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Distinguishing global dollar reserves from official holdings in the United States[1]

Official holdings of US dollar reserves are partly invested outside the United States. These offshore investments do not strictly speaking finance the US current account, but do support the US dollar. Offshore holdings grow fast when intervention is large.

JEL classification: E580, F210, F310, F320, F330, F340, G150, N200.

The extent to which global official dollar reserves exceed official holdings of assets in the United States has come under increasing scrutiny in recent years.[2] To be sure, official holders of dollars have invested a portion outside the United States for generations. But, as official intervention in the foreign exchange markets has reached unprecedented levels, so too has the sum of dollars placed offshore. What accounts for these holdings, and in what sense do they either finance US external deficits or support the dollar's exchange rate?

Drawing on national and BIS data, this special feature begins by presenting estimates of official dollars held offshore. After reviewing the debate over their role in financing US current account deficits, it then outlines the political and economic reasons for such holdings. Once crucial, yield differences have lost importance, while country risk and investment lags after heavy intervention have not.

Finally, the feature argues that, while offshore placements do not strictly speaking finance the US current account deficit, they do support the dollar. The importance of such official support can be gauged by the US net *dollar* external financing requirement, including the purchase of foreign currency assets.

Questions regarding the reasons for and consequences of central banks' dollar holdings outside the United States are just special cases of the broader and long-standing questions of why offshore markets exist and what difference they make. To some extent, then, this feature reviews and updates almost 50 years of analysis with which the BIS has been closely associated.

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[1] I thank Swapan-Kumar Pradhan and Michela Scatigna for research assistance. The views herein expressed are those of the author and do not necessarily reflect those of the BIS.

[2] See BIS (2004), Higgins and Klitgaard (2004) and Truman (2005). Summers (2004) states: "There are significant discrepancies that some … probably understand, but I do not, between BIS figures on central bank accumulation of reserves and US Bureau of Economic Analysis figures on official financing of the current account deficit."

Global official dollar reserves and official holdings of US assets

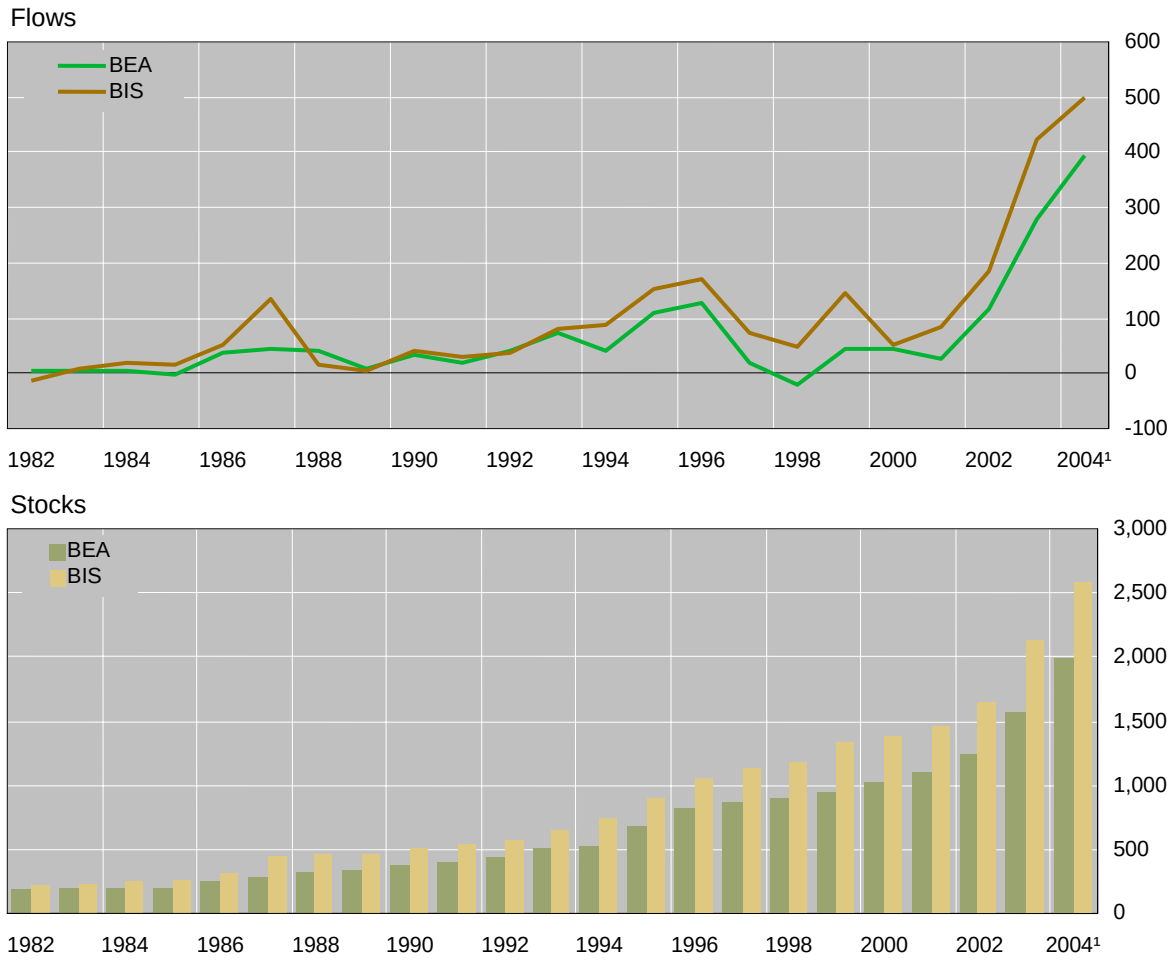
The change in global official dollar reserves as reported by the IMF and BIS differs from the change in official holdings of US assets reported by the Bureau of Economic Analysis (BEA). This divergence has two regularities.

Substantial offshore dollar holdings ...

