



## 저작자표시 2.0 대한민국

이용자는 아래의 조건을 따르는 경우에 한하여 자유롭게

- 이 저작물을 복제, 배포, 전송, 전시, 공연 및 방송할 수 있습니다.
- 이차적 저작물을 작성할 수 있습니다.
- 이 저작물을 영리 목적으로 이용할 수 있습니다.

다음과 같은 조건을 따라야 합니다:



저작자표시. 귀하는 원저작자를 표시하여야 합니다.

- 귀하는, 이 저작물의 재이용이나 배포의 경우, 이 저작물에 적용된 이용허락조건을 명확하게 나타내어야 합니다.
- 저작권자로부터 별도의 허가를 받으면 이러한 조건들은 적용되지 않습니다.

저작권법에 따른 이용자의 권리는 위의 내용에 의하여 영향을 받지 않습니다.

이것은 [이용허락규약\(Legal Code\)](#)을 이해하기 쉽게 요약한 것입니다.

[Disclaimer](#) 

經濟學碩士學位論文

**The effect of vertical integration in movie industry**

영화 산업에서의 수직적 통합이 미치는 영향

2013.02

서울대학교 대학원

경제학부 경제학 전공

안 재현

# **The effect of vertical integration in movie industry**

**A thesis presented**

**by**

**Jae hyun An**

**to**

**Graduation program  
in industrial organization  
for master degree in economics**

**Graduate School  
Seoul National University  
Seoul, Korea  
Feburary, 2013**

# The effect of vertical integration in movie industry

지도교수 Oyvind Thomassen

이 논문을 경제학석사학위논문으로 제출함

2013년 2월

서울대학교 대학원

경제학부

안재현

안재현의 석사학위논문을 인준함

2013년 2월

위 원 장                    이 상 승(인)

부 위 원 장   Oyvind Thomassen(인)

위 원                        조 성 진(인)

## Abstract

Jaehyun An  
Economics  
The Graduate School  
Seoul National University

Recently, there are some arguments on vertical integration of large corporate firms. Most of cinema are multiplexes, and they allocate more times and screens to blockbuster movie compared to small size movie. This phenomenon comes from profit maximization of multiplex and distributor when they are vertically integrated.

I'll try to look on the effect on sales and the existence of the vertical integration. For doing that, first I'll show the circumstance and environment of multiplex and distribution channel of movie in Korea. Then explain characteristic of data and how I dealt with it. Then I'll estimate the effect of collusion using regression. Also I go through that the groups give favor to each other by allocating more screen and times to the each other's film.

Most of researches about movie industry in Korea are focused on Screen Quota policy analysis, and relatively poor in other research. This paper deals with demand sides and the effect of collusion in movie industry. And for studying on structure of movie industry, it will have its own meaning.

Keyword: Movie, film, cinema, Vertical integration, regression,

## **Table of Content**

I . Introduction.....	1
II . Literature review.....	2
III. Market structure in movie industry.....	5
1. Overall market growth.....	5
2. Distributed market.....	6
(1) Firm profit.....	6
(2) Market share.....	8
3. Screening market .....	10
(1) Firm profit.....	10
(2) Market share.....	11
4. Unfair trade in film market.....	13
IV. Firm behavior of movie industry.....	14.
V. Empirical test .....	16
1. data .....	16
2. Model.....	18
3. Results.....	20
VI. Conclusion .....	23
Reference.....	24

## **List of Tables**

<Table 1> Fairness awareness in movie industry.....	4
<Table 2> Profitability of each part in 2010.....	26
<Table 3> Distribute Market in 2011.....	9
<Table 4> Sales of cinema.....	27
<Table 5> Market share in screen market in 2010 and 2011.....	28
<Table 6> Corrective order from Fair Trade Committee .....	29
<Table 7> Data sorted by distributor.....	30
<Table 8> Estimation equation (1).....	20
<Table 9> Estimation of Equation (2).....	21
<Table 10> Log estimation of Equation (3) and (3)'.....	22

## **List of Figures**

<Figure 1> Number of firms in movie industry.....	5
<Figure 2-1> Market share of the number of films.....	8
<Figure 2-2> Market share of box office of distribute firm.....	8
<Figure 3-1>the number of cinema sorted by brand .....	11
<Figure 3-2> the number of screen owned by cinema.....	12

## I. Introduction

At 1998, the action movie named <Swiri> came out and draw huge attraction from all of South Korea. It recorded as the highest number of audience watched until that time, breaking the record of the movie 'Titanic'. Before 'Swiri', Korean movie had been limited in size and genre, like comedy or romance drama because these movie genres required low investment and had opportunity of high profit. At that time, most of action blockbuster movies are from Hollywood and people thought that Korean movie industry could not make these types of movie. But 'Swiri' broke these ideas and made a huge success. From that, movie industry has grown rapidly and changed a lot.

Movie became one of the most popular ways of spending free time in Korea and as a results, the number of audience has increased rapidly, connected to increase in market size of industry. In 2000 the number of screen was 720 and in 2011 it was 1974 so almost 3 times increased. Also market share of Korean movie in admissions increased from 24.7% in 2000 to 51% in 2011.

As the size of movie market became larger, corporate groups entered the movie industry. These groups took an aggressive strategy to expand their business based on large capital. This strategy made successful results, as CJ group has grown as a market leader followed by Lotte both in distribute and screen market. Orion group originally owned Showbox/mediaplex in distribute market and megabox in screen market, but they sold megabox to Macquarie in 2008 so they focus on distribute market now.

Entry of corporate group resulted from a unique characteristic of movie industry compared to other industry: high risk, high return. A movie is

experience good, which cannot be known the quality of good before they watch the movie. Also movie's success doesn't depend on the amount of investment, so that even if a lot of money invested to movie, few audiences go to movie, while small size movie can make huge sales. It is the reason that movie Production Company has difficulty on investment. We will see this later, but in Korea, distribute companies also take a role of investor, because they can manage risks and be funded from abundant capital.<sup>1</sup>

These corporate groups, however, have high market shares in both distributed and screening market, there can be vertical integration. CJ entertainment and Lotte have 55% of market share in distribute market and 60% in screen market. This means that incentives for vertical integration of 2 firms are high and according to report of Fair Trade Committee, there have been unfair trade done by these 2 firms related to vertical integration.

