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Vertical mergers in the video programming and distribution industry: The case of Comcast-NBCU

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THE CENTER FOR THE STUDY
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Vertical Mergers in the Video
Programming and Distribution
Industry: The Case of Comcast-NBCU

By

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December 2012

CASE X:

**VERTICAL MERGERS IN THE VIDEO PROGRAMMING AND DISTRIBUTION
INDUSTRY: THE CASE OF COMCAST-NBCU
December 2012**

by

William P. Rogerson* **

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INTRODUCTION

On December 3, 2009, the Comcast Corporation (Comcast) and NBC Universal, Inc. (NBCU) announced that Comcast would purchase a controlling interest in NBCU. Comcast and NBCU produced very few services or products that directly competed with one another. Rather, their main relationship to one another was that NBCU provided video programming to Comcast that Comcast then distributed to consumers. Thus, this was primarily a vertical merger. The Antitrust Division of the Department of Justice (DOJ) and the Federal Communications Commission (FCC) both reviewed the merger. The FCC reviewed it because the parties had to obtain its permission to transfer various licenses in order to effectuate the merger.

In any vertical merger, the primary two possible competitive concerns are that the vertically integrated firm may have the incentive and ability to disadvantage either downstream rivals or upstream rivals, and that this will damage competition and thus harm consumers (Riordan and Salop 1995, Riordan 2008). In this particular merger, regulators'¹ primary concern was with possible harm to competition in downstream distribution markets. That is, regulators' primary concern was that the merged firm would either raise the prices that it charged competing distributors for NBCU programming or withhold this programming from them altogether, and that this would damage competition in video distribution markets.

One interesting aspect of this merger is that regulators considered the merged firm's ability and incentive to disadvantage two very different groups of downstream competitors. The first group consisted of traditional providers of pay-TV services such as competing cable

¹This paper will use the term "regulators" to refer collectively to both of the government agencies that reviewed the merger.

companies, direct broadcast satellite (DBS) companies, and local wire-line telephone companies (telcos), which are generally referred to collectively as multi-channel video programming distributors (MVPDs). The second group consisted of the relatively new and still rapidly growing and evolving group of firms that deliver professional, full-length video programming to consumers over the Internet, such as Hulu, Netflix, Amazon, and Apple, which are generally collectively referred to as online video programming distributors (OVDs).

With respect to the group of traditional established competitors, the FCC determined the share of a rival MVPD's customers that would switch to Comcast if NBCU programming was withheld from it. Based on this, it determined if the merged firm would find it profitable either permanently or temporarily to withhold programming from its rivals compared to the alternative of continuing to sell the programming at its pre-merger price. It also determined the effect that the merger would have on the vertically integrated firm's opportunity cost of providing NBCU programming to rivals of Comcast Cable, and used this to predict the effect of the merger on programming prices. Regulators concluded that the merged firm would have the incentive and ability to raise programming prices and possibly would also have the incentive to withhold some types of programming altogether.

With respect to the second group of competitors (OVDs), the main issue was whether or not the prospect that OVDs might ultimately provide strong competition to MVPDs was too speculative on which to base a theory of harm. Both regulators decided that OVDs represented a significant source of future potential competition and therefore also needed to be protected against potential anticompetitive actions by the merged firm.

The main potential efficiency that was cited by the parties to the merger was that the

merger would permit much closer coordination and cooperation between the creation and distribution of programming. In particular they suggested that this would allow the merged entity to respond more boldly and innovatively to the rapid technological development that was affecting the entire industry as video programming was increasingly being delivered to consumers directly over the Internet by OVDs. Thus, the emergence of OVDs played a role in both the theory of harm and the theory of benefit that were associated with this merger.

Regulators determined that the potential efficiencies were not adequately substantiated to offset the potential competitive harms of the merger, but that conditions could be adopted that would sufficiently ameliorate the harms and that would still allow the efficiencies of the merger to be achieved. Thus both regulators approved the merger subject to conduct-oriented conditions that required the merged firm to make its programming more available to MVPDs and OVDs. One of the main mechanisms that was used in the remedies was to allow MVPDs and OVDs that felt that they were not receiving reasonable prices from the merged firm to require the merged firm to participate in a binding arbitration process with a third-party arbitrator to resolve the dispute. The FCC has relied on this type of mechanism to fashion remedies in a number of recent merger cases. In addition, Comcast was required to make various commitments that it would not discriminate against OVDs in its role as an Internet service provider (ISP).²

²For further reading, the DOJ's competitive impact statement (DOJ 2011b) provides a relatively short description of the industry and a summary of the DOJ's analysis. The FCC's order (FCC 2011) that approved the merger provides a much more detailed and lengthy treatment. Finally, for an interesting discussion of the merger by the person who served as chief economist of the FCC when it reviewed the merger, see Baker (2011).

BACKGROUND

THE VIDEO PROGRAMMING AND DISTRIBUTION INDUSTRY

The entire vertically related chain of industries that produce and distribute professional full-length video content to viewers either through their television sets or through the Internet will be referred to as the video programming and distribution industry. We can distinguish between two primary vertical levels within this industry.

Video Programming

The video programming industry is the segment of the industry that produces individual television shows, aggregates these shows into networks, and provides these networks to distributors, which then make this content available to households. Television studios produce television shows and then license these shows to networks. Networks aggregate content to provide a stream of programming that they then license to MVPDs. Studios and networks also license programming to OVDs, and the manner in which this occurs is still evolving rapidly. Most networks are backwards-integrated into content production and produce a substantial amount of content in their own studios.

Cable networks are networks that are not directly broadcast over-the-air but are instead licensed only to MVPDs. Cable networks charge MVPDs license fees for the right to distribute their content to MVPD subscribers.

Broadcast networks license their programming either to third-party television stations that are affiliated with the network or to their owned-and-operated television stations (O&Os), which then broadcast the programming over-the-air. In any area that they serve, MVPDs generally also

distribute most of the signals of the local television stations that serve the area. MVPD subscribers generally view this as an important and valuable part of MVPD service, both because it often provides improved reception and also because it eliminates the need for the subscriber to have an antenna.

Under existing regulations,³ a local television station can choose to operate under either one of two different regimes with any MVPD that serves its area. Under the “must carry” regime, the MVPD is required to carry the station’s signal, and no fees are exchanged between the local television station and the MVPD. Under the “retransmission consent” regime, the MVPD has no obligation to carry the signal but must receive permission from the local television station in order to carry its signal. Under the retransmission consent regime, the MVPD must therefore negotiate a fee that it pays the local television station in return for being allowed to distribute its signal. Essentially, all popular commercial stations, including all of the affiliates of the “Big 4” networks – Fox, NBC, CBS, and ABC – elect to operate under the retransmission consent regime and are able to charge relatively substantial retransmission consent fees to MVPDs. Thus, local television stations essentially license programming to MVPDs in much the same way that owners of cable networks do, and can therefore be viewed as part of the network programming industry.

Video Programming Distribution

The video programming distribution industry has three types of participants: traditional MVPDs, OVDs, and local television stations.

³See 47 CFR 76.64.

At one time the only MVPDs were traditional cable system operators such as Comcast and Time Warner. In the 1990s they were joined by the two DBS providers: DirecTV and DISH. Finally, in the last decade, some local telcos have begun to provide MVPD service in competition with the local cable company and the two DBS providers. The two most prominent telcos that have begun to provide MVPD service on a national level are AT&T and Verizon. Most households now have a choice of at least three MVPDs: their local cable company and the two DBS companies, and it is becoming increasingly common for consumers also to have a fourth choice of their local telco. Although it is not that common, in some regions a second cable system has entered to compete with the original cable system. These additional cable systems are typically referred to as cable overbuilders and provide an additional choice for consumers where the overbuilders exist.

The relatively new and still rapidly growing and evolving group of firms that deliver professional, full-length video programming to consumers over the Internet – such as Hulu, Netflix, Amazon, and Apple – are generally collectively referred to as “online video programming distributors” (OVDs). The issue of how plausible it is that OVDs will ultimately evolve business models that make them strong competitors for traditional MVPDs will be delayed until the discussion of potential harms from the merger.

Local television stations are also obviously part of the video distribution system. However, most consumers do not view over-the-air broadcast television as a good substitute for MVPD service, because it does not offer the same variety of programming and because of poor reception of over-the-air signals. Thus, for purposes of analyzing the competitive effects of this merger, the relevant downstream product market should include MVPDs and also possibly OVDs

as potential competitors, but should not include over-the-air broadcast television. Of course broadcast programming is still a highly relevant part of the analysis because this programming is carried by MVPDs and OVDs. However broadcast television is not relevant at the distribution level.

LINES OF BUSINESS OF THE MERGING FIRMS

At the time of the merger, Comcast was the nation's largest cable system operator, with 23.8 million subscribers in 39 states. It was also the nation's largest Internet service provider (ISP), with 16 million subscribers. Finally, Comcast also owned a number of cable networks, including E!Entertainment, TV One, Versus, Style, The Golf Channel, G\$, and nine regional sports networks (RSNs).

NBCU was the owner of a large number of the nation's most popular cable networks, including USA, SyFy, Bravo, MSNBC, mun2, Oxygen, and CNBC. It owned the NBC Television Network (NBC) and ten NBC O&Os in major metropolitan areas. Finally, it owned the Telemundo Television Network and 15 Telemundo O&Os in major metropolitan areas. In addition, NBCU had a one-third ownership interest in Hulu, which was one of the most successful OVDs.

HORIZONTAL VERSUS VERTICAL ASPECTS OF THE MERGER

Comcast's cable systems were part of the video programming distribution industry. NBCU's cable networks and the NBC and Telemundo networks, along with their O&Os, were part of the video programming industry. Therefore the combination of these assets under single

ownership represented a vertical combination of Comcast's distribution assets with NBCU's programming assets.

Note, however, that the merger also had two different horizontal aspects the competitive effects of which needed to be evaluated. First, at the video programming level, Comcast owned some cable networks that were being combined with NBCU's programming assets. Therefore the merger involved a horizontal combination of assets within the video programming industry. Second, at the video distribution level NBCU's one third ownership of the OVD Hulu was being combined with Comcast's cable distribution assets. Therefore the merger also involved a horizontal combination of assets within the video distribution industry.

POSSIBLE COMPETITIVE HARMS

A vertical merger creates the possibility that the merged firm may have the incentive and ability to disadvantage either rival upstream firms or rival downstream firms (Riordan and Salop 1995, Riordan 2008). In addition to these two possible vertical harms, we must add the possible competitive harms from the two different horizontal aspects of the merger. Either of these horizontal combinations had the potential to reduce competition in the industry of which the combined assets were a part. Thus there were four different types of possible competitive harms that regulators needed to consider. Of these four possible harms, it was one of the two possible vertical harms that most occupied regulators' attention. This was that the merged firm would either raise the prices of NBCU programming to the distribution rivals of Comcast cable systems or withhold programming from them altogether. Regulators separately considered the potential harm to two distinctly different types of distribution competitors to Comcast cable systems -

other MVPDs and OVDs - and each of these will also be considered separately in this chapter.

