

# *Managing uncertainty in creative industries: film sequels and Hollywood's profitability, 1988-2015*

Article

Supplemental Material

Pokorny, M., Miskell, P. and Sedgwick, J. (2019) Managing uncertainty in creative industries: film sequels and Hollywood's profitability, 1988-2015. *Competition and Change*, 23 (1). pp. 23-46. ISSN 1477-2221 doi:  
<https://doi.org/10.1177/1024529418797302> Available at  
<https://centaur.reading.ac.uk/78567/>

It is advisable to refer to the publisher's version if you intend to cite from the work. See [Guidance on citing](#).

To link to this article DOI: <http://dx.doi.org/10.1177/1024529418797302>

Publisher: Sage Publications

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Table 1. Number of Films Distributed by the Major Studios included in the Dataset

<b>Studios</b>	<b>Films in dataset</b>
20th Century Fox	432
Columbia	93
Disney/Walt Disney Studios	496
Dreamworks SKG	60
Dreamworks/Paramount	7
Lionsgate	318
MGM Studios	48
MGM/UA	238
Miramax	432
New Line	235
Orion	72
Paramount	393
Sony	506
The Weinstein Company	115
Tristar	73
Universal	461
Warner Bros.	643
<b>Total</b>	<b>4,622</b>

Source: Nielsen EDI/Rentrak

Table 2. Average Production Budgets (\$m, 2005 Prices) and Rates of Return, Major Producers, 1988-1991 to 2012-2015

<b>Distributor</b>		<b>1988-1991</b>	<b>1992-1995</b>	<b>1996-1999</b>	<b>2000-2003</b>	<b>2004-2007</b>	<b>2008-2011</b>	<b>2012-2015</b>	<b>Aggregate</b>
All Majors	Av Budget	23.8	31.7	39.7	45.1	46.1	51.2	53.1	40.7
	RoR (%)	23.9	28.2	26.7	37.4	52.6	64.4	73.4	43.1
Lionsgate	Av Budget			7.1	7.3	12.6	24.4	36.1	21.0
	RoR (%)			-24.2	25.2	69.5	45.7	72.2	60.0
MGM	Av Budget	18.2	29.9	33.4	35.6	21.5	22.0		26.1
	RoR (%)	-7.9	-10.0	1.6	17.2	36.8	33.5		5.7
New Line	Av Budget	9.0	14.9	32.4	39.2	39.4			26.6
	RoR (%)	32.8	49.9	25.4	57.5	46.8			44.9
Miramax	Av Budget	8.5	13.4	13.7	25.0	25.0	12.9		17.2
	RoR (%)	-24.5	-4.5	36.0	42.0	30.0	26.7		27.0
Paramount	Av Budget	29.8	36.6	45.4	45.8	60.4	83.3	57.7	50.0
	RoR (%)	35.7	31.3	38.6	29.7	43.7	70.7	71.2	45.7
Sony	Av Budget		36.0	36.1	49.4	50.5	45.7	51.1	45.4
	RoR (%)		13.0	28.7	29.9	48.1	62.8	68.4	44.0
20 <sup>th</sup> Century Fox	Av Budget	25.3	35.3	47.4	50.5	50.3	57.2	61.8	46.8
	RoR (%)	30.4	31.2	38.9	44.2	71.4	72.1	70.2	52.4
Universal	Av Budget	25.5	39.4	51.1	56.6	53.3	50.7	45.6	45.4
	RoR (%)	34.7	37.6	17.5	45.0	44.6	48.6	85.3	45.8
Disney	Av Budget	28.2	30.9	52.9	52.5	70.5	79.9	100.0	54.0
	RoR (%)	43.8	41.7	27.5	49.9	57.1	64.1	81.2	51.3
Warner Bros.	Av Budget	26.2	44.4	56.5	56.7	64.4	58.9	59.8	51.6
	RoR (%)	22.3	28.4	14.4	22.4	52.2	71.5	63.7	39.7