First, the fraction of dollar reserves that seems to be held outside the United States is substantial (Graph 1). It was about a quarter in mid-2004, if unidentified dollar reserves are considered as being invested in eurodollar bonds.[3] At a minimum the proportion was 20%, based on identified dollar holdings ($438 billion out of the identified total of $2,242 billion in Table 1). Consistent with this observation, the rise in global dollar reserves in any year is usually larger than the BEA-reported increase in official holdings of US assets.

Global official dollar holdings and official holdings of US assets

In billions of US dollars



[1] BIS figures are estimated.

Sources: BEA; BIS.

Graph 1

[3] If offshore holdings account for the difference between the total estimated dollar holdings ($2,334 billion) and identified holdings ($2,241 billion), then offshore holdings would total $531 billion out of $2,241 billion, or almost a quarter. Compare to McCauley and Fung (2003).

Instrument composition of US dollar reserves at end-June 2004

In billions of US dollars

	Short-term	Long-term	Total
Treasury securities	249	923	1,172
Other assets	635	434	1,069
Repos and deposits in the United States	141		
Commercial paper and certificates of deposit in the United States	93		
Offshore deposits	401	37	
Agency securities		216	
Corporate bonds		47	
Equities		134	
Total	884 (39.4%)	1,357 (60.6%)	2,241 (100%)
Memo:			
Share of Treasury securities in assets of the given maturity	*28.2%*	*68.0%*	*52.3%*
Total estimated US dollar reserves at end-June 2004			*2,334*

Note: Figures for US Treasury and agency bonds, corporate bonds and equities are from US Treasury et al (2005). Figures for deposits and money market paper in the United States are from BEA, International Transactions Table 4. Figures for offshore US dollar deposits are from the *BIS Quarterly Review*, Table 5C, BIS (2005, pp 174–5) and the Japanese SDDS for June 2004. Long-term is defined by original maturity; by remaining maturity the long-term share is 51.7%. Table 1

... especially when intervention heavy

Second, there is a tendency for years of sharp increases in dollar reserves to see a larger fraction of offshore holdings. Thus, in 1987, then the year of the largest rise ever in dollar reserves, the increase in official assets reported by the BEA fell far short of that in dollar reserves. Consistent with this observation, the marked rise in global dollar holdings by central banks in recent years has been accompanied by a substantial increase in offshore assets. This partly reflects the stock adjustment process described below.

Offshore choice: insignificant ...

It is argued below that today it makes little difference to global asset prices whether a central bank places a dollar deposit in Tokyo, Hong Kong SAR, Singapore, Bahrain, London or the Caribbean, on the one hand, or New York, on the other. It matters only a little more whether a central bank buys a US Treasury note held in custody in the United States or a dollar note issued by the German government-guaranteed agency KfW held in Europe. At most, such choices affect spreads in yields between centres (unlikely) or issuers.

... or significant?

However, the onshore-offshore choice by reserve managers makes a big difference to the US balance of payments. This was strikingly demonstrated in 1987, when heavy intervention by Asian and European central banks raised global official dollar reserves by $134 billion, compared to a US current account deficit of $160 billion. The BEA, in contrast, reported official purchases of US assets of only $45 billion. At the time, central banks had a regulatory incentive, described below, to hold dollar bank deposits offshore, and interbank inflows were providing a significant share of the financing of the US current account deficit. Funds placed by official reserve managers in Tokyo, Hong Kong or London could be seen as one interbank (or intrabank) transaction away from the private inflow captured by the BEA. Under these circumstances, it was

possible to argue that the official share of the financing of the US current account deficit was in effect over four fifths. Higgins and Klitgaard (2004) adopt this line of reasoning as still appropriate today and term the difference between the BEA and BIS measures a discrepancy.

Do offshore dollars finance the US current account deficit?

Truman (2005) argues, however, that it is mistaken to treat identified official dollar claims on non-residents in the same fashion as those on US residents. After all, the US economy needs only to service US entities' liabilities. Moreover, a variety of countries can finance their current account deficits with US dollar borrowing, and borrowers in countries without such deficits issue dollar-denominated debt. While countries running substantial deficits, like Australia, are not ultimately competing with the United States for US dollar financing, issuers outside the United States sold a record net $257 billion in dollar-denominated debt securities in 2004, according to BIS data.[4]

The perspective of long and short dollar positions

It is useful to distinguish the issue of financing the US current account flow (or net international investment liability stock), on the one hand, from the portfolio balance issue of the holding of the new flow (or stock) of dollar assets, on the other (Tille (2004), BIS (2005, Chapter V)). Foreign central bank acquisition or holding of dollars provides support to the dollar even if it does not finance US deficit or debt. This special feature's last section suggests that the appropriate comparison to be drawn is between the global official dollar reserve change and US net issuance of *dollar* liabilities.

Politics and economics of offshore dollar holdings

Central banks have a variety of reasons for placing dollar reserves outside the United States. The economic reasons are common to those of private investors but some of the political reasons are specific to foreign officials.

Country risk: high politics, litigation risk and infrastructure risk

Offshore dollar holdings often ascribed to country risk considerations:

For an investor, country risk refers to factors that might prevent the use of funds placed in a given jurisdiction. The term can be used in a narrow sense of high politics or a broader sense including the actions of courts and breakdowns of market functioning (Borio and Packer (2004)). Here we opt for a broad usage.

politics ...

High politics. Histories of the eurodollar market, the market for short-term dollar placements outside the United States, refer to the Soviet Union as an early holder of dollars in London (Einzig (1970, p 30), Kindleberger (1973, p 289)). Such placements could have been intended to hide dollar payments from the US authorities and permit dollars to be mobilised in the event of cold war tensions. The validity of efforts to avoid the US authorities' reach became evident in 1979, when they froze Iranian assets.[5]

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[4] Dollar bonds sold by high-quality names outside the United States compete with US agency bonds in the portfolios of central banks (see below). Dollar bonds sold by Brazilian, Korean or Russian agencies, banks and firms, if converted into domestic currency, can lead to intervention and higher official reserve holdings.

