foreclosed MVPD—in those DMAs where it is foreclosed—multiplied by the fraction of that MVPD's viewers who remain with the foreclosed MVPD and do not obtain the NBC programming over the air.[84] To convert this percentage reduction in viewers into a percentage reduction in revenue per remaining viewer, we multiply the percentage reduction in viewers by a "CPM adjustment factor" defined below.[85] Lastly, we multiply this estimated reduction in advertising revenue per viewer times the sum of the total number of viewers at all non-foreclosed MVPDs (including Comcast) and the viewers who stay with a foreclosed MVPD but obtain NBC programming over-the-air. The calculated reduction in the revenue received from these viewers is an additional cost of foreclosure.[86]

72. As with our other parameters, we use two possible values for the CPM adjustment factor. On the low end, we use the 0.39 factor derived from the academic literature. However, NBC advertising executives indicate that, with a substantial decline in NBC's distribution, particularly in major television markets, the overall effect on revenue could be at least {{ }}% greater than the decline in viewers.[87] In other words, a {{ }}% decline in the number of households viewing NBC could lead to a {{ }}% decline in revenue per viewer. We use this NBC estimate as an

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84 Recall that viewers who obtain NBC programming online—either through legitimate sites or via piracy—do not count toward the viewership totals used to determine television advertising prices.

85 We apply the same methodology for both local and national advertising revenues, with the only difference being that the effect on national advertising prices is based on the number of foreclosed households in those DMAs where foreclosure occurs divided by total national households, while the effect on local advertising rates is determined by the foreclosed MVPD's share of households within the particular DMA where foreclosure occurs.

86 We make a conservative, simplifying assumption: we do not apply the percentage reduction in advertising prices to the subscribers who switch away from the foreclosed MVPD and thus still watch NBC programming. That is, we assume these switchers generate the same advertising revenue as pre-foreclosure. This is conservative and it substantially simplifies the process of solving for the critical switching rate.

87 Edward Swindler, Executive Vice President and Chief Operating Officer, Advertising Sales, NBC Universal, January 31, 2010, interview.

alternative value of the CPM adjustment factor.[88]

V. ESTIMATED CRITICAL DEPARTURE RATES UNDER PERMANENT OR TEMPORARY FORECLOSURE

73. Consistent with the Commission's approach in the News Corp.-DirecTV matter, we examine both permanent and temporary foreclosure strategies. In each case, the model is used to estimate a range of critical departure rates, with the range determined by the different values for key model parameters, as presented above. These critical departure rates represent the departure rate from a rival MVPD that would be necessary for the joint venture to find it profitable to deny that MVPD consent to retransmit the signals: (a) from all NBC O&O broadcast stations, and (b) any one O&O broadcast station.[89] We also evaluate the possibility of NBCU's representing NBC's affiliates in retransmission consent bargaining and using that representation to implement a foreclosure strategy involving affiliate stations.

A. Permanent Foreclosure

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88 Note that even foreclosure in only a single DMA would have a large effect on NBC's local viewership, so it is reasonable to expect that these non-linear effects would arise for local advertising rates. Nationally, foreclosure in a single DMA will have only a small percentage effect on NBC's viewership, and our implementation of the Commission staff model correctly applies only a small reduction to national CPMs.

89 We consider (b) for completeness. It is our understanding that, in past negotiations with major MVPDs, NBC has always bargained over the retransmission rights for all of its O&O stations in that MVPD's geographic footprint as a package. (Henry Ahn, Executive Vice President, TV Networks Distribution, (NBC Universal Networks Distribution), January 29, 2010, interview.)

}} Given a set of parameter values, the model solves for the critical value of *d*, above which foreclosure would be profitable and below which it would not.[90]

75. For each permanent foreclosure scenario, Table 2 presents the range of critical departure rates generated by plugging all of the possible combinations of the reasonable parameter values discussed in Section IV above into the modified Commission staff model. Specifically, the range of critical departure rates for each scenario is calculated by plugging into the model both endpoints of the ranges of reasonable values for the following parameters: the percentage of rival MVPD subscribers who—in the event of foreclosure—would obtain NBC through alternative means without switching MVPDs, *a*; the churn rate, *c*; the size of retransmission fees, *Retrans*; the telco providers' market share; the percentage of rival MVPD subscribers under contract; the CPM adjustment factor; the percentage of new subscribers who select one, two, or three product packages; and the fiscal year on which NBC advertising revenues are based.

76. Because our understanding is that NBC has always negotiated retransmission consent with the major MVPDs jointly for all O&O stations, the first row of Table 2 reports the range of critical departure rates for the permanent foreclosure strategy when the form of the foreclosure is to deny access to all of the NBC O&O stations' signals.

77. For completeness, the remaining rows of Table 2 present separate ranges of critical departure rates for DMA-specific foreclosure strategies in each DMA where NBCU owns an

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90 The model conservatively assumes that all subscribers who switch to another MVPD in response to a foreclosure event will again switch to another MVPD if their new MVPD gets foreclosed. As a consequence of this assumption, the calculations are based on a scenario in which all switchers eventually subscribe to a cable MVPD (although not necessarily Comcast) in proportion to pre-foreclosure cable shares.

