



# SECURITY ANALYSIS

Tetra Tech, Inc. TTEK

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# Security Analysis

**Tetra Tech, Inc.**

**TTEK**

**Nick Drake**



Tetra Tech, TTEK, is a consulting and engineering firm with a primary focus in the Environmental and Facility Services sub-industry. It is a mid-cap company with a current stock price, as of April 30<sup>th</sup>, 2021, of \$127.64. This analysis covers Key Ratios and Financial Statements as well as Market Comparable and Discounted Cash Flow methods. After applying each method carefully, I conclude that TTEK's estimated share price is \$147.47. Assumptions used in the analysis were some ratios (P/E, P/B) were TTM rather than Forward due to limited access of peer companies. EV/Sales in my Market Comparable Analysis was inflated and therefore left out of the weighted valuation calculation.

## **Strategic Analysis**

### **Nature and History**

Tetra Tech Inc. is an engineering and consulting firm out of Pasadena, California. Their mission statement is to be the premier worldwide consulting and engineering firm, focusing on water, environment, infrastructure, resource management, energy, and international development services. Four core principles determine how Tetra Tech will succeed in the industry which are: service, value, excellence, and opportunity. They provide solutions to problems in water, environment, infrastructure, resource management, energy, and international development. They operate in over a dozen countries worldwide and are recognized as the leading firm for water solutions by ENR for 18 years straight. TTEK is currently a part of two major business groups, Government Services Group (GSG) and Commercial/International Services Group (CIG). This involvement helps TTEK to manage clients and develop new company ideals to further engage with clients. Tetra Tech offers high-end technical expertise, experience, disciplinary capabilities, and global reach to all clients, large or small.



## Projects

TTEK is a consulting and engineering firm. Their source of income comes from contracts with clients which need their expertise.

- Water – Leading Firm in Water Solutions
  - Provide access to safe, abundant water supplies
  - Treat stormwater and wastewater
  - Flood control and restoration tools
  - Watershed protection
- Environment
  - Range of services offered to present clients with a solution that is feasible and long-term
- Energy
  - Over 1,000 Projects Wind, Solar, Waste Management (Coal)
  - Assist public and private sectors in developing public-private partnerships

- Emergency and Disaster Recovery Management
- Defense Services
  - Working with USAF on multiple projects

## **Customers and Suppliers**

Customers – TTEK works with local governments around the world. Other customers include large corporations in other services industries and small businesses that require aid.

Suppliers – Provide Tetra Tech with the necessary equipment, advise, and materials to ensure the job is done. TTEK is committed to environmentally friendly and safe ways to do business. They have an automated procurement tracking system which contains a list of suppliers and adopts new potential ones. They continually do business with local small businesses and have esteemed relationships with large businesses. Tetra Tech is an active mentor for the U.S. government in its Mentor Protégé program.

## **Competition**

Tetra Tech has many competitors, as the work with multiple industries. Their top competition would naturally be other engineering and consulting firms, however, Tetra Tech does most of their projects which compete with companies in the sub-industry Environmental and Facilities Services. Therefore, TTEK's top competitors are companies which consistently bid on the same contracts.

Due to the many competitors, I will break down lists from two sectors: Engineering Services and Environmental and Facilities Services. Engineering Services is labeled as TTEK's competition outside of their primary income source. Environmental and Facility Services is labeled as TTEK's competition in the industry TTEK is most involved. The focus of this list is looking at the competitions financials to understand the business' operation from a number's standpoint.

## Engineering Services Sector

- Aecom Technology Corporation Ticker: ACM
  - Consulting, Planning, Construction Management, Asset Management
    - Located in California
    - Offer similar services as TTEK
    - Higher Sales, Negative Revenue and Earnings Growth over a 5-year span
    - Offer Negative Returns
- Mistras Group, Inc. Ticker: MG
  - Asset Protection Solutions
    - Negative Profit Margin
    - -53% 5-Year Return
- Stantec Inc Ticker: STN
  - Consulting services in engineering and architecture
    - Offer slightly different services than TTEK but can still interfere with certain contracts
    - Similar financials to TTEK
    - Operate in more markets than TTEK, main market is infrastructure
    - Positive EPS growth and Sales, lower Market Capitalization than TTEK

These competitors can potentially replace Tetra Tech with some contract bids based on their focused market, but overall do not interfere with Tetra Tech's focused sector, which is Environmental and Facility Services.

## Environmental and Facility Services

Environmental and Facility Services is Tetra Tech's primary sub-industry. These competitors are important because they can potentially decrease a major portion of TTEK's sales. This list includes companies that are seen as potential alternatives to TTEK when a government or company is scanning a list of bids on a certain contract.

- Waste Management Ticker: WM
  - The largest company/competitor in the sub-industry
  - Waste Solutions
    - Slow growth – WM has matured as a company and has limited room for growth
    - Higher EPS – WM's earnings per share is higher than TTEK and has a lower Beta, signaling a less risky investment
    - TTEK needs to innovate their methods to win a contract over WM
      - More growth opportunities based on business cycle and larger market footprint than WM
- Republic Services Ticker: RSG
  - Waste Solutions
  - Larger Company than TTEK, offers similar EPS
    - Also, slower growth with a less volatile beta than TTEK
    - Safer investment, but lose the opportunity to gain a higher return over time
  - Focuses on responsible waste solutions, not as innovative as TTEK

Why include waste solution companies as competition for TTEK?

TTEK offers their own waste solutions to projects. A company/government looking at potential bids may pick an alternative engineering company that does not offer waste solutions indicating a lower price. Whereas Tetra Tech includes the waste solutions and relies on the offeror to not overlook this aspect. This issue marks the importance of TTEK creating cost-effective methods based on competition.

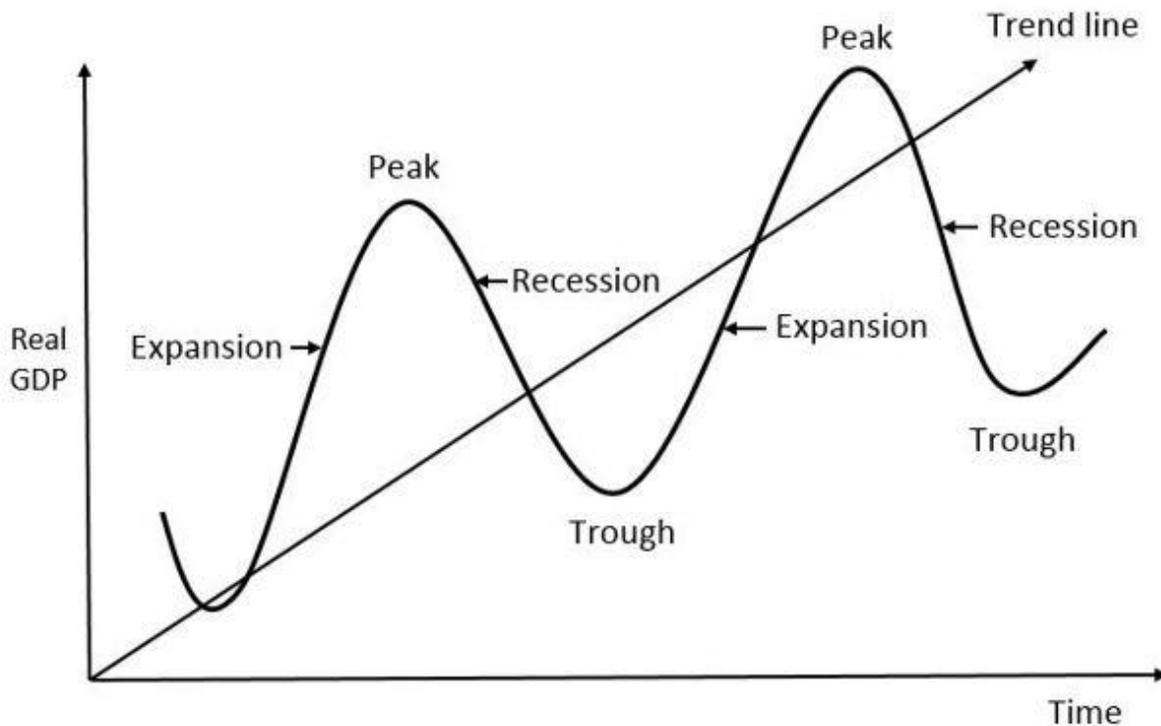
- Rollins, Inc. Ticker: ROL
  - Industrial Pest Control Company
    - Another company that could potentially take a services contract from TTEK
  - Very low EPS, higher margins
  - Another alternative to TTEK's own solutions
    - Potentially taking some of a contract over TTEK – less profitable for TTEK
- Clean Harbors Ticker: CLH
  - Focus on Waste Solutions, but offers many different services which combats TTEK's Environment and Emergency Response/Clean-Up solutions
    - TTEK has superior Net Income and EPS
- Casella Waste Systems Ticker: CWST
  - Small Company with room for growth
  - Higher Beta signifying it is a riskier buy, but could offer more returns
  - Main Market is recycling service and competes with TTEK's environmental market

Why include Pest Control and more Waste Solution companies?

