Luther Project

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Sliding scale - gross profits split ($)

	Movie Theater	Studio
Week 1	20%	80%
Week 2	20%	80%
Week 3	30%	70%
Week 4	40%	60%
Week 5	50%	50%

Which movies to play?

Model to estimate:

Opening gross profit per theater
[$ / theater]

Box Office Mojo

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Adjuster: [Actuals]

| ALL RELEASES | WIDE RELEASES | LIMITED RELEASES | CALENDAR GROSSES |

2014 DOMESTIC GROSSES

Total Grosses of all Movies Released in 2014

#1–100 - **#101–200** - **#201–300** - **#301–400** - **#401–500** - **#501–600** - **#601–700** - **#701–702**

< Previous Year   Data as of: [Today] or ([Month] / [Day] / [2014]) [Go]   Next Year >

Rank	Movie Title (click to view)	Studio [Filter]	Total Gross / Theaters		Opening / Theaters		Open	Close
1	American Sniper	WB	$350,126,372	3,885	$633,456	4	12/25	6/25
2	The Hunger Games: Mockingjay - Part 1	LGF	$337,135,885	4,151	$121,897,634	4,151	11/21	3/19
3	Guardians of the Galaxy	BV	$333,176,600	4,088	$94,320,883	4,080	8/1	1/22
4	Captain America: The Winter Soldier	BV	$259,766,572	3,938	$95,023,721	3,938	4/4	8/21
5	The LEGO Movie	WB	$257,760,692	3,890	$69,050,279	3,775	2/7	9/4
6	The Hobbit: The Battle of the Five Armies	WB (NL)	$255,119,788	3,875	$54,724,334	3,875	12/17	4/2
7	Transformers: Age of Extinction	Par.	$245,439,076	4,233	$100,038,390	4,233	6/27	10/9

317 movies (2012, 2013 and 2014)

- Studios (37)
- Genres (18)
- Ratings (5)
- Run time minutes
- Budget ($)
- Release date (4 seasons)
  - *oscars*
  - *spring*
  - *summer*
  - *bad months*

Opening gross per theater =
b_0 +
b_1 **studio_FoxS** +
b_2 **studio_A24** +
b_3 **studio_BV** +
b_4 **studio_Focus** +
b_5 **studio_Rela** +
b_6 **studio_Fox** +
b_7 **studio_ORF** +
b_8 **Runtime_mins** +
b_9 **Budget** +
b_{10} **genre_Drama** +
b_{11} **rating_R** +
b_{12} **season2_oscars** +
b_{13} **season2_summer**

OLS Regression Results

|			
Dep. Variable:	opening_gross_per_theather	**R-squared:**	0.227
Model:	OLS	**Adj. R-squared:**	0.194
Method:	Least Squares	**F-statistic:**	6.840
Date:	Thu, 28 Apr 2016	**Prob (F-statistic):**	1.46e-11
Time:	16:29:09	**Log-Likelihood:**	-3625.8
No. Observations:	317	**AIC:**	7280.
Df Residuals:	303	**BIC:**	7332.
Df Model:	13		
Covariance Type:	nonrobust		

Residuals Plot
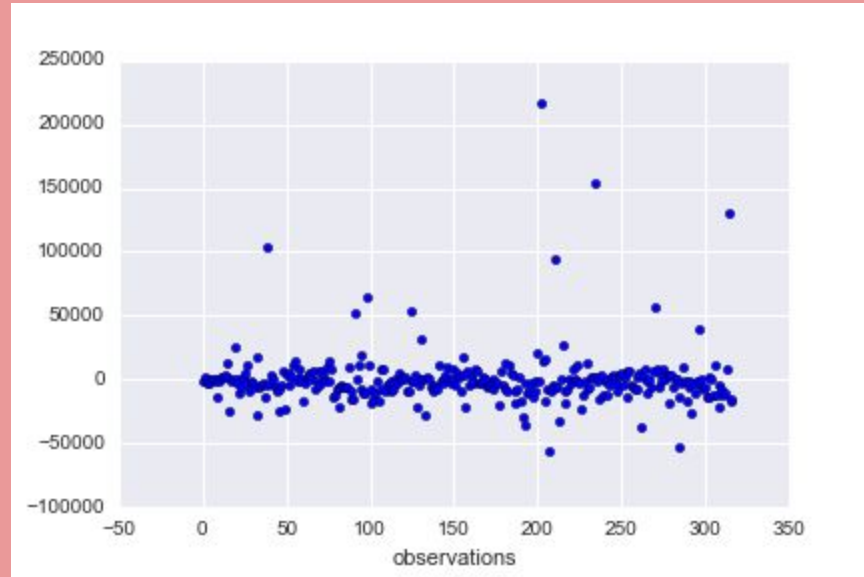
Out Sample data:

- Year 2015
- 104 movies

Model Validation
Opening gross profits per theater
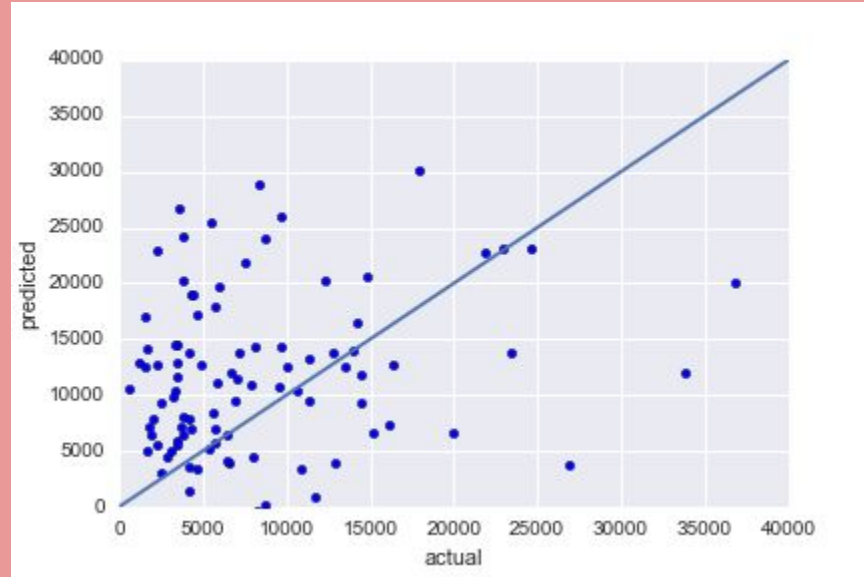
r^2 (coefficient of determination) = 0.11

Root mean squared error = $20,142

Conclusions:
- More domain knowledge to discover variables that might influence opening gross($) and opening theaters (e.g. marketing)
- Test with new available variables(e.g. actor/actresses, director, etc.)
- Test with more historical data (e.g. 10 years)