International Telecommunications Services: The Emerging Asymmetry Across the Atlantic and Comparisons of Performance

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The clash between the different policy approaches taken on the two sides of the Atlantic has been particularly acute in international communications, partly because of its great profitability. Historically, U.S. policy on international telecommunications had carved up the market into distinct segments, assigning each segment to different kinds of carriers. In the 1970s and 1980s, however, the United States radically restructured its own rules of the game and forced the European countries to respond to a new situation. This led to frequent disputes.

One needs to understand the traditional American system, because its change has destabilized the traditional European system, as analyzed later by the theoretical model of Chapter 40, and because it also makes transparent what in most PTTs is buried within internal accounting. By 1990, the European PTTs' international service system was similarly subject to challenge from a variety of directions.

The volume of international telecommunications traffic increased in the 1970s much faster than international trade in general. From 1970 to 1981, international calls originating in the United States increased by a factor of 11.3, whereas American international trade grew, in real terms, by a factor of 3 (Antonelli, 1984).

One part of the impetus behind this rise in international traffic was the dramatic decrease in investment cost for a transatlantic circuit, from $1377 million per voice circuit on TAT-1 in 1956 down to $44,356 per circuit for the fiber-optic TAT-8 cable in 1988 (Stanley, 1988, p. 118). An FCC study found that the cost per minute on transatlantic cable dropped from $2.53 in 1956 to $0.04 in 1988 and was expected to fall to $0.02 in 1992. In the same period of time, the number of available voice circuits grew from 89 to 37,800. Satellite circuit costs similarly fell from $32,000 each on the Early Bird satellite in 1968 to $4680 for the Intelsat-VI satellite generation in 1982 (Stanley, 1988, p. 118).

However, this drop in costs was not matched by an equal drop in prices; consequently, the profit margin on international service remains very high. According to one study, British Telecom charged $750,000 for a direct-broadcast-grade connection between London and New York in 1981, whose cost to BT was only $53,000, an Intelsat charge that already was well above actual economic cost (Stapley, 1981, p. 150).

Closely related to these high prices is their asymmetry. An FCC study showed that the average rate from Europe to the United States exceeded that from the United States to Europe by 34 percent in 1981. When AT&T cut prices, the weighted average for foreign tariffs was almost 95 percent higher than the American tariff (Kwerel, 1984, p. 19).

Lower rates in the United States are partly the result of a

long struggle among various market segments and participants. Clear boundaries were still delineated in 1964, when the FCC prohibited AT&T from entering the international record market (i.e., telegraph and data transmission). The FCC concluded that AT&T's participation would threaten the viability of the so-called International Record Carriers (IRCs). Authorization of the transatlantic TAT-4 cable was contingent upon AT&T's exclusion from such services, with the exception of those that it was already providing to defense agencies of the U.S. government (GAO, 1983).

Among record services, the FCC made a further distinction between domestic services, from which Western Union was restricted, and international services, which were provided by the IRCs, including Western Union International, which had been divested from Western Union to become a wholly independent and unaffiliated entity. IRCs could only operate in the United States from certain limited and approved "gateways." A telegram from Cleveland to Paris, for example, would be routed by Western Union to an IRC gateway, transmitted by an IRC to Europe, and then passed on to the French PTT. Price competition among the IRCs was very restrained.

The market segmentation led to a lack of competition, as well as to substantial earnings margins. Partly because of the high profitability, the situation became unstable and cracks began to appear. The artificial nature of the market segmentation then became evident and led to policy response

within a relatively short time.

The FCC set maximum rates for international telecommunications services in theory on the basis of rate-of-return regulation. In practice, however, these rates were not closely monitored because AT&T's international department was not examined separately from its overall operations. Figures for 1979, the first year that AT&T was required to provide separate reporting, show that the net earnings of overseas voice service represented a very high 36.5 percent on its total investment.

Similarly, the FCC did not investigate the rate of return for any IRC between 1958 and 1976. A 1979 audit report found that telex service was subsidizing telegraph and private services. The IRCs' rate of return for telex services ranged from 34.4 to 58.3 percent for the most profitable carrier and from 18.6 to 25.4 percent for the least profitable carrier, with the variation in the percentages depending on methodology (GAO, 1983, p. 8).

High profits and differential pricing encouraged the emergence of arbitrage. In 1981, a telex message from Germany directly to the United States cost $2.58 per minute, but it cost only $1.76 if routed via the United Kingdom. This led to substantial transatlantic traffic through London telex bureaus. The European PTTs tried to stamp out this arbitrage, citing CCITT rules they themselves had authored, but they were rebuffed by the European Commission and the European High Court of Justice.

Not surprisingly, as the FCC's liberal domestic policies

took shape, its restrictive entry and service policies for international telecommunications appeared to make less and less sense, at least from the U.S. perspective. In 1976, the FCC allowed competitive entry into international telecommunications, and thereafter routinely approved applications by MCI, US Sprint, and others to provide international service.

In a series of rulings in 1979 and 1980, the FCC also largely removed the dichotomy of voice and record carriage, eliminated the rules prohibiting AT&T and the IRCs from entering each other's markets, and expanded the number of gateway cities from which international traffic could be sent.[1]

The FCC also eliminated rate-of-return regulation and tariffing. Only dominant carriers (i.e., AT&T and the Hawaiian Telephone Company) needed to file international tariffs. Other carriers had merely to report their activities.

The PTTs observed all this with some misgivings, for these rulings challenged long-established partnership arrangements and rate structures. But once their initial distaste for the increased complexity in the international telecommunications regime subsided, they realized the potential advantages. As the only address within their countries for AT&T, MCI, Sprint, and others, the PTTs were in a position to profit by forcing rival American carriers to compete against each other for operating agreements.

To prevent the IRCs from being thus "whipsawed," the FCC in 1977 enforced a Uniform Settlements Policy requiring all U.S.

carriers to have uniform settlement rates with all other carriers for the same routes. When the Benelux PTTs and Nordtel (the Inter-Scandinavian telecommunications body) invited all potential suppliers of data communication services to submit bids that included the division of accounting (i.e., an element of price bids), the American reaction was swift. Despite normally championing liberalization, the FCC ironically requested that U.S. carriers collectively defer negotiations with Nordtel. Nordtel backed off and notified the carriers that it did not plan to use its monopoly power for exclusive bids.

When different entities provide international telecommunications service at each end of a circuit, they agree upon a division of the revenues between them. The entities create an "accounting rate" or "settlement rate" to be paid to one carrier by the other carrier collecting from a customer. The accounting rate may bear little or no relationship to the actual customer charge or "collection" rate. As a hypothetical example, the accounting rate for the first three minutes of a telephone call between New York and Paris might be $3.00; the charge for the call in the United States, $4.50; and the charge in France, $6.00. When U.S. customers call, they pay $4.50 to AT&T, which credits $3.00 to the French PTT. When French customers call, they pay $6.00 to the French PTT, which credits $3.00 to AT&T. The Uniform Settlements Policy does not regulate U.S. carriers' rates on the U.S. end, but attempts to protect U.S. companies from whipsawing by foreign PTTs, by requiring that all U.S.

carriers pay a uniform rate.

