

TRENDS IN THE U.S. INTERNATIONAL TELECOMMUNICATIONS INDUSTRY

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TRENDS IN THE U.S. INTERNATIONAL TELECOMMUNICATIONS INDUSTRY

This report traces the economic development of the international telecommunications industry from 1980 through 1995¹, with some historical data going back to 1950. This report is divided into three sections. The first section presents an overview of economic trends in the industry, focusing on traffic, revenue growth, and rates. The second section examines the industry's changing market structure by presenting market-share data for various services, firms, and geographic markets. The third section presents information on telephone service accounting rates and net settlement payments for selected countries.

Much of the data presented in this report was previously published in the *Statistics of Communications Common Carriers* (SOCC). This report ties together data published in numerous annual editions to describe long-term trends. Most of the international data published in the SOCC were filed by international carriers pursuant to Section 43.61 of the Commission's rules or in the old annual Form M reports. The Section 43.61 data also have been compiled in annual reports titled *Section 43.61 International Telecommunications Data*. Annual volumes of the SOCC and recent editions of the Section 43.61 international traffic report are available in the Common Carrier Bureau Public Reference Room at 2000 M Street, N.W., Room 575, Washington DC, (202) 418-1393. Recent data from these sources also are available on the FCC-State Link computer bulletin board, directly at (202) 418-0241, and through a link from the Common Carrier Bureau home page (<http://www.fcc.gov/ccb/>) on the Internet's World Wide Web.

I. Service Growth, Facilities and Price Trends

A. Service Growth

Demand for international telecommunications services and the total toll service revenues of U.S. common carriers have grown rapidly since 1950. Table 1 provides a long-term revenue series for international and domestic toll service. The data for international switched services are based on data from the SOCC, and represent billed revenue for U.S. traffic. No adjustments have been made to the international traffic data for years prior to 1980. International traffic data for 1980 to the present include switched service with Canada and Mexico. Traffic to Hawaii, Guam, the U.S. Virgin Islands, and Puerto Rico has been excluded. The total toll revenue figures for 1950 through 1980 are taken from the SOCC and represent telephone service revenues of reporting carriers. The toll figures for 1981 to the present are from the *Long Distance Market Shares* report published by the Industry Analysis Division and include toll revenues of all carriers.

¹ Carriers filed their final 1995 international traffic data on October 31, 1996.

Table 1. International and Domestic Toll Service Revenues, 1950 to 1995
(Revenue in millions)

	International Service <u>1/</u>							Total Domestic	Total Toll <u>3/</u>	Total International as % of Total Toll	
	Telephone	Telex	Telegraph	Private Line		Miscellaneous	Resale <u>2/</u>				Total International
				Telephone	Record						
1950	\$9.0	\$39.3		\$0.2	\$1.1			\$49.5	\$1,195	\$1,245	4.0 %
1951	12.1	\$0.2	\$42.6	0.3	1.9			57.2	1,346	1,403	4.1
1952	15.4	0.4	41.3	0.3	2.8			60.3	1,475	1,535	3.9
1953	13.1	0.7	42.5	0.3	3.7			60.2	1,582	1,642	3.7
1954	13.7	0.8	45.0	0.2	4.3			64.0	1,732	1,796	3.6
1955	15.7	1.2	46.6	0.2	4.8			68.6	1,980	2,049	3.3
1956	18.7	1.9	49.8	0.3	5.3			76.0	2,201	2,277	3.3
1957	22.7	2.8	50.3	0.6	6.0			82.4	2,443	2,525	3.3
1958	27.8	3.6	50.2	1.4	6.8			89.8	2,590	2,680	3.4
1959	33.1	5.4	55.0	3.4	8.4			105.3	2,903	3,008	3.5
1960	42.3	7.5	57.9	7.1	7.5			122.3	3,121	3,243	3.8
1961	50.9	10.0	57.1	9.1	8.6			135.7	3,359	3,495	3.9
1962	61.4	12.2	56.2	11.1	9.5			150.3	3,636	3,786	4.0
1963	69.4	13.7	56.3	12.4	12.1			163.9	3,931	4,095	4.0
1964	85.3	17.2	58.0	13.6	14.6			188.7	4,426	4,615	4.1
1965	101.5	21.3	50.6	15.9	20.2			209.5	4,883	5,092	4.1
1966	128.6	27.3	49.7	17.6	29.0			252.2	5,591	5,843	4.3
1967	146.3	33.7	49.8	15.1	31.3			276.1	6,099	6,375	4.3
1968	176.3	44.3	50.5	15.4	36.6			323.1	6,803	7,126	4.5
1969	234.7	56.0	53.8	16.8	45.4			406.7	7,825	8,232	4.9
1970	252.2	63.1	53.1	15.5	49.9			433.8	8,522	8,956	4.8
1971	289.1	72.5	49.2	12.7	52.0			475.6	9,486	9,962	4.8
1972	357.1	88.3	44.8	14.2	57.7			562.2	10,761	11,323	5.0
1973	436.4	115.0	47.7	15.1	62.8			677.0	12,449	13,126	5.2
1974	508.9	142.7	52.3	12.9	64.1			781.0	13,801	14,582	5.4
1975	576.3	163.4	42.5	13.2	69.2			864.6	15,233	16,098	5.4
1976	677.7	188.0	37.3	14.1	74.8			991.9	17,688	18,680	5.3
1977	806.4	225.2	35.5	13.8	84.4			1,165.3	19,994	21,159	5.5
1978	975.5	267.3	37.1	14.0	93.3			1,387.3	23,039	24,426	5.7
1979	1,120.7	299.4	37.7	14.7	96.0			1,568.4	26,031	27,599	5.7
1980	2,097.2	324.9	62.6	14.8	100.0			2,599.5	28,402	31,001	8.4
1981	2,239.4	349.6	61.8	14.1	111.9			2,776.7	36,403	39,180	7.1
1982	2,382.1	363.3	56.4	14.3	123.7			2,939.8	40,979	43,919	6.7
1983	2,876.1	378.6	53.8	15.1	138.9			3,462.6	43,507	46,970	7.4
1984	3,197.0	393.8	45.6	7.2	150.4			3,794.0	47,362	51,156	7.4
1985	3,487.4	414.7	44.9	8.5	163.4			4,118.8	50,696	54,815	7.5
1986	4,004.4	389.6	41.6	10.7	164.2			4,610.5	52,857	57,468	8.0
1987	4,749.6	360.1	35.1	26.8	164.1		\$14.1	5,349.9	53,169	58,519	9.1
1988	5,799.8	310.1	29.7		194.2		65.3	6,399.0	56,201	62,600	10.2
1989	6,901.1	243.1	27.0		208.0		112.9	7,492.0	58,532	66,024	11.3
1990	8,042.3	196.1	23.9		201.4		166.9	8,630.7	58,161	66,792	12.9
1991	9,095.9	200.0	15.2		303.4	\$22.7	440.4	10,077.7	58,480	68,558	14.7
1992	10,178.9	155.4	15.6		313.4	24.1	511.1	11,198.4	60,785	71,983	15.6
1993	11,352.6	135.1	11.8		355.7	23.4	591.1	12,469.6	62,820	75,290	16.6
1994	12,254.9	122.7	12.4		431.8	25.3	1,120.2	13,967.3	66,759	80,726	17.3
1995	13,990.3	119.3	6.3		505.7	47.9	1,754.4	16,423.9	67,358	83,782	19.6

1/ For 1950 through 1979, international service revenue data are taken directly from *Statistics of Communications Common Carriers*. The telephone data are based on Form M filings for AT&T, Hawaiian Telephone, Cuban American Telephone and Telegraph, and domestic ITT subsidiaries. The record data (telegraph, telex, and record private line) are based on Form O/R filings. International data for 1980 through 1995 are taken from Tables 4, 5, and 6 herein, and are based on 43.61 data reported in the SOCC. Traffic to Canada and Mexico are first included in 1980, which explains the jump in traffic shown for that year. For switched services, the data represent billed revenue for service from the domestic United States to foreign points.

2/ Includes pure resale revenue for all switched services. Virtually all of the revenue is for pure resale of IMTS.

3/ The data for total domestic and international toll revenues for 1950 through 1980 are taken from Table 6.5 of the latest SOCC, and represent message telephone, WATS, private line and other toll service revenues (accounts 510 through 516) reported in the annual Form M filings. For 1981 through 1995, the total toll figures are from *Long Distance Market Shares*, and include toll revenues of all local and interexchange carriers.

Figure 1: Individual International Service Revenues as a Percentage of Total International Revenues

Figure 1 illustrates the changes over time in the relative importance of the international services detailed in Table 1. In 1950, international telegraph service accounted for almost 80% of all international service revenues. Today that service has virtually disappeared. Telex service grew in importance through 1980, but it too is declining. Private line billings increased from \$1.3 million in 1950 to \$506 million in 1995. Private line service grew in relative importance from 1950 through 1965, reaching 18% of international revenues. Private line revenues increased thereafter, but not as rapidly as overall international revenues. Since 1980, private line service has generally represented between 4% and 6% of total international revenues. In contrast to the other three types of international service, international telephone service represented about 20% of international revenues in 1950, but now accounts for 95% of all international service revenues.

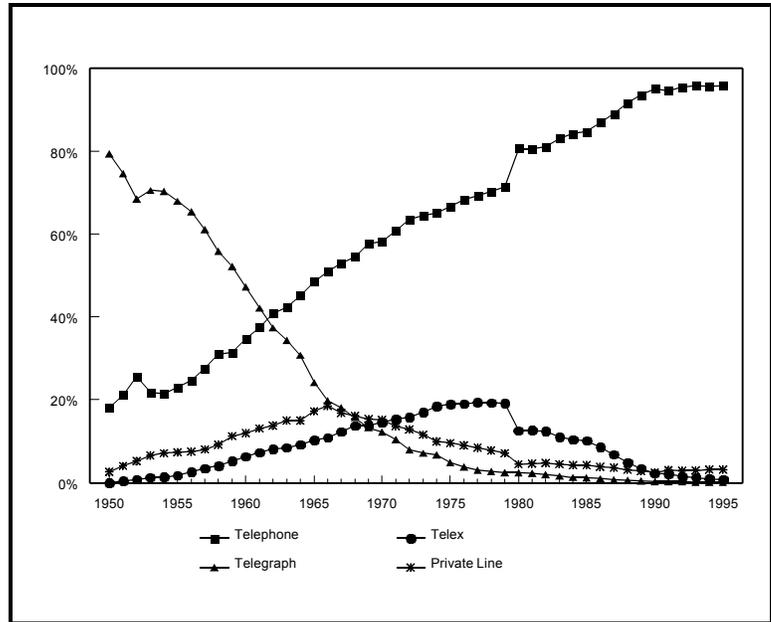
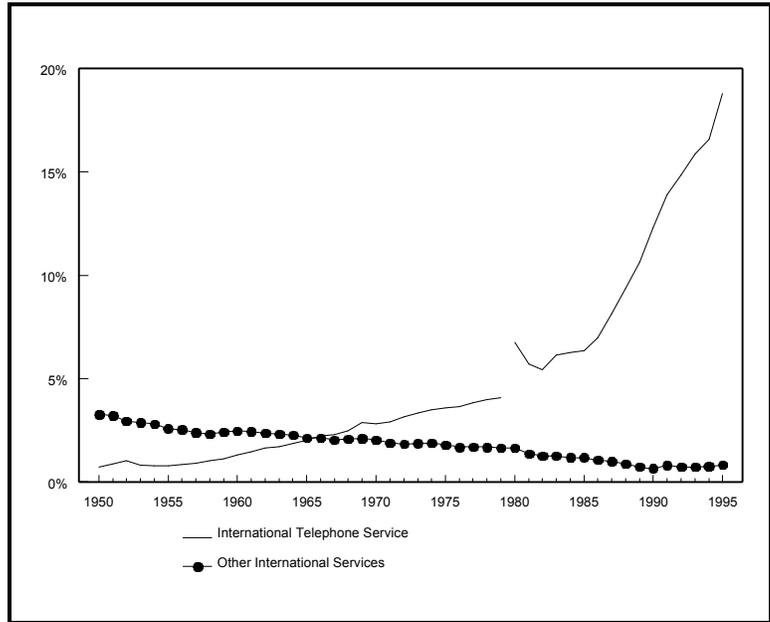


Figure 2: International Service Net Revenues as Percentages of Total Domestic and International Toll Revenues

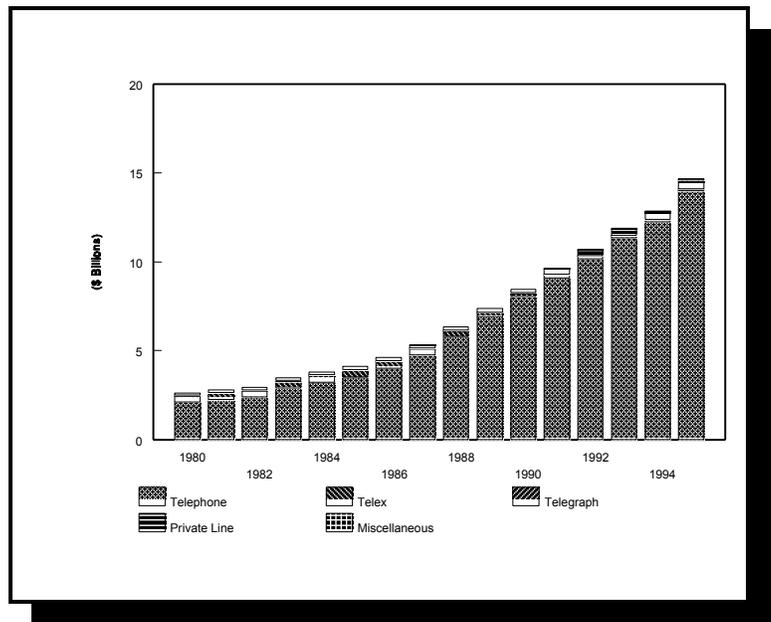
Figure 2 uses data from Table 1 to show that international MTS represents an increasing percentage of overall toll service revenue. The total toll revenue data shown in Table 1 include telephone and private line revenues for intrastate, interstate, and international service. The international MTS data used in Figure 2 include facilities-based and resale service billed revenues. Figure 2 shows that international telephone service accounted for about 1% of all toll revenues in 1950 and about 19% in 1995. Other international services -- telegraph, telex, private line and miscellaneous -- accounted for 3% of all toll revenues in 1950 but less than 1% today.



The telephone series in Figure 2 shows a break in 1980 because data before then exclude Canada and Mexico, but include some offshore U.S. points. Thus, most of the increase from 1979 to 1980 is caused by a reporting change. International message telephone service (MTS) revenue then declined through 1982. International rates rose in 1980 and then declined significantly in 1981. While most international rates rose again in May 1982, off-peak rates remained significantly lower than they had been in the 1970s and AT&T also reduced the initial calling period from 3 minutes to 1 minute for direct-dialed calls. About half of the jump in international telephone service revenues in 1980, however, is due to the inconsistencies in the data series explained above.

Figure 3: U.S. Carrier Billed Revenues by Service

Table 2 shows summary data for five categories of international telecommunications services -- international MTS, telex, telegraph, private line, and miscellaneous services -- as well as data for Comsat and for resellers. Figure 3 shows annual billings for the five categories of international service. Billings by U.S. carriers for services provided over their own facilities reached \$2.6 billion in 1980, \$4.1 billion in 1985 and \$14.7 billion in 1995.



The data in Table 2 are based on the figures reported in the annual volumes of the SOCC. Many significant reporting changes have occurred over the years, and several adjustments have been made to make the time series more consistent. For example, as late as 1985, calls between the U.S. mainland and Alaska, Hawaii and Puerto Rico were classified as overseas calls and were included with international service data. In contrast, from 1968 through 1990, Section 43.61 of the rules did not require carriers to report traffic between the continental U.S. and Mexico or Canada. Carriers have provided some data on service to Canada and Mexico for prior years, and these data have been incorporated in some tables. Another significant change is that "U.S. traffic" refers to calls originating in the United States up to 1990, and calls billed in the United States thereafter. Similarly, "foreign traffic" refers to calls terminating in the United States up to 1990, and calls billed by foreign carriers thereafter. Some data published in the SOCC differ from comparable data published in *Section 43.61 International Telecommunications Data* as a result of late-filed corrections. The tables in this report use data from both reports and identify specific sources in footnotes. Appendix A summarizes reporting changes and adjustments made to previously published data.

Table 2. International Revenue and Operating Statistics
(Revenue and settlement amounts in millions)

Category	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
U.S. Billed Revenues ^{1/}																
Telephone	\$2,097	\$2,239	\$2,382	\$2,876	\$3,197	\$3,487	\$4,004	\$4,750	\$5,800	\$6,901	\$8,042	\$9,096	\$10,179	\$11,353	\$12,255	\$13,990
Telex	\$325	\$350	\$363	\$379	\$394	\$415	\$390	\$360	\$310	\$243	\$196	\$200	\$155	\$135	\$123	\$119
Telegraph	\$63	\$62	\$56	\$54	\$46	\$45	\$42	\$35	\$30	\$27	\$24	\$15	\$16	\$12	\$12	\$6
Private Line	\$115	\$126	\$138	\$154	\$158	\$172	\$175	\$191	\$194	\$208	\$201	\$303	\$313	\$356	\$440	\$506
Miscellaneous												\$23	\$24	\$23	\$25	\$48
Total Billed Revenues	\$2,599	\$2,777	\$2,940	\$3,463	\$3,794	\$4,119	\$4,611	\$5,336	\$6,334	\$7,379	\$8,464	\$9,637	\$10,687	\$11,878	\$12,855	\$14,669
Net Settlements ^{2/}																
Telephone	(\$347)	(\$531)	(\$712)	(\$950)	(\$1,203)	(\$1,130)	(\$1,414)	(\$1,675)	(\$2,028)	(\$2,398)	(\$2,762)	(\$3,298)	(\$3,344)	(\$3,704)	(\$4,289)	(\$4,937)
Telex	\$13	\$1	\$8	\$6	\$23	\$21	\$11	\$9	\$3	\$5	\$1	\$2	\$8	(\$4)	(\$4)	(\$7)
Telegraph	(\$30)	(\$31)	(\$29)	(\$28)	(\$22)	(\$18)	(\$13)	(\$10)	(\$8)	(\$6)	(\$4)	\$0	(\$0)	\$0	\$0	\$1
Miscellaneous												\$17	\$11	\$14	\$9	\$2
Total Net Settlements	(\$365)	(\$561)	(\$733)	(\$972)	(\$1,201)	(\$1,127)	(\$1,416)	(\$1,676)	(\$2,033)	(\$2,400)	(\$2,765)	(\$3,279)	(\$3,325)	(\$3,693)	(\$4,284)	(\$4,941)
Net Revenues																
Telephone	\$1,750	\$1,708	\$1,670	\$1,926	\$1,994	\$2,358	\$2,590	\$3,074	\$3,772	\$4,503	\$5,280	\$5,798	\$6,835	\$7,649	\$7,966	\$9,053
Telex	\$338	\$350	\$371	\$385	\$417	\$436	\$401	\$370	\$313	\$248	\$197	\$202	\$163	\$131	\$118	\$112
Telegraph	\$32	\$31	\$28	\$26	\$24	\$27	\$29	\$25	\$22	\$21	\$20	\$16	\$15	\$12	\$12	\$7
Private Line	\$115	\$126	\$138	\$154	\$158	\$172	\$175	\$191	\$194	\$208	\$201	\$303	\$313	\$356	\$432	\$506
Miscellaneous												\$40	\$35	\$37	\$34	\$50
Total Net Revenue	\$2,235	\$2,216	\$2,207	\$2,491	\$2,593	\$2,992	\$3,195	\$3,659	\$4,301	\$4,979	\$5,699	\$6,358	\$7,362	\$8,185	\$8,563	\$9,729
Billed Revenue per Unit																
Telephone per Minute	\$1.34	\$1.21	\$1.09	\$1.09	\$1.05	\$1.03	\$0.99	\$1.02	\$1.06	\$1.07	\$1.06	\$1.01	\$1.00	\$1.00	\$0.92	\$0.88
Telex per Minute	\$2.47	\$2.26	\$2.23	\$2.14	\$2.14	\$2.19	\$2.17	\$2.30	\$2.51	\$2.69	\$2.68	\$3.13	\$3.02	\$2.71	\$2.66	\$2.46
Telegraph per Word	\$0.19	\$0.20	\$0.22	\$0.22	\$0.25	\$0.28	\$0.34	\$0.35	\$0.36	\$0.36	\$0.44	\$0.41	\$0.48	\$0.45	\$0.59	\$0.50
Satellite Service																
Comsat ^{3/}	\$161	\$189	\$250	\$291	\$278	\$285	\$320	\$334	\$244	\$273	\$303	\$360	\$395	\$415	\$423	\$414
Resale of																
Telephone Service ^{4/}							\$1	\$14	\$65	\$113	\$167	\$440	\$511	\$591	\$1,120	\$1,754

^{1/} U.S. billed revenues are the amounts billed by U.S. carriers. The amounts billed by foreign carriers are not known. The data in this table are derived from the annual publication *Statistics of Communications Common Carriers*. See Appendix A for information on reporting changes over time and adjustments made to published figures.

^{2/} Net settlements represents settlement receipts from foreign telephone companies minus settlement payments to foreign telephone companies. Starting with 1991, settlements include transiting traffic. There are no settlement payments associated with private line services.

^{3/} Comsat information includes business from Intelsat and Inmarsat.

^{4/} Carriers began reporting pure resale traffic separately from facilities-based traffic in 1991. The amounts shown for 1986 through 1990 are included in the billed revenue data presented above. Resale revenue for those years does not include the resale revenue of carriers that also provided facilities based international telephone service. Pure resale international telephone service figures are from Section 43.61 International Telecommunications Data reports.

Starting with the 1995 Section 43.61 international traffic data, carriers are required to provide separate traffic data for service provided over facilities that they own and for service provided over facilities that they lease. For the purpose of Section 43.61 reporting, carriers must now classify their international services as either facilities-based, facilities-resale or pure resale. For categorizing traffic, **facilities-based** refers to services provided using international transmission facilities owned in whole or in part by the carrier providing service. Facilities-based carriers use one or more international channels of communications to provide international telecommunications service. An international channel is a wire or radio link that facilitates electronic communications between a United States point and another world point. A facilities-based carrier either owns international channels, has an ownership interest in the channel such as an indefeasible right of use (IRU), or leases the channel from an entity that does not report those circuits. For categorizing traffic, **facilities-resale** refers to services provided by a carrier utilizing international circuits leased from other reporting international carriers. The determination as to whether service is reported as facilities-based or facilities-resale generally is based on the first international link of a circuit. If the carrier has an ownership interest in that link, or leases it from an entity that does not report that link, then service provided over that circuit will be reported as facilities-based. Otherwise, service will be reported as facilities-resale. Carriers provide **pure resale** services by switching traffic to other U.S. carriers which actually carry the traffic to the international point. Thus, a carrier's pure resale traffic does not go over international circuits that the carrier owns or leases.

The FCC implemented revised reporting requirements in 1964. Starting that year, the SOCC international telephone service traffic data contain minute counts as well as revenues by international point. Table 3 summarizes minutes, billed revenues and settlements data for 1964 through 1995. In order to have relatively consistent data, traffic with Alaska, Hawaii, Puerto Rico, Canada and Mexico has been removed from totals published in the SOCC. Thus, the data in Table 3 differ from totals shown in other tables. For example, Table 3 shows billed revenue per minute of \$1.04 for 1995. As shown in Table 4, the figure would be \$.88 per minute if traffic with Canada and Mexico were included.

U.S. billed minutes increased from 20 million in 1964 to almost 11 billion in 1995. Annual growth averaged nearly 20% over the whole period. The rate of growth slowed in the late 1980s but reached 20% again in 1995. Foreign billed minutes grew at almost the same rate, increasing from 12 million minutes in 1964 to 4.1 billion minutes in 1995. Foreign billed traffic grew faster than U.S. billed traffic through 1975. U.S. carriers billed 63% of the minutes that they handled in 1964. The percentage declined to 57% in 1975 and since then has increased to around 70%.

Table 3. International Telephone Service Excluding Canada and Mexico 1/
(Total revenues and minutes in millions)

	U.S. Billed				Foreign Billed		Per Minute				Weighted average U.S. retained & foreign receipts
	Number of Minutes	Billed Revenue	Payout To PTT	Retained Revenue	Number of Minutes	Receipts from PTT	Billed Revenue	Payout To PTT	Retained Revenue	Receipts from PTT	
1964 <u>2/</u>	20	\$63	\$30	\$33	12	\$20	\$3.11	\$1.50	\$1.62	\$1.63	\$1.62
1965 <u>2/</u>	26	78	37	41	15	25	3.07	1.46	1.61	1.60	1.61
1966 <u>2/</u>	32	100	48	53	19	30	3.10	1.47	1.63	1.59	1.61
1967 <u>2/</u>	40	114	55	60	23	32	2.88	1.38	1.50	1.36	1.45
1968	46	127	62	65	28	40	2.73	1.33	1.41	1.42	1.41
1969	65	172	83	89	38	52	2.66	1.28	1.38	1.35	1.37
1970	81	197	99	98	51	60	2.43	1.22	1.21	1.17	1.19
1971	101	237	121	117	68	75	2.35	1.20	1.16	1.10	1.13
1972	127	292	148	144	92	99	2.31	1.17	1.14	1.08	1.11
1973	159	365	184	180	112	120	2.29	1.16	1.13	1.08	1.11
1974	191	429	217	212	142	152	2.25	1.14	1.11	1.07	1.09
1975	219	490	247	243	167	177	2.23	1.13	1.11	1.06	1.09
1976	273	601	303	298	197	207	2.20	1.11	1.09	1.05	1.08
1977	341	744	375	369	253	260	2.18	1.10	1.08	1.03	1.06
1978	456	954	496	458	346	315	2.09	1.09	1.01	0.91	0.96
1979	646	1,138	693	445	410	475	1.76	1.07	0.69	1.16	0.87
1980	811	1,605	834	772	486	567	1.98	1.03	0.95	1.17	1.03
1981	995	1,623	992	632	677	619	1.63	1.00	0.63	0.91	0.75
1982	1,253	1,719	1,257	461	819	756	1.37	1.00	0.37	0.92	0.59
1983	1,598	2,148	1,594	553	939	877	1.34	1.00	0.35	0.93	0.56
1984	1,916	2,449	1,809	640	1,047	847	1.28	0.94	0.33	0.81	0.50
1985	2,181	2,679	1,907	772	1,234	1,007	1.23	0.87	0.35	0.82	0.52
1986	2,643	3,054	2,305	749	1,356	1,139	1.16	0.87	0.28	0.84	0.47
1987	3,155	3,656	2,721	934	1,569	1,339	1.16	0.86	0.30	0.85	0.48
1988	3,768	4,446	3,171	1,274	1,901	1,554	1.18	0.84	0.34	0.82	0.50
1989	4,463	5,270	3,649	1,621	2,249	1,789	1.18	0.82	0.36	0.80	0.51
1990	5,276	6,306	4,198	2,109	2,543	2,009	1.20	0.80	0.40	0.79	0.53
1991	5,997	7,272	4,745	2,527	2,818	2,049	1.21	0.79	0.42	0.73	0.52
1992	6,653	8,091	4,780	3,311	3,128	2,069	1.22	0.72	0.50	0.66	0.55
1993	7,501	8,927	5,031	3,894	3,397	1,997	1.19	0.67	0.52	0.59	0.54
1994	8,950	9,716	5,554	4,161	3,698	2,006	1.09	0.62	0.46	0.54	0.49
1995	10,776	11,159	6,086	5,165	4,102	1,983	1.04	0.56	0.48	0.48	0.48

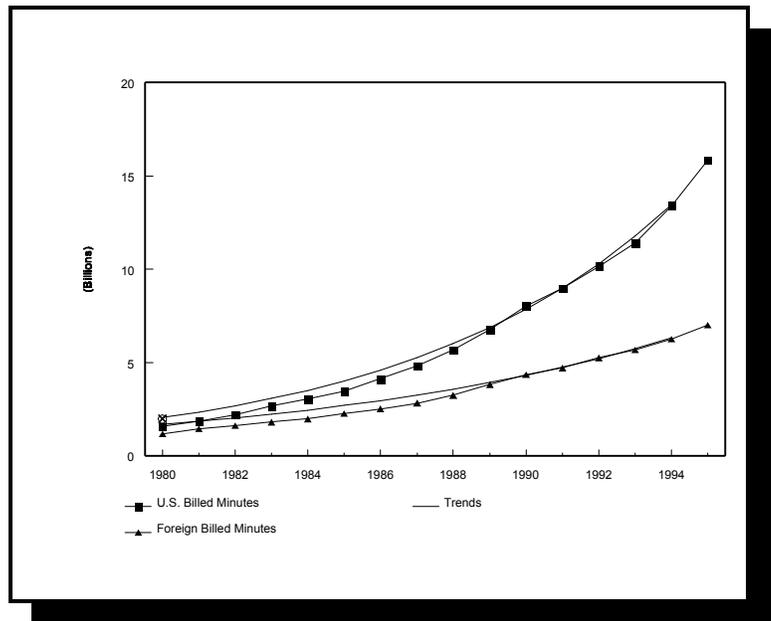
1/ Data in this table differ from data in other tables in this report because Canada and Mexico traffic have been removed. Data from *Statistics of Communications Common Carriers* have been adjusted to remove traffic between the conterminous U.S. and Alaska, Hawaii and Puerto Rico for 1964 through 1984. Data before 1985 include AT&T traffic, only.

2/ Both U.S. billed and foreign billed traffic include transiting traffic for 1964 through 1967.

Table 4 provides detailed traffic and revenue information for international telephone service. Unlike Table 3, this table includes traffic with Canada and Mexico. The table includes minutes of traffic, messages, billed revenues, net settlement payments, and an average price per U.S. call. Settlement payments are explained in Section III. Table 5 presents similar data for international telex service, and Table 6 presents similar data for international telegraph service.

Figure 4: International Telephone Service U.S. Billed and Foreign Billed Minutes of Service

Figure 4 shows the minutes of U.S. and foreign international telephone traffic for 1980 through 1995, including traffic for Canada and Mexico. The graph also shows trend lines -- a 14.4% annual growth in U.S. billed minutes compared with a 10.0% annual growth in foreign billed minutes. For the last two decades significant price cuts relative to inflation have fueled the rapid growth in U.S. billed traffic. Some of the growing disparity in traffic growth is also due to new service arrangements. Services such as USA Direct allow U.S. travelers abroad to place calls from foreign points and have the calls billed by the U.S. carrier at comparably lower rates. Call-back arrangements allow foreign customers to take advantage of relatively low U.S. rates. In addition, U.S. carriers offer "reorigination" arrangements that enable some new foreign carriers to provide international service without negotiating extensive accounting rate agreements and to take advantage of relatively low accounting rates negotiated by U.S. carriers. Section III of this report explains in detail how the settlement deficit has continued to grow because the disparity in traffic growth has more than offset the effect of the decline in settlement rates.



Some Americans now use the Internet as a substitute for telephone calls. This is particularly attractive for international communications, as voice and written messages can be sent over the Internet with little or no per-message charges. Internet messages, unlike most voice and facsimile (fax) calls, go over private circuits rather than as IMTS calls. The FCC does not collect data on Internet usage. Figure 4 suggests, however, that Internet usage did not reduce the growth in IMTS, at least through 1995. The international telecommunications business, however, has a long history of new technologies and services replacing old ones.

Table 4. International Telephone Service Traffic Data 1/
(Message, minute and revenue amounts in millions)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Recent annual rate of growth <u>4/</u>
U.S. Minutes	1,569	1,857	2,187	2,650	3,037	3,446	4,126	4,819	5,679	6,751	8,030	8,986	10,156	11,393	13,393	15,837	14.4%
Foreign Minutes <u>2/</u>	1,162	1,437	1,613	1,808	1,971	2,263	2,511	2,823	3,228	3,810	4,341	4,707	5,248	5,678	6,247	7,005	10.0%
Transiting Minutes												271	398	503	581	521	
Total Minutes	2,732	3,294	3,799	4,458	5,008	5,709	6,637	7,642	8,908	10,561	12,371	13,963	15,803	17,574	20,220	23,363	13.4%
U.S. Messages	199	233	274	322	367	411	482	570	687	835	984	1,371	1,643	1,926	2,313	2,821	22.1%
Foreign Messages	165	202	227	262	288	336	425	455	547	649	739	901	1,067	1,197	1,380	1,517	15.3%
Total Messages	364	435	501	584	655	747	907	1,025	1,233	1,485	1,723	2,272	2,710	3,124	3,694	4,338	19.4%
Average Minutes per Message																	
U.S. Calls	7.9	8.0	8.0	8.2	8.3	8.1	8.0	7.7	7.4	7.2	7.3	6.6	6.2	5.9	5.8	5.6	
Foreign Calls	7.0	7.1	7.1	6.9	6.8	6.7	6.3	5.9	5.4	5.3	5.3	5.2	4.9	4.7	4.5	4.6	
All Telephone Calls	7.5	7.6	7.6	7.6	7.6	7.6	7.6	7.5	7.2	7.1	7.2	6.1	5.8	5.6	5.5	5.4	
Billed Revenues	\$2,097	\$2,239	\$2,382	\$2,876	\$3,197	\$3,487	\$4,004	\$4,750	\$5,800	\$6,901	\$8,042	\$9,096	\$10,179	\$11,353	\$12,255	\$13,990	11.4%
Settlement Payments	\$1,063	\$1,330	\$1,674	\$2,036	\$2,269	\$2,398	\$2,865	\$3,423	\$4,039	\$4,735	\$5,297	\$5,792	\$5,945	\$6,308	\$6,947	\$7,559	7.0%
Retained Billed Revenue	\$1,034	\$910	\$708	\$841	\$928	\$1,089	\$1,140	\$1,327	\$1,761	\$2,166	\$2,745	\$3,304	\$4,234	\$5,044	\$5,307	\$6,432	18.2%
Settlement Receipts	\$716	\$799	\$961	\$1,086	\$1,066	\$1,243	\$1,396	\$1,671	\$1,906	\$2,213	\$2,426	\$2,369	\$2,434	\$2,416	\$2,443	\$2,455	0.4%
Transiting Traffic Receipts												\$281	\$366	\$447	\$492	\$564	
Transiting Traffic Payments												\$156	\$199	\$258	\$276	\$397	
Net Settlement Payments	(\$347)	(\$531)	(\$712)	(\$950)	(\$1,203)	(\$1,159)	(\$1,477)	(\$1,789)	(\$2,199)	(\$2,620)	(\$2,981)	(\$3,298)	(\$3,344)	(\$3,704)	(\$4,289)	(\$4,937)	10.2%
Net Revenue <u>3/</u>	\$1,750	\$1,708	\$1,670	\$1,926	\$1,994	\$2,328	\$2,527	\$2,961	\$3,600	\$4,281	\$5,062	\$5,798	\$6,835	\$7,649	\$7,966	\$9,053	12.0%
Per Minute of U.S. Traffic:																	
U.S. Billings	\$1.34	\$1.21	\$1.09	\$1.09	\$1.05	\$1.01	\$0.97	\$0.99	\$1.02	\$1.02	\$1.00	\$1.01	\$1.00	\$1.00	\$0.92	\$0.88	
Settlement Payments	\$0.68	\$0.72	\$0.77	\$0.77	\$0.75	\$0.70	\$0.69	\$0.71	\$0.71	\$0.70	\$0.66	\$0.64	\$0.59	\$0.55	\$0.52	\$0.48	
Retained Revenue	\$0.66	\$0.49	\$0.32	\$0.32	\$0.31	\$0.32	\$0.28	\$0.28	\$0.31	\$0.32	\$0.34	\$0.37	\$0.42	\$0.44	\$0.40	\$0.41	
Per Minute of Foreign Traffic:																	
Settlement Receipts	\$0.62	\$0.56	\$0.60	\$0.60	\$0.54	\$0.55	\$0.56	\$0.59	\$0.59	\$0.58	\$0.56	\$0.50	\$0.46	\$0.43	\$0.39	\$0.35	
Per Transiting Minute - Revenue												\$0.46	\$0.42	\$0.37	\$0.37	\$0.32	
Net Revenue per Minute	\$0.64	\$0.52	\$0.44	\$0.43	\$0.40	\$0.41	\$0.38	\$0.39	\$0.40	\$0.41	\$0.41	\$0.42	\$0.43	\$0.44	\$0.39	\$0.39	
Percent Billings for Settlements	50.7%	59.4%	70.3%	70.8%	71.0%	68.8%	71.5%	72.1%	69.6%	68.6%	65.9%	63.7%	58.4%	55.6%	56.7%	54.0%	
Average Price for a U.S. call	\$10.53	\$9.61	\$8.70	\$8.92	\$8.71	\$8.20	\$7.77	\$7.60	\$7.56	\$7.34	\$7.28	\$6.63	\$6.20	\$5.89	\$5.30	\$4.96	

1/ The data in this table are derived from the annual FCC publication *Statistics of Communications Common Carriers* (SOCC). The SOCC includes data for Canada and Mexico starting in 1991. AT&T data for Canada and Mexico have been added to the SOCC data for 1980 through 1990. In addition, the SOCC data for 1980 through 1984 were adjusted to remove data for Alaska, Hawaii, and Puerto Rico. Starting in 1991, the SOCC shows totals with and without non-domestic traffic between U.S. points. The table uses the totals for foreign points, which exclude non-domestic traffic between U.S. points. Appendix A summarizes known inconsistencies in the data. Appendix B and Appendix C provide selected traffic data for service with Canada and Mexico, respectively. Transiting traffic was first published in the SOCC for 1991.

2/ Many countries charge for service on the basis of metered pulses, rather than by call minutes as in the United States. The pulses are converted to minutes to facilitate settlements. U.S. carriers report these amounts as foreign billed minutes.

3/ U.S. traffic generally exceeds foreign traffic. Since settlements payments are based on traffic, there is usually a net settlement payment by U.S. carriers, shown as a negative amount in the table. Net revenue is the retained revenue from U.S. billed calls plus the settlement amount from foreign billed calls. U.S. carriers report both settlement receipts and settlement payments for transiting calls in cases where the operating agreements have cascade billing arrangements. In a cascade billing arrangement, the U.S. carrier collects from the originating foreign carrier both the transit fee and the settlement amount that the originating foreign carrier will owe to the terminating foreign carrier. The U.S. carrier then makes the settlement payment.

4/ The annual rates of growth were estimated by fitting a log linear regression to data for 1989 through 1995.

