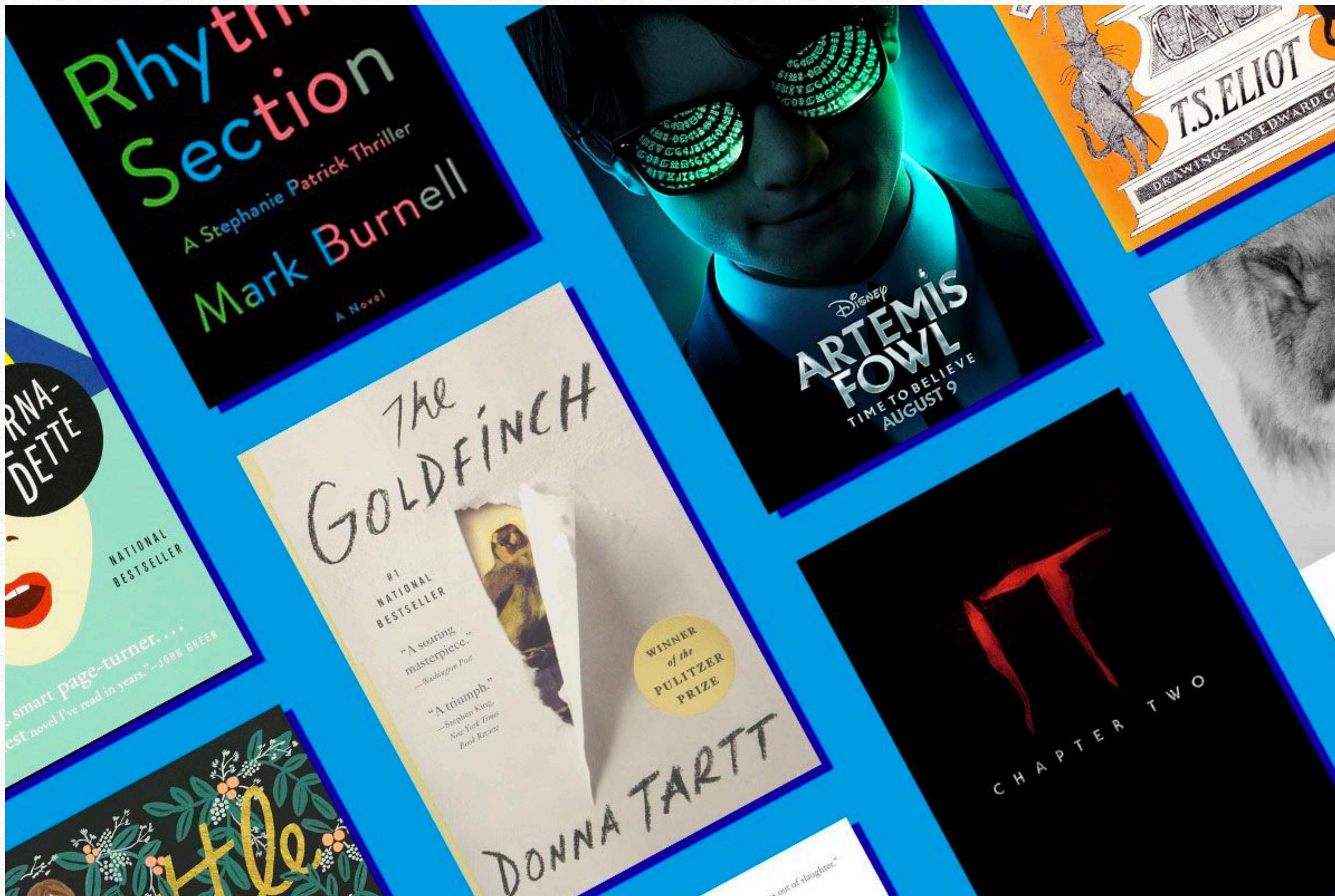


Adapt to succeed?

Revenue prediction of movies based on books.

Katie Huang
January 22nd, 2021

Fulfilled or disappointed?



Are we set to succeed?



Jul 11, 2018, 08:44am EDT

Report: Film Adaptations Of Books Earn 53% More At The Worldwide Box Office



Adam Rowe Contributor +

Media

I write about the future of books and the business of storytelling.

This article is more than 2 years old.

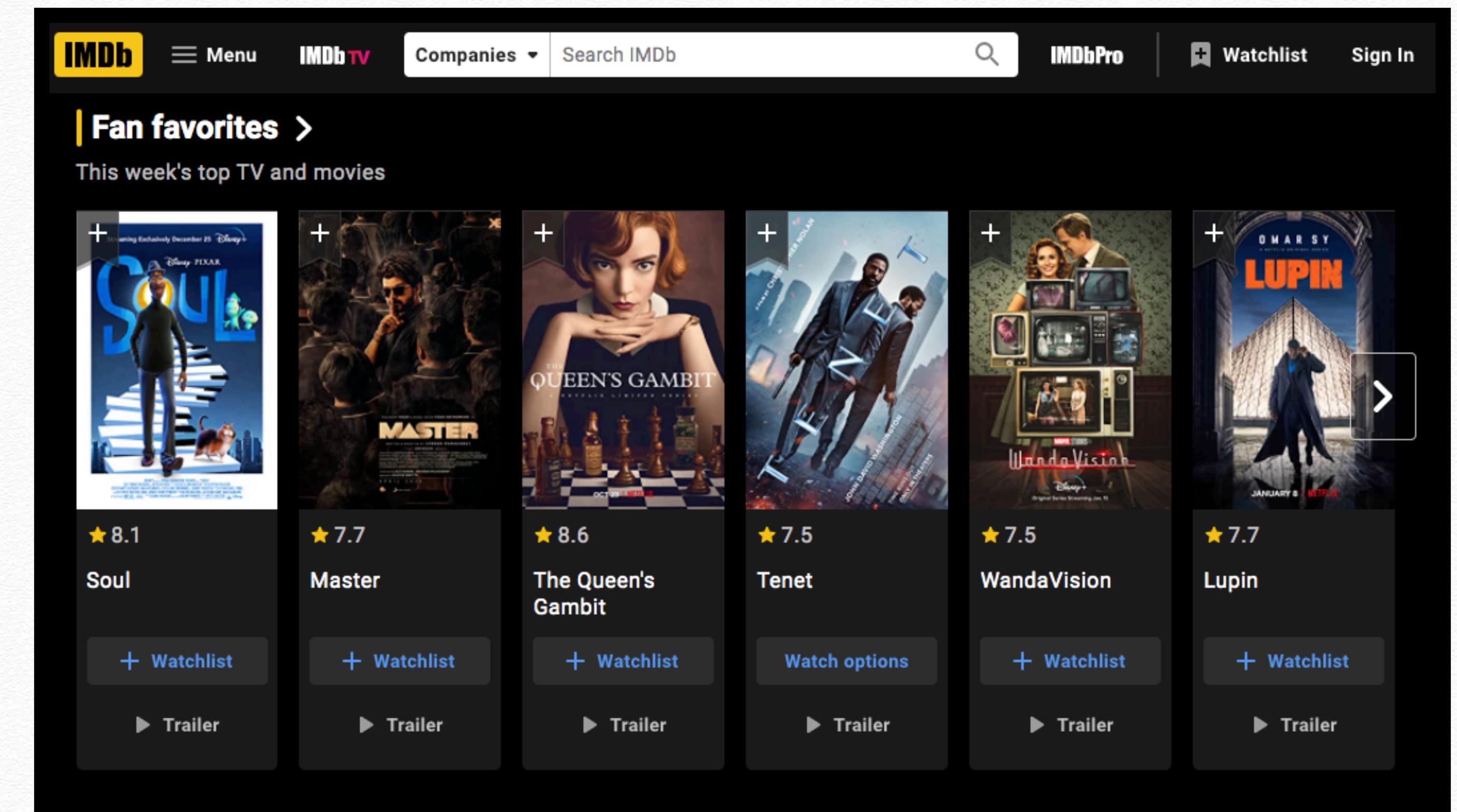
f
t
in



J.K. Rowling poses at 'Harry Potter and The Cursed Child parts 1 & 2' on Broadway Opening Night at... [+]

Movie in general

- ❖ Predict revenue?
- ❖ Data source: IMDb



Movie in general: data

- ❖ Predict revenue?
- ❖ Data source: IMDb
 - ❖ MPAA rating
 - ❖ runtime
 - ❖ genre
 - ❖ release date
 - ❖ director, writer, cast
 - ❖ country, language
 - ❖ box office
 - ❖ ...

Tenet (2020)

PG-13 | 2h 30min | Action, Sci-Fi, Thriller | 3 September 2020 (USA)

7.5 /10 272,720 Rate This

IN CINEMAS NOW

0:31 | Trailer

13 VIDEOS | 269 IMAGES

Armed with only one word, Tenet, and fighting for the survival of the entire world, a EN ▾

Protagonist journeys through a twilight world of international espionage on a mission that will unfold in something beyond real time.

Director: Christopher Nolan
Writer: Christopher Nolan
Stars: John David Washington, Robert Pattinson, Elizabeth Debicki See full cast & crew ▾

69 Metascore From metacritic.com | Reviews 4,154 user | 443 critic | Popularity 4 (• 1)

Details

Official Sites: Official Facebook | Official Instagram | See more ▾
Country: UK | USA
Language: English | Russian | Ukrainian | Estonian | Norwegian
Release Date: 3 September 2020 (USA) See more ▾
Also Known As: Merry-Go-Round See more ▾
Filming Locations: Linnahall, Tallinn, Estonia See more ▾

Box Office

Budget: \$205,000,000 (estimated)
Opening Weekend USA: \$20,200,000, 6 September 2020
Gross USA: \$57,929,000
Cumulative Worldwide Gross: \$363,129,000

See more on IMDbPro ▾

Company Credits

Production Co: Warner Bros., Syncopy See more ▾
Show more on IMDbPro ▾

Technical Specs

Runtime: 150 min
Sound Mix: IMAX 6-Track | Dolby Digital | Sonics-DDP | Datasat
Color: Color
Aspect Ratio: 1.43 : 1
See full technical specs ▾

Target & Predictors

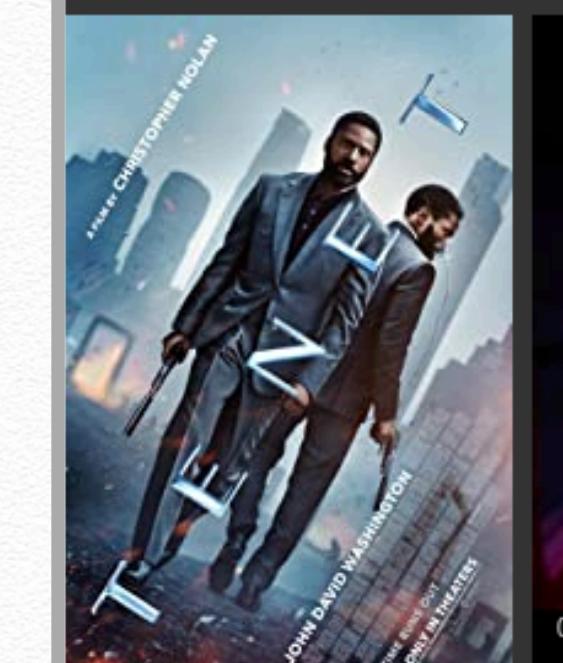
- ❖ Predict revenue?
- ❖ Data source: IMDb
 - ❖ MPAA rating
 - ❖ runtime
 - ❖ genre
 - ❖ release date
 - ❖ director, writer, cast
 - ❖ country, language
 - ❖ box office



❖ Target
opening weekend
revenue in USA

Tenet (2020)

PG-13 | 2h 30min | Action, Sci-Fi, Thriller | 3 September 2020 (USA)



13 VIDEOS | 269 IMAGES

Armed with only one word, Tenet, and fighting for the survival of the entire world, a EN ▾
Protagonist journeys through a twilight world of international espionage on a mission that will unfold in something beyond real time.

Director: Christopher Nolan
Writer: Christopher Nolan
Stars: John David Washington, Robert Pattinson, Elizabeth Debicki [See full cast & crew »](#)

69 Metascore From metacritic.com **Reviews** 4,154 user | 443 critic **Popularity** 4 (♦ 1)

Details

Official Sites: [Official Facebook](#) | [Official Instagram](#) | [See more »](#)
Country: UK | USA
Language: English | Russian | Ukrainian | Estonian | Norwegian
Release Date: 3 September 2020 (USA) [See more »](#)
Also Known As: Merry-Go-Round [See more »](#)
Filming Locations: Linnahall, Tallinn, Estonia [See more »](#)

Box Office

Budget: \$205,000,000 (estimated)
Opening Weekend USA: \$20,200,000, 6 September 2020
Gross USA: \$57,929,000
Cumulative Worldwide Gross: \$363,129,000
[See more on IMDbPro »](#)

Company Credits

Production Co: Warner Bros., Syncopy [See more »](#)
[Show more on IMDbPro »](#)

Technical Specs

Runtime: 150 min
Sound Mix: IMAX 6-Track | Dolby Digital | Sonics-DDP | Datasat
Color: Color
Aspect Ratio: 1.43 : 1
[See full technical specs »](#)

Target & Predictors

- ❖ Predict revenue?
- ❖ Data source: IMDb
 - ❖ MPAA rating
 - ❖ runtime
 - ❖ genre
 - ❖ release date
 - ❖ director, writer, cast
 - ❖ country, language
 - ❖ box office



❖ Target
opening weekend
revenue in USA

❖ Continuous

- ❖ runtime
- ❖ release year
- ❖ budget

Tenet (2020)

PG-13 | 2h 30min | Action, Sci-Fi, Thriller | 3 September 2020 (USA)

TENET
IN CINEMAS NOW

0:31 | Trailer

13 VIDEOS | 269 IMAGES

Armed with only one word, Tenet, and fighting for the survival of the entire world, a [EN](#) Protagonist journeys through a twilight world of international espionage on a mission that will unfold in something beyond real time.

