assets between the Exchange Fund managed by the Monetary Authority and the separately managed Land Fund. Recently the two portfolios were merged. The Monetary Authority's portfolio is also divided along liquidity and investment lines.

In an important respect, Singapore and Hong Kong do not provide appropriate analogies for the United States. Both are not only small but internationally wealthy. That is, both city economies run chronic current account surpluses and have accumulated net foreign assets. By contrast, the United States has run a chronic current account deficit since the 1980s and has accumulated net foreign liabilities in the neighborhood of 20 percent of GDP. Australia provides a better parallel. It has tended to run (relatively larger) current account deficits and it has accumulated a (relatively larger) stock of net foreign liabilities. Fiscally, Australia's recent experience has broadly paralleled that of the United States. Down Under, the stock of federal debt has tended to be relatively smaller and the pay-down is further advanced than in mid-2001 in the United States (Edey and Ellis 2001).

Australia: Maintaining a Government Debt Market in the Face of Surpluses

The Australian government, one of the right, it might be noted, “remains committed to maintaining a viable stock of gross [federal] debt on issue even as its net debt declines” (Edey and Ellis, p. 26). When in late 1999 the Australian government sold a large *tranche* of equity in Telstra, the former telephone monopoly, it could have used the proceeds to pay down debt. But heeding advice that the bond market could not remain liquid with too low an outstanding debt, the government deposited the proceeds with the Reserve Bank of Australia (RBA). The RBA in turn swapped the proceeds into foreign exchange, mostly presumably U.S. dollars in the first instance, and invested the foreign exchange in foreign assets in accord with established reserve management policies (Reserve Bank of Australia 2000, pp. 7–8).

Several features of this arrangement deserve emphasis. First, the RBA did not demand foreign exchange on a net basis and therefore exerted no direct impact on the foreign exchange market. Thus, what Meltzer (2001) characterizes as a “disturbing side-effect” of the accumulation of foreign-currency denominated assets is avoided. The RBA’s long position in, for instance, a cash U.S. dollar security is offset by a forward sale of U.S. dollars against the Australian dollar. In the case of the United States, the combination of a holding of, for instance, a German government security, and a forward sale of euro against dollars would amount to a synthetic dollar investment. Second, the RBA invested the funds in securities of high quality and good liquidity, within the confines of its pre-existing investment guidelines. Finally, an important negative observation is that the RBA has managed to invest government funds without choosing among domestically issued securities.

Foreign Asset Accumulation by the U.S. Official Sector?

This possibility of the Treasury’s maintaining its debt by accumulating assets, either directly or indirectly through the Federal Reserve, has hardly entered the debate. Cavanaugh (2001, p. 9) calls the option of the Treasury’s issuing debt that it does not need “over-borrowing” (in the United Kingdom the long-standing term is “over-funding”). But Cavanaugh (2000, p. 10) speaks of the Treasury acquiring bank deposits or “other private debt or equity instruments.” Wojnilower (2000, p. 15) speaks of the Treasury “on-lend[ing] the proceeds of its borrowing to qualified financial intermediaries proportionately, in an entirely non-discretionary manner.” Wojnilower (2001) speaks of the Treasury recycling funds through the Federal Reserve. Bohn (2002) does consider a Treasury asset build-up, but assumes that the Federal Reserve could do no more than divest its Treasury securities, while the Australian example shows that the Federal Reserve could do more by expanding its balance sheet with liabilities to the Treasury matched by foreign assets. Kohn (2002) lists repos against foreign government securities as an alternative Federal Reserve asset.

Admittedly, for the Federal Reserve to shift its portfolio toward foreign assets would represent a break with its recent past. Moreover, it would be unusual for the central bank of such a large, relatively closed economy to put a heavy weight on foreign assets in its portfolio. This can be seen from the cross-section of the asset com-

position of central banks. There is a clear tendency for central banks in smaller, more open economies to hold a higher fraction of foreign assets (Figure 1).

An arrangement whereby a central bank accumulates foreign assets need not impair its independence or the integrity of the fiscal process.¹ No domestic resident acquires a vested interest in the central bank's portfolio choices and no legislator represents the issuers. The fiscal process is not undermined by the central bank allocating credit to domestic borrowers. While foreign currency operations are used to generate synthetic domestic currency assets, the arrangement is not subject to the criticisms that Broaddus and Goodfriend (1996) have made of such operations in connection with foreign exchange intervention.

