

1992 Act. We then sought comment on several alternative bases for a benchmark, including a benchmark based on rates of systems subject to effective competition as defined in the 1992 Act, average rates of all cable systems, rates charged prior to the 1986 deregulation of the cable industry, or average costs.⁶⁸ At the same time that we issued the Notice, we selected a random sample of cable systems from which we sought information concerning current prices, past prices, and system characteristics to aid in designing an appropriate rate regulation mechanism. We also obtained this information from a sample of systems appearing to be subject to effective competition as defined by the statute.

48. In our April 1, 1993, Rate Order, we concluded that the results of the Competitive Survey supported the findings of Congress that the rates for cable systems not subject to effective competition reflect pervasive market power.⁶⁹ We further determined that we should use a rate regulation system based on the rates of systems subject to effective competition as the principal means of setting regulated rates at reasonable levels.⁷⁰ Using the results of our Competitive Survey, we established a formula to estimate the amount by which the average per-channel rate charged by a noncompetitive system exceeded the rate that a cable system subject to effective competition with similar characteristics would charge.⁷¹ We called that difference the "competitive differential."

49. The Commission concluded that a competitive differential of approximately ten percent exists between the rates of systems subject to effective competition and noncompetitive systems.⁷² The Commission also concluded, however, that a competitive differential based on average behavior will overstate the appropriate adjustment for some systems. The benchmark approach we adopted in April 1993 sought to address this concern. Specifically, statistical analysis was used to develop a prediction of what price a noncompetitive system with a given set of characteristics would charge if it were a system subject to effective competition. This prediction was called the "benchmark." A noncompetitive cable system with rates at or

⁶⁸ Notice of Proposed Rulemaking, MM Docket No. 92-266, FCC 92-544, 8 FCC Rcd 510, 521-22 (1992).

⁶⁹ Rate Order at para. 14.

⁷⁰ Id. at paras. 205-207.

⁷¹ Id. at para. 14, n.29; see also Appendix E.

⁷² Id.

below the benchmark for that system was deemed to have reasonable rates; rates above this predicted level were presumed to be unreasonable.⁷³ Thus, systems whose rates were at or below the benchmark were not required to make any rate reductions, although their regulated rates were capped at current levels.⁷⁴ By contrast, systems whose rates were above the benchmark were required to examine whether their rates were above or below the benchmark on September 30, 1992. If they were below the benchmark on that date, their permitted rate was deemed to be the benchmark. If they were above the benchmark on September 30, 1992, they were required to reduce their September 30, 1992 rates by 10 percent or to the benchmark, whichever reduction was less.⁷⁵ Alternatively, a cable operator could seek to justify rates above the benchmark level through a cost-of-service showing.⁷⁶

50. In adopting this benchmark approach, we concluded, as we had tentatively done in the Notice, that benchmarks would "provide a simple way to ascertain on an individual system basis the extent to which rates exceed the competitive rate level," and as such, best met the statutory mandate that we reduce administrative burdens on subscribers, cable operators, franchising authorities, and the Commission.⁷⁷ We also confirmed our tentative conclusion that while the alternative cost-of-service approach to rate regulation had its advantages, its disadvantages -- which included reducing operator incentives for efficiency and improved service, and imposing heavy administrative and compliance costs upon regulators and regulatees -- were significant.⁷⁸

⁷³ Id. at para. 213.

⁷⁴ Id. at paras. 216, 232. The benchmark mechanism applied to all regulated tiers of service. Id. at para. 197.

⁷⁵ Id. at paras. 217-218. The Commission reasoned that this rate reduction would allow regulators to recapture, for subscribers' benefit, the competitive rate differential that was found to exist across the industry between rates charged by systems facing effective competition and those that do not. The Commission believed that a reduction of up to ten percent for above-benchmark rates would bring these rates considerably closer to competitive levels, in accordance with Congressional intent. Id.

⁷⁶ Id. at para. 213.

⁷⁷ Id. at paras. 187-188.

⁷⁸ Id. at para. 186.

51. In our First Recon. Order in this proceeding, we affirmed our decision to use a benchmark system based on rates charged by systems facing effective competition as the primary method of assessing the reasonableness of regulated cable rates.⁷⁹ While several petitioners challenged our primary reliance on rates charged by systems subject to effective competition in setting benchmark rates, arguing that we failed to take into account the other statutory factors set forth in the Act, we concluded that we properly placed primary weight on rates of systems subject to effective competition in devising the benchmark approach.⁸⁰ We also explained that while we ultimately based the rate-setting methodology on the rates and other characteristics of systems subject to effective competition, we in fact took all of the statutory factors into account when developing the entire rate regulation scheme, which, in addition to the benchmark mechanism, includes cost-of-service showings and price caps.⁸¹

52. While we addressed certain issues regarding the benchmark approach in the First Recon. Order, we indicated that other issues would be addressed in a subsequent reconsideration order. Those issues include concerns about the accuracy of the random and competitive sample data used in constructing the benchmark, the methodology and statistical analysis used in developing the benchmark, and petitioners' recommendations that other variables be incorporated in the benchmark formula.⁸²

53. The analyses and suggestions of petitioners, as well as the additional theoretical and empirical analyses conducted by our staff, persuade us that the approach that we adopted in April of last year is fundamentally sound but can be refined to improve its accuracy and better meet the goals of the statute.⁸³ Accordingly, we are modifying the benchmark approach in several key respects, as discussed in the following sections.

2. Impact on the National Economy

⁷⁹ First Recon. Order at para. 4.

⁸⁰ Id. at para. 12.

⁸¹ Id. at para. 13.

⁸² Id. at para 10, n.17.

⁸³ The specific criticisms and suggestions concerning our benchmark system that have been submitted in this proceeding are discussed in our analysis below.

54. Before presenting our analysis of specific issues resolved in this Order, we present an analytical overview of the impact of our decisions on the Nation's economy, reviewing the likely effect of our actions on promoting innovation, investment, and growth in the cable industry.

55. We believe that the Nation will benefit from regulation that ensures the availability of cable services at competitive rates, while also ensuring that rates are not so low as to inhibit investment in new programming services and enhanced video, voice and data services in the future.

