Analyzing the ROI of Independently Financed Films: are there many more "Slumdogs" than "Millionaires"?

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I. INTRODUCTION: THE CURRENT LANDSCAPE

A few main players dominate the movie industry by controlling most of the revenues and market share, with as little as 6% of movies making up 80% of revenues. The major studios focus on releasing a few blockbuster movies with budgets over $60MM dollars and huge marketing spends, with the intention of attracting a wide audience. Most of these movies are produced in-house, but some are also acquired from smaller companies in different phases of the development process. The last decade has seen a new trend in the film industry, whereby new players have emerged under the assumption that making smaller budget movies with a limited release will necessitate significantly lower prints and advertising (P&A) expenses, and result in the potential for a significantly higher return on investment. The financial industry also accepted this assumption, and began increasingly investing in these so-called “indies”, while the major studios concurrently created specialty arms to play in this space. A small number of hits kept the industry expanding every year, but with the major collapse of financial markets, the money invested in film decreased dramatically over the past 2 years. Many specialty houses, both independent and studio owned, closed as the numbers did not add up, and many investors were burned by the significant losses incurred.

II. STATEMENT OF PURPOSE

The purpose of this paper is to analyze in depth the financing of films released in the last decade (Jan 2000 – Oct 2009). The movies will be categorized into two major groups, those that have been financed independently and those that have been financed by a studio. The budgets of these movies will then be compared to the revenue streams from distribution windows and ancillary rights on a cash-on-cash basis to evaluate the return for the initial financier. With the

collected data that should represent the full sample significantly, this paper will use statistical analysis to predict US DVD revenues from domestic box office and other variables. The results will be used to produce a model to predict the ultimate cash flow over the life of a movie both in the domestic and international markets. The return on cash invested for the financier will then be calculated by taking into account all the costs incurred in the production and distribution of the movie and the average retention rates of each cash flow stream. This paper will hopefully prove that on average, the returns for financers are significantly lower than that of an average market portfolio and will look at the reasons why movies have not historically performed as expected.

III. PRIOR RESEARCH IN THE FIELD

There have not been a lot of studies that look at film revenues beyond the box office numbers. Much of the research in this field is specifically focused on the impact of intrinsic factors to each film in driving its success at the box office. The main reason why box office is the only data point that is referenced to, when identifying a film's success is that this number drives most of the other revenues and cost streams for movies. What this means is that both DVD sales and the ultimate revenues for movies are dependent numbers on box office results, given that it is the best indicator of demand. Furthermore, the cost of movies, participations to talent, and TV output deals are all calculated as a percentage of box office results. Even a portion of the marketing budget is dependent on box office because if a movie is performing, the advertising spend will increase to help the movie grow in revenues. This is particularly the case with small independent films that open on a limited release.

There has been a lot of research in the field of predictability given the risky nature of the movie business as many movies ultimately lose money. De Vany, A in his book *Hollywood*

Economics: How Extreme Uncertainty Shapes the Film Industry focuses on the topic of distribution of profits and how these are shown to follow a stable non–Gaussian distribution with heavy tails and infinite variance. In his 2005 paper De Vany also finds that stars are not significant in producing profits and thus mitigating risks, and that bigger budgets do not lead to higher profits. Joshi, A and Hanssens, D among others, stated that even though big budgets are not the drivers of revenue, advertising can help increase movie returns. They also analyze how this spending will also signal to the market about public companies' valuation of the movies they are releasing.

IV. THE REVENUE WATERFALL FOR INDEPENDENT FILM

IV.I The Distributor Film Rentals from Box Office

There are multiple ways in which films can be financed both by studios and independently. Fee, E outlines these very precisely in his paper *The Cost of Outside Equity Control* and the table below summarizes his definitions:

Table 1: Financing Categorization

Classification	***Type of Financing***	***Description***
Studio	Studio development deal	Early involvement, at script stage
Studio	Studio based independent production	Exclusive relationship between the studio and an independent producers
Studio	Studio Financing/ distribution deal	Financing of a already packaged movie
Studio	Negative Pick-up	Studio will finance the cost of the movie only when it is completed (guarantee)
Independent	Co-financing	Financed by multiple players
Independent	Foreign presles	Sell theatrical and video rights to distributors internationally based on script
Independent	Long-term financing	Financing for a slate of movies
Independent	Single film financing	Limited partnership on one project
Independent	Self-Financing	Producer finances movie himself

Studios can also get involved at a later stage by agreeing to distribute the independent film; they will generally buy the movie at a festival and market it with their own slate of films. An independent house can also decide to rent a distributor for a fee but maintain more of the upside from the revenue streams. Fee, E. looks at the decisions of a producer of an independent film by weighing how different financing agreements constitute a trade-off between retaining controls over the films property and creative vision or relying on outside equity and loosing the power. He concludes that by allowing for an involvement by an outside investor the film will incur costs that are mainly creative but will also have benefits, especially in distribution. The decision will mostly be influenced by how high the artistic stake is in a movie, and this is a reason to justify the continuous growth in independent films.

