Preserving Free Television?
Some Empirical Evidence on the Efficacy of Must-Carry

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In March 1997, the Supreme Court upheld the must-carry provisions of the 1992 *Cable Act* on the grounds that they insured the survival of the “free” over-the-air television. This article empirically evaluates the efficacy of must-carry in preserving free television and shows that non-network broadcast stations were able to increase viewer share after must-carry, lending support to the preservation rationale. The empirical analysis also indicates that this increase came exclusively from network stations, not cable programming.

Delivering a diverse and entertaining array of television programming is the essence of cable television service. In doing so, cable programming competes directly with the programming of over-the-air television broadcast stations for viewer share. According to the recent Supreme Court decision in *Turner Broadcasting System, Inc. v. FCC*, this competition between cable and broadcast programming presents a dilemma: Competition often produces winners and losers, but for the broadcast industry, the Court decided, losing is not an option. In an effort to protect the broadcast industry from both the desirable and potentially undesirable competitive practices of the cable television industry, the Court upheld the must-carry provisions of the *Cable Television Consumer Protection and Competition*
Act of 1992. The must-carry rule—a cornerstone of cable regulation since the dawn of the Federal Communications Commission’s (FCC) interest in the burgeoning cable television industry—requires cable television systems to retransmit the signals of local broadcasting stations without charge to those stations. Under the provisions of the 1992 Cable Act, a broadcaster has the right to negotiate payment from cable operators for retransmission consent or to choose mandatory retransmission under the must-carry rules. In nearly every case, broadcasters were unsuccessful in acquiring payment from cable operators, but some used theses negotiations to gain retransmission guarantees for their affiliated cable networks (Flint, 1993).¹ Smith (1997), Lubinsky (1996), and Allard (1993) provide thorough reviews of the must-carry provisions.

The legal and economic justifications for must-carry regulation have evolved over time, with refinements driven primarily by the rule’s difficulty with the First Amendment (Smith, 1997). In its support of the constitutionality of the must-carry provisions of the 1992 Cable Act, the Supreme Court relied solely on the preservation rationale. The preservation rationale is founded on the concept that Congress has an “independent interest in preserving a multiplicity of broadcasters to ensure that all households have access to information and entertainment on an equal footing with those who subscribe to cable” (Turner Broadcasting System, 1997, p. 28). A broadcast station not retransmitted by the cable operator is foreclosed to 60% of American households—the typical cable penetration rate—making it very difficult for the broadcaster to amass an attractive portfolio of viewers to sell to advertisers. As viewer share declines, so do advertising revenues, station profits, the viability of the broadcast station, and, if foreclosure is widespread, the broadcast industry as a whole. By tying the success and failure of broadcast stations to the cable penetration rate, the potential benefits of must-carry are apparent.

A second rationale accepted by a minority of the Supreme Court Justices was the anticompetitive rationale. The anticompetitive rationale is founded on the notion that cable operators have “incentives to drop local broadcasters in favor of other programmers less likely to compete with them for audience and advertisers (Turner Broadcasting System, 1997, p. 37).” By foreclosing broadcasters to large portions of viewing households, the Court asserts, the cable industry is able to handicap its chief rival in television advertising markets. This intentional crippling of the broadcast industry is undesirable for two reasons: (a) It reduces competition in advertising markets, and (b) it reduces competition in “idea” markets by reducing the number of broadcasters (i.e., independent voices). It is important to note that although the Court did recognize the anticompetitive rationale for must-carry, this rationale was rejected by a majority of the Justices. As a consequence, the Court’s decision hinged almost exclusively (by one vote) on the preservation of

¹These arrangements typically involved affiliated satellite programming, and not broadcast stations. Thus, our conceptual and empirical analysis should not be affected by these dealings.
free over-the-air television. Four judges joined Justice Kennedy’s opinion that laid out both the preservation of free television and anticompetitive rationales for must-carry. Justice Breyer provided the fifth vote to uphold must-carry, though he rejected the anticompetitive rationale. Vita (1997) provides a discussion and empirical analysis of the anticompetitive rationale, but this rationale for must-carry is not the focus of our article.