NBC broadcast station and Comcast owns a cable system. There are several reasons why these DMA-specific critical departure rates differ from the case of simultaneous denial of all NBC O&O stations' broadcast signals. First, MVPD shares (and thus diversion ratios) differ across markets. As noted above, for example, Comcast passes just {{ }}% of television households in the New York DMA.[91] This low share of homes passed indicates that, if Comcast attempted to foreclose rival MVPDs in the New York DMA, then most of the rivals' subscribers who were induced to switch would switch to another MVPD rather than to Comcast. For any given overall departure rate, this pattern of switching among MVPDs would make a foreclosure strategy less profitable in New York than in a city where Comcast could expect to receive a greater share of the switching consumers. Second, Comcast's margins and NBC's advertising revenue vary across markets. Foreclosure would be relatively more profitable in DMAs in which NBC advertising revenues per TV household are lower or Comcast's profit margins per subscriber are higher.[92, 93]

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91 *See* Table 1 above.

92 Note also that foreclosure on a DMA-by-DMA basis does not require Comcast to incur the costs of foreclosure in DMAs where it cannot benefit because it has no cable systems (this is the case in Los Angeles, San Diego, and Dallas-Ft. Worth).

93 It is important to note that low NBC advertising revenues in a given DMA may indicate that NBC is particularly weak in that DMA. Therefore, although the critical switching rates required to make foreclosure profitable will be relatively low in such DMAs, one might also reasonably expect the actual departure rates due to the loss of the NBC stations' signals to be particularly low in such DMAs.

Table 2
Critical Values from Permanent Foreclosure Analysis

Station(s)	Critical Values
All NBC O&Os	{{
Chicago	
Hartford & New Haven	
Miami-Ft. Lauderdale	
New York	
Philadelphia	
San Francisco-Oak-San Jose	
Washington, DC (Hagrstwn)	}}

B. Temporary Foreclosure

78. {{

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- *Temporary Foreclosure of AT&T:* Under this strategy, the joint venture denies retransmission consent to AT&T {{ }}, and then restores access one month later.[94] As a result, fraction *d* of AT&T's subscribers will wish to switch MVPD providers and all of them will be able to do so because we assume no subscribers are under long-term contracts with AT&T. The model solves for the critical value of *d,* above which foreclosure would be profitable and below which it would not.
- *Temporary Foreclosure of DBS Providers:* Under this strategy, {{

94 Because AT&T does not currently have a presence in some of the DMAs in which NBC has O&O broadcast stations, denying retransmission consent to AT&T affects only a subset of the O&O stations/DMAs.

}}[95] The model solves for the critical value of d, above which foreclosure would be profitable and below which it would not.

- *Temporary Foreclosure of Verizon:* Under this strategy, the joint venture denies retransmission consent to Verizon {{ }} and then restores access one month later.[96] In this case, although fraction d of the Verizon subscribers would like to switch to another MVPD due to the foreclosure, only those Verizon subscribers not under long-term contract (assumed to be 30% of all Verizon subscribers) or with contracts expiring during the foreclosure month (assumed to be 1/12 of those under contract) are able to depart. Stated differently, fraction d of the Verizon subscribers who are free to switch in the foreclosure month do so. The model solves for the critical value of d, above which foreclosure would be profitable and below which it would not.

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95 Given long-term contracts, only a fraction of the consumers who would ultimately depart a foreclosed MVPD do so in the first month. Hence, one could consider two-month or longer foreclosure periods. However, if foreclosure in the first month—when all those not under contract plus 1/12 of those under contract switch—is not profitable, then there is no reason to expect foreclosure for subsequent months—in which the same costs are borne but switching rates are lower (because all those subscribers not under long-term contracts have already left)—to be profitable.

96 Because Verizon does not currently have a presence in some of the DMAs in which NBC has O&O broadcast stations, denying retransmission consent to Verizon affects only a subset of the O&O stations/DMAs.

79. As Table 2 did for permanent foreclosure, Table 3 presents ranges of estimated critical departure rates associated with temporary foreclosure strategies aimed at AT&T, the two DBS providers, and Verizon. Again, because NBC has always negotiated retransmission consent jointly for all O&O stations, the first row in each section reports the range of critical values of *d* when the form of the foreclosure is to deny access to all of the NBC O&O stations' signals simultaneously. For completeness, the remaining rows present the ranges for the estimated critical departure rates associated with DMA-by-DMA foreclosure strategies. Observe that, because AT&T, Comcast, and Verizon each lack a presence in some of the DMAs in which NBC has O&O broadcast stations, not all possible combinations arise.

