THE ECONOMIC IMPLICATIONS OF LOW-COST DVD RENTALS

Los Angeles County Economic Development Corporation

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

In this report, the Consulting Practice of the Los Angeles Economic Development Corporation (LAEDC) examines the economic implications of the widespread introduction of low-cost new release DVD rentals, such as those that are expected to be offered by Redbox kiosks in retail and restaurant locations. Our findings indicate the following:

❖ ***Low-cost new release DVD rental options will mean a loss of revenues***

In the event that new releases are available in Redbox kiosks at street date, there will be erosion of retail revenues. Additionally, to the extent that consumers substitute away from higher-priced rentals to lower-cost rentals, there will be erosion of rental revenues. While the magnitude of the revenue loss is difficult to disentangle from the myriad factors threatening this revenue stream, we estimate overall industry revenues of $1 billion or more will be foregone.

❖ ***Foregone revenues in the industry will lead to a loss of motion picture production***

For each $1 billion of revenue in the domestic home video industry, the motion picture industry earns $520 million. Using the motion picture industry in Southern California as representative of overall industry activity, an extra $520 million in industry revenue would translate into direct, indirect and induced economic activity, including:

- At least **$1,493 million in economic output** (as measured by business revenues)
- At least **9,280 jobs** with **annual earnings of almost $395 million**, of which at least 2,290 would be in motion picture and sound recording industries with earnings of at least $109 million
- Up to **$35.4 million in contributions to health and welfare funds** for guild and union members, the majority of which would occur in union plans for below-the-line employees
- Over **$30 million of tax revenues** at state, county and local levels.

❖ ***The industry is undergoing transformational change***

Foregone revenues from low-cost new release DVD rentals may be hard to distinguish from other transformational shifts in the industry, such as:

- The current recession has adversely affected consumer purchases of discretionary items.

- Technology is enabling the digital delivery of content through internet providers, broadcast and cable providers, and telecom providers.

- Households are opting for other forms of entertainments, such as gaming and social networking.

Nevertheless, SNL Kagan projects an increase in distributor revenues from all sources worldwide from $51.3 billion in 2008 to $67.6 billion in 2017. While the composition of these revenues will clearly change, distributors will continue to experience revenue growth into the next decade. Still, any loss of revenues due to the widespread availability of low-cost rentals, particularly if new releases are available for rent on the street date, can be characterized as an opportunity foregone, since overall revenues of the industry *would be higher* if these rentals were not available.

❖ *Economic impact of the spread of low-cost new release DVD rentals is uncertain*

Projections regarding the impact of low-cost new release DVD rentals are uncertain. For example, we cannot predict the outcome of studio agreements (such as Paramount's agreement with Redbox) that allow cancellation if the results are unfavorable to the studio. It is also too early to predict how litigation among the various parties will be resolved.

However, the decline in the home video market represents the ongoing loss of an existing significant revenue stream. The projected offsetting gains in revenue from digital delivery are more uncertain, both in their scale and in the timing. Even if the gains from digital delivery compensate for losses from physical delivery, film production will decline relative to what it would otherwise have been.

INTRODUCTION

Redbox Automated Retail (Redbox) and its low-cost rental DVD kiosks are challenging the traditional distribution and release strategy in the industry. The industry model is built upon timed, sequential release into differentiated market segments through a variety of channels to permit revenue-maximization. Redbox is threatening this model by pledging to purchase DVDs at retail or wholesale prices on the street date and populating its kiosks with these new releases, creating a channel conflict as its $1-per-night DVD rentals compete with DVD sales in the same release window.

Redbox gained momentum following its 2005 acquisition by Coinstar, a company with an existing relationship with a wide network of grocery stores, which allowed the expansion of its self-service DVD rental kiosks from 140 McDonald's restaurants to thousands of grocery stores and other retail locations nationwide. The kiosks, which currently have a 19 percent share in the DVD rental market, offer a small selection of discs at a rental rate of $1 per night. The low price is offset by the lean selection available at each kiosk.

The Redbox business model raises four challenges:

First, allowing rentals at $1 per night on the day and date that projects are released into the retail market will cannibalize retail sales of DVDs. This is essentially a channel conflict that creates competition for the same product at significantly different prices and threatens the retail revenue stream of distributors.

Second, reducing the market price for new release rentals to $1 per night (as opposed to a more commonly-offered $4.99 per multiple-night rental) could also induce customers to demand a lower rental price from all outlets. This in turn will threaten the rental revenue stream of distributors.

Third, reducing the market price for rentals to $1 per night could negatively impact the perceived value of purchasing DVDs, harming the retail segment of the market. For example, if consumers are accustomed to a 3:1 ratio between the sales price and the rental rate, a lower rental rate could lead them to expect a commensurately lower retail price. This would negatively impact both retail revenues and rental revenues of distributors.

Fourth, Redbox sells used discs into the market, a practice which competes with retail sales efforts. This is in contrast to other rental firms which have agreements with studios restricting their sales of used discs.

All four issues have merit. Low-priced rental products available on the street date will draw some consumers away from purchases, and later from higher-priced rentals. Lower rental prices overall may change consumers' perceptions of the value of rentals and of retail purchases and therefore reduce higher-margin retail sales. And the addition of unrestricted used discs into the marketplace will dilute current offerings and lead to a lower market price.