Table 5. International Telex Service Traffic Data ^{1/}
(Message, minute, and revenue amounts in millions)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Recent annual rate of growth ^{3/}
U.S. Minutes	132	154	163	177	184	189	179	156	123	90	73	64	51	50	46	49	-8.4%
Foreign Minutes	149	168	179	191	211	208	196	179	137	107	84	71	59	48	41	34	-16.9%
Transiting Minutes																	
Total Minutes	281	322	342	368	395	397	376	335	260	197	157	164	135	121	107	99	-9.9%
U.S. Messages	51	59	64	69	74	72	69	61	47	33	25	21	15	15	13	13	-12.5%
Foreign Messages	50	56	60	65	72	73	69	62	46	35	25	21	18	15	12	10	-16.9%
Total Messages	101	115	124	134	146	145	138	124	93	68	51	42	33	29	25	23	-14.6%
Average Minutes per Message																	
U.S. Messages	2.6	2.6	2.6	2.6	2.5	2.6	2.6	2.5	2.6	2.7	2.9	3.1	3.3	3.4	3.5	3.7	
Foreign Messages	3.0	3.0	3.0	3.0	2.9	2.9	2.8	2.9	3.0	3.1	3.3	3.4	3.3	3.3	3.3	3.3	
All Telex Messages	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.8	2.9	3.1	3.9	4.1	4.1	4.2	4.3	
Billed Revenues	\$325	\$350	\$363	\$379	\$394	\$415	\$390	\$360	\$310	\$243	\$196	\$200	\$155	\$135	\$123	\$119	-11.0%
Settlement Payments	\$170	\$181	\$189	\$196	\$196	\$198	\$190	\$172	\$136	\$101	\$82	\$72	\$51	\$49	\$43	\$38	-14.4%
Retained Billed Revenue	\$155	\$169	\$174	\$183	\$197	\$217	\$199	\$188	\$174	\$142	\$114	\$128	\$105	\$86	\$79	\$82	-9.0%
Settlement Receipts	\$182	\$181	\$197	\$202	\$220	\$219	\$202	\$181	\$139	\$106	\$83	\$68	\$52	\$39	\$33	\$26	-21.3%
Transiting Traffic Receipts												\$41	\$34	\$30	\$28	\$23	
Transiting Traffic Payments												\$35	\$28	\$24	\$22	\$18	
Net Settlement Payments	\$13	\$1	\$8	\$6	\$23	\$21	\$11	\$9	\$3	\$5	\$1	\$2	\$8	(\$4)	(\$4)	(\$7)	34.5%
Net Revenue ^{2/}	\$338	\$350	\$371	\$385	\$417	\$436	\$401	\$370	\$313	\$248	\$197	\$202	\$163	\$131	\$118	\$112	-12.4%
Per Minute of U.S. Traffic:																	
U.S. Billings	\$2.47	\$2.26	\$2.23	\$2.14	\$2.14	\$2.19	\$2.17	\$2.30	\$2.51	\$2.69	\$2.68	\$3.13	\$3.02	\$2.71	\$2.66	\$2.46	
Settlement Payments	\$1.29	\$1.17	\$1.16	\$1.11	\$1.07	\$1.04	\$1.06	\$1.10	\$1.10	\$1.12	\$1.12	\$1.13	\$0.98	\$0.99	\$0.94	\$0.78	
Retained Revenue	\$1.18	\$1.09	\$1.07	\$1.03	\$1.07	\$1.15	\$1.11	\$1.20	\$1.41	\$1.57	\$1.56	\$2.00	\$2.04	\$1.72	\$1.73	\$1.68	
Per Minute of Foreign Traffic:																	
Settlement Receipts	\$1.22	\$1.08	\$1.10	\$1.06	\$1.04	\$1.05	\$1.03	\$1.01	\$1.01	\$0.99	\$0.99	\$0.95	\$0.89	\$0.82	\$0.80	\$0.76	
Per Transiting Minute - Revenue												\$0.22	\$0.25	\$0.26	\$0.30	\$0.29	
Net Revenue per Minute	\$1.20	\$1.09	\$1.08	\$1.05	\$1.06	\$1.10	\$1.07	\$1.10	\$1.20	\$1.26	\$1.26	\$1.23	\$1.21	\$1.08	\$1.10	\$1.13	
Percent Billings for Settlements	52.2%	51.7%	52.0%	51.7%	49.9%	47.7%	48.9%	47.8%	43.9%	41.6%	41.8%	36.1%	32.5%	36.6%	35.3%	31.6%	
Average Price for a U.S. Message	\$6.38	\$5.89	\$5.71	\$5.47	\$5.34	\$5.77	\$5.66	\$5.86	\$6.61	\$7.37	\$7.73	\$9.67	\$10.10	\$9.19	\$9.35	\$8.99	

^{1/} The data in this table are derived from the annual FCC publication *Statistics of Communications Common Carriers* (SOCC). The SOCC includes data for Canada and Mexico starting in 1991. The SOCC data for 1980 through 1984 were adjusted to remove data for Alaska, Hawaii, and Puerto Rico. Starting in 1991, the SOCC shows totals with and without non-domestic traffic between U.S. points. The table uses the totals for foreign points, which exclude non-domestic traffic between U.S. points. Appendix A summarizes known inconsistencies in the data. Transiting traffic was first published in the SOCC for 1991.

^{2/} Net revenue is the retained revenue from U.S. billed calls plus the settlement amount from foreign billed calls. U.S. carriers report both settlement receipts and settlement payments for transiting calls in cases where the operating agreements have cascade billing arrangements. In a cascade billing arrangement, the U.S. carrier collects from the originating foreign carrier both the transit fee and the settlement amount that the originating foreign carrier will owe to the terminating foreign carrier. The U.S. carrier then makes the settlement payment.

^{3/} The annual rates of growth were estimated by fitting a log linear regression to data for 1989 through 1995.

Table 6. International Telegraph Service Traffic Data ^{1/}
(Message, word, and revenue amounts in millions)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Recent annual rate of growth ^{3/}
U.S. Words	321	306	258	240	185	158	124	99	82	75	54	37	33	26	21	13	-23.1%
Foreign Words	181	167	142	120	105	91	78	61	50	42	33	29	20	16	15	13	-17.9%
Transiting Words																	
Total Words	502	473	400	361	290	249	202	160	132	117	87	78	62	52	47	33	-17.1%
U.S. Messages	7	6	5	5	3	3	2	2	2	1	1	1	1	1	1	0	-12.6%
Foreign Messages	5	5	4	3	3	2	2	2	1	1	1	1	1	1	1	0	-15.2%
Total Messages	12	11	9	8	6	5	4	3	3	2	2	2	2	1	1	1	-13.7%
Average Words per Message																	
U.S. Messages	47.5	49.5	50.4	49.6	53.8	56.3	55.4	54.0	46.6	52.6	44.7	42.5	39.8	36.7	23.4	26.7	
Foreign Messages	35.9	36.5	35.9	36.3	36.9	37.9	36.7	37.5	36.7	42.1	34.6	29.8	29.6	29.4	28.5	28.3	
All Telegraph Messages	42.6	44.0	44.1	44.2	46.1	47.9	46.3	46.3	42.2	48.3	40.2	42.6	41.3	41.3	33.1	35.3	
Billed Revenues	\$63	\$62	\$56	\$54	\$46	\$45	\$42	\$35	\$30	\$27	\$24	\$15	\$16	\$12	\$12	\$6	-19.5%
Settlement Payments	\$44	\$43	\$39	\$38	\$32	\$28	\$21	\$18	\$14	\$13	\$9	\$6	\$5	\$4	\$4	\$2	-21.7%
Retained Billed Revenue	\$19	\$19	\$18	\$16	\$14	\$17	\$20	\$17	\$16	\$14	\$14	\$9	\$10	\$8	\$8	\$4	-18.2%
Settlement Receipts	\$14	\$12	\$10	\$10	\$10	\$9	\$9	\$8	\$6	\$6	\$6	\$5	\$4	\$3	\$3	\$2	-16.9%
Transiting Traffic Receipts												\$4	\$3	\$3	\$4	\$3	
Transiting Traffic Payments												\$2	\$2	\$2	\$2	\$2	
Net Settlement Payments	(\$30)	(\$31)	(\$29)	(\$28)	(\$22)	(\$18)	(\$13)	(\$10)	(\$8)	(\$6)	(\$4)	\$0	(\$0)	\$0	\$0	\$1	Not Meaningful
Net Revenue ^{2/}	\$32	\$31	\$28	\$26	\$24	\$27	\$29	\$25	\$22	\$21	\$20	\$16	\$15	\$12	\$12	\$7	-16.0%
Per Word of U.S. Traffic:																	
U.S. Billings	\$0.19	\$0.20	\$0.22	\$0.22	\$0.25	\$0.28	\$0.34	\$0.35	\$0.36	\$0.36	\$0.44	\$0.41	\$0.48	\$0.45	\$0.59	\$0.50	
Settlement Payments	\$0.14	\$0.14	\$0.15	\$0.16	\$0.17	\$0.17	\$0.17	\$0.18	\$0.17	\$0.17	\$0.18	\$0.16	\$0.16	\$0.14	\$0.20	\$0.18	
Retained Revenue	\$0.06	\$0.06	\$0.07	\$0.07	\$0.08	\$0.11	\$0.16	\$0.17	\$0.20	\$0.19	\$0.27	\$0.25	\$0.32	\$0.31	\$0.39	\$0.32	
Per Word of Foreign Traffic:																	
Settlement Receipts	\$0.08	\$0.07	\$0.07	\$0.09	\$0.10	\$0.10	\$0.11	\$0.12	\$0.11	\$0.15	\$0.18	\$0.17	\$0.18	\$0.18	\$0.20	\$0.17	
Per Transiting Word - Revenue																	
Net Revenue per Word	\$0.06	\$0.07	\$0.07	\$0.07	\$0.08	\$0.11	\$0.14	\$0.15	\$0.17	\$0.18	\$0.23	\$0.20	\$0.25	\$0.23	\$0.27	\$0.22	
Percent Billings for Settlements	70.2%	69.9%	68.8%	70.9%	69.3%	61.4%	51.6%	50.9%	46.0%	46.8%	39.7%	39.6%	32.8%	31.2%	33.4%	36.6%	
Average Price for a U.S. Message	\$9.27	\$10.01	\$11.01	\$11.11	\$13.30	\$15.95	\$18.66	\$19.15	\$16.94	\$18.86	\$19.82	\$17.62	\$18.94	\$16.54	\$13.82	\$13.30	

^{1/} The data in this table are derived from the annual FCC publication *Statistics of Communications Common Carriers* (SOCC). The SOCC includes data for Canada and Mexico starting in 1991. The SOCC data for 1980 through 1984 were adjusted to remove data for Alaska, Hawaii, and Puerto Rico. Starting in 1991, the SOCC shows totals with and without non-domestic traffic between U.S. points. The table uses the totals for foreign points, which exclude non-domestic traffic between U.S. points. Appendix A summarizes known inconsistencies in the data. Transiting traffic was first published in the SOCC for 1991.

^{2/} U.S. traffic generally exceeds foreign traffic. Since settlements payments are based on traffic, there is usually a net settlement payment by U.S. carriers, shown as a negative amount in the table. Net revenue is the retained revenue from U.S. billed calls plus the settlement amount from foreign billed calls. U.S. carriers report both settlement receipts and settlement payments for transiting calls in cases where the operating agreements have cascade billing arrangements. In a cascade billing arrangement, the U.S. carrier collects from the originating foreign carrier both the transit fee and the settlement amount that the originating foreign carrier will owe to the terminating foreign carrier. The U.S. carrier then makes the settlement payment.

^{3/} The annual rates of growth were estimated by fitting a log linear regression to data for 1989 through 1995.

Figure 5: International Telegraph Service

Figure 5 shows telegraph revenues and average charge per word for 1980 through 1995. After peaking in the late 1960s, international telegraph revenues began to decline due to competition from both telephone and telex service. The figure charts the decline of telegraph service as carriers raised rates in the face of shrinking demand.

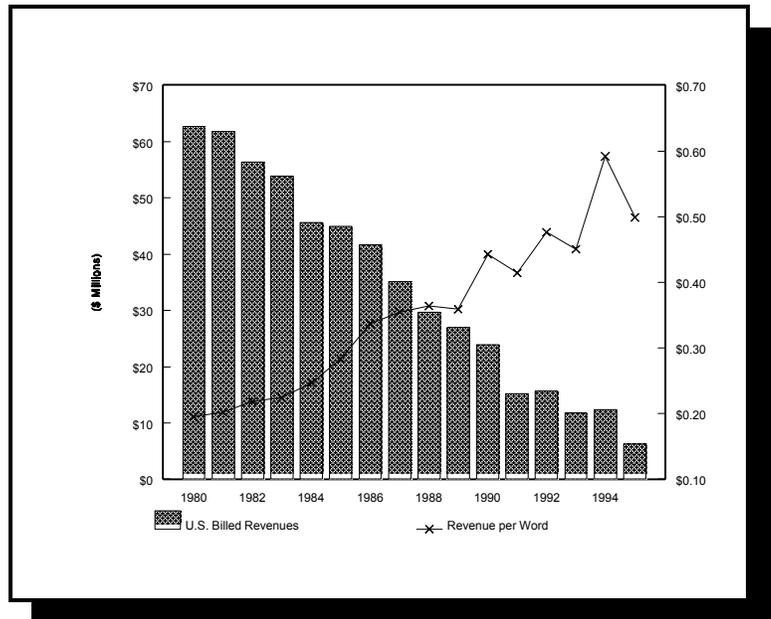


Figure 6: International Telex Service

Figure 6 shows the telex revenues and average charge per minute for 1980 through 1995. Telex revenues peaked in the mid 1980s. Much of the decline since then is due to growth in the use of fax machines. A fax message sent using telephone service is often a good substitute for a telex or telegraph message. Fax via telephone service has become relatively less expensive over time, and a growing percentage of customers have access to fax equipment. Fax traffic represents a significant percentage of total telephone calls between some countries.

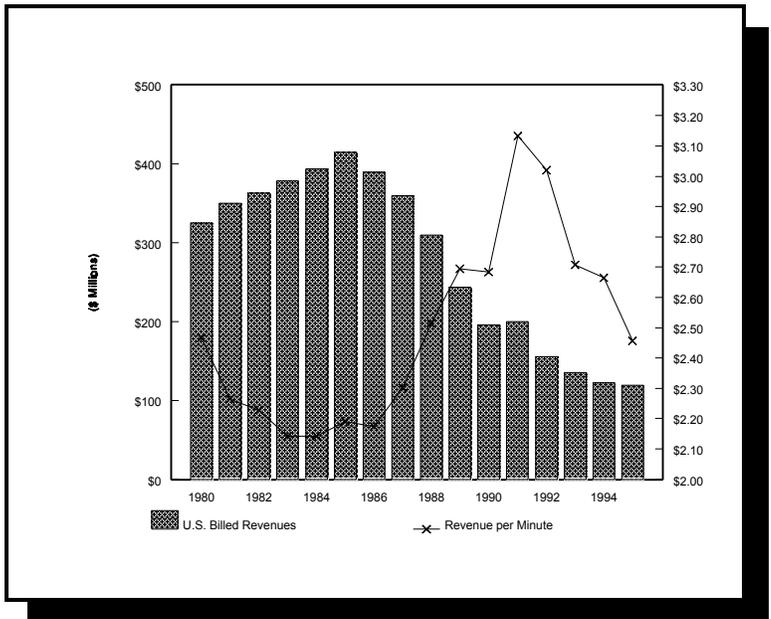


Table 7. U.S. Minutes of International Telephone Service for Selected International Points
(In thousands)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Annual Growth Rate Since 1990 ^{1/}
Australia	10,610	13,639	17,114	21,817	26,444	32,396	41,074	55,123	68,855	82,225	93,632	99,107	113,213	126,113	156,656	201,269	16.4%
Brazil	13,413	15,992	20,041	25,984	32,654	39,501	53,573	56,311	71,805	90,603	108,755	122,458	144,691	171,414	221,824	282,946	21.2%
Canada ^{2/}	576,740	654,662	687,265	742,234	814,035	916,525	1,060,523	1,161,519	1,268,981	1,490,894	1,819,383	1,950,892	2,226,372	2,493,082	2,786,577	3,049,270	11.4%
China	840	961	1,207	1,495	2,123	3,242	5,266	10,283	17,006	25,847	32,774	47,320	68,424	110,128	169,295	230,937	49.4%
Colombia	17,885	24,926	36,068	55,868	64,351	66,053	81,963	95,375	108,033	121,078	132,505	150,362	172,431	200,185	231,098	256,463	14.5%
Dominican Rep.	17,135	20,700	24,473	49,670	41,563	51,450	78,350	89,800	118,548	146,502	165,016	217,888	249,403	253,347	309,695	410,483	17.4%
Egypt	2,208	3,253	4,738	9,736	12,828	15,401	17,841	20,267	23,119	27,749	30,562	38,077	43,905	49,004	56,919	68,649	16.6%
El Salvador	10,878	13,858	17,927	20,276	27,420	32,408	38,250	44,039	53,891	68,574	84,090	89,105	99,880	106,978	120,755	135,655	10.1%
France	35,359	41,258	50,196	61,798	74,360	86,954	99,511	119,030	145,407	172,073	201,571	210,390	239,790	263,575	304,864	362,832	12.6%
Germany ^{3/}	86,001	105,038	136,104	161,926	191,626	219,547	257,125	306,663	367,405	416,844	494,331	561,026	562,891	572,449	603,926	662,213	5.0%
Greece	13,574	16,254	20,486	26,289	30,228	34,179	40,229	43,534	48,225	52,429	57,927	61,054	69,961	75,532	82,130	86,475	8.9%
Guatemala	7,824	9,320	11,424	13,815	17,681	23,026	29,092	34,322	40,290	57,265	70,460	80,582	87,962	93,833	105,361	115,092	10.0%
Hong Kong	9,395	11,672	15,521	20,942	27,245	32,039	47,008	54,178	64,399	76,376	85,439	95,196	113,884	142,780	213,420	315,806	30.0%
India	3,355	4,289	5,462	7,300	13,089	15,524	20,187	25,818	33,456	45,435	58,848	71,345	97,788	134,140	191,513	285,662	37.6%
Israel	14,480	19,022	26,085	33,952	41,617	47,708	56,288	68,625	77,094	91,160	107,021	129,809	137,626	162,591	195,617	214,337	14.9%
Italy	32,885	38,578	47,179	57,051	69,212	81,061	93,283	111,603	127,803	145,860	169,174	178,264	207,212	229,594	250,782	279,385	10.9%
Jamaica	12,624	17,607	17,741	21,472	24,382	38,434	51,656	64,998	72,964	78,671	96,798	103,799	124,310	144,849	167,384	186,684	14.9%
Japan	36,717	45,568	58,542	72,250	91,374	109,117	137,916	175,739	231,797	272,927	319,754	335,721	362,989	397,230	465,717	576,246	12.2%
Korea, Rep. of	13,411	17,779	25,547	34,987	48,489	60,592	76,273	91,429	121,557	141,687	164,827	184,015	206,380	237,304	281,903	319,299	14.5%
Mexico ^{2/}	179,862	205,586	251,849	294,297	307,022	349,157	422,877	502,907	642,333	796,889	934,425	1,038,226	1,277,226	1,398,807	1,656,171	2,012,183	16.4%
Netherlands	15,851	16,434	19,199	22,190	25,699	29,552	34,961	41,575	52,755	62,116	70,964	78,090	92,709	107,258	130,420	163,595	18.2%
Nigeria	1,158	3,141	4,842	6,415	7,361	7,129	7,991	9,657	12,402	11,502	16,213	27,857	34,255	38,548	39,496	52,124	22.2%
Pakistan	987	2,621	3,826	8,098	12,234	11,643	16,949	23,795	27,852	35,573	42,906	55,301	64,251	68,664	84,134	107,244	18.4%
Peru	7,196	9,236	12,063	17,296	20,318	24,543	29,229	34,687	41,196	54,309	64,394	67,472	80,103	89,649	105,751	121,753	14.2%
Philippines	17,552	21,474	29,248	40,067	53,874	61,395	75,771	88,899	105,602	130,285	165,042	185,686	195,233	219,532	258,822	295,671	12.2%
Poland	843	1,670	1,287	3,752	9,523	16,032	21,825	34,225	42,181	53,739	64,264	69,185	73,869	81,568	110,312	133,351	15.8%
Russia ^{4/}	732	1,454	1,449	1,042	1,595	1,858	2,206	3,063	4,944	7,795	13,409	22,129	41,155	45,585	63,649	78,422	41.3%
Saudi Arabia	10,148	15,063	24,247	34,970	36,901	33,225	32,494	30,027	30,943	32,677	68,194	187,506	61,525	67,585	77,516	88,230	-3.6%
South Africa	3,454	4,495	5,898	7,481	9,370	10,817	12,555	14,763	17,306	19,383	22,409	24,278	29,143	36,317	53,685	73,821	27.7%
Spain	15,597	13,042	16,571	19,597	23,237	27,490	32,232	39,376	48,738	57,348	69,000	84,772	105,557	109,459	119,366	130,320	12.9%
Switzerland	23,239	20,726	24,295	29,252	34,650	38,973	45,019	53,807	61,214	69,928	77,553	83,567	93,460	104,370	115,354	135,572	11.7%
Taiwan	8,248	11,027	17,591	26,723	36,002	45,223	61,229	73,100	86,141	100,519	120,170	127,984	162,534	184,310	225,592	271,604	18.4%
Thailand	2,896	3,574	5,350	8,147	11,010	13,963	19,941	21,110	25,256	31,404	38,427	43,943	53,118	62,830	78,302	92,331	19.7%
United Kingdom	132,712	162,407	185,082	210,570	250,094	299,311	354,726	420,142	485,418	543,964	627,434	662,889	733,377	799,805	905,959	1,025,044	10.4%
Sum of above countries	1,335,809	1,566,326	1,825,917	2,168,759	2,489,611	2,875,468	3,455,414	4,019,789	4,744,915	5,611,630	6,687,671	7,485,295	8,426,627	9,378,415	10,939,965	12,820,968	13.7%
Total For All Countries	1,569,150	1,857,207	2,186,565	2,649,683	3,037,022	3,446,265	4,126,061	4,819,218	5,679,412	6,750,673	8,029,739	8,985,797	10,156,212	11,392,816	13,393,191	15,837,132	11.7%
Selected as percent of total	85.1%	84.3%	83.5%	81.8%	82.0%	83.4%	83.7%	83.4%	83.5%	83.1%	83.3%	83.3%	83.0%	82.3%	81.7%	81.0%	
Canada, Mexico, Germany and UK as percent of total	62.2%	60.7%	57.6%	53.2%	51.5%	51.8%	50.8%	49.6%	48.7%	48.1%	48.3%	46.9%	47.3%	46.2%	44.4%	42.6%	

^{1/} ERR

^{2/} Most data have been taken from annual volumes of *Statistics of Communications Common Carriers*. Data for Canada and Mexico are taken from Appendix B and Appendix C, respectively.

^{3/} Data for Federal Republic of Germany through 1990.

^{4/} Data for the USSR through 1991. The 1992 figure includes traffic for the former Soviet republics.

Figure 7: Average Length of an International Telephone Call

Figure 7 shows the average minutes per call for U.S. and foreign calls. The trend has been for customers to make more frequent, but shorter, calls. In 1980, the average U.S. billed international telephone call lasted 7.9 minutes and cost \$10.53. In 1995, the average call lasted 5.6 minutes and cost \$4.96. The decline in the average length of an international telephone call reflects both changes in rate structures and changes in usage. Since 1980, carriers have gone from a 3-minute initial period to a 1-minute initial period. Thus, many calls that would have been recorded as 3-minute calls in the past are now recorded as 1- and 2- minute calls. Today, some telephone services are billed by thirty-second or six-second increments, further reducing the average number of minutes per call. Another factor contributing to the decline in the average minutes per call is that customers have greatly increased their use of fax via telephone calls. Fax calls tend to be short duration calls. Industry sources state that fax traffic may account for almost half of the calls between the United States and Japan. The FCC does not collect any data that separate fax calls or computer modem-originated calls from other customer-dialed message telephone service calls.

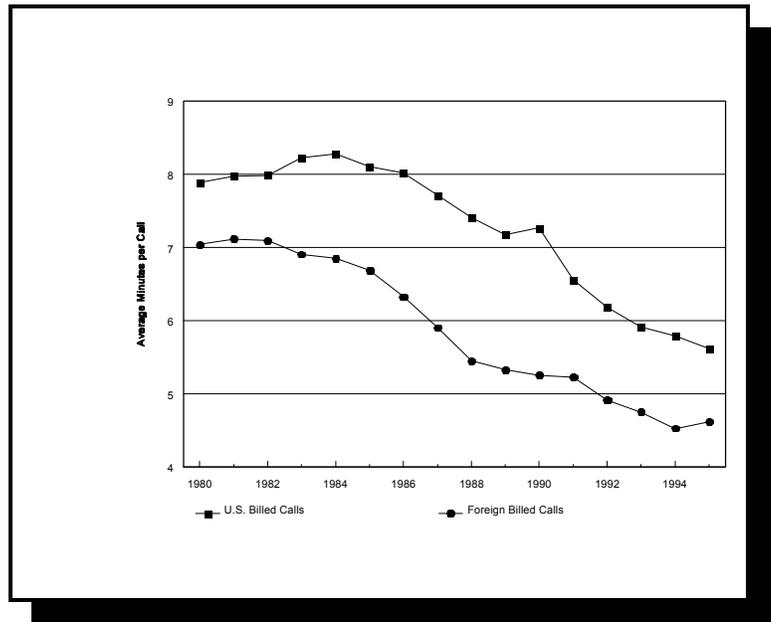


Table 7 shows U.S. billed minutes of international telephone service for 34 countries that collectively represent about 80 percent of all U.S. international calling. The table includes the countries with which the United States has the greatest volumes of international traffic, as well as selected countries in each region of the world. Growth rates over the most recent 6-year period have been estimated using log linear regressions. As noted above, growth rates vary over time and have declined somewhat in recent years. For recent years, growth trends have exceeded 10% per year for 31 of the 34 countries in the table. For the most part, traffic has grown steadily, but there are notable exceptions. For example, traffic to Poland grew rapidly between 1982 and 1987. Since then, growth has been more comparable to other countries. Economic and political reform in the former U.S.S.R. and China have led to growth in traffic exceeding 50% for some years.

Figure 8: U.S. Billed Telephone Service Minutes by Country

Figure 8 shows U.S. minutes of international telephone service for 5 countries and for the total of all international points. The graph employs a logarithmic scale. Thus, a series that grows by the same percentage each year appears as a straight line. The graph illustrates that in recent years, growth in international traffic has been broadly based.

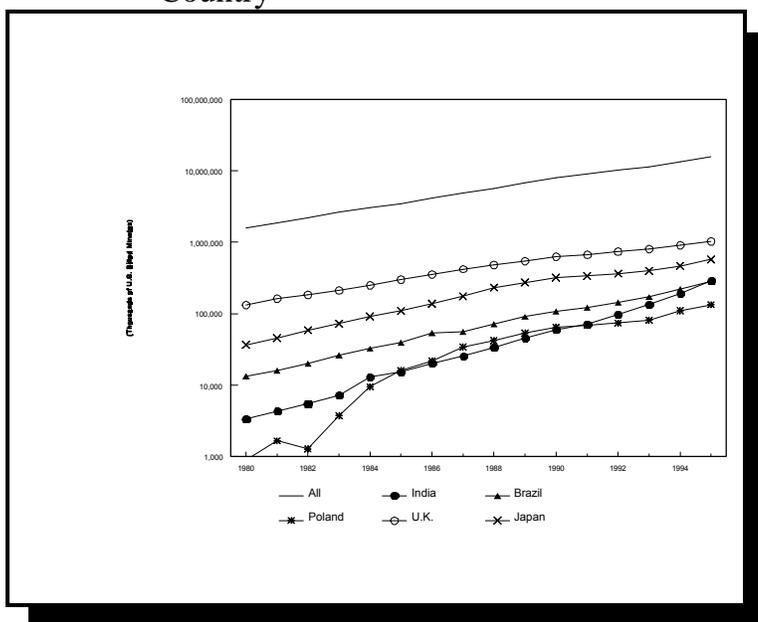


Figure 9: U.S. Billed Telephone Service Minutes by Groups of Countries

Figure 9 shows U.S. international telephone service minutes for three groups of countries. The first group -- Canada, Germany, Mexico, and the United Kingdom -- are the countries to which Americans place the most calls. In 1980, 62% of the international minutes were reported for those countries. In 1995, minutes to these countries represented only 43% of U.S. billed minutes. The second group consists of the other thirty countries shown in Table 7. The final group consists of all the countries that are not shown separately in Table 7. All three groups show rapid growth in minutes. The second group, however, shows the greatest relative growth, jumping from 23% of the total in 1980 to 38% in 1995. These developments illustrate that the distribution of international calls has been changing and partially explains why changes in average revenue per minute do not exactly mirror differences in average rates.

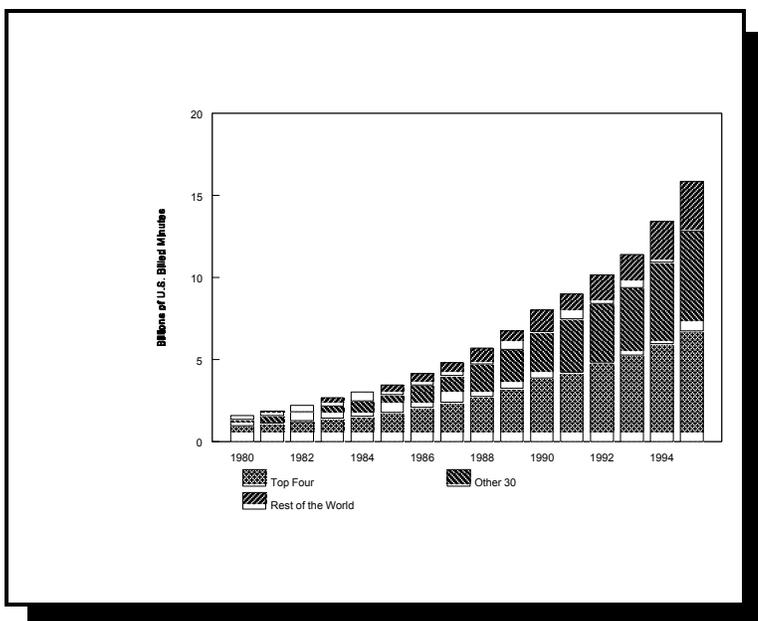


Figure 10: U.S. Billed Telephone Service Minutes by Region

Table 8 contains international MTS minutes and revenues by region. Figure 10 shows traffic data by region of the world. The figure illustrates that international telephone minutes have been growing rapidly in the four regions to which Americans place the most calls. International traffic is generally greatest to the countries with which the United States has strong economic ties and countries from which many Americans emigrated. The United States Census Bureau estimated that in 1995, 23 million people -- 8.8% of the population of the United States -- was foreign born. About 4.5 million people immigrated to the United States between 1990 and 1994, compared to 4.8 million during the entire decade of the 1970s. Census data indicate that a large share of new arrivals came from Mexico and various Asian countries. Traffic to Mexico and many Asian countries has grown rapidly in the 1990s.

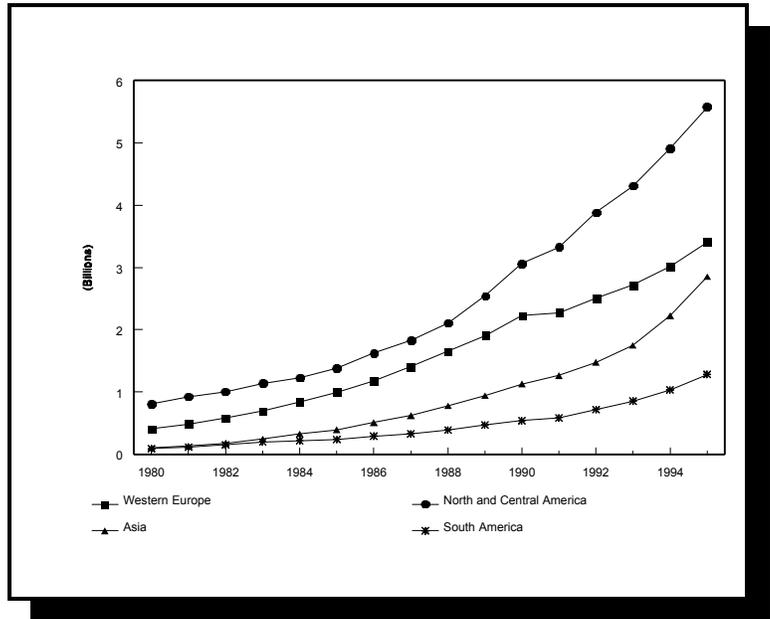


Table 9 shows private line revenues by region of the world. The table shows that U.S. carriers provide the most private line service to regions of the world where they provide the most international telephone service.

Table 8. International MTS by Region

US Billed Minutes (in thousands) ^{1/}

Year	Western Europe	Africa	Middle East	Caribbean	N. and Central America	South America	Asia	Oceania	E. Europe	Antarctica & Maritime	Total
1980	408,823	11,190	44,215	98,387	803,076	86,728	99,186	17,544	<u>2/</u>	1	1,569,150
1981	481,598	17,098	57,533	123,080	919,224	108,378	128,124	22,171	<u>2/</u>	1	1,857,207
1982	582,579	24,349	82,724	143,787	1,003,628	145,102	176,717	27,677	<u>2/</u>	2	2,186,565
1983	694,985	36,265	121,939	191,536	1,135,563	193,266	241,546	34,582	<u>2/</u>	1	2,649,683
1984	840,358	45,902	136,539	205,588	1,224,101	216,446	325,591	42,495	<u>2/</u>	1	3,037,022
1985	992,183	54,367	134,923	211,521	1,381,581	232,223	389,001	50,464	<u>2/</u>	1	3,446,264
1986	1,172,136	62,354	147,807	273,737	1,623,497	286,470	505,057	55,000	<u>2/</u>	2	4,126,060
1987	1,406,047	74,331	168,998	324,737	1,827,508	326,413	617,945	73,237	<u>2/</u>	2	4,819,217
1988	1,655,338	90,253	178,574	396,705	2,105,751	387,251	775,394	90,142	<u>2/</u>	3	5,679,412
1989	1,903,188	113,122	213,521	463,909	2,542,156	465,831	939,636	109,310	<u>2/</u>	3	6,750,675
1990	2,227,075	139,730	284,846	530,267	3,062,478	534,269	1,126,524	124,547	<u>2/</u>	4	8,029,740
1991	2,273,028	174,210	461,787	610,967	3,326,063	580,745	1,262,571	129,045	164,112	3,268	8,985,796
1992	2,506,566	204,900	347,902	681,267	3,882,931	715,660	1,473,809	146,942	192,533	3,701	10,156,211
1993	2,713,102	235,272	400,363	716,139	4,308,664	849,390	1,745,312	165,900	246,782	11,892	11,392,816
1994	3,017,507	303,369	474,164	895,451	4,918,310	1,028,605	2,226,637	245,297	337,457	10,308	13,457,105
1995	3,408,026	408,084	555,730	1,088,796	5,577,100	1,282,233	2,850,979	299,833	408,769	8,869	15,888,419
Annual rate of growth since 1991	10.7%	23.7%	4.7%	15.5%	13.8%	21.9%	22.6%	23.5%	25.6%	28.4%	15.3%

^{1/} International MTS data are derived from the annual FCC publication *Statistics of Communications Common Carriers* (SOCC). The SOCC includes data for Canada and Mexico starting in 1991. AT&T data for Canada and Mexico have been added to the SOCC data for 1980 through 1990. In addition, the SOCC data for 1980 through 1984 were adjusted to remove data for Alaska, Hawaii, and Puerto Rico. Starting in 1991, the SOCC shows totals with and without non-domestic traffic between U.S. points. This table uses the totals for foreign points, which exclude non-domestic traffic between U.S. points. Appendix A summarizes known inconsistencies in the data. Appendix B and Appendix C provide selected traffic data for service with Canada and Mexico, respectively.

^{2/} Data for countries in Eastern Europe and Western Europe were published together through 1990. The combined data are shown in the table as Western Europe data for those years.

Table 8. International MTS by Region

(continued)

US Billed Revenues (in thousands) ^{1/}

Year	Western Europe	Africa	Middle East	Caribbean	N. and Central America	South America	Asia	Oceania	E. Europe	Antarctica & Maritime	Total
1980	\$777,666	\$31,877	\$112,596	\$131,274	\$558,637	\$178,890	\$262,770	\$43,472	<u>2/</u>	\$2	\$2,097,184
1981	744,293	39,656	121,468	139,525	685,473	181,728	280,894	46,331	<u>2/</u>	2	2,239,371
1982	754,194	44,250	129,850	159,433	743,786	184,243	316,467	49,821	<u>2/</u>	6	2,382,050
1983	887,262	53,443	176,552	229,246	828,241	236,701	404,105	60,515	<u>2/</u>	3	2,876,069
1984	1,021,319	64,509	186,473	221,965	864,745	250,689	515,986	71,303	<u>2/</u>	3	3,196,992
1985	1,153,741	70,541	175,663	229,490	935,406	252,353	592,710	77,482	<u>2/</u>	4	3,487,392
1986	1,220,713	75,483	185,327	283,003	1,103,013	319,736	736,464	80,681	<u>2/</u>	4	4,004,425
1987	1,457,256	89,569	214,318	333,133	1,270,785	369,117	906,487	108,970	<u>2/</u>	5	4,749,641
1988	1,726,891	114,246	238,964	404,335	1,564,156	443,542	1,172,619	135,012	<u>2/</u>	7	5,799,773
1989	1,989,172	147,044	285,960	467,181	1,903,171	528,787	1,413,740	166,000	<u>2/</u>	7	6,901,061
1990	2,349,186	194,193	383,542	559,125	2,078,364	611,218	1,687,642	179,031	<u>2/</u>	9	8,042,312
1991	2,382,364	235,781	633,175	628,946	2,204,162	669,482	1,917,754	183,054	209,868	31,336	9,095,922
1992	2,590,865	304,180	476,396	691,624	2,531,751	822,559	2,255,814	204,336	263,865	37,530	10,178,920
1993	2,697,595	323,594	543,652	739,550	2,915,253	927,401	2,517,017	220,925	345,662	121,941	11,352,590
1994	2,762,071	405,676	578,152	862,423	3,076,379	1,055,078	2,766,842	296,745	439,199	86,285	12,328,850
1995	2,916,294	524,472	685,819	1,058,360	3,333,864	1,306,419	3,346,146	340,935	496,558	38,756	14,047,623
Annual rate of growth since 1991	5.2%	22.1%	2.0%	13.9%	10.9%	18.2%	14.9%	16.8%	24.0%	5.5%	11.5%

^{1/} International MTS data are derived from the annual FCC publication *Statistics of Communications Common Carriers* (SOCC). The SOCC includes data for Canada and Mexico starting in 1991. AT&T data for Canada and Mexico have been added to the SOCC data for 1980 through 1990. In addition, the SOCC data for 1980 through 1984 were adjusted to remove data for Alaska, Hawaii, and Puerto Rico. Starting in 1991, the SOCC shows totals with and without non-domestic traffic between U.S. points. This table uses the totals for foreign points, which exclude non-domestic traffic between U.S. points. Appendix A summarizes known inconsistencies in the data. Appendix B and Appendix C provide selected traffic data for service with Canada and Mexico, respectively.

^{2/} Data for countries in Eastern Europe and Western Europe were published together through 1990. The combined data are shown in the table as Western Europe data for those years.

Table 9. International Private Line by Region

US Billed Revenues (in thousands) ^{1/}

Year	Western Europe	Africa	Middle East	Caribbean	N. and Central America	South America	Asia	Oceania	E. Europe	Antarctica & Maritime	Total
1991	\$91,381	\$2,443	\$7,997	\$8,329	\$109,245	\$21,448	\$52,253	\$7,820	\$2,532	\$0	\$303,448
1992	122,490	2,872	7,251	8,148	60,913	21,219	73,077	12,502	4,597	337	313,406
1993	135,958	8,269	7,153	7,113	62,194	22,259	93,359	17,221	1,944	232	355,702
1994	158,292	4,397	7,527	9,834	82,349	28,689	109,495	29,701	8,815	852	439,951
1995	186,400	4,715	9,062	14,409	96,867	34,148	125,449	33,248	9,625	234	514,157
Annual rate of growth since 1991	19.5%	17.9%	3.2%	14.7%	-3.0%	12.3%	24.5%	43.6%	39.6%	n.a.	14.1%

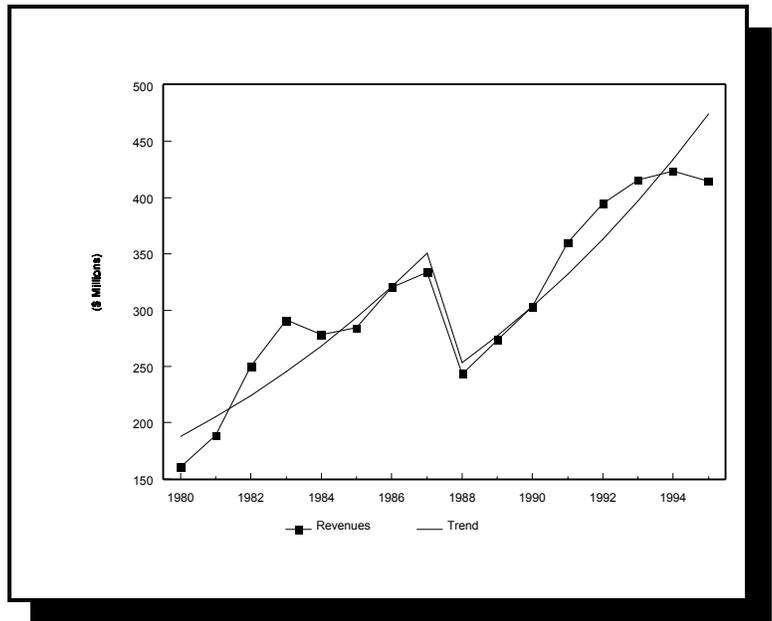
^{1/} International private line revenue by region data for 1991 through 1994 are taken directly from SOCC Tables 4.4. Until 1991, carriers were not required to file country-by-country private line service information.

B. International Facilities

The growth of international service is explained, in part, by the introduction and expansion of modern transmission facilities. The first modern cable system, TAT-1, was installed in 1956 and was followed by additional cable systems and the introduction and expansion of the global communications satellite system, Intelsat. These advancements improved service reliability and quality, expanded capacity, reduced costs, and led to lower rates. International minutes continue to grow more rapidly than domestic toll minutes.

Figure 11: COMSAT International Service Revenues

Table 2 separates Comsat revenues from other carrier revenues because Comsat primarily provides satellite circuits to other carriers. Comsat does this as the U.S. signatory to Intelsat, a consortium that operates a global communications system with 24 satellites in more than 200 countries. In 1995, Comsat also provided a small amount of international service that was reportable as Section 43.61 international traffic data. Revenues reported on Table 2 for Comsat, however, were taken from Comsat's annual Form M report to the FCC. The revenues reported are for business from Intelsat and Inmarsat.



