144. PNR wrote to 25,000 households requesting copies of their local telephone bills, long-distance bills, cable TV bills, and cellular bills. PNR paid $5 to each responding household. PNR received telephone bills from 8,731 households, for a response rate of about 35 percent.[25] Whenever a survey is performed, an analysis of non-respondents must be done to insure that the respondents are not biased, particularly when the response rate is this low. No such study has been done to validate the PNR sample, to my knowledge. There is a presumption that the response rate will be highest in lower-income households, to whom the $5 payment is more significant. No conclusion about long-distance customers in general can possibly be drawn in view of the bias.

145. The bias from selective response appears to be serious. MCI has carried out a comparison of data from PNR on purchases from MCI with similar data on purchases by all of MCI's customers. According to PNR, about 54 percent of MCI residential customers spent $10 or less on long distance. In the MCI data, the corresponding fraction is only 32. Plainly, the highest usage customers were under-represented in the sample.

E. Issues in the Measurement of Cost

146. Economists generally agree that the relation between price and marginal cost is useful for understanding issues about competition and performance. But making valid inferences about industry performance from the relation of price to marginal cost is a challenge. Although the textbook perfectly competitive seller sets its marginal cost equal to price, it is difficult to relate departures from that equality into a suitable measure of performance. An industry could have marginal cost below price but still be workably competitive. In such an industry, the potential entrant would not perceive profit. The hardware costs of the network can be measured, but appear to be a small part of the total cost. Access charges are the single largest component of cost and are easy to measure. The remaining 5 cents or so of cost are in areas such as customer service, billing, and other office-based activities that are hard to measure on a marginal basis.

147. One approach to measuring cost is to look at the very best prices charged for different long-distance services. Long-distance transport sells for about 1.5 cents

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[25] *Ibid.*, PNR information about Bill Harvesting II.

per minute, which is in line with estimates of network costs. It appears that the best available price for switched long-distance for offices or homes is a little below 10 cents per incremental minute, about 4 cents above access charges.

148. Despite the difficulties in measuring marginal cost accurately, I believe that the price-cost margin has declined substantially in the long-distance industry in the past decade. This decline is consistent with increasing competition. The decline has reached the point that the industry today is not far from the limit where price just covers marginal cost.

F. Cost Differentials among Customers and Corresponding Price Differentials

149. It is well known that customers with higher volumes pay less per minute for long-distance service. Some economists have been concerned that these price differences arise from the type of price discrimination that occurs when sellers have market power. Alternatively, the price differences could reflect cost differences. Pure price discrimination, not based on cost differentials, will not exist in a textbook perfectly competitive market. Price differences based on cost differences will occur even in perfect competition. In the long-distance industry, there is good evidence that favorable prices promoted mainly to high-volume customers (a common form of price differential in the industry) are the result of cost differences rather than pure price discrimination.

150. The costs that a long-distance carrier incurs to serve an additional customer for an additional month are substantial. A major component is the cost of billing. According to MCI, the cost of billing a customer with a single long-distance call is about $.48 per month (based on MCI's contracts with local carriers). Another major component of the cost during the period under study of an additional customer is the charge for the Universal Service Fund. This charge is about $.50 per line per month. Thus, an additional customer costs about $.98 per month.

151. As I have noted earlier, there has recently been a shift toward simplified flat-rate long-distance plans and away from explicit quantity discounts, though some flat-rate plans have minimum charges. Higher-usage customers are more likely to take the trouble to seek out the best flat-rate plans. Long-distance carriers are likely to target known large users for their flat-rate promotions, because it is not worth the effort of contacting the low-usage customer.

152. If the higher rates per minute paid by the smallest customers are the result of pure price discrimination and do not reflect differences in costs, including the promotional costs of signing up the customers, then there would be an important arbitrage opportunity for resellers. Because a reseller can buy service cheaply at high-volume low prices and resell the services at higher prices to small customers, the reseller makes substantial profits when prices depart from costs. As I have discussed, there is an active market for resold service—there are at least 260 resellers of long-distance service. I find it unlikely that there are large profits available to resellers that they have failed to pursue, despite the vitality of the reselling business. A more reasonable explanation is that there is an additional cost to recruit and serve each customer. As a result, carriers offer low prices to large customers, as would be expected under competition, to reflect the recruiting cost and the fixed monthly cost of serving a customer.

G. Technical Improvements and New Services since Divestiture

153. Even the occasional user of long distance in the United States is aware of the tremendous improvement in the quality of service in the past decade. Background noise, cross-talk, echoes, and dropped calls have essentially disappeared from long-distance calls. The usefulness of one minute of telephone conversation has risen over the period at the same time that the cost of that minute has fallen dramatically. Fiber optics account for much of the improvement. State of the art fiber network has advanced from under a billion bits per second in 1986 (capacity for 10,000 simultaneous phone calls) to 1.76 billion bits per second in synchronous optical networks today. In addition, the new dispersion-shifted fiber technology requires half as many regenerators per mile in the network. These advances in long-distance technology have lowered costs and improved reliability. The carriers that took advantage of the opportunities in long distance as the AT&T monopoly was broken up—MCI chief among them—have been leaders in advanced fiber technology.

H. Structure and Competition

154. The data reviewed earlier in this section effectively demonstrate the benefits that consumers have received from the development of a competitive long-distance market. In addition, the structural factors often considered by economists in judging the likelihood of the existence and continuation of

competition support the conclusion that vigorous competition is serving the interests of the long-distance consumer. These factors include the concentration of sellers, trends in market shares, the ability of rivals to observe prices, barriers to entry, profitability, and returns to scale.