The purpose of this article is to assess empirically the efficacy of must-carry as a preservation mechanism for the broadcast industry (i.e., free television). The framework underlying the preservation rationale implies that the efficacy of must-carry does not rely simply on cable retransmission, but on the broadcast industry’s ability to gain viewer share that can be converted to revenue through the sale of advertising. Our empirical analysis is motivated by a simple, random-choice model of viewer share that provides the analytical framework for evaluating the effects of must-carry on the viewer shares of various programming alternatives (i.e., cable programming, network broadcast programming, and non-network broadcast programming). The scope of this article, like the Supreme Court’s decision, is narrowly focused on this issue of viewer shares, and we refrain from discussing the plethora of other legal and economic issues surrounding must-carry including the First Amendment claims of cable operators and broadcasters. Discussing those topics here only would detract from our primary purpose.

AN ANALYTICAL FRAMEWORK

In this section we develop a random choice model of viewer share based on the simplifying assumption that each of $N$ channels gets its proportionate share of viewers. In other words, the probability a viewer watches any given channel is $1/N$. Although this assumption will not perform particularly well at estimating the actual viewer share of any particular channel, we believe that it accurately portrays the underlying economic logic of the court’s preservation rationale for must-carry. Because the goal of the article is to assess the efficacy of a particular policy, it is appropriate if not essential to evaluate the achievement of the intended ends within the policy maker’s own logical framework.

All of the $N$ channels can be categorized as one of three types of channels: (a) cable channels, excluding retransmitted broadcast channels ($N_C$); (b) broadcast channels that are retransmitted by the cable system ($N_N$); and (c) broadcast channels excluded from the cable operator’s service package ($N_I$). Cable subscribers have access to both cable and included broadcast channels whereas those not subscribing to cable can view both types of broadcast channels. The variables $V_C$, $V_N$, and $V_I$ are the viewer shares of representative cable, included broadcast, and excluded broadcast channels. The percentage of the total television audience that subscribes to cable television service is $w$ and the audience that does not is $(1 – w)$. 
Cable subscribers view only channels carried by the cable system and, of course, households that do not subscribe to cable view only broadcast channels. Thus, the viewing “market” is divided into two components we define as on-cable ($w$) and off-cable ($1-w$) audiences.

The Preservation Rationale: Excluded Broadcast Channels

Under the preservation rationale, a broadcast station excluded from cable retransmission is doomed because the station will be unable to acquire enough viewers to offer an attractive audience portfolio to advertisers. The viewer share of a representative excluded broadcast channel ($V_i$) prior to must-carry is

$$V_i^* = \frac{1}{N_N + N_{I-1}} \left(1 - w\right)$$

where the asterisk (*) implies prior to must-carry. In the off-cable audience, the representative excluded broadcast channel shares audience with $N_N$ and $N_{I-1}$ channels. At very low cable penetration rates ($w$), there is little harm from being excluded from the on-cable audience, that is, the off-cable audience is relatively large. At 100% penetration ($w = 1$), alternatively, no audience remains for the excluded broadcast channel. More formally, the derivative of excluded broadcast channel viewer share with respect to cable penetration is negative ($dV_i^*/dw < 0$).

Must-carry opens the on-cable audience to the excluded broadcast channel, and, after must-carry, the viewer share of the excluded broadcast stations is

$$V_1 = \frac{1}{N_C + N_N + N_{I-1}} w + \frac{1}{N_N + N_{I-1}} \left(1 - w\right)$$

Obligating cable operators to include all broadcast channels in the basic programming tier expands the potential audience of the excluded broadcast channels by the positive first term on the right side of Equation (1b). This additional audience is the on-cable audience, where the excluded broadcast channel shares audience with $N_C$, $N_N$, and $N_{I-1}$ channels. Because $N_C > 0$, the on-cable audience is more “competitive” than the off-cable audience (each channel has a smaller viewer, or market, share).

Despite must-carry, increases in cable penetration continue to reduce the viewer share of excluded broadcast channels. Consistent with the preservation

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2 The derivatives are easily obtained, and interpretation somewhat straightforward. Proofs of all propositions of this type that arise in our subsequent theoretical discussion are available from the authors upon request.
rationale, however, the effect is more negative before than after must-carry \( \left( \frac{dV^*_1}{dw} < \frac{dV^*_1}{dw} < 0 \right) \). Because the on-cable audience is more competitive than the off-cable audience, the excluded broadcast channels always prefer a lower cable penetration rate with or without must-carry, which simply implies a broadcast station will prefer to share audience with fewer rather than more channels.