Table 3
Critical Values from Temporary Foreclosure Analysis

MVPD	Station(s)	Critical Values
AT&T	All NBC O&Os	{{
	Chicago	
	Hartford & New Haven	
	Miami-Ft. Lauderdale	
	New York	
	San Francisco-Oak-San Jose	
DBS	All NBC O&Os	
	Chicago	
	Hartford & New Haven	
	Miami-Ft. Lauderdale	
	New York	
	Philadelphia	
	San Francisco-Oak-San Jose	
	Washington, DC (Hagrstwn)	
Verizon	All NBC O&Os	
	New York	
	Philadelphia	
	Washington, DC (Hagrstwn)	}}

80. In Section VII.A, below, we compare these critical departure rates values to estimates of actual departure rates during previous incidents in which an MVPD has been denied access to a single broadcast network. Using these comparisons, we show that the data to which we have access provide no support for the proposition that actual departure rates are as high as the critical departure rates for temporary foreclosure, indicating that temporary foreclosure is unlikely to be profitable.

C. NBCU Representation of Affiliates in Retransmission Consent Negotiations

81. Although NBCU has not represented non-O&O stations in the last several rounds of retransmission consent negotiations, for completeness (and following the Commission staff's approach in the News Corp./DirecTV matter) we consider the possibility that NBCU will do so in the future.[97] NBC's O&O stations are currently on a different contracting cycle from that used by NBC's affiliates. Hence, in the near term, the retransmission consent negotiations for O&O and affiliate stations would be conducted separately, even if NBCU had its affiliates' "proxies" in the negotiations.

82. In this scenario, it is difficult to see how Comcast would be able to discriminate among affiliates. NBCU would either have to include affiliates in areas in which Comcast does not have cable systems or would have to pursue the easily detectable strategy of withholding retransmission consent only for those stations serving DMAs in which Comcast operated a cable system. {{

[97] *News Corp.-Hughes Order,* Appendix D: Technical Appendix, ¶ 2.

}}[98] {{

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83. Using September 2009 Comcast data for homes passed and Media Business Corp. data for television households in the third quarter of 2009, one finds that Comcast passed {{ }} homes, while there were [[ ]] U.S. television households.[99] That is, Comcast passes only {{ }} percent of U.S. television households. In contrast, NBC reaches approximately [[ ]] percent of U.S. television households.[100] As such, a strategy of denying rival MVPDs access to NBC affiliates is unlikely to be profitable, as in much of the country the joint venture would be sacrificing NBC revenues and helping rival MVPDs with no corresponding benefit to Comcast. Note that this situation is quite different from that of the NewsCorp./DirecTV transaction, as DirecTV had access to nearly all U.S. households.

84. Table 4 presents the ranges of estimated critical departure rates for permanent and temporary foreclosure strategies based on withholding the full set of NBC affiliate stations. Note that all of these values are well above the corresponding figures for O&O stations. As such, there is no need to focus separate attention on a potential strategy to withhold access to affiliate stations; to the extent that it would be unprofitable to withhold retransmission rights for O&O stations, it is highly unlikely that it would be profitable to withhold retransmission rights

98 Henry Ahn, Executive Vice President TV Networks Distribution (NBC Universal Networks Distribution), February, 19, 2010, interview.

99 {{ }}; Media Business Corp., "Media Census: Video Subscribers by DMA," 3rd Quarter 2009 (3rd Party Attachment 1).

100 Calculated using data from the BIA Master Access Database (3rd Party Attachment 2).

for the affiliates.[101]

Table 4

Critical Values for Affiliate Foreclosure

Scenario	Critical Values
Permanent Foreclosure	{{
Temporary Foreclosure of AT&T	
Temporary Foreclosure of DBS	
Temporary Foreclosure of Verizon	}}

85. {{

}}[102] {{

}}, if Comcast/NBC were to remove successful O&O stations from this negotiation, in order to use them in one-off foreclosure strategies, then the affiliates would be less likely to give their proxies to NBC. This could potentially deter NBC from engaging in such one-off O&O negotiation. As shown above, the critical departure rates for joint foreclosure of all O&Os are quite high, so to the extent that the desire to attract affiliate proxies makes joint negotiation of retransmission consent for all O&O stations more likely to continue, it further lessens the potential for profitable foreclosure.

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101 To compute net advertising revenue for affiliates, we obtained 2008 data (the latest year available) on gross revenues for each affiliate station from the BIA Master Access Database (3rd Party Attachment 2). We then adjusted those revenue data by the ratio of the 2009 net advertising revenue for the NBC O&O stations (for which we have data directly from NBCU (NBCU Attachment 1)) to the gross revenues for those stations reported in BIA. To compute Comcast margins in Comcast markets where NBC does not have an O&O station, we apply the subscriber-weighted average Comcast margin across all Comcast regions not associated with a DMA in which NBC has an O&O station.

102 Henry Ahn, Executive Vice President TV Networks Distribution (NBC Universal Networks Distribution), February, 19, 2010, interview.

D. The Critical Departure Rates Estimated by Application of the Commission Staff Model Are Very Likely Too Low and Are Subject to Considerable Uncertainty

86. As noted above, there are several reasons why these estimated critical departure rates are very likely lower than the true critical departure rates, reinforcing the conclusion that the proposed transaction does not pose a significant risk of foreclosure in the broadcast television programming market. The present section discusses these reasons in greater detail.