1. Concentration

155. The domestic long-distance industry in the United States has the following competitive structure: There are four carriers with national networks (AT&T, MCI, Sprint, and WorldCom). Their current market shares are roughly 54 percent, 18 percent, 9 percent, and 5 percent, respectively.[26] There are at least 20 other carriers with annual revenues over $100 million, including Cable & Wireless and Allnet. In addition, numerous other carriers have smaller roles in the industry, based on their own facilities, capacity leased from other owners, and on reselling network services from other carriers. The FCC reports that there are 390 firms identifying themselves as long-distance carriers or resellers of interstate services.[27] The sellers other than the top four now account for 15 percent of the market.

156. AT&T's market share of just over half does not necessarily indicate a serious deficiency in competition. In any industry, but particularly in an industry where one seller has had an historical head start, one must examine a broader set of information than market share to reach conclusions about the state of competition in a market. In particular, such an examination should consider trends in market shares, barriers to entry, and the prospective profits of a new entrant. It should also consider direct evidence on price-cost margins, as I discussed earlier.

157. WorldCom is now the fourth largest long-distance carrier with nearly 4.1 million customers as of 1995. It has grown both by building its own facilities and by acquisition of other carriers. In January 1995 WorldCom's predecessor, LDDS, acquired WilTel, the sixth largest carrier. Recently, WorldCom acquired Brooks Fiber, a company that provides access services to businesses in several

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[26] *Long Distance Market Share, Second Quarter 1996*, Table 6, Quarterly Toll Revenues Reported to Shareholders, Industrial Analysis Division, Common Carrier Bureau, Federal Communications Commission, September 1996.

[27] *Ibid.*, Table 1.

cities. Currently, WorldCom has about a 5 percent share of the long-distance market. Allnet is the fifth largest carrier with 1.5 million customers as of 1995. Allnet has achieved its growth as a reseller. In 1995 Frontier Communications acquired Allnet's parent. Their combined market share is about two percent of the market. These two firms are just two of the many players who are aggressively challenging AT&T, MCI, and Sprint. At present, there are 130 facilities-based long-distance carriers and 260 resellers who are actively recruiting customers.

158. The market contains many aggressive, successful carriers who have every intention of taking as much business as they can away from the larger carriers. Executives in the industry who are constantly fighting to retain customers solicited by WorldCom, Allnet, and other aggressive sellers would be amused at a portrayal of their industry as a comfortable club with just three members who have agreed not to poach on each other's territories. These other carriers could expand rapidly if competition among the larger carriers were inadequate and left prices above competitive levels. Further, the smaller carriers are increasing competition in the market through consolidations that result in a number of highly successful entities such as Frontier Communications, the fifth-largest carrier. A recent example is the merger announced on June 6, 1997, between Excel and Telco Communications Group, Inc., to create what will be the sixth-largest carrier.

159. The smaller carriers thrive on the availability of fiber capacity in the lease market. Several carriers, such as WorldCom, have an important business in building and leasing fiber capacity to other long-distance carriers. Lease customers include the major carriers as well as the smaller interexchange carriers.

160. Aggressive rivalry from the other larger carriers—MCI, Sprint, and WorldCom—together with the presence of numerous smaller carriers now accounting for 15 percent of the market has been effective in promoting competition in the long-distance market even though AT&T remains the largest long-distance carrier.

2. Trends in Market Shares

161. The changes in and current levels of market share of the long-distance carriers reveal a vigorously competitive market. Thirteen years have passed

since divestiture opened the long-distance market. AT&T still has a majority share, but it continues to lose share—from 65 percent in 1990 to 53 percent in 1995—to all of its rivals. What market share AT&T still has, it retained only by competitive response to the aggressive attempts of its rivals to lure away its business. MCI and Sprint, through combative pricing and pursuit of customers, have raised their combined market shares, to 28 percent as of 1995, up from 24 percent in 1990. The rise in MCI's and Sprint's market shares accounts for about a third of AT&T's loss of share. The remainder—two-thirds—of AT&T's loss was the gain of smaller, but fast-growing and successful, carriers.

162. Measured by economists' favored index of market concentration, the Herfindahl-Hirschman Index (HHI), long-distance service has become ever more competitive with the passage of time. The HHI for 1996 was at a level only half of what it was in 1987. With a continuation of the downward trend observed continuously since divestiture, the long-distance industry will enter the range of a relatively unconcentrated industry within the next 10 years or so.

3. Communication of Prices among Rivals

163. Economic analysis of the relation between competition and rivals' observation of price has stressed that the central question is whether a firm can take its rivals by surprise by offering terms to prospective customers that the rivals cannot match immediately. If a smaller firm can attract a significant number of customers before its rivals respond, competition is more effective in lowering prices because the firm can expand relative to its larger rival or rivals. Even a one-day advantage can be crucial—in the airline business, one carrier can run a media blitz for a special low-price offer for a single day and book a large amount of business, even if the other carriers respond with their own blitzes the next day. In the residential long-distance business, one important tool is the signup bonus. The larger carriers target their rivals periodically with mass mailings offering bonuses—the rivals learn about the tactic only after it occurs. Promotional bargain offerings come at such a fast and furious pace that rivals cannot respond quickly enough to erase the temporary advantage that each offer provides to the carrier making the offer.

164. The observability of prices by rivals is a significant issue in markets with high barriers to entry and small numbers of firms. But in the long-distance market, with hundreds of sellers, a smaller seller need not fear that its larger rivals will respond to the prices it sets. The small firm can publicize its prices as

widely as it chooses. Smaller firms find viable niches in the market, knowing that larger rivals would sacrifice too much profit from their existing customers if they matched the terms that were being offered by the smaller firms to a few of its customers. The combined effect of the hundred or so smaller carriers, each nibbling at the shares of the larger carriers, is to enforce a high level of competition in the market in general.

