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Do vertically and horizontally integrated firms survive longer? The case of cable networks in Korea

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ABSTRACT

This study examines the determinants of the survival of Korean cable networks, focusing on their vertical and horizontal integration. We use survival estimations to analyze the cable networks' duration. We find that a cable network survives longer if it is integrated with more same- and distinct-genre networks, has more viewers, and is carried by more distribution platforms. We also find that vertical integration has no significant effect on network duration when we control for horizontal integration. Although our study abstracts from estimating the cost or production function, the results suggest that joint program production may achieve substantial synergies such as portfolio effects and economies of scale and scope.

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1. Introduction

A large body of economics literature has empirically studied industrial dynamics. Most of these studies attempt to identify the factors affecting firms' entry and exit decisions. This study examines the determinants of Korean cable networks' survival, focusing on the effects of vertical and horizontal integration. We use detailed information on cable networks and apply a duration estimation allowing for unobserved channel-specific heterogeneity.

Since the beginning of cable television services in 1995, Korea's multichannel video programming distributor (MVPD) market has been highly concentrated. In 2012, over 80% of Korean TV households subscribed to an MVPD service, with 60% choosing cable service, 26% choosing IPTV, and 14% choosing direct broadcast satellite, or DBS (Korea Communications Commission, 2013). Cable television operators have dominated Pay TV services in the face of new competitors such as DBS and IPTV (which entered the market in 2002 and 2008, respectively). Some policymakers have been concerned that the established cable operators have an incentive to protect their monopoly profits by retarding competing operators' market entry. They suspect that incumbent cable operators impede competing operators by inducing program suppliers to limit their access to popular programming. In fact, many popular networks, including the three terrestrial broadcast networks (accounting for

60% of total viewer ratings), were not available to DBS for several years.¹

These regulatory concerns were fortified by the prevailing trend of vertical integration between cable operators and cable programming networks. Among the top 30 cable networks with the highest ratings in 2012, 14 were vertically integrated with cable operators, and nine were integrated with terrestrial broadcast networks.² Although the vertical integration of large cable programming networks has created pro-competitive effects in cable programming's downstream market by improving television production quality and thus competing with the terrestrial broadcasting networks, it aroused concern about the restriction of market competition that may arise from the integrated cable companies' discriminatory policy on carrying cable channels.

A large body of literature has shown that vertical integration leads to both efficiency and foreclosure (e.g., Quirnbach, 1986; Chipty, 2001; Crawford et al., 2015). The effects of vertical integration have been studied in two streams of the economics literature. One dates back to Coase (1937) and Williamson (1971), who shed light on the transaction cost savings produced by mergers.

¹ The DBS operators could not access the terrestrial broadcast television channels until 2005. Both the DBS and IPTV operators are now required to pay high channel carriage fees to the terrestrial broadcast channels.

² The terrestrial broadcast networks have expanded into the cable programming market. The three major terrestrial broadcast networks (KBS, MBC, and SBS) owned 20 popular cable networks in 2012. Their key strategy in this integration is to provide their off-network programs exclusively to their affiliated cable networks.

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They view vertical integration, a decision on firm boundaries, as an efficient way to resolve possible conflicts in contracts. A firm can either produce or buy inputs such as capital, labor, and intermediate goods. However, transactions outside firm boundaries can be costly and encounter unexpected incidents beyond the scope of the contracts. Firms that produce input goods themselves (i.e., are vertically integrated) can reduce such costs and risks. Achieving economies of scale is another object of vertical integration when the fixed cost is high (e.g., [Williamson, 1971](#)). Such benefits of scale economies are straightforward in the cable network market, given that the “first-copy” cost increases and the cost per consumer falls as a program’s audience grows. [Noam \(1985\)](#) and [Owen and Greenhalgh \(1986\)](#) estimate the cost functions for cable television networks and find that economies of scale are relatively small in the US cable industry, but [Ford and Jackson \(1997\)](#) find more recently that vertical integration lowers programming costs and prices, which are partially passed along as consumer surplus.

The other literature stream on the effects of vertical integration examines the strategic behavior that limits competition via foreclosure (e.g., [Salinger, 1988](#); [Hart and Tirole, 1990](#); [Whinston, 2003](#)). Theories on market foreclosure posit that a vertically integrated system may discriminate against other firms, thereby restricting rival companies’ access to upstream and downstream markets. Many studies have shown that vertically integrated cable operators have carried their affiliated networks more frequently than their rival networks. [Waterman and Weiss \(1996\)](#) found that premium movie networks in the US market such as HBO were carried more often by the cable systems integrated with the networks.