[5] See Hufbauer et al (1990a, p 38). Not all offshore jurisdictions may prove equally safe: the United Kingdom froze Argentina's assets during the Falklands war (Hufbauer et al (1990b, p 537)). The US freeze on Iranian assets was extended to those held at US bank branches

In the late 1970s and early 1980s, around the time of the Soviet invasion of Afghanistan, Soviet deposits in the United States amounted to only tens of millions of dollars, while Soviet official reserves amounted to tens of billions of dollars (Graph 2, left-hand panel). Once the Soviet Union was dissolved and relations with the United States improved, Russian banks, including the central bank, took to placing their dollars in the United States. Nowadays, Russian deposits in the United States are measured in the tens of billions, just like Russian reserves.

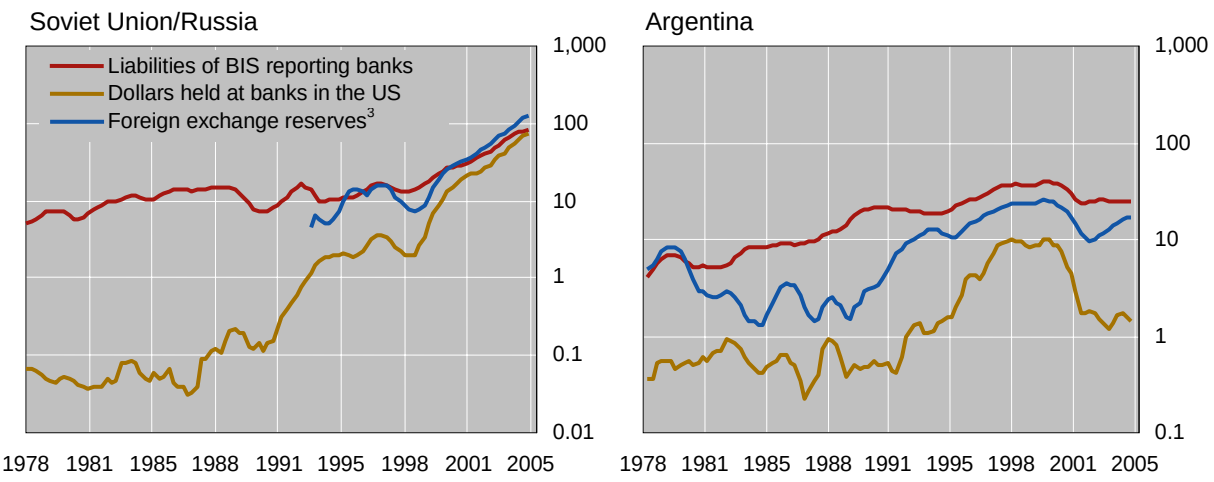
... courts ...

Litigation risk. Another type of country risk that can lead to holding dollars offshore is litigation risk. In the absence of collective action clauses in sovereign bond documentation, there is a hold-out problem when a sovereign restructures its debt. Some US investors seem to specialise in buying distressed sovereign debt and holding out from participating in offered settlements. They then seek to be bought out at better prices by threatening to initiate, or actually initiating, litigation. In some cases, this can include attempts to seize assets of the defaulting sovereign. In response, putting sovereign assets beyond the reach of US or other creditors' courts may be a logical counter-strategy.

It is hard to quantify the extent to which litigation risk has led to holding dollars outside the United States. However, at any given time, only a handful of countries might seek to reduce such risk by choosing an offshore jurisdiction for dollar deposits. At present, Argentina faces ongoing litigation in the United States and its post-default holdings of bank deposits there are relatively low, especially compared to the period in the 1990s when dollars were held in New

Banks' holdings[1] of bank deposits inside and outside the United States

In billions of US dollars[2]



[1] Including central bank holdings. [2] Logarithmic scale, four-quarter moving averages. [3] "At the end of 1990, deposits in Western banks accounted for virtually all of Soviet hard currency assets" (Neu (1991, p 16)).

Sources: Treasury International Capital System; national data; BIS. Graph 2

abroad, originally without regard to currency, but later only to dollar accounts (Kirton (1987, p 274)). The UK freeze on Argentine assets was not extended to those held at UK bank branches outside the United Kingdom. Asset freezes can be used, however, to defend against plundering, as for example the US and allies' freeze of Kuwaiti assets after the invasion by Iraq in 1990.

Location of official dollar deposits and nationality of banks, December 2004

In billions of US dollars

Nationality of bank	Location of deposits		Total
	United States	Offshore	
United States	73.6	7.8	81.4
Others	73.0	264.9[1]	337.9
Total	146.6	272.7	419.3

Note: The X^2 test statistic for the independence of location and nationality is 137, while the critical value for the 1% level of significance is 6.6.

[1] Includes $5 billion from domestic official monetary authorities.

Source: BIS locational banking statistics by nationality. Table 2

York banks to help make the commitment to convertibility more credible (Graph 2, right-hand panel).

... and operations ...

Infrastructure risk. As central banks have lengthened their investment portfolios, their overall access to liquidity has become more dependent on the proper functioning of securities markets, including repurchase markets. Thus, the interruption of trading of US Treasury securities in September 2001 owing to terrorist attacks reminded officials of the potential benefits of having diverse trading and custodial locations. While normal operations with Treasury securities were interrupted, central banks with dollar securities held in European depositories were still able to carry out normal operations with them, since the US payment system continued to operate and thus banks could make dollar payments.

Nationality of bank. The choice of whether to place dollars in the United States or offshore should not be confused with the choice of whether to place dollars in US banks or in other banks. True, US banks receive few of the officially held dollars deposited offshore.[6] But half of the official dollar deposits placed in the United States are placed with banks (or securities firms) not headquartered there (Table 2). A central bank that has decided to place a deposit with a bank headquartered outside the United States still has the choice of whether to place the deposit inside or outside the United States.