This paper summarize the environment of distribute market and screen market, and then look up the behavior of cinema in both case where cinema and distributor are owned by same group and the other. Then estimate the equation using film level data, focusing on the monopolistic behavior of corporate group.

## II. Literature review

About the fairness in movie industry, there are researches done by Fair trade committee and KOFIC. Fair trade committee made overall researches about movie industry and also they investigate the violation of cinema and distributor. The violation of cinema includes discrimination for

---

<sup>1</sup> The average of return of investment of Korean films is -4.6% in 2011 and -11% in 2010. Only 25% of film reached its BEP and 9 films of 65 records over 100% ROI in 2011.

the distributor of same group, finishing movie early, exaggeration in commercial and unfair contract about profit division rate between cinema and distributor. In case of distributor, they discriminate for cinema owned by same group and collusion in price. As the market shares of top 3 companies in distribute and screen market is high, it is easy to become vulnerable to unfair trade.

KOFIC also made research about market structure and the effect of vertical integration in large company. Ryu(2006) studied market share of distribute and screen market using data from 2000 to 2005. He found that in distributed market, the concentration level of 3 major groups-CJ, Lotte, Showbox- isn't high as each firm's market share is about 20% and sum of 3 firms is about 59%. But if we consider only the Korean movie, sum of market share is 87.6%, which means that the concentration level of 3 firms is significantly high and they held high market power. He pointed out that in Korean movie, as the movie industry has high risk high return characteristic, it's hard to find investor outside so the distributors become major investor also. And these firms raise the distributed fee rate and production manage fee and lower the investment rate, which means lower the risk and raise their own profit. However, this raise the risk of other investor so it makes harder to draw investor outside so 3 major distributors reinforce their market power.

Jihoo Kim(2011) analyses the illegal action and unfair trade in distributing and screening market. He pointed out that sales in screening market and Secondary market, such as home video or online download, has significant different; Sales in screening market owns 88.13% and only 11.87% goes to Secondary markets. And in film industry, large firm prefer to have one-source- multi- use strategy, so one firm has profit in both screening and secondary markets.

	total num	Unfair	Normal	Fair	no respon	average
Decision for release date	492	67.3	24.8	3	4.9	26.5
No.Screen	492	86.6	8.37	0.6	4.1	16.5
Decision for open of resevation	492	55.7	32.9	2.6	8.7	29.1
Running period	492	83.7	10.6	1.2	4.5	17.9
Marketing	492	73.8	18.5	3	4.7	24.4

<Table 1> Fairness awareness in movie industry<sup>2</sup>

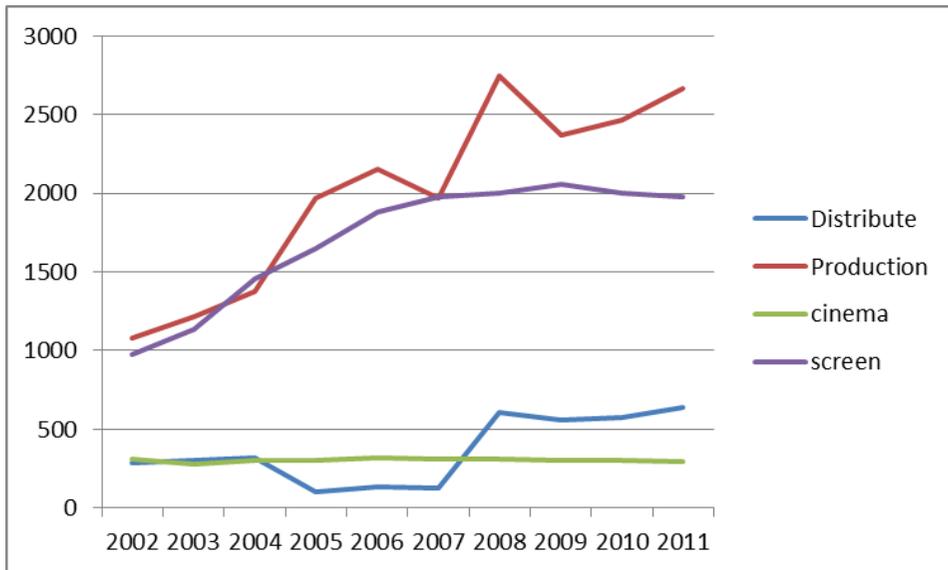
Also there is research about fairness awareness answered by employee in movie industry. <Table 1> shows the result from the survey by employee in film industry. In distribute market and screen market, people said there are discrimination between their own group and other company. They answered that cinemas discriminate in the number of screen, the size of screen, the decision of release date, and the decision of running time and when movie finish. Most unfair part is the number and size of screen, followed by the decision of running time and when the movie finish, the decision of release date, etc. Also there are minimum screening period for protecting small size movie and distributor, but people answered that cinemas don't obey the rule. Overall, people thought that movie industry is unfair in business and have to make standard contract form and watch for discrimination.

---

<sup>2</sup> 현대리서치, 영화산업 공정도 인식도 조사, P.16, 2012

### III. Structure of Movie industry

#### 1. Overall market growth



<Figure 1> Number of firms in movie industry

<Figure 1> shows the number of firms included in movie industry from 2002 to 2011. We can find that the number of production and distribute company has been increased, and if we compare to 2002, it increased twice in number, even though some firms didn't notice when they stop running so data can be different with real one. The number of cinema didn't changed a lot, but the number of screen has been increased. This is because that small cinemas, which had 1~3 screens, closed and multiplex, which had 6~7 screens on average, opened. Multiplexes are usually located in shopping center and have other entertain place, such as recreation room or cafe, and the profit of

multiplex is much higher than small cinema. In case of small cinema, they close or specialize in films they show, such as artistic film or film of other sector (Europe, Latino, Asian, etc.).

