



Krause Fund
Fall 2023

HOLD

Crown Castle, Inc. (NYSE: CCI)

Real Estate

November 11, 2023

Current Price: **\$95.64**

Target Price: **\$89.00 - \$99.00**

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Company Description

Crown Castle International Corp. (CCI) functions as a real estate investment trust (REIT) focusing on communications infrastructure. With an extensive portfolio spanning the United States, CCI's properties include cell towers and fiber-optics used for supporting small cell base stations in metropolitan areas. The company strategically engages in long-term leases with major telecommunication entities, establishing partnerships that yield stable and dependable cash flows. This business model positions CCI at the forefront of facilitating robust and resilient communication networks.

Investment Thesis

We recommend a **HOLD** rating for Crown Castle Inc. (CCI). CCI will experience continued growth, provided by their industry leadership in communications infrastructure and their investment into new 5G technologies. However, this growth will be offset by the high interest rate environment influencing their cost of capital slowing down business transactions and decreasing property valuations.

THESIS DRIVERS

Long-term lease contracts: The majority of CCI's revenue comes from leasing space on its cell towers to three major telecommunications companies: T-Mobile, AT&T, and Verizon Wireless. These revenue streams are secured by long-term contracts with each of these significant tenants. Given the stability provided by these agreements, particularly with major players in the U.S. telecommunications industry, CCI receives reliable and predictable revenue.

Pioneer in Wireless Communication Technologies: In the rapidly growing realm of 5G technology, CCI stands out as a pioneering force, driving advancements for the 5G network. While its main competitor, American Tower Corporation (AMT), concentrates on expanding a broader rural-based tower infrastructure, CCI positions itself to seize a greater market share by prioritizing 5G integration. CCI, with over 120,000 small cell towers, leads in 5G integration and strategically prepares for the future of 6G technology.

THESIS RISKS

Interest rate environment/Recession risk: Our hold recommendation is reflective of macroeconomic headwinds of recession and high interest rates. REITs rely on borrowing money to finance growth and therefore are heavily exposed to market risks related to changes in interest rates. High interest rates decrease the demand to buy and invest in real estate. Rising interest rates do not only decrease overall stock valuation but also property valuations.

Potential Refinancing on Existing Debt: CCI grapples with a potential hurdle linked to the refinancing of its existing debt, which reached \$21.9 billion as of December 31, 2022, up from \$20.8 billion in the preceding year¹³. Significantly, the company is set to address a substantial portion of its debt, totaling \$2 billion, that is due for maturity in 2023. This impending challenge is intensified by recent Federal Reserve rate hikes and indications of a prolonged period of heightened interest rates, which heighten the risk of escalating borrowing costs and, consequently, pose a potential threat to CCI's financial stability.

Slow Tower Growth Rate: With more than 60% of CCI's revenue derived from tower site rentals, the stagnant growth in new towers poses a risk to CCI's revenue expansion. Notably, CCI has not added to its approximately 40,000 towers since 2014. This stands in contrast to its main competitor, AMT, which is actively expanding its tower portfolio. The lack of new tower additions by CCI poses a potential threat to CCI's market share and future revenue growth prospects.

Snapshot

Valuation Methods

DCF/EP: \$110.10

DDM: \$63.85

Relative Valuation: \$107.42

Price Data

Current Price: \$95.64

52-Week Range: \$89-\$99

Key Metrics

Market Capitalization (M): 41,699

Shares Outstanding (M): 434.0

Beta: 0.83

Forward P/E: 132.84

Financial Overview

2022 Revenue (M) \$6,986.00

2023E Revenue (M) \$7,637.03

2022 Profit Margin 23.98%

2023E Profit Margin 12.13%

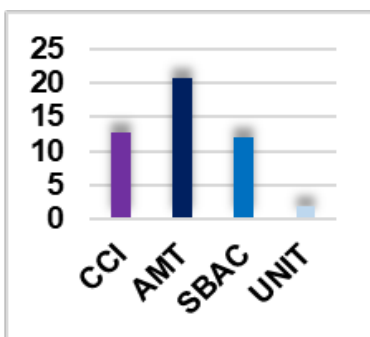
Financial Ratios (2023E)

Current Ratio .11

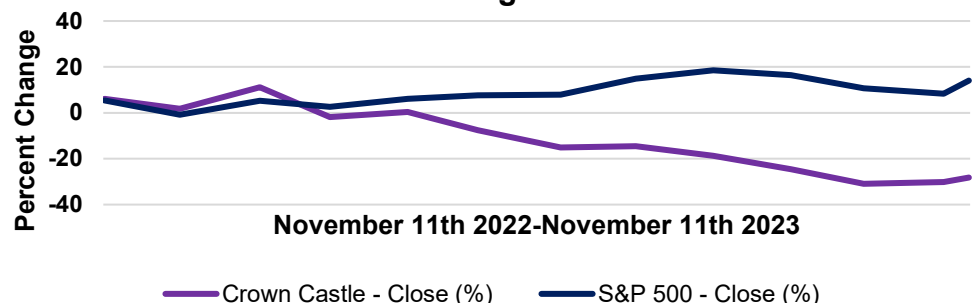
Debt to Equity 2.81

ROA 4.30%

Relative P/FFO



CCI's Total Return % Against S&P 500



Executive Summary

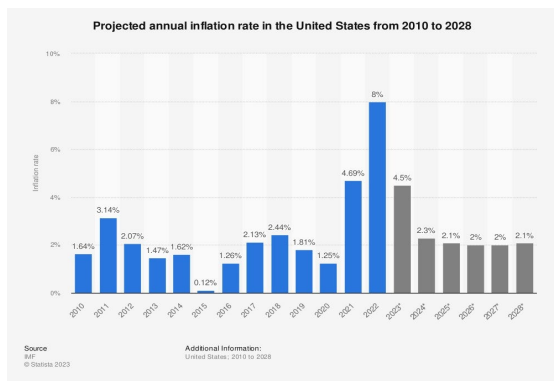
We suggest maintaining a HOLD rating for Crown Castle Inc. (CCI). This recommendation is grounded in the company's forward-thinking business strategy, stable revenue streams, and promising growth prospects. As a robust Real Estate Investment Trust (REIT), CCI strategically navigates the evolving communication infrastructure landscape, evidenced by its expansive network of cell towers and small cell supporting fiber strategically positioned near every major U.S. city. While potential risks include the loss of tenants through mergers and acquisitions and the impact of the current inflationary environment on borrowing costs, CCI's established position and adaptability do, to some extent, mitigate these concerns. Investors should exercise caution in the face of economic uncertainties but recognize CCI as a top choice within the communication infrastructure REIT sector for those seeking a stable, long-term investment.

Economic Analysis

Inflation's Influence

The symbiotic relationship between inflation and interest rates holds substantial sway over the Real Estate Investment Trust (REIT) sector. As inflation prompts the federal reserve to raise interest rates, borrowing costs surge²⁷. This potential increase in mortgage expenses may curb demand, influencing property prices. Given the significant 8% inflation rate observed in 2022, it becomes highly likely that the Federal Reserve will implement interest hikes.²⁹

Inflation Projection



Source: Statista

The Statista graph above shows a coming stabilization of inflation. This is projected to positively impact CCI's profitability driving up the stock price in the coming years.

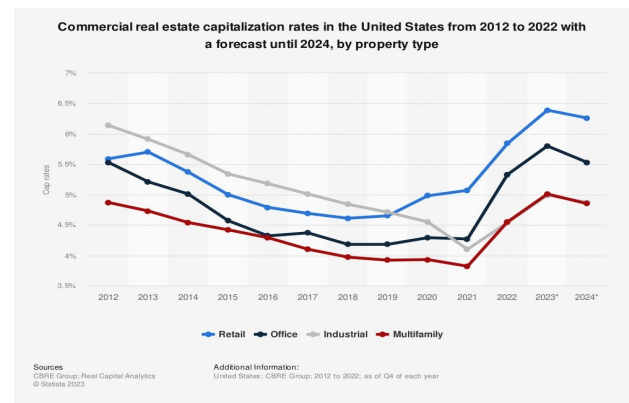
Interest Rate and Cap Rate Dynamics

CCI's primary exposure to market risks are related to changes in interest rates. These may adversely affect their results of operations and overall financial position. Interest rates are pivotal in shaping the real estate landscape, influencing property values, investment choices, and market dynamics²⁸. Our forecasts anticipate a gradual adjustment of interest rates by the Federal Reserve. Simultaneously, cap rates, key indicators of profitability and return potential, show a projected slight decrease in 2024, correlating with expectations of decreasing or stabilizing inflation. CCI's interest rate risk as of September 30, 2023, relates primarily to the impact of interest rate movements on the following two factors: (1) the company's \$3.1bn of floating rate debt as of September 30, 2023, which represented 14% of the company's total debt, and (2) potential future borrowings of incremental debt¹³. Since March of 2022, the Federal Reserve repeatedly raised the federal fund rate for an increase of 5.25%⁴. Further increases will negatively affect the company by increasing the cost of borrowing.

Cap Rates and the evolving REIT Landscape

Capitalization rates (cap rates) play a crucial role in shaping the real estate market, assessing a property's stabilized Net Operating Income (NOI) in relation to its value¹³. Despite a downward trend in REIT cap rates since 2021, the landscape shifted in 2022 Q1 due to the Federal Reserve interest rate hikes¹⁶. These actions heightened risk across various asset classes, prompting higher cap rates to adequately compensate investors. Our cap rate prediction envisions a slight decline in 2024, aligning with the expectation shown in the Statista bar graph of decreasing or stabilizing inflation and the conclusion of the Federal Reserve's rate-hiking schedule.

Cap Rate Projection



Source: Statista

This chart published by Statista, and crafted by CBRE, a leading and prominent Commercial Real Estate firm, shows illustrates elevated Cap Rates for the year of 2023

due to the current high inflation environment. However, projections indicate a decline in Cap Rates from 2024 onward. It is more desirable for Cap Rates to be lower because historically lower Cap Rates align with improved overall valuation and more favorable outlook of returns, often associated with a reduced level of risk.¹³

Recession Warning

Against the current situation of economic fluctuations, the recent inversion of US Treasury bond yields in late March has sparked concerns. This phenomenon, where 2-year bond yields exceeded those of 10-year bonds, has historically served as a precursor to economic recessions.¹² While not all yield curves mirrored this inversion, the strong performance of credit markets in 2023 suggests a level of financial resilience. However, the tightening of loan policies by banks in response to rising short-term rates is a cause for concern, limiting access to loans for various purposes and contributing to the potential recession in 2023.²⁸ It is imperative for investors to closely monitor these indicators as they navigate the economic landscape.

Industry Analysis

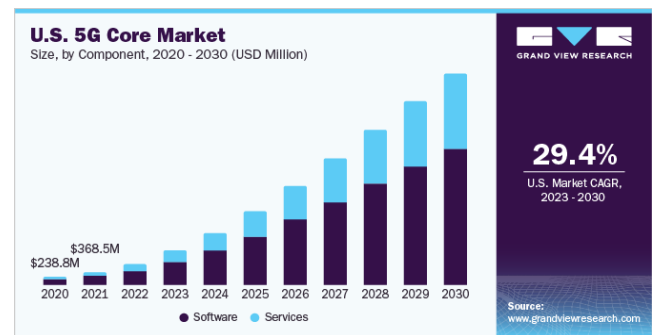
Industry Overview and Context

Within the realm of real estate, Crown Castle Int. (CCI) is a specialized player in Telecom Tower Real Estate Investment Trusts (REITs). This industry, at the cornerstone of real estate and technology is continuously seeing transformation driven by the intricate relationship between the growing need for wireless services and a plethora of continuous advancements in communication technologies.