87. First, although our implementation of the Commission staff model allows the churn after temporary foreclosure ends to be greater than average historical levels, we maintain the assumption that no more than {{ }}% of those consumers who switched MVPDs during the foreclosure period switch back when it ends. This assumption means that we maintain substantial asymmetry—subscribers who switch quickly in response to the loss of NBC at another MVPD switch-back only slowly in response to its restoration. Put differently, even though the subscribers who switch have demonstrated both that they are willing to switch and that, when NBC was available on all MVPDs, they preferred a non-Comcast MVPD, the model assumes that they switch back to their original MVPD only slowly after NBC is restored. A more symmetric model, which assumes that switch back rates, while still perhaps not equaling original switching rates, are higher (with, say, 50% or 75% switching back immediately after foreclosure) would generate substantially higher critical values, closer to those in the permanent foreclosure model.

88. Second, application of the model above does not reflect the applicants' voluntary commitment to accept key components of the Commission's program access rules, as applicable to retransmission consent negotiations. As a rational decision maker, the joint venture would have to account for the probability that attempted foreclosure would trigger a Commission

enforcement action, which would be costly to the firm.[103] Because they omit this regulatory cost, the calculations above overstate the profitability of attempted foreclosure and, thus, understate the true critical departure rates.[104]

89. In addition, the model does not account for the difficulty a broadcast network might face in attracting or retaining high-quality content if its audience declined substantially.[105] If NBC were permanently to lose distribution on a major MVPD (such as a DBS or large telco provider) in one DMA, this could hurt NBC's ability to attract the best local talent and content in that DMA. If NBC were permanently to lose distribution on a major MVPD in multiple large DMAs, this loss could hurt NBC's ability to attract the best content and talent for the national network and might hurt NBC's ability to compete for major sports broadcast rights, such as the NFL and the Olympics. Although temporary (*e.g.,* 1 month) disruptions would be less apt to have a major impact on the overall NBC content strategy and production capabilities, if these temporary disruptions happened repeatedly, they could affect NBC's reputation for providing stable access to a large audience and thus could have some of the same effects as permanent foreclosure.

90. A bottom-line takeaway is that one could easily use reasonable assumptions that would generate very high critical departure rates. Indeed, as long as GE maintains an ownership interest, the contractual provisions indicate that s is properly set to 0 (meaning the joint venture puts no weight on Comcast's MVPD profits), which implies that foreclosure is not profitable.

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103 Litigation costs alone could be in the millions of dollars, depending on a variety of factors including whether the dispute was settled at some point or went through a full trial before an administrative law judge.

104 Moreover, even if foreclosure were theoretically profitable, the program access rules would directly limit the joint venture's ability to engage in such a strategy.

105 Statements in this paragraph rely on Jeffrey Zucker, President and CEO, NBC Universal, February 1, 2010, interview.

Even considering a future time period when GE no longer has an ownership interest in NBCU, one could readily generate very high critical departure rates by making reasonable assumptions involving higher churn rates, large losses to NBC from reduced distribution, litigation risk, fewer new subscribers' taking multiple products, greater viewing of illegally pirated copies of NBC programming, and other factors. It would also be possible to manipulate the model to imply that foreclosure had a non-trivial probability of being profitable. But, given the range of critical values we have shown using reasonable assumptions and the strong reasons to believe even those assumptions are conservative, there would be little reason to put faith in such a conclusion. And, when viewed in terms of the bigger picture discussed in Section II above, the more reasonable and defensible conclusion is that foreclosure is highly unlikely.

VI. ESTIMATED ACTUAL DEPARTURE RATES UNDER TEMPORARY FORECLOSURE

91. In this section, we address the question of how many consumers would actually depart from rival MVPDs in response to the temporary loss of access to a single broadcast network. We do so by examining Comcast subscriber data. We first estimate the expected change in Comcast's penetration rates (the number of households subscribing to Comcast expressed as a percentage of all households passed by Comcast) due to the temporary absence of a single broadcast network at a rival MVPD. We then convert the expected change in Comcast's penetration rate into the estimated actual departure rate from the rival MVPD (*i.e.*, the fraction of the rival MVPD's subscribers who are expected to switch away from the MVPD due to the temporary absence of a single broadcast network). These estimated actual departure rates will then be compared with the estimated critical departure rates in Section VII below.

92. It is important to be clear at the outset that the empirical analysis reported in this section is not testing whether broadcast stations' retransmission rights are valuable to MVPDs and their subscribers. They clearly are. Rather, the analysis examines the specific question of whether a large number of consumers are likely to switch to Comcast Cable in response to specific types of events, such as the short-term loss of NBC's signal due to a retransmission dispute. There are several reasons why the question of how many consumers would switch to Comcast in response to a rival MVPD's loss of NBC retransmission rights is different from the question of whether those rights are valuable to rivals. Among the reasons are: (a) even though loss of retransmission rights may reduce an MVPD's revenues, the MVPD may adopt counterstrategies that allow it to retain its subscribers and (b) those consumers that do switch away from an MVPD that loses retransmission rights may switch to a video provider other than Comcast.