THE INCENTIVE AND ABILITY TO DISADVANTAGE RIVAL MVPDS

THE THEORY OF HARM

According to this theory of harm, if withholding NBCU programming from an MVPD that competes with Comcast cable systems would increase the profit earned by Comcast cable systems, then the merged firm would have both the incentive and ability either to raise the price that it charges the MVPD for NBCU programming or to withhold the programming from it altogether. The reason for this is that, after the merger, the merged firm will view the reduction of Comcast's profits that are associated with providing programming to Comcast's rivals as an opportunity cost of providing this programming to these rivals. When an input supplier's costs increase, we normally expect the input supplier either to negotiate a higher price for the input or to quit supplying it altogether.

The FCC conducted a relatively detailed quantitative analysis to determine the share of a rival MVPD's customers that would switch to Comcast if NBCU programming was withheld from it.⁴ This required a determination of both the fraction of customers that would decide to

⁴Because the FCC publishes very detailed orders that explain the rationale for its decisions, we have a very detailed record of the FCC's reasoning and conclusions for this merger case (FCC 2011). However, a full and complete record of the DOJ's ultimate conclusions and the reasoning behind them generally becomes available only if a case is actually taken to trial. The Comcast-NBCU case was settled. Therefore the only publicly available record of the DOJ's reasoning and conclusions is contained in the Complaint (DOJ 2011a) and Competitive Impact Statement (DOJ 2011b) that it filed with the court as part of the settlement. While these documents are relatively substantial and contain quite thorough summaries of the main qualitative conclusions that the DOJ came to and the reasoning it used to arrive at these

leave the rival MVPD (the departure rate) and the fraction of these departing customers that would switch to Comcast (the diversion rate).

Using these estimates, the FCC performed two different calculations. First, it determined if the merged firm would find it profitable, either permanently or temporarily to withhold programming from its rivals, compared to the alternative of continuing to sell the programming at its pre-merger price. This will be referred to as the foreclosure calculation. Second, using a bargaining framework that was originally suggested by Rogerson (2003a, b), it determined the effect that the merger would have on the vertically integrated firm's opportunity cost of providing NBCU programming to rivals of Comcast's cable systems, and used this to predict the effect of the merger on programming prices. This will be referred to as the bargaining model calculation.

Until recently, the foreclosure calculation was the only calculation that the FCC performed when it considered vertical mergers in the video programming and distribution industry, and the addition of the bargaining model calculation represents an evolution in its method of analysis that provides it with another tool to assess the likely competitive impact of vertical mergers in this industry.

This chapter will discuss in some detail the relationship between the two calculations and how their results should be interpreted. It will be useful to begin with the bargaining model since it provides a somewhat more general framework that can then be used to describe both

conclusions, they do not provide any discussion of the manner in which the DOJ quantitatively measured the extent to which the merger would disadvantage competing MVPDs. Therefore, while the FCC and DOJ drew the same qualitative conclusions about the effect of the merger on rival MVPDs, it cannot be determined if the DOJ necessarily supported or agreed with all of the

calculations.

THE BARGAINING MODEL

FCC's quantitative conclusions.

An important aspect of the price-setting process between upstream programmers and downstream distributors is that both parties are generally large firms. Therefore it is more appropriate to think of terms' being set through a bilateral bargaining process rather than through a process whereby one side simply announces a take-it-or-leave-it set of terms to the other. In particular this means that the economic theory of bargaining (Harsanyi 1989, Roth 1979) can be used to provide a useful framework for analyzing the competitive effects of a vertical merger between a video distributor and a video producer.⁵

A simple example can be used to explain the main ideas: Suppose that a seller can sell a single unit of one good to a buyer at some cost C and that the good is worth V to the buyer. Suppose that V is greater than C , so that there are gains to trade. If the buyer had all of the bargaining power and could make a take-it-or-leave-it offer to the seller, he would offer a price that is slightly above C , and the seller would accept it. Conversely, if the seller had all of the bargaining power and could make a take-it-or-leave-it offer to the buyer, he would offer a price that is slightly less than V , and the buyer would accept it. More generally, we would expect the buyer and seller to negotiate a price somewhere between C and V , and the negotiated price would essentially determine how the buyer and seller split the joint surplus of $V-C$ that the buyer and seller would earn if the seller provides the good to the buyer.

The simplest economic theory of bargaining, which is usually referred to as the Nash

⁵This bargaining theory framework for analyzing the competitive effects of vertical mergers was first suggested by Rogerson (2003a, b) when the FCC considered the vertical merger between News Corp. and DirecTV. At that time, perhaps because the theory was relatively novel, it did not play a major role in shaping the FCC's analysis. However, when Rogerson (2010a, b, c) and Murphy (2010a, b) suggested this framework to the FCC again when it considered the Comcast-NBCU merger, the bargaining theory framework played a much more

bargaining solution, predicts that the negotiated price, p , will be given by:

$$P = \mu V + (1-\mu) C , \quad (1)$$

where μ is a parameter between 0 and 1 that can be interpreted as the relative bargaining strength of the seller. As the parameter μ grows from 0 to 1, the negotiated price increases from C to V . It is easy to verify that, under the Nash bargaining solution, the share of the total surplus from trade that is received by the seller is equal to μ and the share of the total surplus from trade that is received by the buyer is $(1-\mu)$. When μ is equal to $\frac{1}{2}$ the buyer and seller have equal bargaining power. In this case the negotiated price is half-way between C and V , and each party receives half of the total surplus created by trade.

Now suppose that the seller's cost of production increases by some amount ΔC . From formula (1), the resulting change in price, ΔP , will be given by:

$$\Delta P = (1-\mu)\Delta C . \quad (2)$$

Therefore, under the Nash bargaining solution, the share $(1-\mu)$ of any cost increase is passed on to the buyer in form of a price increase. When the seller has no bargaining power (and price is therefore set equal to cost), all the cost increase is passed on to the buyer. When the seller has all of the bargaining power (and price is therefore set equal to V), none of the cost increase is passed on to the buyer. In general, as the seller's bargaining power increases, the negotiated price becomes less dependent on the seller's cost, and less of the cost increase is passed on to the buyer. When μ is equal to $\frac{1}{2}$ so that the buyer and seller have equal bargaining power, exactly half of the cost increase is passed on to the buyer.

Now suppose that the seller's production cost does not change and remains fixed at C .

significant role in shaping the FCC's analysis.

However, assume that the seller owns another business that competes with the buyer and that the profits of the seller's business will decrease by ΔC if the seller provides the product to the buyer.

This example, of course, essentially captures the effect of a vertical transaction between the seller and a firm that competes with the original buyer. The main point to notice is that, as far as the seller is concerned, the vertical transaction has exactly the same effect on its cash flows as would occur if the seller had a direct increase in its cost of production of ΔC . This is because the ΔC of lost profit that the seller will now experience if he provides the original buyer with the product is essentially still a cost of ΔC to the seller. Economists use the term "opportunity cost" to describe such a cost. Since the cash flows of the buyer and seller are exactly the same regardless of whether the cost of production is a direct cost or an opportunity cost, the economic theory of bargaining predicts exactly the same outcome in either case. In particular, after the vertical transaction, the negotiated price will increase by $(1-\mu) \Delta C$.

Therefore, in summary, a vertical transaction between the seller and another firm that competes with the original buyer will create a new opportunity cost for the seller when he provides the good to the original buyer, to the extent that providing the original buyer with the good will reduce the profit of the firm that the seller owns. Furthermore, standard economic theory suggests that a prediction of the effect of the vertical transaction on price is that price will rise by the share $(1-\mu)$ of the opportunity cost increase created by the transaction where μ is the parameter representing the relative bargaining strength of the seller. In particular, then, if we could estimate the amount that a vertical merger between a programmer and an MVPD would increase the per subscriber opportunity cost to the programmer of providing the programming to a rival MVPD, a reasonable prediction of the effect of the vertical transaction on the per

subscriber price that the programmer would charge the rival MVPD is that it will rise by the share $(1-\mu)$ of this amount.

In order to explain the formula that the FCC used to calculate the increase in per subscriber opportunity cost caused by a vertical merger, it will be necessary to introduce a small amount of additional notation. The programmer and MVPD that are vertically integrated will be referred to as the affiliated programmer and the affiliated MVPD. The other MVPD that is not vertically integrated will be referred to as the unaffiliated MVPD. Let π denote the profit per subscriber that is earned by the affiliated MVPD. This will be referred to as the profit margin. Let d be a number between 0 and 1 that denotes the share of the unaffiliated MVPD's customers that would leave the unaffiliated MVPD if it did not carry the programming. This will be referred to as the departure rate. Let α be a number between 0 and 1 that denotes the share of the departing customers that switch to the affiliated MVPD. This will be referred to as the diversion rate. Finally, let ΔC denote the per subscriber change in opportunity cost to the vertically integrated firm of providing programming to the unaffiliated MVPD that is caused by the transaction. It is determined by:

$$\Delta C = \alpha d \pi . \quad (3)$$

This formula can be explained as follows: If the unaffiliated MVPD did not carry the programming, the share of the unaffiliated MVPD's customers that would leave the MVPD and switch to the affiliated MVPD is equal to αd . The per subscriber opportunity cost of selling programming to subscribers of the unaffiliated MVPD is therefore equal to the share of customers that would switch to the affiliated MVPD, αd , multiplied by the profit per subscriber that the affiliated MVPD will earn on every customer that does switch, π .

Substitution of formula (3) into formula (2) shows that the predicted increase in programming price due to the transaction, ΔP , is given by:

$$\Delta P = (1-\mu)\alpha d\pi . \quad (4)$$

ESTIMATION OF THE EFFECT OF THE MERGER ON PROGRAMMING PRICES USING THE BARGAINING MODEL

Introduction

The FCC used formula (4) to estimate the effect of the merger on eleven different programming prices. These were the retransmission consent prices for the NBC broadcasting signal that is charged by each of the ten NBC O&Os in the regions that they served, and the license fee for a bundle consisting of all of the NBCU cable networks. This required the FCC to determine appropriate values of the four parameters – μ , π , d , and α – to substitute into formula (4) for each of the eleven different cases.

Although Comcast and NBCU initially attempted to argue that the bargaining formulation in general, and formula (4) in particular, did not provide a reasonable method of estimating the effect of a vertical merger on programming prices, they did not pursue this line of argument; instead, the debate over the application of the bargaining model basically focused on determining the appropriate values of the four parameters (μ , π , d , and α) to substitute into formula (4) for the purposes of determining the effect of the merger on programming prices. This section will describe the arguments that were advanced by Comcast as to the appropriate values of these parameters, the FCC's response to these arguments, and the nature of estimates that the FCC ultimately adopted.

