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VERIZON COMMUNICATIONS INC. ET AL. *v.*
FEDERAL COMMUNICATIONS
COMMISSION ET AL.CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR
THE EIGHTH CIRCUIT

No. 00–511. Argued October 10, 2001—Decided May 13, 2002*

In order to foster competition between monopolistic carriers providing local telephone service and companies seeking to enter local markets, provisions of the Telecommunications Act of 1996 (Act) entitle the new entrants to lease elements of the incumbent carriers' local-exchange networks, 47 U.S.C. § 251(c), and direct the Federal Communications Commission (FCC) to prescribe methods for state utility commissions to use in setting rates for the sharing of those elements, § 252(d). Such "just and reasonable rates" must, *inter alia*, be "based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the . . . network element." § 252(d)(1)(A)(i). Regulations appended to the FCC's First Report and Order under the Act provide, among other things, for the treatment of "cost" under § 252(d)(1)(A)(i) as "forward-looking economic cost," 47 CFR § 51.505, something distinct from the kind of historically based cost previously relied on in valuing a rate base, see, *e.g.*, *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 596–598, 605; define the "forward-looking economic cost of an element [as] the sum of (1) the total element long-run incremental cost of the element [TELRIC], and (2) a reasonable allocation of forward-looking common costs," § 51.505(a), "incurred in providing a group of elements that "cannot be attributed directly to individual elements," § 51.505(c)(1); and, most importantly, specify that the TELRIC "should be measured based on the use of the most efficient telecommunications technology currently available and the lowest cost network configuration, given the existing location of the incumbent[s] wire centers," § 51.505(b)(1). The regulations also contain so-called "combination" rules requiring an incumbent, upon request and compensation, to perform the functions necessary to combine network ele-

*Together with No. 00–555, *WorldCom, Inc., et al. v. Verizon Communications Inc. et al.*, No. 00–587, *Federal Communications Commission et al. v. Iowa Utilities Board et al.*, No. 00–590, *AT&T Corp. v. Iowa Utilities Board et al.*, and No. 00–602, *General Communications, Inc. v. Iowa Utilities Board et al.*, also on certiorari to the same court.

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ments for an entrant, unless the combination is not technically feasible. §§51.315(b)–(f). Challenges to the regulations, mostly by incumbent carriers and state commissions, were consolidated in the Eighth Circuit, which initially held, *inter alia*, that the FCC had no authority to control state commissions’ ratesetting methodology and that the FCC misconstrued §251(c)(3)’s plain language in implementing the combination rules. Reversing in large part in *AT&T Corp. v. Iowa Utilities Bd.*, 525 U.S. 366, 384–385, this Court, among its rulings, upheld the FCC’s jurisdiction to impose a new ratesetting methodology on the States and reinstated the principal combination rule, Rule 315(b), which forbids incumbents to separate currently combined network elements before leasing them to entrants who ask for them in a combined form. On remand, the incumbents’ primary challenge went to the FCC’s ratesetting methodology. The Eighth Circuit understood §252(d)(1) to be ambiguous as between “forward-looking” and “historical” cost, so that a forward-looking ratesetting method would presumably be reasonable, but held that §252(d)(1) foreclosed the use of the TELRIC methodology because the Act plainly required rates based on the actual, not hypothetical, cost of providing the network element. The court also invalidated the additional combination rules, Rules 315(c)–(f), reading §251(c)(3)’s reference to “allow[ing] requesting carriers to combine . . . elements” as unambiguously requiring requesting carriers, not providing incumbents, to do any and all combining.

Held:

1. The FCC can require state commissions to set the rates charged by incumbents for leased elements on a forward-looking basis untied to the incumbents’ investment. Because the incumbents have not met their burden of showing unreasonableness to defeat the deference due the FCC, see *Chevron U. S. A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 843–845, the Eighth Circuit’s judgment is reversed insofar as it invalidated TELRIC. Pp. 497–528.

(A) This Court rejects the incumbents’ argument that “cost” in §252(d)(1)’s requirement that “the . . . rate . . . be . . . based on the cost . . . of providing the . . . network element” can only mean, in plain language and in this particular technical context, the past cost to an incumbent of furnishing the specific network element actually, physically, to be provided, as distinct from its value or the price that would be paid for it on the open market. At the most basic level of common usage, “cost” has no such clear implication. A merchant asked about the “cost” of his goods may reasonably quote their current wholesale market price, not the cost of the items on his shelves, which he may have bought at higher or lower prices. When the reference shifts into

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the technical realm, the incumbents are still unconvincing. “Cost” as used in calculating the rate base under the traditional cost-of-service method did not stand for all past capital expenditures, but at most for those that were prudent, while prudent investment itself could be denied recovery when unexpected events rendered investment useless. *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 312. And even when investment was wholly includable in the rate base, ratemakers often rejected the utilities’ “embedded costs,” their own book-value estimates, which typically were geared to maximize the rate base with high statements of past expenditures and working capital, combined with unduly low depreciation rates. See, e.g., *Hope Natural Gas Co.*, *supra*, at 597–598. Equally important, the incumbents’ plain-meaning argument ignores the statutory setting in which the mandate to use “cost” in valuing network elements occurs. First, the Act uses “cost” as an intermediate term in the calculation of “just and reasonable rates,” § 252(d)(1), and it was the very point of *Hope Natural Gas* that regulatory bodies required to set rates expressed in these terms have ample discretion to choose methodology, 320 U.S., at 602. Second, it would be strange to think Congress tied “cost” to historical cost without a more specific indication, when the very same sentence that requires “cost” pricing also prohibits any reference to a “rate-of-return or other rate-based proceeding,” § 252(d)(1), each of which has been identified with historical cost ever since *Hope Natural Gas* was decided. Without any better indication of meaning than the unadorned term, the word “cost” in § 252(d)(1) gives ratesetting commissions broad methodological leeway, but says little about the method to be employed. *Iowa Utilities Bd.*, *supra*, at 423. Pp. 497–501.

(B) Also rejected is the incumbents’ alternative argument that, because TELRIC calculates the forward-looking cost by reference to a hypothetical, most efficient element at existing wire centers, not the actual network element being provided, the FCC’s particular methodology is neither consistent with § 252(d)(1)’s plain language nor within the zone of reasonable interpretation subject to *Chevron* deference. Pp. 501–522.

(1) The term “cost” is simply too protean to support the incumbents’ argument that plain language bars a definition of “cost” untethered to historical investment. What the incumbents call the “hypothetical” element is simply the element valued in terms of a piece of equipment an incumbent may not own. P. 501.

(2) Similarly, the claim that TELRIC exceeds reasonable interpretative leeway is open to the objection that responsibility for “just and reasonable” rates leaves methodology largely subject to discretion. E.g., *Permian Basin Area Rate Cases*, 390 U.S. 747, 790.

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The incumbents nevertheless field three arguments, which the Court rejects. Pp. 501–522.

(a) The incumbents argue, first, that a method of calculating wholesale lease rates based on the costs of providing hypothetical, most efficient elements may simulate the competition envisioned by the Act but does not induce it. There are basically three answers to this no-stimulation unreasonableness claim. Pp. 503–517.

(i) The basic assumption of the no-stimulation argument—that in a perfectly efficient market, no one who can lease at a TELRIC rate will ever build—is contrary to fact. TELRIC does not assume a perfectly efficient wholesale market or one that is likely to resemble perfection in any foreseeable time, cf. *Iowa Utilities Bd.*, *supra*, at 389–390, but includes several features of inefficiency that undermine the incumbents’ argument. First, because the FCC has qualified any assumption of efficiency by requiring ratesetters to calculate cost on the basis of the existing location of the incumbent’s wire centers, § 51.505(b)(1), certain network elements will not be priced at their most efficient cost and configuration. Second, TELRIC rates in practice will differ from the products of a perfectly competitive market owing to lags in price adjustments built into the state-commission ratesetting process. Finally, because measurement of the TELRIC is based on the use of the most efficient telecommunications technology currently available, *ibid.*, the marginal cost of a most efficient element that an entrant alone has built and uses would not set a new pricing standard until it became available to competitors as an alternative to the incumbent’s corresponding element. Pp. 504–507.

(ii) It cannot be said that the FCC acted unreasonably in picking TELRIC to promote the mandated competition. Comparison of TELRIC with alternatives proposed by the incumbents as more reasonable—embedded-cost methodologies, an efficient component pricing rule, and “Ramsey pricing,” the most commonly proposed variant of fixed-cost recovery ratesetting—are plausibly answered by the FCC’s stated reasons to reject the alternatives, § 51.505(d); First Report and Order ¶¶ 655, 696, 705, 709. Pp. 507–516.

(iii) The claim that TELRIC is unreasonable as a matter of law because it simulates, but does not produce, facilities-based competition founders on fact. The entrants say that they invested \$55 billion in new facilities from 1996 through 2000, and the incumbents do not contest the figure. A regulatory scheme that can boast such substantial competitive capital spending in four years is not easily described as an unreasonable way to promote competitive investment in facilities. Pp. 516–517.

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(b) Also unavailing is the incumbents' second reason for calling TELRIC an unreasonable exercise of the FCC's regulatory discretion: the supposed incapacity of this methodology to provide enough depreciation and allowance for capital costs to induce rational competition on the theory's own terms. This argument rests upon a fundamentally false premise, that the TELRIC rules limit the depreciation and capital costs that ratesetting commissions may recognize. On the contrary, First Report and Order ¶ 702 gave state commissions considerable discretion on these matters, specifically permitting more favorable allowances for costs of capital and depreciation than were generally allowed under traditional ratemaking practice. The incumbents' fallback position, that existing rates of depreciation and costs of capital are not even reasonable starting points, is unpersuasive. This attack tends to argue in highly general terms, whereas TELRIC rates are calculated on the basis of individual elements. Those rates leave plenty of room for differences in the appropriate depreciation rates and risk-adjusted capital costs depending on the nature and technology of the specific element to be priced. In light of the many TELRIC rates to be calculated by state commissions across the country, the FCC's prescription of a general "starting point" is reasonable enough. Pp. 517–522.

(c) Finally, the incumbents' third argument, that TELRIC is needlessly and unreasonably complicated and impracticable, is unpersuasive. The record suggests that TELRIC rate proceedings are surprisingly smooth-running affairs, with incumbents and competitors typically presenting two conflicting economic models supported by expert testimony, and state commissioners customarily assigning rates based on some predictions from one model and others from its counterpart. At bottom, battles of experts are bound to be part of any ratesetting scheme, and the FCC was reasonable to prefer TELRIC over alternative fixed-cost schemes that preserve home-field advantages for the incumbents. P. 522.

(C) The incumbents' attempt to apply the rule of constitutional avoidance does not present a serious question. They say that "cost" should be construed by reference to historical investment in order to avoid the serious constitutional question whether a methodology so divorced from actual investment will lead to a taking of property in violation of the Fifth (or Fourteenth) Amendment. However, they do not argue that any particular, actual TELRIC rate is so unjust as to be confiscatory, despite the fact that some state commissions have already put TELRIC rates in place. This want of any rate to be reviewed is significant, given that this Court has never considered a taking challenge to a ratesetting methodology without being pre-

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sented with specific rate orders alleged to be confiscatory. See, *e. g.*, *Duquesne*, 488 U. S., at 303–304. Indeed, the general rule is that any question about the constitutionality of ratesetting is raised by rates, not methods. See, *e. g.*, *Hope Natural Gas Co.*, 320 U. S., at 602. Thus, the policy of construing a statute to avoid constitutional questions is presumptively out of place when construing a measure like TELRIC that prescribes a method. The incumbents argue unpersuasively that this action is placed outside the general rule by strong signs that takings will occur if the TELRIC interpretation of §252(d)(1) is allowed. First, their comparison of historical investment in local telephone markets with the corresponding estimate of a TELRIC evaluation is spurious because their assumed numbers are clearly wrong. Second, they misplace their reliance on dicta in *Duquesne*, *supra*, at 315, to the effect that there may be a taking challenge if a ratemaking body makes opportunistic methodology changes just to minimize a utility's return on capital investment. There is no evidence that the decision to adopt TELRIC was arbitrary, opportunistic, or undertaken with a confiscatory purpose. Indeed, the indications in the record are very much to the contrary. Pp. 523–528.

2. The FCC can require incumbents to combine elements of their networks at the request of entrants who cannot combine themselves, when they lease them to the entrants. Thus, the Eighth Circuit erred in invalidating the additional combination rules, Rules 315(c)–(f). Pp. 528–539.

(A) The Court rejects the incumbents' threshold objection that the Government's and competing carriers' challenge to the rules invalidation is barred by waiver because the *Iowa Utilities Bd.* petition to review the Eighth Circuit's earlier invalidation of Rule 315(b) did not extend to its simultaneous invalidation of Rules 315(c)–(f). The incumbents argue that the Eighth Circuit exceeded the scope of this Court's mandate when it revisited the unchallenged portion of its earlier holding, and that this Court should decline to reach the validity of Rules 315(c)–(f) because doing so would encourage the sort of strategic, piecemeal litigation disapproved in *Communist Party of United States v. Subversive Activities Control Bd.*, 367 U. S. 1, 30–31. However, that case does not block consideration of Rules 315(c)–(f) here. Addressing the issue now would not “make waste” of years of efforts by the FCC or the Eighth Circuit, *id.*, at 32, n. 8, would not threaten to leave a constitutional ruling pointless, and would direct the Court's attention not to an isolated, “long-stale” procedural error by the agency, *ibid.*, but to the invalidation of FCC rules meant to have general and continuing applicability. There is no indication that litigation tactics

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prompted the failure last time to appeal on these rules, which were reexamined on remand at the Eighth Circuit's behest, not the Government's nor the competing carriers'. Any issue pressed or passed upon by a federal court is subject to this Court's broad discretion on certiorari, and there are good reasons to look at Rules 315(c)–(f). The Eighth Circuit passed on a significant issue that has been placed in a state of flux by a split among federal cases. Pp. 528–531.

(B) The Eighth Circuit read 47 U.S.C. § 251(c)(3)'s requirement that “[a]n incumbent . . . provide . . . network elements in a manner that allows requesting carriers to combine such elements” as unambiguously excusing incumbents from any obligation to combine provided elements. But the language is not that plain. If Congress had treated incumbents and entrants as equals, it probably would be plain enough that the incumbents' obligations stopped at furnishing an element that could be combined. The Act, however, proceeds on the understanding that incumbent monopolists and contending competitors are unequal. Cf. § 251(c). And because, within the actual statutory confines, it is not self-evident that in obligating incumbents to furnish, Congress silently negated a duty to combine, the Court reads § 251(c)(3)'s language as leaving open who should do the work of combination. Under *Chevron*, that leaves the additional combination rules intact unless the incumbents can show them to be unreasonable. The Court finds, however, that those rules reflect a reasonable reading of the statute. They are meant to remove practical barriers to competitive entry into local-exchange markets while avoiding serious interference with incumbent network operations. The rules say an incumbent shall, for payment, “perform the functions necessary,” Rules 315(c) and (d), to combine elements in order to put a competing carrier on an equal footing with the incumbent when the requesting carrier is unable to combine, First Report and Order ¶ 294, when it would not place the incumbent at a disadvantage in operating its own network, and when it would not place other competing carriers at a competitive disadvantage, Rule 315(c)(2). This duty is consistent with the Act's goals of competition and non-discrimination, and imposing it is a sensible way to reach the result the Act requires. Pp. 531–538.

219 F. 3d 744, affirmed in part, reversed in part, and remanded.

SOUTER, J., delivered the opinion of the Court, in which REHNQUIST, C. J., and STEVENS, KENNEDY, and GINSBURG, JJ., joined, in which SCALIA and THOMAS, JJ., joined as to Part III, and in which THOMAS, J., also joined as to Part IV. BREYER, J., filed an opinion concurring in part and dissenting in part, in which SCALIA, J., joined as to Part VI, *post*,

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p. 539. O'CONNOR, J., took no part in the consideration or decision of the cases.

William P. Barr argued the cause for Verizon Communications, Inc., et al., petitioners in No. 00–511, and for BellSouth Corp. et al., respondents in Nos. 00–555, etc. With him on the briefs were *M. Edward Whelan, Patrick F. Philbin, Michael E. Glover, Mark L. Evans, Michael K. Kellogg, Henk Brands, Charles R. Morgan, James G. Harralson, Andrew G. McBride, Scott Delacourt, Roger K. Toppins, Gary Phillips, Sean A. Lev, and Steven G. Bradbury.*

Solicitor General Olson argued the cause for the federal parties, petitioners in Nos. 00–587, etc., and respondents in No. 00–511. With him on the briefs were *Acting Solicitor General Underwood, Acting Assistant Attorney General Nannes, Deputy Solicitor General Wallace, Barbara McDowell, Catherine G. O'Sullivan, Nancy C. Garrison, and Laurence N. Bourne.* *David P. Murray* filed briefs for respondent Sprint Corporation in Nos. 00–511, etc., in support of petitioner federal parties and in opposition to petitioners Verizon Communications, Inc., et al.

Donald B. Verrilli, Jr., argued the cause for WorldCom, Inc., et al., petitioners in No. 00–555 and respondents in No. 00–511, and for AT&T Corp., petitioner in No. 00–590 and respondent in Nos. 00–511, etc. With him on the briefs for WorldCom, Inc., et al. were *Jodie L. Kelley, Ian Heath Gershengorn, Thomas F. O'Neil III, William Single IV, Carol Ann Bischoff, Robert M. McDowell, and Robert J. Aamoth.* *David W. Carpenter, Peter D. Keisler, Stephen B. Kinnaird, C. Frederick Beckner III, and Mark C. Rosenblum* filed briefs for AT&T.

Briefs for respondents in Nos. 00–511, etc., were filed by *Irwin A. Popowsky* for the National Association of State Utility Consumer Advocates, by *James Bradford Ramsay* and *Lawrence G. Malone* for the Public Service Commission of New York et al., and by *William T. Lake, John H. Har-*

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wood II, and *Robert B. McKenna* for Qwest Communications International, Inc.†

JUSTICE SOUTER delivered the opinion of the Court.*

These cases arise under the Telecommunications Act of 1996. Each is about the power of the Federal Communications Commission to regulate a relationship between monopolistic companies providing local telephone service and companies entering local markets to compete with the incumbents. Under the Act, the new entrants are entitled, among other things, to lease elements of the local telephone networks from the incumbent monopolists. The issues are whether the FCC is authorized (1) to require state utility commissions to set the rates charged by the incumbents for leased elements on a forward-looking basis untied to the incumbents' investment, and (2) to require incumbents to combine such elements at the entrants' request when they lease them to the entrants. We uphold the FCC's assumption and exercise of authority on both issues.

I

The 1982 consent decree settling the Government's anti-trust suit against the American Telephone and Telegraph Company (AT&T) divested AT&T of its local-exchange carriers, leaving AT&T as a long-distance and equipment company, and limiting the divested carriers to the provision of local telephone service. *United States v. American Telephone & Telegraph Co.*, 552 F. Supp. 131 (DC 1982), *aff'd sub nom. Maryland v. United States*, 460 U. S. 1001 (1983). The decree did nothing, however, to increase competition in the persistently monopolistic local markets, which were thought

†*Harisha J. Bastiampillai* and *Morton J. Posner* filed a brief for Allegiance Telecom, Inc., et al. as *amici curiae* urging affirmance in No. 00–511.

*JUSTICE SCALIA joins Part III of this opinion. JUSTICE THOMAS joins Parts III and IV.

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to be the root of natural monopoly in the telecommunications industry. See S. Benjamin, D. Lichtman, & H. Shelanski, *Telecommunications Law and Policy* 682 (2001) (hereinafter Benjamin et al.); P. Huber, M. Kellogg, & J. Thorne, *Federal Telecommunications Law* §2.1.1, pp. 84–85 (2d ed. 1999) (hereinafter Huber et al.); W. Baumol & J. Sidak, *Toward Competition in Local Telephony* 7–10 (1994); S. Breyer, *Regulation and Its Reform* 291–292, 314 (1982). These markets were addressed by provisions of the Telecommunications Act of 1996 (1996 Act or Act), Pub L. 104–104, 110 Stat. 56, that were intended to eliminate the monopolies enjoyed by the inheritors of AT&T's local franchises; this objective was considered both an end in itself and an important step toward the Act's other goals of boosting competition in broader markets and revising the mandate to provide universal telephone service. See Benjamin et al. 716.

Two sets of related provisions for opening local markets concern us here. First, Congress required incumbent local-exchange carriers to share their own facilities and services on terms to be agreed upon with new entrants in their markets. 47 U.S.C. §251(c) (1994 ed., Supp. V). Second, knowing that incumbents and prospective entrants would sometimes disagree on prices for facilities or services, Congress directed the FCC to prescribe methods for state commissions to use in setting rates that would subject both incumbents and entrants to the risks and incentives that a competitive market would produce. §252(d). The particular method devised by the FCC for setting rates to be charged for interconnection and lease of network elements under the Act, §252(d)(1),¹ and regulations the FCC imposed to implement the statutory duty to share these elements, §251(c)(3), are the subjects of this litigation, which must be understood against the background of ratemaking for public

¹Section 252(d) separately provides for ratesetting with respect to reciprocal compensation for interconnected facilities, §252(d)(2), and resale, §252(d)(3).