In sum, the experience of Hong Kong, Singapore and Australia all point to the conclusion that a government bond market can be created or maintained, even in the face of budget surpluses, through an accumulation of assets. Clearly, this is easier for small economies than for one the size of the United States. But there is no lack of investment opportunities. Public-sector debt securities outstanding in domestic markets outside the United States amount to over \$9 trillion; and international debt securities issued by governments and state agencies amount to another \$1.3 trillion.² Surely suitable investments could be found in sufficient size to sustain the Treasury bond market.

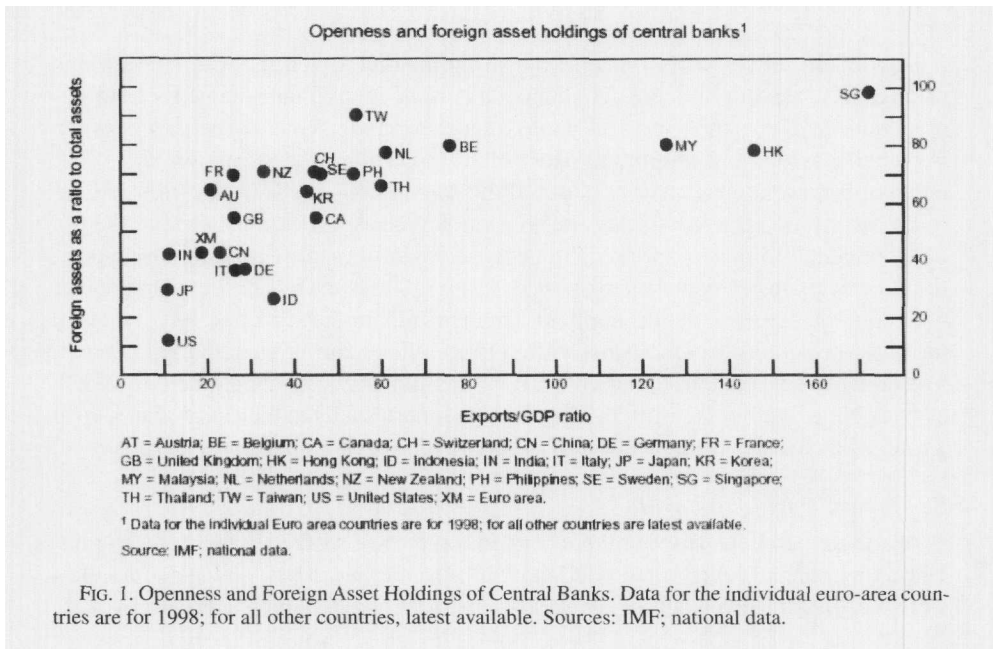


FIG. 1. Openness and Foreign Asset Holdings of Central Banks. Data for the individual euro-area countries are for 1998; for all other countries, latest available. Sources: IMF; national data.

1. See Broaddus and Goodfriend (2001) for an elaboration.
2. Figures from Table 16A and 12C, respectively, of Bank for International Settlements (2001c), pp. 74 and 82.

BENCHMARK TIPPING IN THE MONEY AND BOND MARKETS³

Twenty years ago the U.S. Treasury bill served as the benchmark in the dollar money market (see Figures 2 and 3). Not only did the Treasury bill trade in the most liquid cash markets, but also the futures contract on Treasury bills provided the most important off-balance-sheet instrument for adjusting short-term interest rate exposure. By the middle of the 1980s, however, the offshore eurodollar had displaced the Treasury bill as the most traded money-market instrument and had become the dominant pricing basis for corporate loans and floating-rate notes. Eurodollar transactions trounced Treasury bill turnover in the mid-1980s. This same process may be repeating itself in the bond market, with the early stages discernible even before the serious prospect of long-term decline in Treasury bonds outstanding.

Benchmark Tipping: Money Market

Such a process may be called "benchmark tipping." Much as scales tip as small weights are taken from one pan and placed on the other pan, so liquidity shifts from one instrument to another as market participants abandon one in favor of another. In addition, market participants in this case not only prefer one or the other instrument, but also find it cheapest and easiest to deal where others deal. Thus, each market participant who switched from Treasury bill to eurodollar encouraged others to do likewise.