At the same time, it is likely that Redbox is drawing in new business, attracting customers who would not normally have rented at a higher price point, and catching impulse buyers who would not have made the trip to a specific rental outlet. Video rentals and purchases are highly discretionary and thus probably price-sensitive, making it likely that lower prices will induce more customers to transact.

In this report, the Consulting Practice of the Los Angeles Economic Development Corporation (LAEDC) discusses the economic implications of the widespread availability of low-cost new release DVD rentals. To frame this discussion, we relied on data from SNL Kagan, an industry analyst and forecaster.

Our analysis is organized as follows. We begin with a discussion of the potential impact of Redbox on the retail and rental revenue stream, suggesting an estimate of the magnitude of the lost (or foregone) revenues.

This is followed by our estimate of the economic impact of foregone production due to home video market revenues that are lower than they might otherwise have been.

We conclude with a discussion of the implications for contributions to health and welfare funds held by guilds and unions, and describe some of the larger trends shaping the environment within which this issue rests.

REVENUE IMPACT

No one provides a forecast of the likely impact of low-cost DVD rentals, and in particular of the impact that the availability of low-cost rentals of new releases on the street date would have. The reasons for this lack of prediction are clear. It is exceedingly difficult to disaggregate individual, single-direction effects ("holding all else equal") when an event causes multi-directional and interrelated impacts. How will the introduction of low-cost DVD rentals affect the rental market? How will the existing market be redistributed? Will the entrant draw market share from incumbents, or will it draw in new customers and expand the size of the market (or a combination of both)? How will incumbent market players respond? If the entrant prices its products below the prevailing market price, will incumbents price-match? Completely? How are related markets affected? Specifically, how does the entry of low-cost new release rentals impact the retail market?

Clearly all these factors are interrelated, and a change in one variable will change many others. Expected growth in worldwide revenue from all sources masks an expected decline in domestic rental and retail revenues due to changing consumer preferences, technology advancements, and possibly the widespread introduction of low-cost DVD rentals. In this section we take a closer look at both the rental market and the retail market. In the rental market, we use first a back-of-the envelope approach to measuring the potential impact of low-cost DVD rentals, followed by an approach using current and expected market shares of the industry players. Thereafter, we turn to the retail market.

RENTAL REVENUE IMPACT

Redbox touts $1-per-night rentals out of its kiosks. The current market price for rentals from bricks-and-mortar outlets such as Blockbuster is commonly $4.99 for a multiple-night rental. Netflix is a subscription service offering a variety of plans. SNL Kagan estimates a total rental revenue stream of $8.03 billion in 2009, and rental turns of 1.74 billion. In a back-of-the-envelope calculation, they suggest that if these rental turns were all immediately priced at $1, the industry would see revenues fall from $8.03 billion to $1.74 billion, implying a market loss of $6.3 billion.

This is a useful thought experiment, but it is problematic for several reasons. First, Redbox itself reports that its average rental rate per turn is not $1 but $2, with its customers keeping discs for more than a single night. Second, in spite of facing this competition, other outlets will not match the $1 per night rate for all products. Kiosks are space-constrained and carry limited inventory, while bricks-and-mortar outlets and Netflix in particular can stock a full-range of titles and do not need to compete on price for all products. Likewise, the latest releases and popular titles will be subject to peak demand for short runs and kiosks may be unable to fulfill all requests, leaving a market opportunity for other outlets who can promise inventory availability at a premium price. Third, the analysis omits any consideration of new customers drawn to lower-cost rentals, and does not take into account substitution away from purchases into Redbox rentals, which could be significant if Redbox offers street date availability.

Thus, the $6.3 billion estimate of revenue shortfall is implausible. However, we can address our objections one at a time to refine the estimate. For example, if all rental turns were immediately priced at $2 rather than $1, then total revenues on 1.74 billion turns would be $3.48 billion, implying a market loss of $4.55 billion.

Moreover, not *all* rentals would be priced at $2 given premium products, peak demand, and so on. In the current rental market, the NPD Group reports that Redbox holds 19 percent of the rental market, or 330 million turns. Suppose that the incumbent market participants, with the remaining 81 percent of the market, were to lower their prices on average by 25 percent. Redbox would retain its $2 per turn rate. This combination would produce total revenues of $6.19 billion on 1.74 billion turns, implying a market loss of $1.84 billion.

Further, according to economic theory, lower prices will draw additional rental transactions. The combination of lowered prices and increased turns can lead to a loss of overall revenue or an increase, depending upon the sensitivity of consumers' demand to price changes.

The table below shows how industry revenues would be affected, depending on the consumer response to lower priced rentals, given the SNL Kagan forecast for 2009. Each entry in the table shows the overall change in industry revenues given a combination of a fall in the rental rates that incumbents charge and the increase in their rental turns. Throughout the table, we are assuming that Redbox has a market share of 19 percent and its rental rate averages $2 per turn.