In 1985, an example of whipsawing occurred when RCA filed a complaint with the FCC, charging TRT and FTCC, two other international record carriers, with using so-called special drawing rights instead of the established gold franc settlements in their international telex accounts with the PTTs of Finland, France, Norway, and Spain. RCA charged that this arrangement reduced the accounting rate they would receive from $1.38 to $1.14. FTCC defended itself, arguing that it would actually receive $1.21 under the special drawing right settlement, but it admitted that the figure was still lower than the gold franc rate.

The FCC denied a request for a waiver of the Uniform Settlements Policy, which would have allowed FTCC to reduce accounting rates for telex service to the United Kingdom and twenty-six other European countries. In its denial, the commission stated that FTCC had not shown that collection rates would decrease or that other benefits to the public would result (Kwerel, 1984).

In 1984, the European PTTs affirmed their policy on the control and limitation of entry by American competitors. The PTT organization CEPT recommended that its members not open their markets to any new American carriers unless they would provide better technical service at a lower cost (to PTTs) than at present. New carriers were permitted for new types of communications services such as videotex, teletext, facsimile,

and packet switching, but the CEPT guidelines restricted each to providing only one type of new service.

In an attempt to reduce the barriers to entry created by the PTTs' negotiation requirements, MCI bought an existing IRC, Western Union International (renamed MCI International) from Xerox. MCI International created a convenient international outlet for MCI's American involvement in electronic mail and also provided MCI with an already established relationship with the PTTs. The company concluded agreements with several countries and established London and Hong Kong as international hubs for its traffic to other countries. It also complied with a host of burdensome requirements and procedures that made service to some countries unprofitable.

A related question is the way in which European PTTs utilize American long-distance carriers for communication originating in Europe. For European customers calling American cities, the PTT chooses which U.S. long-distance carrier will transmit the call and realize the subsequent revenue.

Of course, it would be possible to permit the European users to indicate which American long-distance carrier they prefer. This could be accomplished through the use of not one but several country codes for the United States (or North America), with a different numeric access code assigned to each U.S. international carrier.[2] However, one problem with such an arrangement is that the introduction of a choice of services, together with the possibility of advertising campaigns by various carriers directed

at European customers, would visibly demonstrate that network competition is feasible. It is thus unlikely that this type of consumer choice will be granted to European users in the near future. Instead, negotiations center on the ways in which the PTTs might allocate their U.S.-bound traffic between AT&T and its competitors. One way would be to negotiate market shares in advance; another would be to use a fixed share allocation formula. The easiest approach might be to allocate American-bound traffic to American carriers in the same proportion that those carriers supply traffic to Europe.

In addition to extending its pro-competitive and deregulatory policies to international services, the FCC sought to increase competition between types of transmission media and service providers.[3]

An important distinction is made in international communications between transmission by submarine cable and transmission by satellite. The several submarine cables linking North America and Europe are owned and operated by consortia of European and North American telecommunications administrations and firms. In contrast to their part-ownership in the submarine cable operations, AT&T and the other American international carriers and domestic satellite operators were specifically excluded from international satellite transmission, which was reserved for Comsat, the American designated carrier of the International Satellite Organization Intelsat. Created in 1964 at the instigation of the United States, Intelsat is a

cartel-like organization with a considerable monopoly over satellite transmission of international public telecommunications. Each member country designates a carrier to manage outgoing and incoming Intelsat communications traffic. For most countries, this carrier is the governmental PTT authority. Following intense domestic debate in the United States, however, Congress denied AT&T this role in an attempt to limit its power. The role was instead given to Comsat, which was created through the Communications Satellite Act of 1962 as a publicly chartered, privately owned company. Under the 1962 legislation, Comsat was solely a "carrier's carrier"; neither AT&T nor the IRCs were permitted direct access to Intelsat, and Comsat could not connect directly with users. In 1965, Comsat had a 61 percent share in Intelsat, reflecting its share of traffic. By then, its share had declined to approximately 25 percent.[4]

The FCC subsequently permitted Comsat to go beyond its role as a carrier's carrier and to provide services to customers directly. The FCC made this conditional upon a major restructuring of Comsat, which has separated Comsat's unregulated competitive activities from its regulated activities. Under a 1987 FCC ruling, Comsat sold its earth stations and divested its manufacturing subsidiaries in 1988 and 1989.[5]

New International Carriers

Because some PTTs made almost one-quarter of their profits in international services, it was not surprising that new entrants

arrived, first by sky and then by sea. In 1983, the FCC extended its domestic "Open Skies" policy and accepted an application for a license from Orion Telecommunications to build a private satellite system over the North Atlantic. Orion planned to launch its own satellites, to not use any Intelsat facilities, and to aim at segments such as customized business services and private lines that were previously not well served by Intelsat.

Just as MCI had done for domestic services, Orion denied that it was trying to enter the market of the dominant firm and instead argued that it would create a new market (Cowhey and Aronson, 1985).

Orion's application was followed by similar filings from International Satellite, Inc. (backed by TRT), Cygnus (backed by the earth station manufacturer MA/COM), RCA Americom (for modification of an American domestic satellite), and PanAmSat.

The applications caused a debate within the American government concerning whether the United States should endorse or permit international systems to "bypass" Intelsat. A large part of this concern emanated from provisions in the Intelsat agreements concerning non-Intelsat international satellite systems.

The intragovernmental debate kept the applications pending at the FCC and culminated in February 1985 with the issuance of a White Paper intended to provide guidance to the FCC in its deliberations. It cautiously approved the concept of separate private systems, as long as they did not interconnect with public

switched networks. The FCC eventually agreed. Not surprisingly, Comsat opposed the private satellite systems vehemently, and both Comsat and Intelsat sought legislation that would preclude such systems or restrict their operations.

According to a provision of the Intelsat agreement Article 14D, no satellite competition is permitted that would cause economic harm to Intelsat operations and profits. Intelsat uses vague criteria in making such assessments, however. It did not find that the PTTs' Eutelsat system was causing "significant harm" because the European PTTs asserted, with logic more political than economic, that they would use no satellite system other than one that they would operate.

Ironically, the opponents of liberalization of international satellite communication were partially responsible for its emergence. Several regional and intercontinental satellite systems were established outside of the Intelsat organization. The systems include Arabsat, Eutelsat, a project run by a Scandinavian consortium, and the French system (which is "domestic" but which stretches that term to encompass communications with French possessions in the Western Hemisphere). These satellite projects arose partly because several countries believed that they could more easily reach their telecommunications goals if they had greater control over satellite communications. Significantly, they also arose as the countries pursued various industrial policy goals that promoted electronic development projects. The aggregate result has been

to weaken the argument that for reasons of economic and technical efficiency, international satellite telecommunications must be controlled by a single organization.

Intelsat commissioned a report in defense of its opposition to competition that argued that Intelsat costs declined per utilized half-circuit from about $3000 in 1981 to $2500 in 1983. A fully distributed annual cost of a transporter for Intelsat was anticipated to be $1.93 million in 1987-1988. For ISI and Orion, average cost per transponder over a five-year period would result in annual costs of $3.71 million and $3.17 million, respectively, significantly higher than for Intelsat. As a result of traffic diversion, however, Intelsat costs would increase by 8.6 percent in 1987 and 9.8 percent in 1988. Even higher cost increases would occur if the rival systems were to divert more traffic from Intelsat (Walter Hinchman Associates, 1984).