Trends and Developments

At the industry's core is the need for wireless usage. There is a surge in this, propelled by the large appetite for data and the accessibility of affordable smartphones, particularly in emerging markets which creates an opportune environment.⁶ CCI has strategically positioned itself as a pioneer, ready to harness this upward trajectory and assert their dominance in the ever-evolving telecom industry. As various kinds of technology continue to emerge and grow, the need for wireless communication becomes more pertinent. The following graph illustrates the growing pertinency of wireless communication.

Market CAGR



Source: Grandview Research

According to the Grand View Research chart, there is an anticipated Compound Annual Growth Rate (CAGR) of 29.4% in the U.S 5G core market. CCI exclusively operates within and holds predominant position in the United States market, making the situation quite favorable for Crown Castle.⁶

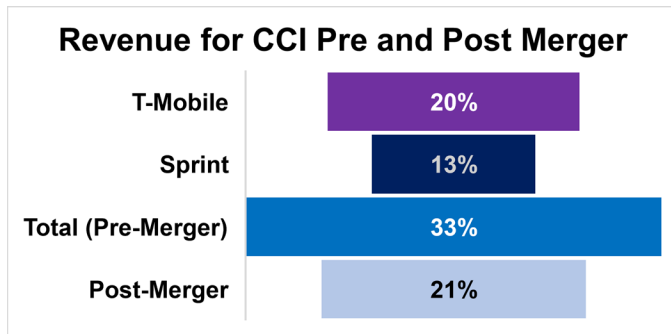
Navigating Industry Forces and Investment Opportunities

Delving into the dynamics of the industry, we apply Porter's 5-forces framework to shed light on the competitive forces orchestrating change and growth. Within this context, an oligopolistic market structure, minimal entry threats, consolidated supplier power, limited consumer influence, and a lack of viable sub-products create nuance. Within this complex atmosphere, CCI possesses investment appeal with a distinctive niche. In the realm of investment potential, CCI's position rises prominently. Their higher dividend yield, along with a strategic emphasis on domestic operations and a targeted approach to growth areas such as the small-cell market and fiber-optic solutions network, positions CCI favorably for sustained expansion.²⁵ Market analysts' sentiments echo this stance, highlighting CCI's commitment to the small-cell market as a pivotal factor aligning with the anticipated growth in smart cities and buildings. This narrative not only enhances CCI's investment appeal but also provides investors with a compelling rationale for long-term engagement in this evolving landscape.⁹

Managing Tenant Risk in Communication REITs

Tenant risk poses a common challenge for Communication Infrastructure Real Estate Investment Trusts (REITs), and this concern has recently gained significance for CCI. These REITs, often leasing to a select number of large-cap clients, face potential complications arising from mergers among these clients. In the realm of energy or communication networks, such mergers can alter the landscape by reducing reliance on a unified network. This shift allows merged entities to operate more efficiently with fewer resources, thereby

impacting REITs' rental revenue and resulting in a subsequent decrease in valuations.



Source: Airwave Advisors

The presented chart above depicts the impact of the T-Mobile-Sprint merger on CCI. Following the merger of T-Mobile and Sprint, the demand for individual towers from CCI diminished, as the combined entities were able to utilize a single tower to accommodate both companies. This consolidation resulted in several towers becoming vacant without tenants.⁵

A Deep Dive into REIT Activities

Examining the financial and operational landscape, the recent capital markets slowdown for US equity REITs directs attention to key players—CCI, AMT, and SBAC. In the Telecom Tower REITs sector, oligopolistic dynamics prevail, with almost all of cell phone towers concentrated among CCI, AMT, and SBAC. This concentration not only shapes competition but also influences pricing strategies. The divergence between CCI's domestic focus and AMT's global footprint adds complexity, defining revenue models and geographic scopes. The oligopolistic culture of the market leads to direct competition and constant need for growth.

Competitive Analysis

Overview

Crown Castle International Inc. operates in the dynamic and competitive wireless tower industry, where it contends with competitors such as American Tower Corporation (AMT) and SBA Communications Corporation (SBAC). The following analysis provides insights into the competitive landscape, business models, and key strategic aspects of these three major players.

Relevant CCI competitors:

American Tower (AMT)

American Tower Corporation is a leading global REIT and a significant competitor in the wireless communication infrastructure industry. With a vast portfolio of

approximately 225,000 communication sites globally, AMT serves as a crucial partner to wireless carriers, broadcasters, and government agencies.

SBA Communications (SBAC)

SBA Communications Corporation is a wireless infrastructure company with a growing presence in the US and international markets. The company owns and operates a portfolio of cell towers and small cells, emphasizing reliable connectivity solutions.

Uniti Group (UNIT)

Uniti Group Inc. is a real estate investment trust specializing in communication infrastructure, including fiber optic networks and cell towers. They focus on obtaining existing communication infrastructure through acquisitions by purchasing established fiber optic networks and cell towers.

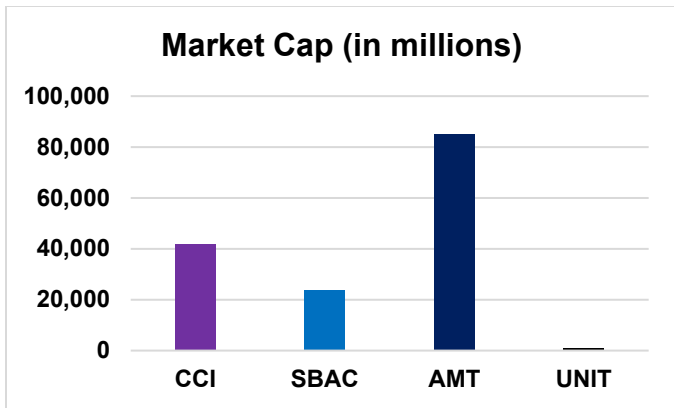
Name	Market Cap	Last Px (USD)	Net Sales T12M	Operating Margin	FFO	Dividend Yield	S&P Rating
Median	32.52B	\$138.73	4.90B	26.3%	8.75	5.06%	
CROWN CASTLE INC	41.47B	\$95.62	7.07B	29%	7.75	6.55%	BBB
AMERICAN TOWER CORP	84.77B	\$181.84	11.06B	23%	9.76	3.56%	BBB-
SBA COMMUNICATIONS CORP	23.56B	\$218.40	2.72B	36%	11.17	1.56%	BB+
UNITI GROUP INC	1.16B	\$4.78	1.15B	-1%	0.77	12.55%	B-

This data table depicts various statistics for CCI and its competitors. It is evident that CCI has the highest operating margin in comparison to its competitors. This is significant because it means that CCI is making the most profit on a dollar of sales post production costs.

Peer Comparisons

Market Capitalization Comparison

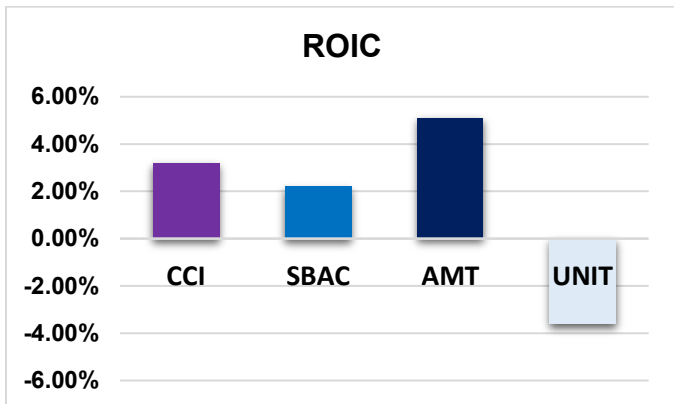
The main three competitors that we have identified that have potential to affect CCI's continued success in the REIT communications industry are SBA Communication (SBAC), American Tower Corporation (AMT) and on a smaller scale Uniti Group (UNIT). Crown Castle has the second largest market cap of any communication structure REIT, the reason that American Tower Corporation has such a large REIT is because they have An international global presence while CCI only operates domestically.³ Crown Castle chose to cease all of its international operations to focus on the domestic market. This is more efficient for CCI because they do not have to deal with various regulatory environments and can focus on dominating the U.S market.²³ We would like to see CCI revive its international footprint after securing its opportunities within the domestic market.



Source: FactSet

Return on Invested Capital (ROIC) Comparison

Return on Invested Capital (ROIC) is an important measure to value a company because it shows how well a company allocates its capital to profitable investments and projects. The higher a company's ROIC is, the better they are managing capital. Crown Castle, Inc. is the second largest ROIC behind American Tower Corporation (AMT). As mentioned prior, AMT is a much larger company operating internationally so their ROIC is rated higher because of the higher profits that they are generating. CCI's ROIC is only 1.9% lower than AMT's.³ Although, the ROIC is lower, relative to CCI's market cap, CCI's ROIC proves to be strong. Tactics that CCI can implement to increase its ROIC are generating more profit and beginning to compete with AMT internationally or taking over even more of the domestic market share. CCI has growth plans in their fiber-optic solutions segment which we will likely see raise its ROIC.¹⁴



Source: FactSet

Company Analysis

Company Description

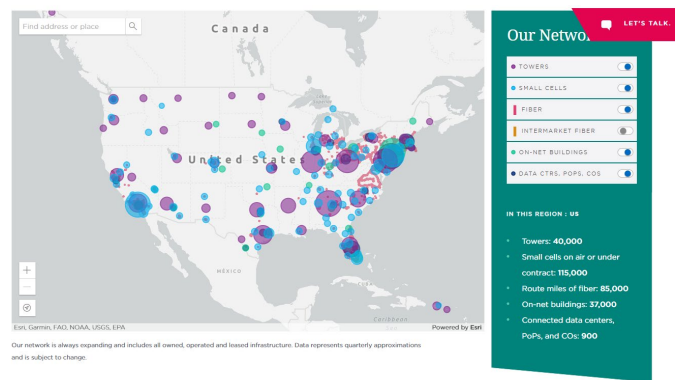
Crown Castle International Corp. (CCI), headquartered in Houston, TX functions as a real estate investment trust (REIT) focusing on communications infrastructure.

With an extensive portfolio spanning the United States, CCI's properties include cell towers and fiber-optics used

for supporting small cell base stations in metropolitan areas.

The company strategically engages in long-term leases with major telecommunication entities, establishing partnerships that yield stable and dependable cash flows. This business model positions CCI at the forefront of facilitating robust and resilient communication networks.

CCI presently possesses, manages, and rents out over 40,000 towers while also offering 115,000+ small cells and maintaining 85,000+ miles of fiber.¹⁵ The company rents out tower space to lasting tenants like T-Mobile, AT&T, and Verizon Wireless.¹³ These strategically positioned cell towers are situated in congested regions of the United States such as large cities, creating a reliable approach for ensuring consistent cash flow over an extended duration and exploring potential avenues for investment and expansion.¹⁵



Source: Crown Castle Infrastructure Solutions

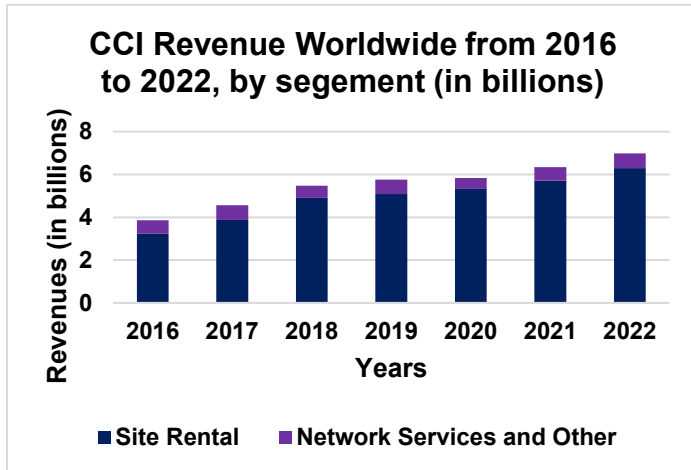
The map shown above is a real time illustration of CCI's network of small cells, towers, and fiber-optic solutions across the United States showing that their presence is especially apparent in densely populated urban areas.

