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Überregulation without Economics: The World Trade Organization's Decision in the U.S.-Mexico Arbitration on Telecommunications Services

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I. INTRODUCTION

On April 2, 2004, the World Trade Organization ("WTO") assumed a new role as a highly specialized, global regulator of domestic telecommunications policy. In April 2002, the WTO's Dispute Settlement Body established an arbitration panel in accordance with Article 6 of the Understanding on Rules and Procedures Governing the Settlement of Disputes in response to a complaint filed by the United States against the Republic of Mexico. The United States alleged that Mexico had violated its commitments under Section 5 of the Annex on Telecommunications to the General Agreement on Trade in Services ("GATS") by failing to ensure that Teléfonos de México, S.A. de C.V. ("Telmex"), the largest Mexican supplier of basic telecommunications services, (1) provide interconnection to U.S. telecommunications carriers at "cost-oriented" rates, (2) refrain from anticompetitive practices[1], and (3) provide U.S. telecommunications

1. United States First Written Submission on Mexico—Measures Affecting

carriers "reasonable and non-discriminatory" access to public telecommunications networks and services as mandated by the GATS Annex on Telecommunications.

In its April 2004 decision, the WTO arbitration panel found that Mexico had not met its GATS commitments with respect to supply of telecommunications services on a "facilities basis"—that is, services supplied over the service provider's own infrastructure, rather than over leased capacity on someone else's infrastructure.[2] As a result, Mexico became obliged to change its domestic telecommunications regulations or face trade sanctions. The panel report in the U.S.-Mexico decision is the first WTO arbitration to deal solely with trade in services under GATS and the first specifically to address telecommunications services.

On one level, the decision illustrates the potential for the WTO to compel changes in any area of domestic law that corresponds to one of the topics within GATS. It is conceivable that, having established the precedent of intervening in the domestic regulatory policy of one of its signatory nations, the WTO will one day direct this new form of überregulation toward a United States regulatory institution that has oversight of domestic firms providing at least one service to foreign customers. On another level, the U.S.-Mexico decision provides an additional example of the U.S. government's recurrent use of trade agreements and institutions to impose specific U.S. regulatory principles on the domestic telecommunications policies of other nations. As the Authors will explain in greater detail below, that exportation of U.S. telecommunications regulation encompasses detailed methodologies used to calculate the costs and permissible prices of regulated carriers. Despite having been exported to other nations, those U.S. policies remain highly controversial within U.S. telecommunications law.[3]

This Article presents an economic analysis of the United States'

Telecommunications Services, WT/DS204, at 9 para. 36, 79 para. 207 (Oct. 3, 2002), *available at* http://www.ustr.gov/assets/Trade_Agreements/Monitoring_Enforcement/Dispute_Settlement/WTO/Dispute_Settlement_Listings/asset_upload_file638_6333.pdf [hereinafter United States Government Written Submission].

2. WTO Dispute Panel Report on Mexico—Measures Affecting Telecommunications ServicesWT/DS204/R (Apr. 2, 2004), *available at* http://www.wto.org/english/tratop_e/dispu_e/204r_e.pdf [hereinafter WTO Dispute Panel Report].

3. *See* Jeffrey H. Rohlfs & J. Gregory Sidak, *Exporting Telecommunications Regulation: The United States.-Japan Negotiations on Interconnection Pricing*, 43 HARV. INT'L L.J. 317, 319 (2002). The conclusive evidence of the controversy surrounding the United States' unbundling policy is that the FCC's rules, regarding the parts of the local network that must be unbundled, have been struck down by the Supreme Court or D.C. Circuit three times. *See* United States Telecomm. Ass'n v. FCC, 359 F.3d 554, 561 (D.C. Cir. 2004).

complaint against Mexico. Part II summarizes the lengthy decision of the WTO arbitration panel. The panel accepted most of the arguments and reasoning contained in the United States' complaint. Therefore, our criticisms of the U.S. government's complaint in most cases apply with equal force to the WTO decision.

Part III shows that the U.S. government conflated *international* settlement rates and *domestic* interconnection pricing. In both the United States and Mexico, international settlement rates have been set by a different pricing methodology than the one used for domestic interconnection. Contrary to the unstated premise of the U.S. government's complaint, direct comparisons of the two rates are not valid. The complaint of the U.S. government raised economic policy questions that are not within the scope of the WTO agreement. These policy questions are properly addressed by the domestic authorities in Mexico. For example, the recovery of Telmex's total costs through allowed rates is properly within the discretion and expertise of the Mexican telecommunications regulator, the Comisión Federal de Telecomunicaciones ("Cofetel").

At the time that the United States filed its complaint, Mexico's international settlement rates were reasonable and were rationally based on the costs of building and operating the public-switched telecommunications network in Mexico. The U.S. government mischaracterized several of the relevant cost principles. First, the U.S. government's estimate of the costs of terminating a call in Mexico ignored non-traffic-sensitive ("NTS") costs that Telmex cannot recoup through other charges. Second, international settlement rates vary by region to reflect the legitimate differences in costs that Telmex incurs in providing network access. Third, the U.S. government incorrectly relied on long-run average incremental cost ("LRAIC") as the price that a competitive market would establish. Moreover, the U.S. government's complaint did not recognize that the price of *northbound* long-distance services in Mexico depends primarily on the cross-subsidization policy chosen by the Mexican government. This policy is also within Cofetel's discretion, and the U.S. government did not allege that this cross-subsidization was anticompetitive.

Part IV demonstrates that, setting aside these cost-justification issues, the U.S. government was advocating a policy that would not necessarily increase the welfare of consumers in the United States. Any complaints regarding the price of *southbound* long-distance services should have been directed instead to the United States Department of Justice for investigation of tacit collusion, as the market for southbound long-distance calls into Mexico was, at the time that the United States filed its brief before the WTO, highly concentrated by antitrust standards. Although reductions in

international settlement rates appear to be correlated with lower international long-distance prices for U.S. consumers, the declines in those prices on calls to Mexico would have been greater had the big three U.S. long-distance carriers—AT&T, WorldCom-MCI, and Sprint—competed more aggressively. Just as competition among U.S. long-distance carriers will naturally reduce southbound long-distance prices, competition among Mexican long-distance carriers has and will continue to put downward pressure on international settlement rates. Indeed, international experience shows that domestic competition in outbound international services brings substantial reductions in international settlement rates.

Part V shows that the WTO panel failed to recognize that the complaint of the U.S. government collapses if Telmex lacks market power in point-to-point international telecommunications services between the United States and Mexico. It is unlikely that Telmex had such market power in 2002. Point-to-point international telecommunications services—not the termination of long-distance calls onto Telmex's wireline network—constitute the relevant product market. For several reasons, Telmex lacks market power in the relevant product and geographic markets. First, Telmex's share of point-to-point international telecommunications services varies by geographic market within Mexico and is declining rapidly. Second, the demand for southbound calls into Mexico is price elastic, which implies that U.S. consumers would quickly substitute away from southbound calls terminated onto Telmex's network in response to a price increase for southbound calls. Third, the supply of termination access by rival networks in Mexico is price elastic, which implies that producers would quickly increase their capacity in response to an increase in the price of termination by Telmex. Fourth, Telmex does not enjoy a significant advantage over its rivals with respect to cost structure, size, or resources.

Even if one were to assume counterfactually that Telmex has market power in the *relevant* product and geographic market, Cofetel could regulate an exercise of market power in international settlement rates. Further, even if one were to assume counterfactually (as the WTO panel incorrectly found) that the proper market definition is the termination of southbound calls, Telmex would still lack market power for at least five reasons. First, the market power of U.S. long-distance carriers is a countervailing force that constrains Telmex's ability to charge excessive international settlement rates. Second, illegal bypass forces Telmex to negotiate lower international settlement rates. Third, Telmex is already substantially below the benchmark international settlement rate established by the Federal Communications Commission ("FCC") to protect U.S. long-

distance carriers. Fourth, the critical share of customers needed by Telmex to render an exercise of market power unprofitable is small because the ratio of marginal cost to fixed cost of completing southbound calls is low. Fifth, packet-switched networks are nearly a perfect substitute for Telmex's circuit-switched networks and will grow in competitive significance.

The Authors conclude that the WTO decision on the U.S.-Mexico arbitration reveals a startlingly low level of economic sophistication in its analysis of inescapably economic questions. The panel's decision runs 227 pages with 1,052 footnotes, yet it does not cite—much less rely upon—any scholarly work on telecommunications regulation, industrial organization, antitrust policy, international trade, or any other branch of economics. Instead, the panel's reasoning is overwhelmingly lexical, interpreting critical terms such as "cost" and "market power" by resorting to dictionaries and canons of construction rather than antitrust economics. The method is reminiscent of how United States courts approached antitrust cases in the first half of the twentieth century. Given the high level of economic sophistication that is now standard in competition law and sector-specific regulation throughout the world, the WTO has made an unimpressive start in implementing the GATS arbitration process.

II. THE U.S.-MEXICO ARBITRATION DECISION

The United States alleged that Mexico violated its commitments under the GATS by failing to ensure that Telmex provided interconnection to U.S. telecommunications suppliers at "cost-oriented" rates and refrained from engaging in anticompetitive practices. The United States also alleged that Mexico neglected to provide U.S. telecommunications suppliers "reasonable and non-discriminatory" access to public telecommunications networks and services as mandated by the GATS Annex on Telecommunications. The panel found that, with respect to supply of services on a "facilities basis," Mexico had not met its GATS commitments.

A. *The Mexican Regulatory Regime*

Before 1997, Telmex supplied Mexico's long-distance and international telecommunications services on a monopoly basis. Thereafter, Mexico allowed multiple Mexican carriers to provide cross-border telecommunications services over Mexican networks. At the time of the arbitration, twenty-seven carriers provided long-distance services in Mexico, of which eleven were "international gateway operators," which are long-distance service licensees authorized by Cofetel to operate a switching exchange as an international gateway. Telmex remains the country's largest

supplier of basic telecommunications services, including international outbound traffic.

Cofetel regulates agreements for interconnection of public telecommunications networks with foreign networks through its International Long-Distance Rules ("ILD Rules").[4] The ILD Rules required, among other things, that all international gateway operators apply the same "uniform settlement rate" to each international long-distance call, regardless of which operator directs the call.[5] The Mexican operator with the greatest market share of outgoing long-distance calls for each country was given the power to unilaterally negotiate the settlement rate with that country.[6] Furthermore, the ILD Rules' "proportionate return" provision mandated that incoming calls from a foreign country be distributed among Mexican operators in proportion to each operator's share of outgoing calls to that country.[7]

B. The United States' Contentions

As part of the GATS negotiations in 1996 and 1997, almost all of the signatory countries committed to abide by a set of procompetitive regulatory principles concerning their telecommunications industries. These principles are embodied in the WTO's Reference Paper, to which the United States and Mexico both subscribed.[8] Section 2 of the Reference Paper, labeled "Interconnection," requires that interconnection with a "major supplier" of public telecommunications transport networks or services be ensured "in a timely fashion, on terms, conditions . . . and cost-

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4. Reglas para Prestar el Servicio de Larga Distancia Internacional que deberán aplicar los Concesionarios de Redes Públicas de Telecomunicaciones Autorizados para Prestar este Servicio, *Acuerdo que establece redes públicas de telecomunicaciones locales*, (Dec. 11, 1996), *available at* http://www.cft.gob.mx/html/9_publica/reglas/11dic96.html [hereinafter ILD Rules].