Table 1
Change in Industry Revenues in Domestic Rental Market
($ millions)

Incumbents reduce rates by:	Incumbents' rental turns increase by:			
	0%	10%	20%	30%
10%	(740)	(70)	590	1,250
20%	(1,470)	(880)	(290)	290
30%	(2,210)	(1,690)	(1,180)	(660)

Source: LAEDC

The first column shows the effect on total revenues of a given percent change in rates if there is no response by consumers renting more DVDs. For example, if incumbents reduce their rates by 20 percent on average, total rental revenues would decline by $1,470 million. All else equal, each 10 percent drop in incumbent rental rates results in $740 million in lost revenues, unless there is a corresponding and offsetting increase in the number of rental turns spurred by the price drop.

Each column to the right shows how total revenues would change if consumers respond to rate reductions by increasing their rentals. For example, if incumbents drop their rental rates by 20 percent in response to Redbox's challenge, and consumers consequently increase their rental transactions by 10 percent, the loss of total revenues falls from $1,470 million to $880 million. If consumers increase their rental transactions by 20 percent, the revenue loss falls to $290 million. In the unlikely event that that a 20 percent fall in rental rates produces a 30 percent increase in turns, industry revenues would *increase* by $290 million.

However, the home video rental market is mature and highly competitive. If incumbents could profitably increase overall revenue by reducing their rental rates, they would already have done so, particularly in response to more convenient options available to consumers, such as Netflix and video-on-demand. Therefore, the likely outcome is somewhere in the lower left-hand quadrant of the table; i.e., an industry revenue loss.

The question is: which combination is most likely since many of the potential outcomes involve losses in excess of $1 billion? To narrow this range, we try a second approach using the estimates of revenue streams, rental turns and market shares prepared by SNL Kagan and the NPD Group. Recall that SNL Kagan estimates total rental revenues of $8.03 billion in 2009, and rental turns of 1.74 billion. Looking forward, SNL Kagan estimates an increase to 1.83 turns in 2010 as consumers respond to the challenging economic environment by substituting out of purchases, with revenues of $8.49 billion.

These estimates include revenues earned by Redbox, which in 2009, according to the NPD Group, held a market share of 19 percent. NPD forecasts Redbox to expand to 30 percent in 2010.

Using these data, and assuming that Redbox continues to earn an average of $2 per rental turn, we compute the 2009 rental revenue of Redbox to be $660 million in 2009 and $1.10 billion in 2010. Similarly, we compute the rental revenue of incumbents to be $7.37 billion in 2009 and $7.39 billion in 2010. These data are shown in the table below.

Table 2
Projected Rental Revenues by Industry Participants 2009 and 2010

Industry participant	Market share	Rental turns (millions)	Average rate per turn	Total revenue ($ millions)
2009				
Total		**1,738.1**		**$ 8,026.7**
Incumbents	81	1,407.8	5.23	7,366.3
Redbox	19	330.2	2.00	660.5
2010				
Total		**1,833.0**		**$ 8,492.7**
Incumbents	70	1,283.1	5.76	7,392.9
Redbox	30	550.0	2.00	1,099.8

Sources: SNL Kagan; NPD Group; LAEDC

From this information, we can calculate the average rental revenue earned per turn by incumbents. Note that using the information provided by the NPD Group and SNL Kagan, incumbents' rental turns are expected to decline by 125 million turns, while Redbox turns will increase by 220 million. However, overall rental revenues of incumbents will increase (marginally) given the increased average rental rate. This increase is expected due to the transition to Blu-ray.

Using this information, we estimate what total rental revenues would be in 2010 if Redbox were to not gain market share. That is, we apply their 2009 market share to the forecast of rental turns in 2010. This is shown in the table below.

Table 3
Projected Rental Revenues in 2010 using 2009 Market Shares

Industry participant	Market share	Rental turns (millions)	Average rate per turn	Total revenue ($ millions)
Total		**1,833.0**		**$ 9,248.7**
Incumbents	81	1,484.7	5.76	8,552.1
Redbox	19	348.3	2.00	696.6
Loss of rental revenue due to Redbox increased market share:				**$ 756.0**

Sources: SNL Kagan; NPD Group; LAEDC

Given a total number of 1.83 billion turns, Redbox would capture 348 million if they remained at a 19 percent market share. If their average rental rate remains at $2.00 per turn, their total revenue would be $697 million. The remaining 1.48 billion turns would be captured by the incumbents. We assume that they maintain their average rental rate of $5.76 per turn, yielding total revenue of $8.53 billion.

Together, if Redbox does not expand its market presence, *and leaving all other assumptions unchanged,* total industry revenues would be $9.25 billion. This implies that the growth of Redbox from 2009 to 2010 would leave the industry with unrealized revenues of $756 million, all else equal.

Retail Revenue Impact

The widespread introduction of low-cost DVD rentals will also have an impact on the retail market as some consumers substitute away from purchasing DVDs into rentals, particularly if new releases are available for rent on the street date.

Again, it is difficult to forecast the extent of the consumer's response in the retail market. SNL Kagan forecasts that in 2009, 912.2 million DVDs will be sold at an average price of $14.09 per unit. If consumers substitute away from purchases, overall industry revenues will fall. The table below shows the loss of industry revenues for a given percentage fall in the number of units sold at the prevailing market price.