As both users and shareholders of the Intelsat consortium, Intelsat's constituent organizations did not want to see their profits whittled down by competition. To that end, they enlisted the traditional cross-subsidy argument. In international terms, the argument stated that the profits from the high-density transatlantic and North Pacific routes were needed to provide a subsidy for low-density traffic to and among Third World countries. It is unclear, however, whether subsidies indeed offset monopoly profits so that the total system approximately realizes only normal profits.

The question might also be raised as to why the PTTs,

mindful of the telecommunications needs of developing countries, cannot assist them by more direct contributions in the form of equipment, expertise, financial subsidies, lower communications tariffs for calls to those countries, or more advantageous settlement rates.

The conflict is not simply between Intelsat and its potential rivals, but just as much between the PTTs and the new carriers. Consequently, various defensive strategies were pursued against potential rural satellite carriers. An "up-link" strategy was aimed at preventing the FCC from granting licenses to both American and foreign applicants. This was supported by the argument that the member states of the Intelsat agreement gave Intelsat the monopoly over commercial international satellite telecommunications. The American applicants countered this argument in two ways. Orion contended that the agreement covered only public switched communications and not private line leasing. ISI argued that the terms of the Intelsat agreement prohibited only those rival systems that would cause "significant economic harm" to Intelsat and that its limited operation would not cause such harm.

A preemptive strategy by Intelsat sought to deter potential entry by offering new service options at reduced rates.

A "down-link" strategy tried to prevent new satellite carriers from connecting into national networks. This required a unified front of all PTT countries in a region against the establishment of a beachhead or, if such were established,

against its use as a transfer point to other countries. As with other cartel-like agreements, this was only as strong as its weakest link. In this instance, all European countries might not be willing to maintain discipline. Given its general evolution toward liberalization of telecommunications and its privatization of British Telecom, the United Kingdom would probably not remain agreeable to the plan. Because of London's importance as an international telecommunications and service center, a British arrangement with Orion, PanAmSat, or similar companies would be a major blow to any united PTT front. Similarly, as in the case of tax havens, some European countries would find it advantageous to become international transmissions hubs by permitting down-links from non-Intelsat carriers.

Limitations against retransmission, however, might not be supported by the European antitrust laws, as previously discussed. When European countries cited CCITT and CEPT rules in an attempt to impose similar restrictions on the use of Great Britain as a telex hub by British telex bureaus, the European Commission held an antitrust proceeding and struck down these attempts as a violation of intra-European competitive rules.

Still, the delaying tactics took their toll. After a while, PanAmSat was the only project that could afford to pursue its goals actively. In 1988, the PanAmSat, with its twenty-four C-Band transponders, was launched, and its chairman, Rene Anselmo, promised to crack the monopoly of Intelsat with service to Central and South America, the continental United States, the

Caribbean, and, significantly, Western Europe. In 1990, PanAmSat filed a $1.5 million lawsuit against Intelsat and won an easing of restrictions against private carriers (Chase, 1990, p. 4).

Although a single global system may be desirable because of its economies of scale, a distance- and border-insensitive technology such as satellite transmission cannot be successfully restricted for long. Sooner or later, companies larger than the groups behind Orion and PanAmSat will establish themselves in this market. Domestic or regional PTT satellites with spare capacity may play a similar role. Even in the absence of competing satellites, Intelsat arrangements are threatened by rivalry from already emerging competitors in private submarine cable facilities. Two companies, Tel-Optik and Submarine Lightwave Cable Company (SLCC), applied for licenses to operate international submarine cable (PTAT) in the United States. The submarine cable applications did not raise issues under the Intelsat agreements. Moreover, AT&T, the major American owner of submarine cable systems, did not file any substantial objections. The FCC thus moved expeditiously to grant the Tel-Optik application in 1985. Cable & Wireless and E. F. Hutton participated in that venture. Soon one Bell regional holding company, NYNEX, acquired an option, thereby raising the question of the permissibility of Bell companies' international involvement, which was eventually denied. The Tel-Optik application proposed two cables to be operated in conjunction with Cable & Wireless in the United Kingdom, with the first cable

to be completed in 1989 and the second in 1992. Similar applications were made and approved for Pacific routes.

Liberalization of entry led to the emergence of international carriers in Britain and Japan. Cable & Wireless (C&W) is the prototype for the new generation of international carriers. In the past, the company operated telecommunications services in Britain's overseas possessions. Between 1981 and 1985, the Conservative government reprivatized the company, which expanded rapidly and became the most interesting international carrier.

As also discussed in the chapter on U.K. telecommunications, C&W's announced goal is to become the first global telephone carrier, and its strategy targets the world's major financial centers: London, New York, Tokyo, Hong Kong, and possibly Bahrain. It is already a dominant presence in Hong Kong, where it owns the local telephone company. In Britain, C&W has become the sole owner of Mercury, which provides it with long-distance capability within Britain and access to several European countries. C&W is also a major partner in the PTAT transatlantic fiber-optic cable to New York and holds transcontinental rights in the United States through its ownership of TDX, an American long-distance carrier.

In Japan, the liberalization of long-distance communications also reached international service. Two consortia applied for a license to provide such service in competition with the previous monopolist KDD. The first was International Telecom Japan (ITJ),

owned by fifty-three large users, including Mitsubishi, Somitomo, Mitsui, Matsushita, and the Bank of Tokyo. It planned to commence service on circuits leased from KDD. The second consortium was International Digital Communications, in which C. Itoh & Co. and Cable & Wireless were the largest partners from among thirty-five companies, including Toyota. The Ministry of Posts and Telecommunications tried to convince the two ventures to merge. Part of the agreement would have been to reduce C&W's share to 3 percent for reasons of "national security" and to exclude it from a role in management. The British and American governments reacted very negatively to these restrictions, viewing them as an instance of nontariff barriers into the Japanese market.

Challenges to the Traditional Rate System

In time the distortions of the traditional system reached the attention of the public. A series of articles by the Financial Times argued that users were overcharged by $10 billion because of cartel-like tariff arrangements. Costs for international calls were estimated at $0.25 to $0.50, but rates averaged $1 per minute. It was estimated that $30 billion in revenues would generate $20 billion in profits in 1990 (Dixon, 1990a, p. 1). BT reported 60 percent profit rates internationally (Malik, 1990, p. 5). In 1990, the European Commission began an investigation into artificially high international rates, and CCITT admitted that its tariff recommendations needed to be revised (Dixon, 1990b). In defense, it was argued that these profits subsidized

residential local rates.

A related issue was the asymmetry in incoming and outgoing traffic to the United States, which paradoxically created a major American deficit because of its lower rates. A study by the International Institute of Communications found that the United States made 5.3 billion minutes of calls and received only 3.1 billion minutes of traffic (Staple, 1990, p. 17).

International telephone service in the United States grew far more rapidly than that in other countries, causing a rise in the deficit from $1.4 billion in 1987 to $2.2 billion in 1989 (Stanley, 1988, p. 5). In 1990, the FCC instituted a proceeding on this matter. Proposals were also made to reform the entire system of settlements (Ergas and Paterson, 1989, p. 20).