Comsat revenues show a sharp decline in 1988, when it sold a significant number of earth stations. Figure 11 shows Comsat revenues as well as a trend line. Regression analysis was used to calculate a trend line with a break after 1987. Annual revenues probably fell by about \$150 million per year as a result of the sale of earth stations.

Carriers that provide facilities-based international service to the public file circuit data under Section 43.82 of the Commission's rules. These carriers now file country-by-country information on circuit capacity to international points. Carriers report the amount of activated and idle circuit capacity by broad service categories, measured as 64 kilobit per second (kbps) equivalent circuits. A 64 kbps circuit is also referred to as a voice-equivalent circuit. Detailed circuit capacity data for 1995 are contained in *Report on 1995 Circuit Status for U.S. Facility-Based International Carriers*, December 31, 1996, International Bureau Reference Room, 2000 M Street, N.W., Room 102, Washington, D.C. 20554.

For 1995, carriers reported about 164 thousand activated 64 kbps equivalent (voice-equivalent) circuits and about 123 thousand idle voice-equivalent circuits. Table 10 shows data

for international circuits for selected points. The data represent circuits actually in use at year-end. U.S. carriers report separate data for undersea cable, terrestrial and satellite circuits. Virtually all terrestrial capacity is reported for Canada and Mexico. Satellite capacity accounts for about 1/6th of the overall capacity in use, but a much higher percentage for some regions of the world, such as Africa and the Middle East.

Table 10 also shows total U.S. billed and foreign billed minutes of international telephone (IMTS) traffic for selected countries and for regions of the world. At year-end, about 80% of activated circuits were used to carry IMTS traffic. Dividing year-end IMTS circuits by traffic for the whole year gives a crude indicator of the average load for international activated circuits. For 1995, this calculation suggests that the average IMTS circuit carried 176 thousand minutes of traffic, which means that the average circuit activated for telephone service was used about 8 hours per day. Countries with the highest volumes of traffic except for Canada and Mexico tend to show higher loading rates by this calculation. However, the calculation for any individual country is unreliable because some traffic to or from a particular foreign country may not go directly over a U.S. carrier's circuits to that country, but instead may transit circuits that are reported for a different country. Also, the circuit data represents bearer circuits, which measures physical capacity. Carrier providing switched voice services often use multiplexing equipment to convert a single bearer circuit into several derived circuits. Thus, the actual loadings may be considerably lower than the figures calculated in the table.

In filing Section 43.82 circuit reports, carriers separate international circuit capacity into four categories: IMTS, private line, miscellaneous including telex and telegraph, and idle or reserve circuits. Dividing private line circuits activated at year-end by private line revenues for the whole year shown in Table 8 gives a rough estimate of the average annual revenue per 64 kbps equivalent circuit. The average annual revenue for all private line circuits for 1995 was about \$18 thousand. The average annual revenue was about \$13 thousand for private line circuits to North and Central America and the Caribbean and more than \$30 thousand for private line circuits to Oceania and Eastern Europe.

Table 10. International Circuit Data for Selected Countries for 1995

	Activated Circuits for All International Services by Type of Facility <u>1/</u>			Activated Circuits for International Message Telephone Service			IMTS Circuits as Percent of Total Activated Circuits
	Cable & Terrestrial Circuits	Satellite Circuits	Total	Cable Terrestrial & Satellite <u>1/</u>	Minutes <u>2/</u> (000)	Minutes per Circuit (000)	
Australia	2,874	293	3,167	2,310	352,212	152	72.9%
Brazil	1,264	633	1,897	1,430	384,687	269	75.4%
Canada	51,223	1,272	52,495	44,384	5,117,953	115	84.5%
China	409	705	1,114	1,058	283,665	268	95.0%
Colombia	914	346	1,260	1,026	316,224	308	81.4%
Dominican Republic	1,477	683	2,160	1,555	509,032	327	72.0%
Egypt	30	210	240	235	77,846	331	97.9%
El Salvador	120	237	357	338	144,248	427	94.7%
France	2,622	300	2,922	2,143	544,141	254	73.3%
Germany	3,532	455	3,987	2,706	953,253	352	67.9%
Greece	142	198	340	314	117,131	373	92.4%
Guatemala	0	338	338	308	129,361	420	91.1%
Hong Kong	1,406	275	1,681	779	419,113	538	46.3%
India	608	690	1,298	1,004	337,592	336	77.3%
Israel	528	300	828	676	284,798	421	81.6%
Italy	1,534	177	1,711	1,545	383,477	248	90.3%
Jamaica	273	374	647	587	231,135	394	90.7%
Japan	6,435	1,393	7,828	4,888	907,067	186	62.4%
Korea, South	1,105	534	1,639	1,143	463,767	406	69.7%
Mexico	24,860	78	24,938	23,270	2,847,936	122	93.3%
Netherlands	1,808	91	1,899	1,224	246,369	201	64.5%
Nigeria	0	242	242	232	71,032	306	95.9%
Pakistan	0	269	269	268	116,464	435	99.6%
Peru	0	344	344	277	145,810	526	80.5%
Philippines	1,804	206	2,010	1,856	345,647	186	92.3%
Poland	347	224	571	554	164,855	298	97.0%
Russia	677	613	1,290	1,108	105,052	95	85.9%
Saudi Arabia	90	317	407	319	112,405	352	78.4%
South Africa	174	169	343	259	100,557	388	75.5%
Spain	1,136	61	1,197	1,120	176,602	158	93.6%
Switzerland	1,156	176	1,332	927	212,980	230	69.6%
Taiwan	1,058	171	1,229	1,070	380,937	356	87.1%
Thailand	140	286	426	342	118,783	347	80.3%
United Kingdom	14,952	1,229	16,181	8,530	1,716,757	201	52.7%
Total for countries shown above	124,698	13,889	138,587	109,785	18,818,887	171	79.2%
Other international points	13,815	12,016	25,831	21,937	4,358,910	199	84.9%
Countries shown as percent of total	90.0%	53.6%	84.3%	83.3%	81.2%		
Countries shown other than Canada & Mexico	48,615	12,539	61,154	42,131	10,852,998	258	68.9%
Western Europe	31,600	3,496	35,096	23,287	5,221,854	224	66.4%
Africa	284	1,992	2,276	2,051	497,814	243	90.1%
Middle East	650	2,421	3,071	2,560	723,843	283	83.4%
Caribbean	6,348	2,771	9,119	8,016	1,460,701	182	87.9%
North and Central America	76,325	3,008	79,333	69,208	8,701,408	126	87.2%
South America	3,648	4,036	7,684	5,908	1,637,159	277	76.9%
Asia	14,069	5,621	19,690	13,856	3,835,041	277	70.4%
Oceania	3,791	1,026	4,817	3,749	522,669	139	77.8%
Eastern Europe	1,738	1,534	3,272	3,027	528,468	175	92.5%
Antarctica & Maritime	60	0	60	60	10,394	173	100.0%
Total for all international points	138,513	25,905	164,418	131,722	23,177,796	176	80.1%

1/ Section 43.82 International Circuit Status Report, December 1996. Data reflect 4 Khz or 64 kbps equivalent circuits. Data shown represent activated circuits. Carriers reported an additional 129,399 Idle circuits.

2/ Section 43.61 International Traffic Data, February 1997.

In its 1995 report to stockholders, AT&T stated that it had added more transatlantic telecommunications circuits in the prior three years than in all prior years combined. The new TAT-12/TAT-13 system doubled capacity. These cables, using fiber optic technology, are capable of carrying 5 gigabits (billion bits) per second. In October 1996, the Commission granted MFS Communications Company, Inc. (MFS) a license to construct a non-common carrier fiber optic cable system (MFS-1 and MFS-2) between the United States and the United Kingdom. MFS and Cable & Wireless plc plan to build and operate the system jointly. The cable system will be the first to offer end-to-end facilities and services between the United States and the United Kingdom. The estimated cost to build the system is \$500 million, and it will offer 10 gigabits (billion bits) per second. In March 1997, AT&T, MCI, Sprint, SBC Communications and six Asian carriers signed an agreement to build the first underseas fiber optic cable to directly link the United States and China. The cost of the cable is estimated at \$1.4 billion and the capacity is expected to be 10 gigabits per second.

Table 11 shows the investment cost and the number of usable 64 kbps equivalent bearer circuits for transatlantic cables installed since 1956. The table also shows the annual investment cost per usable circuit and the investment cost per minute of service. For purposes of this comparison, the same cost of capital and utilization rates are assumed for the whole period. The table shows that cable investment related costs per circuit and per toll minute declined 99% between 1956 and 1996. Continued growth in capacity and declines in per-unit investment costs should continue to result in lower international rates in the future.

Table 11. Transatlantic Cable Systems

System	Year	Techology	Cost (\$ million)	Total 64 kbps Circuits	Usable 64 kbps Circuits <u>1/</u>	Annual Investment Cost per Usable Ckt <u>2/</u>	Investment Cost per Minute <u>3/</u>
TAT-1	1956	Coax Cable	\$49.6	44.5	40.1	\$213,996	\$2.443
TAT-2	1959	Coax Cable	42.7	49.0	44.1	167,308	1.910
TAT-3	1963	Coax Cable	50.6	87.5	78.8	111,027	1.267
TAT-4	1965	Coax Cable	50.4	69.0	62.1	140,238	1.601
TAT-5	1970	Coax Cable	70.4	720.0	648.0	18,773	0.214
TAT-6	1976	Coax Cable	197.0	4,000.0	3,200.0	10,638	0.121
TAT-7	1983	Coax Cable	180.0	4,246.0	3,821.4	8,139	0.093
TAT-8	1988	Fiber Optic	360.0	7,560.0	6,048.0	10,285	0.117
TAT-9	1992	Fiber Optic	406.0	15,120.0	10,584.0	6,628	0.076
TAT-10	1992	Fiber Optic	300.0	22,680.0	18,144.0	2,857	0.033
TAT-11	1993	Fiber Optic	280.0	22,680.0	18,144.0	2,667	0.030
TAT-12	1996	Fiber Optic	378.0	60,480.0	60,480.0	1,080	0.012
TAT-13	1996	Fiber Optic	378.0	60,480.0	60,480.0	1,080	0.012

1/ With allowance for redundance, restoration, etc.

2/ The annual investment cost per usable circuit is the annual payment rate for the life of the asset that produces a present value equal to the initial investment cost. This calculation assumes a 25 year cable life and a discount rate equal to the average cost of capital for the firm. For purposes of comparison, the discount rate is based on 40% debt at an embedded cost of debt of 9% and 60% equity at a 14% rate of return, with the latter increased to reflect a 37% income tax rate. These assumptions translate to a discount rate of 16.9333%

3/ The investment cost per minute assumes that average activated circuits are used 8 hours per day for 365 days each year and that 50% of circuits are idle (not activated). These assumptions are consistent with the current utilization systems shown in Table 10, but probably overstate the utilization rates for early cable systems.

C. Price Trends

AT&T began offering international service to the United Kingdom and some European points in the late 1920s and to some South American and Asian points in the 1930s. Rates varied depending on where the call originated. Before cable, calls were transmitted over radio facilities located on the coast. Rates were lowest for calls that originated near the coastline, with additional zone charges for states farther inland. In the 1940s, AT&T began adopting uniform rates for some countries for calls from any conterminous U.S. point. This practice, however, only became universal for overseas service in 1982; service to Canada and Mexico continues to be distance-sensitive. AT&T's first international rate schedules offered discount rates for Sunday calls and in some cases for night calls. The discount rate periods changed over time and are now based primarily on peak traffic times of day for each country or region. For example, standard rates to Japan apply to calls placed between 2 PM and 8 PM. The time period with the lowest rates is from 3 AM to 2 PM.

Table 12 provides AT&T rates for calls to six selected countries for 1950 to the present. The table shows basic schedule rates for residential customers for calls lasting 3 minutes during the standard rate period. The table also shows rates for the time period with the greatest discount. The table shows station-to-station operator handled rates for early years and then direct-dial rates starting in the year they were introduced -- either 1978 or 1979 for the countries in the table.

Figure 12: International Rates Compared with Long-Haul Domestic Rates

For the countries shown in Table 12, the total decline in basic schedule standard rate period charges from 1950 to the present ranged from 33% to 69%. The rates for the least expensive time periods fell slightly more than the standard period rates. The overall change in international rates has been comparable to declines in domestic long-haul rates. Figure 12 compares an unweighted average of the charges shown in Table 12 with AT&T's daytime rate for a 10-minute call from New York to Los Angeles. Both series ignore the significant discounts introduced

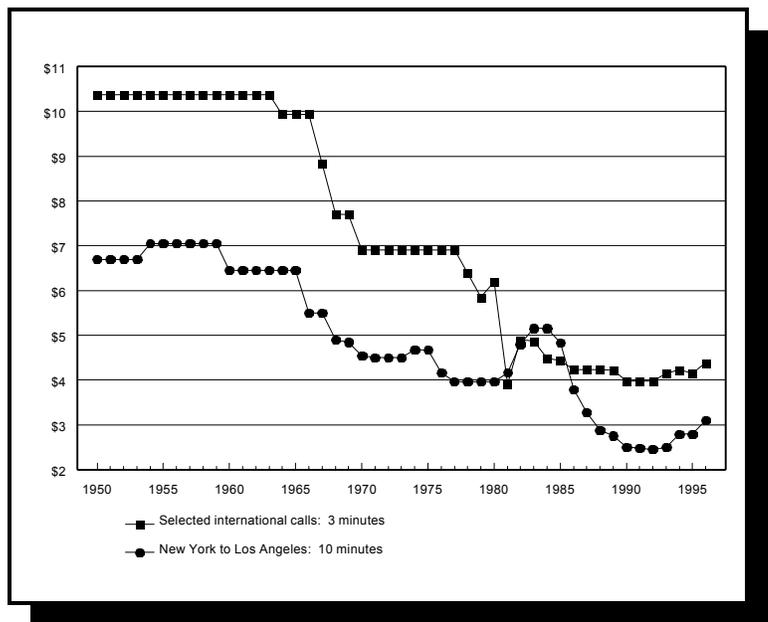


Table 12. AT&T Residential Rates for Calls Lasting 3 Minutes
to Selected International Points, 1950 - 1996 1/

	United Kingdom		Germany		Japan		Philippines		Colombia <u>2/</u>		Israel	
	Standard	Economy	Standard	Economy	Standard	Economy	Standard	Economy	Standard	Economy	Standard	Economy
1950	\$12.00	\$9.00	\$12.00	\$9.00	\$12.00	\$9.00	\$12.00	\$9.00	\$9.00	\$7.50	\$12.00	\$12.00
1951	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1952	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1953	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1954	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1955	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1956	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1957	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1958	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1959	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1960	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1961	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1962	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1963	12.00	9.00	12.00	9.00	12.00	9.00	12.00	9.00	9.00	7.50	12.00	12.00
1964	12.00	9.00	12.00	9.00	9.00	6.75	12.00	9.00	9.00	7.50	12.00	12.00
1965	12.00	9.00	12.00	9.00	9.00	6.75	12.00	9.00	9.00	7.50	12.00	12.00
1966	12.00	9.00	12.00	9.00	9.00	6.75	12.00	9.00	9.00	7.50	12.00	12.00
1967	7.50	5.70	9.00	6.50	9.00	6.75	12.00	9.00	9.00	7.50	12.00	12.00
1968	7.50	5.70	9.00	6.50	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1969	7.50	5.70	9.00	6.50	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1970	3.60	3.60	6.75	5.10	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1971	3.60	3.60	6.75	5.10	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1972	3.60	3.60	6.75	5.10	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1973	3.60	3.60	6.75	5.10	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1974	3.60	3.60	6.75	5.10	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1975	3.60	3.60	6.75	5.10	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1976	3.60	3.60	6.75	5.10	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1977	3.60	3.60	6.75	5.10	9.00	6.75	9.00	6.75	9.00	7.50	9.00	6.75
1978	4.50	3.60	6.00	4.80	7.80	5.85	9.00	6.75	7.05	5.55	9.00	6.75
1979	4.50	3.60	6.00	4.80	7.35	5.55	7.35	5.55	7.05	5.55	7.35	5.55
1980	4.80	3.75	6.30	5.10	7.80	5.85	7.80	5.85	7.80	5.70	7.80	5.85
1981	3.00	2.40	4.05	3.15	4.95	3.75	4.95	3.75	4.50	3.60	4.95	3.75
1982	4.60	2.77	5.03	3.02	7.38	4.43	7.38	4.43	5.13	4.43	6.34	3.81
1983	4.60	2.77	5.03	3.02	7.38	4.43	7.38	4.43	5.13	4.43	6.34	3.58
1984	4.31	2.59	4.73	2.83	6.92	4.16	6.92	4.16	4.82	2.90	5.96	3.58
1985	4.17	2.51	4.61	2.76	6.78	4.07	6.92	4.16	4.82	2.90	5.96	3.58
1986	3.63	2.19	4.12	2.46	6.32	3.79	6.92	4.16	4.82	2.90	5.96	3.58
1987	3.63	2.19	4.12	2.46	6.32	3.79	6.92	4.16	4.82	2.90	5.96	3.58
1988	3.63	2.19	4.12	2.46	6.32	3.79	6.92	4.16	4.82	2.90	5.96	3.58
1989	3.49	2.18	4.12	2.46	6.32	3.79	6.92	4.16	4.82	2.90	5.96	3.58
1990	3.32	2.18	3.95	2.45	5.53	3.78	6.05	4.00	4.61	2.89	5.38	3.58
1991	3.32	2.18	3.95	2.45	5.53	3.78	6.05	4.00	4.61	2.89	5.38	3.58
1992	3.32	2.18	3.95	2.45	5.53	3.78	6.05	4.00	4.61	2.89	5.38	3.58
1993	3.36	2.22	3.95	2.53	5.53	3.78	6.47	4.30	5.07	3.31	5.66	3.68
1994	3.36	2.22	3.95	2.66	5.35	3.10	6.79	3.74	5.21	3.72	6.76	3.87
1995	3.55	2.33	4.11	2.44	5.31	3.08	6.57	3.75	5.75	3.47	6.12	3.38
1996	3.73	2.49	4.17	2.60	5.59	3.30	6.91	4.02	6.05	3.71	6.44	3.62
Percent Change	-69%	-72%	-65%	-71%	-53%	-63%	-42%	-55%	-33%	-51%	-46%	-70%

1/ The table shows rates in effect on December 31. Direct-dial rates are shown starting when offered which was either 1978 or 1979. Station-to-station rates are shown for early years. Rates do not reflect discount plans.

2/ Through 1981, the rates reflect a call from New York City to any point in Colombia.

since 1992. While the total changes from 1950 to the present have been comparable, international rates fell more rapidly before 1984 while domestic rates fell more rapidly after 1984.

Table 13 shows AT&T's residential customer basic schedule charges for direct-dialed calls lasting 7 minutes placed during the standard rate period from the United States to selected countries. AT&T had one rate schedule for both residential and commercial customers through mid-1993. AT&T and most other carriers now charge different rates for residential and commercial customers. Table 14 shows comparable rates available to commercial customers. Commercial rates, weighted by 1995 U.S. billed minutes, are about 21% higher than residential rates, based on AT&T's April 1997 charges for seven-minute calls. Commercial customers, however, tend to make shorter calls than do residential customers. For calls lasting three minutes, basic commercial rates average about 36% higher than basic residential rates.

Figure 13: International Rates Compared with Overall Inflation and with the CPI for Interstate MTS

The rates in Table 13 have been used to construct a Fisher Ideal index for standard period international telephone service rates. Rate information is weighted using U.S. billed minutes data shown in Table 7. The 1997 value reflects rates in effect on April 15, 1997. In Figure 13, the resulting index is compared with the overall rate of inflation as well as with the CPI for interstate MTS. Interstate toll rates fell significantly in the late 1980s, primarily because of decreases in access charges. Access charges account for a much smaller portion of international rates, so the decreases in access costs did not push down international rates as much as domestic toll rates. Like domestic toll rates, basic international service rates rose in recent years while carriers offered discount plans to increasing numbers of high volume customers. These discounts are reflected in the CPI for interstate MTS, but not in the international index shown in Figure 13. Basic schedule rates for international service fell about 10% in early 1997.

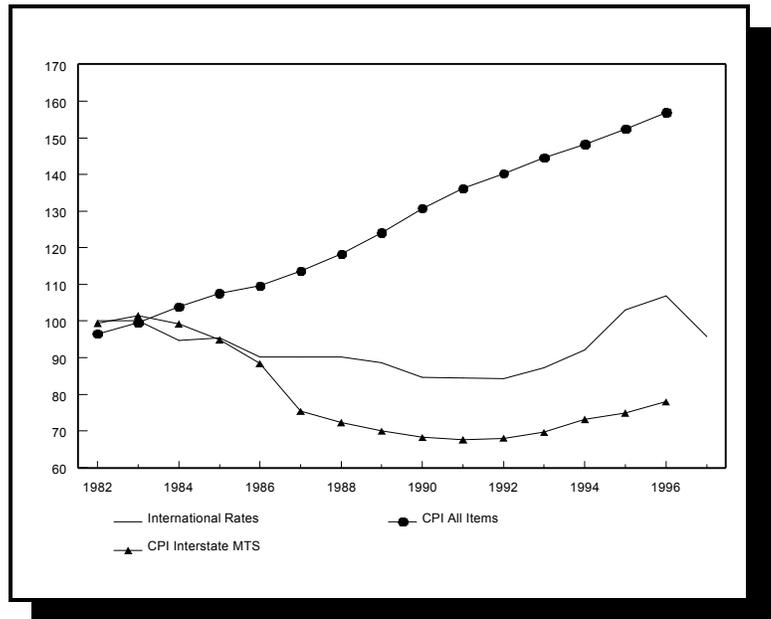


Table 13. AT&T Basic Schedule Rates for Residential Customers 1/

	Rates for 7-minute peak period calls as of December 31															Apr. 15
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994 <u>5/</u>	1995	1996	1997
Australia	\$13.70	\$13.70	\$12.84	\$12.58	\$11.72	\$11.72	\$11.72	\$11.12	\$10.60	\$10.60	\$10.60	\$10.96	\$10.96	\$12.19	\$13.03	\$10.57
Brazil	\$9.85	\$9.85	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$8.74	\$8.74	\$8.74	\$9.34	\$10.42	\$12.68	\$13.52	\$12.88
Canada <u>2/</u>	\$4.77	\$4.77	\$4.48	\$4.76	\$4.48	\$4.48	\$4.48	\$4.28	\$4.07	\$4.07	\$4.07	\$4.28	\$4.35	\$4.83	\$4.83	\$3.78
China	n.o.	n.o.	n.o.	n.o.	\$14.46	\$14.46	\$14.46	\$14.46	\$14.46	\$14.46	\$15.06	\$15.36	\$17.27	\$17.27	\$18.41	\$18.20
Colombia	\$9.85	\$9.85	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.05	\$9.05	\$9.05	\$9.53	\$10.85	\$13.11	\$14.01	\$13.02
Dominican Rep.	\$8.46	\$8.46	\$7.94	\$7.94	\$7.94	\$7.94	\$7.94	\$7.94	\$7.81	\$7.81	\$7.81	\$7.81	\$9.47	\$9.98	\$10.64	\$11.06
Egypt	\$11.77	\$11.77	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.47	\$12.67	\$14.85	\$15.87	\$15.19
El Salvador	\$9.40	\$9.40	\$8.82	\$8.82	\$8.82	\$8.82	\$8.82	\$8.82	\$8.61	\$8.61	\$8.61	\$8.91	\$10.55	\$11.10	\$11.82	\$12.18
France	\$10.35	\$10.35	\$9.73	\$9.49	\$8.48	\$8.48	\$8.48	\$8.48	\$8.07	\$8.07	\$8.07	\$8.07	\$8.19	\$9.90	\$10.56	\$9.31
Germany <u>3/</u>	\$10.35	\$10.35	\$9.73	\$9.49	\$8.48	\$8.48	\$8.48	\$8.48	\$8.31	\$8.31	\$8.31	\$8.31	\$8.31	\$9.55	\$9.73	\$8.75
Greece	\$10.35	\$10.35	\$9.73	\$9.49	\$9.49	\$9.49	\$9.49	\$9.49	\$9.49	\$9.49	\$9.49	\$10.69	\$11.77	\$14.47	\$15.43	\$13.65
Guatemala	\$9.40	\$9.40	\$8.82	\$8.82	\$8.82	\$8.82	\$8.82	\$8.82	\$8.61	\$8.61	\$8.61	\$8.91	\$10.30	\$12.08	\$12.92	\$12.32
Hong Kong	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$12.75	\$13.59	\$12.88
India	n.o.	\$26.94	\$25.31	\$24.54	\$21.52	\$21.52	\$21.52	\$16.44	\$16.44	\$16.44	\$16.44	\$15.53	\$13.41	\$17.00	\$18.14	\$18.48
Israel	\$11.66	\$11.66	\$10.96	\$10.96	\$10.96	\$10.96	\$10.96	\$10.96	\$10.18	\$10.18	\$10.18	\$10.42	\$13.44	\$13.96	\$14.92	\$13.79
Italy	\$10.35	\$10.35	\$9.73	\$9.37	\$8.48	\$8.48	\$8.48	\$8.48	\$8.12	\$8.12	\$8.12	\$8.72	\$9.38	\$10.79	\$11.51	\$10.50
Japan	\$13.70	\$13.70	\$12.84	\$12.58	\$11.72	\$11.72	\$11.72	\$11.72	\$10.49	\$10.49	\$10.49	\$10.49	\$11.43	\$12.11	\$12.95	\$10.15
Jamaica	\$8.46	\$8.46	\$7.94	\$7.42	\$7.42	\$7.42	\$7.42	\$7.42	\$7.42	\$7.42	\$7.42	\$7.72	\$9.25	\$11.00	\$11.90	\$11.13
Korea, Rep. of	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$11.90	\$11.90	\$11.90	\$11.90	\$13.22	\$13.61	\$14.51	\$12.74
Mexico <u>2/</u>	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	\$11.07	\$11.07	\$10.23	\$10.09	\$9.88	\$10.35	\$10.64	\$11.69	\$11.69	\$11.41
Netherlands	\$10.35	\$10.35	\$9.55	\$9.37	\$8.48	\$8.48	\$8.48	\$8.48	\$8.00	\$8.00	\$8.00	\$8.12	\$8.12	\$9.61	\$10.27	\$9.17
Nigeria	\$11.77	\$11.77	\$11.05	\$10.57	\$8.66	\$8.66	\$8.66	\$8.66	\$8.66	\$9.69	\$9.69	\$10.23	\$10.47	\$13.21	\$14.11	\$13.72
Pakistan	n.o.	\$18.24	\$17.14	\$17.14	\$17.14	\$17.14	\$17.14	\$17.14	\$16.69	\$16.69	\$16.69	\$17.89	\$20.96	\$27.12	\$28.92	\$28.91
Peru	\$9.85	\$9.85	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.05	\$9.05	\$9.05	\$9.53	\$11.30	\$13.82	\$14.78	\$13.93
Philippines	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$11.65	\$11.65	\$11.65	\$12.07	\$14.55	\$14.97	\$15.99	\$15.19
Poland	n.o.	\$10.35	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.97	\$11.18	\$11.96	\$10.99
Russia <u>4/</u>	n.o.	n.o.	n.o.	n.o.	n.o.	n.o.	n.o.	\$14.31	\$14.31	\$14.31	\$14.31	\$14.31	\$14.97	\$16.09	\$17.17	\$17.15
Saudi Arabia	\$11.66	\$11.66	\$10.96	\$10.78	\$10.09	\$10.09	\$10.09	\$10.09	\$10.09	\$10.09	\$10.09	\$10.93	\$13.32	\$14.25	\$15.21	\$14.70
South Africa	\$11.77	\$11.77	\$11.05	\$10.57	\$8.66	\$8.66	\$8.66	\$8.66	\$8.66	\$8.66	\$8.66	\$9.38	\$10.34	\$11.52	\$12.30	\$12.25
Spain	\$10.35	\$10.35	\$9.55	\$9.37	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$9.14	\$11.34	\$12.11	\$12.95	\$11.34
Switzerland	\$10.35	\$10.35	\$9.55	\$9.37	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.90	\$8.90	\$10.68	\$11.40	\$9.87
Taiwan	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.19	\$12.19	\$12.19	\$12.19	\$12.19	\$13.81	\$14.77	\$13.93
Thailand	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$14.74	\$14.68	\$15.64	\$14.07
United Kingdom	\$9.64	\$9.64	\$9.03	\$8.73	\$7.59	\$7.59	\$7.59	\$7.45	\$7.08	\$7.08	\$7.08	\$7.20	\$7.20	\$8.03	\$8.57	\$7.63
Fisher Ideal Rate Index	100.0	100.0	94.6	95.4	90.2	90.2	90.2	88.6	84.6	84.5	84.2	87.2	92.0	102.9	106.9	95.8
% changes from prior rate		0.0%	-5.4%	0.8%	-5.4%	0.0%	0.0%	-1.8%	-4.5%	-0.2%	-0.3%	3.5%	5.5%	11.9%	3.8%	-10.4%
Index without Mexico	100.0	100.0	93.8	94.7	88.8	88.8	88.8	87.0	83.6	83.6	83.6	86.4	91.5	102.8	107.5	94.8
% changes from prior rate		0.0%	-6.2%	0.9%	-6.2%	0.0%	0.0%	-2.1%	-3.9%	0.0%	0.0%	3.3%	6.0%	12.3%	4.6%	-11.8%

NOTE: "n.o." is shown if direct-dialed service was not offered at that time. "n.a." indicates rate not available.

1/ Tariff rates do not include taxes or surcharges. Year-end rates are shown for 1980 through 1996. March 1 rates are shown for 1997.

2/ Tariff rates for traffic to Canada and Mexico are distance sensitive. The rates shown for Canada are for 1000 mile calls. A "sum of local rates" pricing scheme is used for service to Mexico. For a call to Mexico, AT&T charges its standard domestic rates for the distance to the Mexican border, and also bills the customer for the amount that the Mexican telephone company charges from the border crossing to the destination. This table shows total charges to customers for calls from Washington D.C. to Mexico City.

3/ Rates for West Germany through 1990.

4/ Rates shown are for service to Moscow.

5/ In March 1994 AT&T introduced a rate schedule specifically for residential customers. Until then, the same rate schedule applied to residential and commercial calls.

Table 14. AT&T Basic Schedule Rates for Commercial Customers 1/

	Rates for 7-minute peak period calls as of December 31															Apr. 15
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994 <u>5/</u>	1995	1996	1997
Australia	\$13.70	\$13.70	\$12.84	\$12.58	\$11.72	\$11.72	\$11.72	\$11.12	\$10.60	\$10.60	\$10.60	\$10.96	\$12.71	\$13.62	\$14.98	\$15.31
Brazil	\$9.85	\$9.85	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$8.74	\$8.74	\$8.74	\$9.34	\$10.43	\$11.19	\$12.35	\$12.60
Canada <u>2/</u>	\$4.77	\$4.77	\$4.48	\$4.76	\$4.48	\$4.48	\$4.48	\$4.28	\$4.07	\$4.07	\$4.07	\$4.28	\$4.84	\$4.98	\$5.54	\$5.68
China	n.o.	n.o.	n.o.	n.o.	\$14.46	\$14.46	\$14.46	\$14.46	\$14.46	\$14.46	\$15.06	\$15.36	\$18.38	\$19.34	\$21.24	\$21.69
Colombia	\$9.85	\$9.85	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.05	\$9.05	\$9.05	\$9.53	\$10.78	\$11.58	\$12.72	\$12.97
Dominican Rep.	\$8.46	\$8.46	\$7.94	\$7.94	\$7.94	\$7.94	\$7.94	\$7.94	\$7.81	\$7.81	\$7.81	\$7.81	\$9.36	\$9.86	\$10.88	\$11.10
Egypt	\$11.77	\$11.77	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.05	\$11.47	\$13.75	\$14.53	\$15.95	\$16.27
El Salvador	\$9.40	\$9.40	\$8.82	\$8.82	\$8.82	\$8.82	\$8.82	\$8.82	\$8.61	\$8.61	\$8.61	\$8.91	\$10.62	\$11.23	\$12.35	\$12.59
France	\$10.35	\$10.35	\$9.73	\$9.49	\$8.48	\$8.48	\$8.48	\$8.48	\$8.07	\$8.07	\$8.07	\$8.07	\$9.67	\$10.31	\$11.37	\$11.60
Germany <u>3/</u>	\$10.35	\$10.35	\$9.73	\$9.49	\$8.48	\$8.48	\$8.48	\$8.48	\$8.31	\$8.31	\$8.31	\$8.31	\$9.92	\$10.44	\$11.50	\$11.73
Greece	\$10.35	\$10.35	\$9.73	\$9.49	\$9.49	\$9.49	\$9.49	\$9.49	\$9.49	\$9.49	\$9.49	\$10.69	\$11.35	\$12.20	\$13.44	\$13.68
Guatemala	\$9.40	\$9.40	\$8.82	\$8.82	\$8.82	\$8.82	\$8.82	\$8.82	\$8.61	\$8.61	\$8.61	\$8.91	\$10.62	\$11.23	\$12.35	\$12.59
Hong Kong	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$13.99	\$14.76	\$16.30	\$16.64
India	n.o.	\$26.94	\$25.31	\$24.54	\$21.52	\$21.52	\$21.52	\$16.44	\$16.44	\$16.44	\$16.44	\$15.53	\$18.63	\$19.60	\$21.54	\$21.95
Israel	\$11.66	\$11.66	\$10.96	\$10.96	\$10.96	\$10.96	\$10.96	\$10.96	\$10.18	\$10.18	\$10.18	\$10.42	\$12.21	\$13.11	\$14.45	\$14.71
Italy	\$10.35	\$10.35	\$9.73	\$9.37	\$8.48	\$8.48	\$8.48	\$8.48	\$8.12	\$8.12	\$8.12	\$8.72	\$9.69	\$9.99	\$10.95	\$11.18
Japan	\$13.70	\$13.70	\$12.84	\$12.58	\$11.72	\$11.72	\$11.72	\$11.72	\$10.49	\$10.49	\$10.49	\$10.49	\$12.59	\$12.94	\$14.28	\$14.54
Jamaica	\$8.46	\$8.46	\$7.94	\$7.42	\$7.42	\$7.42	\$7.42	\$7.42	\$7.42	\$7.42	\$7.42	\$7.72	\$9.21	\$9.72	\$10.74	\$10.96
Korea, Rep. of	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$11.90	\$11.90	\$11.90	\$11.90	\$14.24	\$15.01	\$16.55	\$16.89
Mexico <u>2/</u>	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	\$11.07	\$11.07	\$10.23	\$10.09	\$9.88	\$10.35	\$13.23	\$13.86	\$15.26	\$15.61
Netherlands	\$10.35	\$10.35	\$9.55	\$9.37	\$8.48	\$8.48	\$8.48	\$8.48	\$8.00	\$8.00	\$8.00	\$8.12	\$9.60	\$9.65	\$11.12	\$11.35
Nigeria	\$11.77	\$11.77	\$11.05	\$10.57	\$8.66	\$8.66	\$8.66	\$8.66	\$8.66	\$9.69	\$9.69	\$10.23	\$11.58	\$12.26	\$13.52	\$13.76
Pakistan	n.o.	\$18.24	\$17.14	\$17.14	\$17.14	\$17.14	\$17.14	\$17.14	\$16.69	\$16.69	\$16.69	\$17.89	\$19.96	\$21.44	\$23.56	\$24.04
Peru	\$9.85	\$9.85	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.26	\$9.05	\$9.05	\$9.05	\$9.53	\$10.78	\$11.58	\$12.72	\$12.97
Philippines	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$11.65	\$11.65	\$11.65	\$12.07	\$13.91	\$14.89	\$16.38	\$16.71
Poland	n.o.	\$10.35	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$9.73	\$11.67	\$12.29	\$13.53	\$13.77
Russia <u>4/</u>	n.o.	n.o.	n.o.	n.o.	n.o.	n.o.	n.o.	\$14.31	\$14.31	\$14.31	\$14.31	\$14.31	\$17.16	\$18.07	\$19.91	\$20.33
Saudi Arabia	\$11.66	\$11.66	\$10.96	\$10.78	\$10.09	\$10.09	\$10.09	\$10.09	\$10.09	\$10.09	\$10.09	\$10.93	\$12.63	\$13.55	\$14.91	\$15.24
South Africa	\$11.77	\$11.77	\$11.05	\$10.57	\$8.66	\$8.66	\$8.66	\$8.66	\$8.66	\$8.66	\$8.66	\$9.38	\$10.69	\$11.48	\$12.58	\$12.82
Spain	\$10.35	\$10.35	\$9.55	\$9.37	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$9.14	\$10.13	\$10.84	\$11.92	\$12.15
Switzerland	\$10.35	\$10.35	\$9.55	\$9.37	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.48	\$8.90	\$10.13	\$10.84	\$11.92	\$12.15
Taiwan	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.19	\$12.19	\$12.19	\$12.19	\$14.63	\$15.39	\$16.92	\$17.26
Thailand	\$13.70	\$13.70	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$12.84	\$15.35	\$16.20	\$17.78	\$18.13
United Kingdom	\$9.64	\$9.64	\$9.03	\$8.73	\$7.59	\$7.59	\$7.59	\$7.45	\$7.08	\$7.08	\$7.08	\$7.20	\$8.51	\$8.73	\$9.63	\$9.85
Fisher Ideal Rate Index	100.0	100.0	94.6	95.4	90.2	90.2	90.2	88.6	84.6	84.5	84.2	87.2	102.6	107.4	118.6	121.2
% changes from prior rate		0.0%	-5.4%	0.8%	-5.4%	0.0%	0.0%	-1.8%	-4.5%	-0.2%	-0.3%	3.5%	17.7%	4.6%	10.5%	2.2%
Index without Mexico	100.0	100.0	93.8	94.7	88.8	88.8	88.8	87.0	83.6	83.6	83.6	86.4	100.2	104.8	115.8	118.4
% changes from prior rate		0.0%	-6.2%	0.9%	-6.2%	0.0%	0.0%	-2.1%	-3.9%	0.0%	0.0%	3.3%	16.0%	4.6%	10.5%	2.2%

NOTE: "n.o." is shown if direct-dialed service was not offered at that time. "n.a." indicates rate not available.

1/ Tariff rates do not include taxes or surcharges. Year-end rates are shown for 1980 through 1996. March 1 rates are shown for 1997.

2/ Tariff rates for traffic to Canada and Mexico are distance sensitive. The rates shown for Canada are for 1000 mile calls. A "sum of local rates" pricing scheme is used for service to Mexico. For a call to Mexico, AT&T charges its standard domestic rates for the distance to the Mexican border, and also bills the customer for the amount that the Mexican telephone company charges from the border crossing to the destination. This table shows total charges to customers for calls from Washington D.C. to Mexico City.

3/ Rates for West Germany through 1990.

4/ Rates shown are for service to Moscow.

5/ In March 1994 AT&T introduced a rate schedule specifically for commercial customers. Until then, the same rate schedule applied to residential and commercial calls.

The international rate index in Table 13 rose significantly in 1993, partly due to an increase in rates charged on calls to Mexico. Calls to Mexico are priced differently from other international calls. The U.S. carrier charges domestic, distance-sensitive rates to carry the call to the border, and then adds another distance-sensitive charge for carrying the call from the border to the final destination. The charges for the portion of the call from the border to the destination in Mexico accounts for most of the per-call charge shown in Table 13. Table 13 also shows a price index for all countries except Mexico. The volume of traffic to Mexico is so large that changes in rates within that country have a strong impact on the index contained in Table 13.

As noted above, the rates shown in Table 13 represent basic schedule rates. Many residential customers, even those who make just one or two overseas calls per month, would save money by signing up for a carrier discount plan. AT&T, for example, introduced the "Reach Out World" international discount plan in 1990, with reduced rates for selected countries. By 1993, discounts were available for most international points. In addition to offering lower rates, many discount plans offer expanded off-peak periods and cover calls made from Hawaii as well as from the mainland. Some plans, however, have monthly minimums or monthly flat payments. AT&T's Reach Out-Overseas One Rate International Plan, for example, requires a \$3 per month flat payment. Table 15 shows selected AT&T discount rates available to residential customers who place a large volume of calls. The table also contains rate indexes for 1990 through the present. The peak period discount indexes were linked with the non-discount rates in 1990. Basic schedule rates were used for countries where AT&T did not offer a discount. The off-peak indexes were linked with the peak indexes in 1993, when AT&T began to offer separate peak and off-peak discount rates. Like the discount plan shown for the early 1990s, the current plan offers a single rate for both peak and off-peak periods. For most countries, rates under the current plan are significantly lower than any other rates generally available to residential customers.