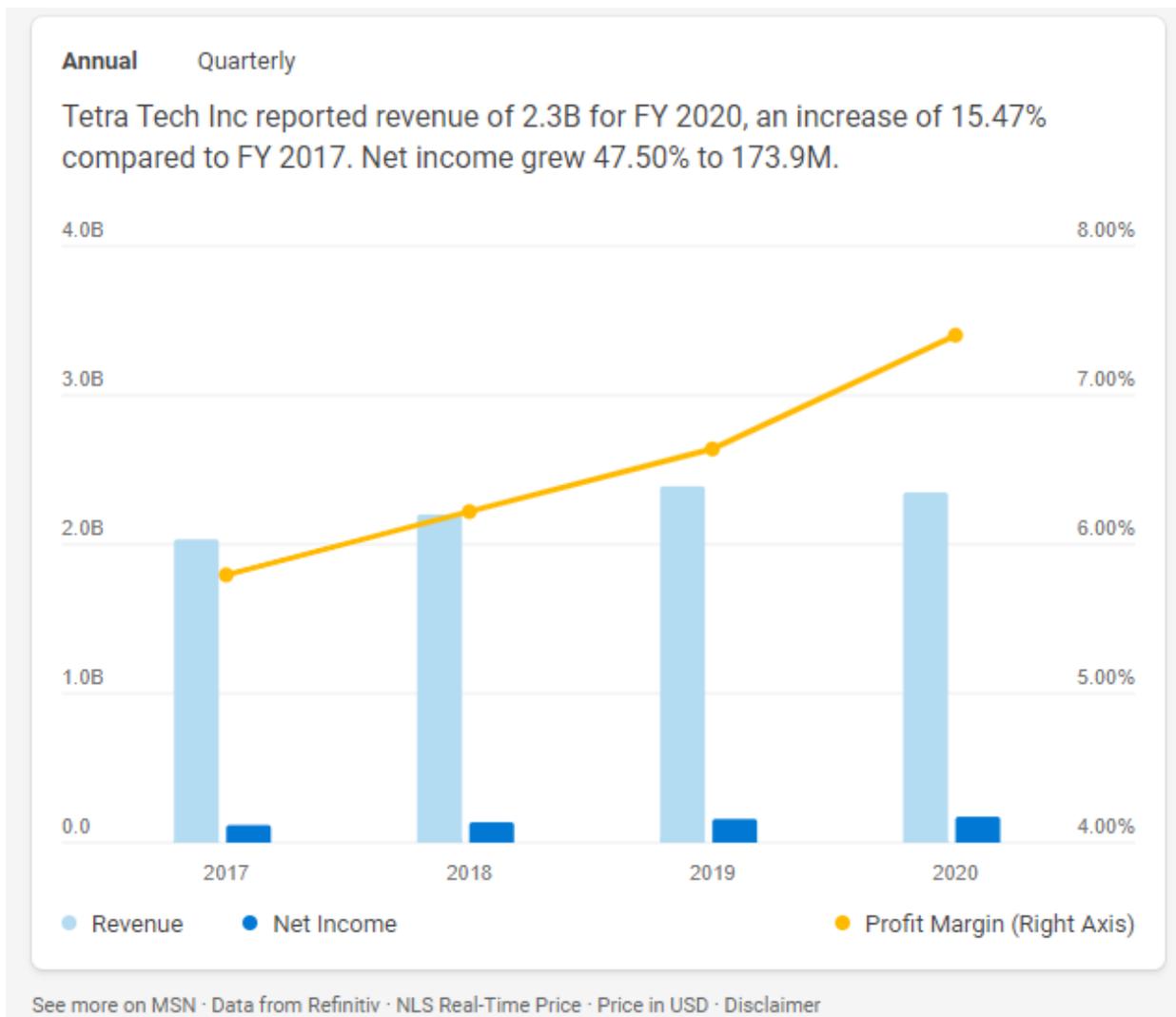
These companies can directly impact Tetra Tech's sales and are seen as alternatives to offerors. TTEK must innovate their own solutions to counter these companies and their solutions. Tetra Tech operates in many markets; therefore, they can potentially fall behind in this market which will impact their earnings long-term.

## Business Cycle

Graph 1



A business cycle is a never-ending cycle of peaks and trough's that follow a company through maturity.



Based on this chart with data from Refinitiv, TTEK is currently in a growth (Expansion) phase in their business cycle. They have shown no signs of lacking revenue, which could lead to an expectation of a company recession in the coming years, however, this is something that is predictable if their revenues and margins begin to thin and slow.

## PESTEL Analysis

Political	Economic	Social	Technological	Legal	Environmental
Government Stability	Exchange Rates	Hiring Methods	Advances	Anti-Trust Laws	Regulations
Corruption	Government Influence	Skill Level	Cost Structures	Discrimination	Climate
Tax Policies	Unemployment Rates	Education Standards	Competitive Timeline	Health and Safety	Endangered Species
Legal Framework	Inflation	Cultures	Research and Development	Tax Policies	Production Hazards
Employee Benefits	Business Cycle	Company Attitude	Copyright and Patents	Copyright and Patents	Social Responsibility

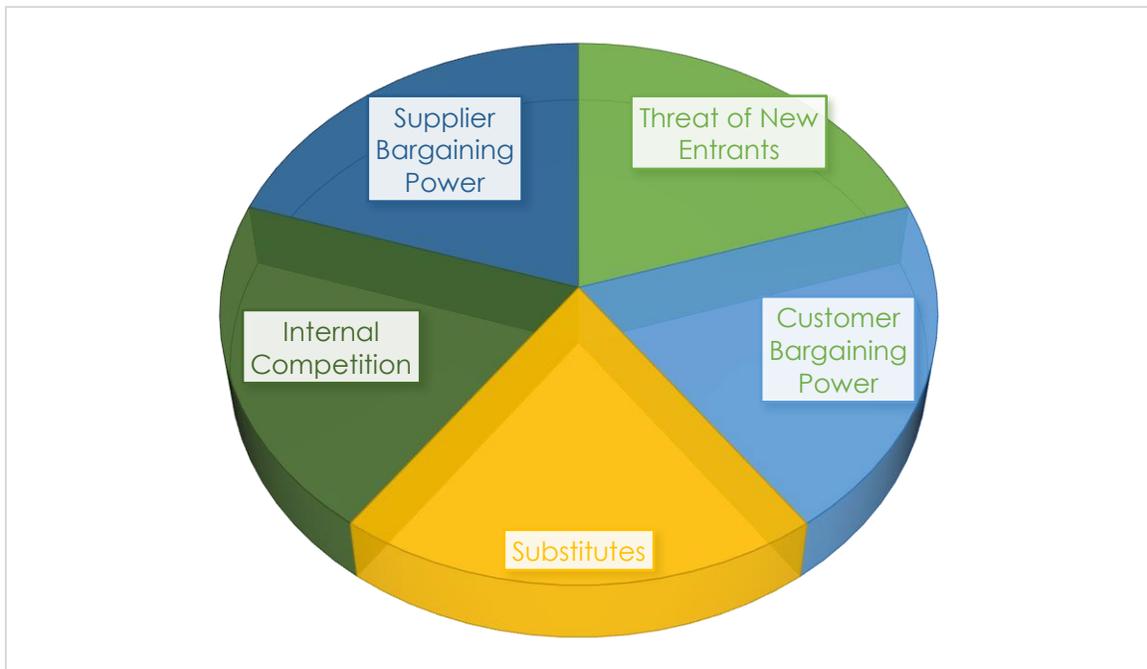
A PESTEL analysis looks at 6 factors: Political, Economic, Social, Technological, Legal, and Environmental. Some factors overlap with things such as Tax Policies, Benefits, Copyright Laws, but have a different understanding within each factor. Tetra Tech operates on a global scale, this means working with various governments to complete an environmentally ethical project. Social factors introduce issues for TTEK as they can bring engineers and other workers to a site but must rely on the community workforce for certain projects. This includes renting machinery that is unavailable to ship across the globe. Each section includes factors that affect TTEK in the way they operate. It is up to Tetra Tech to combat these issues and respect them in a way that does not affect their operations.