56. Any discussion of the effects of cable reregulation on investment must recognize an important principle. Investment and innovation depend on two factors: (1) incentives and (2) access to capital. Both of these factors depend critically on future rates for cable services because those future rates largely determine the returns that the investments will earn. It is useful to discuss incentives and access to capital separately.

57. We believe financial incentives to invest in the cable industry depend on the prospect of future returns, which in turn depend on future demand and how rates will be regulated on a going-forward basis. Throughout this Order, we have been mindful of taking actions to ensure that the methodology to be used in determining rates following growth in programming services, channel additions or deletions, and system upgrades encourages economically efficient investment. Moreover, by limiting the extent to which operators have an opportunity to charge rates for existing services without the constraints of competition, regulation may spur cable industry entrepreneurs to devote increased effort to innovate in ways that create net economic value. We also recognize, however, that short-term investment effects of this revised approach are uncertain and depend upon cash flow and revenue analysis by individual operators.

58. With respect to the going-forward treatment of cable services, two points are of central relevance. First, those services that will be subject to continuing regulation will be allowed to earn a competitive return. For example, operators that add new channels to regulated tiers will be allowed to recover their programming costs, including a return on investment. A second key point is that many innovative new services (*i.e.*, those offered "a la carte"⁴ or not fitting within the traditional definition of cable television) will not be

⁴ "A la carte" services are those which the subscriber purchases on a per-channel or per-event basis, such as a premium movie channel or a sports event. See Rate Order at paras. 326-329.

subject to rate regulation. For these services, market forces, rather than regulation, will drive investment decisions. Those key points -- reasonable returns on regulated investments and market returns on unregulated investments -- guide our analysis of how rate regulation will affect access to capital.

59. Some have argued that forcing cable operators to lower current rates will stifle investment by reducing the cash flows needed to finance this investment. However, we must balance this concern with the goal of establishing reasonable rates for regulated cable services. We also believe that, while investment could initially be adversely affected by the reductions in the cash flows generated by current regulated services, many operators will have opportunities to generate steadily increasing cash flows from unregulated services. Operators also may have access to other sources of funding for future investments. Large MSOs in this industry historically have made extensive use of debt and equity to finance their actions. Since reregulation, credit ratings for the cable operators that have issued public debt have remained stable overall and have even improved in some instances.⁸⁵ The ability of such companies to raise investment funds in those markets is driven by the prospect of future cash flows from new investments, not simply by cash that is currently generated by past investments.⁸⁶ As one investment analyst reported, "the potential for future cable cash flow growth hinges on introduction of new services, not raising rates for basic channels."⁸⁷ We note that stock prices for the larger, publicly held cable operators increased significantly in 1993.⁸⁸

60. Of course, higher rates for today's regulated services

⁸⁵ Major cable MSOs using public debt and equity include Tele-Communications, Inc. ("TCI") and Time Warner. See e.g., Standard & Poor's, Credit Week, November 22, 1993 at 84 (Continental Cablevision), October 25, 1993 at 63 (Cox Enterprises), and September 13, 1993 at 82 (Comcast).

⁸⁶ The role of current cash flows in funding investment may be more significant in the case of small operators, who face greater difficulties in obtaining access to capital. Our transition mechanism for treatment of small operators is intended to address this concern.

⁸⁷ Standard & Poor's, Credit Week, April 5, 1993 at 51.

⁸⁸ Adelphia rose 19.0 percent, Cablevision Systems 93.9 percent, Century 34.8 percent, Comcast 87.7 percent, Jones Intercable 25.5 percent, TCI 42.4 percent, yielding an average increase of 50.55 percent. Data from The Wall Street Journal, January 3, 1994.

might well reduce the cost of borrowing to finance new investments because lenders would have greater assurance of being repaid. But any such fall in borrowing costs would not represent an increase in economic efficiency. Rather, it would simply reflect the fact that the investment risk was being placed on today's consumers of regulated cable services.

61. We also observe that parties arguing the importance of current cash flows make this argument despite the fact that many of the services that will result from these investments will be unregulated. Given the important relationship between investment and unregulated services, cable systems that now offer regulated services without being subject to effective competition, as defined in the statute, will have incentives to upgrade their systems with new capabilities and to introduce enhanced functions, such as interactivity, that are not subject to rate regulation. Furthermore, the revised rate regulation provisions will help prevent cross-subsidization from subscribers of regulated cable services to subscribers of unregulated services by assuring that rates for regulated services are reasonable.⁸⁹

62. Regulation also should stimulate investment by companies that supply programming, customer premises equipment, and network equipment to cable operators. Because operators will be allowed to raise their rates based on the cost of new programming, program vendors will be able to charge market-driven prices for their services. As a result, consumer demand will determine the success or failure of new program offerings. Indeed, because regulation will constrain the power of cable operators relative to new regulated offerings, more of the gains from innovation may accrue to programmers, spurring their incentives to innovate.

63. Indeed, the going-forward methodology, our treatment of "a la carte" channels, our provisions for streamlined showings for upgrades and the incentive upgrade plan that we are establishing in our Cost Proceeding, will encourage operators to expand programming and service choices. Our going-forward methodology includes a 7.5 percent mark-up on costs of programming.⁹⁰ Our "a la carte" rules remove from rate regulation certain packages of per channel offerings where consumer benefits are likely to result.⁹¹ The streamlined cost-of-service showing for upgrades permits operators to adjust capped rates for costs

⁸⁹ The Commission has also established accounting and other safeguards to protect against such cross-subsidization.

⁹⁰ See infra para 246.

⁹¹ See infra para. 191-197.

of upgrades without a review of unrelated costs.⁹² And, the incentive upgrade plan contained in our interim cost-of-service order gives cable operators substantial flexibility in setting rates for new programming and new services.⁹³

64. Equipment sales and investments also may be stimulated by the changes in this Order. Because the quantities of services demanded rise as prices fall, customer premises equipment sales, and thus investment in such equipment, could ultimately increase due to the lower prices that operators are forced to charge for regulated services. Reregulation also will provide investment incentives for the firms that provide plant and equipment to the cable operators themselves. The same forces identified above as creating incentives for cable operators to invest in unregulated markets -- the prospect of earning a market return -- could also create incentives for their equipment suppliers to make investments.

