

Business Analytics: Data Analysis and Decision Making, 6e
CHAPTER 2: Describing the Distribution of a Single Variable

Answers to Conceptual Questions

Note to Instructors: Student answers will vary. The responses here are intended to provide general guidance in terms of concepts that could be discussed.

- C.1. The relevant population consists of all people (adults?) in the U.S. who would consider flying commercially. This might be discovered by a survey of a lot of people (several thousand?) that first asks whether they ever have flown or might fly in the future and then asks whether the fear of terrorist attacks would change their minds. Only the people responding "Yes" to the first question would remain in the sample for analyzing the second question.
- C.2. The "number of children" is a count, so this is a discrete data type.
- C.3. A histogram is typically relevant only for a continuous variable that is binned into discrete categories, so it isn't relevant here. But a column chart of counts in states *is* relevant, and it's a close relative to a histogram.
- C.4. Depending on the difficulty of the exam, the shape could easily be skewed to the left, with the students who didn't study comprising the long left tail. But it could also be symmetric or even skewed to the right, with a few "brains" comprising the long right tail.
- C.5. This should be a time series graph, which is really a scatterplot of the number of air conditioner sales versus time, with the "dots" connected.
- C.6. The mean will be larger than the median, maybe considerably larger. This is because the large incomes in the right tail pull up the average, but they have no effect on the median.
- C.7. This is true only if the distribution, or at least the middle 50% of it, is reasonably symmetric. If it's skewed to the right, say, the median will be closer to the 1st quartile than to the 3rd quartile. This is often clear in boxplots, where the median is *not* in the middle of the box.
- C.8. The standard deviation, like the mean, is highly sensitive to outliers. Remember that in the definition of standard deviation, deviations from the mean are *squared*, so outliers on either side can really increase the standard deviation. As stated in the book, an accepted procedure when outliers are clearly present is to report measures such as the standard deviation *with* the outliers and *without* them.
- C.9. There are basically two indications: (1) the median will be about in the middle of the box, indicating that the middle 50% of the distribution is symmetric, and (2) the lines (whiskers) and outliers on either side of the box will be similar, indicating that the more extreme observations are distributed about the same on the low side as on the high side.
- C.10. It all depends. If these two salaries correspond to employees who are somehow outside the population of interest, such as top executives, it is fine to delete them. But if they aren't, then they shouldn't be deleted. For example, they might reveal a "shady" company salary policy and hence could represent the most interesting finding of the study.

This is the actual composition of the 2008 and 2009 incoming MBA classes at the Kelley School of Business at IU. Names have been omitted for confidentiality.

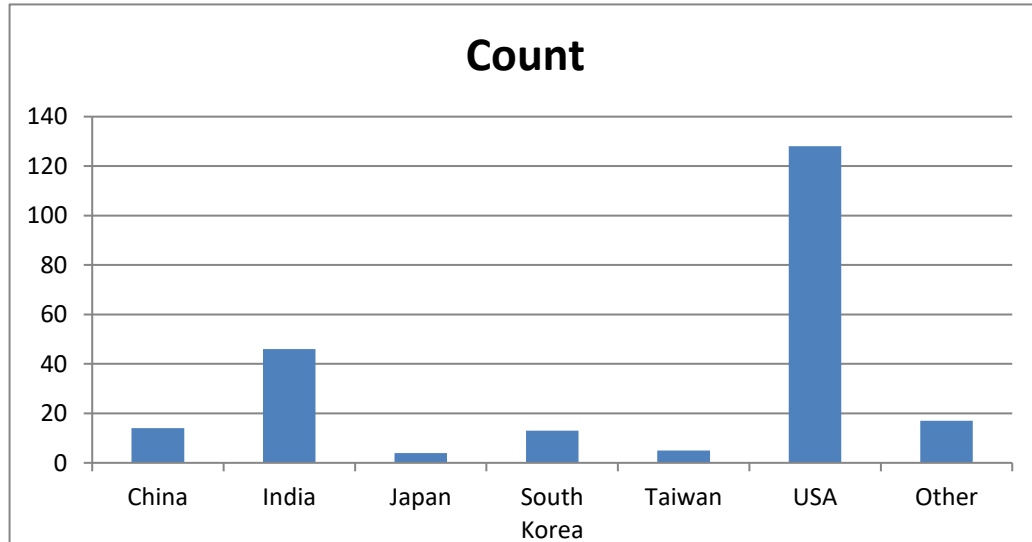
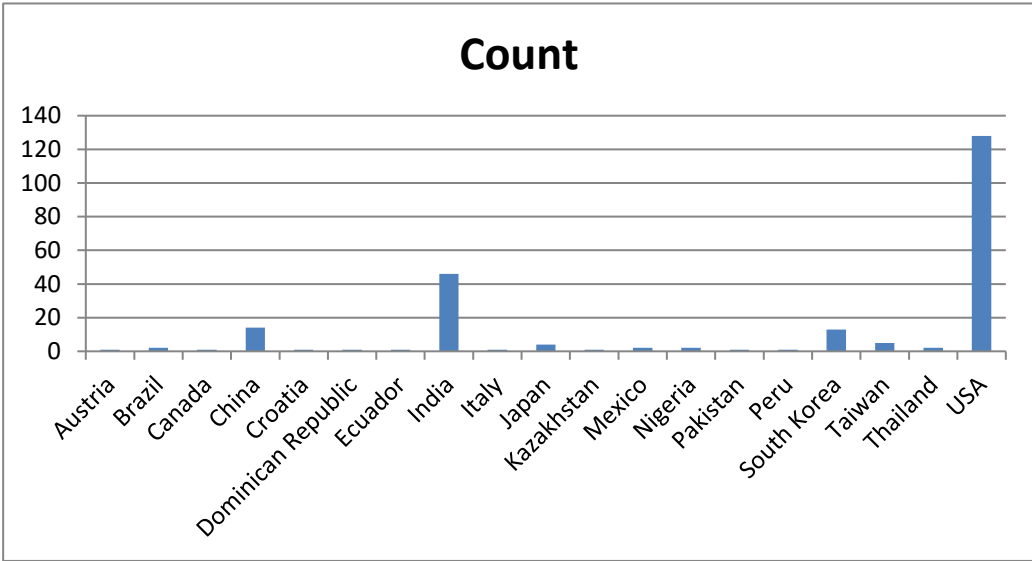
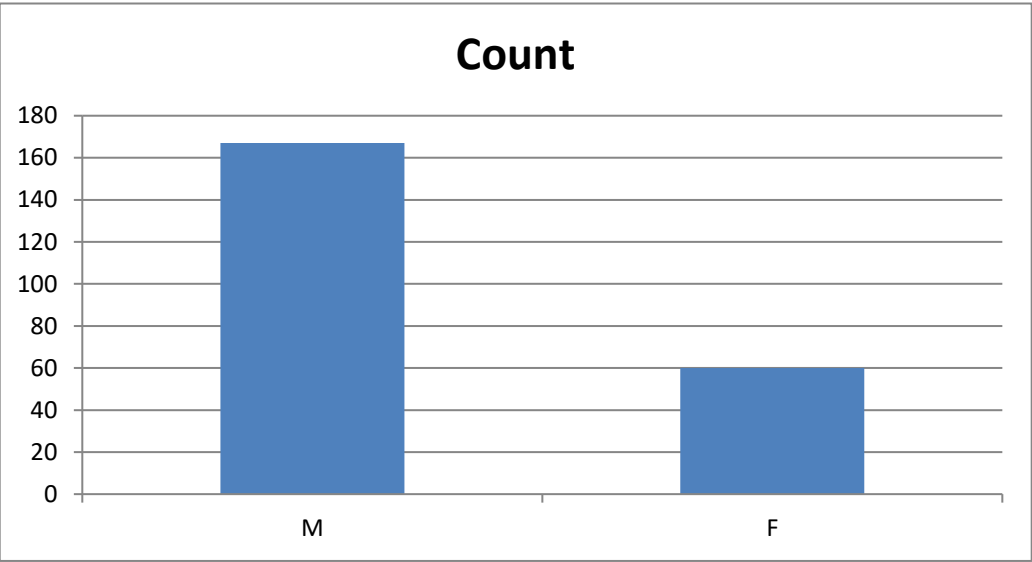
| Student | Gender | Nationality | Gender | Count | Pct of total |
|---------|--------|-------------|--------------------|--------------|---------------------|
| 1 | M | USA | M | 167 | 73.6% |
| 2 | M | USA | F | 60 | 26.4% |
| 3 | M | India | | | |
| 4 | F | India | Nationality | Count | Pct of total |
| 5 | M | USA | Austria | 1 | 0.4% |
| 6 | F | USA | Brazil | 2 | 0.9% |
| 7 | M | USA | Canada | 1 | 0.4% |
| 8 | M | USA | China | 14 | 6.2% |
| 9 | M | USA | Croatia | 1 | 0.4% |
| 10 | M | India | Dominican Republic | 1 | 0.4% |
| 11 | M | India | Ecuador | 1 | 0.4% |
| 12 | M | USA | India | 46 | 20.3% |
| 13 | M | USA | Italy | 1 | 0.4% |
| 14 | F | USA | Japan | 4 | 1.8% |
| 15 | M | India | Kazakhstan | 1 | 0.4% |
| 16 | F | Thailand | Mexico | 2 | 0.9% |
| 17 | M | USA | Nigeria | 2 | 0.9% |
| 18 | M | USA | Pakistan | 1 | 0.4% |
| 19 | F | USA | Peru | 1 | 0.4% |
| 20 | M | USA | South Korea | 13 | 5.7% |
| 21 | M | USA | Taiwan | 5 | 2.2% |
| 22 | M | USA | Thailand | 2 | 0.9% |
| 23 | M | USA | USA | 128 | 56.4% |
| 24 | M | USA | | | |
| 25 | M | South Korea | Nationality | Count | Pct of total |
| 26 | F | China | China | 14 | 6.2% |
| 27 | F | China | India | 46 | 20.3% |
| 28 | M | China | Japan | 4 | 1.8% |
| 29 | M | USA | South Korea | 13 | 5.7% |
| 30 | M | South Korea | Taiwan | 5 | 2.2% |
| 31 | F | South Korea | USA | 128 | 56.4% |
| 32 | F | China | Other | 17 | 7.5% |
| 33 | M | Brazil | | | |
| 34 | M | USA | | | |
| 35 | M | Brazil | | | |
| 36 | F | USA | | | |
| 37 | M | USA | | | |
| 38 | F | USA | | | |
| 39 | M | India | | | |
| 40 | M | USA | | | |
| 41 | M | USA | | | |
| 42 | M | USA | | | |
| 43 | M | USA | | | |
| 44 | M | USA | | | |
| 45 | F | USA | | | |
| 46 | F | USA | | | |

| | | |
|----|---|-------------|
| 47 | M | USA |
| 48 | F | USA |
| 49 | F | USA |
| 50 | F | USA |
| 51 | M | USA |
| 52 | M | USA |
| 53 | F | USA |
| 54 | F | USA |
| 55 | F | USA |
| 56 | F | USA |
| 57 | M | USA |
| 58 | F | USA |
| 59 | M | USA |
| 60 | M | Italy |
| 61 | M | Austria |
| 62 | F | USA |
| 63 | F | India |
| 64 | M | USA |
| 65 | F | USA |
| 66 | M | India |
| 67 | F | China |
| 68 | F | India |
| 69 | M | USA |
| 70 | M | USA |
| 71 | M | USA |
| 72 | F | USA |
| 73 | M | USA |
| 74 | F | Mexico |
| 75 | F | USA |
| 76 | M | India |
| 77 | M | USA |
| 78 | M | China |
| 79 | M | Taiwan |
| 80 | F | USA |
| 81 | M | USA |
| 82 | M | Nigeria |
| 83 | M | USA |
| 84 | M | India |
| 85 | F | Croatia |
| 86 | M | India |
| 87 | F | USA |
| 88 | M | South Korea |
| 89 | M | USA |
| 90 | F | USA |
| 91 | M | Japan |
| 92 | F | USA |
| 93 | M | India |