Table 3. Summary Statistics from Rate of Return Regressions

Distributor	$\alpha$	$\beta$	$R^2$	Data Period	Annual Observations
Lionsgate	-84.012***	2.222***	0.546	1995 to 2015	21
MGM	-50.336***	1.500***	0.492	1988 to 2008	21
New Line	16.324	0.705	0.117	1988 to 2007	20
Miramax	-20.811	1.047*	0.148	1988 to 2009	22
Paramount	13.449*	0.731***	0.525	1988 to 2015	28
Sony	-5.897	0.989***	0.694	1994 to 2015	22
20 <sup>th</sup> Century Fox	15.368*	0.820***	0.492	1988 to 2015	28
Universal	10.708	0.771***	0.412	1988 to 2015	28
Disney	20.663***	0.752***	0.496	1988 to 2015	28
Warner Bros.	-4.463	0.979***	0.535	1988 to 2015	28

\*\*\*Significant at the 1% level, \*\*Significant at the 5% level, \*Significant at the 10% level

Table 4. Percent of Budgets and Profits Accounted for by Sequels, Rates of Return of Sequels and Non-Sequels, Major Producers, 1988-1991 to 2012-2015

Distributor		1988-1991	1992-1995	1996-1999	2000-2003	2004-2007	2008-2011	2012-2015	Aggregate
All Majors	% Budgets	15.6	10.5	8.8	16.2	22.3	23.3	32.8	19.0
	% Profits	28.6	17.1	16.4	30.5	32.5	29.8	40.8	30.4
	RoR Seq (%)	42.6	43.7	46.3	64.0	72.2	80.3	86.7	68.1
	RoR Non-Seq (%)	20.3	26.3	24.6	31.7	46.5	59.4	66.4	37.1
Lionsgate	% Budgets					13.0	18.0	41.3	27.6
	% Profits					36.8	25.9	57.8	46.8
	RoR Seq (%)					107.2	61.1	86.7	86.1
	RoR Non-Seq (%)					-24.7	56.9	-37.6	10.4
MGM	% Budgets	14.6	12.4	22.1	22.6	23.7			18.2
	% Profits	-21.3	-13.5	629.1	96.6	51.3			152.9
	RoR Seq (%)	18.0	9.8	47.1	66.1	56.9			46.3
	RoR Non-Seq (%)	-10.6	-13.2	-10.6	0.8	26.9			-3.7
New Line	% Budgets	28.5	13.9	9.0	36.5	26.0			24.1

	% Profits	67.2	5.6	37.5	66.4	22.8			45.5
	RoR Seq (%)	58.8	19.1	64.8	84.3	46.0			69.2
	RoR Non-Seq (%)	17.3	55.2	18.7	35.3	47.1			34.6
Miramax	% Budgets	3.7	8.2	8.5	15.1	3.7	2.3		9.4
	% Profits	8.6	-23.8	19.6	32.5	16.5	-0.2		27.8
	RoR Seq (%)	-67.1	13.8	55.1	66.1	85.9	-11.6		57.8
	RoR Non-Seq (%)	-23.1	-6.0	33.2	35.7	26.6	26.9		22.4
Paramount	% Budgets	25.9	19.6	9.4	19.1	10.4	33.8	43.7	23.1
	% Profits	43.7	29.1	2.9	33.1	22.1	48.7	51.6	35.4
	RoR Seq (%)	54.0	46.1	13.1	50.2	85.3	88.1	80.1	67.3
	RoR Non-Seq (%)	28.2	27.7	41.0	24.7	38.4	59.6	63.6	38.9
Sony	% Budgets		4.6	2.6	14.9	29.0	11.4	38.2	18.5
	% Profits		15.2	0.5	17.3	31.5	9.0	39.6	21.9
	RoR Seq (%)		34.0	5.6	41.5	61.3	73.6	77.8	62.3
	RoR Non-Seq (%)		11.7	29.2	28.3	43.7	61.9	63.4	40.6
20 <sup>th</sup> Century Fox	% Budgets	16.9	16.8	19.4	13.1	29.0	25.2	31.0	22.9
	% Profits	14.4	33.0	30.7	26.0	33.8	25.3	35.8	29.7
	RoR Seq (%)	29.9	65.3	64.3	72.1	79.0	70.9	83.9	70.8
	RoR Non-Seq (%)	30.4	24.8	33.1	39.0	68.1	72.6	64.4	47.2
Universal	% Budgets	15.3	1.2	10.4	21.8	23.1	16.6	27.9	17.7
	% Profits	21.9	-0.3	30.1	31.4	33.0	26.3	40.1	29.4
	RoR Seq (%)	48.1	-12.6	51.6	59.7	61.4	76.8	102.9	72.0
	RoR Non-Seq (%)	32.1	38.0	13.6	40.4	39.3	42.9	76.5	39.8
Disney	% Budgets	6.4	5.0	4.8	7.9	17.2	25.2	29.7	14.6
	% Profits	9.2	5.8	14.4	8.6	25.6	23.5	40.5	21.4
	RoR Seq (%)	54.5	48.8	56.0	52.7	83.3	69.4	94.5	76.8
	RoR Non-Seq (%)	42.8	41.3	25.3	49.6	51.5	62.6	74.1	47.1
Warner Bros.	% Budgets	14.6	17.7	8.0	17.0	30.5	30.9	30.5	22.2
	% Profits	23.1	37.1	15.5	47.1	41.0	39.3	39.1	37.7
	RoR Seq (%)	32.6	50.3	28.2	63.9	65.8	87.8	79.8	66.5
	RoR Non-Seq (%)	20.3	22.6	13.2	14.2	45.7	63.9	56.4	31.9