Director: Christopher Nolan
Writer: Christopher Nolan
Stars: John David Washington, Robert Pattinson, Elizabeth Debicki [See full cast & crew »](#)

69 Metascore From metacritic.com | Reviews 4,154 user | 443 critic | Popularity 4 (♦ 1)

Details

Official Sites: [Official Facebook](#) | [Official Instagram](#) | [See more »](#)
Country: UK | USA
Language: English | Russian | Ukrainian | Estonian | Norwegian
Release Date: 3 September 2020 (USA) [See more »](#)
Also Known As: Merry-Go-Round [See more »](#)
Filming Locations: Linnahall, Tallinn, Estonia [See more »](#)

Box Office

Budget: \$205,000,000 (estimated)
Opening Weekend USA: \$20,200,000, 6 September 2020
Gross USA: \$57,929,000
Cumulative Worldwide Gross: \$363,129,000

[See more on IMDbPro »](#)

Company Credits

Production Co: Warner Bros., Syncopy [See more »](#)
[Show more on IMDbPro »](#)

Technical Specs

Runtime: 150 min
Sound Mix: IMAX 6-Track | Dolby Digital | Sonics-DDP | Datasat
Color: Color
Aspect Ratio: 1.43 : 1
[See full technical specs »](#)

Target & Predictors

- ❖ Predict revenue?
- ❖ Data source: IMDb
 - ❖ MPAA rating
 - ❖ runtime
 - ❖ genre
 - ❖ release date
 - ❖ director, writer, cast
 - ❖ country, language
 - ❖ box office

❖ Target
opening weekend
revenue in USA

❖ Continuous

- ❖ runtime
- ❖ release year
- ❖ budget

❖ Categorical

- ❖ MPAA rating
- ❖ distributor
- ❖ director
- ❖ writer
- ❖ cast
- ❖ genre
- ❖ country
- ❖ language



Tenet (2020)
PG-13 | 2h 30min | Action, Sci-Fi, Thriller | 3 September 2020 (USA)

TENET
IN CINEMAS NOW

0:31 | Trailer

13 VIDEOS | 269 IMAGES

Armed with only one word, Tenet, and fighting for the survival of the entire world, a Protagonist journeys through a twilight world of international espionage on a mission that will unfold in something beyond real time.

Director: Christopher Nolan
Writer: Christopher Nolan
Stars: John David Washington, Robert Pattinson, Elizabeth Debicki [See full cast & crew »](#)

69 Metascore From metacritic.com | Reviews 4,154 user | 443 critic | Popularity 4 (♦ 1)

Details

Official Sites: [Official Facebook](#) | [Official Instagram](#) | [See more »](#)
Country: UK | USA
Language: English | Russian | Ukrainian | Estonian | Norwegian
Release Date: 3 September 2020 (USA) [See more »](#)
Also Known As: Merry-Go-Round [See more »](#)
Filming Locations: Linnahall, Tallinn, Estonia [See more »](#)

Box Office

Budget: \$205,000,000 (estimated)
Opening Weekend USA: \$20,200,000, 6 September 2020
Gross USA: \$57,929,000
Cumulative Worldwide Gross: \$363,129,000
[See more on IMDbPro »](#)

Company Credits

Production Co: Warner Bros., Syncopy [See more »](#)
[Show more on IMDbPro »](#)

Technical Specs

Runtime: 150 min
Sound Mix: IMAX 6-Track | Dolby Digital | Sonics-DDP | Datasat
Color: Color
Aspect Ratio: 1.43 : 1
[See full technical specs »](#)

Target & Predictors

- ❖ Predict revenue?
- ❖ Data source: IMDb
 - ❖ MPAA rating
 - ❖ runtime
 - ❖ genre
 - ❖ release date
 - ❖ director, writer, cast
 - ❖ country, language
 - ❖ box office

6,000+ movies

❖ Target
opening weekend
revenue in USA

❖ Continuous

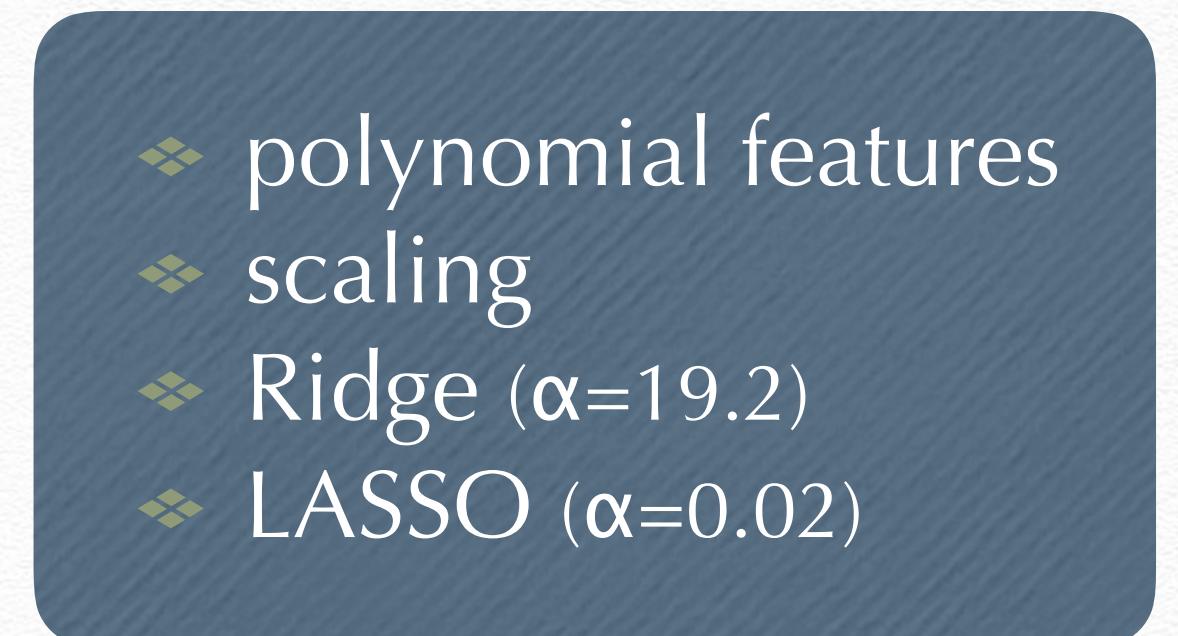
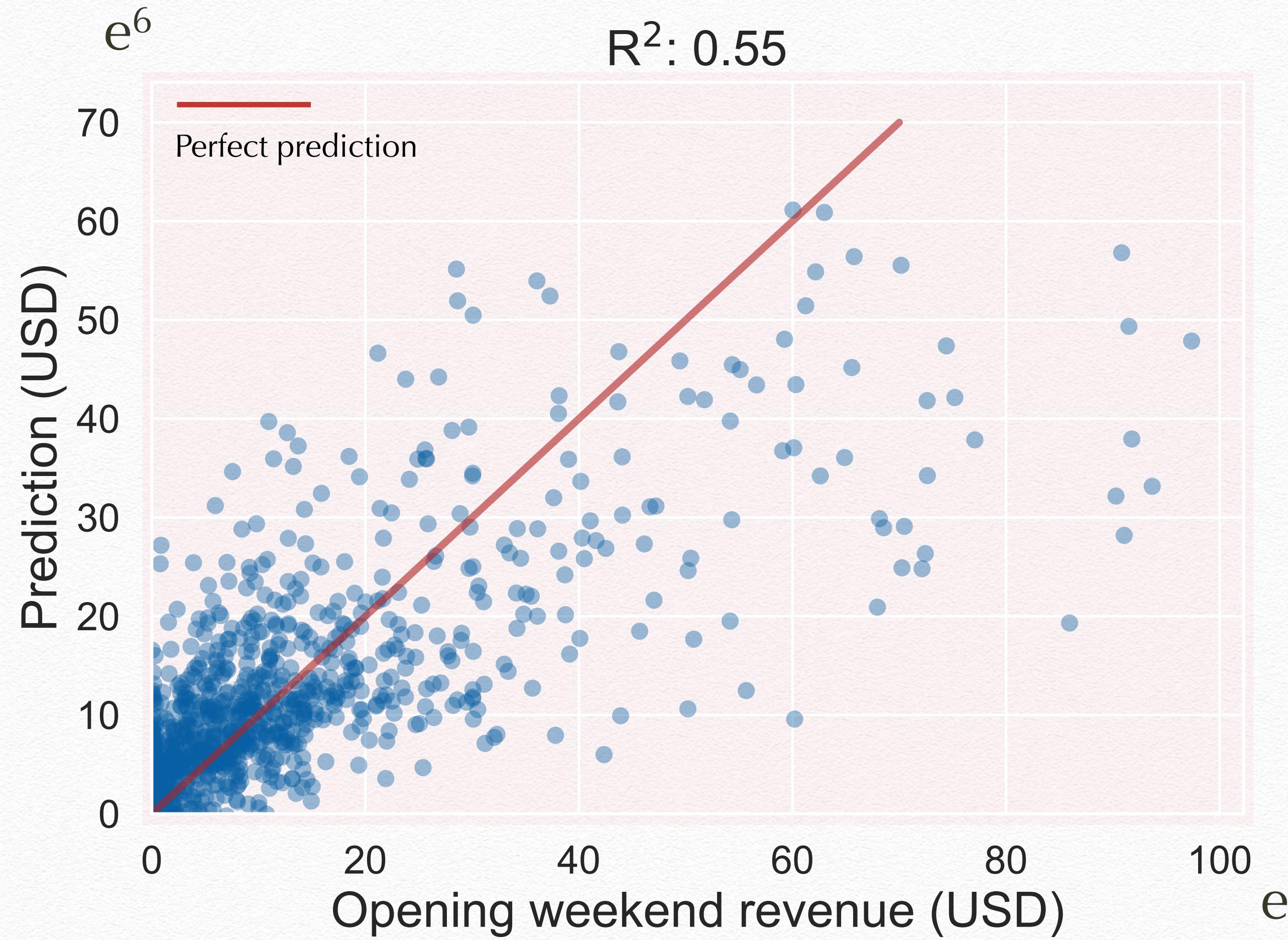
- ❖ runtime
- ❖ release year
- ❖ budget

❖ Categorical

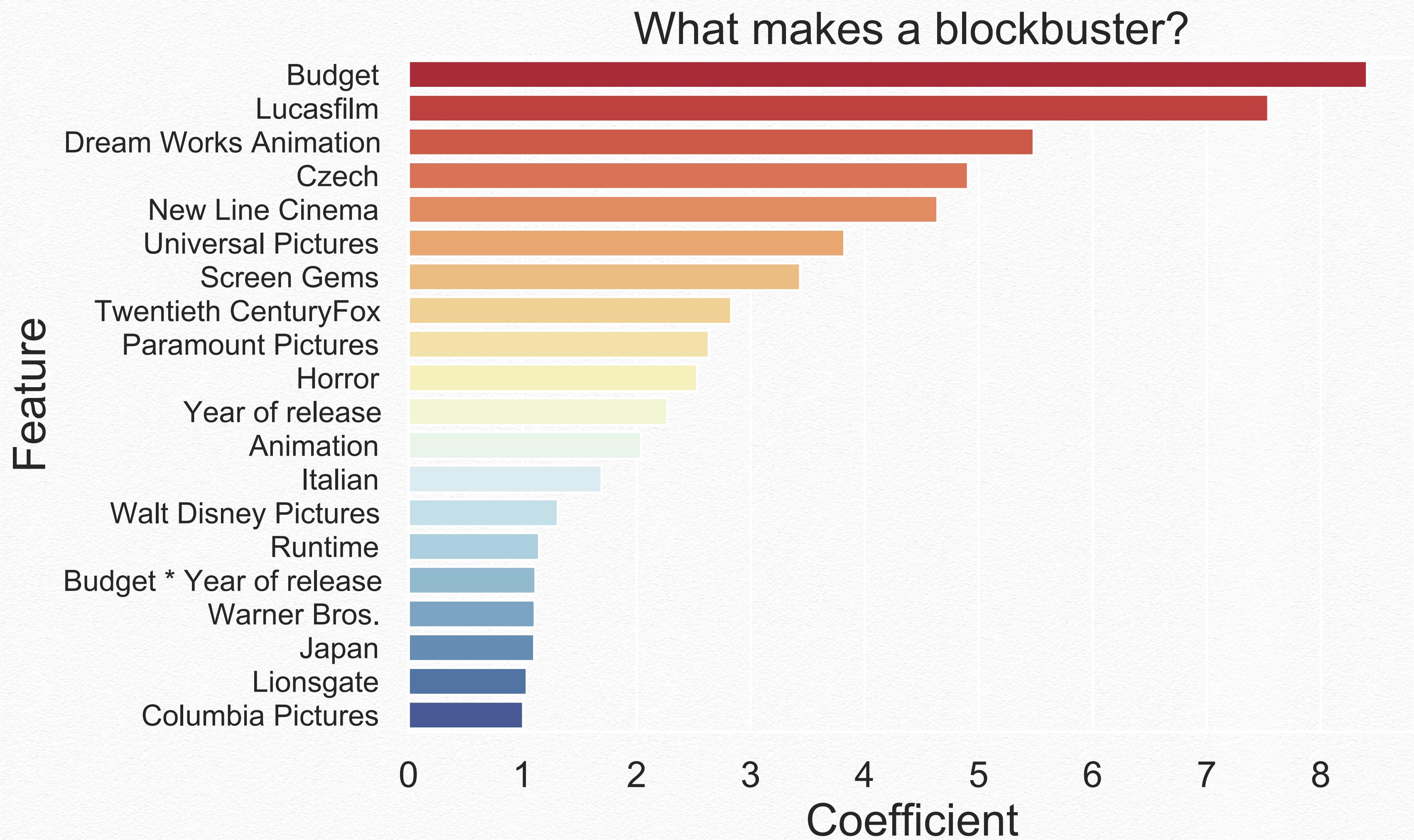
- ❖ MPAA rating
- ❖ distributor
- ❖ director
- ❖ writer
- ❖ cast
- ❖ genre
- ❖ country
- ❖ language

The image shows a screenshot of the IMDb movie page for "Tenet" (2020). At the top, there's a navigation bar with a yellow star icon, the title "Tenet (2020)", its rating of 7.5/10, and a "Rate This" button. Below the title, it says "PG-13 | 2h 30min | Action, Sci-Fi, Thriller | 3 September 2020 (USA)". The main content area features a large thumbnail image of the movie poster with Christopher Nolan and John David Washington. To the right of the poster is a video player showing a trailer thumbnail with a play button and the text "0:31 | Trailer". Below the poster, the plot summary reads: "Armed with only one word, Tenet, and fighting for the survival of the entire world, a Protagonist journeys through a twilight world of international espionage on a mission that will unfold in something beyond real time." A red box highlights the director, writer, and stars: "Director: Christopher Nolan", "Writer: Christopher Nolan", and "Stars: John David Washington, Robert Pattinson, Elizabeth Debicki". There are links to "See full cast & crew" and "Edit". Further down, there are sections for "Metascore" (69), "Reviews" (4,154 user | 443 critic), and "Popularity" (4). The "Details" section includes "Official Sites", "Country: UK | USA", "Language: English | Russian | Ukrainian | Estonian | Norwegian", "Release Date: 3 September 2020 (USA)", "Also Known As: Merry-Go-Round", and "Filming Locations: Linnahall, Tallinn, Estonia". The "Box Office" section lists the budget (\$205,000,000), opening weekend USA (\$20,200,000, 6 September 2020), gross USA (\$57,929,000), and cumulative worldwide gross (\$363,129,000). The "Company Credits" section lists the production company "Warner Bros., Syncopy". The "Technical Specs" section includes runtime (150 min), sound mix (IMAX 6-Track | Dolby Digital | Sonics-DDP | Datasat), color (Color), aspect ratio (1.43 : 1), and a link to "See full technical specs".