93. It is also important to note that, although all of the "events" we study involve the short-term absence of a single broadcast network on a given MVPD, the Fisher retransmission dispute lasted for approximately six months, considerably longer than the one-month temporary disruptions considered in deriving the critical departure rates for temporary foreclosure presented in Section V.B above. Hence, the limited switching in response to this longer-term event (demonstrated below) indicates not only that substantial switching is unlikely for the one-month events considered in the model but also that available evidence does not support a prediction of large switching rates even for longer-term retransmission disputes.

A. Empirical Approach

94. In the News Corp./DirecTV matter, Commission staff evaluated the magnitude of switching that occurred following a retransmission consent dispute between Time Warner and

the ABC O&O broadcast television station in Houston in 2000.[106] The Commission used "fixed effects estimation" to compare DirecTV's subscriber growth rates in zip codes within the Houston DMA that were affected by the retransmission consent dispute (that is, zip codes in which Time Warner was the cable operator) to DirecTV's subscriber growth rate in zip codes within the Houston DMA that were unaffected by the retransmission consent dispute.[107] The Commission found a statistically significant effect on DirecTV's subscriber growth rate in those zip codes in which Time Warner turned off the ABC broadcast signal.[108]

95. We use a similar approach to examine two types of events in which Comcast's rival MVPDs did not offer at least one broadcast network for a certain period of time. First, we examine retransmission consent disputes similar to the one evaluated by the Commission in the News Corp./DirecTV matter. Although the general lack of switching in response to such disputes is most directly on-point for our analysis, we supplement our examination of retransmission consent disputes with analysis of certain instances in which DirecTV and DISH Network introduced "local-into-local" service. Many of the instances of new local-into-local

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106 *News Corp.-Hughes Order,* Appendix D: Technical Appendix, ¶¶ 18-24. The ABC station was not available on Time Warner for a period of 39 hours. *See* Mike McDaniel, "Time Warner, Disney Reach Tentative Deal," *The Houston Chronicle,* May 19, 2000.

107 In particular, the Commission estimated DirecTV's subscriber growth rate as a function of a zip-code-specific effect, a time-specific effect, and a "dummy" variable indicating those zip codes and months in which the ABC signal was unavailable on Time Warner. (*News Corp. Order,* Appendix D: Technical Appendix, ¶ 20.) Many of the details of the model and results are redacted from the Appendix, so we do not offer comment on these results here, except to note that the event in question occurred in 2000, before the growth of telco MVPDs, the rise of online video, and other recent developments listed above. In addition, the event occurred approximately four months after the introduction of local-into-local service in Houston, meaning that the Commission's results may have confounded the effect of the retransmission dispute with the effect of new local-into-local service on DirecTV's shares, particularly if the uptake of DirecTV following the introduction of local-into-local service was not uniform across zip codes. *See* "DirecTV Commences Local Broadcast Network Channels Offering in Houston; Customers Receive Local Channels with Existing Receiver and 18-inch Satellite Dish," *Business Wire,* December 17, 1999; "DirecTV Adds Local Stations to its Local Broadcast Network Service in Dallas, Houston, and Seattle; DirecTV Now Delivering all Four Major Networks in Each Market," *Business Wire,* March 1, 2000.

108 *News Corp.-Hughes Order,* Appendix D: Technical Appendix, ¶ 21.

service involved DBS providers' switching from offering no local service in a particular DMA to offering local service comprising all or nearly all broadcast networks. The effects of such major changes are not directly relevant to the proposed transaction, which raises issues concerning the loss of access only to one broadcast network, NBC. Hence, we focus our attention on the most relevant question regarding local-into-local service—did the absence of a *single* major broadcast network from an otherwise complete rollout of local-into-local service significantly reduce a DBS provider's subscriber share? To this end, we study instances in which a DBS provider was temporarily forced, in a particular DMA, to provide a local-into-local package that lacked one of the broadcast networks (due to failure to come to terms with that network) but later successfully negotiated an agreement with the "holdout" network and began to offer a complete package. Although such instances are not precisely analogous to a situation in which an MVPD loses access to a broadcast network to which it previously had access, these instances still speak to the importance of access to a single broadcast network in determining consumers' MVPD choices.