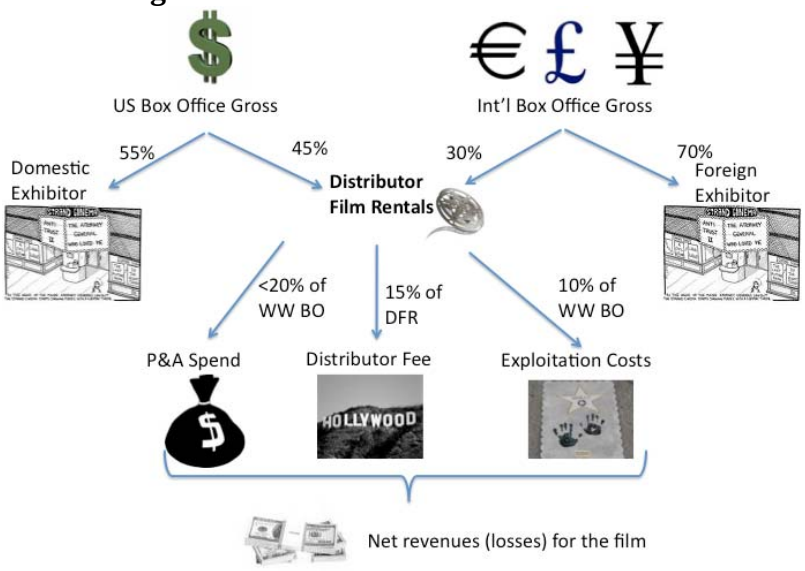
Given the decision made by filmmakers to be financed independently, it is interesting to investigate the actual profits that this asset generates for its investors. In order to better understand what the actual returns for financiers are it is necessary to outline how the revenues generated by movies, in each of the distribution windows, will be split between all significant players. Also, a better understanding of the real costs of a movie, above the actual budget, or "negative cost", and their accounting, will clarify why the investor gets paid back at a significantly later stage of the cash flow stream.

Firstly, when a movie is released theatrically, for every dollar of US domestic box office, the exhibitor, who owns the movie theatres, retains about 55% and thus only 45% of total box office revenues comes back to the film producers. Given that foreign distributors keep most of international revenue and the foreign sales agencies receive a percentage for selling the international rights as pre-sales (in the production phase of the movie), only 30% of international box office will be retained by the production company. The Distributor Film Rental (DFR) is

thus calculated as $DFR = 0.45 * BO_{US} + 0.30 * BO_{Int}$. There is an additional distribution fee that will be subtracted from the DFR to cover studio overhead (about 10% of DFR) and charges an additional fee (about 15% of DFR) to independent companies. The remaining cash flow is considered the net revenues for the movie.

Before the financier is able to recoup any money the distributor will recoup its P&A expenses. This includes all the money spent to market the movie and to physically produce copies for the theatres. On average this will be a calculated as a minimum of $2MM for movies with budgets below $10MM, and will be driven by worldwide box office success. If the box office gross for a movie is less than the "negative cost" then marketing will be limited to 10% of box office. For successful films it will rise up to on average 15% of worldwide box office for independents and 20% for studio movies. Another major cash outflow for the movie are exploitation costs, which include residuals and talent participations, usually accounting for, on average, 10% of worldwide gross. After all expenses have been recouped, the financier will start to receive his initial investment back, if the movie generated any positive cash flows. After that the financier will participate in a split with the production company and the talent in any upside.

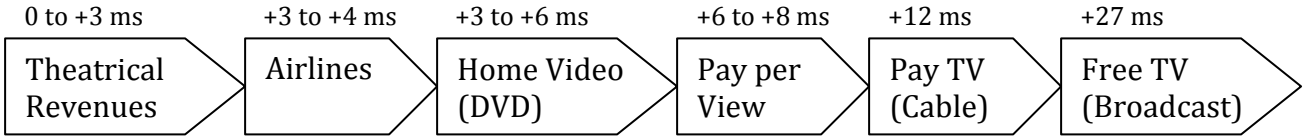
Diagram 1: Revenue waterfall for theatrical



IV.II What Happens Next?

After a movie has been exhibited in theatres it will be cleverly sold through different channels in a system called windowing. This means that for the next 10 years it will receive revenue streams from other forms of distribution deals. This sophisticated model is what has allowed studio movies to be successful on average and for companies to be valued on their movie library. A typical movie window timeline is shown below:

Diagram 2: The movie windows



In order to compute the total return for an investor it is important to predict these cash flow streams that together make what is called the "ultimate" for a film. The main revenue source after box office is the Home Video market that with the release of DVDs has seen a major growth in the last 10 years, both nationally and internationally. It is important to note that this is slowly changing given the increasingly common new options available to consumers such as video downloading and streaming. The costs incurred for the film have been modeled as manufacturing costs of 7% of sales and marketing costs of about 5% of net revenues, floored at a minimum spend of $2MM.

Other than DVD sales other sources of revenue for the film are TV output deals with cable channels, pay per view options, free TV and airlines. In the chapter *Profits out of the Picture: Research Issues and Revenue Sources beyond North America Box Office* Weinberg, C argues that "industry trade publications estimate that the (TV) networks pay approximately 15% of domestic box office for the first three to four showings of feature films. Pay per view and

video on demand were smaller deals at the time the chapter was written but have gained significant sales revenues for the industry in the past few years and have substituted those of free TV. Therefore this assumption will be maintained when calculating ultimate ancillary revenues for films but will be capped at a $15 million rate for all movies. Studio movies will then have the extra revenue from merchandising and licensing, which are beyond the scope of this analysis, as it is hard to generalize across different film properties.

