

ANNEXES

ANNEX 1

COMPARATIVE TABLES

Table 1

Notes and coin in circulation¹⁾

(end of year)

	1996	1997	1998	1999	2000
	Total (USD millions) ²⁾				
Australia	15,634	13,771	13,987	16,086	14,918
China	106,071	122,926	135,335	162,526	177,009
Hong Kong	9,891	10,404	10,479	12,806	11,770
Indonesia	9,296	3,414	4,766	7,688	6,959
Japan	423,211	405,887	471,446	581,944	539,145
Korea	18,305	10,916	11,318	17,003	14,000
Malaysia	7,522	5,509	4,803	6,521	5,858
New Zealand	1,059	931	896	1,099	924
Philippines	5,734	6,163	4,539	7,049	5,303
Singapore	7,353	6,389	6,110	6,792	6,520
Thailand	14,641	12,751	9,089	15,513	11,828
	Value per inhabitant (USD) ²⁾				
Australia	849	740	742	844	774
China	87	99	108	129	137
Hong Kong	1,537	1,603	1,601	1,938	1,766
Indonesia	47	17	24	38	34
Japan	3,362	3,217	3,727	4,594	4,248
Korea	402	238	245	365	298
Malaysia	355	254	217	287	252
New Zealand	285	248	236	288	241
Philippines	80	84	60	92	68
Singapore	2,003	1,684	1,558	1,719	1,623
Thailand	244	210	148	252	191
	As a percentage of GDP				
Australia	3.8	3.9	4.0	4.0	4.1
China	13.0	13.7	14.3	16.4	16.4
Hong Kong	6.4	6.1	6.4	8.1	7.2
Indonesia	5.4	6.6	11.0	15.4	18.2
Japan	9.6	10.1	10.5	11.6	12.1
Korea	3.7	3.4	3.1	4.0	3.4
Malaysia	7.5	7.6	6.4	7.5	6.5
New Zealand	1.6	1.7	1.7	2.1	2.1
Philippines	6.9	7.5	7.0	9.3	7.1
Singapore	8.0	7.6	7.4	8.0	7.1
Thailand	8.0	8.4	8.1	12.7	9.7
	As a percentage of narrow money ³⁾				
Australia	20.6	19.5	19.9	19.6	19.6
China	30.9	29.2	28.8	29.4	27.6
Hong Kong	38.6	42.8	45.5	48.5	45.0
Indonesia	35.1	36.3	41.0	46.8	44.6
Japan	26.1	25.8	25.3	24.8	25.0
Korea	39.1	44.1	38.4	43.9	37.5
Malaysia	31.4	33.8	33.7	33.7	28.5
New Zealand	14.2	14.2	13.2	14.1	13.3
Philippines	67.7	70.3	65.9	69.9	60.6
Singapore	38.1	38.9	37.3	36.4	33.9
Thailand	87.7	93.5	85.3	102.1	90.5

¹⁾ For explanation of figures see relevant country tables.²⁾ Year-end figures converted at end-of-year exchange rates. For Indonesia, Philippines, and Thailand, year-end figures converted at average exchange rates.³⁾ Narrow money: M1.

Table 2

Transferable deposits held by non-banks ¹⁾*(end of year)*

	1996	1997	1998	1999	2000
	Total (USD millions) ²⁾				
Australia	60,404	56,810	56,450	66,183	61,324
China	237,557	297,700	335,185	391,120	465,022
Hong Kong	15,745	13,878	12,536	13,615	14,392
Indonesia	17,198	5,996	6,886	8,733	8,636
Japan	1,199,022	1,166,490	1,389,698	1,764,630	1,618,030
Korea	28,535	13,841	18,143	21,739	23,308
Malaysia	16,423	10,779	9,445	12,808	14,726
New Zealand	6,425	5,701	5,901	6,751	6,075
Philippines	3,777	3,891	3,312	4,494	4,405
Singapore	16,747	16,807	17,093	19,794	21,973
Thailand	4,696	2,997	2,973	2,696	2,938
	Value per inhabitant (USD) ²⁾				
Australia	3,279	3,051	2,996	3,474	3,181
China	194	241	269	311	359
Hong Kong	2,446	2,140	1,915	2,061	2,159
Indonesia	87	30	34	43	43
Japan	9,526	9,246	10,987	13,929	12,748
Korea	627	301	392	466	496
Malaysia	776	497	426	564	633
New Zealand	1,727	1,516	1,557	1,772	1,586
Philippines	53	53	44	59	56
Singapore	3,260	2,644	2,625	3,007	3,159
Thailand	78	49	48	44	48
	As a percentage of GDP				
Australia	14.7	16.0	15.9	16.6	17.0
China	29.0	33.1	35.4	39.5	43.1
Hong Kong	10.2	8.1	7.7	8.6	8.9
Indonesia	10.1	11.5	15.9	17.5	22.6
Japan	27.2	29.0	31.0	35.1	36.3
Korea	5.8	4.3	4.9	5.2	5.7
Malaysia	16.4	14.9	12.6	14.7	16.4
New Zealand	10.0	10.2	11.3	12.9	13.8
Philippines	0.2	0.2	0.1	0.2	0.1
Singapore	13.1	12.0	12.4	13.9	13.8
Thailand	2.6	2.0	2.7	2.2	2.4
	As a percentage of narrow money ³⁾				
Australia	79.4	80.5	80.1	80.4	80.4
China	69.1	70.8	71.2	70.6	72.4
Hong Kong	61.4	57.2	54.5	51.5	55.0
Indonesia	64.9	63.7	59.1	53.2	55.4
Japan	73.9	74.2	74.7	75.2	75.0
Korea	60.9	55.9	61.6	56.1	62.5
Malaysia	68.6	66.2	66.3	66.3	71.5
New Zealand	85.8	86.7	86.8	86.6	87.3
Philippines	44.6	44.4	48.1	44.6	50.3
Singapore	61.9	61.1	62.8	63.6	66.1
Thailand	28.1	22.0	27.9	17.7	22.5

¹⁾ For explanation of figures see relevant country tables. For Philippines, figures for transferable deposits are those for demand deposits.