<Table 2> shows the sales and incomes in different part in film industry. The Sales of screening markets has 47.5% of total sales and distribution market has 11.87% and production market records 14.17%. In terms of net income, screening and distribution market records 53514 mils won and 15179 mils won and production market record -1983 mils won: screening markets has the highest return and sales. So the firms focus on the screening and distribution of film.

The film industry has its own characteristic: Economic of scale and Economic of scope. First, the cost of producing film decreases by mass production and consumption, and film can be easily copied so supplies can be increases. Second it can produce different types of film using same operating systems and process. This can help films can go to secondary markets and reproduce profits. And these characteristic makes company try to own several different firm in different market; they can diversify their profits and lower risks. Here we focus on distributing and screening market.

## 2 . .Distributing market

### (1) Firm profit

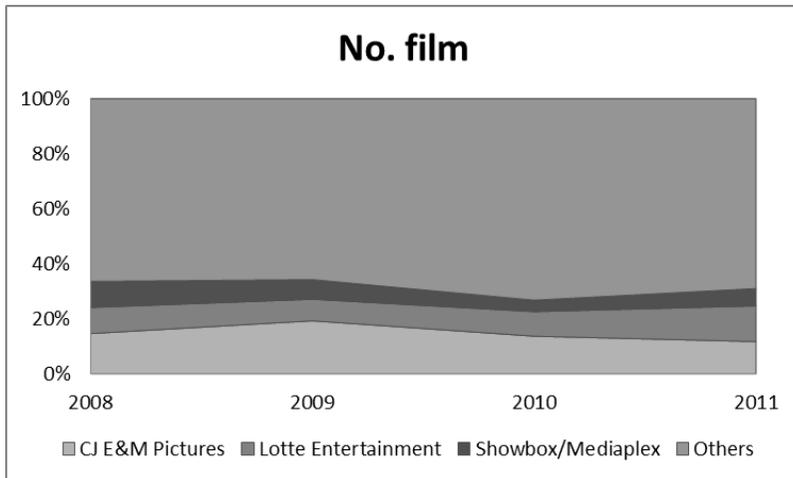
There are 2 different way of distribute the film; direct distribution, indirect distribution. Direct distribution is that the distributor and cinema make a contract and they provide film directly, while indirect distribution is that the main distributor makes a contract with small local distributors and the

local distributor provides films to local cinema. A few foreign movie distributors use indirect and direct distribution but most of the Korean distributor use direct distribution only.

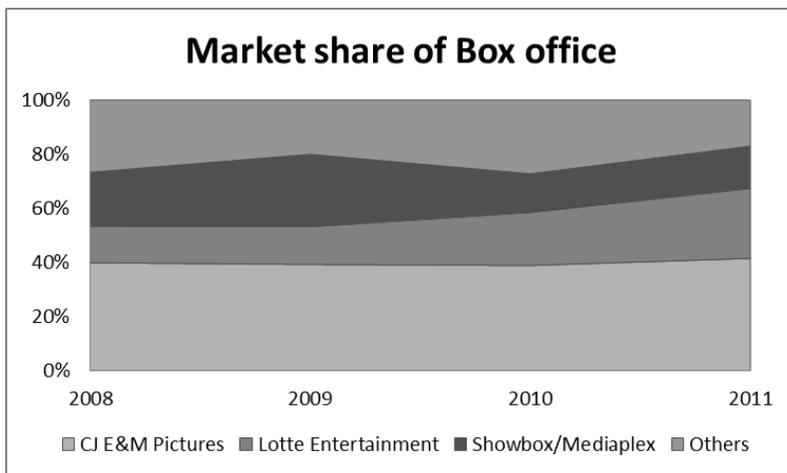
Recently, distributors choose wide release distribution strategy, which is the distributor supplies films to cinema as many as possible and then they increase or decrease of number of cinema after the score of first week. This strategy has grown since multiplex became general. This can increase profits of movie but only to large distributor. As 'blockbuster' movies make 'wide release', small movies have no screen to run.

Distributor is the one who takes movies from production and gives to cinema and takes some fee. This fee is call 'Boo Rate', which is the dividing ratio of profit between cinema and distributor when movie makes sales, and when distributor takes revenue, they took 'distributing service charge' from it and then transfer remain portion to product company. The profit of distributor depends on the sales of movie they distribute, so they want to distribute the film expected success.

(2) Market share



<Figure 2-1> Market share of the number of films



<Figure 2-2> Market share of box office of distribute firm

<Figure 2> shows that distribute company's data.<sup>3</sup> First one shows

---

<sup>3</sup> Using KOFIC data. It is online database which collects information about tickets when ticket is sold. Also they collect the information about movie including director, distributor, actors, etc.

how many film they distribute to cinema, second and third one shows market share of admissions and sales each. Market share of top 3 in the number of films is almost 35%, but market share in admissions and sales takes 80% each, showing that they own high market power in distribute market.

2011	No. film	Admissions	market share of admissions	Sales	market share of sales
CJ E&M Pictures	19.5	34,074,306	41%	₩253,930,121,900	41%
Lotte Entertainment	21.5	21,711,506	26%	₩158,596,292,750	26%
Showbox/Mediaplex	10.5	12,859,623	16%	₩95,816,527,350	16%
NEW	10.5	10,169,314	12%	₩76,116,482,500	12%
SK Planet	0.5	793,021	1%	₩5,906,919,500	1%
Others	103.5	3,073,189	4%	₩22,238,417,000	4%
Total	166	82,680,959	100%	₩612,604,761,000	100%

<Table 3> Distribute Market in 2011

More specifically, <Table 3> shows market share of distribute in 2011. 3 major distributor- CJ entertainments, Lotte Entertainment, Showbox/mediaplex, possess 83% of market share by sales and 83% of market share by admissions. About number of films, 26.7% of films belong to these 3 distributors. These distributors are owned by huge corporate group- CJ, Lotte, and Orion each. These groups have grown in the industry using their sufficient asset and network. If we only consider CJ and Lotte, market share of sales is 67% and market share of admissions is 67%.<sup>4</sup> Especially, CJ has high market share in both.