Comparison of International Performance

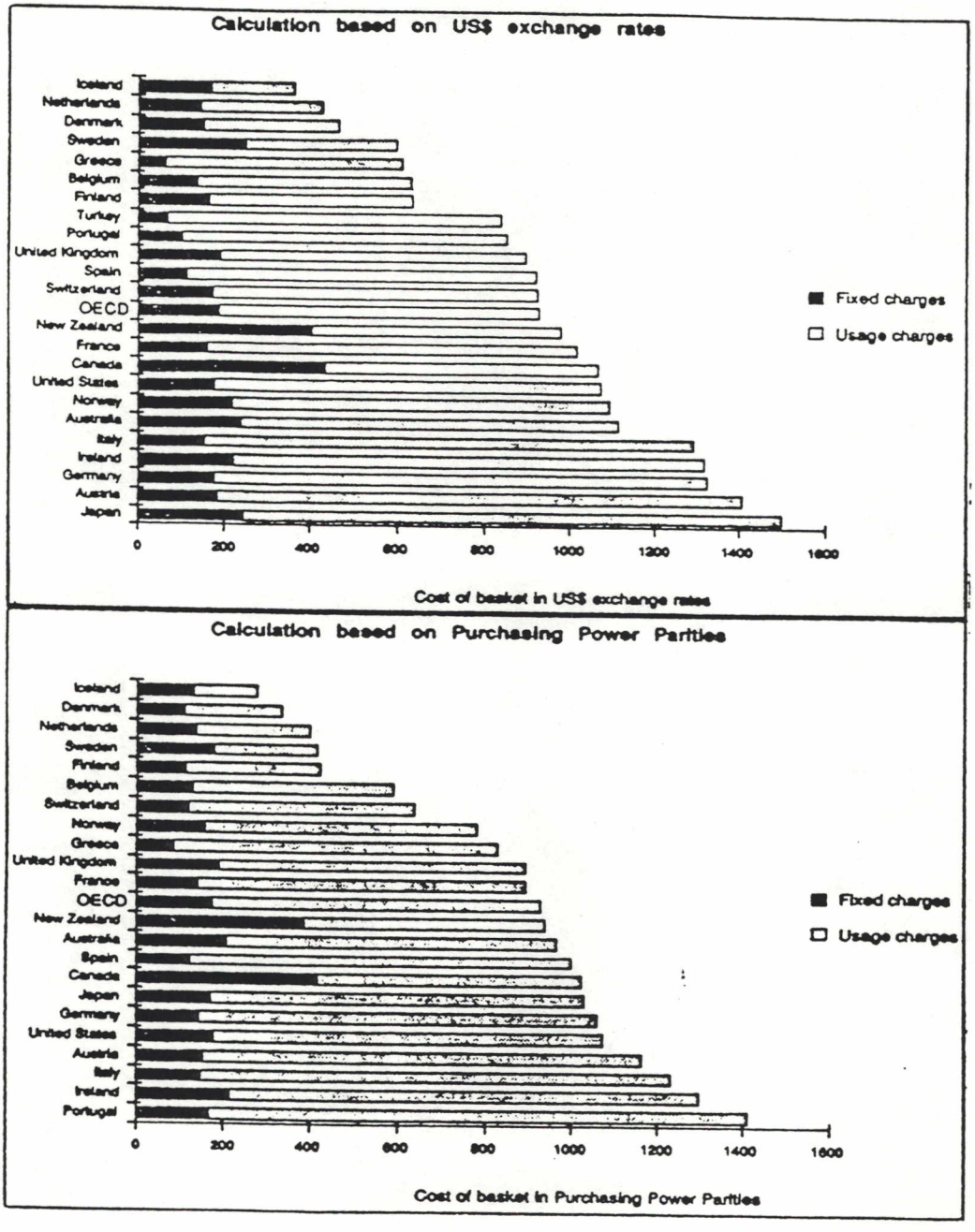
As was stated in the introduction to this book, this is not a comparative study in the sense of measuring the performance of various countries' PTTs and issuing report cards about their relative status. The study is concerned more with vertical changes over time than with horizontal cross-country analysis.

To engage in statistical comparisons requires correct and consistent definition and measurement. The difficulties inherent in the task can be demonstrated with the example of Sweden's Televerket reporting of its own performance.

It is virtually impossible to find any publication by Televerket that does not have tables or charts comparing international rates, with Sweden having the lowest-priced

Figure 32.1 and 32.1a

OECD Basket of Business Telephone Charges, in US$ Exchange Rates and PPPs, November 1989

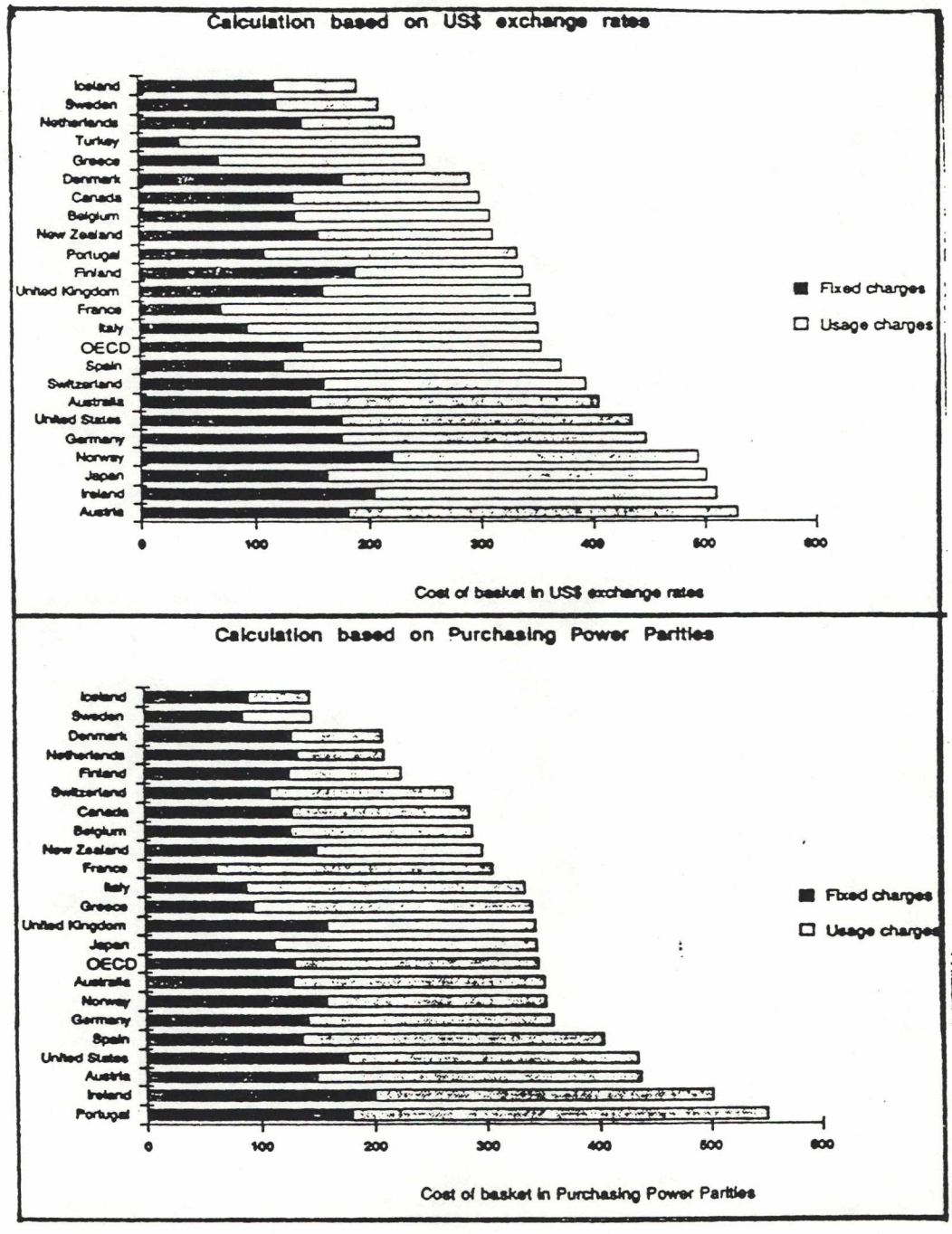


Source: OECD, 1990, p. 52.

