

B. My Estimate of the Departure Rate Associated with the Elimination of an NBC Local Station from an MVPD's Lineup Is Consistent With Other Economic Analyses of the Impact from Direct Broadcast Satellite ("DBS") Providers Introducing or Losing Local Broadcast Stations

41. Previous economic analyses – one regarding DIRECTV's *addition* of local service; another regarding DISH Network's *loss* of network affiliates owned by Fisher Communications – provide evidence that loss of a broadcast signal can affect an MVPD's subscribership. This evidence is consistent with my estimate of the departure rate above.

1. The Impact on DIRECTV of Adding Local-into-Local

42. A 2007 report by Benjamin Klein, Andres Lerner, and Emmett Dacey ("Klein et al.") examined how much DIRECTV's subscribership historically increased after DIRECTV began offering LIL service in particular DMAs.²⁰ Klein et al.'s estimates imply that the number of DIRECTV subscribers would have been about {{

}}, relative to a situation where DIRECTV, like DISH Network and the cable systems in the DMA, did offer local stations. The implied {{ }} percent departure rate from eliminating *all* local network affiliates in a DMA is consistent with my estimate of an economically significant departure rate from elimination of an NBC affiliate, but does not correspond well with Israel and Katz' analysis and conclusions.

43. Klein et al.'s analysis uses monthly data on the number of DIRECTV subscribers, gross additions, and disconnects from January 2003 to March 2007.²¹ They use variation across DMAs in the timing of DIRECTV's and DISH's initial launch of LIL to estimate how DIRECTV's subscribership trends are affected by DIRECTV's launch of LIL.²² In many DMAs, DISH's launch of LIL preceded DIRECTV's launch, so there were periods when

²⁰ Klein, Benjamin; Lerner, Andres; and Dacey, Emmett, "*An Economic Analysis of DIRECTV Providing Local-Into-Local Service via Satellite in All 210 DMAs*," MB Docket No. 07-18 (Aug 23, 2007).

²¹ "Gross additions" equal the number of new subscribers. Klein et al., uses the average disconnect rate ("AVD"), which "equals disconnects minus reconnects divided by the average of each month's beginning and ending total residential subscribers" as their measure of disconnects. See, Klein et al. fn. 5.

²² Klein, et al. do not distinguish between situations where firms' initial launch included all four networks or fewer than four networks.

DIRECTV was the only major MVPD serving a DMA that did not offer local channels. By comparing DIRECTV's subscribership trends before and after it introduced LIL in the 52 DMAs in which DISH launched LIL more than six months prior to DIRECTV's launch,²³ Klein et al. estimate how subscriber additions and disconnects were affected by adding LIL, given other MVPDs' local channel offerings.

44. Klein et al. find that the average monthly gross addition rate is {{ }} percent in the 18 months before DIRECTV's LIL launch, {{ }} percent in the 12 months after DIRECTV's launch, and {{ }} percent during the 13-30 months after DIRECTV's launch of LIL.²⁴ Thus, {{

}}. Moreover, {{

}}. Klein et al. also find that the average monthly disconnect rate, which averaged {{ }} percent during the 18 months before DIRECTV's LIL launch, {{ }} percent during the 30 months after DIRECTV's launch.²⁵ Thus, DIRECTV experienced a net loss of subscribers during the months before launch, when it was the only MVPD not offering local channels in the DMA (the disconnect rate exceeded the gross addition rate), but experienced a net gain of subscribers in those DMAs after launching LIL (the gross addition rate exceeded the disconnect rate).

45. I use the Klein et al. figures to estimate the share of its subscribers that DIRECTV would lose after 30 months if it were the only MVPD that did not offer all local network affiliates in a DMA.²⁶ I use Klein et al.'s estimates that the monthly gross addition rate was {{ }} percent and the monthly disconnect rate was {{ }} percent in the 18 months before launch – I assume that these rates apply when DIRECTV is the only MVPD not offering local channels – and their

²³ This is more than half of the 91 DMAs in which DIRECTV launched LIL between January 2003 and March 2006. According to Klein et al., there were 23 DMAs in which DISH launched LIL less than six months prior to DIRECTV's LIL launch. See, Klein et al. fn 6.

²⁴ Klein et al. Exhibit 2 (c).

²⁵ Klein et al. Exhibit 2 (d).