---

<sup>4</sup> Orion doesn't own their own cinema, because they sold cinema brand Megabox in 2008, so Showbox/Mediaplex shows small amount compare to CJ and Lotte in 2011. They focus on distribution business and increasing their returns.

### 3. Screening market

#### (1) Market structure

At 1990s, Screen industry was competitive market run by small local theater. A local theater has 2 or 3 screens and most of the movie was distributed by local distributor. They run theater flexible so they could choose what they would show and how long they would run. From late 1990s to early 2000s, however, Korean movie market made a huge progress in size and the number of films. As the market grew, corporate group started to invest in the movie industry and participate in screen market. By large capital and asset, they introduced multiplex cinema which has more than 6 or 7 screens and located in shopping center so that they drew a lot of people easily. This is shown in previous section as the number of cinema hasn't changed but the number of screens has been increased.

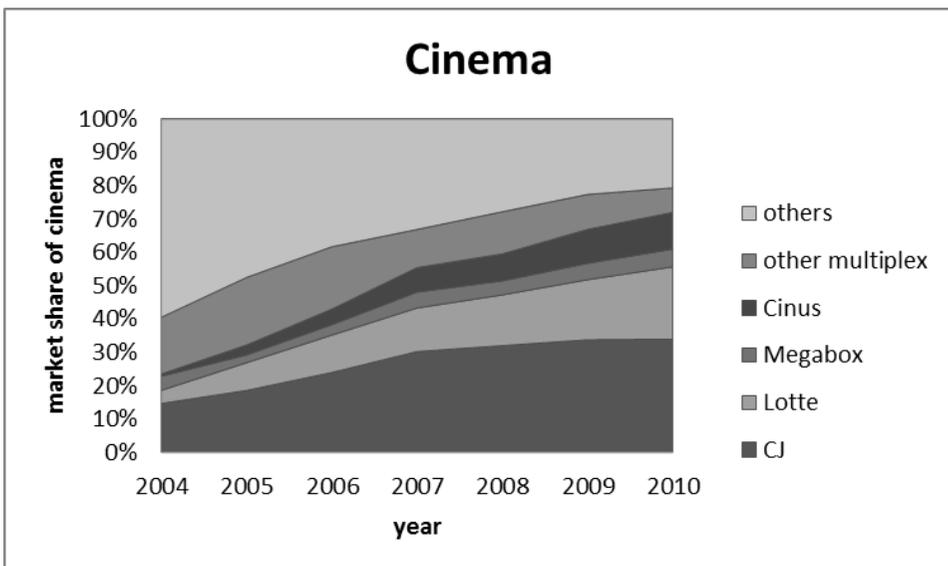
First multiplex is opened by CJ, CJ CGV Gangbyeon, at april 1998, other corporate group enter the market. Megabox owned by Orion opened at 2000 and Lotte open its own multiplex, Lotte cinema, at 2003 and these 3 multiplex has competed each other. These multiplex own franchise most of regions and the number has been increased. These multiplexes run by own or make outsourcing contracts.

The decision of ticket price depends on cinema itself but cinema decide price on almost same level. There can be difference depending on region or time that film are shown. Morning and Midnight has special discount, but the discount rate are not significantly different through cinemas. But they have their own discount, which can be categorized in 2 parts: Own discount factor and alliance with credit card company. Own discount factors

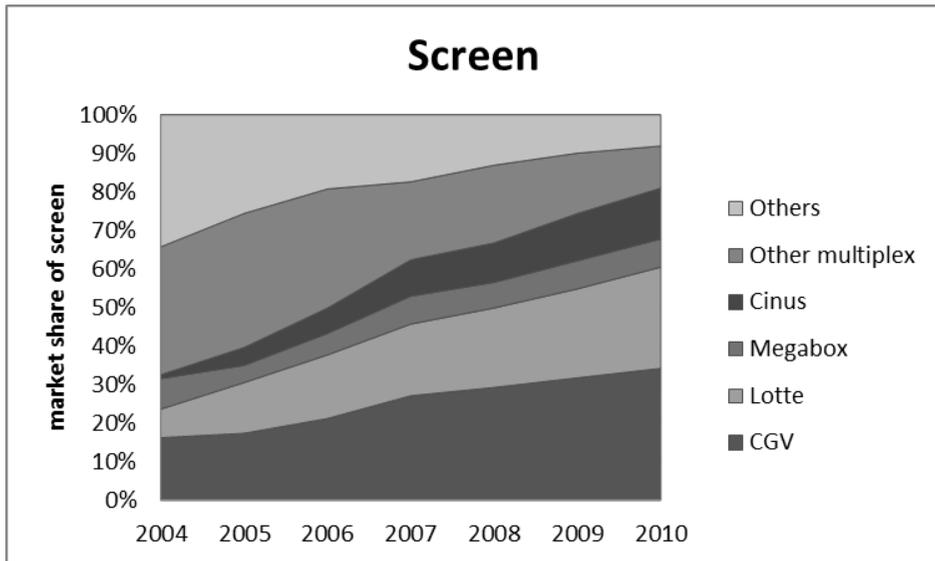
are time discount and membership mileage discount and it doesn't vary across cinema. On the other hand, the discounts using alliance with Credit Card Company vary across cinema, because these depend upon the firm cinema ally with. But CJ CGV, Lotte cinema, and Megabox are owned by corporate group so they can easily ally with credit card Company, and this is one of the reasons these cinema has grown rapidly.

Cinema makes most of sales by selling ticket. But they also have other sales, such as recreation room, cafe, and recreation room. <Table 4> shows the sales structure of multiplex. The share of these facilities in sales has raised and they make profit from screening commercial before they screen the film but most of the sales depend on ticket sales. So we can see that still firms try to run films that can sell more tickets.