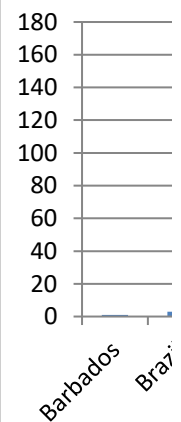
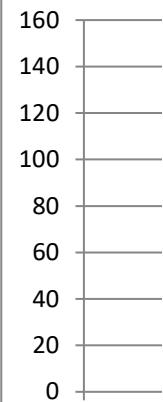
| | | |
|-----|---|-------------|
| 94 | M | India |
| 95 | M | South Korea |
| 96 | M | Nigeria |
| 97 | M | India |
| 98 | M | India |
| 99 | M | India |
| 100 | M | India |
| 101 | M | USA |
| 102 | M | USA |
| 103 | M | South Korea |
| 104 | M | South Korea |
| 105 | M | South Korea |
| 106 | M | South Korea |
| 107 | F | Peru |
| 108 | M | USA |
| 109 | F | USA |
| 110 | F | USA |
| 111 | F | USA |
| 112 | F | USA |
| 113 | F | India |
| 114 | M | India |
| 115 | F | India |
| 116 | M | USA |
| 117 | M | USA |
| 118 | M | USA |
| 119 | M | USA |
| 120 | M | USA |
| 121 | M | USA |
| 122 | M | USA |
| 123 | F | USA |
| 124 | F | USA |
| 125 | M | USA |
| 126 | M | India |
| 127 | M | Kazakhstan |
| 128 | M | India |
| 129 | M | USA |
| 130 | M | USA |
| 131 | M | USA |
| 132 | M | USA |
| 133 | M | USA |
| 134 | M | USA |
| 135 | F | Taiwan |
| 136 | F | India |
| 137 | M | USA |
| 138 | M | South Korea |
| 139 | M | India |
| 140 | M | USA |

| | | |
|-----|---|--------------------|
| 141 | M | USA |
| 142 | M | USA |
| 143 | M | India |
| 144 | M | USA |
| 145 | M | Dominican Republic |
| 146 | F | India |
| 147 | M | USA |
| 148 | F | India |
| 149 | M | Pakistan |
| 150 | M | USA |
| 151 | M | India |
| 152 | M | India |
| 153 | M | USA |
| 154 | M | India |
| 155 | M | India |
| 156 | M | USA |
| 157 | M | India |
| 158 | M | USA |
| 159 | M | USA |
| 160 | M | USA |
| 161 | M | USA |
| 162 | M | USA |
| 163 | M | Ecuador |
| 164 | F | Japan |
| 165 | F | USA |
| 166 | F | USA |
| 167 | M | USA |
| 168 | M | USA |
| 169 | M | South Korea |
| 170 | M | USA |
| 171 | M | Japan |
| 172 | M | India |
| 173 | M | USA |
| 174 | M | USA |
| 175 | M | USA |
| 176 | M | USA |
| 177 | M | USA |
| 178 | M | USA |
| 179 | M | India |
| 180 | F | USA |
| 181 | F | USA |
| 182 | M | India |
| 183 | M | South Korea |
| 184 | M | India |
| 185 | M | India |
| 186 | M | India |
| 187 | M | India |

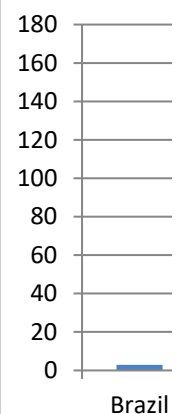
| | | |
|-----|---|-------------|
| 188 | M | USA |
| 189 | F | USA |
| 190 | M | South Korea |
| 191 | M | USA |
| 192 | M | India |
| 193 | M | Thailand |
| 194 | F | Taiwan |
| 195 | F | Taiwan |
| 196 | M | USA |
| 197 | F | India |
| 198 | M | USA |
| 199 | M | India |
| 200 | F | China |
| 201 | M | Mexico |
| 202 | M | USA |
| 203 | M | USA |
| 204 | M | USA |
| 205 | M | India |
| 206 | M | Canada |
| 207 | M | USA |
| 208 | M | USA |
| 209 | M | USA |
| 210 | M | India |
| 211 | M | USA |
| 212 | M | USA |
| 213 | F | USA |
| 214 | M | USA |
| 215 | M | India |
| 216 | M | China |
| 217 | M | USA |
| 218 | M | Taiwan |
| 219 | M | USA |
| 220 | M | China |
| 221 | M | China |
| 222 | M | China |
| 223 | F | China |
| 224 | M | China |
| 225 | M | China |
| 226 | F | USA |
| 227 | M | Japan |



| Student | Gender | Nationality | Gender | Count | Pct of total |
|---------|--------|-------------|--------------------|--------------|---------------------|
| 1 | M | USA | M | 150 | 66.4% |
| 2 | M | India | F | 76 | 33.6% |
| 3 | M | USA | | | |
| 4 | F | USA | Nationality | Count | Pct of total |
| 5 | M | USA | Barbados | 1 | 0.4% |
| 6 | F | USA | Brazil | 3 | 1.3% |
| 7 | F | USA | China | 10 | 4.4% |
| 8 | M | USA | Colombia | 1 | 0.4% |
| 9 | M | USA | India | 29 | 12.8% |
| 10 | M | USA | Japan | 3 | 1.3% |
| 11 | M | Brazil | Mexico | 2 | 0.9% |
| 12 | M | India | Peru | 2 | 0.9% |
| 13 | M | India | Philippines | 1 | 0.4% |
| 14 | F | USA | Puerto Rico | 1 | 0.4% |
| 15 | M | India | South Korea | 12 | 5.3% |
| 16 | M | USA | Taiwan | 5 | 2.2% |
| 17 | M | USA | Thailand | 1 | 0.4% |
| 18 | M | USA | USA | 155 | 68.6% |
| 19 | F | USA | | | |
| 20 | M | USA | Nationality | Count | Pct of total |
| 21 | M | USA | Brazil | 3 | 1.3% |
| 22 | F | USA | China | 10 | 4.4% |
| 23 | M | USA | India | 29 | 12.8% |
| 24 | M | USA | Japan | 3 | 1.3% |
| 25 | M | India | South Korea | 12 | 5.3% |
| 26 | M | USA | Taiwan | 5 | 2.2% |
| 27 | M | USA | USA | 155 | 68.6% |
| 28 | F | China | Other | 9 | 4.0% |
| 29 | M | USA | | | |
| 30 | M | USA | | | |
| 31 | M | China | | | |
| 32 | F | Taiwan | | | |
| 33 | M | USA | | | |
| 34 | M | South Korea | | | |
| 35 | F | USA | | | |
| 36 | M | South Korea | | | |
| 37 | F | USA | | | |
| 38 | M | USA | | | |
| 39 | M | USA | | | |
| 40 | M | USA | | | |
| 41 | M | USA | | | |
| 42 | F | India | | | |
| 43 | M | USA | | | |
| 44 | M | USA | | | |
| 45 | M | USA | | | |
| 46 | F | USA | | | |



Probably the two most notable differences are that (1) there is a higher percentage of females in 2009 than in 2008, and (2) there is a higher percentage of USA students in 2009 than in 2008 (and a corresponding decrease in the percentage of Asian students).

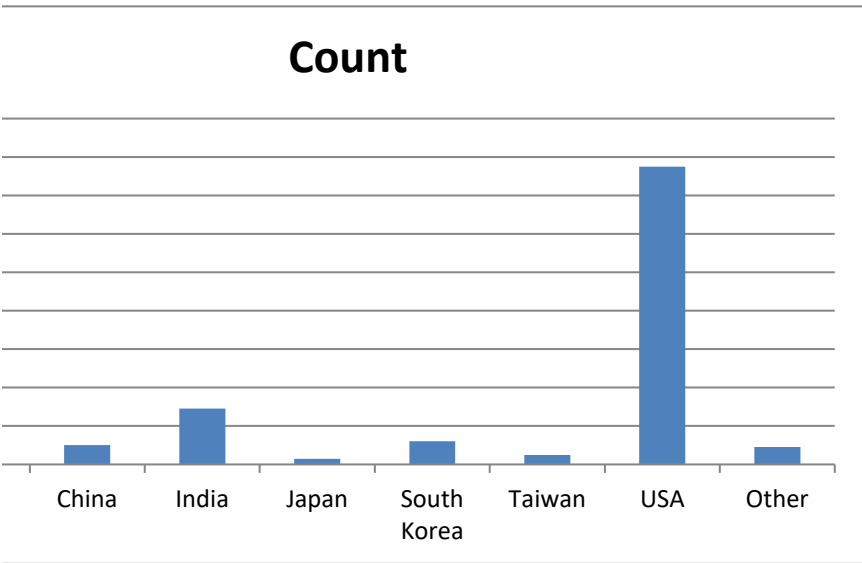
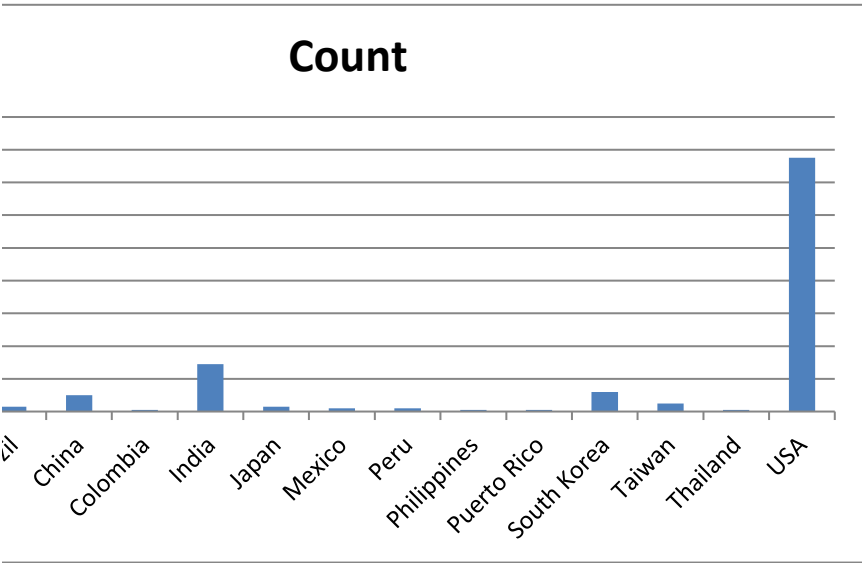
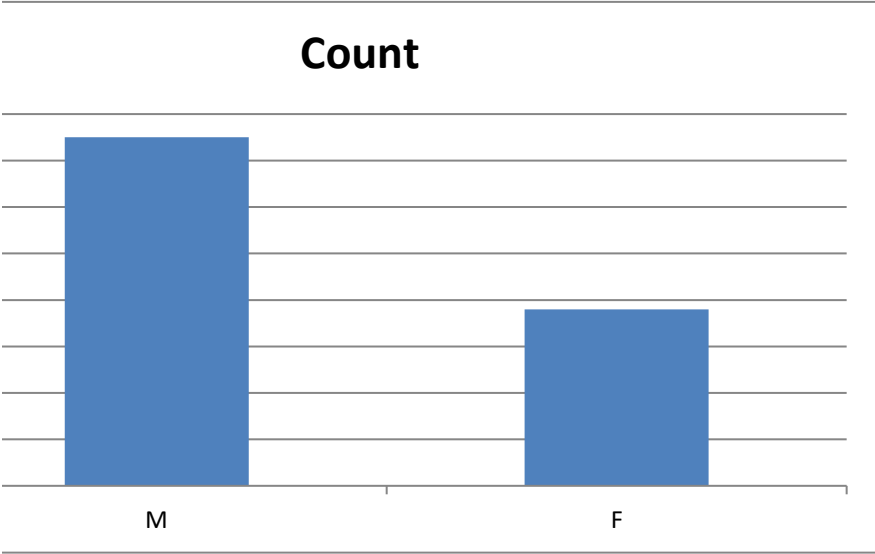


