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# Final Project

An Industry Comparison

## University of Toronto

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# 1 Executive Summary

Video games are a popular entertainment medium that have arisen with digital technology advances. Moreover, the rise of the Internet and streaming services have enabled consumers to upload non-professional yet entertaining videos to video hosting sites such as YouTube. Such homemade entertainment has widened the appeal of video games faster and more effectively than any other entertainment media. Companies have capitalized on the rising popularity of video games to host large-scale public gaming tournaments (e-sports) that draw large sponsorships and a global audience. Video games are widely popular today, and video game developers/publishers such as Electronic Arts and Activision-Blizzard turn massive profits each year.

In this report, we analyze the companies Electronic Arts (EA) and Activision-Blizzard (ATVI) to investigate the desirability of their shares for potential investors. First, we qualitatively analyze the video game industry using Porter's five forces, and we conclude that it is a growing industry with potential profit opportunities. Next, we examine the historical financial statements and balance sheets provided by the companies and Bloomberg to compare their common size statements against one another, and their financial ratios. We then calculate their weighted average cost of capital and other financial values to develop pro forma statements and balance sheets and forecast their stock values. From our analysis, we predict that both EA and ATVI will have growing stocks, but we advise caution on EA's values as their stock appears to be overvalued. We recommend that any potential investor to buy ATVI shares, and recommend investors to sell EA shares before the bubble pops.

## 2 Industry Analysis

### 2.1 Threat of New Entrants

The video game industry has a low barrier to entry, with many open-source programs allowing hobbyist developers to develop their own games, and online distribution platforms making it easy for new entrants to publish their games and gain market presence. Furthermore, the nature of video games as a new medium means the legal system is far behind the actual industry, facilitating small-time developers to make and publish their own games. Despite the low barrier to entry, the threat of new entrants poses little risk to established firms such as EA and ATVI. This is because many new entrants lack the experience and budget to develop high-quality, highly-marketed games (AAA games). Simply put, the quality of the games published by small, independent ("indie") developers is significantly below the quality of games published by AAA developers, and it is very unlikely that indie games will ever impact the AAA gaming industry significantly.

### 2.2 Threat of Substitutes

The primary substitutes to video games are other entertainment media including movies, music, and books. However, video games are a unique entertainment medium in that they provide a virtual interactive experience. While other forms of entertainment are passive, meaning the audience consumes the media without controlling its outcome, gaming is an active experience that requires input from the player. Currently, truly interactive entertainment media other than video games do not exist. As such, the market for games do not overlap with

other media consumers. In summary, video games provide a unique niche that cannot be fulfilled by other media.

### 2.3 Bargaining Power of Customers

Gamers today are rife with choices, with different genres, qualities and prices available on a variety of different platforms. The current business model of video game products is shifting from one-off purchases towards a live-service, subscription-based model with microtransactions. Microtransactions are the sale of in-game, virtual goods and currencies for a fee. These microtransactions happen after the game is purchased and is completely voluntary from the customers/players side.

Recently, there has been harsh public backlash against certain microtransaction practices, especially against EA. As such, EA has been forced to roll back some of their microtransaction systems. However, in these cases EA has been successful at re-introducing their microtransaction systems after the public furor has died down.

In addition to microtransactions, there is the subscription-based model of gaming, where players pay a monthly fee to play games (e.g. World of Warcraft, owned and operated by Activision-Blizzard). Cancelling the subscription prevents the player from playing the game, therefore this model also provides a steady stream of cash flow for the game company. Activision-Blizzard in particular have been highly successful at implementing this model while avoiding public backlash.

From analysing EA and ATVI, it appears that both microtransaction and subscription based models are very profitable, and market analysis suggests the presence of microtransactions do not repel customers from playing games. Furthermore, any backlash against microtransactions do not last for a significant enough period to impact the net income of game companies. Therefore, the bargaining power of customers are very limited.

### 2.4 Bargaining Power of Suppliers

As previously mentioned, video games are quite easy to make. There is also a cultural shift towards digital technology, where jobs involving programming are in high demand. Also, the availability of online courses, tutorials and IDEs means software programming has never been easier. This has led to a large supply of labour force relative to the demand.

While some games are still published as physical DVD releases, the distribution of games is shifting towards a digital platform, where publishers have their own publishing platforms on Windows PC (e.g. EA uses Origin to distribute their games to customers, while Activision-Blizzard uses Battle.net). In a digital product model, raw materials are of no concern. While the development and distribution of video games are both much easier on the PC, the console market is much bigger than the PC market. Therefore, game developers and publishers have deals with console manufacturers (e.g. Sony) to develop and publish games on the manufacturer's consoles.

With these in mind, the bargaining power of suppliers is relatively low. The labour force in producing games is relatively easy to replace, with great supply of artists, programmers and designers. The biggest challenge to game developers and publishers is the development and distribution of video games to the console platforms, as these are manufactured by sole companies. To develop console games, the developers need to license the

console platform's required right to publish. However, console manufacturers have a vested interest in making deals with game developers, as video game consoles without games to play are useless.

## 2.5 Industry Rivalry

The gaming industry is divided generally into the indie market and the AAA market. The indie market refers to games that are developed and published by a small team, often less than 10 people, and have restricted budget. In contrast, the AAA market refers to the games that are not necessarily developed and published by the same team, made by a large team, often more than 30 people, with budgets that reach in the millions of dollars (Grand Theft Auto 5, made by Rockstar Games, cost \$265m to develop and market).

The gaming industry is a highly competitive industry, particularly for basement programmers. The ease of creating a video game means the market is flooded with cheaply made games. In rare cases where an indie game becomes successful, they are often quickly bought out by the AAA market (e.g. the massively successful Riot Game's League of Legends was bought by Tencent in 2011). The difference between the two markets is that the indie market often develop different games of one genre, while the AAA market often relies on publishing sequels of well-established series. As such, there is little competition between the two markets. The rivalry of the AAA market exists between series titles (e.g. EA's Battlefield series and Activision-Blizzard's Call of Duty series are both long-running series that were first released in 2002 and 2003 respectively).

## 3 Financial Analysis

### 3.1 Ratio Analysis

A number of financial ratios were calculated for Electronic Arts and Activision-Blizzard according to the methodology described in section 6.1 of the Appendix. The results are summarized in the tables below.

In terms of liquidity ratios, ATVI is clearly dominant. While both EA and ATVI are video game distributors, ATVI also develops their own games. This gives ATVI a distinct advantage in liquidity since the games developed by ATVI can be sold without paying royalties, while EA will need to pay royalties on any game they distribute.

This fact manifests itself in the leverage ratios as well. ATVI will have more assets than EA since they also own the development studios that create a portion of the games ATVI distributes, resulting in a higher total debt ratio, even though the companies have similar values of total equity. Since EA will not need to finance the development of their own games, they will have a smaller requirement for debt, and therefore less interest to pay on that debt. This results in the disparity observed between the TIE and cash coverage ratios between the two firms.

Another repercussion of this difference in business models can be seen in the profitability measures. While EA takes mostly profit off of the games they distribute, with relatively little overhead, ATVI must use its income to finance further development projects. Most of ATVI's non-current assets are tied up in goodwill, which is subtracted from a firm's income. This reduction in net income results in a significantly lower profit margin. The ROA for ATVI is also much lower than for EA because ATVI has more than twice as much value in assets,

likely related to game development, and significantly less income, due to the financing of these development projects.

These two firms end up having a difference in earnings per share of about 25%. Since EA has a significantly higher share price, their price to earnings ratios tend to be higher, even though the two companies have a market capitalization value within 15% of one another. The market to book ratios provide one last significant manifestation of the difference in business models: EA's significantly lower book value, stemming from their abstention from game development, results in a much higher market to book ratio than ATVI.

| <b>Liquidity Ratios</b>       | <b>EA</b> | <b>ATVI</b> |                              | <b>EA</b>  | <b>ATVI</b> |
|-------------------------------|-----------|-------------|------------------------------|------------|-------------|
| Year                          | 2017      | 2017        | Year                         | 2017       | 2017        |
| Current Ratio                 | 1.06      | 1.78        | <b>Market Value Measures</b> | 2017       | 2017        |
| NWC/TA                        | 0.02      | 0.15        | EPS                          | \$3.14     | \$2.27      |
| <b>Leverage Ratios</b>        |           |             | PE Ratio High                | 29.28      | 10.66       |
| Total Debt Ratio              | 0.47      | 1.51        | PE Ratio Low                 | 19.48      | 7.29        |
| TIE                           | 86.38     | 3.12        | Price Sales Ratio High       | 5.84       | 7.55        |
| Cash Coverage                 | 94.44     | 18.18       | Price Sales Ratio Low        | 3.89       | 4.05        |
| <b>Profitability Measures</b> |           |             | Market To Book Ratio High    | 143,762.34 | 5.46        |
| Profit Margin                 | 0.2       | 0.04        | Market To Book Ratio Low     | 95,669.33  | 3           |

Table 1: Ratios and measures (reduced) for EA and ATVI for the year 2017.

## 3.2 Common Size Analysis

The common size balance sheets and income statements are provided in section 6.3 of the appendix, along with a description for how they were calculated.

### 3.2.1 Common Size Balance Sheet

| <b>EA</b>                        | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   |
|----------------------------------|--------|--------|--------|--------|--------|--------|
| <b>Total Current Assets</b>      | 47.51% | 45.86% | 54.90% | 60.52% | 61.76% | 67.36% |
| <b>Total Non-current Assets</b>  | 52.49% | 54.14% | 45.10% | 39.48% | 38.24% | 32.64% |
| <b>Total Current Liabilities</b> | 38.61% | 37.81% | 41.81% | 44.69% | 34.30% | 31.29% |
| <b>Total Liabilities</b>         | 55.24% | 55.29% | 57.63% | 50.11% | 51.80% | 47.40% |
| <b>Total Shareholders Equity</b> | 44.76% | 44.71% | 42.37% | 49.89% | 48.20% | 52.60% |

Table 2: Common Size (Reduced) Balance Sheet for EA for the years 2012-2017.

| <b>ATVI</b>                      | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   |
|----------------------------------|--------|--------|--------|--------|--------|--------|
| <b>Total Current Assets</b>      | 44.18% | 44.54% | 44.67% | 22.22% | 27.68% | 34.93% |
| <b>Total Current Liabilities</b> | 18.68% | 17.16% | 18.54% | 17.13% | 15.22% | 19.62% |
| <b>Total Liabilities</b>         | 20.30% | 52.74% | 50.60% | 47.08% | 47.75% | 49.31% |
| <b>Total Shareholders Equity</b> | 79.70% | 47.26% | 49.40% | 52.92% | 52.25% | 50.69% |

Table 3: Common Size (Reduced) Balance Sheet for ATVI for the years 2012-2017.

For the year 2017, ATVI's total assets were comprised of approximately 65% non-current assets and 35% current assets, while EA maintained approximately 65% current assets, and 35% non-current assets. In terms of short term profitability, EA will likely be the better choice since a large portion of its assets will mature in the short term. This implies that ATVI likely has better opportunity for long-term constant growth, however much of ATVI's long term equity stems from goodwill. As long as the goodwill for ATVI is not impaired, this does indeed mean that ATVI has better potential for long term, constant growth.

This is good news for ATVI, since it also has a more significant portion of its total liabilities tied up in non-current liabilities. The long term assets will help to maintain a steady cash stream that will help ATVI pay off any interest accrued on these liabilities.

In 2017 EA maintained a larger portion of gross profit as a percentage of sales than ATVI. Further, EA has been growing its percentage of gross profit to sales over the years 2012-2017 while ATVI has been roughly maintaining its percentage. This is likely due to the fact that EA has a lower cost of producing its goods than ATVI, since ATVI develops games in addition to distributing them, while EA does not.

### 3.2.2 Common Size Income Statement

| <b>EA</b>                               | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    |
|---|---------|---------|---------|---------|---------|---------|
| <b>Revenue</b>                          | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| <b>Gross Profit</b>                     | 61.43%  | 63.44%  | 62.32%  | 68.35%  | 69.20%  | 73.21%  |
| <b>Operating Income (Loss)</b>          | 0.84%   | 3.19%   | 0.92%   | 21.00%  | 20.43%  | 25.26%  |
| <b>Pretax Income</b>                    | 0.43%   | 3.66%   | 0.20%   | 20.49%  | 19.95%  | 24.97%  |
| <b>Net Income, GAAP</b>                 | 1.83%   | 2.00%   | 2.13%   | 1.68%   | 1.73%   | 1.57%   |
| <b>Net Income Avail to Common, GAAP</b> | 1.83%   | 2.58%   | 0.22%   | 19.38%  | 26.30%  | 19.96%  |

Table 4: Common Size (Reduced) Income Statement for EA for the years 2012-2017.

| <b>ATVI</b>                             | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    |
|---|---------|---------|---------|---------|---------|---------|
| <b>Revenue</b>                          | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| <b>Gross Profit</b>                     | 65.77%  | 66.59%  | 65.40%  | 66.02%  | 63.77%  | 64.36%  |
| <b>Operating Income (Loss)</b>          | 29.88%  | 29.94%  | 26.84%  | 28.28%  | 21.37%  | 18.65%  |
| <b>Pretax Income</b>                    | 30.02%  | 28.78%  | 22.25%  | 24.04%  | 16.74%  | 16.40%  |
| <b>Net Income, GAAP</b>                 | 23.66%  | 22.04%  | 18.94%  | 19.13%  | 14.62%  | 3.89%   |
| <b>Net Income Avail to Common, GAAP</b> | 23.17%  | 21.54%  | 18.53%  | 18.89%  | 14.56%  | 3.89%   |

Table 5: Common Size (Reduced) Income Statement for ATVI for the years 2012-2017.

## 3.3 Pro Forma Financial Statements

The Pro Forma financial statements for both EA and ATVI can be found in section 6.4 of the appendix. The financial statements were forecasted using a geometric average growth, however, several qualitative factors were used to adjust these growth rates. They are detailed below.