²⁶ This analysis assumes that, had DIRECTV not added LIL, the pre-introduction addition and disconnect rates would have been unchanged.

estimate that these rates are {{ }} percent and {{ }} percent, respectively, during the 18 months beginning one year after DIRECTV started offering LIL service. These estimates imply that DIRECTV would have {{ }} if it were the only MVPD that did not offer all network affiliates in the DMA.²⁷

46. The relevant issue for understanding the impact on a competing MVPD of the proposed Comcast-NBC merger is how loss of a single network would affect that MVPD. If each network contributes proportionately to the gain (or loss) of subscribers, then a reasonable estimate of the effect of losing one of, but not all, the “Big Four” LIL network signals on DIRECTV would be 25 percent of the total {{ }} percent estimated impact for all network affiliates, or {{ }} percent. As such, I view the Klein et al. results – which use a very different methodology and evidence – as supporting my conclusion that departure rates associated with the elimination of NBC from an MVPD’s lineup are economically substantial and much greater than Israel and Katz claim.

2. The Impact on DISH of the Fisher Dispute

47. Analysis submitted in connection with this proceeding provides evidence that loss of a broadcast signal can have a substantial impact on an MVPD’s subscribership. A June 2010 report submitted by Vincent Kunz, Senior Marketing Manager for Reporting and Analytics for DISH Network, examined the impact of the loss of a single Big-Four network station in seven DMAs (as part of the “Fisher” dispute discussed in Israel and Katz’ report) on DISH’s subscriber levels in these DMAs, relative to a set of control DMAs.²⁸ This is similar to the approach adopted by Israel and Katz. Kunz found {{

²⁷ My understanding is that DIRECTV charged subscribers for LIL service during Klein, et al.’s sample period. Therefore, the departure rate implied by this evidence corresponds to both the elimination of this option to subscribers – the elimination of the service and the charge to subscribers who added LIL. See, Klein et al. ¶ 35.

²⁸ “Declaration of Vincent Kunz,” submitted on behalf of DISH Networks LLC, June 7, 2010.

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48. Kunz's analysis {{

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²⁹ In the remaining DMA, {{

³⁰ Kunz ¶ 17.

³¹ Kunz Exhibit E.

³² Kunz Exhibit E.

³³ Kunz Exhibit C.

}}. See, Kunz ¶ 6.

50. {{

}} These patterns are similar to those found by Klein et al., and differ from those assumed by Israel and Katz in their empirical analysis:

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C. Estimating the Effect of the Merger on Retransmission Fees

51. Equation (18) above illustrates that the effect of the proposed transaction on retransmission fees depends, among other things, on the diversion rate α . This parameter represents the share of customers that leaves an MVPD and switches to Comcast as a consequence of the MVPD's losing NBC from its lineup. In their analysis, Israel and Katz assume that, when an MVPD stops showing a broadcast station, its customers substitute to competitors in proportion to the competitors' shares. This would mean that, if Comcast competed with two other MVPDs in a geographic area, and the subscribership shares were 60, 20 and 20 percent, respectively, then 75 percent of the customers who substitute away from a competing MVPD when it loses a broadcast station would switch to Comcast ($= 60 / (20 + 60)$). I adopt this assumption below.

52. I assume that Comcast's average margin is $[[\quad]]$.³⁴ Assuming a $\{\{ \quad \}$ percent departure rate, equation (17) becomes

$$(19) \quad r_i^* - r^* = \{\{ \quad \} \} * \alpha$$

I use data on Comcast's share in the DMAs where it overlaps with NBCU's O&Os, and assume that MVPD₁ has a 10 percent share in each of these DMAs.³⁵ I find that the potential increase in retransmission fees would range from $\{\{ \quad \}$ in New York to $\{\{ \quad \}$ in Philadelphia.

³⁴ *Supra* note 19.

D. This Framework Can be Applied to Estimate the Impact on License Fees for National Cable Programming

53. My discussion in this report focuses on retransmission rates for NBC O&Os (which is also the focus of the Israel and Katz analysis). However, the framework that I present above also is useful in understanding the impact of the proposed merger on any individual network – or block of programming – controlled by the merging parties that, if not made available to one MVPD, would cause some of that MVPD's subscribers to move to other MVPDs. Popular national cable networks, including USA Network, Bravo or MSNBC, may be sufficiently important to potential subscribers that, if withheld, they would cause a portion of an MVPD's subscribers to move to a competing MVPD that offers that programming.

V. Israel and Katz Have Not Addressed the Primary Economic Impact of the Transaction on Competing MVPDs

54. I noted earlier that the question that Israel-Katz analyze – whether the likelihood of withholding increases because of the proposed transaction – is related to the question that I have addressed – how the proposed transaction will change the parties' relative bargaining positions and the retransmission rate. However, my analysis more directly addresses the question of the likely impact of the transaction on MVPDs that compete with Comcast, because it emphasizes the transaction's effect on prices (i.e., retransmission rates), which could be substantial even if the likelihood of foreclosure were to remain low and/or would not change substantially.