| | | |
|----|---|----------|
| 47 | M | India |
| 48 | M | India |
| 49 | F | USA |
| 50 | F | USA |
| 51 | F | USA |
| 52 | M | USA |
| 53 | M | Peru |
| 54 | F | USA |
| 55 | M | USA |
| 56 | M | USA |
| 57 | F | USA |
| 58 | M | USA |
| 59 | F | USA |
| 60 | M | USA |
| 61 | F | USA |
| 62 | M | USA |
| 63 | F | India |
| 64 | F | USA |
| 65 | M | USA |
| 66 | F | USA |
| 67 | M | USA |
| 68 | M | USA |
| 69 | M | China |
| 70 | M | USA |
| 71 | M | Brazil |
| 72 | F | Brazil |
| 73 | F | USA |
| 74 | M | USA |
| 75 | M | USA |
| 76 | M | USA |
| 77 | M | Japan |
| 78 | F | China |
| 79 | M | USA |
| 80 | M | Mexico |
| 81 | F | USA |
| 82 | M | USA |
| 83 | M | USA |
| 84 | M | USA |
| 85 | F | USA |
| 86 | F | Taiwan |
| 87 | F | Taiwan |
| 88 | M | USA |
| 89 | M | Barbados |
| 90 | M | USA |
| 91 | M | India |
| 92 | F | USA |
| 93 | M | USA |

| | | |
|-----|---|-------------|
| 94 | M | South Korea |
| 95 | M | USA |
| 96 | M | USA |
| 97 | M | USA |
| 98 | M | USA |
| 99 | F | USA |
| 100 | F | USA |
| 101 | M | India |
| 102 | M | India |
| 103 | F | USA |
| 104 | M | USA |
| 105 | M | India |
| 106 | M | South Korea |
| 107 | M | USA |
| 108 | M | USA |
| 109 | M | South Korea |
| 110 | M | USA |
| 111 | M | USA |
| 112 | F | India |
| 113 | M | USA |
| 114 | M | India |
| 115 | F | South Korea |
| 116 | M | South Korea |
| 117 | M | South Korea |
| 118 | M | South Korea |
| 119 | F | USA |
| 120 | M | China |
| 121 | F | USA |
| 122 | F | Taiwan |
| 123 | M | USA |
| 124 | F | USA |
| 125 | M | USA |
| 126 | M | USA |
| 127 | M | USA |
| 128 | F | China |
| 129 | M | USA |
| 130 | F | Puerto Rico |
| 131 | F | India |
| 132 | M | USA |
| 133 | M | USA |
| 134 | M | USA |
| 135 | M | USA |
| 136 | F | USA |
| 137 | M | USA |
| 138 | M | USA |
| 139 | F | USA |
| 140 | M | USA |

| | | |
|-----|---|-------------|
| 141 | F | India |
| 142 | F | India |
| 143 | F | USA |
| 144 | M | USA |
| 145 | M | Colombia |
| 146 | M | USA |
| 147 | F | Mexico |
| 148 | M | USA |
| 149 | M | South Korea |
| 150 | F | USA |
| 151 | F | USA |
| 152 | M | USA |
| 153 | F | USA |
| 154 | M | USA |
| 155 | M | USA |
| 156 | M | USA |
| 157 | F | Thailand |
| 158 | F | USA |
| 159 | F | USA |
| 160 | F | USA |
| 161 | M | USA |
| 162 | F | India |
| 163 | M | USA |
| 164 | F | India |
| 165 | M | India |
| 166 | F | USA |
| 167 | F | USA |
| 168 | M | India |
| 169 | M | USA |
| 170 | M | Peru |
| 171 | M | South Korea |
| 172 | M | USA |
| 173 | F | USA |
| 174 | M | Philippines |
| 175 | M | Japan |
| 176 | M | USA |
| 177 | M | USA |
| 178 | M | USA |
| 179 | M | China |
| 180 | M | China |
| 181 | M | USA |
| 182 | M | USA |
| 183 | M | India |
| 184 | M | India |
| 185 | F | USA |
| 186 | M | USA |
| 187 | M | USA |

| | | |
|-----|---|-------------|
| 188 | M | USA |
| 189 | M | USA |
| 190 | M | India |
| 191 | F | USA |
| 192 | M | USA |
| 193 | F | USA |
| 194 | M | USA |
| 195 | M | USA |
| 196 | M | USA |
| 197 | M | USA |
| 198 | F | USA |
| 199 | M | USA |
| 200 | F | South Korea |
| 201 | M | India |
| 202 | M | Japan |
| 203 | M | USA |
| 204 | M | USA |
| 205 | M | USA |
| 206 | M | USA |
| 207 | M | USA |
| 208 | F | Taiwan |
| 209 | M | India |
| 210 | F | USA |
| 211 | F | USA |
| 212 | F | USA |
| 213 | M | India |
| 214 | F | USA |
| 215 | M | India |
| 216 | F | USA |
| 217 | F | USA |
| 218 | M | USA |
| 219 | F | USA |
| 220 | F | USA |
| 221 | M | USA |
| 222 | F | China |
| 223 | M | USA |
| 224 | F | USA |
| 225 | M | China |
| 226 | M | USA |



The Numbers

I wrote some macros to manipulate the data into the form shown here.

| Index | Movie | Distributor |
|-------|--|---------------------|
| 1 | The Texas Chainsaw Massacre: The Beginning | New Line |
| 2 | Year of the Dog | Paramount Vantage |
| 3 | War | Lionsgate |
| 4 | Stomp the Yard | Sony Pictures |
| 5 | The Illusionist | Freestyle Releasing |
| 6 | Pirates of the Caribbean: At World's End | Buena Vista |
| 7 | Sicko | Weinstein Co. |
| 8 | Babel | Paramount Vantage |
| 9 | Ghost Rider | Sony Pictures |
| 10 | Saw III | Lionsgate |
| 11 | World Trade Center | Paramount Pictures |
| 12 | Beerfest | Universal |
| 13 | Ocean's Thirteen | Warner Bros. |
| 14 | Amazing Grace | Warner Bros. |
| 15 | Shrek the Third | Universal |
| 16 | The Holiday | Warner Bros. |
| 17 | Deck the Halls | Warner Bros. |
| 18 | The Namesake | Fox Searchlight |
| 19 | Déjà Vu | Buena Vista |
| 20 | Running With Scissors | Sony Pictures |
| 21 | Ratatouille | Buena Vista |
| 22 | The Hills Have Eyes II | Fox Searchlight |
| 23 | Fast Food Nation | Fox Searchlight |
| 24 | Nancy Drew | Warner Bros. |
| 25 | 28 Weeks Later | 20th Century Fox |
| 26 | The Condemned | Lionsgate |
| 27 | Employee of the Month | Lionsgate |
| 28 | Man of the Year | Universal |
| 29 | The Bourne Ultimatum | Universal |
| 30 | All the King's Men | Sony Pictures |
| 31 | Turistas | 20th Century Fox |
| 32 | I Now Pronounce You Chuck and Larry | Universal |
| 33 | Fantastic Four: Rise of the Silver Surfer | 20th Century Fox |
| 34 | The Nativity Story | New Line |
| 35 | Thank You For Smoking | Fox Searchlight |
| 36 | Casino Royale | MGM |
| 37 | Miami Vice | Universal |
| 38 | The Transformers | Paramount Pictures |
| 39 | Unaccompanied Minors | Warner Bros. |
| 40 | Hannibal Rising | Weinstein Co. |
| 41 | Pride | Lionsgate |
| 42 | The Ant Bully | Warner Bros. |
| 43 | Surf's Up | Sony Pictures |
| 44 | Material Girls | MGM |
| 45 | Daddy Day Camp | Sony Pictures |
| 46 | Pulse | Weinstein/Dimension |

I did the recoding manually, by sorting on Distributor, say, and finding values with count greater than 20.