B. Study of Retransmission Consent Disputes with DISH Network

96. We examine all four of the retransmission consent disputes since 2002 that we have been able to document in which a non-cable MVPD in Comcast's footprint (DISH Network in each case) lost access to one of the "big four" broadcast networks.[109] Three of the disputes were very short-lived and are grouped together in our analysis. The first such dispute occurred in June 2003, when DISH Network lost access to ABC stations for three days in three Comcast DMAs

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109 More details on each of the disputes are presented in Appendix I. There exist retransmission disputes that involved other cable operators. However, these disputes do not provide useful experiments because the territories of rival cable systems generally do not overlap with Comcast's footprint thus limiting any subscriber effects that could be observed in the Comcast data.

due to a dispute with Allbritton Communications.[110] The second dispute occurred in March 2004, when Viacom withdrew the signals of 15 CBS O&O stations (along with other Viacom cable networks including Comedy Central, MTV, MTV2, Nickelodeon, Nick Games and Sports (GAS), Noggin, VH1, VH1 Classic, MTV Espanol, and Black Entertainment Television) from DISH Network. The dispute lasted for approximately 46 hours and affected 12 Comcast DMAs.[111] The third dispute occurred in December 2008. Young Broadcasting, which owned ten ABC, NBC, and CBS affiliate stations, withdrew its signals from DISH Network for a period of three days, affecting four DMAs in which Comcast operated cable systems.[112]

97. A more recent dispute involved a longer-term disruption to DISH Network's service and, thus, is considered separately in our analysis. Fisher Broadcasting, which owned eight ABC, CBS, and Fox affiliates as well as two Univision affiliates, withdrew its stations' signals from DISH Network for approximately six months, from December 17, 2008, until June 10, 2009.

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110 John Eggerton, "Retrans Flap Fixed; EchoStar, Allbritton settle heated carriage fight," *Broadcasting & Cable,* June 9, 2003.

111 Although quite short-lived, this dispute occurred just before the start of the NCAA college basketball tournament, which was broadcast on CBS. Cable companies advertised heavily in an attempt to convince DISH Network subscribers to switch. *See* R. Thomas Umstead, "Kicking Dish in the Pants: MSOs Exploit EchoStar's Brief Loss of SpongeBob and Pals," *Multichannel News,* March 14, 2004, *available at* http://www.multichannel.com/article/59130-Kicking_Dish_In_The_Pants.php, *site visited* February 21, 2010; Michael Learmonth and Kenneth Li, "EchoStar/Dish Network Drops CBS Stations," *Reuters,* March 9, 2004, *available at* http://www.tvantenna.com/news/echostarcbs.html, *site visited* February 21, 2010.

112 *See* Linda Moss, "New Retrans Deal Led to Young's Return to Dish," *Multichannel News,* December 15, 2008, *available at* http://www.multichannel.com/article/160797-New_Retrans_Deal_Led_to_Young_s_Return_to_Dish.php, *site visited* February 21, 2010. Affiliation of Young stations obtained from BIA Master Access Database (3rd Party Attachment 2).

This disruption affected three Comcast DMAs in the Pacific Northwest.[113]

98. We examine the effect of these retransmission consent disputes using monthly data from Comcast on subscribers and homes passed, from which we compute Comcast's penetration rate.[114] Comcast data are provided by "entity" (a standard Comcast unit of geography), and we use a mapping provided by Comcast to aggregate entities into DMAs.[115] Our main variables of interest are "dummy" variables indicating the periods affected by the disruptions.[116]

99. Before turning to our formal econometric analysis of these events, it is useful to consider the following graph of Comcast's penetration rates around the time of the Fisher event—the event of greatest interest due to its long duration. In particular, Figure 3 shows Comcast's penetration rate (expressed as a difference relative to January 2008) in the affected DMAs versus a control region that was not affected by the dispute (described in more detail below). Two things stand out. {{

113 *See* Greg Lamm, "Dispute Unplugs Some KOMO Programs from Dish Service," *Puget Sound Business Journal*, January 9, 2009, *available at* http://seattle.bizjournals.com/seattle/stories/2009/01/12/story7.html, *site visited* February 21, 2010; Washington State Office of the Attorney General, "KOMO and KIMA Back on DISH Network," June 11, 2009, *available at* http://www.atg.wa.gov/BlogPost.aspx?id=22994, *site visited* February 21, 2010. Affiliation of Fisher stations obtained from BIA Master Access Database (3rd Party Attachment 2).

114 Because we focus analysis on Comcast's penetration rate among the households it passes, our results should not be affected by the fact that Comcast may not pass all homes in a given DMA.

115 {{ }} Note that DMAs are the key unit of geography for our analysis because the events we are studying took place at the DMA level.

116 We have also estimated the model at the entity level, with indicators for the periods of the disruption in entities that are within affected DMAs. All substantive results are confirmed.