²⁾ Year-end figures converted at end-of-year exchange rates. For Indonesia, Philippines, and Thailand, year-end figures converted at average exchange rates.

³⁾ Narrow money: M1.

Table 3

Settlement media used by banks ¹⁾*(end of 2000)*

	Banks' reserves at central bank (USD billions) ²⁾	Banks' reserves at central bank as a percentage of narrow money ³⁾	Transferable deposits at other banks (USD billions) ²⁾	Transferable deposits at other banks as a percentage of narrow money
Australia	0.4	neg.	0.9	1.2
China	193.5	30.1	102.4	0.2
Hong Kong	neg.	neg.	nav.	nav.
Indonesia	3.1	20.0	26.2	168.3
Japan	36.9	1.7	37.8	1.8
Korea	6.4	17.3	1.5	4.1
Malaysia	5.1	24.7	0.4	2.1
New Zealand	neg.	0.1	0.3	4.4
Philippines	1.7	19.1	nav.	nav.
Singapore	3.3	17.1	nav.	nav.
Thailand	1.3	9.9	820.2	62.7

¹⁾ For explanation of figures see relevant country tables.²⁾ Year-end figures converted at end-of-year exchange rates. For Indonesia, Philippines, and Thailand, year-end figures converted at average exchange rates.³⁾ Narrow money: M1.

Table 4

Institutional framework ¹⁾*(end of 2000, unless otherwise noted)*

	Number of institutions offering payment services ²⁾	Number of central bank branches ²⁾	Number of bank branches ²⁾	Number of post office branches ²⁾	Others ^{1, 2)}	Total number of branches offering payment services ²⁾
Australia	29.1	0.2	259.5 ³⁾	232.3	63.4	555.5
China	29.1	1.7	nav.	1.9	37.9	nav.
Hong Kong	23.1	0.0	241.3	nap.	19.7	241.3
Indonesia	44.7	0.2	96.1	nav.	nav.	96.3
Japan ⁴⁾	21.7	0.3	314.4	190.4	nap.	505.1
Korea	0.5	0.3	130.1	59.3	nap.	189.7
Malaysia	2.8	0.2	121.9	nap.	18.7	140.8
New Zealand	43.3	0.3	221.7	nap.	nav.	nav.
Philippines	78.0	0.2	96.3	nap.	118.5	215.1
Singapore ⁵⁾	38.6	0.2	174.7	nap.	nav.	175.0
Thailand	0.6	0.1	70.5	18.9 ⁶⁾	nav.	89.5

¹⁾ For explanation of figures see relevant country tables.²⁾ Per million inhabitants.³⁾ As of end of June 2000.⁴⁾ As of end of March 2001.⁵⁾ As of end of March 2000.⁶⁾ As of end of September 2000.

Table 5

Use of cashless payment instruments ¹⁾*(total number of transactions in millions)*

	1996	1997	1998	1999	2000
	Cheques				
Australia ²⁾	983.0	986.0	928.0	806.0	856.0
China	441.5	459.8	458.6	440.0	454.1
Hong Kong	140.8	149.9	135.8	134.1	138.6
Indonesia	nav.	nav.	nav.	nav.	nav.
Japan	296.0	283.4	260.1	239.3	225.9
Korea	1,147.0	1,222.0	1,012.0	1,027.0	1,092.0
Malaysia	96.1	104.8	133.2	154.1	164.8
New Zealand	349.0	342.0	292.0	277.0	250.0
Philippines	111.98	116.71	112.84	116.21	117.59
Singapore ³⁾	82.6	87.7	87.6	92.6	91.7
Thailand ³⁾	93.9	85.8	69.4	68.8	71.7
	Payments by credit/debit cards				
Australia	679.0	815.0	983.0	1,172.0	1,322.0
China	106.2	117.0	146.1	329.1	685.2
Hong Kong	nav.	nav.	nav.	nav.	nav.
Indonesia	nav.	nav.	27.3	42.6	56.7
Japan	1,132.3	1,275.7	1,497.5	1,517.8	2,010.6
Korea	153.7	178.1	195.4	276.9	470.8
Malaysia	nav.	nav.	nav.	nav.	67.9
New Zealand	288.0	402.0	504.0	595.0	678.0
Philippines	nav.	nav.	nav.	nav.	nav.
Singapore ⁴⁾	56.2	66.1	73.4	75.8	85.5
Thailand	nav.	nav.	nav.	nav.	nav.
	Credit transfers ⁵⁾				
Australia ²⁾	434.0	467.0	482.0	529.0	635.0
China	90.8	122.4	125.5	176.5	240.1
Hong Kong	nav.	13.5	14.8	15.5	16.6
Indonesia	nav.	nav.	nav.	nav.	nav.
Japan	1,042.8	1,105.5	1,143.2	1,166.9	1,215.4
Korea	791.0	893.0	893.0	1,004.0	1,225.0
Malaysia	nav.	nav.	nav.	nav.	nav.
New Zealand	220.0	280.0	259.0	271.0	305.0
Philippines	nav.	nav.	nav.	nav.	nav.
Singapore	13.6	15.1	15.7	13.9	14.6
Thailand	0.1	0.2	0.2	0.3	0.6
	Direct debits				
Australia ²⁾	107.0	114.0	151.0	202.0	248.0
China	2.1	4.9	8.7	14.0	19.4
Hong Kong	nav.	31.7	32.7	33.5	35.2
Indonesia	nav.	nav.	nav.	nav.	nav.
Japan	nav.	nav.	nav.	nav.	nav.
Korea ³⁾	237.0	336.0	410.0	453.0	579.0
Malaysia	nav.	nav.	nav.	nav.	nav.
New Zealand	36.0	45.0	49.0	58.0	73.0
Philippines	nav.	nav.	nav.	nav.	nav.
Singapore ³⁾	20.1	23.2	20.7	17.4	17.3
Thailand	nav.	0.3	1.4	2.8	4.1

¹⁾ For explanation of figures see relevant country tables. For China, figures are estimated.²⁾ Annual figures estimated using survey data from the month of May.³⁾ Interbank transactions only.⁴⁾ Figures for debit card only.⁵⁾ For Australia, figures exclude high-value transfers. For Japan, Korea, and Thailand, figures include interbank transfers. For Singapore, interbank transfers only.