5. ILD Rules, Regla 2:XII(a)-(b), *cited in* WTO Dispute Panel Report, *supra* note 2, at 4.

6. ILD Rules, Regla 13, *cited in* WTO Dispute Panel Report, *supra* note 2, at 4.

7. ILD Rules, Reglas 2:XII, 10, 13, 16, 17 and 19, *cited in* WTO Dispute Panel Report, *supra* note 2, at 4.

8. WORLD TRADE ORGANIZATION, NEGOTIATING GROUP ON BASIC TELECOMMUNICATIONS, TELECOMMUNICATIONS SERVICES REFERENCE PAPER § 2.2(b) (Apr. 24, 1996), *at* http://www.wto.org/english/tratop_e/serv_e/telecom_e/tel23_e.htm [hereinafter REFERENCE PAPER], *cited in* WTO Dispute Panel Report, *supra* note 2, at 144. For an analysis of the Reference Paper and its relationship to the WTO agreement on basic telecommunications services, see J. GREGORY SIDAK, FOREIGN INVESTMENT IN UNITED STATES TELECOMMUNICATIONS 367–94 (1997). For a critique of the vagueness of the Reference Paper, see CLAUDE E. BARFIELD, FREE TRADE, SOVEREIGNTY, DEMOCRACY: THE FUTURE OF THE WORLD TRADE ORGANIZATION 56–58 (2001).

oriented rates that are transparent, [and] reasonable . . . ."[9] Section 1 of the Reference Paper obligates the Mexican government to take appropriate measures to prevent a major supplier from engaging in anticompetitive practices. The last treaty provision relevant to the United States complaint, Section 5 of the GATS Annex, commits Mexico to ensuring that international basic telecommunications service suppliers are accorded access to public and private leased telecommunications transfer networks on "reasonable and non-discriminatory terms and conditions."[10]

The United States alleged that Mexico had violated all three sections by failing to regulate Telmex adequately. First, Mexico allegedly breached its obligations under Section 2 of the Reference Paper by allowing Telmex to charge interconnection rates that substantially exceeded costs.[11] Second, the United States claimed that Mexico violated Section 1, not only by failing to prevent Telmex from engaging in anticompetitive practices—including horizontal price-fixing and market-sharing agreements—but also by *requiring* Telmex to do so by granting it the sole power to fix international settlement rates and restrict supply of basic telecommunication services.[12] Third, by allegedly failing to ensure that United States basic telecommunications suppliers were granted access to Mexican telecommunications networks (both public and private leased) on reasonable and non-discriminatory terms, Mexico allegedly contravened its obligations under Section 5 of the GATS Annex.[13]

C. *The Panel's Findings*

Addressing each of the three GATS provisions individually, the WTO panel concluded that, with regard to the supply of services on a facilities basis, Mexico violated its commitments under Sections 2.2 (b) and 1.1 of the Reference Paper, and Sections 5(a) and 5(b) of the Annex on Telecommunications.[14]

1. Mexico's Commitments under Section 2 of the Reference Paper

The panel first examined whether Section 2 of the Reference Paper applied at all to the telecommunications services at issue. It determined that

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9. REFERENCE PAPER, *supra* note 8, at § 2.2(b), *cited in* WTO Dispute Panel Report, *supra* note 2, at 144.

10. GATS Annex on Telecommunications § 5(a), World Trade Organization, *at* http://www.wto.org/english/docs_e/legal_e/26-gats.pdf [hereinafter GATS Annex].

11. *See* United States Government Written Submission, *supra* note 1, at para. 8.

12. *Id.* at para. 241.

13. *See Id.* at para. 207.

14. WTO Dispute Panel Report, *supra* note 2, at 225.

the U.S. public voice telephony, circuit-switched transmission, and facsimile services constituted the "cross-border" supply of the services—therefore falling within the meaning of GATS Article I: 2(a).[15] Furthermore, pursuant to Mexico's schedule of commitments, Mexico undertook full-national-treatment commitment for the cross-border supply of the services at issue and full-market-access commitment for the supply of services at issue on a facilities-basis, but not on a non-facilities-basis. After concluding that Section 2 applied to all cross-border services at issue, except for those on a non-facilities-basis, the panel addressed whether or not Mexico had fulfilled its commitment to provide such services under Section 2.2(b).[16] If Telmex constituted a "major supplier," then Mexico was obliged to ensure that Telmex provided interconnection on "terms, conditions . . . and *cost-oriented* rates that are transparent, reasonable, having regard to economic feasibility and sufficiently unbundled. . . ."[17]

a. Was Telmex a "Major Supplier"?

The panel first examined the definition of "major supplier" listed in the Reference Paper and concluded that Telmex satisfied its meaning: "A major supplier is a supplier which has the ability to materially affect the terms of participation (having regard to price and supply) in the relevant market for basic telecommunications services. . . ."[18] The panel then determined the "relevant market" to be the *termination* of the services at issue supplied cross-border, not *point-to-point* international telecommunications services. It wrote:

> [W]e find no evidence that a domestic telecommunications service is substitutable for an international one, and that an outgoing call is considered substitutable for an incoming one. . . . Even if the price difference between domestic and international interconnection would change, such a price change would not make these differences substitutable in the eyes of a consumer.[19]

Following the Reference Paper's language, the panel then addressed Telmex's "ability to materially affect the terms of participation (having regard to price and supply)."[20] The panel noted that Telmex was legally required by ILD Rule 13 to negotiate settlement rates for the entire Mexican market for termination of the services at issue: "The long-distance service licensee having the greatest percentage of outgoing long-distance

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15. *See id.* at 32.
16. WTO Dispute Panel Report, *supra* note 2, at 174.
17. *See* REFERENCE PAPER, *supra* note 8, § 2.2(b) (emphasis added).
18. *Id.* at definitions, *cited in* WTO Dispute Panel Report, *supra* note 2, at 174.
19. WTO Dispute Panel Report, *supra* note 2, at 176.
20. *Id.*

market share for the six months prior to negotiations with a given country shall be the licensee that is authorized to negotiate settlement rates with the operators of said country."[21] On the basis of that rule, the panel found that Telmex had enough market power to "materially affect the terms of participation. . . ."[22] In short, Telmex was a "major supplier" as defined in the Reference Paper.

b. Were Telmex's Interconnection Rates "Cost-Oriented"?

The panel then addressed whether Telmex's interconnection rates were "cost-oriented," which the panel construed to mean "brought into a defined relation to known costs or cost principles."[23] Citing the U.S. government's written submission, the panel ruled that Mexican law *requires* the use of long-run average incremental cost ("LRAIC") as a basis for such analysis.[24] The panel concluded that the term "cost-oriented" means "the costs incurred in supplying the service, and that the use of long term incremental cost methodologies, such as those required in Mexican law, is consistent with this meaning."[25]

In deciding whether Mexico had ensured that Telmex was interconnecting U.S. suppliers of the services at issue at cost-oriented rates, the panel considered different types of evidence that the United States offered. Basing its analysis on measures such as existing "grey market" prices and the aggregate cost of relevant network components used to interconnect U.S. suppliers, the panel concluded that the interconnection rates charged by Telmex to U.S. suppliers were not "cost-oriented."[26]

In addition to these considerations, the panel examined ILD Rules 16 and 17, which allow international gateway operators to negotiate financial compensation agreements among themselves instead of having to physically transfer calls when the operators do not receive traffic at their gateways in proportion to outgoing calls.[27] Because they suggested the existence of a surplus beyond the costs of receiving calls, the financial compensation agreements in place as part of the "proportionate allocation" rules also contributed to the panel's decision.[28]

Having determined that Telmex was a "major supplier," whose

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21. ILD Rules, Regla 13, *translated by* Authors, *also cited in* WTO Dispute Panel Report, *supra* note 2, at 4.

22. WTO Dispute Panel Report, *supra* note 2, at 176.

23. *Id.* at 179 (emphasis omitted).

24. *Id.* at 177.

25. *Id.* at 181.

26. *Id.* at 189.

27. ILD Rules 16, 17, *cited in* WTO Dispute Panel Report, *supra* note 2, at 187-88.

28. WTO Dispute Panel Report, *supra* note 2, at 188.

interconnection was not implemented at "cost-oriented rates," the panel concluded that Mexico had failed to meet its commitments under Section 2.2(b) of the Reference Paper.

2. Mexico's Commitments under Section 1 of the Reference Paper

Next, the panel addressed Mexico's commitments under Section 1.1 of the Reference Paper, which states that "[a]ppropriate measures shall be maintained for the purpose of preventing suppliers who, alone or together, are a major supplier from engaging in or continuing anti-competitive practices."[29] The panel referred to the definition of "anti-competitive practices" set forth in the Reference Paper, which states that such practices include, among other things, "engaging in anti-competitive cross-subsidization."[30] The panel concluded that, because the list was not exhaustive, the term also includes horizontal price-fixing and market-sharing agreements by suppliers.[31]

To determine the status of Mexico's practices within this meaning, the panel examined the ILD Rules. First, the panel noted that the ILD Rules (1) require all international gateway operators in Mexico to apply a "uniform settlement rate" to all incoming and outgoing traffic, and (2) grant the operator with the greatest share of outgoing calls to a particular country the sole power to negotiate settlement rates with that country.[32] The panel believed that the effect of this process was that "Telmex must negotiate a settlement rate for incoming calls with suppliers in the other markets wishing to supply the Mexican market and apply . . . that single rate to interconnection for incoming traffic from the United States."[33] The panel agreed with the United States that this practice constituted anticompetitive horizontal price-fixing in violation of Section 1.1: "[T]he removal of price competition by the Mexican authorities, combined with the setting of the uniform price by the major supplier, has effects tantamount to those of a price-fixing cartel."[34]

Second, the decision addressed the ILD Rules' "proportionate return" system which requires international gateway operators (1) to distribute among themselves incoming calls from a country in proportion to the outgoing calls that the operator sends to that country, and (2) to negotiate

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29. REFERENCE PAPER, *supra* note 4, § 1.1, *cited in* WTO Dispute Panel Report, *supra* note 2, at 191.

30. REFERENCE PAPER, *supra* note 4, § 1.2, *cited in* WTO Dispute Panel Report, *supra* note 2, at 193.

31. WTO Dispute Panel Report, *supra* note 2, at 193.

32. *Id.* at 196-98.

33. *Id.* at 198.

34. *Id.* at 199.

financial compensation agreements among themselves that replicate proportionality if calls are not distributed accordingly.[35] The panel found that this provision also violated Section 1.1 because it limited rivalry and competition among competing suppliers and was therefore anticompetitive: "[T]he allocation of market share between Mexican suppliers imposed by the Mexican authorities, combined with the authorization of Mexican operators to negotiate financial compensation between them instead of physically transferring surplus traffic, has effects tantamount to those of a market sharing arrangement between suppliers."[36]

Furthermore, the panel found, by requiring these anticompetitive practices by law, Mexico had failed to maintain "appropriate measures" to prevent such anticompetitive practices.[37] Consequently, because Mexico neglected to undertake "appropriate measures" to prevent Telmex, a "major supplier," from engaging in anticompetitive practices, Mexico was found to have violated its Section 1.1 obligations.[38]

3. Mexico's Commitments under Section 5 of the GATS Annex on Telecommunications

Section 5(a) of the GATS Annex on Telecommunications requires Mexico to ensure that "any service supplier of any other Member is accorded access to and use of public telecommunications transport networks and services on reasonable and non-discriminatory terms and conditions. . . ."[39] The panel found that the Annex applies on a facilities basis to *basic telecommunications* commitments scheduled by Mexico, as it would be unreasonable to suppose otherwise. The panel qualified this determination, however, by finding that Mexico's Schedule of Specific Commitments and routing requirement failed to grant market access for the cross-border supply of services on a non-facilities-basis—services provided over capacity leased by the service supplier.[40]

In determining whether Telmex had provided leased access to networks and services to U.S. suppliers on "reasonable and non-discriminatory terms and conditions," the panel first examined the rates that Telmex charged.[41] Based on the previous determination that the uniform rates charged to interconnect U.S. suppliers exceeded cost-oriented rates by

35. *Id.*
36. *Id.*
37. *Id.* at 78.
38. *Id.* at 200.
39. GATS Annex, *supra* note 10, § 5(a).
40. WTO Dispute Panel Report, *supra* note 2, at 205.
41. GATS Annex, *supra* note 10, § 5(a).

a substantial margin and precluded price competition, the panel concluded that such rates were inconsistent with the provision of access to and use of public telecommunications transfer networks and services on reasonable terms.[42]

Consequently, with respect to ensuring access on a facilities basis to U.S. suppliers, the panel found that Mexico failed to abide by its commitments under Section 5(a) of the GATS Annex on Telecommunications.[43] The panel also held that Mexico failed to meet its Section 5(b) obligations by neglecting to ensure that commercially present U.S. suppliers had access to and use of private leased circuits and interconnection.[44]

D. Summary

In considering each of the three GATS issues presented by the United States, the WTO panel ruled against Mexico. It concluded that Mexico failed to ensure that Telmex, a "major supplier" as defined in the Reference Paper, was providing service at "cost-oriented" rates and avoiding anticompetitive practices such as horizontal price-fixing and market sharing. The panel determined that Mexico's failure in these respects violated its obligations under Sections 2.2 and 1.1 of the Reference Paper. Furthermore, because the panel found that Telmex did not provide the cross-border services at issue on "reasonable and non-discriminatory" terms to U.S. suppliers, the panel concluded that Mexico also violated Sections 5(a) and 5(b) of the GATS Annex on Telecommunications.