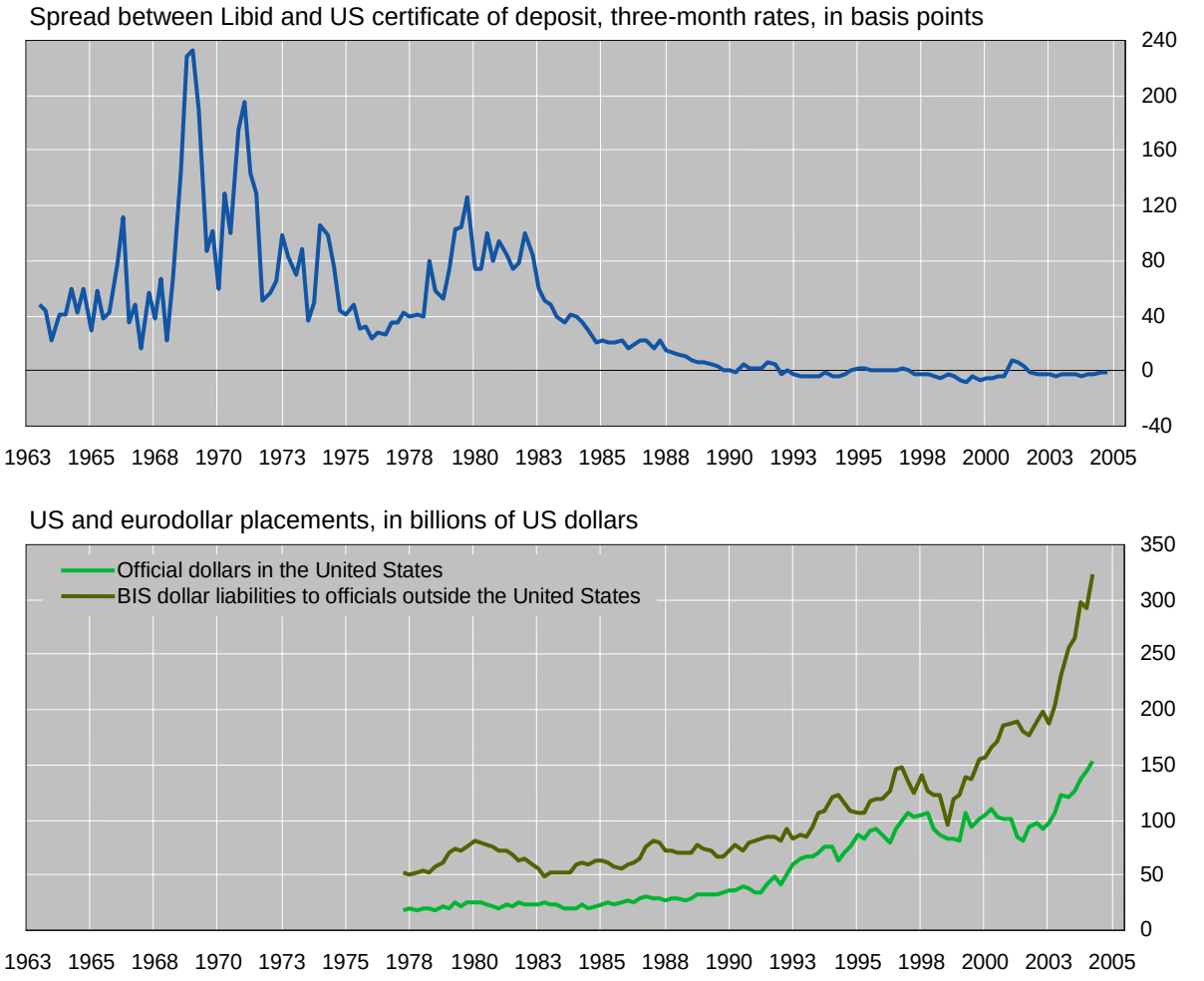
Yield

... but yield was more important ...

Yield has proved more important to the growth of the euromarket over the last two generations than country risk. For most of the life of the eurodollar market, a substantial yield pickup was available to those willing to buy a deposit in a bank in London or another centre outside the United States (Graph 3, upper panel). This resulted originally both from a lack of integration between the London and New York dollar money markets and from US reserve requirements, but from the mid-1970s just from the latter.

[6] As a result, US banks have a global share of only about a fifth of official dollar deposits reported to the BIS. It might be noted in passing that this observation raises a question regarding the oft-assumed advantage of the reserve role of the dollar to the US financial services industry and, through its employment and profits, to the US economy as a whole.

Yields and official placements in US and eurodollar deposits



Sources: National data; BIS statistics. Graph 3

Before global dollar money markets became generally integrated 30 years ago, yields in London often exceeded those in New York by more than the cost of US reserve requirements.[7] Owing to the US "voluntary credit restraint program" introduced in 1965, banks could not place enough US-raised funds in London to ensure the equality of funding costs in the two markets.[8] In particular, these capital controls succeeded in restraining banks in the United States from closing a 100–300 basis point incentive for outward arbitrage in 1971 (Kreicher (1982)). Given these constraints, central banks faced strong incentives to shift onshore deposits offshore. If reserve managers were expected to earn Treasury bill or US certificate of deposit yields, they could earn still higher ones by holding eurodollars.[9]

[7] The classic references are Johnston (1979), Aliber (1980, 2002) and Kreicher (1982).

[8] The BIS (1965, p 143) noted delicately that "the amount of new money that US banks may lend to foreigners is, since February 1965, supervised by the American monetary authorities".