IV.III Definition of Return on Investment

Return on Investment will be defined as the cash remaining after all expenses have been deducted from the "ultimate" (DFR and other movie revenue streams) over the negative cost of the movie. This does not take into account the time value of money given that the cash flows of the movie will be obtained starting at about a minimum of 2 years after the initial investment. It is a necessary assumption to evaluate multiple movies on a consistent basis. It is important to note that the accounting treatment allows film companies to amortize the negative costs of the movie over its life cycle. This will allow film companies to reduce the initial large losses that they incur when investing to make a movie.

V. THE DATA

V. Sample Selection

For the period analyzed, release dates from January 2000 to October 2009, there were 5,276 movies released in the US of which 38% were also distributed internationally. Furthermore, from the American Film Market (AFM) film catalogue, it is evident that another 2,858 movies were trying to get sold for release during this period and more than 90% of them

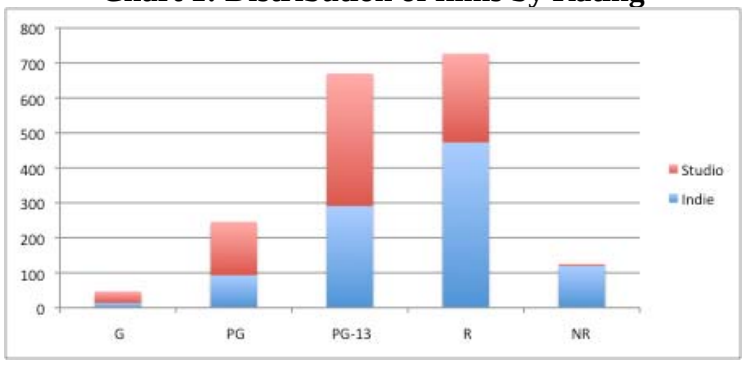
never did, ending up in straight-to-DVD distribution. The latter are all categorized as independently financed.

The database for ROI analysis has been carefully constructed to include all movie titles from the sample, which have available budget information. Each title was then categorized as independent or studio financed by distinguishing whether the main producer was an independent company or a studio/ studio subsidiary, even if a studio ultimately distributed the movie. All the movies with budgets under $2MM were also categorized as independently financed. Theatrical box office, domestically and worldwide and other information such as genre, rating and Oscar nomination, were also collected to classify the title.

The set of movies that will be analyzed compromises 1,815 films, 900 of which were categorized as independently financed and 825 as studio financed. The range of budgets for the movies in the database ranges from $258MM to less than $10,000. The database is populated with movies with multiple ratings and genres, all of which have had domestic distribution. Some of the statistics on the database are summarized below:

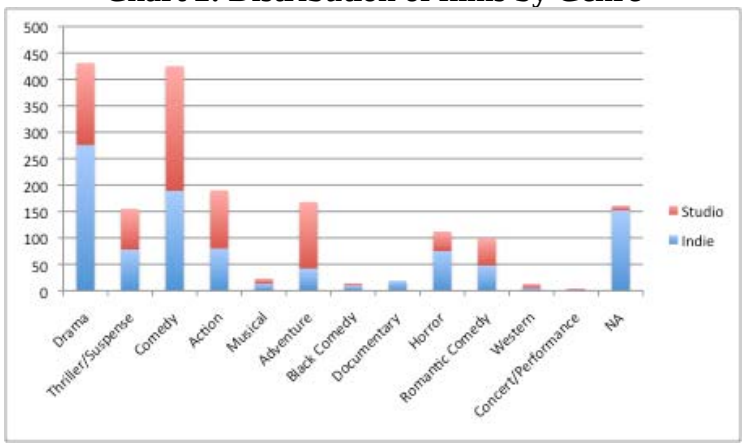
- **Ratings:** The database reflects the general knowledge that independently financed movies are mostly rated R and that studio movies will try to appeal to a wider audience and thus be significant in the G to PG-13 ratings. There are more that 10% of indie movies that have not been rated and this implies that they have never had a large release.

Chart 1: Distribution of films by Rating



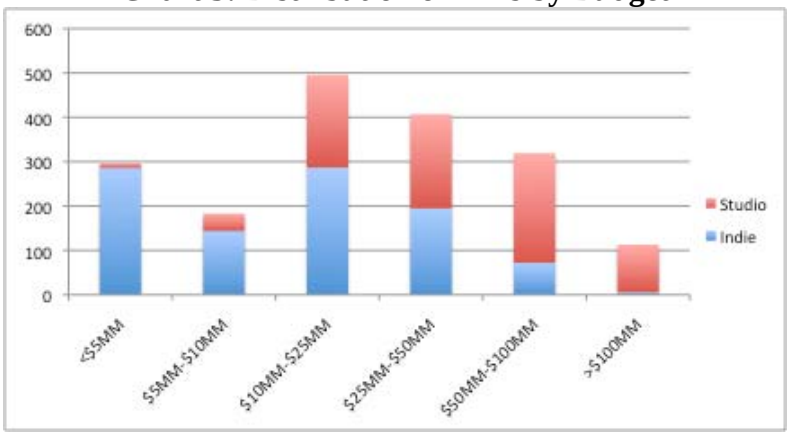
- **Genre:** Of the 12 genres by which movies have been categorized, again it is clear that independently financed films focus mainly on dramas and secondly on comedy. This is probably correlated to the fact that these are cheaper films to shoot, since indies are usually constrained by smaller budgets. The distribution for studio films is similar even though the Action and Adventure categories play a much larger role in the studio portfolio.