Table 6

Use of cashless payment instruments ¹⁾*(number of transactions per inhabitant)*

	1996	1997	1998	1999	2000
	Cheques				
Australia ²⁾	53.4	53.0	49.3	42.3	44.4
China	0.4	0.4	0.4	0.3	0.4
Hong Kong	21.9	23.1	20.8	20.3	20.8
Indonesia	nav.	nav.	nav.	nav.	nav.
Japan	2.4	2.2	2.1	1.9	1.8
Korea	25.2	26.6	21.9	22.0	23.2
Malaysia	4.5	4.8	6.0	6.8	7.1
New Zealand	93.8	91.0	77.0	72.7	65.3
Philippines	1.6	1.6	1.5	1.5	1.5
Singapore ³⁾	22.5	23.1	22.3	23.4	22.8
Thailand ³⁾	1.6	1.4	1.1	1.1	1.2
	Payments by credit/debit cards				
Australia	36.9	43.8	52.2	61.5	68.6
China	0.1	0.1	0.1	0.3	0.5
Hong Kong	nav.	nav.	nav.	nav.	nav.
Indonesia	nav.	nav.	0.1	0.2	0.3
Japan	9.0	10.1	11.8	12.0	15.8
Korea	3.4	3.9	4.2	5.9	10.0
Malaysia	nav.	nav.	nav.	nav.	2.9
New Zealand	77.4	106.9	133.0	156.2	177.0
Philippines	nav.	nav.	nav.	nav.	nav.
Singapore ⁴⁾	15.3	17.4	18.7	19.2	21.3
Thailand	nav.	nav.	nav.	nav.	nav.
	Credit transfers ⁵⁾				
Australia ²⁾	23.6	25.1	25.6	27.8	32.9
China	0.1	0.1	0.1	0.1	0.2
Hong Kong	nav.	2.1	2.3	2.4	2.5
Indonesia	nav.	nav.	nav.	nav.	nav.
Japan	8.3	8.8	9.0	9.2	9.6
Korea	17.4	19.4	19.3	21.5	26.1
Malaysia	nav.	nav.	nav.	nav.	nav.
New Zealand	59.1	74.5	68.3	71.1	79.6
Philippines	nav.	nav.	nav.	nav.	nav.
Singapore	3.7	4.0	4.0	3.5	3.6
Thailand	neg.	neg.	neg.	neg.	neg.
	Direct debits				
Australia ²⁾	5.8	6.1	8.0	10.6	12.9
China	neg.	neg.	neg.	neg.	neg.
Hong Kong	nav.	4.9	5.0	5.1	5.3
Indonesia	nav.	nav.	nav.	nav.	nav.
Japan	nav.	nav.	nav.	nav.	nav.
Korea	5.2	7.3	8.9	9.7	12.3
Malaysia	nav.	nav.	nav.	nav.	nav.
New Zealand	9.7	12.0	12.9	15.2	19.1
Philippines	nav.	nav.	nav.	nav.	nav.
Singapore ³⁾	5.5	6.1	5.3	4.4	4.3
Thailand	nav.	neg.	neg.	neg.	0.1

¹⁾ For explanation of figures see relevant country tables.²⁾ Annual figures estimated using survey data from the month of May.³⁾ Interbank transactions only.⁴⁾ Figures for debit card only.⁵⁾ For Australia, figures exclude high-value transfers. For Japan, Korea, and Thailand, figures include interbank transfers. For Singapore, interbank transfers only.

Table 7

Features of selected interbank funds transfer systems ¹⁾

(end of 2000)

	Type ²⁾	Owner/manager ³⁾	No. of participants (of which: direct)	Processing ⁴⁾	Settlement ⁵⁾	Membership ⁶⁾
Australia						
SWIFT PDS	L	PA	53 (53)	RTT	RTGS	RM
RITS	L	CB	54 (54)	RTT	RTGS	RM
China						
EIS	L	B, CB	20,000 ⁷⁾	RTT, M	GS, BN	RM
Hong Kong						
HKD CHATS	L, R	CB	151 (151)	RTT	RTGS	RM
USD CHATS ⁸⁾	L, R	B	102 (62)	RTT	RTGS	O
Indonesia						
BI-RTGS ⁹⁾	L	CB	123	RTT	RTGS	RM
Japan						
FXYCS	L	B	250 (42)	RTT	N, RTGS	RM
BOJ-NET Funds Transfer System	L	CB	398 (398)	RTT	RTGS ¹⁰⁾	RM
Korea						
BOK-Wire	L	CB	132 (132)	RTT	RTGS	O
Malaysia						
RENTAS	L	CB	89 (89)	RTT	RTGS	RM
New Zealand						
ESAS	L	CB	13 (13)	RTT	RTGS	RM
Philippines						
MIPS ¹¹⁾	L	CB, PA	97	RTT	RTGS	RM
PDDTS	R	B, CB, PA	46	RTT	RTGS	RM
Singapore						
MEPS	L	CB	136 (92)	RTT	RTGS	O
Thailand						
BAHTNET	L	CB	77 (58)	RTT	RTGS	RM

¹⁾ For additional information see relevant country chapters.²⁾ L = large-value system, R = retail system.³⁾ B = banks, CB = central banks, PA = payment association.⁴⁾ M = manual, ACH = automated clearing house (offline), RTT = real-time transmission.⁵⁾ N = multilateral netting, BN = bilateral netting, RTGS = real-time gross settlement, GS = other gross settlement.⁶⁾ O = open membership (any member can apply) or RM = restricted membership (subject to criteria).⁷⁾ An exact figure is not available.⁸⁾ Introduced on August 21, 2000.⁹⁾ Introduced on November 17, 2000.¹⁰⁾ Settlement on a net basis was abolished in January 2001.¹¹⁾ Interbank call loan transactions.