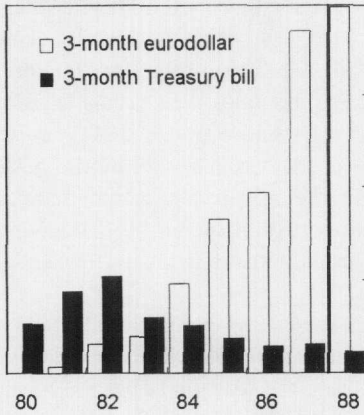
How could the Treasury bill lose out in the market, given its head start? Many users of the Treasury bill contract employed it as an approximate hedge for holdings of private market paper or as an approximate means to manage the gap between short-term assets and liabilities. Most of the time the approximation was close enough. But events that sharply widened the spread between Treasury bills and eurodollars exposed the risk of this approximation ("basis risk"). In particular, the run on Continental Illinois in spring of 1984 proved painful to those holding a long position in private instruments and a short position in Treasury bill futures. On another occasion, the cut-back in the supply of Treasury bills in the spring of 1987 widened the spread. As market participants shifted from bills to eurodollars, the bill contract lost liquidity and the eurodollar contract gained liquidity, inducing others to switch as well. Note that the Treasury bill lost its benchmark status to the eurodollar even at a time when there was no prospect of long-term cut-back in the supply of bills.

Benchmark Tipping: Bond Market

Are there parallels between the events in the money market in the early to mid-1980s and recent events in the bond market? The answer is yes, and some parallels were recognizable even before any serious prospect of a declining Treasury market.

3. This section draws on McCauley (2001a).

Treasury bill and eurodollar futures transactions



Eurodollar turnover as a percentage of money market activity

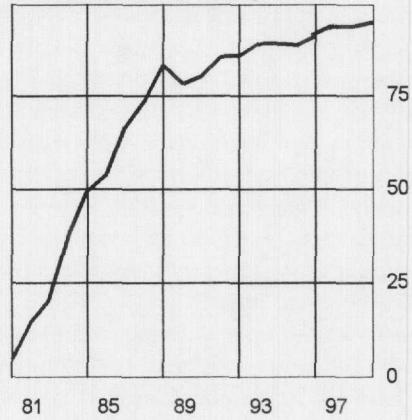


FIG. 2. U.S. Treasury and Private Instruments in the Dollar Money Market. Daily average transactions in billions of U.S. dollars and percent. Sources: FOW Tradedata; Federal Reserve Bank of New York; BIS calculations. ¹Including cash market transactions in Treasury bills.

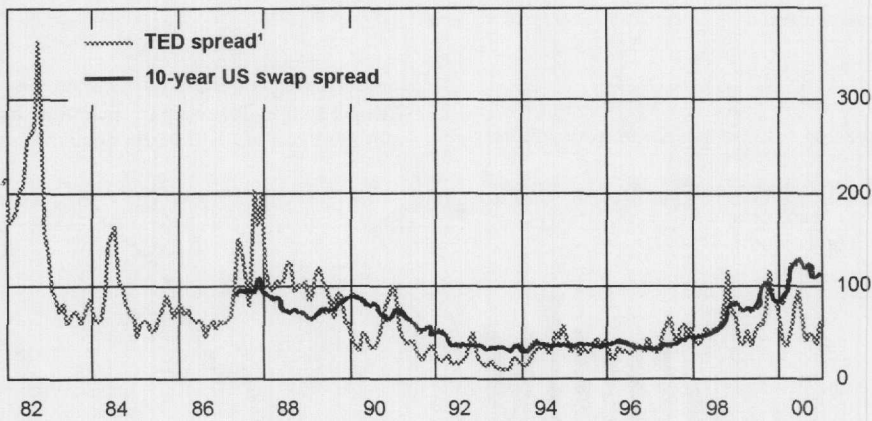
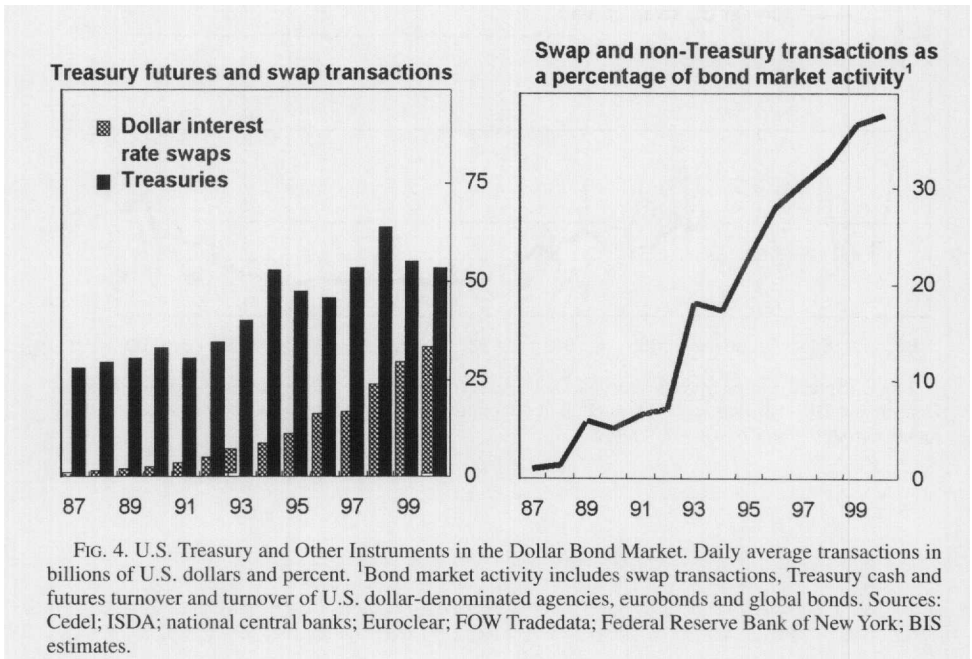