### 3.3.1 Pro Forma Balance Sheets

| EA                               | g (Geo.)       | 2017       | 2018       | 2019       | 2020       | 2021        | 2022        |
|----------------------------------|----------------|------------|------------|------------|------------|-------------|-------------|
| <b>Total Current Assets</b>      | <b>106.59%</b> | \$5,199.00 | \$5,257.29 | \$5,426.07 | \$5,672.62 | \$5,977.07  | \$6,327.63  |
| <b>Total Assets</b>              | <b>106.46%</b> | \$7,718.00 | \$8,500.85 | \$9,227.61 | \$9,934.67 | \$10,645.73 | \$11,376.68 |
| <b>Total Current Liabilities</b> | <b>109.89%</b> | \$2,415.00 | \$2,653.75 | \$2,916.10 | \$3,204.38 | \$3,521.17  | \$3,869.27  |
| <b>Total Liabilities</b>         | <b>111.38%</b> | \$3,658.00 | \$4,074.44 | \$4,538.30 | \$5,054.96 | \$5,630.43  | \$6,271.43  |
| <b>Total Shareholders Equity</b> | <b>103.29%</b> | \$4,060.00 | \$4,426.40 | \$4,689.32 | \$4,879.71 | \$5,015.30  | \$5,105.25  |
| <b>Liab. + Shareholders Eq.</b>  | <b>106.46%</b> | \$7,718.00 | \$8,500.85 | \$9,227.61 | \$9,934.67 | \$10,645.73 | \$11,376.68 |

Table 6: Pro Forma (Reduced) Balance Sheet for EA for the years 2012-2017.

| ATVI                             | g (Geo.)       | 2017        | 2018        | 2019        | 2020        | 2021        | 2022        |
|----------------------------------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Total Current Assets</b>      | <b>102.42%</b> | \$6,520.00  | \$6,677.58  | \$6,838.97  | \$7,004.26  | \$7,173.55  | \$7,346.93  |
| <b>Total Assets</b>              | <b>102.87%</b> | \$18,668.00 | \$19,204.66 | \$19,756.75 | \$20,324.70 | \$20,908.99 | \$21,510.07 |
| <b>Total Current Liabilities</b> | <b>106.47%</b> | \$3,663.00  | \$3,899.89  | \$4,152.10  | \$4,420.62  | \$4,706.51  | \$5,010.88  |
| <b>Total Liabilities</b>         | <b>113.53%</b> | \$9,206.00  | \$10,451.63 | \$11,865.81 | \$13,471.34 | \$15,294.10 | \$17,363.50 |
| <b>Total Shareholders Equity</b> | <b>97.83%</b>  | \$9,462.00  | \$8,753.02  | \$7,890.93  | \$6,853.37  | \$5,614.89  | \$4,146.58  |
| <b>Liab. + Shareholders Eq.</b>  | <b>103.90%</b> | \$18,668.00 | \$19,204.66 | \$19,756.75 | \$20,324.70 | \$20,908.99 | \$21,510.07 |

Table 7: Pro Forma (Reduced) Balance Sheet for ATVI for the years 2012-2017.

In most cases, the pro forma balance sheet was prepared by taking the geometric growth rate in relevant parameters from 2009-2017, and extrapolating this growth rate through 2022. However, in the case of EA it was noted that a series of recent acquisitions of smaller developers are expected to reduce the fraction of current assets and increase the fraction of fixed assets moving forward. In order to forecast the extent to which this will affect the firm's balance sheet, a correction factor was applied. It was noted that the EA's estimated acquisition expense in 2017 was \$455 million compared to \$284 million expected in 2018. Thus, from 2017 to 2018 the acquisition investments dropped by 37.5%. It was assumed the year over year drop in acquisition expenditures would continue at this rate through 2022, and the resulting forecasts for acquisition costs were used to adjust the current and fixed asset forecasts for each year.

### 3.3.2 Pro Forma Income Statements

In most cases, pro forma income statement forecasts were carried out by extrapolating the geometric average growth rate from 2012-2017 through 2022. In EA's case, 2014 was a year in which key financial metrics including net income and earnings per share were far lower than in typical years, which in some cases skewed the perceived geometric average growth rates by over 300%. In these cases, geometric average growth rate was taken from 2015-2017, which represented more typical years for EA.

| <b>EA</b>                        | 2017       | 2018       | 2019       | 2020       | 2021       | 2022       |
|----------------------------------|------------|------------|------------|------------|------------|------------|
| Revenue                          | \$4,845.00 | \$4,999.07 | \$5,158.05 | \$5,322.08 | \$5,491.32 | \$5,665.95 |
| Gross Profit                     | \$3,547.00 | \$3,790.49 | \$4,050.70 | \$4,328.78 | \$4,625.94 | \$4,943.50 |
| Operating Income (Loss)          | \$1,224.00 | \$1,390.81 | \$1,580.35 | \$1,795.73 | \$2,040.46 | \$2,318.54 |
| Pretax Income                    | \$1,210.00 | \$1,383.91 | \$1,582.81 | \$1,810.30 | \$2,070.49 | \$2,368.07 |
| Income (Loss) from Cont Ops      | \$967.00   | \$1,016.57 | \$1,068.67 | \$1,123.45 | \$1,181.04 | \$1,241.57 |
| Income (Loss) Incl. MI           | \$967.00   | \$1,016.57 | \$1,068.67 | \$1,123.45 | \$1,181.04 | \$1,241.57 |
| Net Income, GAAP                 | \$76.00    | \$76.00    | \$76.00    | \$76.00    | \$76.00    | \$76.00    |
| Net Income Avail to Common, GAAP | \$967.00   | \$1,148.64 | \$1,207.52 | \$1,269.42 | \$1,334.48 | \$1,402.89 |
| Basic EPS, GAAP                  | \$3.19     | \$3.40     | \$3.62     | \$3.86     | \$4.11     | \$4.38     |

Table 8: Pro Forma (Reduced) Income Statement for EA for the years 2012-2017.

| <b>ATVI</b>                      | 2017       | 2018       | 2019       | 2020       | 2021       | 2022       |
|----------------------------------|------------|------------|------------|------------|------------|------------|
| Revenue                          | \$7,017.00 | \$7,487.18 | \$7,988.87 | \$8,524.17 | \$9,095.34 | \$9,704.78 |
| Gross Profit                     | \$4,516.00 | \$4,839.17 | \$5,185.46 | \$5,556.54 | \$5,954.17 | \$6,380.25 |
| Operating Income (Loss)          | \$1,309.00 | \$1,305.86 | \$1,302.73 | \$1,299.60 | \$1,296.48 | \$1,293.37 |
| Pretax Income                    | \$1,151.00 | \$1,123.46 | \$1,096.58 | \$1,070.35 | \$1,044.74 | \$1,019.74 |
| Income (Loss) from Cont Ops      | \$273.00   | \$216.91   | \$172.35   | \$136.94   | \$108.81   | \$86.45    |
| Income (Loss) Incl. MI           | \$273.00   | \$216.91   | \$172.35   | \$136.94   | \$108.81   | \$86.45    |
| Net Income, GAAP                 | \$273.00   | \$1,418.67 | \$1,386.09 | \$1,354.25 | \$1,323.15 | \$1,292.76 |
| Net Income Avail to Common, GAAP | \$273.00   | \$217.45   | \$173.20   | \$137.96   | \$109.89   | \$87.53    |
| Basic EPS, GAAP                  | \$0.36     | \$0.31     | \$0.26     | \$0.22     | \$0.19     | \$0.16     |

Table 9: Pro Forma (Reduced) Income Statement for ATVI for the years 2012-2017.

In addition, an adjustment was made to the assumed tax rate paid by EA. Historically, the corporate tax rate in the US has been 35%. According to EA's annual reports, EA's international operations combined with management of tax liabilities have allowed them to operate at an effective tax rate of roughly 20%. Effective 2018, the US corporate tax rate has dropped to 21%. While it is not feasible to expect EA to see a proportional drop in their effective tax rate, an effective tax rate reduction to 17% was considered reasonable. This correction was applied to the calculation of EA's Net Income.

### 3.4 WACC

The weighted average cost of capital, as described in **INSERT REF**, was calculated for the 2017 fiscal year for both EA and ATVI. The full derivation of the values used can be found in section 6.5 of the appendix. The equity value of both companies was determined by each firm's most recent share price multiplied by the number of shares outstanding. Debt value for each firm was taken from the firm's balance sheet. The equity and debt weights reflecting the capital structure of each firm were calculated using these values.

The cost of common equity was calculated for both companies using the CAPM security market line methodology. The market return used was the geometric average market return of the NASDAQ composite stock over the years 2012-2017. This market return was chosen since both firms are listed on the NASDAQ exchange, and the NASDAQ composite stock is a market index of the common stocks and similar securities listed on the

NASDAQ. The risk free return rate chosen was a geometric average of the 10 year U.S. Treasury note yields over the years 2012-2017. The 10 year note was chosen since the financial analyses of these companies was conducted based on data between 2009 and 2017, and the various values were projected to the year 2022. Therefore, since this time period is in excess of 10 years, the 10 year treasury note was chosen. Beta values seemed to vary dramatically between different sources, so an average value was taken from these sources.

The cost of preferred shares was neglected for this analysis, since neither EA nor ATVI reported any outstanding preferred shares on their respective balance sheets. The corporate tax rate that was used is 21%. This was used due to a law that will be going into effect in the near future which will affect both EA and ATVI. A dividend growth model was also used to calculate the cost of common equity for ATVI, however since EA does not issue dividends, this analysis was only applied to ATVI.

The above information, and the calculated WACC values, are summarized in table 10 below.

| <b>WACC</b>                  | <b>EA</b>     | <b>ATVI</b>   |
|------------------------------|---------------|---------------|
| Corporate Tax Rate           | 0.21%         | 0.21%         |
| Cost of Debt Before Tax      | 4.46%         | 4.46%         |
| Cost of Debt                 | 3.53%         | 3.53%         |
| Cost of Common Equity (CAPM) | 18.90%        | 20.59%        |
| Cost of Common Equity (DGM)  | N/A           | 11.00%        |
| Debt Weight                  | 0.12          | 0.16          |
| Common Equity Weight         | 0.88          | 0.84          |
| <b>WACC (CAPM)</b>           | <b>17.10%</b> | <b>17.85%</b> |
| WACC (Div)                   | N/A           | 9.80%         |

Table 10: WACC Calculations for ATVI and EA for the year 2017

### 3.5 Forecasting Stock Value

Stock Value and other financial metrics were forecasted using a geometric average growth rate, the full calculations of which can be found in section 6.6 of the appendix.

| <b>EA</b>                        | <b>2018 Est</b> | <b>2019 Est</b> | <b>2020 Est</b> | <b>2021 Est</b> | <b>2022 Est</b> |
|----------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Stock Value forecast</b>      | \$125.57        | \$176.14        | \$247.07        | \$346.57        | \$486.13        |
| <b>Price/Earnings</b>            | 28.18           | 28.21           | 28.25           | 28.29           | 28.33           |
| <b>Price/Book Value</b>          | 8.55            | 10.77           | 13.56           | 17.07           | 21.49           |
| <b>Book Value Per Share</b>      | \$14.69         | \$16.36         | \$18.23         | \$20.31         | \$22.62         |
| <b>OCF Per Share</b>             | \$7.36          | \$10.57         | \$15.18         | \$21.82         | \$31.35         |
| <b>Revenue (Sales) Per Share</b> | \$16.79         | \$17.64         | \$18.52         | \$19.45         | \$20.43         |
| <b>Price/Operating Cash Flow</b> | 17.07           | 16.67           | 16.27           | 15.88           | 15.51           |
| <b>Price/Sales</b>               | 7.48            | 9.99            | 13.34           | 17.82           | 23.80           |
| <b>Shares Outstanding</b>        | 303.84          | 299.47          | 295.17          | 290.93          | 286.76          |
| <b>Earnings Per Share</b>        | \$4.46          | \$6.24          | \$8.75          | \$12.25         | \$17.16         |
| <b>Free Cash Flow</b>            | \$2,461.49      | \$4,164.21      | \$7,044.78      | \$11,917.96     | \$20,162.14     |
| <b>Net income</b>                | \$1,608.23      | \$2,674.68      | \$4,448.30      | \$7,398.04      | \$12,303.80     |

Table 11: Forecasted Financial Metrics (Reduced) for EA for the years 2018 - 2022

| ATVI                      | 2018 Est   | 2019 Est   | 2020 Est   | 2021 Est   | 2022 Est   |
|---------------------------|------------|------------|------------|------------|------------|
| Stock value forecast      | \$90.84    | \$130.00   | \$186.04   | \$266.23   | \$381.00   |
| Price/earnings            | 58.14      | 77.31      | 102.82     | 136.74     | 181.85     |
| Price/Book Value          | 6.95       | 9.54       | 13.09      | 17.96      | 24.64      |
| Book Value Per Share      | \$13.06    | \$13.63    | \$14.21    | \$14.83    | \$15.47    |
| OCF Per Share             | \$3.50     | \$4.18     | \$5.00     | \$5.96     | \$7.12     |
| Revenue (Sales) Per Share | \$10.77    | \$12.51    | \$14.54    | \$16.90    | \$19.64    |
| Price/Operating Cash Flow | 23.85      | 26.37      | 29.15      | 32.22      | 35.62      |
| Price/Sales               | 7.78       | 8.89       | 10.16      | 11.62      | 13.28      |
| Shares Outstanding        | 771.58     | 785.93     | 800.53     | 815.41     | 830.57     |
| Earnings Per Share        | \$1.56     | \$1.67     | \$1.80     | \$1.93     | \$2.08     |
| Free Cash Flow            | \$2,458.56 | \$2,718.75 | \$3,006.46 | \$3,324.63 | \$3,676.47 |
| Net income                | \$1,853.04 | \$1,970.16 | \$2,094.69 | \$2,227.08 | \$2,367.85 |
| Dividends per Share       | \$0.33     | \$0.37     | \$0.41     | \$0.45     | \$0.50     |

Table 12: Forecasted Financial Metrics (Reduced) for ATVI for the years 2018 - 2022

## 4 Conclusions

Based on our qualitative analysis through Porter's analysis, we conclude that the video game industry shows a strong growth with no signs of recession. Both EA and ATVI are well-established companies with a line-up of highly popular product series and can easily withstand threats of new entrants. Both companies are shifting towards digital distribution systems and relying less on suppliers to distribute their games physically. Both companies have utilised the microtransaction monetisation model to turn high profits, on top of the annual releases and sales of their own intellectual properties. EA and ATVI showed great growth in their profits, but also an increase in Price:Sales and Market:Book ratios, indicating that market value could be outpacing the actual growth of both firms. Despite the similarities that EA and ATVI share, they have some unique traits.

### 4.1 Electronic Arts

Currently, the greatest industry threat to EA comes from their consumer base. EA is viewed as the most aggressive implementers of the 'micro-transaction' in their games, which seriously hurt their goodwill and sales. This backlash was easily mitigated through temporary rollback of the micro-transaction system, but it is not known whether such temporary tactics are sustainable for EA's goodwill long-term and can drop EA's stock value. Nonetheless, it is expected that EA's value will grow, based on our industry and financial analysis.

Analysis of EA's common-size balance sheet and income statement suggests increased stock volatility in the future. Compared to ATVI, EA's % Current Assets and % Current Liabilities are high. A greater fraction of current assets and liabilities will lead to a greater variation in the firm's year-to-year valuation, since current assets and liabilities are inherently more variable than fixed assets and liabilities. While this is not expected to be a driving factor in the overall trend of EA's stock price moving forward, prospective investors should be advised that average stock price will likely be more volatile in the future.

Stock price forecasts for EA are remarkably consistent, with forecasts based on different methods all giving

similar 2018 share value between \$124.32 to \$125.57 per share. This compares to EA's share price at the time of writing of \$144.20/share. Based on this analysis, it appears EA's share is currently overvalued.