[9] The BIS (1964, p 132) reported that the Italian and Japanese authorities placed dollars with their own banks and that the BIS itself placed dollars offshore, "presumably to obtain higher earnings on these funds". The Deutsche Bundesbank, by contrast, at times even required

Policy initiatives to limit official offshore dollar holdings

Before the offshore and onshore US dollar money markets were well integrated, central banks meeting at the BIS expressed concern about money and credit creation in the eurodollar market. Given the absence of any reserve requirements, it was hypothesised that the money and credit multipliers might be very large and money and credit out of official control. There was also a concern that eurodollar deposits would be lent to European companies and the proceeds used to buy European currencies, increasing the need for dollar purchases by central banks. Mayer (1970) likened the placement of dollars offshore by central banks to newly mined gold, in that it permitted an increase in reserve holdings by one country without another country running an official settlements deficit.[①]

Two policy proposals were made, one of which was subsequently implemented and the other not. In 1971, the G10 central banks agreed not to place more funds offshore.[②] However, another, more fundamental, proposal was "an agreement among the major international banking countries (the Group of Ten and Switzerland) to impose reserve requirements on the eurodeposits of the banking systems worldwide. This was proposed by the United States at the BIS in 1980 but was not adopted" (Frydl (1982, p 18)).

The line of reasoning that led central banks to forswear eurodollar deposits made sense at a time when capital controls segmented the onshore and offshore dollar money markets. By the mid-1970s, however, this reasoning had lost its validity. The choice by a central bank, or any other depositor, to place funds in the Caribbean or London instead of New York would just lead to a slightly larger net interbank flow into the United States or a slightly smaller net interbank outflow. For banks arbitraging the two markets, an onshore and an offshore deposit at the same all-in cost were perfect substitutes.

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① See Machlup (1972) and Dufey and Giddy (1978) for discussion. ② Zijlstra (1971): "[I]t is becoming increasingly clear that the Euro-currency market needs guidance and supervision. The group of Governors meeting regularly in Basel decided to set up a study group under my chairmanship to analyse the problem and to work out terms of reference for a standing group which might suggest policies to be adopted by the Governors. I am confident that the Governors will be able to bring the Euro-currency market into better harmony with the proper functioning of the international monetary system ... [W]e have already decided for the time being not to place additional official funds in the market and even to withdraw funds when such action is prudent in the light of market conditions." This policy can be seen as a loose version of Governor Norman's principle of exclusiveness: central banks should do all their business in a given currency through the central bank of issue of that currency, a "doctrine without much practical effect" (Sayers (1976, vol 1, p 158 and vol 3, pp 74–5)).

In January 1974 the US capital controls were abolished. Subsequently, arbitrage tended to hold eurodollar rates within a range against the all-in costs of US money market rates. Yields on deposits located onshore and offshore did not become identical, however. US reserve requirements interacted with the level of interest rates to raise the all-in costs of fund-raising by banks in the United States. At an interest rate of 10%, a 6% reserve on a US certificate of deposit imposed a cost of nearly 60 basis points. Banks would thus be willing to pay that much more for funds in London to finance lending there. So for 15 years after the integration of the on- and offshore dollar money markets, offshore deposits still offered a yield advantage.[10]

German banks that were counterparties to short-term foreign exchange swaps to place the dollars temporarily acquired in US Treasury bills.

[10] In effect, London and other offshore centres allowed central banks to avoid paying the small amount of seigniorage earned by the US public sector on reservable dollar deposits. Most of the seigniorage earnings from non-residents then (and all of them now), however, arose from foreign holdings of US banknotes, which were almost entirely in private hands.

Offshore share of US dollar bank deposits of official monetary institutions and the yield premium on offshore deposits

	Coefficient	Standard error	t-statistic	Significance
Constant	0.2611	0.086	3.047	0.004
Offshore share[1]	0.6237	0.122	5.093	0.000
Spread	0.0002	0.000	2.117	0.040
Sample 1978 Q1–1990 Q3 Adjusted R-squared 0.616 DW statistic 2.360				
Constant	0.0811	0.049	1.641	0.107
Offshore share[1]	0.8682	0.078	11.066	0.000
Spread	–0.0007	0.001	–0.618	0.539
Sample 1990 Q4–2004 Q4 Adjusted R-squared 0.707 DW statistic 2.020				

Note: The dependent variable is the offshore share of dollar deposits, calculated as the ratio between the BIS-reported dollar liabilities to official monetary institutions in banks outside the United States and the sum of such liabilities and the dollar liabilities to official monetary institutions in the United States. The spread is the difference between Libid and the US certificate of deposit rate at the three-month maturity. The US reserve requirement on large deposits and on net eurodollar borrowings was reduced to zero in December 1990 (McCauley and Seth (1992)).

[1] Lagged one quarter.

Sources: National data; BIS statistics; BIS estimates. Table 3

Since 1990, eurodollar deposits have had scant, if any, yield advantages over US money market investments like certificates of deposit. Late that year, the Federal Reserve lowered the reserve requirements on large certificates of deposit to zero. Admittedly, Federal Deposit Insurance Corporation insurance premiums on most, but not all, large bank deposits in the United States still provided an incentive for central banks to place offshore during most of the 1990s. Since 1997, however, the best-rated banks have not had to pay any deposit insurance premiums either.[11]

... as demonstrated by central bank behaviour

Central banks responded as yield-sensitive investors to offshore-onshore rate differentials, although at one point they agreed to refrain from seeking higher yields in the offshore market in the interest of monetary and financial stability (see the box on the previous page).[12] For instance, when high US dollar interest rates widened the yield advantage of offshore deposits around 1980, central banks placed a higher proportion of their deposits offshore (Graph 3, lower panel). Table 3 reports a regression of the offshore share of dollar bank deposits of official monetary institutions on the difference in yields between the London interbank bid (Libid) rate and the US certificate of deposit

[11] "Currently, 93 percent of FDIC-insured institutions, which hold 98 percent of insured deposits, pay nothing for deposit insurance" (Congressional Budget Office (2005)).