Company Objectives

CCI's strategy involves fostering organic growth through their commitment to an annual increase in the dividend per share within the range of 7.00% to 8.00% and has even reached a dividend share of 9.00% which parallels with the company's broader goal of fostering organic growth.³³ By emphasizing a reliable and competitive dividend return, CCI not only seeks to attract and retain investors but also ensures a steady and predictable income stream. This, in turn, supports the company's financial stability and provides a solid foundation for further investment in its existing portfolio of over 40,000 towers and 85,000 miles of high-capacity fiber.¹⁵ The combination of dividend growth and organic portfolio leasing reflects a holistic strategy to enhance shareholder value and maintain sustainable long-term growth.

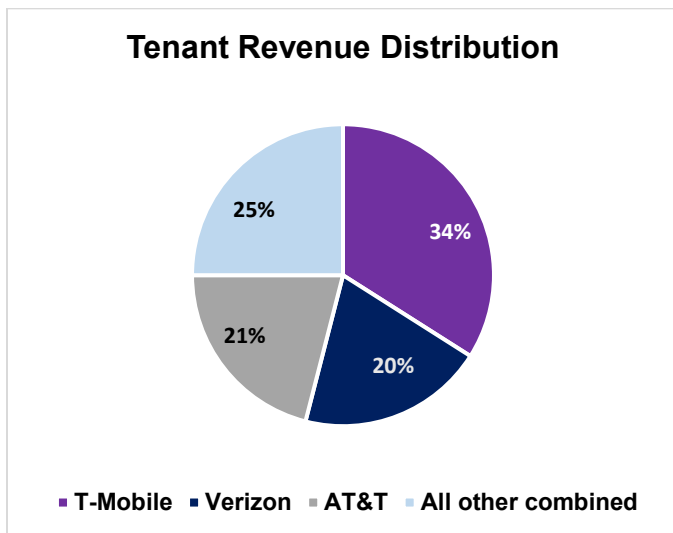
Revenue Analysis

CCI's operational structure is split into two key segments: Site Rental Revenues and Network Services and Other Revenues. Primarily, Site Rental Revenues constitute a majority 90.00% of the total revenues for the year 2021 and just shy of 89% for 2022, emphasizing the significance of this revenue stream.¹⁶ This revenue breakdown by these two segments can be shown on the graph below provided by Statista.



Source: Statista

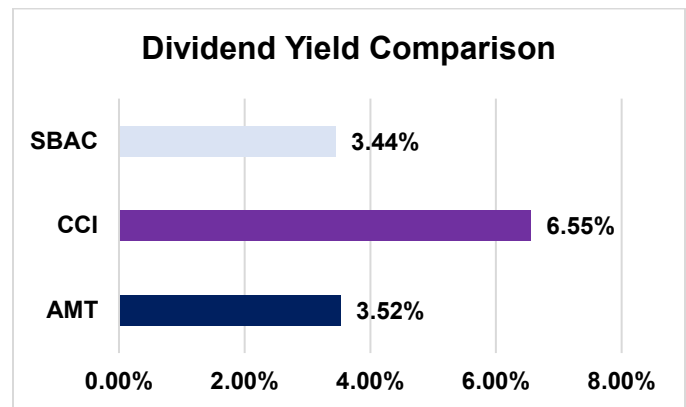
The Site Rental's stable revenue stream relies on long-term contracts to ensure stability. It comprises two main components: Towers and Fiber. The Towers segment, leasing space to major tenants like T-Mobile, AT&T, and Verizon Wireless, is utilized to cost-effectively enhance coverage and capacity for wireless carrier networks. With a 75.00% contribution from three major tenants, the towers segment remains vital in CCI's revenue decomposition, aligning with its strategic vision for sustained growth in the telecommunications industry. The following graph shows a visual breakdown of CCI's tenant revenue distribution.¹³



Source: 2023 10-K

Financial Footing-Dividends

Crown Castle places a paramount emphasis on shareholder commitment as a core element of its strategic approach. As a Real Estate Investment Trust (REIT), the company is already recognized for offering high dividend yields and is required to distribute 90% of its REIT taxable income as dividends to maintain its company status.³⁹ However, Crown Castle's strong financial health allows it to surpass industry standards, currently boasting a noteworthy 6.55% Dividend Yield.



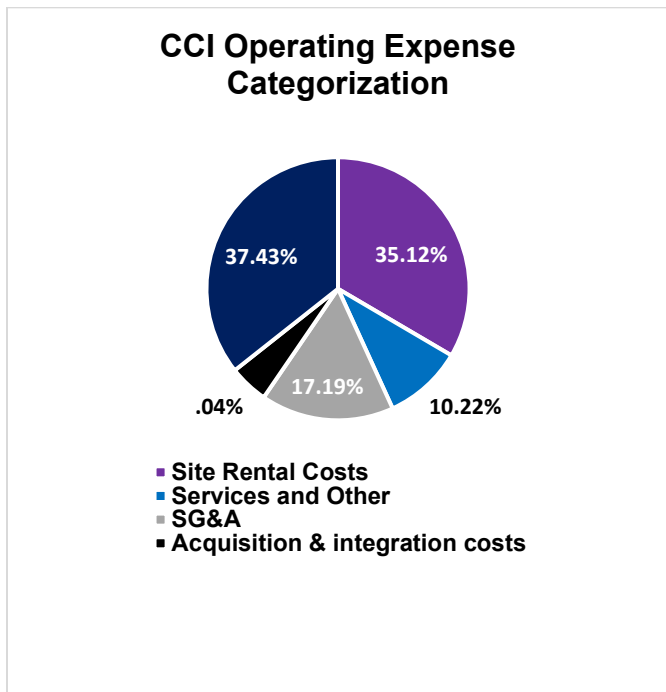
Source: Yahoo Finance

In this chart, Crown Castle's dividend yield is compared against its significant competitors, AMT and SBAC. CCI's dividend yield stands drastically higher, amplifying the company's steadfast commitment to its shareholders. It is worth stating that while Uniti Group Inc. boasts a higher dividend yield than Crown Castle, the comparison is not entirely relevant due to Uniti Group Inc.'s significantly lower stock value, standing around \$4.00, making it an incomparable peer in this context.³³ Dividend yields are an important metric because they indicate the percentage of annual earnings you could get back from an investment relative to its cost. A higher dividend yield suggests the potential for more income from that investment.

Expense Analysis

For the fiscal year ending in 2022, Crown Castle International Corp (CCI) reported total operating expenses amounting to \$4.56 billion. These expenses encompass various components, including costs of operations, general and administration expenses, asset write-down charges, acquisition, and integration costs, as well as depreciation, amortization, and accretion.¹³ Among these, costs of operations, particularly in the Site Rental and Services & Other segments, constitute the primary share, excluding depreciation, amortization, and accretion expenses. Breaking down the costs of operations, CCI incurred approximately \$1.602 billion from Site Rental costs and approximately \$0.466 billion from Services & Other. Together, these two segments make up 45.34% of the total operating expenses.¹³ This

shows us CCI's operational priorities and where CCI is placing emphasis and resources in its day-to-day activities.



Valuation Discussion

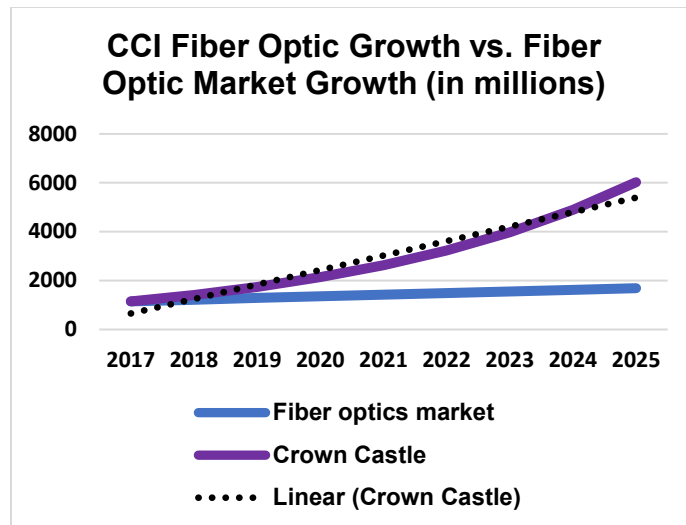
Our valuation model for Crown Castle was constructed, taking into consideration key factors such as the company's historical growth, management guidance, and the anticipated developments in the 5G and telecommunications industries. We foresee Crown Castle's ongoing commitment to investing in projects with positive net present value, along with a consistent annual dividend increase ranging from 7.00% to 8.00% and their onward goal to 9.00% dividend increase, reflecting the company's dedication to growing shareholder value and keeping its position as a reliable investment choice. A key driver for future growth lies in the company's strategic deployment of small cells. This initiative is expected to yield multiple benefits, including an increased tenant base per tower, improved margins, and heightened profitability per tower. Despite our projection that Crown Castle may not significantly acquire new towers, we anticipate sustained revenue growth through the addition of tenants. This forecast aligns with our observation that, while the fiber business is expanding, the company's revenue trajectory will be primarily driven by the continued expansion of its tenant portfolio.

Revenue Decomposition

Fiber-Optic Potential

As shown in the Statista chart above in the revenue analysis, about 89% of their revenue came from site

rentals, mostly from their main clients of T-Mobile, AT&T, and Verizon.³ Site rental revenue includes cell tower revenue, but also from their fiber site rental revenue. In Q1 of the upcoming year, 2024, Crown Castle is expected to generate \$335M in leasing activity, \$180M of this will come from towers, and \$155M from their fiber optic solutions. Last quarter, towers were generating 15% more revenue and fiber optic solutions were generating 23% less revenue.¹⁵ We are seeing a shift into fiber optic revenue, which is still a category of Site Rental revenue.