service. One Televerket study, published in 1984, shows the number of working hours required for an average industrial laborer to pay for annual fixed telecommunication service basket (Roos and Loenqvist, 1984). In Sweden, the basket required thirty hours of work. For Great Britain, in contrast, it was eighty hours; for France, sixty-five; for Germany, fifty-five; and for the United States, fifty. The study's complete lack of transparency presents a problem for the reader. Nowhere in the report is the telecommunications "basket" defined. Repeated attempts to obtain that information from the authors, or from Televerket, were unsuccessful. It appears that the basket is similar to that used by Siemens (Siemens, 1988), but that does not insulate it from scrutiny. Thus, Mitchell (1983) comes to very different conclusions from those of Televerket. Clearly, every country has different prices and usage patterns for different components, permitting arbitrary comparisons. Furthermore, the Televerket study does not explain how it dealt with the greatly varying rates in the United States (e.g., its very different rate differences among customer types and geographic regions). Business users pay more than residential ones, and rural users pay less than urban ones. Nor does the Televerket study account for competing carriers such as MCI, or off-peak calling, where substantial discounts exist. Moreover, this study seems to assume that the U.S. equipment is rented by users. Most Americans, however, buy their equipment, since it is much cheaper to buy terminal equipment than to rent it. The

Figure 32.2 and 32.2a

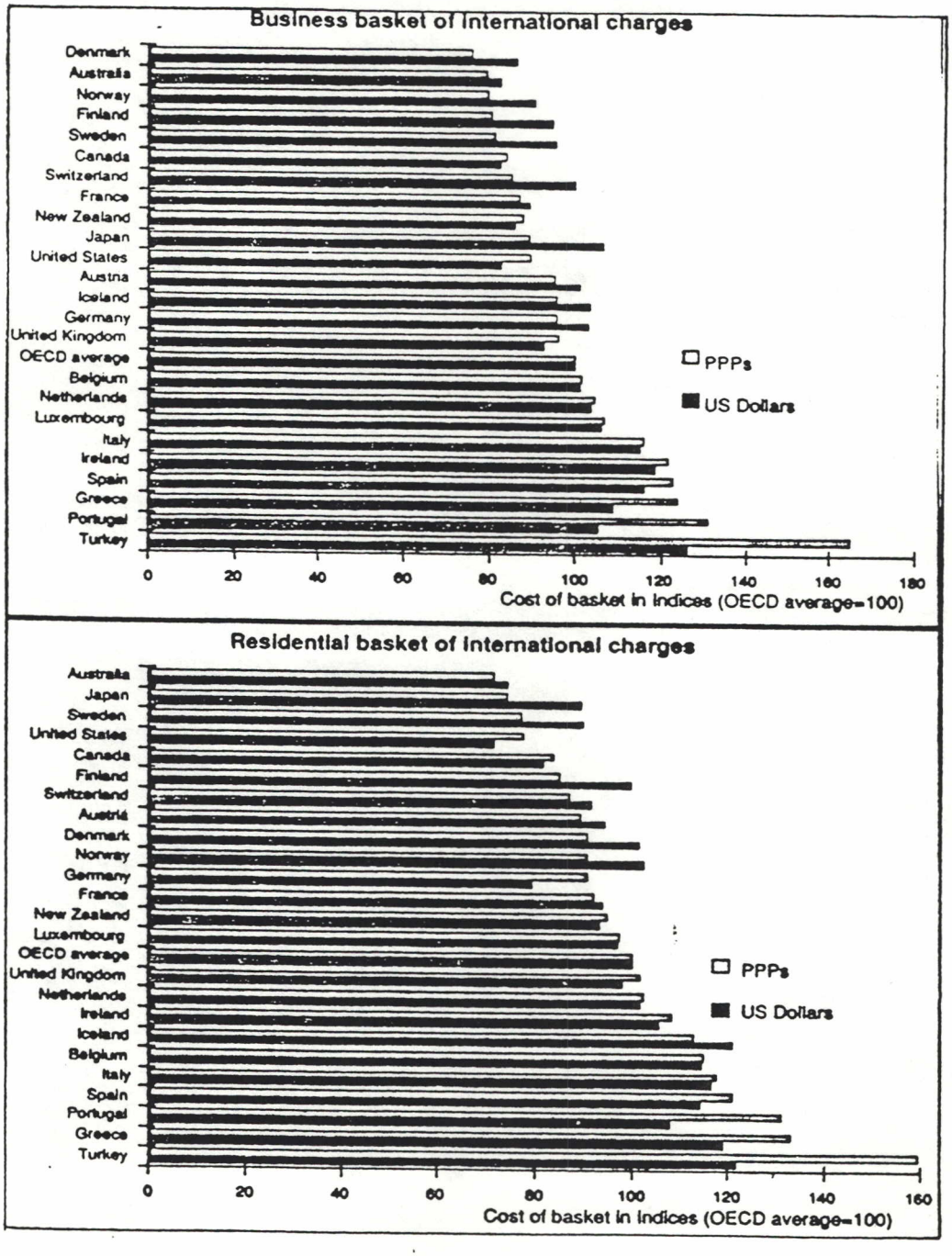
OECD Basket of Residential Telephone Charges, in US$ Exchange Rates and PPPs, November 1989



Source: OECD, 1990, p. 53.