**Must-Carry and Cable Channel Viewer Share**

The viewer share for a representative cable channel \( (V_C) \) before must-carry is

\[
V_C^* = \frac{1}{N_C + N_N} \, \frac{w}{w} \quad (2a)
\]

where the viewer share of the cable channel has no off-cable audience term \( (1-w) \). Prior to must-carry, cable channels share the on-cable audience with included broadcast channels only. Any increase in cable penetration will increase the cable channel's viewer share \( (dV_C^*/dw > 0) \). After must-carry, the viewer share of the cable channel is:

\[
V_C = \frac{1}{N_C + N_N + N_t} \, \frac{w}{w} \quad (2b)
\]

where the addition of the excluded broadcast channels to the on-cable audience makes the on-cable audience more competitive, reducing viewer share. Unlike the excluded broadcast channel, there is no offsetting reduction in viewer share as viewers are transferred from the less competitive off-cable audience to the on-cable audience (see Equation 1b). Thus, increases in the cable penetration rate always increase viewer share, though the effect of cable penetration on cable channel viewer share is smaller after must-carry than before \( (dV_C^*/dw > dV_C/dw > 0) \).

**Must-Carry and Included Broadcast Channels**

The broadcast industry, including both included broadcast channels and excluded broadcast channels, is must-carry's most active proponent. We have already shown that the excluded broadcast channels stand to gain from must-carry (at least in theory). But what about included broadcast channels? Prior to must-carry, the viewer share of a representative included broadcast channel is

\[
V_N^* = \frac{1}{N_C + N_N} \, \frac{w}{w} + \frac{1}{N_N + N_I} \, (1-w) \quad (3a)
\]
where the included broadcast channel has both on-cable and off-cable audience. For the on-cable audience, the representative retransmitted station shares the audience (proportionately) with $N_C$ cable and $N_N-1$ included broadcast channels. For the off-cable audience, the included broadcast channel shares viewers with $N_I$ excluded and $N_N-1$ included broadcast channels. The viewer share of the included broadcast channel is simply a penetration rate weighted average of its viewer shares in the two audiences. Generally, we expect $N_C > N_I$, implying that the on-cable audience segment is more “competitive” than the off-cable segment prior to must-carry, which in turn implies that the included broadcast channel’s share is lower in the on-cable audience than in the off-cable audience. Thus, increases in the penetration rate decrease the viewer share of the included broadcast channel ($dV_N / dw < 0$) as audience shifts from the less competitive off-cable audience to the more competitive on-cable audience.

After must-carry is implemented, the included broadcast channel’s viewer share becomes:

$$V_N = \frac{1}{N_C + N_N + N_I} w + \frac{1}{N_N + N_I} (1-w)$$

where the only difference between Equations (3a) and (3b) is the inclusion of $N_I$ in the on-cable audience. After must-carry, the on-cable audience becomes increasingly competitive due to the addition of the excluded broadcast channels to the on-cable audience. Thus, must-carry increases the negative effect of cable penetration on the viewer share of included broadcast channels ($dV_N / dw < dV_N^* / dw < 0$). Ceteris paribus, there is no effect on the competitiveness of the off-cable audience segment. However, because must-carry is intended to increase the viability and thus the number of non-network stations, an increase in non-network stations may occur. If so, the off-cable segment will become more competitive after must-carry, although still less competitive than the on-cable audience segment. It appears, within the context of this model, that included broadcast channels have little to gain from must-carry. However, the broadcast industry as a whole is better off with than without must-carry—the positive effect on excluded channels exceeds the decline in included broadcast share.