FIG. 3. Spread Jumps Spread between U.S. Treasury and Private Yields (in basis points). Sources: Datastream; BIS calculations. ¹Measured as the monthly average of the spread between the three-month eurodollar and Treasury bill rates.

Again, the Treasury bond futures contract, reinforced by an active repurchase market, enjoyed a long lead over its generic private counterpart, the interest rate swap contract. Again, the riskiness of the Treasury bond future contract as a hedge was exposed by credit events like the LTCM debacle and the Russian default in 1998. The message of these traumatic events was that hedging a portfolio of corporate or mortgage bonds with Treasury securities could produce losses on both sides of the “hedged” transaction. This lesson was only underscored by the market reaction to announcements of supply cut-backs by the U.S. Treasury since them. As a result, hedging of corporate and mortgage bond portfolios increasingly depend on swaps and consequently transactions have been growing faster in swaps than in U.S. Treasury bond futures.⁴

Just as trading in eurodollars eventually surpassed trading in Treasury bills in the early 1980s, trading in swaps is surpassing trading in Treasury coupon securities (Figure 4). Again, the derivative markets are leading the way, and over-the-counter trading in swaps has caught up with futures trading of Treasuries. The latest global survey of derivative transactions found daily turnover of \$100 billion in dollar interest rate swaps (Bank for International Settlements 2001a, p. 10). This may be compared to futures trading in the long bond as well as in the ten-year, five-year, and two-year Treasury note, all of which amounted to no more than \$73 billion a day that same month.



4. For discussion of swaps as an alternative benchmark, see Fleming (2000a and 2000b) and Zamsky (2000).

Notwithstanding rear-guard measures to preserve the liquidity of the Treasury market (Bennett, Garbade, and Kambhu 2000), one should expect the recent shrinkage of the Treasury market to have reduced liquidity in the U.S. Treasury cash market (Figure 5). Such an expectation is consistent with the cross-national evidence from G-10 countries linking size, transactions volumes, and bid-ask spreads (McCauley and Remolona 2000).

The cross-sectional regularity is borne out in the time series as liquidity is draining out of the U.S. and U.K. government bond markets (Bank for International Settlements 2001b). As shown in Figure 6, in the U.S. market, quote sizes, turnover, and price impact all point to a greater difficulty of putting on or taking off a large position in Treasury coupon securities without moving the market against oneself (Fleming 2001).

The concern that modern bond markets cannot function efficiently without government securities, including those of the U.S. Treasury, is probably misplaced. The U.S. Treasury bill has already yielded its pre-eminence in the money market to bank liabilities, and the same process may be in train in the bond market. The central role of government debt may prove no more than a legacy of wartime finance as peacetime markets naturally tip toward reliance on private benchmarks. Viewed in this manner, any sustained reduction in the stock of government debt would only accelerate a process already well under way.

