

How to Make Successful Movies

Prepared for: Fictional Person at Microsoft Movie Studios

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Agenda

- Business Challenge and Our Approach
- Considerations and Caveats
- Analysis
 - How much profit can Microsoft expect to make per movie?
 - What are common characteristics of highly profitable movies?
 - Who are key contributors to highly profitable movies?
- Conclusion
 - Summary of recommendations
 - Suggestions for further analysis

Business Challenge

Fictional Person is the head of Microsoft's new movie studio. They are new to the industry, and have asked for recommendations to help them make successful movies.

Our Approach

Scope of Analysis:

- 1,784 movies released in US theaters from 2010 through 2020
- Focused on profitability, so excluded movies which had missing or bad budget or revenue data

Data Sources:

- Genre, release date, and financial data from The Movie Database
- Audience ratings and credited individuals from IMDB

Key Metrics:

- Profit: Worldwide Box Office Revenue - Production Budget
- Percent ROI: $(\text{Profit} / \text{Budget}) * 100$

Considerations and Caveats

- Profit should be considered an estimate, as accurate data is difficult to obtain
 - Box Office Revenue includes revenue outside the US, where applicable
 - Box Office Revenue is gross and does not reflect the actual cut that the studio would have received
 - Due to lack of available data, Profit calculation does not factor in additional expenses such as advertising and distribution
 - Revenue is for box office proceeds only; revenue from other sources such as streaming and video-on-demand are not included
- All dollar amounts are in \$US, and have been adjusted to 2020 dollars based on the release year.

Revenue and Profit Distributions:

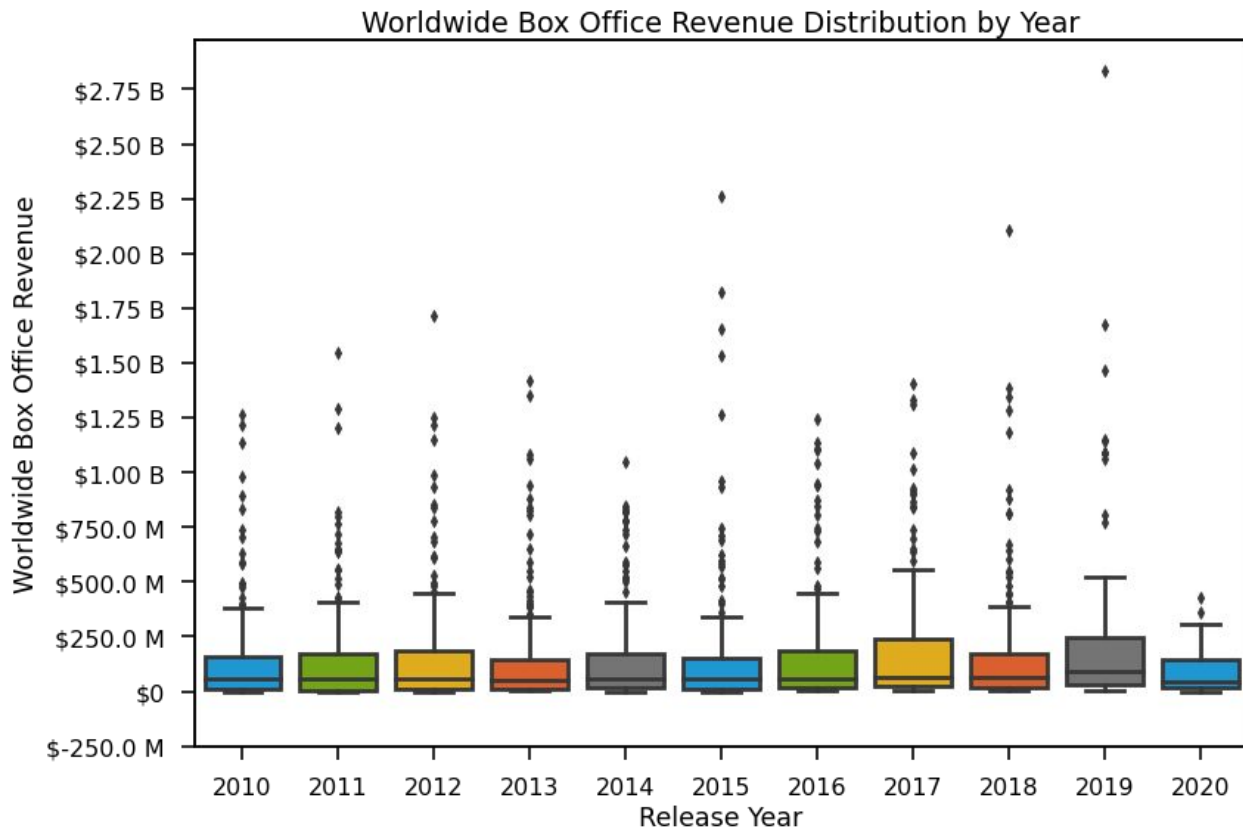
How much revenue do movies make from the box office?

How much profit?

How have revenues and profits been changing over time?