Table 5. Film Rate of Return Regressions, 1988 to 2015 (White's Heteroskedasticity-Consistent Standard Errors in Brackets)

Distributor	Constant	Log(Budget)	Sequel Dummy	Release Year	IMDb Rating	Proportion Overseas	Opening Theatres	R <sup>2</sup>	n
All Majors	344.167 (280.461)	-27.755*** (1.212)	11.356*** (1.783)	-0.226 (0.141)	19.026*** (0.777)	82.765*** (3.815)	0.036*** (0.001)	0.491	3,695
Lionsgate	-3204.379 (2165.683)	-43.065*** (3.549)	18.725*** (7.162)	1.575 (1.080)	13.591*** (3.080)	52.135*** (16.833)	0.044*** (0.004)	0.536	194
MGM	-293.130 (1154.100)	-27.638*** (3.952)	21.765*** (5.890)	0.073 (0.583)	22.097*** (4.013)	73.642*** (12.660)	0.042*** (0.004)	0.591	227
New Line	-753.153 (1657.520)	-28.956*** (5.829)	32.813*** (8.829)	0.316 (0.832)	22.552*** (2.571)	59.784*** (18.327)	0.036*** (0.005)	0.487	185
Miramax	-1636.508 (1448.807)	-22.031*** (4.647)	16.403 (11.312)	0.734 (0.726)	24.279*** (3.717)	82.972*** (14.164)	0.043*** (0.004)	0.405	287
Paramount	-468.272 (815.587)	-34.909*** (3.061)	11.481** (4.776)	0.200 (0.410)	18.715*** (2.715)	100.987*** (11.886)	0.030*** (0.004)	0.585	352
Sony	-1988.847** (779.526)	-35.211*** (3.231)	1.074 (4.115)	0.964** (0.390)	15.719*** (1.977)	79.433*** (9.871)	0.036*** (0.003)	0.524	428
20 <sup>th</sup> Century Fox	1567.299 (1032.300)	-26.552*** (3.599)	6.149 (4.068)	-0.826 (0.516)	15.113*** (2.087)	88.767*** (11.274)	0.036*** (0.005)	0.528	373
Universal	1025.960 (679.352)	-33.791*** (2.921)	5.686 (5.332)	-0.556 (0.342)	20.512*** (2.409)	108.903*** (10.232)	0.031*** (0.003)	0.514	397
Disney	538.193 (1105.085)	-26.521*** (4.324)	15.509*** (5.208)	-0.310 (0.560)	18.144*** (3.236)	103.356*** (12.555)	0.024*** (0.004)	0.406	384
Warner Bros.	1484.139* (827.511)	-34.006*** (3.369)	15.206*** (3.536)	-0.796* (0.414)	20.293*** (1.530)	100.530*** (10.505)	0.036*** (0.004)	0.539	515