See the tables of counts and charts to the right.

| | | |
|----|--|--------------------|
| 47 | Vacancy | Sony/Screen Gems |
| 48 | TMNT | Weinstein Co. |
| 49 | Invincible | Buena Vista |
| 50 | Flyboys | MGM |
| 51 | Mr. Brooks | MGM |
| 52 | Sunshine | Fox Searchlight |
| 53 | The Fountain | Warner Bros. |
| 54 | Clerks II | MGM |
| 55 | Pan's Labyrinth | PictureHouse |
| 56 | John Tucker Must Die | 20th Century Fox |
| 57 | Little Man | Sony Pictures |
| 58 | Hot Fuzz | Focus Features |
| 59 | Norbit | Paramount Pictures |
| 60 | Superbad | Sony Pictures |
| 61 | Spider-Man 3 | Sony Pictures |
| 62 | Next | Sony Pictures |
| 63 | Superman Returns | Warner Bros. |
| 64 | X-Men: The Last Stand | 20th Century Fox |
| 65 | The Queen | Miramax |
| 66 | The Descent | Lionsgate |
| 67 | Perfect Stranger | Sony Pictures |
| 68 | Freedom Writers | Paramount Pictures |
| 69 | The Ex | Weinstein Co. |
| 70 | Are We Done Yet? | Sony Pictures |
| 71 | Waitress | Fox Searchlight |
| 72 | Georgia Rule | Universal |
| 73 | Iraq in Fragments | Typecast Releasing |
| 74 | Lady in the Water | Warner Bros. |
| 75 | Once | Fox Searchlight |
| 76 | Disturbia | Paramount Pictures |
| 77 | Balls of Fury | Focus Features |
| 78 | Idiocracy | 20th Century Fox |
| 79 | Hot Rod | Paramount Pictures |
| 80 | Ice Age: The Meltdown | 20th Century Fox |
| 81 | The Covenant | Sony/Screen Gems |
| 82 | Barnyard: The Original Party Animals | Paramount Pictures |
| 83 | Day Watch | Fox Searchlight |
| 84 | How to Eat Fried Worms | New Line |
| 85 | Everyone's Hero | 20th Century Fox |
| 86 | The Marine | 20th Century Fox |
| 87 | School for Scoundrels | Weinstein Co. |
| 88 | Black Christmas | Miramax/Dimension |
| 89 | The Devil Wears Prada | 20th Century Fox |
| 90 | The Nanny Diaries | Weinstein Co. |
| 91 | Blood Diamond | Warner Bros. |
| 92 | Reign Over Me | Sony Pictures |
| 93 | The Black Dahlia | Universal |

| | | |
|-----|--|-------------------------|
| 94 | Reno 911!: Miami | 20th Century Fox |
| 95 | Live Free or Die Hard | 20th Century Fox |
| 96 | Trust the Man | Fox Searchlight |
| 97 | The Wicker Man | Warner Bros. |
| 98 | The Astronaut Farmer | Warner Bros. |
| 99 | Tenacious D in: The Pick of Destiny | New Line |
| 100 | Pirates of the Caribbean: Dead Man's Chest | Buena Vista |
| 101 | Smokin' Aces | Universal |
| 102 | License to Wed | Warner Bros. |
| 103 | Grindhouse | Weinstein/Dimension |
| 104 | Pathfinder | 20th Century Fox |
| 105 | The Simpsons Movie | 20th Century Fox |
| 106 | Operation Homecoming | The Documentary Group |
| 107 | The Omen | 20th Century Fox |
| 108 | Catch and Release | Sony Pictures |
| 109 | Away From Her | Lionsgate |
| 110 | Knocked Up | Universal |
| 111 | Jet Li's Fearless | Focus/Rogue Pictures |
| 112 | The Guardian | Buena Vista |
| 113 | Water | Fox Searchlight |
| 114 | Accepted | Universal |
| 115 | Music and Lyrics | Warner Bros. |
| 116 | You, Me and Dupree | Universal |
| 117 | Eragon | 20th Century Fox |
| 118 | Primeval | Buena Vista |
| 119 | Night at the Museum | 20th Century Fox |
| 120 | Evan Almighty | Universal |
| 121 | Black Snake Moan | Paramount Vantage |
| 122 | No Reservations | Warner Bros. |
| 123 | Meet the Robinsons | Buena Vista |
| 124 | A Good Year | 20th Century Fox |
| 125 | One Night with the King | Rocky Mountain Pictures |
| 126 | Hostel: Part II | Lionsgate |
| 127 | Stranger Than Fiction | Sony Pictures |
| 128 | We Are... Marshall | Warner Bros. |
| 129 | Rush Hour 3 | New Line |
| 130 | Flicka | 20th Century Fox |
| 131 | Dreamgirls | Paramount Pictures |
| 132 | Children of Men | Universal |
| 133 | Bobby | Weinstein Co. |
| 134 | Underdog | Buena Vista |
| 135 | Flushed Away | Dreamworks SKG |
| 136 | Jackass: Number Two | Paramount Pictures |
| 137 | Confetti | Fox Searchlight |
| 138 | The Invisible | Buena Vista |
| 139 | Borat | 20th Century Fox |
| 140 | Wild Hogs | Buena Vista |

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| 141 | The Grudge 2 | Sony Pictures |
| 142 | Evening | Focus Features |
| 143 | The Invasion | Warner Bros. |
| 144 | The Good Shepherd | Universal |
| 145 | La Vie en Rose | PictureHouse |
| 146 | Fracture | New Line |
| 147 | Monster House | Sony Pictures |
| 148 | Zoom | Sony Pictures |
| 149 | Lucky You | Warner Bros. |
| 150 | 1408 | Miramax/Dimension |
| 151 | Bridge to Terabithia | Buena Vista |
| 152 | Apocalypto | Buena Vista |
| 153 | Bratz | Lionsgate |
| 154 | My Super Ex-Girlfriend | 20th Century Fox |
| 155 | Bug | Lionsgate |
| 156 | The Prestige | Buena Vista |
| 157 | Stardust | Paramount Pictures |
| 158 | Happy Feet | Warner Bros. |
| 159 | Alpha Dog | Universal |
| 160 | Epic Movie | 20th Century Fox |
| 161 | Blades of Glory | Paramount Pictures |
| 162 | Dead Silence | Universal |
| 163 | Delta Farce | Lionsgate |
| 164 | The Messengers | Sony Pictures |
| 165 | I Know Who Killed Me | Sony/TriStar |
| 166 | Who's Your Caddy? | MGM |
| 167 | Notes on a Scandal | Fox Searchlight |
| 168 | I Think I Love My Wife | Fox Searchlight |
| 169 | Charlotte's Web | Paramount Pictures |
| 170 | The Last Kiss | Paramount Pictures |
| 171 | Because I Said So | Universal |
| 172 | Unconscious | Regent Releasing |
| 173 | Shooter | Paramount Pictures |
| 174 | Gridiron Gang | Sony Pictures |
| 175 | Hairspray | New Line |
| 176 | Zodiac | Paramount Pictures |
| 177 | In the Land of Women | Warner Independent Pictures |
| 178 | Premonition | Sony Pictures |
| 179 | Becoming Jane | Miramax |
| 180 | The Protector | Weinstein Co. |
| 181 | Crank | Lionsgate |
| 182 | The Hitcher | Focus Features |
| 183 | The History Boys | Fox Searchlight |
| 184 | Gracie | PictureHouse |
| 185 | Firehouse Dog | 20th Century Fox |
| 186 | The Santa Clause 3: The Escape Clause | Buena Vista |
| 187 | Step Up | Buena Vista |

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| 188 | Open Season | Sony Pictures |
| 189 | The Last Mimzy | New Line |
| 190 | The Reaping | Warner Bros. |
| 191 | Talladega Nights: The Ballad of Ricky Bobby | Sony Pictures |
| 192 | Hollywoodland | Focus Features |
| 193 | Rocky Balboa | MGM |
| 194 | A Mighty Heart | Paramount Vantage |
| 195 | Mr. Bean's Holiday | Universal |
| 196 | Joshua | Fox Searchlight |
| 197 | Flags of Our Fathers | Dreamworks SKG |
| 198 | Little Miss Sunshine | Fox Searchlight |
| 199 | Garfield's A Tail of Two Kitties | 20th Century Fox |
| 200 | Letters from Iwo Jima | Dreamworks SKG |
| 201 | Daddy's Little Girls | Lionsgate |
| 202 | Harry Potter and the Order of the Phoenix | Warner Bros. |
| 203 | Marie-Antoinette | Sony Pictures |
| 204 | The Departed | Warner Bros. |
| 205 | Snakes on a Plane | New Line |
| 206 | Breach | Universal |
| 207 | The Last King of Scotland | Fox Searchlight |
| 208 | 300 | Warner Bros. |
| 209 | The Pursuit of Happyness | Sony Pictures |
| 210 | The Number 23 | New Line |
| 211 | Arctic Tale | Paramount Vantage |

| Recoded Distributor | Genre | Recoded Genre | 7-day Gross | 14-day Gross |
|---------------------|-------------------|-------------------|---------------|---------------|
| New Line | Horror | Horror | \$22,707,121 | \$32,109,139 |
| Other | Drama | Drama | \$141,803 | \$318,598 |
| Lionsgate | Action | Action | \$12,839,402 | |
| Sony Pictures | Drama | Drama | \$28,263,594 | \$42,853,277 |
| Other | Drama | Drama | | |
| Buena Vista | Adventure | Adventure | \$173,339,068 | \$232,297,818 |
| Other | Documentary | Other | | |
| Other | Drama | Drama | | |
| Sony Pictures | Action | Action | \$58,960,097 | \$83,257,376 |
| Lionsgate | Horror | Horror | \$44,576,835 | \$63,279,443 |
| Sony Pictures | Drama | Drama | | |
| Comedy | Comedy | Comedy | \$10,151,951 | \$15,786,241 |
| Adventure | Adventure | Adventure | \$50,705,336 | \$79,668,309 |
| Drama | Drama | Drama | \$5,200,372 | |
| Adventure | Adventure | Adventure | \$150,338,458 | \$227,906,792 |
| Romantic Comedy | Romantic Comedy | Other | \$17,110,339 | \$30,092,962 |
| Comedy | Comedy | Comedy | | |
| Drama | Drama | Drama | \$361,518 | \$1,333,480 |
| Thriller/Suspense | Thriller/Suspense | Thriller/Suspense | | |
| Comedy | Comedy | Comedy | | \$3,660,628 |
| Comedy | Comedy | Comedy | \$80,517,305 | \$124,984,886 |
| Horror | Horror | Horror | \$11,883,609 | \$17,579,582 |
| Drama | Drama | Drama | \$580,363 | \$853,713 |
| Thriller/Suspense | Thriller/Suspense | Thriller/Suspense | \$11,687,594 | \$19,334,739 |
| Horror | Horror | Horror | \$13,460,756 | \$21,121,250 |
| Action | Action | Action | \$4,947,445 | \$6,769,217 |
| Comedy | Comedy | Comedy | \$14,310,416 | \$21,038,727 |
| Comedy | Comedy | Comedy | \$15,480,880 | \$24,146,540 |
| Action | Action | Action | \$98,673,300 | \$144,820,320 |
| Drama | Drama | Drama | \$4,686,955 | |
| Thriller/Suspense | Thriller/Suspense | Thriller/Suspense | \$4,540,030 | \$6,437,413 |
| Comedy | Comedy | Comedy | \$52,547,115 | \$81,169,105 |
| Action | Action | Action | \$77,453,559 | \$105,800,808 |
| Drama | Drama | Drama | \$10,239,000 | \$18,373,000 |
| Black Comedy | Black Comedy | Other | | |
| Action | Action | Action | \$63,267,784 | \$100,763,154 |
| Action | Action | Action | \$36,056,785 | \$50,564,950 |
| Action | Action | Action | | \$228,950,080 |
| Comedy | Comedy | Comedy | \$6,547,915 | |
| Thriller/Suspense | Thriller/Suspense | Thriller/Suspense | \$16,662,340 | \$24,157,310 |
| Drama | Drama | Drama | \$4,295,317 | |
| Adventure | Adventure | Adventure | \$14,260,551 | \$20,610,757 |
| Adventure | Adventure | Adventure | \$25,370,697 | \$40,612,980 |
| Comedy | Comedy | Comedy | \$6,190,228 | |
| Comedy | Comedy | Comedy | | |
| Horror | Horror | Horror | \$11,176,099 | \$16,228,598 |