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Figure 3

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Comcast Shares in DMAs Affected by Fisher Dispute vs. Control Region
Difference from January 2008

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100. To measure the effect of the service disruptions more formally, we use a simple, standard, fixed-effect ("differences-in-differences") regression framework. In particular, we estimate Comcast's DMA-level penetration rate as a function of DMA fixed-effects, year-month

fixed effects, and event indicators, which are "turned on" during the relevant months in the DMAs where the event occurred.[117] For the three short-lived events (Allbritton, Viacom, and Young), we limit analysis to those Comcast "regions" that contain at least one DMA affected by the event, defining a "control group" of unaffected DMAs in the same Comcast regions as the affected DMAs.[118, 119] As a result, the estimated event coefficients compare the change in Comcast's penetration rate (between the base period and the event months) in the affected DMAs to the change in the penetration rate over the same time period in the control DMAs. For the longer-lived Fisher event, there were no DMAs inside regions containing affected DMAs that were not themselves affected by the disruption. Consequently, for the Fisher event we use the DMAs in the closest, unaffected region—Comcast's Central California region, including the Fresno and Sacramento DMAs—as the unaffected control DMAs, against which the effect of the event in affected entities is measured.[120]

101. To focus our analysis on the effect of each event and minimize the role for confounding factors that may have changed differentially in different DMAs in the months before or after the

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117 We have also estimated versions in which the dependent variable is the monthly *change* in Comcast's share. All substantive results are confirmed.

118 Comcast provided a mapping from its entities to {{ }} regions. {{ }} By combining this mapping with the mapping from entities to DMAs, one can determine which DMAs are (at least partially) inside each region. To define the control set of DMAs, we identify those regions that include at least one affected DMA and use the portions of unaffected DMAs in those regions as the control group.

119 {{ }} (Dan Goodwin, Vice President, Financial Planning & Analysis, Comcast Cable, February 10, 2010, interview.)

120 We did not include the San Francisco Bay Area DMA in the controls because it was affected by the Young dispnte that occurred at roughly the same time (although for a much shorter duration) as the Fisher Dispute. However, we have also estimated results with the San Francisco Bay Area included as an additional control group. All substantive results are confirmed.

event, we define our time periods for the study of each event as follows:[121]

- We include a three-month period, two to four months before the event in question as a "base," unaffected period in each DMA, against which changes in later months can be measured.
- We include an indicator for the month prior to the disruption to capture effects that might have arisen if people anticipated the loss of service and switched MVPDs in advance of the loss.
- We include an indicator for the month(s) of the disruption to measure the effect of the event itself.
- We include an indicator for the three months following the disruption to capture any lingering effects.

102. Table 5 reports the parameter estimates, which show no evidence of any positive effect on Comcast's penetration rate resulting from the disruptions affecting DISH Network. The first column presents the results for the Fisher incident. Recall that this event lasted roughly six months, so it should provide an upper bound on the potential effect of one-month foreclosure and some indication of the likely switching for longer-term events. Nevertheless, {{

121 One could attempt to include DMA-specific trends or other controls to account for these confounding factors. However, the choice of which controls to include could have a large effect on results. Nevertheless, we have considered a set of models covering longer time periods than used in the models presented here (in particular, including more months before the event), controlling for linear or quadratic time trends as well as state unemployment rates, with no substantive change in our results.

}}[122]

103. The second column reports analogous results from a single regression on the combined short term events.[123] {{

}}

Table 5

	Fisher Event [a]	Short-Term Events [b]
Month Before Event	{{	
Month(s) of Event		
Three Months After Event		
Observations		}}

Notes:
Robust standard errors in parentheses
** p<0.01, * p<0.05
Share defined as subscribers / homes passed
Includes year-month-event and DMA fixed effects
[a] DISH subscribers lost access to stations in three Comcast DMAs in the Pacific Northwest for seven months in 2008-2009 due to a dispute with Fisher Communciations.
[b] Short-Term Events include the following disputes where DISH subscribers lost access to stations:
ABC stations in three Comcast DMAs for three days in 2003 due to a dispute with Allbritton Communications.
CBS stations in 12 Comcast DMAs for 46-hours in 2004 due to a dispute with Viacom.
Stations in four Comcast DMAs for three days in 2008 due to a dispute with Young Broadcasting.

122 {{

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123 That is, the separate observations for the study of each dispute are stacked together, with a single set of event effects estimated for all of the short-lived disputes. Note that the year-month fixed effects are defined as unique to each dispute.

104. Because these results are for changes only in Comcast's penetration rate (the relevant metric to demonstrate the lack of profitability of a foreclosure strategy) and because of the vast number of alternative econometric specifications that one could potentially estimate, we do not claim that these results prove that there were no departures from rival MVPDs during these events. Rather, we note that, to the extent that these retransmission disputes led to switching *away from DISH Network*, the magnitude of the switching *to Comcast* was so small as to be undetectable in Comcast's subscriber data, as seen both in the econometric results and in the graph of the Fisher event.

C. Effects of Local-into-Local Service

105. Another source of variation in the carriage of broadcast networks by MVPDs comes from the introduction of local-into-local service by DirecTV and DISH Network. In 1999, following enactment of the Satellite Home Viewer Improvement Act of 1999 (SHVIA), DBS providers began offering local broadcast signals. The SHVIA gave DBS providers the option of offering local channels, but did not require them to do so. If a DBS provider chose to provide local channels in a market, then the SHVIA required the provider to offer carriage to all broadcast stations. However, DBS providers were sometimes unable to come to terms with all broadcast stations in a particular DMA, in which case the providers introduced partial local-into-local service lacking one or more of the major broadcast networks.