Table 7 (continued)

	Degree of centralization ¹⁰⁾	Pricing ¹¹⁾	Closing time for same-day transactions in local time (time on Saturday)	Number of transactions (thousands) ¹²⁾	Value of transactions (USD billions) ^{12, 13)}	Ratio of transactions value to GDP (at annual rate) ¹²⁾
Australia						
SWIFT PDS	C	F	16:30	3,657	10,287	28.5
RITS	C	F	16:30	42	897	2.5
China						
EIS	D	S	17:30	31,600	2,845	2.6
Hong Kong						
HKD CHATS	C	F	17:30 (12:00)	3,410	11,670	71.8
USD CHATS ¹⁴⁾	C	F	17:30	185	242	4.5
Indonesia						
BI-RTGS ¹⁵⁾	C	N?	17:00	81,141	138	3.6
Japan						
FXYCS	C	V ¹⁶⁾	13:45 (N)/17:00 (G)	9,298	57,961	12.2
BOJ-NET Funds Transfer System	C	V ¹⁶⁾	17:00	4,715	328,430	69.2
Korea						
BOK-Wire	C	F	17:00 (13:30)	1,407	16,664	36.4
Malaysia						
RENTAS	C	F+V	17:30 (12:00)	1,441	2,996	33.4
New Zealand						
ESAS	C	F	8:40 next business day	714	3,194	69.8
Philippines						
MIPS ¹⁷⁾	D	V	18:30	120	77	1.0
PDDTS	D	V	16:00	580	1	0.01
Singapore						
MEPS	C	V	18:30 (14:25)	1,908	5,533	60.3
Thailand						
BAHTNET	C	V	17:30	642	1,541	12.6

¹⁰⁾ Geographical access to the system: C = centralized (one processing center only) or D = decentralized.

¹¹⁾ Prices charged to participants: F = full costs (including investments), V = variable costs, S = symbolic costs (below variable costs), N = no costs.

¹²⁾ Interbank transactions only.

¹³⁾ Converted at yearly average exchange rates.

¹⁴⁾ Introduced on August 21, 2000.

¹⁵⁾ Introduced on November 17, 2000.

¹⁶⁾ Prices are set on the principle that the institutions that are to benefit from online processing should pay the relevant charges.

¹⁷⁾ Interbank call loan transactions.

Table 8

Operating hours of selected large-value interbank funds transfer systems

(end of 2000, unless otherwise noted)

	Gross (G) or net (N)	Opening/closing time for same-day value in local time (time on Saturday)	Settlement finality in local time (time on Saturday)	Cut-off for all third-party payment orders (time on Saturday)	Cut-off for international correspondents' payment orders in local time (time on Saturday)	Memo item: Standard money market hours in local time (time on Saturday)
Australia						
SWIFT PDS	G	9:15-16:30	9:15-16:30	16:30	16:30	9:15-16:30
RITS	G	9:15-16:30	9:15-16:30	16:30	16:30	
China						
EIS	G, N	8:30-17:30	8:30-17:30	-	-	9:00-16:30
Hong Kong						
HKD CHATS	G	9:00-17:30 (12:00)	9:00-17:30	17:00 (11:30)	17:30	9:00-17:30
USD CHATS	G	9:00-17:30	9:00-17:30	17:00	17:30	
Indonesia						
BI-RTGS	G	6:30-17:00	17:00	16:30	17:00	8:00-17:00
Japan						
FXYCS	G, N	9:00-13:45	14:30 ¹⁸⁾	13:45	13:45	
BOJ-NET Funds Transfer System	G ¹⁹⁾	9:00-17:00	9:00-17:00	17:00	17:00	9:00-17:00
Korea						
BOK-Wire	G	9:30-17:00 (13:30)	9:30-17:00 (13:30)	17:00	nap.	9:30-17:00
Malaysia						
RENTAS	G	8:00-18:00 (13:00)	17:30 (12:00)	16:00 (11:30)	nap.	8:00-18:00 (14:00)
New Zealand						
ESAS	G	9:00-8:40 next business day	-	8:40 next business day	8:40 next business day	8:00-16:30
Philippines						
MIPS	G	10:00-18:30	10:00-18:30	16:00	nap.	nap.
PDDTS	N	9:00-17:00	9:00-17:00	16:00	nap.	nap.
Singapore						
MEPS	G	6:00-20:00 (15:00)	9:00-18:30 (14:30)	18:30 (14:45)	nap.	9:00-18:30 (15:00)
Thailand						
BAHTNET	G	8:30-17:30	8:30-17:30	14:30	nap.	8:30-17:30

¹⁸⁾ Since January 2001.¹⁹⁾ Settlement on a net basis was abolished in January 2001.