Chart 2: Distribution of films by Genre



- **Budget:** It is industry standard to accept indies as the lowest budget films. By the data collected it is clear that this is the case most of the time. But as studios have moved into the lower budget, auteur films, the dividing line becomes fuzzier. As the data suggests, studios like to play big, while indies will typically stay below a $25MM budget range.

Chart 3: Distribution of films by Budget



- **Oscar Nomination:** Without including the 2010 Oscars, the data analyzed shows that Studios win the Oscar competition most of the time, with 62% of Oscar nominated movies. This is changing rapidly as the academy recognizes the audiences' appreciation for more auteur movies.

V.II Predicting domestic DVD sales

Theatrical box office is easily accessible information, but when it comes to DVD sales it is a much harder number to identify. The website *the-numbers.com* has information on domestic DVD sales for a selected number of titles over the Jan 2006 - Oct 2009 period. The paper will make use of this data and statistical analysis to determine a statistically significant regression equation that can predict DVD sales based on a number of predictive variables, including domestic box office, budget, rating, genre and Oscar nomination. This will in turn be used to determine the DVD sales for the full dataset of movies.

Two separate regressions were performed on studio movies and on independent movies data, because studio backed films on average can achieve much higher DVD sales than independents and are affected differently by the predictor variables. The results of my statistical analysis are summarized below.

- **Studio Movies -** The regression equation is:

log Sales Revenue *= 4.61 + 0.613 log Domestic BO + 0.128 log Budget + 0.103 G - 0.309 PG - 0.561 PG-13 - 0.362 R - 0.189 Drama - 0.213 Thriller/Suspense - 0.158 Comedy - 0.157 Action + 0.627 Musical - 0.040 Adventure - 0.565 Black Comedy - 0.416 Horror - 0.005 Romantic Comedy + 0.104 Oscar Nomination*

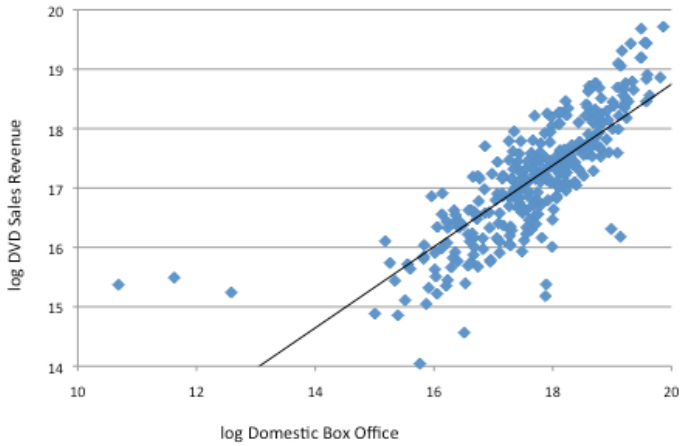
Natural logarithms were used because of the large numbers in both the predictors and the dependent variable so that the relationship would be better explained and R^2 will be higher. The details of this regression are as follows:

Predictor	Coef	SE Coef	T	P
Constant	4.612	1.107	4.17	0.000
log Domestic BO	0.61346	0.03986	15.39	0.000
log Budget	0.12768	0.05961	2.14	0.033
G	0.1032	0.7152	0.14	0.885
PG	-0.3092	0.6873	-0.45	0.653
PG-13	-0.5606	0.6846	-0.82	0.413
R	-0.3624	0.6821	-0.53	0.596
Drama	-0.1888	0.3476	-0.54	0.588
Thriller/Suspense	-0.2127	0.3569	-0.60	0.552
Comedy	-0.1583	0.3526	-0.45	0.654
Action	-0.1570	0.3560	-0.44	0.659
Musical	0.6269	0.4319	1.45	0.148
Adventure	-0.0403	0.3596	-0.11	0.911
Black Comedy	-0.5652	0.6754	-0.84	0.403
Horror	-0.4164	0.3755	-1.11	0.268
Romantic Comedy	-0.0047	0.3721	-0.01	0.990
Oscar Nomination	0.10407	0.09146	1.14	0.256

S = 0.583986 R-Sq = 68.2% R-Sq(adj) = 66.4%

It is interesting to note that the dependent variable can mainly be explained by the domestic box office. This result proves why most of academic and industry research has concentrated on these numbers as the main performance indicators. By using a scatter-plot of the two variables against each other and fitting the regression line, the relationship can be clearly visualized.

Chart 4: Regression of US DVD Sales to Domestic Box Office



For studio movies, the budget plays another important role. This could be because the studio invests this negative cost and thus is more motivated to recoup it through post-theatrical sales. They will invest more in marketing and retail shelf space deals in order to get the DVDs of their largest budget movies sold.