III. WHAT EXPLAINS MEXICO'S INTERNATIONAL SETTLEMENT RATES?

One week after the U.S. government filed its brief with the WTO attacking Mexico's international settlement rates, the FCC stated that "[t]he current international settlement rate system was developed as part of a tradition in which international telecommunications services were supplied through a bilateral correspondent relationship between national monopoly carriers."[45] According to the FCC, the approach of the United States to international settlement rates dates from "the 1930s and has its genesis in

42. WTO Dispute Panel Report, *supra* note 2, at 200-16.

43. WTO Dispute Panel Report, *supra* note 2, at 214.

44. WTO Dispute Panel Report, *supra* note 2 at 216.

45. International Settlements Policy Reform, *Notice of Proposed Rulemaking*, IB Dkt. No. 02-324, para. 1 n.2 (Oct. 11, 2002), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-02-2618A1.pdf [hereinafter International Settlements Policy NPRM].

the principles of antitrust law."[46] Unlike the elaborate provisions contained in the Telecommunications Act of 1996 for the setting of interconnection prices through hundreds of arbitration proceedings run by the state public utilities commissions throughout the United States, the FCC explained that "[h]istorically, the market for international services has been characterized by the model of national monopoly carriers corresponding with one another."[47] In what follows, the Authors critique the economic reasoning that underlies the United States complaint and explain why reductions in the international settlement rate are not producing lower international long-distance prices for U.S. consumers.

Specifically, the United States complaint contained serious economic flaws, which the WTO either ignored or did not perceive. For example, the U.S. government's estimate of the costs of terminating a call in Mexico ignored non-traffic sensitive costs that Telmex cannot recoup through other charges. It also failed to account for regional variation in costs that Telmex incurs in providing network access, and incorrectly relied on LRAIC as the price that a competitive market would establish. In this Section, the Authors address those and other errors in the U.S. government's arguments to the WTO.

A. *Non-Traffic Sensitive Costs that Telmex Incurs in Providing Network Access*

The Mexican government has a social policy of universal access, geographically averaged prices, and minimum service quality standards for telecommunications services. That policy implies, for Telmex, a particular capacity requirement for its network, as well as an "obligation to serve"[48] all customers as the "carrier of last resort."[49] Unlike its competitors, who bear no such obligation, Telmex may not raise prices (or offer particular customers inferior service quality) to ration limited capacity on its network when faced with excess demand. Nor may Telmex limit its output by restraining the capacity of its network. The universal service mandate compels Telmex to supply a level of network capacity that at least equals—*and most likely exceeds*—the level of network capacity that would be supplied by firms in a perfectly competitive market.[50] Telmex must

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46. *Id.* at para. 2.

47. *Id.*

48. J. GREGORY SIDAK & DANIEL F. SPULBER, DEREGULATORY TAKINGS AND THE REGULATORY CONTRACT: THE COMPETITIVE TRANSFORMATION OF NETWORK INDUSTRIES IN THE UNITED STATES 119 (1997).

49. *Id.* at 513.

50. *Id.* ("Mandating that the incumbent [local exchange carrier] alone act as the carrier of last resort forces the firm to hold capacity in reserve to meet demand at peak load.").

therefore build its network with "reserve" or "standby" capacity that will accommodate peak demand.

To provide customers the *option* of calling someone on any given day at any given telephone number in Mexico, Telmex must incur certain costs—known in U.S. telecommunications jargon as "non-traffic-sensitive (or NTS) costs"—that do not vary with the quantity of calls (minutes of use) that Telmex ultimately carries that day. In 2001, the European Commission embraced the proposition that, in a regulated network industry, capacity costs are not attributable to a specific service, but rather constitute common fixed costs of the network as a whole.[51]

Telmex is implicitly required to offer consumers two valuable services simultaneously: network *access* and network *usage*. Even consumers outside Mexico benefit from these service offerings. Even if a caller in the United States makes no calls to Mexico on a given day, he will nonetheless have enjoyed the *option* to do so.[52] Long-run average incremental cost by definition does not include such common or sunk costs. Therefore, an interconnection settlement rate that is set equal to LRAIC would be insufficient to recover the total costs an incumbent network operator legitimately incurs in order to discharge its obligation to serve the public.

Telmex's investment in network infrastructure necessary to perform its obligation to serve in Mexico has the incidental effect—the *network effect*—of ensuring callers in the United States the option to use Telmex's network whenever they wish. The obligation to serve includes an obligation to provide network access to three groups of cities and regions at three different, geographically-averaged prices. The option value of network access is a clear benefit to consumers, and thus its costs deserve to be recovered. As a matter of social policy, the Mexican government decided to use the international settlement rate as a means to recover the NTS network costs. Nothing in the WTO Agreement on Basic Telecommunications Services[53] or in the Reference Paper remotely suggests that signatories

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51. Commission Decision 2001/354/EC, art. 82, 2001 O.J. (L 125) 30 (citing WILLIAM J. BAUMOL & J. GREGORY SIDAK, TOWARD COMPETITION IN LOCAL TELEPHONY 108 (1994)).

52. "There are costs associated with providing both connections and standby capacity to supply the option to achieve a connection. The costs of standby capacity are capital costs of network capacity that are similar to the merchant's cost of holding inventory to provide 'immediacy' to customers." J. Gregory Sidak & Daniel F. Spulber, *Cyberjam: The Law and Economics of Internet Congestion of the Telephone Network*, 21 HARV. J.L. & PUB. POL'Y 327, 362 (1997). *See also* William J. Baumol & J. Gregory Sidak, *The Pig in the Python: Is Lumpy Capacity Investment Used and Useful?*, 23 ENERGY 383 (2002).

53. Data on Telecommunications Markets Covered by the WTO Negotiations on Basic Telecommunications (Feb. 17, 1997), *at* http://www.wto.org/english/news_e/pres97_e/data3.htm (unofficial briefing document).

surrender their discretion to permit carriers the opportunity to recover NTS costs through the international settlement rate.

B. *Regional Variation in Costs that Telmex Incurs in Providing Network Access*

Mexico has three tiers of international settlement rates that vary by city or larger geographic area. The international settlement rate for smaller cities and remote regions is higher than for Mexico City, Guadalajara, and Monterrey. Because there are economies of scale and density in telecommunications networks, the differential pricing reflects the greater cost that Telmex incurs in providing network access to smaller cities and remote regions. In addition, the differential pricing reflects the greater value (the network effect) that is enjoyed by callers to Mexico as Telmex extends the public switched telephone network to provide access to a larger share of the population. Service to these smaller cities and outlying areas is at the heart of Mexico's national policy to provide universal service. Currently, however, there is no universal service fund ("USF") in Mexico. The only source of funding for achieving universal service is the revenue earned by Telmex, which alone bears an obligation and duty to serve as the carrier of last resort.

C. *Would a Competitive Market-Set Price Equal to Long-Run Average Incremental Cost?*

In its endorsement of LRAIC as the best measure of an operator's cost, the U.S. government failed to mention that the *WTO Telecommunications Agreement* never endorsed LRAIC.[54] Nor did the U.S. government mention that the definition of cost can reasonably rest on other economic principles. In a multi-product firm, which by definition has some economies of scope, price must deviate from LRAIC. Otherwise, the firm would not be able to meet its revenue requirement and new capital investment would not occur. The U.S. government's vision of cost-based pricing would not allow Telmex an opportunity to recover its total operating costs plus a non-monopolistic return on its invested capital in the network.

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54. *See* REFERENCE PAPER, *supra* note 8, at § 2.2(b). The Reference Paper states that interconnection is to be ensured "in a timely fashion, on terms, conditions (including technical standards and specifications) and *cost-oriented rates* that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided." *Id.* (emphasis added).

The U.S. government mischaracterized Mexican telecommunications law as requiring international settlement rates to be based on LRAIC. The United States made the following claim concerning domestic interconnection rates in Mexico:

> Mexican law requires interconnection rates to reflect "long-run average incremental costs," in line with the general principle that interconnection rates must relate to the cost of providing that service. Reflecting its domestic requirements, Mexico explained to the WTO Negotiating Group on Telecommunications in February 1995 that interconnection charges must be determined on the basis of the true costs of the service provider.... Since that time, the Mexican government has underscored on several occasions that Mexico requires interconnection rates to be based in cost, reflecting the cost an efficient enterprise would incur in providing interconnection.[55]

Although it claimed that Article 63 of Mexico's 1995 Federal Law explicitly "requires" that domestic interconnection rates reflect LRAIC, the U.S. government's own citation demonstrated that such a requirement is neither explicit nor implied. The law states that the Secretary is "authorized" to apply domestic interconnection rates on a carrier with significant market power that allows recovery "*at least*, of the long-run average incremental cost."[56] Next, the U.S. government asserted that domestic interconnection rates "are meant to allow the supplier to recover long term total incremental costs *as well as imputable common costs*."[57] Neither passage supports the U.S. government's economic misconception that domestic interconnection rates in Mexico *must* be set according to LRAIC. Indeed, the cited materials do just the opposite.

The U.S. government also cited the Vienna Convention in support of its LRAIC approach:

> In sum, there appears to be consensus among many WTO Members – including Mexico – that interconnection rates should be based on the cost of providing interconnection. In other words, it appears that WTO Members intended to give the term "cost-oriented" and *"basadas en costos"* this "special meaning." Therefore, in accordance with generally accepted principles of treaty interpretation reflected in Article 31(4) of the Vienna Convention, the Panel should interpret the term *basadas en costos* on this basis.[58]

This passage is another misstatement of then-current economic policy. The U.S. government asserted that other WTO members consider "cost-

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55. United States Government Written Submission, *supra* note 1, at para. 110.

56. "Ley Federal De Telecommunicaciones", [Federal Law on Telecommunications], D.O., 22 de junio de 1995.

57. United States Government Written Submission, *supra* note 1, at para. 110 n.97 (emphasis added).

58. *Id.* at para. 113.

based" to mean based on LRAIC, and included the United States and Mexico in this list, even though the United States has retreated from this position and Mexico specifically enumerates other factors that should be considered in setting domestic interconnection rates.

In short, the U.S. government failed to prove that domestic interconnection rates in Mexico are set at LRAIC. Consequently, even if one were to counterfactually assume that international settlement rates and domestic interconnection rates are set in the same manner, it still does not follow that the charge for terminating a call from the United States to Mexico should be set at LRAIC.[59]

D. The Cross-Subsidization Policy Chosen by the Mexican Government

Prices on international calls to the United States from Mexico are used to subsidize the cost of supplying local telephone service in Mexico. The price of local telephone service, which is approximately $14 United States dollars ("USD") per month, is capped below the LRAIC of providing such service. The first 100 local calls are included in the monthly rate. Local calls thereafter are charged on an incremental (per call) basis. There is no per-minute charge for local calls. A "subscriber" who pays nothing to Telmex still maintains the ability to receive unlimited incoming calls. In this respect, Telmex subsidizes access to the network through the pricing of other services. This cross-subsidization policy of the Mexican government accepts the tradeoff between faster network deployment and increased long-distance calling.

In addition to this cross-subsidization policy, other domestic regulatory factors may keep long-distance prices artificially high in Mexico. A wireless carrier must contract with an affiliate to offer international long-distance service. That arrangement creates a classic "double-marginalization" problem. The long-distance price faced by wireless customers is marked up twice—once by the affiliated long-distance provider and a second time by the wireless provider. Economists have recognized the price-decreasing effect of this double-marginalization for decades.[60]

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59. Humpty Dumpty said, "When I use a word . . . it means just what I choose it to mean—neither more nor less." LEWIS CARROLL, THROUGH THE LOOKING GLASS (& WHAT ALICE FOUND THERE) chapter 6 (1871). The United States has similarly taken the position in international negotiations on telecommunications services that LRAIC means whatever the U.S. Trade Representative chooses it to mean. *See generally* Rohlfs & Sidak, *supra* note 3 (discussing the United States' interpretation of the 1997 WTO Agreement on telecommunications services).

60. *See* DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL

In seeking Mexico's rapid elimination of its cross-subsidy policy, the U.S. government ignores its own lengthy transition to cost-based pricing. Before the introduction of competition in most countries, telecommunications prices have typically embodied large cross-subsidies that reflect public policy preferences.[61] In particular, access to the network for residential customers has generally been priced below cost. The preponderance of network costs have been recovered through high usage rates for domestic and international long-distance calling. As noted earlier, the economic rationale for these regulatory policies was to promote universal service—and thereby to harness the positive network externalities, or "bandwagon effects," from increasing the reach of the telecommunications network.[62] Mexico is no different from the United States in this respect. As late as 1999, the FCC delayed implementation of full-rate rebalancing in the Coalition for Affordable Local and Long Distance Service ("CALLS") proposal.[63] Fifteen years after the AT&T divestiture, the FCC was still concerned about too rapid of a transition to cost-oriented rates.