**EMPIRICAL ANALYSIS**

Within the framework of our analytical model, the effect of cable penetration ($w$) on the viewer share of each channel type is the key variable by which to assess the preservation rationale for must-carry. For each channel type, cable penetration has a differential and defined effect on viewer share prior to and after implementation of must-carry.
In specifying the empirical model, a few minor adjustments to the conceptual framework are required. First, the viewer share statistic employed in the empirical model is the percentage of viewer share for channel types rather than for individual channels. Channel type \( t \) viewer share (where \( t = C, N, I \)) can be written as \( Z_t = N_t V_t(w) \), and the effect of cable penetration on viewer share is \( dZ_t/dw = N_t \cdot dV_t/dw \), the sign of which is determined by \( dV_t/dw \). Thus, the choice of dependent variable in the empirical analysis does not affect the interpretation of the derivatives in the preceding text.

As in the conceptual model, three channel types are defined: cable, network (which we previously termed “included broadcast channels”), and non-network (which we previously termed “excluded broadcast channels”). This categorization of channels is an important assumption and is based on the premise that all network-affiliated broadcast television stations were retransmitted by cable systems prior to must-carry and a large enough fraction of non-network stations to have a statistically significant affect on viewer share were not. There is evidence supporting these assumptions. First, network-affiliated stations continue to account for about 60% of all viewing and are thus a very important input for cable television service. Second, the FCC report on carriage denials following the 1985 court decision declaring must-carry unconstitutional reported that of the 279 stations that were dropped or denied carriage by reporting cable systems (roughly 50% of all cable systems), 117 were commercial independents, 96 were noncommercial educational and public stations, and 66 stations were classified as other, including, for example, religious stations. There were no network affiliates dropped or denied carriage (Glauberman & Roberts, 1988). Third, one industry analyst predicts that must-carry will mean prices of major TV stations will remain flat but values of other stations could “skyrocket” because of assurance of cable carriage, implying that these other stations were not retransmitted by cable prior to must-carry (Warren Publishing, 1997). Finally, the mere fact that must-carry was in the 1992 Cable Act is evidence that there must have been enough non-network stations standing to benefit from retransmission to organize into a powerful constituency. Although future data-gathering efforts may reveal more detailed information on station carriage, our analysis is restricted by this assumption at present. To a large extent, the validity of the assumptions will be determined by the empirical analysis.

Specification and Data

The analytical model suggests a three-equation model of the following form:

\[
Z_t = \gamma_0 + \gamma_1 w + \gamma_2 w \cdot DMC + \gamma_3 N_N + \gamma_4 N_C + \gamma_5 N_t \quad (1c)
\]

\[
Z_C = \alpha_0 + \alpha_1 w + \alpha_2 w \cdot DMC + \alpha_3 N_N + \alpha_4 N_C + \alpha_5 N_t \quad (2c)
\]
where $DMC$ is an “event” dummy variable that equals 1 after must-carry is implemented, 0 before and all other variables are as defined previously. This specification tests for a change in the effect of cable penetration on viewer share after the implementation of must-carry. *A priori* expectations on the signs of the coefficients are defined and described in the preceding text and are: $\gamma_1 < 0 < \gamma_2$ so that $0 > (\gamma_1 + \gamma_2) > \gamma_1$; $\alpha_2 < 0 < \alpha_1$, so that $(\alpha_1 + \alpha_2) > 0$; and $\beta_1, \beta_2 < 0$ so that $(\beta_1 + \beta_2) < \beta_1$.\(^3\)

Expectations regarding the coefficients on $NN, NI, NC$ are also provided by the model and are $\gamma_5, \alpha_4, \beta_3 > 0$ and $\gamma_3, \alpha_3, \alpha_5, \beta_4, \beta_5 < 0$: More of your own type of channel increases viewer share whereas increases in the number of rival channels decreases viewer share.