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|--------------------|-------------------|-------------------|---------------|---------------|
| Other | Thriller/Suspense | Thriller/Suspense | \$9,667,558 | \$14,985,909 |
| Other | Action | Action | \$29,268,284 | \$41,781,886 |
| Buena Vista | Drama | Drama | \$22,640,843 | \$39,870,508 |
| Other | Drama | Drama | \$7,595,128 | \$10,794,574 |
| Other | Thriller/Suspense | Thriller/Suspense | \$13,682,301 | \$20,621,219 |
| Fox Searchlight | Thriller/Suspense | Thriller/Suspense | \$362,501 | \$2,235,239 |
| Warner Bros. | Drama | Drama | | |
| Other | Comedy | Comedy | | \$20,987,916 |
| Other | Horror | Horror | | |
| 20th Century Fox | Comedy | Comedy | \$22,572,760 | \$32,751,462 |
| Sony Pictures | Comedy | Comedy | | |
| Other | Comedy | Comedy | \$7,724,188 | \$14,090,753 |
| Paramount Pictures | Comedy | Comedy | \$42,082,178 | \$64,938,373 |
| Sony Pictures | Comedy | Comedy | \$50,572,274 | \$76,834,795 |
| Sony Pictures | Adventure | Adventure | \$182,070,572 | \$253,357,629 |
| Sony Pictures | Action | Action | \$9,066,641 | \$13,000,019 |
| Warner Bros. | Adventure | Adventure | | |
| 20th Century Fox | Action | Action | | |
| Other | Drama | Drama | | |
| Lionsgate | Thriller/Suspense | Thriller/Suspense | \$12,927,112 | \$19,882,850 |
| Sony Pictures | Thriller/Suspense | Thriller/Suspense | \$13,968,118 | \$19,418,295 |
| Paramount Pictures | Drama | Drama | \$11,323,827 | \$21,317,621 |
| Other | Romantic Comedy | Other | \$1,944,838 | |
| Sony Pictures | Comedy | Comedy | | |
| Fox Searchlight | Drama | Drama | | |
| Universal | Drama | Drama | \$9,121,575 | \$14,424,970 |
| Other | Documentary | Other | | |
| Warner Bros. | Drama | Drama | | \$35,922,083 |
| Fox Searchlight | Drama | Drama | | |
| Paramount Pictures | Thriller/Suspense | Thriller/Suspense | \$27,194,364 | \$43,085,763 |
| Other | Comedy | Comedy | | |
| 20th Century Fox | Comedy | Comedy | \$234,596 | \$351,327 |
| Paramount Pictures | Comedy | Comedy | \$8,792,476 | \$12,534,240 |
| 20th Century Fox | Adventure | Adventure | | |
| Other | Thriller/Suspense | Thriller/Suspense | \$11,013,531 | \$17,004,815 |
| Paramount Pictures | Comedy | Comedy | \$24,016,098 | \$38,506,651 |
| Fox Searchlight | Action | Action | \$68,234 | \$166,581 |
| New Line | Drama | Drama | \$5,571,313 | |
| 20th Century Fox | Adventure | Adventure | \$6,844,371 | \$12,125,203 |
| 20th Century Fox | Action | Action | \$8,822,674 | \$13,555,127 |
| Other | Comedy | Comedy | \$10,554,778 | \$15,065,677 |
| Other | Horror | Horror | | |
| 20th Century Fox | Comedy | Comedy | | |
| Other | Comedy | Comedy | \$10,151,376 | |
| Warner Bros. | Action | Action | \$12,119,786 | \$22,002,750 |
| Sony Pictures | Drama | Drama | \$9,630,847 | \$14,896,332 |
| Universal | Thriller/Suspense | Thriller/Suspense | \$12,820,690 | \$18,613,540 |

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|--------------------|-------------------|-------------------|---------------|---------------|
| 20th Century Fox | Comedy | Comedy | \$12,662,896 | \$17,729,833 |
| 20th Century Fox | Action | Action | | \$88,674,537 |
| Fox Searchlight | Comedy | Comedy | \$255,827 | \$655,122 |
| Warner Bros. | Thriller/Suspense | Thriller/Suspense | \$13,371,125 | \$18,628,666 |
| Warner Bros. | Drama | Drama | \$5,580,399 | \$8,338,517 |
| New Line | Comedy | Comedy | | |
| Buena Vista | Adventure | Adventure | | |
| Universal | Comedy | Comedy | \$18,630,955 | \$27,061,120 |
| Warner Bros. | Comedy | Comedy | | \$31,442,050 |
| Other | Horror | Horror | \$15,460,828 | \$21,320,000 |
| 20th Century Fox | Adventure | Adventure | \$6,360,568 | \$8,895,535 |
| 20th Century Fox | Comedy | Comedy | \$102,949,705 | \$141,112,342 |
| Other | Documentary | Other | \$6,795 | |
| 20th Century Fox | Horror | Horror | | |
| Sony Pictures | Romantic Comedy | Other | \$9,311,010 | \$12,646,624 |
| Lionsgate | Drama | Drama | | |
| Universal | Romantic Comedy | Other | \$46,223,940 | \$75,946,815 |
| Other | Drama | Drama | \$13,083,004 | \$19,461,440 |
| Buena Vista | Action | Action | \$22,751,717 | \$35,265,924 |
| Fox Searchlight | Drama | Drama | | |
| Universal | Comedy | Comedy | \$14,641,880 | \$23,510,200 |
| Warner Bros. | Romantic Comedy | Other | | |
| Universal | Comedy | Comedy | | |
| 20th Century Fox | Adventure | Adventure | \$30,495,702 | \$48,213,849 |
| Buena Vista | Adventure | Adventure | \$7,716,473 | |
| 20th Century Fox | Comedy | Comedy | \$79,055,249 | \$140,096,754 |
| Universal | Comedy | Comedy | \$45,535,600 | \$69,987,650 |
| Other | Drama | Drama | \$5,410,053 | \$8,079,470 |
| Warner Bros. | Romantic Comedy | Other | \$17,586,828 | \$28,169,989 |
| Buena Vista | Adventure | Adventure | \$35,231,834 | \$59,900,752 |
| 20th Century Fox | Drama | Drama | \$4,799,687 | \$6,851,054 |
| Other | Drama | Drama | \$5,307,651 | |
| Lionsgate | Horror | Horror | \$11,191,000 | \$16,040,871 |
| Sony Pictures | Comedy | Comedy | \$16,300,147 | \$26,778,068 |
| Warner Bros. | Drama | Drama | \$17,038,381 | \$30,289,979 |
| New Line | Action | Action | \$66,323,168 | \$96,763,003 |
| 20th Century Fox | Drama | Drama | \$9,163,221 | \$14,900,036 |
| Paramount Pictures | Musical | Other | | \$22,964,345 |
| Universal | Adventure | Adventure | | |
| Other | Drama | Drama | \$1,242,622 | \$7,204,245 |
| Buena Vista | Adventure | Adventure | \$18,290,912 | \$28,078,697 |
| Other | Comedy | Comedy | \$23,220,769 | \$41,991,571 |
| Paramount Pictures | Comedy | Comedy | \$37,465,379 | \$56,293,371 |
| Fox Searchlight | Romantic Comedy | Other | \$29,623 | \$190,312 |
| Buena Vista | Thriller/Suspense | Thriller/Suspense | \$9,221,338 | \$13,343,836 |
| 20th Century Fox | Comedy | Comedy | \$38,841,865 | \$76,154,492 |
| Buena Vista | Comedy | Comedy | \$49,415,325 | \$85,167,997 |

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|--------------------|-------------------|-------------------|--------------|---------------|
| Sony Pictures | Horror | Horror | \$23,680,202 | \$32,715,981 |
| Other | Drama | Drama | | \$9,668,000 |
| Warner Bros. | Thriller/Suspense | Thriller/Suspense | \$8,374,693 | \$12,611,955 |
| Universal | Drama | Drama | \$24,065,985 | \$41,897,680 |
| Other | Drama | Drama | | \$3,144,035 |
| New Line | Thriller/Suspense | Thriller/Suspense | \$14,260,545 | \$23,032,218 |
| Sony Pictures | Adventure | Adventure | | \$50,951,765 |
| Sony Pictures | Adventure | Adventure | \$6,607,544 | |
| Warner Bros. | Drama | Drama | \$3,622,974 | \$5,329,749 |
| Other | Horror | Horror | \$29,779,254 | \$46,649,346 |
| Buena Vista | Drama | Drama | \$32,648,034 | \$49,302,632 |
| Buena Vista | Adventure | Adventure | \$20,201,406 | \$31,724,156 |
| Lionsgate | Comedy | Comedy | \$6,146,369 | |
| 20th Century Fox | Comedy | Comedy | | \$19,118,663 |
| Lionsgate | Drama | Drama | \$4,871,655 | \$6,740,839 |
| Buena Vista | Thriller/Suspense | Thriller/Suspense | \$19,207,527 | \$31,630,273 |
| Paramount Pictures | Adventure | Adventure | \$13,842,551 | \$22,501,872 |
| Warner Bros. | Musical | Other | \$62,178,720 | \$103,955,600 |
| Universal | Drama | Drama | \$8,796,815 | |
| 20th Century Fox | Comedy | Comedy | \$21,143,563 | \$31,024,169 |
| Paramount Pictures | Comedy | Comedy | \$45,382,907 | \$76,130,018 |
| Universal | Horror | Horror | \$9,775,725 | \$14,145,450 |
| Lionsgate | Comedy | Comedy | \$4,285,912 | \$6,692,207 |
| Sony Pictures | Horror | Horror | \$17,524,018 | \$26,708,505 |
| Other | Thriller/Suspense | Thriller/Suspense | \$5,066,322 | |
| Other | Comedy | Comedy | \$3,711,337 | |
| Fox Searchlight | Drama | Drama | | |
| Fox Searchlight | Comedy | Comedy | \$7,279,181 | \$10,899,186 |
| Paramount Pictures | Drama | Drama | \$18,809,466 | \$40,857,817 |
| Paramount Pictures | Romantic Comedy | Other | \$5,936,292 | \$9,188,774 |
| Universal | Comedy | Comedy | \$16,584,590 | \$28,257,665 |
| Other | Comedy | Comedy | | |
| Paramount Pictures | Thriller/Suspense | Thriller/Suspense | \$19,211,919 | \$30,855,582 |
| Sony Pictures | Drama | Drama | \$17,501,040 | \$28,676,742 |
| New Line | Musical | Other | \$43,858,000 | \$69,629,420 |
| Paramount Pictures | Thriller/Suspense | Thriller/Suspense | \$16,954,103 | \$25,849,997 |
| Other | Comedy | Comedy | \$5,908,658 | \$9,308,837 |
| Sony Pictures | Thriller/Suspense | Thriller/Suspense | \$22,090,745 | \$34,242,317 |
| Other | Drama | Drama | | \$6,148,661 |
| Other | Action | Action | \$6,583,847 | \$9,940,816 |
| Lionsgate | Action | Action | \$15,058,504 | \$21,713,622 |
| Other | Thriller/Suspense | Thriller/Suspense | \$9,800,045 | |
| Fox Searchlight | Comedy | Comedy | | |
| Other | Drama | Drama | \$1,939,458 | |
| 20th Century Fox | Comedy | Comedy | | |
| Buena Vista | Comedy | Comedy | \$24,159,405 | \$43,401,458 |
| Buena Vista | Drama | Drama | \$29,580,830 | \$44,232,438 |