In Mexico, regulators have yet to adopt explicit markups above cost-

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ORGANIZATION 398-401 (Addison Wesley 3d ed. 2000); JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 174 (1988); and Joseph Spengler, *Vertical Integration and Antitrust Policy*, 58 J. POL. ECON. 347, 351-52 (1950) for a contemporary exposition of this topic. Double-marginalization occurs when two companies have a vertical supplier-customer relationship. The upstream company sets its price, and thus its margin between price and marginal cost, to maximize its own profits. The downstream company likewise sets its price and margin to maximize its profit, treating what it pays the upstream company as a cost. If the upstream company begins to offer the downstream product also, it generally will set the final price of the downstream product to maximize its profits jointly from both the upstream and downstream products. The company offering the combined product will often find that it can increase its profits by lowering the price of the final product below the price that would be set in the previous situation. The company offering the combined product will take into account how a lower price on the final product will increase the sale of and profits from the upstream product, while a company offering only the final product will not.

Although the analysis of double-marginalization originally was derived for the case of monopoly, it also applies to imperfect competition, which characterizes telecommunications markets because of the large fixed and common costs. The leading United States antitrust treatise, for example, observes that "[t]he double-marginalization model appears to make robust predictions that vertical integration results in increased output and lower prices any time the affected markets are something less than perfectly competitive." PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 30 (2d ed. 2002).

61. *See, e.g.*, ROBERT W. CRANDALL & LEONARD WAVERMAN, WHO PAYS FOR UNIVERSAL SERVICE? WHEN TELEPHONE SUBSIDIES BECOME TRANSPARENT 166 (2000) (discussing regulatory requirements to price local exchange service below cost).

62. *See, e.g.*, JEFFREY H. ROHLFS, BANDWAGON EFFECTS IN HIGH-TECHNOLOGY INDUSTRIES 177-79 (2001).

63. *See* Access Charge Reform, *Sixth Report and Order*, 15 F.C.C.R. 12,962 (2000).

oriented domestic interconnection rates. Mexico still does not have a universal service funding mechanism. Such measures, if adopted, would ease Mexico's transition to a fully rebalanced rate structure. Without such measures, however, Mexico would be called upon to complete, in only a few years, what the United States has failed to complete in nearly nineteen years. The U.S. government can insist, upon threat of trade sanctions, that Mexico make this transition immediately, but truculence carries no assurance that it will accomplish what U.S. policy-makers have been unable to do at home.

IV. DO U.S. LONG-DISTANCE CARRIERS PASS REDUCTIONS IN MEXICO'S INTERNATIONAL SETTLEMENT RATE ON TO THEIR U.S. CUSTOMERS?

The FCC said in October 2002 that its "primary goal underlying [its] policies [on international settlement rates] has been and continues to be *the protection of U.S. consumers* from potential harm caused by instances of insufficient competition in the global telecommunications market."[64] The FCC had previously said that through its policies on international settlement rates it seeks, among other things, "to prevent anticompetitive conduct in the provision of international services."[65] The U.S. government's complaint was not consistent with this statement of the FCC's policy. Its premise that the international settlement rate is the principal cause of high southbound long-distance prices entirely ignored the more powerful explanatory factor: the absence of vigorous price competition among U.S. long-distance carriers.

A. *Tacit Collusion and the Price of Southbound Long-Distance Services*

With respect to the price of southbound calls, the U.S. government's complaint was knocking on the wrong door. This issue raised competition law questions in the United States. Stated differently, the price of southbound long-distance services in the United States depends primarily on the level of competition among U.S. long-distance carriers, which is beyond the scope of the WTO but squarely within the purview of the Antitrust Division of the United States Department of Justice. Curiously, the U.S. government acknowledged this relationship in its submission:

> Elasticity of demand is more difficult to estimate for termination of cross-border services, because demand for cross-border services by end

64. International Settlements Policy NPRM, *supra* note 45, at para. 1 (emphasis added).

65. Market Entry and Regulation of Foreign-Affiliated Entities, *Report and Order*, 11 F.C.C.R. 3873, 3877 para. 6 (1995).

> users in the United States is not directly related to the settlement rates charged by Telmex and other Mexican carriers but rather to the retail prices charged by the U.S. carriers to their customers.[66]

If demand for southbound traffic is first and foremost a function of long-distance prices, then it was circuitous and incomplete for the U.S. government to focus on the international settlement rate and ignore the *margin* between that rate and the retail price.

Since 1995, the U.S. government has ignored empirical evidence that the margins on outbound international long-distance traffic have increased over time despite the decrease in concentration among long-distance service providers—a counterintuitive relationship that implies that U.S. long-distance carriers have been pricing in a tacitly or explicitly collusive manner.[67] Using data from Mexico, the Dominican Republic, Japan, France, Germany, Italy, and the United Kingdom, Paul MacAvoy determined that international price-cost margins (defined as the ratio of the price-cost margin to price) were inversely related to the Herfindahl-Hirschman Index ("HHI") measure of market concentration for 1994.[68] Professor MacAvoy concluded that, because of the "insignificance of concentration changes, we must reject the hypothesis that international [Message Rate Telecommunications] service has been in the process of becoming more competitive."[69]

The trend in higher margins for outbound international calls in the face of declining international settlement rates continued through 2001. Table 1 shows the relationship between the international settlement rate to Mexico and the margins earned by U.S. long-distance carriers on southbound calls to Mexico from 1992 to 2001.

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66. United States Government Written Submission, *supra* note 1, at attachment A para. 6 (Oct. 3, 2002).

67. *See* PAUL W. MACAVOY, THE FAILURE OF ANTITRUST AND REGULATION TO ESTABLISH COMPETITION IN LONG-DISTANCE TELEPHONE SERVICES 157 (1996). An earlier study conducted by Professor MacAvoy found that the regulatory environment since the AT&T divestiture led to market sharing among the three biggest interexchange carriers rather than price competition. *See* Paul W. MacAvoy, *Tacit Collusion under Regulation in the Pricing of Interstate Long-Distance Telephone Services*, 4 J. ECON. & MGMT. STRATEGY 147 (1995). *See also* PAUL W. MACAVOY & MICHAEL A. WILLIAMS, DEREGULATION OF ENTRY IN LONG-DISTANCE TELECOMMUNICATIONS (2002); Paul W. MacAvoy, *Testing for Competitiveness of Markets for Long Distance Telephone Services: Competition Finally?*, 13 REV. INDUS. ORG. 295 (1998).

68. PAUL W. MACAVOY, THE FAILURE OF ANTITRUST AND REGULATION TO ESTABLISH COMPETITION IN LONG-DISTANCE TELEPHONE SERVICES 168 (1996). The HHI is the sum of the squares of the individual market shares of all market participants. The higher the HHI, the greater the market concentration. *See, e.g.*, CARLTON & PERLOFF, *supra* note 60, at 247.

69. *Id.* at 169.

TABLE 1

CALLS FROM THE U.S. TO MEXICO: INTERNATIONAL SETTLEMENT RATES, LONG-DISTANCE PRICES CHARGED BY U.S. CARRIERS, U.S. CARRIER MARGINS, AND HHI, 1989-2001

Year	Int'l Settlement Rate ($ per minute)* A	Long-Distance Price ($ per minute)** B	U.S. Carrier Margins ($ per minute) $B - A$	U.S. Carrier Markups Over Costs $(B - A)/A$	HHI***
1992	$0.890	$1.186	$0.296	33.3%	5852.0
1993	$0.824	$1.212	$0.389	47.2%	5484.7
1994	$0.684	$1.103	$0.419	61.2%	5271.0
1995	$0.610	$0.972	$0.362	59.4%	5072.0
1996	$0.540	$0.827	$0.287	53.2%	5205.2
1997	$0.432	$0.732	$0.300	69.4%	4336.6
1998	$0.399	$0.641	$0.242	60.8%	4038.1
1999	$0.199	$0.525	$0.325	163.2%	4162.3
2000	$0.196	$0.462	$0.266	135.3%	6214.8
2001	$0.190	NA	NA	NA	NA

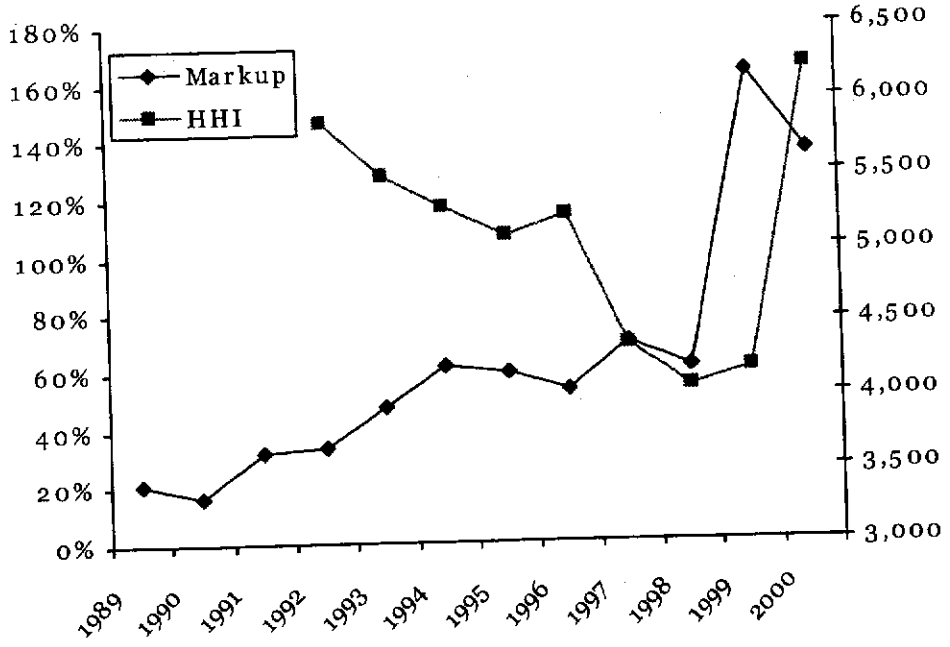
Sources: *FCC, IMTS ACCOUNTING RATES OF THE UNITED STATES, 1985-2004 (July 1, 2004), *at* http://www.fcc.gov/ib/pd/pf/artsweb.xls;
**Linda Blake & Jim Lande, FCC COMMON CARRIER BUREAU, *Trends in the International Telecommunications Industry* Table. 9 (Apr. 2001), *at* http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/Intl/itrnd00.pdf;
*** Linda Blake & Jim Lande, FCC COMMON CARRIER BUREAU, *International Telecommunications Data*, (1992–2001), *available at* http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/intl.html.
Note: The FCC estimates average international long-distance prices by dividing U.S. carriers' total billed revenues for calls to Mexico by U.S. carriers' total billed minutes for calls to Mexico. Unlike the raw FCC pricing data, our prices are in constant 2001 USD.

Table 1 shows that the international settlement rates charged to U.S. long-distance carriers by Mexican operators declined by 91 percent in real terms from 1990 to 2002—from $1.04 (USD) per minute to $0.09 (USD) per minute. However, competition among U.S. long-distance carriers did not drive down the retail price of southbound long-distance service as rapidly. As a result, U.S. carriers enjoyed a substantial increase in operating margins over the same period. In 1990, U.S. carriers earned margins of 16 percent for carrying a call to Mexico. By 1999, that margin had increased to 163 percent. The equivalent margin earned for the period by U.S. carriers for calls to Canada was roughly 40 percent.[70]

As explained by Professor MacAvoy, the decline in concentration in long-distance markets over the 1990s should have been met with reductions in operating margins, *had United States carriers been acting in a non-cooperative manner*. But the empirical evidence suggests that the opposite occurred. Figure 1 shows the relationship between margins earned by U.S. carriers on the U.S.-to-Mexico route and the HHI on the same route.

70. In 1999, the settlement rate for calls completed in Canada was $0.20 (USD) per minute, and the average revenue per minute for U.S. carriers on the United States-to-Canada route was $0.28 (USD). FCC, IMTS ACCOUNTING RATES OF THE UNITED STATES, 1985-2004 (July 1, 2004) *at* http://www.fcc.gov/ib/pd/pf/artsweb.xls [hereinafter IMTS ACCOUNTING RATES]. *See also* LINDA BLAKE & JIM LANDE, FCC COMMON CARRIER BUREAU, *1999 International Telecommunications Data* Table A.1 (Dec. 2000), *available at* http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/Intl/4361-f99.pdf. [hereinafter *FCC 1999 International Data*].