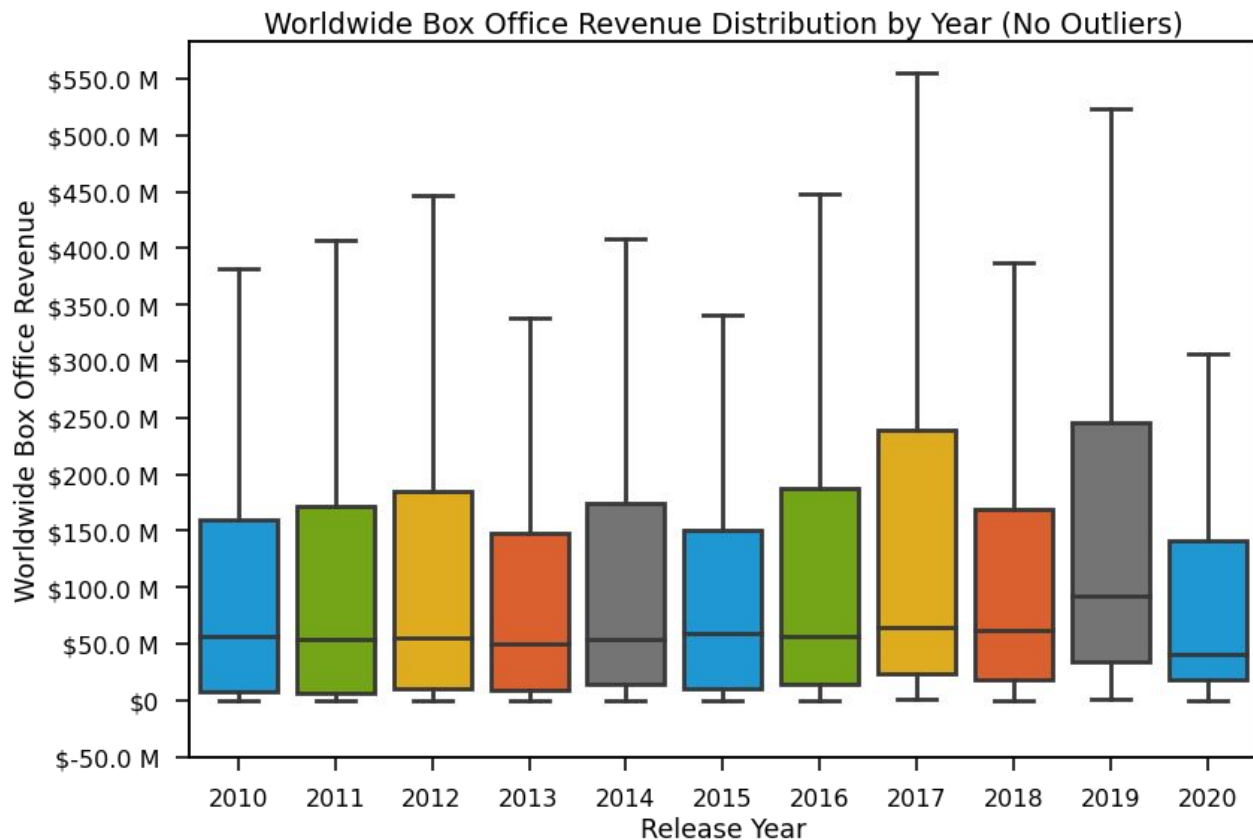
How much revenue do movies make at the box office?

- 50% of revenues (represented by the area in colored boxes) are clustered on the lower end, under \$250 M.
- Some movies make very high revenues, into the hundreds of millions to billions of dollars. However, these very high revenues are much less common, and are considered outliers.
- This analysis uses median as a measure of "average", to reduce the impact of outliers.



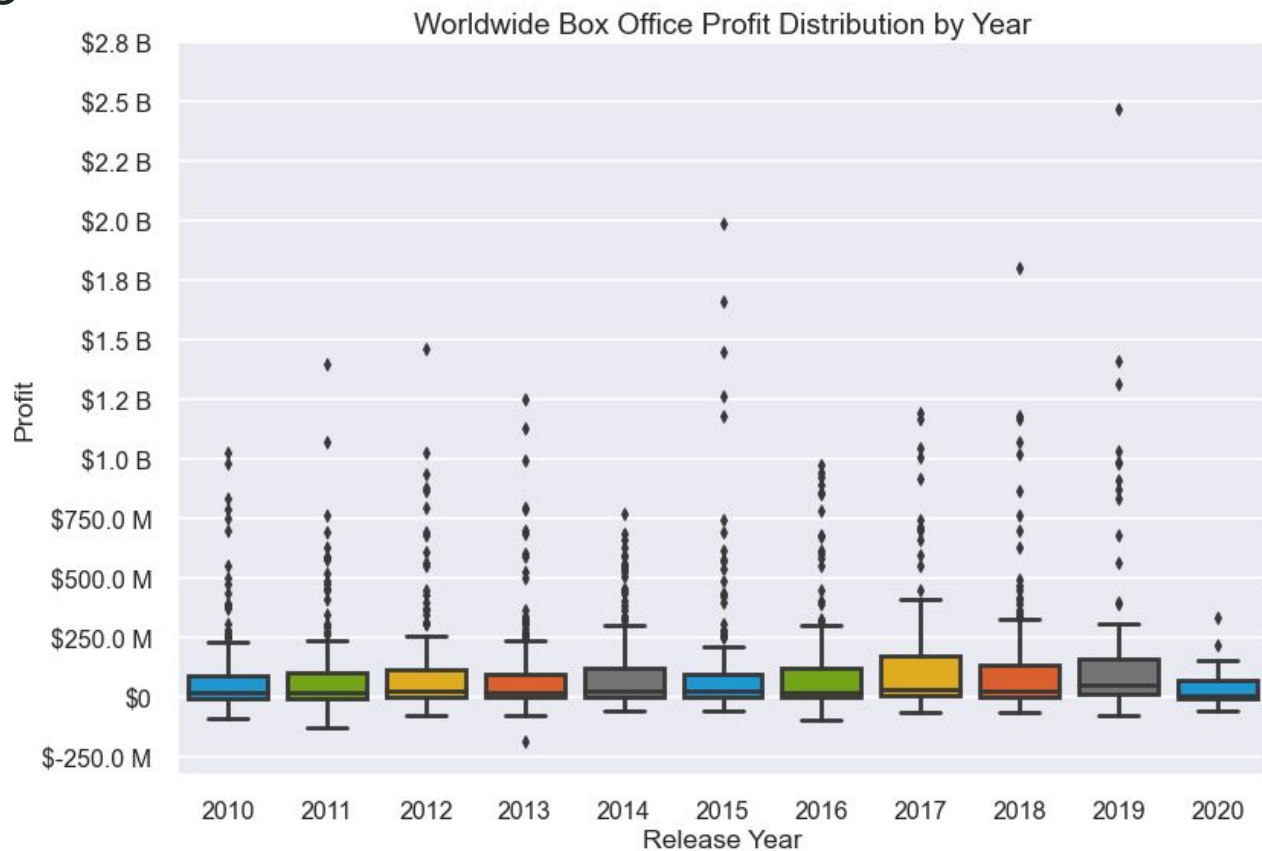
How much revenue do MOST movies make?

- Not considering outliers, we can zoom in to see where most revenues fall.
- Median revenues hover around around \$59 M, with 50% of revenues over the past 10 years falling in the range between \$13.6 M and \$177.2 M.