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|------------------|-------------------|-------------------|--------------|---------------|
| Sony Pictures | Adventure | Adventure | \$28,128,740 | \$48,154,270 |
| New Line | Adventure | Adventure | \$12,192,019 | \$17,318,613 |
| Warner Bros. | Horror | Horror | | |
| Sony Pictures | Comedy | Comedy | \$68,216,958 | \$100,585,876 |
| Other | Drama | Drama | \$7,799,599 | \$11,434,376 |
| Other | Drama | Drama | | |
| Other | Drama | Drama | \$5,418,140 | \$7,757,609 |
| Universal | Comedy | Comedy | \$13,000,430 | |
| Fox Searchlight | Thriller/Suspense | Thriller/Suspense | \$74,590 | \$400,745 |
| Other | Drama | Drama | \$13,576,213 | \$22,131,112 |
| Fox Searchlight | Comedy | Comedy | | |
| 20th Century Fox | Comedy | Comedy | | |
| Other | Drama | Drama | | |
| Lionsgate | Romantic Comedy | Other | | |
| Warner Bros. | Adventure | Adventure | | \$217,083,411 |
| Sony Pictures | Drama | Drama | \$6,906,276 | \$10,733,964 |
| Warner Bros. | Drama | Drama | \$37,950,891 | \$63,472,929 |
| New Line | Thriller/Suspense | Thriller/Suspense | \$20,152,024 | \$28,601,000 |
| Universal | Thriller/Suspense | Thriller/Suspense | \$14,309,725 | \$21,938,345 |
| Fox Searchlight | Drama | Drama | | |
| Warner Bros. | Action | Action | \$96,288,328 | \$141,843,655 |
| Sony Pictures | Drama | Drama | \$38,286,895 | \$79,049,229 |
| New Line | Thriller/Suspense | Thriller/Suspense | \$17,633,643 | \$26,321,000 |
| Other | Documentary | Other | | |

| Total US Gross | International Gross | US DVD Sales | Budget |
|-----------------------|----------------------------|---------------------|---------------|
| \$39,517,763 | \$11,000,000 | \$15,909,367 | \$16,000,000 |
| \$1,540,141 | | | |
| \$22,466,994 | \$18,200,000 | \$27,040,983 | \$25,000,000 |
| \$61,356,221 | \$15,000,000 | \$33,166,898 | \$14,000,000 |
| \$39,868,642 | \$44,407,533 | \$38,189,217 | \$16,500,000 |
| \$309,420,425 | \$651,576,067 | \$295,701,718 | \$300,000,000 |
| \$24,538,513 | \$9,000,000 | \$17,375,592 | \$9,000,000 |
| \$34,302,837 | \$101,000,000 | \$31,456,221 | \$20,000,000 |
| \$115,802,596 | \$121,900,000 | \$103,699,106 | \$120,000,000 |
| \$80,238,724 | \$83,638,091 | \$47,124,617 | \$10,000,000 |
| \$70,278,893 | \$93,000,000 | \$36,856,697 | \$65,000,000 |
| \$19,185,184 | \$974,132 | \$28,372,842 | |
| \$117,144,465 | \$194,600,000 | \$47,716,836 | \$85,000,000 |
| \$21,214,987 | \$6,771,432 | \$25,275,167 | |
| \$322,719,944 | \$476,238,218 | \$174,342,569 | \$160,000,000 |
| \$63,280,000 | \$141,910,324 | \$71,202,459 | \$85,000,000 |
| \$35,093,569 | \$12,137,501 | \$28,291,848 | |
| \$13,610,521 | \$6,569,588 | \$9,345,626 | |
| \$64,038,616 | \$117,000,000 | \$40,473,916 | \$80,000,000 |
| \$6,775,659 | \$437,970 | \$1,877,732 | \$12,000,000 |
| \$206,445,654 | \$418,000,000 | \$189,036,784 | \$150,000,000 |
| \$20,804,166 | \$16,662,372 | \$30,466,195 | \$15,000,000 |
| \$1,005,539 | | | |
| \$25,584,685 | \$5,000,000 | \$10,392,745 | |
| \$28,638,916 | \$35,599,524 | \$24,333,111 | |
| \$7,371,706 | | | |
| \$28,444,855 | \$9,672,863 | \$21,061,839 | \$10,000,000 |
| \$37,442,180 | | | |
| \$227,471,070 | \$214,690,492 | \$123,288,965 | \$130,000,000 |
| \$7,221,458 | \$2,300,000 | | \$55,000,000 |
| \$7,027,762 | \$7,293,308 | \$3,507,046 | \$10,000,000 |
| \$119,725,280 | \$65,983,182 | \$69,258,990 | \$85,000,000 |
| \$131,921,738 | \$156,293,581 | \$62,251,422 | \$120,000,000 |
| \$37,629,831 | \$8,802,433 | \$26,111,634 | \$35,000,000 |
| \$24,793,509 | \$14,438,702 | \$16,644,189 | \$7,500,000 |
| \$167,365,000 | \$429,000,000 | \$79,665,820 | \$102,000,000 |
| \$63,478,838 | \$100,339,718 | \$37,640,111 | \$135,000,000 |
| \$319,246,193 | \$389,026,399 | \$290,541,120 | \$151,000,000 |
| \$16,655,224 | \$5,293,990 | \$7,035,302 | \$25,000,000 |
| \$27,669,725 | \$52,913,586 | \$23,317,001 | \$50,000,000 |
| \$7,057,600 | | | |
| \$28,142,535 | \$27,038,594 | \$28,487,251 | \$45,000,000 |
| \$58,867,694 | \$86,528,051 | \$46,067,803 | \$100,000,000 |
| \$11,449,638 | \$1,000,000 | \$12,117,535 | |
| \$13,235,267 | \$4,962,131 | \$5,394,066 | \$76,000,000 |
| \$20,264,436 | \$9,507,049 | | \$7,500,000 |

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| \$19,063,007 | \$5,300,000 | \$15,476,934 | |
| \$54,149,098 | \$40,860,790 | \$30,361,634 | \$35,000,000 |
| \$57,806,952 | \$673,876 | \$48,056,452 | |
| \$13,090,630 | \$1,725,749 | \$23,600,109 | \$60,000,000 |
| \$28,476,219 | \$17,512,793 | \$29,822,828 | |
| \$3,688,560 | \$28,342,050 | \$6,319,960 | \$40,000,000 |
| \$10,144,010 | \$5,317,628 | \$8,742,316 | \$35,000,000 |
| \$24,148,068 | \$1,746,405 | \$26,390,836 | \$5,000,000 |
| \$37,634,615 | \$45,600,000 | \$40,752,599 | \$16,000,000 |
| \$41,011,711 | \$27,812,815 | \$32,656,099 | |
| \$58,636,047 | \$43,000,000 | \$32,683,684 | \$64,000,000 |
| \$23,618,786 | \$55,578,707 | \$33,365,115 | \$16,000,000 |
| \$95,673,607 | \$63,300,000 | \$44,106,290 | |
| \$121,463,226 | \$48,400,000 | \$134,374,749 | \$17,500,000 |
| \$336,530,303 | \$554,341,323 | \$123,997,036 | \$258,000,000 |
| \$18,211,013 | \$55,380,487 | \$18,978,879 | |
| \$200,120,000 | \$191,000,000 | \$81,570,819 | \$232,000,000 |
| \$234,362,462 | \$224,997,093 | \$103,539,395 | \$150,000,000 |
| \$56,441,711 | \$66,398,892 | \$29,155,509 | \$15,000,000 |
| \$26,024,456 | \$31,005,153 | \$22,436,857 | \$7,000,000 |
| \$23,760,822 | \$38,765,566 | \$23,711,660 | |
| \$36,605,602 | \$6,485,139 | \$20,489,423 | \$21,000,000 |
| \$3,091,922 | \$646,700 | \$1,827,435 | |
| \$49,662,533 | \$8,725,535 | \$22,928,049 | |
| \$19,097,550 | \$3,104,630 | \$23,084,465 | \$1,500,000 |
| \$18,882,880 | \$1,936,721 | \$19,347,243 | \$20,000,000 |
| \$204,462 | | | |
| \$42,285,169 | \$30,500,000 | \$12,428,204 | \$75,000,000 |
| \$9,445,857 | \$9,551,317 | | \$150,000 |
| \$80,209,692 | \$37,363,351 | \$34,408,161 | \$20,000,000 |
| \$32,886,940 | \$7,991,682 | \$19,013,476 | |
| \$444,093 | \$41,106 | | |
| \$13,938,332 | \$396,069 | \$23,972,256 | \$25,000,000 |
| \$195,330,621 | \$456,568,661 | \$131,324,982 | \$75,000,000 |
| \$23,364,784 | \$14,800,000 | \$26,301,459 | \$20,000,000 |
| \$72,779,000 | \$43,839,084 | \$64,992,667 | \$51,000,000 |
| \$459,095 | \$38,411,815 | \$4,060,608 | |
| \$13,040,527 | \$55,787 | \$16,841,759 | |
| \$14,523,101 | \$1,596,538 | \$5,943,446 | |
| \$18,844,784 | \$3,320,824 | \$26,752,947 | \$15,000,000 |
| \$17,807,569 | | | \$20,000,000 |
| \$16,235,738 | | | \$9,000,000 |
| \$124,740,460 | \$201,810,634 | \$95,831,660 | \$35,000,000 |
| \$25,926,673 | \$20,064,522 | \$37,541,232 | |
| \$57,377,916 | \$114,000,000 | \$62,525,527 | \$100,000,000 |
| \$19,661,987 | \$420,000 | \$15,941,535 | \$20,000,000 |
| \$22,672,813 | \$24,000,000 | \$12,345,224 | \$60,000,000 |