## 4.2 Activision-Blizzard

One crucial difference between ATVI and EA is that ATVI has successfully utilised the profitable subscription and microtransaction monetisation model without drawing the level of public backlash EA has been faced with. Thus, ATVI carries a significant advantage in terms of bargaining power of customers over EA.

Based on ratio analysis, ATVI will likely continue to see stock value growth, however concerns regarding the firm's leverage could slow the recent growth trend. ATVI has seen its liquidity ratios decline, likely driven by its acquisitions of smaller developers; this is an indicator of future stock value growth. However, ATVI maintains times interest earned (TIE) and cash coverage ratio (CCR) that only showed an overall increasing trend only recently. These metrics are points to monitor, as low TIE and CCR ratios indicate future stock value decline.

Based on analysis of the common size income statements and balance sheets of ATVI, there is cause for concern for future share price. Activision's % Net Income has steadily dropped since 2012, which has largely been driven by an increase in operating costs. If ATVI is unable to offset its increasing operating costs with increased sales, future stock price value will decline. ATVI maintains a relatively low fraction of current assets and liabilities compared to EA. While this leads to lower volatility in stock price, the low fraction of current assets could hurt the firm's ability to pay interest in times of recession, and its ability to operate sustainably.

Stock values of ATVI have been forecasted using the same methods as EA. Stock price forecasts are remarkably consistent, with forecasts all arriving at a projected 2018 share valuation of between \$79.91 and \$83.42/share. At the time of writing, Activision's stock is trading at \$78.52, and is thus undervalued compared to the stock price valuations.

## 5 Recommendations

EA currently has overvalued stock with respect to the stock price forecasts calculated herein, is expected to see relatively high stock price volatility in the coming years, shows signs of stock price outpacing financial performance, and faces goodwill challenges surrounding its micro-transaction policies. While EA's industry positioning should allow for growth in the long term, the growth is not expected to continue at the rate suggested by recent stock price growth. It is expected that market correction will drop the value of EA's stock in value soon. Thus, it is recommended that shareholders sell holdings of EA stock.

Regarding ATVI, the slight undervaluation of ATVI's stock at present, combined with its successful implementation of profitable, future-oriented subscription and micro-transaction-based business models are positive signals to prospective investors. Concerns of interest payment capacity and declining net income should be manageable for the firm with implementation of internal strategic changes. While the dividend growth rate is expected to slow in the coming years, the impact on stock valuation should be minimal compared to the organic growth expected by ATVI's position in the industry. Thus, it is recommended that prospective investors buy ATVI stock.

## 6 Appendix

### 6.1 Ratio Comparison

#### 6.1.1 Liquidity Measures

**Liquidity Measures** - The primary indicator is how likely a firm will be able to pay its bills over a short term without undue stress, and these measures focus on current assets and current liabilities. An advantage is that for current assets and liabilities. A disadvantage is that current assets and liabilities change rapidly, so today's ratio values may not be a good predictor of future company activity.

- **Current Ratio** - Measures short term liquidity, high values are attractive to creditors, but may also indicate inefficient use of cash and other short term assets. Healthy businesses have a current ratio greater than 1, with the exception of businesses that have a large reserve of borrowing power.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

- **Quick Ratio (Acid Test)** - Inventory is the least liquid asset, and large inventories are often a sign of short term trouble, since liquidity is tied up in inventory.

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

- **Cash Ratio** - Useful to short term creditors.

$$\text{Cash Ratio} = \frac{\text{Cash}}{\text{Current Liabilities}}$$

- **NWC to Total Assets** - NWC is a frequently viewed as the amount of short term liquidity a firm has. Low levels indicate low liquidity.

$$\text{NWC to Total Assets} = \frac{\text{NWC}}{\text{Total Assets}}$$

#### Liquidity Ratios

| Year          | Geo. Av. Growth | 2009 | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016 | 2017 |
|---------------|-----------------|------|-------|-------|-------|-------|-------|-------|------|------|
| Current Ratio | 96.38%          | 1.43 | 0.81  | 0.79  | 0.61  | 0.67  | 0.75  | 0.75  | 1.03 | 1.06 |
| Quick Ratio   | 98.12%          | 1.24 | 0.75  | 0.75  | 0.58  | 0.65  | 0.72  | 0.74  | 1.03 | 1.06 |
| Cash Ratio    | 96.38%          | 1.43 | 0.81  | 0.79  | 0.61  | 0.67  | 0.75  | 0.75  | 1.03 | 1.06 |
| NWC/TA        | 86.33%          | 0.1  | -0.06 | -0.09 | -0.15 | -0.12 | -0.11 | -0.11 | 0.01 | 0.02 |

Table 13: Calculated liquidity ratios for EA from 2012-2017.

#### Liquidity Ratios

| Year          | Geom Av. Growth | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---------------|-----------------|------|------|------|------|------|------|------|------|------|
| Current Ratio | 96.20%          | 2.13 | 1.84 | 2.1  | 2.37 | 2.6  | 2.41 | 1.3  | 1.82 | 1.78 |
| Quick Ratio   | 96.67%          | 2.03 | 1.8  | 2.05 | 2.29 | 2.52 | 2.36 | 1.25 | 1.8  | 1.77 |
| Cash Ratio    | 98.92%          | 1.1  | 0.95 | 1.24 | 1.49 | 1.83 | 1.79 | 0.7  | 1.22 | 1.29 |
| NWC/TA        | 96.07%          | 0.21 | 0.18 | 0.21 | 0.26 | 0.27 | 0.26 | 0.05 | 0.12 | 0.15 |

Table 14: Calculated liquidity ratios for ATVI from 2012-2017.

### 6.1.2 Financial Leverage Ratios

**Financial Leverage Ratios** - Addresses a firm's long term ability to meet its obligations, specifically debt obligations.

- **Total Debt Ratio** - This ratio takes into account all debts of all maturities. Shows how much debt is within the Capital Structure

$$\text{Total Debt Ratio} = \frac{\text{Total Assets} - \text{Total Equity}}{\text{Total Assets}}$$

- **Debt to Equity Ratio** - This ratio describes the company's capital structure, in terms of how much debt and how much equity the company possesses.

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

- **Equity Multiplier** - Similar to the debt to equity ratio, shows how much equity makes up the capital structure.

$$\text{Equity Multiplier} = \frac{\text{Total Assets}}{\text{Total Equity}}$$

- **Long Term Debt Ratio** - A firm's short term debt is constantly changing, so it is frequently useful to calculate the debt ratio only in terms of long term debt.

$$\text{Long Term Debt Ratio} = \frac{\text{Long Term Debt}}{\text{Long Term Debt} + \text{Total Equity}}$$

- **Times Interest Earned Ratio** - A long term solvency ratio used to measure how well a company has its interest obligations covered.

$$\text{TIE} = \frac{\text{EBIT}}{\text{Interest}}$$

- **Cash Coverage Ratio** - The TIE ratio neglects depreciation because it is a non cash expense. It is added back in to the Cash Coverage Ratio, which is used to measure the firm's cash flow available to meet financial obligations.

$$\text{Cash Coverage Ratio} = \frac{\text{EBIT} + \text{Depreciation}}{\text{Interest}}$$

| <b>Leverage Ratios</b> | Geo. Av. Growth | 2009 | 2010 | 2011 | 2012   | 2013  | 2014  | 2015  | 2016   | 2017  |
|------------------------|-----------------|------|------|------|--------|-------|-------|-------|--------|-------|
| Total Debt Ratio       | 104.63%         | 0.33 | 0.41 | 0.48 | 0.55   | 0.55  | 0.58  | 0.5   | 0.52   | 0.47  |
| Debt/Equity            | 107.84%         | 0.49 | 0.7  | 0.92 | 1.23   | 1.24  | 1.36  | 1     | 1.07   | 0.9   |
| Equity Multiplier      | 103.07%         | 1.49 | 1.7  | 1.92 | 2.23   | 2.24  | 2.36  | 2     | 2.07   | 1.9   |
| Long Term Debt Ratio   | 97.15%          | 0.12 | 0.11 | 0.12 | 0.27   | 0.28  | 0.27  | 0.1   | 0.27   | 0.23  |
| TIE                    | 100.05%         | -    | -    | -    | 86.18  | 39.04 | 48.96 | 68.29 | 110.31 | 86.38 |
| Cash Coverage          | 97.68%          | -    | -    | -    | 106.18 | 47.61 | 55.84 | 74.76 | 120.77 | 94.44 |

Table 15: Calculated leverage ratios for EA from 2012-2017.

| <b>Leverage Ratios</b> | Geo. Av. Growth | 2009  | 2010  | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017  |
|------------------------|-----------------|-------|-------|------|------|------|------|------|------|-------|
| Total Debt Ratio       | 98.06%          | 1.78  | 1.76  | 1.79 | 1.8  | 1.47 | 1.49 | 1.53 | 1.52 | 1.51  |
| Debt/Equity            | 116.05%         | 0.28  | 0.32  | 0.27 | 0.25 | 1.12 | 1.02 | 0.89 | 0.91 | 0.97  |
| Equity Multiplier      | 105.16%         | 1.28  | 1.32  | 1.27 | 1.25 | 2.12 | 2.02 | 1.89 | 1.91 | 1.97  |
| Long Term Debt Ratio   | 120.50%         | 0.04  | 0.03  | 0.02 | 0.02 | 0.43 | 0.39 | 0.36 | 0.38 | 0.37  |
| TIE                    | 114.82%         | -0.27 | 1.19  | 1.23 | 1.27 | 1.29 | 1.14 | 1.21 | 1.2  | 3.12  |
| Cash Coverage          | 99.34%          | 48.49 | 10.93 | 3.6  | 3.44 | 3.49 | 3.41 | 3.44 | 5.41 | 18.18 |

Table 16: Calculated leverage ratios for ATVI from 2012-2017.

### 6.1.3 Turnover Ratios

**Turnover Ratios** - Measures the efficiency with which a firm uses its assets to generate sales.

- **Inventory Turnover** - A measure of how many times a firm can sell its entire inventory throughout the course of one year.

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Inventory}}$$

- **Days' Sales in Inventory** - A measure of how long it takes to turnover a full inventory, in other words, how many days the current inventory will last.

$$\text{Days' Sales in Inventory} = \frac{365 \text{ Days}}{\text{Inventory Turnover}}$$

- **Receivables Turnover** - A measure of how fast a firm can collect on the sales made. Another way of explaining this ratio is the number of times a firm can collect on its sales on credit within a given year.

$$\text{Receivables Turnover} = \frac{\text{Sales}}{\text{Accounts Receivable}}$$

- **Days' Sales in Receivables** - Takes the above ratio and makes it in terms of how many days on average that are needed to collect on credit sales.

$$\text{Days' Sales in Receivables} = \frac{365 \text{ Days}}{\text{Receivables Turnover}}$$

- **NWC Turnover** - A ratio used to measure much 'work' can be gotten out of a firm's working capital. In other words, a multiple representing how much revenue a firm's net working capital can create.

$$\text{NWC Turnover} = \frac{\text{Sales}}{\text{NWC}}$$

- **Fixed Asset Turnover** - Instead of using net working capital, how much revenue a firm's fixed assets will generate for a given year.

$$\text{Fixed Asset Turnover} = \frac{\text{Sales}}{\text{Net Fixed Assets}}$$

- **Total Asset Turnover** - How much revenue is generated by each dollar of a firm's total assets.

$$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}}$$

| Turnover Measures          | Geo. Av. Growth | 2009 | 2010 | 2011 | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  |
|----------------------------|-----------------|------|------|------|-------|-------|-------|-------|-------|-------|
| Inventory Turnover         | 113.59%         | -    | -    | -    | 27.08 | 33.05 | 24.05 | 39.69 | -     | -     |
| Day's Sales In Inventory   | 88.04%          | -    | -    | -    | 13.48 | 11.04 | 15.17 | 9.2   | -     | -     |
| Recievables Turnover       | 103.58%         | -    | -    | -    | 11.32 | 12.17 | 10.93 | 12.47 | 18.87 | 13.5  |
| Days' Sales in Receivables | 96.54%          | -    | -    | -    | 32.24 | 29.99 | 33.39 | 29.26 | 19.35 | 27.05 |
| NWC Turnover               | 92.48%          | -    | -    | -    | -5.01 | -6.08 | -5.88 | -6.65 | 58.61 | 32.3  |
| Fixed Asset Turnover       | 108.88%         | -    | -    | -    | 7.29  | 6.93  | 7.01  | 9.84  | 10.01 | 11.16 |
| Total Asset Turnover       | 96.39%          | -    | -    | -    | 0.75  | 0.75  | 0.63  | 0.73  | 0.62  | 0.63  |

Table 17: Calculated turnover measures for EA from 2012-2017.

| Turnover Measures          | Geo. Av. Growth | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016  | 2017  |
|----------------------------|-----------------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| Inventory Turnover         | 145.40%         | 0.88   | 2.15   | 1.77   | 1.26   | 1.19   | 2.03   | 2.14   | 17.37 | 21.39 |
| Day's Sales In Inventory   | 68.78%          | 414.93 | 169.63 | 206.12 | 290.06 | 305.96 | 179.58 | 170.51 | 21.02 | 17.06 |
| Recievables Turnover       | 110.52%         | 5.79   | 6.61   | 7.33   | 6.87   | 8.99   | 6.69   | 6.87   | 9.03  | 7.64  |
| Days' Sales in Receivables | 90.48%          | 63.04  | 55.24  | 49.82  | 53.14  | 40.62  | 54.57  | 53.14  | 40.43 | 47.75 |
| NWC Turnover               | 111.09%         | 1.52   | 1.8    | 1.68   | 1.34   | 1.19   | 1.15   | 6.01   | 3.04  | 2.46  |
| Fixed Asset Turnover       | 96.71%          | -      | -      | 29.17  | 34.44  | 33.21  | 28.08  | 24.68  | 25.61 | 23.87 |
| Total Asset Turnover       | 107.21%         | 0.8    | 0.82   | 0.88   | 0.77   | 0.73   | 0.67   | 1.38   | 1.37  | 1.08  |

Table 18: Calculated turnover measures for ATVI from 2012-2017.



#### 6.1.4 Profitability Measures

**Profitability Measures** - Used to measure how efficiently a firm uses its assets and manages its operations.

- **Profit Margin** - How much profit created in terms of the revenue generated.

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Sales}}$$

- **Return on Assets** - A measure of profit per dollar of a firm's assets.