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utilities in the United States and the structure of local exchanges made accessible by the Act.

A

Companies providing telephone service have traditionally been regulated as monopolistic public utilities.² See J. Bonbright, *Principles of Public Utility Rates* 3–5 (1st ed. 1961) (hereinafter Bonbright); I. Barnes, *Economics of Public Utility Regulation* 37–41 (1942) (hereinafter Barnes). At the dawn of modern utility regulation, in order to offset monopoly power and ensure affordable, stable public access to a utility's goods or services, legislatures enacted rate schedules to fix the prices a utility could charge. See *id.*, at 170–173; C. Phillips, *Regulation of Public Utilities* 111–112, and n. 5 (1984) (hereinafter Phillips). See, e.g., *Smyth v. Ames*, 169 U. S. 466, 470–476 (1898) (statement of case); *Munn v. Illinois*, 94 U. S. 113, 134 (1877). As this job became more complicated, legislatures established specialized administrative agencies, first local or state, then federal, to set and regulate rates. Barnes 173–175; Phillips 115–117. See, e.g., *Minnesota Rate Cases*, 230 U. S. 352, 433 (1913) (Interstate Commerce Commission); *Shreveport Rate Cases*, 234 U. S. 342, 354–355 (1914) (jurisdictional dispute between ICC and Texas Railroad Commission). See generally T. McCraw, *Prophets of Regulation* 11–65 (1984). The familiar mandate in the enabling Acts was to see that rates be “just and reasonable” and not discriminatory. Barnes 289. See, e.g., *Transportation Act of 1920*, 49 U. S. C. § 1(5) (1934 ed.).

² Nationalization, the historical policy choice for regulation of telephone service in many other countries, was rejected in the United States. Cohen, *The Telephone Problem and the Road to Telephone Regulation in the United States, 1876–1917*, 3 J. of Policy History 42, 46, 55–56, 65 (1991) (hereinafter Cohen); S. Vogel, *Freer Markets, More Rules: Regulatory Reform in Advanced Industrial Countries* 26–27 (1996).

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All rates were subject to regulation this way: retail rates charged directly to the public and wholesale rates charged among businesses involved in providing the goods or services offered by the retail utility. Intrastate retail rates were regulated by the States or municipalities, with those at wholesale generally the responsibility of the National Government, since the transmission or transportation involved was characteristically interstate.³ See Phillips 143.

Historically, the classic scheme of administrative rate-setting at the federal level called for rates to be set out by the regulated utility companies in proposed tariff schedules, on the model applied to railroad carriers under the Interstate Commerce Act of 1887, 24 Stat. 379. After interested parties had had notice of the proposals and a chance to comment, the tariffs would be accepted by the controlling agency so long as they were “reasonable” (or “just and reasonable”) and not “unduly discriminatory.” Hale, *Commissions, Rates, and Policies*, 53 Harv. L. Rev. 1103, 1104–1105 (1940). See, e.g., *Southern Pacific Co. v. ICC*, 219 U. S. 433, 445 (1911). The States generally followed this same tariff-schedule model. Barnes 297–298. See, e.g., *Smyth, supra*, at 470–476.

³The first noteworthy federal rate-regulation statute was the Interstate Commerce Act of 1887, 24 Stat. 379, which was principally concerned with railroad rates but generally governed all interstate rates. It was the model for subsequent federal public-utility statutes like the Federal Power Act of 1920, 41 Stat. 1063, the Communications Act of 1934, 48 Stat. 1064, the Natural Gas Act of 1938, 52 Stat. 821, and the Civil Aeronautics Act of 1938, 52 Stat. 973. The Communications Act of 1934 created the FCC and was the first statute to address interstate telephone regulation in an independent and substantive way. Federal regulation in the area had previously been undertaken incidentally to general interstate carrier regulation under the Interstate Commerce Act. The Mann-Elkins Act of 1910, 36 Stat. 539, was the earliest federal statute prescribing rates for interstate and foreign telephone and telegraph carriers, as part of revisions to railroad rates set by the ICC. See R. Viator, *Contrived Competition: Regulation and Deregulation in America* 171 (1994) (hereinafter Viator).

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The way rates were regulated as between businesses (by the National Government) was in some respects, however, different from regulation of rates as between businesses and the public (at the state or local level). In wholesale markets, the party charging the rate and the party charged were often sophisticated businesses enjoying presumptively equal bargaining power, who could be expected to negotiate a “just and reasonable” rate as between the two of them. Accordingly, in the Federal Power Act of 1920, 41 Stat. 1063, and again in the Natural Gas Act of 1938, 52 Stat. 821, Congress departed from the scheme of purely tariff-based regulation and acknowledged that contracts between commercial buyers and sellers could be used in ratesetting, 16 U. S. C. § 824d(d) (Federal Power Act); 15 U. S. C. § 717c(c) (Natural Gas Act). See *United Gas Pipe Line Co. v. Mobile Gas Service Corp.*, 350 U. S. 332, 338–339 (1956). When commercial parties did avail themselves of rate agreements, the principal regulatory responsibility was not to relieve a contracting party of an unreasonable rate, *FPC v. Sierra Pacific Power Co.*, 350 U. S. 348, 355 (1956) (“its improvident bargain”), but to protect against potential discrimination by favorable contract rates between allied businesses to the detriment of other wholesale customers. See *ibid.* Cf. *New York v. United States*, 331 U. S. 284, 296 (1947) (“The principal evil at which the Interstate Commerce Act was aimed was discrimination in its various manifestations”). This Court once summed up matters at the wholesale level this way:

“[W]hile it may be that the Commission may not normally *impose* upon a public utility a rate which would produce less than a fair return, it does not follow that the public utility may not itself agree by contract to a rate affording less than a fair return or that, if it does so, it is entitled to be relieved of its improvident bargain. In such circumstances the sole concern of the Commission would seem to be whether the rate is so low as to

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adversely affect the public interest—as where it might impair the financial ability of the public utility to continue its service, cast upon other consumers an excessive burden, or be unduly discriminatory.” *Sierra Pacific Power Co.*, *supra*, at 355 (citation omitted).

See also *United Gas Pipe Line Co.*, *supra*, at 345.

Regulation of retail rates at the state and local levels was, on the other hand, focused more on the demand for “just and reasonable” rates to the public than on the perils of rate discrimination. See Barnes 298–299. Indeed, regulated local telephone markets evolved into arenas of state-sanctioned discrimination engineered by the public utility commissions themselves in the cause of “universal service.” Huber et al. 80–85. See also Vietor 167–185. In order to hold down charges for telephone service in rural markets with higher marginal costs due to lower population densities and lesser volumes of use, urban and business users were charged subsidizing premiums over the marginal costs of providing their own service. See Huber et al. 84.

These cross subsidies between markets were not necessarily transfers between truly independent companies, however, thanks largely to the position attained by AT&T and its satellites. This was known as the “Bell system,” which by the mid-20th century had come to possess overwhelming monopoly power in all telephone markets nationwide, supplying local-exchange and long-distance services as well as equipment. Vietor 174–175. See also R. Garnet, *Telephone Enterprise: Evolution of Bell System’s Horizontal Structure, 1876–1909*, pp. 160–163 (1985) (Appendix A). The same pervasive market presence of Bell providers that made it simple to provide cross subsidies in aid of universal service, however, also frustrated conventional efforts to hold retail rates down. See Huber et al. 84–85. Before the Bell system’s predominance, regulators might have played competing carriers against one another to get lower rates for the public, see Cohen 47–50, but the strategy became virtually

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impossible once a single company had become the only provider in nearly every town and city across the country. This regulatory frustration led, in turn, to new thinking about just and reasonable retail rates and ultimately to these cases.

The traditional regulatory notion of the “just and reasonable” rate was aimed at navigating the straits between gouging utility customers and confiscating utility property. *FPC v. Hope Natural Gas Co.*, 320 U. S. 591, 603 (1944). See also Barnes 289–290; Bonbright 38. More than a century ago, reviewing courts charged with determining whether utility rates were sufficiently reasonable to avoid unconstitutional confiscation took as their touchstone the revenue that would be a “fair return” on certain utility property known as a “rate base.” The fair rate of return was usually set as the rate generated by similar investment property at the time of the rate proceeding, and in *Smyth v. Ames*, 169 U. S., at 546, the Court held that the rate base must be calculated as “the fair value of the property being used by [the utility] for the convenience of the public.” In pegging the rate base at “fair value,” the *Smyth* Court consciously rejected the primary alternative standard, of capital actually invested to provide the public service or good. *Id.*, at 543–546. The Court made this choice in large part to prevent “excessive valuation or fictitious capitalization” from artificially inflating the rate base, *id.*, at 544, lest “[t]he public . . . be subjected to unreasonable rates in order simply that stockholders may earn dividends,” *id.*, at 545 (quoting *Covington & Lexington Turnpike Road Co. v. Sanford*, 164 U. S. 578, 596 (1896)).⁴

But *Smyth* proved to be a troublesome mandate, as Justice Brandeis, joined by Justice Holmes, famously observed

⁴ And the Court had no doubt who should make the sacrifice in that situation. “If a corporation cannot maintain such a highway and earn dividends for stockholders, it is a misfortune for it and them which the Constitution does not require to be remedied by imposing unjust burdens upon the public.” *Smyth v. Ames*, 169 U. S., at 545 (citation omitted).

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25 years later. *Missouri ex rel. Southwestern Bell Telephone Co. v. Public Serv. Comm'n of Mo.*, 262 U. S. 276, 292 (1923) (dissenting opinion). The *Smyth* Court itself had described, without irony, the mind-numbing complexity of the required enquiry into fair value, as the alternative to historical investment:

“[I]n order to ascertain [fair] value, original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property.” 169 U. S., at 546–547.

To the bewildered, *Smyth* simply threw up its hands, prescribing no one method for limiting use of these numbers but declaring all such facts to be “relevant.”⁵ *Southwestern Bell Telephone Co.*, 262 U. S., at 294–298, and n. 6 (Brandeis, J., dissenting). What is more, the customary checks on calculations of value in other circumstances were hard to come by for a utility’s property; its costly facilities rarely changed hands and so were seldom tagged with a price a buyer would actually pay and a seller accept, *id.*, at 292; *West v. Chesapeake & Potomac Telephone Co. of Baltimore*, 295 U. S. 662, 672 (1935). Neither could reviewing courts resort to a utility’s revenue as an index of fair value, since its reve-

⁵ One of the referents of value that did prove possible was current replacement or reproduction cost, a primitive version of the criterion challenged in these cases. See *McCardle v. Indianapolis Water Co.*, 272 U. S. 400, 417 (1926); Goddard, *The Problem of Valuation: The Evolution of Cost of Reproduction as the Rate Base*, 41 Harv. L. Rev. 564, 570–571 (1928).

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nues were necessarily determined by the rates subject to review, with the rate of return applied to the very property subject to valuation. *Duquesne Light Co. v. Barasch*, 488 U. S. 299, 309, n. 5 (1989); *Hope Natural Gas Co.*, *supra*, at 601.

Small wonder, then, that Justice Brandeis was able to demonstrate how basing rates on *Smyth*'s galactic notion of fair value could produce revenues grossly excessive or insufficient when gauged against the costs of capital. He gave the example (simplified) of a \$1 million plant built with promised returns on the equity of \$90,000 a year. *Southwestern Bell Telephone Co.*, *supra*, at 304–306. If the value were to fall to \$600,000 at the time of a rate proceeding, with the rate of return on similar investments then at 6 percent, *Smyth* would say a rate was not confiscatory if it returned at least \$36,000, a shortfall of \$54,000 from the costs of capital. But if the value of the plant were to rise to \$1,750,000 at the time of the rate proceeding, and the rate of return on comparable investments stood at 8 percent, then constitutionality under *Smyth* would require rates generating at least \$140,000, \$50,000 above capital costs.

The upshot of *Smyth*, then, was the specter of utilities forced into bankruptcy by rates inadequate to pay off the costs of capital, even when a drop in value resulted from general economic decline, not imprudent investment; while in a robust economy, an investment no more prescient could claim what seemed a rapacious return on equity invested. Justice Brandeis accordingly advocated replacing “fair value” with a calculation of rate base on the cost of capital prudently invested in assets used for the provision of the public good or service, and although he did not live to enjoy success, his campaign against *Smyth* came to fruition in *FPC v. Hope Natural Gas Co.*, 320 U. S. 591 (1944).

In *Hope Natural Gas*, this Court disavowed the position that the Natural Gas Act and the Constitution required fair value as the sole measure of a rate base on which “just and

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reasonable” rates were to be calculated. *Id.*, at 601–602. See also *FPC v. Natural Gas Pipeline Co.*, 315 U. S. 575, 602–606 (1942) (Black, Douglas, and Murphy, JJ., concurring). In the matter under review, the Federal Power Commission had valued the rate base by using “actual legitimate cost” reflecting “sound depreciation and depletion practices,” and so had calculated a value roughly 25 percent below the figure generated by the natural-gas company’s fair-value methods using “estimated reproduction cost” and “trended original cost.” *Hope Natural Gas*, 320 U. S., at 596–598, and nn. 4–5. The Court upheld the Commission. “Rates which enable the company to operate successfully, to maintain its financial integrity, to attract capital, and to compensate its investors for the risks assumed certainly cannot be condemned as invalid, even though they might produce only a meager return on the so-called ‘fair value’ rate base.”⁶ *Id.*, at 605. Although *Hope Natural Gas* did not repudiate everything said in *Smyth*, since fair value was still “the end product of the process of rate-making,” 320 U. S., at 601, federal and state commissions setting rates in the aftermath of *Hope Natural Gas* largely abandoned the old fair-value approach and turned to methods of calculating the rate base on the basis of “cost.” A. Kahn, *Economics of Regulations: Principles and Institutions* 40–41 (1988).

“Cost” was neither self-evident nor immune to confusion, however; witness the invocation of “reproduction cost” as a

⁶The fair-value concept survived to some degree in the “used and useful” qualification to the prudent-investment rule, that a utility can only recover prudently invested capital that is being “used and useful” in providing the public a good or service. For example, the Pennsylvania rate statute upheld in *Duquesne Light Co. v. Barasch*, 488 U. S. 299 (1989), provided that capital invested with prudence at the time but rendered useless by unforeseen events would not be recoverable through regulated rates, just as it would be worthless in terms of market value. *Id.*, at 311–312, n. 7 (“The loss to utilities from prudent ultimately unsuccessful investments under such a system is greater than under a pure prudent investment rule, but less than under a fair value approach”).

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popular method for calculating fair value under *Smyth*, see n. 5, *supra*, and the Federal Power Commission's rejection of "trended original cost" (apparently, a straight-line derivation from the cost of capital originally invested) in favor of "actual legitimate cost," *Hope Natural Gas*, *supra*, at 596. Still, over time, general agreement developed on a method that was *primus inter pares*, and it is essentially a modern gloss on that method that the incumbent carriers say the FCC should have used to set the rates at issue here.

The method worked out is not a simple calculation of rate base as the original cost of "prudently invested" capital that Justice Brandeis assumed, presumably by reference to the utility's balance sheet at the time of the rate proceeding. *Southwestern Bell Telephone Co.*, 262 U. S., at 304–306. Rather, "cost" came to mean "cost of service," that is, the cost of prudently invested capital used to provide the service. *Bonbright* 173; P. Garfield & W. Lovejoy, *Public Utility Economics* 56 (1964). This was calculated subject to deductions for accrued depreciation and allowances for working capital,⁷ see Phillips 282–283 (table 8–1) ("a typical electric utility rate base"), naturally leading utilities to minimize depreciation by using very slow depreciation rates (on the assumption of long useful lives),⁸ and to maximize working capital claimed as a distinct rate-base constituent.

⁷ Operating cash, inventory, and accounts receivable constitute typical current assets. Current liabilities consist of accounts payable, such as taxes, wages, rents, interest payable, and short-term debt. Because, for example, accounts receivable may not be collected until after liabilities come due, working capital is capital needed to pay current liabilities in the interim. Z. Bodie & R. Merton, *Finance* 427 (prelim. ed. 1998).

⁸ For example, in 1997, regulated incumbent local-exchange carriers had an average depreciation cycle of 14.4 years for their assets (an average depreciation cost of \$127 per line as against gross plant investment of \$1,836 per line), roughly twice as long as the average cycle of 7.4 years for unregulated competitive carriers like Worldcom. Weingarten & Stuck, *Rethinking Depreciation*, 28 *Business Communications Review* 63 (Oct. 1998).

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This formula, commonly called the prudent-investment rule, addressed the natural temptations on the utilities' part to claim a return on outlays producing nothing of value to the public. It was meant, on the one hand, to discourage unnecessary investment and the "fictitious capitalization" feared in *Smyth*, 169 U. S., at 543–546, and so to protect ratepayers from supporting excessive capacity, or abandoned, destroyed, or phantom assets. Kahn, Tardiff, & Weisman, Telecommunications Act at three years: an economic evaluation of its implementation by the Federal Communications Commission, 11 Information Economics & Policy 319, 330, n. 27 (1999) (hereinafter Kahn, Telecommunications Act). At the same time, the prudent-investment rule was intended to give utilities an incentive to make smart investments deserving a "fair" return, and thus to mimic natural incentives in competitive markets⁹ (though without an eye to fostering the actual competition by which such markets are defined). In theory, then, the prudent-investment qualification gave the ratepayer an important protection by mitigating the tendency of a regulated market's lack of competition to support monopolistic prices.

But the mitigation was too little, the prudent-investment rule in practice often being no match for the capacity of utilities having all the relevant information to manipulate the rate base and renegotiate the rate of return every time a rate was set. The regulatory response in some markets was adoption of a rate-based method commonly called "price caps," *United States Telephone Assn. v. FCC*, 188 F. 3d 521, 524 (CA DC 1999), as, for example, by the FCC's setting of maximum access charges paid to large local-exchange com-

⁹ In a competitive market, a company may not simply raise prices as much as it may need to compensate for poor investments (say, in a plant that becomes unproductive) because competitors will then undersell the company's goods. See N. Mankiw, *Principles of Economics* 308–310 (1998) (hereinafter Mankiw).

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panies by interexchange carriers, *In re Policy and Rules Concerning Rates for Dominant Carriers*, 5 FCC Rcd. 6786, 6787, ¶ 1 (1990).

The price-cap scheme starts with a rate generated by the conventional cost-of-service formula, which it takes as a benchmark to be decreased at an average of some 2–3 percent a year to reflect productivity growth, Kahn, Telecommunications Act 330–332, subject to an upward adjustment if necessary to reflect inflation or certain unavoidable “exogenous costs” on which the company is authorized to recover a return. 5 FCC Rcd., at 6787, ¶ 5. Although the price caps do not eliminate gamesmanship, since there are still battles to be fought over the productivity offset and allowable exogenous costs, *United States Telephone Assn.*, *supra*, at 524, they do give companies an incentive “to improve productivity to the maximum extent possible,” by entitling those that outperform the productivity offset to keep resulting profits, 5 FCC Rcd., at 6787–6788, ¶¶ 7–9. Ultimately, the goal, as under the basic prudent-investment rule, is to encourage investment in more productive equipment.

Before the passage of the 1996 Act, the price cap was, at the federal level, the final stage in a century of developing ratesetting methodology. What had changed throughout the era beginning with *Smyth v. Ames* was prevailing opinion on how to calculate the most useful rate base, with the disagreement between fair-value and cost advocates turning on whether invested capital was the key to the right balance between investors and ratepayers, and with the price-cap scheme simply being a rate-based offset to the utilities’ advantage of superior knowledge of the facts employed in cost-of-service ratemaking. What is remarkable about this evolution of just and reasonable ratesetting, however, is what did not change. The enduring feature of ratesetting from *Smyth v. Ames* to the institution of price caps was the idea that calculating a rate base and then allowing a fair rate of

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return on it was a sensible way to identify a range of rates that would be just and reasonable to investors and rate-payers. Equally enduring throughout the period was dissatisfaction with the successive rate-based variants. From the constancy of this dissatisfaction, one possible lesson was drawn by Congress in the 1996 Act, which was that regulation using the traditional rate-based methodologies gave monopolies too great an advantage and that the answer lay in moving away from the assumption common to all the rate-based methods, that the monopolistic structure within the discrete markets would endure.

Under the local-competition provisions of the Act, Congress called for ratemaking different from any historical practice, to achieve the entirely new objective of uprooting the monopolies that traditional rate-based methods had perpetuated. H. R. Conf. Rep. No. 104–230, p. 113 (1996). A leading backer of the Act in the Senate put the new goal this way:

“This is extraordinary in the sense of telling private industry that this is what they have to do in order to let the competitors come in and try to beat your economic brains out. . . .

“It is kind of almost a jump-start. . . . I will do everything I have to let you into my business, because we used to be a bottleneck; we used to be a monopoly; we used to control everything.

“Now, this legislation says you will not control much of anything. You will have to allow for nondiscriminatory access on an unbundled basis to the network functions and services of the Bell operating companies network that is at least equal in type, quality, and price to the access [a] Bell operating company affords to itself.” 141 Cong. Rec. 15572 (1995) (remarks of Sen. Breaux (La.) on Pub. L. 104–104).