The FCC concluded that the merger would result in significant increases for the retransmission consent fees that would be charged by the six NBC O&Os that served areas where Comcast was the primary incumbent cable provider and in the license fee charged by the merged firm for a bundle of the NBCU cable networks. Because its estimates for many of the parameters were based on confidential information, the FCC did not provide public information on the values that it chose for many of the four parameters or for the values of the magnitudes of predicted price effects that it calculated. However, in many cases publicly available information together with the FCC's explanation of the method that it used to calculate parameter values can be used to provide at least some sense of the likely values of the parameters that the FCC settled on.

This section will conclude by substituting these likely parameter values into formula (4) to provide some sense of the likely magnitudes of the price effects that the FCC predicted. This exercise will shed some light on why the FCC drew the conclusions that it did. One observation of particular interest concerns the critical role that was played by the fact that there are enormous fixed and sunk costs of providing cable service. This meant that Comcast's profit margin on additional subscribers was extremely large. There was no dispute over the magnitude of Comcast's profit margin. The FCC accepted Comcast's own estimate of its profit margin and, as will be seen, it was so large that modest values of the other parameters could still produce significant predicted price increases. Thus one of the primary drivers of the FCC's finding that the merger would cause significant price increases was the fact that the presence of significant levels of fixed costs in the cable industry results in a very large profit margin on each additional subscriber.

The Bargaining Strength Parameter, μ

The economists that first suggested the bargaining model formulation originally simply assumed that μ was equal to $\frac{1}{2}$ without providing much justification other than noting that this was a common assumption in the economics literature and that it could be interpreted as a reasonable estimate to use in the absence of any other information in the sense that it was at the midpoint of the interval of theoretically possible values. Comcast immediately argued that even if an estimate of the harm created using μ equal to $\frac{1}{2}$ was in some sense the “most likely” estimate in the absence of information about μ , the true harm could be anywhere between 0 and twice the “likely estimate” depending on the actual value of μ , and the range of possible values was therefore simply too large for it to be appropriate to use formula (4) to guide competition policy decisions without any information about the likely value of μ . This focused attention on this issue of whether or not it was possible empirically to estimate the value of μ .

It turns out that this is possible. In particular, equation (1) expresses the price that results from a negotiation as a function of the buyer’s value, V , the seller’s cost, C , and the bargaining parameter, μ . This means that for any particular transaction between a buyer and seller that has already occurred, if the values of V and C can be directly estimated and if data on the actual price that was negotiated, P , is available, then these data can be used to calculate the value of μ that applied in that situation by inverting formula (1). Further, a recent paper by Crawford *et. al.* (2012) had performed precisely this type of exercise for negotiations between programmers and MVPDs over prices for cable networks and concluded that μ was very close to $\frac{1}{2}$ for the set of negotiations for which it had data.

The FCC concluded that this was sufficient evidence to justify using an estimate of μ equal to $\frac{1}{2}$ for the case of national cable networks. Crawford *et al.* (2012) did not consider the case of negotiations over retransmission consent for broadcast networks. However, the FCC concluded that the negotiation environments were similar enough that it would be justified is using an estimate of μ equal to $\frac{2}{3}$ for retransmission consent negotiations, which would produce a somewhat lower and thus more conservative estimate of the price effects.

Note that the estimation procedure that Crawford *et al.* (2012) employed was very sophisticated and simultaneously estimated demand curves and bargaining parameters in a fully specified structural model. However, it would have been possible directly to estimate V and C and thus μ using much simpler formulas that are based on departure rates, profit margins, and advertising revenues using the same type of logic that was used to calculate formula (3). While resources, data, and time might not always be available to conduct the more sophisticated exercise of Crawford *et al.* (2012), the less sophisticated approach could be used to provide some evidence on the likely size of μ in a much broader range of circumstances. Given that it should generally be possible to provide some evidence as to the likely magnitude of μ , it seems likely that if the bargaining formulation is used to calculate the magnitude of competitive effects in other mergers in the future, antitrust authorities will generally be very interested in seeing empirical evidence on the likely magnitude of μ , rather than simply settling for the assumption that μ is equal to $\frac{1}{2}$.

The Profit Margin, π

Comcast provided the FCC with an estimate of its profit margin per subscriber that the

Commission accepted, after conducting its own review. Therefore there was no dispute over the magnitude of this parameter.

The value of π that the Commission and Comcast agreed upon was never made public. However, publicly available data can be used to provide a rough estimate of the magnitude of this parameter. In particular, Bernstein Research (2010, exhibit 38 at page 22) reports that Comcast's video direct gross profit per subscriber in 2009 was \$42.98 per subscriber per month and this can be used as an approximate value of π . However it should be noted that this figure does not include profit contributions from broadband or telephone service. To the extent that customers that switch from rival MVPDs would also switch their broadband Internet and/or land-line telephone service to Comcast, the figure of \$42.98 is therefore likely somewhat conservative.

The Departure Rate, d

Now consider the departure rate, d , which is the share of the unaffiliated MVPD's customers that would leave if the programming became unavailable. This is the parameter where the importance of the programming to subscribers is reflected. If the programming is "important," then a large share of customers will leave, and this will tend to produce a large opportunity cost. If the programming is "unimportant," then a small share of customers will leave, and this will tend to produce a small opportunity cost. Recall that we wish to consider two different types of programming: the signal of a local NBC affiliate, and a bundle that consists of all of NBCU's national cable networks.

The major empirical problem that economists face in attempting to estimate departure rates is that essentially all of the major broadcast networks and all of the most important cable

networks are carried by all MVPDs. Therefore there simply are very little data available that describe how subscriber demand for a particular MVPD is affected when it permanently does not offer a major broadcast network or a major cable network.

The one major exception is the natural experiment that was created when DBS providers were first allowed to begin carrying local broadcast stations. Examination of DBS subscribership data over this period can be used to provide some information on how subscribership responded to the unavailability versus availability of all local broadcast stations. The GAO (2002) examined such data and concluded that DBS subscribership increased by 32% due to the ability to offer the signals of local broadcast stations. This means that DBS subscribership was reduced by 24% due to the inability to offer the signals of local broadcast stations.⁶

Based on these data, it might therefore be reasonable to predict that an MVPD's subscribership would decline by approximately 24% if it was unable to offer any broadcast networks. The problem is that this does not necessarily provide much information on how subscribers would respond to the unavailability of a single Big 4 broadcast network.

The only type of data that is available that describes subscriber response to the unavailability of a single Big 4 broadcast network or a small bundle of cable networks is data that describe subscribership response to the temporary unavailability of programming that is created when programming is temporarily withdrawn during a dispute over license fees. The problem with most of these incidents is that the withdrawal is often temporary: lasting only a matter of days or even hours in some cases. To the extent that customers were correctly anticipating that the unavailability of programming would be short-lived, the departure rate of customers in

⁶I.e., $.34/1.34 = .24$

response to such temporary unavailability might be considerably lower than the response would be to permanent unavailability. Further complicating the problem, essentially all MVPD subscribership data are confidential and not publicly available. Therefore even when temporary withdrawals have stretched over a longer length of time, data on the effects of subscribership might not necessarily be available to regulators.

Consequently, the FCC found itself in possession of only one set of data that it determined could provide information on departure rates that it judged to be reliable. These were data that were submitted by the DBS provider DISH related to a retransmission consent dispute between Fisher Communication and DISH. Fisher Communication owned a number of local broadcast affiliates of Big 4 networks in Oregon, Washington, Idaho, and California. On December 17, 2008, Fisher suspended DISH's carriage of the signals of all of these broadcast stations in a dispute over retransmission consent fees, and carriage remained suspended over a six-month period until the dispute was settled and carriage was restored on June 10, 2009. There were seven different local television markets in which DISH lost carriage of a single Big 4 local television station.

Although DISH initially provided an analysis of these data, the FCC conducted its own independent analysis by comparing DISH subscribership in the seven affected markets with DISH subscribership in other similar markets that did not experience a withdrawal. Thus, it employed a "differences in differences" approach to determine the effect that the withdrawal of a single Big 4 network affiliate had on subscribership in the affected regions. The FCC did not publicly report its results. Therefore its estimate of d cannot be reported in this paper. Rather the FCC simply substituted its estimated value of d into equation (4) and reported that the price

effects were significant.

The FCC did not find any subscription data during periods of temporary withdrawal of cable networks that it felt could shed any light on the likely magnitude of the departure rate for the bundle of NCBU cable networks. Here, it instead relied on a novel and interesting approach that was suggested by Murphy (2010a) to estimate the apparent value of the departure rate based on pricing data from historic agreements between programmers and MVPDs for the programming in question.

The basic idea is simple: Recall that, for any particular negotiation between a programmer and an MVPD, equation (4) predicts the price that they will agree upon, P , as a function of the programmer cost, C , the value of the programming to the MVPD, V , and the bargaining coefficient, μ . As observed above, the values of C and V can be expressed as functions of the departure rate, d , the profit margin, π , and advertising revenue per subscriber, using the same type of logic as was used to calculate formula (3). This observation was used above to explain that, so long as we know the values of the parameters that determine V and C and we know the price that was agreed upon, we can invert equation (4) to directly calculate the apparent value of the bargaining coefficient. Murphy's closely related observation was that if we are willing to assume that μ is equal to $\frac{1}{2}$ and we know the values of all of the parameters that determine V and C except for the departure rate and we know the price that was agreed upon, we can invert equation (4) to calculate the apparent value of the departure rate, d .

In its final order the FCC used this procedure to calculate the apparent value of d both for the NBC networks and for the bundle of all NBCU cable networks. It reported that the estimate of the departure rate that it obtained for the NBC network was very close to the estimate that it

obtained using data from the Fisher-DISH dispute. Citing this as some evidence that the procedure was reliable, the FCC used this method to create estimates of the departure rate for the bundle of NBCU programming. Once again, it did not publicly report any of these estimates. However it did note that the departure rates that it calculated for the bundle of NBCU programming were generally larger than the departure rates that it calculated for the NBC network.

Comcast submitted an analysis of its own subscribership data in the regions that were affected by the Fisher-DISH dispute described above, and reported that there was no measurable increase in Comcast's subscribership in the regions affected by the Fisher-DISH dispute during the time of the Fisher-DISH dispute. At the time that Comcast prepared its original report, the DISH report concluding that DISH's subscribership had declined during this period had not yet been submitted to the FCC or made available to Comcast. In its original report, Comcast was careful to point out that its conclusion that Comcast had not gained any subscribers during the period of the dispute only provided information about the value of the product of the departure rate and diversion rate, $d\alpha$, and did not necessarily provide any information about either parameter separately. That is, the fact that Comcast did not obtain new subscribers during the dispute was potentially consistent with a large departure rate but a low diversion rate.