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$$

- **Return on Equity** - A measure of profit per dollar of a firm's equity, helps show how stockholders fared over a given year.

$$\text{ROE} = \frac{\text{Net Income}}{\text{Total Equity}}$$

| <b>Profitability Measures</b> | Geo. Av. Growth | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|-------------------------------|-----------------|------|------|------|------|------|------|------|------|------|
| Profit Margin                 | 161.19%         | -    | -    | -    | 0.02 | 0.03 | 0    | 0.19 | 0.26 | 0.2  |
| Return on Assets              | 155.36%         | -    | -    | -    | 0.01 | 0.02 | 0    | 0.14 | 0.16 | 0.13 |
| Return on Equity              | 150.43%         | -    | -    | -    | 0.03 | 0.04 | 0    | 0.29 | 0.34 | 0.24 |

Table 19: Calculated profitability measures for EA from 2012-2017.

| <b>Profitability Measures</b> | Geo. Av. Growth | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|-------------------------------|-----------------|------|------|------|------|------|------|------|------|------|
| Profit Margin                 | 104.96%         | 0.03 | 0.09 | 0.23 | 0.24 | 0.22 | 0.19 | 0.19 | 0.15 | 0.04 |
| Return on Assets              | 107.46%         | 0.01 | 0.03 | 0.08 | 0.08 | 0.07 | 0.06 | 0.06 | 0.06 | 0.01 |
| Return on Equity              | 116.05%         | 0.28 | 0.32 | 0.27 | 0.25 | 1.12 | 1.02 | 0.89 | 0.91 | 0.97 |

Table 20: Calculated profitability measures for ATVI from 2012-2017.

### 6.1.5 Market Value Measures

**Market Value Measures** - Ratios that involve the price per share of stock.

- **Earning Per Share** - Net Income per common share of company stock.

$$\text{EPS} = \frac{\text{Net Income}}{\text{Shares Outstanding}}$$

- **Price to Earnings Ratio** - How much each share sells for in terms of how much net income is generated per share. How much an investor is willing to pay for a share per dollar of current income generated per share.

$$\text{Price to Earnings Ratio} = \frac{\text{Price Per Share}}{\text{EPS}}$$

- **Price to Sales Ratio** - A company can have negative earnings for quite some time, rendering Price to Earnings ratio not very meaningful. Instead we look at their sales.

$$\text{Price to Sales Ratio} = \frac{\text{Price Per Share}}{\text{Sales Per Share}}$$

- **Market to Book Ratio** - The ratio of a firm's book value to its market value, roughly comparing the market value of a firm's investments to the cost of their investments.

$$\text{Market to Book Ratio} = \frac{\text{Market Value Per Share}}{\text{Book Value Per Share}}$$

| Market Value Measures     | Geo. Av. Growth | 2012      | 2013      | 2014       | 2015       | 2016       | 2017       |
|---------------------------|-----------------|-----------|-----------|------------|------------|------------|------------|
| EPS                       | 167.84%         | \$0.24    | \$0.32    | \$0.03     | \$2.83     | \$3.85     | \$3.14     |
| PE Ratio High             | 76.60%          | 111       | 60.16     | 1,189.71   | 21.31      | 20         | 29.28      |
| PE Ratio Low              | 77.84%          | 68.18     | 33.21     | 647.99     | 9.43       | 13.78      | 19.48      |
| Price Sales Ratio High    | 123.47%         | 2.04      | 1.55      | 2.66       | 4.13       | 5.26       | 5.84       |
| Price Sales Ratio Low     | 125.47%         | 1.25      | 0.86      | 1.45       | 1.83       | 3.62       | 3.89       |
| Market To Book Ratio High | 111.85%         | 82,108.81 | 68,487.40 | 109,764.65 | 134,791.01 | 154,998.01 | 143,762.34 |
| Market To Book Ratio Low  | 113.66%         | 50,434.23 | 37,806.73 | 59,785.10  | 59,638.47  | 106,818.05 | 95,669.33  |

Table 21: Calculated market value measures for EA from 2012-2017.

| Market Value Measures     | Geo. Av. Growth | 2009 | 2010 | 2011  | 2012  | 2013  | 2014  | 2015 | 2016 | 2017  |
|---------------------------|-----------------|------|------|-------|-------|-------|-------|------|------|-------|
| EPS                       | 116.63%         | -    | 0.77 | 0.86  | 1.12  | 0.9   | 1.37  | 1.36 | 2.02 | 2.27  |
| PE Ratio High             | 100.80%         | -    | -    | 10.16 | 10.14 | 13.95 | 10.51 | 9.59 | 9.12 | 10.66 |
| PE Ratio Low              | 95.19%          | -    | -    | 9.8   | 9.9   | 13.63 | 7.59  | 7.71 | 5.32 | 7.29  |
| Price Sales Ratio High    | 111.36%         | -    | -    | 3.96  | 3.14  | 4.22  | 5.4   | 6.49 | 7.11 | 7.55  |
| Price Sales Ratio Low     | 105.99%         | -    | -    | 2.86  | 2.4   | 2.46  | 3.27  | 2.99 | 4.03 | 4.05  |
| Market To Book Ratio High | 122.48%         | -    | -    | 1.62  | 1.39  | 1.89  | 2.55  | 3.95 | 4.14 | 5.46  |
| Market To Book Ratio Low  | 116.31%         | -    | -    | 1.21  | 1.04  | 1.07  | 1.77  | 1.85 | 2.56 | 3     |

Table 22: Calculated market value measures for ATVI from 2012-2017.

## 6.2 Financial Statements

In forecasting financial documents and metrics, a geometric average growth model was implemented. The geometric average growth of a metric is calculated using the year by year percentage change in the value of the metric, in conjunction with the following formula:

$$\text{Geometric Average Growth} = \left\{ \prod_{i=1}^n (1 + r_n) \right\}^{\frac{1}{n}} - 1$$

Where n is the number of years taken into consideration and  $r_n$  is the rate of change for the metric in that year.

### 6.2.1 Balance Sheets

| EA   | 2012              | 2013              | 2014              | 2015              | 2016              | 2017              |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>Current Assets</b>                            |                   |                   |                   |                   |                   |                   |
| Cash and Equivalents                             | \$1,293.00        | \$1,292.00        | \$1,782.00        | \$2,068.00        | \$2,493.00        | \$2,565.00        |
| Marketable Securities                            | \$119.00          | \$-               | —                 | —                 | —                 | —                 |
| Accounts Receivable - Trade                      | \$366.00          | \$312.00          | \$327.00          | \$362.00          | \$233.00          | \$359.00          |
| Inventories                                      | \$59.00           | \$42.00           | \$56.00           | \$36.00           | —                 | —                 |
| Deferred Income Tax Asset (Short-Term)           | \$67.00           | \$52.00           | \$74.00           | \$54.00           | —                 | —                 |
| Other Current Assets                             | \$268.00          | \$239.00          | \$316.00          | \$247.00          | \$287.00          | \$308.00          |
| Allowance For Doubtful Accounts                  | \$252.00          | \$200.00          | \$186.00          | \$140.00          | \$159.00          | \$145.00          |
| Short-Term Investments                           | \$437.00          | \$388.00          | \$583.00          | \$953.00          | \$1,341.00        | \$1,967.00        |
| <b>Total Current Assets</b>                      | <b>\$2,609.00</b> | <b>\$2,325.00</b> | <b>\$3,138.00</b> | <b>\$3,720.00</b> | <b>\$4,354.00</b> | <b>\$5,199.00</b> |
| <b>Noncurrent Assets</b>                         |                   |                   |                   |                   |                   |                   |
| Property Plant & Equipment - Net                 | \$568.00          | \$548.00          | \$510.00          | \$459.00          | \$439.00          | \$434.00          |
| Growth in Noncurrent Assets (%)                  | 96.48%            | 93.07%            | 90.00%            | 95.64%            | 98.86%            |                   |
| Geometric Average Growth                         |                   |                   |                   |                   |                   | 102.58%           |
| Deferred Income Tax Asset (Long-Term)            | \$42.00           | \$53.00           | \$28.00           | \$13.00           | \$387.00          | \$286.00          |
| Other Intangible Assets                          | \$369.00          | \$253.00          | \$177.00          | \$111.00          | \$57.00           | \$8.00            |
| Goodwill   | \$1,718.00        | \$1,721.00        | \$1,723.00        | \$1,713.00        | \$1,710.00        | \$1,707.00        |
| Other Noncurrent Assets                          | \$185.00          | \$170.00          | \$140.00          | \$131.00          | \$103.00          | \$84.00           |
| <b>Total Assets</b>                              | <b>\$5,491.00</b> | <b>\$5,070.00</b> | <b>\$5,716.00</b> | <b>\$6,147.00</b> | <b>\$7,050.00</b> | <b>\$7,718.00</b> |
| <b>Current Liabilities</b>                       |                   |                   |                   |                   |                   |                   |
| Accounts Payable - Trade                         | \$215.00          | \$136.00          | \$119.00          | \$68.00           | \$89.00           | \$87.00           |
| Accrued Expenses and Other                       | \$857.00          | \$737.00          | \$781.00          | \$794.00          | \$710.00          | \$789.00          |
| Deferred/Unearned Revenue (Short-Term)           | \$1,048.00        | \$1,044.00        | \$1,490.00        | \$1,283.00        | \$1,458.00        | \$1,539.00        |
| Convertible Debt                                 | —                 | —                 | —                 | \$602.00          | \$161.00          | \$-               |
| <b>Total Current Liabilities</b>                 | <b>\$2,120.00</b> | <b>\$1,917.00</b> | <b>\$2,390.00</b> | <b>\$2,747.00</b> | <b>\$2,418.00</b> | <b>\$2,415.00</b> |
| <b>Non Current Liabilities</b>                   |                   |                   |                   |                   |                   |                   |
| Notes Payable (Long-Term)                        | \$539.00          | \$559.00          | \$580.00          | \$-               | \$989.00          | \$990.00          |
| Deferred Income Taxes (Liabilities)              | \$8.00            | \$1.00            | \$18.00           | \$80.00           | \$2.00            | \$1.00            |
| Other Noncurrent Liabilities                     | \$366.00          | \$326.00          | \$306.00          | \$253.00          | \$163.00          | \$148.00          |
| Provision For Taxation                           | —                 | —                 | —                 | —                 | \$80.00           | \$104.00          |
| <b>Total Liabilities</b>                         | <b>\$3,033.00</b> | <b>\$2,803.00</b> | <b>\$3,294.00</b> | <b>\$3,080.00</b> | <b>\$3,652.00</b> | <b>\$3,658.00</b> |
| <b>Stockholder Equity</b>                        |                   |                   |                   |                   |                   |                   |
| Preferred Stock                                  | —                 | —                 | 0                 | 0                 | —                 | —                 |
| Common Stock                                     | 3                 | 3                 | 3                 | 3                 | 3                 | 3                 |
| Additional Paid In Capital                       | \$2,359.00        | \$2,174.00        | \$2,353.00        | \$2,127.00        | \$1,349.00        | \$1,049.00        |
| Accumulated Other Comprehensive Income           | \$173.00          | \$69.00           | \$37.00           | \$2.00            | -\$16.00          | -\$19.00          |
| Retained Earnings (Accumulated Deficit)          | -\$77.00          | \$21.00           | \$29.00           | \$904.00          | \$2,060.00        | \$3,027.00        |
| Shares Outstanding                               | 320               | —                 | 311               | 310               | 301               | 308               |
| Par Value  | 0.01              | 0.01              | 0.01              | 0.01              | 0.01              | 0.01              |
| Shares Issued                                    | —                 | —                 | —                 | —                 | 301               | 308               |
| <b>Total Shareholders Equity</b>                 | <b>\$2,458.00</b> | <b>\$2,267.00</b> | <b>\$2,422.00</b> | <b>\$3,067.00</b> | <b>\$3,398.00</b> | <b>\$4,060.00</b> |
| <b>Total Liabilities and Shareholders Equity</b> | <b>\$5,491.00</b> | <b>\$5,070.00</b> | <b>\$5,716.00</b> | <b>\$6,147.00</b> | <b>\$7,050.00</b> | <b>\$7,718.00</b> |

Table 23: Balance Sheet for EA for the years 2012-2017.