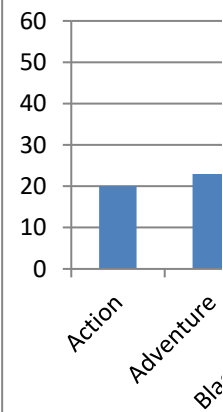
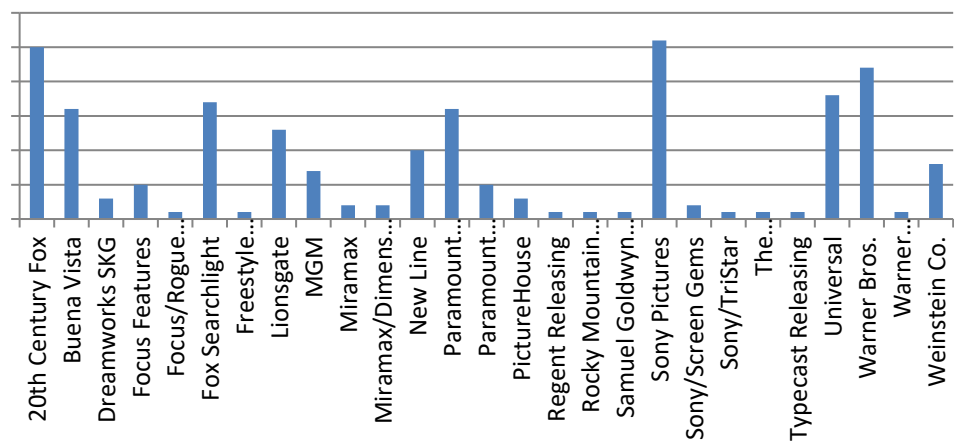
| | | | |
|---------------|---------------|---------------|---------------|
| \$20,342,161 | | | |
| \$134,529,403 | \$249,002,061 | \$100,735,780 | \$110,000,000 |
| \$1,530,535 | \$1,017,843 | | \$9,000,000 |
| \$24,413,467 | \$13,308,360 | | |
| \$11,003,643 | | | \$13,000,000 |
| \$8,334,575 | \$5,100,000 | \$6,035,460 | |
| \$423,315,812 | \$642,344,000 | \$320,671,450 | \$225,000,000 |
| \$35,662,731 | \$20,384,530 | \$35,769,990 | \$17,000,000 |
| \$43,792,641 | \$27,000,000 | \$22,727,928 | \$35,000,000 |
| \$25,031,037 | \$25,156,752 | \$31,032,170 | \$53,000,000 |
| \$10,232,081 | \$20,590,780 | \$27,357,887 | |
| \$183,135,014 | \$343,936,008 | \$96,337,909 | \$72,500,000 |
| \$6,795 | | | |
| \$54,607,383 | \$65,000,000 | \$10,459,743 | \$25,000,000 |
| \$15,432,542 | | | |
| \$4,548,331 | | | |
| \$148,761,765 | \$70,232,344 | \$117,411,877 | \$27,500,000 |
| \$24,633,730 | \$42,000,000 | \$30,497,752 | |
| \$55,011,732 | \$32,000,000 | \$53,922,172 | |
| \$5,529,144 | \$2,590,061 | | |
| \$36,580,083 | \$1,734,720 | \$37,827,956 | |
| \$50,572,589 | \$94,983,557 | \$21,129,239 | \$40,000,000 |
| \$75,802,010 | \$54,600,000 | \$41,628,625 | \$54,000,000 |
| \$75,030,163 | \$174,457,952 | \$87,654,390 | \$100,000,000 |
| \$10,597,734 | \$1,000,000 | \$4,982,989 | |
| \$250,863,268 | \$323,617,573 | \$153,286,880 | \$110,000,000 |
| \$100,289,690 | \$72,929,590 | \$37,997,932 | \$175,000,000 |
| \$9,396,870 | | | \$15,000,000 |
| \$43,107,979 | \$49,000,000 | \$26,948,545 | \$28,000,000 |
| \$97,822,171 | \$71,510,807 | \$78,345,374 | |
| \$7,459,300 | \$34,604,805 | \$7,342,760 | \$35,000,000 |
| \$13,395,961 | | | \$20,000,000 |
| \$17,544,812 | \$16,061,597 | \$16,167,194 | \$7,500,000 |
| \$40,435,190 | \$4,800,000 | \$30,880,666 | \$30,000,000 |
| \$43,545,364 | | | |
| \$140,125,968 | \$112,900,000 | \$40,775,094 | \$180,000,000 |
| \$21,000,147 | \$893,444 | \$49,920,014 | \$15,000,000 |
| \$103,365,956 | \$51,600,000 | \$53,661,766 | \$75,000,000 |
| \$35,552,383 | \$33,897,819 | \$25,338,142 | \$76,000,000 |
| \$11,205,901 | \$8,667,942 | \$12,345,494 | |
| \$43,760,605 | \$21,540,742 | \$38,478,972 | |
| \$64,665,672 | \$113,000,000 | \$70,937,146 | \$149,000,000 |
| \$72,778,712 | \$10,800,000 | \$49,039,094 | \$11,000,000 |
| \$228,498 | \$4,506,731 | | |
| \$20,568,319 | \$2,971,947 | \$13,668,418 | |
| \$128,505,958 | \$133,066,786 | \$62,652,669 | \$18,000,000 |
| \$168,213,584 | \$84,800,000 | \$92,291,863 | |

| | | | |
|---------------|---------------|---------------|--------------|
| \$39,143,839 | \$29,500,000 | \$8,293,678 | \$20,000,000 |
| \$12,406,646 | \$478,928 | | |
| \$15,074,191 | \$25,072,851 | \$4,845,361 | \$80,000,000 |
| \$59,908,565 | \$35,468,177 | \$33,880,479 | |
| \$10,299,782 | \$73,200,000 | | \$15,500,000 |
| \$38,989,507 | \$50,200,000 | \$22,208,165 | |
| \$73,661,010 | \$66,500,000 | \$71,541,095 | \$75,000,000 |
| \$11,989,328 | \$516,860 | \$6,679,409 | \$35,000,000 |
| \$5,755,286 | \$766,543 | \$853,973 | \$55,000,000 |
| \$71,985,628 | \$56,543,671 | \$49,635,451 | \$22,500,000 |
| \$82,234,139 | \$54,700,000 | \$41,355,482 | \$25,000,000 |
| \$50,866,635 | \$66,918,416 | \$43,279,287 | \$40,000,000 |
| \$10,010,209 | \$15,737,014 | \$39,102,832 | |
| \$22,530,295 | \$38,000,000 | | |
| \$7,006,708 | | | \$4,000,000 |
| \$53,089,891 | \$54,806,115 | \$45,348,399 | \$40,000,000 |
| \$38,634,938 | \$96,921,737 | \$25,077,781 | \$70,000,000 |
| \$198,000,317 | \$187,000,000 | \$203,202,864 | \$85,000,000 |
| \$15,242,450 | \$12,977,992 | \$12,376,741 | |
| \$39,739,367 | \$47,119,211 | \$16,820,895 | \$20,000,000 |
| \$118,594,548 | \$27,000,000 | \$49,169,389 | \$61,000,000 |
| \$16,574,590 | \$4,040,071 | \$16,762,012 | |
| \$8,130,530 | | | |
| \$35,374,833 | \$18,400,000 | \$15,902,523 | |
| \$7,233,485 | | | |
| \$5,694,308 | | | |
| \$17,510,118 | \$32,242,273 | \$8,957,029 | |
| \$12,559,771 | \$645,640 | \$13,549,608 | \$14,000,000 |
| \$82,985,708 | \$61,000,000 | \$83,550,733 | \$82,500,000 |
| \$11,614,790 | | | |
| \$42,674,040 | \$26,205,530 | \$23,917,497 | |
| \$68,501 | | | |
| \$47,003,582 | \$48,200,000 | \$57,244,093 | \$60,000,000 |
| \$38,432,823 | \$3,048,028 | \$33,990,308 | \$30,000,000 |
| \$118,823,091 | \$84,000,000 | \$104,029,214 | \$75,000,000 |
| \$33,080,084 | \$50,000,000 | \$20,971,999 | \$85,000,000 |
| \$11,052,958 | \$3,087,444 | \$9,691,414 | \$10,500,000 |
| \$47,852,604 | \$33,608,739 | \$33,205,167 | |
| \$18,663,911 | \$18,640,726 | \$8,050,112 | \$16,500,000 |
| \$12,044,087 | \$31,000,000 | \$13,059,709 | \$5,700,000 |
| \$27,838,408 | \$5,986,288 | \$28,754,050 | \$12,000,000 |
| \$16,379,582 | \$4,476,064 | | |
| \$2,730,296 | \$10,695,293 | | \$3,700,000 |
| \$2,956,339 | \$80,397 | | \$9,000,000 |
| \$13,932,383 | \$3,366,768 | \$17,210,792 | |
| \$84,500,122 | \$23,000,000 | \$76,815,057 | |
| \$65,328,121 | \$50,000,000 | \$51,183,795 | \$12,000,000 |

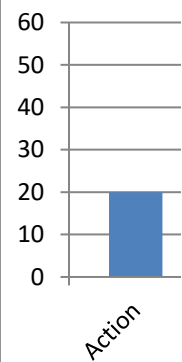
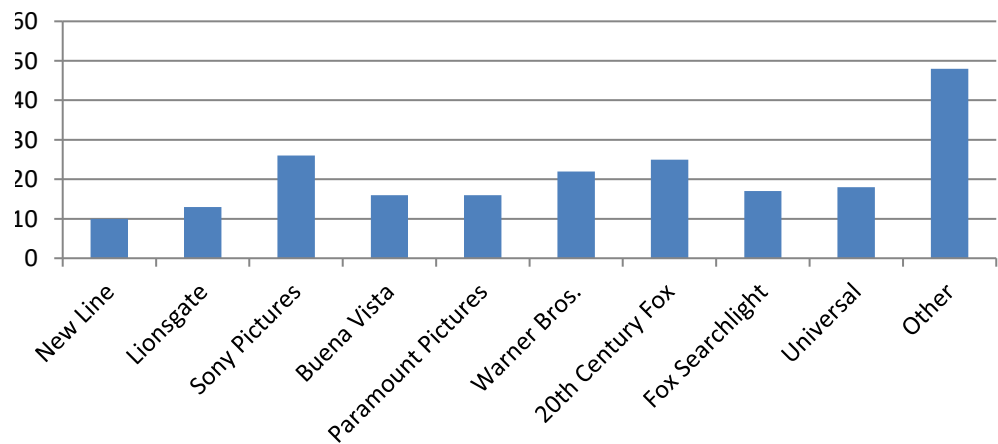
| | | | |
|---------------|---------------|---------------|---------------|
| \$85,105,259 | \$104,796,444 | \$96,372,487 | \$85,000,000 |
| \$21,471,047 | \$5,149,714 | \$21,227,639 | |
| \$25,126,214 | \$37,100,000 | \$19,733,449 | \$40,000,000 |
| \$148,213,377 | \$14,800,000 | \$84,806,563 | \$73,000,000 |
| \$14,426,251 | | | |
| \$70,269,899 | \$85,450,189 | \$34,655,821 | \$24,000,000 |
| \$9,176,787 | \$9,755,330 | \$5,434,934 | \$15,000,000 |
| \$33,302,167 | \$196,397,938 | \$28,162,446 | \$25,000,000 |
| \$482,355 | \$233,349 | | |
| \$33,602,376 | \$28,300,000 | \$45,095,837 | \$53,000,000 |
| \$59,891,098 | \$40,632,083 | \$55,497,574 | \$8,000,000 |
| \$28,426,747 | \$113,275,517 | \$18,693,368 | |
| \$13,756,082 | \$55,000,000 | \$13,618,088 | \$13,000,000 |
| \$31,366,978 | \$150,081 | \$31,456,820 | |
| \$292,004,738 | \$646,464,126 | \$220,651,146 | \$150,000,000 |
| \$15,962,471 | \$44,900,000 | \$16,617,894 | \$40,000,000 |
| \$133,311,000 | \$157,228,042 | \$140,647,116 | \$90,000,000 |
| \$34,020,814 | \$28,000,000 | \$23,693,992 | \$33,000,000 |
| \$33,000,880 | \$1,457,899 | \$18,301,944 | |
| \$17,606,684 | \$30,756,832 | \$16,831,973 | \$6,000,000 |
| \$210,614,939 | \$245,453,242 | \$261,158,713 | \$60,000,000 |
| \$162,586,036 | \$143,500,000 | \$90,820,939 | \$55,000,000 |
| \$35,193,167 | \$41,400,000 | \$27,501,523 | \$32,000,000 |
| \$833,532 | \$194,090 | | |