Table 4
Change in Industry Revenues in Domestic DVD Retail Market
Given a Decline in Unit Sales
($ millions)

Unit retail sales decrease by:						
0%	**5%**	**10%**	**15%**	**20%**	**25%**	**30%**
-	(643)	(1,286)	(1,928)	(2,571)	(3,214)	(3,857)

Source: LAEDC

For every five percent fall in unit sales, overall industry revenues will decline by $643 million.

At the same time, retailers will respond to the incipient loss of consumer purchases by reducing sales prices. A lower sales price could retain existing consumers and attract additional consumers that would not normally have purchased DVDs. As with the rental market, the combination of reduced prices and increased transactions may yield an overall loss of retail revenues or it may bring an overall increase in total revenues. The net impact is dependent on the consumer's price sensitivity.

The table below shows how industry revenues would be affected, depending on the consumer response to lower priced discs, given the SNL Kagan forecast for 2009. Each entry in the table shows the overall change in industry revenues given a combination of a fall in the sales price that retailers charge and the increase in their unit sales.

Table 5
Change in Industry Revenues in Domestic Retail Market
($ millions)

Retail prices fall by:	Unit retail sales increase by:			
	0%	**10%**	**20%**	**30%**
10%	(1,290)	(130)	1,030	2,190
20%	(2,570)	(1,540)	(510)	510
30%	(3,860)	(2,960)	(2,060)	(1,160)

Source: LAEDC

The first column shows the effect on total revenues of a given percent change in prices if there is no response by consumers purchasing more DVDs. For example, if retailers reduce their prices by 20 percent on average, total retail revenues would decline by $2,570 million. Each column to the right shows how total revenues would change if consumers respond to price reductions by increasing their purchases. For example, if retailers drop their prices by 20 percent in response to Redbox's challenge, and consumers consequently increase their purchases by 20 percent, total revenues will fall by $510 million.

Notice that if retailers reduce their prices by 20 percent on average and consumers increase their purchases by 30 percent, total revenues in the retail market would *increase* by $510 million.

However, we again assume, given the competitive nature of the retail industry and its maturity, that retailers would have reduced prices already if overall revenue could be profitably increased, and deduce therefore that the likely outcome in the retail market would be a price reduction impact lying in the lower left-hand quadrant of the table: i.e., an industry revenue loss.

Unlike in the rental market, we lack sufficient data to narrow the range. The dynamic feedback between these two markets makes estimation especially difficult. For example, suppose producers expect a 10 percent decline in unit sales. The entries in Table 4 show that, all else equal, they could expect a decline in industry revenues of $1,286 million. To forestall this loss, they may preemptively reduce their retail sales price. Depending on consumer price-sensitivity, a reduction in the retail price of 10 percent could lead to an increase in unit sales. If this increase was 10 percent, then the revenue loss due to the price drop would be $130 million (seen in Table 5). The outcome of the expected *loss* of sales as consumers substitute into rentals and the *increased* sales in response to lower prices is unknown.

RENTAL AND RETAIL MARKET SUMMARY

To summarize, we expect there to be a short-term decline in annual retail revenues as consumers respond to a poor economic environment and to the availability of low-cost DVD rentals. This may be exacerbated by substitution away from higher-priced rentals and by a deterioration of the prevailing market price. To some extent, these declines in revenues will be offset by the growth of newer revenue streams associated with the digital delivery of content. Indeed, SNL Kagan projects an increase in distributor revenues from all sources worldwide from $51.3 billion in 2008 to $67.6 billion in 2017. Nevertheless, overall industry revenues would be still higher if Redbox low-cost DVD rentals were not available on the street date.

The estimation of the loss of revenues is problematic given the multiple interdependent impacts. Our back-of-the-envelope approach in the rental market suggests a wide range of potential losses, from $200 million to $2.2 billion, with a high probability of losses in excess of $1 billion. Our comparative market share approach suggests that losses are $756 million. The impact on retail sales revenues is also likely to be negative, but our estimate of the magnitude of losses is more uncertain.

Allowing for the loss on the lower end of several hundred million in the retail market, plus $756 million in the rental market, we conclude that revenues losses in the domestic rental and retail market will be $1 billion, but perhaps much more.

Economic Implications

Based on our estimates from the prior section, we believe that the overall domestic home video market may lose $1 billion or more in revenues due to the introduction of low-cost DVD rentals.

This loss of revenues in the market is shared among players along the distribution chain, including producers, distributors, wholesalers, retailers and rental outlets. We focus here on how a loss of industry revenue affects the production of film and television projects and the related job retention and creation.

Data reported by SNL Kagan from 1999 to 2008 show that on average, approximately 52 percent of industry revenues from rentals and retail sales are earned by distributors. Hence, we that assume a loss of domestic home video industry revenues of $1 billion translates into a loss of $520 million for distributors.

We estimate the impact on the economic activity in the five-county region of Southern California (which includes the counties of Los Angeles, Orange, Riverside, San Bernardino and Ventura), the entertainment capital of the world. The diverse economic base of the region supports all aspects of motion picture and entertainment production, from set construction to writers and directors to film developing and post-production activities—unlike production taking place in Michigan and other states where many components may be imported (such as the creative talent) or absent entirely (such as post-production expertise). Thus, basing our estimates on activity in Southern California allows us to estimate the total economic activity associated with revenues in the industry, bearing in mind that the impact, like many productions, could be spread across multiple states.