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For the first time, Congress passed a ratesetting statute with the aim not just to balance interests between sellers and buyers, but to reorganize markets by rendering regulated utilities' monopolies vulnerable to interlopers, even if that meant swallowing the traditional federal reluctance to intrude into local telephone markets. The approach was deliberate, through a hybrid jurisdictional scheme with the FCC setting a basic, default methodology for use in setting rates when carriers fail to agree, but leaving it to state utility commissions to set the actual rates.

While the Act is like its predecessors in tying the methodology to the objectives of "just and reasonable" and non-discriminatory rates, 47 U. S. C. §252(d)(1), it is radically unlike all previous statutes in providing that rates be set "without reference to a rate-of-return or other rate-based proceeding," §252(d)(1)(A)(i). The Act thus appears to be an explicit disavowal of the familiar public-utility model of rate regulation (whether in its fair-value or cost-of-service incarnations) presumably still being applied by many States for retail sales, see *In re Implementation of Local Competition in Telecommunications Act of 1996*, 11 FCC Rcd. 15499, 15857, ¶ 704 (1996) (First Report and Order), in favor of novel ratesetting designed to give aspiring competitors every possible incentive to enter local retail telephone markets, short of confiscating the incumbents' property.

B

The physical incarnation of such a market, a "local exchange," is a network connecting terminals like telephones, faxes, and modems to other terminals within a geographical area like a city. From terminal network interface devices, feeder wires, collectively called the "local loop," are run to local switches that aggregate traffic into common "trunks." The local loop was traditionally, and is still largely, made of copper wire, though fiber-optic cable is also used, albeit to a

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far lesser extent than in long-haul markets.¹⁰ Just as the loop runs from terminals to local switches, the trunks run from the local switches to centralized, or tandem, switches, originally worked by hand but now by computer, which operate much like railway switches, directing traffic into other trunks. A signal is sent toward its destination terminal on these common ways so far as necessary, then routed back down another hierarchy of switches to the intended telephone or other equipment. A local exchange is thus a transportation network for communications signals, radiating like a root system from a “central office” (or several offices for larger areas) to individual telephones, faxes, and the like.

It is easy to see why a company that owns a local exchange (what the Act calls an “incumbent local exchange carrier,” 47 U.S.C. §251(h)) would have an almost insurmountable competitive advantage not only in routing calls within the exchange, but, through its control of this local market, in the markets for terminal equipment and long-distance calling as well. A newcomer could not compete with the incumbent carrier to provide local service without coming close to replicating the incumbent’s entire existing network, the most costly and difficult part of which would be laying down the “last mile” of feeder wire, the local loop, to the thousands (or millions) of terminal points in individual houses and businesses.¹¹ The incumbent company could also control its local-loop plant so as to connect only with terminals it manufactured or selected, and could place conditions or fees (called “access charges”) on long-distance carriers seeking to con-

¹⁰ Some loop lines employ coaxial cable and fixed wireless technologies, but these constitute less than 1 percent of the total number of reported local-exchange lines in the United States. FCC, Local Telephone Competition: Status as of June 30, 2001 (Feb. 27, 2002) (table 5).

¹¹ A mininetwork connecting only some of the users in the local exchange would be of minimal value to customers, and, correspondingly, any value to customers would be exponentially increased with the interconnection of more users to the network. See generally W. Arthur, *Increasing Returns and Path Dependence in the Economy* 1–12 (1994).

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nect with its network. In an unregulated world, another telecommunications carrier would be forced to comply with these conditions, or it could never reach the customers of a local exchange.

II

The 1996 Act both prohibits state and local regulation that impedes the provision of “telecommunications service,” §253(a),¹² and obligates incumbent carriers to allow competitors to enter their local markets, §251(c). Section 251(c) addresses the practical difficulties of fostering local competition by recognizing three strategies that a potential competitor may pursue. First, a competitor entering the market (a “requesting” carrier, §251(c)(2)) may decide to engage in pure facilities-based competition, that is, to build its own network to replace or supplement the network of the incumbent. If an entrant takes this course, the Act obligates the incumbent to “interconnect” the competitor’s facilities to its own network to whatever extent is necessary to allow the competitor’s facilities to operate. §§251(a) and (c)(2). At the other end of the spectrum, the statute permits an entrant to skip construction and instead simply to buy and resell “telecommunications service,” which the incumbent has a duty to sell at wholesale. §§251(b)(1) and (c)(4). Between these extremes, an entering competitor may choose to lease certain of an incumbent’s “network elements,”¹³ which

¹²Title 47 U. S. C. §253(a) (1994 ed., Supp. V) provides:

“No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.”

¹³“Network element” is defined as “a facility or equipment used in the provision of a telecommunications service. Such term also includes features, functions, and capabilities that are provided by means of such facility or equipment, including subscriber numbers, databases, signaling systems, and information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecommunications service.” §153(29).

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the incumbent has a duty to provide “on an unbundled basis” at terms that are “just, reasonable, and nondiscriminatory.” § 251(c)(3).

Since wholesale markets for companies engaged in resale, leasing, or interconnection of facilities cannot be created without addressing rates, Congress provided for rates to be set either by contracts between carriers or by state utility commission rate orders. §§ 252(a)–(b). Like other federal utility statutes that authorize contracts approved by a regulatory agency in setting rates between businesses, *e. g.*, 16 U. S. C. § 824d(d) (Federal Power Act); 15 U. S. C. § 717c(c) (Natural Gas Act), the Act permits incumbent and entering carriers to negotiate private rate agreements, 47 U. S. C. § 252(a);¹⁴ see also § 251(c)(1) (duty to negotiate in good faith). State utility commissions are required to accept any such agreement unless it discriminates against a carrier not a party to the contract, or is otherwise shown to be contrary to the public interest. §§ 252(e)(1) and (e)(2)(A). Carriers, of course, might well not agree, in which case an entering carrier has a statutory option to request mediation by a state commission, § 252(a)(2). But the option comes with strings, for mediation subjects the parties to the duties specified in § 251 and the pricing standards set forth in § 252(d), as

¹⁴ Section 252(a) provides:

“(a) Agreements arrived at through negotiation

“(1) Voluntary negotiations

“Upon receiving a request for interconnection, services, or network elements pursuant to section 251 of this title, an incumbent local exchange carrier may negotiate and enter into a binding agreement with the requesting telecommunications carrier or carriers without regard to the standards set forth in subsections (b) and (c) of section 251 of this title. The agreement shall include a detailed schedule of itemized charges for interconnection and each service or network element included in the agreement. The agreement, including any interconnection agreement negotiated before February 8, 1996, shall be submitted to the State commission under subsection (e) of this section.”

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interpreted by the FCC's regulations, § 252(e)(2)(B). These regulations are at issue here.

As to pricing, the Act provides that when incumbent and requesting carriers fail to agree, state commissions will set a "just and reasonable" and "nondiscriminatory" rate for interconnection or the lease of network elements based on "the cost of providing the . . . network element," which "may include a reasonable profit."¹⁵ § 252(d)(1). In setting these rates, the state commissions are, however, subject to that important limitation previously unknown to utility regulation: the rate must be "determined without reference to a rate-of-return or other rate-based proceeding." *Ibid.* In *AT&T Corp. v. Iowa Utilities Bd.*, 525 U. S. 366, 384–385 (1999), this Court upheld the FCC's jurisdiction to impose a new methodology on the States when setting these rates. The attack today is on the legality and logic of the particular methodology the Commission chose.

As the Act required, six months after its effective date the FCC implemented the local-competition provisions in its First Report and Order, which included as an appendix the new regulations at issue. Challenges to the order, mostly by incumbent local-exchange carriers and state commissions, were consolidated in the United States Court of Appeals for the Eighth Circuit. *Iowa Utilities Bd. v. FCC*, 120 F. 3d 753, 792 (1997), *aff'd in part and rev'd in part*, 525 U. S. 366, 397 (1999). See also *California v. FCC*, 124 F. 3d 934, 938 (1997), *rev'd in part*, 525 U. S. 366, 397 (1999) (challenges to *In re Implementation of Local Competition Provisions in Telecommunications Act of 1996*, 11 FCC Rcd. 19392 (1996) (Second Report and Order)).

So far as it bears on where we are today, the initial decision by the Eighth Circuit held that the FCC had no au-

¹⁵ Rates for wholesale purchases of telecommunications services are covered separately, and must be based on the incumbent's retail rates. § 252(d)(3).

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thority to control the methodology of state commissions setting the rates incumbent local-exchange carriers could charge entrants for network elements, 47 CFR § 51.505(b)(1) (1997). *Iowa Utilities Bd. v. FCC*, *supra*, at 800. The Eighth Circuit also held that the FCC misconstrued the plain language of § 251(c)(3) in implementing a set of “combination” rules, 47 CFR §§ 51.315(b)–(f) (1997), the most important of which provided that “an incumbent LEC shall not separate requested network elements that the incumbent LEC currently combines,” § 51.315(b). 120 F. 3d, at 813. On the other hand, the Court of Appeals accepted the FCC’s view that the Act required no threshold ownership of facilities by a requesting carrier, First Report and Order ¶¶ 328–340, and upheld Rule 319, 47 CFR § 51.319 (1997), which read “network elements” broadly, to require incumbent carriers to provide not only equipment but also services and functions, such as operations support systems (*e. g.*, billing databases), § 51.319(f)(1), operator services and directory assistance, § 51.319(g), and vertical switching features like call-waiting and caller I. D., First Report and Order ¶¶ 263, 413. 120 F. 3d, at 808–810.

This Court affirmed in part and in larger part reversed. *AT&T Corp. v. Iowa Utilities Bd.*, 525 U. S., at 397. We reversed in upholding the FCC’s jurisdiction to “design a pricing methodology” to bind state ratemaking commissions, *id.*, at 385, as well as one of the FCC’s combination rules, Rule 315(b), barring incumbents from separating currently combined network elements when furnishing them to entrants that request them in a combined form, *id.*, at 395. We also reversed in striking down Rule 319, holding that its provision for blanket access to network elements was inconsistent with the “necessary” and “impair” standards of 47 U. S. C. § 251(d)(2), 525 U. S., at 392. We affirmed the Eighth Circuit, however, in upholding the FCC’s broad definition of network elements to be provided, *id.*, at 387, and

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the FCC's understanding that the Act imposed no facilities-ownership requirement, *id.*, at 392–393. The case then returned to the Eighth Circuit. *Id.*, at 397.

With the FCC's general authority to establish a pricing methodology secure, the incumbent carriers' primary challenge on remand went to the method that the Commission chose. There was also renewed controversy over the combination rules (Rules 315(c)–(f)) that the Eighth Circuit had struck down along with Rule 315(b), but upon which this Court expressed no opinion when it reversed the invalidation of that latter rule. 219 F. 3d 744, 748 (2000).

As for the method to derive a “nondiscriminatory,” “just and reasonable rate for network elements,” the Act requires the FCC to decide how to value “the cost . . . of providing the . . . network element [which] may include a reasonable profit,” although the FCC is (as already seen) forbidden to allow any “reference to a rate-of-return or other rate-based proceeding,” § 252(d)(1). Within the discretion left to it after eliminating any dependence on a “rate-of-return or other rate-based proceeding,” the Commission chose a way of treating “cost” as “forward-looking economic cost,” 47 CFR § 51.505 (1997), something distinct from the kind of historically based cost generally relied upon in valuing a rate base after *Hope Natural Gas*. In Rule 505, the FCC defined the “forward-looking economic cost of an element [as] the sum of (1) the total element long-run incremental cost of the element [TELRIC]; [and] (2) a reasonable allocation of forward-looking common costs,” § 51.505(a), common costs being “costs incurred in providing a group of elements that “cannot be attributed directly to individual elements,” § 51.505(c)(1). Most important of all, the FCC decided that the TELRIC “should be measured based on the use of the most efficient telecommunications technology currently available and the lowest cost network configuration, given the existing location of the incumbent[s] wire centers.” § 51.505(b)(1).

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“The TELRIC of an element has three components, the operating expenses, the depreciation cost, and the appropriate risk-adjusted cost of capital.” First Report and Order ¶ 703 (footnote omitted). See also 47 CFR §§ 51.505(b)(2)–(3) (1997). A concrete example may help. Assume that it would cost \$1 a year to operate a most efficient loop element; that it would take \$10 for interest payments on the capital a carrier would have to invest to build the lowest cost loop centered upon an incumbent carrier’s existing wire centers (say \$100, at 10 percent per annum); and that \$9 would be reasonable for depreciation on that loop (an 11-year useful life); then the annual TELRIC for the loop element would be \$20.¹⁶

The Court of Appeals understood § 252(d)(1)’s reference to “the cost . . . of providing the . . . network element” to be ambiguous as between “forward-looking” and “historical” cost, so that a forward-looking ratesetting method would presumably be a reasonable implementation of the statute. But the Eighth Circuit thought the ambiguity afforded no leeway beyond that, and read the Act to require any forward-looking methodology to be “based on the incremental costs that an [incumbent] actually incurs or will incur in providing . . . the unbundled access to its specific network elements.” 219 F. 3d, at 751–753. Hence, the Eighth Circuit held that § 252(d)(1) foreclosed the use of the TELRIC methodology. In other words, the court read the Act as plainly requiring rates based on the “actual” not “hypothetical” “cost . . . of providing the . . . network element,” and reasoned that TELRIC was clearly the latter. *Id.*, at

¹⁶The actual TELRIC rate charged to an entrant leasing the element would be a fraction of the TELRIC figure, based on a “reasonable projection” of the entrant’s use of the element (whether on a flat or per-usage basis) as divided by aggregate total use of the element by the entrant, the incumbent, and any other competitor that leases it. 47 CFR § 51.511 (1997). See also First Report and Order ¶ 682.

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750–751. The Eighth Circuit added, however, that if it were wrong and TELRIC were permitted, the claim that in prescribing TELRIC the FCC had effected an unconstitutional taking would not be “ripe” until “resulting rates have been determined and applied.” *Id.*, at 753–754.

The Court of Appeals also, and for the second time, invalidated Rules 315(c)–(f), 47 CFR §§ 51.315(c)–(f) (1997), the FCC’s so-called “additional combination” rules, apparently for the same reason it had rejected them before, when it struck down Rule 315(b), the main combination rule. 219 F. 3d, at 758–759. In brief, the rules require an incumbent carrier, upon request and compensation, to “perform the functions necessary to combine” network elements for an entrant, unless the combination is not “technically feasible.” *Id.*, at 759. The Eighth Circuit read the language of § 251(c)(3), with its reference to “allow[ing] requesting carriers to combine . . . elements,” as unambiguously requiring a requesting carrier, not a providing incumbent, to do any and all combining. *Ibid.*

Before us, the incumbent local-exchange carriers claim error in the Eighth Circuit’s holding that a “forward-looking cost” methodology (as opposed to the use of “historical” cost) is consistent with § 252(d)(1), and its conclusion that the use of the TELRIC forward-looking cost methodology presents no “ripe” takings claim. The FCC and the entrants, on the other side, seek review of the Eighth Circuit’s invalidation of the TELRIC methodology and the additional combination rules. We granted certiorari, 531 U. S. 1124 (2001), and now affirm on the issues raised by the incumbents, and reverse on those raised by the FCC and the entrants.

III

A

The incumbent carriers’ first attack charges the FCC with ignoring the plain meaning of the word “cost” as it occurs

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in the provision of § 252(d)(1) that “the just and reasonable rate for network elements . . . shall be . . . based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the . . . network element” The incumbents do not argue that in theory the statute precludes any forward-looking methodology, but they do claim that the cost of providing a competitor with a network element in the future must be calculated using the incumbent’s past investment in the element and the means of providing it. They contend that “cost” in the statute refers to “historical” cost, which they define as “what was in fact paid” for a capital asset, as distinct from “value,” or “the price that would be paid on the open market.” Brief for Petitioners in No. 00–511, p. 19. They say that the technical meaning of “cost” is “past capital expenditure,” *ibid.*, and they suggest an equation between “historical” and “embedded” costs, *id.*, at 20, which the FCC defines as “the costs that the incumbent LEC incurred in the past and that are recorded in the incumbent LEC’s books of accounts,” 47 CFR § 51.505(d)(1) (1997). The argument boils down to the proposition that “the cost of providing the network element” can only mean, in plain language and in this particular technical context, the past cost to an incumbent of furnishing the specific network element actually, physically, to be provided.

The incumbents have picked an uphill battle. At the most basic level of common usage, “cost” has no such clear implication. A merchant who is asked about “the cost of providing the goods” he sells may reasonably quote their current wholesale market price, not the cost of the particular items he happens to have on his shelves, which may have been bought at higher or lower prices.

When the reference shifts from common speech into the technical realm, the incumbents still have to attack uphill. To begin with, even when we have dealt with historical costs as a ratesetting basis, the cases have never assumed a sense

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of “cost” as generous as the incumbents seem to claim.¹⁷ “Cost” as used in calculating the rate base under the traditional cost-of-service method did not stand for all past capital expenditures, but at most for those that were prudent, while prudent investment itself could be denied recovery when unexpected events rendered investment useless, *Duquesne Light Co. v. Barasch*, 488 U. S., at 312. And even when investment was wholly includable in the rate base, ratemakers often rejected the utilities’ “embedded costs,” their own book-value estimates, which typically were geared to maximize the rate base with high statements of past expenditures and working capital, combined with unduly low rates of depreciation. See, e. g., *Hope Natural Gas*, 320 U. S., at 597–598. It would also be a mistake to forget that “cost” was a term in value-based ratemaking and has figured in contemporary state and federal ratemaking untethered to historical valuation.¹⁸

What is equally important is that the incumbents’ plain-meaning argument ignores the statutory setting in which the mandate to use “cost” in valuing network elements occurs. First, the Act uses “cost” as an intermediate term

¹⁷ Nor is it possible to argue that “cost” would have to mean past incurred cost if the technical context were economics. See D. Carlton & J. Perloff, *Modern Industrial Organization* 50–74 (2d ed. 1994) (hereinafter Carlton & Perloff). “Sunk costs” are unrecoverable past costs; practically every other sort of economic “cost” is forward looking, or can be either historical or forward looking. “Opportunity cost,” for example, is “the value of the best forgone alternative use of the resources employed,” *id.*, at 56, and as such is always forward looking. See Sidak & Spulber, *Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996*, 97 Colum. L. Rev. 1081, 1093 (1997) (hereinafter Sidak & Spulber, *Telecommons*) (“Opportunity costs are . . . by definition forward-looking”).

¹⁸ See, e. g., *Mobil Oil Exploration & Producing Southeast, Inc. v. United Distribution Cos.*, 498 U. S. 211, 224–225 (1991); *Potomac Elec. Power Co. v. ICC*, 744 F. 2d 185, 193–194 (CA DC 1984); *Alabama Elec. Coop., Inc. v. FERC*, 684 F. 2d 20, 27 (CA DC 1982). Cf. *National Assn. of Greeting Card Publishers v. Postal Service*, 462 U. S. 810, 832 (1983).

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in the calculation of “just and reasonable rates,” 47 U. S. C. §252(d)(1), and it was the very point of *Hope Natural Gas* that regulatory bodies required to set rates expressed in these terms have ample discretion to choose methodology, 320 U. S., at 602. Second, it would have been passing strange to think Congress tied “cost” to historical cost without a more specific indication, when the very same sentence that requires “cost” pricing also prohibits any reference to a “rate-of-return or other rate-based proceeding,” §252(d)(1), each of which has been identified with historical cost ever since *Hope Natural Gas* was decided.¹⁹

The fact is that without any better indication of meaning than the unadorned term, the word “cost” in §252(d)(1), as in accounting generally, is “a chameleon,” *Strickland v. Commissioner, Maine Dept. of Human Services*, 96 F. 3d 542, 546 (CA1 1996), a “virtually meaningless” term, R. Estes, *Dictionary of Accounting* 32 (2d ed. 1985). As JUSTICE BREYER put it in *Iowa Utilities Bd.*, words like “cost” “give ratesetting commissions broad methodological leeway; they say little about the ‘method employed’ to determine a par-

¹⁹The incumbents make their own plain-language argument based on statutory context, relying on the part of §252(d)(1)(B) which provides that a just and reasonable rate “may include a reasonable profit.” They say that because separate provision is made in §252(d)(1)(A) for factoring “cost” into the rate, “reasonable profit” may only be understood as income above recovery of the actual cost of an incumbent’s investment. But as the FCC has noted, “profit” may also mean “normal” profit, which is “the total revenue required to cover all of the costs of a firm, including its opportunity costs.” First Report and Order ¶699, and n. 1705 (citing D. Pearce, *MIT Dictionary of Modern Economics* 310 (1994)). That is to say, a “reasonable profit” may refer to a “normal” return based on “the cost of obtaining debt and equity financing” prevailing in the industry. First Report and Order ¶700. This latter sense of “cost” (and accordingly “reasonable profit”) is fully incorporated in the FCC’s provisions as to “risk-adjusted cost of capital,” namely, that “States may adjust the cost of capital if a party demonstrates . . . that either a higher or a lower level of cost of capital is warranted, without . . . conducting a ‘rate-of-return or other rate based proceeding.’” *Id.*, ¶702.