- **Indie Movies -** The regression equation is:

log Sales Revenue *= 9.63 + 0.442 log Domestic BO - 0.0743 log Budget + 1.08 G + 0.678 PG + 0.605 PG-13 + 0.553 R - 0.028 Drama - 0.015 Thriller/Suspense + 0.004 Comedy + 0.211 Action + 0.185 Musical + 0.001 Adventure - 0.370 Black Comedy - 0.326 Documentary + 0.320 Horror - 0.355 Oscar* Nomination

Natural logarithms were used in this equation for the same reasons outlined above. The R^2 for this equation is lower because of the nature of independent movies, given the hit or miss business model, which is even less predictable than that of studio movies. Furthermore independents have less money to spend on DVD release and will therefore rely more on consumer viral marketing. The details of the regression are below:

Predictor	Coef	SE Coef	T	P
Constant	9.6323	0.9551	10.09	0.000
log Domestic BO	0.44196	0.03425	12.90	0.000
log Budget	-0.07432	0.05044	-1.47	0.142
G	1.0833	0.5980	1.81	0.071
PG	0.6784	0.5501	1.23	0.219
PG-13	0.6053	0.5320	1.14	0.257
R	0.5527	0.5377	1.03	0.305
Drama	-0.0276	0.2499	-0.11	0.912
Thriller/Suspense	-0.0150	0.2656	-0.06	0.955
Comedy	0.0038	0.2487	0.02	0.988
Action	0.2106	0.2645	0.80	0.427
Musical	0.1849	0.4150	0.45	0.656
Adventure	0.0013	0.3153	0.00	0.997
Black Comedy	-0.3698	0.4607	-0.80	0.423
Documentary	-0.3257	0.4162	-0.78	0.435
Horror	0.3203	0.2676	1.20	0.233
Oscar Nomination	-0.3548	0.1520	-2.33	0.021

S = 0.677110 R-Sq = 50.4% R-Sq(adj) = 46.7%

Again domestic box office is the main predictor of DVD sales and is statistically significant. It is interesting to note the negative sign on the budget coefficient. This could be driven by higher budget movies competing with the studio ones on DVD customers but with a smaller marketing spend and no infrastructure. Also, the nature of independents is to be low budget films so there should be a smaller correlation between the negative cost and the movie's success. Another observation from the data is that dramas and documentaries are the genres that negatively affect DVD sales, but these are the protagonist-driven genres of many significant

independent film festivals such as Sundance. Furthermore, Oscar nomination also seems to have a negative coefficient. This could be explained by the fact that independent movies do not time their release around the Academy Awards as much as studio ones and might already be out of theatres and have released their DVD, thus having potentially no added income from the press around the Oscars.

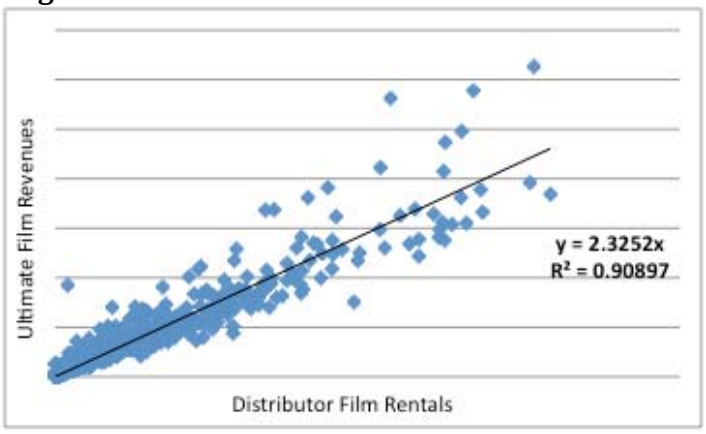
Once the two regressions were used to estimate domestic DVD sales revenues, they were used as an indicator of potential international sales. The demand for the title internationally was calculated as a ratio of foreign box office versus that in the US. This was then multiplied by the US estimate to get an international revenue stream. The main assumption here is that all foreign markets behave like the US in terms of DVD consumption, which is not necessarily true, but for the purpose of the analysis it is assumed that on average it should converge.

V.III The Ultimate Multiple

Once the DVD and other ancillary revenues were calculated and added to the DFR for each movie, these were used to compute the *ultimate* multiple. This can be used as a good predictor to calculate the total revenues of a film once the distributor film rentals (DFR) are known. This is a way for studios to predict the life value of each of their films after they have observed the box office performance. The two variables were regressed against each other and the regression multiple is 2.33x. This means that the other revenues count for 133% of the theatrical. This is important to note as it shows that when looking at movie profitability the other revenue streams should be taken into closer consideration. Below is the regression showing this relationship, with an R^2 of over 90%. Not that as the DFR gets larger the outliers increase in both directions. The highest ultimate multiple movies are the G rated animated films for children, such as the Pixar and Disney ones that have a very long revenue life after their initial theatrical release.

Merchandising and licensing also play a large part and are not included in the calculation, thus making the multiple even larger than currently computed.