65. Reregulation also should stimulate demand for network equipment. In 1993, industry observers forecasted that construction spending would increase to \$2 billion from its 1992 level of \$1.3 billion.⁹⁴ Measured in terms of percentage growth, cable operators have become the most aggressive purchasers of fiber optic equipment in the telecommunications industry.⁹⁵ The National Cable Television Association (NCTA) recently estimated that \$14 billion will be spent over the next ten years to rebuild 75 percent of the Nation's cable systems, including heavy investment in fiber optic equipment.⁹⁶

66. We further believe that the new and revised rules we adopt in this Order will decrease the regulatory risk faced by investors in the cable industry. By creating an uncertain environment, unstable or ever-changing regulations can discourage investment. We continue to believe that it is important to have a stable and predictable regulatory scheme and that the rules adopted today establish such a system as a transition to

⁹² See Report and Order and Further Notice of Proposed Rulemaking, MM Docket No. 93-215, FCC 94-38 (adopted Feb. 22, 1994).

⁹³ See id.

⁹⁴ Paul Kagan Associates, Cable TV Financial Data Book, 1993, at 9.

⁹⁵ Department of Commerce, U.S. Industrial Outlook 1994 at 30-15.

⁹⁶ See USA Today, November 4, 1993 at 1-B.

competition and, when appropriate, deregulation. Such regulation should also help stimulate construction of advanced networks that will become key links in the national information infrastructure.

3. Estimating the Competitive Differential

67. As noted, throughout our regulatory process we have been mindful of promoting innovation, investment and growth in the cable industry while at the same time ensuring reasonable rates for regulated services. Estimating the competitive differential requires an analysis of the difference in rates charged by noncompetitive cable systems and cable systems subject to effective competition. In this section we consider our specific methodology for calculating the average competitive differential based on the results of our Competitive Survey that we conducted as part of our initial implementation of the Cable Act.⁹⁷

68. In our April 1993 Rate Order, the Commission used regression analysis to compare the rates charged by cable systems that were not subject to effective competition and those Congress had defined as being subject to effective competition: i.e., low-penetration, overbuild, and municipal systems.⁹⁸ In our Competitive Survey of September 30, 1992 cable rates, we evaluated as one group the entire competitive sample. That is, we combined all the data from the three types of systems subject to effective competition rather than evaluating each of the three types of systems separately. Using that approach, we found the average competitive differential -- the average difference in rates charged by systems subject to effective competition and those not so subject -- to be ten percent.⁹⁹ As a practical matter, that figure gave primary weight to the data from low penetration systems because they constituted more than half of

⁹⁷ The Competitive Survey was described in Appendix E of the Rate Order.

⁹⁸ See Communications Act, Section 623(1)(1), 47 U.S.C. Section 543(1)(1).

⁹⁹ Rate Order, at para. 14 and Appendix E. Some petitioners contend that the Commission erred by using the average rates of systems subject to effective competition when developing the benchmark formula. The Commission rejects the argument the Commission erred in adopting a benchmark that is based on the average rate charged by competitive systems. We believe a benchmark based on an average competitive system combined with the opportunity to justify a higher rate in a cost-of service proceeding is most likely to ensure reasonable rates for systems not subject to effective competition.

the data sample of systems subject to effective competition.¹⁰⁰

69. Questions had been raised concerning the propriety of using the low penetration systems in our analysis, and the exclusion of these systems would have had a significant effect on the competitive differential under the benchmark methodology adopted at that time. In fact, when the low-penetration data were deleted from the group and the competitive differential was estimated based on the overbuild and municipal systems data alone, the competitive differential was found to be 28 percent.¹⁰¹ We therefore issued a Further Notice with the Rate Order in which we requested comment on (1) whether the exclusion of low penetration systems would produce a better measure of the competitive differential, and (2) whether we should, and lawfully could, include within the data upon which the competitive rate differential is determined, only the rates of overbuild and municipal systems.¹⁰²

70. In our Second Report and Order, we concluded that we were required to consider all three types of systems subject to effective competition, as defined by Section 623(1)(1) of the Communications Act, 47 U.S.C. Section 543(1)(1), in crafting our benchmark system.¹⁰³ Accordingly, we concluded that data from cable systems with less than 30 percent penetration should continue to be included in the sample of systems used to assess the reasonableness of cable rates.¹⁰⁴ In addition, we stated that it would not serve the public interest to exclude low penetration systems merely because such an exclusion would result in larger rate reductions.¹⁰⁵ We also decided to continue to include municipal and overbuild systems in the sample of systems used to assess the reasonableness of cable rates both because Congress defined those types of systems as being subject to "effective competition" and because economic analysis indicates that data from these systems are relevant to this assessment.¹⁰⁶

¹⁰⁰ There were 79 low penetration systems, 46 overbuilds and 16 municipals in the database used in the Rate Order analysis. Id., Appendix E at para. 11.

¹⁰¹ Id., Appendix E at para. 30.

¹⁰² Id. at paras. 561-563.

¹⁰³ Second Report and Order at paras. 128-131.

¹⁰⁴ Id. at para. 128.

¹⁰⁵ Id. at para. 130.

¹⁰⁶ Id. at para. 131.

71. Our decision to include low penetration systems in the competitive sample used to calculate the competitive differential has been challenged on reconsideration by NYNEX.¹⁰⁷ In addition, numerous other petitioners have raised questions concerning our underlying economic and statistical methodology.¹⁰⁸ In response to those concerns, and based on our own further analysis, we have refined our method of computing the competitive differential. As described below, we have: (1) disaggregated our analysis of the three types of systems subject to effective competition to achieve a better understanding of the differential between these systems and those in our noncompetitive sample; (2) improved the variables used in our statistical analysis of the competitive differential; and (3) tested whether additional variables should be included in our regression analyses to account for the effects of cost and demand differences that our initial statistical estimation may not have fully captured.

a. Disaggregated Treatment of Low Penetration, Overbuild, and Municipal Systems

72. The competitive differential in the Rate Order was a single number (9.4%) based on the difference between the rates of systems in the Commission's random sample of noncompetitive cable systems and the rates of low-penetration systems, overbuilds, and municipal systems.¹⁰⁹ Because the competitive differential in the Rate Order was a single number calculated from the rates of all systems in the sample that were thought to be subject to effective competition, it reflected the relative number of cable systems in each of the three categories subject to effective competition. We recognize, however, that the three portions of the competitive sample -- low-penetration systems, overbuilds, and municipals -- have very different characteristics. In addition to reviewing the definitions of the three types of systems, it thus is useful to consider some of the characteristics of each.