(2) Market share of cinema



<Figure 3-1>the number of cinema sorted by brand



<Figure 3-2> the number of screen owned by cinema

<Figure 3> shows that market shares of cinema in the number of cinema and screen. As I mention before the number of cinema hasn't changed much. But first graph shows that the share of non-multiplex has decreased and market share of CJ and Lotte increased. Megabox seems stable but it merged with Cinus in 2010 as Megabox so the real share of Megabox goes high. Same explanation applied to market share of screen. As the number of screen of multiplex is high compare to non-multiplex cinema, so the ratio of non-multiplex in screen goes down rapidly. Also we can see the share of other multiplex in both has decreased, and this is because that these multiplex changed to franchise of top multiplex brands. By doing this, CJ, Lotte and Megabox can extend their market stable.

<Table 5> shows the market share of cinema and screen in Korea on 2010 and 2011. CGV and Lotte cinema are owned by Cj and Lotte each. 82% of cinema is multiplex and 93% of screen is included in multiplex on 2011.

As you can see most of the screen market is owned by multiplex and other form of cinema-mostly local theater- takes little proportion. Also almost 60% of cinema is run by CJ and Lotte and their share of screen is 67%. This means that the level of concentration is significantly high and these multiplexes own high market power. As sales of movie directly are affected by the number of screen, it is important for films to run at multiplex.

#### 4. Unfair trade in film market

Until now, we see that screen market takes the large proportion of sales so the corporate firms want to show own films more than other films. There are several ways to achieve their goal. First, they cut off the films earlier without notice; cinema shows a film at least 2 weeks but multiplex didn't follow the rule. Jihoo Kim(2011) found the corrective order from Fair Trade Committee that major multiplexes cut off movie in 6 days if movie was not distributed by major distributor. <Table 6> shows the cases of corrective orders from Fair Trade Committee.

Also there is 'Cross screening'; 2 films are shown in one screen crossly which is one films is shown and then other films shows next then repeat this. By this way, multiplex argue that they obey the rules but they can show their own films more. And multiplex allocate the morning or midnight times to films that is not famous or distributed by other firms.

These unfair trades are problems in a long time. Recently movie <Touch> directed by Byeonghoon Min, suffers cross screening from the first day, and director Min accused multiplex as unfair trade to KOFIC( Korean Film Council) and declared he would finish screening of the film. The film was small size movie but audience rating was good and attracts many people

but it had no room for screening. In Seoul, only 3 cinemas showed the movie and most of case it shows one day in a week.<sup>5</sup> This is not the case. The film ‘Pieta’ directed by Kiduk Kim(2012) also suffer from cross screening even though it won the Golden lion in the 69th Venice International Film Festival. This is problem that reduces diversities in films and deprives creativeness in movie industry.

#### IV. Model for vertical integration

In this paper we concentrate the behavior of cinema, which gives favor to own group. As we notice, most behavior adjusted the number of screen and how many times film has shown. Here we tried to see this.

P denotes price of tickets and Q is total number of audience measured by the number of ticket sold. But cinema only takes  $\delta$  percent of the sales, cause  $(1-\delta)$  goes to distributor and distributor takes distribute fee  $\lambda$ .

As we saw previous section, price of ticket is almost same across cinema, so we denote price as fixed. And then divide Q in 2 parts: one is the audience watching the film that distributed by their own group and the other. For simplicity, I assume 2 product, 1 is distributed by own group and 2 is the other. We denote as below

---

5

[http://star.ohmynews.com/NWS\\_Web/OhmyStar/at\\_pg.aspx?CNTN\\_CD=A0001803292](http://star.ohmynews.com/NWS_Web/OhmyStar/at_pg.aspx?CNTN_CD=A0001803292), (‘교차상영으로 사라지는 슬한 한국영화들, 그 해법은?’, 오마이뉴스, 2010.11.17)

$$(1) \quad Q = Q_1 + Q_2$$

And the number of audience depends on the quality and strategy of cinema. Here, I assume 2 strategies, how many times movie have shown and the number of screen, each denote RC and NC. We denote this as below

$$(2) \quad Q_i = \text{Quality}_i + \alpha \cdot RC_i + \beta \cdot NS_i \quad (\alpha > 0, \beta > 0)$$

$$(3) \quad RC = RC_1 + RC_2$$

$$(4) \quad NS = NS_1 + NS_2$$

So the maximization of cinema is different whether they are in corporate group or not. If the cost of cinema is C, we can write profit maximization problem as below.

$$(5) \quad \text{Max } \delta \cdot P \cdot Q_1 - C$$

$$(6) \quad \text{Max } \delta \cdot P \cdot Q_2 - C + \lambda \cdot (1 - \delta) \cdot P \cdot Q_1$$

Equation (1) is maximization of normal cinema and equation (2) is maximization of corporate group which owns cinema and distribute company both.

For simplicity, we assume that RC and NC is one. Also price is one too. Then we can solve profit maximization problem using equation (2) and (3) as constraints. If we solve the equation (1), results came as below.

$$(7) \quad \frac{\partial TR}{\partial RC_1} = \frac{\partial TR}{\partial RC_2} = 0$$

$$(8) \quad \frac{\partial TR}{\partial NS_1} = \frac{\partial TR}{\partial NS_2} = 0$$

So cinema doesn't have incentive to give favor depending on distributor. Then we solve the equation (2) and the results came as below.

$$(9) \quad \frac{\partial TR}{\partial RC_1} = \lambda \cdot (1 - \delta) \cdot \alpha, \quad \frac{\partial TR}{\partial RC_2} = -\lambda \cdot (1 - \delta) \cdot \alpha$$

$$(10) \quad \frac{\partial TR}{\partial NS_1} = \lambda \cdot (1 - \delta) \cdot \beta, \quad \frac{\partial TR}{\partial NS_2} = -\lambda \cdot (1 - \delta) \cdot \beta$$

So cinema has incentives to show film that distributed by own group more and many times. By doing this, cinema can maximize its own profit. So we will see this results hold in empirical test.