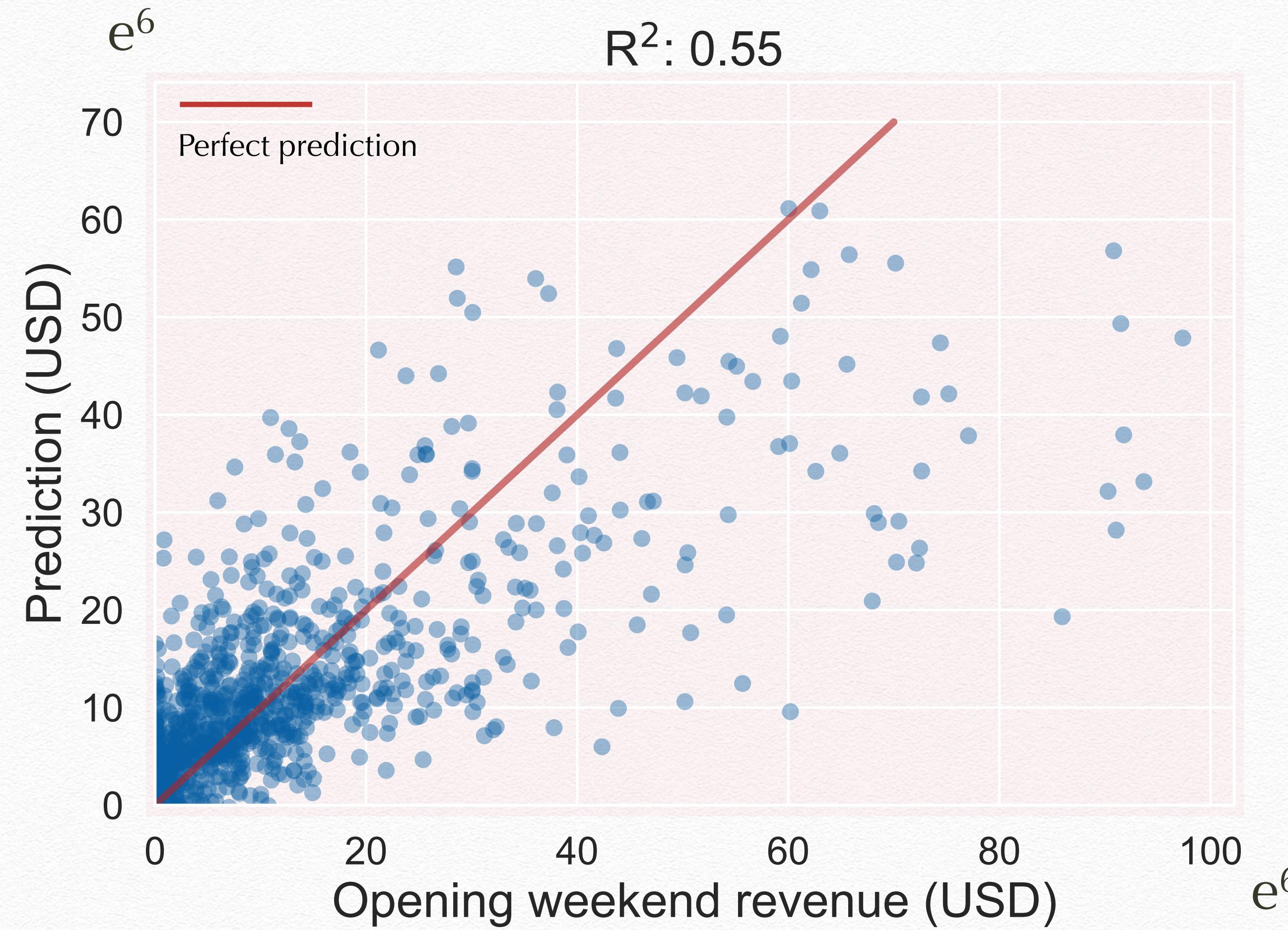
Movie in general: model



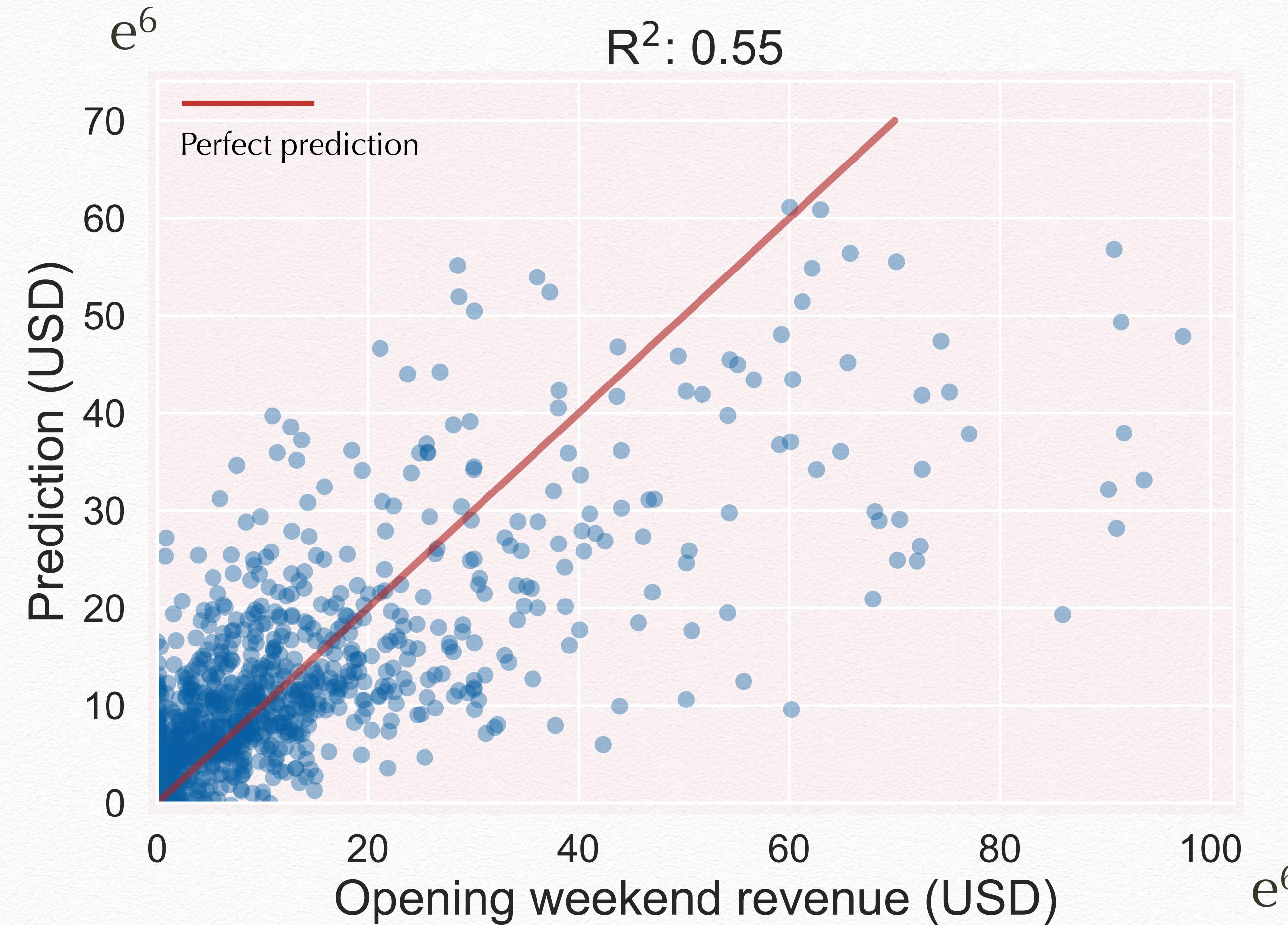
What we learned...



Who are the outliers?



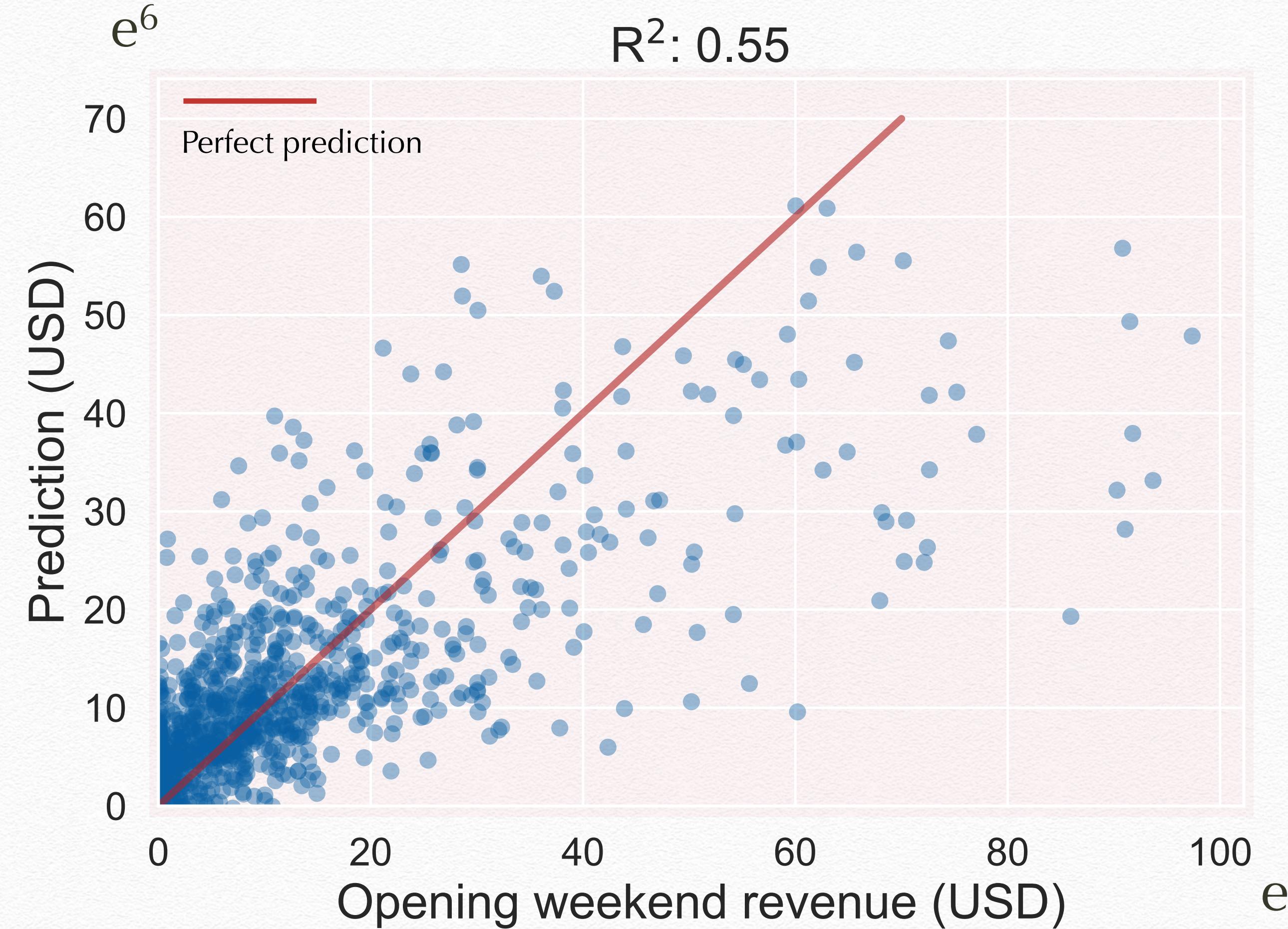
Who are the outliers?



movie_title
Joker
Fifty Shades of Grey
Halloween
It Chapter Two
Us
Harry Potter and the Chamber of Secrets
The Hangover Part II
Twilight
Despicable Me 2
Pitch Perfect 2
Logan
Iron Man
Harry Potter and the Prisoner of Azkaban
Harry Potter and the Sorcerer's Stone
X2: X-Men United