Even if this view regarding the normal functioning of markets is accepted, however, difficult questions remain about market behavior under stress. Could a flight to quality in an environment of a much reduced supply of government securities lead to a more exaggerated widening of public-private spreads, with adverse implications for the solvency of portfolios still exposed to this spread risk? And in the event of a disappearance of government securities, would the modern run from private to public paper revert to the previous pattern of a run from private paper to currency or

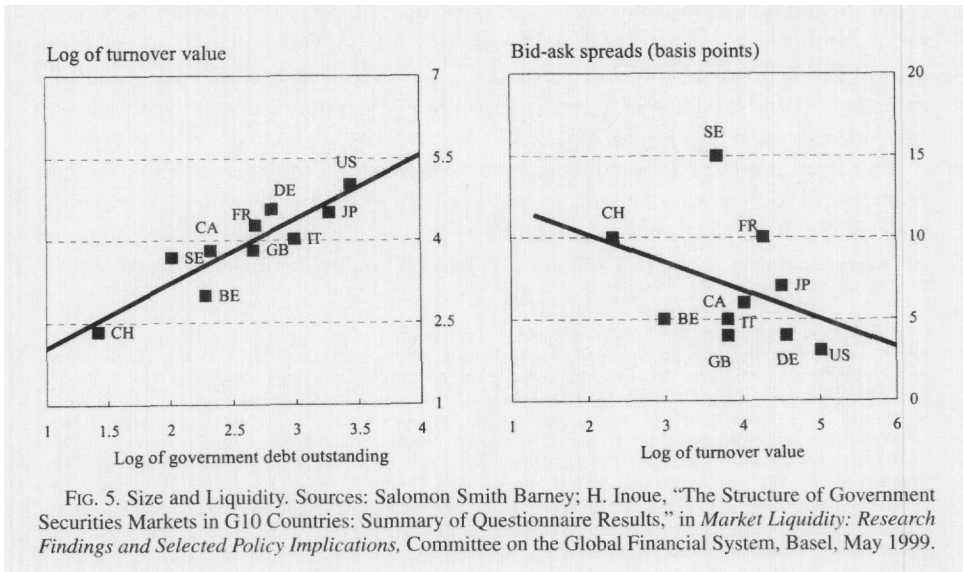


FIG. 5. Size and Liquidity. Sources: Salomon Smith Barney; H. Inoue, "The Structure of Government Securities Markets in G10 Countries: Summary of Questionnaire Results," in *Market Liquidity: Research Findings and Selected Policy Implications*, Committee on the Global Financial System, Basel, May 1999.

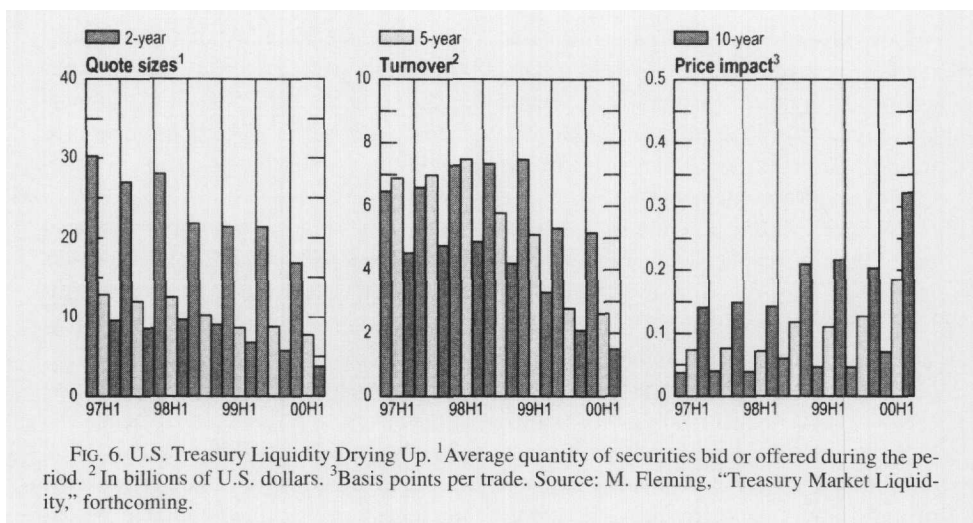


FIG. 6. U.S. Treasury Liquidity Drying Up. ¹Average quantity of securities bid or offered during the period. ²In billions of U.S. dollars. ³Basis points per trade. Source: M. Fleming, "Treasury Market Liquidity," forthcoming.

specie?⁵ Or would the absence of U.S. government securities mean that a flight to quality would become a flight from the U.S. dollar into other currencies offering the debt of very credit-worthy government(s)?⁶

DIVERSIFYING FOREIGN OFFICIAL PORTFOLIOS AWAY FROM U.S. TREASURIES

In broad parallel with market developments, official reserve managers have shifted their portfolio away from U.S. Treasuries, first at the short end of the maturity spectrum and now at the long end. Yield more than liquidity provided the key motivation for this official shift, but liquidity played a role. At the short end, official holdings of bank deposits, both offshore and in the United States, have generally exceeded official holdings of Treasury bills for a generation. In recent years the gap has widened markedly (Figure 7).