## Industry Analysis

### Sustained Profitability

- TTEK operates in many industries, but overall is an engineering firm
  - Engineering is one of the most sought-after jobs worldwide and is necessary to adapt to certain global situations and make life easier for our species
  - There is an endless number of solutions to an endless number of issues in the world and TTEK has the supplies necessary to solve them

### Porter's Five Forces



1. Threat of New Entrants – TTEK could reduce this threat by introducing new technology and producing innovative solutions to raise the bar for new companies to enter the market

2. Supplier Bargaining Power – Tetra Tech works hard to maintain healthy relationships with their suppliers. This can be an issue if they become too friendly and allow the supplier to charge more for relatively cheap supplies. TTEK needs to maintain relationships to maintain their supplier base. There are a limited number of suppliers TTEK operates with due to their guidelines and requirements. If TTEK makes it seem like an achievement to supply them, they will be able to limit bargaining power from suppliers.
3. Customer Bargaining Power – TTEK holds valuable connections with their service groups and has a strong network of customer connections. Every company would prefer a specific number of customers based on supplies but need to make good deals to thrive as a company. Tetra Tech's connections and reputation keeps their bargaining power with customers high.
4. Substitutes – Differentiation and increasing company scale is necessary to thrive in the Environmental and Facility services industry.
5. Internal Competition – Existing competition within the industry continues to adapt to help their company thrive. TTEK can counter this by continuing to adapt and over-achieve their goals without spending too much on supplies. This requires a necessary ability to limit the cost of goods sold.

Tetra Tech is in a good position competitively. If they can continue to satisfy customers, their name will not be overlooked on contract bids and most likely secure the deal. The company's social image is very important and the methods they use are ideal in keeping a strong image to the communities they work in. Within the industry, TTEK is around the middle, but massive growth in recent years has pushed them towards the top, with no signs of slowing growth.

# **Financial Statements Analysis**

## **Horizontal/Vertical Analysis of Income Statement and Balance Sheet**

### **2016-2020**

#### Vertical Analysis of Income Statement and Balance Sheet

##### **Income Statement**

- Cost of Goods Sold % of Revenues down from 87.21% in 2016 to 85.62% in 2020.
- Replaced by a steady increase in Gross Income % of Revenues from 12.73% in 2016 to 14.65% in 2020
- Net Income % of Revenues gradually increased from 3.25% in 2016 to 5.81% in 2020.
- Notable trend is a decrease in costs of goods sold leading to an increase in profit margin.

##### **Balance Sheet**

- Accounts receivable % of total assets decreases nearly 10% from 40.48% in 2016 to 31.98% in 2020.
- Leads to a decrease in current assets % of total assets from 51.97% in 2016 to 42.01% in 2020.
- Large jump in Net PP&E % of total assets from 1.83% in 2019 to 11.55% in 2020.
- No notable jumps in total liabilities and shareholder's equity

##### **Trends**

- Services are becoming more profitable.
- PP&E increase shows growth potential worldwide
- Steady growth in revenues over 5-years show no sign of slowing down.

## Horizontal Analysis of Income Statement and Balance Sheet

### **Income Statement**

- % Sales increased 15.89% in 2020 from 2016
- Gross Income increased from 328M in 2016 to 438M in 2020.
- Non-Operating Income/Expense made strange jumps from 2016-20... numbers are low enough to not raise a concern.
- Current Domestic Income Tax decreased over the 5-year span while Current Foreign Tax increased
- Net Income had a 100M jump from 2016... a 107.52% increase.

### **Balance Sheet**

- Total Current Assets increased 6.88% 2016-20 and Total Assets increased 32.22%
  - Explained by a 207M increase in Net PP&E, 243M increase in Intangible Assets, and a 29M increase in Other Assets.
- ST Debt and Current Portion LT Debt increased over 600% helping Current Liabilities increase 65% from 2016.
- Total Liabilities increased 43.87% and Total Equity increased 19.62%

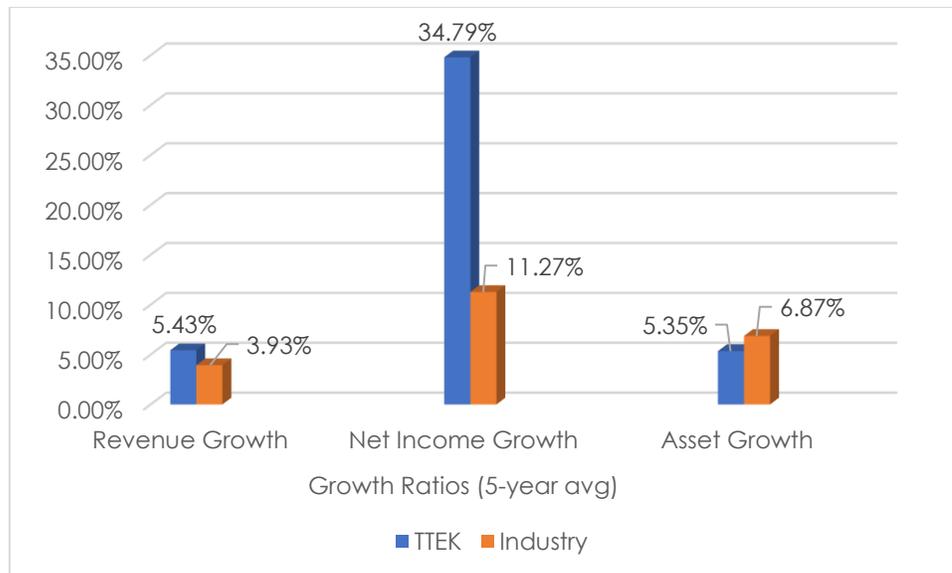
### **Trends**

- Sales and Net Income increasing steadily, and Current Foreign Income Tax show a larger footprint outside of the U.S.
- Increase in Assets also leading to an Increase in Current Liabilities show an increase in contracts being made.

## Key Ratios

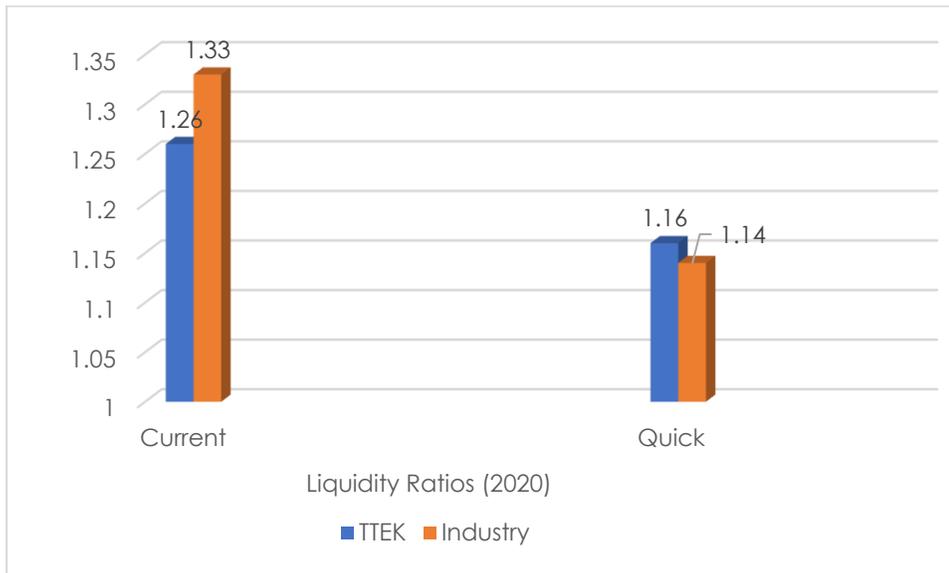
\*All industry averages were collected from the Environmental and Facility Services sub-industry. The numbers used were taken from the peer group TTEK is associated with later in the analysis