Chart 5: Regression of Ultimate Revenues to Distributor Film Rentals

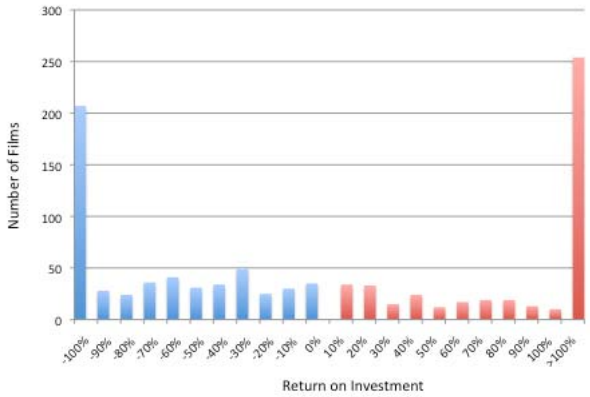


VI. THE ANALYSIS

VI. Let's analyze returns

The cash-on-cash return on investment was calculated for the 990 independently financed movies analyzed. All the revenues of the film, as described above, were added together and all the costs associated to making those revenues subtracted from these. This final cash flow was compared to the initial "negative", the movie budget. If the cash flows were smaller than the initial budget then the financiers achieved a negative return on their investment. If the return was less than -100% this implies that the financiers never received anything back from the film and that even the production company and distributors were exposed to a loss. If the ROI on the movie is more than 100% then this means that the financier was able to double its initial investment in the film. The distribution of independently financed returns is shown below:

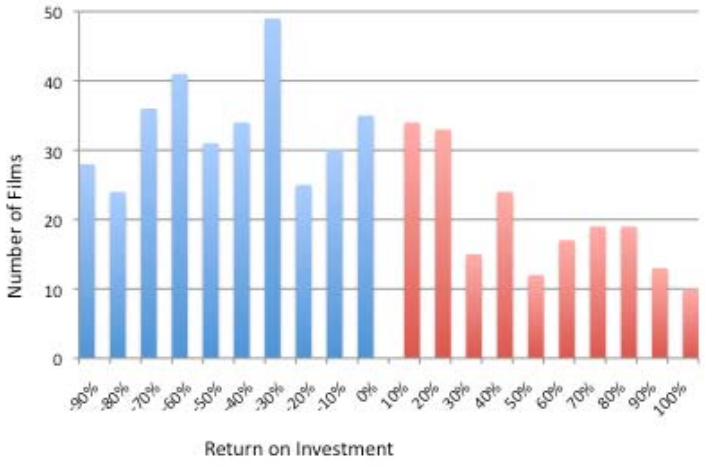
Chart 6: Distribution of independent Film Returns



As already documented by De Vany, A. the returns of films do not follow a normal distribution. The anomaly of movie returns explained by the large tails, shows that independently financed films behave like extreme events. This makes the predictability of a success nearly impossible, given the infinite variance of returns.

The distribution of returns can be analyzed in more detail by disregarding the tails. This assumes that over a large enough number of films the two tails will cancel out.

Chart 6: Distribution of independent Film Returns



The kurtosis of the distribution is low, given the flat peak around the mean and a more uniform distribution. It is interesting to note that increasing returns diminish quicker than decreasing ones. The investors of independently financed films will have a positive return 45%

of the time but will double its money (ROI > 100%) only 25% of the time. Given that the cash flows of a film are generally achieved over a period of at least 10 years after the initial investment, this equates to a yearly return of 7.18%.

When looking at the entire distribution the mean is large and positive. This is because there is a positive skew in the distribution, the tail on the right is larger, as negative returns are floored by how much money is invested, both the negative and the film costs. This is not a significant number in explaining the potential return from a film. The median is a better indicator as it reduces the importance of outliers. The median ROI is -13.12% for an independently financed movie. This is a clear signal of the historic underperformance of these types of films. In contrast, the median of the studio-financed movies is 27%. On an annual basis over a ten-year period, this is not an impressive result either but it has sustained the studio model through the years.

The absolute return of a film, as calculated for the purposes of the analysis is heavily influenced by the size of the denominator. Very small budget movies will have significantly larger returns, both in positive and negative terms. To eliminate this effect, the analysis looks at both the absolute returns of movies in the sample and the budget-weighted % return over the whole portfolio. The statistics for studio and independently finance films are summarized below:

Table 2: The cash-on-cash Returns

Variable	***Studio Financed***	***Independently Financed***
Returns in %		
Average % Return	153%	1055%
Median % Return	27%	(13%)
Budget-Weighted Returns		
Average of Absolute Returns	$26,921,922	$2,213,197
Median of Absolute Returns	$8,846,379	($1,389,147)
Total of Budgets	$45,732,091,638	$19,639,637,318
Total of Absolute Returns	$22,210,585,390	$2,191,065,514
% Budget-weighted Return	48.57%	11.16%
Yearly return (over 10 years)	4.04%	1.06%

It is pretty clear from the data that studio movies outperform the independent ones when looking at budget-weighted returns. For every $1 invested in a studio film, the return is $1.49 dollars, whilst for an independent it is only $1.11. Over a 10-year horizon for the investment this equates to 1.06% return a year. This shows that leaving the "negative" money in a bank account or in marketable securities is a better investment than independent movies, on the full portfolio. Independents though, do benefit from the lower costs involved in making the movie and marketing it, thus driving returns significantly higher for the successes than that of movie studios where the initial investment, that has to be recovered, is larger.