Data from the U.S. Treasury suggest a parallel shift over the last three or four years from U.S. Treasury coupon securities to other long-term securities, including equities. But these data must be interpreted with care, because there is no parallel at the longer maturity to the BIS statistics on official holdings of bank deposits outside

5. The answer advanced by Wojnilower (2000, 2001) is that the flight to quality in the future would be a flight to claims on financial firms judged so large that the government stands behind them. He further argues (Wojnilower 2001) that "In the absence of Treasury securities as a competitive safe haven, the potential for inflationary overexpansion by these banks—the ones too large to fail—are unlimited." It is as if occasional "fires," namely, spikes in the spread of private borrowers over that of the government, scar trees but leave the forest more fire-resistant. Wojnilower concludes that the dynamics of private markets under stress pose such hazards that the Treasury market should be maintained even through fiscal surpluses.

6. Truman (2001b, p. 7) notes that "International flights to quality in the form of U.S. Treasury obligations, to the extent that they have occurred in recent years, have not been manifested in significant dollar appreciation." See also Schinasi, Kramer, and Smith (2001).

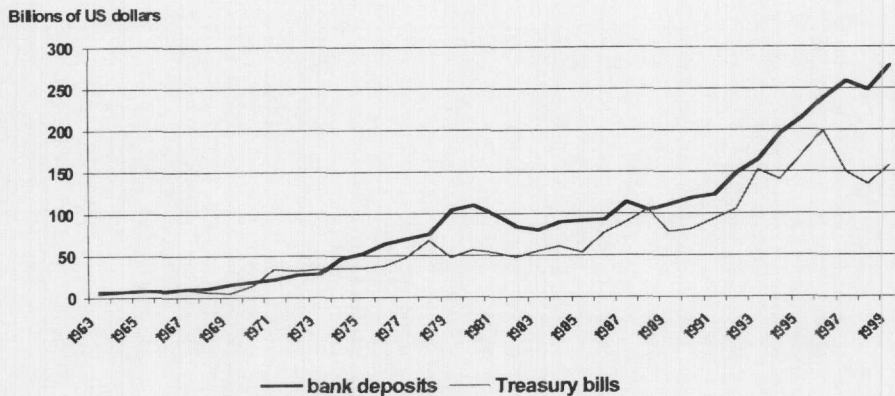


FIG. 7. Official Shift: Dollar Holdings in the Money Market from Treasury Bills. Official holdings of Treasury bills and bank deposits. Sources: U.S. Treasury; BIS.

the United States. In particular, when dollar bonds, including the agency, supranational, and high-quality sovereign bonds that meet central banks' credit requirements, are marketed outside the United States through eurodollar bond channels, they are not captured in the U.S. Treasury data.

The overall dollar portfolio held by foreign official institutions has very largely diversified away from U.S. Treasury securities (Figure 8).⁷ Taking identified official holdings in the United States and in dollar deposits offshore, the shift away from Treasury securities in the decade 1989–1999 does not appear all that impressive. But these data almost surely understate the shift significantly. One piece of evidence is that these identified holdings sum to about \$400 billion less than estimated total dollar holdings by central banks (Figure 9). If none of these unidentified holdings is invested in Treasury securities, as would be the case if they were all invested in dollar bonds held outside the United States, then the Treasury share of the global official dollar portfolio could be as low as 43 percent at end-1999.⁸

*Official Transactions' Shift Away from U.S. Treasury*⁹

Official reserve managers turn over their holdings of securities for several reasons. They can transact in order to add to, or draw down, their net reserve holdings. If they roll over a security at maturity, they need to transact. These two reasons are consistent with fairly low turnover. More transactions are generated when official reserve managers seek to adjust duration, credit, counterparty, or currency risk.