Table 15. AT&T Discount Rates 1/

	Peak period rates							
	Reach Out World			TrueWorld Savings				One Rate
	1990	1991	1992	1993	1994	1995	1996	1997 (April 15)
Australia	\$5.81	\$5.60	\$5.46	\$8.21	\$9.46	\$9.46	\$10.08	\$3.09
Brazil	\$5.46	\$4.62	\$4.62	\$7.68	\$8.01	\$9.30	\$9.91	\$4.30
Canada	\$2.66	\$2.66	\$2.80	\$3.33	\$3.14	\$3.30	\$3.53	\$0.84
China				\$10.12	\$9.52	\$13.55	\$14.45	\$8.33
Colombia		\$4.62	\$4.62	\$7.68	\$8.40	\$9.74	\$10.42	\$5.27
Dominican Rep.				\$6.49	\$6.38	\$8.23	\$8.79	\$3.78
Egypt				\$8.81	\$9.46	\$10.98	\$11.70	\$6.20
El Salvador				\$7.20	\$7.00	\$8.46	\$9.02	\$5.55
France	\$4.34	\$4.34	\$4.34	\$6.37	\$5.99	\$7.34	\$7.84	\$2.45
Germany	\$4.34	\$4.34	\$4.34	\$6.49	\$6.10	\$7.17	\$7.67	\$2.45
Greece		\$4.34	\$4.34	\$8.45	\$9.24	\$10.75	\$11.48	\$2.45
Guatemala				\$7.20	\$7.00	\$9.02	\$9.63	\$5.10
Hong Kong	\$5.81	\$5.46	\$5.46	\$8.81	\$8.29	\$9.52	\$10.14	\$4.20
India		\$11.41	\$10.92	\$12.67	\$10.47	\$11.98	\$12.77	\$7.79
Israel	\$6.23	\$5.18	\$5.18	\$8.45	\$9.02	\$10.58	\$11.31	\$4.31
Italy	\$4.34	\$4.34	\$4.48	\$6.78	\$7.00	\$7.84	\$8.34	\$2.45
Japan	\$5.81	\$5.46	\$5.46	\$8.45	\$8.29	\$9.24	\$9.86	\$3.30
Jamaica		\$4.13	\$4.13	\$6.72	\$7.34	\$8.34	\$8.90	\$5.12
Korea, Rep. of	\$5.81	\$5.60	\$5.60	\$9.52	\$9.80	\$10.42	\$11.09	\$4.13
Mexico <u>2/</u>	\$10.23	\$10.09	\$9.88	\$8.39	\$8.12	\$8.90	\$9.52	\$4.55
Netherlands	\$4.34	\$4.34	\$4.34	\$6.25	\$5.88	\$7.11	\$7.56	\$2.45
Nigeria				\$7.08	\$6.66	\$8.57	\$9.13	\$5.14
Pakistan	\$14.21	\$8.47	\$8.82	\$14.70	\$16.41	\$19.94	\$21.28	\$9.10
Peru	\$5.81	\$4.62	\$4.62	\$7.91	\$8.46	\$9.91	\$10.58	\$5.21
Philippines	\$7.63	\$5.60	\$5.60	\$9.04	\$9.58	\$11.31	\$12.04	\$4.90
Poland				\$7.62	\$7.56	\$8.23	\$8.79	\$4.10
Russia				\$11.60	\$10.92	\$11.48	\$12.26	\$7.96
Saudi Arabia				\$8.81	\$8.96	\$10.47	\$11.14	\$7.59
South Africa				\$7.38	\$7.22	\$8.23	\$8.79	\$3.49
Spain	\$4.34	\$4.34	\$4.34	\$7.20	\$7.34	\$9.07	\$9.69	\$2.45
Switzerland	\$4.34	\$4.34	\$4.34	\$6.90	\$6.89	\$8.06	\$8.62	\$2.45
Taiwan	\$5.81	\$5.46	\$5.46	\$9.52	\$8.96	\$10.36	\$11.03	\$4.14
Thailand	\$5.81	\$5.60	\$5.60	\$9.58	\$9.02	\$11.14	\$11.87	\$5.21
United Kingdom	\$4.13	\$4.13	\$4.13	\$5.65	\$5.32	\$5.82	\$6.22	\$0.84
Fisher Ideal Rate Index (1982=100)	57.5	53.2	53.8	66.5	64.8	72.8	77.7	26.1
% changes		-7.5%	1.1%	23.5%	-2.5%	12.3%	6.7%	-66.5%
Index without Mexico	54.4	49.8	50.6	66.8	65.2	73.6	78.6	24.8
% changes		-8.4%	1.7%	32.0%	-2.3%	12.8%	6.7%	-68.5%

1/ Rates are shown for 7-minute direct dialed calls placed by residential customers. Tariff rates do not include taxes or surcharges. Year-end rates except as indicated. The AT&T "Reach Out World" rates did not offer discounts to all countries for the years shown. AT&T's "TrueWorld (sm) Savings" rates, including "Reach Out World" discounts, are shown for 1993 to 1996. Customers of this plan as well as the "Reach Out-Overseas One Rate" plan must pay a fixed charge of \$3 per month.

2/ Tariff rates for traffic to Mexico are distance sensitive. A "sum of local rates" pricing scheme is used for service to Mexico. For a call to Mexico, AT&T charges its standard domestic rates for the distance to the Mexican border, and also bills the customer for the amount that the Mexican telephone company charges from the border crossing to the destination. The table shows total charges to customers for calls from Washington D.C. to Mexico City.

Table 15. AT&T Discount Rates 1/
(continued)

	Off-peak period rates							
	Reach Out World			TrueWorld Savings				One Rate
	1990	1991	1992	1993	1994	1995	1996	1997 (April 15)
Australia	\$5.81	\$5.60	\$5.46	\$4.64	\$4.87	\$4.87	\$5.21	\$3.09
Brazil	\$5.46	\$4.62	\$4.62	\$4.28	\$4.70	\$5.60	\$5.99	\$4.30
Canada	\$2.66	\$2.66	\$2.80	\$1.13	\$1.18	\$1.34	\$1.23	\$0.84
China				\$6.96	\$6.89	\$9.13	\$9.74	\$8.33
Colombia		\$4.62	\$4.62	\$4.34	\$4.82	\$5.66	\$6.05	\$5.27
Dominican Rep.				\$4.76	\$4.70	\$5.60	\$5.99	\$3.78
Egypt				\$6.13	\$6.05	\$7.22	\$7.73	\$6.20
El Salvador				\$5.12	\$5.04	\$5.94	\$6.33	\$5.55
France	\$4.34	\$4.34	\$4.34	\$3.69	\$3.47	\$3.86	\$4.03	\$2.45
Germany	\$4.34	\$4.34	\$4.34	\$3.69	\$3.47	\$3.75	\$4.03	\$2.45
Greece		\$4.34	\$4.34	\$3.87	\$4.54	\$5.43	\$5.77	\$2.45
Guatemala				\$5.12	\$5.04	\$5.94	\$6.33	\$5.10
Hong Kong	\$5.81	\$5.46	\$5.46	\$4.64	\$4.54	\$5.21	\$5.54	\$4.20
India		\$11.41	\$10.92	\$9.28	\$7.84	\$8.12	\$9.24	\$7.79
Israel	\$6.23	\$5.18	\$5.18	\$4.40	\$4.70	\$5.66	\$6.05	\$4.31
Italy	\$4.34	\$4.34	\$4.48	\$4.05	\$4.31	\$4.93	\$5.26	\$2.45
Japan	\$5.81	\$5.46	\$5.46	\$4.64	\$4.54	\$5.21	\$5.54	\$3.30
Jamaica		\$4.13	\$4.13	\$4.11	\$4.65	\$5.49	\$5.88	\$5.12
Korea, Rep. of	\$5.81	\$5.60	\$5.60	\$4.76	\$4.48	\$4.93	\$5.26	\$4.13
Mexico <u>2/</u>	\$6.30	\$6.30	\$6.30	\$5.36	\$4.98	\$5.60	\$5.99	\$4.55
Netherlands	\$4.34	\$4.34	\$4.34	\$3.69	\$3.47	\$4.14	\$4.42	\$2.45
Nigeria				\$5.89	\$5.54	\$6.61	\$7.06	\$5.14
Pakistan	\$14.21	\$8.47	\$8.82	\$7.79	\$8.40	\$10.47	\$11.14	\$9.10
Peru	\$5.81	\$4.62	\$4.62	\$4.22	\$4.82	\$5.66	\$6.05	\$5.21
Philippines	\$7.63	\$5.60	\$5.60	\$4.82	\$5.43	\$6.05	\$6.44	\$4.90
Poland				\$4.40	\$4.59	\$5.43	\$5.77	\$4.10
Russia				\$7.91	\$7.73	\$8.01	\$8.57	\$7.96
Saudi Arabia				\$5.53	\$5.43	\$6.89	\$7.34	\$7.59
South Africa				\$4.52	\$4.54	\$5.43	\$5.77	\$3.49
Spain	\$4.34	\$4.34	\$4.34	\$4.22	\$4.59	\$5.43	\$5.77	\$2.45
Switzerland	\$4.34	\$4.34	\$4.34	\$3.69	\$3.64	\$4.31	\$4.59	\$2.45
Taiwan	\$5.81	\$5.46	\$5.46	\$4.64	\$4.37	\$4.87	\$5.21	\$4.14
Thailand	\$5.81	\$5.60	\$5.60	\$4.76	\$4.48	\$5.43	\$5.77	\$5.21
United Kingdom	\$4.13	\$4.13	\$4.13	\$3.51	\$3.30	\$3.81	\$4.03	\$0.84
Fisher Ideal Rate Index (1982=100)	57.5	53.2	53.8	34.2	34.2	39.1	40.3	25.4
% changes		-7.5%	1.1%	-36.5%	0.0%	14.4%	3.0%	-37.0%
Index without Mexico	54.4	49.8	50.6	33.0	33.5	38.4	39.3	23.9
% changes		-8.4%	1.7%	-34.7%	1.3%	14.7%	2.3%	-39.0%

1/ Rates are shown for 7-minute direct dialed calls placed by residential customers. Tariff rates do not include taxes or surcharges. Year-end rates except as indicated. The AT&T "Reach Out World" rates did not offer discounts to all countries for the years shown. AT&T's "TrueWorld (sm) Savings" rates, including "Reach Out World" discounts, are shown for 1993 to 1996. Customers of this plan as well as the "Reach Out-Overseas One Rate" plan must pay a fixed charge of \$3 per month.

2/ Tariff rates for traffic to Mexico are distance sensitive. A "sum of local rates" pricing scheme is used for service to Mexico. For a call to Mexico, AT&T charges its standard domestic rates for the distance to the Mexican border, and also bills the customer for the amount that the Mexican telephone company charges from the border crossing to the destination. The table shows total charges to customers for calls from Washington D.C. to Mexico City.

Figure 14: Rate Indexes of Basic Standard Period Rates and Discount Plan Rates

Figure 14 shows the rate index shown in Table 13 with the comparable rate indexes shown in Table 15. As noted earlier, basic schedule rates rose between 1992 and 1996. The graph illustrates how AT&T increased the peak period discount plan rates in 1993 at the same time it introduced much lower discount plan rates for an off-peak period. Both peak and off-peak discount rates rose from 1993 through 1996, but have fallen significantly since then. Average billed revenue per minute fell between 1993 and 1995, in part, because many customers switched from relatively high basic rates to discount rate plans.

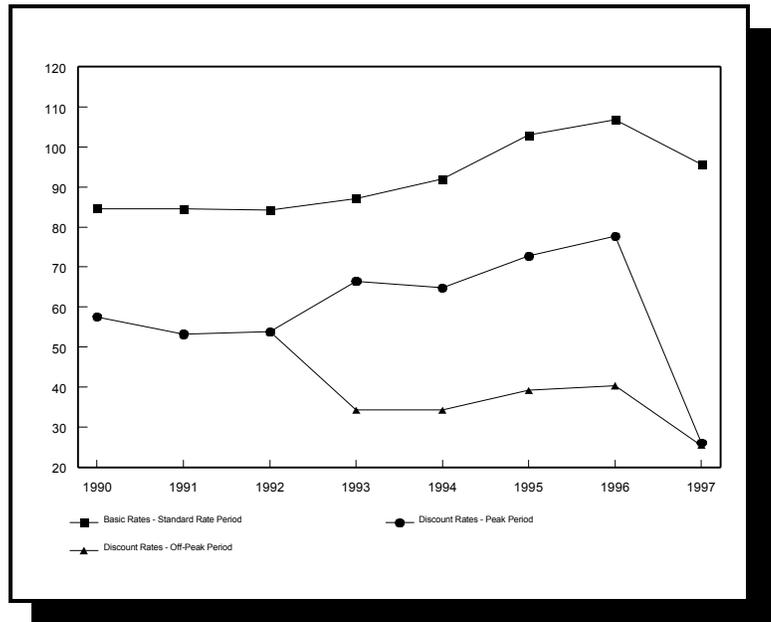
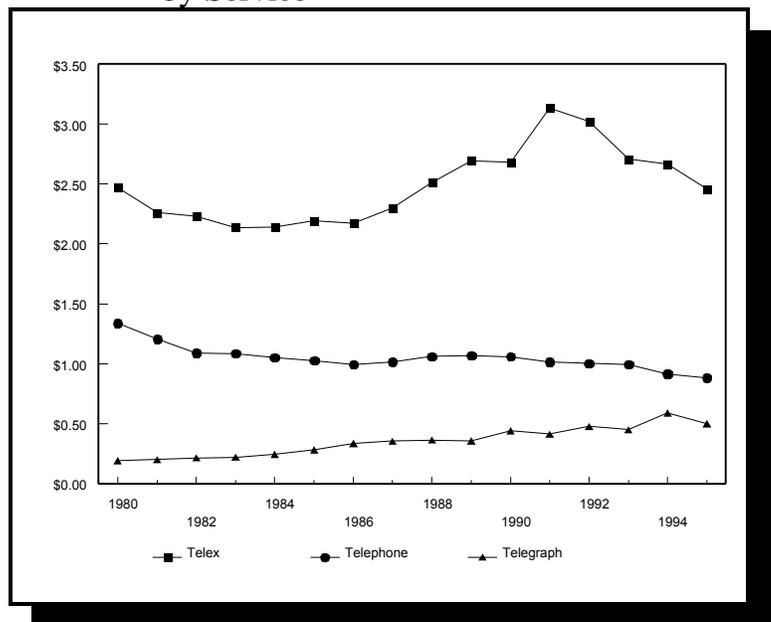


Figure 15: Billings per Unit of U.S. Traffic by Service

Revenue per minute data provide a crude indicator of pricing trends. Figure 15 shows telephone revenue per minute, telex revenue per minute, and telegraph revenue per word. These figures represent U.S. billed revenues divided by total U.S. units of traffic. U.S. billed revenue per minute for international telephone service declined in the early 1980s, stayed relatively flat for a decade, and then declined after 1993 because a growing number of customers have subscribed to discount plans. The discount plans have caused some reporting problems, because the discounts are often based on total bills, rather than being rated call by call. As a result, some carriers rate all traffic at their basic rates and then estimate an average amount of discount in



order to calculate the billed revenue amounts filed in their Section 43.61 data. It appears that some carriers did not fully reflect discounts in their 1993 data, which means that the published data overstate the decline for 1994. Billed revenue per minute for telex service rose in the late 1980s, and has declined since then. Figure 15 suggests that international telegraph service rates have doubled since 1980.

In 1991 Section 43.61 filings, carriers started reporting the number of minutes and words used for settlement purposes, rather than for billing purposes. The settlement traffic measures are lower than the comparable billing traffic measures since settlements are based on actual holding time while consumers are usually billed in whole minutes. The revenue per minute and revenue per word amounts shown in Figure 15 would be a few percent lower starting in 1991 if the FCC had continued to collect billed amounts of traffic rather than settled amounts of traffic.

Figure 16: Year-to-Year Percent Increases in U.S. Billed Minutes

Available evidence suggests that price reductions have induced greater than proportionate increases in demand for international telephone service. Figure 16 shows the year-to-year percentage increases in U.S. billed minutes of international telephone traffic. The graph shows that traffic was growing fastest in the late 1970s and early 1980s -- often by more than 25% per year. Growth in travel and world trade accounts for some telephone traffic growth. Some of the growth was also spurred by the availability of new high quality international telecommunications facilities and the introduction of international direct-dial service to more countries. Since 1970, however, much of the growth in international calling can be explained by general expansion of the U.S. economy and the decline in the real (after inflation) cost of international telephone service.

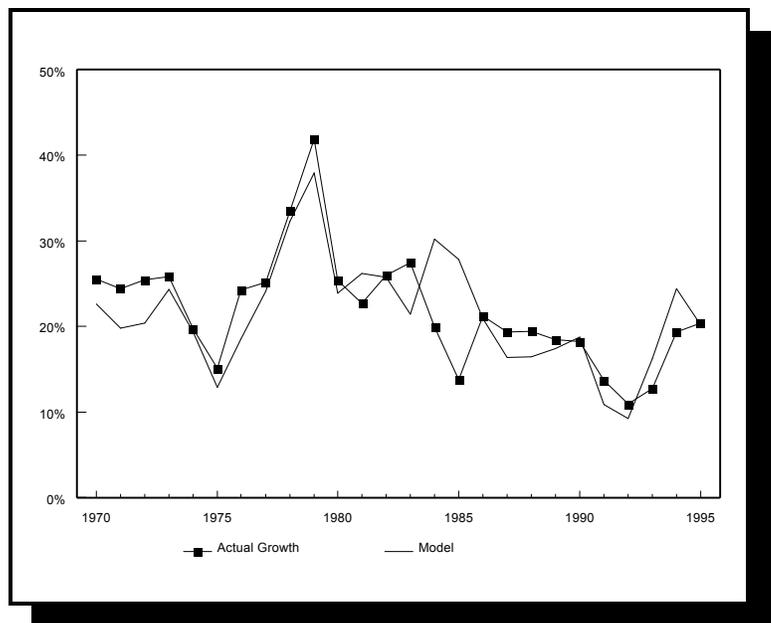


Figure 16 shows the percentage changes in minutes based on actual data and also as calculated by a simple regression model. The model explains about 56% of the variance in year-to-year changes in minutes. The model was formulated as follows:

$$\ln(\text{minutes}) = \text{constant} + \ln(\text{real GDP}) + \ln(\text{real rates}) + \text{constant}$$

where the rate variable is a lagged average of rates for the six countries included in Table 12. The variable was constructed as a simple average of the peak and off-peak 3 minute charges through 1993, chained with an average of revenues per minute for the same countries thereafter. The resulting series was then deflated by the Consumer Price Index. The GDP and rate variables were constructed as weighted averages of values for the current and two prior years -- 50% for the current year, 40% for the prior year, and 10% for two years prior. This smoothing reflects the fact that demand often lags changes in the economy and changes in rates. The model does not fit the data well before 1970. For 1970 to 1995 (26 observations), the model has the following coefficients and t statistics:

	Coefficient	t Statistic
Real GDP	3.04	8.3
Real Rates	-1.29	-12.0

A log linear trend variable improves the fit if added, but is correlated with the Real GDP variable. Inclusion lowers the coefficients to 2.17 for real GDP and -1.11 for the price elasticity. (An elasticity of -2.26, combined with the real price changes indicated by the rate variable, would be large enough to explain all of the growth in international calling between 1970 and 1995.) The model implies that international telephone calling is price elastic. This suggests that the growth in discount plans combined with the 1997 rate decreases is likely to spur faster growth in calling, perhaps to growth rates seen in the late 1970s and early 1980s.

II. Market Structure

Today, the four largest toll carriers in the United States are also the four largest providers of international service between the United States and international points. The following chart illustrates that international service represents almost one fourth of the toll revenue billed by the largest toll carriers.

Chart: Toll revenue for 1995		
Carrier	Total toll revenue * (\$billions)	International toll revenue ** (\$billions)
AT&T	\$38.1	\$8.7
LDDS Worldcom	3.6	.6
MCI	14.6	4.2
Sprint	7.3	1.4

* Source: Long Distance Market Shares
** Source: Section 43.61 International Telecommunications Data, includes facilities-based, facilities-resale and pure resale U.S. billed revenue.

The structure of the international telecommunications industry was very different in 1980. This section of *International Trends* explains how resale has encouraged competition, summarizes some of the major transactions that have shaped the current industry leaders, and presents market share information.

A. Resale

The Commission has a long-standing policy of allowing carriers to resell the services of other carriers. This has been critical to the development of international competition because it allowed carriers such as MCI and Sprint to provide service via resale while they negotiated operating agreements with foreign administrations.

Section 43.61 International Telecommunications Data shows that 230 carriers provided \$1.8 billion of pure resale international telephone service in 1995. This compares to 69 carriers reporting \$440 million in 1991. Carriers provide pure resale service by routing calls to an underlying carrier, which carries the traffic over its own facilities and pays settlements on that traffic to the carrier in the country of destination. Under the Commission's proportionate return policy, the underlying carrier gets the lucrative return traffic associated with the resale minutes.

Pure resale service is significantly different from facilities-resale service, which is also referred to as simple resale service. To provide facilities-resale service, carriers obtain private line circuits between the United States and a foreign point and negotiate an agreement with a carrier in that point to terminate calls. Facilities-resale carriers will typically receive return traffic from the foreign carrier. Facilities-resale service is similar to facilities-based service, except that 1) carriers do not have an ownership interest in the circuits; 2) compensation is not bound by existing accounting rate agreements; 3) the proportionate return rules do not apply; and 4) circuits to only a few international points can be resold in the form of facilities-resale service. A call should not be reported or double-counted as both a facilities-based and a facilities-resale call. Pure resale minutes, on the other hand, are reported by both the reselling and the underlying carriers. The underlying carrier reports the pure resale traffic that it handles for other carriers as either facilities-based or facilities-resale service traffic. Facilities-based and facilities-resale traffic are also referred to as underlying or physical traffic. Facilities-resale telephone service accounted for \$33 million compared with \$14.1 billion for facilities-based service.

The data on pure resale service are incomplete prior to 1991. Carriers first reported resale international traffic data in 1985. Carriers that provided both pure resale and facilities-based services, however, reported combined data until 1991. Thus, the resale totals shown for years before 1991 were for small carriers that did not provide any facilities-based service. The 1991 reporting change explains more than half of the increase in resale traffic between 1990 and 1991. Billings for pure resale international message telephone service rose from \$440 million in 1991 to \$1.8 billion in 1995. Some of this increase is due to an increase in the number of carriers complying with reporting requirements rather than to growth in pure resale service. Total international minutes, messages and billed revenue by carrier are presented in *Section 43.61 International Telecommunications Data* reports.

The FCC does not require carriers filing pure resale traffic data to identify separately call-back type traffic. A call-back uncompleted call signalling arrangement, for example, allows a customer in a foreign country to use foreign facilities to dial a preassigned telephone number in the United States. The call is not completed, but the presence of signalling information triggers a call back to the customer, who receives a dial tone from the U.S. carrier's switch. The customer can then place a call via the U.S. carrier's outbound switched service. U.S. call-back carriers typically operate as pure resale carriers. The FCC has determined that call-back using uncompleted call signalling does not violate either U.S. domestic or international law. *VIA USA, Ltd., Telegroup, Inc., Discount Call Int'l Co.*, 9 FCC Rcd 2288 (1994); (*Call-Back Order*), aff'd on reconsideration, 10 FCC Rcd 9540 (1995) (*Call-Back Reconsideration*) (together "*Call-Back Proceeding*"). The Commission concluded that call-back is good, to the extent that it promotes competition and forces down international rates. Some countries impose value-added taxes (VAT) on call-back and other countries have banned call-back entirely. The Commission ruled, however, that U.S. carriers are not authorized to provide call-back using uncompleted call signalling in countries which expressly have declared that call-back is illegal. The Commission's International Bureau maintains a public information file containing documentation about the legal status of call-back for many countries. The public file is titled

International Call-Back: Foreign Law, and is available in the International Bureau Reference Room, 2000 M Street, N.W., Room 102, Washington, D.C. 20554.

Table 16 compares pure resale international message telephone service (IMTS) minutes and revenue data with underlying traffic data. AT&T reported no pure resale traffic. In recent years, MCI and Sprint have used pure resale to carry less than 3% of their minutes. All other carriers taken together provide about 70% of their minutes on a pure resale basis.

While AT&T, MCI and Sprint provide most of the underlying IMTS service, smaller carriers have made inroads in that part of the market, as well. In 1991, smaller carriers reported 1.6% of the underlying U.S. billed service minutes. These carriers now account for 6.0% of underlying service minutes. Since 1991, these carriers show a 60% annual growth in U.S. billed facilities-based and facilities-resale minutes, compared with 14% annual growth for the three largest carriers.

As noted above, pure resale minutes are reported by both the reselling and the underlying carriers. Dividing pure resale minutes by the total minutes reported as facilities-based and facilities-resale service provides an estimate of the percentage of minutes that the underlying carriers sell to resellers. The estimate may be slightly high, since some resellers are actually reselling the services of other resellers. Table 16 shows that underlying carriers sold about 6% of their minutes to resellers in 1991. This had increased to about 16% in 1995. Some of the increase may be due to better reporting, but many pure resale carriers report substantial growth over this period.

Resale has not been as important for international private line services as for international MTS. The 1995 traffic data show that facilities-resale private line circuits accounted for \$10 million of revenue compared with \$506 million for facilities-based circuits.

Table 16. Pure Resale Compared with Other Types of IMTS 1/
(Revenue and minutes shown in thousands)

Company	1991	1992	1993	1994	1995
AT&T					
Facilities-Based and Facilities-Resale					
U.S. Minutes	6,596,014	7,038,969	7,200,907	8,039,868	8,831,143
U.S. Billed Revenue	\$6,962,147	\$7,313,799	\$7,482,250	\$7,984,452	\$8,424,874
MCI					
Facilities-Based and Facilities-Resale					
U.S. Minutes	1,599,786	2,101,422	2,856,890	3,529,197	4,485,504
U.S. Billed Revenue	\$1,486,972	\$2,065,113	\$2,779,355	\$2,952,375	\$3,967,807
Pure Resale					
U.S. Minutes	64,013	37,142	30,745	28,637	50,559
U.S. Billed Revenue	\$65,366	\$47,967	\$34,307	\$55,757	\$51,553
Percent Minutes Handled by Pure Resale	3.8%	1.7%	1.1%	0.8%	1.1%
SPRINT					
Facilities-Based and Facilities-Resale					
U.S. Minutes	728,442	946,173	1,181,074	1,489,696	1,772,347
U.S. Billed Revenue	\$603,785	\$785,940	\$1,047,749	\$1,228,667	\$1,288,845
Pure Resale					
U.S. Minutes	72,861	42,326	32,441	32,880	38,425
U.S. Billed Revenue	\$88,149	\$63,438	\$28,110	\$56,685	\$68,222
Percent Minutes Handled by Pure Resale	9.1%	4.3%	2.7%	2.2%	2.1%
Carriers Other than AT&T, MCI and Sprint					
Facilities-Based and Facilities-Resale					
U.S. Minutes	147,616	207,352	274,404	556,885	968,075
U.S. Billed Revenue	\$166,267	\$166,637	\$195,192	\$265,361	\$478,265
Pure Resale					
U.S. Minutes	358,087	485,257	665,119	1,260,389	2,452,755
U.S. Billed Revenue	\$286,925	\$399,660	\$528,686	\$1,007,750	\$1,634,614
Percent Minutes Handled by Pure Resale	70.8%	70.1%	70.8%	69.4%	71.7%
Combined Totals					
Facilities-Based and Facilities-Resale					
U.S. Minutes	9,071,858	10,293,916	11,513,275	13,615,646	16,057,069
U.S. Billed Revenue	\$9,219,171	\$10,331,489	\$11,504,546	\$12,430,855	\$14,159,791
Revenue Per Minute	\$1.02	\$1.00	\$1.00	\$0.91	\$0.88
Carriers Other Than AT&T, MCI, and Sprint as a % of Total Facilities-Based and Facilities-Resale Traffic					
U.S. Minutes	1.6%	2.0%	2.4%	4.1%	6.0%
U.S. Billed Revenue	1.8%	1.6%	1.7%	2.1%	3.4%
Pure Resale					
# of Reporting Carriers	69	86	130	180	230
U.S. Minutes	494,961	564,725	728,305	1,321,906	2,541,739
U.S. Billed Revenue	\$440,440	\$511,065	\$591,103	\$1,120,192	\$1,754,389
Revenue Per Minute	\$0.89	\$0.90	\$0.81	\$0.85	\$0.69
Pure Resale Minutes as % of Facilities-Based and Facilities-Resale Minutes	5.5%	5.5%	6.3%	9.7%	15.8%

1/ Carriers handle pure resale traffic by routing calls to other carriers and reselling those carrier's switched services. Facilities-based calls are carried over international circuits in which the carrier has an ownership interest. Facilities-resale calls are carried over international circuits that the carrier leases from other carriers. The data in this table were taken from Section 43.61 Traffic Data reports. The figures are world totals for international message telephone service and include international traffic between domestic and offshore U.S. points.

B. Mergers and Acquisitions

For a long time, the international telecommunications industry was divided between providers of voice services and providers of record services. For most destinations, AT&T was the sole telephone supplier from the United States mainland. Other carriers provided service from Alaska, Hawaii, Puerto Rico, and the U.S. Virgin Islands. Many competing carriers provided record services -- initially telegraph service and later telex service. In 1964, the Commission established a regulatory dichotomy between the voice market and the non-voice market with the TAT-4 decision. The Commission, however, eliminated this distinction in the early 1980s, along with many other restrictions, limitations, and entry barriers. These Commission actions helped usher in a period of rapid change.

The international telecommunications industry has a long history of merger and acquisition activity. Western Union left the international market in 1963 as a result of a restriction placed on it by the Commission when it authorized the merger of Western Union and Postal Telegraph in 1943. The restriction was lifted in the early 1980s. Western Union acquired ITT World Communications in 1987 and created a subsidiary, WU Worldcom, which later sold its international leased channel operations to a company that became known as World Communications. The remaining operations of WU Worldcom were absorbed by Western Union. Western Union accounted for about one-fifth of the revenues in the record service segment in 1990 when it sold its remaining international communications services to AT&T. That year AT&T also acquired control of the ITT subsidiaries All America Cable & Radio and ITT Communications-Virgin Islands. These subsidiaries provide service from Puerto Rico and the U.S. Virgin Islands.

Western Union International, which was spun off by Western Union in 1963, was acquired by Xerox in 1978 and then sold to MCI in 1982. MCI also acquired RCA Globcom in 1988. British Telecommunications plc (BT) acquired a 20 percent interest in MCI in 1993. In September 1995, MCI acquired the largest cellular reseller in the United States, Nationwide Cellular Services, Inc. In November 1996, British Telecommunications announced its proposal to buy MCI Communications. If it is approved, the merger of the companies would create a combined parent company called Concert which would be the world's second-largest long distance company.

Other once-prominent record carriers have also changed hands. McDonnell Douglas acquired FTC Communications in 1985. Two years later the unit was transferred to National Gateway Telecom, which at that time also owned Alascom, and then to TRT. TRT was acquired by UNC Resources in 1985, by ICC Telecommunications in 1988, and by IDB in 1993. Both FTC and TRT recently entered the telephone service market. General Electric acquired RCA Globcom in 1986 but sold it to MCI in 1988.

Since 1972, AT&T and Alascom jointly offered long distance services between the lower forty eight states and Alaska. In 1995, AT&T acquired Alascom from Pacific Telecom (PT) and continues to operate the company as a subsidiary, now called AT&T Alascom.

Prior to 1992, IDB Communications Group, Inc., now a part of LDDS, offered some international services through its subsidiary, CICI Inc. IDB, however, greatly expanded its operations with the December 1992 acquisition of World Communications, Inc. ("WorldCom") and Houston International Teleport ("HIT"), the parent corporation of Satellite Transmission and Reception Specialist Company ("STARS"). The acquisition of WorldCom created a new operating unit called IDB WorldCom which consisted of IDB International, IDB&T and Satellite Transmission and Reception Specialist. IDB acquired TRT Communications, Inc. and associated subsidiaries in 1993.

In 1989, LDDS Communications Inc. (LDDS) barely met the Commission's one hundred million dollar benchmark requirement for financial reporting. Through 1991, LDDS reported international resale services only. In 1992, LDDS acquired ATC as well as Tele-Fibernet Corporation and accordingly reported international facilities-based switched services. In 1993, the company merged with Metromedia Communications Corp. and ComSystems Network Services. On December 30, 1994, LDDS acquired IDB WorldCom and shortly afterwards, on January 5, 1995, acquired WilTel Network Services. The company changed its name in 1995 from LDDS Communications Inc. d/b/a LDDS WorldCom to WorldCom, Inc. d/b/a LDDS WorldCom. In December 1996, WorldCom merged with MFS Communications Co., Inc.. Since 1992, LDDS WorldCom has been the fourth largest interexchange carrier in the United States.

Until December 1992, Telefonica Larga Distancia de Puerto Rico was a public corporation wholly owned by the government of Puerto Rico. In December 1992, the assets of that corporation were transferred to LD Acquisition Corporation ("LD"), a Puerto Rico corporation principally owned by Telefonica International Holding, B.V. ("TI Holding"). TI is a Netherlands corporation which is wholly owned by T.I. Telefonica International de Espana, S.A. Telefonica Larga Distancia de Puerto Rico's common carrier international and domestic fixed earth station licenses and its international fixed public point-to-point telegraph and telephone station license were assigned to an affiliated U.S.-controlled company named Telecomunicaciones Ultramarinas de Puerto Rico.

The Telecommunications Act of 1996, Pub. Law No. 104-104, 110 Stat. 56 (1996) permits regional Bell operating companies (RBOCs) to enter interstate and international toll markets once they meet certain conditions set forth in new Section 271 of the Communications Act. Thus far, the Commission has authorized NYNEX Long Distance, Ameritech Communications, Inc. and Bell Atlantic Communications to provide some international services. These authorizations, however, are contingent upon the Commission's prior determination on a state-by-state basis, that the Bell Operating company with which those entities are affiliated has met the requirements of Section 271.

C. Global Alliances and the WTO Agreement

The preceding section sketches mergers and acquisitions between U.S. carriers. In recent years, U.S. carriers have been developing partnerships with foreign carriers. Alliances between U.S. and foreign carriers have resulted in cooperative joint venture arrangements to provide worldwide services to customers through single points of contact. *Global Communications Alliances: Forms and Characteristics of Emerging Organizations*, published in February 1996 by the FCC's International Bureau, presents detailed information on these emerging partnerships. The report describes three major trends in the global communication alliances: increased private ownership of national carriers; liberalization or the introduction of competition; and increasing participation among major international carriers in global alliances.

In February 1997, 69 member nations of the World Trade Organization (WTO), announced a major global agreement to open telecom markets by January 1, 1998. In many countries, this will require elimination of the government monopoly and will provide opportunities for U.S. carriers to enter and compete. Implementing the agreement is expected to move international toll charges closer to cost which could mean price reductions of 80% in some countries. Some countries, such as Britain, Sweden, Australia, Finland, New Zealand and Chile have already opened their markets. Many Asian and Latin American countries are also moving to deregulate their telecom markets. As a result, U.S. carriers may soon be able to operate in many new countries.

D. Changes in Market Share

Table 17 shows net revenue data by service for the major carriers for 1980 to the present. For switched services, net revenue is billed revenue less settlement payments plus settlement receipts. Starting in 1991, the switched services data do not include any pure resale revenues. For private line services, net revenue is equal to billed revenues. The data shown in Table 17 are subject to the types of definition changes summarized in Appendix A. An attempt has been made to remove traffic between Hawaii and the mainland, but no attempt has been made to include traffic with Canada and Mexico before 1991. As a consequence, the industry totals in this table do not match the data in Tables 1 through Table 6. The final section of Table 17 shows total carrier revenues for international services. These totals comprise telephone, telex, telegraph, and private line service, but exclude miscellaneous services.

Table 18 shows data from Table 17 restated as percentages of total. This provides an indicator of the market shares of carriers by major service category, as well as for overall international revenues.

AT&T was the dominant provider of international telephone service in 1980 and accounted for 70% of overall international revenues. With the exception of Hawaiian Telephone, owned by GTE, the other large carriers principally provided record services. AT&T continues to be the largest provider of international services but is no longer classified as a dominant carrier in the international market. MCI and Sprint together reported 35% of international revenues in 1995. While an increasing number of carriers report facilities-based or facilities-resale international telephone or private line service, the number of firms reporting telex and telegraph services declined as those markets shrank. AT&T, which was barred from providing record services until the Commission eliminated the dichotomy between the voice and record markets in the early 1980s, is now the largest provider of international telex and telegraph services.

Table 17. Net Revenue from International Services by Carrier 1/

(In millions)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Telephone																
Alascom <u>2/</u>	\$1.6	\$1.9	\$2.8	\$3.6	\$4.0	\$3.3	\$4.5	\$5.0	\$5.5	\$4.9	\$2.8	\$5.6	\$6.3	\$6.6	\$6.6	\$4.3
All America Cable & Radio	\$14.1	\$15.0	\$20.8	\$24.7	\$27.0	N/A	N/A	N/A	N/A	---	---	---	---	---	---	---
AT&T Corp.	\$1,402.7	\$1,526.7	\$1,338.1	\$1,562.6	\$1,728.9	\$1,795.7	\$1,852.1	\$2,160.2	\$2,617.6	\$2,945.8	\$3,385.5	\$4,388.9	\$4,956.4	\$5,110.6	\$5,348.1	\$5,714.8
Cuban American	\$3.5	\$4.6	\$4.5	\$5.0	\$4.8	N/A										
FTC Communications	---	---	---	---	---	---	---	\$9.2	\$5.2	\$6.4	---	---	---	---	---	---
GTE / Hawaiian Telephone	\$117.4	\$116.7	\$126.2	\$123.3	\$28.7	\$28.5	\$25.5	\$10.0	\$19.1	\$27.8	\$33.7	\$26.2	\$31.6	\$30.8	\$30.9	\$31.3
IDB WorldCom Svcs., Inc. <u>3/</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	\$27.4	---	---
ITT Communications-V.I.	\$9.6	\$8.7	\$10.0	\$17.8	\$12.0	N/A	N/A	N/A	N/A	---	---	---	---	---	---	---
MCI / WUI <u>4/</u>	---	---	---	---	---	\$13.9	\$60.4	\$112.1	\$189.3	\$362.2	\$527.6	\$971.0	\$1,379.4	\$1,834.0	\$1,854.5	\$2,472.3
Sprint	---	---	---	---	---	\$1.8	\$15.3	\$39.0	\$73.2	\$155.4	\$267.6	\$408.3	\$525.7	\$713.7	\$770.8	\$754.7
TRT Telecommunications	---	---	---	---	---	---	---	\$1.2	\$5.6	\$10.8	\$18.4	\$12.5	\$9.3	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom <u>5/</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	\$38.0	\$144.4
Other Carriers	N/A	\$90.0	\$65.5	\$76.5	\$91.0	\$95.4										
Total	\$1,549.0	\$1,673.6	\$1,502.3	\$1,737.0	\$1,805.5	\$1,843.2	\$1,957.8	\$2,336.6	\$2,915.5	\$3,513.4	\$4,235.7	\$5,902.4	\$6,974.2	\$7,799.6	\$8,140.0	\$9,217.3
Telex																
AT&T	---	---	---	---	---	---	---	---	---	---	---	\$63.6	\$52.0	\$42.4	\$54.6	\$57.0
FTC Communications	\$2.9	\$3.8	\$4.3	\$5.1	\$7.5	\$9.4	\$10.6	\$9.8	\$8.2	\$9.5	---	---	---	---	---	---
IDB WorldCom Svcs., Inc. <u>3/</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	\$22.5	---	---
ITT Worldcom	\$113.4	\$121.0	\$129.8	\$121.5	\$120.1	\$113.2	\$108.0	\$102.0	---	---	---	---	---	---	---	---
MCI / WUI <u>4/</u>	---	---	---	\$85.2	\$87.3	\$79.2	\$73.1	\$62.2	\$53.7	\$59.0	\$101.6	\$90.8	\$77.1	\$66.4	\$50.9	\$43.8
RCA Globcom	\$106.0	\$104.6	\$100.5	\$107.5	\$117.8	\$117.3	\$109.2	\$100.1	\$80.2	\$74.2	---	---	---	---	---	---
Sprint	---	---	---	---	---	---	---	---	---	---	N/A	\$0.7	\$0.7	\$0.7	\$1.3	\$1.7
TRT Telecommunications	\$24.0	\$32.4	\$37.9	\$38.1	\$46.9	\$52.6	\$55.3	\$60.4	\$49.8	\$45.1	\$50.5	\$47.6	\$34.2	---	---	---
Western Union	---	---	---	---	\$28.5	\$33.1	\$38.0	\$34.8	\$107.9	\$86.2	\$59.5	---	---	---	---	---
Western Union International	\$77.0	\$89.3	\$91.6	---	---	---	---	---	---	---	---	---	---	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom <u>5/</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	\$12.1	\$10.1
Other Carriers	N/A	\$0.3	\$0.1	\$0.1	\$0.0	\$0.1										
Total	\$323.3	\$351.2	\$364.1	\$357.3	\$408.0	\$404.8	\$394.2	\$369.3	\$299.9	\$274.0	\$211.6	\$202.9	\$164.2	\$132.0	\$118.9	\$112.7
Telegraph																
AT&T	---	---	---	---	---	---	---	---	---	---	---	\$4.8	\$7.2	\$6.5	\$5.9	\$3.0
FTC Communications	\$0.7	\$0.9	\$0.8	\$0.8	\$1.1	\$1.2	\$1.2	\$1.1	\$0.9	\$0.9	---	---	---	---	---	---
IDB WorldCom Svcs., Inc. <u>3/</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	\$1.2	---	---
ITT Worldcom	\$10.8	\$9.7	\$8.8	\$7.1	\$4.8	\$5.2	\$5.7	\$5.0	---	---	---	---	---	---	---	---
MCI / WUI <u>4/</u>	---	---	---	\$5.7	\$4.1	\$4.1	\$4.8	\$4.1	\$3.0	\$3.4	\$7.6	\$6.8	\$5.6	\$4.5	\$3.5	\$3.1
RCA Globcom	\$10.8	\$9.7	\$8.1	\$6.6	\$5.7	\$7.1	\$7.1	\$4.3	\$3.2	\$2.9	---	---	---	---	---	---
TRT Telecommunications	\$3.9	\$4.0	\$4.1	\$3.3	\$2.8	\$3.4	\$3.9	\$3.4	\$3.2	\$2.8	\$5.6	\$4.0	\$2.7	---	---	---
U.S.-Liberia	\$0.1	\$0.2	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.0	\$0.0	---	---	---	---	---
Western Union	---	---	---	---	\$2.7	\$5.6	\$7.8	\$6.5	\$10.5	\$10.3	\$11.5	---	---	---	---	---
Western Union International	\$11.7	\$11.1	\$8.1	---	---	---	---	---	---	---	---	---	---	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom <u>5/</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	\$3.1
Other Carriers	N/A	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0										
Total	\$37.9	\$35.5	\$30.1	\$23.6	\$21.3	\$26.7	\$30.5	\$24.6	\$21.0	\$20.3	\$24.7	\$15.7	\$15.5	\$12.2	\$12.5	\$7.2

See note on final page of table.