Figure 32.3 and 32.3a

OECD Basket of International Telephone Charges, Ranked by Country, November 1989



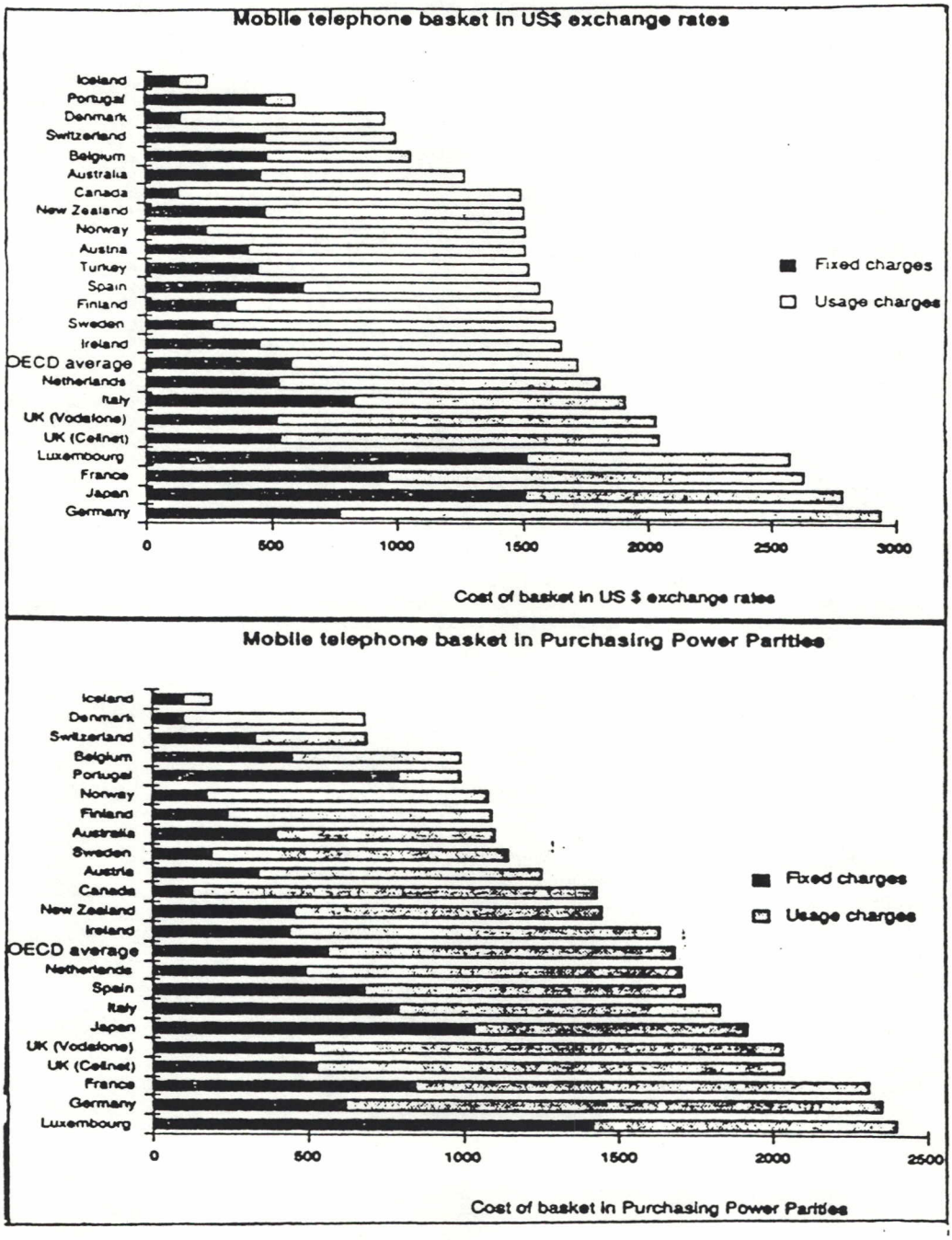
Source: OECD, 1990, p. 61.

study discloses no absolute cost of service—which is of course problematic, since any comparison would depend on the exchange rates of the day—but uses the average industrial wage as a measuring rod. As a result, the comparison is biased toward richer countries, where wages are higher, and within these countries toward those with strongly unionized economies, where industrial wages are relatively high. Televerket indicated that for local rates, New York City was chosen as a typical representative of the United States. The author, until recently regulator of telephone rates in New York State, wishes that this were true! Unfortunately, for a variety of reasons, New York is at the high-cost end. Furthermore, in New York State, rates vary by the size of the local and adjoining exchanges, on the rationale that small exchanges provide local connections with fewer other parties, and hence should be cheaper. Thus, even within the New York region, the city itself is high-priced. New York City is also one of the few locations in the country without flat rate service. In most other places, the flat rate service option provides a discount to many users that is not reflected in the measured service rates. Thus, New York is hardly typical, and it creates bias in the figures used by Televerket.

Other problems bias comparison of Swedish and U.S. systems: Swedish usage of operator assistance in calls is much lower (one for every twelve in the United States); U.S. residential mobility reduces the life of a main station to 3.8 years (versus ten years in Sweden), which leads to higher installation costs than are

Figure 32.4 and 32.4a

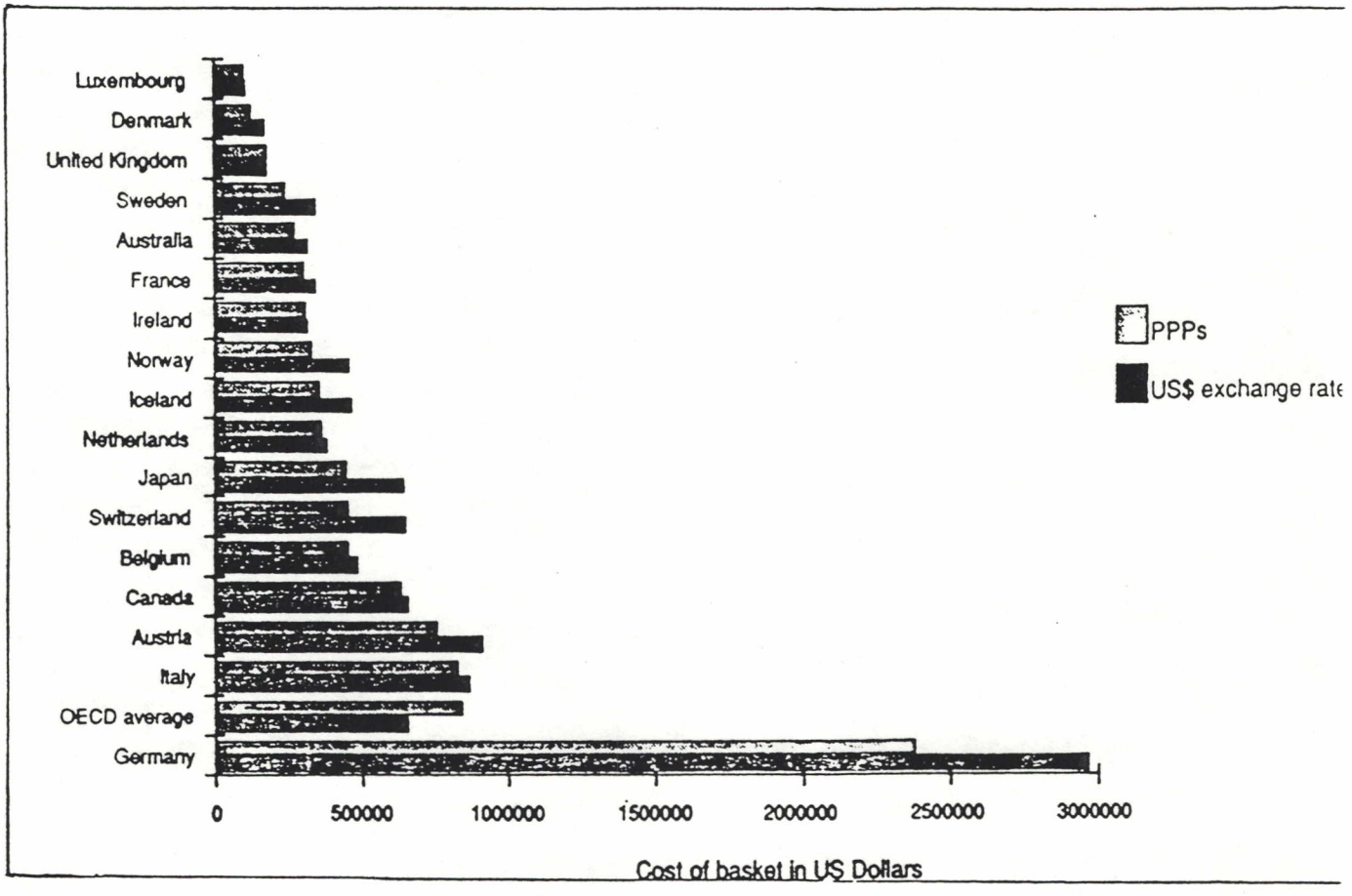
OECD Basket of Mobile Telephone Charges, Ranked by Country, November 1989



Source: OECD, 1990, p. 64.