Central banks turn over their holdings of Treasury coupon securities at rates between 100 and 200 percent per annum and in recent years the turnover rate has edged

7. The paragraph draws on Fung and McCauley (2000).

8. Compare to the estimate of Truman (2001b, p. 4) of 49 percent at end-2000. The difference arises principally owing to his assumption regarding the dollar share of foreign exchange reserves.

9. The paragraph draws on Fung and McCauley (2000).

Billions of US dollars

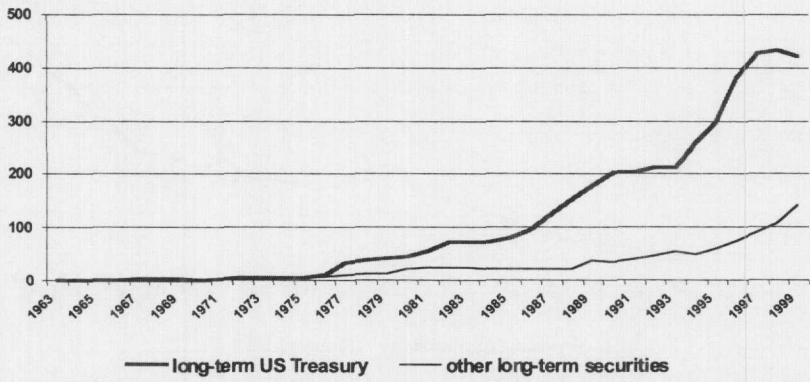


FIG. 8. Official Shift: Dollar Bonds from Treasury Notes. Official holdings of Treasury notes and other long-term securities. Source: U.S. Treasury.

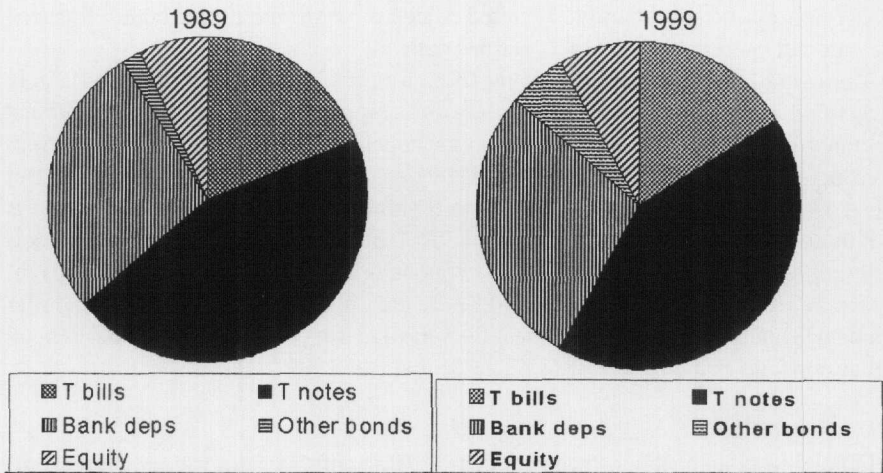


FIG. 9. Official Shift: Identified Official Dollar Holdings. Sources: U.S. Treasury; U.S. Department of Commerce; BIS.

down. This range of turnover is much lower than that of other non-U.S. residents, which includes hedge funds legally resident in the Caribbean. Whether the peak turnover in 1993 reflected the exchange rate crisis in Europe or other developments is not clear (Figure 10).

Central banks are turning over their holdings of agency securities at rates approaching their turnover rates in Treasuries. While peak turnover was recorded in 1994, it must be borne in mind that central bank holdings of agency securities were then very small. It could be that the turnover then represented managers deviating for some months from their Treasury benchmarks. In recent years, by contrast, it appears that agency securities have become core portfolio holdings and are turned over at much the same rate as Treasury securities. (Note that the data do not include turnover of U.S. agency securities held offshore, so agency turnover could well exceed that of Treasuries; see Figure 11.) This suggests that official reserve managers are using agency securities to adjust their duration risk.

The evidence reviewed here suggests that foreign central banks are well along in the process of diversifying away from holdings of Treasury securities in their dollar portfolios and learning to use other securities to manage their duration. If, in a world of disappearing Treasury securities, it were decided that providing a very safe asset to foreign central banks served some important purpose, it might be remembered that the Federal Reserve in the 1920s had a policy of endorsing private, two-signature paper for its foreign central bank correspondents (LaRoche 1993). Even if this policy produced profits, however, it may not correspond to contemporary notions of the central bank's proper role.