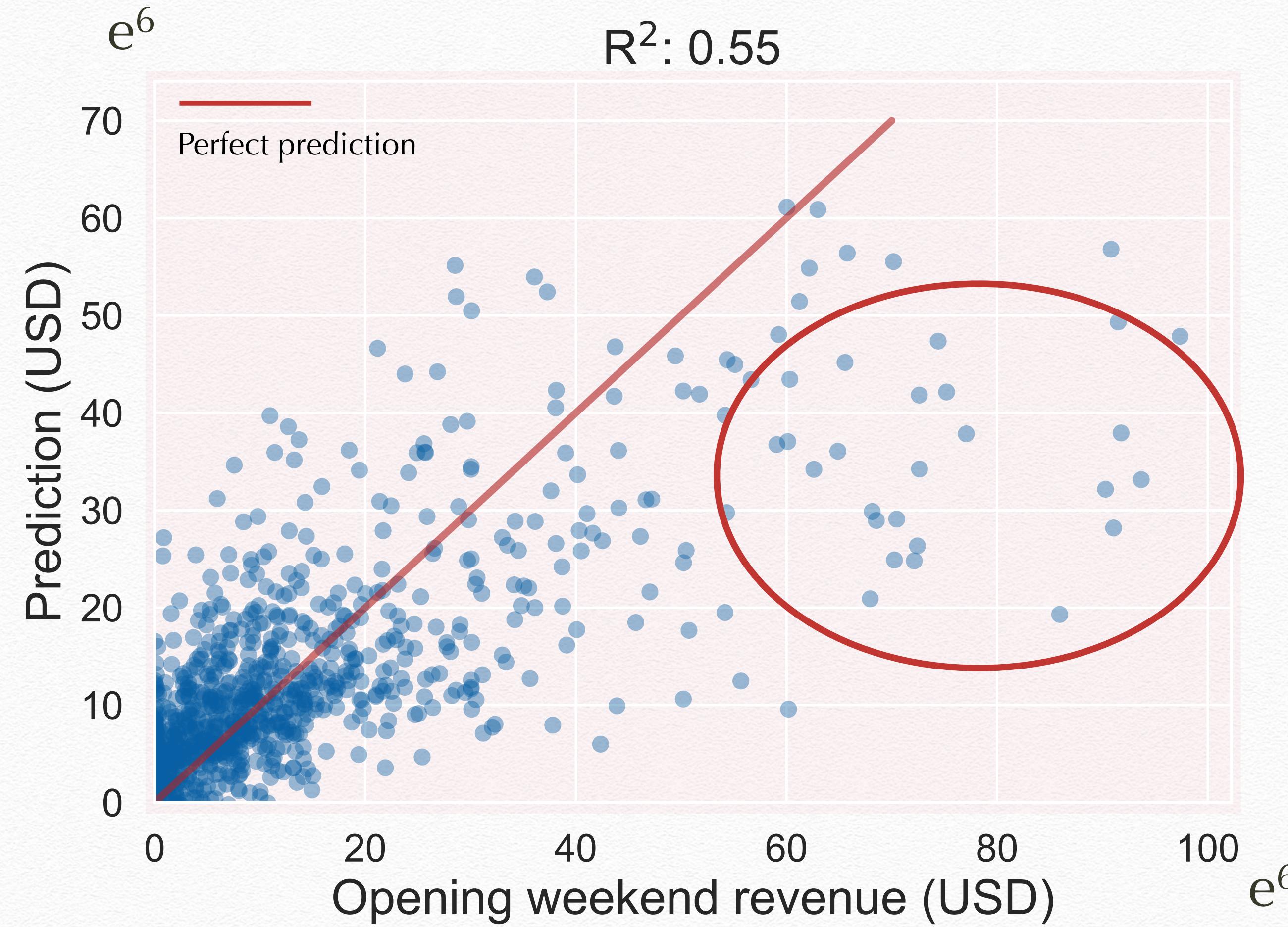
Who are the outliers?

Movie adaptations!



movie_title
Joker
Fifty Shades of Grey
Halloween
It Chapter Two
Us
Harry Potter and the Chamber of Secrets
The Hangover Part II
Twilight
Despicable Me 2
Pitch Perfect 2
Logan
Iron Man
Harry Potter and the Prisoner of Azkaban
Harry Potter and the Sorcerer's Stone
X2: X-Men United

Who are the outliers?

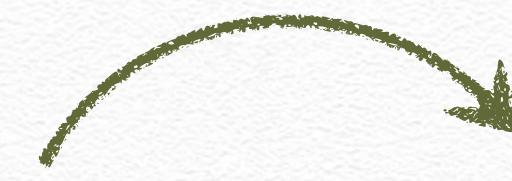


Movie adaptations!



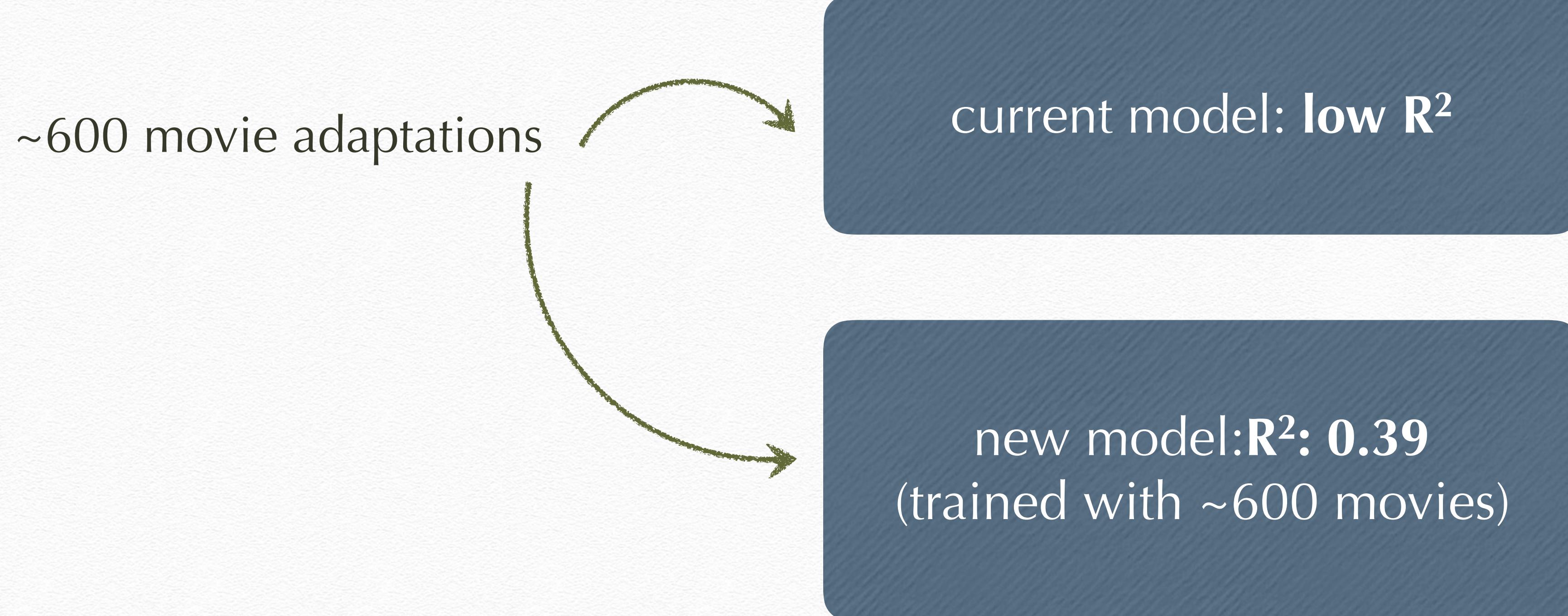
Movie adaptations: model...not so easy!

~600 movie adaptations



current model: **low R^2**

Movie adaptations: build a new model



What to do?

- ❖ IMDb
- ❖ goodreads

Listopia > Book To Film Book Lists



The BOOK was BETTER than the MOVIE

1,515 books — 18,582 voters



The MOVIE was BETTER than the BOOK

1,017 books — 9,984 voters



I Only Watched the Movie!

1,125 books — 6,117 voters



I Saw the Movie & Read the Book

1,815 books — 1,718 voters



Book To Movie Adaptations You're Most Excited About

335 books — 1,102 voters



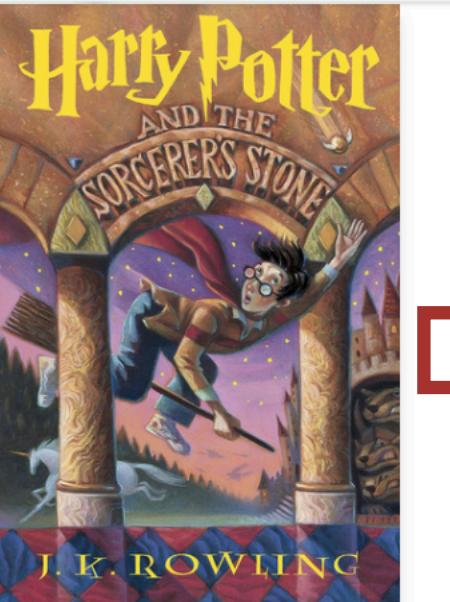
Books Made into Movies

806 books — 366 voters

Movie adaptations: data

- ❖ IMDb
- ❖ goodreads
 - ❖ ratings, reviews
 - ❖ book info

Listopia > Book To Film Book Lists



Harry Potter and the Sorcerer's Stone

(Harry Potter #1)

by J.K. Rowling, Mary GrandPré (Illustrator)

★★★★★ 4.48 · Rating details · 7,314,600 ratings · 115,910 reviews

Harry Potter's life is miserable. His parents are dead and he's stuck with his heartless relatives, who force him to live in a tiny closet under the stairs. But his fortune changes when he receives a letter that tells him the truth about himself: he's a wizard. A mysterious visitor rescues him from his relatives and takes him to his new home, Hogwarts School of Witchcraft ...more



Want to Read ▾

Rate this book
★★★★★

GET A COPY

Amazon Stores ▾

Hardcover, Library Edition, 309 pages
Published November 1st 2003 by Scholastic Inc (first published June 26th 1997)

Original Title	Harry Potter and the Philosopher's Stone
Edition Language	English
URL	https://kids.scholastic.com/kids/book/harry-potter-and-the-sorcerers-stone-by-j-k-rowling/
Series	Harry Potter #1
Characters	Draco Malfoy, Ron Weasley, Petunia Dursley, Vernon Dursley, Dudley Dursley...more
Setting	London, England, 1991 Hogwarts School of Witchcraft and Wizardry, 1991 (United Kingdom) Hogwarts School of Witchcraft and Wizardry, 1992 (United Kingdom)

Movie adaptations: data

- ❖ IMDb
- ❖ goodreads
 - ❖ ratings, reviews
 - ❖ book info
- ❖ fictionDB
 - ❖ author publications

Listopia > Book To Film Book Lists



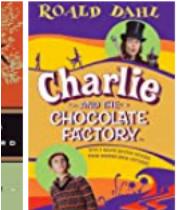
Harry Potter and the Sorcerer's Stone

(Harry Potter #1)

by J.K. Rowling, Mary GrandPré (Illustrator)

★★★★★ 4.48 · Rating details · 7,314,600 ratings · 115,910 reviews

Harry Potter's life is miserable. His parents are dead and he's forced to live in a tiny cupboard under the stairs. But when he finds himself: he's a wizard! He's going to Hogwarts School of Witchcraft



Search Results

SEARCH RESULTS: 500 TITLES

Author	Book	Series	Genre	Date	
Austen, Jane	Northanger Abbey		HR	1803	BUY at AMAZON
Austen, Jane	Persuasion		HR	1818	BUY at AMAZON
Austen, Jane	Emma		HR	1815	BUY at AMAZON
Austen, Jane	Pride and Prejudice		HR	1813	BUY at AMAZON
Austen, Jane	Sense and Sensibility		HR	1811	BUY at AMAZON
Austen, Jane	Mansfield Park		HR	1814	BUY at AMAZON
Austen, Jane; Baird, Gerry	Pride and Prejudice for Teens		R	Nov-2015	BUY at AMAZON

Movie adaptations: data

- ❖ IMDb
- ❖ goodreads
 - ❖ ratings, reviews
 - ❖ book info
- ❖ fictionDB
 - ❖ author publications
- ❖ Google
 - ❖ book popularity
 - ❖ author popularity

Google

harry potter and the sorcerer's stone

All Videos Books Images Shopping More Settings Tools

About 14,400,000 results (1.00 seconds)

www.imdb.com › title › Harry Potter and the Sorcerer's Stone (2001) - IMDb

Harry Potter and the Sorcerer's Stone (2001) · Director: · Writers: · Stars: · Motion Picture Rating (MPAA): Rated PG for s... · Runtime: 152 min | 159 min (extended) · Director: Chris Columbus · Release Date: 16 November 2001 (USA) · ★★★★☆ Rating: 7.6/10 · 656,253 votes · Full Cast & Crew · Harry Potter and the Sorcerer's... · Harry Potter · Trivia

People also search for

harry potter and the chamber of secrets · harry potter and the prisoner of azkaban · ian hart · harry potter and the philosopher's stone cast



Harry Potter and
Sorcerer's Stone

PG · 2001 · Fantasy/Adventure

Movie adaptations: data

- ❖ IMDb
- ❖ goodreads
 - ❖ ratings, reviews
 - ❖ book info
- ❖ fictionDB
 - ❖ author publications
- ❖ Google
 - ❖ book popularity
 - ❖ author popularity

Google search results for "harry potter and the sorcerer's stone":

Search bar: harry potter and the sorcerer's stone

Results count: About 14,400,000 results (1.00 seconds)

Filters: All, Videos, Books, Images, Shopping, More, Settings, Tools

Link 1: [Harry Potter and the Sorcerer's Stone \(2001\) - IMDb](http://www.imdb.com/title/tt0124732/)

Link 2: [Harry Potter and the Sorcerer's Stone \(2001\) · Director: · Writers: · Stars: · Plot summary · Awards · External links](http://en.wikipedia.org/wiki/Harry_Potter_and_the_Philosopher%27s_Stone)

Google search results for "harry potter and the sorcerer's stone before:2001:11:16":

Search bar: harry potter and the sorcerer's stone before:2001:11:16

Results count: About 75,500 results (0.57 seconds)

Filters: All, Shopping, Videos, Images, News, More, Settings, Tools

Link 1: [Harry Potter and the Philosopher's Stone \(film\) - Wikipedia](http://en.wikipedia.org/wiki/Harry_Potter_and_the_Philosopher%27s_Stone_(film)_-_Wikipedia)

Link 2: [Harry Potter and the Sorcerer's Stone \(film\) | The JH Movie ...](http://the-jh-movie-collection-official.fandom.com/wiki/Harry_Potter_and_the_Sorcerer%27s_Stone_(film))

Text snippet from Wikipedia: Harry Potter and the Philosopher's Stone is a 2001 fantasy film directed by Chris Columbus and ... 4 November 2001 (2001-11-04) (Odeon Leicester Square); 16 November 2001 (2001-11-16) (United Kingdom and United States) ... Harry, Ron, and Hermione decide that night to try and find the stone **before** Snape does.