A. Changes in Retransmission Rates Are More Likely than Carriage Interruptions

55. Economics predicts that if the transaction has an impact, it largely should be through its effect on changes in retransmission rates, given the large gains from trade between the owner of NBC programming and MVPDs. The large gains from trade mean that the parties jointly stand to lose considerable value if they do not come to terms. This does not mean that the parties always will come to terms and engage in trade. If there is substantial uncertainty about the value

³⁵ Comcast shares as reported in Israel-Katz Report Table 1.

of the rights being licensed (for example due to large market shifts), or the parties have very different views of the total gains they can achieve through a transaction, then trade may not occur, at least for a period of time. However, in general, when both parties benefit from reaching agreement, they will do so.

56. Consistent with economic theory, while threats and public discussion about potential programming disruptions may have become more prominent, actual “withholding” of local stations has been relatively uncommon.³⁶ After the Comcast-NBCU merger, the gains from trade from licensing NBC stations to competing MVPDs likely will remain large (though they will be reduced somewhat), but terms to which the parties agree likely will change. In other words, I expect the transaction’s primary impact to be on prices (retransmission rates),³⁷ not quantity (foreclosure). This is because even though “withholding” occurs infrequently, the prospect and consequences of “withholding” affect the terms to which the parties agree.

57. The Israel-Katz analysis, which claims to follow the FCC’s earlier framework, does not address the possibility that retransmission rates could change after an NBCU-Comcast merger, but only how the likelihood of foreclosure would change after such a merger, *holding retransmission rates fixed*. Their analysis therefore inevitably understates the impact of the transaction on retransmission fees (by assuming this impact away), while overstating the impact of the transaction on another margin (the likelihood of foreclosure). Economic logic shows that if an NBCU-Comcast merger were to affect parties’ incentives in the way that the Israel and Katz analysis suggests, and if the joint gains from trade are as large as Israel and Katz’ assumptions imply, then it is likely that retransmission fees would increase whether or not withholding becomes more frequent. NBC and MVPDs would negotiate new fees such that it would remain in their mutual interest for the MVPDs to carry NBC.

58. Moreover, the FCC recognizes that application of the FCC Staff model of withholding understates the likely impact from a merger such as that proposed by Comcast and NBC. In the

³⁶ See CRS Report for Congress, “Retransmission Consent and Other Federal Rules Affecting Programmer-Distributor Negotiations: Issues for Congress” (Order Code RL34078), July 9, 2007 p. CRS-13.

³⁷ I use the term “retransmission rate” to include both explicit monetary compensation as well as other terms and conditions associated with retransmission agreement.

Appendix to its Order on the News/Hughes transaction in which it presented the model and described its implications, the FCC wrote the following:

Our analysis of the incentives to temporarily foreclose the local broadcast signals from rival MVPDs is only able to measure the effect of the first benefit, the additional profits that are earned when consumers switch to DirecTV. The effect of the increased credibility of withholding of retransmission on the compensation for retransmission of the local broadcast station's signal is difficult to quantify... Our analysis will provide an estimate of increased incentive and ability that is likely to occur due to the additional profit News Corp. earns when consumers switch from rival MVPDs to DirecTV, as such it is an estimate of the *minimum* increase in incentive and ability to obtain additional compensation from MVPDs.³⁸ (emphasis in original)

B. Israel and Katz Ignore Many Advantages of Using Data On Negotiated Retransmission Rates

59. There are advantages to using data on negotiated retransmission rates to infer departure rates and the implied impact on retransmission fees. One is that this provides much more data from which to evaluate the likely effect of the proposed transaction compared with the relatively few instances of temporary withholding of broadcast signals in general, and of NBC signals in particular.

60. Second, by using data on actual retransmission rates, there is no need to model separately the possibility of temporary and permanent withholding. The observed rates reflect the bargaining positions of the two parties and their implicit ability to deny access to each other's assets, and directly measures the relevant gain to MVPDs and to NBC stations from reaching an agreement.³⁹

61. Third, the framework provides a direct way to estimate how retransmission fees might change as a result of the proposed transaction. Israel and Katz claim to quantify "critical departure rates" necessary for the joint venture to find it profitable to deny competing MVPDs consent to retransmit broadcast signals, but they do not translate those "critical departure rates"

³⁸ *General Motors Corp., Hughes Electronics Corp. and The News Corporation Ltd.*, 19 FCC Rcd. 473, Appendix D, ¶ 12 (2004).

³⁹ My estimates are robust to several changes in the bargaining environment (such as permanent versus temporary withholding) as long as the gain to Comcast is a fixed fraction of the loss to a competing MVPD.

into an impact on payment for retransmission. Indeed, as I explain below, the empirical analysis that Israel-Katz perform to address the question how Comcast's subscribership changed when there were "temporary foreclosure" events affecting a competing MVPD is flawed and does not provide evidence that Comcast did not benefit during those events.