Source: Statista

This trendline graphs illustrates what it would look like if Crown Castle continued to grow their fiber-optic revenue at the current rate they are of 23%, vs. the fiber-optic market's revenue growth overall which is about 5%. Crown Castle would exponentially beat the market growth in fiber optic solutions.¹⁶

Crown Castle's Leasing Strategy

Crown Castle strategically positions itself as a leader in the cell tower industry by prioritizing stability.³³ They do this via leasing space on its 40,100 cell towers primarily to major carriers. This secures a reliable and long-term revenue stream. A key element of their strategy is the geographic placement of 71% of their towers in top Basic Trading Areas (BTAs), maximizing the towers' desirability and attracting a higher number of tenants. This is because a BTA is essentially a densely populated area that has a lot of business. They are located within metropolitan areas.³⁶

Crown Castle is also proactively extending leases, particularly those nearing expiration from the early 1990s, using third-party firms to streamline negotiations and secure favorable terms efficiently.¹⁵

The company's focus on maintaining an average lease term of 36 years ensures sustained financial predictability. Diversification through an average of 2.2 subtenants per tower enhances revenue stability, since the intricacy and cost associated with relocating towers act as a significant

deterrent for competitive moves or aggressive renegotiations if there were an issue with a tenant.³³ Additionally, Crown Castle's emphasis on small cell development aligns with industry trends, placing them to meet the increasing demand for enhanced wireless connectivity.¹⁵

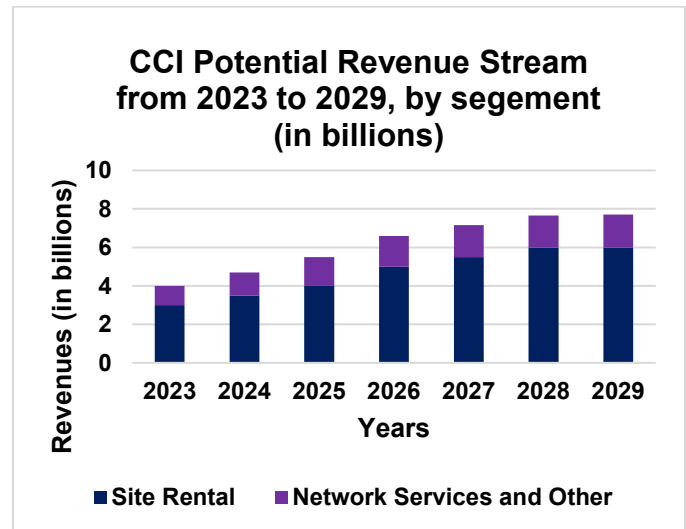
Active engagement with landowners for new leases showcases a forward-thinking approach, capitalizing on concerns or opportunities related to existing leases nearby. Collaboration with industry experts like Steel in the Air (a consulting firm) underscores a commitment to fair dealings and ensures that Crown Castle remains adaptable to market dynamics.⁹ Recommendations for lease modifications further demonstrate their flexibility, allowing the company to navigate changing landscapes while maintaining mutually beneficial relationships with landowners. Crown Castle's strategy revolves around stability, geographic advantage, diversification, adaptability, and proactive growth, cementing its position as a leader in the competitive cell tower leasing market.

The Upcoming 6G Wave

The arrival of 6G is going to impact Crown Castle in various ways. As 6G networks bring about increased density and introduce new infrastructure requirements, Crown Castle, with its extensive portfolio of cell towers, may find opportunities to enhance and expand its infrastructure to accommodate the new 6G environment. The dynamics of leasing tower space could undergo shifts with changing demand patterns. As a key player in leasing space to major carriers, Crown Castle stands to benefit from the anticipated surge in demand for upgrades to 6G. The company's active involvement in 6G development through collaborations with research institutions like The University of Texas-Austin positions it as a significant contributor to shaping the telecommunications industry.⁸ However, this also adds challenges, requiring Crown Castle to adapt to new standards, invest in infrastructure upgrades, and deal with potential changes in lease agreements. In navigating these changes, Crown Castle is situated to spearhead facilitating the infrastructure needed for the next generation of wireless communication.

6G will require more tower density. This is going to restructure Crown Castle's revenue and increase its Capital Expenditures. They are going to need to build more densely compacted towers and even more likely small cell nodes to close gaps between towers. In pursuit of the upcoming 6G, Crown Castle executives have confirmed the realization of their planned deployment of 10,000 small cells this year which is double from the previous year's deployment.⁵ Looking ahead, the company is poised for further expansion, with projections indicating an increase to 14,000 small cells in 2024. This will restructure their revenue stream from almost all site rental revenue to an increase in network and other revenue. The following graph depicts how that might look

compared to the original revenue segment provided by Statista.³²



Source: Light Reading

Weighted Average Cost of Capital (WACC)

In establishing Crown Castle's Weighted Average Cost of Capital (WACC) at 7.80%, we used the approach which involved calculating both the cost of equity and the cost of debt, coupled with determining market values for equity and debt. The market value of equity was obtained by multiplying the stock price by the total shares outstanding, representing a weight of equity at 56.37%. Simultaneously, the value of debt was computed by summing short-term debt, the current portion of long-term debt, long-term debt, and the present value of operating leases, resulting in a weight of debt at 43.63%. Also, Crown Castle's current capital structure does not include any preferred stock.

Cost of Equity

In the evaluation of the WACC, the determination of the cost of equity through the Capital Asset Pricing Model (CAPM) yielded a figure of 8.87%, surpassing our initial projections. This heightened cost is a result of an elevated risk-free rate, set at 4.85% based on the yield of a 10-year bond, and an increased risk premium. The Federal Reserve's consistent rate hikes are expected to contribute to a sustained ascent in WACC throughout the current year. However, we anticipate that as inflation stabilizes and the Federal Reserve concludes its rate hikes, WACC will subsequently experience a decline. The equity risk premium, standing at 4.84% and derived from Aswath Damodaran's estimation on October 23rd, was regarded as a prudent reflection of prevailing market conditions. Furthermore, the Beta estimate of 0.83 was derived from pulling the raw 3-year weekly beta from the Bloomberg terminal.

Cost of Debt

In determining the after-tax cost of debt, our calculation yielded a value of 6.63%. The applied assumptions encompass a risk-free rate of 4.85%, based on the yield of the 10-year Treasury Bond, a 1.89% default premium, a marginal tax rate of 2.00%, and a 6.74% pre-tax cost of debt. The pre-tax cost represents the yield-to-maturity on a bond set to mature on January 15th, 2051.

Valuation Models

Discounted Cash Flow and Economic Profit (DCF and EP) Model

Both the Discounted Cash Flow (DCF) and Economic Profit (EP) models were applied over a 10-year horizon, discounting cash flows at the 7.89% Weighted Cost of Capital (WACC). In the DCF model, the present value of operating assets was assessed at \$70,016, achieved by discounting free cash flows and continuing value with the WACC.

In the EP model, the present value of EP was determined to be \$57,785.90. Adjustments involved adding invested capital from 2022, resulting in a total PV of \$74,312.8.

Non-operating adjustments included factoring in restricted cash, subtracting accrued interest, total debt, present value of operating leases, and present value of employee stock option plans (ESOP). This process yielded the total equity value at \$46,856.4. Dividing this by the number of shares outstanding arrived at a per-share price of \$99.30.

Dividend Discount Model (DDM)

We assert that the Dividend Discount Model (DDM) is a more robust valuation method for Crown Castle, given the substantial role dividends play in attracting investors, with 90.00% of taxable income mandated as dividends. Favoring the DDM is further justified by management's explicit goal of annual dividend growth, ranging from 7.00 to 8.00%, extending to 9.00. Key DDM assumptions include a Compound Value (CV) growth of Earnings Per Share (EPS) at 2.75%, a CV year Return on Equity (ROE) of 57%, and a cost of equity at 8.87%. Using the projected dividends in alignment with management's goals, the CV price was computed by multiplying the projected Price-to-Earnings (P/E) ratio in 2032E by the corresponding EPS in 2032E, resulting in a P/E multiple of 15.55 and an EPS of \$7.30. This calculation yielded a future stock price of \$113.54. Discounting this future price and subsequent dividends at the cost of equity produced an implied price of \$63.85. This price is 33.24% lower than the closing price on November 11th, 2023. We anticipate that as markets transition out of bear market conditions and management fulfills its commitment to dividend increases,

Crown Castle's stock price will exhibit consistent growth while providing reliable cash flow.

Relative Valuation Model

In our relative valuation analysis, we utilized the Price-to-Earnings (P/E) and Price-to-Funds from Operations (P/FFO) ratios. The 2023 P/E ratio, calculated by dividing the November 11th, 2023, stock price by the estimated 2023 Earnings Per Share (EPS) from the income statement, was determined to be 50.21. To establish the target price using the relative P/E ratio, we computed the average of AMT and SBA's 2023 P/E ratios and multiplied it by CCI's 2023 EPS, resulting in a target price of \$107.58. The same methodology was applied to the P/FFO ratio, yielding a stock price of \$81.10. Importantly, UNIT was excluded from these calculations due to its outlier status.

Sensitivity Analysis

Equity Risk Premium and Beta

Over the past five years, Crown Castle International Corp. (CCI) has maintained a relatively low average beta of 0.83, signaling lower volatility compared to the broader market. A slight increase in beta by 0.02, coupled with a 0.10% uptick in the equity risk premium, is anticipated to negatively impact the stock price. Despite its REIT status, CCI remains vulnerable to future volatility, with its cost of equity at 8.80%, derived through CAPM and integrated into the WACC. In the face of heightened market volatility and potential bond retirements, CCI may need to offer higher yields, driven by the increasing 10-year treasury yield. This adjustment could raise both the cost of equity and debt, potentially resulting in a stock price decline, highlighting the importance of prudent capital structure management in evolving market conditions.

		Equity Risk Premium							
		110.10	4.54%	4.64%	4.74%	4.84%	4.94%	5.04%	5.14%
Beta	0.89	109.59	107.68	105.81	103.97	102.17	100.39	98.65	
	0.87	111.58	109.67	107.81	105.97	104.17	102.40	100.66	
	0.85	113.60	111.71	109.84	108.02	106.22	104.46	102.72	
	0.83	115.66	113.78	111.92	110.10	108.31	106.55	104.82	
	0.81	117.77	115.89	114.04	112.23	110.44	108.69	106.97	
	0.79	119.92	118.05	116.21	114.40	112.62	110.88	109.16	
	0.77	122.11	120.25	118.42	116.62	114.85	113.11	111.40	

Marginal Tax Rate and Dividend Yield

The interplay between the marginal tax rate and dividend yield is crucial for understanding how they collectively influence Crown Castle International Corp. (CCI). A notable pattern shows that when the dividend yield increases, the valuation drops and vice versa. The fixed marginal tax rate of 1.68% is critical for CCI's REIT status, impacting its obligation to distribute income as dividends. This fixed rate directly affects the after-tax income available for distribution to shareholders. Considering a

potential increase in CCI's current 6.72% dividend yield, this is often seen as positive for investor retention, but caution is warranted due to the observed inverse relationship between dividend yield and valuation. Investors may interpret a higher dividend yield as suggesting lower growth prospects and increased risk, influencing how CCI's value is perceived in the market.

		Dividend Yield							
		110.10	5.22%	5.72%	6.22%	6.72%	7.22%	7.72%	8.22%
Marginal Tax Rate	1.53%	111.23	110.80	110.36	109.92	109.49	109.05	108.61	
	1.58%	111.29	110.86	110.42	109.98	109.54	109.11	108.67	
	1.63%	111.35	110.92	110.48	110.04	109.60	109.16	108.73	
	1.68%	111.41	110.98	110.54	110.10	109.66	109.22	108.78	
	1.73%	111.47	111.04	110.60	110.16	109.72	109.28	108.84	
	1.78%	111.53	111.09	110.66	110.22	109.78	109.34	108.90	
	1.83%	111.59	111.15	110.72	110.28	109.84	109.40	108.96	

Pre-Tax Cost of Debt and Revenue Per mile of Fiber

In Crown Castle's valuation we can see an increase, driven by a low pre-tax cost of debt at 6.74% with a sensitivity range of $\pm 1\%$, and a high revenue per mile of fiber at 2.00% with a sensitivity range of $\pm 0.5\%$, stems from foundational financial principles. A low pre-tax cost of debt mitigates financial risk, lowering interest expenses and elevating net cash flows. Concurrently, a high revenue per mile signifies robust income from fiber assets, further contributing to valuation growth. Crown Castle's strategic focus on increasing revenue in its fiber segment introduces a dynamic element. While this initiative holds potential for bolstering cash flows and enhancing valuation, it also introduces risks. An increase in revenue per mile of fiber could influence the pre-tax cost of debt. If successful, revenue growth may enhance the company's creditworthiness, potentially leading to a reduction in the pre-tax cost of debt. Careful risk management is crucial to navigate the challenge of larger capital investments associated with expanding fiber infrastructure. It will be interesting to watch CCI's growth strategy in this segment.