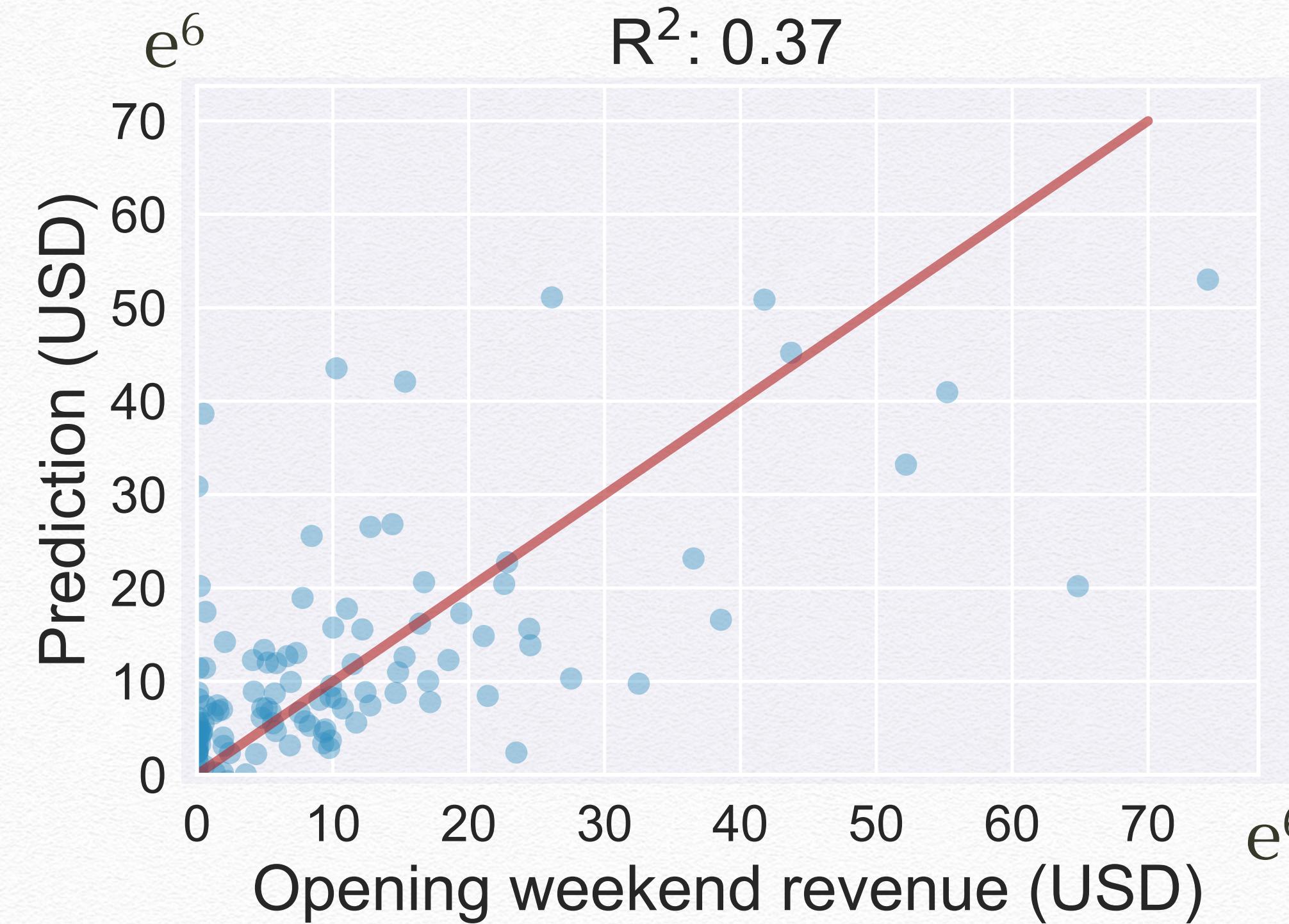
Text snippet from Fandom: Nov 4, 2001 — Harry Potter and the Philosopher's Stone (released in the United ... Voldemort attempts to bargain the stone from Harry in exchange for ... USA Today. https://www.usatoday.com/life/movies/2001-11-16-harry-review.htm#more.



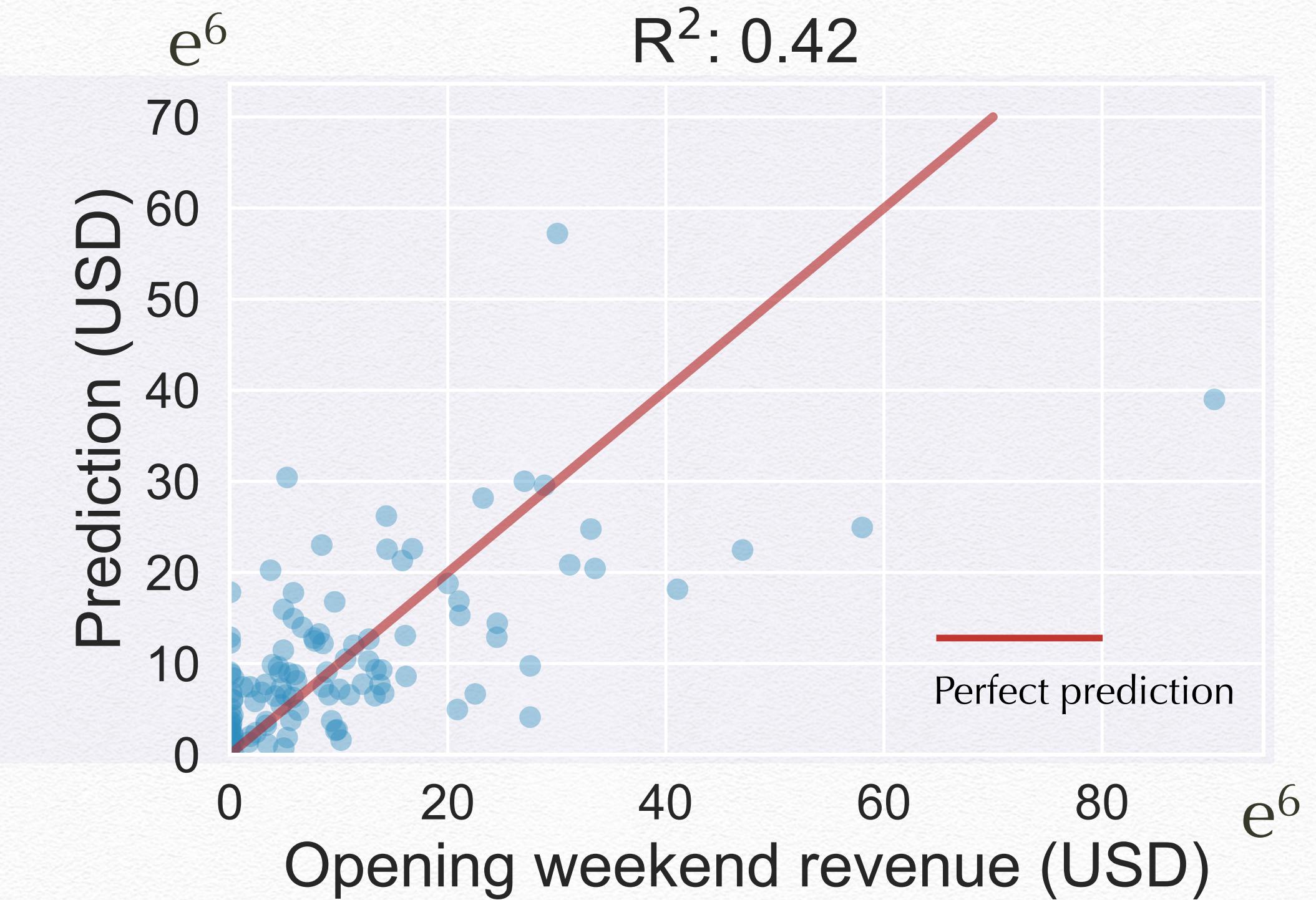
Harry Potter and
Sorcerer's Stone

PG · 2001 · Fantasy/Adventure

Movie adaptations: model

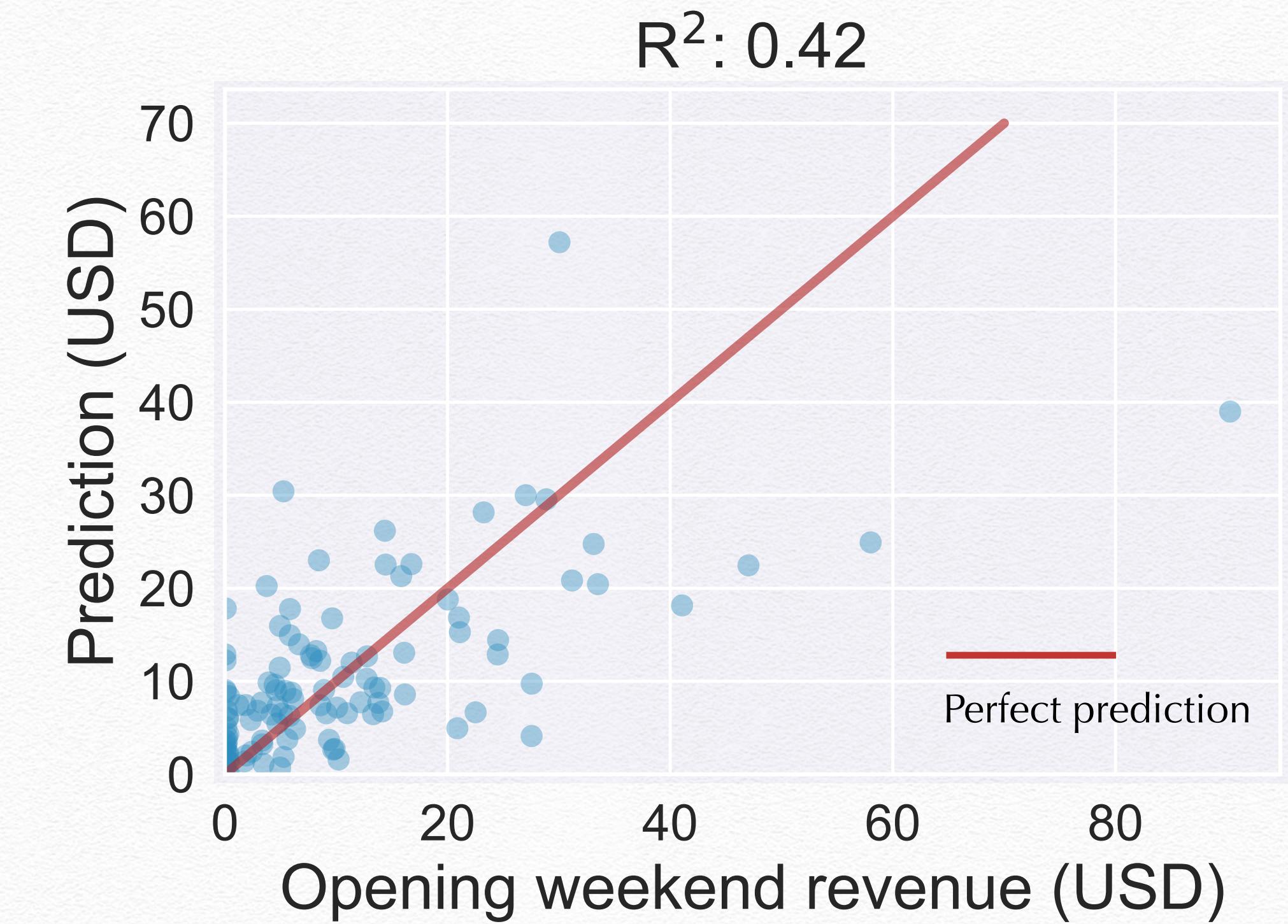
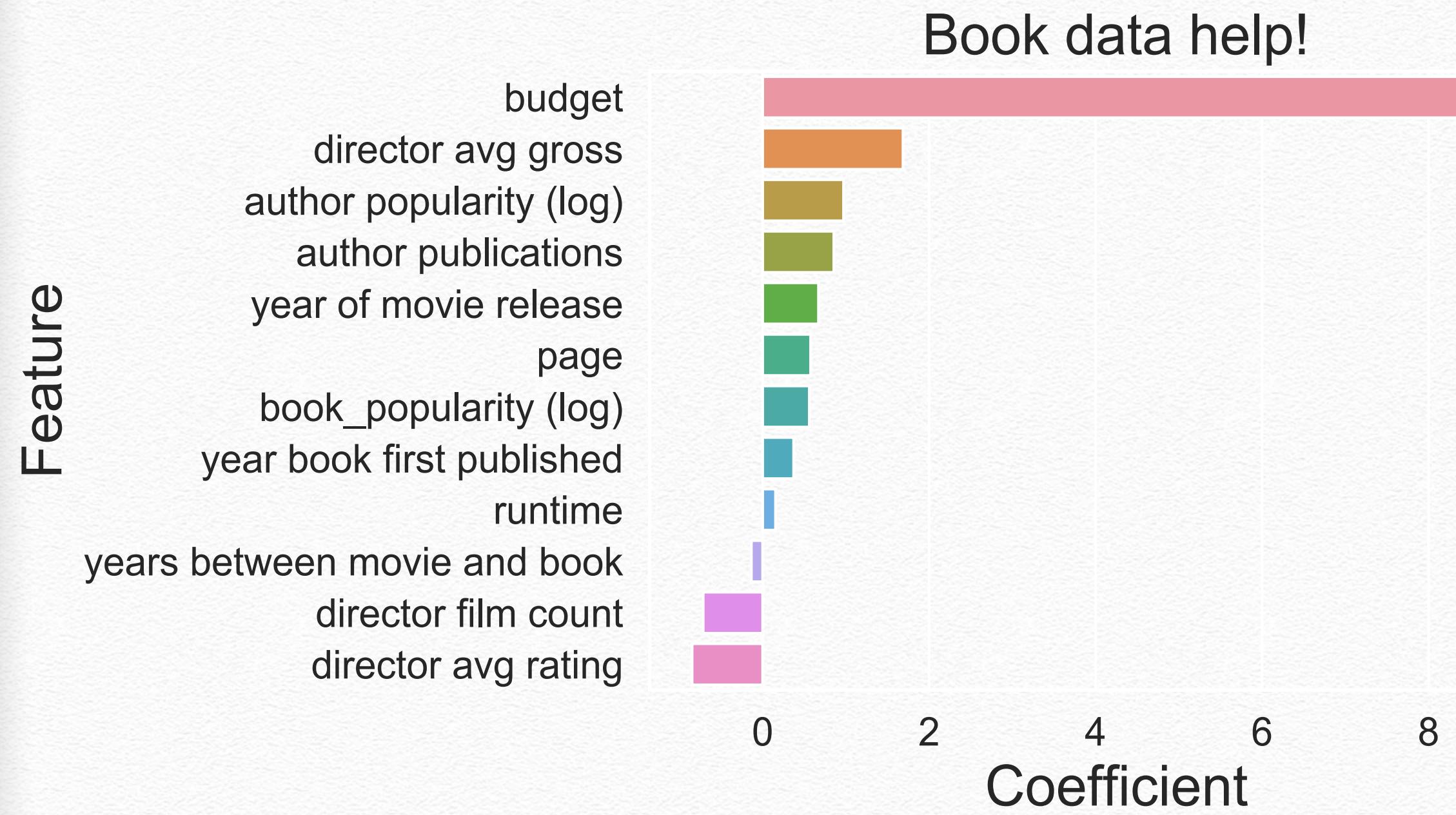