For our estimates, we examine the impact of foregone *revenue* to the industry rather than the impact of a decrease in *film production*. We select this approach because we believe that one firm's strategy for responding to a sudden revenue loss may be quite different from another. For example, it is possible that a project facing lowered revenue expectations would not be funded, and therefore the studio would have a smaller film slate. It is also possible that cost structures could be trimmed—perhaps by shooting fewer scenes or employing lesser talent—such that the film slate would be maintained but at an overall lower level of quality. The actual response is difficult to predict, although we note that studios facing shortfalls will nevertheless need to maintain adequate profit margins to ensure continued access to capital; therefore, lower revenues overall will inevitably translate into less production.

ECONOMIC IMPACT OF PRODUCTION LOSS

We estimate the loss of economic activity in the five-county Southern California region attributable to a loss of $1 billion in industry revenues. The results are shown in the table below. Since there is a significant potential for larger losses, we provide an accounting of the incremental impact of every additional $100 million in lost revenues to distributors in the Appendix.

Table 6
Economic Impact of $1 billion in Industry Revenues

Revenue Loss	
Rental and retail industry revenue loss	$ 1,000
Revenue loss borne by distributors	520
Economic Impact	
Output ($ millions)	$ 1,493
Employment (jobs)	9,280
Earnings ($ millions)	$ 395
Fiscal Impact	
Tax revenues	$ 30

Source: LAEDC
2008 dollars

A loss of $1 billion in domestic rental and retail revenues will cause a revenue loss of $520 million in the motion picture industry. This $520 million in revenues in the motion picture industry would have produced $1.5 billion in economic output (measured by business revenues) in firms throughout Southern California, including 9,280 jobs with total earnings of $395 million.

The earnings circulate throughout the regional economy, generating taxable purchases and thus tax revenue. Additionally, the state will collect income tax revenue, and unemployment and disability taxes will be paid. The tax revenue at the local, county and state level is more than $30 million. This is an underestimate since we do not account for corporate income taxes and business gross receipts taxes, nor any permits or fees that are foregone.

The loss of revenues, jobs and earnings will fall most significantly in the motion picture industry itself, but many other industries will be affected as indirect and induced effects ripple through the economy. The impacts by industry sector are shown in the table on the following page. The values in the table should be interpreted as illustrative of the industry effects rather than precise, given model and data limitations.

Of the 9,280 jobs, almost half will occur in the Information sector. In addition to motion picture and sound recording industries, this sector includes: publishing industries; radio and television broadcasting; telecommunications industries; and internet service providers.

Table 7
Industry Breakdown of $1 billion in Industry Revenues

Industry	Output ($ millions)	Jobs	Earnings ($ millions)
Agriculture	$ 3.6	32	$ 0.8
Mining	1.8	2	0.4
Utilities	21.3	31	3.7
Construction	5.8	47	2.3
Manufacturing	121.1	411	21.4
Wholesale trade	33.0	163	10.6
Retail trade	46.4	624	15.2
Transportation and warehousing	28.1	199	9.8
Information	818.5	4,400	201.3
Finance and insurance	64.1	243	17.2
Real estate	105.0	255	7.5
Professional, scientific and technical services	56.9	398	23.7
Management of companies	19.8	108	10.3
Administrative and waste management	29.0	448	12.9
Education services	8.6	132	3.9
Health care and social assistance	47.3	496	23.0
Arts, entertainment and recreation	27.2	383	10.6
Accommodations and food services	28.3	576	10.9
Other services	27.0	270	8.8
Households	n/a	65	0.7
Total *	**$ 1,493**	**9,280**	**$ 395**

* May not sum due to rounding
Source: LAEDC
2008 dollars

In 2008, approximately 52 percent of the employment (and 54 percent of the earnings) in the Information sector was in motion picture and sound recording industries, implying that of the 4,400 jobs, *at least* 2,290 will be in motion picture and sound recording industries.

Similarly, $201.3 million is earned in the Information sector, of which *at least* $109 million is earned by workers in motion picture and sound recording industries.

Other industry sectors with significant impact include retail trade (624 jobs), accommodation and food services (576 jobs), and health care and social assistance (almost 500 jobs).

CONTEXT

The potential loss of $1 billion or more in video sales and rental revenue due to low-cost new release DVD rentals is just one element of the upheaval gripping the home video market. The recession has left consumers with less enthusiasm to spend hard-earned dollars on discretionary items; new entertainment options have brought competition to old standbys; and technological change underpins a seismic shift in the delivery of content.

The current recession has affected consumer purchases of discretionary items, probably inducing substitution away from purchases to more affordable renting, and encouraging even lower cost rentals through Redbox or Netflix. This may be short-lived until economic conditions improve, but other trends will persist. Many households may opt for other forms of entertainment as increased competition for budgets and leisure time from other activities (such as gaming and social networking) put pressure on the traditional home entertainment model. Most important of all, the shift from physical to digital delivery of media content threatens to upend the home video market.