[12] Risk-adjusted returns matter to central banks, but it is hard to think of a good proxy for the risk of eurodollar deposits. Frydl (1982) argued that the risk imputed by depositors to eurodollar deposits had subsided after the 1974 failure of Bankhaus Herstatt. Frydl also argued that the agreement on the Concordat regarding the division of supervisory responsibilities between home and host authorities had given comfort to depositors in the eurodollar market. In the event, the Latin American debt and Continental Illinois crises of 1982 and 1984, respectively, led to a substantial, if temporary, risk premium of eurodollar rates over US money market rates.

rate. Before the reduction of the US reserve requirements on large certificates of deposit in the fourth quarter of 1990, a 10 basis point widening in the spread was associated with a 0.2 percentage point rise in the share of official deposits offshore in the same quarter and a 0.6 percentage point rise with a lag.[13]

Since 1990, the onshore-offshore choice has been dominated by the interaction of the composition of reserve gainers (and losers) and differences across central banks in their habitual choice of deposit centre. These habits may be rooted, for instance, in time zone convenience: Latin American central banks may find it more convenient to place dollars in banks in the United States than Asian central banks.

Securities market regulation

Avoiding securities market regulation not an obvious factor ...

The empirical analysis has focused thus far on bank deposits, but these represent less than a third of official dollar holdings. Over time, central banks have extended the maturity of their portfolios by buying long-term securities. Here, too, they choose between investing in dollar securities in the United States and offshore; unfortunately, there is no direct measure of the latter.

The historical relationship between onshore and offshore bond markets stands as a mirror image of that between the onshore and offshore deposit markets. In both cases, a US tax affected relative yields in the two markets until it was eliminated. This "tax" was the reserve requirement on large deposits in the United States (paid by the bank), on the one hand, and a withholding tax on interest paid on US bonds held by non-residents (paid by the holder), on the other. Banks in London could afford to pay higher yields on dollar deposits at the same all-in costs, while dollar bond issuers in Europe could pay lower yields to non-residents because interest payments were paid gross.[14]

Central banks were not subject to the withholding tax and so had little incentive to buy relatively low-yielding eurodollar bonds. Into the 1980s, Indirect evidence suggests that there was little central bank holding of eurodollar bonds.[15] With the repeal of the US withholding tax in July 1984, however, the US and eurodollar bond markets quickly became integrated in their pricing. Possible savings by issuing eurodollar bonds instead of US bonds

[13] Why did US pension funds, insurance companies, mutual funds and state and local governments buy large US certificates of deposit before 1990 when they could get higher yields on deposits with the same banks' Caribbean or London branches? This question has never received a satisfactory answer. Some, no doubt, were constrained by investment guidelines that limited foreign holdings, but then the question is why these were not altered. It is clear that the growth of the money market mutual fund industry increased US portfolios capable of investing in the eurodollar market. One could label the unwillingness of US investors to buy eurodollars a response to country risk or an expression of home bias.

[14] Competition forced banks in London generally to pass through to depositors the saving from the absence of a reserve requirement. In contrast, each high-quality bond issuer was in its own spectrum of credit risk a discriminating monopolist, facing two different demand curves in the US and euromarket, the former more elastic. Consequently, the issuer did not push eurodollar issuance to the point of equal cost vis-à-vis US issues and offshore investors were inhibited by the withholding tax from buying higher-yielding onshore bonds. In effect, the eurodollar bond issuer shared with the the bond buyer the benefit of the absence of the tax.

[15] Fung and McCauley (2000) found that the sum of official assets in the United States and BIS-reported offshore deposits came very near to estimated dollar reserves in 1980.

came to be measured in basis points, rather than tens of basis points or even percentage points (Papke (2000)).

Since 1984, central banks might actually have had an incentive to buy eurodollar bonds, if the cost of Securities and Exchange Commission (SEC) registration outweighs the liquidity benefits of full access to the US bond investor base. Savings from avoiding this cost can presumably be shared between the buyer (including central banks) and the issuer. Against this cost, however, might be the benefit of additional liquidity that secondary trading of a bond could derive from a wider range of US investors. Many top-quality bonds marketed through eurobond channels nowadays are global bonds that are also issued in the United States and registered with the SEC. Others can be sold in the United States to institutional investors under the SEC's Rule 144A.

The breakdown of selected international dollar bond issues by SEC status over the last five years suggests that central banks do not buy bonds of non-US issuers to avoid the costs of SEC regulation (Table 4). The selected obligors are known to attract wide holdings by central banks. While the French agency CADES has eschewed SEC registration in this period, others, like the German government financing agency KfW, have registered most of their dollar paper. The Republic of Italy has registered over 90% of its dollar issues since 2000. The bulk of these obligors' issues, over two thirds by value, have been SEC-registered. It seems that central banks are seen by issuers as willing to bear the costs of SEC registration to enjoy better secondary market liquidity.[16]

US SEC registration of selected international bond issues denominated in US dollars

In billions of US dollars, 2000–May 2005

	SEC-registered	Rule 144A eligible	Neither	Total
CADES (French agency)	–	–	6.75	6.75
Hydro Quebec	0.75	–	–	0.75
KfW (German agency)	23.00	–	21.36	44.36
Quebec	4.75	–	0.02	4.77
Republic of Italy	48.00	–	4.15	52.15
Swedish Export Credit	3.10	0.25	2.99	6.34
Japan Bank for International Cooperation	1.00		2.25	3.25
Total	80.60	0.25	37.52	118.37