After the DISH study was made available, Comcast did not dispute DISH's finding that its own subscribership had declined in the affected regions during the period of the dispute. Instead, it interpreted DISH's finding that it had experienced a positive departure rate together with its own finding that it had not experienced an increase in subscribership to mean that the apparent diversion rate to Comcast during this period was approximately zero. In particular it

did not interpret its analysis as contradicting any of the findings about the apparent size of the departure rate that DISH experienced. Therefore further discussion of this analysis will be delayed until the next section that discusses the diversion rate.

Comcast objected strenuously to Murphy's method for indirectly calculating apparent departure rates based on historic pricing data. It argued that the method at best could be interpreted as providing a single one-dimensional constraint on the joint value of μ , d , and a number of other parameters that were no easier to measure than d . It argued that an estimate of d that was derived by arbitrarily assuming that μ was equal to $\frac{1}{2}$ and by using possibly poor measures of other relevant variables provided at best an extremely unreliable estimate of d , and that direct measurement of d was a much more appropriate procedure to follow. Further, there might be many other unmeasured factors that affected prices between various types of programming (such as the manner in which programming was bundled together), and Murphy's method simply ascribed all of the unexplained variation to departure rates. Thus if retransmission consent prices were generally lower than license fees for national cable networks for any one of a number of reasons, Murphy's method would ascribe all of this difference to a difference in departure rates.

The issue of whether or not Murphy's indirect method for deriving departure rates is a reasonable method to use for purposes of analyzing competitive effects is likely to be a subject of lively dispute and controversy in the analysis of future mergers. While it provides an elegant way of avoiding many severe data problems, it does raise a number of serious issues that likely will be further debated.

Note that while the FCC used Murphy's indirect method to justify choosing a somewhat

higher departure rate for the bundle of NBC cable networks than for the NBC signal, some more basic evidence justified using a departure rate for the bundle of NBC programming that was at least comparable in size to the departure rate for the NBC network: Based on prime time ratings it appears that individual broadcast networks and the bundle of NBCU cable networks are of relatively similar popularity. For example, at around the time the merger was being considered, the prime time ratings for the Big 4 broadcast networks were: CBS (4.0), Fox (3.4), ABC (3.0), and NBC (2.8).⁷ The sum of the prime time ratings for the top four NBCU cable networks was 4.1.⁸ The fact that individual broadcast networks and the bundle of NBCU cable networks are of relatively similar popularity can be interpreted as suggesting that they are likely to exhibit relatively similar departure rates. Thus even in the absence of relying on Murphy's indirect method to estimate departure rates, there was some independent evidence to suggest that the departure rate for the bundle of NBC networks would be at least comparable in size to the departure rate for an individual Big 4 broadcast network.

The Diversion Rate, α

Now consider the parameter α , which is the share of customers leaving the MVPD that switch to Comcast. There are two primary cases that need to be considered separately, depending upon whether the MVPD purchasing programming from the merged firm is another incumbent

⁷Ratings for week of March 8-14, 2010 (Allocao, 2010). A rating point corresponds to a 1% viewing share of all TV households. Thus, for example, the CBS rating of 4.0 means that during prime time viewing hours on average 4.0% of TV households were viewing CBS.

⁸The prime time ratings for NBCU's four most popular networks were: USA (1.9), SyFy (.8), Bravo (.8), and MSNBC (.6), which sum to 4.1; these were ratings for the week of March 8-14, 2010 (Allocao, 2010).

cable company that does not compete with Comcast or is one of the four national MVPDs: DirecTV, Dish, Verizon, or AT&T.⁹ When the MVPD that is purchasing programming is another incumbent cable company, the value of α is obviously equal to zero, since none of the customers leaving the other cable company have the option of switching to Comcast.

Now consider the case where the MVPD purchasing the programming from the merged firm is one of the four national MVPDs. It is useful to begin by identifying the geographic markets for each of the 11 products¹⁰ for which price increases are being calculated. For the signal of each of the NBC O&Os, the relevant geographic market is the local television market over which the signal is received. Regions corresponding to local television markets are called Designated Market Areas (DMAs). For the bundle of NBCU cable networks, the relevant geographic market is the country as a whole.

⁹There is also the third case of a cable overbuilder that directly competes with Comcast. The same type of reasoning described below can be used to calculate the value of α for this case. Since almost no MVPD subscribers are served by cable overbuilders, this case will not be explicitly considered in this paper. See Rogerson (2010a) for a treatment of this case.

¹⁰The products are the signals of the ten NBCU local O&Os and the bundle of all NBCU cable networks.

A simple assumption to make about diversion rates would be that customers that leave an MVPD go to other MVPDs in proportion to each of these MVPDs' market shares. This will be called the proportional switching assumption. It will be necessary to introduce two more pieces of notation to describe the formula for determining α under the proportional switching assumption. For any one of the 11 products, let s_C denote the share of MVPD subscribers in the product's region that receive service from Comcast. This will be referred to as Comcast's market share in the region. Similarly, let s_R denote the share of MVPD subscribers in the product's region that receive service from the rival MVPD that Comcast is selling the product to. This will be referred to as the rival's market share in the product's region.¹¹ Under the proportional switching assumption, the value of α for the particular product and rival being considered is then determined by:

$$\alpha = s_C / (1 - s_R) . \quad (5)$$

This can be explained as follows: Customers leaving the rival MVPD must switch to one of the other MVPDs that serve the region. The total market share of all of the other firms that subscribers could switch to is thus equal to $(1 - s_R)$. Therefore equation (5) states that customers switch to other MVPDs in proportion to their relative market shares.

Comcast argued strongly that when the rival MVPD from which programming was being withheld was one of the two DBS providers, the diversion rate to Comcast should be much smaller than the diversion rate that was implied by the proportional switching assumption, because it was likely that customers of one of the two DBS providers would generally view the

¹¹The rival will be one of the four national providers. Note that each of the four rivals will generally have a different market share.

services of the other DBS provider as a much closer substitute than the services of other non-DBS providers. As mentioned above, Comcast also provided evidence to support the contention that the diversion rate to Comcast would be very low when customers are switching from one of the DBS providers, by showing that in regions affected by the Fisher-DISH dispute, Comcast had not gained an appreciable number of customers during the period of the dispute. It argued that this suggested that even if customers had left the affected DBS provider, essentially none of them had switched to Comcast. That is, it argued that the data from this case suggested that the diversion rate to Comcast where programming with withheld from a DBS provider was zero. While it acknowledged that the true diversion rate was likely to be higher than zero, it argued that its result suggested that it was likely much lower than the diversion rate implied by the proportional switching assumption. It suggested that using a diversion rate equal to one-third of the value that resulted from the proportional switching assumption would be a reasonable value to use.

Murphy (2010b) responded by noting that there was at least one additional factor that Comcast had not accounted for in its empirical analysis which would have tended to reduce Comcast subscribership in the affected regions over the period of the dispute and that this might explain why the apparent diversion rate was zero.¹² More importantly, Murphy (2010b) also provided an alternate calculation of the diversion rate to the incumbent cable provider for customers leaving a DBS provider, based on a survey of DirecTV customers who left DirecTV

¹²This is that the switchover to all-digital set top boxes during this period created the possibility for some consumer dissatisfaction in the short run, which might have caused some switching away from Comcast in the short run. (The switchover to all-digital set top boxes did not occur in the regions that Comcast's study used as control regions.)

due to dissatisfaction with programming that determined to which MVPD they switched. The FCC determined that this alternate calculation provided the most reliable evidence that was available on the actual diversion rate between a DBS provider and an incumbent cable provider. Although it was publicly reported that the FCC used a diversion rate that was equal to a fraction of the proportional rate where the fraction was less than 1 but greater than the value of $1/3$ that was suggested by Comcast, the actual fraction that was chosen by the FCC was never made public.

The fact that the services of the two DBS providers are closer substitutes for one another than for the services of other MVPDs does not suggest that the diversion rate to Comcast for customers switching from a telco provider of cable services should be lower than the value implied by the proportional switching assumption. In fact, to the extent that the services of two land line providers are closer substitutes for one another than for the services of DBS providers, the same logic as above can be used to argue that customers leaving a telco provider of cable services might be disproportionately likely to switch to the incumbent cable provider rather than to a DBS provider. This means that the diversion rate between a telco and Comcast might therefore be larger than the rate that was implied by the proportional switching assumption. The FCC decided to use a diversion rate for telcos that was equal to that implied by the proportional switching assumption and interpreted this as being a conservative assumption in the sense that the argument described above suggested that the diversion rate might actually be higher than this.

The diversion rates that are implied by the proportional switching assumption will now be calculated. Table 1 provides data on the market shares of Comcast and each of the four national MVPDs for each of the ten DMAs that were served by an NBCU O&O and also for the country

as a whole.¹³ The DMA's are ordered according to Comcast's market share from highest to lowest. Comcast is the primary incumbent cable provider in six of the DMAs, with market shares ranging from 62.9% in Philadelphia to 38.9% in Hartford-New Haven. Comcast has a small market share in New York and a zero market share in the remaining three DMAs that are served by an NBCU O&O. Comcast's market share for the nation as a whole is equal to 0.236. The four national providers have regional market shares that range between 0.000 and 0.285. Their national market shares range between 0.023 and 0.188.

Table 2 presents the diversion rate for each region and for the nation as a whole for each of the four national providers calculated according to formula (3). For the six regions where Comcast is the dominant incumbent cable provider, the values of α range from 0.39 to 0.71. The average of all values of α for these six regions is 0.58. In the remaining four regions the value of α is close to 0 or equal to 0. Finally, for the nation as a whole the values of α for the four different national MVPDs range from between 0.24 to 0.29 and their average value is 0.26.

Predicted Price Increases

Recall that the formula for calculating the estimated price increase is given by equation (4). As described above, relatively good public information exists regarding the general magnitude that the FCC estimated for the value of each parameter except for the departure rate, d . To provide the reader with a sense of the general magnitude of price increases that the FCC might have predicted using this formula, the projected price increases will be calculated for a

¹³For completeness, market shares for other cable operators are also provided, even though these are not needed for any of the calculations.

departure rate of 5% (i.e., for a value of $d = 0.05$) and using values for the other parameters in the general range that the FCC likely used. This will provide the approximate value of the price increases that the FCC would have predicted if it believed that the departure rate was 5%. The predicted price increase for other departure rates can of course be calculated by adjusting these values proportionately (e.g., the predicted price increases for a departure rate of 2.5% would be half these amounts, the predicted price increases for a departure rate of 10% would be twice these amounts, etc.).