Movie data only



Movie + book data

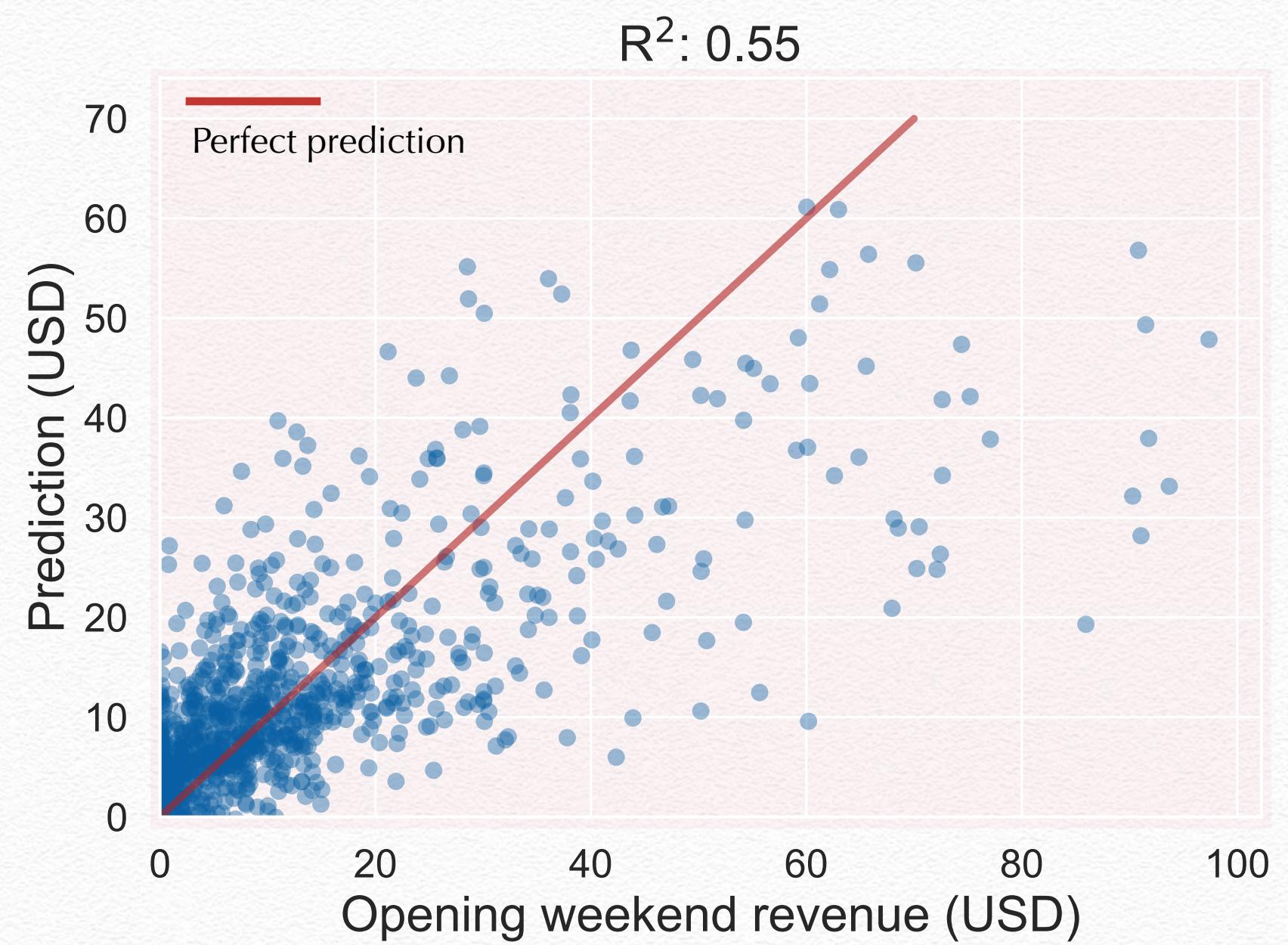
Movie adaptations: model



Movie + book data

Summary

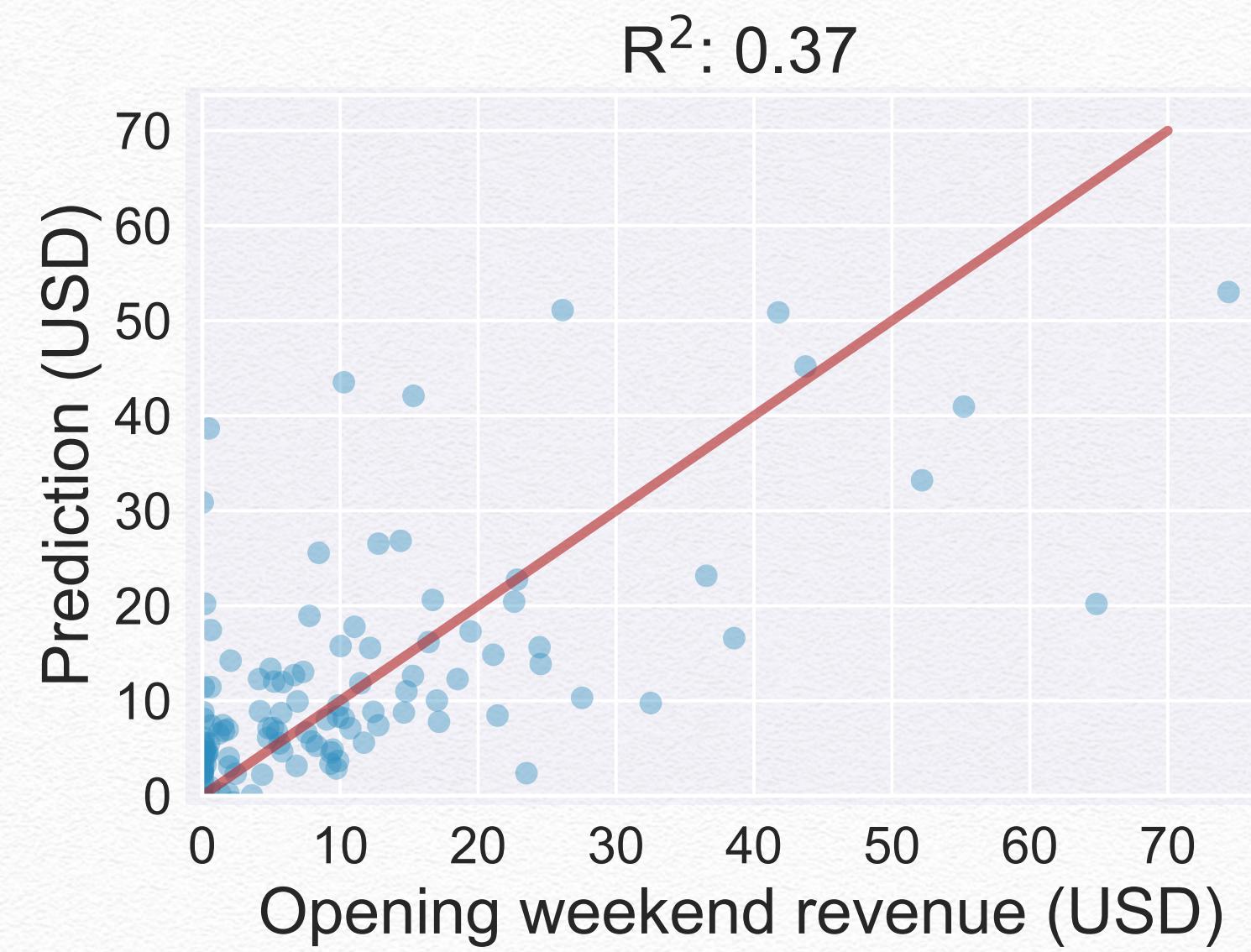
Linear regression model
for **movie in general**



- Adaptation movies among outliers

Summary

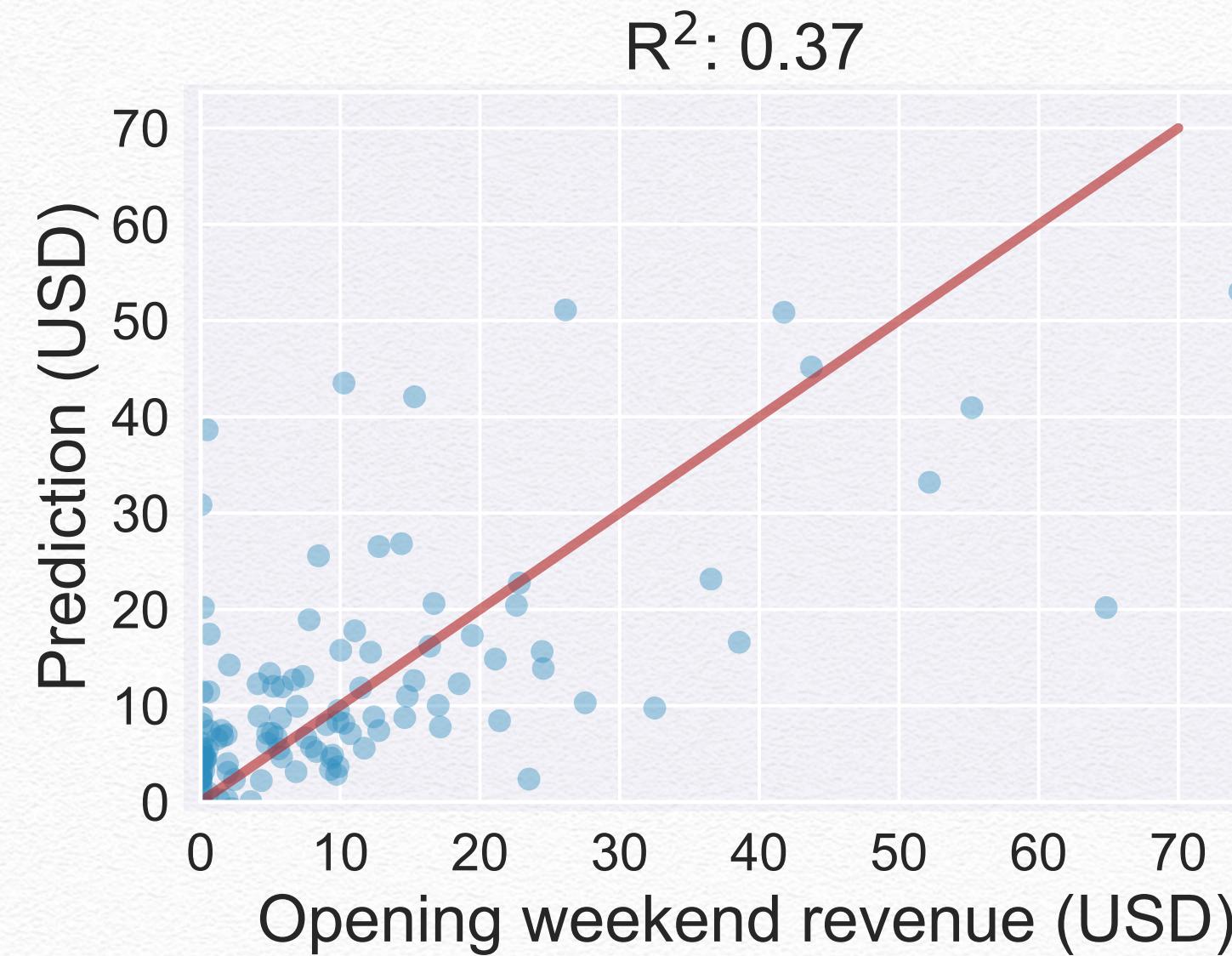
Linear regression model
for **movie adaptations**



Movie data only

Summary

Linear regression model
for movie adaptations



Movie data only

book data

goodreads Home My Books Browse ▾ Community ▾ Search books

Harry Potter and the Sorcerer's Stone
(Harry Potter #1)
by J.K. Rowling, Mary GrandPré (Illustrator)
★★★★★ 4.48 · Rating details · 7,314,600 ratings · 115,910 reviews
Harry Potter's life is miserable. His parents are dead and he's stuck with his heartless relatives, who force him to live in a tiny closet under the stairs. But his fortune changes when he receives a letter that tells him the truth about himself: he's a wizard. A mysterious visitor rescues him from his relatives and takes him to his new home, Hogwarts School of Witchcraft ...more

Want to Read Rate this book

FICTIONDB Series | Book Release Calendar | Search | My Account ▾ Search Author, Titles, Series, ISBN

Search Results

SEARCH RESULTS: 500 TITLES

Author Book Series Genres Data

Google harry potter and the sorcerer's stone

About 14,400,000 results (1.00 seconds)