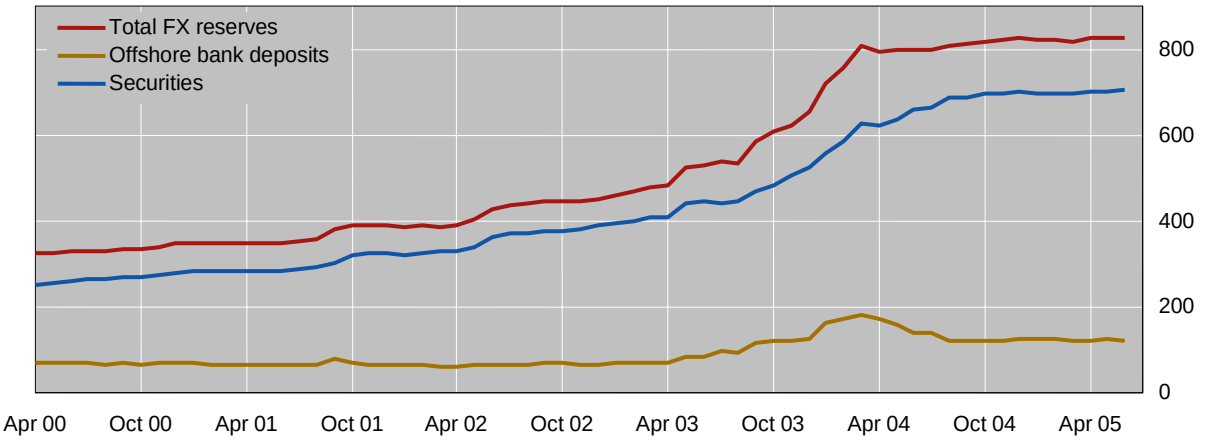
Note: Bonds issued by such non-residents of the United States and bought by foreign central banks, even if marketed in the United States, would not be included in the BEA flow or stock.

Sources: Dealogic; BIS. Table 4

[16] If regulation does not seem a strong reason for central banks to buy dollar bonds of non-US residents, then perhaps considerations of yield, portfolio diversification and perhaps the diversification of infrastructure risk are more important.

Japanese foreign exchange reserves, securities holdings and offshore bank deposits

In billions of US dollars



Source: Japanese Ministry of Finance. Graph 4

Stock adjustment in the investment process

... but lags in investment do seem to play a role

Large acquisitions of dollars within a short period of time seem to lead to temporary increases in offshore holdings. This could reflect reserve managers' parking funds in bank deposits in preparation for investment in securities. As we have seen, such deposits are largely held outside the United States, formerly for yield and now out of convenience or habit, while securities are mostly held in the United States. Lags in the investment process can push up the offshore share when reserves grow rapidly.[17] The reason for the lag is that, in common with other stock adjustment processes, the process of switching funds from bank deposits into securities may entail costs that are larger the greater the stock of funds to be switched (or, for a given size, the faster). In some cases, reserve managers prefer to buy newly issued securities, and this takes time; in other cases, reserve managers may find that intervention does not coincide with perceived opportunities to buy securities.

The flow of investment during the large Japanese intervention of 2003–04 is a case in point (Graph 4). Funds initially flowed into bank accounts in Japan, and only gradually were they invested in securities. As a result, the heavy purchases drove up the share of offshore deposits in the overall portfolio, which was then gradually worked down as securities were purchased.

Implications and conclusion

In conclusion, three statements of ascending breadth can be made about the importance of official financing of US external deficits in 2004. Strictly speaking, the official sector, in purchasing US liabilities onshore, financed 59% of the US current account deficit in 2004 ($395 billion out of $668 billion; Table 5). Including offshore holdings, however, foreign officials bought enough

[17] The acquisition of an offshore dollar account is not an immediate settlement result of intervention, since a purchase of dollars would be normally settled in the United States.

Official holdings of US dollars and US external financing

In billions of US dollars

	Flow			Stock	
	2002	2003	2004	2003	2004
BEA foreign official assets in the United States	116	278	395	1,567	1,982
Official dollar purchases/holdings[1]	187	423	498	2,077	2,575
US current account deficit/net international investment position	475	520	668	2,157	2,484
US fixed income external financing/debt[2]	510	672	836	3,012	3,734
US dollar net external financing/ liabilities (excluding US equity from dollar-denominated)[3]	515	697	791	3,288	3,901
US dollar net external financing/liabilities[4]	652	799	958	7,446	8,516

[1] Estimated using foreign official assets in the United States from BEA, offshore US dollar deposits from the BIS international banking statistics, Table 5C, and the Japanese SDDS data on deposit reserves. [2] Calculated by adding flows/stock of net direct investment and net portfolio equity investment to the absolute value of the current account deficit/net international liability position . [3] Calculated by adding US official reserve flows/assets, the net increase/holding of foreign currency bonds and the net increase/stock of US bank and non-bank claims denominated in foreign currency to fixed income external financing/debt. [4] Estimated by summing the absolute value of the current account deficit/net international investment position, flows/stocks of direct and portfolio equity investment abroad, the net increase/stock of foreign currency denominated bonds, the net increase/stock of US bank and non-bank claims denominated in foreign currency and the flow/stock of US official reserve assets.

Sources: BEA; Nguyen (2005); Sauers and Pierce (2005); US Treasury et al (2005); BIS estimates.

Table 5

dollars to have financed three quarters of that deficit ($498 billion).[18] Note that the gap between these shares was narrower in 2004 than in 2003, when 53% contrasted with 81%. This narrowing reflects both the deceleration of reserve growth in 2004 compared to 2003 and the working-out of the stock adjustment process evident in Graph 4. Recall, however, that these offshore holdings do not immediately finance US deficits, since they involve the liabilities of residents of other countries. But certainly the official increase in global official dollar reserves, whether placed on shore or offshore, supports the dollar.

The extent of that support might be most appropriately compared with the US economy's overall dollar financing requirements, ie the US net issuance of *dollar* liabilities, rather than the size of the current account deficit.[19] This net

[18] Note, however, that questions can arise when comparing the growth of global dollar reserves to the US current account deficit. It is entirely possible that the increase in official dollar reserves exceeds the current account deficit, in which case reserve accumulation is necessarily financing more than the deficit. Indeed, in the late 1960s, when the difference was first noticed, the US current account was in surplus. At that time, there was concern that European central banks' accumulation of Treasury bills or eurodollars was financing US firms' purchases of corporate assets in Europe (Kindleberger (1965)).