| <b>ATVI</b>                                      | <b>2012</b>        | <b>2013</b>        | <b>2014</b>        | <b>2015</b>        | <b>2016</b>        | <b>2017</b>        |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| <b>Current Assets</b>                            |                    |                    |                    |                    |                    |                    |
| Cash and Equivalents                             | \$3,959.00         | \$4,410.00         | \$4,848.00         | \$1,823.00         | \$3,245.00         | \$4,713.00         |
| Accounts Receivable - Trade                      | \$707.00           | \$510.00           | \$659.00           | \$679.00           | \$732.00           | \$918.00           |
| Inventories                                      | \$209.00           | \$171.00           | \$123.00           | \$128.00           | \$49.00            | \$46.00            |
| Deferred Income Tax Asset (Short-Term)           | \$487.00           | \$321.00           | —                  | —                  | —                  | —                  |
| Other Current Assets                             | \$496.00           | \$429.00           | \$449.00           | \$421.00           | \$392.00           | \$476.00           |
| Allowance For Doubtful Accounts                  | \$332.00           | \$381.00           | \$383.00           | \$343.00           | \$261.00           | \$279.00           |
| Short-Term Investments                           | \$416.00           | \$33.00            | \$10.00            | —                  | —                  | —                  |
| Capitalized Software Net (Short-Term)            | —                  | \$367.00           | \$452.00           | \$336.00           | \$412.00           | \$367.00           |
| <b>Total Current Assets</b>                      | <b>\$6,274.00</b>  | <b>\$6,241.00</b>  | <b>\$6,541.00</b>  | <b>\$3,387.00</b>  | <b>\$4,830.00</b>  | <b>\$6,520.00</b>  |
| <b>Noncurrent Assets</b>                         |                    |                    |                    |                    |                    |                    |
| Long Term Investments                            | \$8.00             | \$9.00             | \$9.00             | —                  | —                  | —                  |
| Property Plant & Equipment - Net                 | \$141.00           | \$138.00           | \$157.00           | \$189.00           | \$258.00           | \$294.00           |
| Deferred Income Tax Asset (Long-Term)            | —                  | —                  | \$264.00           | \$275.00           | \$283.00           | \$459.00           |
| Other Intangible Assets                          | \$68.00            | \$43.00            | \$47.00            | \$482.00           | \$1,858.00         | \$1,106.00         |
| Goodwill   | \$7,106.00         | \$7,092.00         | \$7,086.00         | \$7,095.00         | \$9,768.00         | \$9,763.00         |
| Patents/Trademarks/Copyrights                    | \$433.00           | \$433.00           | \$433.00           | —                  | —                  | —                  |
| Restricted Cash/Investments (Long-Term)          | —                  | —                  | \$-                | \$3,561.00         | —                  | —                  |
| Other Noncurrent Assets                          | \$41.00            | \$35.00            | \$85.00            | \$177.00           | \$401.00           | \$440.00           |
| Capitalized Software - Net                       | \$129.00           | \$21.00            | \$20.00            | \$80.00            | \$54.00            | \$86.00            |
| <b>Total Assets</b>                              | <b>\$14,200.00</b> | <b>\$14,012.00</b> | <b>\$14,642.00</b> | <b>\$15,246.00</b> | <b>\$17,452.00</b> | <b>\$18,668.00</b> |
| <b>Current Liabilities</b>                       |                    |                    |                    |                    |                    |                    |
| Accounts Payable - Trade                         | \$343.00           | \$355.00           | \$325.00           | \$284.00           | \$222.00           | \$323.00           |
| Current Portion of Long-Term Debt                | —                  | \$25.00            | —                  | —                  | —                  | —                  |
| Accrued Expenses                                 | —                  | —                  | —                  | —                  | —                  | —                  |
| Accrued Expenses and Other                       | \$652.00           | \$636.00           | \$592.00           | \$625.00           | \$806.00           | \$1,411.00         |
| Deferred/Unearned Revenue (Short-Term)           | \$1,657.00         | \$1,389.00         | \$1,797.00         | \$1,702.00         | \$1,628.00         | \$1,929.00         |
| <b>Total Current Liabilities</b>                 | <b>\$2,652.00</b>  | <b>\$2,405.00</b>  | <b>\$2,714.00</b>  | <b>\$2,611.00</b>  | <b>\$2,656.00</b>  | <b>\$3,663.00</b>  |
| <b>Non Current Liabilities</b>                   |                    |                    |                    |                    |                    |                    |
| Long Term Debt                                   | —                  | \$4,668.00         | \$4,324.00         | \$4,074.00         | \$4,887.00         | \$4,390.00         |
| Deferred Income Taxes (Liabilities)              | \$25.00            | \$66.00            | \$10.00            | \$10.00            | \$44.00            | \$21.00            |
| Other Noncurrent Liabilities                     | \$206.00           | \$251.00           | \$361.00           | \$483.00           | \$746.00           | \$1,132.00         |
| <b>Total Liabilities</b>                         | <b>\$2,883.00</b>  | <b>\$7,390.00</b>  | <b>\$7,409.00</b>  | <b>\$7,178.00</b>  | <b>\$8,333.00</b>  | <b>\$9,206.00</b>  |
| <b>Stockholder Equity</b>                        |                    |                    |                    |                    |                    |                    |
| Additional Paid In Capital                       | \$9,450.00         | \$9,682.00         | \$9,924.00         | \$10,242.00        | \$10,442.00        | \$10,747.00        |
| Treasury Stock (Amount)                          | —                  | -\$5,814.00        | -\$5,762.00        | -\$5,637.00        | -\$5,563.00        | -\$5,563.00        |
| Accumulated Other Comprehensive Income           | -\$26.00           | \$68.00            | -\$303.00          | -\$633.00          | -\$629.00          | -\$638.00          |
| Retained Earnings (Accumulated Deficit)          | \$1,893.00         | \$2,686.00         | \$3,374.00         | \$4,096.00         | \$4,869.00         | \$4,916.00         |
| Par Value  | \$-                | \$-                | \$-                | \$-                | \$-                | \$-                |
| Treasury Shares (Number)                         | —                  | 428.68             | 428.68             | 428.68             | 428.68             | 428.68             |
| Shares Issued                                    | 1,111.61           | 1,132.39           | 1,150.61           | 1,163.18           | 1,174.16           | 1,186.18           |
| Total Shareholders Equity                        | \$11,317.00        | \$6,622.00         | \$7,233.00         | \$8,068.00         | \$9,119.00         | \$9,462.00         |
| Shares Authorized                                | 2,400.00           | 2,400.00           | 2,400.00           | 2,400.00           | 2,400.00           | 2,400.00           |
| Shares Outstanding                               | —                  | —                  | —                  | —                  | —                  | —                  |
| <b>Total Shareholders Equity</b>                 | <b>\$11,317.00</b> | <b>\$6,622.00</b>  | <b>\$7,233.00</b>  | <b>\$8,068.00</b>  | <b>\$9,119.00</b>  | <b>\$9,462.00</b>  |
| <b>Total Liabilities and Shareholders Equity</b> | <b>\$14,200.00</b> | <b>\$14,012.00</b> | <b>\$14,642.00</b> | <b>\$15,246.00</b> | <b>\$17,452.00</b> | <b>\$18,668.00</b> |

Table 24: Balance Sheet for ATVI for the years 2012-2017.

## 6.2.2 Income Statements

| <b>EA</b>                           | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Revenue                             | \$4,143.00  | \$3,797.00  | \$3,575.00  | \$4,515.00  | \$4,396.00  | \$4,845.00  |
| Gross Profit                        | \$2,545.00  | \$2,409.00  | \$2,228.00  | \$3,086.00  | \$3,042.00  | \$3,547.00  |
| Operating Income (Loss)             | \$35.00     | \$121.00    | \$33.00     | \$948.00    | \$898.00    | \$1,224.00  |
| Pretax Income                       | \$18.00     | \$139.00    | \$7.00      | \$925.00    | \$877.00    | \$1,210.00  |
| Income (Loss) from Cont Ops         | \$76.00     | \$98.00     | \$8.00      | \$875.00    | \$1,156.00  | \$967.00    |
| Income (Loss) Incl. MI              | \$76.00     | \$98.00     | \$8.00      | \$875.00    | \$1,156.00  | \$967.00    |
| Net Income, GAAP                    | \$76.00     | \$76.00     | \$76.00     | \$76.00     | \$76.00     | \$76.00     |
| Net Income Avail to Common, GAAP    | \$76.00     | \$98.00     | \$8.00      | \$875.00    | \$1,156.00  | \$967.00    |
| Net Income Avail to Common, Adj     | \$196.90    | \$93.72     | \$73.28     | \$592.96    | \$749.15    | \$998.85    |
| Basic Weighted Avg Shares           | 331         | 310         | 308         | 311         | 310         | 303         |
| Basic EPS, GAAP                     | \$0.23      | \$0.32      | \$0.03      | \$2.81      | \$3.73      | \$3.19      |
| Basic EPS from Cont Ops             | \$0.23      | \$0.32      | \$0.03      | \$2.81      | \$3.73      | \$3.19      |
| Basic EPS from Cont Ops, Adjusted   | \$0.59      | \$0.30      | \$0.24      | \$1.91      | \$2.42      | \$3.30      |
| Diluted Weighted Avg Shares         | 336         | 313         | 316         | 325         | 330         | 314         |
| Diluted EPS, GAAP                   | \$0.23      | \$0.31      | \$0.03      | \$2.69      | \$3.50      | \$3.08      |
| Diluted EPS from Cont Ops           | \$0.23      | \$0.31      | \$0.03      | \$2.69      | \$3.50      | \$3.08      |
| Diluted EPS from Cont Ops, Adjusted | \$0.59      | \$0.30      | \$0.24      | \$1.82      | \$2.27      | \$3.18      |

Table 25: Income Statement for EA for the years 2012-2017.

| <b>ATVI</b>                         | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Revenue                             | \$4,856.00  | \$4,583.00  | \$4,408.00  | \$4,664.00  | \$6,608.00  | \$7,017.00  |
| Gross Profit                        | \$3,194.00  | \$3,052.00  | \$2,883.00  | \$3,079.00  | \$4,214.00  | \$4,516.00  |
| Operating Income (Loss)             | \$1,451.00  | \$1,372.00  | \$1,183.00  | \$1,319.00  | \$1,412.00  | \$1,309.00  |
| Pretax Income                       | \$1,458.00  | \$1,319.00  | \$981.00    | \$1,121.00  | \$1,106.00  | \$1,151.00  |
| Income (Loss) from Cont Ops         | \$1,149.00  | \$1,010.00  | \$835.00    | \$892.00    | \$966.00    | \$273.00    |
| Income (Loss) Incl. MI              | \$1,149.00  | \$1,010.00  | \$835.00    | \$892.00    | \$966.00    | \$273.00    |
| Net Income, GAAP                    | \$1,149.00  | \$1,010.00  | \$835.00    | \$892.00    | \$966.00    | \$273.00    |
| Net Income Avail to Common, GAAP    | \$1,125.00  | \$987.00    | \$817.00    | \$881.00    | \$962.00    | \$273.00    |
| Net Income Avail to Common, Adj     | \$1,125.65  | \$1,059.85  | \$817.00    | \$887.21    | \$1,060.78  | \$1,106.77  |
| Basic Weighted Avg Shares           | 1,112       | 1,024       | 716         | 728         | 740         | 754         |
| Basic EPS, GAAP                     | \$1.01      | \$0.96      | \$1.14      | \$1.21      | \$1.30      | \$0.36      |
| Basic EPS from Cont Ops             | \$1.01      | \$0.96      | \$1.14      | \$1.21      | \$1.30      | \$0.36      |
| Basic EPS from Cont Ops, Adjusted   | \$1.01      | \$1.04      | \$1.14      | \$1.22      | \$1.43      | \$1.47      |
| Diluted Weighted Avg Shares         | 1118        | 1035        | 726         | 739         | 754         | 766         |
| Diluted EPS, GAAP                   | \$1.01      | \$0.95      | \$1.13      | \$1.19      | \$1.28      | \$0.36      |
| Diluted EPS from Cont Ops           | \$1.01      | \$0.95      | \$1.13      | \$1.19      | \$1.28      | \$0.36      |
| Diluted EPS from Cont Ops, Adjusted | \$1.01      | \$1.02      | \$1.13      | \$1.20      | \$1.41      | \$1.45      |

Table 26: Income Statement for ATVI for the years 2012-2017.

### 6.3 Common Size Analysis

Companies can have different sizes and compositions, so it is helpful to describe the information on a balance sheet and on an income statement in terms of something on that financial document, in order to compare the various metrics.

#### 6.3.1 Common Size Balance Sheet

Every item on a company's balance sheet is expressed as a percentage of the company's total assets or total liabilities and shareholders' equity.

| <b>EA</b>  |         |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|---------|
| <b>Current Assets</b>                            | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    |
| Cash and Equivalents                             | 23.55%  | 25.48%  | 31.18%  | 33.64%  | 35.36%  | 33.23%  |
| Marketable Securities                            | 2.17%   | 0.00%   |         |         |         |         |
| Accounts Receivable - Trade                      | 6.67%   | 6.15%   | 5.72%   | 5.89%   | 3.30%   | 4.65%   |
| Inventories                                      | 1.07%   | 0.83%   | 0.98%   | 0.59%   |         |         |
| Deferred Income Tax Asset (Short-Term)           | 1.22%   | 1.03%   | 1.29%   | 0.88%   |         |         |
| Other Current Assets                             | 4.88%   | 4.71%   | 5.53%   | 4.02%   | 4.07%   | 3.99%   |
| Allowance For Doubtful Accounts                  | 4.59%   | 3.94%   | 3.25%   | 2.28%   | 2.26%   | 1.88%   |
| Short-Term Investments                           | 7.96%   | 7.65%   | 10.20%  | 15.50%  | 19.02%  | 25.49%  |
| <b>Total Current Assets</b>                      | 47.51%  | 45.86%  | 54.90%  | 60.52%  | 61.76%  | 67.36%  |
| <b>Noncurrent Assets</b>                         |         |         |         |         |         |         |
| Property Plant & Equipment - Net                 | 10.34%  | 10.81%  | 8.92%   | 7.47%   | 6.23%   | 5.62%   |
| Deferred Income Tax Asset (Long-Term)            | 0.76%   | 1.05%   | 0.49%   | 0.21%   | 5.49%   | 3.71%   |
| Other Intangible Assets                          | 6.72%   | 4.99%   | 3.10%   | 1.81%   | 0.81%   | 0.10%   |
| Goodwill   | 31.29%  | 33.94%  | 30.14%  | 27.87%  | 24.26%  | 22.12%  |
| Other Noncurrent Assets                          | 3.37%   | 3.35%   | 2.45%   | 2.13%   | 1.46%   | 1.09%   |
| Total Noncurrent Assets                          | 52.49%  | 54.14%  | 45.10%  | 39.48%  | 38.24%  | 32.64%  |
| <b>Total Assets</b>                              | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| <b>Current Liabilities</b>                       |         |         |         |         |         |         |
| Accounts Payable - Trade                         | 3.92%   | 2.68%   | 2.08%   | 1.11%   | 1.26%   | 1.13%   |
| Accrued Expenses and Other                       | 15.61%  | 14.54%  | 13.66%  | 12.92%  | 10.07%  | 10.22%  |
| Deferred/Unearned Revenue (Short-Term)           | 19.09%  | 20.59%  | 26.07%  | 20.87%  | 20.68%  | 19.94%  |
| Convertible Debt                                 |         |         | 9.79%   | 2.28%   | 0.00%   |         |
| <b>Total Current Liabilities</b>                 | 38.61%  | 37.81%  | 41.81%  | 44.69%  | 34.30%  | 31.29%  |
| <b>Non Current Liabilities</b>                   |         |         |         |         |         |         |
| Notes Payable (Long-Term)                        | 10.15%  | 0.00%   | 14.03%  | 12.83%  |         |         |
| Deferred Income Taxes (Liabilities)              | 0.15%   | 0.02%   | 0.31%   | 1.30%   | 0.03%   | 0.01%   |
| Other Noncurrent Liabilities                     | 6.67%   | 6.43%   | 5.35%   | 4.12%   | 2.31%   | 1.92%   |
| Provision For Taxation                           |         |         |         | 1.13%   | 1.35%   |         |
| <b>Total Liabilities</b>                         | 55.24%  | 55.29%  | 57.63%  | 50.11%  | 51.80%  | 47.40%  |
| <b>Stockholder Equity</b>                        |         |         |         |         |         |         |
| Preferred Stock                                  |         | 0.00%   | 0.00%   |         |         |         |
| Common Stock                                     | 0.05%   | 0.06%   | 0.05%   | 0.05%   | 0.04%   | 0.04%   |
| Additional Paid In Capital                       | 42.96%  | 42.88%  | 41.17%  | 34.60%  | 19.13%  | 13.59%  |
| Accumulated Other Comprehensive Income           | 3.15%   | 1.36%   | 0.65%   | 0.03%   | -0.23%  | -0.25%  |
| Retained Earnings (Accumulated Deficit)          | -1.40%  | 0.41%   | 0.51%   | 14.71%  | 29.22%  | 39.22%  |
| Par Value  | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| <b>Total Shareholders Equity</b>                 | 44.76%  | 44.71%  | 42.37%  | 49.89%  | 48.20%  | 52.60%  |
| <b>Total Liabilities and Shareholders Equity</b> | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

Table 27: Common Size Balance Sheet for EA for the years 2012-2017.