## **Growth Ratios**



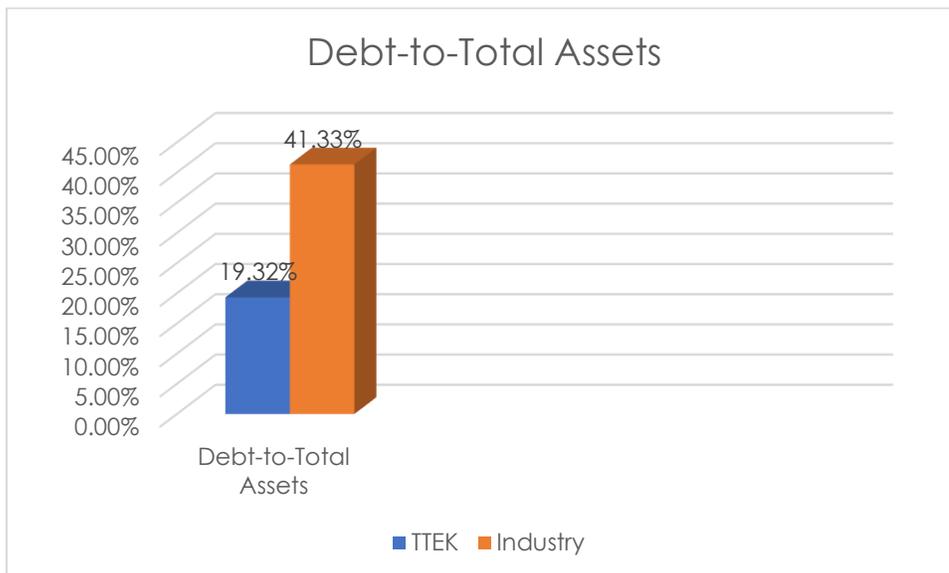
- Revenue growth is stronger than the industry average.
- Income Growth is very high compared to the industry average and is possible effected by big contracts TTEK has recently won.
- Asset Growth is slightly lower than the industry average although this does not raise a concern

## Liquidity Ratios



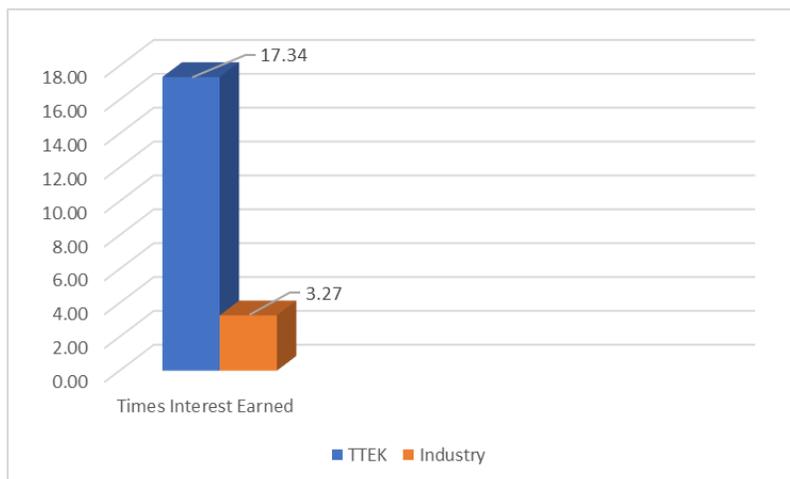
- TTEK's Current Ratio, although smaller than the industry average, shows they can still pay off all current liabilities through current assets... They are less liquid than competitors.
- The Quick Ratio shows quick assets that can be used to cover current debt obligations, the numbers show that TTEK and the industry have very similar quick ratios
- TTEK's Current Ratio is less ideal indicating the company has lower liquidity than its competition.
- Compared to industry average, TTEK fits in, but does not show any sign of becoming more liquid

## Leverage Ratios



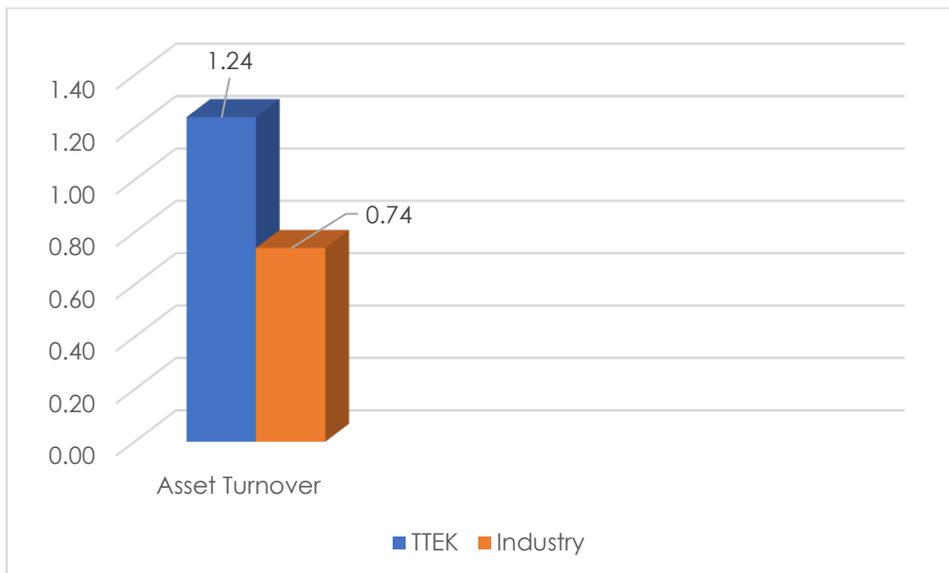
- TTEK has a lower Debt-to-Total Assets indicating it holds less leverage, therefore is a less risky investment
- TTEK is funded by equity mainly, while the industry seems to be funded by liabilities.

Neither TTEK nor the industry holds more liabilities than assets



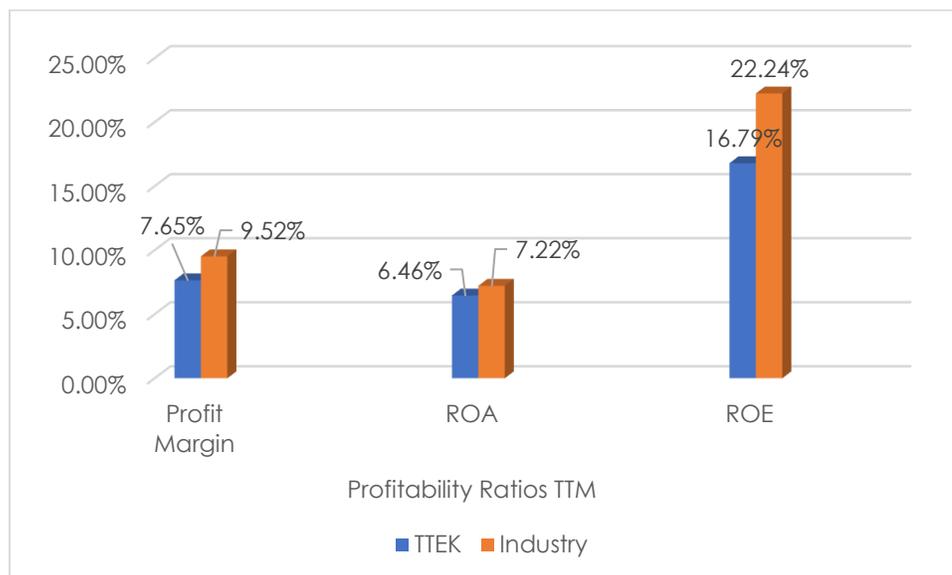
- TTEK has more room to cover its debts over the industry average

## Asset Management



- TTEK's asset turnover is higher than the industry average, indicating they are more efficient in generating revenue through assets
- TTEK does not hold inventory, this ratio is irrelevant for the company and left out because of this.

## Profitability Ratios



### Profit Margin

- TTEK has a lower profit margin compared to its matured competition, implying they will eventually surpass them.