Technology is enabling the digital delivery of content through internet providers, broadcast and cable providers, and telecom providers. The availability of instant content is growing, and the trip to any rental outlet, be it a bricks-and-mortar store or a kiosk, will decline and perhaps disappear entirely. Further, some content is escaping revenue models entirely as content is delivered free to subscribers, challenging traditional revenue models which depend on per unit viewing charges.

The SNL Kagan forecast for home entertainment market revenues reflects these trends, falling from $20.9 billion in 2009 to $13.2 billion in 2018. While sell-through units will grow slowly through this period, sales revenues will fall from $12.9 billion to $9.9 billion. Rental revenues will decline from $8.0 billion to $3.3 billion as rental turns crash from 1.7 billion in 2009 to 500 million in 2018.

Low-cost DVD rental options will contribute to the decline in revenue from rentals and sales, particularly if titles are available for rent at $1 per night on the street date, but the impact will likely be overshadowed by larger trends.

The decline in revenues from the home video market matters from an industry perspective because the sales and rental revenues help compensate for the abundant risk in film development. Fickle consumers and fast-changing preferences, amid unexpected political or natural events, can doom the most promising project to the cutting room floor or catapult a small-budget independent film into the stratosphere. Such inherent uncertainty at the outset necessitates a project development strategy that diversifies production across a variety of genres and budgets. Film slates are designed to maximize overall success, such that one or two blockbuster hits can compensate for losses suffered on other projects.

The financial success of a project (and its distributor) depends on a multi-phased distribution strategy. Although box office numbers are headlined in industry and popular press, revenues from this income stream account for less than twenty-five percent of the total revenues earned by distributors. Most movies are not immediate money makers and companies rely on sequential sales, such as in the home entertainment market, to recoup their production and marketing investment.

The shift to digital delivery will provide new revenue streams for the industry and new opportunities such as 3D theatrical releases (and potentially home releases also), and royalties and licensing fees from new delivery methods. Increased availability of all types of digital content and media have changed lifestyles and will continue to contribute to demand for video products. Indeed, SNL Kagan forecasts continuing growth in overall industry revenues as alternative streams compensate for this loss of revenue. In total, SNL Kagan projects an increase in distributor revenues from all sources worldwide from $51.3 billion in 2008 to $67.6 billion in 2017. While the composition of these revenues will clearly change, distributors will continue to experience revenue growth into the next decade.

This suggests two important concluding thoughts.

First, the shift in revenue will create upheaval. The decline in DVD revenues represents an ongoing loss of an existing significant revenue stream, while the offsetting gains in revenue from digital delivery seem to us to be more uncertain, both in scale and in timing, and subject to wider margins of error. The composition of distributors' revenues is expected to change significantly over the next ten years as the popularity of online and on-demand services grows. However, the revenue streams from these new business lines are uncertain given their continuing innovation and evolution.

Second, any loss of jobs due to low-cost new release DVD rentals upsetting the existing home video revenues will not be easily visible given the larger trends in the industry. Thus these losses are best characterized as an opportunity foregone, since overall revenues of the industry *would be higher* if Redbox low-cost DVD rentals were not available on the street date.

APPENDIX

INCREMENTAL ECONOMIC IMPACT

We estimate the loss of economic activity in the five-county Southern California region of each incremental $100 million loss of revenues in the motion picture and sound recording industries. The results are shown in the table below.

Table A-1
Economic Impact of $100 million Loss of Industry Revenues

Revenue Loss	
Revenue loss borne by distributors	$ 100
Economic Impact	
Output ($ millions)	$ 287
Employment (jobs)	1,780
Earnings ($ millions)	$ 76
Fiscal Impact	
Tax revenues	$ 6

Source: LAEDC
2008 dollars

The loss of $100 million in revenues in the motion picture industry would result in a total loss of $287 million in economic output (as measured by business revenues) in firms throughout Southern California. More than 1,780 jobs with total earnings of almost $76 million will be lost for every $100 million in revenue loss for the industry.

The lost earnings will mean less money circulates throughout the regional economy, generating fewer taxable purchases and thus less tax revenue. Additionally, the state will collect less income tax revenue, and less unemployment and disability taxes will be paid. The loss of tax revenue at the local, county and state level will be almost $6 million. This is an underestimate since we do not account for the loss of corporate income taxes and business gross receipts taxes, nor any permits or fees that are foregone on production losses.

The loss of revenues, jobs and earnings will fall most significantly in the motion picture industry itself, but many other industries will be affected as indirect and induced effects ripple through the economy. The impacts by industry sector are shown in the table on the following page. The values in the table should be interpreted as illustrative of the industry effects rather than precise given model and data limitations.

Of the 1,780 jobs lost for every $100 million in foregone revenues, almost half will occur in the Information sector. In addition to motion picture and sound recording industries, this sector includes: publishing industries; radio and television broadcasting; telecommunications industries; and internet service providers.

In 2008, approximately 52 percent of the employment (and 54 percent of the earnings) in the Information sector was in motion picture and sound recording industries, implying that of the 846 jobs that are lost, *at least* 450 will be lost in motion picture and sound recording industries for every $100 million in lost revenues.