Table 17. Net Revenue from International Services by Carrier 1/

(In millions)

(continued)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Private Line																
All America Cable & Radio	\$0.3	\$0.9	\$0.4	\$0.4	\$0.7	N/A	N/A	N/A	N/A	---	---	---	---	---	---	---
AT&T	\$7.4	\$5.1	\$4.8	\$5.0	\$4.9	\$6.7	\$8.9	\$8.4	\$37.5	\$42.5	\$64.6	\$114.4	\$121.7	\$141.5	\$171.9	\$213.9
Cuban American	\$0.1	\$0.1	\$0.1	\$0.1	\$0.0	N/A										
FTC Communications	\$2.4	\$4.1	\$5.4	\$6.5	\$8.8	\$10.1	\$12.7	\$13.1	\$12.6	\$12.9	---	---	---	---	---	---
GTE / Hawaiian Telephone	\$6.4	\$7.6	\$8.4	\$9.3	\$1.2	\$1.4	\$1.3	\$17.8	\$9.7	\$8.9	\$1.3	\$1.6	\$1.6	\$2.2	\$2.0	\$1.6
IDB WorldCom Svcs., Inc. <u>3/</u>	---	---	---	---	---	---	---	---	---	---	---	\$30.3	\$42.2	\$85.9	---	---
ITT Communications-V.I.	\$0.6	\$0.5	\$0.5	\$0.3	\$0.4	N/A	N/A	N/A	N/A	---	---	---	---	---	---	---
ITT Worldcom	\$34.3	\$36.0	\$39.6	\$45.7	\$48.9	\$53.1	\$51.9	\$52.1	---	---	---	---	---	---	---	---
MCI / WUI <u>4/</u>	---	---	---	\$33.2	\$32.5	\$34.9	\$34.5	\$36.4	\$39.7	\$50.3	\$69.6	\$76.7	\$81.8	\$94.3	\$125.5	\$147.9
RCA Globcom	\$36.5	\$40.3	\$42.9	\$47.4	\$51.8	\$54.9	\$54.0	\$50.1	\$46.9	\$38.2	---	---	---	---	---	---
Sprint	---	---	---	---	---	---	---	---	---	---	\$2.4	\$6.2	\$1.3	\$23.8	\$38.7	\$41.7
TRT Telecommunications	\$3.6	\$4.6	\$5.4	\$6.1	\$7.1	\$8.8	\$9.6	\$10.6	\$12.8	\$13.3	\$27.3	\$22.7	\$22.5	---	---	---
Western Union	---	---	---	---	\$1.3	\$2.0	\$1.9	\$2.5	\$35.0	\$6.5	\$0.0	---	---	---	---	---
Western Union International	\$23.2	\$26.9	\$30.4	---	---	---	---	---	---	---	---	---	---	---	---	---
World Communications	---	---	---	---	---	---	---	---	---	\$35.5	\$38.6	\$41.3	\$34.4	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom <u>5/</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	\$89.8	\$84.8
Other Carriers	N/A	\$13.6	\$17.8	\$18.3	\$13.0	\$37.9										
Total	\$114.8	\$126.0	\$138.0	\$154.0	\$157.6	\$171.9	\$174.9	\$190.9	\$194.2	\$208.0	\$203.8	\$307.1	\$323.4	\$366.1	\$440.9	\$527.7
Total Telephone, Telex, Telegraph and Private Line																
Alascom <u>2/</u>	\$1.6	\$1.9	\$2.8	\$3.6	\$4.0	\$3.3	\$4.5	\$5.0	\$5.5	\$4.9	\$2.8	\$5.6	\$6.3	\$6.6	\$6.6	\$4.3
All America Cable & Radio	\$14.4	\$15.8	\$21.2	\$25.1	\$27.7	---	---	---	---	---	---	---	---	---	---	---
AT&T	\$1,410.1	\$1,531.8	\$1,342.9	\$1,567.6	\$1,733.8	\$1,802.4	\$1,861.0	\$2,168.5	\$2,655.1	\$2,988.3	\$3,450.1	\$4,571.7	\$5,137.3	\$5,300.9	\$5,580.5	\$5,988.7
Cuban American	\$3.6	\$4.7	\$4.6	\$5.1	\$4.8	---	---	---	---	---	---	---	---	---	---	---
FTC Communications	\$6.0	\$8.8	\$10.6	\$12.4	\$17.3	\$20.7	\$24.4	\$33.2	\$27.0	\$29.7	---	---	---	---	---	---
GTE / Hawaiian Telephone	\$123.8	\$124.3	\$134.6	\$132.6	\$29.8	\$29.9	\$26.8	\$27.8	\$28.8	\$36.8	\$35.0	\$27.9	\$33.2	\$33.0	\$33.0	\$32.9
IDB WorldCom Svcs., Inc. <u>3/</u>	---	---	---	---	---	---	---	---	---	---	---	\$30.3	\$42.2	\$42.2	---	---
ITT Communications-V.I.	\$10.2	\$9.2	\$10.5	\$18.2	\$12.4	---	---	---	---	---	---	---	---	---	---	---
ITT Worldcom	\$158.4	\$166.8	\$178.2	\$174.3	\$173.8	\$171.4	\$165.6	\$159.1	---	---	---	---	---	---	---	---
MCI / WUI <u>4/</u>	---	---	---	\$124.1	\$124.0	\$132.1	\$172.8	\$214.8	\$285.7	\$474.8	\$706.5	\$1,145.3	\$1,543.9	\$1,999.2	\$2,034.4	\$2,667.0
RCA Globcom	\$153.3	\$154.6	\$151.5	\$161.5	\$175.3	\$179.3	\$170.4	\$154.5	\$130.4	\$115.2	---	---	---	---	---	---
Sprint	---	---	---	---	---	\$1.8	\$15.3	\$39.0	\$73.2	\$155.4	\$270.0	\$415.2	\$527.7	\$738.2	\$810.8	\$798.1
TRT Telecommunications	\$31.4	\$41.0	\$47.4	\$47.4	\$56.8	\$64.8	\$68.8	\$75.5	\$71.4	\$72.0	\$101.9	\$86.8	\$68.7	---	---	---
U.S.-Liberia	\$0.1	\$0.2	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Western Union	---	---	---	---	\$32.4	\$40.7	\$47.8	\$43.9	\$153.4	\$103.0	\$71.0	---	---	---	---	---
Western Union International	\$111.9	\$127.2	\$130.1	---	---	---	---	---	---	---	---	---	---	---	---	---
World Communications	---	---	---	---	---	---	---	---	---	\$35.5	\$38.6	\$41.3	\$34.4	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom <u>5/</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	\$142.9	\$240.5
Other Carriers	N/A	\$103.9	\$83.4	\$94.9	\$104.0	\$133.3										
Total	\$2,024.9	\$2,186.2	\$2,034.5	\$2,271.9	\$2,392.4	\$2,446.5	\$2,557.4	\$2,921.4	\$3,430.7	\$4,015.7	\$4,675.8	\$6,428.1	\$7,477.2	\$8,215.1	\$8,712.2	\$9,864.9

1/ For switched services, net revenues equals billed revenues minus settlement payouts plus settlement receipts.

For private line services, net revenues equals billed revenues.

2/ Alascom was sold to AT&T in August of 1995. The information reported for Alascom is for January through July of 1995.

AT&T Alascom is included with AT&T for August through December of 1995.

3/ IDB WorldCom Services, Inc. figures consist also of TRT Telecommunications, World Communications, and CICI, Inc.

4/ MCI/WUI figures consist of MCI International, Inc. and Western Union International, Inc.

5/ LDDS Communications, Inc. acquired IDB WorldCom Svcs., Inc. in 1994. The company changed its name in 1995 from LDDS Communications Inc. d/b/a LDDS WorldCom to WorldCom, Inc. d/b/a LDDS WorldCom.

Table 18. Market Shares Based on Net Revenue from International Services by Carrier

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Telephone																
Alascom ^{2/}	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%
All America Cable & Radio	0.9%	0.9%	1.4%	1.4%	1.5%	---	---	---	---	---	---	---	---	---	---	---
AT&T Corp.	90.6%	91.2%	89.1%	90.0%	95.8%	97.4%	94.6%	92.4%	89.8%	83.8%	79.9%	74.4%	71.1%	65.5%	65.7%	62.0%
Cuban American	0.2%	0.3%	0.3%	0.3%	0.3%	---	---	---	---	---	---	---	---	---	---	---
FTC Communications	---	---	---	---	---	---	---	0.4%	0.2%	0.2%	---	---	---	---	---	---
GTE / Hawaiian Telephone	7.6%	7.0%	8.4%	7.1%	1.6%	1.5%	1.3%	0.4%	0.7%	0.8%	0.8%	0.4%	0.5%	0.4%	0.4%	0.3%
IDB WorldCom Svcs., Inc. ^{3/}	---	---	---	---	---	---	---	---	---	---	---	---	---	0.4%	---	---
ITT Communications-V.I.	0.6%	0.5%	0.7%	1.0%	0.7%	---	---	---	---	---	---	---	---	---	---	---
MCI / WUI ^{4/}	---	---	---	---	---	0.8%	3.1%	4.8%	6.5%	10.3%	12.5%	16.5%	19.8%	23.5%	22.8%	26.8%
Sprint	---	---	---	---	---	0.1%	0.8%	1.7%	2.5%	4.4%	6.3%	6.9%	7.5%	9.1%	9.5%	8.2%
TRT Telecommunications	---	---	---	---	---	---	---	0.0%	0.2%	0.3%	0.4%	0.2%	0.1%	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom ^{5/}	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.5%	1.6%
Other Carriers	---	---	---	---	---	---	---	---	---	---	---	1.5%	0.9%	1.0%	1.1%	1.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Telex																
AT&T	---	---	---	---	---	---	---	---	---	---	---	31.3%	31.7%	32.1%	45.9%	50.6%
FTC Communications	0.9%	1.1%	1.2%	1.4%	1.8%	2.3%	2.7%	2.7%	2.7%	3.5%	---	---	---	---	---	---
IDB WorldCom Svcs., Inc. ^{3/}	---	---	---	---	---	---	---	---	---	---	---	---	---	17.0%	---	---
ITT Worldcom	35.1%	34.5%	35.6%	34.0%	29.4%	28.0%	27.4%	27.6%	---	---	---	---	---	---	---	---
MCI / WUI ^{4/}	---	---	---	23.8%	21.4%	19.6%	18.5%	16.8%	17.9%	21.5%	48.0%	44.7%	46.9%	50.3%	42.8%	38.8%
RCA Globcom	32.8%	29.8%	27.6%	30.1%	28.9%	29.0%	27.7%	27.1%	26.7%	27.1%	---	---	---	---	---	---
Sprint	---	---	---	---	---	---	---	---	---	---	---	0.4%	0.4%	0.5%	1.1%	1.5%
TRT Telecommunications	7.4%	9.2%	10.4%	10.7%	11.5%	13.0%	14.0%	16.3%	16.6%	16.5%	23.9%	23.5%	20.8%	---	---	---
Western Union	---	---	---	---	7.0%	8.2%	9.7%	9.4%	36.0%	31.5%	28.1%	---	---	---	---	---
Western Union International	23.8%	25.4%	25.2%	---	---	---	---	---	---	---	---	---	---	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom ^{5/}	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10.2%	9.0%
Other Carriers	---	---	---	---	---	---	---	---	---	---	---	0.1%	0.1%	0.1%	0.0%	0.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Telegraph																
AT&T	---	---	---	---	---	---	---	---	---	---	---	30.9%	46.3%	52.9%	47.0%	40.8%
FTC Communications	1.9%	2.4%	2.8%	3.3%	5.2%	4.5%	3.8%	4.3%	4.5%	4.4%	---	---	---	---	---	---
IDB WorldCom Svcs., Inc. ^{3/}	---	---	---	---	---	---	---	---	---	---	---	---	---	10.1%	---	---
ITT Worldcom	28.4%	27.3%	29.3%	30.2%	22.5%	19.4%	18.5%	20.5%	---	---	---	---	---	---	---	---
MCI / WUI ^{4/}	---	---	---	24.1%	19.4%	15.3%	15.7%	16.8%	14.5%	16.8%	30.7%	43.7%	36.4%	37.0%	28.4%	43.1%
RCA Globcom	28.5%	27.2%	27.0%	28.0%	26.7%	26.7%	23.4%	17.5%	15.5%	14.1%	---	---	---	---	---	---
TRT Telecommunications	10.2%	11.4%	13.6%	13.9%	13.1%	12.6%	12.6%	13.8%	15.3%	13.7%	22.7%	25.3%	17.3%	---	---	---
U.S.-Liberia	0.3%	0.5%	0.5%	0.5%	0.6%	0.4%	0.4%	0.4%	0.4%	0.2%	0.1%	---	---	---	---	---
Western Union	---	---	---	---	12.5%	21.0%	25.6%	26.5%	49.8%	50.8%	46.4%	---	---	---	---	---
Western Union International	30.7%	31.2%	26.9%	---	---	---	---	---	---	---	---	---	---	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom ^{5/}	---	---	---	---	---	---	---	---	---	---	---	---	---	---	24.6%	16.1%
Other Carriers	---	---	---	---	---	---	---	---	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

See note on final page of table.

Table 18. Market Shares Based on Net Revenue from International Services by Carrier

	(continued)															
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Private Line																
All America Cable & Radio	0.3%	0.7%	0.3%	0.3%	0.4%	---	---	---	---	---	---	---	---	---	---	---
AT&T	6.5%	4.0%	3.5%	3.2%	3.1%	3.9%	5.1%	4.4%	19.3%	20.4%	31.7%	37.3%	37.6%	38.7%	39.0%	40.5%
Cuban American	0.1%	0.0%	0.1%	0.1%	0.0%	---	---	---	---	---	---	---	---	---	---	---
FTC Communications	2.1%	3.2%	3.9%	4.2%	5.6%	5.9%	7.2%	6.9%	6.5%	6.2%	---	---	---	---	---	---
GTE / Hawaiian Telephone	5.6%	6.1%	6.1%	6.1%	0.7%	0.8%	0.7%	9.3%	5.0%	4.3%	0.6%	0.5%	0.5%	0.6%	0.5%	0.3%
IDB WorldCom Svcs., Inc. ^{3/}	---	---	---	---	---	---	---	---	---	---	---	9.9%	13.1%	23.5%	---	---
ITT Communications-V.I.	0.5%	0.4%	0.4%	0.2%	0.3%	---	---	---	---	---	---	---	---	---	---	---
ITT Worldcom	29.9%	28.6%	28.7%	29.7%	31.1%	30.9%	29.7%	27.3%	---	---	---	---	---	---	---	---
MCI / WUI ^{4/}	---	---	---	21.6%	20.6%	20.3%	19.7%	19.0%	20.4%	24.2%	34.2%	25.0%	25.3%	25.8%	28.5%	28.0%
RCA Globcom	31.8%	32.0%	31.1%	30.8%	32.9%	31.9%	30.9%	26.2%	24.2%	18.4%	---	---	---	---	---	---
Sprint	---	---	---	---	---	---	---	---	---	---	1.2%	2.0%	0.4%	6.5%	8.8%	7.9%
TRT Telecommunications	3.1%	3.6%	3.9%	4.0%	4.5%	5.1%	5.5%	5.6%	6.6%	6.4%	13.4%	7.4%	7.0%	---	---	---
Western Union	---	---	---	---	0.8%	1.2%	1.1%	1.3%	18.0%	3.1%	0.0%	---	---	---	---	---
Western Union International	20.2%	21.3%	22.1%	---	---	---	---	---	---	---	---	---	---	---	---	---
World Communications	---	---	---	---	---	---	---	---	---	17.1%	18.9%	13.5%	10.6%	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom ^{5/}	---	---	---	---	---	---	---	---	---	---	---	---	---	---	20.4%	16.1%
Other Carriers	---	---	---	---	---	---	---	---	---	---	---	4.4%	5.5%	5.0%	2.9%	7.2%
Total	100.0%															
Total Telephone, Telex, Telegraph and Private Line																
Alascom ^{2/}	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%
All America Cable & Radio	0.7%	0.7%	1.0%	1.1%	1.2%	---	---	---	---	---	---	---	---	---	---	---
AT&T	69.6%	70.1%	66.0%	69.0%	72.5%	73.7%	72.8%	74.2%	77.4%	74.4%	73.8%	71.1%	68.7%	64.5%	64.1%	60.7%
Cuban American	0.2%	0.2%	0.2%	0.2%	0.2%	---	---	---	---	---	---	---	---	---	---	---
FTC Communications	0.3%	0.4%	0.5%	0.5%	0.7%	0.8%	1.0%	1.1%	0.8%	0.7%	---	---	---	---	---	---
GTE / Hawaiian Telephone	6.1%	5.7%	6.6%	5.8%	1.2%	1.2%	1.0%	1.0%	0.8%	0.9%	0.7%	0.4%	0.4%	0.4%	0.4%	0.3%
IDB WorldCom Svcs., Inc. ^{3/}	---	---	---	---	---	---	---	---	---	---	---	0.5%	0.6%	0.5%	---	---
ITT Communications-V.I.	0.5%	0.4%	0.5%	0.8%	0.5%	---	---	---	---	---	---	---	---	---	---	---
ITT Worldcom	7.8%	7.6%	8.8%	7.7%	7.3%	7.0%	6.5%	5.4%	---	---	---	---	---	---	---	---
MCI / WUI ^{4/}	---	---	---	5.5%	5.2%	5.4%	6.8%	7.4%	8.3%	11.8%	15.1%	17.8%	20.6%	24.3%	23.4%	27.0%
RCA Globcom	7.6%	7.1%	7.4%	7.1%	7.3%	7.3%	6.7%	5.3%	3.8%	2.9%	---	---	---	---	---	---
Sprint	---	---	---	---	---	0.1%	0.6%	1.3%	2.1%	3.9%	5.8%	6.5%	7.1%	9.0%	9.3%	8.1%
TRT Telecommunications	1.6%	1.9%	2.3%	2.1%	2.4%	2.6%	2.7%	2.6%	2.1%	1.8%	2.2%	1.4%	0.9%	---	---	---
U.S.-Liberia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	---	---	---	---	---
Western Union	---	---	---	---	1.4%	1.7%	1.9%	1.5%	4.5%	2.6%	1.5%	---	---	---	---	---
Western Union International	5.5%	5.8%	6.4%	---	---	---	---	---	---	---	---	---	---	---	---	---
World Communications	---	---	---	---	---	---	---	---	---	0.9%	0.8%	0.6%	0.5%	---	---	---
WorldCom, Inc. d/b/a LDDS WorldCom ^{5/}	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.6%	2.4%
Other Carriers	---	---	---	---	---	---	---	---	---	---	---	1.6%	1.1%	1.2%	1.2%	1.4%
Total	100.0%															

^{1/} For switched services, net revenues equals billed revenues minus settlement payouts plus settlement receipts.

For private line services, net revenues equals billed revenues.

^{2/} Alascom was sold to AT&T in August of 1995. The information reported for Alascom is for January through July of 1995.

AT&T Alascom is included with AT&T for August through December of 1995.

^{3/} IDB WorldCom Services, Inc. figures consist also of TRT Telecommunications, World Communications, and CICI, Inc.

^{4/} MCI/WUI figures consist of MCI International, Inc. and Western Union International, Inc.

^{5/} LDDS Communications, Inc. acquired IDB WorldCom Svcs., Inc. in 1994. The company changed its name in 1995 from LDDS Communications Inc. d/b/a LDDS WorldCom to WorldCom, Inc. d/b/a LDDS WorldCom.

Figure 17: Net Revenues for International MTS by Carrier

Figure 17 shows net revenues for international MTS for AT&T, MCI, Sprint, and other carriers. The graph illustrates how the international MTS market has expanded since 1980. While AT&T's revenues in this market have increased rapidly, MCI and Sprint have grown faster, capturing a significant share of the market.

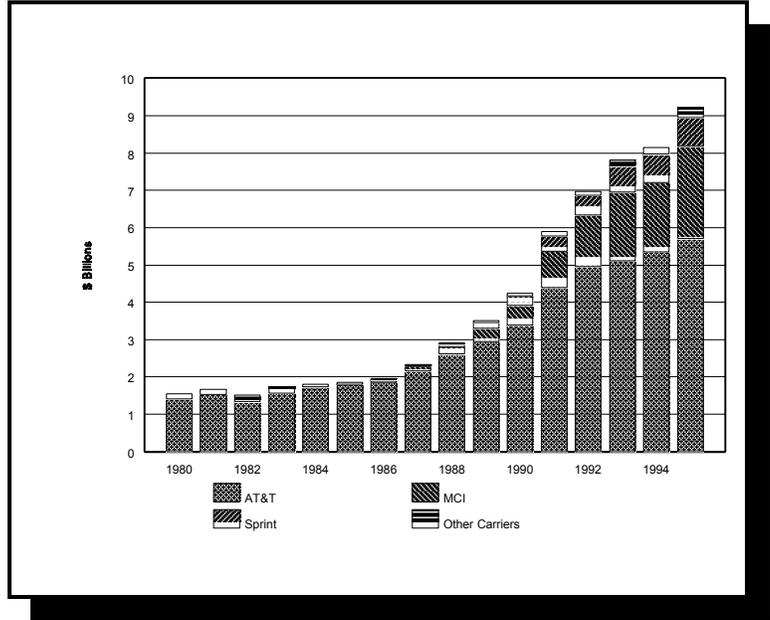


Figure 18: Net Revenues for International Private Line Service by Carrier

Figure 18 shows revenues for international private line service for AT&T, for the international record carriers that existed in 1980, and for all other carriers. The international record carriers provided most private line service in 1980. The figure illustrates how these carriers disappeared by the early 1990s, replaced by AT&T and other carriers, principally MCI and Sprint.

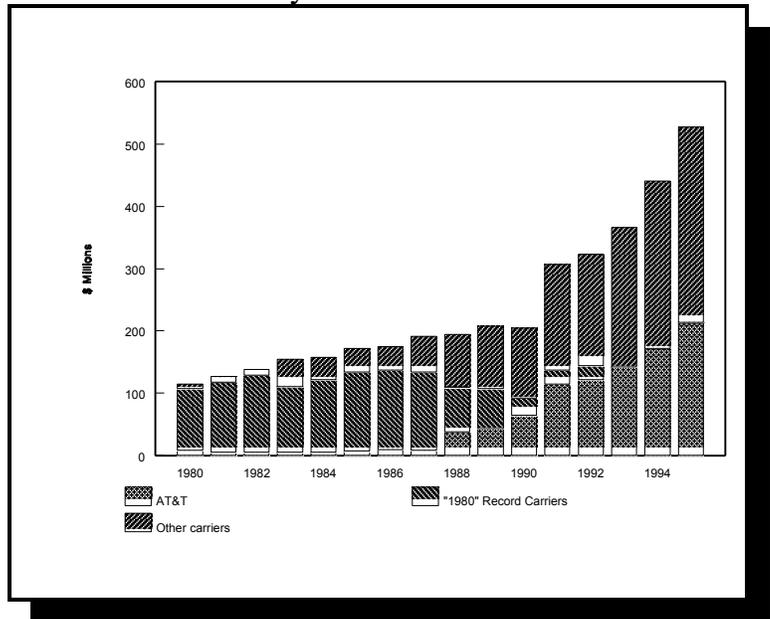


Figure 19: Market Shares for the Total International Services Market

Figure 19 shows AT&T's share of all international service revenue. The figure also shows the combined share for MCI and Sprint. AT&T received about 70% of the net revenues in 1980. Record carriers received about 23% of the net revenues in 1980 and MCI and Sprint had not yet entered the market. AT&T's share of revenues rose through 1988, primarily reflecting the growth of international MTS compared with the decline of the telex and telegraph markets. Since that time, however, MCI and Sprint have become major international carriers and other telephone carriers are vying for market share.

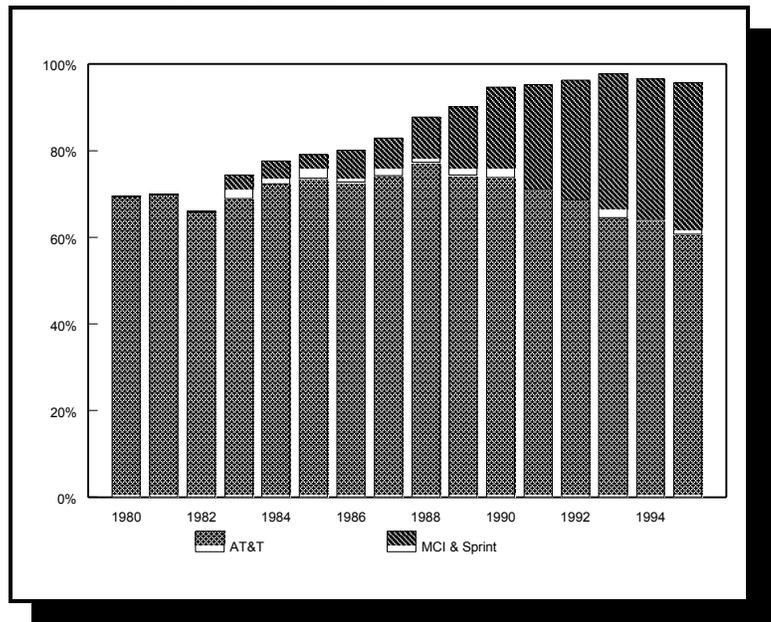


Table 19 shows telephone service market shares for selected countries for 1985 to 1995. Revenue shares are shown separately for traffic billed in the U.S. and traffic billed in foreign points.

In 1985, AT&T provided most of the international telephone service between the continental U.S. and most foreign markets. At that time some carriers began to provide international telephone service on a resale basis. In order to provide facilities-based service to international points, carriers must obtain facilities, executed operating agreements with foreign carriers and then attract customers.

The operating agreement contains an accounting rate which is the basis for payments to a foreign carrier when that carrier completes a call for a U.S. carrier. The accounting rate is symmetrical, meaning that the foreign carrier pays the U.S. carrier the same amount per minute when the U.S. carrier completes a call for the foreign carrier. In the past, some accounting rates were so high that the U.S. carrier would pay out more than it collected from customers. Those high settlement rates, however, meant that return traffic was very profitable. The FCC adopted a proportionate return policy so that U.S. carriers would each get roughly the same share of foreign billed traffic for any particular country as it had for U.S. billed traffic. Settlement payments are discussed in greater detail below.

Table 19. Carrier Shares of International Telephone Service Revenues
for Selected Countries

Country	Based on Billed Revenues for Continental U.S. Traffic													
	1985			1986			1987				1988			
	AT&T	MCI	Sprint	AT&T	MCI	Sprint	AT&T	MCI	Sprint	Others	AT&T	MCI	Sprint	Others
Australia	94.4%	3.6%	2.0%	87.0%	8.4%	4.6%	83.2%	9.5%	7.2%	0.1%	80.2%	12.2%	6.7%	0.8%
Brazil	90.6%	9.4%	0.0%	80.6%	19.4%	0.0%	90.8%	9.2%	0.0%	0.0%	87.1%	12.6%	0.0%	0.3%
Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
China	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Colombia	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	94.3%	4.6%	0.0%	1.0%
Dominican Rep.	*****	0.0%	0.0%	97.3%	0.0%	2.7%	96.5%	0.0%	3.5%	0.0%	98.6%	0.0%	1.4%	0.0%
Egypt	88.0%	8.3%	3.8%	89.3%	7.5%	3.3%	91.2%	8.8%	0.0%	0.0%	86.0%	13.2%	0.0%	0.8%
El Salvador	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
France	*****	0.0%	0.0%	93.9%	6.1%	0.0%	82.1%	10.8%	0.9%	6.2%	79.9%	13.7%	5.2%	0.0%
Germany _1/	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	92.3%	5.0%	2.6%	0.3%
Greece	92.4%	7.6%	0.0%	83.4%	16.6%	0.0%	89.3%	10.7%	0.0%	0.0%	86.3%	11.9%	1.9%	0.0%
Guatemala	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Hong Kong	98.5%	0.0%	1.5%	81.2%	8.5%	10.3%	81.3%	11.4%	7.2%	0.0%	79.5%	13.4%	6.5%	0.6%
India	*****	0.0%	0.0%	*****	0.0%	0.0%	99.9%	0.0%	0.0%	0.1%	98.4%	0.0%	0.1%	1.5%
Israel	*****	0.0%	0.0%	*****	0.0%	0.0%	98.4%	1.6%	0.0%	0.0%	88.5%	8.8%	2.8%	0.0%
Italy	*****	0.0%	0.0%	98.3%	1.7%	0.0%	91.0%	6.2%	2.8%	0.0%	86.8%	9.3%	3.8%	0.0%
Jamaica	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Japan	*****	0.0%	0.0%	97.7%	1.5%	0.8%	88.8%	6.2%	5.0%	0.0%	83.6%	9.7%	6.7%	0.0%
Korea, Rep. of	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	99.4%	0.5%	0.1%	0.0%
Mexico	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Netherlands	*****	0.0%	0.0%	98.8%	1.2%	0.0%	92.3%	7.7%	0.0%	0.0%	84.5%	11.8%	3.7%	0.0%
Nigeria	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Pakistan	*****	0.0%	0.0%	99.8%	0.2%	0.0%	88.6%	11.4%	0.0%	0.0%	89.3%	10.7%	0.0%	0.0%
Peru	*****	0.0%	0.0%	*****	0.0%	0.0%	98.6%	0.0%	1.4%	0.0%	98.0%	0.0%	2.0%	0.0%
Philippines	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Poland	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Russia	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Saudi Arabia	94.6%	5.4%	0.0%	82.3%	17.7%	0.0%	89.3%	10.7%	0.0%	0.0%	85.6%	14.4%	0.0%	0.0%
South Africa	94.2%	5.8%	0.0%	92.3%	7.7%	0.0%	89.7%	10.3%	0.0%	0.0%	90.3%	9.7%	0.0%	0.0%
Spain	*****	0.0%	0.0%	97.4%	2.6%	0.0%	90.8%	6.7%	2.5%	0.0%	86.4%	9.7%	3.9%	0.0%
Switzerland	*****	0.0%	0.0%	99.8%	0.2%	0.0%	93.7%	6.3%	0.0%	0.0%	83.9%	12.4%	3.7%	0.0%
Taiwan	97.3%	1.7%	1.0%	83.4%	8.6%	8.0%	80.4%	12.7%	6.8%	0.0%	77.9%	14.3%	7.7%	0.2%
Thailand	93.9%	5.7%	0.4%	74.7%	11.0%	14.3%	86.8%	8.4%	4.8%	0.0%	82.4%	11.8%	5.8%	0.0%
United Kingdom	95.1%	3.6%	1.4%	87.5%	9.1%	3.4%	84.5%	9.9%	5.1%	0.5%	81.3%	11.8%	5.8%	1.0%

Country	Based on Settlement Receipts for Foreign Traffic to the Continental U.S.													
	1985			1986			1987				1988			
	AT&T	MCI	Sprint	AT&T	MCI	Sprint	AT&T	MCI	Sprint	Others	AT&T	MCI	Sprint	Others
Australia	97.2%	1.6%	1.2%	71.4%	17.9%	10.7%	78.3%	12.2%	9.5%	0.0%	78.6%	12.7%	8.6%	0.0%
Brazil	98.4%	1.6%	0.0%	77.7%	22.3%	0.0%	89.5%	10.5%	0.0%	0.0%	89.0%	11.0%	0.0%	0.0%
Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
China	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Colombia	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	97.2%	2.3%	0.0%	0.5%
Dominican Rep.	*****	0.0%	0.0%	*****	0.0%	0.0%	98.9%	0.0%	1.1%	0.0%	97.5%	0.0%	2.5%	0.0%
Egypt	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	90.5%	9.5%	0.0%	0.0%
El Salvador	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
France	*****	0.0%	0.0%	98.0%	2.0%	0.0%	82.9%	9.0%	1.1%	7.1%	75.4%	14.2%	4.8%	5.6%
Germany _1/	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	98.6%	1.1%	0.3%	0.3%
Greece	93.1%	6.5%	0.0%	72.9%	27.1%	0.0%	82.8%	17.2%	0.0%	0.0%	83.6%	15.6%	0.7%	0.0%
Guatemala	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Hong Kong	84.2%	9.7%	6.0%	84.3%	9.7%	6.0%	81.1%	13.0%	5.9%	0.0%	74.5%	17.8%	6.7%	1.0%
India	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Israel	*****	0.0%	0.0%	*****	0.0%	0.0%	98.2%	1.8%	0.0%	0.0%	91.3%	5.3%	3.4%	0.0%
Italy	*****	0.0%	0.0%	99.7%	0.3%	0.0%	81.8%	12.8%	5.3%	0.0%	78.6%	12.8%	8.6%	0.0%
Jamaica	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Japan	*****	0.0%	0.0%	*****	0.0%	0.0%	91.6%	4.4%	4.0%	0.0%	81.9%	11.5%	6.6%	0.0%
Korea, Rep. of	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	99.5%	0.5%	0.0%	0.0%
Mexico	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Netherlands	*****	0.0%	0.0%	*****	0.0%	0.0%	93.4%	6.6%	0.0%	0.0%	86.3%	11.2%	2.4%	0.0%
Nigeria	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Pakistan	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Peru	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Philippines	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Poland	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Russia	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Saudi Arabia	97.8%	2.2%	0.0%	80.2%	19.8%	0.0%	79.1%	20.9%	0.0%	0.0%	77.3%	27.0%	0.0%	0.0%
South Africa	*****	0.0%	0.0%	*****	0.0%	0.0%	*****	0.0%	0.0%	0.0%	*****	0.0%	0.0%	0.0%
Spain	*****	0.0%	0.0%	*****	0.0%	0.0%	96.5%	3.5%	0.0%	0.0%	90.5%	7.6%	1.9%	0.0%
Switzerland	*****	0.0%	0.0%	*****	0.0%	0.0%	96.6%	3.4%	0.0%	0.0%	87.2%	9.3%	3.5%	0.0%
Taiwan	*****	0.0%	0.0%	96.6%	3.4%	0.0%	85.9%	9.1%	5.0%	0.0%	82.4%	10.1%	7.5%	0.0%
Thailand	*****	0.0%	0.0%	*****	0.0%	0.0%	95.8%	4.2%	0.0%	0.0%	86.6%	9.0%	4.4%	0.0%
United Kingdom	96.8%	2.7%	0.5%	85.8%	11.1%	3.1%	83.5%	10.3%	5.8%	0.4%	81.2%	10.2%	7.2%	1.4%

Note: n.a. - not available. Figures may not add to 100% due to rounding.

_1/ West Germany through 1990.