[19] One can also compare the change in global dollar reserves to the fixed income borrowing by the United States. On this view, US borrowing is needed to cover the current account and the excess of US direct investment and portfolio equity outflows over such inflows into the United States. A problem with this measure as compared to that in the text is that it would not make sense were central banks to switch from buying bonds to buying equities.

issuance by the United States exceeds the (absolute size of the) current account deficit by the US acquisition of foreign currency assets in any year. In effect, the US economy is going short the dollar, once to finance an excess of imports of goods and services over exports, and twice to finance the acquisition of foreign equities, corporate assets and foreign currency denominated bonds. On this showing, increases in global official dollar reserves did less of the work, serving as counterpart to 51% of the increase in the US short dollar position in 2004 (comparing the second and last rows of Table 5). A still broader view, taking in offshore dollar borrowing and lending, remains to be reached through further investigation.

Thus, it is both easy to understate and possible to overstate the role of foreign official support for the dollar. While global reserve managers have lost their strongest reason to place dollars outside the United States, they continue to place large sums offshore. The dollar is supported wherever officials place their dollars. The increase in global official dollar reserves is most sensibly compared not to the US current account deficit, but to a wider notion of the US financing requirement in dollars.

References

Aliber, R Z (1980): "The integration of the offshore and domestic banking system", *Journal of Monetary Economics*, vol 6, pp 509–26.

——— (2002): *The New International Money Game*, 6th edition, Chicago, University of Chicago Press.

Bank for International Settlements (1964): *34th Annual Report.*

——— (1965): *35th Annual Report.*

——— (2004): *74th Annual Report.*

——— (2005): *75th Annual Report.*

Borio, C E V and F Packer (2004): "Assessing new perspectives on country risk", *BIS Quarterly Review*, December, pp 47–62.

Congressional Budget Office (2005): "Modifying Federal deposit insurance", study transmitted to Richard S Shelby, Chairman, Senate Banking Committee, by Douglas Holtz-Eakin, Director, CBO.

Dufey, G and I H Giddy (1978): *The international money market*, Englewood Cliffs, New Jersey, Prentice-Hall.

Einzig, P (1970): *The eurodollar system*, 5th edition, New York: St Martin's Press.

Frydl, E (1982): "The eurodollar conundrum", *FRBNY Quarterly Review*, Spring, pp 11–19.

Fung, B and R N McCauley (2000): "Composition of US dollar foreign exchange reserves by instrument", *BIS Quarterly Review*, November, pp 59–60.

Higgins, M and T Klitgaard (2004): "Reserve accumulation: implications for global capital flows and financial markets", *Current Issues in Economics and Finance*, vol 10, no 10, Federal Reserve Bank of New York, September/ October, www.newyorkfed.org/research/current_issues/ci10-10.html .

Hufbauer, G C, J J Schott and K A Elliott (1990a): *Economic sanctions reconsidered: history and current policy*, 2nd edition, Washington, Institute for International Economics.

——— (1990b): *Economic sanctions reconsidered: supplemental case studies*, 2nd edition, Washington, Institute for International Economics.

Johnston, R B (1979): "Some aspects of the determination of eurocurrency interest rates", *Bank of England Quarterly Bulletin*, March, pp 35–46.

Kindleberger, C P (1965): "Balance-of-payments deficits and the international market for liquidity", *Essays in international finance*, Princeton, Princeton University Press, May.

——— (1973): *International economics,* 5th edition, Homewood, Illinois, Irwin.

Kirton, J (1987): "Economic sanctions and alliance consultations: Canada, the United States and the strains of 1979–82", in D Leyton-Brown (ed), *The utility of international economic sanctions*, London, Croom Helm.

Kreicher, L L (1982): "Eurodollar arbitrage", *FRBNY Quarterly Review*, vol 7, Summer, pp 10–22.

Machlup, F (1972): "The eurodollar system and its control", in F Machlup et al (eds), *International Monetary Problems*, Washington DC, American Enterprise Institute.

Mayer, H (1970): "Some theoretical problems relating to the eurodollar market", *Princeton Essays in International Finance*, no 79, Princeton, Princeton University Press.

McCauley, R N and B Fung (2003): "Choosing instruments in managing dollar foreign exchange reserves", *BIS Quarterly Review*, March, pp 39–46.

McCauley, R N and R Seth (1992): "Foreign bank credit to US corporations: the implication of offshore loans", *FRBNY Quarterly Review*, vol 17, Spring, pp 52–65.

Neu, C R (1991): *Soviet international finance in the Gorbachev era*, Santa Monica: RAND, R-4116-USDP.

Nguyen, E L (2005): "The international investment position of the United States at yearend 2004", *Survey of Current Business,* July, pp 30–9.

Papke, L E (2000): "One-way treaty with the world: the US withholding tax and the Netherlands Antilles", *International Tax and Public Finance*, vol 7, no 3.

Sauers, R M and K K Pierce (2005): "US international transactions, first quarter of 2005", *Survey of Current Business,* July, pp 72–121.

Sayers, R L (1976): *The Bank of England, 1891–1944*, Cambridge, Cambridge University Press.

Summers, L H (2004): "The US current account deficit and the global economy", Per Jacobsson Lecture, 3 October.

Tille, C (2004): *Financial integration and the wealth effect of exchange rate fluctuations*, Federal Reserve Bank of New York, processed.

Truman, E M (2005): "Postponing global adjustment", *Institute for International Economics Working Paper* number 05–6, July.

US Treasury, Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System (2005): *Report on foreign portfolio holdings of U.S. securities as of June 30, 2004*, June, http://www.ustreas.gov/tic/shl2004r.pdf.

Zijlstra, J (1971): "President's speech", BIS Annual General Meeting.