These theories have yet to conclusively determine the overall effects of vertical integration on industry dynamics; thus, the extent to which vertical integration affects the likelihood of a cable network’s survival remains an empirical question. [Lee and Kim \(2011\)](#) estimate the probability of cable network carriage and find that vertically integrated cable companies are more likely to carry affiliated cable channels and to refuse to carry rival channels in the Korean cable television market.³ Their finding suggests that vertical integration can create foreclosure effects. However, their study is limited in its use of cross-sectional data and lacks focus on the effects of vertical integration on the survival of cable programming networks.

The availability of micro-level data on cable networks allows us to consider other potential determinants of the survival of cable networks, such as horizontal mergers and portfolio effects. As the cost structure of a cable network is related to the corporation’s setup, cable networks often consolidate to achieve both scale and scope economies ([Blumenthal and Goodenough, 2006](#)). Corporations that operate multiple cable networks can combine their operations into a single operations center, through which advertising sales, business and legal affairs, accounting, senior corporate management, technology and engineering resources, and website operations can be shared by cable networks under common ownership. They can also obtain volume discounts when signing up cable systems to carry those networks or encourage cable operators to either buy their cable networks as a package or place the networks in advantageous channel locations in exchange for selling their popular cable networks. [Doyle \(2000\)](#) also argues that the joint production of the same type of media can achieve economies of scale and cost savings.

Companies can achieve economies of scope by diversifying their product lines. Synergies can be achieved by sharing production processes or distribution channels and applying technological or

production know-how to different genres ([Robins and Wiersema, 1995](#)). The joint production of multiple genres can be rationalized in terms of risk reduction, managing product life cycles, market exploitation, loyalty development, and marketing advantages ([Barksdale and Harris, 1982](#); [Dimmick and Wallschlaeger, 1986](#); [Markides and Williamson, 1996](#); [Picard and Rimmer, 1999](#); [Picard, 2005](#)). In our analysis of cable television networks, we measure this portfolio effect as the extent to which firms own various cable network genres.

Several studies have examined the duration of firms or products in the entertainment and media industries ([Brown 2007](#); [Chisholm and Norman, 2006](#); [De Vany, 2004](#); [Fu, 2009](#); [Van Kranenburg et al., 2002](#)) and the manufacturing industries ([Audretsch, 1991](#); [Audretsch and Mahmood, 1995](#)). Among the studies that apply the survival estimation method, the closest to ours is [Brown \(2007\)](#), who also analyzes the survival of cable networks. However, [Brown \(2007\)](#) focuses on the number of subscribers required for a cable network’s survival, whereas we examine the role of vertical or horizontal integration.⁴ In our survival analysis, we inspect the effects of integrations on cable networks’ survival by adding the indicator of vertical or horizontal integration for each cable network to measure the net effects of the integration. We then use alternative variables to capture diverse aspects of the effects, such as scale/scope economies or market foreclosure. For instance, we allow for the degree of potential market foreclosure—in terms of its impact on network survival—by measuring the number of rivals served by the integrated firms.

Our results show that a cable network survives longer when it is integrated with networks of multiple genres and that this effect is magnified as it integrates with more same-genre networks. Network duration is positively correlated with both the number of viewers and the number of distribution platforms. We also find, however, that vertical integration between cable operators and programming networks does not significantly affect cable networks’ survival. This may imply that the ramifications of vertical integration do not influence the viability of integrated cable networks and their rivals, or that vertical integration simply does not play an important role in the success of cable networks in Korea. However, given the tradeoffs between the efficiency gains and market foreclosure resulting from vertical integration, as the theory suggests, our findings may also indicate that these two effects of vertical integration counterbalance each other and that the estimated net effect of vertical integration is thus nearly zero.

To resolve the ambiguity about the role of vertical integration implied by the results of our duration analysis, we conduct further analysis focusing on the effects of vertical integration. Specifically, we examine the channel carriage decisions of cable operators in 2006 and 2011 following the empirical framework in [Chipty \(2001\)](#), who finds evidence of both market foreclosure and efficiency gains arising from vertical integration in the US cable TV industry. We find that vertical integration leads to efficiency enhancement whereby cable operators are more likely to carry their integrated networks. However, we find no evidence that integrated firms foreclose rival channels of the same genre as that of the integrated program provider or raise their costs. Combined with our findings from the duration analysis, this result suggests that the efficiency gains from vertical integration may not affect the sustainability of program providers in Korea.

The rest of this paper proceeds as follows. [Section 2](#) provides background on the Korean MVPD market. [Section 3](#) outlines the

³ The Korean Broadcasting Act prohibits cable operators and cable networks from owning cable network stock and equity shares exceeding a certain limit. Exclusive contracts between cable operators and networks are considered a violation of the Monopoly Regulation and Fair Trade Act.

⁴ We could have estimated the comparable effects of the number of subscribers if we had a proper variable. However, we are unable to calculate the number of subscribers to each network because most networks are provided as a bundle, and we have no information on the number of subscribers to each SO-bundle. We include viewer ratings instead to reflect a channel’s popularity.

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