## V. Empirical Test

### 1. Data

The Korean Film Council (KOFIC), entrusted by the Ministry of Culture, Sports and Tourism, Republic of Korea, aiming to support and promote Korean films, collects most of data related to movie industry in Korea. They construct the database 'KOBIS (Korea Box office Information System)'. Kobis is connected to cinema: when a ticket is sold, information

goes to database directly. These informations provide the data of sales, the number of audience, screen and seat, and market share of screen and seat of each film. Also Kobis collect data of actor, Production Company, distributor, price and most of information about movie. Here we use sales, the number of audience, the number of screen and how many times are shown (denote running count). In case of the number of screen and running count, there are both aggregate data and cinema level data.

We also use production cost and rating from audience and critics each. In case of production cost, I use the information of the media, which production company gives to press. It includes articles, advertisement and interview.<sup>6</sup> And rating information came from the Rating site, and usually came from Naver. Naver Movie owns the largest database in rating so I choose Naver as standard.<sup>7</sup>

<Table 7> shows the average value of each data sorted by distributor in 2010 and 2011. As we can see, average sales of CJ and Showbox didn't different much and Lotte and NEW also seems similar in sales and admissions. Showbox is owned by Orion, which is a large corporate group, so they can invest much but NEW is not owned by large group and they show significant results. Also NEXT seems competitive with other distributor. So we can say that capability among distributor isn't different much.

---

<sup>6</sup> Production cost consists of 2 parts: original production cost and marketing cost. Here, I use total production cost; marketing cost increases as original production cost and also marketing is one of the reason that people decide to watch the films.

<sup>7</sup> Rating from audience is available in movie webzines and other reservation sites but most of case they have similar rating.

## 2. Model

First I find the relation between sales and major distributors. To see this, make an equation below

$$(1) \quad Sales_j = \beta_1 dd_j + \beta_2 production\ cost_j + \beta_3 rating\ by\ audience_j + \beta_4 rating\ by\ critics_j$$

Production cost measured the size of film and Rating measure the quality of movie. DD is dummy variable that if the distributor has cinema in its own group. Here, CJ and Lotte have both distribute firms and cinema so they have value 1. Otherwise, the value is 0. But this only gives what characteristics effect on the sales of film, cannot be proof for discrimination of cinema. So to find the effect of vertical integration, I estimate other equation below.

To see the relation between cinema and distributor, I use the data which cinema the film has shown and how many time film has shown. Below is the equation.

$$(2) \quad RC_{jc} = \alpha_1 DD_{jc} + \alpha_2 1_f + \alpha_3 1_c \\ NC_{jc} = \gamma_1 DD_{jc} + \gamma_2 1_f + \gamma_3 1_c$$

$$(3) \quad \log RC_{jc} = c + \alpha_1 DD_{jc} + \alpha_2 1_f + \alpha_3 1_c + \alpha_4 DD_{compete} \\ \log NC_{jc} = c + \gamma_1 DD_{jc} + \gamma_2 1_f + \gamma_3 1_c + \gamma_4 DD_{compete}$$

J represents film and c represents cinema and  $1_f, 1_c$  are fixed factors of the film and cinema each, and submitting these dummy to control the effect of film and cinema, which the effects of film itself captured by  $1_f$  and the effects of cinema captured by  $1_c$ .  $DD_{jc}$  measures the effect of corporate group, which is 1 if the movie is distributed and shown by same group at the same time and 0 otherwise.  $DD_{compete}$  is the dummy that if one corporate group which owns both distribute and cinema are shown in the cinema which is owned by other corporate group holding distribute firm at the same time. In this case if the film distributed by Lotte is shown at CGV or the film distributed by CJ entertainment shown at Lotte cinema,  $DD_{compete}$  has 1 and 0 otherwise. This has 2 meaning: first, we can see whether these corporate groups compete with each other or not and second the effect of vertical integration of cinema and distributor can be detected more accurately. If the  $\gamma_4$  is negative, they show other group's film less each other, while if the value is positive, they show each other's film more than independent distributor.

Equation (2) estimate the effect of running count and the number of screen and equation (3) shows the increment in running count and the number of screen when the distributor and cinema has been vertically integrated. Equation (3) can be rewrite as following.

$$(3)' \quad RC_{jc} = e^{constant} e^{\alpha_1 DD_{jc}} e^{\alpha_2 1_f} e^{\alpha_3 1_c} e^{\alpha_4 DD_{compete}}$$

$$NS_{jc} = e^{constant} e^{\gamma_1 DD_{jc}} e^{\gamma_2 1_f} e^{\gamma_3 1_c} e^{\gamma_4 DD_{compete}}$$

By equation (3) and (3)', if dummy goes to 1, exponential of  $\gamma_1$  can be measured and it is increment of effect when there are vertical integration

between distributor and cinema. Also the effect of competition between corporate groups will be seen.

### 3. Result

		DD	PRODCO ST	RATEAU D	RATECRI T	mean dependent var	S.D dependen t var	R square
equation 1	coefficient	0.414	1.241	0.724	0.389	0.368	0.838	0.385
	st err	0.096	0.136	0.278	0.166			

<Table 8> Estimation equation (1)

First, I estimate the equation (1) for seeing the relation between sales and corporate group. As I mention before, dummy variable measures the relationship between distributor and cinema if they are owned by same corporate group. Column 1 in <Table 8>, Rating from audience and critics affects to sales, especially rating from audience is high as 0.724, which is plausible results thinking that before people choose what to watch they search for comments from audiences. And the coefficient of production cost is significantly high as 1.24. This seems also plausible that if the production cost is high, it means that it invested a lot of resources to the film so the firms want to earn more sales.