		Revenue Per Mile of Fiber							
		110.10	0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%
Pre-tax Cost of Debt	8.24%	83.64	85.99	88.37	90.79	93.24	95.73	98.26	
	7.74%	89.25	91.71	94.21	96.75	99.32	101.93	104.58	
	7.24%	95.32	97.90	100.52	103.18	105.88	108.62	111.40	
	6.74%	101.90	104.61	107.37	110.17	113.01	115.89	118.81	
	6.24%	109.06	111.92	114.82	117.77	120.75	123.79	126.87	
	5.74%	116.87	119.89	122.95	126.06	129.22	132.42	135.67	
	6.24%	109.06	111.92	114.82	117.77	120.75	123.79	126.87	

Dividend Yield and CV Growth of EPS

Examining how Dividend Yield and Constant Value Growth of Earnings Per Share (EPS) impact Crown Castle International Corp. (CCI), a Real Estate Investment Trust (REIT), provides a deeper understanding of the company's financial strategies. As an REIT, CCI has a distinctive focus on distributing dividends and maintaining steady earnings growth. Slight changes, like a 0.02% increase in Dividend Yield and a 0.05% boost in Constant Value Growth of EPS, offer a

glimpse into potential future scenarios. This scrutiny is pivotal for CCI's strategic decision-making, particularly in the context of their potential moves such as raising dividend yields. Such a decision signals confidence in sustained earnings growth. This aligns with CCI's REIT framework, emphasizing the distribution of a substantial portion of earnings as dividends to uphold its tax-advantaged status.

		CV Growth EPS							
		110.10	2.60%	2.65%	2.70%	2.75%	2.80%	2.85%	2.90%
Dividend Yield	6.78%	107.04	108.02	109.03	110.05	111.09	112.15	113.24	
	6.76%	107.06	108.04	109.04	110.07	111.11	112.17	113.25	
	6.74%	107.07	108.06	109.06	110.08	111.13	112.19	113.27	
	6.72%	107.09	108.08	109.08	110.10	111.14	112.21	113.29	
	6.70%	107.11	108.09	109.10	110.12	111.16	112.22	113.31	
	6.68%	107.13	108.11	109.11	110.14	111.18	112.24	113.33	
	6.66%	107.14	108.13	109.13	110.15	111.20	112.26	113.34	

Cost of Equity and Risk-Free Rate

For Crown Castle International Corp. (CCI), a Real Estate Investment Trust (REIT), closely monitoring the Cost of Equity and the Risk-Free Rate is crucial, especially with rates currently at 4.85% and 8.87%, respectively. Applying a .05% margin change to both variables adds complexity to this analysis. In the REIT context, when both the Cost of Equity and the Risk-Free Rate increase, even marginally, it adversely impacts CCI's valuation. Higher Cost of Equity suggests heightened investor risk perception, demanding increased returns, while an elevated Risk-Free Rate establishes a higher benchmark for market returns. For a dividend-focused REIT like CCI, this dual rate increase results in a higher discount rate applied to future cash flows, reducing the present value and causing a drop in valuation. In the unique context of a REIT, this decline not only affects investor appeal but also influences CCI's strategic decisions and tax-advantaged status. Thus, ongoing analysis is vital for CCI to navigate changing financial landscapes while meeting income-focused investor expectations within the real estate investment realm.

		Risk Free Rate							
		110.10	4.55%	4.65%	4.75%	4.85%	4.95%	5.05%	5.15%
Cost of Equity	9.02%	117.26	114.87	112.53	110.23	107.99	105.80	103.65	
	8.97%	117.22	114.82	112.48	110.19	107.95	105.76	103.61	
	8.92%	117.17	114.78	112.44	110.15	107.91	105.72	103.57	
	8.87%	117.12	114.73	112.39	110.10	107.86	105.67	103.53	
	6.74%	115.13	112.78	110.48	108.23	106.03	103.88	101.77	
	4.61%	113.13	110.82	108.56	106.35	104.19	102.07	100.00	
	2.48%	111.13	108.86	106.64	104.46	102.34	100.26	98.23	

Revenue Per Mile of Fiber and Risk-Free Rate

Evaluating the sensitivity of Crown Castle's valuation to changes in the risk-free rate, at a baseline of 4.85% with a sensitivity range of $\pm 0.15\%$, and revenue per mile of fiber at 2.00% with a sensitivity range of $\pm 0.02\%$, is vital for a REIT. A lower risk-free rate, reflecting enhanced creditworthiness and increased demand for safe assets,

can favorably impact Crown Castle's cash flows and overall valuation. However, considering the company's fiber revenue growth goals, the sensitivity analysis on revenue per mile, with a baseline growth of 2.00% and a range of $\pm 0.02\%$, shows how changes in income from fiber assets could affect valuation. The highest valuation is with the highest revenue per mile of fiber and lowest risk-free rate. As Crown Castle pursues its fiber revenue growth, they need to watch the macroeconomic factors to keep their risk-free rate low. This is something to watch as they pursue advancement in this segment.

		Risk-Free Rate						
		4.40%	4.55%	4.70%	4.85%	5.00%	5.15%	5.30%
Revenue Per mile of Fiber	110.10	120.74	117.19	113.76	110.44	107.22	104.10	101.08
	2.06%	120.62	117.08	113.65	110.33	107.11	103.99	100.97
	2.04%	120.50	116.96	113.53	110.21	107.00	103.88	100.86
	2.02%	120.38	116.84	113.42	110.10	106.89	103.77	100.76
	2.00%	120.26	116.73	113.30	109.99	106.78	103.67	100.65
	1.98%	120.14	116.61	113.19	109.88	106.67	103.56	100.54
	1.96%	120.03	116.49	113.07	109.76	106.56	103.45	100.44
	1.94%							

Important Disclaimer

This report was created by students enrolled in the Security Analysis (6F:112) class at the University of Iowa. The report was originally created to offer an internal investment recommendation for the University of Iowa Krause Fund and its advisory board. The report also provides potential employers and other interested parties an example of the students' skills, knowledge and abilities. Members of the Krause Fund are not registered investment advisors, brokers or officially licensed financial professionals. The investment advice contained in this report does not represent an offer or solicitation to buy or sell any of the securities mentioned. Unless otherwise noted, facts and figures included in this report are from publicly available sources. This report is not a complete compilation of data, and its accuracy is not guaranteed. From time to time, the University of Iowa, its faculty, staff, students, or the Krause Fund may hold a financial interest in the companies mentioned in this report.

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Crown Castle Inc.
Income Statement
Scale

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Net revenues													
Site rental revenues	5,320.00	5,719.00	6,289.00	6,842.45	7,404.34	7,631.89	7,919.61	8,213.31	8,535.04	8,948.14	9,383.76	9,801.61	10,283.21
Services & other revenues	520.00	621.00	697.00	792.74	819.74	920.75	1,011.46	1,098.33	1,211.62	1,328.34	1,455.22	1,598.83	1,754.13
Net Revenues	5,840.00	6,340.00	6,986.00	7,635.19	8,224.08	8,552.64	8,931.07	9,311.64	9,746.67	10,276.48	10,838.98	11,400.44	12,037.34
Operating Expenses													
Cost of operations													
Costs of site rental operations	1,521.00	1,554.00	1,602.00	1,559.00	1,571.67	1,577.56	1,569.41	1,572.88	1,573.28	1,571.85	1,572.67	1,572.60	1,572.38
Costs of services & other operations	448.00	439.00	466.00	530.01	548.06	615.59	676.24	734.32	810.06	888.10	972.93	1,068.94	1,172.78
Selling, general & administrative expenses (and Asset write-down charges)	752.00	701.00	784.00	886.60	927.02	962.72	1,050.41	1,198.38	1,382.30	1,532.20	1,613.04	1,683.18	1,830.40
Acquisition & integration costs	10.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Depreciation, amortization & accretion	1,608.00	1,644.00	1,707.00	1,707.00	1,668.82	1,634.87	1,604.68	1,577.84	1,553.97	1,532.75	1,513.87	1,497.09	1,482.17
Total operating expenses	4,339.00	4,339.00	4,561.00	4,684.61	4,717.56	4,792.74	4,902.74	5,085.42	5,321.61	5,526.91	5,674.51	5,823.81	6,059.72
Operating income (loss)	1,863.00	2,001.00	2,425.00	2,950.58	3,506.51	3,759.90	4,028.33	4,226.23	4,425.05	4,749.58	5,164.47	5,576.63	5,977.62
Interest expense & amortization of deferred financing costs	(689.00)	(657.00)	(699.00)	(2,122.66)	(2,178.98)	(2,233.10)	(2,286.48)	(2,337.42)	(2,386.14)	(2,453.14)	(2,509.75)	(2,568.28)	(2,622.71)
Gains (losses) on retirement of long-term obligations	(95.00)	(145.00)	(28.00)	-	-	-	-	-	-	-	-	-	-
Interest income	2.00	1.00	3.00	105.71	36.57	48.43	63.57	49.52	53.84	55.65	53.00	54.16	54.27
Other income (expense)	(5.00)	(21.00)	(10.00)	-	-	-	-	-	-	-	-	-	-
Income (loss) from continuing operations before income taxes	1,076.00	1,179.00	1,691.00	933.63	1,364.11	1,575.23	1,805.42	1,938.33	2,092.76	2,352.08	2,707.72	3,062.51	3,409.18
Provision (benefit) for income taxes	20.00	21.00	16.00	8.28	12.10	13.97	16.01	17.19	18.56	20.86	24.02	27.16	30.24
Income (loss) from continuing operations	1,056.00	1,158.00	1,675.00	925.35	1,352.01	1,561.26	1,789.40	1,921.13	2,074.20	2,331.22	2,683.71	3,035.35	3,378.94
Discontinued operations													
Less: net income (loss) attributable to the noncontrolling interest	-	-	-	-	-	-	-	-	-	-	-	-	-
Net income (loss) attributable to Crown Castle Inc. stockholders	1,056.00	1,096.00	1,675.00	925.35	1,352.01	1,561.26	1,789.40	1,921.13	2,074.20	2,331.22	2,683.71	3,035.35	3,378.94
Dividends on preferred stock & losses on purchases of preferred stock	57.00	-	-	-	-	-	-	-	-	-	-	-	-
Net income (loss) attributable to Crown Castle Inc. common stockholders	999.00	1,096.00	1,675.00	925.35	1,352.01	1,561.26	1,789.40	1,921.13	2,074.20	2,331.22	2,683.71	3,035.35	3,378.94
Net income (loss)	1,056.00	1,096.00	1,675.00	925.35	1,352.01	1,561.26	1,789.40	1,921.13	2,074.20	2,331.22	2,683.71	3,035.35	3,378.94
Other comprehensive income loss													
Foreign currency translation adjustments	1.00	-	(1.00)	-	-	-	-	-	-	-	-	-	-
Comprehensive income (loss) attributable to CCIC stockholders	1,057.00	1,096.00	1,674.00	925.35	1,352.01	1,561.26	1,789.40	1,921.13	2,074.20	2,331.22	2,683.71	3,035.35	3,378.94
Net income (loss) attributable to CCI common stockholders, per common share													
Net income (loss) per common share - basic	2.36	2.54	3.87	2.14	3.12	3.61	4.14	4.44	4.79	5.39	6.20	7.02	7.81
Weighted-average common shares outstanding													
Basic	423.00	432.00	433.00	432.50	432.75	432.63	432.69	432.66	432.67	432.66	432.67	432.67	432.67
Year end shares outstanding													
Basic	431.00	432.00	433.00	434.82	436.35	437.92	438.84	439.09	439.30	440.12	441.58	443.06	443.98
Dividends/distributions declared per share:													
Common stock	4.93	5.46	5.98	6.51820	7.10484	7.74427	8.44126	9.20097	10.02906	10.93167	11.91552	12.98792	14.15683