¹⁰⁷ In particular, NYNEX asserts that excluding low penetration systems would not require the Commission to redefine "effective competition." Rather, NYNEX claims, "effective competition" is only relevant to one out of the seven criteria in Section 623(b)(2)(C) of the Communications Act of 1934, as amended. NYNEX Petition for Reconsideration at 2-3. Several parties filed comments supporting (GTE, State of Connecticut, Office of the Attorney General) and opposing (Cablevision, Viacom, Time Warner and Continental) the NYNEX petition.

¹⁰⁸ Specific challenges are addressed in the technical appendix to this Order.

¹⁰⁹ Rate Order, Appendix E at para. 29.

73. Low-penetration systems are those whose subscribers comprise less than 30 percent of the households in the franchise area.¹¹⁰ The question of whether the entire franchise area was wired for cable service was not considered in defining low penetration systems for purposes of the competitive sample. Thus, this definition of "penetration" does not conform to the standard industry definition of penetration as the ratio of subscribers to homes passed by cable wire. Rather, some of the systems in our sample are considered low penetration systems even though a very high percentage of the homes passed by cable wire subscribe, since such a system may be considered a low penetration system if a large portion of the franchise area is not wired.

74. The second statutory category, overbuild systems, occurs in markets where two or more cable systems or multichannel video providers each make its service available to at least 50 percent of households in the franchise area. In order to be considered an overbuild, more than 15 percent of households in the franchise area must subscribe to services provided by other than the operator with the largest share of the subscribers within the franchise areas.¹¹¹ To meet the statutory definition, however, it is not necessary for the cable systems actually to compete head-to-head by offering their service to all of the same potential subscribers.

75. The third statutory category, municipals, includes both cable systems owned by municipal authorities and privately-owned cable systems in franchise areas where the franchising authority itself operates a cable system offering service to at least 50 percent of the households in the franchise area.¹¹² This part of our competitive sample consists of pairs of cable systems, one publicly-owned municipal system and a privately-owned system that competes with it, serving the same franchise area. All but one of these pairs meet the criteria for the "overbuild" category as well as the "municipal" category.¹¹³

¹¹⁰ Communications Act, Section 623(1)(1)(A), 47 U.S.C. Section 543(1)(1)(A)

¹¹¹ *Id.* at Section 623(1)(1)(B), 47 U.S.C. Section 543(1)(1)(B).

¹¹² *Id.* at Section 623(1)(1)(C), 47 U.S.C. Section 543(1)(1)(C).

¹¹³ The remaining pair does have two operators in the same franchise area, but the private operator does not meet the statutory overbuild criterion because its subscribers do not constitute at least 15 percent of the households in the franchise

76. In response to petitioners' concerns regarding the validity of our statistical approach to the analysis of the competitive sample, we have conducted a more refined analysis. This revised analysis indicates that the competitive differential varies widely across the three types of systems defined as subject to effective competition. Moreover, we found these differences to be statistically significant.¹¹⁴ Accordingly, we find that instead of computing the competitive differential by analyzing collectively the rates of all three types of systems in our competitive sample, it is most appropriate to estimate a separate competitive differential for each of the three classes of systems.

b. Improved Variables

77. In revising our methodology to determine reasonable cable rates, we also have improved several other aspects of our analysis.

78. First, we have refined our measure of the price of regulated cable service. Instead of measuring rates as monthly revenue per subscriber per channel, we now measure rates as monthly revenue per subscriber. Our analysis shows that the price of cable service increases only a small amount as the number of channels included in regulated tiers of service increases. Moreover, subscribers actually purchase regulated service not on a per-channel basis, but in tiers consisting of several channels. Revising the price variable in this way thus better reflects consumer demand and improves the quality of the statistical analysis.¹¹⁵

79. In addition, we have strengthened our measure of overbuild competition. First, we have added to the overbuild sample those municipal-category cable systems that also meet the overbuild criteria. Second, because the extent of actual competition is limited in many franchise areas classified as having overbuilds, we have refined the overbuild variable to measure the extent of system-overlap competition rather than

area.

¹¹⁴ Specifically, we applied an F test, a standard test of the equivalence of several parameters, to the variables representing the three competitive samples. They proved to be statistically significantly different at much better than the 1 percent confidence level.

¹¹⁵ We have also improved the measure of equipment and installation revenue that enters into the measure of revenue per subscriber, as described in the Technical Appendix.

simply adopting a variable that only indicates whether or not there is any competition from another cable system. We expected and found that the effect of competition on a system's prices would be greater the larger the fraction of households in the system's service area that are subject to actual head-to-head competition.

80. The staff also detected and corrected numerous errors in the data, based on their own checks of the data and errors reported by commenters, cable systems, and users of the data. When apparent errors were found, correct information was obtained from cable systems and entered into the database.

c. Tests for the Effects of Cost and Demand Differences

81. Some petitioners claim that in the original analysis of cable rates, we failed to consider important characteristics of cable systems that might have affected their rates.¹¹⁶ Controlling for such variables is important because, if competitive systems generally differ from noncompetitive systems in some characteristic that affects rates, failing to account for that characteristic in the analysis will distort the results, giving a biased estimate of the effect of competition. Suppose, for instance, that competitive systems had higher density (subscribers per mile) than noncompetitive ones, and that higher densities were associated with lower rates. In such a situation, failing to control for differences in density would cause competition to appear to reduce rates more than it actually does. Given the additional time to analyze our data on reconsideration, we have had an opportunity to control for more characteristics that may affect rates and to arrive at a more accurate estimate of the competitive differential.