Table 9

Features of selected securities settlement systems

(end of 2000, unless otherwise noted)

	Type ¹⁾	Owner/manager ²⁾	No. of participants (of which: direct)	Settlement of cash leg ³⁾	Securities settlement (delivery) ³⁾	Delivery lag (T+n)
Australia						
RITS	G	CB	138	RTGS	RTGS	T, T+3
Austraclear	G, O	O	619	RTGS	RTGS	T, T+3
CHES	E	SE	160	RTGS, N	RTGS, N	T+3
China						
Government	G, E	O	705 (600)	N	GS	T+1
Hong Kong						
CMU	G, O	CB	179/203 ⁴⁾	G, N	G, N	T+0
CCASS	E	SE	570	G, N	G, N	T+2
Indonesia						
BI-SKRIP	G	CB	nav.	RTGS, N	RTGS, N	T ⁵⁾
C-BEST	E	O	nav.	N	N	T+4
Japan						
BOJ-NET JGB						
Services	G	CB	371/421 ⁶⁾	RTGS ⁷⁾	RTGS ⁷⁾	T+0-T+3 ⁸⁾
JASDEC	E	B, SE, O	296 ⁹⁾	G, N	G, N	T+3
Korea						
KSE Stock	E	SE	51 (51)	N	N	T+2
KOSDAQ	E	O	64 (64)	N	N	T+2
KSE IDM	G	SE	82 (82)	N	N	T+0
KSE GBM	G, O	SE	64 (64)	N	N	T+0
OTC	G, O	O	nav.	RTGS	RTGS	T+0
Malaysia						
RENTAS	G, O	CB	66	RTGS	RTGS	T+0
SCANS	E	SE	74	N	N	T+3
New Zealand						
AustraclearNZ	G, E, O	CB	326 (312)	RTGS	RTGS	T+0
FASTER	G, E, O	SE	23 ¹⁰⁾	RTGS, N	RTGS	T+1.2 ¹¹⁾
Philippines						
ROSS	G, E	O	346	G/N	N	T+0
Singapore						
MEPS-SGS	G	CB	136 (92)	RTGS	G	T+0
CDP	E, O	SE	87 (31) ¹²⁾	N	G	T+3
DCSS	O	SE	63 (63)	G	G	T+n ¹³⁾
Thailand						
Bond registry system	G	CB	16,540 (16,540)	N	G	T+2
Book-entry system ¹⁴⁾	G, E	CB, TSD	974 (974), 58 (58)	RTGS/N, N	RTGS/G, N	T+2, T+3

¹⁾ G = government securities, E = equity, O = other.²⁾ B = banks, CB = central banks, SE = stock exchange, O = other.³⁾ G = gross settlement, N = net, RTGS = real-time gross settlement.⁴⁾ Number of recognized dealers/CMU members.⁵⁾ Coupon payment is calculated on T-2 before maturity.⁶⁾ Number of participants in book-entry/registration systems.⁷⁾ Settlement on a net basis was abolished in January 2001.⁸⁾ T+3 is the norm for outright transactions. Most repo transactions are settled on a T+2-T+3 basis. Settlement for the BOJ's market operations takes place on a T+0-T+3 basis.⁹⁾ As of end of March 2001.¹⁰⁾ Number of participant broking firms.¹¹⁾ On average: depending on the type of instrument and other conditions associated with the trade.¹²⁾ Number of depository agents as at end of June 2000.¹³⁾ By mutual agreement between counterparties.¹⁴⁾ Comma (,) separates government securities from equity; and slash (/) means there are two types of settlement.

Table 9

Features of selected securities settlement systems (continued)

	DVP mechanism		Central securities depository	Cash settlement agent ¹⁵⁾	Number of transactions (thousands)	Value of transactions (USD billions) ¹⁶⁾	Ratio of transactions value to GDP (at annual rate)
	¹³⁾	Intraday finality ¹⁴⁾					
Australia							
RITS	Model 1	Y	RITS	CB	101	1,127	3.1
Austraclear	Model 1	Y	Austraclear	CB	193	1,388	3.8
CHESS	Model 1, 3	Y	TNSC	CB	14,797	217	0.6
China							
Government	Model 2	N	CDC, SD&C	CB, B, O	1,979,800	488	0.5
Hong Kong							
CMU	Model 1, 3	Y	CMU	CB	52	761	4.7
CCASS	Model 3	N	CCASS	B	36,867	402	2.5
Indonesia							
BI-SKRIP	Model 1, 2	Y, N	BI	CB	20,905,820,000	nav.	nav.
C-BEST	Model 2	N	C-BEST	B	108,680,000	6	0.1
Japan							
BOJ-NET JGB							
Services	Model 1	Y	CB	CB	2,073/143 ¹⁷⁾	96,452/4,136 ¹⁷⁾	20.3/0.9 ¹⁷⁾
JASDEC	Model 3 ¹⁸⁾	Y	JASDEC	CB, B	34,710	nav.	nav.
Korea							
KSE Stock	Model 3	Y	KSD	B	nav.	555	1.2
KOSDAQ	Model 3	Y	KSD	B	nav.	512	1.1
KSE IDM	Model 3	Y	KSD	CB	nav.	18	neg.
KSE GBM	Model 3	Y	KSD	B	nav.	6	neg.
OTC	Model 1 ¹⁹⁾	Y	KSD	CB, B	nav.	936	2.0
Malaysia							
RENTAS	Model 1	Y	CB	CB	52	nav.	nav.
SCANS	Model 2	N	MCD ²⁰⁾	B	2,354	64	0.7
New Zealand							
AustraclearNZ	Model 1	Y	NZCSD	CB, B	312 ²¹⁾	1,147 ²¹⁾	25.1
FASTER	Model 1	Y	-	SE	605	4	0.1
Philippines							
ROSS	Model 1 ²²⁾	Y	GSED	CB	nav.	85	1.1
Singapore							
MEPS-SGS	Model 1	Y	CB	CB	21	100	1.1
CDP	Model 2	Y	CDP	B	99,301,000	99	1.1
DCSS	Model 1	Y	CDP	CB	1.7	3	0.03
Thailand							
Bond registry system	Model 1	Y	CB	CB	neg.	25	0.2
Book-entry system ²³⁾	Model 1, Model 3	Y, N	CB, TSD	CB	11.25, 1000	9, 4	0.1, neg.