Table 19. Carrier Shares of International Telephone Service Revenues
for Selected Countries
(continued)

Country	Based on Billed Revenues for Continental U.S. Traffic											
	1989				1990				1991			
	AT&T	MCI	Sprint	Others	AT&T	MCI	Sprint	Others	AT&T	MCI	Sprint	Others
Australia	76.1%	14.0%	8.2%	1.7%	70.6%	18.9%	9.6%	0.9%	70.2%	19.9%	9.1%	0.7%
Brazil	79.2%	14.6%	5.5%	0.6%	77.6%	16.6%	5.5%	0.2%	77.1%	17.2%	5.6%	0.1%
Canada	NA	NA	NA	NA	NA	NA	NA	NA	67.8%	19.9%	11.8%	0.4%
China	92.7%	1.3%	6.0%	0.0%	89.1%	2.9%	8.0%	0.0%	86.7%	9.6%	3.7%	0.0%
Colombia	85.9%	9.2%	3.2%	1.6%	80.9%	13.2%	5.4%	0.6%	79.7%	13.7%	5.8%	0.7%
Dominican Rep.	89.9%	7.6%	2.5%	0.0%	84.3%	11.4%	4.2%	0.0%	82.9%	11.4%	5.7%	0.0%
Egypt	83.0%	15.4%	0.0%	1.6%	76.4%	17.4%	5.3%	0.9%	74.3%	20.0%	5.0%	0.7%
El Salvador	99.9%	0.0%	0.0%	0.1%	92.7%	6.4%	0.7%	0.2%	86.0%	8.3%	5.7%	0.0%
France	76.2%	14.7%	6.6%	2.4%	72.0%	17.6%	7.8%	2.6%	70.6%	19.0%	8.6%	1.8%
Germany 1/	84.6%	9.8%	5.6%	0.0%	81.3%	12.5%	6.2%	0.0%	80.8%	13.2%	5.9%	0.0%
Greece	81.4%	13.0%	5.6%	0.0%	76.5%	18.3%	5.1%	0.1%	76.0%	19.5%	4.6%	0.0%
Guatemala	92.9%	4.4%	2.1%	0.6%	85.7%	9.8%	3.9%	0.6%	83.7%	10.6%	5.2%	0.5%
Hong Kong	73.8%	17.1%	8.1%	1.0%	68.0%	22.5%	8.6%	0.8%	66.1%	25.4%	7.9%	0.7%
India	83.0%	11.5%	4.1%	1.4%	83.3%	14.9%	1.4%	0.4%	76.9%	19.7%	3.2%	0.1%
Israel	80.6%	13.4%	6.0%	0.0%	76.4%	15.7%	8.0%	0.0%	76.7%	16.3%	7.0%	0.0%
Italy	83.2%	11.5%	5.3%	0.0%	79.2%	14.6%	6.3%	0.0%	78.1%	16.2%	5.7%	0.0%
Jamaica	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	93.5%	6.5%	0.0%	0.0%
Japan	78.5%	12.4%	9.1%	0.0%	73.0%	17.4%	9.6%	0.1%	71.5%	19.9%	8.4%	0.3%
Korea, Rep. of	88.0%	8.1%	3.9%	0.1%	81.7%	16.1%	2.1%	0.1%	74.0%	20.9%	4.8%	0.2%
Mexico	NA	NA	NA	NA	NA	NA	NA	NA	78.5%	12.7%	8.7%	0.1%
Netherlands	72.7%	18.8%	8.4%	0.1%	74.1%	18.5%	7.3%	0.1%	72.1%	19.9%	7.9%	0.1%
Nigeria	100.0%	0.0%	0.0%	0.0%	97.0%	0.3%	0.0%	0.0%	74.9%	24.8%	0.3%	0.0%
Pakistan	84.2%	10.0%	5.8%	0.0%	83.8%	11.9%	4.2%	0.1%	81.2%	15.7%	3.0%	0.2%
Peru	87.6%	8.8%	2.4%	1.2%	79.5%	15.0%	4.5%	1.0%	77.5%	16.9%	4.8%	0.8%
Philippines	100.0%	0.0%	0.0%	0.0%	98.2%	0.7%	0.0%	1.1%	84.3%	10.8%	5.0%	0.0%
Poland	96.7%	3.3%	0.0%	0.0%	94.7%	5.2%	0.0%	0.1%	90.4%	7.4%	2.2%	0.0%
Russia	100.0%	0.0%	0.0%	0.0%	96.1%	3.3%	0.0%	0.6%	91.1%	8.9%	0.0%	0.0%
Saudi Arabia	82.0%	18.0%	0.0%	0.0%	82.5%	17.5%	0.0%	0.0%	72.9%	14.2%	0.1%	12.9%
South Africa	83.0%	17.0%	0.0%	0.0%	79.9%	19.9%	0.0%	0.2%	74.7%	21.4%	3.9%	0.0%
Spain	82.9%	11.9%	5.2%	0.0%	77.8%	16.0%	6.2%	0.0%	75.8%	18.1%	6.1%	0.0%
Switzerland	76.4%	14.3%	9.3%	0.0%	74.3%	17.9%	7.6%	0.2%	71.3%	19.0%	8.0%	1.6%
Taiwan	72.7%	17.0%	9.3%	0.9%	62.4%	27.9%	9.5%	0.2%	57.8%	35.1%	6.9%	0.2%
Thailand	78.4%	13.8%	7.8%	0.0%	68.2%	24.0%	7.3%	0.5%	62.6%	31.7%	5.8%	0.0%
United Kingdom	76.5%	14.8%	7.2%	1.5%	73.2%	17.0%	9.0%	0.8%	70.3%	19.8%	9.1%	0.7%

Country	Based on Settlement Receipts for Foreign Traffic to the Continental U.S.											
	1989				1990				1991			
	AT&T	MCI	Sprint	Others	AT&T	MCI	Sprint	Others	AT&T	MCI	Sprint	Others
Australia	71.6%	16.2%	11.6%	0.7%	69.5%	18.6%	10.6%	1.3%	68.3%	19.5%	10.6%	1.6%
Brazil	82.5%	16.7%	0.8%	0.0%	73.4%	18.7%	7.8%	0.0%	73.6%	21.3%	5.1%	0.0%
Canada	NA	NA	NA	NA	NA	NA	NA	NA	74.4%	15.6%	10.0%	0.0%
China	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	98.5%	0.8%	0.6%	0.1%
Colombia	85.1%	11.7%	1.4%	1.8%	84.1%	9.5%	5.7%	0.7%	69.2%	21.6%	8.3%	0.9%
Dominican Rep.	86.1%	11.7%	2.2%	0.0%	81.6%	14.4%	4.0%	0.0%	78.3%	16.1%	5.6%	0.0%
Egypt	77.9%	21.2%	0.0%	0.9%	68.5%	23.7%	0.0%	7.8%	63.1%	32.6%	0.0%	4.4%
El Salvador	100.0%	0.0%	0.0%	0.0%	79.9%	18.7%	1.4%	0.0%	83.3%	8.0%	8.6%	0.0%
France	68.1%	15.6%	10.5%	5.8%	64.4%	21.3%	8.1%	6.2%	67.2%	19.9%	9.2%	3.7%
Germany 1/	79.9%	14.3%	5.8%	0.0%	67.3%	20.3%	12.4%	0.0%	57.4%	32.7%	9.9%	0.0%
Greece	78.2%	17.2%	4.6%	0.0%	78.0%	16.0%	5.9%	0.1%	76.8%	14.7%	8.5%	0.0%
Guatemala	88.8%	6.2%	4.9%	0.0%	82.5%	14.5%	2.3%	0.7%	72.0%	18.9%	6.6%	2.5%
Hong Kong	69.1%	19.7%	9.8%	1.4%	67.0%	21.5%	10.2%	1.4%	63.0%	26.3%	9.3%	1.4%
India	94.9%	5.1%	0.0%	0.0%	90.3%	9.6%	0.0%	0.1%	87.6%	11.6%	0.8%	0.0%
Israel	86.8%	9.8%	3.4%	0.0%	75.5%	17.2%	7.3%	0.0%	78.1%	14.5%	7.4%	0.0%
Italy	72.0%	17.5%	10.4%	0.0%	65.0%	17.8%	17.2%	0.0%	68.3%	19.0%	12.7%	0.0%
Jamaica	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	98.5%	1.5%	0.0%	0.0%
Japan	77.2%	13.8%	9.0%	0.0%	76.4%	10.6%	13.0%	0.0%	68.8%	18.8%	12.4%	0.0%
Korea, Rep. of	87.3%	10.4%	2.3%	0.0%	77.5%	14.8%	7.1%	0.7%	67.8%	23.4%	7.9%	0.9%
Mexico	NA	NA	NA	NA	NA	NA	NA	NA	81.9%	10.5%	7.6%	0.0%
Netherlands	80.4%	14.9%	4.7%	0.0%	76.9%	17.0%	6.1%	0.0%	64.3%	24.0%	11.7%	0.0%
Nigeria	100.0%	0.0%	0.0%	0.0%	96.2%	3.8%	0.0%	0.0%	58.2%	41.8%	0.0%	0.0%
Pakistan	99.4%	0.6%	0.0%	0.0%	96.1%	3.9%	0.0%	0.0%	83.2%	16.8%	0.0%	0.0%
Peru	82.3%	14.3%	0.0%	3.4%	72.4%	23.9%	0.0%	3.7%	79.2%	16.1%	3.3%	1.4%
Philippines	100.0%	0.0%	0.0%	0.0%	86.1%	0.0%	1.0%	12.9%	95.3%	1.8%	2.9%	0.0%
Poland	100.0%	0.0%	0.0%	0.0%	99.9%	0.0%	0.0%	0.1%	92.8%	4.2%	2.9%	0.0%
Russia	100.0%	0.0%	0.0%	0.0%	99.9%	0.0%	0.0%	0.1%	100.0%	0.0%	0.0%	0.0%
Saudi Arabia	85.0%	15.0%	0.0%	0.0%	73.5%	26.5%	0.0%	0.0%	30.9%	69.1%	0.0%	0.0%
South Africa	100.0%	0.0%	0.0%	0.0%	99.8%	0.0%	0.0%	0.2%	93.3%	6.7%	0.0%	0.0%
Spain	91.4%	6.8%	1.8%	0.0%	85.8%	11.4%	2.8%	0.0%	77.3%	17.8%	4.9%	0.0%
Switzerland	73.8%	18.4%	7.8%	0.0%	71.7%	22.4%	6.0%	0.0%	67.6%	20.5%	9.8%	2.1%
Taiwan	75.5%	14.1%	10.4%	0.0%	69.2%	19.5%	11.3%	0.0%	60.1%	30.2%	9.7%	0.0%
Thailand	78.2%	11.9%	9.9%	0.0%	81.4%	7.8%	8.7%	2.1%	68.5%	22.8%	8.7%	0.0%
United Kingdom	73.2%	15.8%	8.2%	2.7%	65.5%	20.4%	11.6%	2.4%	66.5%	21.3%	11.3%	0.9%

Note: n.a. - not available. Figures may not add to 100% due to rounding.
1/ West Germany through 1990.

Table 19. Carrier Shares of International Telephone Service Revenues
for Selected Countries
(continued)

Country	Based on Billed Revenues for Continental U.S. Traffic															
	1992				1993				1994				1995			
	AT&T	MCI/WUI	Sprint	Others	AT&T	MCI/WUI	Sprint	Others	AT&T	MCI/WUI	Sprint	Others	AT&T	MCI/WUI	Sprint	Others
Australia	67.2%	21.6%	10.2%	1.0%	64.6%	21.8%	12.2%	1.3%	64.2%	20.7%	13.4%	1.7%	55.4%	21.2%	14.1%	9.3%
Brazil	71.9%	20.8%	6.3%	1.0%	65.2%	25.8%	8.8%	0.1%	65.3%	22.6%	10.0%	2.1%	61.6%	24.6%	8.0%	5.9%
Canada	60.3%	22.7%	16.5%	0.5%	57.8%	25.4%	15.8%	1.0%	60.0%	26.5%	11.5%	2.0%	60.3%	26.6%	10.0%	3.1%
China	61.6%	30.3%	8.1%	0.0%	48.3%	38.5%	13.2%	0.0%	49.9%	34.2%	15.9%	0.0%	49.3%	37.0%	10.9%	2.8%
Colombia	78.8%	15.0%	4.8%	1.4%	70.1%	21.1%	7.1%	1.7%	67.7%	22.0%	7.8%	2.5%	56.5%	34.1%	6.2%	3.2%
Dominican Rep.	80.3%	13.1%	4.6%	2.0%	69.9%	20.3%	7.2%	2.6%	80.3%	13.1%	4.6%	2.0%	51.8%	36.6%	4.8%	6.8%
Egypt	76.8%	19.4%	3.3%	0.5%	69.7%	23.3%	6.4%	0.7%	65.4%	25.4%	8.0%	1.2%	61.7%	27.1%	8.6%	2.6%
El Salvador	82.6%	10.5%	6.6%	0.2%	78.9%	15.4%	5.6%	0.0%	76.2%	16.7%	7.1%	0.0%	69.6%	24.1%	6.3%	0.0%
France	68.4%	21.1%	8.8%	1.7%	65.4%	22.6%	10.0%	2.0%	61.2%	21.7%	11.7%	5.4%	58.0%	27.6%	10.7%	3.7%
Germany _1/	76.6%	16.5%	6.6%	0.3%	72.4%	19.2%	8.5%	0.0%	70.8%	19.2%	9.9%	0.1%	65.2%	23.1%	10.0%	1.7%
Greece	73.0%	22.3%	4.8%	0.0%	66.8%	27.9%	5.4%	0.0%	68.1%	24.9%	7.0%	0.0%	67.1%	25.6%	6.6%	0.8%
Guatemala	82.3%	11.3%	6.0%	0.3%	76.7%	17.0%	5.7%	0.5%	72.8%	18.4%	7.8%	1.0%	67.5%	23.6%	7.2%	1.8%
Hong Kong	60.7%	30.4%	8.0%	0.9%	53.2%	33.8%	11.2%	1.8%	52.0%	34.1%	11.9%	2.0%	40.4%	36.7%	19.5%	3.3%
India	66.2%	26.9%	6.5%	0.4%	51.9%	38.4%	9.0%	0.8%	54.1%	33.9%	11.0%	1.0%	47.3%	44.8%	6.8%	1.2%
Israel	70.9%	19.9%	9.3%	0.0%	57.4%	27.0%	15.0%	0.6%	57.7%	25.7%	14.3%	2.3%	55.1%	29.6%	12.6%	2.7%
Italy	74.5%	19.3%	6.2%	0.0%	71.0%	22.0%	6.9%	0.0%	70.6%	21.2%	8.1%	0.1%	67.1%	20.1%	9.9%	2.9%
Jamaica	86.4%	11.2%	2.4%	0.0%	80.9%	13.6%	5.5%	0.0%	78.6%	16.1%	5.4%	0.0%	69.3%	24.7%	6.0%	0.0%
Japan	67.5%	23.2%	8.6%	0.8%	61.0%	26.9%	10.9%	1.3%	62.8%	23.1%	12.6%	1.4%	54.6%	31.8%	10.0%	3.6%
Korea, Rep. of	66.3%	28.0%	5.4%	0.3%	56.0%	34.5%	8.9%	0.7%	58.8%	29.6%	10.7%	0.9%	56.8%	30.2%	10.4%	2.5%
Mexico	74.2%	17.0%	8.6%	0.1%	70.8%	20.3%	8.8%	0.2%	69.0%	21.4%	8.3%	1.3%	67.2%	22.5%	8.0%	2.5%
Netherlands	68.5%	21.9%	8.9%	0.6%	67.5%	22.9%	9.5%	0.0%	62.5%	21.7%	13.3%	2.6%	57.0%	22.1%	13.1%	7.9%
Nigeria	61.9%	27.6%	10.5%	0.0%	56.9%	32.6%	10.5%	0.0%	59.1%	28.6%	12.3%	0.0%	51.1%	38.4%	10.5%	0.0%
Pakistan	79.4%	16.7%	3.6%	0.3%	66.8%	28.6%	4.6%	0.0%	67.1%	25.2%	7.6%	0.1%	60.4%	32.8%	6.7%	0.0%
Peru	78.8%	16.3%	4.0%	0.8%	69.6%	24.4%	5.1%	0.9%	66.9%	25.0%	6.3%	1.8%	63.7%	28.5%	5.5%	2.4%
Philippines	76.5%	18.6%	4.9%	0.0%	64.8%	29.7%	5.6%	0.0%	65.2%	27.1%	7.5%	0.2%	62.8%	29.2%	7.2%	0.8%
Poland	78.8%	14.8%	6.4%	0.0%	73.6%	17.8%	8.5%	0.0%	71.4%	16.8%	11.8%	0.0%	68.8%	20.3%	10.9%	0.0%
Russia	84.5%	9.1%	0.2%	6.2%	60.5%	20.0%	6.5%	13.0%	59.8%	22.8%	12.4%	5.0%	57.8%	28.1%	11.1%	3.0%
Saudi Arabia	68.9%	24.3%	6.7%	0.0%	63.9%	28.9%	7.2%	0.0%	61.6%	29.8%	8.6%	0.0%	59.0%	31.2%	9.5%	0.3%
South Africa	69.9%	22.0%	8.1%	0.0%	56.3%	33.0%	10.6%	0.0%	52.2%	27.8%	20.0%	0.0%	45.2%	39.5%	15.3%	0.1%
Spain	72.0%	20.5%	7.4%	0.0%	63.7%	28.6%	7.6%	0.0%	66.5%	22.1%	9.7%	1.8%	63.9%	20.6%	10.7%	4.8%
Switzerland	67.4%	21.5%	8.8%	2.2%	65.2%	21.0%	10.9%	2.9%	63.3%	21.9%	11.5%	3.2%	59.3%	23.4%	13.1%	4.2%
Taiwan	52.6%	40.6%	6.5%	0.3%	39.9%	46.6%	13.2%	0.3%	43.3%	40.3%	15.6%	0.8%	41.5%	45.0%	11.4%	2.1%
Thailand	55.9%	38.6%	5.5%	0.0%	45.1%	48.9%	6.0%	0.0%	47.4%	43.1%	9.6%	0.0%	43.0%	47.1%	9.4%	0.5%
United Kingdom	68.7%	20.8%	9.5%	1.0%	66.3%	21.7%	10.9%	1.2%	66.3%	22.3%	10.2%	1.2%	63.2%	23.8%	9.6%	3.4%

Country	Based on Settlement Receipts for Foreign Traffic to the Continental U.S.															
	1992				1993				1994				1995			
	AT&T	MCI/WUI	Sprint	Others	AT&T	MCI/WUI	Sprint	Others	AT&T	MCI/WU	Sprint	Others	AT&T	MCI/WU	Sprint	Others
Australia	65.5%	21.2%	11.6%	1.7%	62.7%	24.4%	11.4%	1.6%	59.0%	23.9%	11.6%	5.5%	52.5%	23.1%	14.9%	9.5%
Brazil	71.9%	20.8%	6.3%	1.0%	77.0%	17.6%	5.4%	0.0%	66.7%	24.8%	7.7%	0.8%	62.6%	22.1%	9.3%	6.1%
Canada	76.8%	17.0%	6.2%	0.0%	68.9%	18.6%	9.6%	2.9%	59.6%	24.3%	9.6%	6.5%	62.3%	25.8%	9.0%	2.9%
China	71.4%	22.4%	6.2%	0.0%	60.1%	32.3%	7.6%	0.0%	56.0%	33.2%	10.8%	0.0%	49.1%	36.8%	12.2%	1.8%
Colombia	81.5%	10.6%	5.1%	2.8%	70.3%	21.6%	6.6%	1.5%	65.3%	25.2%	7.7%	1.8%	57.5%	30.2%	6.1%	6.2%
Dominican Rep.	77.5%	12.7%	5.9%	3.9%	80.6%	11.1%	4.2%	4.0%	69.2%	22.9%	6.0%	1.9%	67.5%	23.7%	5.6%	3.2%
Egypt	61.0%	34.3%	0.3%	4.3%	74.7%	20.6%	3.9%	0.8%	62.9%	29.6%	6.2%	1.3%	49.3%	31.6%	13.1%	6.0%
El Salvador	89.9%	5.5%	4.6%	0.0%	90.0%	5.4%	4.6%	0.0%	87.8%	7.2%	5.0%	0.0%	75.1%	17.2%	7.8%	0.0%
France	66.2%	22.1%	8.5%	3.2%	63.4%	20.6%	12.4%	3.7%	55.5%	26.6%	12.7%	5.2%	51.9%	25.8%	13.5%	8.7%
Germany _1/	54.0%	31.1%	14.9%	0.0%	66.9%	22.0%	11.1%	0.0%	65.6%	24.5%	9.9%	0.0%	56.4%	28.5%	13.1%	2.0%
Greece	76.9%	19.3%	3.8%	0.0%	60.4%	34.2%	5.4%	0.0%	49.3%	49.0%	1.7%	0.0%	61.7%	26.9%	11.4%	0.0%
Guatemala	70.6%	18.9%	9.2%	1.3%	64.8%	24.2%	9.3%	1.6%	51.7%	33.3%	11.3%	3.6%	37.9%	37.9%	12.5%	11.7%
Hong Kong	60.8%	29.3%	8.7%	1.2%	51.8%	36.2%	9.7%	2.2%	44.4%	38.8%	12.5%	4.3%	38.8%	37.0%	15.9%	8.2%
India	63.7%	29.3%	7.0%	0.0%	54.4%	39.0%	6.6%	0.0%	52.7%	36.6%	10.3%	0.4%	45.5%	46.5%	6.6%	1.4%
Israel	71.0%	19.6%	9.3%	0.0%	55.8%	29.5%	14.4%	0.3%	59.0%	24.5%	16.5%	0.0%	53.5%	25.2%	14.9%	6.4%
Italy	72.4%	23.9%	3.7%	0.0%	64.2%	22.8%	13.0%	0.0%	69.8%	21.8%	8.4%	0.0%	62.0%	22.5%	12.6%	2.8%
Jamaica	92.5%	7.5%	0.0%	0.0%	78.6%	17.7%	3.7%	0.0%	70.4%	21.2%	8.4%	0.0%	73.9%	18.9%	7.2%	0.0%
Japan	67.7%	23.4%	8.8%	0.1%	64.7%	23.9%	10.3%	1.1%	59.4%	26.1%	12.0%	2.5%	54.1%	28.3%	12.1%	5.5%
Korea, Rep. of	72.4%	22.1%	5.2%	0.3%	61.6%	30.3%	7.6%	0.4%	57.4%	31.2%	10.1%	1.3%	56.0%	30.8%	10.0%	3.2%
Mexico	74.7%	13.8%	11.5%	0.0%	71.7%	18.1%	10.1%	0.0%	70.9%	19.6%	8.5%	1.1%	62.7%	26.3%	7.7%	3.4%
Netherlands	60.3%	29.3%	10.4%	0.0%	68.1%	22.8%	9.0%	0.0%	63.7%	23.1%	11.2%	2.1%	58.8%	25.8%	15.3%	0.1%
Nigeria	67.4%	25.0%	7.5%	0.0%	65.7%	26.0%	8.3%	0.0%	51.3%	36.4%	12.3%	0.0%	55.4%	36.8%	7.8%	0.0%
Pakistan	69.4%	30.6%	0.0%	0.0%	69.9%	25.6%	4.6%	0.0%	70.0%	22.6%	7.4%	0.0%	64.1%	27.1%	8.8%	0.0%
Peru	69.4%	20.1%	7.6%	3.0%	69.0%	19.0%	8.8%	3.1%	63.1%	23.8%	8.9%	4.2%	58.8%	28.3%	8.0%	4.9%
Philippines	77.1%	17.7%	4.6%	0.5%	59.4%	35.5%	4.7%	0.5%	56.3%	36.2%	6.6%	0.9%	60.7%	30.4%	8.1%	0.8%
Poland	62.2%	37.8%	0.0%	0.0%	78.0%	15.1%	6.9%	0.0%	60.3%	32.9%	6.7%	0.1%	58.6%	30.3%	11.1%	0.0%
Russia	99.2%	0.0%	0.0%	0.8%	79.4%	13.5%	5.2%	1.8%	45.0%	43.4%	9.3%	2.3%	53.0%	27.5%	15.2%	4.4%
Saudi Arabia	68.7%	25.2%	6.0%	0.0%	72.0%	20.8%	7.2%	0.0%	60.3%	32.7%	7.0%	0.0%	56.7%	37.0%	6.3%	0.0%
South Africa	68.2%	22.8%	9.0%	0.0%	62.0%	28.1%	9.9%	0.0%	54.7%	33.8%	11.5%	0.0%	43.9%	38.3%	17.8%	0.0%
Spain	65.7%	23.8%	10.6%	0.0%	65.3%	25.1%	9.6%	0.0%	59.8%	29.8%	8.0%	2.4%	55.6%	30.1%	11.1%	3.2%
Switzerland	59.6%	24.9%	10.0%	5.6%	65.7%	24.1%	10.3%	0.0%	92.3%	7.7%	0.0%	0.0%	46.3%	29.6%	14.2%	9.9%
Taiwan	54.2%	37.6%	8.2%	0.0%	45.3%	46.0%	8.7%	0.0%	40.6%	43.6%	15.8%	0.0%	41.5%	40.9%	13.9%	3.6%
Thailand	55.4%	38.4%	6.2%	0.0%	43.2%	51.3%	5.5%	0.0%	44.7%	48.1%	7.1%	0.1%	42.3%	47.9%	9.8%	0.0%
United Kingdom	65.0%	21.7%	11.2%	2.1%	61.8%	24.8%	11.4%	2.0%	56.5%	29.0%	11.2%	3.3%	49.4%	26.5%	12.0%	12.0%

1/ West Germany through 1990.

Despite the FCC's proportionate return policy, there are several reasons why carriers may have different shares of U.S. billed versus foreign billed traffic. Foreign carriers may only apportion traffic to a U.S. carrier after that carrier reaches a threshold size. Foreign carriers may treat some types of traffic, such as USA Direct and Call USA calls, differently than other classes of telephone service. In addition, foreign carriers apportion current period traffic based on prior period calling volumes. Thus, foreign minute market shares will tend to lag U.S. billed market shares if traffic patterns are changing rapidly. Tables 16 and 17 include both facilities-based and facilities-resale traffic, but the proportionate return policy applies to facilities-based traffic only. Finally, the market shares for U.S. traffic are derived from charges to customers, while the market shares for foreign traffic are based on settlements, which are based on accounting rates. Thus, a carrier could have similar shares of minutes, but different revenue shares for U.S. traffic and for foreign traffic. Nonetheless, carriers tend to have similar shares of U.S. and foreign traffic.

The data in Table 19 show that market entry occurred in different geographic markets in different years. Typically, AT&T lost 15% to 20% of the international telephone service market share two or three years after new carriers began providing service to a country. MCI has the second largest share in most markets while Sprint typically has the third largest share.

III. Accounting Rates and Settlement Payments

U.S. and foreign carriers jointly provide international services. The foreign carriers are often communications agencies of foreign governments -- generally referred to as post, telephone and telegraph administrations or PTTs. Privatization in many countries is occurring, however, and in some cases the U.S. carrier may be dealing with its own foreign affiliates. Service generally is provided in accordance with service operating agreements that provide for the negotiation of accounting rates, accounting rate shares, and surcharges for switched services. The accounting rate share, often referred to as the settlement rate, provides the basis for determining payments of U.S. and foreign carriers. U.S. carriers owe settlement payments for the services that they bill, and are owed payments for the services that the foreign carriers bill. In addition, U.S. carriers are owed payments for switched traffic that transits U.S. points. Because U.S. carriers bill for more traffic than foreign carriers, and because they terminate more collect calls which generate surcharges for the originating carrier, U.S. carriers make net settlement payments to most foreign carriers. The total net payment for all U.S. carriers grew from \$0.4 billion in 1980 to \$4.9 billion in 1995. Total U.S. carrier revenue, net of settlement payments, grew from \$2.2 billion to \$9.7 billion over the same period. This section reviews trends in accounting rates and settlement payments.

U.S. carriers and foreign carriers conduct bilateral negotiations to reach operating agreements, which include accounting rates, accounting shares, and other factors that affect settlement amounts. An accounting rate is intended to reimburse each carrier for the cost it incurs to provide a unit of joint service on a specific route. For telephone service, the accounting rates are based on a minute of service and may include surcharges for certain types of traffic, such as collect calls. Accounting rate agreements state that the two carriers will share the accounting rate on a 50/50 basis. In practice, this means that the carrier that bills the call will owe to the other carrier an amount equal to half the accounting rate times the number of minutes.

The accounting rate agreements between U.S. carriers and foreign carriers specify the accounting rates and also the currency units in which payments are made. Many accounting rates are defined in monetary units other than U.S. dollars, such as "special drawing rights" (SDRs) and gold francs (GF). In such cases, changes in the value of the dollar can affect the net settlement amounts. Accounting rates may vary by time of day, by service classification, by the volume of minutes, or even by the locations in which the calls originate and terminate. The accounting rate for a country, however, is the same regardless of whether the call originates in the United States or in the foreign point.

Accounting rates that exceed cost distort pricing and can result in significant balance of payment outflows. The Commission oversees accounting agreements both to move accounting rates to cost and to protect U.S. carriers from "whipsawing" -- where a foreign monopoly carrier plays competing U.S. carriers against one another in order to gain unwarranted concessions. For example, the Commission recently concluded that Telintar in Argentina blocked AT&T's circuits to Argentina, imposed discriminatory accounting rates and refused WorldCom adequate

facilities to terminate its traffic. *Order*, #ISP-96-W-062, released March 18, 1996. The Commission ordered all U.S. carriers with correspondent agreements with Telintar for direct termination of U.S. traffic to suspend all settlement payments to Telintar for switched voice service until Telintar corrected its practices. The Commission allowed settlement payments to resume on March 27, 1996.

Figure 20: Gross Settlement Amounts - Settlement Payments and Settlement Receipts

Figure 20 shows annual amounts owed by U.S. carriers to foreign carriers, commonly called settlement payments. The figure also shows annual amounts due to U.S. carriers from foreign carriers, commonly called settlement receipts. The graph shows totals for all switched services. Total receipts and payments increased dramatically from 1980 to 1995 due to growth in telephone service. In 1980, telegraph and telex service accounted for almost 20% of total payments and receipts. Since then, the contribution of telegraph and telex services has declined. Telephone service now accounts for virtually all payments and receipts.

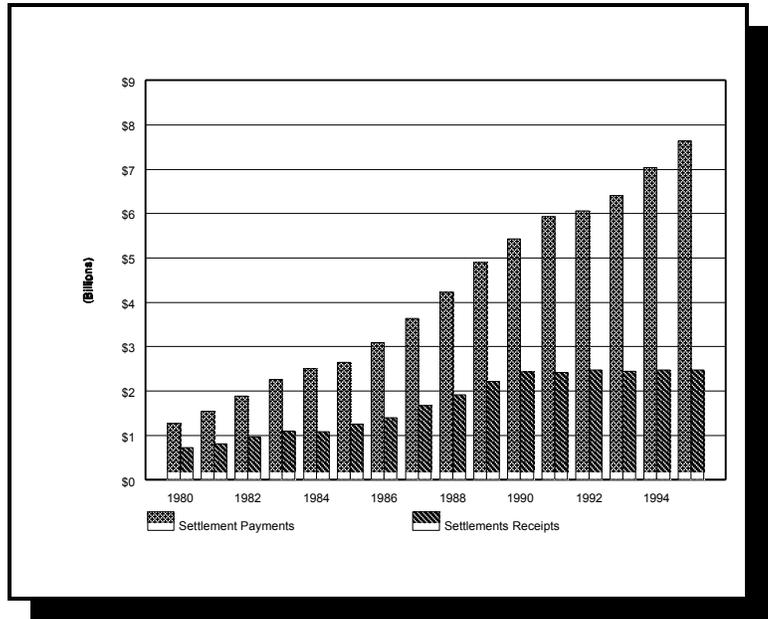


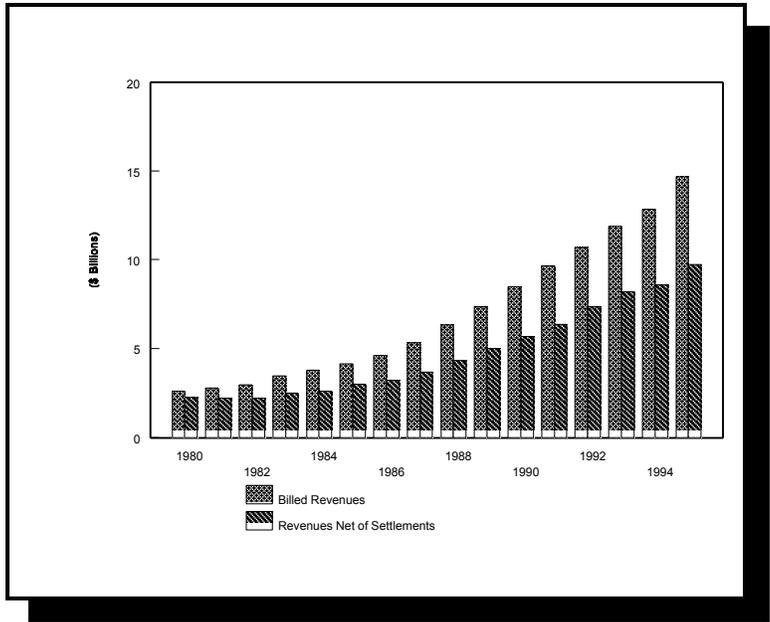
Figure 20 shows that the settlement amounts owed by U.S. carriers greatly exceed the amounts due from foreign carriers. The difference is termed the net settlement payment. U.S. carriers make net settlement payments because U.S. carriers bill more minutes than do foreign carriers. As shown in Section I, U.S. traffic has grown faster than foreign traffic in recent years. In addition to other factors, the difference between U.S. and foreign calling reflects relative incomes, emigration patterns, and the fact that U.S. rates are generally lower than foreign rates. The model presented at the end of Section II demonstrates that much of the growth in U.S. billed minutes has been stimulated by the decreases in the inflation-adjusted cost of international service in the United States.

U.S. carriers now offer services, such as country-direct and call-back arrangements, that allow customers in foreign points to place calls that take advantage of relatively low U.S. service rates. Some U.S. carriers now offer "reorigination" services that allow a new foreign carrier to complete its customer's calls to countries with which it does not have an accounting rate agreement. These new services tend to increase the amount of U.S. billed traffic relative to the amount of foreign billed traffic. The resulting increase in U.S. net settlement out-

payments does not cause balance of payments concerns. For some of these calls, U.S carriers receive payments from either foreign customers or foreign carriers and these payments exceed the settlement payouts. For the remaining calls, the settlement payouts are offset by the fact that U.S. customers are no longer paying foreign carriers for the service. These new arrangements encourage foreign carriers to lower their international rates.

Figure 21: U.S. Carrier Billed Revenues Before and After Settlements

Figure 21 shows billed international service revenues before and after settlements. The gap between the two series represents the net settlement payout, which grew to almost \$5 billion by 1995.



The average settlement amount owed per minute declined significantly from \$.70 in 1989 to \$.48 in 1995. Currency rate fluctuations, accounting rate reductions, changing traffic patterns, and the growth in services such as USA Direct have all influenced the average settlement payment per minute. In 1995, the international settlement amount represented 54% of international telephone service billed revenue.

Figure 22: Billed Revenue per Minute Divided to Show U.S. Retained Revenue and Settlement Payments

Figure 22 shows billed revenue per minute divided into the portion that the U.S. carriers retain and the portion that they owe as settlements. The portion that U.S. carriers owe has been decreasing, reflecting declines in accounting rates. Billed revenue per minute dropped rapidly in the early 1980s as customers began to directly dial calls and as minimum call lengths declined. Average billed revenue per minute is also affected by changes in the distribution of traffic. Billed revenue per minute also reflects rate changes.

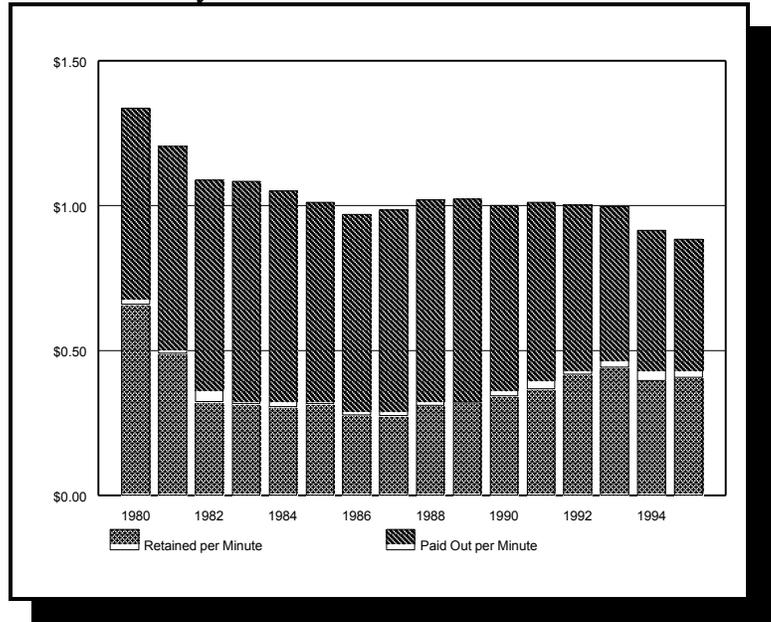


Figure 23: Billed Revenue per Minute Divided to Show U.S. Retained Revenue and Settlement Payments (excluding Canada and Mexico)

Figure 23 presents the same comparison as Figure 22, but for a longer period and excluding traffic with Canada and Mexico. Figure 23 suggests that U.S. carrier international toll rates declined more rapidly than did settlement rates in the early 1980s.

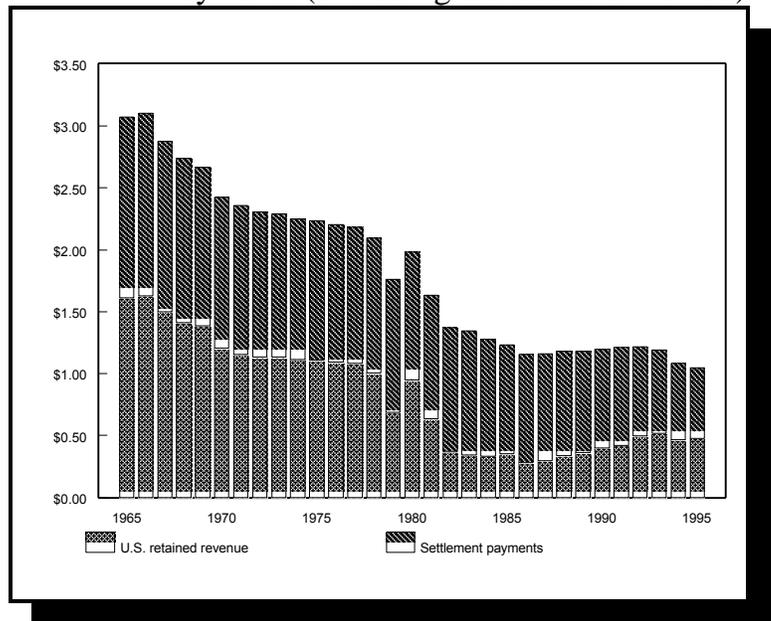


Figure 24: U.S. Retained Revenue per Minute from U.S. Billed and Foreign Billed Traffic

Figure 24 compares the retained revenue per U.S. billed minute with settlement receipts per foreign billed minute. Billed revenue per minute remained near \$1.00 per minute from 1985 through 1993 but dropped to \$.88 in 1995. The portion retained by U.S. carriers, however, increased from \$.32 per minute in 1985 to \$.41 in 1995. In addition to the \$.41 they retained per U.S. billed minute, U.S. carriers were owed about \$.35 for each minute of foreign billed traffic that they handled in 1995. Combining U.S. and foreign traffic, carriers netted an average of \$.39 for each minute of international telephone service that they handled in 1995.

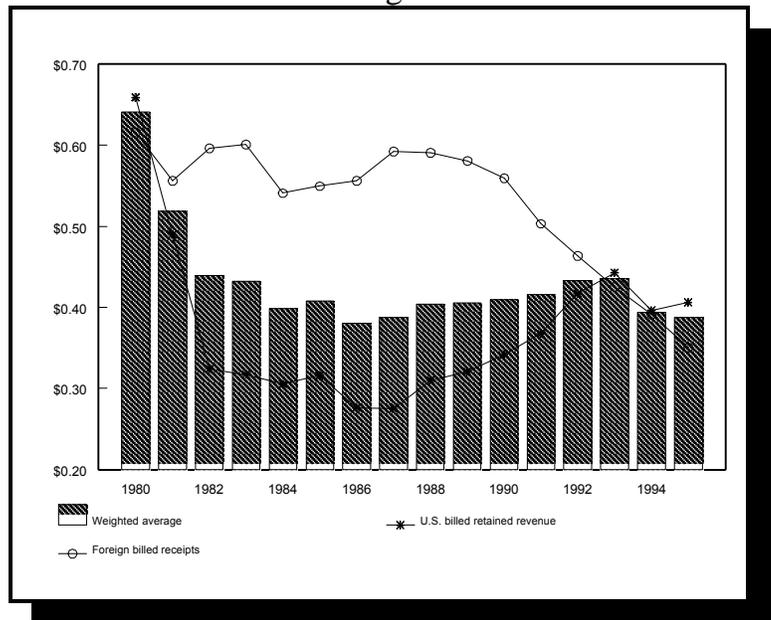
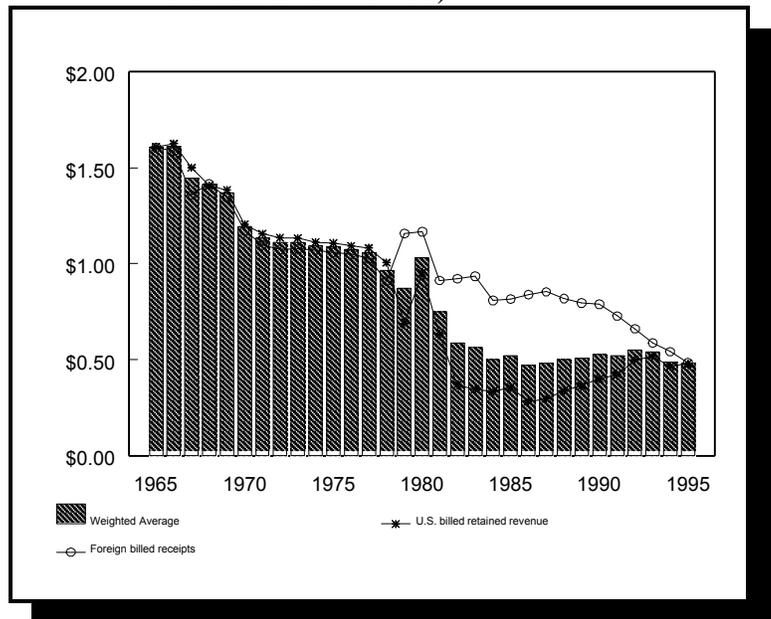


Figure 25: U.S. Retained Revenue per Minute from U.S Billed and Foreign Billed Traffic (excluding Canada and Mexico)

Figure 25 presents the same comparison as Figure 24, but for a longer period and excluding traffic with Canada and Mexico. Retained revenue per U.S. billed minute and settlement receipts per foreign billed minute were both around \$1.60 in 1965. From 1965 to 1978, U.S. carriers netted about the same amount of revenue per minute for both U.S. billed and foreign billed traffic. That changed significantly in the 1980s. By 1986, U.S. carriers netted more than three times as much for each minute of foreign billed traffic as they did for each minute of U.S. billed traffic.



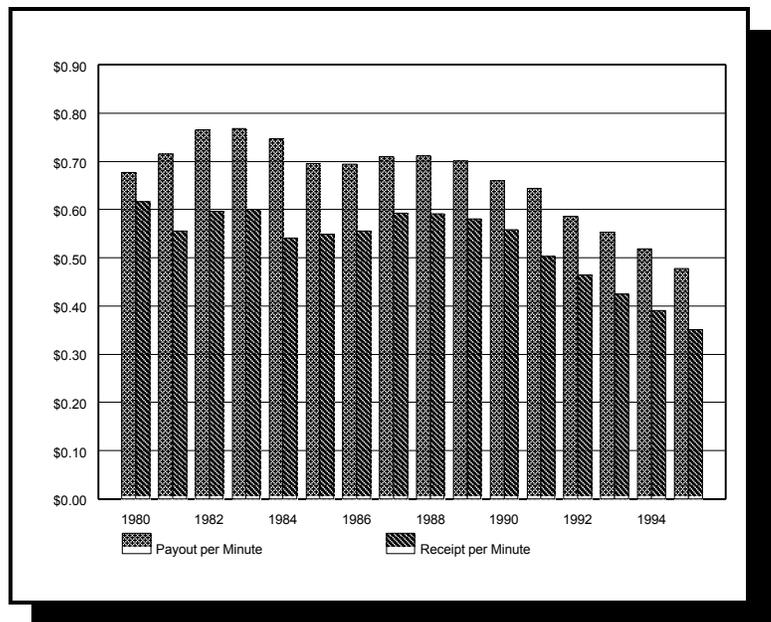
Again, this is a reflection of the fact that U.S. tariff rates declined faster than settlement rates through the mid-1980s. The trend, however, changed again in the late 1980s. Settlement

receipts per minute continued to decline while U.S. retained revenue per minute increased through 1993. In 1995, both measures again were the same, at about \$0.48.