FIGURE 1
MARKUP EARNED BY U.S. LONG-DISTANCE CARRIERS
PROVIDING INTERNATIONAL SERVICE TO MEXICO, 1989-2000



Note: The markup is the per-minute margin relative to the per-minute international settlement rate.

Figure 1 shows that while the HHI declined from 5,852 to 4,162 between 1992 and 1999, the margin earned by U.S. carriers on the southbound route to Mexico increased from roughly 33 percent to 160 percent over the same period. This evidence is not consistent with the hypothesis that U.S. carriers are pricing in a non-cooperative manner on the southbound route. Consequently, the empirical evidence contradicts the claim by the U.S. government that U.S. consumers will capture the benefit from further reductions in the international settlement rate. To the contrary, the empirical evidence implies that the U.S. long-distance carriers keep those reductions in the form of larger margins.

B. *In a More Competitive Environment, United States Long-Distance Carriers Would Have Reduced Their Price for Southbound Calls Beyond the Decrease in International Settlement Rates*

It was an article of faith in the U.S. government's complaint that, as the FCC said in October 2002, "[r]eductions in inflated settlement rates . . . move prices closer to cost."[71] With respect to calls from the United States to Mexico, however, the data show that proposition to be unequivocally false. Although it is true that prices for calls from the United States to Mexico declined significantly from 1989 to 2002, the margins that U.S. long-distance carriers earned remained high. In a competitive environment with a homogenous service such as long-distance telephony, entry will occur until price is driven to marginal cost. More precisely, in the presence of economies of scale, price will be driven down to a level that exceeds marginal cost only by as much as necessary to recover fixed costs. In the process, the shares of the incumbent providers are also driven down, leading to a decrease in concentration. Hence, if firms are not colluding, decreases in concentration should cause decreases in margins. Contrary to this fundamental economic relationship, the margins earned by U.S. long-distance carriers on calls to Mexico increased over the past decade as concentration declined.

Southbound long-distance prices would have been substantially lower if the three largest U.S. long-distance carriers had priced more competitively. Under Cournot competition, firms compete by choosing quantities such that each firm's quantity choice is a best response to the other firm's quantity.[72] The markup relative to price under Cournot competition is equal to the inverse of the product of the number of firms and the own-price elasticity of demand, or

$$[1] \quad \frac{p-c}{p} = \frac{1}{n\varepsilon}$$

where p is the price, c is the marginal cost, n is the number of firms, and ε is the own-price elasticity of demand for the service.[73] Under the monopoly-pricing rule,[74] a model of perfect collusion among competitors, the markup relative to price is equal to inverse of the own-price elasticity of

71. International Settlements Policy NPRM, *supra* note 45, at para. 17.

72. CARLTON & PERLOFF, *supra* note 60, at 88.

73. *Id.*

74. *See, e.g.*, HAL R. VARIAN, MICROECONOMIC ANALYSIS 235 (W.W. Norton & Co. 3rd ed. 1992).

demand, or

$$[2] \quad \frac{p - c}{p} = \frac{1}{\varepsilon}$$

Under Bertrand competition, a third model of oligopolistic competition, firms compete by choosing prices such that each firm's price is a best response to the other firm's price.[75] When goods are homogenous, Bertrand competition results in prices equal to marginal costs.

Table 2 shows some scenarios from 1989 to 2002 in which the three U.S. long-distance carriers competed according to these three familiar pricing models in the industrial organization literature.

75. *Id.*

TABLE 2
PRICING FOR CALLS FROM THE UNITED STATES TO MEXICO UNDER ALTERNATIVE MODELS OF OLIGOPOLISTIC PRICING, 1989-2001

Year	Int'l Settlement Rate ($ per minute) A	Actual Long-Distance Price ($ per minute) B	Predicted Long-Distance Price Under Bertrand Model	Predicted Long-Distance Price Under Cournot Model	Predicted Long-Distance Price Under Monopoly
1989	$1.25	$1.51	$1.25	$1.70	$6.25
1990	$1.04	$1.21	$1.04	$1.42	$5.20
1991	$0.96	$1.27	$0.96	$1.31	$4.80
1992	$0.89	$1.19	$0.89	$1.21	$4.45
1993	$0.82	$1.21	$0.82	$1.12	$4.10
1994	$0.68	$1.10	$0.68	$0.93	$3.40
1995	$0.61	$0.97	$0.61	$0.83	$3.05
1996	$0.54	$0.83	$0.54	$0.74	$2.70
1997	$0.43	$0.73	$0.43	$0.59	$2.15
1998	$0.40	$0.64	$0.40	$0.55	$2.00
1999	$0.20	$0.53	$0.20	$0.27	$1.00
2000	$0.20	$0.46	$0.20	$0.27	$1.00
2001	$0.19	NA	$0.19	$0.26	$0.95

Note: Assumes an own-price elasticity of demand equal to –1.25. Prices are in constant 2001 U.S. dollars.

As Table 2 shows, U.S. long-distance carriers appeared to compete in a Cournot manner from 1989 to 1993—that is, the actual prices were roughly equal to the predicted prices under Cournot competition. Indeed, as the former Secretary-General of the International Telecommunication Union, Dr. Pekka Tarjanne, observed, "[b]etween 1990 and 1993, at precisely the time when significant price reductions were first being made in US international settlement rates, the average revenue earned by US operators per minute of outgoing international traffic actually *grew*."[76]

Hence, the actual price charged by U.S. long-distance carriers for calls to Mexico began to deviate from the Cournot price in 1994 and began

76. Pekka Tarjanne, How Would We Recognize a Competitive Telecommunications Market if We Saw One?, Address at the American Enterprise Institute 7 (1998), *at* http://www.itu.int/ITU-D/ict/papers/competition/aei_r1.pdf.

to move in the direction of the monopoly price by 2001. Put differently, for the years following the WTO's 1997 agreement on telecommunications services, the U.S. long-distance companies set prices on calls from the United States to Mexico at a level that exceeded the predicted level by the Cournot model of non-cooperative oligopoly pricing. The U.S. government failed in its stated goals of protecting U.S. consumers of international telecommunications to Mexico, and yet the United States argued that the problem was the international settlement rate. The WTO complaint process does not exist to permit a signatory nation to mask its own failure to protect its own consumers from the pricing behavior of its own domestic carriers.

V. DID TELMEX HAVE MARKET POWER IN POINT-TO-POINT INTERNATIONAL TELECOMMUNICATIONS SERVICES BETWEEN THE UNITED STATES AND MEXICO?

On economic grounds, the U.S. government's and the WTO's market definition—the termination of international circuit-switched calls from the United States into Mexico—was incorrectly narrow in scope. The proper market definition is point-to-point long-distance services between the United States and Mexico. But even if one uses the U.S. government's incorrect market definition, it is still doubtful that Telmex had market power.

A. *Point-to-Point International Telecommunications Services as the Relevant Product Market*

The U.S. government's allegation that Telmex possessed and exercised market power could not be evaluated without identifying the proper definition of both product and geographic markets. The key to the proper market definition is to recognize that a southbound call is a substitute for a northbound call.

1. The Relevant Product and Geographic Market

Under the 1992 Merger Guidelines, used by the Antitrust Division of the United States Department of Justice (as well as the FCC) to define product markets, a set of services represents a distinct product market if a hypothetical unregulated monopoly provider of those services could profitably sustain a nontransitory, nontrivial price increase—that is, if the unregulated monopolist's profits after the price increase would exceed its profits before the price increase.[77] If the price increase would cause enough

77. DEPARTMENT OF JUSTICE AND FEDERAL TRADE COMMISSION, HORIZONTAL MERGER GUIDELINES 6, at § 1.11 (1992) (revised 1997), *available at* http://www.usdoj.gov/atr/public/guidelines/hmg.htm (defining the relevant product market as "a product or group of

buyers to shift their purchases to an alternative product to render the increase unprofitable, then that alternative product should be considered to be part of the relevant product market.

A closed user group ("CUG") is generally defined as a group where the members are as concerned about the price of receiving a call as the price of making a call, such as where a group of friends and family located in both the United States and Mexico have an interest in keeping call costs down in general. These CUGs exist both in the private context, where a group of friends and family does not want to impose high costs on other members, and in the business context, where a firm has a substantial interest in minimizing rates paid by calling parties who are clients or potential sources of business.

The consequence of CUGs is that international callers will consider the prices of *incoming* calls when choosing whether to make or receive calls. Because a Telmex customer in Mexico can receive calls for free, international calls made from the United States to Mexico act as a constraint on Telmex's negotiation of the international settlement rate and its pricing of northbound international long-distance service. This form of substitution within a CUG is well recognized in both the economic literature and regulatory practice.[78] A consumer in Mexico can substitute receiving an inbound international call for making an outbound international call, provided that he has an economical way to indicate his desire to have a telephone conversation with a party in the United States.[79] Reversing a call from Mexico to the United States will result in the Mexican carrier losing the revenue for the outgoing call, but gaining the international settlement rate. Even if a Mexican consumer elects to call an individual in the United States and arrange to have that individual call him back, the pricing of calls from the United States to Mexico will discipline Telmex's ability to raise its price.

In particular, a Mexican consumer will request a callback from the United States if the savings from the callback (equal to the per-minute difference between the northbound and southbound long-distance rates, multiplied by the duration of the call) exceeds the cost of alerting the party

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products such that a hypothetical profit-maximizing firm that was the only present and future seller of those products ['monopolist'] likely would impose at least a 'small but significant and nontransitory' increase in price") [hereinafter HORIZONTAL MERGER GUIDELINES].

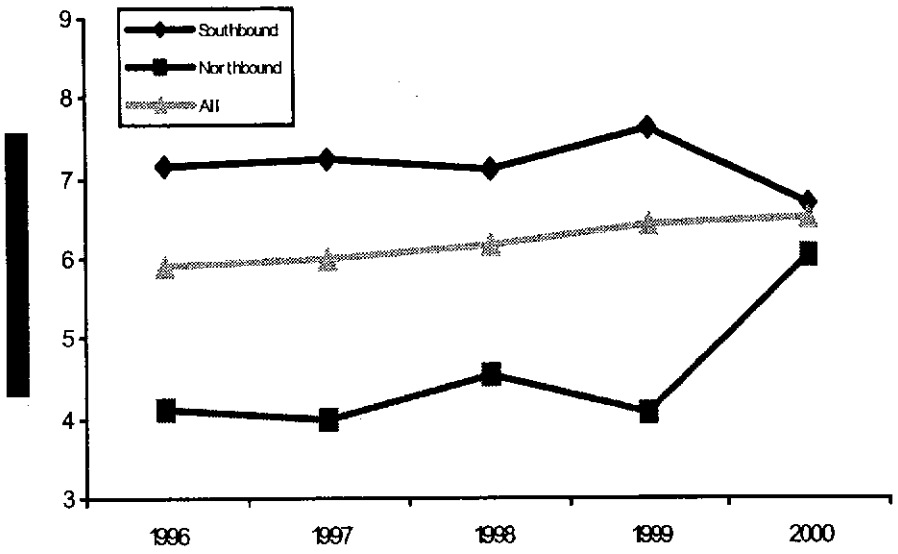
78. *See, e.g.*, Jerry Hausman, *Mobile Telephone*, *in* 1 HANDBOOK OF TELECOMMUNICATIONS ECONOMICS: STRUCTURE, REGULATION AND COMPETITION 563, 566 (Martin E. Cave, et al. eds., 2002) (discussing a "calling party pays" framework).

79. This alternative is contingent on the consent of the receiving party in the United States, because the receiving party has to pay the charge for the call under this alternative.

in the United States of the Mexican consumer's interest to engage in conversation. Consequently, for closed user groups making calls of sufficient duration for the per-minute cost savings to exceed the alert cost, southbound calls carried by AT&T, Sprint, and WorldCom are perfect substitutes for northbound calls carried by Telmex.

The substitutability of southbound calls for northbound calls has been demonstrated by the rising trend in the length of northbound calls versus southbound calls as the price of northbound calls has fallen relative to the price of southbound calls, as demonstrated by Figure 2.

FIGURE 2
MARKUP EARNED BY U.S. LONG-DISTANCE CARRIERS PROVIDING INTERNATIONAL SERVICE TO MEXICO



Source: Linda Blake & Jim Lande, FCC COMMON CARRIER BUREAU, *International Telecommunications Data*, (1996–2000), *available at* http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/intl.html.