¹³⁾ Model 1: transfer instructions for both securities and funds are settled on a trade-by-trade basis. Model 2: Securities transfer instructions are settled on a gross basis while funds transfer instructions are settled on a net basis. Model 3: transfer instructions for both securities and funds are settled on a net basis.

¹⁴⁾ Y = yes, N = no.

¹⁵⁾ B = banks, CB = central banks, SE = stock exchange, O = other.

¹⁶⁾ Converted at yearly average exchange rates.

¹⁷⁾ Figures for book-entry/registration systems.

¹⁸⁾ For stocks traded on the Tokyo Stock Exchange and Osaka Securities Exchange since May 2001.

¹⁹⁾ Free-of-payment delivery basis.

²⁰⁾ Malaysian Central Depository Sdn Bhd.

²¹⁾ Figures for the year ending in June.

²²⁾ Modified model 1. Funds settle on different system, i.e., MIPS.

²³⁾ Comma (,) separates government securities from equity.

Table 10

Direct participants in central bank funds transfer systems

(end of 2000)

	Total direct participants	Deposit-taking institutions	Non-deposit taking institutions, of which:				
			Central bank	public authorities	postal institution	securities companies	others
Australia							
RITS	54	50	1	0	0	1	2
China							
EIS	20,000	nav.	2,190	nav.	nav.	nav.	nav.
Hong Kong							
HKD CHATS	151	0	1	0	0	0	0
USD CHATS	62	0	1	0	0	0	0
Indonesia							
BI-RTGS	123	nav.	nav.	nav.	nav.	nav.	nav.
Japan							
BOJ-NET Funds Transfer System	398	337	0	0	0	57	4
Korea							
BOK-Wire	132	65	0	0	0	53	14
Malaysia							
RENTAS	66	64	1	nap.	0	0	0
New Zealand							
ESAS	13	11	1	1	0	0	0
Philippines							
MIPS	97	87	0	0	0	0	10
Singapore							
MEPS	92	91	1	0	0	0	0
Thailand							
BAHTNET	58	37	6	3	0	1	11

Table 11

Participants in selected securities settlement systems*(end of 2000, unless otherwise noted)*

	Total	Of which: banks	Securities companies	Others
Australia				
RITS	138	51	nav.	87
Austraclear	619	nav.	nav.	nav.
CHESS ¹⁾	160	nav.	nav.	nav.
China				
Government bonds settlement system	705	178	18	509
Hong Kong				
CMU ²⁾	179/203	170/187	0/0	9/16
CCASS	570	58	512	0
Indonesia				
BI-RTGS	nav.	nav.	nav.	nav.
Japan				
BOJ-NET JGB Services ³⁾	371/421	225/262	86/99	60/60
JASDEC ⁴⁾	296	52	222	22
Korea				
KSE Stock	51	0	51	0
KOSDAQ	64	0	64	0
KSE IDM	82	29	52	1
KSE GBM	51	0	51	0
Malaysia				
RENTAS	66	65	nav.	1
SCANS	74	11	61	2
New Zealand				
AustraclearNZ	326	30	nav.	nav.
FASTER ⁵⁾	23	nav.	nav.	nav.
Philippines				
ROSS	346	nav.	nav.	nav.
Singapore				
MEPS-SGS ⁴⁾	140	nav.	nav.	nav.
CDP ⁶⁾	87	nav.	nav.	nav.
DCSS	63	nav.	nav.	nav.
Thailand				
Bond registry system	16,540	nav.	nav.	nav.
Book-entry system ⁷⁾	58/974	nav.	nav.	nav.

¹⁾ Figure for 2001. Figure for 2000 is not available but membership numbers have been stable over time.

²⁾ Number of recognized dealers/CMU members.

³⁾ Number of participants in book-entry/registration systems.

⁴⁾ As of end of March 2001.

⁵⁾ Number of participant broking firms.

⁶⁾ Number of depository agents as of end of June 2000.

⁷⁾ Number of participants in equity/government securities.

ANNEX 2

STATISTICAL METHODOLOGY FOR COUNTRY TABLES¹

General

Exceptions	Data in the tables conform to this methodology unless indicated otherwise in the table concerned. However, it should be noted that varying methods of collecting data can also complicate cross-country comparisons.
Breaks in series	Where these occur they are indicated by a footnote.
Sources of data	These are indicated under the table concerned where it is felt appropriate.
Definitions	Definitions in the tables which are not given in this methodology are based on the Bank for International Settlements, <i>A glossary of terms used in payments and settlement systems</i> , revised version, January 2001 (http://www.bis.org/publ/cps00b.htm). Where necessary, footnotes to individual tables explain the country-specific definitions, eg of "banks". (Note that in general the term "banks" should be broadly construed according to local regulations so as to include all relevant financial institutions.)
Intra-bank items	These are included as appropriate except where indicated.
Foreign currency	Foreign currencies are not included in the figures unless otherwise indicated.
Time period	Each table indicates the period (eg year) or point of time (eg end year) that the data apply to. Where the data apply to a period, the data are the total for that period unless the table explicitly indicates otherwise (eg a daily average).
Estimated data	Where data are broadly estimated and thus only indicative, this is indicated in a footnote (except for population and GDP in Table 1).
Seasonal adjustment	Figures are not seasonally adjusted unless otherwise indicated.
"nav.", "nap.", "neg." and "0"	Where data are not available, this is indicated by "nav.". Where data are not applicable, this is indicated by "nap." Where data are very small (relative to other relevant data in the table concerned), this is indicated by "neg.". Where data mean absolutely zero or none, rather than being a small number rounded to zero, this is indicated by "0".

¹ Based on the methodology for statistical tables in the Bank for International Settlements, *Payment Systems in the Group of Ten Countries*.