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ticular rate.” 525 U. S., at 423 (opinion concurring in part and dissenting in part). We accordingly reach the conclusion adopted by the Court of Appeals, that nothing in § 252(d)(1) plainly requires reference to historical investment when pegging rates to forward-looking “cost.”

B

The incumbents’ alternative argument is that even without a stern anchor in calculating “the cost . . . of providing the . . . network element,” the particular forward-looking methodology the FCC chose is neither consistent with the plain language of § 252(d)(1) nor within the zone of reasonable interpretation subject to deference under *Chevron U. S. A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U. S. 837, 843-845 (1984). This is so, they say, because TELRIC calculates the forward-looking cost by reference to a hypothetical, most efficient element at existing wire centers, not the actual network element being provided.

1

The short answer to the objection that TELRIC violates plain language is much the same as the answer to the previous plain-language argument, for what the incumbents call the “hypothetical” element is simply the element valued in terms of a piece of equipment an incumbent may not own. This claim, like the one just considered, is that plain language bars a definition of “cost” untethered to historical investment, and as explained already, the term “cost” is simply too protean to support the incumbents’ argument.

2

Similarly, the claim that TELRIC exceeds reasonable interpretative leeway is open to the objection already noted, that responsibility for “just and reasonable” rates leaves methodology largely subject to discretion. *Permian Basin Area Rate Cases*, 390 U. S. 747, 790 (1968) (“We must re-

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iterate that the breadth and complexity of the Commission's responsibilities demand that it be given every reasonable opportunity to formulate methods of regulation appropriate for the solution of its intensely practical difficulties"). See generally *Chevron*, *supra*, at 843–845, 866 ("When a challenge to an agency construction of a statutory provision, fairly conceptualized, really centers on the wisdom of the agency's policy, rather than whether it is a reasonable choice within a gap left open by Congress, the challenge must fail").²⁰ The incumbents nevertheless field three ar-

²⁰ While JUSTICE BREYER does not explicitly challenge the propriety of *Chevron* deference, he relies on our decision in *Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Automobile Ins. Co.*, 463 U. S. 29, 56 (1983), to argue that the FCC's choice of TELRIC bears no "rational connection" to the Act's deregulatory purpose. See *post*, at 542, 554 (opinion concurring in part and dissenting in part). *State Farm* involved review of an agency's "changing its course" as to the interpretation of a statute, 463 U. S., at 42; these cases, by contrast, involve the FCC's first interpretation of a new statute, and so *State Farm* is inapposite to the extent that it may be read as prescribing more searching judicial review under the circumstances of that case. (Indeed, *State Farm* may be read to suggest the obverse conclusion, that the FCC would have had some more explaining to do if it had not changed its course by favoring TELRIC over forward-looking methodologies tethered to actual costs, given Congress's clear intent to depart from past ratesetting statutes in passing the 1996 Act.)

But even on JUSTICE BREYER's own terms, FCC rules stressing low wholesale prices are by no means inconsistent with the deregulatory and competitive purposes of the Act. As we discuss below, a policy promoting lower lease prices for expensive facilities unlikely to be duplicated reduces barriers to entry (particularly for smaller competitors) and puts competitors that can afford these wholesale prices (but not the higher prices the incumbents would like to charge) in a position to build their own versions of less expensive facilities that are sensibly duplicable. See n. 27, *infra*. See also *infra*, at 515–516 (discussing FCC's objection to Ramsey pricing). And while it is true, as JUSTICE BREYER says, that the Act was "deregulatory," in the intended sense of departing from traditional "regulatory" ways that coddled monopolies, see *supra*, at 488 (remarks of Sen. Breaux), that deregulatory character does not necessarily require the FCC to employ passive pricing rules deferring to incumbents' proposed methods and

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guments. They contend, first, that a method of calculating wholesale lease rates based on the costs of providing hypothetical, most efficient elements may simulate the competition envisioned by the Act but does not induce it. Second, they argue that even if rates based on hypothetical elements could induce competition in theory, TELRIC cannot do this, because it does not provide the depreciation and risk-adjusted capital costs that the theory compels. Finally, the incumbents say that even if these objections can be answered, TELRIC is needlessly, and hence unreasonably, complicated and impracticable.

a

The incumbents' (and JUSTICE BREYER's) basic critique of TELRIC is that by setting rates for leased network elements on the assumption of perfect competition, TELRIC perversely creates incentives against competition in fact. See *post*, at 548–551. The incumbents say that in purporting to set incumbents' wholesale prices at the level that would exist in a perfectly competitive market (in order to make retail prices similarly competitive), TELRIC sets rates so low that entrants will always lease and never build network elements. See *post*, at 549–550. And even if an entrant would otherwise consider building a network element more efficient than the best one then on the market (the one assumed in setting the TELRIC rate), it would likewise be deterred by the prospect that its lower cost in building and operating this new element would be immediately available to its competitors; under TELRIC, the incumbents assert, the lease rate for an incumbent's existing element would in-

cost data. On the contrary, the statutory provisions obligating the incumbents to lease their property, § 251(c)(3), and offer their services for resale at wholesale rates, § 251(c)(4), are consistent with the promulgation of a ratesetting method leaving state commissions to do the work of setting rates without any reliance on historical-cost data provided by incumbents.

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stantly drop to match the marginal cost²¹ of the entrant's new element once built. See *ante*, at 550; Brief for Respondents BellSouth et al. in Nos. 00–555, etc., pp. 28–29. According to the incumbents, the result will be, not competition, but a sort of parasitic free riding, leaving TELRIC incapable of stimulating the facilities-based competition intended by Congress.

We think there are basically three answers to this no-stimulation claim of unreasonableness: (1) the TELRIC methodology does not assume that the relevant markets are perfectly competitive, and the scheme includes several features of inefficiency that undermine the plausibility of the incumbents' no-stimulation argument; (2) comparison of TELRIC with alternatives proposed by the incumbents as more reasonable are plausibly answered by the FCC's stated reasons to reject the alternatives; and (3) actual investment in competing facilities since the effective date of the Act simply belies the no-stimulation argument's conclusion.

(1)

The basic assumption of the incumbents' no-stimulation argument is contrary to fact. As we explained, the argument rests on the assumption that in a perfectly efficient market, no one who can lease at a TELRIC rate will ever build. But TELRIC does not assume a perfectly efficient wholesale market or one that is likely to resemble perfection in any foreseeable time. The incumbents thus make the same mistake we attributed in a different setting to the FCC itself. In *Iowa Utilities Bd.*, we rejected the FCC's necessary-and-impair rule, 47 CFR §51.319 (1997), which required incumbents to lease any network element that might reduce, however slightly, an entrant's marginal cost of providing a telecommunications service, as compared with providing the service using the entrant's own equivalent

²¹ "Marginal cost" is "the increase in total cost [of producing goods] that arises from an extra unit of production." See Mankiw 272; see also *id.*, at 283–288, 312–313; Carlton & Perloff 51–52.

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element. 525 U. S., at 389–390. “In a world of perfect competition, in which all carriers are providing their service at marginal cost, the Commission’s total equating of increased cost (or decreased quality) with ‘necessity’ and ‘impairment’ might be reasonable, but it has not established the existence of such an ideal world.” *Id.*, at 390.

Not only that, but the FCC has of its own accord allowed for inefficiency in the TELRIC design in additional ways affecting the likelihood that TELRIC will squelch competition in facilities. First, the Commission has qualified any assumption of efficiency by requiring ratesetters to calculate cost on the basis of “the existing location of the incumbent[’s] wire centers.” 47 CFR §51.505(b)(1) (1997). This means that certain network elements, principally local-loop elements, will not be priced at their most efficient cost and configuration to the extent, say, that a shorter loop could serve a local exchange if the incumbent’s wire centers were relocated for a snugger fit with the current geography of terminal locations.

Second, TELRIC rates in practice will differ from the products of a perfectly competitive market owing to built-in lags in price adjustments. In a perfectly competitive market, retail prices drop instantly to the marginal cost of the most efficient company. See Mankiw 283–288, 312–313. As the incumbents point out, this would deter market entry because a potential entrant would know that even if it could provide a retail service at a lower marginal cost, it would instantly lose that competitive edge once it entered the market and competitors adjusted to match its price. See Brief for Respondents BellSouth et al. in Nos. 00–555, etc., at 28–29. Wholesale TELRIC rates, however, are set by state commissions, usually by arbitrated agreements with 3- or 4-year terms, see Brief for Respondent Qwest Communications International, Inc., in Nos. 00–511, etc., p. 39; Reply Brief for Petitioners Worldcom, Inc., et al. 6; Reply Brief for Respondent Sprint Corp. 7, and n. 3; Reply Brief for Peti-

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tioner AT&T Corp. 11–12; and no one claims that a competitor could receive immediately on demand a TELRIC rate on a leased element at the marginal cost of the entrant who introduces a more efficient element.

But even if a competitor could call for a new TELRIC rate proceeding immediately upon the introduction of a more efficient element by a competing entrant, the competitor would not necessarily know enough to make the call; the fact of the element's greater efficiency would only become apparent when reflected in lower retail prices drawing demand away from existing competitors (including the incumbent), forcing them to look to lowering their own marginal costs. In practice, it would take some time for the innovating entrant to install the new equipment, to engage in marketing offering a lower retail price to attract business, and to steal away enough customer subscriptions (given the limited opportunity to capture untapped customers for local telephone service) for competitors to register the drop in demand.

Finally, it bears reminding that the FCC prescribes measurement of the TELRIC “based on the use of the most efficient telecommunications technology currently available,” 47 CFR §51.505(b)(1) (1997). Owing to that condition of current availability, the marginal cost of a most efficient element that an entrant alone has built and uses would not set a new pricing standard until it became available to competitors as an alternative to the incumbent's corresponding element.²²

²²The Michigan state commission's September 1994 order implementing a long-run incremental cost method for leasing local-exchange network elements, which the FCC considered, see First Report and Order ¶ 631, and n. 1508, makes this limitation more explicit by specifying that rates are to be set based on the costs of elements using the most efficient technology “currently available for purchase.” Michigan Pub. Serv. Comm'n, *Re A Methodology to Determine Long Run Incremental Cost*, 156 P. U. R. 4th 1, 7, 13 (1994).

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As a reviewing Court we are, of course, in no position to assess the precise economic significance of these and other exceptions to the perfectly functioning market that the incumbents' criticism assumes. Instead, it is enough to recognize that the incumbents' assumption may well be incorrect. Inefficiencies built into the scheme may provide incentives and opportunities for competitors to build their own network elements, perhaps for reasons unrelated to pricing (such as the possibility of expansion into data-transmission markets by deploying "broadband" technologies, cf. *post*, at 552 (BREYER, J., concurring in part and dissenting in part), or the desirability of independence from an incumbent's management and maintenance of network elements). In any event, the significance of the incumbents' mistake of fact may be indicated best not by argument here, but by the evidence of actual investment in facilities-based competition since TELRIC went into effect, to be discussed at Part III-B-2-a-(3), *infra*.²³

(2)

Perhaps sensing the futility of an unsupported theoretical attack, the incumbents make the complementary argument that the FCC's choice of TELRIC, whatever might be said about it on its own terms, was unreasonable as a matter of law because other methods of determining cost would have done a better job of inducing competition. Having consid-

²³ JUSTICE BREYER characterizes these built-in inefficiencies as well as provisions for state-commission discretion as to permitted costs of depreciation and capital, see Part III-B-2-a-(2), *infra*, as "coincidences" that have favored considerable competitive investment by sheer luck. See *post*, at 552. He thus shares the assumption of an efficient market made by the incumbents in their argument, and like the incumbents, dismisses departures from the theoretical assumption of a perfectly competitive market as inconsistencies rather than pragmatic recognitions. The FCC is, of course, under no obligation to adopt a ratesetting scheme committed to realizing perfection in economic theory, see First Report and Order ¶ 683 (rejecting pricing premised on a fully "hypothetical least-cost most efficient network").

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ered the proffered alternatives and the reasons the FCC gave for rejecting them, 47 CFR § 51.505(d) (1997); First Report and Order ¶¶ 630–711, we cannot say that the FCC acted unreasonably in picking TELRIC to promote the mandated competition.

The incumbents present three principal alternatives for setting rates for network elements: embedded-cost methodologies, the efficient component pricing rule, and Ramsey pricing.²⁴ The arguments that one or another of these methodologies is preferable to TELRIC share a basic claim: it was unreasonable for the FCC to choose a method of setting rates that fails to include, at least in theory, some additional costs beyond what would be most efficient in the long run,²⁵ because lease rates that incorporate such costs will do a better job of inducing competition.²⁶ The theory is that once an

²⁴ JUSTICE BREYER proposes a “less formal kind of ‘play it by ear’ system” based on recent European Community practices as yet another alternative, see *post*, at 558; but the incumbents do not appear to have advocated such an informal ratesetting scheme to the FCC, see First Report and Order ¶¶ 630–671, nor have they argued for this alternative before this Court. And to the extent that JUSTICE BREYER’s proposal emphasizes state commissions’ discretion to vary rates according to local circumstances and the particulars of each case, this is a feature that is already built into TELRIC. See *infra*, at 519–520.

²⁵ In the long run, “all of a firm’s costs become variable or avoidable.” First Report and Order ¶ 677. See also Kahn, Telecommunications Act 326 (“[A]ll costs are variable and minimized”). In general, the costs of producing a good include variable and fixed costs. Variable costs depend on how much of a good is produced, like the cost of copper to make a loop which rises as the loop is made longer; fixed costs, like rent, must be paid in any event without regard to how much is produced. See Carlton & Perloff 51–56. The long run is a timeframe of sufficient duration that a company has no fixed costs of production.

²⁶ The argument that rates incorporating fixed costs are necessary to avoid an unconstitutional taking is taken up in Part III–C, *infra*. Indeed, the expert literature the incumbents rely on to advocate fixed-cost ratesetting systems, see *infra*, at 514–515, do so almost exclusively on the premise of averting unwanted confiscation, and thus offer little support

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entrant has its foot in the door, it will have a greater incentive to build and operate its own more efficient network element if the lease rates reflect something of the incumbents' actual and inefficient marginal costs. And once the entrant develops the element at its lower marginal cost and the retail price drops accordingly, the incumbent will have no choice but to innovate itself by building the most efficient element or finding ways to reduce its marginal cost to retain its market share.

The generic feature of the incumbents' proposed alternatives, in other words, is that some degree of long-run inefficiency ought to be preserved through the lease rates, in order to give an entrant a more efficient alternative to leasing. Of course, we have already seen that TELRIC itself tolerates some degree of inefficient pricing in its existing wire-center configuration requirement and through the rate-making and development lags just described. This aside, however, there are at least two objections that generally undercut any desirability that such alternatives may seem to offer over TELRIC.

The first objection turns on the fact that a lease rate that compensates the lessor for some degree of existing inefficiency (at least from the perspective of the long run) is simply a higher rate, and the difference between such a higher rate and the TELRIC rate could be the difference that keeps a potential competitor from entering the market. See n. 27, *infra*. Cf. First Report and Order ¶ 378 (“[I]n some areas, the most efficient means of providing competing service may be through the use of unbundled loops. In such cases, preventing access to unbundled loops would either discourage a potential competitor from entering the market in that area, thereby denying those consumers the benefits of competition, or cause the competitor to construct unnecessarily du-

for the incumbents' argument that recovery of fixed costs is a better way to spur competition (as opposed to compensating incumbents).

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plicative facilities, thereby misallocating societal resources”). If the TELRIC rate for bottleneck elements is \$100 and for other elements (say, switches) is \$10, an entering competitor that can provide its own, more efficient switch at what amounts to a \$7 rate can enter the market for \$107. If the lease rate for the bottleneck elements were higher (say, \$110) to reflect some of the inefficiency of bottleneck elements that actually cost the incumbent \$150, then the entrant with only \$107 will be kept out. Is it better to risk keeping more potential entrants out, or to induce them to compete in less capital-intensive facilities with lessened incentives to build their own bottleneck facilities? It was not obviously unreasonable for the FCC to prefer the latter.²⁷

²⁷ JUSTICE BREYER may be right that “firms that share existing facilities do not compete in respect to the facilities that they share,” *post*, at 550 (at least in the near future), but this is fully consistent with the FCC’s point that entrants may need to share some facilities that are very expensive to duplicate (say, loop elements) in order to be able to compete in other, more sensibly duplicable elements (say, digital switches or signal-multiplexing technology). In other words, JUSTICE BREYER makes no accommodation for the practical difficulty the FCC faced, that competition as to “un-shared” elements may, in many cases, only be possible if incumbents simultaneously share with entrants some costly-to-duplicate elements jointly necessary to provide a desired telecommunications service. Such is the reality faced by the hundreds of smaller entrants (without the resources of a large competitive carrier such as AT&T or Worldcom) seeking to gain footholds in local-exchange markets, see FCC, Local Telephone Competition: Status as of June 30, 2001, p. 4, n. 13. (Feb. 27, 2002) (485 firms self-identified as competitive local-exchange carriers). JUSTICE BREYER elsewhere recognizes that the Act “does not require the new entrant and incumbent to compete in respect to” elements, the “duplication of [which] would prove unnecessarily expensive,” *post*, at 546. It is in just this way that the Act allows for an entrant that may have to lease some “unnecessarily expensive” elements in conjunction with building its own elements to provide a telecommunications service to consumers. In this case, low prices for the elements to be leased become crucial in inducing the competitor to enter and build. Cf. First Report and Order ¶630 (wholesale prices should send “appropriate signals”).

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The second general objection turns the incumbents' attack on TELRIC against the incumbents' own alternatives. If the problem with TELRIC is that an entrant will never build because at the instant it builds, other competitors can lease the analogous existing (but less efficient) element from an incumbent at a rate assuming the same most efficient marginal cost, then the same problem persists under the incumbents' methods. For as soon as an entrant builds a more efficient element, the incumbent will be forced to price to match,²⁸ and that rate will be available to all other competitors. The point, of course, is that things are not this simple. As we have said, under TELRIC, price adjustment is not instantaneous in rates for a leased element corresponding to an innovating entrant's more efficient element; the same would presumably be true under the incumbents' alternative methods, though they do not come out and say it.

Once we get into the details of the specific alternative methods, other infirmities become evident that undermine the claim that the FCC could not reasonably have preferred TELRIC. As for an embedded-cost methodology, the problem with a method that relies in any part on historical cost, the cost the incumbents say they actually incur in leasing network elements, is that it will pass on to lessees the difference between most efficient cost and embedded cost.²⁹ See First Report and Order ¶ 705. Any such cost difference is an inefficiency, whether caused by poor management resulting in higher operating costs or poor investment strategies

²⁸ That is to say, if the entrant could offer a telecommunications service at a lower retail price, competitors including the incumbent would have to match that price by looking into ways to reduce their marginal costs, and the incumbents' recalibrated costs would form the basis of new lease rates.

²⁹ In theory, embedded cost could be lower than efficient cost, see Brief for Respondent Federal Parties 17, n. 8 (though the incumbents, understandably, do not avail themselves of this tack); in which case the goal of efficient competition would be set back for the different reason of too much market entry.

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that have inflated capital and depreciation. If leased elements were priced according to embedded costs, the incumbents could pass these inefficiencies to competitors in need of their wholesale elements, and to that extent defeat the competitive purpose of forcing efficient choices on all carriers whether incumbents or entrants. The upshot would be higher retail prices consumers would have to pay. *Id.*, ¶¶ 655 and 705.

There are, of course, objections other than inefficiency to any method of ratemaking that relies on embedded costs as allegedly reflected in incumbents' book-cost data, with the possibilities for manipulation this presents. Even if incumbents have built and are operating leased elements at economically efficient costs, the temptation would remain to overstate book costs to ratemaking commissions and so perpetuate the intractable problems that led to the price-cap innovation. See *supra*, at 486–487.

There is even an argument that the Act itself forbids embedded-cost methods, and while the FCC rejected this absolutistic reading of the statute, First Report and Order ¶ 704,³⁰ it seems safe to say that the statutory language places a heavy presumption against any method resembling the traditional embedded-cost-of-service model of rate-setting.³¹ At the very least, proposing an embedded-cost

³⁰ “We find that the parenthetical, ‘(determined without reference to a rate-of-return or other rate-based proceeding),’ does not further define the type of costs that may be considered, but rather specifies a type of proceeding that may not be employed to determine the cost of interconnection and unbundled network elements.” First Report and Order ¶ 704 (footnote omitted).

³¹ The parenthetical provision that “cost” for ratemaking purposes must be “determined without reference to a rate-of-return or other rate-based proceeding,” 47 U. S. C. § 252(d)(1)(A)(i), was in the Senate version of the 1996 Act, but not in the House version. S. 652, 104th Cong., 1st Sess., § 251(d)(6)(A) (1995) (“[T]he charge . . . (A) shall be (i) based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the unbundled element . . .”). Both the Senate and House bills contained additional language that was not enacted to the ef-

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alternative is a counterintuitive way to show that selecting TELRIC was unreasonable.