As Figure 2 shows, the average duration of a southbound call from the United States to Mexico fell from 7.7 minutes to 6.7 minutes between 1999 and 2000.[80] At the same time, the average duration of a northbound call from Mexico to the United States rose from 4.1 minutes to 6.1 minutes.[81] Thus, in one year, the ratio of the northbound to southbound call durations rose from .53 to .91, which is near parity.

The relevant geographic market is point-to-point. At its most fundamental level, a long-distance connection "involves a customer making a connection from one specific location to another specific location."[82] As

80. *FCC 1999 International Data*, *supra* note 70, at Table A.1; LINDA BLAKE & JIM LANDE, FCC COMMON CARRIER BUREAU, *2000 International Telecommunications Data* Table A.1 (Dec. 2001), *available at* http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/Intl/4361-00.pdf [hereinafter *FCC 2000 International Data*].

81. *FCC 1999 International Data supra* note 70, at Table A.1; *FCC 2000 International Data*, *supra* note 80, at Table A.1.

82. Regulatory Treatment of LEC Provision of Interexchange Services Originating in the LEC's Local Exchange Area, *Second Report and Order*, 12 F.C.C.R. 15,756, para. 64 (1997) [hereinafter *BOC Classification Order*].

the FCC has observed, customers "do not view interexchange calls originating in different locations to be close substitutes for each other."[83] In this respect, the relevant geographic market for international long-distance services between the United States and Mexico includes all possible routes that permit a connection from one particular location in the United States (Mexico) to another location in Mexico (the United States)—that is, a point-to-point market.[84] Refile and reorganization are not necessary to consider because there is no third country through which calls on the United States-Mexico routes could be more cheaply completed.

2. Telmex's Incentive to Eliminate Double-Marginalization on Southbound Calls and the Resulting Incentive to Lower Its Price of Northbound Calls

Because of the double-marginalization effect described earlier, Telmex has a strong incentive to moderate its prices on the northbound calls to the United States. The reasoning is as follows: the lower the price that Telmex charges for a northbound call to the United States, the more that call becomes a substitute in a closed-user group for a southbound call from the United States to Mexico. Every southbound call is terminated by Telmex (unless it is illegally terminated through bypass). In other words, termination by Telmex in Mexico is a complementary input to the carriage of a call by a U.S. long-distance carrier across the border.

As noted earlier, however, the southbound route is imperfectly competitive, if not tacitly or explicitly collusive. Consequently, the big three U.S. long-distance carriers have an incentive to set a retail margin in addition to the margin inherent in the international settlement rate that Mexico and the United States have negotiated. Telmex, however, has the incentive to force the U.S. long-distance carriers to reduce their retail prices on the southbound route so that consumers in the United States demand more minutes of use, which Telmex will then terminate at the international settlement rate. The means by which Telmex attempts to increase the derived demand for termination in Mexico is to make the retail rate for northbound calls to the United States more price competitive with the retail rate that the U.S. long-distance companies charge for southbound calls to Mexico.[85]

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83. *Id.*

84. *Id.*

85. Telmex's incentive to eliminate double-marginalization on the southbound route finds a close analogy in the economic analysis of United States telecommunications regulation. Under current regulatory policies in the United States, access and long-distance services are both sold at prices exceeding marginal (incremental) cost, so as to cover the large fixed costs of local and long-distance networks. Consequently, the academic literature

B. *Did Telmex Possess Market Power in the Relevant Product and Geographic Markets?*

It is doubtful that Telmex had the ability to raise the international settlement rate for the termination of long-distance calls that originate in the United States because it lacked market power in the relevant product market consisting of point-to-point combinations for international calls between the United States and Mexico. The international settlement rate, of course, has fallen steadily and substantially. So, in this context, market power may be considered the refusal to *drop* price in the face of competition and falling input prices.

1. Did Telmex Have Market Power in the Market for Northbound Point-to-Point Telecommunications Services?

Although a large market share does not necessarily indicate market power, a low market share usually indicates a lack of market power. Usually, a firm with a low market share cannot raise the price of a product by restricting its output.[86] United States courts almost never conclude that a firm possesses market power if its market share is less than 50 percent.[87]

Although Telmex's overall share of the international telecommunications services market exceeded 60 percent at the time of the WTO case, the swift *decline* in Telmex's share since 1997 implies that

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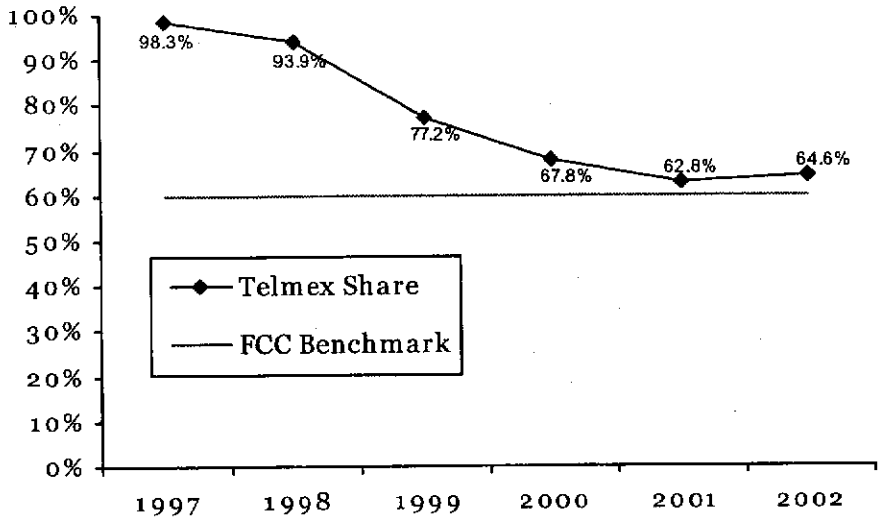
in the United States recognizes that a Bell Operating Company ("BOC") has a greater incentive to charge lower long-distance prices in the United States than does a U.S. Interexchange Carrier ("IXC") because the BOC's pricing decisions consider the additional margin earned on access service when long-distance sales are expanded by lower prices. Furthermore, when the BOC lowers the long-distance price, the IXCs will lower their prices, which will increase the number of long-distance minutes demanded and consequently the number of access minutes demanded from the BOCs. *See* DAVID E.M. SAPPINGTON & DENNIS L. WEISMAN, DESIGNING INCENTIVE REGULATION FOR THE TELECOMMUNICATIONS INDUSTRY 258-61, 267-71 (1996). *See also* David S. Sibley & Dennis L. Weisman, *The Competitive Incentives of Vertically Integrated Local Exchange Carriers: An Economic and Policy Analysis*, 17 J. POL'Y ANALYSIS & MGMT. 74 (1998); Dennis L. Weisman, *Regulation and the Vertically Integrated Firm: The Case of RBOC Entry into Interlata Long Distance*, 8 J. REG. ECON. 249 (1995).

86. *See, e.g.*, *BOC Classification Order*, *supra* note 82, at para. 83 (possessing the ability to raise prices by restricting one's own output "usually requires a large market share"). "[T]he fact that each BOC interLATA affiliate initially will have zero market share in the provision of in-region, interstate, domestic, interLATA services suggests that the affiliate will not initially be able to raise price by restricting its output." *Id.* at para. 96.

87. *See* Joseph Angland, et al., *Antitrust Law Developments*, 1 A.B.A. SEC. ANTITRUST L. 213-14 (4th ed. 1997) (summarizing case law). *See also* United States v. Aluminum Co. of America, 148 F.2d 416, 424 (2d Cir. 1945) ("it is doubtful whether sixty or sixty-four percent [market share] would be enough [to constitute a monopoly]; and certainly thirty-three percent is not"); William M. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 HARV. L. REV. 937, 952-68 (1981) (surveying case law).

Telmex lacked market power. Figure 3 shows the rate of decline in Telmex's share from January 1997 to January 2002.

FIGURE 3
TELMEX'S SHARE OF INTERNATIONAL LONG-DISTANCE REVENUE, JANUARY 1997-JANUARY 2002



Source: TELMEX, PARTICIPATION DE MERCADO DE LARGA DISTANCIA POR SERVICIO: TOTAL (on file with Authors).

As Figure 3 shows, Telmex's share of revenue from outbound international long-distance service decreased from 98.3 percent in January 1997 to 64.6 percent in January 2002. As a benchmark for comparison, when the FCC declared in 1995 that AT&T was non-dominant in "interstate, domestic, interexchange telecommunications services" in the United States, AT&T's market share was estimated to be 60 percent.[88] By that time, eleven years had passed since the U.S. government's breakup of the Bell System. Likewise, in 1996, AT&T's overall share of the international long-distance services market was estimated to be about 60 percent when the FCC declared AT&T to be non-dominant in those services.[89] On outbound routes to a number of countries, AT&T's market

88. Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier, *Order*, 11 F.C.C.R. 3271, 3307 para. 68 (1995) ("Although several parties argue that AT&T's overall market share of 60 percent is inconsistent with a finding that AT&T lacks market power, we disagree.") [hereinafter *AT&T Motion I*].

89. Motion of AT&T Corp. to be Declared Non-Dominant for International Service, *Order*, 11 F.C.C.R. 17,963, paras. 38-40 (1996).

share was significantly higher. AT&T's average market share (weighted by revenues) on routes to seventy-six select countries was 74 percent, and the carrier faced no competition whatsoever on routes to four countries.[90]

2. The Demand for Southbound Calls into Mexico Is Price Elastic, which Reduced the Likelihood that Telmex Could Have Exercised Market Power in the Determination of International Settlement Rates

The U.S. government asserted that Telmex had market power in the termination of long-distance calls that originate in the U.S. because the United States demand for southbound calls is not sensitive to changes in prices.[91] The available evidence on the relationship between the volume of U.S. southbound traffic and southbound long-distance prices (as opposed to international settlement rates) appears to contradict that assertion. Table 3 shows the degree to which demand for southbound traffic has fluctuated in response to changes in the price of southbound calls from 1996 through 2000.

TABLE 3
OWN-PRICE ELASTICITY OF DEMAND FOR SOUTHBOUND CALLS INTO MEXICO, 1996-2000

Year	Quantity of Minutes (thousands)	Percentage Increase in Quantity of Minutes (*A*)	Long-Distance Price ($ per minute)	Percentage Decrease in Long-Distance Prices (*B*)	Own-Price Elasticity of Demand (*A* / *B*)
1996	2,380,007		$0.827		
1997	2,786,488	17.0 %	$0.732	-11.5 %	-1.48
1998	3,020,570	8.4 %	$0.641	-12.4 %	-0.68
1999	4,053,381	34.2 %	$0.525	-18.1 %	-1.89
2000	6,801,152	67.8 %	$0.462	-12.0 %	-5.65
Average					-2.42

Source: Linda Blake & Jim Lande, FCC COMMON CARRIER BUREAU, *International Telecommunications Data*, (1996–2000), *available at* http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/intl.html.

Note: Prices are in constant 2001USD.

As Table 3 shows, assuming that a price decrease is the only factor that influences the demand for southbound service, the average own-price elasticity of demand from 1997 through 2000 was 2.42 in absolute terms,

90. *Id.*

91. United States Government Written Submission, *supra* note 1, attachment A para. 6 (suggesting "that demand for additional minutes to Mexico from the United States in response to settlement reductions has also been somewhat inelastic").

which is considered highly elastic.[92] If half of the growth in southbound traffic was attributable to other factors, such as growth in income or growth in population, then the elasticity estimate would be 1.21 in absolute terms. Even this own-price elasticity of demand (greater than one in absolute terms) implies that Telmex could not raise termination rates (an input to the end-user's price of service) excessively without losing a substantial amount of southbound calls.

To generate a smaller estimate of the own-price elasticity of demand to support its case, the U.S. government relied on a specious economic methodology. It related the change in southbound traffic to the change in *international settlement rates*:

> During the longer period from 1998 through 2001, when the settlement rate between the United States and Mexico fell from 37 cents to 15.5 cents per minute, a decrease of 58.1%, overall incoming minutes received by Mexican carriers increased 71%. Adjusting this volume increase for the increase in volume of minutes that likely would have taken place over this period in any case due to extraneous economic factors, based on evidence of the annual growth in United States-Mexico traffic of 8.4% from 1997-1998 when there was no decrease in the settlement rate, the total price-related change in volume over this period can be estimated at 46.5%, yielding an elasticity of 0.8.[93]

The U.S. government attributed 100 percent of the growth in southbound traffic in 1998 to non-price-related factors because the international settlement rate did not change that year.[94] Although the international settlement rate did not change, the price paid by consumers in the United States certainly did change: Table 3 shows that southbound long-distance prices decreased by 12.4 percent in 1998. If the U.S. government had attributed a lower (and more reasonable) percentage of the growth in southbound traffic to non-price-related factors, then it would have derived a much higher estimate of the own-price elasticity of demand for southbound traffic. Because of this error in analysis, the U.S. government's estimate of the own-price elasticity of demand on the southbound route was false.