Figure 32.5

Basket of Charges for 1.5/2.0 Ombit/s Leased Lines



Source: OECD, 1990, p. 70.

reflected in charges; 75–80 percent of U.S. residential toll minutes are incurred at low-rate off-peak periods, whereas the proportion in Sweden is 36 percent. There is also the question of what a local call will buy in terms of the territory covered. This figure can vary tremendously. In the Netherlands, for example, the range of a local call is 31 square miles; but in the United Kingdom it is 2673 square miles, and in the United States the local ranges vary greatly across the country.

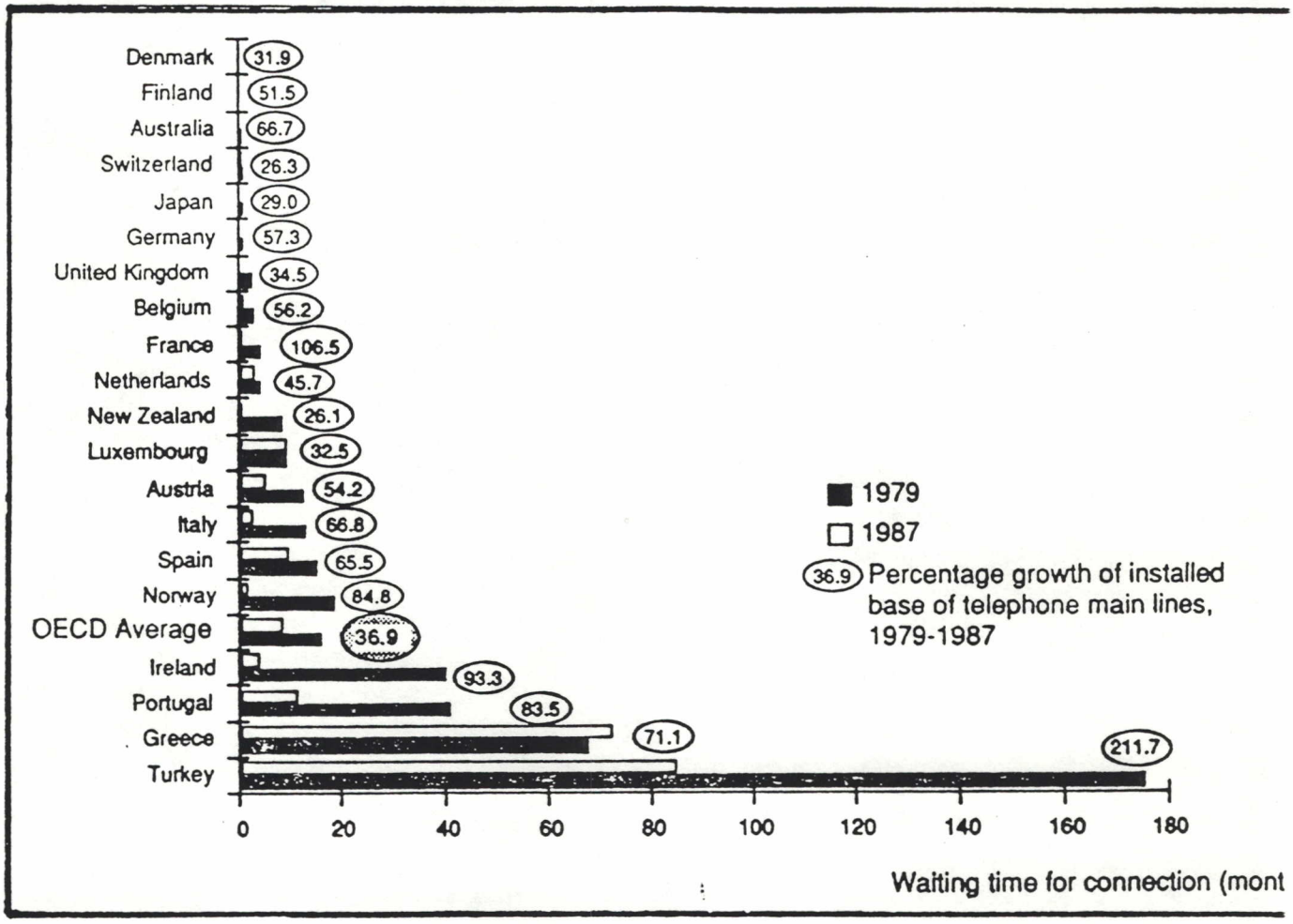
It is also noteworthy to compare services. In the United States, operator assistance and itemized bills are included. Network quality, as measured by the percentage of unsuccessful calls due to overload or technical faults, was at 2.4 percent of trunk calls in 1985 (Televerket, 1986, p. 9). In the United States, the percentage of unsuccessful trunk calls was 1 percent for only twenty peak hours per year, with the other times being lower.

It thus appears that in this comparison virtually every judgment call ends up with an unfavorable assumption about U.S. rates, or noninclusion of favorable factors. Although some simplifications are unavoidable, Televerket's analysts should not consistently err to one side.

In the decade between 1972 and 1982 alone, at least fourteen international comparative studies of residential telephone rates were undertaken (Mitchell, 1983). Subsequent comparisons include Siemens (1988); Logica (1989); McDowall (1987); and Horton and Donovan (1987). The results vary widely but are

Figure 32.6

Waiting Time for Telephone Installation, Selected OECD Member Countries, 1979-87



Source: OECD, 1990, p. 126.

Table 32.7

Fault Reporting Rates in Selected OECD Countries

Country	Year	Faults per 100 main lines	Comments
Belgium	1985	41.3	
Denmark	1988	31.7	Jutland Telephone
Finland	1987	23.0	
France	1986	21.7	
Greece	1987	62.5	
Ireland	1988/89	52.0	
Japan	1988	2.2	
Norway	1988	30.9	
Portugal	1985	59.0	
Spain	1986	46.3	Complaints
		31.0	Faults
Sweden	1986	16.0	
Turkey	Jan.-Oct. 1989	19.4	
United Kingdom	1988	22.0	

Source: CEPT, PTO annual reports.

Source: OECD, 1990, 131.

consistent insofar as they usually favor the sponsoring administration. Usually, the definition of the basket (local versus long-distance) can strongly affect results, depending on the extent of subsidization of local calls. Given the large number of variables to be considered and judgments to be made, one could conduct defensible statistical studies that would show probably several countries as the cheapest telephone country. Mitchell (1983), a respected RAND economist, using 1979 data for hourly earnings of production workers in manufacturing industries, finds that forty-two hours of work purchase one year of residential service in the United States. In Sweden, the same service requires fifty-five hours; in the United Kingdom, ninety-eight; in Italy, 111; in Germany, 126; and in France, 165 (Mitchell, 1983).