82. In our recent analysis of the data we incorporated several variables that were not included in the original benchmark regressions. Among the variables used in the equation were measures of the numbers of channels of various types.¹¹⁷ We

¹¹⁶ See Charles River Associates' "A Further Analysis of the FCC's Cable Television Benchmark Rates" at 8 (submitted with Tele-Communications, Inc. Petition for Reconsideration) ("Charles River Study"); Liberty Media Corporation Petition for Reconsideration at 12-13; Coalition of Small System Operators Petition for Reconsideration at 10, Community Antenna Television Association Petition for Reconsideration at 8; King County, et. al. Petition for Reconsideration at 10.

¹¹⁷ The exact form of the variables used is presented in the Technical Appendix.

found that rates increased as (1) the number of channels increased, and (2) as the percentage of channels available only on cable (*i.e.*, non-broadcast channels) increased. The number of local broadcast channels carried was expected to measure competition from local broadcast stations and was expected to have a negative effect on rates; however, it did not prove to be statistically significant.¹¹⁸

¹¹⁸ Several petitioners for reconsideration contend that the use of the satellite variable in determining a cable operator's benchmark rate unreasonably discriminates against program suppliers that do not use satellite technology. See *e.g.*, Atlanta Interfaith Broadcasters Petition for Reconsideration at 10-12; Video Jukebox Network Petition for Reconsideration at 3-5. Some also state that the use of the number of satellite channels as a variable discourages the carriage of local-interest programming and thus favors certain speakers in violation of the First Amendment. Northland at 2-3, Video Jukebox Network at 7-8. The Commission does not believe that the satellite channel variable violates the First Amendment since (1) the variable reflects the fact that competitive systems' prices vary along with the percentage of non-broadcast channels and (2) it is entirely appropriate to reflect cost differences in the benchmark. Nonetheless, the Commission has responded to petitioners' policy concern by replacing the satellite channel variable with a percentage of non-broadcast channels variable.

Other petitioners argue that cable operators should not be allowed to include menu, directory, or other so-called "barker" channels in their channel count on regulated tiers for purposes of determining benchmark rates. National Association of Telecommunications Officers and Advisors (NATOA) Petition for Reconsideration argues that cable operators should be prohibited from recovering a per channel cost for such low cost channels. NATOA at 33; King County, *et. al.* Petition for Reconsideration at 11. King County contends that the sole purpose of barker channels is to sell premium and pay-per-view services and, thus, these channels do not provide service to subscribers who desire only basic or expanded tier service. Moreover, this petitioner suggests that cable operators receive at least implicit payment for carriage of the barker channels because such channels promote increased use of premium and pay-per-view channels. King County at 11. NCTA responds that menu channels provide a valuable service and that lower cost channels are balanced by higher than average cost channels. NCTA Opposition to Petitions for Reconsideration at 12, *see also* Prevue Networks, Inc. Opposition to NATOA Petition for Reconsideration at 2 (useful service), Time Warner Entertainment Company, L.P. Opposition to Petitions for Reconsideration at 3 (benchmark is an average rate). After considering these arguments, we affirm our decision not to become

83. We also considered measures of the quantities of optional services purchased by customers, including numbers of additional outlets, converter boxes, addressable converters, remote controls, tier changes, installations, and upper tiers of service.¹¹⁹ These variables, which were all measured on a per-subscriber basis, were examined to improve the measure of the competitive differential by ensuring that it reflected price differences rather than differences in the levels of service consumed. Increases in the percentages of customers purchasing remote controls, additional outlets, upper tiers of service, and tier changes all were associated with increases in revenues per subscriber.

84. Other variables were considered to reflect costs of providing service, including the number of subscribers to the system. As expected, rates per subscriber declined as the number of subscribers increased because fixed costs could be spread over more customers. Construction costs were represented by various measures of miles of plant (i.e., cable wiring), miles below ground, miles of fiber plant, and whether a system was required to bury cable drops.¹²⁰ These variables were not statistically significant and were dropped from the analysis. At several points in the analysis, various measures of density were tested and never proved to be statistically significant. Whether a system was owned by a multiple system operator (MSO) was included in the expectation that economies of joint ownership might exist. Surprisingly, systems that were owned by an MSO had higher per-subscriber revenues than those that were not. In addition, we expected that high wage rates would raise system costs. Median income in the franchise area was used as a proxy for wage rates,¹²¹ and median income was positively related to revenue per

embroiled in regulating the content of channels for purposes of rate regulation. See Form 393, Part III, Line 102 Instructions. Accordingly, the Commission will continue to count all types of channels in the "number of regulated channels" variable.

¹¹⁹ Addressable convertors allow the cable operator to communicate with an individual subscriber's cable box via the cable wire. This allows the cable operator to block out or unblock a channel, such as a pay-per-view channel, without sending out a service technician. Tier changes refer to customers adding or deleting a tier of channels to their service.

¹²⁰ This is discussed in detail in the Technical Appendix.

¹²¹ Income data by zip code area were obtained from the Bureau of the Census and merged with the cable survey data base. We considered whether the inclusion of the income variable could reflect demand effects (higher prices reflecting higher demand in

subscriber.

85. Contrary to claims of some petitioners,¹²² we also do not believe that the benchmark is flawed because it does not account for differences in individual system costs. The regression analysis performed has identified the statistically significant determinants of average revenue per subscriber. Some of these are cost-related, some may reflect demand factors, and some may embody both demand and cost factors. The data did not allow us to isolate a statistically significant relationship between costs and prices so as to permit us to craft a cost-based benchmark.¹²³ Cable systems retain the option to initiate a cost-of-service proceeding if they believe that the benchmark fails to provide them with a reasonable return. We also note that in our Cost Proceeding, we are examining the use of average cost schedules to set regulated cable rates which should provide an approach to setting rates that is similar to a cost-based benchmark.

d. System Size and the Competitive Differential.

86. Several petitioners conducted analyses of the Commission's cable Competitive Survey data that could be interpreted as demonstrating that the competitive differential varies with system size and that the competitive differential is not statistically significant for systems larger than 5,000 subscribers.¹²⁴ These commenters failed to offer an explanation of why it is appropriate to break up the sample at this point,

higher income areas) rather than cost effects (higher prices reflecting higher costs in higher income areas). To study this, we tested for the possible impact of simultaneous equations bias between supply and demand effects. This test results in an income coefficient that is almost identical to our regression estimate (.070 versus .069), indicating that our estimated coefficient primarily reflects cost effects rather than demand effects. See Technical Appendix at 16-17, 24-25.