It will be useful to review the values that the FCC assigned to each of the other parameters: The FCC estimated the bargaining parameter, μ , to be equal to $\frac{1}{2}$ for the bundle of national cable networks and $\frac{2}{3}$ for each NBC O&O. A reasonable but potentially somewhat conservative value for the value of the profit margin parameter used by the FCC is \$42.98. The diversion rate is somewhat more complicated. It was shown above that the proportional switching assumption yields an average diversion rate of 0.58 for the six NBC O&Os that serve regions where Comcast is the dominant cable provider, 0 for the four NBC O&Os where Comcast has little presence, and .26 for the bundle of NBC cable networks. The FCC assumed that this was the diversion rate for telcos but that the diversion rate for DBS providers was somewhere between this value and one third of this value.

For the purposes of deriving an approximate value of the FCC's projected price increase for the eleven different types of programming, a diversion rate equal to one-half of the rate that is implied by the proportional switching assumption will be used. This yields a diversion rate of 0.29 for the six NBC O&Os where Comcast is the primary incumbent cable provider, 0.0 for the four NBC O&Os where Comcast has very little presence, and 0.13 for the bundle of NBCU cable

networks. Substituting these values and a value of $d = 0.05$ into equation (4) yields price increases of 21 cents per subscriber per month for the six NBC O&Os where Comcast is the dominant cable provider, an increase of 0 cents per subscriber per month for the four NBC O&Os where Comcast has very little presence, and an increase of 14 cents per subscriber per month for the bundle of NBC cable networks.

At the time of the merger, most analysts were predicting that retransmission consent fees for the Big 4 networks would likely rise to a level between \$0.50 per subscriber per month and \$.75 per subscriber per month.¹⁴ Therefore an increase of \$0.21 per subscriber per month would increase retransmission consent fees by about one-third. The sum of the 2009 license fees charged for the NBCU cable networks was \$1.56 per subscriber per month.¹⁵ Therefore an increase of \$0.14 per subscriber per month would amount to approximately a 9% price increase. Thus even a relatively modest departure rate of 5% would produce significant price increases. This calculation therefore provides some insight into why the FCC ultimately concluded that there would be significant price effects.

An important point to note is that one of the main drivers of the size of these estimated effects is the large profit margin of \$43.98 that Comcast earns per cable subscriber. This in turn is caused by the fact that the cable industry has enormous fixed costs. More generally, vertical competitive effects of the sort calculated here are likely to be much more significant in industries

¹⁴See Bernstein Research (2010)

¹⁵ 2009 subscription fees (per subscriber per month) for the NBCU national cable networks were: USA (\$0.55), SyFy (\$0.21), Bravo (\$0.19), MSNBC (\$0.16), mun2 (\$0.06), Oxygen (\$0.10), and CNBC (\$0.29) for a total of \$1.56. Source: Kagan data reported in Kafka (2010).

where fixed costs are significant.

CALCULATING THE PROFITABILITY OF PERMANENT AND TEMPORARY FORECLOSURE HOLDING PROGRAMMING PRICES FIXED

The FCC also calculated the profitability to the merged firm of either permanently or temporarily withholding programming under the assumption that programming prices must remain fixed at their pre-merger levels if the programming continues to be sold. The precise nature of the permanent and temporary foreclosure calculations will now both be described for the abstract selling problem described above.¹⁶ Namely, suppose that a seller has a cost, C , of producing the good, the buyer has a value, V , of consuming the good, and the seller currently sells the good to the buyer at a price of P . Now suppose that the seller is considering a merger with some other buyer and that we are able to estimate that the seller's opportunity cost of selling to the original buyer will increase by ΔC because of the merger.

First consider the calculation of the incentive for permanent foreclosure. This calculation compares the profitability to the merged firm of continuing to sell the product to the seller at the pre-merger price of P compared to not selling the product to the seller at all. If the latter option is more profitable, then the merged firm is said to find it profitable to engage in permanent foreclosure. In this simple model, of course, the latter option is more profitable if and only if $C + \Delta C$ is greater than P . Therefore, determining whether or not there is an incentive for permanent

¹⁶Just as for the bargaining model calculation, one must translate the abstract model into a formulation that involves departure rates and diversion rates and other relevant parameters to develop estimates of the magnitude of these effects for the Comcast-NBCU merger. However, the basic nature of the calculation can be most easily grasped by describing it for the simple abstract problem, and this is all that will be presented in this chapter. See FCC (2011a, App. B)

foreclosure simply amounts to determining if the increase in opportunity cost due to the merger, ΔC , is greater than or less than the pre-merger profit of the seller: $P - C$.

An important point to note about this calculation is that it does *not* necessarily provide information about whether or not the merger will result in foreclosure if foreclosure is defined to be the situation where the seller no longer sells the product to the buyer. The fact that $C + \Delta C$ is greater than P simply means that selling *at the pre-merger price* will no longer be profitable for the seller. However, if there are still gains to trade in the sense that the seller's opportunity cost of providing the good to the buyer, $C + \Delta C$ is less than the buyer's value, V , we would generally expect the price simply to be negotiated upwards and for trade to occur at this higher price. We would only expect trade no longer to occur if the seller's opportunity cost of providing the good to the buyer was greater than the value of the good to the buyer. Therefore the fact that $C + \Delta C$ is greater than P can *not* be interpreted as implying that foreclosure will occur. Instead, it should simply be interpreted as showing that trade will not occur at the pre-merger price of P .

The FCC was aware of this point, and correctly interpreted a finding that there were incentives for permanent foreclosure as not necessarily meaning that foreclosure was certain. Rather it simply meant that the merger would have a large enough effect on the opportunity cost of the seller that it would no longer be profitable for the seller to sell the product at the pre-merger price.

for a detailed estimation of the magnitude of these effects for the Comcast-NBCU merger.

Now consider the incentive for temporary foreclosure. This calculation is motivated by the observation that, when a programmer temporarily withdraws programming from an MVPD during a dispute over license fees, many of the subscribers that leave the affected MVPD and switch to another MVPD during the course of the dispute do not immediately switch back once the dispute is settled and the programming is restored. To account for this effect, the FCC considered a multi-period model and compared the present discounted value of a temporary withdrawal of programming followed by selling the programming at the pre-merger price, P , with continuing to sell the programming for all periods at the pre-merger price, P .¹⁷ The firm was said to have an incentive to engage in temporary foreclosure if it preferred temporarily withholding the good.

In this simple model there is some parameter θ between 0 and 1 such that temporary foreclosure is profitable if and only if ΔC is greater than $\theta(P - C)$. Recall that permanent foreclosure is profitable if and only if ΔC is greater than $P - C$. Thus temporary foreclosure is profitable over a larger range of cost increases than is permanent foreclosure. The parameter θ grows smaller as it takes longer for consumers to switch back or the period of temporary foreclosure grows smaller.¹⁸

The same subtlety of interpretation that applies to the permanent foreclosure calculation

¹⁷The calculation would require the FCC to make assumptions about the length of the period of temporary foreclosure and the speed at which customers returned to the original MVPD after the period of temporary foreclosure was over.

¹⁸This is intuitive: In the temporary foreclosure model, the per-period cost of foreclosure to the seller, $P - C$, is only experienced by the seller while the temporary foreclosure occurs, while the per-period benefit of foreclosure to the seller, ΔC , continues to be received for some time after the temporary foreclosure is over. Therefore to determine if temporary foreclosure is profitable, the per-period cost, $P - C$, is weighed less heavily than the per-period benefit, ΔC .

also applies to the temporary foreclosure calculation. When the merged firm finds it profitable to engage in temporary foreclosure, this does *not* necessarily mean that we will observe temporary foreclosure. Rather it simply means that the merger will have a large enough effect on the merged firm's opportunity costs of selling the good that it seems likely that price will be negotiated upwards. Once again the FCC was aware of this point and only interpreted a finding that it was profitable to engage in temporary foreclosure as an indication that prices may rise after the merger.

In the Comcast-NBCU merger, the FCC found that the merged firm would likely find it marginally profitable to engage in permanent foreclosure in at least some cases and would almost surely find it profitable to engage in temporary foreclosure. It interpreted these findings as providing more evidence that prices were likely to rise because of the merger.

As described above, the FCC's calculation of the profitability of permanent or temporary foreclosure was not interpreted as specifically predicting whether or not the merger would cause the product to be withheld either temporarily or permanently. Rather, it was simply interpreted as providing some stylized information about the effect of the merger on the merged firm's bargaining power. As foreclosure of either type became more profitable it was more likely that the merger would cause price increases. From this perspective it was natural for the FCC to complement its historic approach of calculating the profitability of foreclosure by also using the bargaining model to calculate directly the effect of the merger on bargaining strength and thus prices. The bargaining model framework simply provided a method to calculate a more precise estimate of the price effect of a merger, instead of simply determining whether the effect was "large" or "small" in some more stylized sense.

It seems likely that the FCC will continue to use versions of the bargaining framework when it analyses future vertical mergers. Possible directions for improvement include more carefully using data on pre-merger prices to provide more information about the manner in which firms actually bargain with one another (including measures of their bargaining strength) and creating explicit multi-period bargaining models that incorporate the possibility that customers may be slow or reluctant to switch back to their original provider when programming is restored after a temporary withdrawal.

PROGRAM ACCESS RULES

The FCC has had a long-standing concern with the possibility that vertically integrated cable operators might have both the incentive and ability to disadvantage competing MVPDs. In particular the FCC enforces regulations, which are usually referred to as program access regulations, that attempt to control the extent to which any cable-affiliated programmer can disadvantage its rivals.¹⁹ These regulations prohibit any provider of programming that is affiliated with a cable operator from either engaging in exclusive contracts with a single MVPD or from charging discriminatory prices. Thus, a provider of programming that is affiliated with a cable operator cannot simply refuse to sell its programming to other MVPDs and must charge other MVPDs prices that are no higher than the prices that it charges itself. Aggrieved MVPDs have the right to file complaints at the FCC, which the FCC then investigates and rules on.

Since program access rules would apply to the merged firm, regulators had to consider whether or not program access rules would address the potential harms of the merger. In fact, one

of Comcast's arguments in support of approving the merger with no conditions was that existing program access rules would take care of any potential vertical competitive issues. The FCC's view was that program access rules would be only partially effective in preventing the merged firm from disadvantaging rival MVPDs. In particular it determined that, while the prohibition on exclusive contracts would likely prevent the merged firm from simply refusing to sell its programming to all rival MVPDs, the prohibition on discrimination likely would not prevent the merged firm from increasing the programming prices that it charged to all rival MVPDs because of two separate problems with the price discrimination prohibition:

The first problem is that, for purposes of evaluating price discrimination complaints, the FCC has adopted the position that quantity discounts of any size should be viewed as non-discriminatory. This means that when a provider set a price for a given MVPD, the discrimination prohibition places no constraints at all on the prices that the provider can charge to any smaller MVPD. Instead, the discrimination prohibition simply means that the provider cannot charge a higher price to a larger MVPD. In particular, this means that an MVPD can *not* win a price discrimination complaint against a provider by showing that a larger MVPD has received a lower price. If the provider is charging a lower price to a larger MVPD, the FCC does not view this as evidence of discrimination but rather simply as a permissible volume discount. In order to win a price discrimination complaint against a provider, an MVPD has to show that the provider has charged a lower price to an MVPD no larger than itself. In particular, since Comcast Cable was the largest MVPD in the nation, this meant that the merged firm could charge Comcast Cable lower prices than any other MVPD without violating program access

¹⁹See 47 CFR 76.1001-1004.

rules. This problem with the discrimination prohibition is often referred to as the “quantity discounts loophole.”