|  |         |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|---------|
| <b>ATVI</b>                                      |         |         |         |         |         |         |
| <b>Balance Sheet</b>                             | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    |
| <b>Current Assets</b>                            |         |         |         |         |         |         |
| Cash and Equivalents                             | 27.88%  | 31.47%  | 33.11%  | 11.96%  | 18.59%  | 25.25%  |
| Accounts Receivable - Trade                      | 4.98%   | 3.64%   | 4.50%   | 4.45%   | 4.19%   | 4.92%   |
| Inventories                                      | 1.47%   | 1.22%   | 0.84%   | 0.84%   | 0.28%   | 0.25%   |
| Deferred Income Tax Asset (Short-Term)           | 3.43%   | 2.29%   | —       | —       | —       | —       |
| Other Current Assets                             | 3.49%   | 3.06%   | 3.07%   | 2.76%   | 2.25%   | 2.55%   |
| Allowance For Doubtful Accounts                  | 2.34%   | 2.72%   | 2.62%   | 2.25%   | 1.50%   | 1.49%   |
| Short-Term Investments                           | 2.93%   | 0.24%   | 0.07%   | —       | —       | —       |
| Capitalized Software Net (Short-Term)            | —       | 2.62%   | 3.09%   | 2.20%   | 2.36%   | 1.97%   |
| <b>Total Current Assets</b>                      | 44.18%  | 44.54%  | 44.67%  | 22.22%  | 27.68%  | 34.93%  |
|  |         |         |         |         |         |         |
| <b>Noncurrent Assets</b>                         |         |         |         |         |         |         |
| Long Term Investments                            | 0.06%   | 0.06%   | 0.06%   | —       | —       | —       |
| Property Plant & Equipment - Net                 | 0.99%   | 0.98%   | 1.07%   | 1.24%   | 1.48%   | 1.57%   |
| Deferred Income Tax Asset (Long-Term)            | —       | —       | 1.80%   | 1.80%   | 1.62%   | 2.46%   |
| Other Intangible Assets                          | 0.48%   | 0.31%   | 0.32%   | 3.16%   | 10.65%  | 5.92%   |
| Goodwill   | 50.04%  | 50.61%  | 48.40%  | 46.54%  | 55.97%  | 52.30%  |
| Patents/Trademarks/Copyrights                    | 3.05%   | 3.09%   | 2.96%   | —       | —       | —       |
| Restricted Cash/Investments (Long-Term)          | —       | —       | 0.00%   | 23.36%  | —       | —       |
| Other Noncurrent Assets                          | 0.29%   | 0.25%   | 0.58%   | 1.16%   | 2.30%   | 2.36%   |
| Capitalized Software - Net                       | 0.91%   | 0.15%   | 0.14%   | 0.52%   | 0.31%   | 0.46%   |
| <b>Total Assets</b>                              | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
|  |         |         |         |         |         |         |
| <b>Current Liabilities</b>                       |         |         |         |         |         |         |
| Accounts Payable - Trade                         | 2.42%   | 2.53%   | 2.22%   | 1.86%   | 1.27%   | 1.73%   |
| Current Portion of Long-Term Debt                | —       | 0.18%   | —       | —       | —       | —       |
| Accrued Expenses                                 | —       | —       | —       | —       | —       | —       |
| Accrued Expenses and Other                       | 4.59%   | 4.54%   | 4.04%   | 4.10%   | 4.62%   | 7.56%   |
| Deferred/Unearned Revenue (Short-Term)           | 11.67%  | 9.91%   | 12.27%  | 11.16%  | 9.33%   | 10.33%  |
| <b>Total Current Liabilities</b>                 | 18.68%  | 17.16%  | 18.54%  | 17.13%  | 15.22%  | 19.62%  |
|  |         |         |         |         |         |         |
| <b>Non Current Liabilities</b>                   |         |         |         |         |         |         |
| Long Term Debt                                   | —       | 33.31%  | 29.53%  | 26.72%  | 28.00%  | 23.52%  |
| Deferred Income Taxes (Liabilities)              | 0.18%   | 0.47%   | 0.07%   | 0.07%   | 0.25%   | 0.11%   |
| Other Noncurrent Liabilities                     | 1.45%   | 1.79%   | 2.47%   | 3.17%   | 4.27%   | 6.06%   |
| <b>Total Liabilities</b>                         | 20.30%  | 52.74%  | 50.60%  | 47.08%  | 47.75%  | 49.31%  |
|  |         |         |         |         |         |         |
| <b>Stockholder Equity</b>                        |         |         |         |         |         |         |
| Additional Paid In Capital                       | 66.55%  | 69.10%  | 67.78%  | 67.18%  | 59.83%  | 57.57%  |
| Treasury Stock (Amount)                          | —       | -41.49% | -39.35% | -36.97% | -31.88% | -29.80% |
| Accumulated Other Comprehensive Income           | -0.18%  | 0.49%   | -2.07%  | -4.15%  | -3.60%  | -3.42%  |
| Retained Earnings (Accumulated Deficit)          | 13.33%  | 19.17%  | 23.04%  | 26.87%  | 27.90%  | 26.33%  |
| Par Value  | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| <b>Total Shareholders Equity</b>                 | 79.70%  | 47.26%  | 49.40%  | 52.92%  | 52.25%  | 50.69%  |
|  |         |         |         |         |         |         |
| <b>Total Liabilities and Shareholders Equity</b> | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

Table 28: Common Size Balance Sheet for ATVI for the years 2012-2017.

### 6.3.2 Common Size Income Statement

Metrics on the income statement are represented as a percentage of total sales. This tells us what happens to each dollar in sales.

| <b>EA</b>                               | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    |
|---|---------|---------|---------|---------|---------|---------|
| <b>Revenue</b>                          | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| + Sales & Services Revenue              | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| - Cost of Revenue                       | 38.57%  | 36.56%  | 37.68%  | 31.65%  | 30.80%  | 26.79%  |
| + Cost of Goods & Services              | 38.57%  | 36.56%  | 37.68%  | 31.65%  | 30.80%  | 26.79%  |
| <b>Gross Profit</b>                     | 61.43%  | 63.44%  | 62.32%  | 68.35%  | 69.20%  | 73.21%  |
| + Other Operating Income                | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| - Operating Expenses                    | 60.58%  | 60.26%  | 61.40%  | 47.35%  | 48.77%  | 47.95%  |
| + Selling, General & Admin              | 30.41%  | 30.08%  | 30.49%  | 22.88%  | 23.38%  | 22.95%  |
| + Selling & Marketing                   | 21.31%  | 20.75%  | 19.02%  | 14.33%  | 14.15%  | 13.89%  |
| + General & Administrative              | 9.10%   | 9.32%   | 11.47%  | 8.55%   | 9.24%   | 9.06%   |
| + Research & Development                | 28.48%  | 30.37%  | 31.47%  | 24.23%  | 25.23%  | 24.87%  |
| + Other Operating Expense               | 1.69%   | -0.18%  | -0.56%  | 0.24%   | 0.16%   | 0.12%   |
| <b>Operating Income (Loss)</b>          | 0.84%   | 3.19%   | 0.92%   | 21.00%  | 20.43%  | 25.26%  |
| - Non-Operating (Income) Loss           | 0.41%   | -0.47%  | 0.73%   | 0.51%   | 0.48%   | 0.29%   |
| + Interest Expense, Net                 | 0.27%   | 0.61%   | 0.70%   | 0.47%   | 0.30%   | 0.45%   |
| + Interest Expense                      | 0.48%   | 0.76%   | 0.84%   | 0.69%   | 0.64%   | 0.97%   |
| - Interest Income                       | 0.22%   | 0.16%   | 0.14%   | 0.22%   | 0.34%   | 0.52%   |
| + Other Investment (Inc) Loss           | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| + Foreign Exch (Gain) Loss              | 0.00%   | 0.00%   | 0.00%   | 1.37%   | 0.32%   | 0.83%   |
| + (Income) Loss from Affiliates         | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| + Other Non-Op (Income) Loss            | 0.14%   | -1.08%  | 0.03%   | -1.33%  | -0.14%  | -0.99%  |
| <b>Pretax Income</b>                    | 0.43%   | 3.66%   | 0.20%   | 20.49%  | 19.95%  | 24.97%  |
| - Income Tax Expense (Benefit)          | -1.40%  | 1.08%   | -0.03%  | 1.11%   | -6.35%  | 5.02%   |
| + Current Income Tax                    | 0.68%   | 1.03%   | 0.20%   | 0.69%   | 2.50%   | 2.89%   |
| + Deferred Income Tax                   | -2.08%  | 0.05%   | -0.22%  | 0.42%   | -8.85%  | 2.13%   |
| + Tax Allowance/Credit                  | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| <b>Income (Loss) from Cont Ops</b>      | 1.83%   | 2.58%   | 0.22%   | 19.38%  | 26.30%  | 19.96%  |
| - Net Extraordinary Losses (Gains)      | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| + Discontinued Operations               | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| + XO & Accounting Changes               | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| <b>Income (Loss) Incl. MI</b>           | 1.83%   | 2.58%   | 0.22%   | 19.38%  | 26.30%  | 19.96%  |
| - Minority Interest                     | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| <b>Net Income, GAAP</b>                 | 1.83%   | 2.00%   | 2.13%   | 1.68%   | 1.73%   | 1.57%   |
| - Preferred Dividends                   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| - Other Adjustments                     | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| <b>Net Income Avail to Common, GAAP</b> | 1.83%   | 2.58%   | 0.22%   | 19.38%  | 26.30%  | 19.96%  |
| <b>Net Income Avail to Common, Adj</b>  | 4.75%   | 2.47%   | 2.05%   | 13.13%  | 17.04%  | 20.62%  |
| <b>Net Abnormal Losses (Gains)</b>      | 2.92%   | -0.11%  | 1.83%   | -6.25%  | -9.25%  | 0.66%   |
| <b>Net Extraordinary Losses (Gains)</b> | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |

Table 29: Common Size Income Statement for EA for the years 2012-2017.



| <b>ATVI</b>                             | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    |
|---|---------|---------|---------|---------|---------|---------|
| <b>Revenue</b>                          | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| + Sales & Services Revenue              | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| - Cost of Revenue                       | 34.23%  | 33.41%  | 34.60%  | 33.98%  | 36.23%  | 35.64%  |
| + Cost of Goods & Services              | 34.23%  | 33.41%  | 34.60%  | 33.98%  | 36.23%  | 35.64%  |
| <b>Gross Profit</b>                     | 65.77%  | 66.59%  | 65.40%  | 66.02%  | 63.77%  | 64.36%  |
| + Other Operating Income                | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| - Operating Expenses                    | 35.89%  | 36.66%  | 38.57%  | 37.74%  | 42.40%  | 45.70%  |
| + Selling, General & Admin              | 23.46%  | 23.91%  | 25.61%  | 23.89%  | 27.91%  | 30.47%  |
| + Selling & Marketing                   | 11.90%  | 13.22%  | 16.15%  | 15.74%  | 18.31%  | 19.64%  |
| + General & Administrative              | 11.55%  | 10.69%  | 9.46%   | 8.15%   | 9.59%   | 10.83%  |
| + Research & Development                | 12.44%  | 12.74%  | 12.95%  | 13.85%  | 14.50%  | 15.23%  |
| + Other Operating Expense               | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| <b>Operating Income (Loss)</b>          | 29.88%  | 29.94%  | 26.84%  | 28.28%  | 21.37%  | 18.65%  |
| - Non-Operating (Income) Loss           | -0.14%  | 1.16%   | 4.58%   | 4.25%   | 4.63%   | 2.25%   |
| + Interest Expense, Net                 | -0.10%  | 1.16%   | 4.47%   | 4.14%   | —       | —       |
| + Interest Expense                      | 0.02%   | 1.27%   | 4.56%   | 4.14%   | 2.98%   | 2.14%   |
| - Interest Income                       | 0.12%   | 0.11%   | 0.09%   | 0.00%   | —       | —       |
| + Other Investment (Inc) Loss           | -0.14%  | 1.16%   | 4.58%   | 4.25%   | 3.24%   | 2.08%   |
| + Foreign Exch (Gain) Loss              | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| + (Income) Loss from Affiliates         | 0.00%   | 0.00%   | 0.00%   | —       | —       | —       |
| + Other Non-Op (Income) Loss            | 0.10%   | -1.16%  | -4.47%  | -4.14%  | -1.59%  | -1.97%  |
| <b>Pretax Income</b>                    | 30.02%  | 28.78%  | 22.25%  | 24.04%  | 16.74%  | 16.40%  |
| - Income Tax Expense (Benefit)          | 6.36%   | 6.74%   | 3.31%   | 4.91%   | 2.12%   | 12.51%  |
| + Current Income Tax                    | 6.57%   | 2.99%   | 4.45%   | 5.15%   | 2.29%   | 15.06%  |
| + Deferred Income Tax                   | -0.21%  | 3.51%   | -1.13%  | -0.24%  | -0.17%  | -2.55%  |
| + Tax Allowance/Credit                  | 0.00%   | 0.24%   | —       | —       | —       | —       |
| <b>Income (Loss) from Cont Ops</b>      | 23.66%  | 22.04%  | 18.94%  | 19.13%  | 14.62%  | 3.89%   |
| - Net Extraordinary Losses (Gains)      | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| + Discontinued Operations               | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| + XO & Accounting Changes               | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| <b>Income (Loss) Incl. MI</b>           | 23.66%  | 22.04%  | 18.94%  | 19.13%  | 14.62%  | 3.89%   |
| - Minority Interest                     | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| <b>Net Income, GAAP</b>                 | 23.66%  | 22.04%  | 18.94%  | 19.13%  | 14.62%  | 3.89%   |
| - Preferred Dividends                   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |
| - Other Adjustments                     | 0.49%   | 0.50%   | 0.41%   | 0.24%   | 0.06%   | 0.00%   |
| <b>Net Income Avail to Common, GAAP</b> | 23.17%  | 21.54%  | 18.53%  | 18.89%  | 14.56%  | 3.89%   |
| <b>Net Income Avail to Common, Adj</b>  | 23.18%  | 23.13%  | 18.53%  | 19.02%  | 16.05%  | 15.77%  |
| <b>Net Abnormal Losses (Gains)</b>      | 0.01%   | 1.59%   | 0.00%   | 0.13%   | 1.49%   | 11.88%  |
| <b>Net Extraordinary Losses (Gains)</b> | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   | 0.00%   |

Table 30: Common Size Income Statement for ATVI for the years 2012-2017.

## 6.4 Pro Forma Financial Statements

In order to project a firm's financial statements into the future, each metric to be projected has its growth from year to year calculated. The geometric mean of these values is then used as the average growth rate. The most recent year is then multiplied by this growth rate to determine the projected value for the subsequent years.