Other incumbents say the FCC was unreasonable to pick TELRIC over a method of ratesetting commonly called the efficient component pricing rule (ECPR). See Brief for Respondent Qwest Communications International, Inc., in Nos. 00–511, etc., at 40–41. ECPR would base the rate for a leased element on its most efficient long-run incremental cost (presumably, something like the TELRIC) plus the opportunity cost to the incumbent when the entrant leasing

fect that “rate of return regulation” would be “eliminated” or prescribing its “abolition.” S. 652, 104th Cong., 1st Sess., § 301(a)(3) (1995) provided:

“Rate of Return Regulation Eliminated—

“(A) In instituting the price flexibility required under paragraph (1) the Commission and the States shall establish alternative forms of regulation for Tier 1 telecommunications carriers that do not include regulation of the rate of return earned by such carrier”

H. R. 1555, 104th Cong., 1st Sess., § 248(b) (1995) stated:

“Notwithstanding any other provision of law, to the extent that a carrier has complied with sections 242 and 244 of this part, the Commission, with respect to rates for interstate or foreign communications, and State commissions, with respect to rates for intrastate communications, shall not require rate-of-return regulation.”

The Commission inferred from the omission of the express prohibitions that Congress intended to forbid a “type of proceeding” not a method. This was a reasonable inference in light of the common practice of setting wholesale rates by contracts incorporating retail rates set in state rate-of-return proceedings, see, *e. g.*, *Boston Edison Co. v. FERC*, 233 F. 3d 60, 62, and n. 1 (CA1 2000), though not the only one: Congress may, for example, have balked at limiting state regulation at such a level of specificity. Less plausible is JUSTICE BREYER’s interpretation of the statutory language, as “reflect[ing] Congress’ desire to obtain not perfect prices but speedy results,” *post*, at 559; he concludes that the provision “specifies that States need not use formal methods, relying instead upon bargaining and yardstick competition,” *ibid.* Section 252(d)(1), however, specifies how a state commission should set rates when an incumbent and an entrant fail to reach a bargain, § 252(a)(2); it seems strange, then, to read the statutory prohibition as affirmatively urging more bargaining and regulatory flexibility, rather than as firing a warning shot to state commissions to steer clear of entrenched practices perceived to perpetuate incumbent monopolies.

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the element provides a competing telecommunications service using it. See *Iowa Utilities Bd.*, 525 U.S., at 426 (BREYER, J., concurring in part and dissenting in part); J. Sidak & D. Spulber, *Deregulatory Takings and the Regulatory Contract* 284–285 (1997); First Report and Order ¶ 708. The opportunity cost is pegged to the retail revenue loss suffered by the incumbent when the entrant provides the service in its stead to its former customers. *Ibid.*

The FCC rejected ECPR because its calculation of opportunity cost relied on existing retail prices in monopolistic local-exchange markets, which bore no relation to efficient marginal cost. “We conclude that ECPR is an improper method for setting prices of interconnection and unbundled network elements because the existing retail prices that would be used to compute incremental opportunity costs under ECPR are not cost-based. Moreover, the ECPR does not provide any mechanism for moving prices towards competitive levels; it simply takes prices as given.” *Id.*, ¶ 709. In effect, the adjustment for opportunity cost, because it turns on pre-existing retail prices generated by embedded costs, would pass on the same inefficiencies and be vulnerable to the same asymmetries of information in ratemaking as a straightforward embedded-cost scheme.³²

The third category of alternative methodologies proposed focuses on costs over an intermediate term where some fixed costs are unavoidable, as opposed to TELRIC’s long run. See n. 25, *supra* (defining the long run). The fundamental intuition underlying this method of ratesetting is that competition is actually favored by allowing incumbents rate re-

³² ECPR advocates have since responded that the FCC was wrong to assume a static tether to uncompetitive retail prices, because ECPR, properly employed, would dynamically readjust the opportunity-cost factor as retail prices drop. Sidak & Spulber, *Telecommons* 1097–1098. But this would not cure the distortions caused by passing any difference between retail price and most efficient cost back to the incumbents as a lease premium.

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covery of certain fixed costs efficiently incurred in the intermediate term.

The most commonly proposed variant of fixed-cost recovery ratesetting is “Ramsey pricing.” See *Iowa Utilities Bd.*, *supra*, at 426–427 (BREYER, J., concurring in part and dissenting in part). Ramsey pricing was originally theorized as a method of discriminatory taxation of commodities to generate revenue with minimal discouragement of desired consumption. Ramsey, A Contribution to the Theory of Taxation, 37 Econ. J. 47, 58–59 (1927). The underlying principle is that goods should be taxed or priced according to demand: taxes or prices should be higher as to goods for which demand is relatively inelastic. K. Train, Optimal Regulation: The Economic Theory of Natural Monopoly 122–125 (1991). As applied to the local-exchange wholesale market, Ramsey pricing would allow rate recovery of certain costs incurred by an incumbent above marginal cost, costs associated with providing an unbundled network element that are fixed and unavoidable over the intermediate run, typically the 3- or 4-year term of a rate arbitration agreement. The specific mechanism for recovery through wholesale lease rates would be to spread such costs across the different elements to be leased according to the demand for each particular element. First Report and Order ¶ 696. Cf. B. Mitchell & I. Vogelsang, Telecommunications Pricing: Theory and Practice 43–61 (1991). Thus, when demand among entrants for loop elements is high as compared with demand for switch elements, a higher proportion of fixed costs would be added as a premium to the loop-element lease rate than to the switch lease rate.

But this very feature appears to be a drawback when used as a method of setting rates for the wholesale market in unbundled network elements. Because the elements for which demand among entrants will be highest are the costly bottleneck elements, duplication of which is neither likely nor desired, high lease rates for these elements would be

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the rates most likely to deter market entry, as our earlier example showed: if the rate for bottleneck elements went from \$100 to \$110, the \$107 competitor would be kept out. This is what the FCC has said:

“[W]e conclude that an allocation methodology that relies exclusively on allocating common costs in inverse proportion to the sensitivity of demand for various network elements and services may not be used. We conclude that such an allocation could unreasonably limit the extent of entry into local exchange markets by allocating more costs to, and thus raising the prices of, the most critical bottleneck inputs, the demand for which tends to be relatively inelastic. Such an allocation of these costs would undermine the pro-competitive objectives of the 1996 Act.” First Report and Order ¶ 696 (footnote omitted).

(3)

At the end of the day, theory aside, the claim that TELRIC is unreasonable as a matter of law because it simulates but does not produce facilities-based competition founders on fact. The entrants have presented figures showing that they have invested in new facilities to the tune of \$55 billion since the passage of the Act (through 2000), see Association for Local Telecommunications Services, Local Competition Policy & the New Economy 4 (Feb. 2, 2001); Hearing on H. R. 1542 before the House Committee on Energy and Commerce, Ser. No. 107-24, p. 50 (2001) (statement of James H. Henry, Managing General Partner, Greenfield Hill Capital, LLP); see also M. Glover & D. Epps, *Is the Telecommunications Act of 1996 Working?*, 52 Admin. L. Rev. 1013, 1015 (2000) (\$30 billion invested through 1999). The FCC’s statistics indicate substantial resort to pure and partial facilities-based competition among the three entry strategies: as of June 30, 2001, 33 percent of entrants were using their own facilities; 23 percent were reselling services; and 44 percent were leas-

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ing network elements (26 percent of entrants leasing loops with switching; 18 percent without switching). See FCC, Local Telephone Competition: Status as of June 30, 2001, p. 2 (Feb. 27, 2002) (tables 3–4). The incumbents do not contradict these figures, but merely speculate that the investment has not been as much as it could have been under other ratemaking approaches, and they note that investment has more recently shifted to nonfacilities entry options. We, of course, have no idea whether a different forward-looking pricing scheme would have generated even greater competitive investment than the \$55 billion that the entrants claim, but it suffices to say that a regulatory scheme that can boast such substantial competitive capital spending over a 4-year period is not easily described as an unreasonable way to promote competitive investment in facilities.³³

b

The incumbents' second reason for calling TELRIC an unreasonable exercise of the FCC's regulatory discretion is the supposed incapacity of this methodology to provide enough depreciation and allowance for capital costs to induce rational competition on the theory's own terms. This challenge must be assessed against the background of utilities' customary preference for extended depreciation schedules in ratemaking (so as to preserve high rate bases), see n. 8, *supra*; we have already noted the consequence of the utilities' approach, that the "book" value or embedded costs of capital presented to traditional ratemaking bodies often bore

³³ Nor, for that matter, does the evidence support JUSTICE BREYER's assertion that TELRIC will stifle incumbents' "incentive . . . either to innovate or to invest" in new elements. *Post*, at 551. As JUSTICE BREYER himself notes, incumbents have invested "over \$100 billion" during the same period. *Post*, at 552. The figure affirms the commonsense conclusion that so long as TELRIC brings about some competition, the incumbents will continue to have incentives to invest and to improve their services to hold on to their existing customer base.

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little resemblance to the economic value of the capital. See FCC Releases Audit Reports on RBOCs' Property Records, Report No. CC 99-3, 1999 WL 95044 (FCC, Feb. 25, 1999) ("[B]ook costs may be overstated by approximately \$5 billion"); Huber et al. 116 (We now know that "[b]y the early 1980s, the Bell System had accumulated a vast library of accounting books that belonged alongside dime-store novels and other works of fiction. . . . By 1987, it was widely estimated that the book value of telephone company investments exceeded market value by \$25 billion dollars"). TELRIC seeks to avoid this problem by basing its valuation on the market price for most efficient elements; when rates are figured by reference to a hypothetical element instead of an incumbent's actual element, the incumbent gets no unfair advantage from favorable depreciation rates in the traditional sense.

This, according to the incumbents, will be fatal to competition. Their argument is that TELRIC will result in constantly changing rates based on ever cheaper, more efficient technology; the incumbents will be unable to write off each new piece of technology rapidly enough to anticipate an even newer gadget portending a new and lower rate. They will be stuck, they say, with sunk costs in less efficient plant and equipment, with their investment unrecoverable through depreciation, and their increased risk unrecognized and uncompensated.³⁴

³⁴The incumbents also contend that underdepreciation, *i. e.*, book values in excess of the economic value of assets, is another reason for increasing depreciation costs under TELRIC. Brief for Petitioners in No. 00-511, pp. 4-5. This argument is unpersuasive. As we have described, underdepreciation (to the extent of its continuation today, which the Government disputes, Brief for Respondent Federal Parties 38-39) was undertaken largely by the incumbents themselves, not forced upon them by regulators, as a means to keep the rate base inflated under the public-utility model of regulation. See *supra*, at 485-487, 499. For all we know, the incumbent carriers may yet be seeking low rates of depreciation in state retail-rate proceedings still conducted under that model, even as

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The argument, however, rests upon a fundamentally false premise, that the TELRIC rules limit the depreciation and capital costs that ratesetting commissions may recognize. In fact, TELRIC itself prescribes no fixed percentage rate as risk-adjusted capital costs and recognizes no particular useful life as a basis for calculating depreciation costs. On the contrary, the FCC committed considerable discretion to state commissions on these matters.

“Based on the current record, we conclude that the currently authorized rate of return at the federal or state level is a reasonable starting point for TELRIC calculations, and incumbent LECs bear the burden of demonstrating with specificity that the business risks that they face in providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital or depreciation rate. . . . States may adjust the cost of capital if a party demonstrates to a state commission that either a higher or a lower level of cost of capital is warranted, without that commission conducting a ‘rate-of-return or other rate based proceeding.’ We note that the risk-adjusted cost of capital need not be uniform for all elements. We intend to re-examine the issue of the appropriate risk-adjusted cost of capital on an ongoing basis, particularly in light of the state commissions’ experiences in addressing this issue in specific situations.” First Report and Order ¶ 702.

The order thus treated then-current capital costs and rates of depreciation as mere starting points, to be adjusted upward if the incumbents demonstrate the need. That is, for

they seek high depreciation rates here today to factor into the wholesale prices they may charge for the same elements they use to provide retail services. In short, the incumbents have already benefited from under-depreciation in the calculation of retail rates, and there is no reason to allow them further recovery through wholesale rates.

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calculating leased element rates, the Commission specifically permits more favorable allowances for costs of capital and depreciation than were generally allowed under traditional ratemaking practice.

The incumbents' fallback position, that existing rates of depreciation and costs of capital are not even reasonable starting points, is unpersuasive. As to depreciation rates, it is well to start by asking how serious a threat there may be of galloping obsolescence requiring commensurately rising depreciation rates. The answer does not support the incumbents. The local-loop plant makes up at least 48 percent of the elements incumbents will have to provide, see *id.*, ¶ 378, n. 818 ("As of . . . 1995 . . . [l]ocal loop plant comprises approximately \$109 billion of total plant in service, which represents . . . 48 percent of network plant"), and while the technology of certain other elements like switches has evolved very rapidly in recent years, loop technology generally has gone no further than copper twisted-pair wire and fiber-optic cable in the past couple of decades. See n. 10, *supra* (less than 1 percent of local-exchange telephone lines employ technologies other than copper or fiber). We have been informed of no specter of imminently obsolescent loops requiring a radical revision of currently reasonable depreciation.³⁵ This is significant because the FCC found as a general matter that federally prescribed rates of depreciation and counterparts in many States are fairly up to date with the current state of telecommunications technologies as to different elements. See First Report and Order ¶ 702.

³⁵ JUSTICE BREYER makes much of the availability of new technologies, specifically, the use of fixed wireless and electrical conduits, see *post*, at 549; but the use of wireless technology in local-exchange markets is negligible at present (36,000 lines in the entire Nation, less than 0.02 percent of total lines, FCC, Local Telephone Competition: Status as of June 30, 2001 (Feb. 27, 2002) (table 5)), and the FCC has not reported any use whatsoever of electrical conduits to provide local telecommunications service.

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As for risk-adjusted costs of capital, competition in fact has been slow to materialize in local-exchange retail markets (as of June 30, 2001, the incumbents retained a 91 percent share of the local-exchange markets, FCC, Local Telephone Competition: Status as of June 30, 2001 (Feb. 27, 2002) (table 1)), and whether the FCC's assumption about adequate risk adjustment was based on hypothetical or actual competition, it seems fair to say that the rate of 11.25 percent mentioned by the FCC, First Report and Order ¶ 702, is a "reasonable starting point" for return on equity calculations based on the current lack of significant competition in local-exchange markets.

A basic weakness of the incumbents' attack, indeed, is its tendency to argue in highly general terms, whereas TELRIC rates are calculated on the basis of individual elements. TELRIC rates leave plenty of room for differences in the appropriate depreciation rates and risk-adjusted capital costs depending on the nature and technology of the specific element to be priced (as between switches and loops, for example). For that matter, even the blanket assumption that on a TELRIC valuation the estimated purchase price of a most efficient element will necessarily be lower than the actual costs of current elements is suspect. The New York Public Service Commission, for example, used the cost of the more expensive fiber-optic cable as the basis for its TELRIC loop fixed rates, notwithstanding the fact that competitors argued that the cheaper copper-wire loop was more efficient for voice communications and should have been the underlying valuation for loop rates. See 2 Lodging Material for Respondents Worldcom, Inc., et al. 655–657 (Opinion No. 97–2, effective Apr. 1, 1997 (Opinion and Order Setting Rates for First Group of Network Elements)). In light of the many different TELRIC rates to be calculated by state commissions across the country, see Brief for Petitioners Worldcom, Inc., et al. in No. 00–555, p. 21 ("millions"), the Commis-

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sion's prescription of a general "starting point" is reasonable enough.

c

Finally, as to the incumbents' accusation that TELRIC is too complicated to be practical, a criticism at least as telling can be leveled at traditional ratemaking methodologies and the alternatives proffered. "One important potential advantage of the T[E]LRIC approach, however is its relative ease of calculation. Rather than estimate costs reflecting the present [incumbent] network—a difficult task even if [incumbents] provided reliable data—it is possible to generate T[E]LRIC estimates based on a 'green field' approach, which assumes construction of a network from scratch." App. 182 (Reply Comments of the National Telecommunications and Information Administration 24 (May 30, 1996)). To the extent that the traditional public-utility model generally relied on embedded costs, similar sorts of complexity in reckoning were exacerbated by an asymmetry of information, much to the utilities' benefit. See *supra*, at 486–487, 499. And what we see from the record suggests that TELRIC rate proceedings are surprisingly smooth-running affairs, with incumbents and competitors typically presenting two conflicting economic models supported by expert testimony, and state commissioners customarily assigning rates based on some predictions from one model and others from its counterpart. See, e. g., 1 Lodging Material for Respondents Worldcom, Inc., et al. 146–147, 367–368 (Fla. Pub. Serv. Comm'n, *In re: Determination of cost of basic local telecommunications service, pursuant to Section 364.025, Florida Statutes*, issued Jan. 7, 1999); 2 *id.*, at 589–598, 701–704 (N. Y. Pub. Serv. Comm'n, Opinion No. 97–2, *supra*). At bottom, battles of experts are bound to be part of any ratesetting scheme, and the FCC was reasonable to prefer TELRIC over alternative fixed-cost schemes that preserve home-field advantages for the incumbents.

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* * *

We cannot say whether the passage of time will show competition prompted by TELRIC to be an illusion, but TELRIC appears to be a reasonable policy for now, and that is all that counts. See *Chevron*, 467 U. S., at 866. The incumbents have failed to show that TELRIC is unreasonable on its own terms, largely because they fall into the trap of mischaracterizing the FCC's departures from the assumption of a perfectly competitive market (the wire-center limitation, regulatory and development lags, or the refusal to prescribe high depreciation and capital costs) as inconsistencies rather than pragmatic features of the TELRIC plan. Nor have they shown it was unreasonable for the FCC to pick TELRIC over alternative methods, or presented evidence to rebut the entrants' figures as to the level of competitive investment in local-exchange markets. In short, the incumbents have failed to carry their burden of showing unreasonableness to defeat the deference due the Commission. We therefore reverse the Eighth Circuit's judgment insofar as it invalidated TELRIC as a method for setting rates under the Act.

C

The incumbents' claim of TELRIC's inherent inadequacy to deal with depreciation or capital costs has its counterpart in a further argument. They seek to apply the rule of constitutional avoidance in saying that "cost" ought to be construed by reference to historical investment in order to avoid a serious constitutional question, whether a methodology so divorced from investment actually made will lead to a taking of property in violation of the Fifth (or Fourteenth) Amendment. The Eighth Circuit did not think any such serious question was in the offing, 219 F. 3d, at 753–754, and neither do we.

At the outset, it is well to understand that the incumbent carriers do not present the portent of a constitutional

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taking claim in the way that is usual in ratemaking cases. They do not argue that any particular, actual TELRIC rate is “so unjust as to be confiscatory,” that is, as threatening an incumbent’s “financial integrity.” *Duquesne Light Co.*, 488 U. S., at 307, 312. Indeed, the incumbent carriers have not even presented us with an instance of TELRIC rates, which are to be set or approved by state commissions and reviewed in the first instance in the federal district courts, 47 U. S. C. §§252(e)(4) and (e)(6). And this, despite the fact that some States apparently have put rates in place already using TELRIC. See First Report and Order ¶631 and accompanying footnotes (“A number of states already employ, or have plans to utilize, some form of [long-run incremental cost] methodology in their approach to setting prices for unbundled network elements”).

This want of any rate to be reviewed is significant, given that this Court has never considered a taking challenge on a ratesetting methodology without being presented with specific rate orders alleged to be confiscatory. See, *e. g.*, *Duquesne Light Co.*, *supra*, at 303–304 (denial of \$3.5 million and \$15.4 million increases to rate bases of electric utilities); *Smyth v. Ames*, 169 U. S., at 470–476 (Nebraska carrier-rate tariff schedule alleged to effect a taking). Granted, the Court has never strictly held that a utility must have rates in hand before it can claim that the adoption of a new method of setting rates will necessarily produce an unconstitutional taking, but that has been the implication of much the Court has said. See *Hope Natural Gas Co.*, 320 U. S., at 602 (“The fact that the method employed to reach [just and reasonable rates] may contain infirmities is not . . . important”); *Natural Gas Pipeline Co.*, 315 U. S., at 586 (“The Constitution does not bind rate-making bodies to the service of any single formula or combination of formulas”); *Los Angeles Gas & Elec. Corp. v. Railroad Comm’n of Cal.*, 289 U. S. 287, 305 (1933) (“[M]indful of its distinctive function in the enforcement of constitutional rights, the Court has refused to be bound by

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any artificial rule or formula which changed conditions might upset”). Undeniably, then, the general rule is that any question about the constitutionality of ratesetting is raised by rates, not methods, and this means that the policy of construing a statute to avoid constitutional questions where possible is presumptively out of place when construing statutes prescribing methods.

The incumbents say this action is one of the rare ones placed outside the general rule by signs, too strong to ignore, that takings will occur if the TELRIC interpretation of §252(d)(1) is allowed. First, they compare, at the level of the entire network (as opposed to element-by-element), industry balance-sheet indications of historical investment in local telephone markets with the corresponding estimate of a TELRIC evaluation of the cost to build a new and efficient national system of local exchanges providing universal service. Brief for Petitioners in No. 00–511, at 10–11, and n. 6. As against an estimated \$180 billion for such a new system, the incumbents juxtapose a value representing “total plant” on the industry balance sheet for 1999 of roughly \$342 billion. They argue that the huge and unreasonable difference is proof that TELRIC will necessarily result in confiscatory rates. *Ibid.* (citing FCC, 1999 Statistics of Communications Common Carriers 51 (Aug. 1, 2000) (table 2.9, line no. 32)).