Table 1: Basic statistical data

Population	Figures are averages for the year or at a point in the year as indicated.
GDP	Figures are nominal (not real).
GDP per capita	This figure equals the <i>GDP</i> figure divided by the <i>population</i> figure.
Exchange rate (domestic currency vis-à-vis USD) year-end average	The exchange rate of the local currency against the US dollar is provided both as a year-end value and as an average for the year.

Table 2: Settlement media used by non-banks

Banknotes and coins on issue	Banknotes and coins represent the value of cash in circulation in the economy. This excludes the value of banknotes and coins kept in vaults at central banks or at banks (see Table 4) but includes the value held by non-residents.
Transferable deposits	These are transferable deposits which can be used to make cashless payments using one of the instruments mentioned in Tables 7 and 8. They do not include deposits in foreign currencies unless these are included in M1.
Others	Filled in only if Narrow Money Supply (M1) includes items other than banknotes and coins and transferable deposits.
Narrow money supply (M1)	Cash in circulation and transferable deposits held by non-banks including non-residents.
Memorandum items:	
Broad money supply	Included in some cases. Footnotes to individual tables explain the definition of broad money supply used and how it differs from narrow money supply.
Outstanding value on e-money schemes	The difference between the value of cash loaded onto electronic purses (a reloadable multi-purpose prepaid card which may be used for small retail or other payments instead of banknotes and coins) or onto electronic wallets (a computer device used in some electronic money systems which can contain an IC card or in which IC cards can be inserted and which may perform more functions than an IC card) and the value spent.

Table 3: Settlement media used by banks

Transferable balances held at central bank	Deposits held by banks at the central bank which can be used for payment purposes, regardless of the type of account (eg current account, reserve account, settlement account, clearing account).
of which: required reserves	Funds that banks are required to hold at the central bank. If only part of the required reserves can be used for payment purposes, that amount is indicated here.
free reserves	Funds held voluntarily at the central bank that can be used for payment purposes.

Transferable deposits at other banks	Deposits held at other banks in the country (not at the central bank) which can be used for payment purposes.
Others	Included only if assets other than <i>balances held at central bank</i> and <i>transferable deposits at other banks</i> are relevant. In some cases a breakdown is provided. In other cases a footnote indicates what is included in this item.

Memorandum items:

Institutions' borrowing from central bank	Institutions' borrowing (in the forms defined in a footnote by the respective country) from the central bank which can be used for payment purposes.
--	--

Table 4: Institutional framework (end-of-year figures)

Categories	Categories of institutions are based on the individual countries' own financial systems. Particular categories are explained in a footnote where this is felt to be necessary.
Columns 1 and 2	Number of points of entry into the cashless payment system.
Column 1: Number of institutions	Any institution which executes cashless payments is mentioned even if it does not hold deposits for customers (eg because the money transferred is given in cash by the customer to the institution, or debited from a sight account held at another institution).
Column 2: Number of branches	All branches of an institution. As a rule, the head office of the institution is counted as a branch if it offers cashless payment services.
Column 3: Number of accounts	Number of accounts on which cashless payments (see definitions in Tables 7 and 8) can be made. The only accounts mentioned here are those which: are held at central banks, or at other deposit-taking institutions for non-deposit-taking institutions; and can be debited directly using one of the instruments mentioned in Tables 7 and 8.
Column 4: Value of accounts	Aggregate amount of deposits held on accounts mentioned in Column 3. As a rule, the sum of the entries in the last column is identical to transferable deposits in Table 2.

Tables 5 and 6: Volume and value of payment instructions handled by selected interbank settlement systems

With regard to the volume and value of transactions, each payment instruction is counted once (not twice, ie the debit from the payer's account and the credit to the payee's account are not counted separately).

Interbank settlement systems	Interbank clearing and settlement systems in which most (or all) direct participants are financial institutions and which are used primarily to process cashless payments.
-------------------------------------	--

As a rule, all interbank settlement systems are mentioned here, both those managed by central bank and those managed by private operators.

Figures are provided system by system, with categories of various payment instruments (such as cheques, direct debits, credit transfers, etc.) as sub-items.

Tables 7 and 8: Volume and value of indicators of use of various cashless payment instruments

The objective of these tables is to estimate the volume and the value of cashless payment instruments used in the country concerned. Figures concerning only a sample of banks or customers should not be given, but should be extrapolated to provide figures covering the whole volume and value of cashless payment instruments used in the country. The data may include both retail and wholesale, and interbank and customer-initiated payments for cheques and credit transfers, and potentially for other instruments. The same is explained by way of a footnote.

In principle, the term "payment" is defined here to exclude **any** funds transfer in which the originator and the beneficiary are the same. This definition excludes any funds transfers in which the originator and the beneficiary are the same institution or individual. Therefore, any instrument which is used by banks' customers to get cash should not be counted (eg cheques used to obtain cash). Likewise, transfers between accounts in the same name in the same institution are excluded (eg transfers from a cheque account to a savings account, if both accounts are held at the same bank). However, because in practice it is usually impossible to exclude them from the data, transfers between accounts in the same name but where the accounts are held at **different** institutions are included unless indicated otherwise.

Strictly speaking "cashless" means without the involvement of cash. Such a narrow definition would exclude money (postal) orders, which involve cash at one or both ends of the transaction, as well as the majority of travellers' cheques, which are often paid in cash. It is not realistic to use such a narrow definition because it is very doubtful whether available statistics would permit a breakdown of the number of money orders or travellers' cheques according to the way they are paid or settled. Therefore, all payment instruments which involve cashless interbank settlement are included in the statistics.

In the case of cross-border payments, there is a need to avoid double counting (ie in the country of the originator and in the country of the beneficiary). Cross-border cashless payments are accordingly counted in the country of the originator.

The following guidelines are also followed:

No distinction is made between interbank items (bank A to bank B), inter-branch items (bank A branch to another bank A branch), or intra-branch items (bank A customer to another bank A customer at the same branch): all are included in the statistics;

Funds transfers used to settle credit card transactions are included (this is a payment from the user to the issuer);

Cheques Travellers' cheques and bankers' drafts are included under cheques. Commercial bills are included if funds transfers can be made on the basis of these, without using another medium.

