

AN OVERVIEW OF THE GLOBAL FOREIGN EXCHANGE MARKET

BY

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1. Introduction

The primary data on foreign exchange (forex) markets is obtained from the latest triennial central bank survey of forex and derivative market activity in 43 countries, conducted in April 1998 by the Bank for International Settlements (BIS, 1998). Referring to Table 1, *daily* global forex trades (i.e. traditional instruments of spots, swaps and forwards) have seen a phenomenal increase from US\$18.3bn in 1977 to US\$1490bn by 1998¹.

Of the total turnover in 1995, only 41 percent were spot transactions (Table 2). The remainder were in the form of derivatives, with swaps constituting the bulk of all financial transactions (46 percent), futures, forwards, options and other 'exotic' derivatives making up the remainder². Financial derivatives in 1977 comprised a negligible portion of total forex transactions. Indeed, even in 1989, spot transactions constituted about three-fifths of the share of daily forex turnover. With the expected continuation of innovations in financial instruments, the use of financial derivatives is concomitantly anticipated to rise in the future. It is therefore imperative that academics and policy-makers pay far closer attention to their economic costs and benefits.

Financial derivatives have allowed private agents to leverage their capital manifold, hence contributing to the precipitous growth in the forex market. Specifically, anywhere between 60 and 90 percent of forex transactions are of the

¹ Three points ought to be noted. First, to obtain forex volumes, we need to multiply the daily turnover by 250 (trading days). Second, the growth would have been slower if measured in some other major currency (such as the Deutsche mark or Japanese yen), given the depreciation of the US\$ between 1989 and 1995. Third, other issues relating to intertemporal comparisons of the survey have been noted in BIS (1996) and Felix (1996).

² In general terms, a *derivative* is a synthetic financial instrument derived from some underlying assets such as currencies and equities; a *forward* is a promise/obligation to buy/sell the underlying asset in question - that is tailor-made according to size and maturity and traded 'over-the-counter' (OTC) - at a predetermined price and future date; a *future* is a standardised and more liquid form of a future which is traded on exchanges; an *option* is the right but not obligation to buy/sell the underlies; and a *swap* is an exchange of two principals (generally currencies or interest rates) with an offsetting future transaction.

inter-dealer variety. This phenomenon of repeated passing of inventory balances between dealers is termed the 'hot potato' process - not unlike the typical text-book money multiplier - and describes how an initial forex transaction sets into motion a series of chain reactions or transactions with other banks or financial agents, which attempt to rebalance their financial inventories, so as to have net neutral positions (both in terms of net worth as well as timing)³. This hot potato process helps to partly explain the seeming herd mentality or clumping together of forex flows. Apart from the wholesale or decentralised and spontaneous dealership aspects of the market, the remainder of forex turnover is by the retail market, i.e. transfers between banks or financial agents and 'non-financial' customers such as exporters, mutual fund holders, and the like. Consistent with the high trading volume, almost 82 percent of the spot forex turnover has a maturity of less than seven days. The predominance of the inter-dealer transactions is also reflected in the acute and growing concentration of business in a handful of financial institutions. For instance, the market share of the top 20 institutions in the US rose from 60 to 70 percent from 1992 to 1995, the corresponding figures being 63 and 68 percent in the UK. In Japan, the top ten institutions constituted 51 percent in 1995, up from 44 percent in 1992 (BIS, 1996).

2 Geographical Composition

The forex market is highly concentrated geographically, with four countries accounting for 65 percent of all transactions (Table 3). Specifically, the UK is the largest, with a 32 percent market share, followed by the US with 18 percent and Japan and Singapore with 8 and 7 percent respectively. This concentration is consistent with the oft-noted geographical triad of Europe-US-Asia Pacific. The other four countries with market shares of some significance are Germany (5 percent), France, Hong Kong and Switzerland (4 percent each). Apart from Australia and Canada (2 percent each), the remainder is divided among other European markets.

³ Lyons (1996) provides an excellent discussion and empirical validation of the hot potato effect.