CONCLUSIONS

The international dimension highlighted here means that three policy questions—appropriate fiscal policy in macroeconomic terms, the optimal level of Treasury debt outstanding, and the proper role of the U.S. government (or the Federal Reserve) in accumulating claims on the U.S. private sector—are separate questions.

The Treasury market could be maintained in the face of budget surpluses without the government favoring one set of domestic issuers of debt or equity over another. In particular, policy could combine “overfunding” and an accumulation of foreign assets by the U.S. official sector. The official sector would not have to take on foreign exchange risk to do so. Australia has resisted the pay-down of its government debt without the government's taking foreign exchange risk or its picking winners among private issuers.

In the event of a disappearing U.S. Treasury market, it is easy to overstate the international repercussions. In the fixed income market, it may no more than accelerate the tipping of liquidity away from Treasury to private benchmarks based on the obligations of banks of international standing. For their part, central banks should find it possible to invest elsewhere the minority of their dollar reserves that are still held in Treasury securities. Questions remain about how a flight to quality would

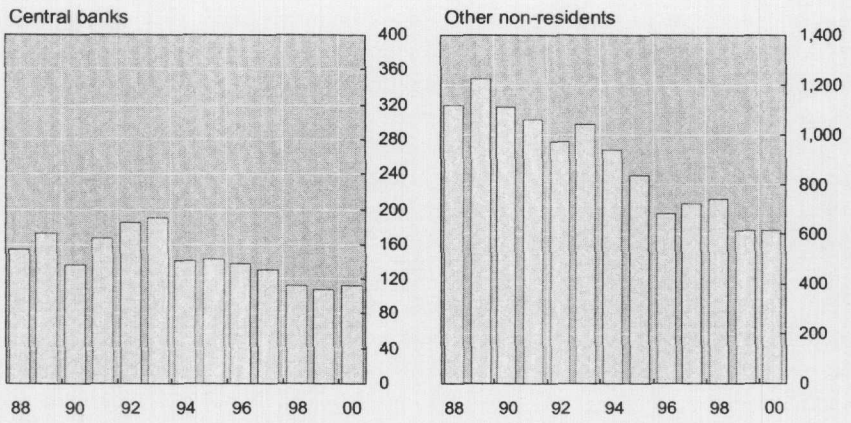


FIG. 10. Official Transactions: Turnover Rate in Treasury Securities Peaked in Early 1990s. In percentages. Source: U.S. Department of the Treasury

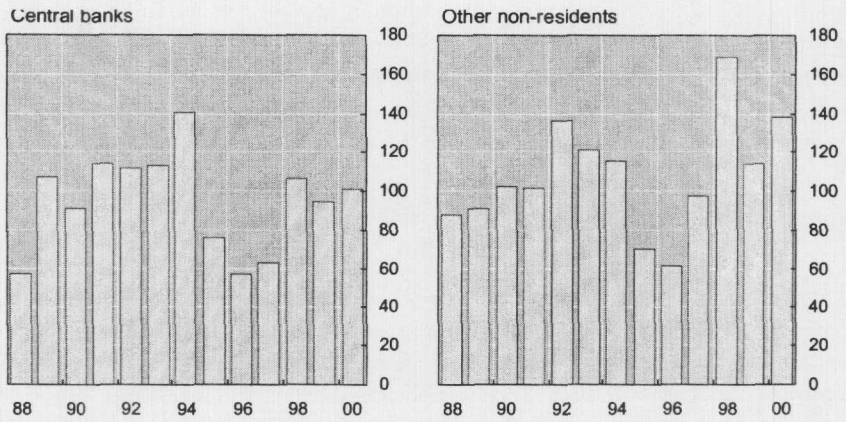


FIG. 11. Official Transactions: Turnover of Agencies Approaching Treasury Securities. In percentages. Sources: U.S. Department of the Treasury; U.S. Department of Commerce; author's calculations.

happen in the absence of Treasury securities and in particular whether the search for safety could put downward pressure on the dollar.

The possibility of running surpluses, retaining the Treasury debt market, and not choosing among domestic private investments suggests a reconsideration of the arguments for retaining the Treasury market. These include avoiding the fixed costs of re-establishing the institutional and market infrastructure in the (expected) event that the market is needed in the future, or earning monopoly rents as the provider of a security with unique credit characteristics.

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