BIA’s *MasterAccess* database provides all of the data used in this empirical analysis with the exception of the number of cable channels. Cable channel data are provided by the *Warren Television and Cable Factbook* (1994 electronic version). The must-carry provisions were implemented in October 1993, so data for the 100 largest television markets for the 2 years preceding and following the implementation of must-carry are included in the sample (1991, 1992, 1994, 1995). *MasterAccess* provides viewer share data by four channel types: network, independent, public, and cable. Network stations are defined as those stations affiliated with NBC, ABC, CBS, Fox, or UPN. Viewer share and station count for independent and public stations are summed to create $Z_I$ and $N_I$. As a practical matter, whether we group public stations with non-network, with network, or allow them to enter the system separately seems to make no difference to the crux of our analysis. Our inferences concerning the effect of must-carry on the viewer share of network, non-network, and cable stations are quite robust with respect to our treatment of public stations.\(^4\)

**Estimation**

We estimate the system of equations formed by (1c)–(3c) using a seemingly unrelated regression (SURE) technique. But three econometric issues must be dealt with prior to estimation. First, by definition, $(Z_N + Z_I + Z_C = 1)$, so only two of the three equations are estimated (with the implied coefficient restrictions), and the resulting coefficients are used to calculate the coefficients of the

\(^3\)Correlating these sign and magnitude hypotheses with the prior discussion will be more straightforward if it is recalled that the coefficient of $w$ measures its effect on $Z$ prior to must-carry and the sum of that coefficient and the coefficient on the interaction variable $w \cdot DMC$ measures the corresponding effect after must-carry implementation.

\(^4\)Corroborating empirical results are available from the authors upon request.
third. Greene (1997) provides a detailed account of the estimation of share equations. Second, the implementation of the must-carry rule might lead to an increase in the number of non-network stations. We rejected the null hypothesis that $N_I$ is exogenous using the Hausman test and, as a result, insulate against simultaneity bias by employing instrumental variable (IV) estimation, replacing $N_I$ with an instrumental variable ($\hat{N}_I$). The variables used as instruments in an OLS regression to obtain $\hat{N}_I$ include $w$, $w^*DMC$, $NN$, TV households as a percent of total households, and a set of regional dummies.

Third, a variable measuring the number of cable channels ($N_C$) by television market is complicated by the fact that many cable systems are located within any given television market. We approximate the number of cable channels in each television market by aggregating system-level data from the Warren Cable Factbook to the television market level over a number of years. Specifically, we took the average number of cable channels offered by all cable systems in the market as our approximation of $N_C$. If approximation errors are random, the instrumental variable ($\hat{N}_C$) created by regressing this measure on the variables used to produce $\hat{N}_I$ is the same as would have been generated had the true $N_C$ been available. We adopted this procedure for handling our measurement problems with $N_C$ because it allows us to assess directly the impact of the number of cable stations on viewer shares and because the marginal cost to the statistical properties of our estimators is small (Greene, 1997, pp. 440–442). The other obvious alternative, using proxy variables for the effect of $N_C$, has none of the advantages we detailed earlier: It does not allow a direct assessment of the impact of $N_C$ on viewer share, plus it can easily result in inconsistent estimates (Greene, 1997, pp. 442–443). Virtually the only statistical problem we encounter by using our instrument for $N_C$ rather than the true $N_C$ is a potential loss of efficiency of our estimates, but we more than hope to compensate for this loss by incorporating the cross-equation constraints noted earlier. Recall that we are already relegated to optimal asymptotic properties because we use an instrument for $N_C$ rather than the true $N_C$ is a potential loss of efficiency of our estimates, but we more than hope to compensate for this loss by incorporating the cross-equation constraints noted earlier. Recall that we are already relegated to optimal asymptotic properties because we use an instrument for $N_I$. There is, therefore, no loss of asymptotic efficiency attributable to using an instrument for $N_C$ because IV produces consistent estimates. But let us be clear, we use $\hat{N}_C$ to account for the potential for measurement error in $N_C$ and not to solve a simultaneity issue, as was the case with $N_I$.

Because viewer shares may be influenced by factors other than must-carry and the numbers of the various types of channels, we include two additional variables in each of the three equations in our system. First, cable programming has consistently increased its viewer share at the expense of broadcasters, primarily due to expanding channel capacity and better programming over time. Of course, increases in cable penetration contribute to the increase in the cable viewer share but that effect is accounted for by the inclusion of penetration as an explanatory variable. In order to guard against our must-carry dummy picking up this trend in mean effect, we include a time trend variable ($YEAR$) in each equation that accounts for any general trends in viewer share over the relevant time period.
Along these same lines but more specifically, the fastest growing segment of the U.S. population in recent years has been Hispanic. It should therefore be no surprise to observe an expanding number of independent television stations that are programmed for Hispanic audiences. For this reason, we include an explanatory variable measuring the percent of Hispanic population in the television market (HISPAN). In other words, it is quite possible that the model is picking up unspecified collinearity between the number of cable and non-network stations, which does not allow us to distinguish their separate effects on their relevant market shares.