Of some surprise is the fact that, while Japan's market share has fallen sharply (from a high of 15 percent in 1989), those of the other three financial centers in the Asia Pacific have also declined (by 1 percentage point each). Thus, contrary to popular belief, the erosion of Tokyo as a financial center is not due to the Asia Pacific competitors. Rather, the UK seems to have been the main beneficiary of Tokyo's relative decline, its share rising by 6 percentage points during the period, while that of the US rose by 2 percentage points. This broad data seems to suggest that the top three viz. London, New York and Tokyo being international financial centers, may, to some extent, be in direct competition with one another. Even this thesis though is in doubt, given the differing time-zones that each center caters to (especially Japan and the US where the overlap is minimal). London's favourable geographical location, time-zone and agglomeration economies which have led to depth in the capital markets, are broad reasons for its preeminent position. The other major centers - Hong Kong, Singapore and possibly Australia in the Asia Pacific; Germany, France, Switzerland and others in Europe - are primarily regional competitors⁴. Indeed, if Japan's downward trend continues it too will have to be considered only a regional financial center.

Table 4 shows that the US\$ constituted the bulk of transactions (87 percent), with the Deutsche mark (30 percent), Japanese yen (21 percent) and the Pound Sterling (11 percent) being the three next largest⁵. Significantly, the US\$ is the only truly 'global' currency, with the result that it is most widely used as the vehicle currency for cross-border transactions (Tavlas, 1997). The DM's share is predominantly because of its use in Europe, hence signifying its position as the anchor of the EMS. The Japanese yen expectedly is most widely used in the Asia Pacific region, though even here it is the US\$ that predominates, i.e. there is no 'yen

⁴ Though even here the extent of regional competition is at times limited. For instance, Hong Kong and Singapore have developed unique niches, both in market areas serviced and types of businesses that predominate (Handley, 1998).

⁵ Note that the two-way currency transactions, with each side of the transaction counted distinctly, must necessarily mean that the total is 200 percent.

bloc' (also see Frankel and Wei, 1998, p.200). The relatively low (and declining) share of the pound sterling in comparison to London's predominant market share of forex turnover, emphasises the high and growing internationalisation of the London forex market.

3 Forex Growth in Comparative Perspective

To put the growth in forex transactions in perspective, consider concomitant trends in and distribution of global trade (simple average of exports and imports) and official gold and forex reserves (Table 5). Revealingly, the trade-to-forex volume ratio has seen a striking decline from 23.9 percent in 1977 to 1.6 percent in 1995. This provides some, albeit crude validation of the thesis regarding the growing delink between forex transactions and real economic activities, with the former far exceeding the financing requirements of the latter. This point may be further emphasised by comparing patterns of world trade (exports) with those of the forex market noted above. In 1995, the US constituted 13.4 percent of global trade, Japan 7.7 percent, the UK 5.0 percent, Hong Kong 3.7 percent, Singapore 2.5 percent and industrial countries as a whole (excluding US, UK and Japan) about 50 percent (IMF, International Financial Statistics Yearbook, 1997).

Comparison of the distribution of trade flows with that of forex turnover reveals that only in the cases of the US and Japan is the distribution of their respective market shares in forex transactions more or less consistent with their respective shares of global trade. This point is further emphasised by the fact that the bulk of transactions in these two markets involve the domestic currency (over 70 percent). Hence, the growing share of the US market and the simultaneous decline of the Japanese share previously noted, are probably more due to the relative buoyancy of real economic activity in the former and continued economic slump of the latter, rather than because of the dynamics of 'head-to-head' competition. This apart, the UK's forex market share significantly exceeds its global trade share. Hong Kong's and particularly Singapore's forex market shares are also well in excess of

their respective trade shares. London, Singapore and Hong Kong also have the highest share of transactions involving non-domestic currencies. All this underscores the roles that the financial sectors in these economies play as independent growth engines, as opposed to mere 'bridesmaids' roles vis-à-vis expansions of domestic respective real economic activities.

While official reserves-to-exports ratio on average remained relatively constant at 26 percent in 1995 (up from 22.6 percent in 1977, but down from the peak of 29.9 percent in 1983), consider the official reserves-to-forex (daily) turnover ratio. This declined sharply from 14.5 days in 1977 to just 1.1 days by 1995, thus suggesting a much-diminished ability of monetary authorities to defend currencies in the face of speculative attacks. For completeness, we compare the distribution of forex transactions with the corresponding region-wise share of aggregate official reserves. In 1995, Japan had 12.7 percent of global official reserves (including SDRs), the US 6.1 percent, Singapore 4.7 percent, the UK 2.9 percent and industrial countries as a whole (except for the three mentioned above) about 43 percent. Figures were unavailable for Hong Kong (IMF, International Financial Statistics Yearbook, 1997).