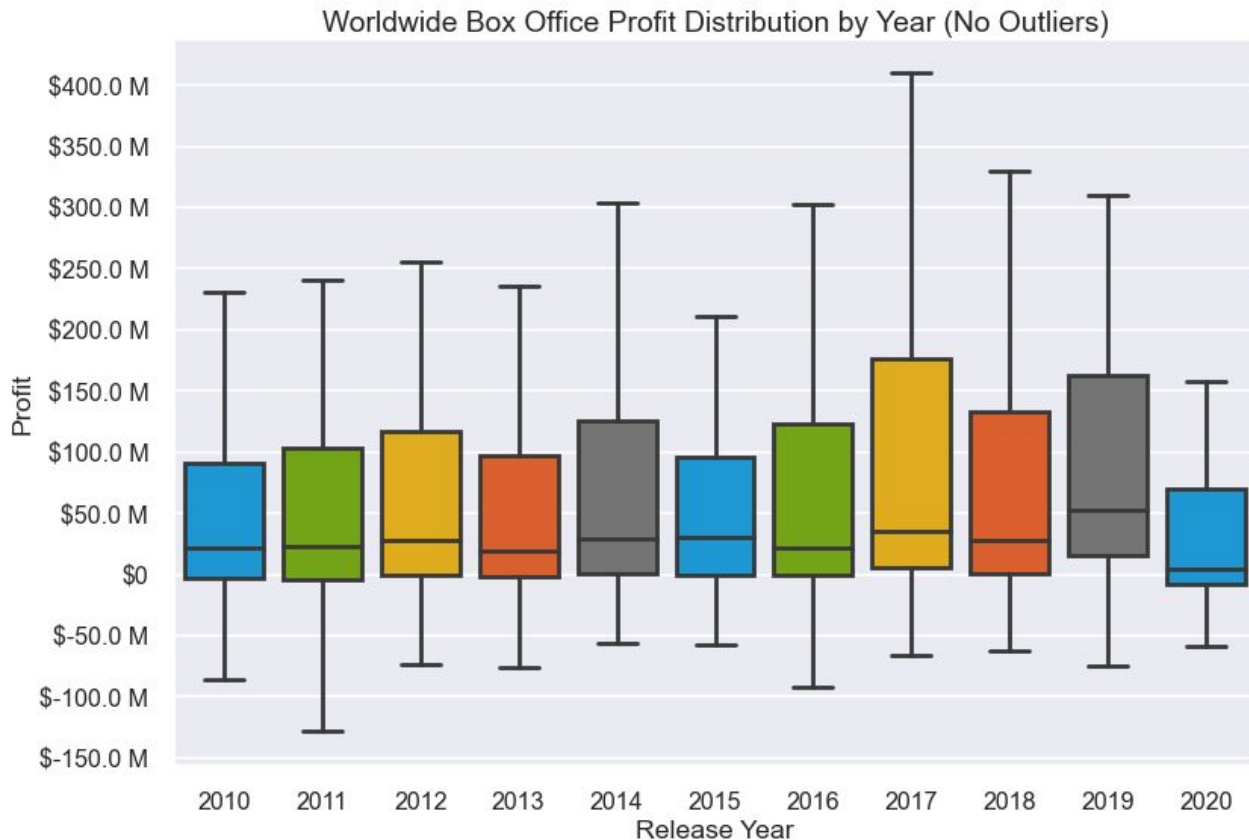
How much profit do movies make?

- Profit is skewed right similarly to revenue.
- Some movies make very high amount of profit over \$250 M and up into the billions, but this is not typical.



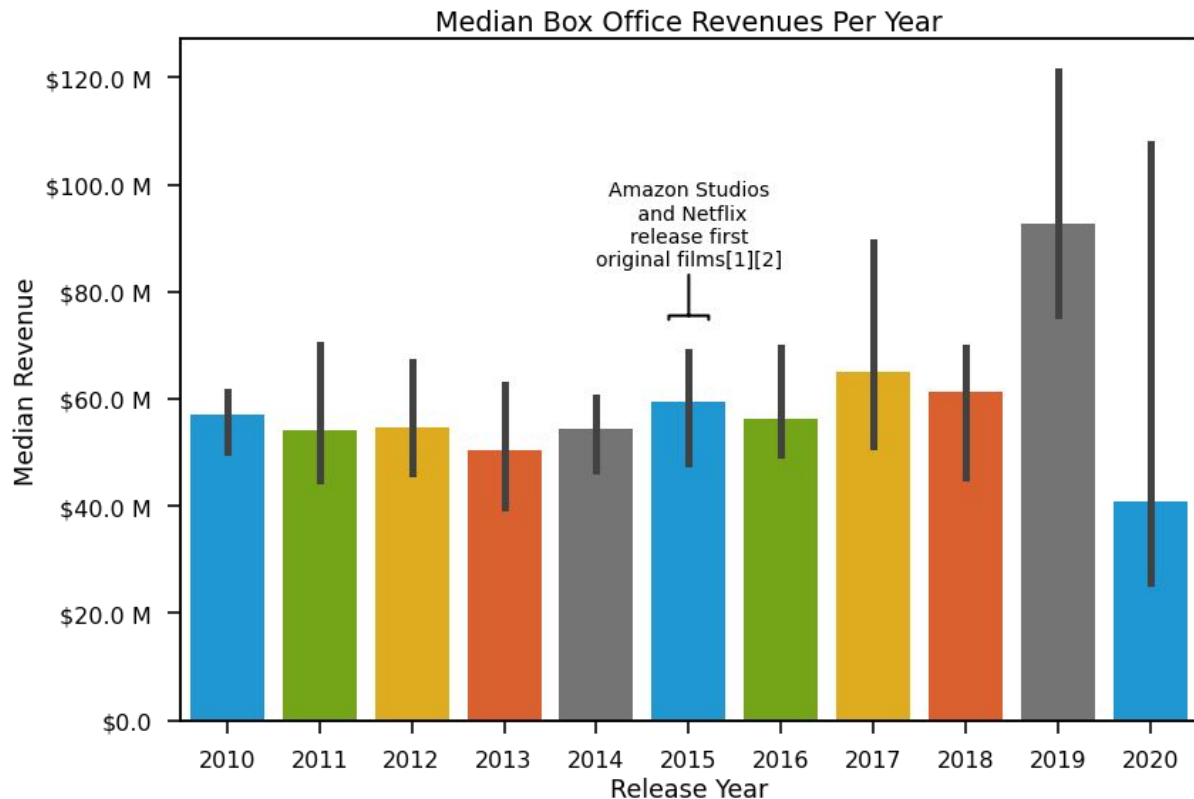
How much profit do MOST movies make?