The second problem with the discrimination prohibition is that, to the extent that the internal transfer price that the merged firm charges itself for programming is simply an accounting charge that can be arbitrarily set without any real consequences,²⁰ the merged firm would be able to raise the price that it charged to all of its rivals and still satisfy the price discrimination prohibition at no cost to itself simply by raising its own internal transfer price. This problem with the discrimination prohibition is often referred to as the “uniform price increases loophole.”

OWNERSHIP STRUCTURE

We can define a “complete” vertical merger to be a merger that results in a single entity’s owning and controlling 100% of both the upstream assets and the downstream assets and a “partial” vertical merger to be one that only results in a single entity’s having partial ownership interests at one or both levels. The theory of harm and calculation of competitive effects that were described above in this section were based on the assumption that, after the merger, the upstream and downstream firm would make coordinated decisions to maximize their joint profits. This is obviously the case for a complete merger.

However, questions can be raised as to whether or not this assumption continues to hold as a merger grows more partial in nature. The Comcast-NBCU transaction was actually a partial

²⁰While transfer prices are sometime used to provide managers with the incentive to use internal resources efficiently, internal resource decisions can also be directly controlled or incentivized in other ways when necessary.

vertical merger and not a complete vertical merger. Comcast raised the argument that the entities that would result from the transaction would not make coordinated decisions to maximize their joint profits and that even if a complete merger would create competitive harms (and they of course disputed this too), the actual partial vertical merger that was occurring would not cause competitive harms. This section will describe Comcast's argument and regulators' evaluation of it.

It will be useful to begin with a more detailed description of the actual transaction. Prior to the transaction NBCU was owned 100% by General Electric Company ("GE"). Under the proposed transaction a joint venture ("JV") would be formed that would be owned 51% by Comcast and 49% by GE that would combine all of NBCU's assets with all of Comcast's programming assets. Comcast would remain the 100% owner of its cable operations. In addition, under the transaction, GE would have certain rights to require Comcast to purchase its share of the joint venture at various specified times in the future, and Comcast would have certain rights to require GE to sell its interest to Comcast at various specified times in the future. The DOJ summed up the effect of the various provisions as meaning that "[i]t is expected that Comcast will ultimately own 100 percent of the JV."²¹ Thus it was essentially the case that the transaction would immediately give Comcast a controlling interest in the JV and would make it quite likely that Comcast would eventually purchase GE's remaining ownership interest.

Comcast's argument began with the correct observation that, although the anticompetitive actions described above in this section had the effect of raising the joint profits of the JV and Comcast's cable operations, their direct effect was generally to lower the JV's profits and raise

²¹DOJ (2011b, p. 3).

the profits of Comcast's cable operations. Total profit was increased because the rise in Comcast's profits exceeded the fall in the JV's profits. Comcast's basic argument was that since GE would not participate in the profits that would be earned by Comcast's cable operations, that GE would be made worse off if the JV was operated to maximize joint profits and that the fiduciary duties of the board of directors of the JV would therefore require them to operate the JV as though it was independently owned.

The FCC's basic critique of this argument was that so long as side payments could be made between Comcast's cable operations and the JV to split equitably any increase in total profits that would result from coordinated behavior, then it would be in everyone's interests, including GE's interests, for the JV and Comcast to coordinate their actions to attempt to maximize their joint profits. Further, Comcast's controlling interest in the JV would make it possible for the entities closely to coordinate their actions and to exchange side payments when necessary. In fact Comcast's claims that the merger would result in large efficiencies was largely predicated on the assumption that this type of close coordination would be possible after the merger. The FCC also noted that the fact that the transaction was structured so that Comcast would likely eventually own 100% of the JV made it even more likely that this close coordination and cooperation would occur.

Therefore the FCC essentially rejected Comcast's argument that the JV would be run as an independent firm to protect interests of minority shareholders. While the DOJ did not directly comment on this argument in its Competitive Impact Statement, its entire discussion of competitive effects implicitly assumed that the JV and Comcast's cable operations would be run to maximize the joint profits of both entities. Therefore it also apparently rejected Comcast's

argument. This is not surprising. In the absence of unusual features of some sort, antitrust authorities normally evaluate the competitive effects of a partial vertical merger where a single entity owns 100% of one level of production and a controlling interest in the other level of production under the assumption that the firms will be able to coordinate their actions to maximize their joint profits.

EMPIRICAL ESTIMATES OF VERTICAL PRICE EFFECTS

Comcast also presented an empirical study that concluded that previous instances of vertical integration or disintegration between programmers and distributors had no apparent effects on subsequent programming prices. Comcast argued that, given the variety of maintained assumptions on which the bargaining model and foreclosure calculations depended, if reliable evidence could be gathered as to how actual previous instances of vertical integration or disintegration had affected programming prices, regulatory authorities should give this evidence great weight in evaluating the effects of the Comcast-NBCU merger. Although Comcast won the argument that reliable evidence of this sort should be given great weight, it lost the argument that its study provided reliable evidence that vertical integration has no effect on subsequent programming prices. The basic problem was that there are very few previous instances of vertical integration or disintegration to consider and it becomes very difficult if not impossible to convincingly control for the myriad of other factors that likely affect programming prices with almost no data. Thus, given the paucity of data, it may simply not be possible to derive any reliable empirical conclusions on this subject.

The Comcast study initially considered four different instances of vertical integration or

disintegration. The first instance occurred in 2002, when Cablevision sold its 85% interest in Bravo. The second instance occurred in 2007, when Cox purchased the Travel Channel. The third instance occurred in 2004 when the News Corp. purchased a controlling interest in DirecTV. The fourth instance occurred in 2008 when the News Corp. sold its controlling interest in DirecTV. For the third and fourth instances, the five networks owned by the News Corp. for which Comcast had pricing data were Fox News, Fox Sports en Espanol, FX, National Geographic, and Speed. For each instance, Comcast had pricing data for the annual fees that were charged by the networks in the years both before and after the transaction occurred. The study attempted to assess the impact of the integration/disintegration events on network prices, controlling for other factors that might affect programming prices.

The FCC observed that two of the four events - the sale of Bravo by Cablevision and Cox's purchase of the Travel Channel - were not probative because the modest national market shares of Cablevision and Cox meant that the predicted vertical price effects were likely too small to measure. It re-conducted the study using only the remaining two data points, controlling for other factors that might affect prices in a different manner than Comcast did, which the FCC argued was superior. The FCC study concluded that vertical integration did have significant effects on programming prices in the predicted direction. While the FCC concluded that its study had shown that vertical integration did have a significant effect on prices in the predicted direction, at a minimum it seems fair to say that it demonstrated that the conclusions of Comcast's study could not be relied upon.

Another interesting point to consider about this empirical exercise is that the FCC had actually imposed conditions on the News Corp.-DirecTV merger relatively similar to the

conditions that it ultimately imposed on the Comcast-NBCU merger. Suppose for a moment that the News Corp.-DirecTV merger would have caused programming prices to rise in the absence of any conditions being imposed, but that the conditions were effective and prevented any price rises. Then, even if one could correctly measure the effect of the merger on programming prices, one would conclude that the merger had no effect. However even this could only be interpreted as showing that the merger had no effect given the conditions that were imposed. It could *not* be interpreted to show that the merger would have had no effect had the conditions not been imposed. Thus even the data on the News Corp.-DirecTV merger was not suitable to use in this study for its intended purpose.

THE INCENTIVE AND ABILITY TO DISADVANTAGE OVDS

ANALYSIS OF THE HARM

Regulators noted that the merged firm would likely have both a greater ability and a greater incentive to disadvantage new and emerging competitors than established competitors. The merged firm would have a greater ability to disadvantage emerging competitors simply because withholding critical programming from an emerging competitor was more likely to cause it to fail than withholding programming from an established competitor. The merged firm would have a greater incentive to disadvantage emerging competitors because the cost of withholding programming to an emerging competitor with a small customer base is much smaller than the cost of withholding programming from an established rival with a large customer base. Therefore the evidence that the merged firm had the incentive and ability to disadvantage established competitors implied *a fortiori* that the merged firm would have an incentive to

disadvantage potential competitors.

With respect to OVDs, the main issue, therefore, was simply whether or not the prospect that OVDs might ultimately provide strong competition to MVPDs was too speculative for a theory of harm. Both regulators decided that OVDs represented a significant source of future potential competition and therefore also needed protection. For example the DOJ offered the following conclusion:

When measured by the number of customers who are cord-shaving or cord-cutting, OVDs have a *de minimus* share of the video programming distribution market. Their current market share, however, greatly understates their potential competitive significance in this market. Whether viewers buy individual or a combination of OVD services, OVDs are likely to continue to develop into better substitutes for MPVD video services. Evolving consumer demand, improving technology (e.g., higher Internet access speeds, better compression technologies to improve picture quality, improved digital rights management to combat piracy), the increased choice of viewing devices and advertisers willingness to place their ads on the Internet likely will make OVDs stronger competitors to MVPDs for an increasing number of viewers.²²

Both regulators specifically mentioned that an important factor in shaping their decision was the fact that numerous Comcast documents existed that identified OVDs as a serious competitive threat. For example, the DOJ made the following statement.

In this case, Defendants' own assessments - as reflected in numerous internal documents and their executives' testimony - of the importance of OVDs and their potential to alter dramatically the existing competitive landscape are particularly important to determining the relevant product market.²³

OTHER POSSIBLE COMPETITIVE EFFECTS

As discussed earlier in this paper, although regulators focused on the potential vertical

²²DOJ (2011b) at page 6.

²³DOJ (2011b) at page 7.

competitive harm that the merged firm would disadvantage downstream rivals, the vertical combination of assets also raised the possibility that the merged firm would disadvantage upstream rivals. Furthermore there were two different horizontal aspects to the merger that created the possibility for additional competitive harms. This section will briefly describe regulators' analysis of these issues.