Table 1
Daily Global Forex Turnover, 1977-98
(US\$ billion)

Year	Excluding Derivatives ^a	Including Derivatives ^b
1977	18.3	n.a.
1980	82.5	n.a.
1983	119.0	n.a.
1986	270.0	n.a.
1989	590.0	620.0
1992	820.0	880.0
1995	1190.0	1260.0
1998	1490.0	n.a.

Notes: a) Includes spot, outright forward and swaps

b) Includes in addition futures and options

Sources: BIS (1996, 1998) and Felix (1996a)

Table 2
Daily Global Forex Turnover Including Derivatives, 1989-98
(US\$ billion)

Categories	1989		1992		1995		1998	
	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)
Spot	350	56.5	400	45.5	520	41.3	590	n.a.
Swaps + Outright Forwards ^a	240	38.7	420	47.7	670	53.2	900	n.a.
Reporting gaps	30	4.8	60	6.8	70	5.6	n.a.	n.a.
Total	620	100.0	880	100.0	1260	100.0	n.a.	n.a.

Notes: a) Swaps were about US\$320 billion in 1992 and US\$580 in 1995. Data not available for 1989 which did not separate the two items

Sources: BIS (1996, 1998) and Felix (1996a)

Table 3
Geographical Distribution of Forex Turnover, 1989-98
(Daily Averages in US\$ billion)

Country	April 1989		April 1992 ^c		April 1995		April 1998	
	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)
UK	184.0	26	290.5	27	463.8	30	637.7	32
USA	115.2	16	166.9	16	244.0	16	350.9	18
Japan	110.8	15	120.2	11	161.3	10	148.6	8
Singapore	55.0	8	73.6	7	105.4	7	139.0	7
Germany	n.a.	n.a.	55.0	5	76.2	5	94.3	5
Switzerland	55.0	8	65.5	6	86.5	6	81.7	4
Hong Kong	48.8	7	60.3	6	90.2	6	78.6	4
France	23.2	3	33.3	3	58.0	4	71.3	4
Australia	28.9	4	29.0	3	39.5	3	46.6	2
Canada	15.0	2	21.9	2	29.8	2	41.0	2
Others ^a	80.0	11	129.1	12	172.9	11	294.4	14
Total ^b	717.9	100	1076.2	100	1571.8	100	1971.0	100

Notes: a) Approximate
b) Total 'net-gross' turnover, i.e. adjusted for local double-counting ('net-gross')
c) Data for 1992 not adjusted for double-counting

Source: BIS (1998)

Table 4
Use of Major Currencies on One Side of the Transaction, 1989-98
(as % of Global Gross Forex Turnover)

Currency	April 1989	April 1992	April 1995	April 1998
US \$	90	82	83	87
Deutsche Mark	27	40	37	30
Japanese Yen	27	23	24	21
Pound Sterling	15	14	10	11
French Franc	2	4	8	5
Swiss Franc	10	9	7	7
Canadian \$	1	3	3	4
Australian \$	2	2	3	3
ECU and other EMS Currencies	4	12	15	17
Others	22	11	10	15
Total	200	200	200	200

Source: BIS (1998)

Table 5
Global Official Reserves, Forex Trading and Trade, 1977-95

Year	Trade ^a (US\$ billion)	Reserves ^b (US\$ billion)	Annual global Forex volume (US\$ billion)	Reserves/ Trade (%)	Trade/ Forex (%)	Reserves/ Forex (days)
1977	1094.7	296.6	18.3	27.1	23.9	16.2
1980	1960.0	468.9	82.5	23.9	9.5	5.7
1983	1752.6	496.6	119.0	28.3	5.9	4.2
1986	2074.5	552.6	270.0	26.6	3.1	2.0
1989	3003.2	826.8	590.0	27.5	2.0	1.4
1992	3780.6	1022.5	820.0	27.0	1.8	1.2
1995	5053.0	1330.0	1260.0	26.3	1.6	1.1

Notes: a) Simple average of exports and imports

b) Includes gold holdings

Sources: BIS (1996) and IMF, International Financial Statistics Yearbook, various issues

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