62. Thus, the Israel-Katz analysis does not provide a reasonable picture of how economic outcomes could change after an NBCU-Comcast merger. Their analysis does not account for the increase in retransmission rates that would result from temporary foreclosure. In their model, the value obtained from temporary foreclosure derives exclusively from Comcast's gain of additional subscribers, against which they net out the costs of such foreclosure. However, the motivation for threatening temporary foreclosure is the resulting increase in retransmission rates, a gain that Comcast can achieve when it bears *no* costs if it does not actually foreclose. This is a limitation of how Israel-Katz implemented the FCC's framework – they fail to incorporate the resulting increases in retransmission fees across all the geographic areas where Comcast operates as a factor in NBCU's decision whether to withhold either temporarily or permanently.

63. The merger also affects the incentive to publicize the possibility that programming might possibly be interrupted in the future. In the pre-merger scenario, NBCU gains no direct benefit from such an announcement (and would even lose if viewers value continuity of programming when making viewing choices), since the loss of subscribers to an MVPD provides no direct gain to NBCU. In contrast, news of an impending interruption would provide a direct benefit to Comcast if it prompted subscriber switching to avoid an impending disruption. As such, threats to withhold programming could potentially become more likely post merger.

VI. Katz' Previous Conclusion that Increases In MVPD Competition Led to Higher Retransmission Rates Is Consistent With My Analysis, And Inconsistent With the Conclusions in his Report in this Proceeding

64. On November 12, 2009, Michael Katz (with co-authors Jonathan Orszag and Theresa Sullivan) submitted an economic study to the FCC ("RTC Report") in which he analyzed how outcomes of retransmission rate negotiations would be affected by increased competition among

MVPDs in local markets.⁴⁰ In his RTC Report, Katz offers a framework, similar to the one I presented above, for analyzing negotiations between an MVPD and the owner of a local station for retransmission of the station’s signal. According to Katz, retransmission “creates a valuable service to which both sides of the negotiation contribute and from which both potentially benefit,”⁴¹ with the station owner contributing the signal and the MVPD contributing distribution. If the two parties come to terms, this creates “incremental profits derived from additional advertising fees and subscriber fees.”⁴² Katz states that “a negotiation over retransmission rights can thus be thought of as a negotiation over *how to divide the pool of incremental profits created by the retransmission of the broadcaster’s signal to the MVPD’s subscribers*”⁴³ (italics in original), which is the same framework that I presented above. Katz then explains that “under the negotiated agreement, each party will receive an amount equal to its disagreement profits plus some share of the gains from cooperation,”⁴⁴ a share that he later assumes (as is standard in bargaining models and as I do above) equals one-half. Again, this perspective is the same as mine.

65. Katz uses the bargaining framework to explain why economics predicts that retransmission rates would increase as competition among MVPDs has increased. Katz reasons that competition among MVPDs improves a broadcaster’s “disagreement point,” because subscribers are better able to substitute across the larger number of competing MVPDs, which reduces the broadcaster’s potential lost profits from failing to reach agreement with a single MVPD. According to Katz, “[a]s competition among MVPDs has intensified, the relative bargaining strength of MVPDs in negotiations with local broadcast stations has been weakened. Now, an MVPD faces the prospect of losing more subscribers than it previously would have if it is unable to carry local stations. This is so because a subscriber who cannot get a local broadcast station from his MVPD can now go to a different MVPD to receive that signal, as well as other

⁴⁰ Michael L. Katz, Jonathan Orszag, & Theresa Sullivan, *An Economic Analysis of Consumer Harm from the Current Retransmission Consent Regime*, GN Docket No. 09-47 (Nov. 12, 2009) (“Katz 2009 RTC Report”).

⁴¹ Katz 2009 RTC Report, ¶ 17.

⁴² Katz 2009 RTC Report, ¶ 17.

⁴³ Katz 2009 RTC Report, ¶ 18.

⁴⁴ Katz 2009 RTC Report, ¶ 20.

programming.”⁴⁵ The higher “disagreement point” increases the amount the broadcaster likely obtains when it negotiates retransmission rights with individual MVPDs. This is similar to the logic that I explained above for why a merger between NBCU and Comcast would improve NBC’s disagreement point and thus increase the amount NBC would receive in retransmission negotiations.

66. Thus, in November 2009, Katz argued that the departure rates associated with the elimination of a local station from an MVPD’s lineup are significant, and he supported his conclusion with his own analysis as well as with citations to other economic studies (including studies by the FCC). Now, however, Katz (with Israel) claims that he finds no empirical evidence of departure. Unlike his current report in support of the Comcast-NBC merger, Katz acknowledged in 2009 how changes in bargaining position caused by changes in competition can affect negotiated retransmission rates. His November 2009 report is consistent both with the analysis I presented above, and with the empirical analysis of Klein et al. {{ }}, which show that departure rates associated with the absence of local network stations from an MVPD’s lineup are significant. If departure rates were as low as Israel and Katz claim in their February 2010 Report, then Katz’ earlier conclusion that increases in competition among MVPDs have caused retransmission negotiations to become more favorable to broadcasters would not hold.