4. Barriers to Entry

165. Although market share information is useful, it is important to examine a broader set of information than just market shares to reach conclusions about the state of competition in a market. In particular, the examination should consider barriers to entry and the prospective profits of a new entrant. In a non-competitive industry with conspicuous barriers to entry, a new firm would make high profits if it could overcome the barriers. In long distance, regulation created an absolute barrier to entry until the 1970s. Prospective entrants knew they could make substantial profits if they were allowed to compete with AT&T, and they were willing to fight hard for the right.

166. The role of barriers to entry is prominent in all discussions of structural determinants of competition. If a small number of sellers are isolated from further competition by high barriers to entry, the likelihood of implicit collusion is higher. In my opinion, however, the barriers to entry in the long-distance business are relatively low, so actual and prospective entry keep the market competitive.

167. Potential barriers to entry in the long-distance industry include the cost of creating a network of sufficient size to compete effectively with existing carriers and the cost of attracting customers from those carriers. One form of entry would call for a completely new network of transmission facilities at the national level. This form would cost billions of dollars and would likely be unprofitable. AT&T estimates that it has spent nearly $3 billion on its fiber network in 1993 excluding electronic or optoelectronic equipment.[28] It is precisely the favorable state of competition that makes such entry unprofitable. If the existing long-distance carriers were charging prices that generated excessive profits and were

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[28] Jonathan Kraushaar, *Fiber Deployment Update*, Industry Analysis Division, Common Carrier Bureau, Federal Communications Commission, April 1993.

providing substandard service, the prospective profits to full-scale entry would be enough to induce the necessary large investment, exactly because there are no artificial barriers to entry in the long-distance market.

168. Most importantly, provision of national service does not require the ownership of a full national network. If uncompetitive behavior among the larger carriers created excessive prices, the resulting profit opportunity would be seized by operators who already know how to assemble an effective national service from components available today in the lease market.

169. Even if prevailing prices generated only moderate excess profits, a different form of entry at the national level could still occur. A national network could be created from a combination of investment and leasing of existing fiber capacity, a successful strategy pursued by WorldCom and Allnet. Also, entry is possible on a smaller scale by constructing a smaller network and by reselling the services of other carriers. AT&T has more than 50 percent of its fiber dark while Sprint has nearly a quarter still dark.[29] There is an active lease market for fiber transmission facilities to support this type of competition. Again, if failure of competition among the larger players created high prices and poor service, the smaller players would expand to take advantage of the profit opportunities that such a situation would create. The technology of long-distance telephone service is well suited to competitive discipline because successful rivals can remain permanently viable.

170. Some economists have concluded that the basic transmission technology of modern long-distance service—fiber optics—has high fixed and low variable costs. In other words, according to this view, a long-distance carrier must make a large investment to be in business in the first place, but can then increase its volume of business without adding much capacity or incurring additional costs that rise with volume. But this view fails to consider the flexibility of long-distance operations. In particular, the ownership of facilities and the provision of long-distance service are not linked in the way that the analysis assumes. The United States has an active market in leased communications facilities that supports a much more flexible industry with essentially constant returns to scale. The market easily supports active competition among many long-distance carriers.

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[29] *Ibid.*

171. Analyses of barriers to entry have stressed the importance of sunk costs, rather than the total costs of entry. A sunk cost is one that cannot be recovered if entry is not successful. Few of the costs of transmission capacity in the long-distance business are sunk, because there is an active market where an unsuccessful entrant in retail long distance could sell or lease facilities to other retail sellers. In this respect, the long-distance market is quite different from the local market—in that market, the investment of an unsuccessful entrant may have little resale value, so sunk costs are a more important barrier to entry in local service than in long distance.

5. Profits

172. If existing long-distance carriers were charging prices that generated excessive profits and were providing substandard service, the profits of a prospective entrant would be enough to induce the necessary investment for full-scale entry because there are no artificial barriers to entry in the long-distance market. Even if prevailing prices generated only moderate excess profits, a different form of entry at the national level, or entry on a regional level, could still occur. Today, 13 years after pre-divestiture barriers to entry were removed, the entry of around 390 carriers of different sizes has exhausted the profits from entry. As a result, the long-distance market is substantially competitive, and the ease of entry ensures that the market will remain competitive in the future.

173. Where competition is weak, firms can overprice their products and enjoy abnormal profits from their market power. One way to consider profitability is to study data on stock market values. The market places a value on the future stream of profit. Figure 3 compares an index of AT&T, MCI, and Sprint adjusted stock prices to a similar index of adjusted stock prices for the Bell Operating Companies. The adjusted stock price is the value of an initial investment of $1 with dividends continuously reinvested in the same stock. Each line in Figure 3 is the value-weighted average of the underlying individual stocks. The figure shows that, since the beginning of the decade, the Bells have outperformed AT&T, MCI, and Sprint in the stock market.[30]

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[30] Data were compiled from TradeLine and represent monthly stock prices adjusted for capital changes and cash and non-cash dividends. An index, beginning 1/1/90, was constructed for each company. Then indices for the long-distance carriers and the RBOCs were constructed using market values as of January 20, 1997.

Figure 3. Adjusted Stock Prices for Long-Distance Carriers and Bells

174. Another way to see how the stock market views competition in the telephone industry is to compare stock-market values to the book values of assets. Almost all firms trade well above book value, because of intangible assets not included in their accounts, but firms with market power are valued even higher because of the capital value of the extra profits associated with market power. Here are recent data on market to book value ratios for long-distance carriers and local telephone companies:

Company	*Ratio of Market to Book Value*
AT&T	2.7
MCI	2.4
Sprint	1.8
WorldCom	8.0
Ameritech	4.4
Bell Atlantic	3.6
BellSouth	3.2
Nynex	3.0
Pacific Telesis	6.2
SBC	4.6
US West	4.3
SNET	5.3

Source: Morningstar StockTools Database

The only long-distance carrier with a lofty market value in relation to book value is WorldCom, not usually identified as a member of the comfortable long-distance oligopoly. AT&T, MCI, and Sprint—the usual members of that group—are at the bottom. The stars, apart from WorldCom, are Pacific Telesis and SNET.