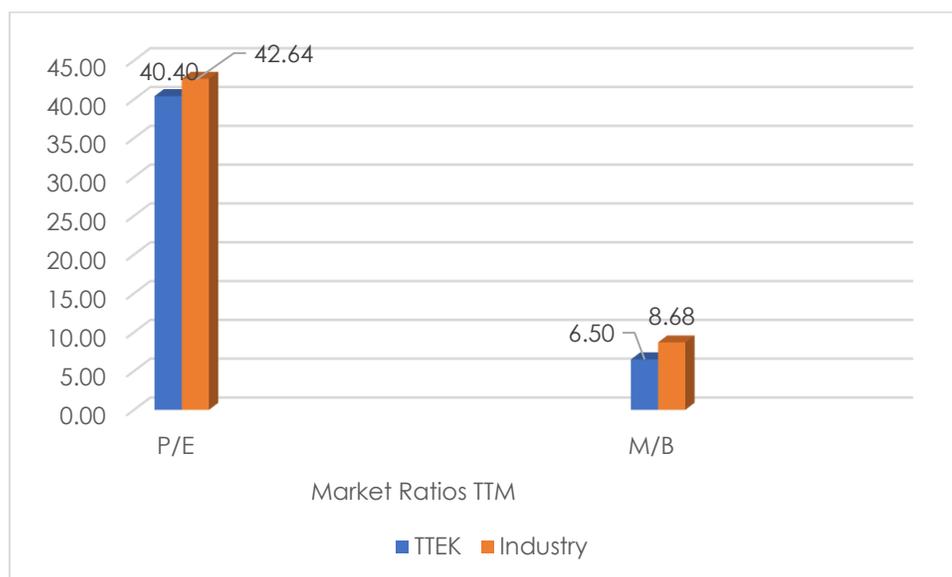
### Return on Assets

- TTEK shows a similar ROA to the industry average signaling a similar use of assets for income.

### Return on Equity

- TTEK's ROE is less than the industry average and shows us that they hold decent profitability in terms of their equity

## Market Ratios



- TTEK holds a high TTM P/E ratio after a successful year, one that mimicked the industry
- The M/B value shows that investors are willing to pay approximately \$6.50 for every \$1 TTEK generates... investors expect good things to come from TTEK

## Summary

- Each ratio analysis and horizontal/vertical analysis signals that TTEK is growing rapidly in the industry
  - Their increased revenues with a dip in COGS indicate they are making proper transitions internally to increase income and profit margin
- TTEK still trails the industry in a few key ratios, but it is more so their numbers alone that show me how they are financially as a company
- These numbers lead me to estimate the company has more room for growth before reaching a mature state like their competition

## Public Comparable Analysis

### Methodology

This relative valuation method uses ratios of companies like Tetra Tech to determine Tetra Tech's equity value. This valuation method helps the analyst determine a valuation range rather than one specific stock price the share should trade at. Notable advantages of this method are that it is easily understandable, fewer assumptions are used and it can give insight to the way the market is moving currently.

### Peer Group

Tetra Tech is one of the top water and environmental services firms in the world. This led me to pick other competitive companies within the Environmental and Facilities services sub-industry. Each company has a market capitalization less than \$60bn and greater than \$3bn. Each company in the selection group share similar multiples I used for the valuation.

### Multiples

- Enterprise Value (EV) and Price (P)
  - EV/Sales
    - Indicates a company's attractiveness in the market
    - How much is needed to purchase the company based on its sales
    - Considers equity and debt
  - EV/EBITDA
    - How many times EBITDA is needed to purchase the company

- EV/EBIT
  - Modified multiple of P/E ratio
- P/E\*
  - Matches current share price to earnings per share
- P/Book\*
  - Compares market value of a company to book value
- P/E and P/Book are TTM as a portion of the peer group has no forward P/E or P/Book publicly available

### **Competition**

- Waste Management (WM)
  - Well established company in the sub-industry
  - Market Capitalization of \$56,743m
  - More profitable than TTEK, but TTEK has room for growth
- Republic Services (RSG)
  - Market Cap of \$32,860m
  - Similar EPS and ROE
- Rollins (ROL)
  - Market Cap of \$17,471m
  - Beta of 0.42, very low volatility
  - Higher Earnings, less revenue than TTEK
- Clean Harbors (CLH)
  - Market Cap of \$4,819m
  - Close P/E, EV/Sales to TTEK

- Casella Waste Systems (CWST)
  - Market Cap of \$3,351m
  - Highest P/E ratio of the group, lowest Net Income and Revenue

## Findings

Company Name	Market Cap	EV	EV/Sales	EV/EBITDA	EV/EBIT	P/E TTM	P/Book TTM
Waste Management	\$ 56,743.00	\$ 70,100.00	4.61	17.57	30.11	37.20	7.70
Republic Services	\$ 32,860.00	\$ 42,190.00	4.16	15.88	28.11	34.70	3.90
Rollins, Inc	\$ 17,471.00	\$ 17,750.00	8.22	39.38	42.80	68.70	19.00
Tetra Tech	\$ 7,798.00	\$ 8,120.00	2.74	30.08	31.21	41.10	6.60
Clean Harbors	\$ 4,819.00	\$ 5,970.00	1.90	10.98	23.68	36.90	3.70
Casella Waste Systems	\$ 3,351.00	\$ 3,800.00	4.91	24.28	50.20	35.80	9.50
TTEK Current Price: \$127.64							
Basic Shares Outstanding: 58.19							
<b>Median</b>			4.61	17.57	30.11	36.90	7.70
Enterprise Value			\$ 13,661.75	\$ 4,742.97	\$ 7,833.81		
Total Equity Value			\$ 13,339.75	\$ 4,420.97	\$ 7,511.81	\$ 7,001.12	\$ 9,097.67
Equity Value Per Share			\$ 229.24	\$ 75.97	\$ 129.09	\$ 120.31	\$ 156.34
<b>Mean</b>			4.76	21.62	34.98	42.66	8.76
Enterprise Value			\$ 14,106.28	\$ 5,835.71	\$ 9,100.85		
Total Equity Value			\$ 13,784.28	\$ 5,513.71	\$ 8,778.85	\$ 8,093.98	\$ 10,350.07
Equity Value Per Share			\$ 236.88	\$ 94.75	\$ 150.87	\$ 139.10	\$ 177.87

## Median

- Using the Median of each multiple, TTEK is considered undervalued in EV/Sales and P/Book
  - High EV/Sales indicate investors believe that sales will greatly increase in the future
  - A P/B ratio of 7.7 fits in relatively nicely among the peer group and shows that TTEK has room for more growth

## Mean

- The average of the selection group shows that TTEK is mostly undervalued now
  - A good sign showing that compared to its competition, it is mostly undervalued and more attractive to investors

## Final Range

<b>Multiples</b>							
			8.22	39.38	50.20	68.70	19.00
			4.76	21.62	34.98	42.66	8.76
			4.61	17.57	30.11	36.90	7.70
			1.90	10.98	23.68	34.70	3.70
<b>Equity Value</b>							
			\$ 413.10	\$ 177.15	\$ 218.92	\$ 224.00	\$ 385.78
			\$ 236.88	\$ 94.75	\$ 150.87	\$ 139.10	\$ 177.87
			\$ 229.24	\$ 75.97	\$ 129.09	\$ 120.31	\$ 156.34
			\$ 91.23	\$ 45.40	\$ 100.34	\$ 113.14	\$ 75.13

A valuation range shows what the likely price of a share in TTEK will be at depending on the mood of the market. The high values are extremely high and are most likely if there is a bubble in the industry, therefore, those values were deemed to be too high for a true range. My high estimate for TTEK is \$160, Mid estimate is \$135, and low is \$125. Based on the peer-group the low estimate seems high, but TTEK's signs of growth as a company lead me to believe that the low range will increase through the 2021 fiscal year. Due to the highly inflated/deflated highs and lows, they were not used in determining my valuation range. These outliers are from certain companies having inflated numbers that fluctuate greatly on a yearly basis.

## Valuation Range

**High:** \$150 – Based on a healthy market and how TTEK is seen by investors – a strong company with a lot of room for growth in their industry

**Mid:** \$135 – The market is normal, TTEK has shown signs of growth and the share price will reflect this.

**Low:** \$115 – Near a recession or TTEK has made poor decisions. This low estimate is for future reference, not a day-to-day interpretation of the stock price.