Crown Castle Inc.
Historical Cash Flow Statement

Fiscal Years Ending Dec. 31	2016	2017	2018	2019	2020	2021	2022
Fiscal Years Ending Dec. 31							
Cash flows from operating activities:							
Net income (loss) from continuing operations	356.97	444.55	671.00	860.00	1,056.00	1,158.00	1,675.00
Adjustments to reconcile income (loss) from continuing operations to net cash provided by (used for) operating activities:	-	-	-	-	-	-	-
Depreciation, amortization & accretion	1,108.55	1,242.41	1,528.00	1,572.00	1,608.00	1,644.00	1,707.00
Losses (gains) on retirement of long-term obligations	52.29	3.53	106.00	2.00	95.00	145.00	28.00
Losses (gains) on settled swaps	2.61	0.33	-	-	-	-	-
Amortization of deferred financing costs & other non-cash interest, net	14.33	9.37	7.00	1.00	6.00	13.00	17.00
Stock-based compensation expense	79.34	91.65	103.00	117.00	138.00	129.00	156.00
Asset write-down charges	34.45	17.32	26.00	19.00	74.00	21.00	34.00
Deferred income tax provision (benefit)	8.60	14.89	2.00	2.00	3.00	4.00	3.00
Other non-cash adjustments, net	2.45	(1.65)	2.00	(2.00)	5.00	21.00	5.00
Changes in assets and liabilities, excluding the effect of acquisitions:	-	-	-	-	-	-	-
Accrued interest	30.04	34.77	16.00	21.00	31.00	(17.00)	-
Accounts payable	10.60	(34.07)	37.00	19.00	(77.00)	15.00	(5.00)
Other liabilities	-	-	-	254.00	(65.00)	(118.00)	(281.00)
Deferred revenues, deferred ground lease payables, other accrued liabilities & other liabilities	196.00	175.52	223.00	-	-	-	-
Receivables	(58.66)	60.86	(105.00)	(96.00)	166.00	(113.00)	(49.00)
Other assets	-	-	-	(71.00)	15.00	(113.00)	(412.00)
Decrease (increase) in prepaid expenses, deferred site rental receivables, long-term prepaid rent & other assets	(55.32)	(15.29)	(114.00)	-	-	-	-
Net cash flows from operating activities	<u>1,782.26</u>	<u>2,044.19</u>	<u>2,502.00</u>	<u>2,698.00</u>	<u>3,055.00</u>	<u>2,789.00</u>	<u>2,878.00</u>
Cash flow from investing activities							
Capital expenditures	(873.88)	(1,228.07)	(1,741.00)	(2,057.00)	(1,624.00)	(1,229.00)	(1,310.00)
Payments for acquisitions, net of cash acquired	(556.85)	(9,260.14)	(42.00)	(17.00)	(1,310.00)	(1,229.00)	(1,624.00)
Receipts from foreign currency swaps	8.14	(0.33)	-	-	-	-	-
Other investing activities, net	12.36	(5.49)	(12.00)	(7.00)	(10.00)	8.00	(7.00)
Net cash flows from investing activities	<u>(1,410.23)</u>	<u>(10,494.02)</u>	<u>(1,795.00)</u>	<u>(2,081.00)</u>	<u>(1,741.00)</u>	<u>(1,332.00)</u>	<u>(1,352.00)</u>
Cash flow from financing activities							
Proceeds from issuance of long-term debt	5,201.01	3,092.32	2,742.00	1,894.00	3,733.00	3,985.00	748.00
Principal payments on debt & other long-term obligations	(95.79)	(118.88)	(105.00)	(86.00)	(105.00)	(1,076.00)	(74.00)
Purchases & redemptions of long-term debt	(4,044.83)	-	(2,346.00)	(12.00)	(2,490.00)	(2,089.00)	(1,274.00)
Borrowings under revolving credit facility	3,440.00	2,820.00	1,820.00	2,110.00	2,430.00	1,245.00	3,495.00
Payments under revolving credit facility	(4,565.00)	(1,840.00)	(1,725.00)	(2,660.00)	(2,665.00)	(870.00)	(2,855.00)
Net issuances (repayments) under commercial paper program	-	-	-	155.00	130.00	(20.00)	976.00
Payments for financing costs	(41.53)	(29.24)	(31.00)	(24.00)	(38.00)	(42.00)	(14.00)
Net proceeds from issuance of common stock	1,325.87	4,221.33	841.00	-	-	-	-
Net proceeds from issuance of preferred stock	-	1,607.76	-	-	-	-	-
Purchases of common stock	(24.94)	(23.31)	(34.00)	(44.00)	(76.00)	(70.00)	(65.00)
Dividends or distributions paid on common stock	(1,239.16)	(1,508.71)	(1,782.00)	(1,912.00)	(2,105.00)	(2,373.00)	(2,602.00)
Dividends or distributions paid on preferred stock	(43.99)	(29.94)	(113.00)	(113.00)	(85.00)	-	-
Net (increase) decrease in restricted cash	(7.93)	3.81	-	-	-	-	-
Net cash flows from financing activities	<u>(96.29)</u>	<u>8,195.15</u>	<u>(733.00)</u>	<u>(692.00)</u>	<u>(1,271.00)</u>	<u>(1,310.00)</u>	<u>(1,665.00)</u>
Net increase (decrease) in cash, cash equivalents, & restricted cash - continuing operations	<u>276.00</u>	<u>(255.00)</u>	<u>(26.00)</u>	<u>(75.00)</u>	<u>43.00</u>	<u>147.00</u>	<u>(139.00)</u>
Discontinued Operations:							
Net cash flows from discontinued operations - investing activities	113.15	-	-	-	-	(62.00)	-
Net increase (decrease) in cash & cash equivalents - discontinued operations	-	-	-	-	-	-	-
Effect of exchange rate changes on cash	<u>(0.10)</u>	<u>1.18</u>	<u>(1.00)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Cash & cash equivalents at end of year	<u>179.00</u>	<u>568.00</u>	<u>440.00</u>	<u>413.00</u>	<u>338.00</u>	<u>381.00</u>	<u>466.00</u>
Cash, cash equivalents, & restricted cash at end of period	<u>567.60</u>	<u>314.09</u>	<u>413.00</u>	<u>338.00</u>	<u>381.00</u>	<u>466.00</u>	<u>327.00</u>

Crown Castle Inc.
Forecasted Cash Flow Statement

Fiscal Years Ending Dec. 31	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Cash flows from operating activities										
Net Income	925.35	1,352.01	1,561.26	1,789.40	1,921.13	2,074.20	2,331.22	2,683.71	3,035.35	3,378.94
Changes in working capital										
Depreciation, amortization & accretion	1,707.00	1,668.82	1,634.87	1,604.68	1,577.84	1,553.97	1,532.75	1,513.87	1,497.09	1,482.17
Changes in assets and liabilities, excluding the effect of acquisitions:										
Receivables net	(37.61)	(18.62)	(8.93)	(4.22)	(1.98)	(0.92)	(0.43)	(0.20)	(0.09)	(0.04)
Deferred Site Rental Receivables	(8.05)	(3.99)	(1.91)	(0.90)	(0.42)	(0.20)	(0.09)	(0.04)	(0.02)	(0.01)
Prepaid Expenses	(6.47)	(3.20)	(1.54)	(0.73)	(0.34)	(0.16)	(0.07)	(0.03)	(0.02)	(0.01)
Other current assets	(15.20)	(8.36)	(4.22)	(2.04)	(0.97)	(0.45)	(0.21)	(0.10)	(0.05)	(0.02)
Deferred site rental receivables	(123.92)	(61.37)	(29.42)	(13.89)	(6.51)	(3.04)	(1.42)	(0.66)	(0.31)	(0.14)
Other intangible assets	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Other assets	(8.62)	(4.27)	(2.05)	(0.97)	(0.45)	(0.21)	(0.10)	(0.05)	(0.02)	(0.01)
Accounts Payable	21.93	19.89	11.10	12.78	12.86	14.70	17.90	19.00	18.97	21.52
Accrued Interest	372.72	14.74	14.17	13.98	13.34	12.75	17.54	14.82	15.32	14.25
Deferred Revenues	68.39	62.04	34.61	39.87	40.09	45.83	55.82	59.26	59.15	67.10
Long-term prepaid rent & other assets, net	(157.32)	(4.65)	(2.23)	(1.05)	(0.49)	(0.23)	(0.11)	(0.05)	(0.02)	(0.01)
Other accrued liabilities	37.82	34.31	19.14	22.05	22.17	25.34	30.87	32.77	32.71	37.11
Net cash flows from operating activities	2,779.03	3,050.35	3,227.86	3,461.97	3,579.27	3,724.57	3,986.65	4,325.30	4,661.06	5,003.83
Cash flows from investing activities										
Capital Expenditures (change in gross PPE)	(1,362.40)	(1,362.40)	(1,362.40)	(1,362.40)	(1,362.40)	(1,362.40)	(1,362.40)	(1,362.40)	(1,362.40)	(1,362.40)
Operating lease right-of-use assets	(149.30)	(138.62)	(128.19)	(118.10)	(108.45)	(99.27)	(90.61)	(82.49)	(74.92)	(67.90)
Site rental contracts & tenant relationships, net	447.00	446.00	396.00	375.00	370.00	287.00	374.80	360.56	353.47	349.17
Operating lease liabilities (current & LT)	134.55	124.92	115.52	106.43	97.73	89.46	81.65	74.34	67.51	61.19
Restricted Cash	(459.42)	0.58	0.42	0.31	0.24	0.18	0.14	0.11	0.09	0.08
Net Cash flows from investing activities	(1,389.58)	(929.52)	(978.65)	(998.76)	(1,002.88)	(1,085.03)	(996.41)	(1,009.88)	(1,016.24)	(1,019.87)
Cash flows from financing activities										
Other long-term liabilities	(362.53)	(71.45)	(40.66)	(62.82)	(12.91)	(1.09)	19.41	40.27	(18.47)	(10.90)
Dividends distributions	(2,819.12)	(3,074.62)	(3,350.37)	(3,652.43)	(3,980.86)	(4,339.29)	(4,729.74)	(5,155.47)	(5,619.43)	(6,125.20)
Current maturities of debt & other obligations	(85.00)	(44.00)	(20.00)	(30.00)	(99.00)	141.33	(22.78)	(12.41)	(7.14)	(5.00)
Current portion of operating lease liabilities	8.01	7.43	6.87	6.33	5.82	5.32	4.86	4.42	4.02	3.64
Debt & other long-term obligations	639.04	654.53	650.73	646.68	642.19	659.83	634.04	635.29	635.01	634.23
Common stock & Additional Paid in Capital	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Net cash flows from financing activities	(2,619.47)	(2,527.98)	(2,753.29)	(3,092.10)	(3,444.64)	(3,533.77)	(4,094.09)	(4,487.76)	(5,005.88)	(5,503.09)
Net increase (decrease) in cash, cash equivalents, & restricted cash	(1,230.02)	(407.15)	(504.07)	(628.89)	(868.25)	(894.22)	(1,103.84)	(1,172.34)	(1,361.06)	(1,519.12)
Cash, cash equivalents, & beginning of period	156.00	(1,074.02)	(1,481.16)	(1,985.24)	(2,614.13)	(3,482.38)	(4,376.60)	(5,480.45)	(6,652.79)	(8,013.85)
Cash, cash equivalents, & end of period	(1,074.02)	(1,481.16)	(1,985.24)	(2,614.13)	(3,482.38)	(4,376.60)	(5,480.45)	(6,652.79)	(8,013.85)	(9,532.97)