VII. Specific Critiques of the Israel and Katz Implementation and Empirical Analysis

A. Israel and Katz’ Empirical Analysis Is Inconclusive and Does Not Show that Historical Departure Rates Are Extremely Low

67. Israel and Katz attempt to estimate empirically the departure rate associated with elimination of an NBC station from an MVPD’s lineup using historical evidence from a small number of events in which an MVPD lost retransmission rights for broadcast signals. However, their data and methodology likely are not powerful enough to produce a reliable estimate.

68. According to Israel and Katz:

⁴⁵ Katz 2009 RTC Report, ¶ 36.

Our empirical results reveal no statistical evidence to support the proposition that significant numbers of consumers depart an MVPD that is temporarily unable to offer consumers access to a single broadcast network...Our conclusion therefore is that, although there are surely at least some subscriber departures away from a rival MVPD that loses access to a broadcast network such as NBC, the amount of such switching to Comcast is sufficiently small as to be undetectable in Comcast's share data.⁴⁶

69. Thus, Israel and Katz acknowledge that there likely was an impact, but that their data and analysis were insufficient to identify that impact. Israel and Katz perform two related empirical analyses to examine the impact on Comcast's subscribership when a competing MVPD temporarily lost the right to one of the four major broadcast networks. Evidence that Comcast's share of MVPD subscribership in the DMA increased as a result would indicate a positive departure rate from the affected MVPD. However, Israel and Katz have data on only a few episodes in Comcast's territory where an MVPD has access to all but one of the major networks, and most of these are very short periods. Thus, their analysis necessarily is based on a small number of events and their estimated effects are accordingly noisy. A second problem with their analysis is that the change in *Comcast's* share is only an indirect way of assessing the relevant departure rate associated with the affected MVPD. A more direct way of measuring the departure rate associated with, say, the absence of NBC on DISH is to assess how much it affects *DISH's* subscribership or share, not Comcast's (even if that is the ultimate value of interest). These weaknesses make the fact that Israel and Katz find no impact unpersuasive as support for their claim that the departure rate is small or zero.

70. In their first analysis, Israel and Katz use data on four episodes where one of Comcast's competitors lost access to one of the major networks as a consequence of a retransmission rate dispute. Three of these lasted three or fewer days, {{
}}. These episodes likely are uninformative as to the impact of "permanent foreclosure" or a one-month "temporary foreclosure." The fourth dispute (Fisher) lasted for six months and involved several DMAs in the Pacific Northwest where DISH stopped retransmitting Fisher-owned stations. This episode – the same episode that Kunz analyzes as described above – has more relevance in

⁴⁶ Israel-Katz Report ¶ 8.

understanding the departure rate relevant for evaluating the proposed Comcast-NBC merger than the other three disputes. Israel and Katz use data from the three “Fisher DMAs” where Comcast had subscribers: Eugene, Portland, and Seattle. In these DMAs, DISH lost access to one of the four major networks during the dispute.

71. Israel and Katz compare Comcast’s “penetration rate” (the number of subscribers divided by homes passed) in these markets to penetration rates in DMAs in central California unaffected by the dispute. {{

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72. The principal problem with Israel and Katz’s analysis is that their data and methodology may not offer sufficient power {{

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}}. A more reasonable interpretation, and one consistent with the analysis submitted in this proceeding by DISH, is {{

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73. In their second empirical analysis, Israel and Katz analyze the impact on Comcast’s penetration rate of DBS’s introduction of “local-into-local” service into new areas for only three of the four major networks, because the DBS company temporarily had not come to terms with one of the local affiliates. Israel and Katz identified ten “partial local-into-local” episodes, nine of which involved DISH, and only four of which they consider to be “confirmed.” These incidents lasted from one to twenty-two months. Again, they compare the affected DMAs with geographically proximate control DMAs in which there was no change in the availability of “local-into-local” stations during their period of study. {{

}} This suggests that other factors must be driving their empirical results.

74. Israel and Katz’ analysis also fails to consider broader evidence that is informative about the impact at issue here – the change in incentives from Comcast’s acquisition of NBC O&Os. One type of relevant evidence is how DBS companies’ introduction of “full LIL” affected Comcast’s subscriber levels. This evidence may not provide as direct a measure of the effect on an MVPD’s subscribership of eliminating only an NBC station from a competitor’s lineup, but it does offer some indication of the likely effect if, as seems reasonable, broadcast stations are not perfect substitutes.⁴⁹ Looking at events involving introduction of full LIL is useful for estimating the effect on Comcast of a loss of subscribers at another MVPD, because it provides a more powerful signal that can be measured more easily and there is no clear reason why the

⁴⁹ Israel and Katz explored an analysis of full LIL, though their analysis focused only on six DMAs and is not explained in any detail. They report that full LIL {{ }} on Comcast’s share of homes passed. *See*, Israel-Katz Report fn 125.

pattern of subscriber loss (i.e., the competing MVPDs to which the lost subscribers would move) would be different for full LIL and partial LIL.