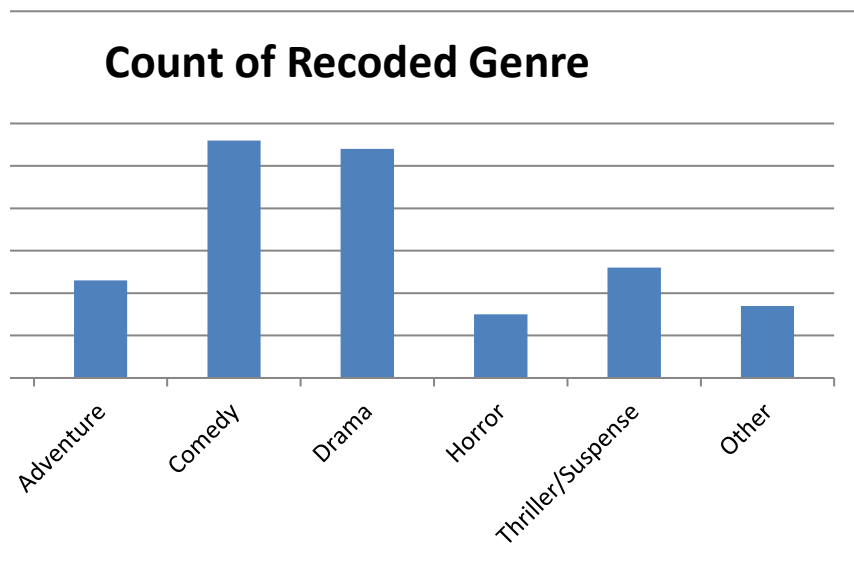
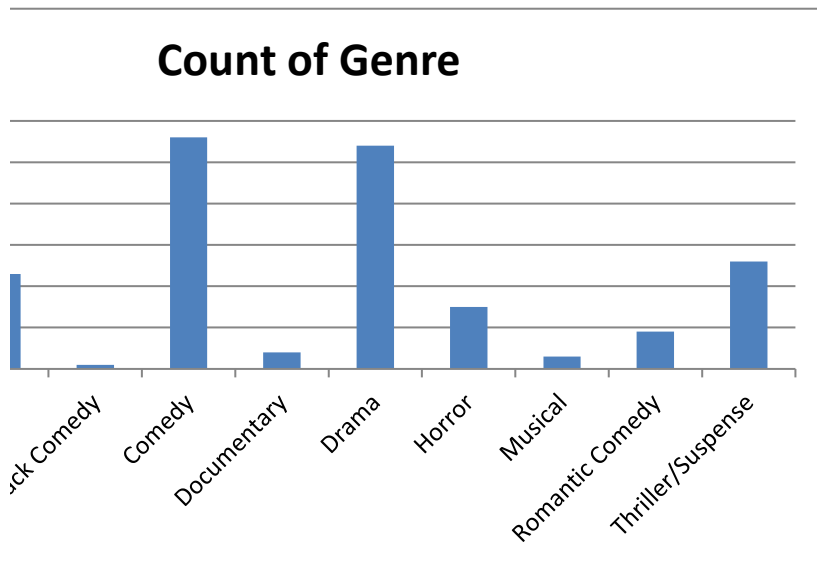
| Distributor | Count | Genre | Count | |
|-----------------------------|-------|-------------------|-------|----|
| 20th Century Fox | 25 | Action | 20 | 30 |
| Buena Vista | 16 | Adventure | 23 | |
| Dreamworks SKG | 3 | Black Comedy | 1 | |
| Focus Features | 5 | Comedy | 56 | |
| Focus/Rogue Pictures | 1 | Documentary | 4 | |
| Fox Searchlight | 17 | Drama | 54 | |
| Freestyle Releasing | 1 | Horror | 15 | |
| Lionsgate | 13 | Musical | 3 | |
| MGM | 7 | Romantic Comedy | 9 | |
| Miramax | 2 | Thriller/Suspense | 26 | |
| Miramax/Dimension | 2 | | | 25 |
| New Line | 10 | | | 20 |
| Paramount Pictures | 16 | | | 15 |
| Paramount Vantage | 5 | | | 10 |
| PictureHouse | 3 | | | 5 |
| Regent Releasing | 1 | | | 0 |
| Rocky Mountain Pictures | 1 | | | |
| Samuel Goldwyn Films | 1 | | | |
| Sony Pictures | 26 | | | |
| Sony/Screen Gems | 2 | | | |
| Sony/TriStar | 1 | | | |
| The Documentary Group | 1 | | | |
| Typecast Releasing | 1 | | | |
| Universal | 18 | | | |
| Warner Bros. | 22 | | | |
| Warner Independent Pictures | 1 | | | |
| Weinstein Co. | 8 | | | |
| Weinstein/Dimension | 2 | | | |
| Recoded Distributor | Count | Recoded Genre | Count | |
| New Line | 10 | Action | 20 | 6 |
| Lionsgate | 13 | Adventure | 23 | |
| Sony Pictures | 26 | Comedy | 56 | |
| Buena Vista | 16 | Drama | 54 | |
| Paramount Pictures | 16 | Horror | 15 | |
| Warner Bros. | 22 | Thriller/Suspense | 26 | |
| 20th Century Fox | 25 | Other | 17 | |
| Fox Searchlight | 17 | | | 5 |
| Universal | 18 | | | 4 |
| Other | 48 | | | 3 |
| | | | | 2 |
| | | | | 1 |

Count of Distributor



Count of Recoded Distributor





| Numbers of six-packs purchased | | | | |
|--------------------------------|--------|--------|--------|-----------|
| Customer | Beer A | Beer B | Beer C | All three |
| 1 | 2 | 5 | 2 | 9 |
| 2 | 2 | 2 | 6 | 10 |
| 3 | 2 | 4 | 5 | 11 |
| 4 | 1 | 6 | 0 | 7 |
| 5 | 4 | 0 | 2 | 6 |
| 6 | 3 | 1 | 3 | 7 |
| 7 | 6 | 1 | 6 | 13 |
| 8 | 0 | 1 | 4 | 5 |
| 9 | 3 | 0 | 3 | 6 |
| 10 | 0 | 1 | 4 | 5 |
| 11 | 1 | 0 | 5 | 6 |
| 12 | 1 | 1 | 0 | 2 |
| 13 | 0 | 1 | 3 | 4 |
| 14 | 2 | 4 | 6 | 12 |
| 15 | 3 | 5 | 1 | 9 |
| 16 | 1 | 0 | 3 | 4 |
| 17 | 0 | 1 | 6 | 7 |
| 18 | 6 | 0 | 0 | 6 |
| 19 | 6 | 6 | 0 | 12 |
| 20 | 3 | 3 | 6 | 12 |
| 21 | 0 | 3 | 0 | 3 |
| 22 | 4 | 0 | 3 | 7 |
| 23 | 1 | 2 | 0 | 3 |
| 24 | 2 | 2 | 6 | 10 |
| 25 | 4 | 6 | 0 | 10 |
| 26 | 1 | 4 | 0 | 5 |
| 27 | 5 | 3 | 5 | 13 |
| 28 | 0 | 4 | 2 | 6 |
| 29 | 4 | 0 | 4 | 8 |
| 30 | 0 | 1 | 1 | 2 |

Similar averages to those quoted in

| Beer A | Beer B | Beer C |
|----------|----------|----------|
| 8.173913 | 7.695652 | 7.818182 |

Columns B-D contain random numbers. Column E contains their sums. The AVERAGE function to calculate the average of the numbers in column E where the number in column A is 0, is a simple key to see how the random numbers are distributed.

As you can see, the "Any" average is not always the same as the "Beer A" average because of a built-in bias. It averages the numbers in column E, whereas the others average the numbers in column A. Therefore, these particular numbers are not large ones.

Still, there is nothing that guarantees the data to the right. Now, if column A is 0, columns P and Q will be small (a form of bias). The "Any" average is not always the same as the "Beer A" average. Of course, there are other types of customer behavior that can be modeled with number formulas.

n case

Any

7.333333

numbers of purchases, and
Columns G-I use the AVERAGEIF
ages in the case, whereas the Any
e average of column E. Press the F9
umbers and averages change.

age tends to be the lowest. This is
verages all the numbers in column
e only over the numbers in column
n B (or C or D) is positive.
mbers in column E tend to be the

antees this behavior. Look at the
nn O is positive, columns P and Q
and loyalty to brand A), whereas if
Q can be larger. In this case, the
ie lowest. In fact, it is usually larger
course, we could build in many
vior, depending on the random

Numbers of six-packs purchased

| Customer | Beer A | Beer B | Beer C | All three |
|----------|--------|--------|--------|-----------|
| 1 | 2 | 1 | 0 | 3 |
| 2 | 0 | 3 | 2 | 5 |
| 3 | 1 | 1 | 1 | 3 |
| 4 | 4 | 1 | 1 | 6 |
| 5 | 0 | 3 | 4 | 7 |
| 6 | 1 | 1 | 1 | 3 |
| 7 | 4 | 1 | 1 | 6 |
| 8 | 5 | 0 | 0 | 5 |
| 9 | 6 | 0 | 1 | 7 |
| 10 | 6 | 0 | 0 | 6 |
| 11 | 0 | 5 | 4 | 9 |
| 12 | 0 | 4 | 0 | 4 |
| 13 | 5 | 1 | 1 | 7 |
| 14 | 5 | 1 | 1 | 7 |
| 15 | 4 | 0 | 0 | 4 |
| 16 | 4 | 0 | 1 | 5 |
| 17 | 5 | 0 | 1 | 6 |
| 18 | 5 | 0 | 0 | 5 |
| 19 | 3 | 0 | 1 | 4 |
| 20 | 6 | 0 | 0 | 6 |
| 21 | 6 | 1 | 0 | 7 |
| 22 | 5 | 0 | 0 | 5 |
| 23 | 5 | 0 | 0 | 5 |
| 24 | 2 | 0 | 1 | 3 |
| 25 | 1 | 1 | 1 | 3 |
| 26 | 4 | 0 | 0 | 4 |
| 27 | 0 | 2 | 0 | 2 |
| 28 | 0 | 4 | 4 | 8 |
| 29 | 0 | 1 | 6 | 7 |
| 30 | 5 | 0 | 1 | 6 |

Averages quoted in case

| Beer A | Beer B | Beer C | Any |
|----------|--------|----------|----------|
| 5.043478 | 5.4375 | 5.666667 | 5.266667 |