\*\*\*Significant at the 1% level, \*\*Significant at the 5% level, \*Significant at the 10% level

Figure 1 North American Profits against Production Costs

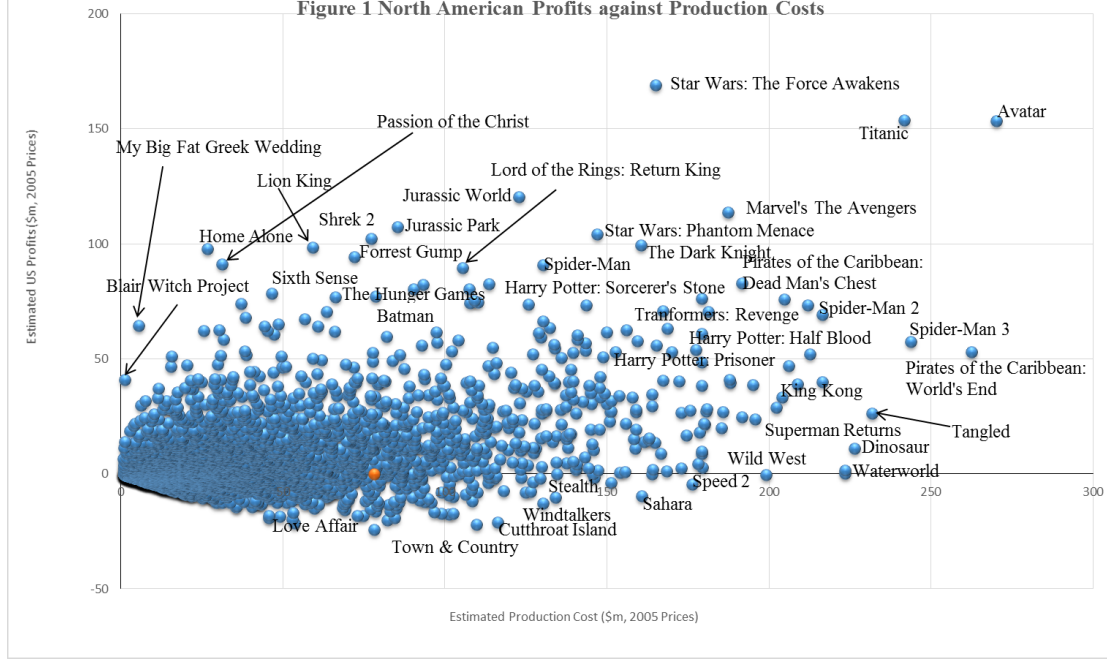




Figure 2 Annual North American Theatrical Rates of Return and Percentage of Profitable Films, Majors, 1988 to 2015