¹²² See e.g., King County Reply to Oppositions at 2-4; Century Petition for Reconsideration at 2-6, Wometco Petition for Reconsideration at 7-8; see also First Recon. at para. 13.

¹²³ This reflects the fact that operators did not in response to the initial Notice in this proceeding or in our Cost Proceeding provide sufficient information for us to establish a cost-based benchmark of the type sought by some operators.

¹²⁴ NCTA Petition for Reconsideration at 15, Time Warner Entertainment Company, L.P. Petition for Reconsideration at 3 (above 10,000).

why such an effect might be expected to occur, or why we should take it into account in formulating policy.

87. We believe that to some extent the failure to find a significant competitive differential in the analyses of a reduced sample comprised solely of larger systems stems from inaccurate measurement of the degree of competition. First, inclusion of low penetration systems in the competitive sample, even though they appear to behave no differently from noncompetitive systems, caused the estimate of the competitive effect to be smaller and less statistically significant for systems of all sizes. In other words, were it not for the disproportionately high number of low penetrations systems in the competitive sample, the competitive differential would have been larger for systems of all sizes.

88. Second, the apparent lack of a significant competitive difference in the rates of larger systems may have resulted from measuring competition on a franchise area basis when many systems charge uniform prices for all franchise areas in the system. Using the system overlap measure of competition, described above,¹²⁵ which we believe more accurately captures the extent of competitive pressure on prices, we tested for the extent to which prices varied with system size for competitive and noncompetitive systems. And we used a procedure that does not arbitrarily divide the sample at 5,000 subscribers. Using this procedure, we found that the effect of system size on the competitive differential is not significant. This finding supports the conclusion that a single competitive differential is appropriate for systems of all sizes.

89. We also considered another statistical approach that yielded different competitive differentials for systems of differing sizes. This approach leads to the conclusion that the rates charged by cable operators that are subject to competition rise to the level of noncompetitive ones as the number of subscribers increases. To draw policy conclusions, one must understand the source of any relationship between system size and the magnitude of the competitive differential. One possible explanation for why the competitive differential may be smaller for larger systems is that larger competitive systems are more sophisticated and may thus have learned to collude more effectively. To the extent that this explanation is valid, it suggests that the larger competitive differential exhibited by smaller systems more accurately represents the effect of competition. This logic would suggest that we apply the larger competitive differential derived from smaller systems to all systems, regardless of their size. Nevertheless, given the

¹²⁵ See supra para. 79, see also infra para. 97.

relatively small number of observations in the competitive sample, we believe that dividing the data into smaller and smaller samples is statistically risky, and that a competitive differential estimated on the basis of the three types of systems subject to effective competition is more likely to yield an accurate measure of competition.

e. The New Competitive Differential

90. Our statistical analysis of the Competitive Survey indicates that the competitive differential is 1 percent for the low penetration sample, 16 percent for the overbuild sample, and 37 percent for the municipal sample. These three numbers serve as the fundamental components of the Commission's derivation of an appropriate composite competitive differential for application to the rates of regulated systems. In deriving a single competitive differential, the Commission is compelled to exercise its judgment and expertise, taking into account the factors identified by Congress in the Cable Act. In so doing, the Commission is especially guided by (1) the Act's requirement that in promulgating rate regulations the Commission is to take into account or consider, *inter alia*, the rates charged by systems subject to effective competition¹²⁶ and (2) Congress's finding that "without the presence of another multichannel video programming distributor, a cable system faces no local competition," resulting in "undue market power" for the cable operator.¹²⁷

91. In determining a single composite competitive differential to apply to regulated systems, we believe the Cable Act of 1992 requires us to take into account all three categories of cable systems that Congress defined as being subject to effective competition. For that reason, we deny NYNEX's petition for reconsideration of our Second Report and Order. That petition urges us to exclude low penetration systems from the competitive sample. In considering the rates of the three types of systems, however, we believe it is appropriate and informative to assess the extent and nature of competition faced by each of the three classes of systems that Congress has deemed to be subject to effective competition.

92. As noted, low penetration systems' rates did not differ substantially from the rates of systems in the random sample not subject to effective competition. While low penetration may result from sharing a market with a competitor, it may also

¹²⁶ Communications Act, Sections 623(b)(2)(C)(i), 623(c)(2)(B), 47 U.S.C. Sections 543(b)(2)(C)(i), (c)(2)(B).

¹²⁷ Cable Act of 1992, Section 2(a)(2).

result from a number of other conditions not related to competition. For example, a new system that has just begun operation or a system that serves a low income neighborhood may have low penetration. A system with high prices or poor service also may have low franchise area penetration as a consequence.

93. In conducting our data analysis, we made a number of attempts to isolate these various factors and their potential effects. Regressions were run to examine the effects of consumer income levels, the extent to which a system serves an urban population (in an attempt to capture the effects of local competition from other forms of entertainment), the age of the system, and the number of broadcast television channels in the service area. None of these attempts was successful in identifying a statistically significant effect, leaving us unable to conclude that the rates set by low-penetration systems (other than those that also are overbuilds or municipal systems) are likely at or near competitive levels.

94. Furthermore, the statutory definition of low penetration is based on homes in the franchise area, not homes passed by the cable system. Yet cable systems frequently offer service to only a portion of the franchise area. Indeed, it is possible that, under the statutory definition, a system could have low penetration simply because it is redlining (i.e., choosing to offer service in only part of its franchise area). When measuring the choices available to potential subscribers, penetration might better be measured on the basis of homes passed rather than franchise area homes. Hazlett has examined the franchises in the low penetration sample and found that a significant minority of them in fact exhibit greater than 30 percent penetration of homes passed.¹²⁸ Our own data analysis reaches a similar conclusion.

95. Previous studies of cable industry market power conducted by outside experts and academics have focused on overbuilds as representing competition because they are engaged in head-to-head competition. We agree that overbuilds come closest to facing competition and thus charging reasonable rates, although interpretation of the overbuild results must be guided by analysis of the other two types of system deemed by Congress to face effective competition.