RESULTS

The results are presented in Table 1. Only one explanatory variable (YEAR in the $N_f$ model) is statistically insignificant at standard levels in both the network and non-network equations. However, in the cable equation, the only variables that are significant at these standard levels are cable penetration rates (at the 0.01 level), the number of non-network stations (at the 0.01 level), and the time trend

<table>
<thead>
<tr>
<th>Variable</th>
<th>Equation (1c): Network</th>
<th>Equation (2c): Cable</th>
<th>Equation (3c): Non-Network</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EC</td>
<td>t Test</td>
<td>EC</td>
</tr>
<tr>
<td>Constant</td>
<td>0.734</td>
<td>22.54</td>
<td>0.061</td>
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<tr>
<td>$w$</td>
<td>$-0.086$</td>
<td>2.61</td>
<td>$0.377$</td>
</tr>
<tr>
<td>$w_c$: DMC</td>
<td>$-0.085$</td>
<td>4.01</td>
<td>0.002</td>
</tr>
<tr>
<td>$N_2$</td>
<td>0.033</td>
<td>5.21</td>
<td>0.011</td>
</tr>
<tr>
<td>$\dot{N}_c$</td>
<td>$-0.004$</td>
<td>2.31</td>
<td>$-0.001$</td>
</tr>
<tr>
<td>$\dot{N}_1$</td>
<td>$-0.010$</td>
<td>6.71</td>
<td>0.012</td>
</tr>
<tr>
<td>HISPAN</td>
<td>$-0.099$</td>
<td>6.17</td>
<td>0.028</td>
</tr>
<tr>
<td>YEAR</td>
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<td>0.010</td>
</tr>
<tr>
<td>$Z_N$</td>
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</tr>
<tr>
<td>$Z_C$</td>
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<tr>
<td>$Z_I$</td>
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</tr>
<tr>
<td>R²</td>
<td>0.56</td>
<td></td>
<td>0.55</td>
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<tr>
<td>Obs.</td>
<td>398</td>
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</tbody>
</table>

Note. EC = estimated coefficient; $t$ test = absolute value of $t$ test statistic.

aStatistic for DMC and not the interaction term.
(at the 0.10 level). The empirical models fit the data quite well, with each $R^2$ exceeding 0.55. Comparing across equations, all but one of the variables related to cable penetration are statistically significant and have the correct sign. The lone exception is the must-carry interaction term in the cable equation, which turned out positive but insignificant (i.e., the coefficient cannot confidently be differentiated from zero). We conclude that the empirical results are broadly consistent with our conceptual model of viewer choice. Most of the coefficients on the number of channels are consistent with our a priori expectations; the only statistically significant differences obtaining are for $N_C$ in the non-network equation and for $N_I$ in the cable equation. On the issue of our network/non-network assumption of the empirical model, observe that the effect of cable penetration on viewer share prior to must-carry is larger in absolute value for non-network stations than for network stations ($|\beta_1| < |\gamma_1|$), lending support to our assumption regarding channel types.

Consistent with the preservation rationale, cable penetration reduces the viewer share of excluded broadcast channels prior to must-carry ($\gamma_1 < 0$). Further, must-carry offsets the negative effect of cable penetration on non-network station viewer share ($\gamma_2 > 0$), though, as predicted, the overall effect of cable penetration remains negative for these channels ($\gamma_1 + \gamma_2 < 0$).

Also as predicted by the analytical model, increases in cable penetration reduce the viewer share of network channels ($\beta_1 < 0$). Must-carry increases this negative effect as expected ($\beta_2 < 0$) so that $(\beta_1 + \beta_2 < \beta_1)$. Also as expected, increases in the cable penetration rate increases viewer share for cable channels ($\alpha_1 > 0$), although must-carry is found to have no effect on cable channel viewer share ($\alpha_2 = 0$). Under the preservation rationale, we expected that the increase in viewer share to excluded broadcast channels would come (proportionately) from cable and included broadcast channels. However, our results imply that the share gain to non-network stations has come solely from network stations and not cable programming ($\beta_2 = \gamma_2$ and $\alpha_2 = 0$).