Table A-2
Industry Breakdown of $100 million Loss of Industry Revenues

Industry	Output ($ millions)	Jobs	Earnings ($ millions)
Agriculture	$ 0.7	6	$ 0.1
Mining	0.4	0	0.1
Utilities	4.1	6	0.7
Construction	1.1	9	0.4
Manufacturing	23.3	79	4.1
Wholesale trade	6.3	31	2.0
Retail trade	8.9	120	2.9
Transportation and warehousing	5.4	38	1.9
Information	157.4	846	38.7
Finance and insurance	12.3	47	3.3
Real estate	20.2	49	1.4
Professional, scientific and technical services	10.9	76	4.6
Management of companies	3.8	21	2.0
Administrative and waste management	5.6	86	2.5
Education services	1.7	25	0.8
Health care and social assistance	9.1	95	4.4
Arts, entertainment and recreation	5.2	74	2.0
Accommodations and food services	5.4	111	2.1
Other services	5.2	52	1.7
Households	n/a	12	0.1
Total *	**$ 287**	**1,780**	**$ 76**

* May not sum due to rounding
Source: LAEDC
2008 dollars

Similarly, $38.7 million will be lost in earnings in the Information sector for every loss of $100 million in industry revenues, of which *at least* $21 million will be lost by workers in motion picture and sound recording industries.

Nevertheless, other industry sectors will also be negatively impacted, including retail trade, which will lose 120 jobs, and accommodation and food services, which will lose 111 jobs.

IMPLICATIONS FOR UNION PENSION FUNDS

The motion picture industry is populated with many small businesses and independent agents, talent and contractors, as well as part-time workers and freelance workers. These firms and workers provide a full range of services, such as costume design, set construction, equipment rental, lighting, special effects, and creative talent. The nature of film production means that employment for many workers is short term and/or part-time, for many different employers, and possibly for several different projects at the same time.

The nature of employment in the motion picture industry has heightened the importance of union membership, which provides collective bargaining power to a very large, diverse and scattered labor pool facing a small and concentrated hiring market. Most production companies have employment agreements with unions representing directors, actors, and writers (called guilds), such as the Screen Actors Guild (SAG), the Directors Guild of America (DGA), the Writers Guild of America (WGA) and the American Federation of Television and Radio Artists (AFTRA). Other occupations are represented by the International Alliance of Theatrical Stage Employees, Moving Picture Technicians, Artist and Allied Crafts (IATSE), the International Brotherhood of Teamsters (IBT) and the United Scenic Artists.

Unions also provide health and welfare benefits to their members, which are paid out of funds established through contributions from employers based on employee wages and, in some cases, on residual payments earned by members on projects as they continue through their individual release windows. The amount paid varies by the labor agreements entered into by the various unions. For example, contributions towards health and welfare funds by employers of SAG members are equal to 15 percent of all wages paid, while for the DGA it is 14.5 percent. For IATSE workers, the amount is calculated as a combination of a fixed dollar-per-hour rate and a percentage of the minimum, or as a flat, per-day sum, resulting in contributions in the range of 15 percent of earnings. Additional contributions to the health and welfare funds of IATSE unions are made from residuals earned by union members. (Residuals for guild members may be paid directly to members, with perhaps only a percentage diverted to health and welfare funds.)

Contributions to health and welfare funds would be affected by a loss of revenue in the motion picture industry in two ways: First, to the extent that a loss of revenue translates into reduced production, there would be fewer earnings paid to union members and less concomitant payments into the funds by employers. Second, to the extent that residual payments to union members and their health and welfare funds are dependent on DVD sales and rental revenues, then a decline in this revenue stream would translate into reduced contributions.

We estimate the potential losses from both sources of contributions to health and welfare funds for the loss of $520 million in revenues in the motion picture industry as follows:

In the prior section, we estimated that a revenue loss of $520 million in the industry would result in a loss of $109 million in earnings of workers in the industry. At the current contribution rate, this implies a loss of contributions to health and benefit funds of approximately $16.3 million per year.

In addition to this, there is a loss of residual payments to funds held by IATSE unions. To estimate the contributions made from residuals, we rely on our earlier work conducted on film production budgets. In that work, we estimated that of all wages paid on a typical project, approximately 45 percent are paid to below-the-line employees. A report prepared by UCLA states that residuals account for approximately 30 percent of income for guild members (*Labor Relations and Residual Compensation in the Movie and Television Industry,* by Archie Kleingartner and Alan Paul of the UCLA Institute of Industrial Relations, 1992). We use this as an upper-bound, recognizing that other industry occupations may be entitled to lower residual payments than directors, actors and writers.

Taking these two estimates together, of $109 million earned in the industry, 45 percent (or $49 million) would have been paid in wages to (and therefore, in this case, lost by) below-the-line employees. Since these wages represent approximately 70 percent of total income, therefore an additional $19.1 million would have been received as residuals and directed into the health and welfare funds for union members.

In summary, given a revenue loss of $520 million in the motion picture industry, we estimate that up to $35.4 million is lost in contributions to health and welfare funds for guild and union members. The majority of this loss will occur in union plans for below-the-line employees because residuals paid to such employees are diverted into health and welfare funds.