The comparison, however, is spurious because the numbers assumed by the incumbents are clearly wrong. On the one side, the \$180 billion is supposed to be based on constructing a barebones universal-service telephone network, and so it fails to cover elements associated with more advanced telecommunications services that incumbents are required to provide by lease under 47 U. S. C. §251(c)(3). See *Application by Bell Atlantic New York for Authorization under Section 271 of the Communications Act*, 15 FCC Rcd. 3953, ¶ 245 (1999), *aff’d*, 220 F. 3d 607 (CA DC 2000). See also *In re Federal-State Joint Bd. on Universal Serv.*, 14 FCC Rcd. 20432, ¶ 41, and n. 125 (1999) (explaining that the universal-

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service model may not be “appropriate [for] determining . . . prices for unbundled network elements”). We do not know how much higher the efficient replacement figure should be, but we can reasonably assume that \$180 billion is too low.

On the other side of the comparison, the “balance sheet” number is patently misstated. As explained above, any rates under the traditional public-utility model would be calculated on a rate base (whether fair value or cost of service) subject to deductions for accrued depreciation. See Phillips 310–315. The net plant investment after depreciation is not \$342 billion but \$166 billion, FCC, Statistics of Communications Common Carriers, at 51 (table 2.9, line no. 50), an amount less than the TELRIC figure the incumbents would like us to assume. And even after we increase the \$166 billion by the amount of net current liabilities (\$22 billion) on the balance sheet, *ibid.* (line no. 64 minus line no. 13), as a rough (and generous) estimate of the working-capital allowance under cost of service, the rate base would then be \$188 billion, still a far cry from the \$342 billion the incumbents tout, and less than 5 percent above the incumbents’ \$180 billion universal-service TELRIC figure. What the best numbers may be we are in no position to say: the point is only that the numbers being thrown out by the incumbents are no evidence that TELRIC lease rates would be confiscatory, sight unseen.

The incumbent carriers’ second try at nonrate constitutional litigation focuses on reliance interests allegedly jeopardized by an intentional switch in ratesetting methodologies. They rely on *Duquesne*, where we held as usual that a ratesetting methodology would normally be judged only by the “overall impact of the rate orders,”³⁶ but went further

³⁶The Court upheld a Pennsylvania statute barring rate recovery of capital prudently invested in canceled power plants because the “overall impact of the rate orders,” which allowed returns on common equity of 16 percent and overall returns of 11 to 12 percent, was not “constitutionally objectionable.” 488 U.S., at 312; see also *id.*, at 314 (“It is not

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in dicta. We remarked that “a State’s decision to arbitrarily switch back and forth between methodologies in a way which required investors to bear the risk of bad investments at some times while denying them the benefit of good investments at others would raise serious constitutional questions.” 488 U. S., at 315.³⁷ In other words, there may be a taking challenge distinct from a plain-vanilla objection to arbitrary or capricious agency action³⁸ if a ratemaking body were to make opportunistic changes in ratesetting methodologies just to minimize return on capital investment in a utility enterprise.

In *Duquesne* itself, there was no need to decide whether there might be an exception to the rate-order requirement for a claim of taking by rates, and there is no reason here to decide whether the policy of constitutional avoidance should be invoked in order to anticipate a rate-order taking claim. The reason is the same in each case: the incumbent carriers here are just like the electric utilities in *Duquesne* in failing to present any evidence that the decision to adopt TELRIC

theory, but the impact of the rate order which counts”) (quoting *FPC v. Hope Natural Gas Co.*, 320 U. S. 591, 602 (1944)). The utilities in *Duquesne*, like the incumbents here, made “[n]o argument . . . that . . . reduced rates jeopardize the financial integrity of the companies, either by leaving them insufficient operating capital or by impeding their ability to raise future capital.” 488 U. S., at 312. Nor did they show that allowed rates were “inadequate to compensate current equity holders for the risk associated with their investments under a modified prudent investment scheme.” *Ibid.*

³⁷JUSTICE SCALIA, joined by Justice White and JUSTICE O’CONNOR, concurred, and noted that “all prudently incurred investment may well have to be counted” to determine “whether the government’s action is confiscatory.” *Id.*, at 317.

³⁸The incumbents make the additional argument that it was arbitrary or capricious for the FCC to reject historical costs, Brief for Petitioners in No. 00–511, at 44–49, but this is simply a restatement of the argument that the FCC was unreasonable in interpreting § 252(d)(1) to foreclose the use of historical cost in ratesetting, which we have already addressed, see Part III–B–2, *supra*.

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was arbitrary, opportunistic, or undertaken with a confiscatory purpose. What we do know is very much to the contrary. First of all, there was no “switch” of methodologies, since the wholesale market for leasing network elements is something brand new under the 1996 Act. There was no replacement of any predecessor methods, much less an opportunistic switch “back and forth.” And to the extent that the incumbents argue that there was at least an expectation that some historically anchored cost-of-service method would set wholesale lease rates, no such promise was ever made. First Report and Order ¶ 706 (“[C]ontrary to assertions by some [incumbents], regulation does not and should not guarantee full recovery of their embedded costs. Such a guarantee would exceed the assurances that [the FCC] or the states have provided in the past”). Cf. *Duquesne, supra*, at 315. Any investor paying attention had to realize that he could not rely indefinitely on traditional ratemaking methods but would simply have to rely on the constitutional bar against confiscatory rates.³⁹

IV

A

The effort by the Government and the competing carriers to overturn the Eighth Circuit’s invalidation of the additional

³⁹ In fact, the FCC’s order is more hospitable to early taking claims than any court would be under *Duquesne*: “Incumbent LECs may seek relief from the Commission’s pricing methodology, if they provide specific information to show that the pricing methodology, as applied to them, will result in confiscatory rates.” First Report and Order ¶ 739. The FCC, in other words, is willing to consider a challenge to TELRIC in advance of a rate order, but any challenger needs to go beyond general criticism of a method’s tendency, and to show with “specific information” that a confiscatory rate is bound to result. Additionally, as the FCC has acknowledged, the smallest, rural incumbent local-exchange carriers most likely to suffer immediately from the imposition of unduly low rates are expressly exempt from the TELRIC pricing rules under 47 U. S. C. § 252(f)(1), see First Report and Order ¶ 706, and other rural incumbents may obtain exemptions from the rules by applying to their state commissions under § 252(f)(2).

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combination rules, 47 CFR §§ 51.315(c)–(f) (1997), draws the incumbents’ threshold objection that the challenge is barred by waiver, since the 1999 petition to review the 1997 invalidation of Rule 315(b) did not extend to the Eighth Circuit’s simultaneous invalidation of the four companion rules, Rules 315(c)–(f), 120 F. 3d, at 813, 819, n. 39.⁴⁰ The incumbents must, of course, acknowledge that the Court of Appeals *sua sponte* invited briefing on the status of Rules 315(c)–(f)⁴¹ on remand after this Court’s reinstatement of Rule 315(b), *Iowa Utilities Bd.*, 525 U. S., at 395, and specifically struck them down again, albeit on its 1997 rationale, 219 F. 3d, at 758–759. But the incumbent carriers argue that the Eighth Circuit exceeded the scope of this Court’s mandate when it revisited the unchallenged portion of its earlier holding, so that this Court should decline to reach the validity of Rules 315(c)–(f) today. To do so, they say, would encourage the sort of strategic, piecemeal litigation disapproved in *Communist Party of United States v. Subversive Activities Control Bd.*, 367 U. S. 1, 30–31 (1961):

“The demands not only of orderly procedure but of due procedure as the means of achieving justice according to law require that when a case is brought here for review of administrative action, all the rulings of the agency upon which the party seeks reversal, and which are then available to him, be presented. Otherwise we would be promoting the ‘sporting theory’ of justice, at the potential cost of substantial expenditures of agency time. To allow counsel to withhold in this Court and save for a later stage procedural error would tend to foist upon

⁴⁰ AT&T did not raise the issue in the relevant petition for certiorari as it claims. See Pet. for Cert. in *AT&T Corp. v. Iowa Utilities Bd.*, O. T. 1998, No. 97–826, pp. 9–10, 13.

⁴¹ See Order in *Iowa Utilities Bd. v. FCC*, No. 96–3321, etc. (CA8, June 10, 1999), pp. 2–3 (“The briefs should also address whether or not, in light of the Supreme Court’s decision, this court should take any further action with respect to . . . § 315(c)–(f)”).

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the Court constitutional decisions which could have been avoided had those errors been invoked earlier.”

We do not think *Communist Party* blocks our consideration of Rules 315(c)–(f). The issue there was raised by the petitioner’s failure on an earlier trip to this Court to pursue a procedural objection to agency action. Litigation of the procedural point would not only have obviated the Court’s need to review the constitutionality of an Act of Congress when the case got here, but could have saved five years of litigation during which time “the Board and the Court of Appeals [had] each twice more reconsidered [the] steadily growing record” *Id.*, at 31–32, n. 8. After all that time, petitioner sought review of the procedural point.

Nothing like that can be said about these cases. Addressing the issue now would not “make waste” of years of efforts by the FCC or the Court of Appeals, *id.*, at 32, n. 8, would not threaten to leave a constitutional ruling pointless, and would direct the Court’s attention not to an isolated, “long-stale” procedural error by the agency, *ibid.*, but to the invalidation of FCC rules meant to have general and continuing applicability. There is no indication of litigation tactics behind the failure last time to appeal on these rules, which were reexamined on remand at the behest of the court, not the Government or the competing carriers.

Any issue “pressed or passed upon below” by a federal court, *United States v. Williams*, 504 U. S. 36, 41 (1992) (internal quotation marks omitted), is subject to this Court’s broad discretion over the questions it chooses to take on certiorari, and there are good reasons to look at Rules 315(c)–(f). The Court of Appeals passed on a significant issue, and one placed in a state of flux, see *Virginia Bankshares, Inc. v. Sandberg*, 501 U. S. 1083, 1099, n. 8 (1991) (citations omitted), by the split between these cases and *US West Communications v. MFS Intelenet, Inc.*, 193 F. 3d 1112, 1121 (CA9 1999), (affirming identical state-commission rules), cert. denied, 530 U. S. 1284 (2000). We accordingly rejected the incumbents’

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claim of waiver when they raised it in opposition to the petition for certiorari, and we reject it again today. See *Stevens v. Department of Treasury*, 500 U. S. 1, 8 (1991).

B

The Eighth Circuit found the four additional combination rules at odds with the plain language of the final sentence of 47 U. S. C. § 251(c)(3), which we quote more fully:

“[E]ach incumbent local exchange carrier has . . .

“[t]he duty to provide, to any requesting telecommunications carrier for the provision of a telecommunications service, nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory An incumbent local exchange carrier shall provide such unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications service.”

“Bundling” and “combination” are related but distinct concepts. Bundling is about lease pricing. To provide a network element “on an unbundled basis” is to lease the element, however described, to a requesting carrier at a stated price specific to that element. *Iowa Utilities Bd.*, *supra*, at 394. The FCC’s regulations identify in advance a certain number of elements for separate pricing, 47 CFR § 51.319 (1997), but the regulations do not limit the elements subject to specific rates. A separately priced element need not be the simplest possible configuration of equipment or function, and a predesignated unbundled element might actually comprise items that could be considered separate elements themselves. For example, “if the states require incumbent LECs to provision subloop elements [which together constitute a local loop], incumbent LECs must still provision a local loop

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as a single, combined element when so requested, because we identify local loops as a single element in this proceeding.” First Report and Order ¶ 295. The “combination” provided for in Rules 315(b)–(f), on the other hand, refers to a mechanical connection of physical elements within an incumbent’s network, or the connection of a competitive carrier’s element with the incumbent’s network “in a manner that would allow a requesting carrier to offer the telecommunications service.” *Id.*, ¶ 294, n. 620.

The additional combination rules are best understood as meant to ensure that the statutory duty to provide unbundled elements gets a practical result. A separate rate for an unbundled element is not much good if an incumbent refuses to lease the element except in combination with others that competing carriers have no need of; or if the incumbents refuse to allow the leased elements to be combined with a competitor’s own equipment. And this is just what was happening before the FCC devised its combination rules. Incumbents, according to the FCC’s findings, were refusing to give competitors’ technicians access to their physical plants to make necessary connections. *In re Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 15 FCC Rcd. 3696, 3910, ¶ 482 (1999) (Third Report and Order), petitions for review pending *sub nom. United States Telecom Assn. v. FCC*, Nos. 00–1015, etc. (CADCA).

The challenged additional combination rules, issued under § 251(c)(3), include two that are substantive and two that are procedural, the latter having no independent significance here. Rule 315(c) requires an incumbent to “perform the functions necessary to combine unbundled network elements in any manner, even if those elements are not ordinarily combined” in the incumbent’s own network, so long as the combination is “[t]echnically feasible” and “[w]ould not impair the ability of other carriers to obtain access to unbundled network elements or to interconnect” with the

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incumbent's network. The companion Rule 315(d) likewise requires the incumbent to do the combining between the network elements it leases and a requesting carrier's own elements, so long as technically feasible.⁴²

The rules are challenged alternatively as inconsistent with statutory plain language and as unreasonable interpretations. The plain language in question is the sentence that "[a]n incumbent local exchange carrier shall provide such unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications service." 47 U. S. C. § 251(c)(3). The Eighth Circuit read this as unambiguously excusing incumbents from any obligation to combine provided elements, 219 F. 3d, at 759. The ruling has a familiar ring, for this is the same reason that the Court of Appeals invalidated these rules in 1997 along with Rule 315(b), as being inconsistent with a plain limit on incumbents' obligation under § 251(c)(3) to provide elements "on an unbundled basis." 120 F. 3d, at 813.

But the language is not that plain. Of course, it is true that the statute would not be violated literally by an incumbent that provided elements so that a requesting carrier could combine them, and thereafter sat on its hands while any combining was done. But whether it is plain that the incumbents have a right to sit is a question of context as much as grammar. If Congress had treated incumbents and entrants as equals, it probably would be plain enough that the incumbents' obligations stopped at furnishing an element that could be combined. The Act, however, proceeds on the understanding that incumbent monopolists and contending competitors are unequal, cf. § 251(c) ("Additional obligations of incumbent local exchange carriers"), and within the actual statutory confines it is not self-evident that in obligating

⁴² Under Rules 315(e)–(f), an incumbent that denies a requested combination has the burden to prove technical infeasibility or to show how the combination would impede others' access.

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incumbents to furnish, Congress negated a duty to combine that is not inconsistent with the obligation to furnish, but not expressly mentioned. Thus, it takes a stretch to get from permissive statutory silence to a statutory right on the part of the incumbents to refuse to combine for a requesting carrier, say, that is unable to make the combination, First Report and Order ¶ 294, or may even be unaware that it needs to combine certain elements to provide a telecommunications service. *Id.*, ¶ 293. And these are the only instances in which the additional combination rules obligate the incumbents according to the FCC's clarification in the First Report and Order.

The conclusion that the language is open is certainly in harmony with, if not required by, our holding in *Iowa Utilities Bd.*, dealing with Rule 315(b). In reinstating that rule, we rejected the argument that furnishing elements “on an unbundled basis,” § 251(c)(3), must mean “physically separated,” 525 U. S., at 394, and expressly noted that “§ 251(c)(3) is ambiguous on whether leased network elements may or must be separated,” *id.*, at 395. We relied on that ambiguity in holding that an incumbent has no statutory right to separate elements when a competitor asks to lease them in the combined form employed by the incumbent in its own network. *Ibid.* That holding would make a very odd partner with a ruling that an ambiguous § 251(c)(3) plainly empowers incumbent carriers to refuse to combine elements even when requesting carriers cannot. We accordingly read the language of § 251(c)(3) as leaving open who should do the work of combination, and under *Chevron U. S. A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U. S. 837 (1984), that leaves the FCC's rules intact unless the incumbents can show them to be unreasonable.

For the decision whether Rules 315(c)–(f) survive *Chevron* step two, *Iowa Utilities Bd.* is, to be sure, less immediate help, since in that case we found Rule 315(b) reasonable because it prevented incumbents from dismantling exist-

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ing combinations to sabotage competitors, 525 U. S., at 395, whereas here we deal not with splitting up but with joining together. We think, nonetheless, that the additional combination rules reflect a reasonable reading of the statute, meant to remove practical barriers to competitive entry into local-exchange markets while avoiding serious interference with incumbent network operations.

At the outset, it is well to repeat that the duties imposed under the rules are subject to restrictions limiting the burdens placed on the incumbents. An obligation on the part of an incumbent to combine elements for an entrant under Rules 315(c) and (d) only arises when the entrant is unable to do the job itself. First Report and Order ¶ 294 (“If the carrier is unable to combine the elements, the incumbent must do so”). When an incumbent does have an obligation, the rules specify a duty to “perform the functions necessary to combine,” not necessarily to complete the actual combination. 47 CFR §§ 51.315(c)–(d) (1997). And the entrant must pay “a reasonable cost-based fee” for whatever the incumbent does. Brief for Petitioner Federal Parties in Nos. 00–587, etc., p. 34. See also *id.*, at 10, 34, n. 14.

The force of the objections is limited further by the FCC’s implementation in the rules of the statutory conditions that the incumbents’ duty arises only if the requested combination does not discriminate against other carriers by impeding their access, and only if the requested combination is “technically feasible,” § 251(c)(3). As to the latter restriction, the Commission “decline[d] to adopt the view proffered by some parties that incumbents must combine network elements in any technically feasible manner requested.” First Report and Order ¶ 296. The concern was that such a rule “could potentially affect the reliability and security of the incumbent’s network, and the ability of other carriers to obtain interconnection, or request and use unbundled elements.” *Ibid.*

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Thus, the incumbents are wrong to claim that the restriction to “technical feasibility” places only minimal limits on the duty to combine, since the First Report and Order makes it clear that what is “technically feasible” does not mean merely what is “economically reasonable,” *id.*, ¶ 199, or what is simply practical or possible in an engineering sense, see *id.*, ¶¶ 196–198. The limitation is meant to preserve “network reliability and security,” *id.*, ¶ 296, n. 622, and a combination is not technically feasible if it impedes an incumbent carrier’s ability “to retain responsibility for the management, control, and performance of its own network,” *id.*, ¶ 203.

This demanding sense of “technical feasibility,” as a condition protecting the incumbent’s ability to control the performance of its own network, is in accord with what we said in *Iowa Utilities Bd.* There, for example, we reinstated the Commission’s “pick and choose” rule⁴³ in part because the duty to provide network elements on matching terms to all comers did not arise when it was “not technically feasible,” § 51.809(b)(2). 525 U.S., at 396. If “technically feasible” meant what is merely possible, it would have been no limitation at all.

The two substantive rules each have additional features that are consistent with the purposes of § 251(c)(3). Rule 315(c), to the extent that it raises a duty to combine what is “ordinarily combined,” neatly complements the facially similar Rule 315(b), upheld in *Iowa Utilities Bd.*, *id.*, at 395, forbidding incumbents to separate currently combined network elements when the entrant requests them in a combined form. If the latter were the only rule, an incumbent

⁴³ “An incumbent LEC shall make available without unreasonable delay to any requesting telecommunications carrier any individual interconnection, service, or network element arrangement contained in any agreement to which it is a party that is approved by a state commission pursuant to section 252 of the Act, upon the same rates, terms, and conditions as those provided in the agreement.” 47 CFR § 51.809(a) (1997).

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might well be within its rights to insist, for example, on providing a loop and a switch in a combined form when a naive entrant asked just for them, while refusing later to combine them with a network interface device, which is also ordinarily combined with the loop and the switch, and which is necessary to set up a telecommunications link. But under Rule 315(c), when the entrant later requires the element it missed the first time, the incumbent's obligation is to "perform the functions necessary," 47 CFR § 51.315(c) (1997), for a combination of what the entrant cannot combine alone, First Report and Order ¶ 294, and would not have needed to combine if it had known enough to request the elements together in a combined form in the first place. Cf. *id.*, ¶ 297 ("[I]ncumbent[s] must work with new entrants to identify the elements the new entrants will need to offer a particular service in the manner the new entrants intend").

Of course, it is not this aspect of Rule 315(c), requiring the combination of what is ordinarily combined, that draws the incumbents' (or JUSTICE BREYER's, see *post*, at 563) principal objection; they focus their attack, rather, on the additional requirement of Rule 315(c), that incumbents combine unbundled network elements "even if those elements are not ordinarily combined in the incumbent['s] network." 47 CFR § 51.315(c) (1997). To build upon our previous example, this would seemingly require an incumbent to combine the loop, switch, and interface (ordinarily combined in its network) with a second loop and network interface (provided by the incumbent as a separate unbundled element), so that the competitive carrier could charge for a second-line connection, as for a fax or modem. See Brief for Petitioners Worldcom, Inc., et al. in No. 00-555, at 48 (providing the example).

But this provision of Rule 315(c) is justified by the statutory requirement of "nondiscriminatory access." § 251(c)(3). As we have said, the FCC has interpreted the rule as obli-

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gating the incumbent to combine “[i]f the carrier is unable to combine the elements.” First Report and Order ¶ 294. There is no dispute that the incumbent could make the combination more efficiently than the entrant; nor is it contested that the incumbent would provide the combination itself if a customer wanted it or the combination otherwise served a business purpose. See Third Report and Order ¶ 481. It hardly seems unreasonable, then, to require the incumbent to make the combination, for which it will be entitled to a reasonable fee; otherwise, an entrant would not enjoy true “nondiscriminatory access” notwithstanding the bare provision on an unbundled basis of the network elements it needs to provide a service.