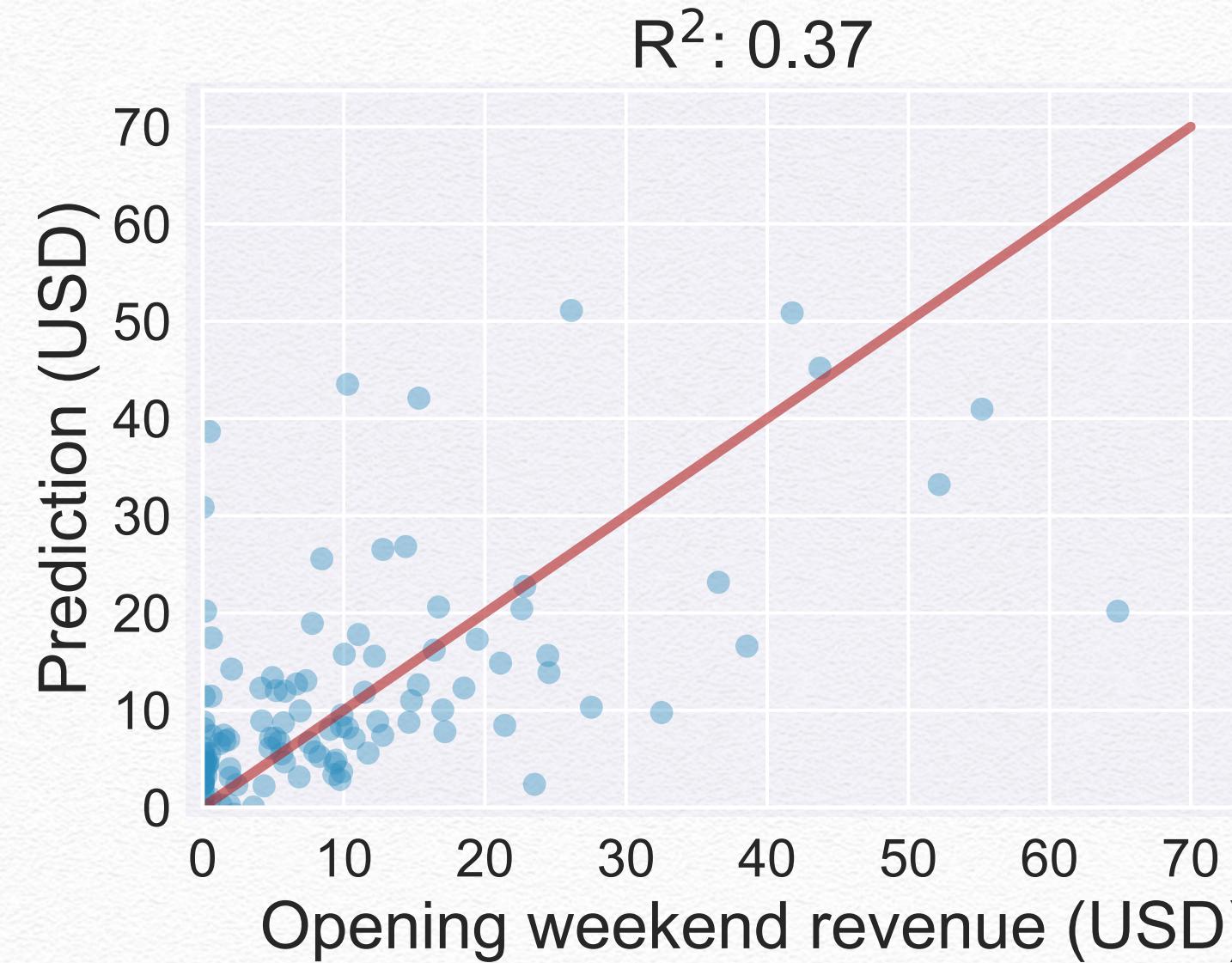
www.imdb.com title Harry Potter and the Sorcerer's Stone (2001) - IMDb
Harry Potter and the Sorcerer's Stone (2001) · Director: · Writers: · Stars:
Motion Picture Rating (MPAA): Rated PG for s... Runtime: 152 min | 159 min (extended)
Director: Chris Columbus Release Date: 16 November 2001 (USA)
★★★★★ Rating: 7.6/10 · 656,253 votes
Full Cast & Crew · Harry Potter and the Sorcerer's... · Harry Potter - Trivia

People also search for
harry potter and the chamber of secrets · harry potter and the prisoner of azkaban
ian hart · harry potter and the philosopher's stone cast

Harry Potter and Sorcerer's Stone
PG · 2001 · Fantasy/Adventure

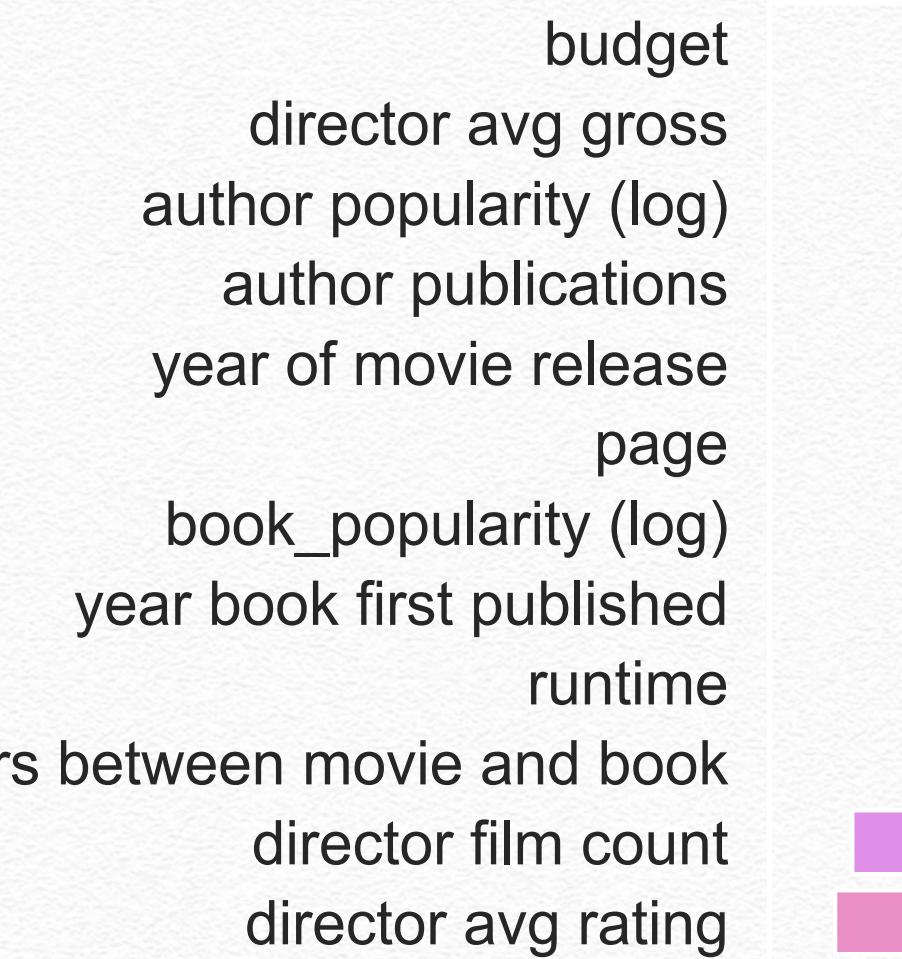
Summary

Linear regression model
for movie adaptations



Movie data only

Feature



R²: 0.37 → 0.42

Book data help!

book data

The screenshot shows three examples of book data:

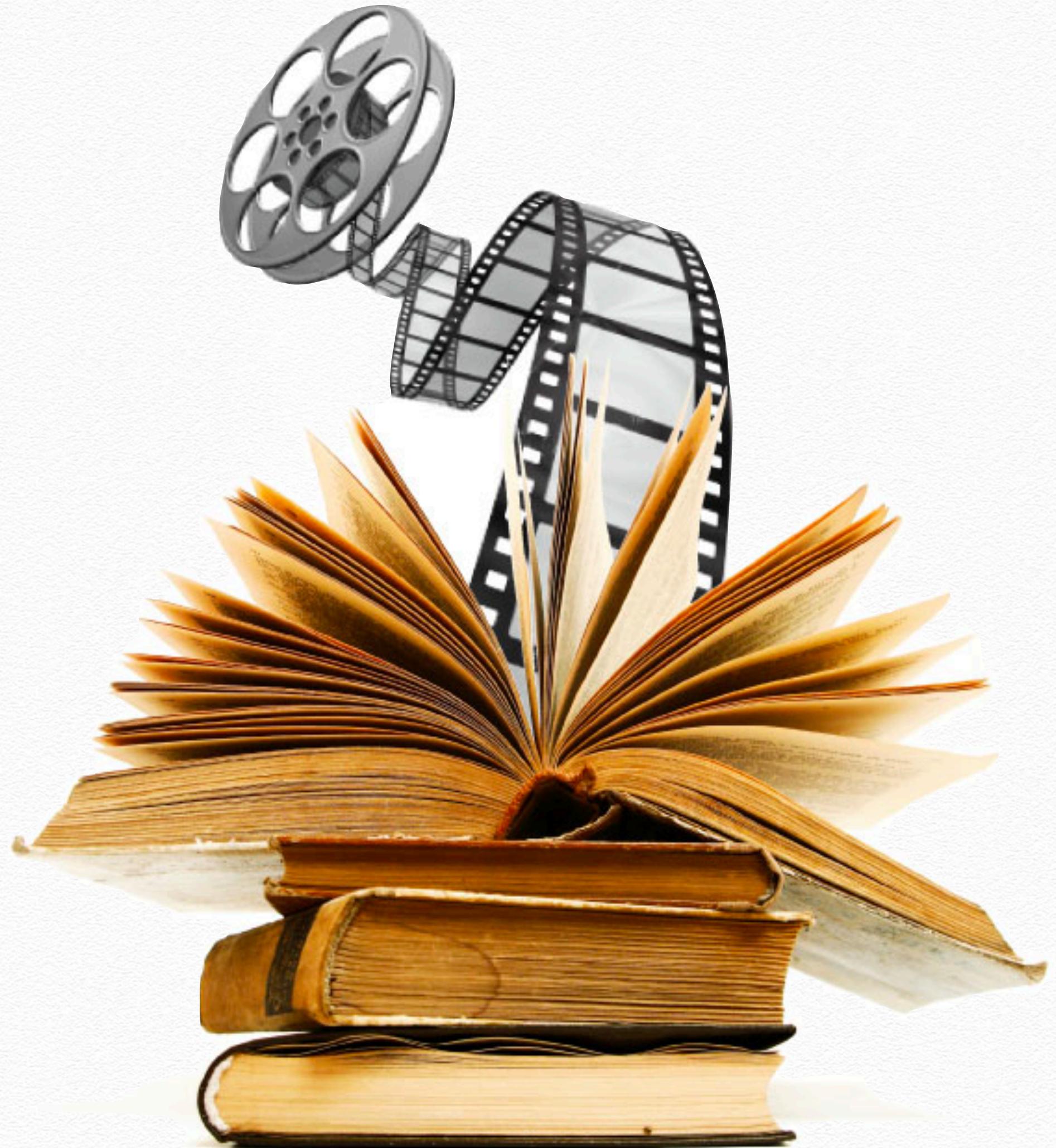
- Goodreads:** A book page for "Harry Potter and the Sorcerer's Stone" by J.K. Rowling. It shows the cover, rating (4.48), and a brief summary.
- FictionDB:** A search results page showing 500 titles. A search for "harry potter and the sorcerer's stone" is shown.
- Google:** A search results page for "harry potter and the sorcerer's stone" on Google. It includes the IMDB link, movie poster, and a snippet of information about the movie.



Harry Potter and
Sorcerer's Stone

Outlook

- ❖ **Improve model for movie adaptations**
 - ❖ increase sample size
 - ❖ resolve timeline of book ratings
- ❖ **Decision making on production of movie adaptation**



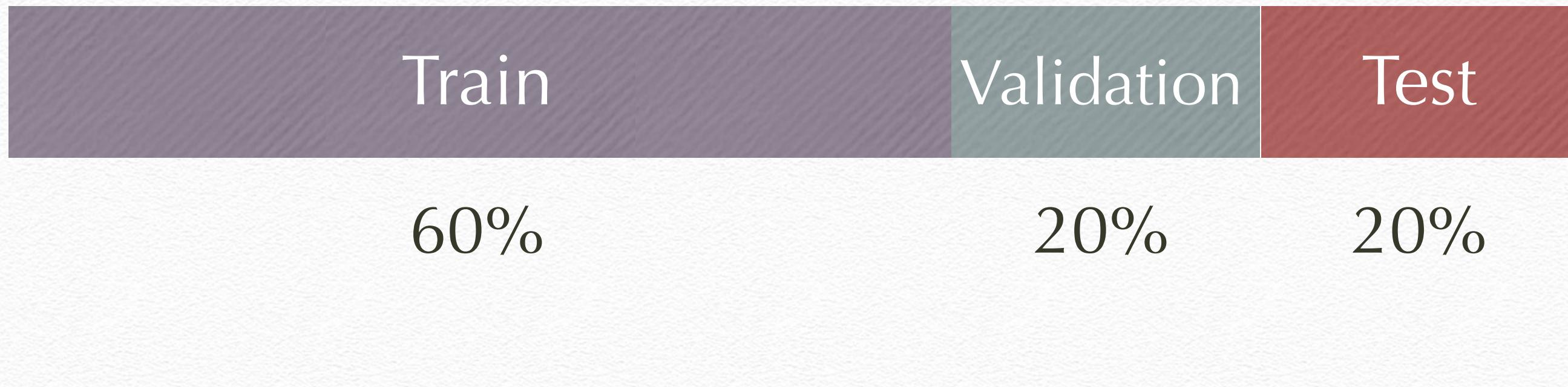
Thank you!