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92. *See, e.g.*, DAVID M. KREPS, A COURSE IN MICROECONOMIC THEORY 300 (1990).

93. United States Government Written Submission, *supra* note 1, attachment A para. 6 (citations omitted).

94. *Id.* In the U.S. government's model, there are only two variables that can explain a change in the volume of southbound traffic: the international settlement rate and extraneous economic factors. Because the international settlement rate did not change, the U.S. government incorrectly infers that the change in southbound traffic was due entirely to exogenous factors. In fact, the change was likely due to the real price for service faced by U.S. customers as reflected in the international rate charged by U.S. long distance carriers. *Id.*

3. The Supply of Northbound International Telecommunications Services by Rival Networks Is also Price Elastic, which Implies that Telmex Could Not Have Imposed Excessive Access Charges

The price elasticity of supply for northbound international calls is an important determinant of whether Telmex has the ability to exercise market power in the relevant product and geographic markets. The FCC assesses supply elasticity based on two main factors: (1) the capacity of existing competitors to expand supply and (2) low entry barriers for new suppliers.[95] The FCC's telecommunications regulations obviously do not bind Mexico. But even if one adopts the approach used in the United States to measure supply elasticity with respect to telecommunications carriers, one must conclude that the supply of northbound international telecommunications services is price-elastic.

Telmex's competitors could absorb immediately, and without additional investment, significant numbers of Telmex's long-distance customers. As Table 4 shows, there are numerous providers of competitive long-distance services throughout Telmex's region of coverage. In 2002, over 98 percent of consumers in Telmex regions lived in cities or towns with at least one alternative long-distance carrier.[96] Over 75 percent of consumers in Telmex regions lived in cities or towns served by five or more long-distance competitors.[97]

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95. *AT&T Motion I*, *supra* note 88, at para. 57 (stating that the greater the capacity of existing competitors to expand supply and the lower the barriers to entry, the more elastic the supply can be judged to be).

96. Telmex: Competitive Environment Analysis (on file with authors) [hereinafter Competitive Environment Analysis]. *See* THE WORLD GAZETTEER, MEXICO 2004, *available at* http://www.world-gazetteer.com/fr/fr_mx.htm (last visited November 28, 2004) [hereinafter WORLD GAZETTEER].

97. Competitive Environment Analysis. *See* WORLD GAZETTEER.

TABLE 4
COMPETING LONG-DISTANCE CARRIERS IN TELMEX REGIONS, 2002

Number of Facilities-Based Competitors	Cities Served by *X* Competitors	Population Living in Areas Served by *X* Competitors (in thousands)	Percentage of Customers with Access to at Least *X* Competitors.
9	2	9,997	24.4 %
8	4	4,404	35.2 %
7	10	5,167	47.9 %
6	17	6,331	63.4 %
5	20	5,597	77.1 %
4	16	2,522	83.2 %
3	17	1,405	86.7 %
2	36	1,632	90.7 %
1	47	2,999	98.0 %
0	29	805	100.0 %

Source: Telmex: Competitive Environment Analysis (on file with authors); THE WORLD GAZETTEER, MEXICO 2004, *available at* http://www.world-gazetteer.com/fr/fr_mx.htm (last visited October 14, 2004).

Note: Population data were not available for five of the cities served by one competitor and seven of the cities served only by Telmex. The total population for these two rows is obtained by applying the average population of cities for which population data were available in each of these two rows to the cities for which data were unavailable. The resulting population likely overstates the true amount somewhat because it is probable that population data were unavailable because the cities were especially small.

As Table 4 shows, the presence of so many facilities-based long-distance competitors, and the ability of those competitors to interconnect to Telmex's network, indicates that they could absorb most of Telmex's current long-distance subscribers without additional dedicated or shared (downstream) investment.

Of course, the WTO did not need to rely on cost estimates to be able to conclude that upstart long-distance providers could readily thwart Telmex's exercise of market power. The rapid rate at which these long-distance providers entered the market and gained market share speaks for itself. Between January 1997 and January 2002, the long-distance market share of Telmex fell by more than 30 percent.[98] Beyond the importance of

98. Comisión Federal De Telecommuniciaciones, Communications Sector Program 2001–2006 4, *at* http://www.cft.gob.mx/html/presidencia/communicationsectorprogram.pdf (stating "Specifically, the companies authorized to provide international long distance services have captured around 30 percent of the traffic"). Cofetel notes, by way of comparison, that it took eight years for international long-distance competitors in the United States to achieve the same market share that competitors in Mexico achieved in only five years. *Id.*

their then-current market share, however, was the fact that these competitors stood ready to provide service to Telmex's customers in nearly every region of Mexico should Telmex attempt to exercise market power.

4. Telmex Did Not Enjoy Any Significant Advantage with Respect to Cost Structure, Size, or Resources

The U.S. government argued that Telmex had substantial advantages over its competitors with respect to international services:

> Telmex has consistently retained most of the market for international services originating within Mexico as a result of various competitive advantages, including its vertical integration with its ubiquitous and irreplaceable local network and inter-city facilities to parts of Mexico without equal access, its ability to discriminate against competitors in providing leased lines and interconnection within Mexico, and its control of the largest share of the capacity available to provide international services of any Mexican carrier. Telmex's market power generally, and specifically in international services, is also evidenced by its ability to set prices to consumers for origination of international traffic well above what other Mexican carriers charge or what United States carriers charge for identical traffic in the opposite direction, by the relative inelasticity of demand for both originating and terminating international services in Mexico, and by Telmex's consistently high profitability.[99]

This argument misrepresented a number of key facts and was not persuasive on economic grounds. For example, the U.S. government implied that Telmex set prices for outbound international calls that were "well above what other Mexican carriers charge," despite the fact that many of Telmex's competitors had complained that Telmex's international long-distance prices are too low.[100]

Each factor cited by the U.S. government as "evidence" that Telmex enjoyed "various competitive advantages" over rivals was either irrelevant or misleading. First, the United States attempted to posit Telmex's vertical integration as a competitive advantage, but ignored the fact that the Mexican affiliates of the U.S. long-distance carriers are also vertically integrated.[101] Second, the United States cited Telmex's "ubiquitous and

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99. United States Government Written Submission, *supra* note 1, at para. 98.

100. *Id.*

101. Indeed, at the time that the U.S. government filed its complaint with the WTO, AT&T and WorldCom were investors in two of Telmex's principal competitors. Although WorldCom subsequently declared bankruptcy after committing the largest fraud ever witnessed in the telecommunications industry, over the relevant time period WorldCom and AT&T did not lack resources or expertise relative to Telmex. *See generally* J. Gregory Sidak, *The Failure of Good Intentions: The WorldCom Fraud and the Collapse of American Telecommunications After Deregulation*, 20 YALE J. ON REG. 207 (2003) (discussing the

irreplaceable local network" as a competitive advantage, yet failed to mention that, for 92.5 percent of Telmex's lines, customers could presubscribe to the service of a competing long-distance carrier. Third, the United States pointed to Telmex's "inter-city facilities to parts of Mexico without equal access," but did not explain that these "parts" comprised only 7.5 percent of Telmex's lines. Fourth, the United States claimed that Telmex had the ability to "discriminate against competitors in providing leased lines and interconnection within Mexico," even though there was no evidence that Telmex had such ability.

Finally, the very phenomenon to which the United States claimed Telmex's purported competitive advantages contributed was itself nonexistent. Although the United States government claimed that Telmex had "consistently retained most of the market for international services originating within Mexico," Telmex's share of international long-distance revenues had not been consistent at all. Indeed, as Figure 3 demonstrates, Telmex had lost over a third of the market for international long-distance between January 1997 and January 2002.

C. *Even If the Market Definition Had Been the Termination of Southbound Calls, Telmex Lacked Market Power*

The U.S. government did not undertake a standard antitrust analysis of the relevant product market. Instead, it defined the relevant product market as "termination of voice telephony, facsimile and circuit-switched data transmission services supplied on a cross-border basis from the United States into Mexico."[102] The U.S. government used the following reasoning to reach this narrow market definition:

> The Mexican competition authority, the Comisión Federal de Competencia ("CFC"), determined in 1998 and reaffirmed in 2001 that international long distance service is a relevant market for which there are "no close substitutes," and that such service is distinct from domestic local, access, long distance or carrier toll services. This determination was made for the purpose of identifying the broad categories of service in which Telmex would be subject to regulation as a dominant carrier. Accordingly, the CFC's category of international services included several types of switched and non-switched telecommunications services, among which, significantly, were international port services for switching and routing of both originating and terminating international traffic. The CFC's analysis clearly applied to termination of cross-border traffic, as the CFC recognized that the international ports "permit the accounting of international traffic and compliance with the proportional return scheme set forth in

United States' attempt to deregulate telecommunications).

102. United States Government Written Submission, *supra* note 1, at para. 81.

> the regulations," that is, Mexico's requirements for termination of international traffic, as discussed below. The CFC also recognized that each international route between Mexico and another country, such as the United States, "constitutes a geographic market."[103]

This reasoning is unsound on economic grounds and does not support the conclusion that Telmex could exercise market power. The U.S. government also did not provide a compelling justification for the exclusion of packet-switched telecommunications services from the relevant product market. Packet-switched telecommunications services are an effective substitute to services that use Mexico's circuit-switched network. Furthermore, the importance of packet-switched telecommunications will only increase as data communications services become more popular.

1. The Critical Share of Marginal Customers Needed to Render an Exercise of Market Power by Telmex Unprofitable Would Be Small

Telmex was the sole carrier authorized to negotiate with the U.S. carriers over the international settlement rate for all telecommunications traffic from the United States that was legally terminated in Mexico.[104] However, Telmex had no ability to negotiate over the rate for traffic that U.S. carriers terminated illegally in Mexico by bypassing interconnection with an authorized gateway at the Mexican border. For example, the U.S. carrier could simply use a short microwave link to send a call across the border to an unauthorized gateway, which would then make the call appear to originate in Mexico. To the extent that this simple bypass occurred, it strengthened the negotiating position of the U.S. long-distance carriers relative to their counterparts in Mexico, and it prevented Telmex from setting an international settlement rate that approached a monopoly price.

It is likely that termination of southbound calls from the United States onto wireless networks and onto rival wireline networks through bypass methods constrained the pricing of terminating access onto Telmex's wireline network. From an antitrust perspective, the relevant question should have been: Could a hypothetical, unregulated monopoly supplier of the service in question (in this case, terminating access onto Telmex's wireline network) profitably sustain a 5 percent price increase for a

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103. *Id.* at para. 75 (quoting Comisión Federal de Competencia, Teléfonos de Mexico, Declaratoria de Poder Sustancial en Diversos Mercados Relacionados con la Telefonía (Statement of Substantial Power in Different Telephone Markets), File No. AD-41-97, at 18-19 (24-26 in Spanish original) (May 21, 2001)).

104. United States Government Written Submission, *supra* note 1, at para. 241.

substantial time period, usually assumed to be two years?[105] To answer this standard question in antitrust cases, one conducts "critical share" analysis.[106]

If Telmex were to raise its prices for terminating access of southbound calls, some U.S. carriers would substitute away from terminating their calls onto Telmex's wireline network (for example, through illegally bypassing the authorized points of international connection). Define the original price for terminating a call onto Telmex's wireline network as P_0, and the associated derived demand for terminating access onto Telmex's wireline network (measured in minutes) as Q_0. When the price of terminating access increases to P_1, the number of terminating minutes demanded falls to Q_1. Let c denote Telmex's marginal cost of providing terminating access. The decrease in the volume of calls due to the price increase is the difference between Q_0 and Q_1 which are the "marginal" minutes. The remaining minutes, Q_1, are the "inframarginal" minutes.

Telmex would raise its price for termination onto its wireline network by 5 percent if the profits after the price increase would exceed the profits before the price increase. The profitability of a 5 percent price increase depends on the firm's own-price elasticity of demand. That comparison of profits can be expressed algebraically as the following:

[1] $(1.05\,P_0 - c)\,Q_1 > (P_0 - c)\,Q_0$.