96. There were 41 overbuild systems in our sample -- 51 when the overbuild municipals are included. As noted above, it is not necessary for overbuild systems to actually compete head-

¹²⁸ See Affidavit of Thomas W. Hazlett, appended to Joint Comments of Bell Atlantic, GTE, and the NYNEX Telephone Companies in Response to the FNPRM (June 17, 1993).

to-head across their service areas in order for them to qualify as overbuilds under the statutory definition. However, our analysis of the Competitive Survey data reveals that there is extensive head-to-head competition in many instances. While this situation is closer to the concept of robust and vigorous competition than is the situation of a low-penetration system, we still believe that we must also consider other factors that will reflect aspects of a competitive marketplace.

97. As explained more fully in the Technical Appendix, we corrected statistically for the fact that most overbuilds do not entail full head-to-head competition. We were able to do so because the amount of head-to-head competition varies among the overbuilds in our sample and the rates charged by cable companies decrease as the amount of head-to-head competition increases. Accordingly, we calculated a revised competitive differential of 16 percent for the overbuild systems in our sample. We regard that figure as superior to the 12 percent figure derived from the data without correction for the lack of full head-to-head competition.

98. Many petitioners agree that the rates charged by overbuild cable systems reflect competitive behavior.¹²⁹ Indeed, petitioners also urge us to rely primarily on these rates for purposes of determining the competitive differential.¹³⁰ There are, however, two concerns with the use of the overbuild competitive differential as the measure of the overall average competitive differential. One point argued by some petitioners is that overbuild operators may set prices below their average total costs (*i.e.*, below the costs that include a return on capital), particularly during the early stages of overbuild competition. Petitioners suggest, for example, that the competitive rivalry between two cable competitors in the same franchise area leads to unsustainable price cuts or "price wars," during which services are priced below cost.¹³¹ William Shew, on

¹²⁹ See *e.g.*, GTE Opposition at 6-10; King County *et. al.* Opposition to Petitions for Reconsideration at 6-10.

¹³⁰ See *e.g.*, Consumer Federation of America Comments at 7 (June 17, 1993); Maryland People's Counsel Reply Comments at 2.

¹³¹ See *e.g.*, Bank of New York Petition for Reconsideration at 3, Booth American Company, *et. al.* Petition for Reconsideration at 11, Coalition of Small System Operators Petition for Reconsideration at 7, CATA Petition for Reconsideration at 16-17, Liberty Media Corporation Petition for Reconsideration at 11, NCTA Petition for Reconsideration at 11, Northland Communications Corporation Petition for Reconsideration at 15, Stanley M. Searle Petition for Reconsideration at 2-3,

behalf of Harron Communications, argues specifically that overbuilds that have been in existence for less than five years are not a reliable indicator of competitive prices because they engage in price wars. As evidence of this, Shew states that the overbuilds in the FCC database that have been in existence for less than five years charged rates that are 25 percent lower than those overbuilds where competition endured for more than five years. Shew argues that rates charged by overbuilds in existence more than five years are reliable measures of competitive rates because prices have stabilized.¹³²

99. As we stated in the Second Report and Order, there is nothing in the record to support the contentions that overbuild systems of any particular age are charging rates that do not allow them to recover costs or otherwise provide for viable operation.¹³³ Even if Shew is correct that new overbuilds charge lower rates than more mature overbuilds, he presents no evidence that the newer systems are failing to earn a profit or will be unprofitable in the long-run. Equally important, the behavior cited by Shew is equally consistent with the well-established body of economic evidence showing that firms that face one or at most a few competitors may eventually collude and collectively raise prices rather than compete with each other.¹³⁴

100. Thus, the second concern about the overbuild competitive differential is that it is smaller than one that would be generated by vigorous competition. Several market conditions indicate that cable overbuilds would be expected to charge parallel or coordinated rates successfully. First, there typically are only two cable operators in a given overbuild franchise area. Second, operators can observe one another's marketing efforts and thus respond quickly to deviations from an implicit agreement. Third, operators do not enter into long-term contracts with their subscribers, so that if one operator deviates from implicit parallel rates, the other operator can retaliate to take the customers back, thereby lowering the profitability of a practice that would deviate from the coordinated, parallel rates. Finally, cable operators are not dealing with large, organized customers who might otherwise be

Wometco Cable Corp., et. al. Petition for Reconsideration at 3, Harron Communications Corp. Petition for Reconsideration at 2.

¹³² Harron Communications Corp. Petition for Reconsideration 13-14.

¹³³ Second Report and Order at para. 131.

¹³⁴ F. Scherer and D. Ross, Industrial Market Structure and Economic Performance (1990) at 226.

expected to exercise buyer power. ■

101. Both the "price-war" and the "parallel or coordinated pricing" scenarios predict that competitive differentials should fall as the length of time during which the systems have been in competition with one another rises. Statistical analysis of the data show that the competitive differential falls over time. In particular, various exploratory regressions show that operators in young overbuild situations price as much as 25 percent less than operators in the noncompetitive sample, while systems that have been in competition five years have a competitive differential of approximately 17 percent, and by some measures the competitive differential falls to ten percent or less after an even greater number of years. While they are informative, no one number is definitive because each is derived by taking the overbuild subsample and dividing it further. From this regression analysis and our examination of the industry structure, we believe that estimates of ten and 12 percent for the competitive differentials are clearly too low due to the effects of parallel or coordinated pricing, and the true average competitive differential is substantially higher. At the same time, this analysis leads us to conclude that these effects are unlikely to push the true differential much higher than 20 percent. Consequently, our best estimate of the average competitive differential starts with the overbuild coefficient from the benchmark regression of 16 percent and is adjusted slightly upwards.

102. The municipal sample clearly demonstrates the lowest rates, with an estimated competitive differential of 37 percent. Our sample of municipal systems consists of 11 systems, 10 of which also qualify as overbuilds. In light of the possibility of tacit coordination between oligopolists discussed above, and the likelihood that government authorities are less inclined to participate in such practices, the systems in the municipal subsample might be thought to present the best measure of competition.