Crown Castle Inc.
Common Size Income Statement

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Net revenues													
Site rental revenues	91.10%	90.21%	90.02%	89.62%	90.03%	89.23%	88.67%	88.20%	87.57%	87.07%	86.57%	85.98%	85.43%
Services & other revenues	8.90%	9.79%	9.98%	10.38%	9.97%	10.77%	11.33%	11.80%	12.43%	12.93%	13.43%	14.02%	14.57%
Net Revenues	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Expenses													
Cost of operations													
Costs of site rental operations	26.04%	24.51%	22.93%	20.42%	19.11%	18.45%	17.57%	16.89%	16.14%	15.30%	14.51%	13.79%	13.06%
Costs of services & other operations	7.67%	6.92%	6.67%	6.94%	6.66%	7.20%	7.57%	7.89%	8.31%	8.64%	8.98%	9.38%	9.74%
Selling, general & administrative expenses	12.88%	11.06%	11.22%	11.61%	11.27%	11.26%	11.76%	12.87%	14.18%	14.91%	14.88%	14.76%	15.21%
Acquisition & integration costs	0.17%	0.02%	0.03%	0.03%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
Depreciation, amortization & accretion	27.53%	25.93%	24.43%	22.36%	20.29%	19.12%	17.97%	16.94%	15.94%	14.92%	13.97%	13.13%	12.31%
Total operating expenses	74.30%	68.44%	65.29%	61.36%	57.36%	56.04%	54.90%	54.61%	54.60%	53.78%	52.35%	51.08%	50.34%
Operating income (loss)	31.90%	31.56%	34.71%	38.64%	42.64%	43.96%	45.10%	45.39%	45.40%	46.22%	47.65%	48.92%	49.66%
Interest expense & amortization of deferred financing costs	-11.80%	-10.36%	-10.01%	-27.80%	-26.50%	-26.11%	-25.60%	-25.10%	-24.48%	-23.87%	-23.15%	-22.53%	-21.79%
Gains (losses) on retirement of long-term obligations	-1.63%	-2.29%	-0.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Interest income	0.03%	0.02%	0.04%	1.38%	0.44%	0.57%	0.71%	0.53%	0.55%	0.54%	0.49%	0.48%	0.45%
Other income (expense)	-0.09%	-0.33%	-0.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Income (loss) from continuing operations before income taxes	18.42%	18.60%	24.21%	12.23%	16.59%	18.42%	20.22%	20.82%	21.47%	22.89%	24.98%	26.86%	28.32%
Provision (benefit) for income taxes	0.34%	0.33%	0.23%	0.11%	0.15%	0.16%	0.18%	0.18%	0.19%	0.20%	0.22%	0.24%	0.25%
Income (loss) from continuing operations	18.08%	18.26%	23.98%	12.12%	16.44%	18.25%	20.04%	20.63%	21.28%	22.68%	24.76%	26.62%	28.07%
Discontinued operations													
Less: net income (loss) attributable to the noncontrolling interest													
Net income (loss) attributable to Crown Castle Inc. stockholders	18.08%	17.29%	23.98%	12.12%	16.44%	18.25%	20.04%	20.63%	21.28%	22.68%	24.76%	26.62%	28.07%
Dividends on preferred stock & losses on purchases of preferred stock	0.98%	-	-	-	-	-	-	-	-	-	-	-	-
Net income (loss) attributable to Crown Castle Inc. common stockholders	17.11%	17.29%	23.98%	12.12%	16.44%	18.25%	20.04%	20.63%	21.28%	22.68%	24.76%	26.62%	28.07%
Net income (loss)	18.08%	17.29%	23.98%	12.12%	16.44%	18.25%	20.04%	20.63%	21.28%	22.68%	24.76%	26.62%	28.07%

Crown Castle Inc.
Common Size Balance Sheet

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Current Assets													
Cash & cash equivalents	3.97%	4.61%	2.23%	-14.07%	-18.01%	-23.21%	-29.27%	-37.40%	-44.90%	-53.33%	-61.38%	-70.29%	-79.19%
Restricted cash	2.47%	2.67%	2.38%	8.19%	7.60%	7.30%	6.99%	6.70%	6.40%	6.07%	5.75%	5.47%	5.18%
Receivables, net	7.38%	8.56%	8.49%	8.95%	8.87%	8.83%	8.78%	8.55%	8.72%	8.74%	8.78%	8.75%	8.74%
Prepaid expenses	1.63%	1.66%	1.46%	1.42%	1.36%	1.32%	1.28%	1.23%	1.17%	1.11%	1.06%	1.00%	0.95%
Other current assets	3.46%	2.29%	1.04%	2.71%	2.62%	2.54%	2.51%	2.45%	2.31%	2.31%	2.49%	2.46%	2.44%
Total current assets	<u>18.90%</u>	<u>19.78%</u>	<u>17.42%</u>	<u>6.73%</u>	<u>1.70%</u>	<u>-4.07%</u>	<u>-10.85%</u>	<u>-19.69%</u>	<u>-27.97%</u>	<u>-37.27%</u>	<u>-46.15%</u>	<u>-55.81%</u>	<u>-65.48%</u>
Deferred site rental receivables	24.11%	25.05%	27.97%	27.21%	26.01%	25.36%	24.44%	23.51%	22.49%	21.35%	20.24%	19.25%	18.23%
Total assets	<u>18.90%</u>	<u>19.78%</u>	<u>17.42%</u>	<u>6.73%</u>	<u>1.70%</u>	<u>-4.07%</u>	<u>-10.85%</u>	<u>-19.69%</u>	<u>-27.97%</u>	<u>-37.27%</u>	<u>-46.15%</u>	<u>-55.81%</u>	<u>-65.48%</u>
Total gross property & equipment	444.61%	429.12%	407.64%	390.83%	379.41%	380.76%	379.88%	378.99%	376.05%	369.92%	363.29%	357.35%	349.76%
Less: accumulated depreciation - property & equipment	184.98%	188.28%	187.10%	193.55%	199.98%	211.42%	220.43%	228.36%	234.11%	236.96%	238.63%	240.01%	239.62%
Property & equipment, net	259.62%	240.84%	220.54%	197.28%	179.42%	169.35%	159.46%	150.63%	141.94%	132.96%	124.66%	117.34%	110.14%
Operating lease right-of-use assets	110.68%	105.39%	93.42%	87.43%	82.85%	81.17%	79.05%	76.99%	74.57%	71.61%	68.65%	65.93%	63.00%
Goodwill	172.57%	158.96%	144.36%	132.09%	122.63%	117.92%	112.92%	108.31%	103.47%	98.14%	93.04%	88.46%	83.78%
Site rental contracts & tenant relationships, net	74.74%	62.81%	50.60%	40.44%	32.13%	26.26%	20.95%	16.12%	12.46%	8.17%	4.42%	1.10%	-1.86%
Other intangible assets, net	1.16%	1.01%	0.87%	0.76%	0.67%	0.61%	0.55%	0.49%	0.44%	0.39%	0.34%	0.30%	0.26%
Long-term prepaid rent & other assets, net	-	-	-	-	-	-	-	-	-	-	-	-	-
Other assets, net	2.04%	1.94%	1.95%	1.89%	1.81%	1.76%	1.70%	1.64%	1.57%	1.49%	1.41%	1.34%	1.27%
Total Assets	<u>663.84%</u>	<u>615.77%</u>	<u>557.13%</u>	<u>495.89%</u>	<u>449.20%</u>	<u>420.28%</u>	<u>390.07%</u>	<u>359.76%</u>	<u>330.66%</u>	<u>298.44%</u>	<u>268.16%</u>	<u>239.36%</u>	<u>210.72%</u>
Liabilities and Equity													
Current Liabilities													
Accounts payable	3.94%	3.88%	3.38%	3.38%	3.38%	3.38%	3.38%	3.38%	3.38%	3.38%	3.38%	3.38%	3.38%
Accrued interest	3.41%	2.87%	2.62%	7.28%	6.94%	6.84%	6.70%	6.57%	6.41%	6.25%	6.06%	5.90%	5.70%
Deferred revenues	12.05%	12.24%	10.54%	10.54%	10.54%	10.54%	10.54%	10.54%	10.54%	10.54%	10.54%	10.54%	10.54%
Other accrued liabilities	6.47%	6.32%	5.83%	5.83%	5.83%	5.83%	5.83%	5.83%	5.83%	5.83%	5.83%	5.83%	5.83%
Current maturities of debt & other obligations	2.21%	1.14%	11.72%	9.61%	8.39%	7.83%	7.17%	5.81%	7.00%	6.42%	5.97%	5.61%	5.28%
Current portion of operating lease liabilities	5.63%	5.50%	5.01%	4.69%	4.44%	4.35%	4.24%	4.13%	4.00%	3.84%	3.68%	3.54%	3.38%
Total current liabilities	<u>33.72%</u>	<u>31.96%</u>	<u>39.09%</u>	<u>41.32%</u>	<u>39.51%</u>	<u>38.76%</u>	<u>37.85%</u>	<u>36.25%</u>	<u>37.15%</u>	<u>36.25%</u>	<u>35.45%</u>	<u>34.79%</u>	<u>34.10%</u>
Debt & other long-term obligations	327.93%	324.24%	299.31%	282.23%	269.98%	267.22%	263.14%	259.28%	254.48%	247.53%	240.54%	234.27%	227.14%
Operating lease liabilities	99.45%	95.13%	84.18%	78.79%	74.66%	73.15%	71.24%	69.38%	67.20%	64.53%	61.87%	59.41%	56.78%
Other long-term liabilities	41.20%	34.29%	27.91%	20.79%	18.43%	17.25%	15.82%	15.03%	14.35%	13.80%	13.45%	12.63%	11.87%
Total liabilities	<u>501.83%</u>	<u>485.52%</u>	<u>450.50%</u>	<u>449.72%</u>	<u>458.88%</u>	<u>459.20%</u>	<u>470.14%</u>	<u>467.97%</u>	<u>463.13%</u>	<u>459.93%</u>	<u>461.28%</u>	<u>462.93%</u>	<u>463.51%</u>
Common stock	0.07%	0.06%	0.06%	0.05%	0.05%	0.05%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.03%
6.875% mandatory convertible preferred stock, series A	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional paid-in capital	307.14%	284.15%	259.32%	237.27%	220.28%	211.82%	202.85%	194.56%	185.88%	176.29%	167.15%	158.92%	150.51%
Accumulated other comprehensive income (loss)	307.14%	284.15%	259.32%	237.27%	220.28%	211.82%	202.85%	194.56%	185.88%	176.29%	167.15%	158.92%	150.51%
Dividends or distributions in excess of earnings	-145.07%	-153.83%	-152.68%	-164.50%	-173.67%	-187.91%	-200.81%	-214.72%	-228.38%	-239.94%	-250.30%	-260.64%	-269.66%
Total Crown Castle International Corp. stockholders' equity (deficit)	<u>162.00%</u>	<u>130.25%</u>	<u>-</u>	<u>72.76%</u>	<u>46.61%</u>	<u>23.90%</u>	<u>2.03%</u>	<u>-20.17%</u>	<u>-42.51%</u>	<u>-63.66%</u>	<u>-83.16%</u>	<u>-101.73%</u>	<u>-119.16%</u>
Total liabilities and equity	<u>663.84%</u>	<u>615.77%</u>	<u>557.13%</u>	<u>495.89%</u>	<u>449.20%</u>	<u>420.28%</u>	<u>390.07%</u>	<u>359.76%</u>	<u>330.66%</u>	<u>298.44%</u>	<u>268.16%</u>	<u>239.36%</u>	<u>210.72%</u>