The (own-price) elasticity of derived demand for termination onto Telmex's wireline network is the percent decrease in terminating minutes for every 1 percent increase in Telmex's price for terminating access. A constant elasticity demand curve implies:

[2] $Q_1 / Q_0 = (P_1 / P_0)$.

Substituting this definition of elasticity into equation 2 and canceling terms yields:

[3] $(1.05\,P_0 - c)\,(P_1 / P_0) > (P_0 - c)$.

Dividing both sides by the new margin per minute and taking logarithms yields:

[4] $\log [1.05] > \log[P_0 - c] - \log[1.05\,P_0 - c]$.

Equation 4 can be used to determine whether Telmex could raise the price of terminating access and increase its profits. In other words, Equation 4 indicates the own-price elasticity of demand for Telmex that

105. HORIZONTAL MERGER GUIDELINES, *supra* note 77, at 1-2, § 0.1.

106. See Jerry A. Hausman & J. Gregory Sidak, A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks, 109 YALE L.J. 417, 477-79 (1999).

would be necessary to defeat a 5 percent price increase.

Consider a critical-share analysis of traffic patterns in Zone 2 Mexican cities (approximately 200 medium-sized cities).[107] A similar analysis could be performed for Zone 1 and Zone 3 cities. Using an initial terminating price of 8.5 cents per minute and a marginal cost of 3 cents per minute,[108] the critical level of elasticity for the price increase to be profitable is –1.5. If the own-price elasticity of demand for terminating access onto Telmex's wireline network is less than –1.5 (that is, if the own-price elasticity is greater than 1.5 in absolute terms), then Telmex could not profitably raise the price of termination.

As explained earlier, the market own-price elasticity of demand for southbound services was between –1.2 and –2.4. Using Marshall's Laws of Derived Demand,[109] one can estimate that the elasticity of demand for terminating access onto Telmex's wireline network (the only input in the production of the final service to U.S. consumers) is also between –1.2 and –2.4. In particular, when an input represents 100 percent of the cost of supplying the final service, which is the case for terminating access and southbound long-distance service, the own-price elasticity of demand for the input equals the own-price elasticity of demand for the final service.[110] Hence, under conservative estimations of the elasticity of demand for terminating access onto Telmex's wireline network during the relevant time period, Telmex could not have raised its prices for terminating access, thereby increasing its profits. That is, Telmex lacked market power.

Another way to consider critical share is in terms of the critical level of lost output. Using Equation 2 and the above estimate of the own-price elasticity of derived demand for termination, if Telmex were to lose 7.2 percent of its terminating minutes from U.S. carriers, then Telmex would not be willing to raise its price by 5 percent. Telmex estimated that in 2001 black-market calls displaced up to 18 percent of its international revenue.[111] Because 18 percent of southbound traffic represents more than the critical share of 7.2 percent, Telmex could not have increased its profit by raising the price of terminating access. That is, during the relevant time period Telmex lacked market power in the termination of southbound traffic.

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107. United States Government Written Submission, *supra* note 1, at para. 130(b).

108. United States Government Written Submission, *supra* note 1, at para. 118.

109. For a discussion of Marshall's rules of derived demand, see P.R.G. LAYARD & A.A. WALTERS, MICROECONOMIC THEORY 259-62 (1978).

110. *Id.*

111. TELMEX, 2001 ANNUAL REPORT 17 (June 2002) (on file with the Securities and Exchange Commission), *available at* http://www.telmex.com/explorer/esto/pdfs/annual01.pdf.

2. Countervailing Market Power of U.S. Long-Distance Carriers in the Bilateral Negotiation of International Settlement Rates

The U.S. government argued that Telmex had been able to extract supracompetitive profits from the international settlement rates as a result of its superior negotiating position. Although Telmex was the sole negotiator on behalf of all Mexican firms, it could not impose supracompetitive rates on U.S. carriers because those carriers had substantial market power over the southbound U.S.-Mexico route. The market for calls from the United States into Mexico was highly concentrated. As Table 2 shows, the HHI[112] of market concentration between 1994 and 2000 was quite high—above 4,000 every year—and in 2000, the index increased by more than 2,000 to 6,215.

If Telmex had been negotiating international settlement rates with a number of small U.S. carriers, the U.S. government's contention might have been plausible. But it was not plausible that Telmex held a vastly superior position in negotiations over the international settlement rate. In 1999 and 2000, more than 90 percent of the market for southbound calls into Mexico was controlled by two U.S. carriers that had identical negotiation objectives vis-à-vis Telmex.

3. Telmex Offered Termination Access at a Price that Complied with the ITU's Target Rate and Was Substantially Below the Benchmark Settlement Rate that the FCC Established to Protect U.S. Long-Distance Carriers

Mexico's international settlement rates in 2002[113] were among the lowest 20 percent of all published settlement rates for the thirty-five countries in Mexico's teledensity group.[114] Teledensity is a measure of the number of telephone lines per 100 inhabitants. Mexico's teledensity group included the thirty-two countries that had between ten and twenty telephone lines per 100 inhabitants. Based on these data, Mexico's 2002 international settlement rates complied with the target international settlement rates set forward by the International Telecommunications Union ("ITU").[115] Telmex's international settlement rate was significantly

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112. *See, e.g.*, CARLTON & PERLOFF, *supra* note 60, at 247. By way of comparison for the HHI numbers for southbound international calls, the Merger Guidelines consider a post-merger HHI above 1,800 to be highly concentrated. HORIZONTAL MERGER GUIDELINES, *supra* note 77, at 16, § 1.51c.

113 IMTS ACCOUNTING RATES, *supra* note 70.

114. *See* INTERNATIONAL TELECOMMUNICATION UNION, WORLD TELECOMMUNICATION DEVELOPMENT REPORT 2002: REINVENTING TELECOMS (2002) at A8-11.

115. *Id.* In March 1999, the World Telecommunication Policy Forum ("WTPF") adopted

below the benchmark settlement rate that the FCC established to protect U.S. long-distance carriers (a maximum of 11.75 cents in Zone 3 cities versus the FCC benchmark rate of 19.0 cents).[116] Indeed, the difference between the actual settlement rate and the FCC Benchmark rate demonstrates the countervailing market power of the U.S. carriers in the rate-setting process.

4. The Absence of International Simple Resale Did Not Give Telmex Market Power in the Termination of Southbound Calls

The WTO panel rejected the argument that Mexico's policies toward non-facilities-based service providers violated that nation's various treaty commitments. The U.S. government had argued that the ILD Rules "prohibit alternative arrangements for the delivery and termination of international calls in Mexico, such as those available in many other countries for the origination and termination of international traffic over international private lines—also known as 'international simple resale' or 'ISR' services."[117] Contrary to that assertion, Telmex could not have exercised market power in the termination of southbound calls even if the Mexican government continued its policy of not mandating the unbundling of Telmex's long-distance capacity. There is not now, and there was not at the time of the WTO case, any barrier to entry into facilities-based provision of southbound long-distance service in Mexico. Indeed, at the time of the WTO case, the Mexican affiliates of AT&T and WorldCom—Alestra and Avantel—*already* operated their own fiber-optic long-distance facilities, on which U.S. carriers could lease capacity to transport their southbound calls from the United States. In other words, whether facilities-based entry was possible was not a hypothetical question. *It had already happened.* Any supposed barriers to the facilities-based entry were not so high that they could not be surmounted. The mandatory, rate-regulated ISR

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an opinion setting up a Focus Group to study transitional arrangements towards cost orientation for the period 1999-2001. The Focus Group created a report entitled Annex E to Recommendation D140, which contained target settlement rates. *See* INTERNATIONAL TELECOMMUNICATION UNION, CHARGING AND ACCOUNTING IN INTERNATIONAL TELECOMMUNICATIONS SERVICES: ITU-T RECOMMENDATION D.140, Annex E (1996), *at* http://www.itu.int/osg/spu/intset/itu-t/d140/d140_e_23621.html.

116. FCC, UNITED STATES IMTS NET SETTLEMENT PAYMENTS, 1985-2000 (April 9, 2002) *at* http://www.fcc.gov/ib/pd/pf/nsp.xls; IMTS ACCOUNTING RATES, *supra* note 70. For a complete description of Telmex's interconnection rates provided to U.S. suppliers, see WorldCom's Petition for Waiver of the International Settlements Policy for a Change in Accounting Rate for International Message Telephone Services with Telefonos de Mexico S.A. De C.V., *Public Notice*, attachment 1 (May 6, 2002), *at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-02-1251A1.txt.

117. United States Government Written Submission, *supra* note 1, at para. 8.

that the U.S. government asked the WTO to impose would have added nothing to the competitiveness of the market for international calling between Mexico and the United States, given that U.S. carriers already had alternative facilities with ample capacity available to them at competitive prices. Posing the question in these terms highlights the difference between the welfare of consumers and the welfare of competitors.[118]

So why did the U.S. government seek mandatory ISR? The most plausible economic answer is that mandatory ISR would enlarge the already high margins that U.S. long-distance carriers reaped on the southbound route. The regulated price for mandatory ISR could never exceed the arms-length market price for such capacity. That was certainly the United States' experience from the hundreds of arbitrations by which state public utilities commissions in 1996 and 1997 set wholesale discounts that incumbent local exchange carriers were required to offer to their competitors pursuant to the Telecommunications Act of 1996.[119] As the principal beneficiaries, AT&T, WorldCom, and Sprint were sophisticated participants in those hundreds of rate proceedings. The United States' experience suggested that strategic use of the WTO complaint process could override the Mexican regulatory process and produce a lower price for resale than the market price. A form of regulatory arbitrage would result. A U.S. carrier would divert traffic from its affiliated carrier in Mexico if the transfer price that the two carriers had struck by arms-length agreement exceeded the below-market price that the WTO compelled Telmex (through the Mexican government) to offer as a result of the imposition of mandatory ISR.

In light of the widening margins that U.S. long-distance carriers have earned on the southbound route, it could not even be said that the regulatory arbitrage resulting from mandatory, rate-regulated ISR would have subsidized U.S. consumers calling Mexico. Rather, U.S. carriers would have captured for themselves the lion's share of the difference between the market price and the regulated price for international wholesale capacity on Telmex's network. Nothing in the 1997 WTO Agreement or the 1996 Reference Paper remotely suggested that one signatory nation must compel its incumbent carrier to subsidize the operations of equally experienced carriers from another signatory nation. The U.S. government evidently thought otherwise.

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118. *See* Jerry A. Hausman & J. Gregory Sidak, *A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks*, 109 YALE L.J. 417 (1999).

119. *See* J. Gregory Sidak & Daniel F. Spulber, *The Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996*, 97 COLUM. L. REV. 1081, 1082-83 (1997).

VI. CONCLUSION

The WTO embraced most of the U.S. government's policy preferences. It is unlikely that consumers in the United States and Mexico are any better off than if Cofetel had been permitted to oversee Mexico's domestic regulatory reform. As the international settlement rate is lowered to LRAIC, Telmex will have less incentive on the margin to invest to upgrade and maintain its networks. To restore that incentive, Telmex will have to generate an offsetting amount of incremental net revenue from its other services in Mexico. Doing so will have the marginal effect of slowing growth in demand for those services. Perhaps the U.S. government believes that U.S. consumers benefit when Mexican consumers lose. That reasoning would be fallacious, however, because it ignores the network effects in telecommunications. U.S. consumers benefit from a more ubiquitous network in Mexico. Consequently, the U.S. government's success at the WTO will hurt its own consumers, contrary to stated U.S. policy. The sole beneficiaries of the U.S. policy appear to be U.S. long-distance carriers, which in all likelihood will widen their margins on calls from the U.S. to Mexico.

Mandatory international simple resale would have undermined Cofetel's efforts to spur facilities-based competition. A U.S. carrier that wants to establish a connection between the United States and Mexico has the choice of building its own facility in Mexico (through its Mexican affiliate) or interconnecting, either through paying access charges to a Mexican carrier or leasing a line from a Mexican carrier. Non-facilities-based competition has been a failure in the United States, largely because carriers that rely too heavily on an incumbent's facilities are incapable of offering distinct or innovative services, and can therefore only compete on price. The sole bright spot in the WTO decision was its rejection of mandatory ISR.

The policies advocated by the U.S. government before the WTO advanced the private interests of AT&T, Sprint, and WorldCom while depriving U.S. consumers of a more ubiquitous telecommunications network in North America. Those policies successfully overturned the informed judgments of an independent regulatory authority in Mexico that, consistent with principles of the WTO agreement and its associated Reference Paper, had based its decisions on expertise and detailed knowledge concerning the industry that it regulates.