- Not considering outliers, we can zoom in to see where most profits fall.
- Median profits hover around around \$27 M, with 50% of revenues falling in the range between -\$452 K and \$117.94 M



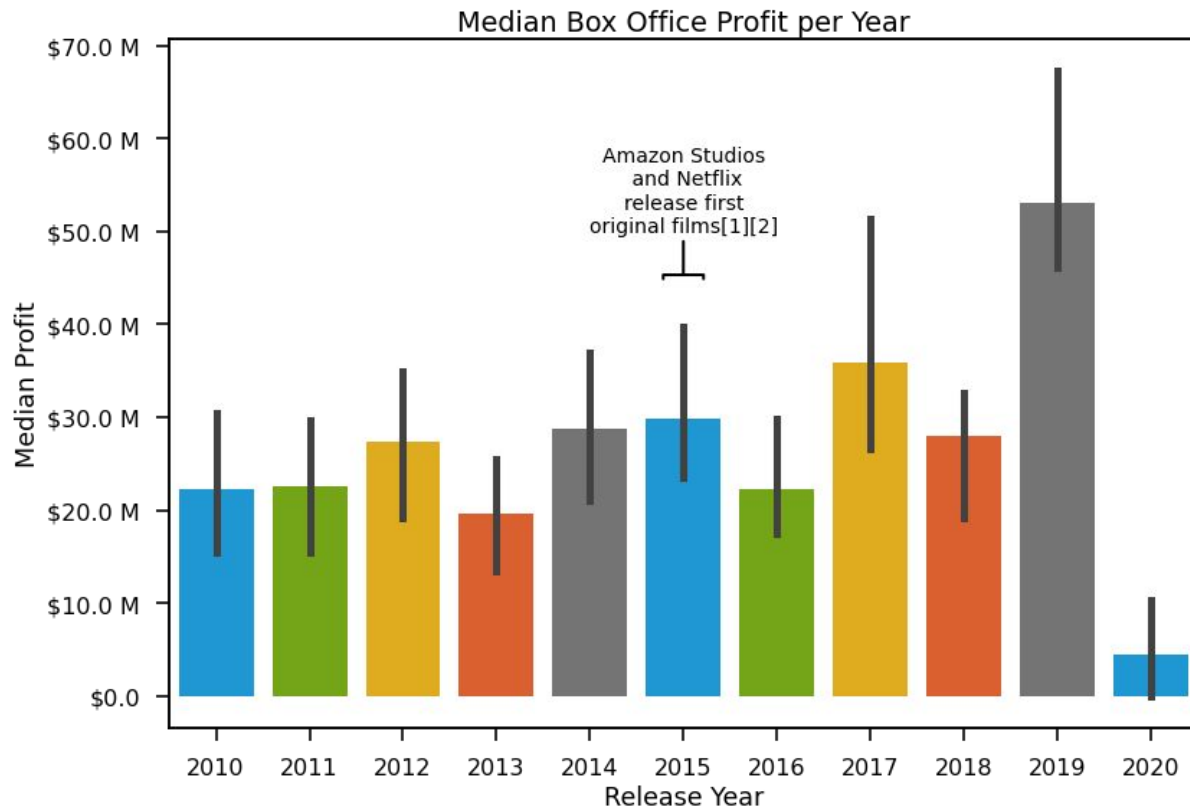
How are box office revenues trending?

- Box office revenues have remained fairly steady over the past 10 years, despite new studios releasing original content primarily online.
- COVID-19 pandemic is likely a primary factor contributing to the dip in 2020, since theaters were closed in the US for most of the year. We can't yet predict whether box office revenues will return to previous levels.



How are profits trending?

- Median profits are generally trending slightly up, again with the exception of 2020.
- We can't yet predict whether box office revenues will return to previous levels. Since box office revenues significantly impact profits, we can't assume this upward trend will continue.

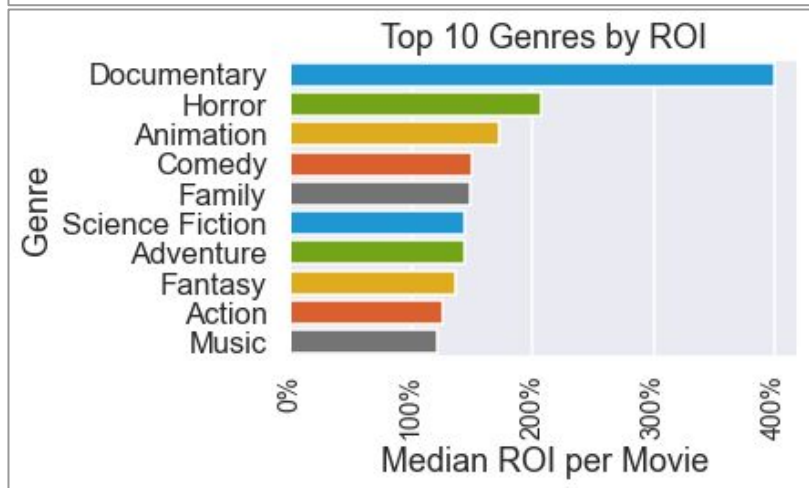
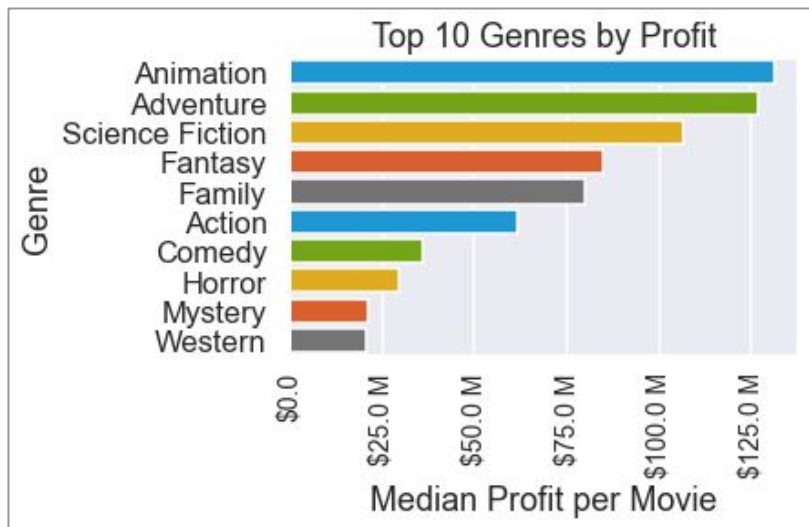


Successful Movie Characteristics:

What characteristics do the most successful movies share?