As to Rule 315(d), it is hard to see how this rule is any less reasonable than § 251(c)(2), which imposes a statutory duty to interconnect. The rule simply requires the incumbent to perform functions necessary to combine the unbundled elements it provides with elements owned by the requesting carrier “in any technically feasible manner.” Essentially, it appears to be nothing more than an element-to-element version of the incumbents’ statutory duty “to provide, for the facilities and equipment of any requesting . . . carrier, interconnection with the local exchange carrier’s network,” in § 251(c)(2).

In sum, what we have are rules that say an incumbent shall, for payment, “perform the functions necessary,” 47 CFR §§ 51.315(c) and (d) (1997), to combine network elements to put a competing carrier on an equal footing with the incumbent when the requesting carrier is unable to combine, First Report and Order ¶ 294, when it would not place the incumbent at a disadvantage in operating its own network, and when it would not place other competing carriers at a competitive disadvantage, 47 CFR § 51.315(c)(2) (1997). This duty is consistent with the Act’s goals of competition and nondiscrimination, and imposing it is a sensible way to reach the result the statute requires.

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* * *

The 1996 Act sought to bring competition to local-exchange markets, in part by requiring incumbent local-exchange carriers to lease elements of their networks at rates that would attract new entrants when it would be more efficient to lease than to build or resell. Whether the FCC picked the best way to set these rates is the stuff of debate for economists and regulators versed in the technology of telecommunications and microeconomic pricing theory. The job of judges is to ask whether the Commission made choices reasonably within the pale of statutory possibility in deciding what and how items must be leased and the way to set rates for leasing them. The FCC's pricing and additional combination rules survive that scrutiny.

The judgment of the Court of Appeals is reversed in part and affirmed in part, and the cases are remanded for further proceedings consistent with this opinion.

It is so ordered.

JUSTICE O'CONNOR took no part in the consideration or decision of these cases.

JUSTICE BREYER, with whom JUSTICE SCALIA joins as to Part VI, concurring in part and dissenting in part.

I agree with the majority that the Telecommunications Act of 1996 (Act or Telecommunications Act), 47 U. S. C. §251 *et seq.* (1994 ed. and Supp. V), does not require a historical cost pricing system. I also agree that, at the present time, no taking of the incumbent firms' property in violation of the Fifth Amendment has occurred. I disagree, however, with the Court's conclusion that the specific pricing and unbundling rules at issue here are authorized by the Act.

I

The primary goal of the Telecommunications Act is to "promote competition and reduce regulation" in both local

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and long-distance telecommunications markets. Preamble, 110 Stat. 56; see also H. R. Conf. Rep. No. 104-458, p. 1 (1996). As part of that effort, the Act requires incumbent local telecommunications firms to make certain “elements” of their local systems available to new competitors seeking to enter those local markets. 47 U. S. C. § 251(c)(3) (1994 ed., Supp. V). If the incumbents and competitors cannot agree on the price that an incumbent can charge a new entrant, local regulators will determine the price. § 252. The regulated price will depend upon the element’s “cost.” § 252(d)(1)(A). In *AT&T Corp. v. Iowa Utilities Bd.*, 525 U. S. 366 (1999), this Court held that the Act authorizes the Federal Communications Commission (FCC or Commission) to set rules for determining those prices.

These cases require the Court to review the Commission’s rules. Those rules create a “start-from-scratch” version of what the Commission calls a “Total Element Long-Run Incremental Cost” system (TELRIC). See Kahn, Tardiff, & Weisman, *The Telecommunications Act at three years: an economic evaluation of its implementation by the Federal Communications Commission*, 11 Info. Econ. & Policy 319, 326 (1999) (hereinafter Kahn) (referring to the FCC’s system as “TELRIC-Blank Slate”). In essence, the Commission requires local regulators to determine the cost of supplying a particular incumbent network “element” to a new entrant, not by looking at what it has cost *that incumbent* to supply the element in the past, nor by looking at what it will cost *that incumbent* to supply that element in the future. Rather, the regulator must look to what it would cost *a hypothetical perfectly efficient firm* to supply that element in the future, assuming that the hypothetical firm were to build essentially from scratch a new, perfectly efficient communications network. The only concession to the incumbent’s actual network is the presumption that presently existing wire centers—which hold the switching equipment for a local area—will remain in their current locations.

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See *In re Implementation of Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd. 15499, 15848–15849, ¶685 (1996) (hereinafter Order) (describing TELRIC as “based on costs that assume that wire centers will be placed at the incumbent LEC’s current wire center locations, but that the reconstructed local network will employ the most efficient technology for reasonably foreseeable capacity requirements”).

An example will help explain the system as I understand it. Imagine an incumbent local telephone company’s major switching center, say, in downtown Chicago, from which cables and wires run through conduits or along poles to subsidiary switching equipment, other electronic equipment, and eventually to end-user equipment, such as telephone handsets, computer modems, or fax machines located in office buildings or private residences. A new competitor, whom the law entitles to use an “element” of the incumbent firm’s system, asks for use of such an “element,” say, a single five-block portion of this system, thereby obtaining access to 20 downtown office buildings. Under the Commission’s TELRIC, the incumbent’s “cost” (upon which “rates” must be based) equals not the real resources that the Chicago incumbent must spend to provide the five-block “element” demanded, but the resources that a hypothetical perfectly efficient new supplier would spend were that supplier rebuilding the entire downtown Chicago system, other than the local wire center, from scratch. This latter figure, of course, might be very different from any incumbent’s actual costs.

As a reviewing Court, we must determine, among other things, whether the Commission has “‘abuse[d]’” its statutorily delegated “‘discretion’” to create implementing rules. *Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Automobile Ins. Co.*, 463 U. S. 29, 41 (1983) (quoting Administrative Procedure Act, 5 U. S. C. § 706(2)(A)). In doing so, we must assume that Congress intended to grant

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the Commission broad legal leeway in respect to the substantive content of the rules, *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971); *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 602 (1944), particularly since the subject matter is a highly technical one, namely, ratemaking, where the agency possesses expert knowledge. *Chevron U. S. A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 843–844 (1984).

Nonetheless, that leeway is not unlimited. It is bounded, for example, by the scope of the statute that grants authority and by the need for the agency to show a “rational connection” between the regulations and the statute’s purposes. *State Farm*, 463 U.S., at 56. We must determine whether, despite the leeway given experts on technical subject matter, agency regulations exceed these legal limits. See *id.*, at 43; *Overton Park*, *supra*, at 416; Administrative Procedure Act, 5 U.S.C. § 706(2)(A) (requiring agency action to be set aside if “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law”). And, reluctantly, I have come to the conclusion that they do. After considering the incumbents’ objections and the Commission’s responses, I cannot find that “rational connection” between statutory purpose and implementing regulation that the law demands. *State Farm*, *supra*, at 56.

II

Because the critical legal problem concerns the relation of the Commission’s regulations to the statute’s purpose, I must ask at the outset, what is that purpose? The relevant statutory provision says only that the agency shall set “rate[s]” (for “elements”) “based on . . . cost.” 47 U.S.C. § 252(d)(1). At first blush the word “cost” calls to mind traditional cost-based ratesetting. See Natural Gas Act, 15 U.S.C. § 717c; Natural Gas Act of 1938, §§ 4a, 5, 52 Stat. 824; Interstate Commerce Act, 49 U.S.C. § 10701 (1994 ed., Supp. V); Federal Aviation Act of 1958, 49 U.S.C. § 1302(c) (1976 ed., Supp. II) (repealed 1980); see also *ante*, at 478

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(discussing traditional ratesetting); J. Bonbright, A. Danielson, & D. Kamerschen, *Principles of Public Utility Rates* 109–110, 388 (2d ed. 1988) (hereinafter Bonbright); *In re Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992: Rate Regulation*, 9 FCC Rcd. 4527, 4555, ¶ 55 (1994) (Commission rules referring to “[o]riginal cost” as traditional basis “for public utility valuation”).

An agency engaged in traditional ratemaking will seek to protect consumers by mandating low prices as the end result. In doing so, the agency will sometimes try to mimic the prices that it believes (hypothetically) the regulated firm (often a legal monopoly) would have set had it been an unregulated firm in a competitively structured industry. See *ante*, at 486; Bonbright 89 (“[M]any economists have declared that . . . the prices that would result without regulation but under pure or perfect competition would be the ‘ideal’ prices”); 1 A. Kahn, *Economics of Regulation: Principles and Institutions* 63 (1988) (hereinafter *Economics of Regulation*) (“The traditional legal criteria of proper public utility rates have always borne a strong resemblance to the criteria of the competitive market in long-run equilibrium”). And the Commission’s regulations are at least arguably consistent with an agency effort to find prices that replicate the end results of theoretically perfect competition. See Order ¶¶ 679, 738.

But that regulatory objective—low, competition-mimicking prices—is not the objective of the relevant statutory provision here. The Telecommunications Act is not a ratemaking statute seeking better regulation. It is a deregulatory statute seeking competition. It assumes that, given modern technology, local telecommunications markets may now prove large enough for several firms to compete in the provision of some services—but not necessarily all services—without serious economic waste. It finds the competitive process an indirect but more effective way to bring

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about the common objectives of competition and regulation alike, namely, low prices, better products, and more efficient production methods. But it authorizes the Commission to promulgate rules that will help achieve that procedural goal—the substitution of competition for regulation in local markets—where that transformation is economically feasible. See *ante*, at 539 (accepting this rationale). The Act does not authorize the Commission to promulgate rules that would hinder the transition from a regulated to a competitive marketplace—whether or not those rules directly mandate lower “element” prices along the way.

Five considerations, taken together, convince me that the description of the statutory goal I have just given is an accurate one. First, the Act itself says that its objective is to substitute competition for regulation. Preamble, 110 Stat. 56 (stating that the goal of the Act is to “promote competition and reduce regulation” in both local and long-distance telecommunications markets); see also H. R. Conf. Rep. No. 104–458, at 1; *ante*, at 489.

Second, the Act’s history suggests the Congress would have thought that goal a reasonable one. The 20th century’s history of telecommunications markets is primarily one of regulation. For decades experts justified regulation on the ground that telecommunications providers were “natural monopolists,” *i. e.*, telecommunications markets would not support more than one firm of efficient size. See *ante*, at 475–476. But beginning in the 1970’s, technological developments led to a change of expert opinion by undermining the “natural monopoly” rationale. Long-distance telecommunications markets seemed newly capable of supporting several competing firms without significant economic waste. See R. Vietor, *Contrived Competition: Regulation and Deregulation in America 185–190* (1994). And opinion began to change similarly in respect to local markets. In the case of local markets, however, the change was marked by hesitation and lingering uncertainty. See P. Huber, M. Kellogg, &

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J. Thorne, *Federal Telecommunications Law* 53, 86–87 (2d ed. 1999) (hereinafter Huber); P. Huber, M. Kellogg, & J. Thorne, *The Geodesic Network II: 1993 Report on Competition in the Telephone Industry* 2.1–2.5 (1992). That is because local telecommunications service had long demanded expensive fixed investment, for example, digging up streets to lay cables or stringing wires on overhead poles. See *ante*, at 489–491. And whether, or the extent to which, a new competitor could replicate, or avoid, that kind of investment without significantly wasting resources remained unclear. See Huber 34, 206. Thus, at the time Congress wrote the new Act, technological development seemed to permit nonwasteful competition in respect to some aspects of local service; but in respect to other aspects an incumbent local telecommunications provider might continue to possess “natural monopoly” advantages. *Id.*, at 206–207. And these circumstances made it reasonable for Congress to try to secure local competition insofar as that competition would prove economically feasible, *i. e.*, where competition would not prove seriously wasteful. See Order ¶1. See also 47 U.S.C. §§ 271(c)(1)(A), 271(c)(1)(B) (recognizing that some local markets will not support more than one firm).

Third, the Act’s structure and language indicate a congressional effort to secure that very end. The Act dismantles artificial legal barriers to new entry in local markets, thereby *permitting* new firms to enter if they wish. § 253(a); see *ante*, at 491, and n. 12. But the Act recognizes that simple permission may not prove sufficient—perhaps because the incumbent will retain a “natural monopoly” form of control over certain necessary elements of service. It consequently goes on to *promote* new entry in three ways. See *ante*, at 491–492. First, it requires incumbents to “interconnect” with new entrants (at a price determined by the regulations before us), thereby allowing a new entrant’s small set of subscribers to connect with the incumbent firm’s likely larger customer base. § 251(c)(2). Second, it requires

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incumbents to sell retail services to new entrants at wholesale rates, thereby allowing newly entering firms automatically to compete in retailing if they so desire. § 251(c)(4). Third, it requires incumbents to provide new entrants “access to network elements,” say, telephone lines connecting homes or offices with switching centers, “on an unbundled basis.” § 251(c)(3). This third requirement permits a new entrant to compete selectively without replicating (or substituting) all of the elements the incumbent uses to offer the service in question.

Suppose, for example, the incumbent’s control of certain existing cables, lines, or switching equipment would put the new entrant at an economic disadvantage because duplication of those “elements” would prove unnecessarily expensive. The new Act does not require the new entrant and incumbent to compete in respect to *those* elements, say, through wasteful duplication. Rather, the Act permits the new entrant to offer, and to compete with respect to, a related service by obtaining “access” to (and therefore using) *those* “elements” of the incumbent’s network, while finding on its own other elements necessary to the service. It is as if a railroad regulator, anxious to promote railroad competition between City A and City B but aware that it would prove wasteful to duplicate a certain railroad bridge across the Mississippi River, ordered the bridge’s owner to share the bridge with new competitors. The sharing would avoid wasteful duplication of the hard-to-duplicate resource—namely, the bridge. But at the same time it would facilitate competition in the remaining aspects of the A-to-B railroad service. That, I assume, is why the Act says that the “elements” that must be shared are those for which access is “necessary” and in respect to which “failure to provide access” would “impair” the ability of the new entrant “to provide the services that it seeks to offer.” § 251(d)(2). See *Iowa Utilities Bd.*, 525 U.S., at 392 (Commission must give “substance to the ‘necessary’ and ‘impair’ require-

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ments”); cf. *id.*, at 416–417 (BREYER, J., concurring in part and dissenting in part) (stating that the “necessary” and “impair” provision’s object is to require access to, and thereby force sharing of, those elements of an incumbent’s system that would prove, to a significant degree, economically wasteful to duplicate).

To put the matter more concretely, imagine that a communications firm—a potential new entrant—wishes to sell voice, data, text, pictures, entertainment, or other communications services, perhaps in competition with the incumbent. That firm must decide how its service will reach a customer inside a house or office. Should the firm (1) run its own new cable into the house? (2) run wires through an already-existing electricity conduit? (3) communicate without wires, say, by wireless or one-way or two-way satellite? (4) or use the incumbent’s pair of twisted copper telephone service wires already in place? If the potential new entrant claims that all but the last of these possibilities are impractical or far too expensive—that using existing telephone wires is far cheaper (in terms of real resources expended) than the alternatives—then the new entrant is claiming that the incumbent’s wires are a kind of “bridge” to which it must have access. And it may ask the regulator to make its new entry feasible by requiring the incumbent to permit it to use that “element” at a reasonable price.

Fourth, the Commission has described the Act’s goals as including promotion of nonwasteful competition. The preamble to the Commission’s price regulations describes their statutorily based aim as “giv[ing] appropriate signals to producers and consumers and ensur[ing] *efficient* entry and utilization of the telecommunications infrastructure.” Order ¶ 630 (emphasis added). The Commission also says that “the prices that potential entrants pay for these elements should reflect forward-looking economic costs in order to encourage *efficient* levels of investment and entry.” *Id.*, ¶ 672 (emphasis added). And it adds that “Congress spe-

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cifically determined that input prices should be based on costs because this would foster competition in the retail market.” *Id.*, ¶ 710; see also *id.*, ¶ 1.

Fifth, the Solicitor General confirmed this view at oral argument when he said that the rates in question should be set in order to “encourage new entrants to come into the market,” Tr. of Oral Arg. 60, to “allow them to enter the market at competitive rates,” *ibid.*, and to “encourage them to develop new technologies,” *id.*, at 61.

The statute, then, seeks new local market competition insofar as local markets can support that competition without serious waste. And we must read the relevant ratesetting provision—including the critical word “cost”—with that goal in mind.

III

The Commission’s critics—Verizon, other incumbents, and experts whose published articles Verizon has lodged with the Court—concede that the statute grants the Commission broad authority to define “cost[s].” They also concede that every ratesetting system has flaws. Cf., e.g., *Missouri ex rel. Southwestern Bell Telephone Co. v. Public Serv. Comm’n of Mo.*, 262 U.S. 276, 311–312 (1923) (Brandeis, J., joined by Holmes, J., dissenting) (criticizing “reproduction cost” systems because of the administrative difficulty of determining costs); Economics of Regulation 109–111 (criticizing “historical cost” systems because of their failure to provide proper incentives).

Nonetheless, the critics argue, the Commission cannot lawfully choose a system that thwarts a basic statutory purpose without offering any significant compensating advantage. They take the relevant purpose as furthering local competition where feasible. See Part II, *supra*. They add that rates will further that purpose (1) if they discourage new firms from using the incumbent’s facilities or “elements” when it is significantly less expensive, economically speaking, for the entrant to build or to buy elsewhere, and (2) if

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they encourage new firms to use the incumbent's facilities when it is significantly less expensive, economically speaking, for the entrant to do so. They point out that prices that approximately reflect an *actual* incumbent's *actual* additional costs of supplying the services (or "element") demanded will come close to doing both these things. See Kahn 330 (prices set at "incremental cost," the cost of supplying an added "increment," will give challengers the "proper target at which to shoot" only if that cost reflects "the cost that society will *actually* incur if they purchase more" or the resources that it would save if they purchase less); Knieps, Interconnection and Network Access, 23 Ford. Int'l L. J. 90 (2000); see also J. Sidak & D. Spulber, *Deregulatory Takings and the Regulatory Contract* (1998) (arguing that a market-determined efficient component pricing rule (M-ECPR) satisfies these objectives and that the FCC has misunderstood the M-ECPR system). But prices like the Commission's, based on the costs that a *hypothetical* "most efficient" firm would incur if *hypothetically* building largely from scratch, Order ¶ 685, would do neither. Indeed, they would do exactly the opposite, creating incentives that hinder rather than further the statute's basic objective.

First, the critics ask, why, given such a system, would a new entrant ever build or buy a new element? After all, the Commission's ratesetting system sets the incumbent's compulsory leasing rate at a level that would rarely exceed the price of building or buying elsewhere. That is because the Commission's ratesetting system chooses as its basis the hypothetical cost of the most efficient method of providing the relevant service—*i. e.*, the cost of entering a house through the use of electrical conduits or of using wireless (if cheaper in general), and it then applies those costs (based on, say, hypothetical wireless) *as if* they were the cost of the system in place (the twisted pair of wires). Why then would the new entrant use an electrical conduit, or a wireless system, to enter a house when, by definition, the Commis-

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sion will require the incumbent to lease its pair of twisted wires at an equivalent price or lower—whether or not the incumbent will have to spend more, in fact, to provide the twisted wires? The rules further discourage independent building or buying by assessing a special penalty upon the new entrant that does so, for that entrant will have to worry that soon another newer new entrant will insist upon sharing the incumbent’s equivalent of that very element at a still lower regulation-determined price based on subsequent technological developments.

The Commission’s system will tend to create instances in which (1) the incumbent’s *actual* future cost of maintaining an element (say, a set of wires) will exceed (2) the new entrant’s cost of building or buying elsewhere (say, through wireless or wires in electrical conduits) which, in turn, will equal (or even exceed) (3) the *hypothetical* future “best practice” cost (namely, what the experts decide will, in general, be cheapest). In such a case (or in related cases, where technological improvements, actual or predicted, tend to offset various cost differences), the new entrant will uneconomically share the incumbent’s facilities by leasing rather than building or buying elsewhere. And that result, in the assumed circumstances, is wasteful. It undermines the efficiency goal that the majority itself claims the Act seeks to achieve. Cf. *ante*, at 509–510, 539.

Nor is the “sharing” of facilities (*e. g.*, the wire pairs) that this result embodies consistent with the competition that the Act was written to promote. That is because firms that share existing facilities do not compete in respect to the facilities that they share, any more than several grain producers who auction their grain at a single jointly owned market compete in respect to *auction services*. Cf. *Iowa Utilities Bd.*, 525 U. S., at 429 (BREYER, J., concurring in part and dissenting in part) (“It is in the *unshared*, not in the *shared*, portions of the enterprise that meaningful competition would likely emerge”). Yet rules that combine a

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strong monetary incentive to share with a broad definition of “network element,” see 47 CFR §§ 51.319(f)–(g) (1997); Order ¶ 413, will tend to produce widespread sharing of entire incumbent systems under regulatory supervision—a result very different from the competitive market that the statute seeks to create. See *Iowa Utilities Bd.*, *supra*, at 386–387 (affirming the Commission’s broad definition of “network element”). At the least, those rules are inconsistent with the Commission’s own view that they will sometimes “serve as a transitional arrangement until fledgling competitors could develop a customer base and complete the construction of their own networks.” *In re Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 15 FCC Rcd. 3696, 3700, ¶ 6 (1999) (Third Report and Order). Why, given the pricing rules, would those “fledgling competitors” ever try to fly on their own?