VERTICAL COMPETITIVE EFFECTS ON PROVIDERS OF PROGRAMMING

A vertical merger potentially creates the same type of incentive for the merged firm to disadvantage upstream rivals as it does for the merged firm to disadvantage downstream rivals. In this particular merger, one concern was whether or not Comcast would refuse to carry rival programming that competed most directly with NBCU programming. Another potential concern arose from the facts that (i) providers of networks earn significant advertising revenues from their programming and therefore have a very direct and strong interest in maximizing viewership; and (ii) decisions made by the MVPD can influence viewership. Therefore, there was a potential that the merged firm could make decisions that would shift viewership away from networks that compete with NBCU networks and towards NBCU networks.

One manner in which the merged firm might so disadvantage rival networks would be to place them on a less-heavily-subscribed-to tier of service. Another possibility related to the fact that MVPDs sometimes create "local neighborhoods" of channels with the same general focus by assigning them channel numbers close to one another. To the extent this occurs, another potential method for the merged firm to disadvantage rival programming would be to exclude it from a relevant local neighborhood of channels.

While a number of competing providers of programming raised these issues at the FCC, one of the strongest proponents was Bloomberg TV. Bloomberg TV argued that its network and CNBC were the two leading business news networks and that the merged firm would have a powerful incentive to disadvantage Bloomberg News, both to allow CNBC to earn higher profits within the regions served by Comcast cable systems, and also potentially to weaken Bloomberg on a national level, and thus allow CNBC to earn higher profits over the nation as a whole. One specific issue it raised was the possibility that the merged firm would exclude Bloomberg TV from a local neighborhood of news or business news channels.

Finally, another factor that needed to be accounted for was that the FCC enforces a set of regulations that are often referred to as program carriage regulations that limit the ability of any vertically integrated cable operator to disadvantage rival providers of programming.²⁴ Therefore the issue of whether existing program carriage rules would address any potential competition problems needed to be considered.

Comcast argued that the MVPD market was much too competitive for Comcast's cable systems to be able to withhold programming from subscribers and successfully compete for subscribers. It also argued that existing program carriage rules would address any potential competitive harms that might arise. The FCC determined that the merged firm would have a significant incentive and ability to disadvantage competing networks and that existing program carriage rules needed to be supplemented to address this harm. However, the DOJ left this issue completely unaddressed in its complaint and competitive impact statement. That is, it simply did not discuss this potential competitive harm at all. It is not clear if the DOJ determined that this

²⁴See 47 CFR 1300-1302.

was not an important issue or if it simply determined that the FCC had adequately addressed the issue.

HORIZONTAL COMPETITIVE EFFECTS

There were two horizontal aspects to the merger that regulators needed to consider as well. The first horizontal aspect was the combination of NBCU's programming assets with Comcast's programming assets. (Recall that although Comcast's primary line of business was operating cable systems, it did own a number of cable networks.) It is likely that very significant horizontal competitive concerns in the programming market would have been raised if Comcast and NBCU each owned one of the two top cable networks in a particular genre such as the two top news networks or the two top RSNs that served a particular region. However, this was not the case. Some parties did raise the issue that the horizontal combination of the parties' networks might still increase its monopoly power and allow it to increase prices, even though there was no obvious combination of top networks in the same genre. In particular some parties noted that there were six regions of the country that were served by both an NBC O&O and a Comcast RSN, and that the ability of a single party simultaneously to deny access to both of these networks might allow it to charge higher prices than if they were separately controlled. Comcast strongly argued that the networks were not close enough substitutes for there to be any horizontal competitive effect.

The FCC in fact made a determination that there would be adverse horizontal effects in the programming market, but noted that the arbitration conditions that it was imposing to address the vertical competitive harms would also address horizontal competitive harms if they existed,

so there was no need to take any additional action (FCC 2011, para. 138). The DOJ did not discuss this issue at all. Therefore this issue played a fairly small role in the analysis of the merger. It seems clear that the DOJ would not have raised any competitive concerns if NBCU had attempted to merge with a stand-alone firm consisting solely of Comcast's programming assets. It is less clear whether the FCC would ultimately have taken any action in such a case. If we take the FCC's statement at face value (that it determined there was a competitive harm but that conditions it was already imposing to deal with the vertical harm also addressed the horizontal harm), then it is possible that the FCC might have raised competitive concerns even if NBCU had attempted to merge with a stand-alone firm consisting solely of Comcast's programming assets.

Second, the combination of the ownership of Comcast's cable systems with NBCU's one-third interest in Hulu was a horizontal combination of an MVPD and an OVD. Although there was a competitive concern with this horizontal combination, it was not the normal concern that the combination of two businesses with substantial market shares would allow the combined business to exercise (or enhance) its market power. In this case the OVD industry was a nascent industry that created a future competitive threat to Comcast, and regulators' main concern with respect to OVDs was that Comcast would use its control of NBCU programming to disadvantage OVDs and thus stunt their growth. Consistent with this, regulators' main concern with Comcast's acquiring a one-third ownership interest in Hulu was that Comcast might take advantage of its control to slow its growth or restrict its competitive threat in other ways.

EFFICIENCIES

The main potential efficiency to which the parties to the merger pointed was that the merger would permit much closer coordination and cooperation between the creation and distribution of programming. In particular they suggested that this would allow the merged entity to respond more boldly and innovatively to the rapid technological development that was affecting the entire industry as video programming was increasingly being delivered to consumers directly over the Internet by OVDs. Thus, the emergence of OVDs played a role in both the theories of harm and the theories of benefit that were associated with this merger. Both the FCC and the DOJ determined that these efficiencies were not sufficiently substantiated for them to outweigh the competitive harms.

One other potential efficiency that was raised by the parties was the so-called “reduction in double marginalization” effect. Double marginalization occurs when an upstream firm charges a linear price to a downstream firm, which then charges a price in the downstream market. In this situation, the resulting downstream price will be higher than the monopoly price that a single merged firm would charge because the downstream firm ignores the fact that when it increases its price in the downstream market, this not only affects its own profit, but also reduces the upstream firm’s profit. Thus a merger would benefit both firms and consumers. The double marginalization problem can be addressed without a vertical merger through using more complex pricing rules at the wholesale level such as two-part tariffs or minimum quantity requirements.

The DOJ and FCC both concluded that the merger would not create significant efficiencies through the reduction of double marginalization, but for somewhat different reasons. The DOJ determined that the video programming and distribution industry largely solved the double marginalization problem through more sophisticated pricing schemes, direct controls over

the quantity purchased through quantity minimums, and direct agreements over tier placement. The FCC did not explicitly make this point. Rather, it noted that, even if programmers and MVPDs used linear pricing schemes, the reduced double marginalization effect was not likely to be that large because the downstream firm would view the opportunity cost of lost programming sales to rival MVPDs as an opportunity cost, and that this would greatly reduce the magnitude of the double marginalization effect.

One interesting point to note about the DOJ position that linear pricing does not play a significant role in the relationship between upstream and downstream providers in this industry is that this position is potentially somewhat in conflict with the theory of harm that the merged firm will harm its downstream rivals by raising prices.

CONDITIONS

The FCC and the DOJ both determined that the potential efficiencies did not offset the potential competitive harms of the merger, but that conditions could be adopted that would sufficiently ameliorate the harms and still allow the potential benefits of the merger to be realized. Thus both regulators approved the merger subject to conditions that were primarily conduct-oriented rather than structural. As will be discussed further below, the sets of conditions that were approved by the agencies were consistent with one another but not identical. All of the conditions were put in place for a period of seven years.

This section will begin by describing the conditions that were imposed. It is most natural to describe separately the sets of conditions that were adopted to deal with each of the possible harms. Then it will turn to discussing the general issue of the role that conduct-oriented or

behavioral conditions should play in antitrust remedies.

VERTICAL COMPETITIVE EFFECTS ON MVPDS

To protect MVPDs from the merged firm's increased incentive and ability to disadvantage rival MVPDs, the main set of conditions that the FCC imposed was to provide MVPDs that wished to purchase programming from the merged firm with the right to ask for the terms of the contract to be determined by a binding baseball-style arbitration process with a third party arbitrator. Under the arbitration process both parties would be required to submit final offers. The term "baseball-style" refers to the fact that the arbitrator is required to choose the final offer that "best reflects the fair market value of the programming at issue."²⁵ That is the arbitrator is not allowed to choose some intermediate price between the two offers. Instead, he is restricted to choosing one of the two prices that were offered.

The desirable property that this baseball-style arbitration process is thought to possess is that each party has a relatively powerful incentive to submit an offer that, although biased in its favor, is still relatively close to fair market value. Thus, the process tends to produce relatively similar offers from both parties, with the result that substantial agreement is reached even before the arbitrator announces a decision. The FCC had used this same remedy in a number of previous vertical mergers and was reasonably satisfied with its results.

The DOJ did not impose a separate set of remedies. Rather, in its competitive impact statement it simply noted that it had determined that the remedies that were imposed by the FCC dealt adequately with the competitive harm and there was therefore no need for the DOJ to impose its own remedies.

VERTICAL COMPETITIVE EFFECTS ON OVDs

The DOJ and FCC imposed two major sets of conditions to protect OVDs from the increased incentive of the merged firm to disadvantage them.

The first set of conditions was designed to require the merged firm to make its programming available to OVDs on reasonable terms. In particular, the merged entity was required to make its programming available to OVDs on terms, conditions, and prices that were comparable to the terms, conditions, and prices on which other providers of programming made similar types of programming available. In addition, anticipating the possibility that OVDs might eventually begin transmitting entire linear networks, the merged entity was also required to make entire networks available to OVDs on terms, conditions, and prices that were comparable to the terms, conditions, and prices on which it makes these networks available to MVPDs. The conditions were enforced by providing OVDs with the right to ask for baseball-style arbitration to determine the terms of any programming deal with the merged firm. In this case the DOJ and FCC adopted very similar sets of conditions. However, the DOJ explicitly noted in its competitive impact statement that it expected that most OVDs would normally use the FCC process, presumably because the FCC had greater experience with overseeing this type of condition and because the FCC might be better suited in any event to oversee conduct-related conditions of this sort.

The second set of conditions was designed to require Comcast, in its role as an ISP, to make its broadband network available to OVDs on reasonable terms. Comcast cable operated its

²⁵FCC (2011, para. 50).

own OVD service, Fancast Xfinity, where it made a variety of on-demand content available to its cable subscribers, and it seemed very likely that Comcast would continue to expand and develop this service as a primary method of competing with stand-alone OVDs. Both agencies recognized that Comcast Cable, operating as an ISP, would have a very powerful incentive to disadvantage competing stand-alone OVDs. Therefore both agencies adopted conditions that essentially required Comcast to provide non-discriminatory treatment to all OVDs compared to the treatment that it provided to Fancast X-finity. The FCC adopted a set of voluntary commitments that had been offered by Comcast. The DOJ fashioned its own set of specific requirements.

One interesting point to notice about this second set of conditions is that they were designed to remedy a harm whose existence was quite independent of the merger. That is, Comcast's incentive and ability to disadvantage other OVDs by providing them with inferior access to its broadband system was not substantially affected by the merger.