B. Israel and Katz' Analysis of GE's Incentives With Respect to Foreclosure Strategies Is Incorrect

75. Israel and Katz note that GE will retain a 49 percent ownership interest in NBCU under the terms of the proposed transaction, and argue that this reduces (even eliminates) the likelihood that NBCU-Comcast will engage in foreclosure strategies. They claim that GE would bear some of the costs, but obtain none of the benefits, from foreclosure, because any net benefit to Comcast results from a sacrifice of NBCU's revenues from broadcast advertising and retransmission rights in order to obtain higher Comcast revenues from subscribers (in which GE does not share). Israel and Katz claim that, "as long as it has a significant stake in NBCU, GE has strong incentives to protect its ownership interest by seeing that the joint venture does not engage in costly foreclosure strategies, regardless of the benefits to Comcast Cable."⁵⁰ Later in their analysis, Israel and Katz state that "one could argue that this makes foreclosure impossible," and they suggest that the proper weight on MVPD profits in their application of the FCC model is zero.

76. Israel and Katz' analysis is incorrect. If foreclosure is profitable and in the joint financial interest of NBCU and Comcast, then Comcast and GE have an incentive to reach an agreement whereby GE is better off than without foreclosure. This could be done through agreement on other transactions between the entities. For example, Comcast could agree to more generous terms in retransmission negotiations with NBCU's O&Os, permitting an effective transfer of a portion of the incremental foreclosure-related profits from its MVPD business to NBCU and thus GE. It is in GE's interest to agree to foreclosure strategies that are jointly profitable for NBCU and Comcast, and then share in the incremental profits. GE's ownership interest in NBCU does not make foreclosure "impossible," as Israel and Katz suggest. The most reasonable assumption for the proper weight on MVPD profits in Israel and Katz' application of the FCC model is one,

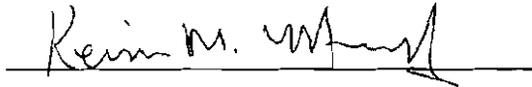
⁵⁰ Israel-Katz Report ¶ 16.

not zero,⁵¹ and there is no economic reason to make any adjustment to take into account GE's stake in NBCU. Moreover, the terms of the deal between NBCU and Comcast give Comcast the right to acquire all of GE's interest in NBCU over the next several years. If constraints from GE's minority stake prevent joint profit maximization by Comcast and NBCU, having Comcast acquire the remaining stake from GE would be a natural solution.

⁵¹ Former FCC chief economist William Rogerson made a similar argument in his economic analysis of the News-DIRECTV transaction. *See*, Rogerson Report, *supra* note 10.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed this 21 day of June, 2010.

A handwritten signature in cursive script, appearing to read "Kevin M. Murphy", is written over a horizontal line.

Kevin M. Murphy

APPENDIX A

ESTIMATE OF k

1. As described in the text, k is one divided by the share of the decline in profits that is accounted for by the decrease in the number of MVPD₁ subscribers, holding price constant. The total decline in profits can be written as:

$$(1) P_1(N = 1)Q_1(N = 1) - P_1(N = 0)Q_1(N = 0)$$

Adding and subtracting $P_1(N = 1)Q_1(N = 0)$ from this expression and rearranging, one obtains a decomposition where the first term represents the impact on profits from the decrease in the number of subscribers, and the second term represents the impact on profits from the decrease in the price the MVPD charges subscribers.

$$(2) P_1(N = 1)[Q_1(N = 1) - Q_1(N = 0)] + Q_1(N = 0)[P_1(N = 1) - P_1(N = 0)]$$

Dividing by $Q_1(N = 1)$, one obtains:

$$(3) P_1(N = 1) \left[1 - \frac{Q_1(N=0)}{Q_1(N=1)} \right] + \frac{Q_1(N=0)}{Q_1(N=1)} [P_1(N = 1) - P_1(N = 0)]$$

2. Both Klein et al. and Kunz provide data from which I can estimate k . As I discussed above, Klein et al.'s estimates imply $\{ \{$

$\} \}$, relative to a situation where DIRECTV

was the only MVPD not to offer local channels. Klein et al., report that DIRECTV charged \$3 per subscriber for local channels, that $\{ \{$ percent of existing DIRECTV subscribers chose to receive local channels and assumed that $\{ \{$ DIRECTV subscribers elect to subscribe to the local channels.⁵² Following Klein et al.'s estimates and assumptions, I assume $\frac{Q_1(N=0)}{Q_1(N=1)}$

$\{ \{$ $\} \}$, and $[P_1(N = 1) - P_1(N = 0)] = \{ \{$ $\} \}$. I adopt the same assumption as in the text for MVPD margin – that $P_1(N = 1) = \{ \{$ $\} \}$. By

substituting these values into Equation (3), I obtain:

⁵² Klein et al. ¶ 33, ¶ 35, and fn 17.