Appendix

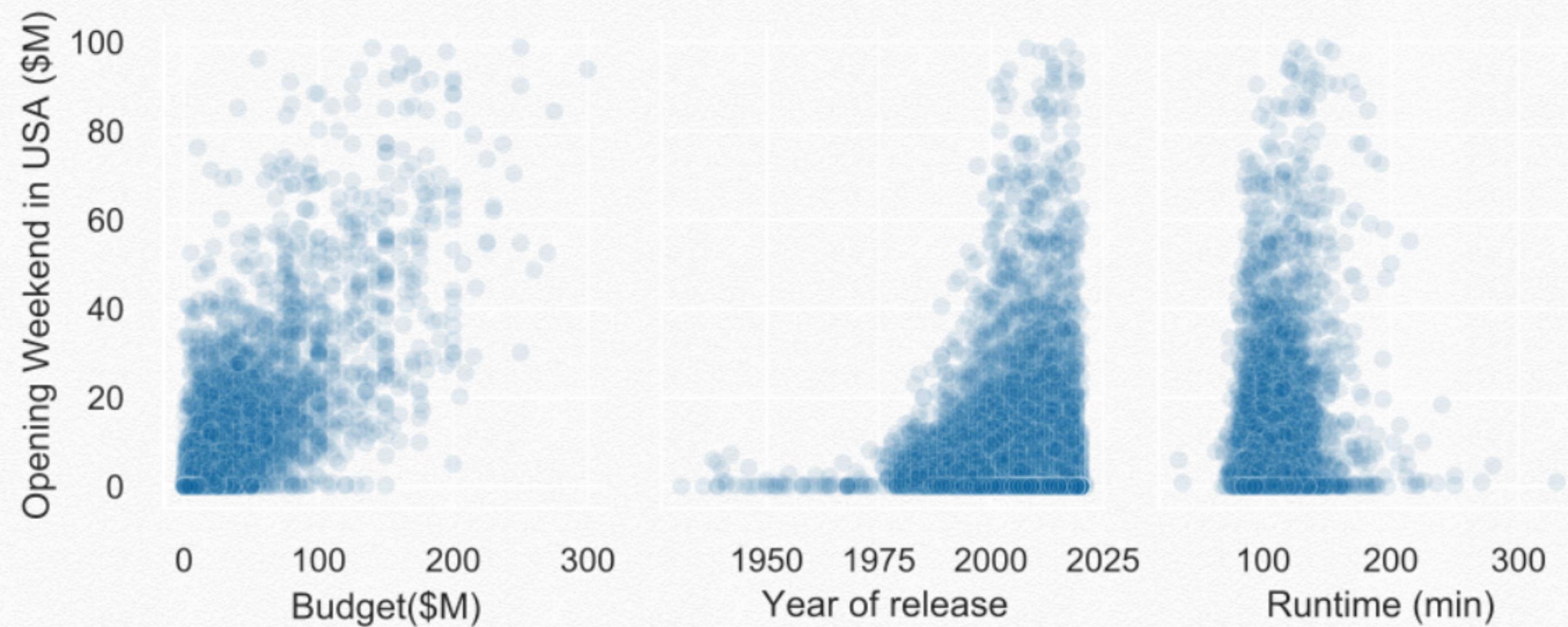
Build a simple model

6,000+ movies

❖ Target opening weekend revenue in USA (\$M)

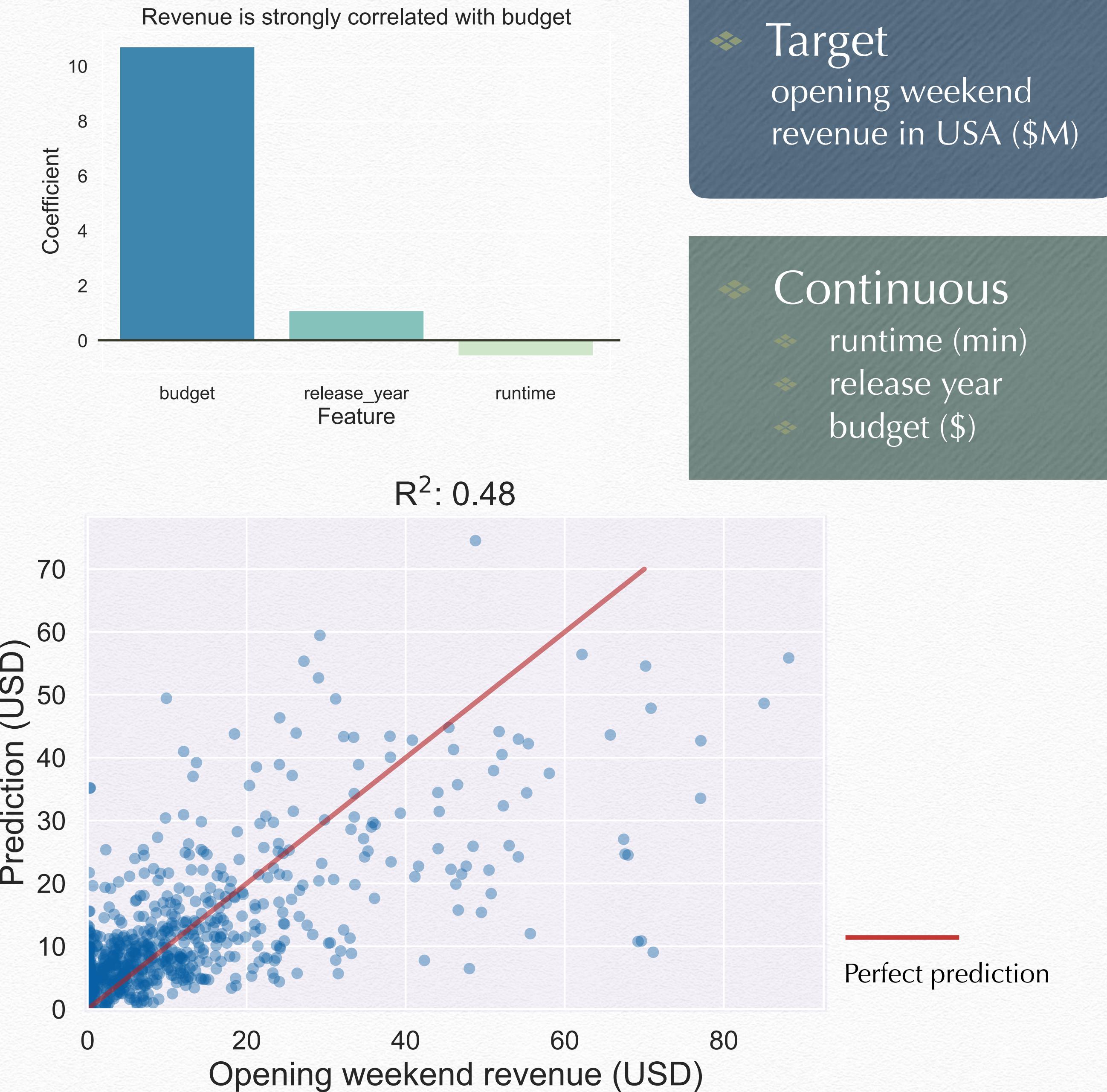


❖ Continuous
❖ runtime (min)
❖ release year
❖ budget (\$)



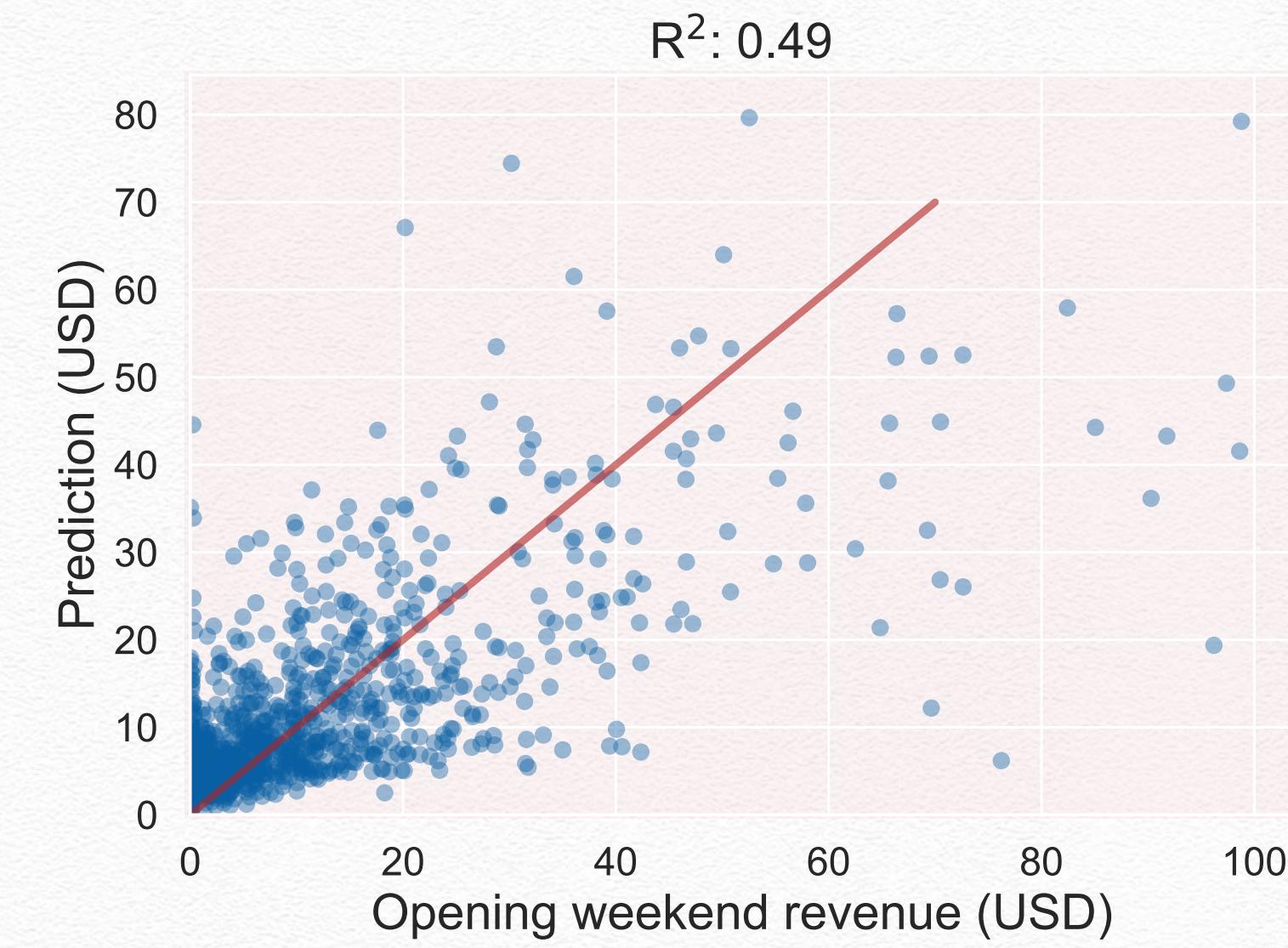
Build a simple model

Cross-Validation (5-fold)	R^2
Linear Regression	0.48
Scaling	0.48
Polynomial Features + Scaling	



Build a simple model

Cross-Validation (5-fold)	R ²
Linear Regression	0.48
Scaling	0.48
Polynomial Features + Scaling	0.49



Categorical variables

- ❖ Continuous
 - ❖ runtime
 - ❖ release year
 - ❖ budget

	Train: R^2	Validation: R^2
genre	0.51	0.52
distributor	0.50	0.51
cast	0.50	0.50
all	0.51	0.51
all+poly	0.60	negative!

overfitting!

- ❖ Categorical
 - ❖ MPAA rating
 - ❖ distributor
 - ❖ director
 - ❖ writer
 - ❖ cast
 - ❖ genre
 - ❖ country
 - ❖ language

Ridge ($\alpha=19.2$) $R^2: 0.55$
LASSO ($\alpha=0.02$) $R^2: 0.55$

Evaluation

Test set
 $R^2: 0.59$

- ❖ Continuous
 - ❖ runtime
 - ❖ release year
 - ❖ budget

- ❖ Categorical
 - ❖ MPAA rating
 - ❖ distributor
 - ❖ director
 - ❖ writer
 - ❖ cast
 - ❖ genre
 - ❖ country
 - ❖ language

- ❖ polynomial features
- ❖ scaling
- ❖ Ridge ($\alpha=19.2$)
- ❖ LASSO ($\alpha=0.02$)

Who are the outliers?

movie_title	res
Joker	-76.432654
Fifty Shades of Grey	-74.037323
Halloween	-69.834310
It Chapter Two	-68.496035
Us	-62.068580
Harry Potter and the Chamber of Secrets	-61.293593
The Hangover Part II	-61.176890
Twilight	-58.788479
Despicable Me 2	-58.753424
Pitch Perfect 2	-58.459170
Logan	-57.834601
Iron Man	-57.681644
Harry Potter and the Prisoner of Azkaban	-56.534309
Harry Potter and the Sorcerer's Stone	-55.773166
X2: X-Men United	-54.032581

res = prediction - actual revenue

Movie adaptations!

Movie adaptations: model...not so easy!

	Train: R ²	Validation: R ²
basic movie features	0.46	0.37
genre	0.50	0.50
other categorical	0.43	0.41
actor	0.69	0.20
all+poly	0.72	0.25

~600 movie adaptations

Ridge ($\alpha=10.25$) R²: **0.26**
LASSO ($\alpha=0.1$) R²: **0.39**

Movie adaptations: model...not so easy!

~600 movie adaptations



current model: **low R^2**

new model:
Ridge ($\alpha=10.25$) $R^2: 0.26$
LASSO ($\alpha=0.1$) $R^2: 0.39$

Target & Predictors

- ❖ Predict revenue?
- ❖ Data source: IMDb
 - ❖ IMDb rating
 - ❖ MPAA rating
 - ❖ runtime
 - ❖ genre
 - ❖ release date
 - ❖ director, writer, cast
 - ❖ country, language
 - ❖ box office
 - ❖ ...



❖ Target
opening weekend
revenue in USA

❖ Continuous
IMDb rating
runtime
release year
budget

Tenet (2020)

PG-13 | 2h 30min | Action, Sci-Fi, Thriller | 3 September 2020 (USA)

7.5 / 10
272,720 Rate This

TENET IN CINEMAS NOW

0:31 | Trailer

13 VIDEOS | 269 IMAGES

Armed with only one word, Tenet, and fighting for the survival of the entire world, a Protagonist journeys through a twilight world of international espionage on a mission that will unfold in something beyond real time.

Director: Christopher Nolan
Writer: Christopher Nolan
Stars: John David Washington, Robert Pattinson, Elizabeth Debicki See full cast & crew »

69 Metascore From metacritic.com | Reviews 4,154 user | 443 critic | Popularity 4 (♦ 1)

Details

Official Sites: [Official Facebook](#) | [Official Instagram](#) | See more »
Country: UK | USA
Language: English | Russian | Ukrainian | Estonian | Norwegian
Release Date: 3 September 2020 (USA) See more »
Also Known As: Merry-Go-Round See more »
Filming Locations: Linnahall, Tallinn, Estonia See more »

Box Office

Budget: \$205,000,000 (estimated)
Opening Weekend USA: \$20,200,000, 6 September 2020
Gross USA: \$57,929,000
Cumulative Worldwide Gross: \$363,129,000

See more on IMDbPro »

Company Credits

Production Co: Warner Bros., Syncopy See more »
Show more on IMDbPro »

Technical Specs

Runtime: 150 min
Sound Mix: IMAX 6-Track | Dolby Digital | Sonics-DDP | Datasat
Color: Color
Aspect Ratio: 1.43 : 1
See full technical specs »