## **Discounted Cash Flows Method**

### **Gordon Growth and Exit Multiple Strategy**

The discounted cash flow method (DCF) helps to value a company based on expected cash flows over a horizon period. The present value of these expected cash flows is discounted by using the weighted average cost of capital (WACC). I will go into further detail about the methods used after listing some advantages of a DCF model.

#### **Advantages**

- Does not require comparable companies
  - This methodology uses numbers from financial statements and key ratios solely from the company being analyzed
- Grants the idea of an intrinsic value
  - A DCF helps understand the underlying value of the company and its cash flows
- Relies on free cash flows
  - Free cash flows are unrestricted in a way they are not involved with certain accounting policies which may affect a company's earnings
- Simple to understand
  - The end of the DCF model shows an estimate of what the company is worth without needing to explain many intricate details

## Calculating Free Cash Flows

Finding WACC – The weighted average cost of capital is used as the discount factor when finding the present value of the cash flows. I use it as the first step to my model.

Weight of Debt	Weight of Equity	AT Cost of Debt	Beta	Rf	Market Risk	Cost of Equity	WACC
0.0505	0.9495	1.99%	0.8956	2.25%	5.75%	7.40%	7.13%

The WACC = (Weight of Debt\*After-Tax Cost of Debt) + (Weight of Equity\*Cost of Equity)

The weight of debt = Total Liabilities / (Total Liabilities + Total Equity) and the weight of equity is simply 1 – weight of debt as they must equal 1. Total Liabilities are the two-year averages of short-term and long-term debt and total equity is the market capitalization. The after-tax cost of debt was calculated by taking the book value of debt / interest expense. The Beta, Risk-Free Rate, and Market Premium were all found by online sources and used to determine the Cost of Equity.

### Steps to Calculate Free Cash Flows

1. Determine a Horizon Period – I found that a 5-year time horizon with a terminal growth period was necessary when looking to find TTEK's equity value per share.
2. Estimate Sales Growth – Using an estimation to find the growth rate of the company, I calculated the sales growth in 2021 to 2026 (the terminal period).
3. Use the estimated Growth Rate and Sales Growth to find future EBIT, Taxes, Operating Cash Flows, Change in Net Working Capital, and Change in Capital Expenditures
4. Find the future Free Cash Flows – By subtracting Operating Cash Flows, Change in NWC, and Change in CAPEX – This allowed me to then discount the Free Cash Flows and find the Enterprise Value

### **Forecast Period Selection**

Due to Tetra Tech's current location in their business cycle, I estimate that there is a lot of room for growth in the company. I estimate that it will take roughly 5 years until their growth period slows and caps out. Based on Key Ratios such as Net Income and Revenue growth as well as their Profitability Ratios, I am comfortable with a relatively high growth rate over this 5-year span. Relative companies also showed signs of massive growth over a similar timeframe and I feel it is necessary to include Tetra Tech as one of their relative companies.

### **Assumptions**

- Growth Rate – Determining the growth rate and terminal growth rate for a DCF analysis is necessary to reach a final equity value for the firm. 2021E is 18% and decreases to 3.5% for the terminal period (2026E)
- Forecast Period – TTEK's forecast period is an estimate made by looking at their financials and previous growth to determine when the company goes into a mature state, which will see the company have a strict growth rate of 3.5%

### **Estimating the Terminal Value**

I used the Perpetuity Growth Rate Method and the Exit Multiple Method to get a range in which I can correctly estimate the terminal value. The Perpetuity Growth Rate method assumes the company will generate FCF's at a constant rate forever once it reaches the terminal period. The Exit Multiple Method assumes that the company is sold, in this case, for EBITDA and takes the terminal value of EBITDA and uses an estimate from the market comparable approach to find the company's enterprise value.

## Perpetuity Growth Rate Model

### Calculating the Terminal Value

I used the Terminal Period's FCF and multiplied it by the terminal growth rate and took that over the WACC – Terminal Growth Rate

Terminal Value	11,217.39
PV of Terminal Value	7,949.44
Enterprise Value	8,993.15
Less Net Debt	322.00
Cash & Equiv	157.52
<b>Equity Value</b>	<b>8,828.66</b>

After taking the present value of the terminal value I can find the enterprise value. Then, I subtract Net Debt and add Cash and Cash Equivalents to find the estimated Equity Value of the firm.

Shares Outstanding	58.19
<b>Price Per Share \$</b>	<b>151.72</b>

Taking the estimated Equity Value over TTEK's shares outstanding my estimation for price per share is \$151.72. Consider that this value only matters if TTEK continues to grow at a rate of 18% down to a terminal rate of 3.5%. Also consider that this value, in my opinion, is valid and TTEK is generating enough sales and revenue to reach this price soon.

## Exit Multiple Approach

### Calculating the Terminal Value

This method focuses on EBITDA from the comparable approach. I estimated the exit multiple to be 18.0x by finding the middle ground between my Average and Median multiples for EV/EBITDA. I then found the EVITDA % of Sales to calculate the future growth of EBITDA until reaching the terminal period, multiplied it by the exit multiple and found the present value based on the information available.

Terminal Year EBITDA	557.05
Exit Multiple	18
Terminal Value	10,026.83
PV of TV	\$7,105.72

With this information I did the same method used in the Perpetuity Growth Model to find the Enterprise Value, then the Equity Value of TTEK.

Enterprise Value	8,583.16
Less Net Debt	322.00
Less Pref. St & Min Int	0.08
Cash and Cash Equiv	157.52
<b>Equity Value</b>	<b>8,418.67</b>

From there, I took the Equity Value / Shares Outstanding:

Shares Outstanding	58.19
<b>Price Per Share \$</b>	<b>144.68</b>

My value was like the perpetuity growth model. The price can easily fluctuate with each exit multiple chosen. The companies used in the peer selection group seem to have matured in their

business cycle and have limited growth opportunities. If the exit multiple were 25.0x rather than 18.0x:

Shares Outstanding	58.19
<b>Price Per Share \$</b>	<b>192.16</b>

The price per share jumps \$50 and shows more TTEK will continue to rise. However, this is a speculation and I firmly believe an exit multiple of 18x is this correct choice and considers more reasonable expectations for the company.

### **Sensitivity Analysis**

That last point raises the question of how a range of values could look if we are given certain assumptions. This sensitivity analysis helps explain how variables impact the equity value and price per share of TTEK. In this analysis I see how a different WACC, terminal growth rate, and exit multiple can impact the price per share of TTEK. These combinations can help identify certain “what-if” scenarios and show the impact on the dependent variable, price per share. Assumptions in this analysis are that all other variables are held constant while changing one variable to see its impact on the price/share.

#### Sensitivity Analysis on Perpetuity Growth Model

Changes to the Terminal Growth Rate and WACC show different scenarios to TTEK’s Price per Share and can help derive a fitting range of values for the company based on these adjustments. The values highlighted in yellow are the most likely range of values for TTEK’s proper price per share given my assumptions.

Sensitivity Analysis								
	7.40%	7.30%	7.20%	7.13%	7.00%	6.90%	6.80%	
3.80%	\$ 151.33	\$ 155.94	\$ 160.81	\$ 164.40	\$ 171.48	\$ 177.33	\$ 183.57	
3.70%	\$ 147.54	\$ 151.91	\$ 156.53	\$ 159.93	\$ 166.62	\$ 172.14	\$ 178.01	
3.60%	\$ 143.94	\$ 148.10	\$ 152.49	\$ 155.71	\$ 162.04	\$ 167.25	\$ 172.79	
<b>3.50%</b>	\$ 140.53	\$ 144.49	\$ 148.66	\$ <b>151.72</b>	\$ 157.73	\$ 162.66	\$ 167.89	
3.40%	\$ 137.29	\$ 141.06	\$ 145.04	\$ 147.95	\$ 153.65	\$ 158.33	\$ 163.28	
3.30%	\$ 134.21	\$ 137.81	\$ 141.60	\$ 144.37	\$ 149.80	\$ 154.24	\$ 158.93	
3.20%	\$ 131.27	\$ 134.72	\$ 138.33	\$ 140.98	\$ 146.15	\$ 150.37	\$ 154.83	

WACC is the horizontal column and Terminal Growth Rate is the vertical rows.