175. If, as some economists have concluded, the long-distance industry earns abnormal profit from the market power that results from limited competition, then the profits of the established sellers should exceed the profits of the would-be rivals that are locked out of the market. A comparison of AT&T to WorldCom suggests just the opposite. The stock market value of AT&T is slightly over $1 of value per dollar of revenue. WorldCom commands over $2 of value per dollar of revenue.[31] The stock market believes that AT&T's position is likely to continue to wither compared to other sellers such as WorldCom.

6. Returns to Scale

176. Competition cannot flourish in an industry where the technology has important returns to scale. When large scale brings lower cost, one firm will dominate and its cost advantage will prevent effective competition from smaller rivals. All the evidence suggests the absence of increasing returns in the long-distance market. AT&T is approximately three times as large as MCI. Under returns to scale, AT&T should have substantially lower costs per minute of service and thus higher profits. But, in fact, AT&T and MCI are about equally profitable. Further, many carriers exist in the market that are much smaller than MCI, and these small carriers are not only viable, but profitable and growing.

I. Conclusion on Competition and Collusion

177. The United States has a vibrant, successful long-distance industry. Since competition was introduced to the long-distance market, there has been a large and continuing flow of technological innovations. The performance of the industry in the past decade has been a clear success, with substantial declines in prices relative to other products and the rapid development and dissemination of

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[31] Morningstar StockTools Database.

advanced technologies by the competitive long-distance carriers. The price-cost margin has declined to close to its competitive minimum.

178. The force of competition among the four major long-distance carriers (AT&T, MCI, Sprint, and WorldCom) and dozens of other significant carriers has pushed prices down to the level where only an efficient firm with perceptive management can make a profit. But competition in long distance does not take the precise form of textbook perfect competition. For example, AT&T's brand name and consumer inertia dating back to the time when the company was a monopoly gives a continuing, though declining, advantage to AT&T.

179. After divestiture provided the opportunity for full competition in the long-distance market in the United States, competition acted quickly to lower prices. Increasing competition and rising productivity were driving forces, along with declining access charges, in lowering long-distance prices. The decline in the price of long distance was most rapid just after divestiture, but has continued since 1987. The economic analysis of the benefits of competition teaches that competition will drive prices toward the level of cost. During the transition from noncompetitive prices to competitive prices, large price reductions will occur. After the benefits of competition are achieved, the economy continues to enjoy low prices but cannot expect prices to continue falling at their earlier rate. Future declines in long-distance prices will come from continuing improvements in productivity and from any further declines in access charges that are granted by regulators or that result from structural changes in local telephone service.

180. In my opinion, the performance of the industry suggests vigorous competition with large consumer benefits even though AT&T still has about half of the U.S. long-distance market. There are neither natural barriers to entry nor barriers created by law in the market. If competition were inadequate, new firms would enter and those currently on the periphery would move into the core.

181. The Bells' economists have argued that the long-distance industry is distinctly non-competitive. The particular form of non-competitive organization that they diagnose is tacit collusion. In this view, each long-distance carrier is willing to stick to high prices because there is an understanding that the others will keep their prices high as well. However, the Bells' economists cite no evidence of actual collusion. The diagnosis of tacit collusion makes little sense for an industry with numerous sellers, many of whom are small enough to avoid any strategic response from the four major sellers, but collectively large enough to

exploit any gap between price and cost. These sellers—currently ranked number 5 and smaller—have grown collectively in recent years and now account for an important share of the total market.

J. The Bells' Potential to Increase Competition in Long Distance

182. A major issue in evaluating a Bell proposal to enter long distance is the current performance of the long-distance industry. My conclusion, stated above, is that the performance of the industry has been outstanding since competition became effective. Although the long-distance industry does not entirely fit the model of textbook perfect competition, long-distance customers have enjoyed sharply declining prices and improved service, and the market satisfies the standard of highly workable competition.

183. In view of the absence of barriers to entry and the absence of abnormal profit in the industry, there simply is no important market power left for a Bell to compete away. Since divestiture, the entry of numerous sellers has competed away the profit opportunities that previously existed.

184. As a result, standard economic analysis concludes that a Bell's control of a long-distance subsidiary in its in-region market would not increase the number of long-distance carriers in that market in the long run. Entry is driven by potential profit, and industry equilibrium occurs at the point where there are sufficiently many sellers so that the incremental profit to one more seller is zero. The number of sellers is determined by this condition. Consequently, if a Bell enters a particular market, it means that there will be one fewer other seller in the market in equilibrium. Price and quantity are the same whether the equilibrium includes the Bell or not.

V. The Net Assessment: Little to Gain, Much to Lose

185. My analysis of the impact of a Bell's control of a long-distance subsidiary relies on the analysis and factual conclusions presented earlier in this declaration. There are two major issues: (1) the benefits to the consumer from the Bell's possible role in increasing competition in the long-distance market,

and (2) the harm that would result from the breakdown in cooperation in the telephone system as a result of the Bell's dominant position in providing access services. Part IV provided the basis for my conclusion that the long-distance consumer has little to gain from the addition of a Bell to the long list of sellers already present in the long-distance market. Part II discussed the Bells' dominance of access markets and the limited role that local telephone competition is likely to play in the next few years in constraining the Bells' conduct with respect to their long-distance rivals. Material in Part III provided the analytical framework and factual background for my conclusion that a Bell's presence in the long-distance market in the Bell's own region is a threat to consumer welfare in that market.