U.S. carriers get less than a third as much revenue for each international minute (excluding Canada and Mexico) that they handle now as compared to three decades ago. Nonetheless, \$.48 per minute for 1995 is almost four times the charge for a direct dialed interstate minute. See *Telecommunications Industry Revenue: TRS Fund Worksheet Data*, December 1996, Figure 3. The average retained revenue per international minute had declined from \$1.61 in 1965 to \$.50 in 1984. Retained revenue per minute thus declined about 5% a year at a time when inflation averaged about 6% per year. Since that time, the overall rate of inflation has declined and access costs per minute have decreased dramatically. The cost of international circuits has also decreased significantly since 1985. Retained revenue per minute handled, however, declined from \$.50 to \$.48 (\$.41 to \$.39 if traffic with Canada and Mexico is included). Because of lower costs, carriers today realize much greater profits in providing international service than they did a decade earlier.

Figure 26: U.S. versus Foreign Settlement Amounts per Minute

Figure 26 compares the average settlement owed per minute of U.S. traffic with the average settlement due per minute of foreign traffic. Even though a single accounting rate applies regardless of where the call originates or is billed, the overall average settlement per minute is higher for U.S. billed traffic than for foreign billed traffic. There are several reasons for this difference. Accounting rates vary among countries, between services, and over time. Moreover, the distribution of traffic by country is different for service to the United



States compared with service from the United States. In some cases, accounting rates vary by time of day, by the overall volume of traffic, or even by the origin or destination within a country. Thus, differences in traffic patterns can result in differences in the average amounts owed per minute. For example, a U.S. carrier's average settlement owed per minute could be higher than a foreign carrier's if the U.S. carrier handles a larger share of collect calls, reflecting the fact that collect calls are subject to substantial surcharges.

Table 20. Net Settlement Payments for Telephone Service to Selected Countries 1/

(Amounts shown in millions of dollars)

Country	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Trend growth <u>2/</u>
Australia <u>3/</u>	\$0.3	\$0.2	(\$0.5)	\$0.0	\$0.6	(\$0.9)	(\$1.4)	(\$1.7)	(\$1.3)	\$0.2	(\$3.9)	(\$1.7)	\$1.8	\$2.8	\$0.7	\$0.9	(\$1.4)	(\$0.8)	(\$6.2)	(\$19.0)	\$8.7	n.a.
Brazil	1.2	0.3	1.2	2.6	(10.6)	1.9	2.4	7.2	16.4	19.3	21.4	30.9	25.4	36.7	43.6	51.4	50.1	70.8	90.7	104.2	102.6	20.0%
Canada	NA	NA	NA	2.0	(0.2)	(3.7)	(1.1)	19.0	31.4	22.4	8.1	1.3	(19.3)	(0.3)	4.7	36.2	112.8	120.6	130.3	136.6	125.3	3.4%
China	0.1	0.1	0.2	0.3	1.5	1.5	1.6	2.0	2.4	3.1	3.6	5.3	11.5	19.1	26.3	30.9	45.7	62.7	77.4	151.9	231.1	51.1%
Colombia	2.2	2.6	3.3	6.5	12.3	11.6	17.0	25.0	39.9	46.4	37.3	47.7	57.8	63.3	70.9	77.6	88.4	95.8	111.7	122.9	131.9	11.1%
Dominican Rep.	1.6	3.0	3.0	5.2	8.2	10.7	10.9	13.1	32.2	21.6	23.9	44.7	48.0	61.9	75.3	80.8	114.2	125.8	119.2	125.0	125.5	1.8%
Egypt	0.2	0.4	0.5	0.7	1.0	2.2	3.8	4.4	9.3	11.9	14.6	16.1	16.6	18.2	21.4	22.7	27.7	33.4	33.3	37.0	41.7	9.6%
El Salvador	0.5	0.3	1.2	2.6	3.3	5.9	7.1	10.9	12.6	16.7	17.7	22.2	26.7	33.0	42.6	52.8	60.3	64.0	65.0	69.6	77.1	5.9%
France	(5.2)	2.3	(3.5)	2.2	1.3	0.4	7.7	10.9	12.9	26.7	16.1	27.2	26.4	31.4	32.9	42.8	38.9	38.7	40.7	41.5	44.3	3.4%
Germany <u>4/</u>	10.2	15.9	18.6	36.3	44.5	26.5	62.7	79.2	76.1	95.2	55.4	87.7	126.1	153.1	167.2	222.5	257.5	187.6	129.5	79.4	64.2	-30.5%
Greece	(1.6)	(1.6)	(0.6)	(1.7)	(1.2)	(23.0)	3.7	7.2	12.1	13.4	15.6	22.3	26.5	28.4	30.2	35.8	43.3	39.6	38.6	36.0	34.0	-5.6%
Guatemala	1.0	1.8	1.8	2.2	2.4	2.1	3.4	5.1	6.8	8.0	9.9	12.5	19.1	22.9	32.3	40.2	47.8	47.5	52.1	56.7	58.7	6.1%
Hong Kong	1.4	1.6	2.0	3.1	4.2	6.2	4.9	7.8	9.2	12.3	11.4	19.6	17.8	14.0	14.1	15.7	19.5	24.8	33.9	56.7	106.2	52.5%
India	0.4	1.1	1.5	2.0	3.2	4.6	5.2	5.4	9.6	15.2	15.7	14.9	7.9	8.1	13.8	20.0	27.6	31.9	58.1	109.3	202.9	68.6%
Israel	2.5	2.8	3.0	7.3	6.8	4.0	11.5	18.2	24.1	35.1	39.9	43.9	44.4	47.4	57.5	67.9	93.2	93.3	104.9	128.4	119.0	8.4%
Italy	6.8	8.7	10.8	14.1	14.9	17.7	9.1	17.4	22.9	28.8	30.1	40.8	51.5	59.6	69.5	77.7	84.2	59.8	85.1	72.2	65.9	-3.0%
Jamaica	1.1	0.9	2.5	3.5	5.6	6.8	1.2	2.9	12.5	17.4	16.0	13.9	24.9	30.3	32.6	47.5	56.2	64.3	78.3	93.0	99.5	16.3%
Japan	2.9	2.9	3.4	9.6	20.5	29.5	29.1	38.0	46.6	59.4	52.9	62.4	78.4	91.4	78.5	72.5	45.3	38.5	52.0	76.7	119.2	30.0%
Korea, Rep. of	3.4	4.8	6.3	8.2	10.8	17.3	18.8	30.4	43.1	60.1	72.0	76.7	85.2	106.2	111.7	110.6	99.3	92.2	103.0	110.9	118.7	5.6%
Mexico	NA	NA	NA	60.1	82.7	84.5	159.0	191.7	201.4	218.4	222.1	247.1	312.6	410.9	533.9	573.5	613.2	676.9	720.0	818.9	871.7	9.4%
Netherlands	-0.2	-0.7	-1.9	1.4	1.0	-2.9	4.2	0.2	1.2	1.9	-0.3	-2.2	5.1	7.6	7.0	10.6	10.2	10.2	8.1	10.8	22.2	17.5%
Nigeria	0	-0.2	-0.1	0	-0.6	-0.4	-1.6	-0.1	-1.5	2.2	5.2	5.7	6.9	5.0	3.5	3.1	10.9	17.0	18.8	9.5	8.5	-10.3%
Pakistan	0.3	0.3	0.4	0.4	0.7	1.2	3.6	4.5	9.1	14.4	12.9	19.0	28.2	32.0	40.1	43.0	58.3	63.8	69.7	88.0	107.3	16.7%
Peru	0.6	0.7	1.7	2.6	4.3	7.0	7.6	11.4	19.4	21.9	22.3	24.9	29.8	40.0	51.1	56.6	54.2	53.4	58.7	62.1	58.7	2.7%
Philippines	5.2	5.6	6.4	9.3	13.9	18.6	21.1	30.7	45.4	60.8	63.2	78.2	86.0	94.7	114.8	140.5	158.2	151.4	140.1	145.5	154.2	-0.9%
Poland	0.3	0.3	0.3	0.3	0.3	0.7	1.6	1.4	3.8	9.8	15.8	19.3	27.7	32.2	36.2	46.4	44.9	32.4	31.8	42.1	52.4	5.9%
Russia	-0.5	-0.5	-0.5	0.1	0	0.3	1.1	1.4	1.0	1.8	1.8	2.1	2.8	3.7	3.5	6.5	16.0	39.3	20.8	39.0	60.6	30.4%
Saudi Arabia	0.3	1.5	2.8	3.7	10.1	9.5	17.9	(7.3)	6.4	15.0	7.2	11.6	9.7	9.8	11.2	39.0	114.2	30.6	37.7	50.2	66.9	-5.6%
South Africa <u>5/</u>	0	-1	-1.9	-1.8	-4.9	-2.6	-3.1	-2.6	-2.4	-0.6	1.0	1.7	2.8	3.9	6.2	6.8	8.0	9.1	13.0	18.1	27.0	36.6%
Spain	1.4	1.7	1.9	2.9	1.8	1.2	3.5	6.7	9.2	11.5	11.6	16.2	18.8	24.1	23.0	30.3	41.1	48.0	54.9	55.7	52.9	6.8%
Switzerland	1.1	1.9	2.0	5.2	2.0	9.5	9.3	7.9	10.5	11.2	6.4	10.0	10.4	11.4	10.5	8.2	13.9	13.4	15.6	17.9	19.1	9.7%
Taiwan	0.9	1.0	1.4	2.5	2.3	5.7	5.5	11.9	20.1	26.8	28.7	36.1	39.5	43.9	45.0	48.1	36.0	43.5	48.8	79.0	95.0	28.9%
Thailand	1.7	0.9	1.1	1.6	2.7	3.5	4.0	6.9	9.1	12.4	15.7	23.2	22.8	25.9	30.2	31.4	32.0	32.7	36.2	44.8	50.7	13.1%
United Kingdom	6.4	8.0	7.3	3.2	2.1	19.3	22.4	13.5	11.3	22.6	8.5	32.6	41.5	44.5	46.2	74.8	88.3	72.1	67.3	77.1	55.2	-8.4%
Sum of the above countries	46.5	67.6	75.6	198.2	247.5	276.3	453.7	580.7	762.9	943.3	877.7	1,111.3	1,316.4	1,606.9	1,877.0	2,219.8	2,612.4	2,585.1	2,733.9	3,144.4	3,582.3	8.6%
Four highest for year	28.6	38.2	43.1	120.1	162.6	159.8	273.2	339.7	369.5	434.5	412.7	489.7	609.9	764.9	927.6	1,047.1	1,143.1	1,141.7	1,119.8	1,252.9	1,459.9	6.0%
Ten highest for year	42.9	56.6	64.9	161.8	224.7	245.2	370.4	463.2	563.2	657.7	625.6	765.3	931.5	1,133.0	1,325.5	1,498.4	1,739.3	1,686.5	1,734.5	1,953.6	2,199.5	6.4%
Total for all countries	\$70.5	\$95.9	\$115.3	\$243.6	\$300.1	\$347.2	\$530.9	\$712.2	\$949.7	\$1,203.0	\$1,129.8	\$1,414.3	\$1,675.4	\$2,027.9	\$2,398.1	\$2,762.3	\$3,298.2	\$3,343.8	\$3,703.8	\$4,296.1	\$4,937.7	11.2%
Selected as percent of total	66.0%	70.5%	65.6%	81.4%	82.5%	79.6%	85.4%	81.5%	80.3%	78.4%	77.7%	78.6%	78.6%	79.2%	78.3%	80.4%	79.2%	77.3%	73.8%	73.2%	72.5%	
Four highest as percent of total	40.6%	39.8%	37.4%	49.3%	54.2%	46.0%	51.4%	47.7%	38.9%	36.1%	36.5%	34.6%	36.4%	37.7%	38.7%	37.9%	34.7%	34.1%	30.2%	29.2%	29.6%	
Ten highest as percent of total	60.9%	59.0%	56.3%	66.4%	74.9%	70.6%	69.8%	65.0%	59.3%	54.7%	55.4%	54.1%	55.6%	55.9%	55.3%	54.2%	52.7%	50.4%	46.8%	45.5%	44.5%	

1/ Net payout is the settlement payouts less the settlement receipts based on data in "Statistics of Communications Common Carriers." Prior to 1985, the data are for AT&T only. Beginning in 1991, the data include settlements arising from transiting traffic. See Appendix A for a list of other reporting changes over time.

2/ Estimated by log linear regression using data from 1991 through 1995.

3/ Australia data include Nauru Island through 1980.

4/ Data for Federal Republic of Germany (West Germany) through 1990.

5/ South Africa includes Southwest Africa (now Namibia) through 1984.

A significant portion of total net settlement payments are concentrated among a small number of countries. In 1995, 45% of the net settlement payments were made to just 10 countries. Table 20 shows the net telephone service settlement payments to 34 selected countries for 1975 through 1995. The telephone service net settlement payment to these countries totaled almost \$3.6 billion -- 73% of the total for 1995. The table also shows the percentage of world total payments received by the top 4 and top 10 recipients each year.

Figure 27: Net Settlement Payments by Groups of Countries

Figure 27 shows net settlement payments to three groups of countries -- the four that received the greatest payments each year, the other 30 countries shown in Table 20, and all other countries of the world. The graph illustrates that settlements have increased dramatically for all three groups of countries.

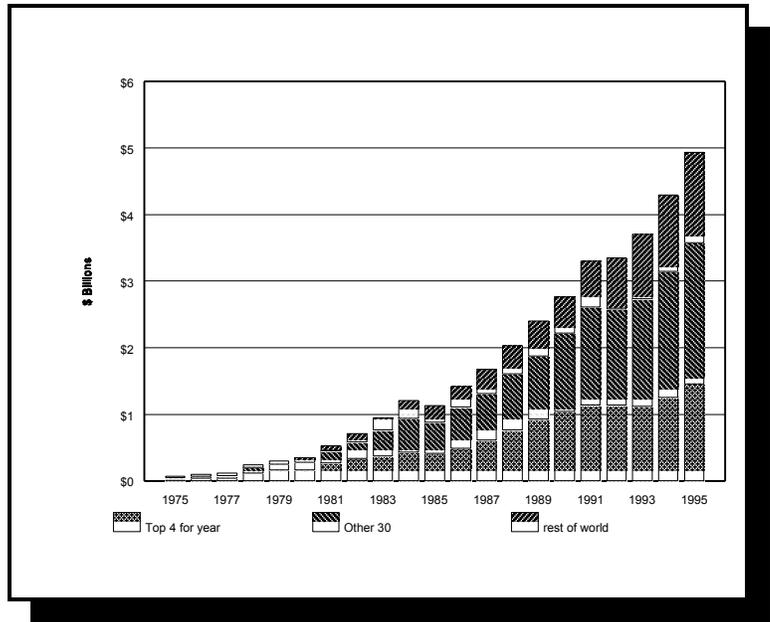


Figure 28: Percentages of Net Settlement Payments by Groups of Countries

Figure 28 shows the data represented in Figure 27 expressed as percentages of total net settlement payments. The graph illustrates that net settlement payments are becoming less concentrated. Net payments to the top 4 countries declined from 46% of the total in 1980 to almost 30% of the total in 1995. Over the same period, net payments to the other 30 countries in the table increased from 34% of the total to 43% of the total. Payments to all other countries increased from 20% to 27% of the total.

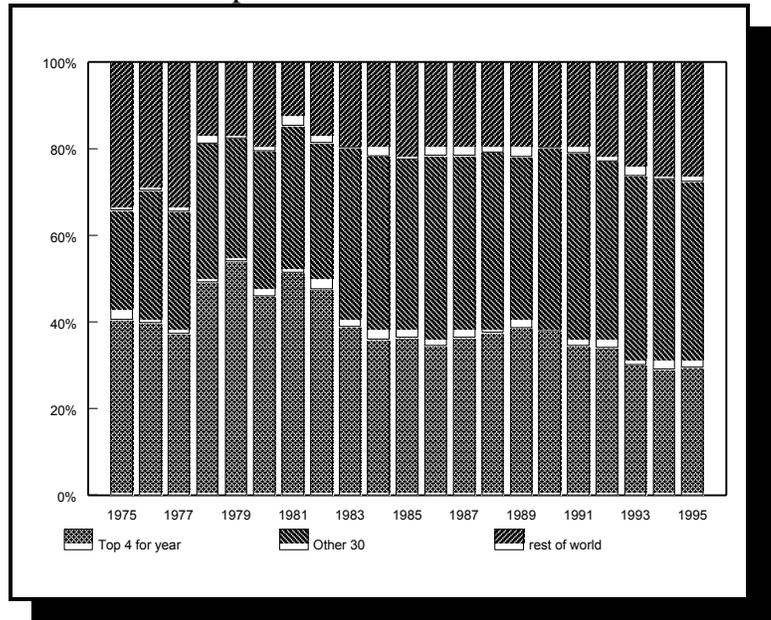


Figure 29: Net Settlement Payments to Mexico, Germany, the Philippines, and Canada

Figure 29 illustrates changes in net settlement payments to selected countries. Mexico continues to receive more net settlement payments for international telephone service than any other country. Mexico represented 18% of net settlement payments for 1995. In recent years, however, the rate of growth in settlement payments has been much greater for many other countries, and has exceeded 50% per year for China, Hong Kong and India.

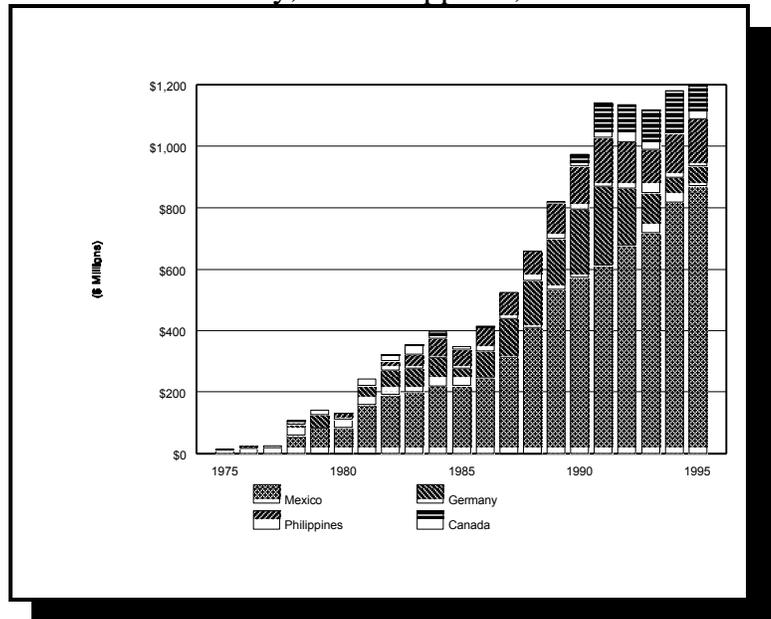
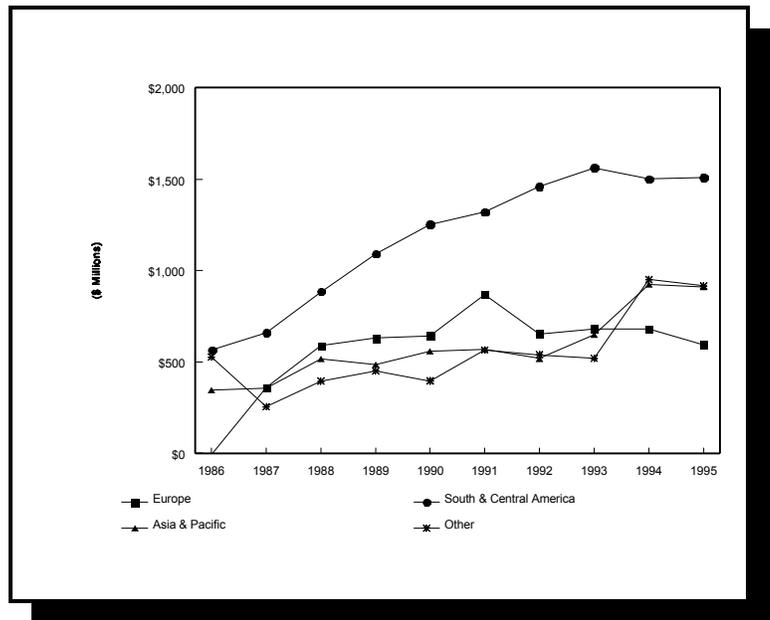


Figure 30: Net Settlement Payments by Region of the World

The Bureau of Economic Analysis (BEA), U.S. Department of Commerce, conducts surveys of settlement payments to foreign countries and publishes summaries of their data in the Survey of Current Business. Table 21 shows a comparison of the data published by BEA and data shown in Tables 4, 5, and 6 of this report. The data sources show roughly the same overall trends. Figure 30 shows the growth in net settlement payments by region of the world. Net settlement payment by region was calculated by subtracting receipts from payments using the BEA data.



Appendix A explains how differences between the BEA and FCC data arise from definitional differences. The FCC directs carriers to report settlement amounts in the same period that they provided service while the BEA wants data to reflect payments actually made during a calendar year. The BEA focuses on the actual balance of payments while the FCC data track the settlements for regulated services. Thus, the BEA includes payments associated with enhanced services and payments to Intelsat. The BEA, however, excludes settlement payments between some U.S. points. The FCC data include settlement payments between U.S. carriers and their foreign affiliates. The BEA tracks all payments between U.S. carriers and their foreign affiliates, but includes them in other accounts.

Table 22 shows accounting rates for 34 countries. After a period of relative stability, accounting rates began to decline in the mid-1980s. Since 1985, accounting rates have dropped for every country in the table except Nigeria. Rates for 12 of the countries dropped in the first quarter of 1997. While the decline has been modest in some cases, accounting rates for some countries have declined by 70%. Nonetheless, there is widespread agreement that accounting rates continue to be significantly higher than the costs of providing international telephone services. The table also illustrates the variety of accounting rate arrangements between U.S. carriers and foreign correspondents and differences in the frequency with which accounting rates are renegotiated.

Table 21. Measures of the International Settlements Deficit
(Amounts shown in millions of dollars)

	43.61 Settlements Data <u>1/</u>			BEA Estimate of International Sales and Purchases of Private Services <u>2/</u>												
	Receipts	Payments	Deficit	Receipts					Payments					Deficit		
				Europe	South & Central America	Asia & Pacific	Other	All Countries	Europe	South & Central America	Asia & Pacific	Other	All Countries			
1980	\$912	\$1,277	\$365													
1981	992	1,553	561													
1982	1,168	1,901	733													
1983	1,298	2,270	972													
1984	1,296	2,497	1,201													
1985	1,471	2,623	1,152													
1986	1,606	3,076	1,470	\$953	\$356	\$388	\$130	\$1,827	\$946	\$920	\$732	\$655	\$3,253	\$1,426		
1987	1,859	3,613	1,753	763	407	468	473	2,111	1,122	1,064	824	726	3,736	1,625		
1988	2,051	4,189	2,137	822	400	519	455	2,196	1,410	1,283	1,035	848	4,576	2,380		
1989	2,325	4,849	2,524	911	449	643	516	2,519	1,540	1,539	1,127	965	5,171	2,652		
1990	2,515	5,389	2,873	973	531	687	544	2,735	1,616	1,783	1,245	939	5,583	2,848		
1991	2,767	6,063	3,296	1,093	651	956	591	3,291	1,960	1,971	1,523	1,154	6,608	3,317		
1992	2,892	6,229	3,336	1,007	569	776	533	2,885	1,660	2,028	1,293	1,071	6,052	3,167		
1993	2,938	6,645	3,707	927	589	756	512	2,784	1,607	2,151	1,404	1,031	6,193	3,409		
1994	3,003	7,294	4,291	924	550	760	637	2,871	1,603	2,051	1,684	1,586	6,924	4,053		
1995	3,073	8,016	4,943	841	576	794	637	2,848	1,434	2,083	1,704	1,552	6,773	3,925		

1/ The totals include settlement payments and settlement receipts for MTS (Table 4), telex (Table 5), and telegraph (Table 6). Settlements associated with transiting traffic are first included for 1991.

2/ 1995 data from the *Survey of Current Business*, November 1996, Table 5.9 and Table 5.10, pages 98-101. Data for some prior years were revised.

In nominal terms, the accounting rates for most countries have declined in recent years. Many accounting rates, however, are expressed in Gold Francs or Special Drawing Rights. Because the value of the dollar changes over time, the dollar payment per minute can change from year to year even if the nominal accounting rate remains the same. Table 23 shows peak and off-peak period accounting rates expressed in dollars. Table 22 also presents a Fisher Ideal index of accounting rates for the countries in the table, weighted by U.S. billed minutes of telephone service traffic. Where off-peak accounting rates exist, the peak rates are weighted 2/3 and the off-peak rates are weighted 1/3. The table shows that accounting rates for the countries in Table 23, on average, are less than half of what they were in 1991.

Figure 31: Decline in Accounting Rates

Figure 31 illustrates the decline in accounting rates. The figure shows the Fisher Ideal index of peak period accounting rates in U.S. dollars from Table 23, as well as accounting rates for Columbia, Germany and Japan, rebased so that 1980 equals 100. While rates are down for all three countries, the timing and magnitude of changes often differ significantly. Although the nominal accounting rate for Germany did not change between 1983 and 1990, the figure shows how the rate expressed in U.S. dollars changed significantly because of currency rate changes.

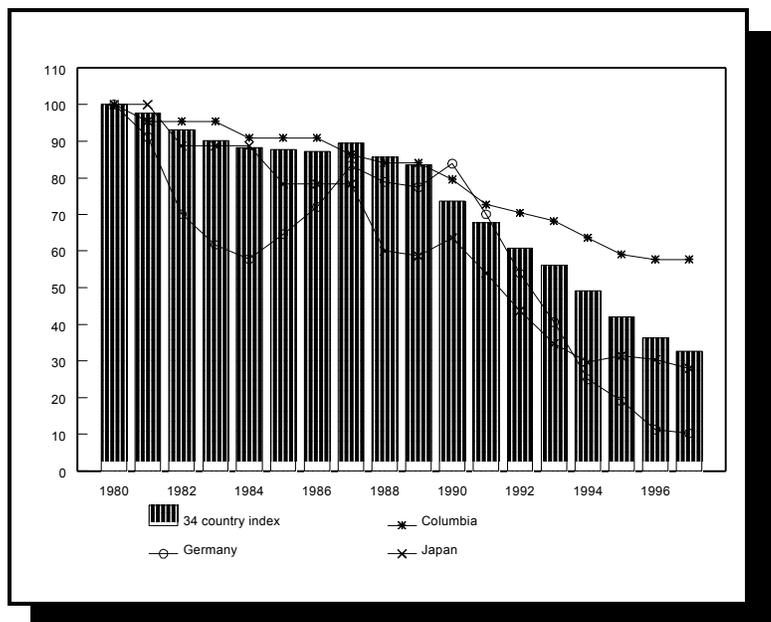


Table 22. Telephone Service Accounting Rates for Selected Countries 1/

	Peak Period Accounting Rates																	
	Accounting Rates as of December 31																	May 1
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Australia	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	1.5 SDR	1.2 SDR	1.2 SDR	1.2 SDR	1.2 SDR	0.8 SDR	0.68 SDR	0.6 SDR	0.55 SDR	0.4 SDR	0.4 SDR	0.308 SDR	0.308 SDR
Brazil	\$3.00	\$3.00	\$3.00	\$3.00	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$1.60	\$1.50	\$1.40	\$1.30	\$1.14	\$1.03	\$1.00
Canada	N/A	N/A	N/A	N/A	N/A	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.28	\$0.28	\$0.28	\$0.28	\$0.26	\$0.24	\$0.22	\$0.22
China	N/A	N/A	N/A	N/A	N/A	9.0 GF	9.0 GF	9.0 GF	9.0 GF	8.0 GF	8.0 GF	7.5 GF	7.5 GF	6.5 GF	6.0 GF	5.5 GF	4.5 GF	4.0 GF
Colombia	\$2.20	\$2.10	\$2.10	\$2.10	\$2.00	\$2.00	\$2.00	\$1.90	\$1.85	\$1.85	\$1.75	\$1.60	\$1.55	\$1.50	\$1.40	\$1.30	\$1.27	\$1.27
Dominican Republic	N/A	N/A	N/A	N/A	N/A	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.42	\$1.39	\$1.36	\$1.29	\$1.30	\$1.10	\$0.90	\$0.80
Egypt	N/A	N/A	N/A	N/A	N/A	\$2.10	\$2.10	\$2.00	\$2.00	\$1.95	\$1.90	\$1.80	\$1.70	\$1.60	\$1.50	\$1.40	\$1.40	\$1.40
El Salvador	N/A	N/A	N/A	N/A	N/A	\$1.55	\$1.55	\$1.50	\$1.50	\$1.50	\$1.50	\$1.40	\$1.30	\$1.25	\$1.20	\$1.20	\$1.10	\$1.10
France	1.6 SDR	1.6 SDR	1.6 SDR	1.6 SDR	1.6 SDR	1.6 SDR	1.4 SDR	1.4 SDR	1.4 SDR	1.2 SDR	1.2 SDR	1.0 SDR	0.7 SDR	0.7 SDR	0.42 SDR	0.36 SDR	0.24 SDR	0.19 SDR
Germany	1.6 SDR	1.6 SDR	1.3 SDR	1.2 SDR	1.2 SDR	1.2 SDR	1.0 SDR	0.8 SDR	0.6 SDR	0.34 SDR	0.26 SDR	0.16 SDR	0.16 SDR					
Greece	N/A	N/A	N/A	N/A	N/A	5.0 GF	5.0 GF	5.0 GF	5.0 GF	5.0 GF	5.0 GF	1.53 SDR	1.21 SDR	1.12 SDR	.95 SDR	.85 SDR	0.7 SDR	0.7 SDR
Guatemala	N/A	N/A	N/A	N/A	N/A	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.40	\$1.30	\$1.20	\$1.18	\$1.00	\$1.00
Hong Kong	\$8.00	\$8.00	\$8.00	\$8.00	\$8.00	\$2.60	\$2.50	\$2.50	\$2.50	\$2.35	\$2.20	\$1.90	\$1.60	\$1.20	\$1.00	\$1.00	.65 SDR	.58 SDR
India	N/A	N/A	N/A	N/A	N/A	\$2.70	\$2.50	\$2.50	\$2.25	\$2.25	\$2.25	\$2.25	\$2.00	\$1.90	\$1.80	\$1.80	\$1.60	\$1.58
Israel	\$3.00	\$3.00	\$2.50	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.28	\$2.16	\$2.16	\$1.90	\$1.18	\$1.18
Italy	5.5 GF	5.0 GF	5.0 GF	5.0 GF	5.0 GF	5.0 GF	5.0 GF	5.0 GF	5.0 GF	5.0 GF	4.6 GF	4.38 GF	1.2 SDR	1.1 SDR	0.82 SDR	0.48 SDR	0.36 SDR	0.28 SDR
Jamaica	N/A	N/A	N/A	N/A	N/A	\$1.75	\$1.75	\$1.75	\$1.75	\$1.75	\$1.65	\$1.60	\$1.55	\$1.50	\$1.40	\$1.40	\$1.30	\$1.25
Japan	\$3.00	\$3.00	\$2.66	\$2.66	\$2.66	\$2.35	\$2.35	\$2.35	1.34 SDR	1.34 SDR	1.34 SDR	1.13 SDR	0.95 SDR	0.75 SDR	0.6 SDR	0.63 SDR	0.63 SDR	0.63 SDR
Korea, Rep. of	\$3.00	\$3.00	\$3.00	\$3.00	\$2.80	\$2.80	\$2.60	\$2.52	\$2.44	\$2.36	\$2.10	\$1.90	\$1.60	\$1.44	0.95 SDR	0.85 SDR	0.85 SDR	0.72 SDR
Mexico 2/	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$1.45	\$1.32	\$1.16	\$1.10	\$1.00	\$0.91	\$0.67	\$0.68	\$0.70
Netherlands	1.6 SDR	1.6 SDR	1.6 SDR	1.2 SDR	1.1 SDR	1.1 SDR	0.9 SDR	0.5 SDR	0.5 SDR	0.4 SDR	0.25 SDR	0.25 SDR	0.25 SDR					
Nigeria	N/A	N/A	N/A	N/A	N/A	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50
Pakistan	N/A	N/A	N/A	N/A	N/A	\$2.55	\$2.55	\$2.55	\$2.55	\$2.55	\$2.30	\$2.30	\$2.30	\$2.30	\$2.30	\$2.30	\$2.20	\$2.00
Peru	N/A	N/A	N/A	N/A	N/A	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$1.50	\$1.40	\$1.30	\$1.30	\$1.23	\$1.20
Philippines	\$2.70	\$2.70	\$2.70	\$2.70	\$2.50	\$2.30	\$2.30	\$2.15	\$2.00	\$1.98	\$1.92	\$1.85	\$1.68	\$1.68	\$1.34	\$1.23	\$1.00	\$1.00
Poland	N/A	N/A	N/A	N/A	N/A	\$2.00	\$1.75	\$1.75	\$1.65	\$1.50	\$1.50	\$1.35	\$1.30	\$1.25	\$1.20	\$1.15	\$0.95	\$0.70
Russia	N/A	N/A	N/A	N/A	N/A	\$9.00	\$9.00	\$9.00	\$9.00	\$3.00	\$3.00	\$2.60	\$2.60	\$2.60	\$2.60	\$2.60	\$2.60	\$2.60
Saudia Arabia	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.20	\$2.20	\$2.20	\$2.20	\$2.20	\$2.20	1.5 SDR
South Africa	N/A	N/A	N/A	N/A	N/A	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$1.80	\$1.80	\$1.50	\$1.20	\$1.20	\$1.00	\$1.00
Spain	5.3 GF	5.3 GF	5.3 GF	5.3 GF	5.3 GF	5.3 GF	5.3 GF	5.3 GF	1.7 SDR	1.6 SDR	1.6 SDR	1.5 SDR	1.5 SDR	1.3 SDR	1.2 SDR	1.0 SDR	.44 SDR	.44 SDR
Switzerland	5.5 GF	1.6 SDR	1.4 SDR	1.4 SDR	1.25 SDR	1.12 SDR	1.12 SDR	.808 SDR	.808 SDR	.61 SDR	.61 SDR	.35 SDR	.35 SDR	.28 SDR				
Taiwan	\$2.25	\$2.25	\$2.25	\$2.25	\$2.25	\$2.00	\$2.00	\$2.00	\$2.00	\$1.90	\$1.80	\$1.60	\$1.40	\$1.20	\$1.20	\$1.20	\$1.20	\$1.20
Thailand	N/A	N/A	N/A	N/A	N/A	\$2.50	\$2.50	\$2.50	\$2.50	\$2.30	\$2.30	\$2.00	\$1.75	\$1.60	\$1.60	\$1.55	\$1.50	\$1.50
United Kingdom	\$1.20	\$1.20	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	.68 SDR	0.54 SDR	0.44 SDR	0.33 SDR	0.25 SDR	0.25 SDR	0.15 SDR

See notes at end of table.

Table 22. Telephone Service Accounting Rates for Selected Countries 1/
(Continued)

	Off-Peak Period Accounting Rates																	
	Accounting Rates as of December 31																	May 1
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Australia							0.6 SDR	0.6 SDR	0.6 SDR	0.6 SDR								
Brazil								\$1.50	\$1.50	\$1.20	\$1.20							
Canada							\$0.38	\$0.38	\$0.38	\$0.38	\$0.24	\$0.24	\$0.24	\$0.24	\$0.22	\$0.20	\$0.14	\$0.14
China																		
Colombia																		
Dominican Republic							\$0.80	\$0.80	\$0.80	\$0.80	\$0.80	\$0.60	\$0.60		\$0.60	\$0.60	\$0.60	\$0.60
Egypt																		
El Salvador																		
France											1.0 SDR	0.8 SDR						
Germany																		
Greece																		
Guatemala																		
Hong Kong																		
India																		
Israel	\$2.25	\$2.25				\$2.10	\$2.10	\$1.90	\$1.90	\$1.90	\$1.90	\$1.90	\$1.63	\$1.40	\$1.40	\$1.23	\$1.10	\$1.10
Italy									3.67GF	3.67GF	3.67GF	3.67GF		0.8 SDR	0.55 SDR			
Jamaica									\$0.74	\$0.74	\$1.40	\$1.40	\$1.40	\$1.40				
Japan																		
Korea, Rep. of																		
Mexico																		
Netherlands																		
Nigeria																		
Pakistan																	\$1.40	\$1.20
Peru									\$1.50	\$1.35	\$1.20	\$1.20	\$1.20					
Philippines											\$1.50	\$1.50	\$1.50	\$1.25	\$1.25			
Poland																		
Russia						\$6.75	\$6.75	\$6.75	\$6.75	\$2.25	\$2.25							
Saudia Arabia																		1.2 SDR
South Africa																		
Spain									1.2 SDR	1.2 SDR	1.2 SDR	1.0 SDR	1.0 SDR	0.8 SDR	0.7 SDR	0.66 SDR		
Switzerland																		
Taiwan																		
Thailand																		
United Kingdom				\$0.76	\$0.76	\$0.76	\$0.76	\$0.76	\$0.76	\$0.76	\$0.76	.48 SDR	.38 SDR	.35 SDR			.15 SDR	0.1 SDR

1/ Where more than one PTT connects with U.S. carriers, the table shows rates for the first carrier providing service. For example, accounting rates are for Korea Telecom in Korea, Kokusai Den shin Denwa in Japan, PLDT in the Philippines, CODETEL in the Dominican Republic, and British Telecom in the United Kingdom. Accounting rates may vary by time of day, or by volume of traffic.

2/ Accounting rates for service between Mexico and the United States vary by service classification and the originating or terminating locations. Each rate shown in the table represents a simple average for all accounting rates in effect for service between the United States and Mexico.