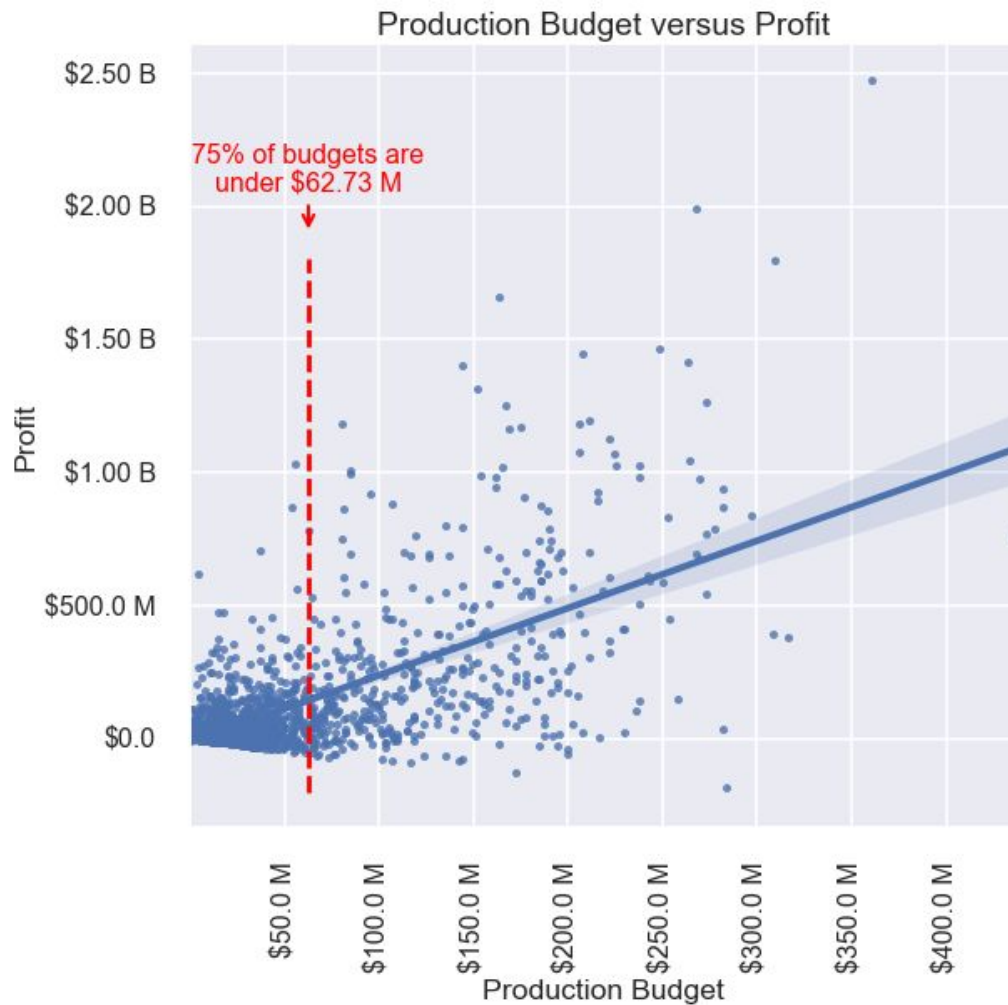
Which genres are most successful?

- Animation, Adventure, Science Fiction, and Fantasy movies are the best genres to choose if Microsoft's primary goal is to maximize profits.
- If the goal is to maximize ROI, Documentaries generate by far the highest, followed by Horror.



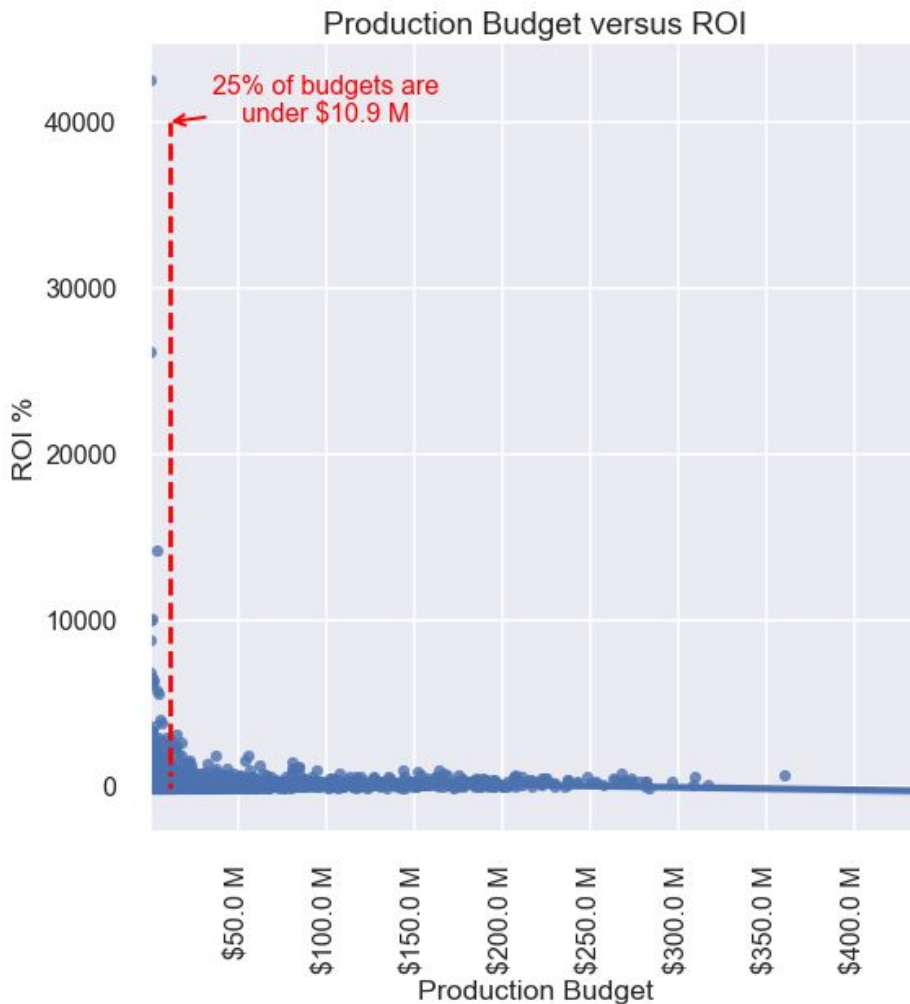
Do movies with higher budgets make more profit?