### 6.4.1 Pro Forma Balance Sheet

| EA   | 2017           | 2018       | 2019       | 2020       | 2021        | 2022        |
|--|----------------|------------|------------|------------|-------------|-------------|
| <b>Current Assets</b>                            |                |            |            |            |             |             |
| <b>Total Current Assets</b>                      | \$5,199.00     | \$5,257.29 | \$5,426.07 | \$5,672.62 | \$5,977.07  | \$6,327.63  |
| <b>Geometric Average Growth</b>                  | <b>106.59%</b> |            |            |            |             |             |
| <b>Noncurrent Assets</b>                         |                |            |            |            |             |             |
| <b>Total Assets</b>                              | \$7,718.00     | \$8,500.85 | \$9,227.61 | \$9,934.67 | \$10,645.73 | \$11,376.68 |
| <b>Geometric Average Growth</b>                  | <b>106.46%</b> |            |            |            |             |             |
| <b>Current Liabilities</b>                       |                |            |            |            |             |             |
| <b>Total Current Liabilities</b>                 | \$2,415.00     | \$2,653.75 | \$2,916.10 | \$3,204.38 | \$3,521.17  | \$3,869.27  |
| <b>Geometric Average Growth</b>                  | <b>109.89%</b> |            |            |            |             |             |
| <b>Non Current Liabilities</b>                   |                |            |            |            |             |             |
| <b>Total Liabilities</b>                         | \$3,658.00     | \$4,074.44 | \$4,538.30 | \$5,054.96 | \$5,630.43  | \$6,271.43  |
| <b>Geometric Average Growth</b>                  | <b>111.38%</b> |            |            |            |             |             |
| <b>Stockholder Equity</b>                        |                |            |            |            |             |             |
| <b>Total Shareholders Equity</b>                 | \$4,060.00     | \$4,426.40 | \$4,689.32 | \$4,879.71 | \$5,015.30  | \$5,105.25  |
| <b>Geometric Average Growth</b>                  | <b>103.29%</b> |            |            |            |             |             |
| <b>Total Liabilities and Shareholders Equity</b> | \$7,718.00     | \$8,500.85 | \$9,227.61 | \$9,934.67 | \$10,645.73 | \$11,376.68 |
| Growth in Total Shareholders Equity (%)          | 109.48%        |            |            |            |             |             |
| <b>Geometric Average Growth</b>                  | <b>106.46%</b> |            |            |            |             |             |

Table 31: Pro Forma Balance Sheet for EA for the years 2012-2017.

| ATVI   | 2017           | 2018        | 2019        | 2020        | 2021        | 2022        |
|--|----------------|-------------|-------------|-------------|-------------|-------------|
| <b>Current Assets</b>                            |                |             |             |             |             |             |
| <b>Total Current Assets</b>                      | \$6,520.00     | \$6,677.58  | \$6,838.97  | \$7,004.26  | \$7,173.55  | \$7,346.93  |
| <b>Geo Average change (%)</b>                    | <b>102.42%</b> |             |             |             |             |             |
| <b>Noncurrent Assets</b>                         |                |             |             |             |             |             |
| <b>Total Assets</b>                              | \$18,668.00    | \$19,204.66 | \$19,756.75 | \$20,324.70 | \$20,908.99 | \$21,510.07 |
| <b>Geo Average change (%)</b>                    | <b>102.87%</b> |             |             |             |             |             |
| <b>Current Liabilities</b>                       |                |             |             |             |             |             |
| <b>Total Current Liabilities</b>                 | \$3,663.00     | \$3,899.89  | \$4,152.10  | \$4,420.62  | \$4,706.51  | \$5,010.88  |
| <b>Geo Average change (%)</b>                    | <b>106.47%</b> |             |             |             |             |             |
| <b>Non Current Liabilities</b>                   |                |             |             |             |             |             |
| <b>Total Liabilities</b>                         | \$9,206.00     | \$10,451.63 | \$11,865.81 | \$13,471.34 | \$15,294.10 | \$17,363.50 |
| <b>Geo Average change (%)</b>                    | <b>113.53%</b> |             |             |             |             |             |
| <b>Stockholder Equity</b>                        |                |             |             |             |             |             |
| <b>Total Shareholders Equity</b>                 | \$9,462.00     | \$8,753.02  | \$7,890.93  | \$6,853.37  | \$5,614.89  | \$4,146.58  |
| <b>Geo Average change (%)</b>                    | <b>97.83%</b>  |             |             |             |             |             |
| <b>Total Liabilities and Shareholders Equity</b> | \$18,668.00    | \$19,204.66 | \$19,756.75 | \$20,324.70 | \$20,908.99 | \$21,510.07 |

Table 32: Pro Forma Balance Sheet for ATVI for the years 2012-2017.

### 6.4.2 Pro Forma Income Statement

| <b>EA</b>                           | 2017       | 2018       | 2019       | 2020       | 2021       | 2022       |
|-------------------------------------|------------|------------|------------|------------|------------|------------|
| Revenue                             | \$4,845.00 | \$4,999.07 | \$5,158.05 | \$5,322.08 | \$5,491.32 | \$5,665.95 |
| Geometric Mean Growth               | 103.18%    |            |            |            |            |            |
| Gross Profit                        | \$3,547.00 | \$3,790.49 | \$4,050.70 | \$4,328.78 | \$4,625.94 | \$4,943.50 |
| Geometric Mean Growth               | 106.86%    |            |            |            |            |            |
| Operating Income (Loss)             | \$1,224.00 | \$1,390.81 | \$1,580.35 | \$1,795.73 | \$2,040.46 | \$2,318.54 |
| Geometric Mean Growth               | 113.63%    |            |            |            |            |            |
| Pretax Income                       | \$1,210.00 | \$1,383.91 | \$1,582.81 | \$1,810.30 | \$2,070.49 | \$2,368.07 |
| Geometric Mean Growth               | 114.37%    |            |            |            |            |            |
| Income (Loss) from Cont Ops         | \$967.00   | \$1,016.57 | \$1,068.67 | \$1,123.45 | \$1,181.04 | \$1,241.57 |
| Geometric Mean Growth               | 105.13%    |            |            |            |            |            |
| Income (Loss) Incl. MI              | \$967.00   | \$1,016.57 | \$1,068.67 | \$1,123.45 | \$1,181.04 | \$1,241.57 |
| Geometric Mean Growth               | 105.13%    |            |            |            |            |            |
| Net Income, GAAP                    | \$76.00    | \$76.00    | \$76.00    | \$76.00    | \$76.00    | \$76.00    |
| Geometric Mean Growth               | 100.00%    |            |            |            |            |            |
| Net Income Avail to Common, GAAP    | \$967.00   | \$1,148.64 | \$1,207.52 | \$1,269.42 | \$1,334.48 | \$1,402.89 |
| Geometric Mean Growth               | 105.13%    |            |            |            |            |            |
| Net Income Avail to Common, Adj     | \$998.85   | \$1,296.40 | \$1,682.58 | \$2,183.80 | \$2,834.34 | \$3,678.66 |
| Geometric Mean Growth               | 129.79%    |            |            |            |            |            |
| Basic Weighted Avg Shares           | 303        | 298        | 292        | 287        | 282        | 277        |
| Geometric Mean Growth               | 98.25%     |            |            |            |            |            |
| Basic EPS, GAAP                     | \$3.19     | \$3.40     | \$3.62     | \$3.86     | \$4.11     | \$4.38     |
| Geometric Mean Growth               | 106.55%    |            |            |            |            |            |
| Basic EPS from Cont Ops             | \$3.19     | \$3.40     | \$3.62     | \$3.86     | \$4.11     | \$4.38     |
| Geometric Mean Growth               | 106.55%    |            |            |            |            |            |
| Basic EPS from Cont Ops, Adjusted   | \$3.30     | \$4.33     | \$5.70     | \$7.49     | \$9.85     | \$12.96    |
| Geometric Mean Growth               | 131.49%    |            |            |            |            |            |
| Diluted Weighted Avg Shares         | 314        | 310        | 306        | 301        | 297        | 293        |
| Geometric Mean Growth               | 98.65%     |            |            |            |            |            |
| Diluted EPS, GAAP                   | \$3.08     | \$3.30     | \$3.53     | \$3.77     | \$4.04     | \$4.32     |
| Geometric Mean Growth               | 107.00%    |            |            |            |            |            |
| Diluted EPS from Cont Ops           | \$3.08     | \$3.30     | \$3.53     | \$3.77     | \$4.04     | \$4.32     |
| Geometric Mean Growth               | 107.00%    |            |            |            |            |            |
| Diluted EPS from Cont Ops, Adjusted | \$3.18     | \$4.20     | \$5.55     | \$7.34     | \$9.70     | \$12.81    |
| Geometric Mean Growth               | 132.13%    |            |            |            |            |            |

Table 33: Pro Forma Income Statement for EA for the years 2012-2017.

|                                     |            |            |            |            |            |            |
|-------------------------------------|------------|------------|------------|------------|------------|------------|
| <b>ATVI</b>                         | 2017       | 2018       | 2019       | 2020       | 2021       | 2022       |
| Revenue                             | \$7,017.00 | \$7,487.18 | \$7,988.87 | \$8,524.17 | \$9,095.34 | \$9,704.78 |
| Geometric Mean Growth               | 106.70%    |            |            |            |            |            |
| Gross Profit                        | \$4,516.00 | \$4,839.17 | \$5,185.46 | \$5,556.54 | \$5,954.17 | \$6,380.25 |
| Geometric Mean Growth               | 107.16%    |            |            |            |            |            |
| Operating Income (Loss)             | \$1,309.00 | \$1,305.86 | \$1,302.73 | \$1,299.60 | \$1,296.48 | \$1,293.37 |
| Geometric Mean Growth               | 99.76%     |            |            |            |            |            |
| Pretax Income                       | \$1,151.00 | \$1,123.46 | \$1,096.58 | \$1,070.35 | \$1,044.74 | \$1,019.74 |
| Geometric Mean Growth               | 97.61%     |            |            |            |            |            |
| Income (Loss) from Cont Ops         | \$273.00   | \$216.91   | \$172.35   | \$136.94   | \$108.81   | \$86.45    |
| Geometric Mean Growth               | 79.46%     |            |            |            |            |            |
| Income (Loss) Incl. MI              | \$273.00   | \$216.91   | \$172.35   | \$136.94   | \$108.81   | \$86.45    |
| Geometric Mean Growth               | 79.46%     |            |            |            |            |            |
| Net Income, GAAP                    | \$273.00   | \$1,418.67 | \$1,386.09 | \$1,354.25 | \$1,323.15 | \$1,292.76 |
| Geometric Mean Growth               | 97.70%     |            |            |            |            |            |
| Net Income Avail to Common, GAAP    | \$273.00   | \$217.45   | \$173.20   | \$137.96   | \$109.89   | \$87.53    |
| Geometric Mean Growth               | 79.65%     |            |            |            |            |            |
| Net Income Avail to Common, Adj     | \$1,106.77 | \$1,101.07 | \$1,095.40 | \$1,089.75 | \$1,084.14 | \$1,078.56 |
| Geometric Mean Growth               | 99.48%     |            |            |            |            |            |
| Basic Weighted Avg Shares           | 754        | 703        | 655        | 611        | 570        | 531        |
| Geometric Mean Growth               | 93.23%     |            |            |            |            |            |
| Basic EPS, GAAP                     | \$0.36     | \$0.31     | \$0.26     | \$0.22     | \$0.19     | \$0.16     |
| Geometric Mean Growth               | 85.37%     |            |            |            |            |            |
| Basic EPS from Cont Ops             | \$0.36     | \$0.31     | \$0.26     | \$0.22     | \$0.19     | \$0.16     |
| Geometric Mean Growth               | 85.37%     |            |            |            |            |            |
| Basic EPS from Cont Ops, Adjusted   | \$1.47     | \$1.57     | \$1.67     | \$1.78     | \$1.90     | \$2.03     |
| Geometric Mean Growth               | 106.71%    |            |            |            |            |            |
| Diluted Weighted Avg Shares         | 766        | 715        | 668        | 624        | 582        | 544        |
| Geometric Mean Growth               | 93.37%     |            |            |            |            |            |
| Diluted EPS, GAAP                   | \$0.36     | \$0.31     | \$0.26     | \$0.23     | \$0.19     | \$0.16     |
| Geometric Mean Growth               | 85.52%     |            |            |            |            |            |
| Diluted EPS from Cont Ops           | \$0.36     | \$0.31     | \$0.26     | \$0.23     | \$0.19     | \$0.16     |
| Geometric Mean Growth               | 85.52%     |            |            |            |            |            |
| Diluted EPS from Cont Ops, Adjusted | \$1.45     | \$1.55     | \$1.65     | \$1.76     | \$1.88     | \$2.00     |
| Geometric Mean Growth               | \$1.07     |            |            |            |            |            |

Table 34: Pro Forma Income Statement for ATVI for the years 2012-2017.

## 6.5 WACC

The weighted average cost of capital was calculated for both Electronic Arts and Activision-Blizzard. First, the Equity and Debt Values were calculated for each company. The equity value was calculated using the most recent stock price and the most recent number of shares outstanding. The debt value was obtained from the balance sheet of each respective company.

The appropriate weights were then determined according to the capital structure of each respective company. The geometric average market return and risk free rate were determined using historic values for the return of the Nasdaq and using historic yields on the U.S. Treasury 10 year bill.

| Stock Price                               | 2012        | 2013        | 2014        | 2015        | 2016        | 2017               |
|---|-------------|-------------|-------------|-------------|-------------|--------------------|
| <b>EA</b>                                 | \$16.49     | \$17.70     | \$29.01     | \$58.82     | \$66.11     | <b>\$89.52</b>     |
| <b>ATVI</b>                               | \$10.58     | \$17.85     | \$20.28     | \$38.95     | \$36.26     | <b>\$63.48</b>     |
|   |             |             |             |             |             |                    |
| <b>Shares Outstanding</b>                 |             |             |             |             |             |                    |
| <b>EA</b>                                 | 331.39      | 300.08      | 309.59      | 310.04      | 309.31      | <b>308.27</b>      |
| <b>ATVI</b>                               | \$1,111.61  | 703.71      | 721.93      | 734.50      | 745.49      | <b>757.51</b>      |
|   |             |             |             |             |             |                    |
| <b>Total Equity</b>                       |             |             |             |             |             |                    |
| <b>EA</b>                                 | \$5,462.93  | \$5,311.35  | \$8,981.21  | \$18,234.77 | \$20,448.42 | <b>\$27,595.88</b> |
| <b>ATVI</b>                               | \$11,755.23 | \$12,562.96 | \$14,637.12 | \$28,608.88 | \$27,027.62 | <b>\$48,082.64</b> |
|   |             |             |             |             |             |                    |
| <b>Total Debt</b>                         |             |             |             |             |             |                    |
| <b>EA</b>                                 | \$3,033.00  | \$2,803.00  | \$3,294.00  | \$3,080.00  | \$3,652.00  | <b>\$3,658.00</b>  |
| <b>ATVI</b>                               | \$2,883.00  | \$7,390.00  | \$7,409.00  | \$7,178.00  | \$8,333.00  | <b>\$9,206.00</b>  |
|   |             |             |             |             |             |                    |
| <b>Capital Structure</b>                  |             |             |             |             |             |                    |
| <b>EA</b>                                 |             |             |             |             |             |                    |
| xD  | 0.36        | 0.35        | 0.27        | 0.14        | 0.15        | <b>0.12</b>        |
| xE  | 0.64        | 0.65        | 0.73        | 0.86        | 0.85        | <b>0.88</b>        |
| <b>ATVI</b>                               |             |             |             |             |             |                    |
| xD  | 0.2         | 0.37        | 0.34        | 0.2         | 0.24        | <b>0.16</b>        |
| xE  | 0.8         | 0.63        | 0.66        | 0.8         | 0.76        | <b>0.84</b>        |
|   |             |             |             |             |             |                    |
| <b>Nasdaq Annual Return</b>               | 15.91%      | 38.32%      | 13.40%      | 5.73%       | 7.50%       | 28.24%             |
| <b>Geometric Mean</b>                     |             |             |             |             |             | <b>117.83%</b>     |
|   |             |             |             |             |             |                    |
| <b>10 Year Tbill Yield Jan 1st year+1</b> | 3.04%       | 2.17%       | 2.27%       | 2.45%       | 2.41%       | 2.88%              |
| <b>Geometric Mean</b>                     |             |             |             |             |             | <b>102.46%</b>     |

Table 35: WACC Parameter Calculations for the years 2012-2017

Beta was taken from a number of sources and averaged out.

| Beta                           | EA          | ATVI        |
|--------------------------------|-------------|-------------|
| 36 Month Beta (Globe and Mail) | 0.76        | 1.18        |
| Beta (Yahoo Finance)           | 1.11        | 0.75        |
| Beta (Nasdaq)                  | 1.34        | 1.55        |
| <b>Beta (Average)</b>          | <b>1.07</b> | <b>1.16</b> |

Table 36: Beta Values for 2017.