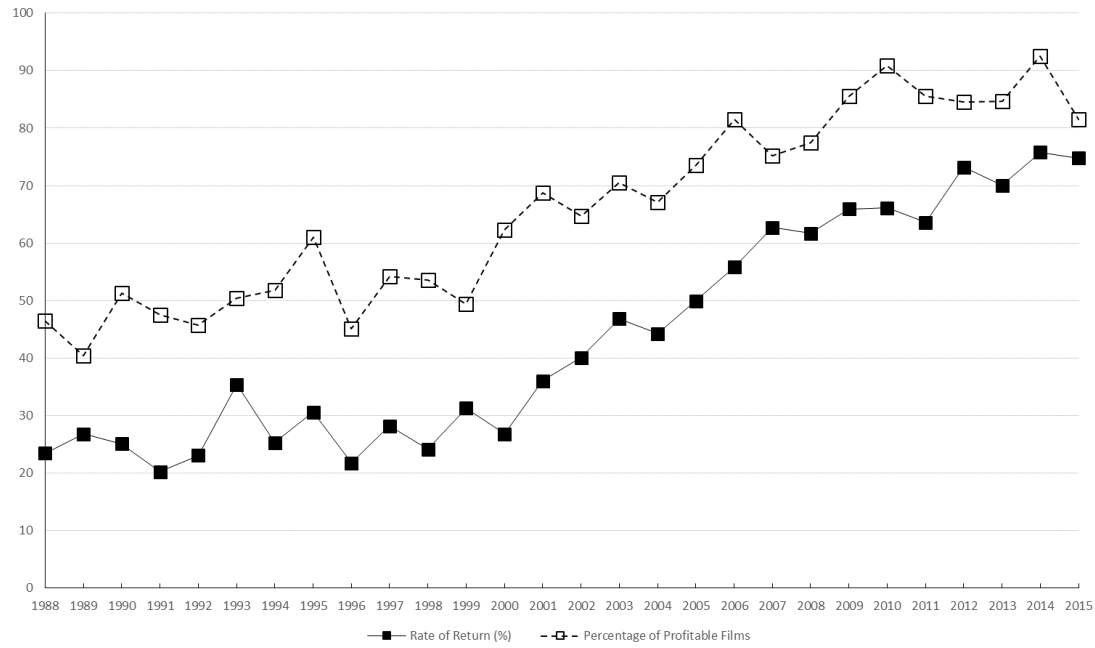


Figure 3 North American and Overseas Box-Office, Majors, \$million, 2005 Prices

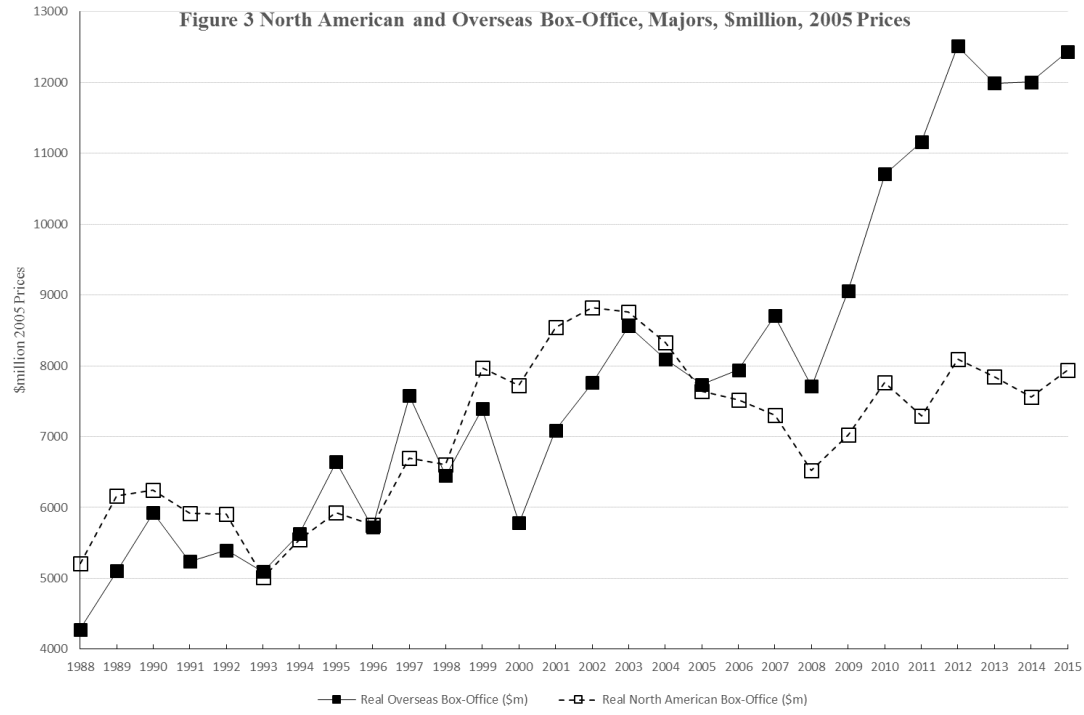


Figure 4 Percentage of Production Budgets and Profits Accounted for by Sequels, Majors, 1988 to 2015