The coefficient of dd is 0.414 which shows positive relation between sales and group. This can be seen that large corporate group choose more profitable films so they can make more sales. Even the data sorted by distribute firms show that there are little difference between large firm and others so the dd can be seen as proof for discrimination, but to be accurate, equation (2) and (3) can be helpful

	Equation (2)			
	Runcount		Nscreen	
	coefficient	st err	Coeffecient	st err
DD	0.40	0.04	0.10	0.01
DD compete	0.34	0.05	0.09	0.01
Mean dependent var	0.2156		0.0624	

<Table 9> Estimation of Equation (2)

Equation (2) estimates the effect of corporate group, using film level data. In case of Runcount, the coefficient is 0.4 and mean of dependent variable is 0.22 so cinema shows the film distributed by integrated distributor more than other films. Mean dependent variable is 0.22 so this can mean that cinema shows the films distributed by same groups almost twice more than other films. Also the number of screen has high correlation with dummy, compared to mean of dependent variable, that coefficient is 0.1, which can be seen that cinema gives 1.5 times more screen to its own films. So we can say that if cinema and distribute firm is owned by same group, they have incentive to show more times on many screen. Also ‘DD compete’ has high positive coefficient, 0.34 in runcount and 0.09 in the number of screen, so that it shows corporate groups show each other’s film more-this is little bit smaller than its own films but highly significant so that it can be seen that corporate groups gives favor to each other rather than compete each other.

	Equation (3)			
	Runcount		Nscreen	
Log	coefficient	st err	coefficient	st err
C	2.83	0.41	0.57	0.29
DD	0.75	0.12	0.66	0.08
Exp(dd)	2.11		1.93	
DD compete	0.50	0.15	0.49	0.10
Exp(dd compete)	1.65		1.63	

<Table 10> Log estimation of Equation (3) and (3)'

<Table 10> shows the estimation using log variable. Coefficient of DD is high and exp(dd) is 2.11 in Runcount and 1.93 in Nscreen, which means that when dd is 1, runcount increase 111% and the number of screen increase 93%, which is significantly high. And the coefficient of DD compete has 0.5 and 0.49, which is highly significant coefficient and it shows that they show 65% more and give 63% more screens than other films. We can tell that corporate group gives favor each other so they can make more profits again. It is same results with the research of Fair Trade Committee which reports the violation of cinema by collusion.

## VI. Conclusion

We see that there is discrimination in movie industry and it comes from vertical integration in distributor and cinema. This paper only sees the number of screen and how many times movie are shown, but there are other unfair treatments in industry, such as decision of release date and end date. This can be hard to measure because data are not available, but if we can estimate the effect it can make behavior more clear.

And variables vary considerably in quantity. And this shows that there are possibilities that there can be unfairness depending on genre of movies. And it goes to decrease in diversity and in the end; it can reduce welfare of audience.

Also independent variables affecting sales are hard to measure so research cannot go further. And there can be endogenous problem in sales and dummies but it is hard to find instrumental variable. If an instrumental variable can be set up, research can be more abundant.

However, the results match the expectation and explain the behavior of firms so this is what this paper aimed at first place. Next goal is that find ways to diversify the genre of movie and to increase profit in both large firms and small firms.

## References

- 고정민, “한국영화의 위기의 진단과 과제”, SERI 경제포커스, 제 166호, 2007.11.5
- 김보연 외, “2009년 한국 영화산업 실태조사와 한국영화 투자 수익성 분석”, 영화진흥위원회 영화정책센터, 2011
- 김보연 외, “2010년 한국 영화산업 실태조사와 한국영화 투자 수익성 분석”, 영화진흥위원회 영화정책센터, 2012
- 김지후, “한국 영화산업의 불공정거래행위와 그 개선방안에 관한 연구”, 학위 논문, 한양대학교, 2011
- 류형진, 도동준, “영화산업 독과점 현황과 공정경쟁질서 확보방안”, 영화진흥위원회 정책연구팀, 2006
- 박제현, “영화산업 구조분석 및 경쟁정책적 평가”, 공정거래위원회, 2008
- 영화진흥위원회, “2009 한국 영화산업 결산”, 영화진흥위원회, 2009
- 영화진흥위원회, “2010 한국 영화산업 결산”, 영화진흥위원회, 2011
- 영화진흥위원회, “2011 한국 영화산업 결산”, 영화진흥위원회, 2011
- 최영준, “한국 영화산업에서의 수직 통합과 영화 상영일수 관계”, 국제경영리뷰, 제11권 1호, 2007
- 현대리서치연구소, “영화산업 공정성 인지도 조사”, 영화진흥위원회, 2012
- Daron Acemoglu et al, “Vertical integration and Technology:

Theory and Evidence”, Journal of the European Economic Association, 2010

Fernando Barrera-Rey, “The Effects of Vertical Integration on Oil Company Performance”, Oxford Institute for Energy Studies, 1995

Grossman, Sanford and Oliver Hart, “The Cost and Benefits of Ownership: A Theory of Vertical and Lateral Integration.” Journal of Political Economy, 94, 691-719, 1986

Ohanian, Nancy Kane, “Vertical Integration in the U.S Pulp and Paper Industry, 1900-1940”, Review of Economics and Statistics, 76, 207-07, 1994

	Investment	Production	Import	Production assist	Distribution	Screening	Marketing	Secondary market
Sales(mil won)	49,486	506,823	416,852	168,506	424,583	1,699,683	158,537	153,478
Precentage	1.38%	14.17%	11.65%	4.71%	11.87%	47.50%	4.43%	4.29%
Gross Profit		91,892	81,308	81,172	82,386	1,020,029	92,480	
Operating income		7,546	7,616	9,239	27,186	207,699	188,387	
Ordinary income		-906	-1,153	-285	17,225	63,354	10,411	
Net income		-1,983	-1,438	-464	15,179	53,514	9,168	

<Table 2> Profitability of each part in 2010

	2004			2005			2006			2007(Jan~Jul)		
	ticket	facilities	commercial	ticket	facilities	commercial	ticket	facilities	commercial	ticket	facilities	commercial
CGV	75.4	15	6.2	74.9	14.9	5.7	70.2	15.1	8.6	67.8	15.6	10.5
Primus				83.6	11.8	3	80.9	12.8	5	81.6	12.8	3.8
Megbox	74.6	12.2	9.3	73.7	11.7	11.8	71.5	12.2	13.3			
Lotte	83.5	13.3	1.4	79.4	15.3	2.2	88.1	4.8	3	86.5	5.6	3.4