VERTICAL COMPETITIVE EFFECTS ON PROGRAMMERS

As discussed above, only the FCC made the determination that the merger would cause this harm and thus the FCC was the only agency that adopted conditions that were designed to remedy it. The FCC adopted two main conditions. First, it somewhat strengthened the application of program carriage rules to the merged firm by reducing the burden of proof for MVPDs that might file complaints. Second, the FCC specifically required that if the merged firm ever created a specific news or business news neighborhood, that all relevant networks of competitors must be placed in this neighborhood.

HORIZONTAL COMPETITIVE EFFECTS

In order to prevent Comcast from attempting to affect Hulu adversely or restrict the competitive threat that it posed for Comcast's cable systems, both agencies required the merged firm to relinquish its active control of Hulu by giving up its voting and governance rights and to instead become a passive investor. As mentioned above, although the FCC determined that the horizontal combination of NBCU and Comcast programming assets would damage competition in the programming market, it also determined that the arbitration conditions that it imposed to deal with the vertical competitive harms also dealt with this horizontal competitive harm. Thus the FCC imposed no additional conditions to remedy the horizontal competitive harm in the programming market.

THE PROS AND CONS OF CONDUCT-ORIENTED CONDITIONS

Economists distinguish between two different types of antitrust remedies: structural remedies, and conduct-oriented conditions or behavioral remedies. The main distinction is that a structural remedy “creates or preserves legally and operationally independent firms so as to maintain competition in the affected market,”²⁶ while a behavioral remedy “permits integration subject to operating rules intended to prevent the merged firm from subsequently undermining market competition.”²⁷ The most typical structural remedy is to require a divestiture of some

²⁶Kwoka and Moss (2011, p. 4).

²⁷Kwoka and Moss (2001, p. 4).

sort. Behavioral remedies are more often used in vertical cases than horizontal cases, and often involve conditions of the sort that were adopted in this merger that attempt to prevent the merged firm from disadvantaging its competitors.²⁸

Historically, the DOJ has been skeptical of the value of behavioral remedies. The main problem that it perceived with conduct-oriented conditions was that crafting, monitoring, and enforcing detailed regulations that essentially required the firm to act other than in its own self-interest is a regulatory activity, and antitrust agencies (and federal judges) had neither the detailed industry-specific knowledge nor the resources to engage in this type of activity. Further, there was also a concern that detailed conduct-oriented regulation would very often be ineffective and/or create other distortions and problems. (That is, there was a concern that regulation may not work very well even when conducted by expert well-funded regulators.)

In the last few years the DOJ has apparently become more favorably disposed towards behavioral remedies. In particular it has employed behavioral remedies in a number of important merger cases in addition to the Comcast-NBUC case and also revised its merger condition guidelines to specifically endorse the use of behavioral remedies.²⁹ This move towards greater use of behavioral remedies is somewhat controversial, and there is a concern in some quarters that behavioral remedies will not be effective (Kwoka and Moss 2011; American Antitrust Institute 2011.) Proponents of behavioral remedies argue that carefully-drafted conditions can be enforced; and that in cases where structural remedies are not possible, imposing conditions can

²⁸Establishing firewalls to prevent information from flowing between divisions of the merged firm is another common sort of condition.

²⁹See Kwoka and Moss (2011) for a detailed discussion of these recent events. Also see Heyer (2012), which endorses the use of behavioral remedies in some circumstances.

allow the merger to proceed and the efficiencies generated by the merger to occur, while minimizing the competitive harms.

Over the next few years there will likely be a lively debate over the role that behavioral remedies should play in antitrust enforcement. Evidence on the extent to which the Comcast-NBCU conditions turn out to be effective will likely play a role in shaping this debate.

THE FOCUS OF THE DOJ VS. THE FCC

One interesting aspect of this case is the difference in the relative focus of the two agencies. The main focus of the DOJ was on the potential for the merged firm to disadvantage OVDs. Although it briefly discussed the potential harm that the merged firm might disadvantage rival MVPDs, the vast bulk of its discussion on competitive harms was devoted to the potential for the merged firm to disadvantage OVDs. It declined to impose its own conditions to require the merged firm from making NBCU content available to MVPDs and instead noted that it believed that the FCC conditions were adequate to address the problem. However, it imposed its own conditions to require the merged firm to make NBCU content available to OVDs even though they were substantially similar to the conditions imposed by the FCC. More importantly, it imposed additional conditions that require the merged firm to make its broadband system available to OVDs, over and above the conditions that the FCC imposed.

In contrast, the FCC appeared to be at least as concerned with the potential for the merged firm to disadvantage MVPDs as OVDs. Furthermore it also considered the potential for the merged firm to disadvantage rival programmers.

In some ways this difference in focus is relatively consistent with past behavior of the

agencies. The last major vertical merger in the video programming and distribution industry that the agencies considered before the Comcast-NBCU merger was the News Corp.-DirecTV merger in 2003-04 (FCC 2004). The main difference between these two cases was that in 2003-04 OVDs were not yet recognized as a source of potential competition for MVPDs. The FCC conducted an investigation that was comparable in scope to its investigation of the Comcast-NBCU merger and imposed similar sorts of conditions. However, the DOJ decided not to challenge the merger, and simply stated that the FCC conditions addressed its main concerns. It seems possible that the DOJ would have followed much the same course of action in the case of the Comcast-NBCU merger, were it not for the issues that were raised by the threat to the potential competition that flows from OVDs.

SUBSEQUENT EVENTS

In the one and a half years that have followed since the approval of the merger in January of 2011, private firms have used the competition-related merger conditions two times.³⁰ First, Bloomberg Television filed a complaint with the FCC that it was not being placed in a news neighborhood and the FCC ruled in favor of Bloomberg (Shields 2012). Second, an OVD subsequently filed a complaint that NBCU programming was not being made available to it and requested binding arbitration. As of mid-summer 2012 this case has not yet been resolved (Teinowitz 2012). The fact that the conditions have not been used extensively should not

³⁰The FCC adopted some additional conditions that were not directly meant to address competitive harms; they were instead related to its broader mandate to protect the public interest. One challenge to these conditions has also occurred. See Bode (2012).

necessarily be taken as a sign that they have had no effect because the conditions may have caused the merged firm to alter its behavior to comply with the conditions.

Another potentially significant development is that the DOJ has reportedly opened an investigation of the merged firm's compliance with the condition that Comcast, in its capacity as an ISP, not disadvantage other OVDs by providing them with inferior access to its broadband system as compared with what it provides to its own OVD, Fancast X-finity (Woollacott 2012). While the DOJ could potentially attempt to bring a case against the merged firm's actions based on general antitrust statutes, its ability to bring such a case is greatly enhanced by the fact that the merged firm agreed to conditions that limit this behavior.

CONCLUSION

The Comcast-NBCU merger took place at a moment in time that regulators judged to be a critical turning point in the evolution of the video distribution industry, when Internet-based distribution of video was just beginning to position itself to compete with traditional video distribution technologies. Comcast and NBCU argued that the greater coordination between distribution and production of programming created by their merger would allow them to respond more boldly and innovatively to and take advantage of the technological developments that were sweeping the industry. However, the DOJ and FCC were concerned that the merged firm could easily crush nascent on-line distribution competitors either by withholding NBCU content from them or by degrading their access to the Comcast broadband network. The agencies ultimately decided that conditions could be imposed on the merged firm to control its potentially anticompetitive conduct that would still allow the efficiencies of the merger to be captured.

It will be interesting to follow developments in this industry over the next few years to see if Internet-based distribution fulfills its promise to provide consumers with a new competitive alternative, and if the conditions that were imposed by the DOJ and FCC can be determined to have played a role in fostering this competition. It will also be interesting to see if any evidence can be found to show that the vertical merger of content production and distribution that was created by the Comcast-NBCU merger allowed the firm to introduce more innovative products and services than did its non-integrated competitors.

The FCC was equally concerned that the merged firm might be able to disadvantage Comcast's traditional distribution competitors by withholding NBCU content from them or by increasing the prices that it charged for this content. The FCC further refined its method of quantifying the magnitude of the competitive harms in the traditional distribution market by using an innovative bargaining model methodology to estimate the extent to which the vertical merger would increase the merged firm's opportunity cost of providing programming to competitors and the extent to which this increased opportunity cost would result in higher programming prices. The fact that profit margins were so high in the cable industry (due to the enormous fixed infrastructure costs of providing cable service) played a major role in driving the FCC's conclusion that the competitive effects in the traditional distribution market would also be significant.

TABLE 1
MARKET SHARES OF COMCAST AND EACH OF THE FOUR NATIONAL MVPDS

Region	Comcast	Other Cable	Total Cable	DirecTV	Dish	Verizon	AT&T
Philadelphia	0.629	0.085	0.714	0.110	0.058	0.117	0.000
Chicago	0.608	0.045	0.653	0.179	0.118	0.000	0.050
San Francisco-Oakland	0.572	0.040	0.613	0.200	0.126	0.000	0.061
Miami-Ft. Lauderdale	0.528	0.039	0.567	0.285	0.090	0.000	0.058
Washington DC	0.448	0.130	0.578	0.186	0.105	0.131	0.000
Hartford-New Haven	0.389	0.298	0.686	0.146	0.064	0.000	0.104
New York	0.095	0.630	0.724	0.092	0.048	0.131	0.004
Los Angeles	0.000	0.511	0.511	0.251	0.133	0.068	0.037
Dallas-Ft. Worth	0.000	0.438	0.438	0.215	0.188	0.064	0.095
San Diego	0.000	0.724	0.724	0.122	0.084	0.004	0.066
Total U.S.	0.236	0.379	0.615	0.188	0.144	0.003	0.023

Source: Media Business Corp. data that were presented in Rogerson (2010a), Tables 1 and 2.

TABLE 2
VALUES OF α

Region	DirecTV	Dish	Verizon	AT&T
Philadelphia	0.71	0.67	0.71	0.63
Chicago	0.74	0.69	0.61	0.64
San Francisco-Oakland	0.72	0.65	0.57	0.61
Miami-Ft. Lauderdale	0.74	0.58	0.53	0.56
Washington DC	0.55	0.50	0.52	0.45
Hartford-New Haven	0.46	0.42	0.39	0.43
New York	0.10	0.10	0.11	0.10
Los Angeles	0.00	0.00	0.00	0.00
Dallas-Ft. Worth	0.00	0.00	0.00	0.00
San Diego	0.00	0.00	0.00	0.00
Total U.S.	0.29	0.28	0.24	0.24

Note: The parameter α is determined by the formula $\alpha = s_c / (1 - s_R)$ where s_c is the market share of Comcast and s_R is the market share of the rival firm. The data to calculate α for each region/rival pair are presented in Table 1.

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