186. As I noted in Part III, the purpose of the existing policy of structural separation is to ensure cooperation between the local carriers and the downstream long-distance carriers, who are dependent on the local carriers. One reason for changing the policy might be that the need for cooperation has declined. But trends in telecommunications appear to be sharply in the opposite direction. As the telephone network becomes more sophisticated, the amount of technical information about the local network and interaction between the local network and the long-distance carrier is becoming greater. To put it differently, the consequences to a long-distance carrier of lack of cooperation from a local carrier are greater today than in 1982 when the decision to impose structural separation was made. As soon as a local carrier such as Ameritech or SNET controls a long-distance subsidiary, the local carrier will owe its shareholders a duty of non-cooperation with its rivals in long distance. Competing with rivals, not helping them, is a central principle of the American economy.

187. The premise that vertical integration is a danger to the long-distance consumer is embodied in the Telecommunications Act of 1996, which requires that local competition reach a threshold level before a local carrier is permitted to control a long-distance subsidiary. As I concluded in Part II, local competition is far short of that threshold. Except for large businesses, few telephone customers can turn to alternative sellers of access services to avoid the adverse effects of a Bell's withdrawal of cooperation once it controls its own long-distance subsidiary.

188. Both the actual experience with local telephone companies' activities in long distance and local toll and an analysis of the structure and performance of the existing long-distance market agree that the consumer has almost nothing to

gain from a local telephone company's control of a long-distance subsidiary. In both local toll and long distance, local phone companies are the high-price sellers. We have little to gain, and much to lose from allowing the local telephone companies to enter the long-distance business serving their local customers.

VI. Discussion of Analyses Performed by BellSouth's Experts

A. Professor Jerry Hausman

189. Professor Hausman concludes that entry by BellSouth into long distance will benefit the telephone consumer because BellSouth will have incentives to continue to cooperate with its rivals in the long-distance business and to compete in the long-distance market in a way that lowers prices.[32] Additionally, he concludes that in other countries, many of which have introduced competition into long distance but have chosen to allow the historical telephone company to control a long-distance subsidiary, prices are below those in the United States. He compares Canada to the United States, in particular.

190. In support of his conclusion that long-distance prices will decline if BellSouth is permitted to control a long-distance subsidiary, Hausman cites the theory of double marginalization. Oddly, Hausman develops this analysis from scratch and does not cite or benefit from the work of his MIT colleagues, Richard Schmalensee (see below) and Franklin Fisher,[33] nor the work of other economists who have considered this subtle topic. It is true, as Professor Hausman indicates, that if a monopoly upstream firm merges with a monopoly downstream firm, and the two firms do not use efficient two-part pricing for the intermediate product, then merger of the two firms will result in a lower price to the consumer of the final product. It is a leap, however, to apply this result, as Professor Hausman does, to the telephone business, where the intermediate product (access) has a

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[32] "Declaration of Professor Jerry A. Hausman," September 26, 1997.

[33] See Franklin M. Fisher, "An Analysis of Switched Access Pricing and the Telecommunications Act of 1996," prepared on behalf of MCI Telecommunications Corporation, May 15, 1996.

regulated price and where (we hope) the local telephone company will not monopolize the downstream market (long distance).

191. The primary inhibition to the price decline identified by Professor Hausman is well explained in Professor Schmalensee's declaration in this matter on behalf of BellSouth. The basic thrust of Professor Hausman's argument is that the downstream operation, post merger, will face upstream marginal cost, whereas previously it had faced the elevated price charged by the upstream monopolist. The incentive then is to expand downstream output and to charge a lower price. Professor Schmalensee disposes of the application of this argument in the long-distance setting in prose of admirable vigor: "This naïve argument is flat-out wrong. Think about what happens if the long-distance affiliate were to take, say, 100 minutes away from a competitor. The LEC would no longer receive carrier access revenues from that competitor. If access charges were, say, 6 cents per minute, then the LEC would forego $6.00 in access revenues. To maximize profits, the LEC corporate parent must recognize that $6.00 in lost access revenues as an opportunity cost of having its long-distance affiliate carry the 100 minutes." Because of the opportunity cost, the long-distance affiliate will set a price comparable to existing prices and will not have an incentive to deliver significantly lower long-distance prices to the consumer.

192. The premise of Professor Hausman's argument is that access charges substantially exceed the economic cost of providing access. To the extent that the Bell would base retail long-distance prices on the economic cost of access rather than on the current regulated access charge, consumers would benefit. The best way to ensure maximum consumer benefit is to reduce the price of access across the board so that all sellers of long distance face genuinely lower access costs. The social benefit would be greatest if access charges were reduced and the dominant local carrier retained full incentives for cooperation by continuing the current restriction on controlling any long-distance carrier. Disregarding the adverse effects of lost cooperation between the local carrier and the long-distance carriers, it remains theoretically possible that the effect of control of a long-distance carrier by the dominant local provider may be to lower long-distance prices slightly, although this has not occurred in fact in non-Bell territories such as Connecticut where the dominant local incumbent also provides long-distance service.

193. Professor Hausman suggests, in effect, that permitting a local carrier to offer long-distance service is an end run around high regulated access charges.

In this respect, he is suggesting that the local carriers sacrifice the revenue they currently earn from access charges. To the extent that this revenue has been used in the past for social purposes such as supporting universal service, Professor Hausman is proposing to lower the revenue available for those purposes. A full accounting of costs and benefits would need to consider the effects of the loss of revenue or of replacing it from other sources.