### Sensitivity Analysis on Exit Multiple

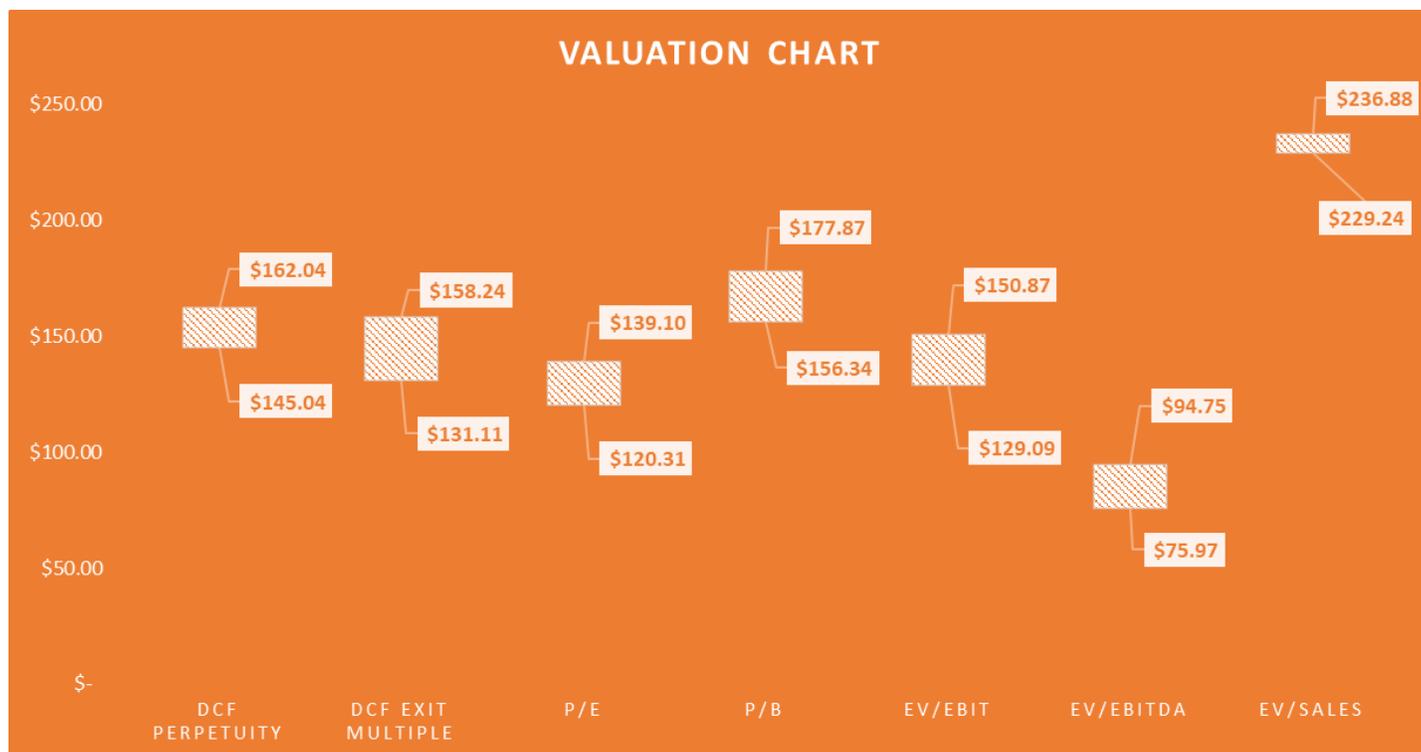
This variable shows what we would expect, an increase in share price as the exit multiplier increases. If TTEK can increase their EBITDA over the coming years, their price/share will increase. This means they need to bring in new customers and maintain a customer base over the competition.

Exit Multiple Sensitivity	
20x	\$ 158.24
19x	\$ 151.46
18x	\$ 144.68
17x	\$ 137.89
16x	\$ 131.11

## Valuation Chart

This chart depicts the highs/lows of the sensitivity analysis and the median and average for the comparable method to gain a visual on the price fluctuations of TTEK.

As of April 30<sup>th</sup>, TTEK was trading at \$127.64



In every method shown, except for EV/EBITDA and P/E, TTEK is undervalued currently.

EV/Sales is too high given the reports from the peer companies and TTEK, it is not used to determine a true value range.

## Weighted Average Valuation

Weighted Average Calculation			
Method	Valuation	Weight	Weighted Value
DCF Perpetuity	\$ 151.72	0.18	\$ 26.80
DCF Exit Multiple	\$ 144.68	0.17	\$ 24.37
P/E	\$ 139.10	0.16	\$ 22.53
P/B	\$ 177.87	0.21	\$ 36.83
EV/EBIT	\$ 150.87	0.18	\$ 26.50
EV/EBITDA	\$ 94.75	0.11	\$ 10.45
	\$ 858.99	1.00	\$ 147.47

After taking the valuations from each method, finding a weight, and adding them together I get a weighted average value for TTEK of \$147.47.

**Recommendation:** After reviewing the financials of Tetra Tech, Inc. and using multiple methods to determine a proper share price, I believe the company is undervalued and worth investing in as of today. Thank you for your time.



Growth Ratios (5-year avg)				Industry Observed: Environmental and Facility Services								
	Revenue Growth	Net Income Growth	Asset Growth									
TTEK	5.43%	34.79%	5.35%									
Industry	3.93%	11.27%	6.87%									
Liquidity Ratios (2020)				Revenue Growth	Net Income Growth	Asset Growth	WM	RSG	ROL	CLH	CWST	Average
	Current		Quick	3.26%	2.18%	7.79%	-0.81%	7.22%	3.93%			
TTEK	1.26		1.16	14.72%	5.22%	11.38%	25.05%	0.00%	11.27%			
Industry	1.33		1.14	6.38%	2.50%	11.92%	2.22%	11.34%	6.87%			
Leverage Ratios TTM				Current	Quick	Debt-Total Assets	Times Interest Earned					
	Debt-to-Total Assets		Times Interest Earned	1.01	0.67	0.67	2.40	1.88	1.33			
TTEK	19.32%		17.34	0.88	0.60	0.53	1.95	1.74	1.14			
Industry	41.33%		3.27	44.63%	37.13%	0.00%	44.35%	80.54%	41.33%			
Asset Management TTM				Debt-Total Assets	Times Interest Earned	Asset Turnover	Inventory Turnover					
	Asset Turnover		Inventory Turnover	5.89	4.21	-	3.28	2.95	3.27			
TTEK	1.24		0.00	0.55	0.44	1.20	0.76	0.73	0.74			
Industry	0.74		60.50	79.38	105.27	41.68	9.82	66.33	60.50			
Profitability Ratios TTM				Profit Margin	ROA	ROE						
	Profit Margin		ROA	9.97%	9.53%	12.07%	4.29%	11.76%	9.52%			
TTEK	7.65%		6.46%	5.53%	4.19%	14.53%	3.27%	8.57%	7.22%			
Industry	9.52%		7.22%	21.96%	11.65%	29.69%	10.33%	37.58%	22.24%			
Market Ratios TTM				P/E	M/B							
	P/E		M/B	38.40	34.70	67.80	36.60	35.70	42.64			
TTEK	40.40		6.50	7.70	3.90	18.80	3.60	9.40	8.68			
Industry	42.64		8.68									