<Table 4> Sales of cinema<sup>8</sup>

---

<sup>8</sup> 박제현, 영화산업 구조분석 및 경쟁정책적 평가, p.44, 공정거래위원회, 2008

구분				2010			2011		
				No. cinema	No. screen	No.seat	No. cinema	No. screen	No.seat
Multiplex	Top 3	CJ	CGV	26%	31%	31%	29%	34%	34%
			Primus	8%	9%	8%	8%	8%	7%
			Total	34%	40%	39%	37%	42%	41%
		Lotte	Lotte Cinema	22%	24%	24%	23%	25%	26%
		Megabox		16%	19%	18%	17%	19%	19%
		Total		72%	83%	82%	77%	87%	86%
		other multiplex		7%	10%	11%	5%	7%	7%
		Total		79%	93%	93%	82%	93%	93%
Non multiplex				21%	7%	7%	18%	7%	7%
Total				100%	100%	100%	100%	100%	100%

<Table 5> Market share in screen market in 2010 and 2011

Case number	Name of Case	Defendant	Case
2007제 일4177	Status abuse of CJ CGV in trade	CJ CGV	From 2004 to 2007, 29 films contracting with 16 distributor is over in 6 days without notice
2007제 일4169	Status abuse of Lotte in trade	Lotte	From 2004 to 2007, 26 films contracting with 17 distributor is over in 6 days without notice
2007제 일4170	Status abuse of Megabox in trade	Megabox	From 2004 to 2007, 169 films contracting with 11 distributor is over in 6 days without notice
2007제 일4178	Status abuse of Primus in trade	Primus	From 2004 to 2007, 140 films contracting with 35 distributor is over in 6 days without notice

<Table 6> Corrective order from Fair Trade Committee

Distributor	DD	market share of screen	Runcount	Share of taken seat	Admissions	Sales	Production costs (unit:hundred millions)
CJ Entertainment	1.00	16.65%	35,421	17.66%	1,558,592	₩11,660,709,542.86	44.05
Shobox	0.00	20.64%	35,744	17.81%	1,491,227	₩11,130,786,173.33	60.43
NEW	0.00	18.95%	31,642	18.92%	1,131,822	₩8,212,859,225.00	33.80
Next	0.00	15.29%	27,727	18.95%	1,032,808	₩7,748,647,562.50	17.43
Lotte	1.00	15.96%	28,844	15.29%	1,000,838	₩7,286,527,240.00	40.54
Cinema Service	0.00	15.96%	28,346	16.70%	809,330	₩6,055,114,833.33	14.77
Sinergy	0.00	13.32%	22,902	12.77%	532,768	₩3,938,144,800.00	26.64
FNH	0.00	14.81%	20,543	10.73%	505,357	₩3,744,456,222.22	25.14
Others	0.01	1.65%	1,642	7.67%	39,462	₩289,900,258.71	8.80
Mountain Pictures	0.00	0.99%	1,066	8.08%	24,667	₩143,094,423.53	8.53

<Table 7> Data sorted by distributor

## 국문초록

1990년대 후반부터 등장한 멀티플렉스는 영화 산업의 수직계열화를 초래하는 결과를 가져왔다. 이는 전반적으로 성장한 영화산업과 함께 많은 문제점을 야기하고 있다. 특히 배급시장과 상영시장에서의 수직계열화는 자사의 배급 영화에 편의를 주게 함으로써 다른 배급사의 영화가 차별을 받는 문제를 가져오게 했다. 특히 이는 소규모 영화나 독립영화, 예술영화의 상영권을 침해하고 상업영화 및 블록버스터들의 지나친 독식 현상을 야기하기에 이르렀다.

이에 이 논문에서는 영화 산업의 소개와 배급 및 상영 시장의 특징과 규모를 살펴본 뒤 수직계열화로 인한 멀티플렉스의 최적 행위를 살펴보고 실제 데이터를 가지고 회귀분석을 통해 이러한 수직계열화로 인한 차별이 존재하는지에 대해서 살펴보고자 한다.

대부분의 한국 영화산업의 연구들이 스크린쿼터에 초점을 맞추고 있거나 독점 과점의 정책적 규제적 측면에서 살펴보고 있는 바 통계적, 경제학적인 분석을 통해 좀 더 직접적인 분석이 가능할 것이라고 기대하고 있다.

.....

**주요어 : 영화산업, 수직계열화, 수직적통합, 멀티플렉스, 배급, 상영**

**학 번 : 2010-23016**

## 감사의 글

I really appreciate to professor Oyvind for everything. He gave guidance and taught so many things that it was all his help to finish this paper. And really grateful to have patience that I'm not smart and not good at speaking English but he is always gentle and encourages not giving up. I will really study hard so next time I'll definitely write better one.

2012년 마지막을 보내면서 너무나 힘들었던 시간들이었고 모든 걸 다 포기하고 싶었지만 마지막 마무리만큼은 해야 한다는 마음으로 어설피게나마 여기까지 온 것 같습니다. 저의 지도교수님이었던 Oyvind Thomassen 교수님께 정말 감사드립니다. 영어도 잘 하지 못하면서 너무나 느렸고 서툴렀던 저를 그래도 참고 지도해주셔서 감사합니다. 더 열심히 해 지금보다 더 멋진 모습 보여드리고 싶습니다.

지금의 자신을 안다는 건 부끄러운 일이라고 생각하지만 분명 여기서부터 다시 시작할 수 있는 것도 있다 생각하기에 새롭게 자신을 다잡고 지금까지 저를 지지해준 저의 가족들과 친구들에게도 감사의 말을 전합니다. 또 저의 멘토가 되어주신 김영식 교수님께도 정말 감사드립니다. 비록 지금은 형편없어도 언젠가는 제대로 혼자 설 수 있는 모습을 보여드릴 수 있도록 노력하겠습니다. 감사합니다.