An increase in the number of network stations increases network share ($\beta_3 > 0$), whereas increases in cable channels and non-network stations decreases network share ($\beta_4 < 0$, $\beta_5 < 0$). All three effects are statistically significant and consistent with our a priori expectations. As expected, non-network share rises with an increase in the number of non-network stations ($\gamma_5 > 0$) and declines with an increase in the number of network stations ($\gamma_3 < 0$). Inconsistent with our a priori expectation, a positive relation is found between non-network viewer share and (our instrument for) cable channels ($\alpha_5 > 0$). Similarly, increases in the number of non-network stations tend to increase cable’s share ($\gamma_4 > 0$). Cable’s share is unaffected by either the number of cable channels or network stations ($\alpha_4 = 0$, $\beta_4 = 0$). The positive relations between cable channels and non-network share and non-network stations and cable share may indicate a complementarity between the two types of channels. Certainly these two channel types have common traits not
shared with network stations. For example, cable and non-network programming are more diverse than network programming. Preferences for diversity in any one market may lead to more non-network stations, and more viewing of both cable and non-network programming. For example, a larger Hispanic population shifts viewer share to cable and non-network programming. In other words, it is quite possible that the model is picking up unspecified collinearity between the number of cable and non-network stations that does not allow us to distinguish their separate effects on their relevant market shares.

A larger percentage of Hispanic population leads to increases in non-network viewer share, which appears to be taken from network channels because HISPAN’s effect on cable’s share is insignificant. The results on YEAR indicate a significant negative trend in the network channels’ viewer share and a less significant positive trend of about the same magnitude for cable’s viewer share. The effects of temporal change on non-network viewer share appear to be accounted for primarily by cable penetration, must-carry, and the number of stations because YEAR is not statistically significant in that equation.

CONCLUSION

The Supreme Court decision to uphold the must-carry provisions of the 1992 Cable Act hinged exclusively on the preservation of free television. The preservation rationale was aimed at protecting the financial viability of broadcasters by expanding their viewing audience. After providing a conceptual framework, we specified an empirical model that assesses the efficacy of must-carry in increasing the viewer share of broadcasters and thus preserving free television.

Our econometric results support the preservation rationale for must-carry. Following the imposition of must-carry, we find that there has been a statistically significant shift in viewer share toward non-network broadcast channels—the channels most likely not to be retransmitted by cable systems. Our findings suggest that the gain in viewer share by excluded broadcast channels comes primarily at the expense of included broadcast channels and not cable programming channels. We note, however, that the policy implications of our findings should be tempered by the limitations of the data. As with all empirical work, this research should be considered neither conclusive nor incontrovertible, but rather as one element in a portfolio of evidence.

Although this article focuses primarily on the more traditional policy issues of must-carry, perhaps the most important contemporary policy question is how must-carry will apply to digital broadcast television. With digital broadcasting, one analog channel can be converted into multiple (approximately six) digital channels and how many of these digital signals cable systems will be required to retransmit under the must-carry rules is a point of contention. Because a large
number of (presumably) free digital broadcast channels might reduce the demand for cable service, the most logical extension of our model would be to incorporate the relation between the number of broadcast channels and cable penetration. As the number of broadcast channels increases, the relative superiority of cable service to over-the-air reception of programming will diminish (cable penetration, $w$, will be reduced) so that the efficacy of must-carry will be lower with digital broadcasting. In other words, consumers will no longer choose between few broadcast channels and many cable channels, but many of either. The model also could be extended to incorporate the growth of alternative video distribution networks such as direct broadcast satellite.

A more difficult conceptual and empirical issue arises when, given the channel capacity limitations of analog cable systems, the carriage of many digital broadcast signals forces cable systems to replace other programming with must-carry signals. If capacity limitations exist, then our conceptual and empirical models would need to be adjusted to account for these limitations as well as for the relative consumer preferences for different types of programming. Empirical measurement of these preferences, particularly in light of the data limitations, would be a difficult task.

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