103. However, we find there are several concerns with the municipal sample. First, the municipal sample contains only 12 operators. We raise this concern both in the statistical sense of using a small sample, and because it demonstrates that the universe of municipal systems is itself small and thus, in some respects, unusual as compared to other competitive systems. Petitioners have also raised concerns that the very low rates charged by municipally-owned systems reflect "unfair" competition. They suggest that municipalities have lower costs than privately-owned systems, are willing to accept losses, and may be subsidizing the provision of cable service from other

revenues.¹³⁵ The National Cable Television Association (NCTA) attempted to support these contentions with studies showing that a few municipal systems were subsidized or not making a profit.¹³⁶ However, these municipal systems responded that the information and assumptions used in the studies were not accurate and that NCTA's conclusions were unfounded.¹³⁷

104. Because of these concerns about municipally owned systems, we turned our attention to the private systems that compete against municipally run systems. Analysis revealed that the competitive differentials for private and municipal systems do not differ from one another by a statistically significant amount. In every instance, however, the municipal system was built after the private system had been operated for some portion of time, and several of the municipals appear to be quite new. Thus, we cannot be sure that the privately operated systems are continuing to cover their investment costs at the current prices.

105. After reviewing the disaggregated data from all three types of unregulated systems, we have decided that we should give the most emphasis to the data relating to overbuilds. After doing so, we have selected 17 percent as the revised competitive differential. In selecting that figure, we were guided by the 16 percent competitive differential estimated from our data on overbuilds to reflect full head-to-head competition. We adjusted upward from 16 percent on account of our conclusion that cable operators facing competition may engage in parallel or coordinated pricing over time. We also considered the 37 percent competitive differential for municipal systems but discounted this factor somewhat because of the small number of municipal systems and on account of our consideration of low penetration systems, which had only a one percent competitive differential. Our decision to adjust upward was also influenced by our conclusion that any cable operators that would be harmed by applying the competitive differential because analysis of their costs and revenues shows that they do not fully exercise their market power may invoke our cost-of-service rules.

4. Applying the Competitive Differential

¹³⁵ See e.g., CATA Petition for Reconsideration at 17-18, NCTA Petition for Reconsideration at 12-14, Harron Communications Corp. Petition for Reconsideration at 3, Wometco Cable Corp., et. al. Petition for Reconsideration at 3.

¹³⁶ NCTA Petition for Reconsideration at 12-14.

¹³⁷ Michigan Communities Opposition to Petitions for Reconsideration at 21-27; King County et. al. Opposition to Petitions for Reconsideration at 17.

106. The April 1993 Rate Order required some, but not all, noncompetitive cable operators to lower their rates to avoid refund liability. In particular, only those regulated operators with very high rates were required to come down ten percent. Operators with rates less than ten percent above the benchmark were required to reduce their rates only to the benchmark which was the average per-channel rate charged by similar effectively competitive systems in our rate sample. Those cable operators with rates below the benchmark were not required to reduce their rates at all.¹³⁸ This approach reflected concern that an average adjustment factor applied to all regulated cable systems would be too high for some systems (i.e., those for which the differences between revenues and costs were relatively small). Because the approach focused solely on the revenue part of the difference between revenues and costs, an implicit assumption of this approach was that all cable operators' costs are similar, so that only high subscriber rates reflect the exercise of market power. Expressed somewhat differently, this approach gave weight to the argument that only those cable operators with high rates were charging subscribers too much.

107. We believe that profit-maximizing cable operators, whether they are subject to competition or are noncompetitive, set their prices based on costs and subscriber demand. Without more detailed information on the cost and demand conditions facing a particular cable operator, however, it is impossible to determine the amount by which that operator's revenues exceed its costs. A cable system may have a small degree of market power yet still charge a high price because its costs are high.¹³⁹ Likewise, a cable system may have a large degree of market power yet still charge a low price because its costs are relatively low. Given the absence of industry-wide data, we have not been able to identify the underlying cost and demand factors with sufficient precision to allow us to construct an estimate of market power on a system-by-system basis. Furthermore, we believe that our refined statistical analysis indicates that behavior reflective of market power may exist generally within the noncompetitive sector of the cable industry, rather than just with systems charging relatively higher rates.

108. This finding is consistent with the numerous other

¹³⁸ Rate Order at para. 216.

¹³⁹ See Supplemental Comments in Further Support of Interim Benchmark Adjustments For Low Density and Smaller Cable Operators (Small Cable Business Association) at 7-10.

studies performed over the years.¹⁴⁰ We have reviewed many studies of market power of cable systems conducted by the Commission and independent market analysts. Based on these studies, there seems to be relatively little disagreement among economists that noncompetitive cable companies possess market power.

109. For these reasons, we have concluded that it is preferable to apply the same percentage adjustment to all regulated cable systems rather than to attempt to assign different adjustments to different systems. Thus, as a general matter, to avoid refund liability, regulated cable systems will be required by May 15, 1994 (the effective date of the modified rules) either to set their rates so that their regulated revenues per subscriber do not exceed September 30, 1992 levels reduced by the revised competitive differential of 17 percent¹⁴¹ (with certain adjustments described below), or to submit a cost-of-service showing supporting higher rates.¹⁴² At the same time, our

¹⁴⁰ See supra note 60. While these studies support our conclusion and are consistent with our actions, we are not relying on these materials for our decisions.

¹⁴¹ As discussed below, we will provide a limited exception to this requirement for cable systems that are unable to bring their regulated rates into compliance with the revised benchmark rules by May 15, 1994. As long as such a system does not increase any rate component for regulated service or equipment and does not engage in rate or service offering restructuring (by, for example, moving channels out of a regulated service tier) following the release of this Order, the system may take up to an additional 60 days beyond May 15, 1994 (i.e., by July 14, 1994) to bring its regulated rates into conformance with the revised standards without incurring refund liability. See infra note 42.

¹⁴² Cable systems that previously elected the benchmark approach to rate-setting under the initial rules may justify their rates under the new rules using either the revised benchmark approach or a cost-of-service showing. However, consistent with our rules requiring systems to use a uniform approach to rate-setting among regulated tiers, the system must apply the same rate-setting methodology to justify rates for both the basic and cable programming services tiers. See Third Report and Order at para. 9. Thus, for example, if the system elects to use the benchmark approach to support its rates for basic service, it must also use the benchmark system to justify rates for its upper regulated service tiers.

We also remind operators choosing to make a cost-of-service