ECONOMIC IMPACT METHODOLOGY

The total estimated economic impact includes direct, indirect and induced effects. **Direct activity** includes the loss of material purchases and the loss of jobs provided by the motion picture industry and its contractors due to the loss of production. **Indirect effects** are those which stem from the employment and business revenues lost by the materials not purchased by the motion picture industry and its contractors. For example, indirect jobs are lost when the suppliers of the office furniture and insurance policies to the motion picture industry are no longer needed. **Induced effects** are those lost due to the foregone spending of employees whose wages are no longer sustained due to the loss of both direct and indirect spending.

Without actual estimates of the loss of revenues, we measure the impacts per loss of $100 million in industry revenues, without regard to the source or reason. Total effects are estimated using multipliers from the Regional Input-Output Modeling System (RIMS II) developed by the Bureau of Economic Analysis at the U.S. Department of Commerce. Our estimates for earnings and output are expressed in constant (2008) dollars.

The estimated economic impacts are based on the loss of revenues within the five-county Southern California region that includes the counties of Los Angeles, Orange, Riverside, San Bernardino and Ventura. Data limitations prevent us from estimating how much of the overall loss of revenues will take place outside of the region; for example, materials or furniture and equipment might have been *purchased* locally but be manufactured elsewhere. In some instances, the loss of spending may occur in neighboring counties and thus generate *additional* negative economic impact that spills over from those neighboring counties. This spillover is not captured by our five-county analysis.

Job loss (or earnings) estimates are based on national average relationships between output and employment (or earnings). Where such relationships at the regional level differ from the national relationships, the impacts may be understated or overstated. Job loss estimates are measured on a job-count basis for both wage-and-salary workers and proprietors regardless of the number of hours worked.

DESCRIPTION OF INDUSTRY SECTORS

The industry sectors used in this report are established by the North American Industry Classification System (NAICS). NAICS divides the economy into twenty sectors, and groups industries within these sectors according to production criteria. Listed below is a short description of each sector as taken from the sourcebook, *North American Industry Classification System,* published by the U.S. Office of Management and Budget (2007).

Agriculture, Forestry, Fishing and Hunting: Activities of this sector are growing crops, raising animals, harvesting timber, and harvesting fish and other animals from farms, ranches, or the animals' natural habitats.

Mining: Activities of this sector are extracting naturally-occurring mineral solids, such as coal and ore; liquid minerals, such as crude petroleum; and gases, such as natural gas; and beneficiating (e.g., crushing, screening, washing and flotation) and other preparation at the mine site, or as part of mining activity.

Utilities: Activities of this sector are generating, transmitting, and/or distributing electricity, gas, steam, and water and removing sewage through a permanent infrastructure of lines, mains, and pipes.

Construction: Activities of this sector are erecting buildings and other structures (including additions); heavy construction other than buildings; and alterations, reconstruction, installation, and maintenance and repairs.

Manufacturing: Activities of this sector are the mechanical, physical, or chemical transformation of material, substances, or components into new products.

Wholesale Trade: Activities of this sector are selling or arranging for the purchase or sale of goods for resale; capital or durable non-consumer goods; and raw and intermediate materials and supplies used in production, and providing services incidental to the sale of the merchandise.

Retail Trade: Activities of this sector are retailing merchandise generally in small quantities to the general public and providing services incidental to the sale of the merchandise.

Transportation and Warehousing: Activities of this sector are providing transportation of passengers and cargo, warehousing and storing goods, scenic and sightseeing transportation, and supporting these activities.

Information: Activities of this sector are distributing information and cultural products, providing the means to transmit or distribute these products as data or communications, and processing data.

Finance and Insurance: Activities of this sector involve the creation, liquidation, or change of ownership of financial assets (financial transactions) and/or facilitating financial transactions.

Real Estate and Rental and Leasing: Activities of this sector are renting, leasing, or otherwise allowing the use of tangible or intangible assets (except copyrighted works), and providing related services.

Professional, Scientific, and Technical Services: Activities of this sector are performing professional, scientific, and technical services for the operations of other organizations.

Management of Companies and Enterprises: Activities of this sector are the holding of securities of companies and enterprises, for the purpose of owning controlling interest or influencing their management decision, or administering, overseeing, and managing other establishments of the same company or enterprise and normally undertaking the strategic or organizational planning and decision-making of the company or enterprise.

Administrative and Support and Waste Management and Remediation Services: Activities of this sector are performing routine support activities for the day-to-day operations of other organizations, such as: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.

Educational Services: Activities of this sector are providing instruction and training in a wide variety of subjects. Educational services are usually delivered by teachers or instructors that explain, tell, demonstrate, supervise, and direct learning. Instruction is imparted in diverse settings, such as educational institutions, the workplace, or the home through correspondence, television, or other means.

Health Care and Social Assistance: Activities of this sector are operating or providing health care and social assistance for individuals.

Arts, Entertainment and Recreation: Activities of this sector are operating facilities or providing services to meet varied cultural, entertainment, and recreational interests of their patrons, such as: (1) producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) preserving and exhibiting objects and sites of historical, cultural, or educational interest; and (3) operating facilities or providing services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.

Accommodation and Food Services: Activities of this sector are providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.

Other Services (except Public Administration): Activities of this sector are providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities, such as equipment and machinery repairing, promoting or administering religious activities, grant-making, advocacy, and providing dry-cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.