- Yes, movies with higher budgets generally make more profits.
- For a chance at the highest profits, Microsoft should make movies with higher budgets.
- The top 25% of budgets start at around \$62.7 M, which is a reasonable floor for budgets to maximize profits.



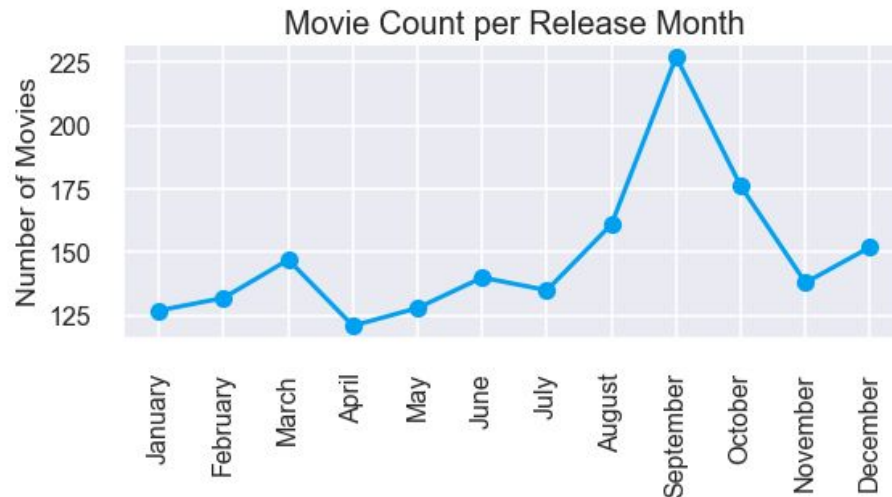
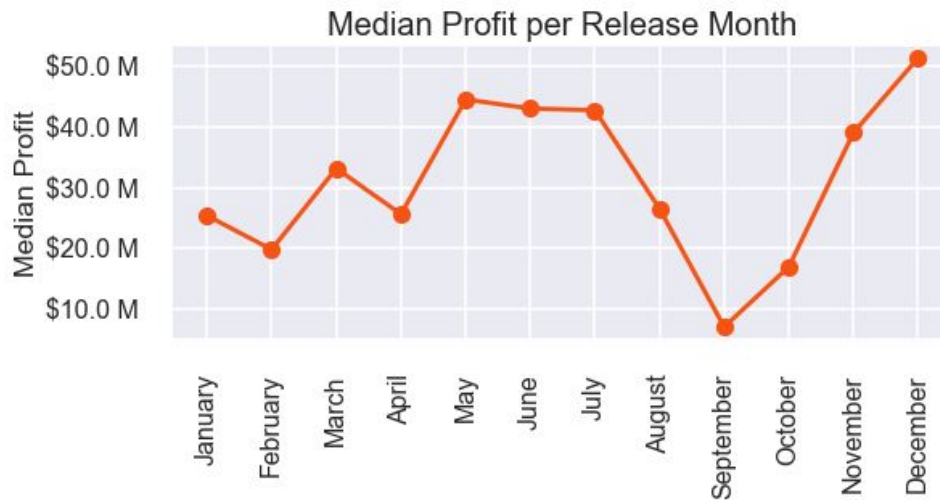
Do movies with higher budgets yield higher ROI?

- However, the inverse is true for ROI: movies with the lowest budgets make the highest ROI, and ROI decreases as budgets increase.
- To maximize ROI, Microsoft should make movies with lower budgets.
- The bottom 25% of budgets go up to around \$10.9 M, which is a reasonable ceiling for budgets to maximize ROI.



Does release month affect success?

- Yes. Movies released in December have the highest median profit by far. May, June, July, and November are also good choices for release months.
- Microsoft should avoid releasing movies in September, and also October, as they had the lowest media profits.
 - September and October also had the highest number of movies released, so the lower median profit in these months could be due to competition.



Key Players in Successful Movies:

Which individual contributors might Microsoft consider hiring to work on their movies?

Who consistently works on successful movies?

- Key contributors to a movie such as Directors, Writers, Actors and Actresses can be important to its success
- While we can't truly quantify their contributions, the following slides list contributors:
 - Who were credited on **at least two movies** in the past ten years
 - Whose **movies averaged in the top 1% of profits, ROI, or IMDB ratings** compared to our larger dataset
- These are the initial "short lists" of contributors Microsoft should consider hiring for its movies, depending on whether the primary goal is to maximize profit, ROI, or audience ratings.
- Review the Appendix for top 10 lists, which might not fall within top 1%

Directors

	Director Name	Mean Movie Profit	Movie Count
1	Anthony Russo	\$1.46 B	4
2	Chris Buck	\$1.28 B	2
3	Jennifer Lee	\$1.28 B	2
4	Joe Russo	\$1.46 B	4
5	Joss Whedon	\$1.36 B	2

	Director Name	Mean Movie ROI	Movie Count
1	Ariel Schulman	4299.7%	4
2	Henry Joost	4299.7%	4
3	Jordan Peele	3375.6%	2
4	William Brent Bell	3573.6%	3

	Director Name	Mean Movie Rating	Movie Count
1	Christopher Nolan	8.43	5
2	Lee Unkrich	8.35	2
3	Quentin Tarantino	8.63	3