Second, what incentive would the Commission’s rules leave the incumbents either to innovate or to invest in a new “element?” The rules seem to say that the incumbent will share with competitors the cost-reducing benefits of a successful innovation, while leaving the incumbent to bear the costs of most unsuccessful investments on its own. But see *infra*, at 552. Why would investment not then stagnate? See, *e. g.*, Jorde, Sidak, & Teece, Innovation, Investment, and Unbundling, 17 Yale J. Reg. 1, 8 (2000) (“It makes no economic sense for the [incumbent] to invest in technologies that lower its own marginal costs, so long as competitors can achieve the identical cost savings by regulatory fiat”); Sidak & Spulber, Deregulation and Managed Competition in Network Industries, 15 Yale J. Reg. 117, 124–125 (1998) (“If deprived of a return to capital facilities after capital has been sunk in irreversible investments, or if faced with reduced returns to investments already made, any economically rational company will eliminate or reduce similar capital investments in the future”); Armstrong, AT&T Scoffs at Possible Common Carrier Status, Telecommunications Reports,

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Nov. 9, 1998 (Chief Executive Officer of AT&T, which here supports the Commission's regulations), cited in Huber 206, n. 611 ("‘No company will invest billions of dollars . . . if competitors who have not invested a penny of capital, nor taken an ounce of risk, can come along and get a free ride on the investments and risks of others’").

I recognize that no regulator is likely to enforce the Commission's rules so strictly that investment literally slows to a trickle. Indeed, the majority cites figures showing that in the past several years new firms have invested \$30 to \$60 billion in local communications markets. See *ante*, at 516. We do not know how much of this investment represents facilities, say, broadband, for which an incumbent's historical network offers no substitute. Nor do we know whether this number is small or large compared with what might have been. Cf. FCC, Statistics of Communications Common Carriers 51 (table 2.7); FCC, Statistics of Communications Common Carriers 42 (table 2.7); FCC, Statistics of Communications Common Carriers 29 (table 2.7); FCC, Statistics of Communications Common Carriers 1 (table 2.7) (incumbents' similar investment over the same period amounts to over \$100 billion); cf. FCC, 2000/2001 Statistics of Communications Common Carriers 51 (table 2.9) (total depreciated investment plus working capital equals \$220 billion); *ante*, at 516, 521 (new entrants' market share provided by entrants' own facilities alone is 33%). Regardless, given the incentives, this independent investment would seem to have been made despite the "start from scratch" rules, not because of them. At best, such statistics do no more than show that at least some of the coincidences I describe below have, happily for the Commission and the public alike, come to pass. See *infra*, at 554, 556, 560–561.

The critics mention several other problems as well. They say, for example, that the Commission's regulations will exacerbate the problem of "stranded costs"—*i. e.*, the need for a once-regulated incumbent to recover its reasonable, but now

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technologically outdated, historical investment. See Part III–C, *ante*. They add that the regulations will make nearly redundant the statute’s provisions for “element” rates set through negotiation. See 47 U. S. C. § 252(a)(1). After all, given the Commission’s regulations, how much is there to negotiate about? The regulations entitle the new entrant to a price equal to, or lower than, the price to which any rational incumbent could agree. See Brief for United States in *Mathias v. Worldcom Technologies, Inc.*, O. T. 2001, No. 00–878, p. 18, n. 5 (“[A]s a practical matter” carriers have little incentive to negotiate).

Nor, in the critics’ view, do the regulations possess any offsetting advantages. They lack that ease of administration that led Justices Holmes and Brandeis to favor use (for ratesetting purposes) of an incumbent’s historic costs despite their economic inaccuracy. See *Southwestern Bell Telephone Co.*, 262 U. S., at 292–296 (dissenting opinion); see also *ante*, at 481–483. The hypothetical nature of the Commission’s system means that experts must estimate how imaginary firms would rebuild their systems from scratch—whether, for example, they (hypothetically) would receive permission to dig up streets, to maintain unsightly telephone poles, or to share their pole costs with other users, say, cable operators—and they must then estimate what would turn out to be most “efficient” in such (hypothetical) future circumstances. The speculative nature of this enterprise, the critics say, will lead to a battle of experts, each asking a commission to favor what can amount to little more than a guess. See Kahn 333, 334, n. 36, 335 (describing three models introduced in regulatory proceedings, one of which reduced all actual expenses by 27% because railroad regulation had brought similar efficiency gains, another of which assumed that all utilities, including electricity producers, would rebuild entire systems from scratch at the same time, and the third of which assumed New Hampshire’s telecommunications system was administratively most efficient but then reduced its actual administrative expenses by 25%).

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These administrative difficulties seem far greater than any difficulty likely involved in an effort to determine an actual incumbent's actual (past or likely future) costs. See Affidavits of W. Baumol, J. Ordover, & R. Willig, Comments of AT&T Corp., CC Docket 96–98: In the Matter of Implementation of Local Competition Provisions in the Telecommunications Act of 1996, ¶ 25 (May 16, 1996), App. 67 (TELRIC's estimates “do not simply accept the architecture, sizing, technology, or operating decisions” of the incumbents “as bases for calculating” costs). Assumptions are inevitable. And the resulting uncertainties mean a somewhat random sort of rate that can either exacerbate the incentive problems previously mentioned or alleviate those problems by a kind of regulatory coincidence. See *ante*, at 522 (describing how state commissioners “customarily assign rates based on some predictions from one model and others from its counterpart”).

IV

The criticisms described in Part III are serious, potentially severing any rational relation between the Commission's regulations and the statutory provision's basic purposes. *State Farm*, 463 U.S., at 56. Hence, the Commission's responses are important. Do those responses reduce the force of the criticisms, blunt their edges, or suggest offsetting virtues? I have found six major responses. But none of them is convincing.

First, the FCC points out that rates will include not only a charge reflecting hypothetical “most-efficient-firm” costs but also a depreciation charge—a charge that can reconcile a firm's initial historic investment, say, in equipment, and the equipment's current value, which diminishes over time. See Order ¶ 686 (“[P]roperly designed depreciation schedules should account for expected declines in the value of capital goods”). If, for example, an incumbent's reasonable investment, measured actually and historically, came to \$50 million, but FCC experts predict a “most-efficient-

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firm-building-from-scratch” future replication cost of \$30 million, a depreciation charge could permit the incumbent to recoup the otherwise missing \$20 million. And, in theory, a state commission might structure a potentially complex depreciation charge so as both to permit recovery of historic investment and also to offset many of the improper investment incentives described in Part II, *supra*.

This response, however, does not reflect what the Commission’s regulations actually say. Those regulations say nothing about permitting recovery of reasonable historic investment nor about varying the charge to offset perverse investment incentives. Rather, they strongly indicate the opposite. They clearly require state commissions to use *current* depreciation rates right alongside the Commission’s new and different “most-efficient-firm-building-from-scratch” charges. See Order ¶ 702. They do create an exception from “current” rates. But to take advantage of that exception “incumbent LECs” have to bear the “burden of demonstrating with specificity that the *business risks* that they face in providing unbundled network elements and interconnection services would justify a different . . . depreciation rate.” *Ibid.* Unless the exception is to swallow the rule, the term “business risks” must refer to some special situation—not to the ordinary circumstance in which a new entrant simply asks to share an “element” at rates determined under Commission “most-efficient-firm” rules. In any event, that is how 24 state commissions have read the language. See *1998 Biennial Regulatory Review—Review of Depreciation Requirements for Incumbent Local Exchange Carriers*, 15 FCC Rcd. 242, ¶ 69 (1999). And the FCC nowhere explicitly says to the contrary. Hence the FCC depreciation rules as written do not respond to the critics’ claims in the ordinary case, nor do they otherwise transform its “most-efficient-firm-building-from-scratch” system into a system that reflects historic costs.

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Second, the FCC points out that a state commission can adjust permissible profit rates. In theory, such an adjustment could offset many of the improper investment incentives described in Part II, *supra*. But, like the depreciation regulations, the profit regulations say nothing about the matter. Indeed, like the depreciation regulations, they suggest the opposite. The relevant FCC regulations say that “the *currently authorized rate of return at the federal or state level is a reasonable starting point.*” Order ¶ 702 (emphasis added). They, too, add an exception, available to “incumbent LEC’s” that successfully “bear the burden of demonstrating with specificity that the *business risks* that they face in providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital.” *Ibid.* But this exception, like the depreciation exception, cannot respond to the critics’ claims in the ordinary case for similar reasons.

The FCC adds that it did not have “time” to offer more than “tentative guidance,” Reply Brief for Federal Parties 11–12, that profits now may be too high, Order ¶ 702, and that the incumbents may find other ways to lower their capital costs, *id.*, ¶ 687. These additions, however, concede the critics’ basic point—that the “profit” rules as written do not provide an answer to Part III’s claims. Rather, *considered as a response to those claims*, they must rest upon no more than hope for a regulatory coincidence. Most significantly, they hope that current market conditions mean that current profit rates somehow magically offset the adverse effects of the Commission’s other regulations, see Part III, *supra*. See Reply Affidavit of J. Hausman ¶ 9, n. 8, submitted with Reply Comments of the United States Telecom Association, CC Docket No. 96–98 (FCC filed May 30, 1996), App. 197 (testifying for critics that profit rates would have to double or triple to secure investment). Cf. G. Hubbard & W. Lehr, Capital Recovery Issues in TELRIC Pricing: Response to Professor Jerry A. Hausman (July 18, 1996), App. 216, 221

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(arguing for FCC defenders that Hausman overstates the need for change, but stating that “if any adjustments . . . are required . . . such adjustments would be modest”). And the majority relies on its belief that that hope has been realized. *Ante*, at 521 (stating that in light of the fact that “competition in fact has been slow to materialize,” “it seems fair to say” that the current rate is a “‘reasonable starting point’”). Of course, one must sympathize with the FCC’s time problem. But the statute did not require the FCC so quickly to create so complex a system. Rather, the statute seems to foresee rates set, not by FCC regulations primarily or in detail, but by negotiations among the parties, 47 U. S. C. §252(a)(1), if not by state commissions. See *Iowa Utilities Bd.*, 525 U. S., at 412–420 (BREYER, J., concurring in part and dissenting in part).

Third, the Commission supports the reasonableness and practicality of its system with the claim that “a number of states” have used it successfully, as have several European nations. Order ¶681. As to domestic experience, I can find no evidence that, prior to the promulgation of the rules at issue here, any State had successfully implemented the FCC’s version of TELRIC. It is hardly surprising that since then several States have tried to apply it. Nor is it surprising that their implementation has produced criticisms similar to those made here. See, e. g., *MCI Telecommunications Corp. v. GTE Northwest, Inc.*, 41 F. Supp. 2d 1157, 1168–1169, and n. 7 (Ore. 1999) (discussing problems with the FCC’s TELRIC).

And the “foreign nation” part of the Commission’s claim rests only upon a 1997 European Community paper referring to a “best current practice” approach as a future goal. See Commission of European Communities, Recommendation on Interconnection in a liberalised telecommunications market, C(97) 3148, §§3.3, 3.5 (Oct. 15, 1997), <http://europa.eu.int/ISPO/infosoc/telecompolicy/en/r3148-en.htm> (Apr. 17, 2002). Indeed, Britain’s FCC counterpart has said that, in the

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absence of a showing of inefficiency, the incumbent's *actual* current expenditures on capacity additions should be used "as the starting point." See Office of Telecommunications (OfTel), Access to Bandwidth: Indicative prices and pricing principles ¶ 9 (May 2000), <http://www.oftel.gov.uk/publications/broadband/llu/llu0500.htm> (Apr. 17, 2002).

In fact, as I understand the European system, it may turn out in practice to work roughly as follows: The relevant European regulatory agency, seeking competition, encourages new firms to enter local markets in order to provide new voice, data, text, picture, entertainment, or other communications service. Like the Commission, the agency normally has the authority to insist that an incumbent firm "unbundle," *e. g.*, that it permit a new entrant to use its pair of twisted wires running from switching center to the inside of a house. It also has the authority to set prices. But in exercising that authority, it has neither required, nor is it likely to rely upon, any one ratesetting method. Rather, it may encourage negotiation among the parties in order to reach agreed-upon prices low enough to prevent the incumbent from blocking entry but high enough to encourage the new firm to consider other entry methods, such as use of electricity conduits, or new cables, where economically feasible. If no agreement can be reached, the regulator, in determining the price, can use formulas, modified to take proper account of depreciation and historical cost, or it can look to prices set in other European nations as a yardstick to help produce competition.

This less formal kind of "play it by ear" system, in my view, is what the statute before us intended. The Act provides for price negotiation among the parties, it brings in state regulators where necessary to break deadlocks, and it permits the States to use a variety of different ratesetting approaches, looking to experience in other States as appropriate, in order to determine proper prices. The mysterious statutory parenthetical phrase "(determined without ref-

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erence to a rate-of-return or other rate-based proceeding),” § 252(d)(1), makes sense from this point of view. It reflects Congress’ desire to obtain not perfect prices but speedy results. It specifies that States need not use formal methods, relying instead upon bargaining and yardstick competition. See *Iowa Utilities*, *supra*, at 424–425 (BREYER, J., concurring in part and dissenting in part); cf. Order ¶ 631 (describing how the New York Commission “se[t] prices on a case-by-case basis”). I recognize, however, that the FCC has rejected this approach in favor of extraordinarily complex national ratesetting standards, which we review only to determine whether they will further, or serve as obstacles to, the competitive marketplace that the statute seeks.

Fourth, the FCC adds that its system seeks to base rates on the costs a hypothetical “most efficient firm” hypothetically would incur were it “building from scratch.” And such a system, in its view, will “simulate” or “best replicat[e], to the extent possible, the conditions of a competitive market.” Order ¶ 679; see also *id.*, ¶ 738. This response, however, does not do more than describe that very feature of the system upon which the critics focus their attack.

As I have previously said, *supra*, at 543, such an objective is perhaps consistent with an ordinary ratesetting statute that seeks only low prices. But the problem before us—that of a lack of “rational connection” between the regulations and the statute—grows out of the fact that the Telecommunications Act is not a typical regulatory statute asking regulators simply to seek low prices, perhaps by trying to replicate those of a hypothetical competitive market. Rather, this statute is a deregulatory statute, and it asks regulators to create prices that will induce appropriate new entry. See Part II, *supra*. That being so, we may assume, purely for argument’s sake, that the FCC rules could successfully “replicate” the prices toward which perfectly efficient, perfectly competitive markets would tend. But see Kahn 326–327 (stating that such prices are never achieved in any actual

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market); A. Kahn, *Whom the Gods Would Destroy, or How Not to Deregulate* 4 (2001) (stating that a firm in an actual market would determine efficient investment in light of its actual system, not a hypothetical system built from scratch). Still, those rules, if successful, would produce the strong incentives to demand sharing, and the strong disincentives to build independently, that Part II describes—for they would create a “sharing” or “interconnection” price equal to or lower than any price associated with the creation of independent facilities. They would thereby tend toward a system in which regulatory price setting would *supplant*, not *promote*, competition. And however congenial institutional regulators might find such a system, it differs dramatically from the system that the statute seeks to bring about. See Part II, *supra*. Cf. *Iowa Utilities Bd.*, 525 U. S., at 387–392 (setting aside Commission rules granting new entrants power to obtain access to virtually any existing element). At least that is the claim that underlies much of the criticism set forth in Part III, *supra*. And the Commission’s response that its system simulates the conditions of a competitive market does not respond to that basic criticism.

Fifth, the Commission says that its regulations are simply suggestive, leaving States free to depart. Reply Brief for Federal Parties 11–12. The short but conclusive answer to this response is that the Commission considered a “suggestive” approach and rejected it. See Order ¶ 66 (refusing to characterize rules as setting forth, not “requirements,” but “‘preferred outcomes,’” because the latter approach “would fail to establish explicit national standards for arbitration, and would fail to provide sufficient guidance to the parties’ options in negotiations”).

Sixth, the majority (but not the Commission) points out that local commissions are likely to leave any given set of rates in effect for some period of time. And this “regulatory lag” will solve the problem. See *ante*, at 505–506. I do not understand how it could solve the main problem—that of

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leading new entrants to lease a more costly incumbent “element” where building or buying independently could prove less costly. See *supra*, at 548–550. Nor, given any new entrant’s legal right to obtain a regulator’s decision, am I certain that lags will prove significant. But, in any event, lags will differ, depending upon regulator, time, and circumstance, thereby introducing a near random element that might, or might not, ameliorate the system’s otherwise adverse effects.

In sum, neither the Commission’s nor the majority’s responses are convincing.

V

Judges have long recognized the difficulty of reviewing the substance of highly technical agency decisionmaking. Compare *Ethyl Corp. v. EPA*, 541 F. 2d 1, 66 (CA DC 1976) (en banc) (Bazelon, C. J., concurring) (“[T]he best way for courts to guard against unreasonable . . . administrative decisions is not . . . themselves to scrutinize the technical merits . . . [but to] establish a decision-making process that assures a reasoned decision” (internal quotation marks omitted)), with *id.*, at 69 (Leventhal, J., concurring) (stating that judges must assure, on substantive review, “conformance to statutory standards and requirements of rationality,” acquiring “whatever technical background is necessary”). This Court has emphasized the limitations the law imposes upon judges’ authority to insist upon special agency procedures. *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U. S. 519, 543–548 (1978). But it has also made clear that judges nonetheless must review for rationality the substance of agency decisions, including technical decisions. *State Farm*, 463 U. S., at 56. That review requires agencies to undertake the difficult task of translating technical matters into language that judges can understand and preparing technical responses to challenges of the sort found here. But, despite the difficulty, review by generalist judges is important, both

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because technical agency decisions are often of great importance to the general public and because the law forbids agencies, in the name of technical expertise, to wrest themselves free of public control.

Agencies are, of course, expert in technical areas. That is why Judge Leventhal wrote that “the judges,” when reviewing the rationality of substantive decisions, “must act with restraint.” *Ethyl Corp.*, 541 F. 2d, at 69. And I agree. But, he added, judges may not “abstain from any substantive review.” *Id.*, at 68. And again I agree. In these cases, the critics’ claims are strong. They suggest that the FCC’s pricing rule, together with its original “forced leasing” twin, see *Iowa Utilities Bd.*, *supra*, at 388–392 (finding original leasing rule unlawful), would bring about, not the competitive marketplace that the statute demands, but a highly regulated marketplace characterized by widespread sharing of facilities with innovation and technological change reflecting mandarin decisionmaking through regulation rather than decentralized decisionmaking based on the interaction of freely competitive market forces. And the Commission’s replies are unsatisfactory. The majority nonetheless finds the Commission’s pricing rules reasonable. As a regulatory theory, that conclusion might be supportable. But under this *deregulatory* statute, it is not. Under these circumstances, it would amount to abstention from, indeed abdication of, “rational basis” review, were I to agree that the record here demonstrates the “rational connection” between regulations and statutory purpose upon which the law insists. *State Farm*, *supra*, at 56; Administrative Procedure Act, 5 U. S. C. § 706(2)(A); see also *State Farm*, *supra*, at 43 (“[W]e may not supply a reasoned basis for the agency’s action that the agency itself has not given”). As Judge Leventhal properly put it, “Restraint, yes, abdication, no.” *Ethyl Corp.*, *supra*, at 69. The Court, of course, with 65 pages of careful analysis, does not abdicate its reviewing responsibility; but for the reasons stated here I cannot agree with

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its substantive conclusion. Consequently, I would affirm the Eighth Circuit's determination that the regulations are unlawful.

VI

I disagree with the majority about one further legal issue. The statute imposes upon an incumbent the

“duty to provide . . . for the provision of a telecommunications service, nondiscriminatory access to network elements on an unbundled basis . . . in a manner that allows *requesting carriers to combine* such elements in order to provide such telecommunications service.”
47 U. S. C. §251(c)(3) (emphasis added).

The FCC, pointing to this provision, has said that (upon request) incumbents must themselves combine, among other things, elements that are ordinarily not combined. Rules 315(c)–(f), 47 CFR §§51.315(c)–(f) (1997). How, the incumbents ask, can a statute that speaks of the *requesting carriers* combining elements grant the FCC authority to insist that *they*, the incumbents, combine the elements?

In *Iowa Utilities Bd.*, the Court found authority for a somewhat similar rule—a rule that forbids incumbents to *uncombine* elements ordinarily found in combination. But, as the majority recognizes, *ante*, at 534–535, that different rule rests upon a rationale absent here. If an incumbent takes apart elements that it ordinarily keeps together, it is normally discriminating against the requesting carriers. And the statutory provision forbids discrimination. But here the incumbent simply keeps apart elements that it ordinarily keeps apart in the absence of a new entrant's demand. How does that discriminate? And if it does not discriminate, where does this statutory provision give the FCC authority to forbid it?

I cannot find the statutory authority. And I consequently would affirm the lower court on the point.

For these reasons, I dissent.