194. Much of Professor Hausman's declaration is devoted to empirical investigations of the effect of control of a long-distance subsidiary by a dominant local carrier. He considers SNET, GTE, and Canada.

195. Professor Hausman concludes that SNET's long-distance prices are somewhat lower than AT&T's. He cites a regular peak price of 23 cents per minute and a discounted price of 20 cents for SNET. At the time (before reductions in July 1997), AT&T's regular price was 31 cents per minute. I am unable to reconcile Professor Hausman's statement about AT&T's discounted prices, however. AT&T has an actively promoted plan at 10 cents per minute, well below SNET's lowest discounted rate, even after adjustment for SNET's policy of billing by the second. I fail to see how he reaches the conclusion that SNET is cheaper.

196. Professor Hausman's comparison of GTE's and AT&T's prices is flawed in the same way. Again, Professor Hausman makes no mention of AT&T's actively promoted 10 cent rate, which is far cheaper than the GTE plan he discusses. Like SNET, GTE has positioned itself toward the top of the distribution of long-distance prices, whereas currently AT&T offers one of the better prices at 10 cents per minute.

197. Professor Hausman infers a dollar value of $7 billion per year for the national consumer savings from permitting dominant local telephone companies to control long-distance subsidiaries. This figure is calculated from his estimate of the difference between SNET and AT&T prices and ignores entirely the prices of the other major and minor long-distance carriers. As discussed above, I am skeptical of the evidence that SNET's prices are lower than other prices, and equally skeptical that SNET's role as a reseller of Sprint's services in Connecticut has had anything like Professor Hausman's estimated effect on the overall price of long distance. The figure also ignores the consumer welfare losses as SNET and other local carriers continue to withdraw cooperation from rival

long-distance companies, and the ultimate harm to long-distance competition. The figure should not be taken seriously.

198. In his comparison of the U.S. telephone market with those of other countries that have competition in long-distance service, Professor Hausman argues that not only have other countries chosen to allow the historical phone company to control a long-distance carrier, but that in Canada, the country most like the United States, the historical company's rates are lower than rates in the United States. None of the Canadian prices quoted by Professor Hausman is as low as AT&T's actively promoted 10 cents per minute. Because the prices Professor Hausman quotes are for the cheapest plan offered by each of the Canadian carriers, it appears that the correct conclusion is that long-distance service is cheaper in the United States. No Canadian customer enjoys the 10 cent rate available to any telephone subscriber anywhere in the United States.

199. Professor Hausman consistently restates Canadian dollar prices in U.S. dollars at the current exchange rate. An appropriate comparison would not be at the exchange rate, but rather in terms of purchasing power. It is well documented that exchange rates do not reflect purchasing power parities except on the average. It is also widely thought that the current value of the Canadian dollar is below purchasing power parity. The excess of Canadian long-distance prices over U.S. prices would be even larger, I believe, if stated in terms of purchasing power.

200. Professor Hausman analyzes the list prices of the major long-distance carriers in a framework similar to the one used by other economists engaged by the Bells. As I showed in Part IV, list prices have as little to do with the prices paid for most purchases in this industry as in many others. AT&T may put a list price of 27 cents on its product, but it gets about 12 cents on the average and customers with any significant long-distance volume have only themselves to blame if they pay more than about 10 cents.

201. Professor Hausman makes the statement, "Furthermore, AT&T did not pass on the recent (July 1997) access rate decreases to its one-rate plan customers or indeed, to any of their residential discount plan customers." (p. 23) It is true that AT&T's bargain One Rate Plus plan remained at 10 cents per minute at all times of the day. But recently, AT&T moved this plan from a status where it was provided only to customers who demanded it to a status where it is actively promoted through $100 switchover checks. Surely one of the reasons

that AT&T finds it profitable to promote such a low rate is that its costs have fallen. Further, as Section III showed, revenue per minute has been declining dramatically, faster than the decline in access charges. AT&T customers are continuing to enjoy rapidly declining prices, and one of the forces contributing to the rapid decline is diminishing access charges.

B. Professor Richard Schmalensee

202. Professor Schmalensee concludes that there is inadequate competition in long distance, that BellSouth's creation of a long-distance subsidiary would deliver benefits to the consumer, and that a dominant local carrier such as BellSouth does not have an incentive to interfere in the operations of its long-distance rivals.[34]

203. The evidence he cites of inadequate competition is first, that the rising market shares of smaller carriers is a sign of high profit margins; second, that AT&T's list prices have risen rather than fallen since 1993, and that this is true even after incorporating flat-rate plans into the analysis; and, third, that prices for residential service exceed cost.

204. Professor Schmalensee observes that AT&T's market share has fallen steadily, Sprint's and MCI's have been steady, and that smaller carriers have expanded. He reaches the carefully hedged conclusion that this pattern is "consistent with tacit price coordination among the Big Three carriers, or at least with a tight-knit oligopoly" (p. 6). I believe that Professor Schmalensee would agree that any pattern of trends in market shares could be consistent with any type of oligopoly model. For example, in a Cournot model, market shares are controlled by cost differences. Perhaps the smaller carriers have more favorable cost trends than do the established firms. I do not disagree with Professor Schmalensee's use of the word "consistent" but do point out that the trends in market shares are also consistent with a workably competitive market where muscular and active smaller companies are squeezing their way into the market by taking advantage of small cost differentials. The dogs are eating the dogs, and the smaller dogs are gaining weight. My analysis of the long-distance industry in

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[34] "BellSouth's Prospects for Success in the InterLATA Market," Declaration of Richard L. Schmalensee, August 18, 1997.

Part IV uses the kinds of data that most economists would rely upon to reach conclusions about the factors explaining changes in market shares, and, in my opinion, strongly supports the competitive model for that purpose.