The dividend growth rate model was used to calculate the cost of equity for ATVI according to the following formula:

$$R_E = \frac{D_1}{P_0} + g$$

| Dividend Growth Rate Calc (ATVI)      | 2012    | 2013    | 2014    | 2015    | 2016    | 2017           | 2018 (est)    |
|---------------------------------------|---------|---------|---------|---------|---------|----------------|---------------|
| Dividend payments per share (EQY_DPS) | \$0.18  | \$0.19  | \$0.20  | \$0.23  | \$0.26  | \$0.30         | <b>\$0.33</b> |
| Dividend growth rate                  | 109.09% | 105.56% | 105.26% | 115.00% | 113.04% | 115.38%        |               |
| <b>Average dividend g</b>             |         |         |         |         |         | <b>110.48%</b> |               |

Table 37: Dividend Growth Rate Calculation for ATVI.

The cost of debt before taxes was taken to be the geometric average return of the U.S. 10 year treasury note from the years 2012-2017. An additional cost of debt premium of 2%, associated with greater risk than the cost of debt of U.S. Treasury notes, as discussed in class. The WACC of both EA and ATVI were calculated using a corporate tax rate of 21%. The cost of debt after taxes was then calculated for both companies was performed using the following equation:

$$T_C = \frac{\text{Tax Expense}}{\text{EBIT}}$$

$$R_D = R_{DBT} \times (1 - T_C)$$

Both companies had their cost of equity calculated using the CAPM security market line methodology. Here, each company's beta, along with a risk free rate of return, which was chosen to be the geometric average of the 10 year U.S. Treasury note, and an average market return, which was chosen to be the geometrical average return of the NASDAQ composite stock due to both companies being listed on the NASDAQ, are used in conjunction with the following formula to arrive at a cost of equity.

$$R_{CE} = R_F + \beta(R_M - R_F)$$

| <b>WACC</b>        | <b>EA</b>     | <b>ATVI</b>   |
|--------------------|---------------|---------------|
| Tc                 | 0.21          | 0.21          |
| R_DBT              | 4.46%         | 4.46%         |
| R_D                | 3.53%         | 3.53%         |
| R_E (CAPM)         | 18.90%        | 20.59%        |
| R_E (Div)          | N/A           | 11.00%        |
| xD                 | 0.12          | 0.16          |
| xE                 | 0.88          | 0.84          |
| <b>WACC (CAPM)</b> | <b>17.10%</b> | <b>17.85%</b> |
| WACC (Div)         | N/A           | 9.80%         |

Table 38: WACC Calculations for ATVI and EA for the year 2017

## 6.6 Forecasting Stock Value

Geometric averages in growth rate were calculated for a number of important financial metrics. In these tables, the geometric average has been used to predict the values for these various metrics, without including any qualitative corrections.

| EA                               | 2012     | 2013     | 2014     | 2015      | 2016       | 2017       |                |
|----------------------------------|----------|----------|----------|-----------|------------|------------|----------------|
| <b>Stock Value forecast</b>      | \$16.49  | \$17.70  | \$29.01  | \$58.82   | \$66.11    | \$89.52    |                |
| Growth                           |          | 107.37%  | 163.90%  | 202.74%   | 112.40%    | 135.41%    |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>140.27%</b> |
| <b>Price/Earnings</b>            | 27.95    | 59.74    | 122.61   | 32.28     | 29.16      | 28.14      |                |
| Growth                           |          | 213.73%  | 205.25%  | 26.32%    | 90.35%     | 96.50%     |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>100.13%</b> |
| <b>Price/Book Value</b>          | 2.15     | 2.36     | 3.73     | 5.94      | 5.86       | 6.79       |                |
| Growth                           |          | 109.93%  | 157.89%  | 159.59%   | 98.51%     | 115.97%    |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>125.91%</b> |
| <b>Book Value Per Share</b>      | \$7.68   | \$7.50   | \$7.79   | \$9.89    | \$11.29    | \$13.18    |                |
| Growth                           |          | 97.67%   | 103.80%  | 127.04%   | 114.11%    | 116.77%    |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>111.41%</b> |
| <b>OCF Per Share</b>             | \$0.84   | \$1.08   | \$2.30   | \$3.44    | \$4.74     | \$5.12     |                |
| Growth                           |          | 129.17%  | 213.00%  | 149.64%   | 137.62%    | 108.08%    |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>143.68%</b> |
| <b>Revenue (Sales) Per Share</b> | \$12.52  | \$12.25  | \$11.61  | \$14.52   | \$14.18    | \$15.99    |                |
| Growth                           |          | 97.86%   | 94.76%   | 125.08%   | 97.68%     | 112.76%    |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>105.02%</b> |
| <b>Price/Operating Cash Flow</b> | 19.72    | 16.39    | 12.61    | 17.09     | 13.96      | 17.49      |                |
| Growth                           |          | 83.12%   | 76.95%   | 135.48%   | 81.67%     | 125.29%    |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>97.62%</b>  |
| <b>Price/Sales</b>               | 1.32     | 1.45     | 2.50     | 4.05      | 4.66       | 5.60       |                |
| Growth                           |          | 109.72%  | 172.95%  | 162.09%   | 115.08%    | 120.09%    |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>133.57%</b> |
| <b>Shares Outstanding</b>        | 331.39   | 300.08   | 309.59   | 310.04    | 309.31     | 308.27     |                |
| Growth                           |          | 90.55%   | 103.17%  | 100.14%   | 99.77%     | 99.66%     |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>98.56%</b>  |
| <b>Earnings Per Share</b>        | \$0.59   | \$0.30   | \$0.24   | \$1.82    | \$2.27     | \$3.18     |                |
| Growth                           |          | 50.24%   | 79.85%   | 770.16%   | 124.42%    | 140.33%    |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>140.08%</b> |
| <b>Free Cash Flow</b>            | \$105.00 | \$218.00 | \$615.00 | \$972.00  | \$1,372.00 | \$1,455.00 |                |
| Growth                           |          | 207.62%  | 282.11%  | 158.05%   | 141.15%    | 106.05%    |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>169.17%</b> |
| <b>Net income</b>                | \$76.00  | \$98.00  | \$8.00   | \$875.00  | \$1,156.00 | \$967.00   |                |
| Growth                           |          | 128.95%  | 8.16%    | 10937.50% | 132.11%    | 83.65%     |                |
| Geometric Average Growth         |          |          |          |           |            |            | <b>166.31%</b> |

Table 39: Historic Financial Metrics for EA for the years 2012 - 2017

| EA                               | 2018 Est   | 2019 Est   | 2020 Est   | 2021 Est    | 2022 Est    |
|----------------------------------|------------|------------|------------|-------------|-------------|
| <b>Stock Value forecast</b>      | \$125.57   | \$176.14   | \$247.07   | \$346.57    | \$486.13    |
| <b>Price/Earnings</b>            | 28.18      | 28.21      | 28.25      | 28.29       | 28.33       |
| <b>Price/Book Value</b>          | 8.55       | 10.77      | 13.56      | 17.07       | 21.49       |
| <b>Book Value Per Share</b>      | \$14.69    | \$16.36    | \$18.23    | \$20.31     | \$22.62     |
| <b>OCF Per Share</b>             | \$7.36     | \$10.57    | \$15.18    | \$21.82     | \$31.35     |
| <b>Revenue (Sales) Per Share</b> | \$16.79    | \$17.64    | \$18.52    | \$19.45     | \$20.43     |
| <b>Price/Operating Cash Flow</b> | 17.07      | 16.67      | 16.27      | 15.88       | 15.51       |
| <b>Price/Sales</b>               | 7.48       | 9.99       | 13.34      | 17.82       | 23.80       |
| <b>Shares Outstanding</b>        | 303.84     | 299.47     | 295.17     | 290.93      | 286.76      |
| <b>Earnings Per Share</b>        | \$4.46     | \$6.24     | \$8.75     | \$12.25     | \$17.16     |
| <b>Free Cash Flow</b>            | \$2,461.49 | \$4,164.21 | \$7,044.78 | \$11,917.96 | \$20,162.14 |
| <b>Net income</b>                | \$1,608.23 | \$2,674.68 | \$4,448.30 | \$7,398.04  | \$12,303.80 |

Table 40: Forecasted Financial Metrics for EA for the years 2018 - 2022

| <b>ATVI</b>                      | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> |                |
|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|
| Stock value forecast             | \$10.58     | \$17.85     | \$20.28     | \$38.95     | \$36.26     | \$63.48     |                |
| Growth                           |             | 168.82%     | 113.57%     | 192.11%     | 93.08%      | 175.08%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>143.11%</b> |
| <b>Price/earnings</b>            | 10.5088     | 17.4738     | 17.8319     | 32.3013     | 25.5917     | 43.715      |                |
| Growth                           |             | 166.28%     | 102.05%     | 181.14%     | 79.23%      | 170.82%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>132.99%</b> |
| <b>Price/Book Value</b>          | 1.0431      | 1.8948      | 2.0112      | 3.5241      | 2.952       | 5.0692      |                |
| Growth                           |             | 181.65%     | 106.14%     | 175.22%     | 83.77%      | 171.72%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>137.19%</b> |
| <b>Book Value Per Share</b>      | \$10.14     | \$9.42      | \$10.08     | \$11.05     | \$12.28     | \$12.52     |                |
| Growth                           |             | 92.94%      | 107.00%     | 109.64%     | 111.12%     | 101.96%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>104.31%</b> |
| <b>OCF Per Share</b>             | \$1.21      | \$1.23      | \$1.86      | \$1.73      | \$2.91      | \$2.94      |                |
| Growth                           |             | 102.06%     | 150.59%     | 93.03%      | 168.39%     | 100.78%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>119.40%</b> |
| <b>Revenue (Sales) Per Share</b> | \$4.37      | \$6.51      | \$6.11      | \$6.35      | \$8.86      | \$9.26      |                |
| Growth                           |             | 149.08%     | 93.75%      | 104.00%     | 139.59%     | 104.50%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>116.22%</b> |
| <b>Price/Operating Cash Flow</b> | 8.7803      | 14.4446     | 10.8395     | 22.3835     | 12.3997     | 21.574      |                |
| Growth                           |             | 164.51%     | 75.04%      | 206.50%     | 55.40%      | 173.99%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>110.55%</b> |
| <b>Price/Sales</b>               | 2.4319      | 3.9838      | 3.273       | 6.0422      | 4.0438      | 6.8039      |                |
| Growth                           |             | 163.81%     | 82.16%      | 184.61%     | 66.93%      | 168.26%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>114.32%</b> |
| <b>Shares Outstanding</b>        | 1,111.61    | 703.71      | 721.93      | 734.5       | 745.49      | 757.51      |                |
| Growth                           |             | 63.31%      | 102.59%     | 101.74%     | 101.50%     | 101.61%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>101.86%</b> |
| <b>Earnings Per Share</b>        | \$1.01      | \$1.02      | \$1.13      | \$1.20      | \$1.41      | \$1.45      |                |
| Growth                           |             | 100.97%     | 110.74%     | 106.05%     | 117.74%     | 102.66%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>107.47%</b> |
| <b>Free Cash Flow</b>            | \$1,344.49  | \$868.66    | \$1,341.99  | \$1,270.25  | \$2,171.01  | \$2,223.28  |                |
| Growth                           |             | 64.61%      | 154.49%     | 94.65%      | 170.91%     | 102.41%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>110.58%</b> |
| <b>Net income</b>                | \$1,282.86  | \$947.32    | \$1,019.75  | \$1,011.24  | \$1,538.89  | \$1,742.88  |                |
| Growth                           |             | 73.84%      | 107.65%     | 99.16%      | 152.18%     | 113.26%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>106.32%</b> |
| <b>Dividends per Share</b>       | \$0.18      | \$0.19      | \$0.20      | \$0.23      | \$0.26      | \$0.30      |                |
| Growth                           |             | 105.56%     | 105.26%     | 115.00%     | 113.04%     | 115.38%     |                |
| Geometric Average Growth         |             |             |             |             |             |             | <b>110.76%</b> |

Table 41: Historic Financial Metrics for ATVI for the years 2012 - 2017

| <b>ATVI</b>               | <b>2018 Est</b> | <b>2019 Est</b> | <b>2020 Est</b> | <b>2021 Est</b> | <b>2022 Est</b> |
|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Stock value forecast      | \$90.84         | \$130.00        | \$186.04        | \$266.23        | \$381.00        |
| Price/earnings            | 58.14           | 77.31           | 102.82          | 136.74          | 181.85          |
| Price/Book Value          | 6.95            | 9.54            | 13.09           | 17.96           | 24.64           |
| Book Value Per Share      | \$13.06         | \$13.63         | \$14.21         | \$14.83         | \$15.47         |
| OCF Per Share             | \$3.50          | \$4.18          | \$5.00          | \$5.96          | \$7.12          |
| Revenue (Sales) Per Share | \$10.77         | \$12.51         | \$14.54         | \$16.90         | \$19.64         |
| Price/Operating Cash Flow | 23.85           | 26.37           | 29.15           | 32.22           | 35.62           |
| Price/Sales               | 7.78            | 8.89            | 10.16           | 11.62           | 13.28           |
| Shares Outstanding        | 771.58          | 785.93          | 800.53          | 815.41          | 830.57          |
| Earnings Per Share        | \$1.56          | \$1.67          | \$1.80          | \$1.93          | \$2.08          |
| Free Cash Flow            | \$2,458.56      | \$2,718.75      | \$3,006.46      | \$3,324.63      | \$3,676.47      |
| Net income                | \$1,853.04      | \$1,970.16      | \$2,094.69      | \$2,227.08      | \$2,367.85      |
| Dividends per Share       | \$0.33          | \$0.37          | \$0.41          | \$0.45          | \$0.50          |

Table 42: Forecasted Financial Metrics for ATVI for the years 2018 - 2022