Writers

	Writer Name	Mean Movie Profit	Movie Count
1	Colin Trevorrow	\$1.22 B	3
2	Don Heck	\$1.14 B	3
3	J.J. Abrams	\$1.41 B	2
4	Jim Starlin	\$1.38 B	5
5	Michael Crichton	\$1.41 B	2

	Writer Name	Mean Movie ROI	Movie Count
1	E.L. James	5111.2%	3
2	Jordan Peele	3375.6%	2
3	Kelly Marcel	5011.3%	3
4	Oren Moverman	4362.8%	2

	Writer Name	Mean Movie Rating	Movie Count
1	Jonathan Nolan	8.50	2
2	Lee Unkrich	8.35	2
3	Quentin Tarantino	8.63	3

Male Actors

	Actor Name	Mean Movie ROI	Movie Count
1	Jamie Dornan	3821.2%	4
2	Ty Simpkins	3690.9%	2

	Actor Name	Mean Movie Profit	Movie Count
1	Jonathan Groff	\$1.28 B	2
2	Rupert Grint	\$1.12 B	2

	Actor Name	Mean Movie Rating	Movie Count
1	Aamir Khan	8.35	2

Female Actors

- Note: there were no actresses who met this criteria for ratings

	Actress Name	Mean Movie Profit	Movie Count
1	Daisy Ridley	\$1.34 B	3

	Actress Name	Mean Movie ROI	Movie Count
1	Eloise Mumford	5111.2%	3
2	Katie Featherston	4286.7%	2
3	Lin Shaye	3969.6%	2
4	Olivia Cooke	3674.1%	3

Conclusion

- Summary of recommendations
- Suggestions for additional analysis

Summary of Analysis and Recommendations

- Over the past ten years, movies typically made (in 2020 US dollars) **\$13.6 M to \$177.2 M in box office revenue**, and **-\$452 K to \$117.94 M in profit**.
- However, **it's still uncertain how the COVID-19 pandemic will affect box office revenues in the future**. Past trends in box office revenue and profits may not pick up where they left off.

To maximize profits:

- Focus on **Adventure, Science Fiction, Animation, or Fantasy** genres
- Make **higher budget movies**, over approximately \$62.7M

To maximize ROI:

- Focus on **Documentaries**, with Horror films as a distant second
- Make **lower budget movies**, under approximately \$10.9M

In general:

- Target **pre-holiday season** (November, December), or **early summer** (May, June, July) to release movies to theaters
- **Avoid releasing movies in September and October**
- Consider hiring directors, writers, actors, and actresses who have contributed to movies with **profit, ROI, and ratings in the top 1% of our sample**

Suggestions for further analysis

- If possible, obtain more financial data related to:
 - Average cut of box office proceeds that go to studios
 - Average spend on advertising and promotion
 - Average revenue post-theatrical-release (streaming, video-on-demand, etc)
- A closer look at factors contributing to high user ratings, critical ratings and award nominations
- Analysis of how runtime and MPAA ratings contribute to profit and ROI
- Investigate whether certain words or linguistic properties in titles contribute to higher profits or ROI

Appendix

- Sources
- Additional figures

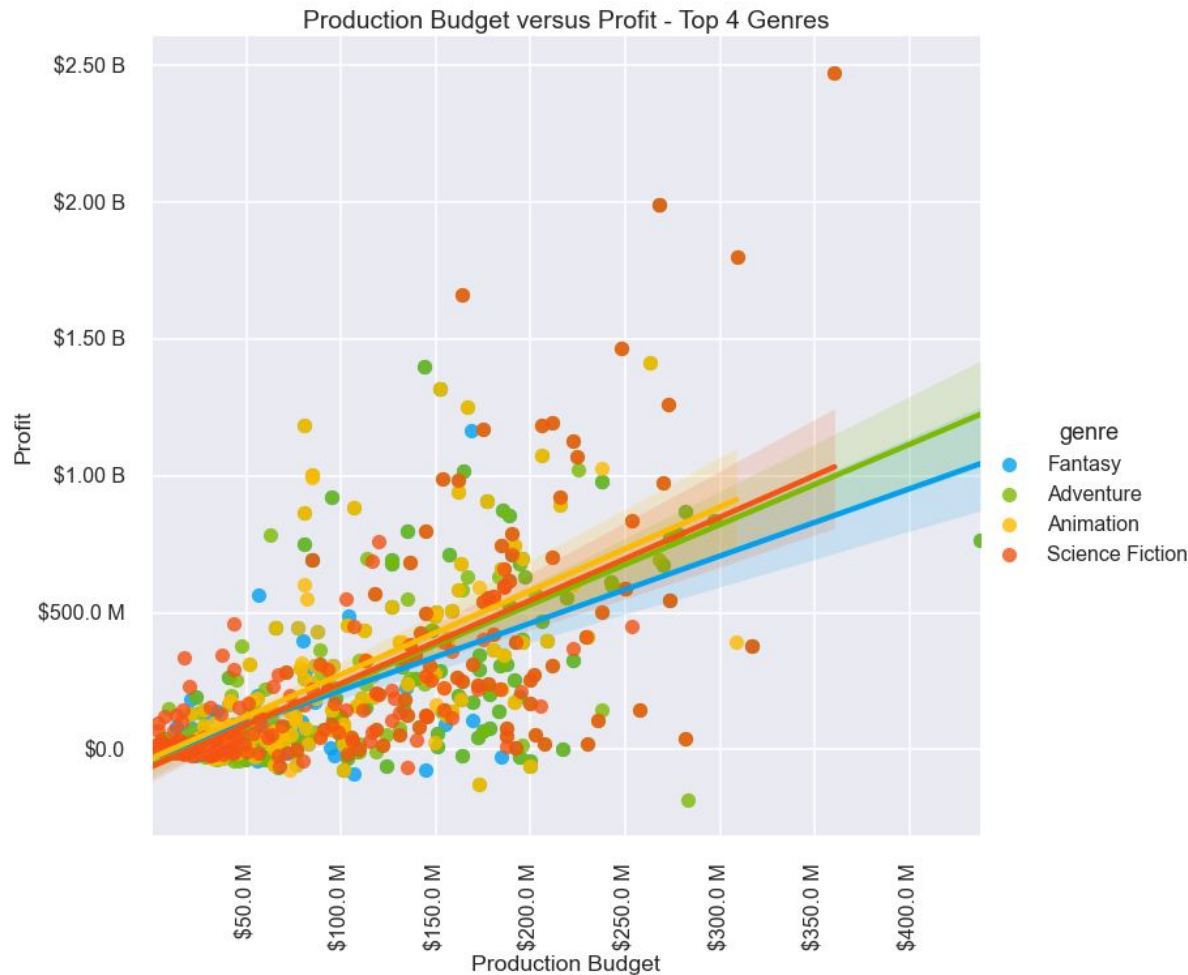
Sources

[1]: https://en.wikipedia.org/wiki/List_of_Amazon_Studios_films; accessed March 18. 2021