Company Name	Market Cap	EV	EV/Sales	EV/EBITDA	EV/EBIT	P/E TTM	P/Book TTM	Sales	EBITDA	EBIT	Earnings	Book Value of Equity	Net Debt
Waste Management	\$ 56,743.00	\$ 70,100.00	4.61	17.57	30.11	37.20	7.70	\$ 15,206.07	\$ 3,989.76	\$ 2,328.13	\$ 1,525.35	\$ 7,369.22	\$ 13,357.00
Republic Services	\$ 32,860.00	\$ 42,190.00	4.16	15.88	28.11	34.70	3.90	\$ 10,141.83	\$ 2,656.80	\$ 1,500.89	\$ 946.97	\$ 8,425.64	\$ 9,330.00
Rollins, Inc	\$ 17,471.00	\$ 17,750.00	8.22	39.38	42.80	68.70	19.00	\$ 2,159.37	\$ 450.74	\$ 414.72	\$ 254.31	\$ 919.53	\$ 279.00
Tetra Tech	\$ 7,798.00	\$ 8,120.00	2.74	30.08	31.21	41.10	6.60	\$ 2,963.50	\$ 269.95	\$ 260.17	\$ 189.73	\$ 1,181.52	\$ 322.00
Clean Harbors	\$ 4,819.00	\$ 5,970.00	1.90	10.98	23.68	36.90	3.70	\$ 3,142.11	\$ 543.72	\$ 252.11	\$ 130.60	\$ 1,302.43	\$ 1,151.00
Casella Waste Systems	\$ 3,351.00	\$ 3,800.00	4.91	24.28	50.20	35.80	9.50	\$ 773.93	\$ 156.51	\$ 75.70	\$ 93.60	\$ 352.74	\$ 449.00
TTEK Current Price: \$127.64													
Basic Shares Outstanding: 58.19													
<b>Median</b>			4.61	17.57	30.11	36.90	7.70		EV/Sales	EV/EBITDA	EV/EBIT	P/E TTM	P/Book TTM
Enterprise Value		\$ 13,661.75	\$ 4,742.97	\$ 7,833.81					\$ 229.24	\$ 75.97	\$ 129.09	\$ 120.31	\$ 156.34
Total Equity Value		\$ 13,339.75	\$ 4,420.97	\$ 7,511.81	\$ 7,001.12	\$ 9,097.67							
Equity Value Per Share		\$ 229.24	\$ 75.97	\$ 129.09	\$ 120.31	\$ 156.34							
<b>Mean</b>			4.76	21.62	34.98	42.66	8.76		EV/Sales	EV/EBITDA	EV/EBIT	P/E TTM	P/Book TTM
Enterprise Value		\$ 14,106.28	\$ 5,835.71	\$ 9,100.85					\$ 236.88	\$ 94.75	\$ 150.87	\$ 139.10	\$ 177.87
Total Equity Value		\$ 13,784.28	\$ 5,513.71	\$ 8,778.85	\$ 8,093.98	\$ 10,350.07							
Equity Value Per Share		\$ 236.88	\$ 94.75	\$ 150.87	\$ 139.10	\$ 177.87							
<b>Multiples</b>			8.22	39.38	50.20	68.70	19.00						
			4.76	21.62	34.98	42.66	8.76						
			4.61	17.57	30.11	36.90	7.70						
			1.90	10.98	23.68	34.70	3.70						
<b>Equity Value</b>													
		\$ 413.10	\$ 177.15	\$ 218.92	\$ 224.00	\$ 385.78							
		\$ 236.88	\$ 94.75	\$ 150.87	\$ 139.10	\$ 177.87							
		\$ 229.24	\$ 75.97	\$ 129.09	\$ 120.31	\$ 156.34							
		\$ 91.23	\$ 45.40	\$ 100.34	\$ 113.14	\$ 75.13							

Weighted Average Cost of Capital									
Total Liabilities	Total Equity	Weight of Debt	Weight of Equity	AT Cost of Debt	Beta	Rf	Market Risk	Cost of Equity	WACC
414,890,000	7,798,000,000	0.0505	0.9495	1.99%	0.8956	2.25%	5.75%	7.40%	7.13%
Stock Price	127.64								
# of Shares	58.19M								
					Book Value of Debt				
					2 Yr avg of ST Debt	65.74			
					2 Yr avg of LT Debt	349.15			
Book Value of Debt	414.89					414.89			
Interest Expense	10.44								
Tax Rate	21.00%								
Cost of Debt	2.52%								

Discounted Cash Flow							
	Reported	Tetra Tech					Terminal
		Horizon Period					
	2020	2021	2022	2023	2024	2025	Period
Cost of Capital	7.13%						
Terminal Growth Rate	3.50%						
EBIT %	8.11%						
<b>In Millions</b>							
Sales	2,990.00	3,528.20	4,092.71	4,747.55	5,412.20	6,169.91	6,385.86
Growth Rate		18.00%	16.00%	16.00%	14.00%	14.00%	3.50%
EBIT	242.47	286.11	331.89	384.99	438.89	500.33	517.84
Taxes		60.08	69.70	80.85	92.17	105.07	108.75
OCF		226.03	262.19	304.14	346.72	395.26	409.10
Change in NWC		37.14	38.95	45.19	45.87	52.29	14.90
Change in CAPEX		1.93	2.02	2.35	2.38	2.71	0.77
FCF		186.96	221.21	256.61	298.48	340.26	393.42
Discounted FCF		174.52	192.75	208.71	226.60	241.13	
Terminal Value	11,217.39						
PV of Terminal Value	7,949.44						
Enterprise Value	8,993.15						
Less Net Debt	322.00						
Cash & Equiv	157.52					NWC % of Sales	7%
Equity Value	8,828.66					CAPEX % of Sales	0%
Shares Outstanding	58.19						
Price Per Share	\$ 151.72						

Exit Multiple Method							
	Reported	Tetra Tech					Terminal
		Horizon Period					
	2020	2021	2022	2023	2024	2025	Period
Cost of Capital	7.13%						
Terminal Growth Rate	3.50%						
EBITDA %	9.03%						
<b>In Millions</b>							
Sales	2,990.00	3,528.20	4,092.71	4,747.55	5,412.20	6,169.91	6,385.86
Growth Rate		18.00%	16.00%	16.00%	14.00%	14.00%	3.50%
EBITDA	269.95	318.54	369.51	428.63	488.64	557.05	576.54
Less Taxes		66.89	77.60	90.01	102.61	116.98	121.07
OCF		251.65	291.91	338.62	386.02	440.07	455.47
Change in NWC		37.14	38.95	45.19	45.87	52.29	14.90
Change in CAPEX		1.93	2.02	2.35	2.38	2.71	0.77
Unlevered CF		212.58	250.93	291.08	337.78	385.07	439.79
		198.43	218.64	236.75	256.44	272.88	
Terminal Year EBITDA	557.05						
Exit Multiple	18						
Terminal Value	10,026.83						
PV of TV	\$7,105.72						
Enterprise Value	8,583.16						
Less Net Debt	322.00						
Less Pref. St & Min Int	0.08						
Cash and Cash Equiv	157.52						
Equity Value	8,418.67						
Shares Outstanding	58.19						
Price Per Share	\$ 144.68						

Sensitivity Analysis								
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3.60%	\$ 143.94	\$ 148.10	\$ 152.49	\$ 155.71	\$ 162.04	\$ 167.25	\$ 172.79	
<b>3.50%</b>	\$ 140.53	\$ 144.49	\$ 148.66	\$ 151.72	\$ 157.73	\$ 162.66	\$ 167.89	
3.40%	\$ 137.29	\$ 141.06	\$ 145.04	\$ 147.95	\$ 153.65	\$ 158.33	\$ 163.28	
3.30%	\$ 134.21	\$ 137.81	\$ 141.60	\$ 144.37	\$ 149.80	\$ 154.24	\$ 158.93	
3.20%	\$ 131.27	\$ 134.72	\$ 138.33	\$ 140.98	\$ 146.15	\$ 150.37	\$ 154.83	

Exit Multiple Sensitivity	
20x	\$ 158.24
19x	\$ 151.46
18x	\$ 144.68
17x	\$ 137.89
16x	\$ 131.11

	Open	High	Low	Close
DCF Perpetuity	\$ 145.04	\$ 162.04	\$ 145.04	\$ 162.04
DCF Exit Multiple	\$ 131.11	\$ 158.24	\$ 131.11	\$ 158.24
P/E	\$ 120.31	\$ 139.10	\$ 120.31	\$ 139.10
P/B	\$ 156.34	\$ 177.87	\$ 156.34	\$ 177.87
EV/EBIT	\$ 129.09	\$ 150.87	\$ 129.09	\$ 150.87
EV/EBITDA	\$ 75.97	\$ 94.75	\$ 75.97	\$ 94.75
EV/Sales	\$ 229.24	\$ 236.88	\$ 229.24	\$ 236.88

Weighted Average Calculation			
Method	Valuation	Weight	Weighted Value
DCF Perpetuity	\$ 151.72	0.18	\$ 26.80
DCF Exit Multiple	\$ 144.68	0.17	\$ 24.37
P/E	\$ 139.10	0.16	\$ 22.53
P/B	\$ 177.87	0.21	\$ 36.83
EV/EBIT	\$ 150.87	0.18	\$ 26.50
EV/EBITDA	\$ 94.75	0.11	\$ 10.45
	\$ 858.99	1.00	\$ 147.47

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