ATTACHMENT 1
CURRICULUM VITAE OF PROFESSOR KEVIN M. MURPHY

Curriculum Vitae

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2008: John von Neumann Lecture Award, Rajk College, Corvinus University, Budapest
2007: Kenneth J. Arrow Award (with Robert H. Topel)
October 2005: Garfield Research Prize (with Robert H. Topel)
September 2005: MacArthur Foundation Fellow
1998: Elected to the American Academy of Arts & Sciences
1997: John Bates Clark Medalist
1993: Fellow of The Econometric Society
1989 – 1991: Sloan Foundation Fellowship, University of Chicago
1983 – 1984: Earhart Foundation Fellowship, University of Chicago
1981 – 1983: Fellowship, Friedman Fund, University of Chicago
1980 – 1981: Phi Beta Kappa, University of California, Los Angeles
1980 – 1981: Earhart Foundation Fellowship, University of California, Los Angeles
1979 – 1981: Department Scholar, Department of Economics, University of California, Los Angeles

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July 2005: Present: George J. Stigler Distinguished Service Professor of Economics, Department of Economics and Booth School of Business, University of Chicago

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1993 – 2002: George Pratt Shultz Professor of Business Economics and Industrial Relations, University of Chicago

1989 – 1993: Professor of Business Economics and Industrial Relations, University of Chicago

1988 – 1989: Associate Professor of Business Economics and Industrial Relations, University of Chicago

1986 – 1988: Assistant Professor of Business Economics and Industrial Relations, University of Chicago

1983 – 1986: Lecturer, Booth School of Business, University of Chicago

1982 – 1983: Teaching Associate, Department of Economics, University of Chicago

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Publications

Books

Social Economics: Market Behavior in a Social Environment with Gary S. Becker, Cambridge, MA: Harvard University Press (2000).

Measuring the Gains from Medical Research: An Economic Approach edited volume with Robert H. Topel, Chicago: University of Chicago Press (2003).

Articles

“Government Regulation of Cigarette Health Information,” with Benjamin Klein and Lynne Schneider, 24 *Journal of Law and Economics* 575 (1981).

“Estimation and Inference in Two-Step Econometric Models,” with Robert H. Topel, 3 *Journal of Business and Economic Statistics* 370 (1985).

“Unemployment, Risk, and Earnings: Testing for Equalizing Wage Differences in the Labor Market,” with Robert H. Topel, in Unemployment and the Structure of Labor Markets, pp.

103-139, ed. Kevin Lang and Jonathan S. Leonard. London: Basil Blackwell (1987).

“The Evolution of Unemployment in the United States: 1968-1985,” with Robert H. Topel, in NBER Macroeconomics Annual, pp. 11-58, ed. Stanley Fischer. Cambridge, MA: MIT Press (1987).

“Cohort Size and Earnings in the United States,” with Mark Plant and Finis Welch, in Economics of Changing Age Distributions in Developed Countries, pp. 39-58, ed. Ronald D. Lee, W. Brian Arthur, and Gerry Rodgers. Oxford: Clarendon Press, (1988).

“The Family and the State,” with Gary S. Becker, 31 *Journal of Law and Economics* 1 (1988).

“A Theory of Rational Addiction,” with Gary S. Becker, 96 *Journal of Political Economy* 675 (1988).

“Vertical Restraints and Contract Enforcement,” with Benjamin Klein, 31 *Journal of Law and Economics* 265 (1988).

“Income Distribution, Market Size, and Industrialization,” with Andrei Shleifer and Robert W. Vishny, 104 *Quarterly Journal of Economics* 537 (1989).

“Wage Premiums for College Graduates: Recent Growth and Possible Explanations,” with Finis Welch, 18 *Educational Researcher* 17 (1989).

“Industrialization and the Big Push,” with Andrei Shleifer and Robert W. Vishny, 97 *Journal of Political Economy* 1003 (1989).

“Building Blocks of Market Clearing Business Cycle Models,” with Andrei Shleifer and Robert W. Vishny, in NBER Macroeconomic Annual, pp. 247-87, ed. Olivier Jean Blanchard and Stanley Fischer. Cambridge, MA: MIT Press (1989).