[2]: https://en.wikipedia.org/wiki/List_of_Amazon_Studios_films; accessed March 18. 2021

Do budgets relate to profits differently in top genres?

- No, the budget-profit relationships for top genres are about the same as the entire sample set



Top ten directors

- If a director worked on multiple movies in the past ten years, these represent the mean profit and rating for all their movies
- If a value is in **blue**, it falls **within the top 1% of values** for that metric

	Director Name	Mean Movie Profit	Movie Count
1	Joe Russo	\$1.46 B	4
2	Anthony Russo	\$1.46 B	4
3	Joss Whedon	\$1.36 B	2
4	Jennifer Lee	\$1.28 B	2
5	Chris Buck	\$1.28 B	2
6	J.J. Abrams	\$1.04 B	3
7	Eric Guillon	\$1.00 B	1
8	Jared Bush	\$942.2 M	1
9	Pierre Coffin	\$933.1 M	4
10	Josh Cooley	\$909.5 M	1

	Director Name	Mean Movie Rating	Movie Count
1	Zolbayer Dorj	9.400000	1
2	Quentin Tarantino	8.633333	3
3	Éric Toledano	8.500000	1
4	Nitesh Tiwari	8.500000	1
5	Rodney Rothman	8.500000	1
6	Bob Persichetti	8.500000	1
7	Olivier Nakache	8.500000	1
8	Christopher Nolan	8.425000	5
9	Sandeep Reddy Vanga	8.400000	1
10	Adrian Molina	8.400000	1

Top ten writers

- If a writer worked on multiple movies in the past ten years, these represent the mean profit and rating for all their movies
- If a value is in **blue**, it falls **within the top 1% of values** for that metric

	Writer Name	Mean Movie Profit	Movie Count
1	Michael Crichton	\$1.41 B	2
2	J.J. Abrams	\$1.41 B	2
3	Jim Starlin	\$1.38 B	5
4	Shane Morris	\$1.25 B	1
5	Chris Buck	\$1.25 B	1
6	Hans Christian Andersen	\$1.25 B	1
7	Colin Trevorrow	\$1.22 B	3
8	Joe Robert Cole	\$1.18 B	1
9	Gabrielle-Suzanne Barbot de Villeneuve	\$1.17 B	1
10	Don Heck	\$1.14 B	3

	Writer Name	Mean Movie Rating	Movie Count
1	Zolbayar Dorj	9.400000	1
2	Scott Powers Houston	9.400000	1
3	Buyantsogt Ganbold	9.400000	1
4	Dae-hwan Kim	8.700000	1
5	Max Eggers	8.700000	1
6	Jin Won Han	8.700000	1
7	Quentin Tarantino	8.633333	3
8	Shreyas Jain	8.500000	1
9	Nikhil Mehrotra	8.500000	1
10	Nitesh Tiwari	8.500000	1

Top ten actors

- If a actor worked on multiple movies in the past ten years, these represent the mean profit and rating for all their movies
- If a value is in **blue**, it falls **within the top 1% of values** for that metric

	Actor Name	Mean Movie Profit	Movie Count
1	Jonathan Groff	\$1.28 B	2
2	Pierre Coffin	\$1.18 B	1
3	Rafe Spall	\$1.17 B	1
4	Rupert Grint	\$1.12 B	2
5	Craig T. Nelson	\$1.07 B	1
6	Huck Milner	\$1.07 B	1
7	Ned Beatty	\$1.03 B	1
8	Trey Parker	\$1.00 B	1
9	Jordan Peele	\$909.5 M	1
10	Robert Downey Jr.	\$905.8 M	12

	Actor Name	Mean Movie Rating	Movie Count
1	Dorj Dambii	9.400000	1
2	Dorjsambuu Dambii	9.400000	1
3	Sharavdorj Dambii	9.400000	1
4	Woo-sik Choi	8.700000	1
5	Kang-ho Song	8.700000	1
6	Sun-kyun Lee	8.700000	1
7	François Cluzet	8.500000	1
8	Paul Reiser	8.500000	1
9	Omar Sy	8.500000	1
10	Anthony Gonzalez	8.400000	1

Top ten actresses

- If an actress worked on multiple movies in the past ten years, these represent the mean profit and rating for all their movies
- If a value is in **blue**, it falls **within the top 1% of values** for that metric

	Actress Name	Mean Movie Profit	Movie Count
1	Daisy Ridley	\$1.34 B	3
2	Idina Menzel	\$1.25 B	1
3	Carrie Fisher	\$1.20 B	1
4	Sarah Vowell	\$1.07 B	1
5	Holly Hunter	\$1.07 B	1
6	Rosie Huntington-Whiteley	\$1.07 B	1
7	Zazie Beetz	\$1.03 B	1
8	Miranda Cosgrove	\$999.4 M	2
9	Jenny Slate	\$942.2 M	1
10	Kaitlin Olson	\$893.5 M	1

	Actress Name	Mean Movie Rating	Movie Count
1	Brittany Belt	9.400000	1
2	Yeo-jeong Jo	8.700000	1
3	Melissa Benoist	8.500000	1
4	Sakshi Tanwar	8.500000	1
5	Sanya Malhotra	8.500000	1
6	Audrey Fleurot	8.500000	1
7	Fatima Sana Shaikh	8.500000	1
8	Anne Le Ny	8.500000	1
9	Shalini Pandey	8.400000	1
10	Alanna Ubach	8.400000	1