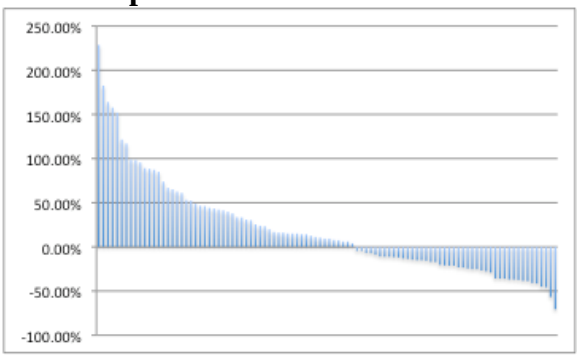
It is important to note that when using the median, and thus eliminating the effect of outliers, the return for an independent is actually negative. This is no surprise, given the failure of many of the independent film companies in the last few years. The asset class has proven to be a difficult investment to make even if in theory the lower sunk costs would facilitate the speed at which the movie would be profitable for every dollar of profit achieved.

VI.II A little bit on portfolio theory

The paper is now going to look at all the independent movies in the sample and is going to apply portfolio theory to discuss the returns for specific portfolios of movies. Assume that there is an investor who has no insider knowledge on any of the movies that he can choose to invest in. It will also be understood that by randomly selecting a small portfolio of 8-10 films, the investor is fully diversified, as there is no covariance between films, if they are not sequels. The covariance measures how returns of assets move together; thus no covariance describes the unpredictability of any title, whose performance cannot be predicted by that of any other film. The 100 portfolios were selected randomly and then the return of each portfolio was calculated as follows: $E(R_p) = \sum_i w_i E(R_i)$. The return from the asset was already calculated and the

weights for each film were found as the budget over the total portfolio investment. This assumes that when an investor selects a movie, he will fully invest in it. *Table 1* in the Appendix shows the details for weighted returns for a selection of 100 portfolios with randomly assigned movies. The returns are also shown in the chart below.

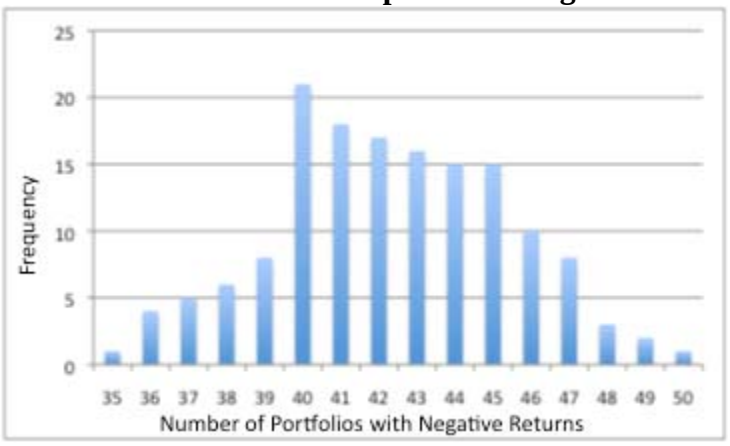
Chart 7: Expected Returns from each Portfolio



In this particular randomization, the number of portfolios with positive returns outweighs that with negative, both in number and size. There are 44 portfolios with negative returns and 38 portfolios yielding more than 20% return. Therefore by allowing diversification there is a larger probability of actually achieving a positive return, rather than on single investments, because of successes covering for the effects of losses.

When repeating the random selection of portfolios for 150 iterations, it is interesting to note that the number of negative portfolios will rarely be 50% and never above, as shown below:

Chart 8: Distribution of Expected Failing Portfolios



It can be argued that investors will have some information on the movies they want to invest in and will then decide to invest in those they believe will be more profitable. The analysis looks at portfolios of films based on certain characteristics to compare their performance. The data for expected portfolio returns is shown below:

Table 3: The Returns from Portfolios by type

PORTFOLIO TYPE	EXPECTED RETURN
Ratings	
G	119%
PG	7%
PG-13	4%
R	14%
NR	-4%
Genre	
Drama	15%
Thriller/Suspense	1%
Comedy	9%
Action	-15%
Musical	88%
Adventure	5%
Documentary	176%
Horror	94%
Romantic Comedy	21%
Budget	
<$5M	227%
$5M-$10M	158%
$10M-$25M	70%
$25M-$50M	36%
$50M-$100M	14%
>$100MM	-40%

The findings show that the best type of portfolio to invest in is of G rated films because as mentioned before, they have a high multiple for non-theatrical returns. NR movies are the worst performers, probably because of limited release and low investment in promoting ancillary revenues. These films might have to use a rent-a-distributor system and only release to get critics reviews for the movie. Surprisingly documentaries are very high performers. This could be explained by the fact that the negative cost is usually very low and that the sample is skewed to include only the ones that get theatrical release. For documentaries this is usually a very limited number as most will only be bought for TV release. horror and romantic comedies are other safer genres to look into when selecting a film investment. It is also absolutely clear that higher budget movies will not translate in better returns in the independents category, contrary to the strategy of studios. This could be because the production can devote a much lower marketing spend towards

the film and thus making it harder to support its post-theatrical success. Many studio independent film arms and production companies, given the easy capital markets from 2004 to 2008, dangerously moved into higher budget territory when looking at what films to produce and causing them to go out of business.