“Efficiency Wages Reconsidered: Theory and Evidence,” with Robert H. Topel, in Advances in the Theory and Measurement of Unemployment, pp. 204-240. ed. Yoram Weiss and Gideon Fishelson. London: Macmillan, (1990).

“Empirical Age-Earnings Profiles,” with Finis Welch, 8 *Journal of Labor Economics* 202 (1990).

“Human Capital, Fertility, and Economic Growth,” with Gary S. Becker and Robert F. Tamura, 98 *Journal of Political Economy*, S12 (1990).

“Accounting for the Slowdown in Black-White Wage Convergence,” with Chinhui Juhn and Brooks Pierce, in Workers and Their Wages: Changing Patterns in the United States, pp. 107-143, ed. Marvin Kosters. Washington, D.C.: American Enterprise Institute (1991).

“The Role of International Trade in Wage Differentials,” with Finis Welch, in Workers and Their Wages: Changing Patterns in the United States, pp. 39- 69, ed. Marvin Kosters. Washington, D.C.: American Enterprise Institute (1991).

“Why Has the Natural Rate of Unemployment Increased over Time?” with Robert H. Topel and Chinhui Juhn, *2 Brookings Papers on Economic Activity* 75 (1991).

“The Allocation of Talent: Implications for Growth,” with Andrei Shleifer and Robert W. Vishny, *106 Quarterly Journal of Economics* 503 (1991).

“Rational Addiction and the Effect of Price on Consumption,” with Gary S. Becker and Michael Grossman, *81 American Economic Review* 237 (1991).

“Wages of College Graduates,” in The Economics of American Higher Education, pp. 121-40, ed. William E. Becker and Darrell R. Lewis. Boston: Kluwer Academic Publishers (1992).

“Changes in Relative Wages, 1963-1987: Supply and Demand Factors,” with Lawrence F. Katz, *107 Quarterly Journal of Economics* 35 (1992).

“The Structure of Wages,” with Finis Welch. *107 Quarterly Journal of Economics* 285 (1992).

“The Transition to a Market Economy: Pitfalls of Partial Planning Reform,” with Andrei Shleifer and Robert W. Vishny, *107 Quarterly Journal of Economics* 889 (1992).

“The Division of Labor, Coordination Costs, and Knowledge,” with Gary S. Becker, *107 Quarterly Journal of Economics* 1137 (1992).

“Industrial Change and the Rising Importance of Skill” with Finis Welch, in Uneven Tides: Rising Inequality in America, pp. 101-132, ed. Peter Gottschalk and Sheldon Danziger. New York: Russell Sage Foundation Publications (1993).

“Wage Inequality and the Rise in Returns to Skill,” with Chinhui Juhn and Brooks Pierce, *101 Journal of Political Economy* 410 (1993).

“Occupational Change and the Demand for Skill, 1940-1990,” with Finis Welch, 83

American Economic Review 122 (1993).

“Inequality and Relative Wages,” with Finis Welch, 83 *American Economic Review* 104 (1993).

“Why Is Rent-Seeking So Costly to Growth?” with Andrei Shleifer and Robert W. Vishny, 83 *American Economic Review* 409 (1993).

“A Simple Theory of Advertising as a Good or Bad,” with Gary S. Becker, 108 *Quarterly Journal of Economics* 941 (1993).

“Relative Wages and Skill Demand, 1940-1990,” with Chinhui Juhn, in Labor Markets, Employment Policy, and Job Creation, pp. 343-60, ed. Lewis C. Solmon and Alec R. Levenson. The Milken Institute Series in Economics and Education. Boulder, CO: Westview Press, (1994).

“Cattle Cycles,” with Sherwin Rosen and Jose A. Scheinkman, 102 *Journal of Political Economy* 468 (1994).

“An Empirical Analysis of Cigarette Addiction,” with Gary S. Becker and Michael Grossman, 84 *American Economic Review* 396 (1994).

“Inequality in Labor Market Outcomes: Contrasting the 1980s and Earlier Decades,” with Chinhui Juhn, 1 *Economic Policy Review* 26 (1995).

“Employment and the 1990-91 Minimum Wage Hike,” with Donald R. Deere and Finis Welch, 85 *American Economic Review* 232 (1995).

“Examining the Evidence on Minimum Wages and Employment,” with Donald R. Deere and Finis Welch, in The Effects of the Minimum Wage on Employment, pp. 26-54, ed. Marvin H. Kosters. Washington, D.C.: The AEI Press, (1996).

“Social Status, Education, and Growth,” with Chaim Fershtman and Yoram Weissm, 104 *Journal of Political Economy* 108 (1996).

“Wage Inequality and Family Labor Supply,” with Chinhui Juhn, 15 *Journal of Labor Economics* 72 (1997).

“Quality and Trade,” with Andrei Shleifer, 53 *Journal of Development Economics* 1 (1997).