Possibly to alleviate this problem, since 1983, Televerket's comparative rate calculations have been modified; they are compiled by the British consulting firm Logica and are based on a basket of the French user group, AFUTT. In a recent Logica survey Sweden had the third lowest rates of all OECD countries. However, contracting out does not necessarily resolve the problem.

For Televerket it is not a simple statistical number that is at stake. Televerket's public relations, both domestic and international, seem to revolve around its claim to be the world's lowest-priced service provider. This may well be true, but Televerket owes a significantly more comprehensive analysis if it

Table 32.8

Public Payphones in OECD Countries

Country	No. of payphones	Payphones per 1 000 population
Australia[1]	34 135	2.19
Austria	28 018	3.71
Belgium	11 373	1.15
Canada[1]	143 682	5.86
Denmark	5 792	1.13
Finland	17 739	3.61
France	213 126	3.86
Germany	162 458	2.66
Greece	21 815	2.20
Japan	910 000	7.54
Luxembourg	640	1.75
Netherlands	8 020	0.55
Norway	13 353	3.22
Portugal	18 126	1.77
Spain[1]	40 720[2]	1.06[2]
Sweden	18 700[3]	2.10
Switzerland	57 526	8.90
Turkey	35 500	1.55
United Kingdom	76 500	1.35
USA	1 714 055	7.18

Notes: 1. 1985 data.
2. Call box telephones - i.e. excluding public call offices.
3. 1988 data including privately operated payphones.

Sources: Siemens, 1987; PTOs .

Source: OECD, 1990, p. 129.

wishes its numbers not to be viewed as self-serving. Televerket's management concedes the uncertainties of these figures and a certain overenthusiasm of its public relations department. This should be reflected in more restrained publicity materials.

Perhaps the most thorough comparative study of rates and quality is a lengthy OECD report issued in 1990. But it too makes numerous assumptions that are problematic for the U.S. system, which has a structure that is considerably different from the European ones.

The OECD methodology uses an average ratio between fixed and usage-sensitive charges (2:3 for residential and subscribers 1:4 for businesse users). In applying these ratios to the U.S. situation, the OECD study apparently does not take into account the fact that most U.S. monthly residential fixed service charges include provision for unlimited local calling. Business calls in contrast, are often not included. Otherwise, it is hard to understand how the study would list residential fixed charges at $175.10, which is higher than business charges—calculated at $174.67 (OECD 1990, Figure 3.2, p. 46). This misconception skews the subsequent analysis. Other assumptions are similarly unfavorable, such as the use of New York City as the comparison city; the absence of quality factors; the lack of credit for operator availability and itemized billing; the use of AT&T as long-distance carrier; and the use of only partial off-peak discounts.

The study itself concedes that: "on balance, the model works best for the countries of Western Europe which tend to have similar tariff structures and similar geographies" (p. 57).

In consequence, it is best to use the following figures as a comparison of traditional or semi-traditional systems, and to be wary of applying them to the U.S., and perhaps to Japan.

OECD calculations show that the lowest rates in Western Europe for a basket of business telephone charges, including fixed and usage costs, are found in Iceland ($365) and the Netherlands ($430). Swedish rates are $600 while the highest charges are found in Austria ($1,409), Ireland ($1,320) and Germany ($1,326). The OECD average is $930 (OECD, 1990, p. 52). When purchasing power parities are held constant (Figure 32.1), Iceland, Denmark, the Netherlands and Sweden are least expensive for telephone charges (Figure 32.1); Portugal, Italy, and Ireland are the most costly. Germany is also above average (OECD, 1990, p. 52).

The OECD's comparison of a basket of residential services shows similarly that consumers in Iceland, Sweden, Denmark, and the Netherlands enjoy the lowest rates, whereas rates in Portugal and Ireland are highest. Iceland's rates are only $191, representing 34 percent of the OECD average of $354. Austrian consumers, on the other hand, pay $529—64 percent above the OECD average (OECD, 1990, p. 53).

Europe's lowest international charges are found in Scandinavia, with Denmark ($76) being the cheapest of all OECD

countries for business service. On the other end of the scale, Spain, Greece, and Portugal have the least favorable business rates. Turkey and Portugal, at $165 and $131, have the highest rates in Europe. They are followed by Greece ($124) and Spain ($123).

The residential basket of international charges (Figure 32.3) shows that among the five least expensive countries in the OECD survey, Sweden (at $78) is the cheapest European country. Turkey, Greece, Portugal, and Spain have the highest charges in Europe.

The highest European charges for mobile services are found in Luxembourg, France, and Germany. Germany, the highest at $2944, reflects a ratio of usage-to-fixed charges of almost 3:1. France, which follows with $2630, has higher fixed charges than Germany; Luxembourg ($2573) has the highest fixed costs of the three.

The OECD's basket of mobile telephone charges calculated in purchasing power parities (Figure 32.4) shows Iceland as the least expensive nation, with the second cheapest, Denmark, over three and a half times more expensive ($189 versus $687). At the other end of the scale, Luxembourg had the highest charges for mobile service ($2405) followed closely by Germany ($2358) and France ($2316). The OECD average for mobile service is $1681 ($1116 for usage and $565 for fixed charges).

The OECD comparison of charges for leased data lines with 1.5–2.0 Mbps of capacity (Figure 32.5) shows a relatively even

distribution for all OECD countries except Germany. Here charges are about three times higher than the OECD average.

Price is not the only performance dimension of significance. OECD figures adapted from the ITU statistics reveal great variation in the amount of time it takes to obtain telephone service (Figure 32.6). The OECD average shows a significant drop in the amount of waiting time between 1979 and 1987 to around ten months, and the installed base of main lines grew 37 percent. Potential subscribers in Greece and Turkey must wait six and seven years, respectively, for installation. This stands in stark contrast to the situation in Denmark and Finland, where waiting time is negligible. Greece is the only country among those shown where the wait actually increased between 1979 and 1987, while at the same time its installed base of main lines increased 71.1 percent. Portugal and Ireland both cut waiting periods significantly between 1979 and 1987, but still rank high on this dimension.

The growth rates of installed lines in OECD countries for the same eight-year period were remarkable (see also Figure 32.6), with Turkey (211 percent), France (106 percent), and Ireland (93 percent) leading the way. Growth was less dramatic in percentage terms in more mature telephone systems (e.g., 26 percent in Switzerland).

OECD statistics reveal the range of faults, apart from network congestion, reported per 100 main lines. Only thirteen countries compile such statistics nationally (Table 32.1).

Japan's rate—in 1988, 2.2 faults per 100 lines—is far below that of any European country participating in the survey. Greece (62) has the highest rate, followed by Portugal (59) and Ireland (52). Some of Europe's most reliable networks include Sweden at 16 and France at 22 (both for 1986). The OECD estimates a 40 percent likelihood of line faults occurring in OECD countries (OECD, 1990, p. 131).

OECD figures also show that the availability of pay phones per 1000 population in European countries (1985) ranged from a low in the Netherlands of 0.55 to a high in Switzerland of 8.9 (Table 32.2). Between these extremes lay the United Kingdom (1.35), Germany (2.66), and France (3.86). In the United States (excluding privately operated phones) the number was 7.18. The bulk of the world's payphones are in Japan and the United States.