VII. CONCLUSION: WHY DO INVESTMENTS IN FILM PERFORM POORLY?

This paper's results have further analyzed in depth movie returns by considering their life after the theatrical release. Even if in general the returns should be higher than those addressed by research on box office proceeds, they show that investing in movies is still a very risky decision. The reason why the returns are so variable is because learning from the past is an impossible task to do. Each new film is unique and comparing it to past releases will not predict its returns with any degree of certainty.

The investment could be compared to that of venture capital (VC) companies looking to give money to start-ups. Each film could be analyzed as a new venture that has no reliable information and a relatively low track record of performance, given only by the prior experience of the creative talent involved. The way a VC firm looks to limit the risk is to finance the new venture in stages and will only release more funds if the venture achieves some pre-defined set of milestones. This technique cannot be used with films because they are very capital intensive to make and the full cost is sunk before demand can be assessed. All film contracts with talent are also conditional on achievement of full financing and thus staging will not be possible during production.

An extra challenge faced by independent production companies is the uncertainty of distribution. When looking at the performance of the analyzed films, it is clear that the returns

can be, for successful films, quite rewarding. The main problem here is that the data only takes into account the distributed movies, thus having a positive bias on the returns. The information from the American Film Market shows that there were at least 2,570 completed and never distributed English language films in the same period. This means that investors in these films earned -100% returns driving the expected return for a film to a significantly lower % than that calculated at 11.16%. On top of these completed movies thousands of scripts are written every year for financing consideration that never get made. The rigorous process that production companies set up, through screening and then development of the best ideas, helps investors select from a smaller pool of projects and thus lower the risk of bad investments.

Another observation worth mentioning is on the nature of the consumption of the product. Movies are experience goods, meaning that the customer has to buy them before they can try them. The trailers provide some amount of information about the film itself, but none about the experience. This phenomenon makes demand for a movie very uncertain; it will be price elastic and shifting through time.

A better understanding of the variance in the returns is through an attribute of the asset, its uniqueness. This can be used to investors' advantage in formulating better financing strategies. Instead of looking at each movie separately, a structure should be put in place for investors to select to participate in a portfolio of films, thus valuing films on an aggregation basis. As shown by the data above, when all films are looked at separately, the median budget-weighted return was negative. On the other hand, looking at the portfolio analysis using random selection shows that pooling the assets will get the successes to compensate for the losses, thus giving portfolio successes a probability of on average about 60. This is because the covariance of the films in the portfolio is close to 0, thus eliminating all idiosyncratic risk through diversification.

No matter how bad the returns look, financing of films will continue and the industry will never disappear because movies can be considered a “status investment” and the benefits associated to being part of this industry as an employee or a financier are larger than the actual value of financial returns. Just by walking by a newspaper stand it is clear that this industry is vastly talked about and that fame is aspired by many. This is why investors of independent films will continue to *“Get Rich or Die Tryin’*.

APPENDIX

Table 1: Portfolio Returns for one random selection

Portfolio	Return	Portfolio	Return
1	-17.11%	51	-27.60%
2	73.87%	52	-11.05%
3	33.62%	53	157.77%
4	-25.23%	54	9.41%
5	52.44%	55	23.44%
6	-20.90%	56	152.11%
7	30.22%	57	46.20%
8	-7.15%	58	41.39%
9	-4.27%	59	-35.98%
10	-29.02%	60	-35.90%
11	61.11%	61	-21.26%
12	16.26%	62	-41.41%
13	39.82%	63	16.99%
14	9.47%	64	-36.89%
15	88.30%	65	15.17%
16	6.18%	66	-37.41%
17	66.80%	67	-4.35%
18	98.50%	68	6.20%
19	25.57%	69	182.59%
20	-14.45%	70	44.24%
21	43.38%	71	48.76%
22	-26.65%	72	-13.53%
23	4.16%	73	117.03%
24	-16.90%	74	98.94%
25	15.24%	75	-56.68%
26	163.93%	76	7.70%
27	23.89%	77	-21.19%
28	-36.98%	78	-11.08%
29	-15.11%	79	-13.00%
30	-38.39%	80	62.59%
31	-45.78%	81	-11.53%
32	228.68%	82	95.63%
33	-24.56%	83	20.07%
34	12.69%	84	-23.40%
35	-44.98%	85	46.57%
36	87.31%	86	-10.80%
37	-20.28%	87	65.26%
38	-25.19%	88	89.21%
39	15.18%	89	-6.73%
40	30.86%	90	-8.93%
41	-35.62%	91	11.31%
42	53.33%	92	-23.11%
43	14.24%	93	-11.84%
44	84.91%	94	33.39%
45	-70.51%	95	10.60%
46	14.36%	96	-15.01%
47	38.04%	97	-15.63%
48	-38.74%	98	-40.86%
49	8.01%	99	42.23%
50	121.53%	100	16.27%

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