205. Professor Schmalensee bases his conclusions about residential long-distance prices on the PNR "Bill Harvesting" data. In response to earlier section 271 filings by SBC and Ameritech, and as discussed above in Part IV, Section D, I have shown that these data are badly biased. Professor Schmalensee continues to rely on the biased PNR data without responding to this evidence of bias. I do not believe that the PNR data are usable to measure actual residential prices. Instead, I believe that the best way to measure those prices is by revenue per minute. As I showed in Section III, revenue per minute has fallen every year since 1985. It has fallen much faster than access charges and its level is far below theoretical calculations based on price plans and hypothetical distributions of customers among plans.

206. Professor Schmalensee's discussion of AT&T's One Rate plan has been rendered completely obsolete by the One Rate Plus plan, which prices all long-distance calls at 10 cents per minute. This plan was in existence when Professor Schmalensee wrote, but he ignored it. It cannot be ignored today, as AT&T is actively promoting the plan by mailing $100 checks to prospective customers. One Rate Plus is a sure bargain for any of the subscribers considered by Professor Schmalensee on pages 9 and 10 of his affidavit.

207. Professor Schmalensee observes that AT&T earns profits on its sales of long distance—its price is above its cost. Although he does not mention the fact, it is reasonably well known that MCI makes profits as well. In Part IV, I discussed profitability and market value. Although the long-distance market is workably competitive and delivers substantial and rising benefits to the consumer, it is not perfectly competitive, the standard Professor Schmalensee applies. No industry with intellectual property, brand-name capital, and the other intrinsic features of long distance could ever be expected to have marginal cost equal to price, no matter how much rivalry there is. Professor Schmalensee's findings of marginal cost somewhat below price do not have any implications for policy analysis in general or for the evaluation of the wisdom of permitting BellSouth to control a long-distance subsidiary in South Carolina in particular.

208. Professor Schmalensee considers low-usage customers, who are well known to pay higher rates per minute for long distance than do other customers. His

reliance on the biased PNR data to estimate the fraction of AT&T customers who pay list price probably results in a serious overstatement of this fraction. I believe it is not in dispute that AT&T has retained a substantial fraction of low-usage customers and that the carriers that have expanded since 1984 have done so in part by attracting higher-usage customers. Moreover, as Professor Schmalensee discusses, it is understandable that low-usage customers pay more per minute, because there are important fixed costs of serving a customer. In a competitive industry, prices to each class of customers will reflect the costs of serving the class, including the costs associated with adding a customer, even if those costs do not vary over the customer's usage.

209. My only disagreement with Professor Schmalensee in this area is his carefully qualified conclusion that BellSouth would offer better pricing to low-usage customers: "When entering the interLATA market, BellSouth *might* position itself as a low-priced carrier" (p. 21, emphasis added). But Professor Schmalensee's review of the comparison between BellSouth and AT&T emphasizes the similarities of the two carriers. He offers no reason why BellSouth would not make the same decisions as AT&T when confronted with the same business issue: How to price to low-usage customer with substantial fixed costs and low propensities to seek bargains. All the evidence I have seen suggests that BellSouth would find the same answer as AT&T has, to offer pricing reflecting the influences of these fundamental determinants.

210. Professor Schmalensee addresses the issue of overpriced access. As he notes, there is no dispute that access charges continue to exceed cost (p. 21). He disposes quickly of the suggestion that a dominant local carrier would use its access cost advantage to offer bargains in the long-distance market. As I noted earlier, the opportunity cost from foregone access sales inhibits this source of price reductions in long distance. I would add that experience with situations such as SNET confirms Professor Schmalensee's basic conclusion that dominant local carriers do not behave as if they had low costs. They set long-distance prices at the upper end of the distribution of long-distance prices.

211. Finally, Professor Schmalensee briefly considers the issue of cooperation between BellSouth and its long-distance rivals (p. 25). He appeals to Sibley and Weisman's analysis. As noted earlier in Part III, Section H, the correct inference from Sibley and Weisman is that conditions are virtually *never* present that would encourage BellSouth to lower the costs of its rivals. My full analysis of Sibley and Weisman's results—and the related findings of Nicholas

Economides—have been available to Professor Schmalensee for several months, but he disposes of the issue in a single paragraph with the mistaken statement that a dominant local carrier generally has the incentive to cooperate with its long-distance rivals.

C. Professor Richard Gilbert

212. Professor Gilbert finds important consumer value from the bundled services that BellSouth could offer if it controlled a long-distance subsidiary.[35]

213. Professor Gilbert's assertion of benefits from bundling local and long-distance service draws in part on evidence from a survey by J.D. Power and Associates.[36] The survey found that consumers generally preferred to buy a bundle of telephone services than to buy the components separately at the same total price. That is, the survey showed, for telephones, the equivalent of the proposition that shoppers would prefer to buy milk and eggs in the same store, rather than having to visit two separate stores. Were it not for other issues, the survey would support the general proposition that it is socially optimal to rely on the market to determine how products are bundled.

214. But there are other issues in the policy decision about permitting a dominant local carrier to control a long-distance subsidiary. Although the finding that consumers prefer bundling is plausible, it provides no basis for measuring the amount of benefit from bundling, in order to weigh the benefit against the costs of permitting a dominant local carrier to control a long-distance subsidiary.

215. As Professor Gilbert notes, other telephone companies, such as AT&T, MCI, Sprint, and WorldCom, are planning to offer bundled products. Their plans indicate that they perceive commercial benefits from bundling. Again, it is reasonable to conclude that the commercial benefits obtained by sellers can be traced back to benefits received by consumers. But the announced plans of the other carriers do not provide any basis for quantification of the benefits of bundling. The entry of these carriers into local service in order to provide bundled service is pro-competitive by any standard. Because no policy issue is

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[35] "Affidavit of Richard J. Gilbert," September 17, 1997.