Payments by debit and credit cards Also includes delayed debit cards (charge cards).

Credit transfers A payment order or possibly a sequence of payment orders made for the purpose of placing funds at the disposal of the beneficiary. Money orders are included under credit transfers.

Direct debits Pre-authorised debit of the payer's account by the payee.

Total The sum of the above items.

Tables 9 and 10: Volume and value of transfer instructions handled by securities settlement systems

Figures are provided system by system, with categories of various securities (such as government securities, bonds, shares, CDs, futures, options, etc.) as sub-items in some cases.

Transfer instructions comprise all transfer instructions entered into the securities settlement system (including deliveries free of payment). As regards options, all the contracts are included.

As far as CDs are concerned, transactions should be considered regardless of their issuers (banks, central bank, mortgage institutions).

Each transaction is counted once (not twice for sale and purchase). It is the transaction itself that is counted and not the double message notifications.

Securities settlement systems Transfer systems which settle transfer instructions for both securities and funds, and may include trading platforms and clearing houses. SSSs mentioned here include not only those managed by the central banks, but also those managed by private operators.

Table 11: Number of participants in securities settlement systems

Figures are provided separately for each securities settlement system, with categories of various participants (such as banks, securities companies, etc.) as sub-items.

ANNEX 3

CORE PRINCIPLES FOR SYSTEMICALLY IMPORTANT PAYMENT SYSTEMS²

Core Principles for systemically important payment systems

- I. The system should have a wellfounded legal basis under all relevant jurisdictions.
- II. The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.
- III. The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.
- IV.* The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.
- V.* A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.
- VI. Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.
- VII. The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.
- VIII. The system should provide a means of making payments which is practical for its users and efficient for the economy.
- IX. The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.
- X. The system's governance arrangements should be effective, accountable and transparent.

* Systems should seek to exceed the minima included in these two Core Principles.

Responsibilities of the central bank in applying the Core Principles

- A. The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.

² Excerpts from the Bank for International Settlements, *Core Principles for Systemically Important Payment Systems*, January 2001.

- B. The central bank should ensure that the systems it operates comply with the Core Principles.
- C. The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight.
- D. The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.

ANNEX 4

RECOMMENDATIONS FOR SECURITIES SETTLEMENT SYSTEMS³

CPSS-IOSCO Technical Committee

Recommendations for Securities Settlement Systems

Legal risk

1. Legal framework

Securities settlement systems should have a well founded, clear and transparent legal basis in the relevant jurisdictions.

Pre-settlement risk

2. Trade confirmation

Confirmation of trades between direct market participants should occur as soon as possible after trade execution, but no later than trade date (T+0). Where confirmation of trades by indirect market participants (such as institutional investors) is required, it should occur as soon as possible after trade execution, preferably on T+0, but no later than T+1.

3. Settlement cycles

Rolling settlement should be adopted in all securities markets. Final settlement should occur no later than T+3. The benefits and costs of a settlement cycle shorter than T+3 should be evaluated.

4. Central counterparties (CCPs)

The benefits and costs of a CCP should be evaluated. Where such a mechanism is introduced, the CCP should rigorously control the risks it assumes.

5. Securities lending

Securities lending and borrowing (or repurchase agreements and other economically equivalent transactions) should be encouraged as a method for expediting the settlement of securities transactions. Barriers that inhibit the practice of lending securities for this purpose should be removed.

³ Excerpts from the Bank for International Settlements and International Organization of Securities Commissions, *Recommendations for Securities Settlement Systems*, November 2001.

Settlement risk

6. Central securities depositories (CSDs)

Securities should be immobilised or dematerialised and transferred by book entry in CSDs to the greatest extent possible.

7. Delivery versus payment (DVP)

CSDs should eliminate principal risk by linking securities transfers to funds transfers in a way that achieves delivery versus payment.

8. Timing of settlement finality

Final settlement should occur no later than the end of the settlement day. Intraday or real-time finality should be provided where necessary to reduce risks.

9. CSD risk controls to address participants' failure to settle

CSDs that extend intraday credit to participants, including CSDs that operate net settlement systems, should institute risk controls that, at a minimum, ensure timely settlement in the event that the participant with the largest payment obligations is unable to settle. The most reliable set of controls is a combination of collateral requirements and limits.

10. Cash settlement assets

Assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If central bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose.

Operational risk

11. Operational reliability

Sources of operational risk arising in the clearing and settlement process should be identified and minimised through the development of appropriate systems, controls and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Contingency plans and backup facilities should be established to allow for timely recovery of operations and completion of the settlement process.

Custody risk

12. Protection of customers' securities

Entities holding securities in custody should employ accounting practices and safekeeping procedures that fully protect customers' securities. It is essential that customers' securities be protected against the claims of a custodian's creditors.

Other issues

13. Governance

Governance arrangements for CSDs and CCPs should be designed to fulfill public interest requirements and to promote the objectives of owners and users.

14. Access

CSDs and CCPs should have objective and publicly disclosed criteria for participation that permit fair and open access.

15. Efficiency

While maintaining safe and secure operations, securities settlement systems should be cost-effective in meeting the requirements of users.

16. Communication procedures and standards

Securities settlement systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement cross-border transactions.

17. Transparency

CSDs and CCPs should provide market participants with sufficient information for them to identify and evaluate accurately the risks and costs associated with using the CSD or CCP services.

18. Regulation and oversight

Securities settlement systems should be subject to transparent and effective regulation and oversight. Central banks and securities regulators should cooperate with each other and with other relevant authorities.

19. Risks in cross-border links

CSDs that establish links to settle cross-border trades should design and operate such links to reduce effectively the risks associated with cross-border settlements.

ANNEX 5

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