Table 23. Accounting Rates for Selected Countries in U.S. Dollars

	Peak Period Accounting Rates																	
	Accounting Rates as of December 31																	May 1
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Australia	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$1.65	\$1.47	\$1.70	\$1.61	\$1.58	\$1.14	\$0.97	\$0.83	\$0.76	\$0.59	\$0.59	\$0.45	\$0.41
Brazil	\$3.00	\$3.00	\$3.00	\$3.00	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$2.50	\$1.60	\$1.50	\$1.40	\$1.30	\$1.14	\$1.03	\$1.00
Canada	N/A	N/A	N/A	N/A	N/A	\$0.42	\$0.42	\$0.42	\$0.42	\$0.42	\$0.28	\$0.28	\$0.28	\$0.28	\$0.26	\$0.24	\$0.22	\$0.22
China	N/A	N/A	N/A	N/A	N/A	\$3.23	\$3.60	\$4.17	\$3.96	\$3.43	\$3.72	\$3.48	\$3.37	\$2.93	\$2.91	\$2.67	\$2.13	\$1.75
Colombia	\$2.20	\$2.10	\$2.10	\$2.10	\$2.00	\$2.00	\$2.00	\$1.90	\$1.85	\$1.85	\$1.75	\$1.60	\$1.55	\$1.50	\$1.40	\$1.30	\$1.27	\$1.27
Dominican Republic	N/A	N/A	N/A	N/A	N/A	\$1.45	\$1.45	\$1.45	\$1.45	\$1.45	\$1.42	\$1.39	\$1.36	\$1.29	\$1.30	\$1.10	\$0.90	\$0.80
Egypt	N/A	N/A	N/A	N/A	N/A	\$2.10	\$2.10	\$2.00	\$2.00	\$1.95	\$1.90	\$1.80	\$1.70	\$1.60	\$1.50	\$1.40	\$1.40	\$1.40
El Salvador	N/A	N/A	N/A	N/A	N/A	\$1.55	\$1.55	\$1.50	\$1.50	\$1.50	\$1.50	\$1.40	\$1.30	\$1.25	\$1.20	\$1.20	\$1.10	\$1.10
France	\$2.04	\$1.86	\$1.76	\$1.68	\$1.57	\$1.76	\$1.71	\$1.99	\$1.80	\$1.58	\$1.71	\$1.43	\$0.96	\$0.97	\$0.62	\$0.54	\$0.35	\$0.25
Germany	\$2.04	\$1.86	\$1.43	\$1.26	\$1.18	\$1.32	\$1.47	\$1.70	\$1.61	\$1.58	\$1.71	\$1.43	\$1.10	\$0.83	\$0.51	\$0.39	\$0.23	\$0.21
Greece	N/A	N/A	N/A	N/A	N/A	\$1.79	\$2.00	\$2.32	\$2.20	\$2.15	\$2.32	\$2.19	\$1.66	\$1.55	\$1.41	\$1.26	\$1.01	\$0.93
Guatemala	N/A	N/A	N/A	N/A	N/A	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.40	\$1.30	\$1.20	\$1.18	\$1.00	\$1.00
Hong Kong	\$8.00	\$8.00	\$8.00	\$8.00	\$8.00	\$2.60	\$2.50	\$2.50	\$2.50	\$2.35	\$2.20	\$1.90	\$1.60	\$1.20	\$1.00	\$1.00	\$0.94	\$0.77
India	N/A	N/A	N/A	N/A	N/A	\$2.70	\$2.50	\$2.50	\$2.25	\$2.25	\$2.25	\$2.25	\$2.00	\$1.90	\$1.80	\$1.80	\$1.60	\$1.58
Israel	\$3.00	\$3.00	\$2.50	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.40	\$2.28	\$2.16	\$2.16	\$1.90	\$1.18	\$1.18
Italy	\$2.29	\$1.90	\$1.80	\$1.71	\$1.60	\$1.79	\$2.00	\$2.32	\$2.20	\$2.15	\$2.13	\$2.03	\$1.65	\$1.52	\$1.22	\$0.69	\$0.52	\$0.38
Jamaica	\$2.29	\$1.90	\$1.80	\$1.71	\$1.60	\$1.79	\$2.00	\$2.32	\$2.20	\$2.15	\$2.14	\$2.04	\$1.65	\$1.51	\$1.22	\$0.71	\$0.52	\$0.37
Japan	\$3.00	\$3.00	\$2.66	\$2.66	\$2.66	\$2.35	\$2.35	\$2.35	\$1.80	\$1.76	\$1.91	\$1.62	\$1.31	\$1.04	\$0.89	\$0.94	\$0.91	\$0.84
Korea, Rep. of	\$3.00	\$3.00	\$3.00	\$3.00	\$2.80	\$2.80	\$2.60	\$2.52	\$2.44	\$2.36	\$2.10	\$1.90	\$1.60	\$1.44	\$1.41	\$1.26	\$1.23	\$0.96
Mexico	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$1.45	\$1.32	\$1.16	\$1.10	\$1.00	\$0.91	\$0.67	\$0.68	\$0.70
Netherlands	\$2.04	\$1.86	\$1.76	\$1.26	\$1.18	\$1.32	\$1.47	\$1.70	\$1.61	\$1.45	\$1.56	\$1.29	\$0.69	\$0.69	\$0.59	\$0.37	\$0.36	\$0.33
Nigeria	N/A	N/A	N/A	N/A	N/A	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50
Pakistan	N/A	N/A	N/A	N/A	N/A	\$2.55	\$2.55	\$2.55	\$2.55	\$2.55	\$2.30	\$2.30	\$2.30	\$2.30	\$2.30	\$2.30	\$2.20	\$2.00
Peru	N/A	N/A	N/A	N/A	N/A	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$1.50	\$1.40	\$1.30	\$1.30	\$1.23	\$1.20
Philippines	\$2.70	\$2.70	\$2.70	\$2.70	\$2.50	\$2.30	\$2.30	\$2.15	\$2.00	\$1.98	\$1.92	\$1.85	\$1.68	\$1.68	\$1.34	\$1.23	\$1.00	\$1.00
Poland	N/A	N/A	N/A	N/A	N/A	\$2.00	\$1.75	\$1.75	\$1.65	\$1.50	\$1.50	\$1.35	\$1.30	\$1.25	\$1.20	\$1.15	\$0.95	\$0.70
Russia	N/A	N/A	N/A	N/A	N/A	\$9.00	\$9.00	\$9.00	\$9.00	\$3.00	\$3.00	\$2.60	\$2.60	\$2.60	\$2.60	\$2.60	\$2.60	\$2.60
Saudia Arabia	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.20	\$2.20	\$2.20	\$2.20	\$2.20	\$2.20	\$2.00
South Africa	N/A	N/A	N/A	N/A	N/A	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$1.80	\$1.80	\$1.50	\$1.20	\$1.20	\$1.00	\$1.00
Spain	\$2.21	\$2.01	\$1.91	\$1.81	\$1.70	\$1.90	\$2.12	\$2.46	\$2.29	\$2.10	\$2.28	\$2.15	\$2.06	\$1.80	\$1.78	\$1.44	\$0.64	\$0.59
Switzerland	\$2.29	\$1.86	\$1.76	\$1.68	\$1.57	\$1.76	\$1.71	\$1.99	\$1.68	\$1.47	\$1.59	\$1.16	\$1.11	\$0.84	\$0.91	\$0.52	\$0.51	\$0.37
Taiwan	\$2.25	\$2.25	\$2.25	\$2.25	\$2.25	\$2.00	\$2.00	\$2.00	\$2.00	\$1.90	\$1.80	\$1.60	\$1.40	\$1.20	\$1.20	\$1.20	\$1.20	\$1.20
Thailand	N/A	N/A	N/A	N/A	N/A	\$2.50	\$2.50	\$2.50	\$2.50	\$2.30	\$2.30	\$2.00	\$1.75	\$1.60	\$1.60	\$1.55	\$1.50	\$1.50
United Kingdom	\$1.20	\$1.20	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$0.97	\$0.74	\$0.61	\$0.49	\$0.37	\$0.36	\$0.20
Fisher Ideal Index <u>1/</u>	100.0	97.6	93.0	90.1	88.3	87.7	87.2	89.5	85.6	83.5	73.7	67.7	60.8	56.0	49.2	42.1	36.2	32.7
change from prior year																		

See notes at end of table.

Table 23. Accounting Rates for Selected Countries in U.S. Dollars
(Continued)

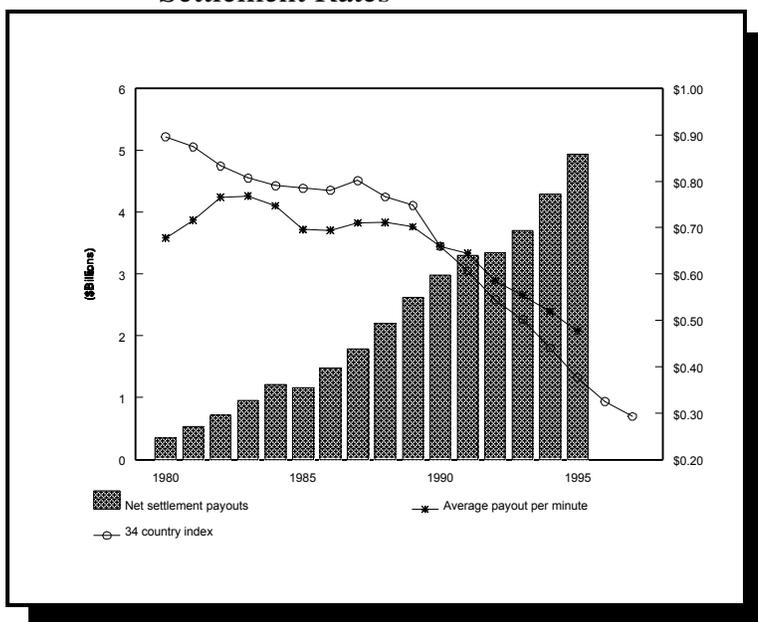
	Off-Peak Period Accounting Rates																	
	Accounting Rates as of December 31																	May 1
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Australia	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$1.65	\$0.74	\$0.85	\$0.81	\$0.79	\$1.14	\$0.97	\$0.83	\$0.76	\$0.59	\$0.59	\$0.45	\$0.41
Brazil	\$3.00	\$3.00	\$3.00	\$3.00	\$2.50	\$2.50	\$2.50	\$1.50	\$1.50	\$1.20	\$1.20	\$1.60	\$1.50	\$1.40	\$1.30	\$1.14	\$1.03	\$1.00
Canada	N/A	N/A	N/A	N/A	N/A	\$0.42	\$0.38	\$0.38	\$0.38	\$0.38	\$0.24	\$0.24	\$0.24	\$0.24	\$0.22	\$0.20	\$0.14	\$0.14
China	N/A	N/A	N/A	N/A	N/A	\$3.23	\$3.60	\$4.17	\$3.96	\$3.43	\$3.72	\$3.48	\$3.37	\$2.93	\$2.91	\$2.67	\$2.13	\$1.75
Colombia	\$2.20	\$2.10	\$2.10	\$2.10	\$2.00	\$2.00	\$2.00	\$1.90	\$1.85	\$1.85	\$1.75	\$1.60	\$1.55	\$1.50	\$1.40	\$1.30	\$1.27	\$1.27
Dominican Republic	N/A	N/A	N/A	N/A	N/A	\$1.45	\$0.80	\$0.80	\$0.80	\$0.80	\$0.80	\$0.60	\$0.60	\$1.29	\$0.60	\$0.60	\$0.60	\$0.60
Egypt	N/A	N/A	N/A	N/A	N/A	\$2.10	\$2.10	\$2.00	\$2.00	\$1.95	\$1.90	\$1.80	\$1.70	\$1.60	\$1.50	\$1.40	\$1.40	\$1.40
El Salvador	N/A	N/A	N/A	N/A	N/A	\$1.55	\$1.55	\$1.50	\$1.50	\$1.50	\$1.50	\$1.40	\$1.30	\$1.25	\$1.20	\$1.20	\$1.10	\$1.10
France	\$2.04	\$1.86	\$1.76	\$1.68	\$1.57	\$1.76	\$1.71	\$1.99	\$1.80	\$1.58	\$1.43	\$1.14	\$0.96	\$0.97	\$0.62	\$0.54	\$0.35	\$0.25
Germany	\$2.04	\$1.86	\$1.43	\$1.26	\$1.18	\$1.32	\$1.47	\$1.70	\$1.61	\$1.58	\$1.71	\$1.43	\$1.10	\$0.83	\$0.51	\$0.39	\$0.23	\$0.21
Greece	N/A	N/A	N/A	N/A	N/A	\$1.79	\$2.00	\$2.32	\$2.20	\$2.15	\$2.32	\$2.19	\$1.66	\$1.55	\$1.41	\$1.26	\$1.01	\$0.93
Guatemala	N/A	N/A	N/A	N/A	N/A	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.40	\$1.30	\$1.20	\$1.18	\$1.00	\$1.00
Hong Kong	\$8.00	\$8.00	\$8.00	\$8.00	\$8.00	\$2.60	\$2.50	\$2.50	\$2.50	\$2.35	\$2.20	\$1.90	\$1.60	\$1.20	\$1.00	\$1.00	\$0.94	\$0.77
India	N/A	N/A	N/A	N/A	N/A	\$2.70	\$2.50	\$2.50	\$2.25	\$2.25	\$2.25	\$2.25	\$2.00	\$1.90	\$1.80	\$1.80	\$1.60	\$1.58
Israel	\$2.25	\$2.25	\$2.50	\$2.40	\$2.40	\$2.10	\$2.10	\$1.90	\$1.90	\$1.90	\$1.90	\$1.90	\$1.63	\$1.40	\$1.40	\$1.23	\$1.10	\$1.10
Italy	\$2.29	\$1.90	\$1.80	\$1.71	\$1.60	\$1.79	\$2.00	\$2.32	\$1.61	\$1.58	\$1.70	\$1.70	\$1.65	\$1.11	\$0.82	\$0.69	\$0.52	\$0.38
Jamaica	\$2.29	\$1.90	\$1.80	\$1.71	\$1.60	\$1.79	\$2.00	\$2.32	\$0.74	\$0.74	\$1.40	\$1.40	\$1.40	\$1.40	\$1.22	\$0.71	\$0.52	\$0.37
Japan	\$3.00	\$3.00	\$2.66	\$2.66	\$2.66	\$2.35	\$2.35	\$2.35	\$1.80	\$1.76	\$1.91	\$1.62	\$1.31	\$1.04	\$0.89	\$0.94	\$0.91	\$0.84
Korea, Rep. of	\$3.00	\$3.00	\$3.00	\$3.00	\$2.80	\$2.80	\$2.60	\$2.52	\$2.44	\$2.36	\$2.10	\$1.90	\$1.60	\$1.44	\$1.41	\$1.26	\$1.23	\$0.96
Mexico	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$1.45	\$1.32	\$1.16	\$1.10	\$1.00	\$0.91	\$0.67	\$0.68	\$0.70
Netherlands	\$2.04	\$1.86	\$1.76	\$1.26	\$1.18	\$1.32	\$1.47	\$1.70	\$1.61	\$1.45	\$1.56	\$1.29	\$0.69	\$0.69	\$0.59	\$0.37	\$0.36	\$0.33
Nigeria	N/A	N/A	N/A	N/A	N/A	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50
Pakistan	N/A	N/A	N/A	N/A	N/A	\$2.55	\$2.55	\$2.55	\$2.55	\$2.55	\$2.30	\$2.30	\$2.30	\$2.30	\$2.30	\$2.30	\$1.40	\$1.20
Peru	N/A	N/A	N/A	N/A	N/A	\$2.00	\$2.00	\$1.50	\$1.35	\$1.20	\$1.20	\$1.20	\$1.50	\$1.40	\$1.30	\$1.30	\$1.23	\$1.20
Philippines	\$2.70	\$2.70	\$2.70	\$2.70	\$2.50	\$2.30	\$2.30	\$2.15	\$2.00	\$1.50	\$1.50	\$1.50	\$1.25	\$1.25	\$1.34	\$1.23	\$1.00	\$1.00
Poland	N/A	N/A	N/A	N/A	N/A	\$2.00	\$1.75	\$1.75	\$1.65	\$1.50	\$1.50	\$1.35	\$1.30	\$1.25	\$1.20	\$1.15	\$0.95	\$0.70
Russia	N/A	N/A	N/A	N/A	N/A	\$6.75	\$6.75	\$6.75	\$6.75	\$2.25	\$2.25	\$2.60	\$2.60	\$2.60	\$2.60	\$2.60	\$2.60	\$2.60
Saudia Arabia	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.36	\$2.20	\$2.20	\$2.20	\$2.20	\$2.20	\$2.20	\$1.60
South Africa	N/A	N/A	N/A	N/A	N/A	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$1.80	\$1.80	\$1.50	\$1.20	\$1.20	\$1.00	\$1.00
Spain	\$2.21	\$2.01	\$1.91	\$1.81	\$1.70	\$1.90	\$2.12	\$2.46	\$1.62	\$1.58	\$1.71	\$1.43	\$1.38	\$1.11	\$1.04	\$0.95	\$0.64	\$0.59
Switzerland	\$2.29	\$1.86	\$1.76	\$1.68	\$1.57	\$1.76	\$1.71	\$1.99	\$1.68	\$1.47	\$1.59	\$1.16	\$1.11	\$0.84	\$0.91	\$0.52	\$0.51	\$0.37
Taiwan	\$2.25	\$2.25	\$2.25	\$2.25	\$2.25	\$2.00	\$2.00	\$2.00	\$2.00	\$1.90	\$1.80	\$1.60	\$1.40	\$1.20	\$1.20	\$1.20	\$1.20	\$1.20
Thailand	N/A	N/A	N/A	N/A	N/A	\$2.50	\$2.50	\$2.50	\$2.50	\$2.30	\$2.30	\$2.00	\$1.75	\$1.60	\$1.60	\$1.55	\$1.50	\$1.50
United Kingdom	\$1.20	\$1.20	\$1.06	\$0.76	\$0.76	\$0.76	\$0.76	\$0.76	\$0.76	\$0.76	\$0.76	\$0.68	\$0.52	\$0.49	\$0.49	\$0.37	\$0.22	\$0.13

1/ The Fisher Ideal index of accounting rates is based on the accounting rates for the countries in the table, denominated in U.S. dollars and weighted by U.S. Billed minutes. Where off-peak accounting rates exist, peak accounting rates were weighted 2/3 and off-peak accounting rates were weighted 1/3.

2/ Peak period accounting rates are shown in this table if the rates in the off-peak period are the same as the rates in the peak period.

Figure 32: Net Settlement Payouts Compared with Settlement Rates

Figure 32 compares the net settlement payouts for international telephone service (scale shown on the left) with two measures of settlement rates (scale shown on the right). One measure of settlement rates is the average payout per U.S. billed minute for calls to all countries. The other measure is the Fisher Ideal index of accounting rates from Table 23, rebased so that 1990 value is the same as that year's average settlement payout per minute. Relatively steep drops in the measures of settlement rates are associated with slower growth in settlement payouts. Given that the decreases in settlement rates for 1996 and 1997 are in line with other decreases for the 1990s, it is likely that the deficit grew by a significant amount in 1996 and will continue to grow in 1997. The figure also shows that the index for the 34 countries in Table 23 dropped more rapidly than did the average payout per minute. Accounting rate surcharges for collect calls may not have declined as rapidly as accounting rates. It is also likely, however, that accounting rates dropped more rapidly for these countries than for countries not included in Table 23.



The Commission continues to push for lower accounting rates. In 1992, the Commission adopted benchmark international settlement rates for Europe, Asia, and other regions. The rates were price ceilings or guidelines to be used by U.S. carriers negotiating accounting rates with foreign administrations, *Benchmark International Settlement Rates*, Second Report and Order and Second Further Notice of Proposed Rulemaking, 7 FCC Rcd 2580 (1992). The International Bureau adopted a *Policy Statement on International Accounting Rate Reform*, 11 FCC Rcd 3146 (1996) which summarized efforts to reduce international settlement rates. In November 1996, the Commission released its Fourth Report and Order, *Regulation of International Accounting Rates*, CC Docket No. 90-337, FCC 96-459 (Nov. 29, 1996), which gives international carriers greater flexibility for accounting rate matters. The new rules allow U.S. carriers to deviate from the Commission's International Settlement Policy (ISP) with any foreign carrier in a country that meets the Commission's effective competitive opportunities (ECO) test adopted in the Commission's Foreign Carrier Entry Order, *Market Entry and Regulation of Foreign-affiliated Entities*, 11 FCC Rcd 3873 (1995). As a result, a single carrier can provide end-to-end service between the United States and a foreign market without using an accounting rate.

In December 1996 the International Bureau released a proposal to revise the settlement benchmarks, *International Settlement Rate Benchmarks*, IB Docket No. 96-261., Report No. DC 96-111 (Dec. 11, 1996). The proposal would further lower the benchmarks.

Appendix A: Notes on the Data

Much of the data presented in this report is based on the figures reported in the annual volumes of *Statistics of Communications Common Carriers (SOCC)*. The *Manual for Filing Section 43.61 Data in accordance with the FCC's Rules and Regulations*, June 1995, currently provides directions for filing international traffic data. Many significant reporting changes have occurred over the years, and several adjustments have been made to make the time series more consistent. The most significant changes stem from the changing focus of the reporting requirements. Prior to 1990, the FCC collected data for overseas telecommunications. At one time, traffic to Alaska, Hawaii and Puerto Rico was classified as reportable overseas traffic, while traffic to foreign points such as Canada and Mexico was not reported. This classification arose from the fact that carriers used radio facilities for overseas traffic while they used terrestrial cable facilities to serve Canada and Mexico.

Since 1985, Hawaii, Alaska, the conterminous U.S. and Puerto Rico have been considered U.S. domestic points for reporting purposes. Carriers need not report data for traffic between any two domestic U.S. points. Starting in 1991, carriers must report all traffic for offshore U.S. points, such as Guam and Midway, and must include traffic between offshore U.S. points and all other U.S. points. Also in 1991, the FCC started systematically collecting traffic data for service to Canada, Mexico, and Saint Pierre and Miquelon. The current data requirements facilitate better tracking of the effects of settlement payments on the national balance of payments.

Several adjustments were made to published data so that the data presented in the report for recent years approximate totals for all international traffic. Traffic reported to Alaska, Hawaii, and Puerto Rico has been removed from the data presented in this publication for the years 1980 through 1984. AT&T voluntarily provided telephone traffic data for Canada and Mexico for 1978 through 1990. All carriers filed data beginning in 1991. Appendix B and Appendix C show the available telephone service traffic data for Canada and Mexico, respectively. Log linear regression analysis with a dummy trend was used to estimate traffic carried by AT&T's competitors for 1985 through 1990. While very approximate, these estimates were used to construct industry total data shown in the report.

In addition to reclassifying international points, the FCC instituted other reporting changes in 1991. Service categories changed. Switched-resale traffic was separated from facilities-based traffic to avoid double counting. The Commission changed the definition of minutes for reporting purposes. For facilities-based service, carriers now report the number of minutes upon which settlements are calculated. They formerly reported billing minutes. The settlement process is used by U.S. and foreign carriers to provide compensation for handling traffic for each other. Compensation is based on conversation minutes. Settlement minutes averaged 5% to 6% less than billed minutes for traffic billed in the United States for 1988 through 1990. Because carriers do not make settlement payments for their pure resale traffic, they continue to report resale data based on billing information.

In 1991, the FCC also changed the traffic categories for reporting purposes. Prior to 1991, carriers reported traffic originating in the United States, terminating in the United States and transiting the United States. Since 1991, the reporting categories are U.S. billed, foreign billed, and transiting traffic. U.S. billed traffic is all traffic billed to a customer by the carrier serving the U.S. location covered by the report. Prior to 1991, a collect call placed from a U.S. point could have been classified as originating traffic. Because these calls are billed by a carrier serving an international point, such traffic, however, now must be reported as foreign billed calls. Foreign billed traffic is all traffic billed to customers by foreign carriers. Transiting traffic is traffic that originates from an international point, is routed through the United States, terminates at an international point, and is billed to customers by a foreign carrier. Starting in 1991, the report incorporates some data for transiting traffic. To avoid confusion, this report uses the term "**U.S. traffic**" to refer to traffic originating in the United States through 1990, and traffic billed in the United States thereafter. Similarly, the term "**Foreign traffic**" refers to traffic originating in foreign points through 1990, and traffic billed by foreign carriers thereafter. Prior to 1991, many carriers classified traffic based on billing. Thus, the change in definitions may not have caused any significant changes in the data being reported.

During 1995, the Commission adopted a revised Section 43.61 international traffic data reporting manual. Starting with 1995 data, carriers provided both the actual number of private lines and the number of voice equivalent private lines. Carriers separated facilities-resale traffic from facilities-based traffic. Carriers also separately identified U.S. billed traffic originated in a foreign point via world direct type services. Finally, the revised manual clarified the treatment of discounts for reporting purposes.

Figure A-1 summarizes changes in reporting definitions over time. These changes may account for some of the year-to-year changes in the reported data. In addition, the data may contain reporting errors. For example, the 1987 SOCC contains inaccurate data for traffic to the United Kingdom because AT&T's Section 43.61 filing omitted foreign traffic for November and December. Corrected figures have been used in Table 20, which shows net settlement payments for telephone service to selected countries. The FCC's reporting requirements incorporate a threshold below which corrections need not be made. In addition, the complexity of the settlements process guarantees that some errors are only discovered or correctable after the carriers file their final Section 43.61 report for the year. While the data cannot be used to calculate precise year-to-year changes, the data provide a good indicator of industry trends. To compensate for changes in reporting over time, this report uses regression analysis to calculate growth rates. This ensures that data from the whole period, rather than just the end points, are considered in estimating trend growth rates. In addition, regression analysis permits the data to be divided into periods to evaluate whether trends have changed over time.

Complete technical information on current reporting requirements is contained in the *Manual for Filing Section 43.61 Data in accordance with the FCC's Rules and Regulations*, June 1995. Additional information on 1995 data is contained in the *Section 43.61 International Telecommunications Data* report for 1995.

Figure A-1

Reporting and Definitional Changes Affecting SOCC International Traffic Statistics	
1.	The treatment of Hawaii and Puerto Rico traffic changed over time. Prior to 1985, Hawaii and Puerto Rico were classified as overseas points. Generally, traffic between the continental U.S. and Hawaii and Puerto Rico were included in SOCC tables through 1984. Where possible, these amounts have been removed from tables.
2.	The treatment of Alaska traffic changed over time. Alaska traffic was included for some years before 1968, and for 1981 through 1984. Where possible, Alaska data for 1981 through 1984 have been removed from tables.
3.	Starting in 1991, the international tables include traffic for all domestic U.S. points, including Alaska, Hawaii and Puerto Rico. (International traffic for offshore U.S. points is contained in the Section 43.61 International Telecommunications Data report.)
4.	Carriers did not report data for Saint Pierre and Miquelon, Canada or Mexico for 1968 through 1990. The 1980 through 1990 SOCC data presented in Table 1 and Table 2 have been adjusted to include estimates for telephone traffic with Canada and Mexico.
5.	U.S. traffic with the U.S. Virgin Islands was included in the international tables for 1980 through 1984, and then excluded for 1985 through 1990. U.S. traffic to other offshore U.S. points, such as Guam and Wake Island was included for 1980 through 1985, and then excluded from the country- by-country table for 1986 through 1990. Beginning with 1991, the traffic with non-domestic offshore U.S. points has been included in the statistical tables. Such traffic currently represents less than 1% of all international traffic for the United States.
6.	Maritime traffic was not explicitly included in some years through 1990. Starting in 1991, the SOCC tables include maritime traffic.
7.	Before divestiture, interexchange carriers such as MCI and Sprint did not provide international telephone service. Through 1984, the tables containing country-by-country international telephone traffic represented AT&T only.
8.	Prior to 1991, some switched service revenues, such as telephone service from offshore U.S. points, was classified as miscellaneous. In addition, some minor services, such as packet switching, were reported as miscellaneous. Carriers, however, were not required to report any data for some minor services.

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|-----|---|
| 9. | From 1985 through 1990, switched services data included both facilities- based and resale service. Starting in 1991, carriers must separate international facilities-based traffic from international pure resale traffic. Starting in 1995, carriers must also separate facilities-based and facilities-resale private line services. |
| 10. | Through 1984, carriers reported transiting traffic both by points of origin and destination. Thus, each transiting call would be counted twice. |
| 11. | Through 1990, carriers were instructed to categorize traffic data by point of origin. Starting in 1991, carriers are instructed to categorize traffic based on where each call is billed. This may not represent a significant change, because many carriers reported traffic based on billing prior to 1991. In this report, the term "U.S. traffic" refers to traffic reported as originating in the U.S. through 1990, and traffic reported as billed in the U.S. thereafter. Similarly, the term "foreign traffic" refers to traffic reported as originating in foreign points through 1990, and traffic reported as billed to foreign points thereafter. |
| 12. | Through 1990, carriers were instructed to report the number of billing minutes or billing words. Starting in 1991, carriers report the number of minutes or words used for settlement purposes. |

Both the Bureau of Economic Analysis (BEA), U.S. Department of Commerce and the Federal Communications Commission (FCC) collect data on settlement payments and receipts. The FCC figures are used to monitor U.S. carriers, while the BEA data are used to monitor the balance of payments. As a result, there are significant differences in the reporting instructions.

In recent years, the Section 43.61 reports have shown greater U.S. carrier payments to foreign entities than do the BEA estimates. The BEA figures, however, show greater U.S. carrier receipts. It is not clear whether reporting differences explain most or all of the differences in reported data. Some factors would tend to make the FCC figures higher. For example, carrier's settlement receipts and payments lag the date when traffic is actually provided. The FCC requests payments and receipts when accrued -- that is, at the time service was provided. The BEA requests that carriers file actual payments and receipts made during the calendar year. Because settlement payments are often made long after the calls were made, and because traffic has been growing rapidly, the settlements owed during a year tend to be greater than the settlements made during the year. This means that carriers would tend to report higher settlement receipts and payments in their Section 43.61 annual reports than in their BEA annual reports. Also, Section 43.61 reports include settlement payments between U.S. carriers and their foreign affiliates. Other reporting differences, however, would tend to make the BEA figures higher. For example, the carrier reports to BEA include intercarrier payments for private line, enhanced service, and support service receipts. U.S. carrier payments to Intelsat are also included. All of these types of payments would not be included in Section 43.61 reports. In 1991, the last benchmark survey, enhanced services represented 2.8% of settlement receipts and 0.3% of payments.

The timing differences explained above and the fact that the BEA excludes payments to affiliates may be responsible for this difference. The BEA figures, however, include some payments, such as payments to Intelsat, which should offset some or all of the difference. The data differences are summarized in Figure A-2 below:

Figure A-2

Differences Between Section 43.61 Data and BEA International Data	
Section 43.61 International Traffic Data	BEA Telecommunications Payments and Receipts
Messages, minutes, billed revenues, and settlement payments and receipts.	Settlement payments and receipts.
Covers basic telecommunications services (MTS, telex, telegraph, private line and miscellaneous).	Covers basic telecommunications service, enhanced or value added services, and telecommunications support services (such as maintaining earth stations located in foreign points).

Includes payments between U.S. carriers and their foreign affiliates.	Excludes payments between U.S. carriers and their foreign affiliates, although these can be estimated from other data filed with BEA.
Carriers are asked to report payments and receipts when accrued -- that is, at the time service was provided, regardless of when the settlements were actually made.	Carriers are asked to file settlement payments and receipts actually made during the year, regardless of whether or not the service was provided during the year.
Includes payments and receipts for traffic that transits a U.S. point, but excludes receipts or payments for exclusively foreign services such as circuit capacity provided to foreign carriers.	Includes payments and receipts for traffic that transits U.S. points and also payments and receipts for foreign service.
U.S. carriers report the private line revenue billed on their behalf as revenue, rather than as settlement receipts. They do not report the revenue that they bill on behalf of foreign carriers as either revenue or settlement payments.	U.S. carriers report both the private line revenue they bill on behalf of foreign carriers and payments to Intelsat as payments. They report private line revenue billed on their behalf by foreign carriers as settlement receipts.
U.S. carriers report their billings to foreign addresses as U.S. billed revenue.	Carriers are asked to report their billings to foreign addresses as settlement receipts.
All carriers with revenue in the reporting year are required to file preliminary data on the following July 31 and final traffic data on October 31.	All carriers with payments or receipts greater than \$500,000 are required to file data on March 31 of the following year for publication in June. Revisions are typically made the following June.

Appendix B: International Telephone Traffic with Canada

AT&T Traffic with Canada
(All figures are shown in thousands)

	U.S. Traffic					Foreign Traffic			Transiting Traffic			Total Retained Revenue
	Number of Messages	Number of Minutes	AT&T Billed Revenue	Payout to PTT	Retained Revenue	Number of Messages	Number of Minutes	Receipts from PTT	Receipts from PTT	Payout to PTT	Retained Revenue	
1978	71,564	479,479 <u>1/</u>	\$222,432	\$86,835	\$135,597	67,143	447,172 <u>1/</u>	\$84,790				\$220,387
1979	78,277	524,456 <u>1/</u>	245,409	95,710	149,699	75,420	502,297 <u>1/</u>	95,878				245,577
1980	85,198	570,827 <u>1/</u>	270,986	105,685	165,301	85,475	569,264 <u>1/</u>	109,393				274,694
1981	96,712	647,970 <u>1/</u>	321,221	125,402	195,819	94,483	629,257 <u>1/</u>	126,486				322,306
1982	101,708	681,444 <u>1/</u>	346,511	171,547	174,964	95,830	638,228 <u>1/</u>	152,594				327,558
1983	113,098	757,757 <u>1/</u>	394,002	195,031	198,971	108,880	725,141	163,674				362,645
1984	122,202	814,035	386,207	191,199	195,008	116,160	775,990	168,775				363,783
1985	128,220	832,857	374,915	185,583	189,332	127,870	845,430	177,490				366,822
1986	141,667	881,737	394,510	195,302	199,208	146,099	941,172	194,040				393,248
1987	146,465	874,797	404,183	215,057	189,126	157,682	932,211	234,375				423,500
1988	145,136	859,975	422,241	216,044	206,197	149,805	838,726	216,320				422,517
1989	159,444	943,550	485,209	237,882	247,327	159,130	893,821	233,197				480,524
1990	168,198	1,115,719	481,973	201,257	280,716	167,399	953,624	200,839				481,554
1991 <u>3/</u>	244,046	1,295,006	539,774	207,384	332,390	188,101	1,048,330	141,045	192	33	159	473,594
1992 <u>3/</u>	268,798	1,394,018	523,953	209,494	314,459	195,770	1,113,680	154,256	502	62	439	469,154
1993 <u>3/</u>	292,569	1,426,374	592,024	220,455	371,569	196,975	1,040,509	165,421	581	121	460	537,450
1994 <u>3/</u>	332,920	1,569,970	593,412	214,647	378,765	203,123	1,024,155	142,993	164	13	151	521,910
1995 <u>3/</u>	351,558	1,639,955	624,460	188,557	435,903	231,141	1,135,739	138,450	541	125	417	574,770

All Reporting U.S. Carriers Traffic with Canada
(All figures are shown in thousands)

	U.S. Traffic					Foreign Traffic			Transiting Traffic			Total Retained Revenue
	Number of Messages	Number of Minutes	Total Billed Revenue	Payout to PTT	Retained Revenue	Number of Messages	Number of Minutes	Receipts from PTT	Receipts from PTT	Payout to PTT	Retained Revenue	
1985 <u>2/</u>	141,101	916,525	412,578	204,226	208,352	127,870	845,430	177,490				385,842
1986 <u>2/</u>	170,392	1,060,522	474,503	234,902	239,600	146,099	941,172	194,040				433,640
1987 <u>2/</u>	194,470	1,161,519	536,657	285,544	251,113	172,109	1,017,503	255,818				506,932
1988 <u>2/</u>	214,163	1,268,981	623,060	318,795	304,265	181,567	1,016,554	262,184				566,449
1989 <u>2/</u>	251,935	1,490,894	766,674	375,875	390,799	208,668	1,172,073	305,792				696,591
1990 <u>2/</u>	274,274	1,819,362	785,936	328,183	457,753	235,379	1,340,888	282,399				740,152
1991 <u>3/</u>	397,515	1,950,892	799,700	303,742	495,958	256,996	1,420,585	190,664	193	33	160	686,782
1992 <u>3/</u>	482,780	2,226,372	871,459	329,361	542,098	269,419	1,512,091	207,846	995	62	933	750,877
1993 <u>3/</u>	570,345	2,493,082	1,026,218	372,936	653,283	309,134	1,604,887	241,726	1,085	121	964	895,963
1994 <u>3/</u>	644,101	2,786,577	990,991	378,475	612,515	362,609	1,800,084	241,392	468	19	450	854,357
1995 <u>3/</u>	720,920	3,049,270	1,039,776	349,090	690,686	409,702	2,067,288	223,056	783	125	658	914,400

- 1/ For 1978 through 1983, U.S. and foreign minutes for Canada were estimated as 6.7 times the number of messages.
- 2/ For 1985 through 1990 traffic for other carriers was estimated by fitting a log linear trend to 1978 through 1992 minutes data, with a dummy trend representing traffic carried by non-reporting competitors. Messages and revenues were estimated by using per minute ratios derived from AT&T data.
- 3/ Starting with 1991, data for AT&T are taken from annual editions of *Section 43.61 International Telecommunications Data* and data for all carriers are taken from annual volumes of *Statistics of Communications Common Carriers*.

Appendix C: International Telephone Traffic with Mexico

AT&T Traffic with Mexico
(All figures are shown in thousands)

	U.S. Traffic					Foreign Traffic			Transiting Traffic			Total Retained Revenue
	Number of Messages	Number of Minutes	AT&T Billed Revenue	Payout to PTT	Retained Revenue	Number of Messages	Number of Minutes	Receipts from PTT	Receipts from PTT	Payout to PTT	Retained Revenue	
1978	17,049	122,751 <u>1/</u>	112,149	85,081	27,068	10,745	62,320 <u>1/</u>	25,012				52,080
1979	21,629	155,729 <u>1/</u>	186,243	115,623	70,620	14,303	82,956 <u>1/</u>	32,909				103,529
1980	26,067	187,682 <u>1/</u>	220,700	123,800	96,900	18,441	106,955 <u>1/</u>	39,270				136,170
1981	29,795	214,523 <u>1/</u>	294,685	212,222	82,463	22,410	129,977 <u>1/</u>	53,250				135,712
1982	36,397	251,849	317,039	244,997	72,042	25,833	155,623	53,102				125,144
1983	39,333	294,297	334,522	246,248	88,274	26,680	144,462	44,818				133,092
1984	41,722	307,022	361,378	268,204	93,174	24,916	147,083	49,819				142,993
1985	45,644	336,117	381,354	276,185	105,169	30,351	170,015	54,096				159,265
1986	52,230	392,755	442,383	301,728	140,655	34,134	185,656	54,584				195,239
1987	59,510	450,713	499,511	372,726	126,785	36,633	188,675	60,176				186,961
1988	77,024	561,937	639,361	480,107	159,254	47,701	239,364	69,242				228,496
1989	97,440	702,468	762,037	626,633	135,404	60,794	306,412	92,736				228,140
1990	114,362	823,553	837,517	680,084	157,433	72,466	361,706	106,554				263,987
1991 <u>3/</u>	105,284	788,544	803,038	590,895	212,144	77,208	375,169	105,439	2,664	1,384	1,280	318,863
1992 <u>3/</u>	133,989	940,340	901,752	633,519	268,233	98,654	440,351	116,900	3,772	2,021	1,751	386,883
1993 <u>3/</u>	144,640	960,035	989,944	653,779	336,165	107,371	476,210	127,207	8,889	2,944	5,942	469,314
1994 <u>3/</u>	158,505	1,061,620	1,066,290	686,249	380,041	118,955	517,944	137,911	7,623	7,231	392	518,344
1995 <u>3/</u>	173,458	1,292,895	1,141,095	723,917	417,179	122,402	527,604	155,418	5,966	2,615	3,351	575,948

All Reporting U.S. Carriers Traffic with Mexico
(All figures are shown in thousands)

	U.S. Traffic					Foreign Traffic			Transiting Traffic			Total Retained Revenue
	Number of Messages	Number of Minutes	Total Billed Revenue	Payout to PTT	Retained Revenue	Number of Messages	Number of Minutes	Receipts from PTT	Receipts from PTT	Payout to PTT	Retained Revenue	
1985 <u>2/</u>	47,415	349,157	396,149	286,900	109,249	32,631	182,785	58,159				167,408
1986 <u>2/</u>	56,236	422,878	476,313	324,870	151,443	39,386	214,226	62,983				214,426
1987 <u>2/</u>	66,402	502,907	557,356	415,889	141,467	45,945	236,633	75,472				216,939
1988 <u>2/</u>	88,043	642,332	730,833	548,795	182,038	61,967	310,948	89,950				271,988
1989 <u>2/</u>	110,537	796,889	864,464	710,860	153,604	77,198	389,093	117,760				271,364
1990 <u>2/</u>	129,761	934,446	950,290	771,658	178,632	91,599	457,204	134,686				313,318
1991 <u>3/</u>	147,144	1,038,226	1,024,086	743,223	280,863	93,437	468,266	128,671	2,741	1,384	1,357	410,891
1992 <u>3/</u>	190,045	1,277,226	1,216,942	835,517	381,426	137,362	608,649	156,494	4,121	2,021	2,100	540,020
1993 <u>3/</u>	217,361	1,398,807	1,399,855	903,602	496,253	148,407	676,214	177,217	9,308	2,944	6,364	679,834
1994 <u>3/</u>	253,475	1,656,171	1,547,714	1,014,704	533,010	173,613	748,753	195,115	7,962	7,231	731	728,856
1995 <u>3/</u>	290,151	2,012,183	1,700,765	1,124,339	576,426	195,107	835,660	248,653	7,904	3,937	3,967	829,046

- 1/ For 1978 through 1981, U.S. minutes for Mexico were estimated as 6.2 times messages, while foreign minutes were estimated as 5.8 times messages.
- 2/ For 1985 through 1990 traffic for other carriers was estimated by fitting a log linear trend to 1979 through 1992 minutes data, with a dummy trend representing traffic carried by non-reporting competitors. Messages and revenues were estimated by using per minute ratios derived from AT&T data.
- 3/ Starting with 1991, data for AT&T are taken from annual editions of *Section 43.61 International Telecommunications Data* and data for all carriers are taken from annual volumes of *Statistics of Communications Common Carriers*.

Customer Response

Publication: Trends in the U.S. International Telecommunications Industry, June 1997

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Text clarity	()	()	()	()	()
Completeness of text	()	()	()	()	()

3. Overall, how do you rate this report?

	Excellent	Good	Satisfactory	Poor	No opinion
	()	()	()	()	()

4. How can this report be improved?

5. May we contact you to discuss possible improvements?

Name:
Telephone #:

To discuss the information in this report contact Linda Blake or Jim Lande; Industry Analysis Division, at 202-418-0940		
Fax this response to 202-418-0520	or	Mail this response to FCC/IAD Mail Stop 1600 F Washington, DC 20554