[36] *Ibid.*, p. 10

raised by their offering of bundled services, there has been no reason to quantify the separate benefits of bundling—all aspects of their plans are good for the consumer. In the case of BellSouth in South Carolina—where lower density and longer loops will delay the emergence of local competition in comparison to other states—any benefits of bundling must be carefully weighed against the costs of reduced cooperation that certainly will follow from the dominant local carrier's control of a long-distance subsidiary.

214: Consumers will benefit from future competition in bundled services. The opening of local markets to effective competition is a strict requirement for that competition, else the dominant local carrier will be the single seller of bundled services. Consumers will be better off if the involvement of the local carrier in long distance is deferred until local competition develops.

216. To the extent that would-be local rivals can overcome the fierce opposition of the incumbent local carrier, the consumer will be offered bundled service even if BellSouth continues to be only a local carrier. The tone of Professor Gilbert's analysis is that letting BellSouth control a long-distance subsidiary in South Carolina is the only way to deliver consumers the benefit of bundling. The correct way to frame the policy issue, however, is different: Compare the welfare of the consumer with and without BellSouth in the long-distance business. With BellSouth in long distance, the services of the existing long-distance carriers will be degraded because BellSouth will lose its incentive to cooperate with them. Without BellSouth in long distance, consumers will face one fewer seller of bundled service but will enjoy the benefits of the high degree of cooperation between local and long-distance carriers that has existed since divestiture in 1984.

217. Professor Gilbert recognizes that common ownership is not the only way that carriers can offer bundled products.[37] To return to the analogy of a grocery store, rack jobbers actually handle many stocking and merchandising functions in grocery stores. These are independent businesses that operate under contracts with the stores. The store and its many rack jobbers collaborate to bundle 40,000 different products in the typical grocery store. The consumer receives the benefits of a huge volume of bundling, but common ownership is not needed to achieve those benefits.

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[37] *Ibid.*, p. 16

218. The evidence Professor Gilbert cites on the interesting issue of contract versus ownership is decidedly mixed. He notes (p. 15) that there are a number of large, successful organizations such as Electronic Data Systems and Andersen Consulting that provide billing and other services under contract. I believe that outsourcing of many business services is a growing, not a shrinking trend in the U.S. economy.[38] On the other hand, as Professor Gilbert observes, merger with common ownership has been selected over contractual relations in a number of instances in the telephone industry (p. 17). The evidence here is difficult to interpret because many mergers are motivated by the theory that the acquired company has been underperforming. In other words, the driving force of the merger is not the economies obtained by using ownership in place of contracts, but rather the theory that the managers of the acquiring company can create more value from the acquired company's assets. I conclude that the evidence still supports the view that most efficiencies of joint telephone product offerings can be achieved through contracts. These efficiencies should therefore not be viewed as potential benefits from permitting a dominant local carrier to control a long-distance subsidiary.

219. Professor Gilbert examines SNET as a laboratory of bundling. He confirms that SNET is a high-price long-distance carrier, charging 23 cents per minute during peak times (p. 19). By contrast, AT&T will carry the same call for 10 cents per minute. Again, low prices are not a benefit that Connecticut consumers have enjoyed as a result of SNET's involvement in long distance.

D. Professor D. John Roberts

220. Professor Roberts concludes that predatory pricing, broadly conceived, is unlikely in the long-distance business.[39] Concerns that a dominant local carrier might drive out its rivals in long distance are farfetched, in his view. In this analysis, he applies the modern theory of predatory pricing—a theory to which he was a major contributor. In place of the earlier crude analysis that concluded that predatory pricing is almost invariably irrational, the modern theory has

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[38] See "Brand-Name Knowledge," *Wall Street Journal*, October 13, 1997, p. A22, by Robert Reich, for an interesting discussion of Sara Lee's decision to become an assetless company that outsources all business functions except managing its brand name.

[39] "Affidavit of D. John Roberts," August 18, 1997.

identified circumstances where it could occur and would actually be beneficial to the predator.

221. I concur with Professor Roberts's conclusion that a local carrier is unlikely to drive an established long-distance carrier permanently out of the market. Whatever effect occurred in the short run, the local carrier could not disable an established long-distance carrier sufficiently to prevent its re-entry later, when the local carrier raised long-distance prices. Although, as I have explained earlier in this declaration, the local carrier has powerful methods for interfering with its long-distance rivals, it can deploy these methods just as effectively without sacrificing profits by setting low long-distance prices.

222. There is evidence in favor of Professor Roberts's view that he does not cite: Dominant local carriers have invariably proven to be high-price, not low-price, entrants to long distance, and to retain high prices in local toll when entry occurs. Rather than benefiting consumers by setting low prices, they position themselves at the top of toll-call pricing.

223. Concerns about strategic anti-competitive pricing may be a serious factor in limiting local competition, a topic Professor Roberts does not consider. If the dominant local carrier develops a reputation for setting selective low prices targeted directly against local entrants, the result could be a powerful barrier to entry.

E. Professor Glenn A. Woroch

224. As Professor Woroch explains, there is—on paper—a set of provisions intended to permit rivals to offer competing local service by reselling the incumbent's service or by leasing network elements. [40] But the entire history of the regulated telephone industry shows over and over that provisions that try to overcome strong incentives are not nearly as effective as they appear on paper. The dominant local carrier has extremely strong incentives not to cooperate with local rivals. The high level of cooperation needed to make local competition effective is a tremendous challenge and will take much more than provisions on paper. Moreover, the incumbent local carriers have launched an effective

[40] "Affidavit of Glenn A. Woroch," September 29, 1997.