106. In theory, the introduction of full local-into-local service allows one to determine the effects of a broadcast network station's carriage on MVPD subscribership. There are at least two reasons, however, why the resulting estimates of subscriber switching are very likely to be larger than the true amount of switching that would occur from temporary foreclosure of an NBC

broadcast station's retransmission rights. First, the simultaneous introduction of multiple new stations through local-into-local service was considered a "game changer" for satellite providers.[124] Second, the addition of the signals may have been perceived as a permanent change.[125]

107. Instead of examining the initial introduction of a "full" package of broadcast signals for new local-into-local service (including all four major broadcast network), we focus our analysis on those cases in which either DirecTV or DISH Network's initial local-into-local offering was "partial," in that it included all-but-one of the "big four" broadcast television networks, and the DBS provider later added the final network. Although still imperfect, this provides an analog to the question at hand. In particular, by comparing Comcast's penetration rate in the periods when the DBS provider offered only partial local-into-local service to Comcast's penetration rate after the DBS provider gained access to the signals of all the major broadcast networks' stations in a DMA, we can develop an estimate of how much higher Comcast's penetration rate is when the DBS provider lacks access to one network's broadcast station.

108. We were able to identify ten events since 2002 in which a DBS provider in Comcast's footprint offered local-into-local service that lacked a major broadcast network for some period

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124 *See* 2002 Video Competition Report, 17 FCC Rcd 26901, 26931-32 ¶ 61 (2002); Mary Bellotti, "KOIN holds out for better fee deal with satellite company," *The Business Journal*, November 24, 2000.

125 To put our analysis in perspective, we also examined the effects on Comcast's share due to the first introduction of local-into-local service in a DMA in cases in which a DBS provider received simultaneous access to the local affiliates of all four major broadcast networks. Using precisely the same methodology with which we find that Comcast's penetration rate is no higher when a DBS provider offers only partial, rather than full, local-into-local service, we find a statistically significant decline in Comcast's penetration rate of {{ }} when a DBS provider goes from offering no local-into-local service to offering complete service. The DMAs studied to reach this conclusion include those in Comcast's footprint for which we have reliable Comcast share data, and in which we can document via public sources that the DMA received its first local-into-local service after January 1, 2002 (to ensure that the time period is comparable to that used for our events involving partial local-into-local service): Augusta, GA; Grand Rapids, MI; Green Bay, WI; Hartford, CT; Lansing, MI; and Richmond, VA.

of time. In each case, we use an unaffected DMA in the same Comcast region as the affected DMA—or an appropriate, nearby DMA if there is no unaffected DMA in the same Comcast region as the affected DMA—as the control, against which the change in penetration rate in the affected DMA is measured.[126]

109. We have been able to verify four of the ten events through press releases or other news sources. These four events are the following:[127]

- DISH Network started carrying NBC in Tucson, AZ on February 19, 2003, after six months of carriage of the other three major broadcast networks. The El Paso, TX DMA, which experienced no change in local-into-local service during the relevant time period, serves as the control.
- DirecTV started carrying CBS in Portland, OR on June 24, 2002, after 22 months of carriage of the other three major broadcast networks. The Seattle, WA DMA, which

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126 We use the following rule to select a control DMA: Choose a control DMA in the same Comcast region as the affected DMA, provided that: (a) there are no discontinuities in Comcast's share data for the control DMA; (b) there are no changes in the local-into-local status of DBS providers taking place in the control DMA during the period under consideration (*e.g.*, DISH Network or DirecTV entering the market with one or more broadcast networks); and (c) we can confirm the carriage status for DISH Network and DirecTV during the period under consideration based on public information. If there are no candidate DMAs meeting these conditions in the same region as the affected DMA, then we look for other DMAs in neighboring Comcast regions that satisfy the same conditions. We have also estimated versions of the model using alternative control DMAs for the events. Details on the alternative control DMAs are contained in Appendix I. All substantive results are confirmed.

127 Additional details on these events are presented in Appendix I. Source for Tucson: DISH Network, Press Release, "DISH Network Satellite Television Adds NBC for Tucson Customers, Now Broadcasts All Four Major Local TV Channels," February 19, 2003, *available at* http://dish.client.shareholder.com/releasedetail.cfm?ReleaseID=243667, *site visited* February 22, 2010. Sources for Portland: "DIRECTV Begins Offering Local Broadcast Network Channels in Portland, Ore.; Customers to Receive Local Channels with Existing Receiver and 18-inch Satellite Dish," *Business Wire*, August 24, 2000; Eileen Davis Hudson, "Local Media," *Mediaweek*, June 24, 2002. Source for West Palm Beach: Bob Betcher, "Channel 12 Reaches Pact with DISH," *The Stuart News* (Stuart, FL), August 2, 2002. Source for Colorado Springs: DISH Network, Press Release, "DISH Network Satellite Television Now Broadcasts CBS and NBC for Colorado Springs Customers," February 19, 2003, *available at* http://dish.client.shareholder.com/releasedetail.cfm?ReleaseID=243662, *site visited* February 21, 2010.