Crown Castle Inc.
Value Driver Estimation

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
NOPLAT:													
Net Revenues	5,840.00	6,340.00	6,986.00	7,635.19	8,224.08	8,552.64	8,931.07	9,311.64	9,746.67	10,276.48	10,838.98	11,400.44	12,037.34
-Cost of operations (site rental)	1,521.00	1,554.00	1,602.00	1,559.00	1,571.67	1,577.56	1,569.41	1,572.88	1,573.28	1,571.85	1,572.67	1,572.60	1,572.38
-Cost of operations (services and other)	448.00	439.00	466.00	530.01	548.06	615.59	676.24	734.32	810.06	888.10	972.93	1,068.94	1,172.78
-Selling, general, & administrative	678.00	680.00	750.00	886.60	927.02	962.72	1,050.41	1,198.38	1,382.30	1,532.20	1,613.04	1,683.18	1,830.40
-Depreciation, amortization, and accretion	1,608.00	1,644.00	1,707.00	1,707.00	1,668.82	1,634.87	1,604.68	1,577.84	1,553.97	1,532.75	1,513.87	1,497.09	1,482.17
+Other operating income	362.00												
+Implied interest on operating leases	413.65	435.97	450.67	440.15	450.22	459.57	468.22	476.18	483.50	490.19	496.30	501.87	506.92
EBITA	1,636.65	2,458.97	2,911.67	3,392.73	3,958.74	4,221.47	4,498.54	4,704.41	4,910.55	5,241.77	5,662.78	6,080.50	6,486.54
Less: Adjusted taxes													
+Tax Provision (benefit)	20.00	21.00	16.00	8.28	12.10	13.97	16.01	17.19	18.56	20.86	24.02	27.16	30.24
+Tax shield on acquisition & integration costs	0.09	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
+Tax shield on interest expense & amortization of deferred financing costs	6.40	7.25	6.20	18.83	19.33	19.81	20.28	20.73	21.17	21.76	22.26	22.78	23.26
+Tax shield on losses on retirement of long-term obligations	0.88	1.60	0.25	-	-	-	-	-	-	-	-	-	-
-Tax on interest income	0.02	0.01	0.03	0.94	0.32	0.43	0.56	0.44	0.48	0.49	0.47	0.48	0.48
-Tax on other income	(0.05)	(0.23)	(0.09)	-	-	-	-	-	-	-	-	-	-
+Tax shield on other expense	(0.05)	(0.23)	(0.09)	-	-	-	-	-	-	-	-	-	-
+Tax shield on implied interest on operating leases	3.84	4.81	4.00	3.90	3.99	4.08	4.15	4.22	4.29	4.35	4.40	4.45	4.50
Total adjusted taxes	31.20	34.65	26.44	30.09	35.11	37.44	39.90	41.73	43.56	46.49	50.23	53.03	57.54
Add: Change in Deferred Taxes	3.00	3.00	4.00	(8.68)	4.30	2.11	2.30	1.33	1.54	2.59	3.55	3.54	3.46
NOPLAT	1,608.45	2,427.32	2,889.24	3,353.96	3,927.92	4,186.14	4,460.94	4,664.01	4,868.54	5,197.66	5,616.10	6,030.10	6,432.47
Invested Capital (IC):													
Operating current assets:													
Normal cash	116.80	126.80	139.72	152.70	164.48	171.05	178.62	186.23	194.93	205.53	216.78	228.01	240.75
Receivables, net	431.00	543.00	593.00	630.61	649.23	658.16	662.38	664.35	665.27	665.70	665.91	666.00	666.04
Prepaid expenses	95.00	105.00	102.00	108.47	111.67	113.21	113.93	114.27	114.43	114.51	114.54	114.56	114.56
Other current assets	202.00	145.00	200.00	88.20	96.56	100.78	102.82	103.79	104.25	104.46	104.56	104.60	104.62
Operating current liabilities:													
Accounts payable	230.00	246.00	236.00	257.93	277.82	288.92	301.71	314.56	329.26	347.16	366.16	385.13	406.64
Deferred revenues	704.00	776.00	804.39	866.44	866.44	901.05	940.92	981.01	1,026.85	1,141.93	1,201.08	1,268.18	1,268.18
Other accrued liabilities	378.00	401.00	407.00	444.82	479.13	498.27	520.32	542.49	567.83	598.70	631.47	664.18	701.29
Operating Working Capital	(467.20)	(503.20)	(344.28)	(527.17)	(601.44)	(645.04)	(705.19)	(769.42)	(845.06)	(938.33)	(1,037.78)	(1,137.22)	(1,250.13)
Net PPE, Net other operating assets:													
Deferred site rental receivables	1,408.00	1,588.00	1,954.00	2,077.92	2,139.28	2,168.71	2,182.60	2,189.11	2,192.15	2,193.57	2,194.23	2,194.54	2,194.68
Property & equipment, net	15,162.00	15,269.00	154.07	15,062.40	14,755.98	14,483.51	14,241.23	14,025.79	13,834.22	13,663.87	13,512.40	13,377.71	13,257.94
Site rental contracts & tenant relationships, net	4,365.00	3,982.00	3,535.00	3,088.00	2,642.00	2,246.00	1,871.00	1,501.00	1,214.00	839.20	478.64	125.17	(224.00)
Other intangible assets, net	68.00	64.00	61.00	58.00	55.00	52.00	49.00	46.00	43.00	40.00	37.00	34.00	31.00
FV of operating leases	6,464.00	6,682.00	6,526.00	6,675.30	6,813.92	6,942.11	7,060.21	7,168.66	7,267.93	7,358.54	7,441.02	7,515.94	7,583.84
Invested Capital (IC):	27,467.0	27,585.0	12,230.1	26,961.6	26,406.2	25,892.3	25,404.0	24,930.6	24,551.3	24,095.2	23,663.3	23,247.4	22,843.5
ROIC	5.94%	8.84%	10.47%	27.42%	14.57%	15.85%	17.23%	18.36%	19.53%	21.17%	23.31%	25.48%	27.67%
FCF (Free Cash Flow)													
NOPLAT	1,608.45	2,427.32	2,889.24	3,353.96	3,927.92	4,186.14	4,460.94	4,664.01	4,868.54	5,197.66	5,616.10	6,030.10	6,432.47
Change in IC	408.00	118.00	(15,354.93)	14,731.55	(555.43)	(513.85)	(488.29)	(473.48)	(379.26)	(456.12)	(431.88)	(415.94)	(403.89)
FCF	1,200.45	2,309.32	18,244.17	(11,377.59)	4,483.35	4,700.00	4,949.23	5,137.49	5,247.80	5,653.98	6,047.98	6,444.04	6,836.36
Economic Profit													
Beg. IC	27,059.00	27,467.00	27,585.00	12,230.07	26,961.62	26,406.18	25,892.32	25,404.04	24,930.56	24,551.29	24,095.18	23,663.29	23,247.36
x (ROIC-WACC)	(0.02)	0.01	0.03	0.20	0.07	0.08	0.09	0.10	0.12	0.13	0.15	0.18	0.20
EP	(526.55)	260.13	712.74	2,388.99	1,800.61	2,102.65	2,418.00	2,659.59	2,901.48	3,260.73	3,714.95	4,163.03	4,598.22

Crown Castle Inc.*Weighted Average Cost of Capital (WACC) Estimation***Cost of Equity:**

Risk-Free Rate	4.85%
Beta	0.83
Equity Risk Premium	4.84%
Cost of Equity	8.87%

ASSUMPTIONS:

10-year treasury bond yield
Average of 3 year weekly RAW beta (bloomberg BETA function)
Prof. Damodaran estimated implied risk premium

Cost of Debt:

Risk-Free Rate	4.85%
Implied Default Premium	1.89%
Pre-Tax Cost of Debt	6.74%
Marginal Tax Rate	2%
After-Tax Cost of Debt	6.63%

10-year treasury bond yield
30-year corporate bond yield

Market Value of Common Equity:

Total Shares Outstanding	433
Current Stock Price	\$95.64
MV of Equity	41,412.12

MV Weights

56.30%

Market Value of Debt:

Short-Term Debt	2381
Current Portion of LTD	350
Long-Term Debt	22885
PV of Operating Leases	6,526.00
MV of Total Debt	32,142.00

43.70%

Market Value of the Firm

73,554.12

100.00%

Estimated WACC**7.89%**

Crown Castle Inc.*Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models*

Key Inputs:

CV Growth of NOPLAT	2.75%
CV Year ROIC	27.67%
WACC	7.89%
Cost of Equity	8.87%

<i>Fiscal Years Ending Dec. 31</i>	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
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DCF Model:

Free Cash Flow (FCF)	-11377.6	4483.4	4700.0	4949.2	5137.5	5247.8	5654.0	6048.0	6446.0	6836.4
Continuing Value (CV)										112704.2
PV of FCF	-10545.5	3851.6	3742.4	3652.7	3514.3	3327.3	3322.6	3294.2	3254.3	56898.9

Value of Operating Assets:	74312.8
Non-Operating Adjustments	
add Restricted Cash	166.0
less accrued interest	-183.0
less debt and other obligations	-20910.0
less PV of operating leases	-6526.0
less PV of ESOP	-3.4

Value of Equity	46856.4
Shares Outstanding	433.0
Intrinsic Value of Last FYE	\$ 108.21
Implied Price as of Today	\$ 110.10

EP Model:

Economic Profit (EP)	2389.0	1800.6	2102.6	2418.0	2659.6	2901.5	3260.7	3715.0	4163.0	4598.2
Continuing Value (CV)										89456.9
PV of EP	2214.3	1546.9	1674.3	1784.5	1819.3	1839.6	1916.2	2023.5	2101.7	45162.5

Total PV of EP	62082.8
Invested Capital (last FYE)	12230.1
Value of Operating Assets:	74312.8
Non-Operating Adjustments	
add Restricted Cash	166.0
less accrued interest	-183.0
less debt and other obligations	-20910.0
less PV of operating leases	-6526.0
PV of ESOP	-3.4

	46856.4
	433.0
	\$ 108.21
	\$ 110.10

Crown Castle Inc.*Relative Valuation Models*

Ticker	Company	Price	EPS		P/E 23	P/E 24	P/FFO	
			2023E	2024E			2023E	2024E
AMT	American Tower Corporation	\$184.42	\$3.82	\$4.03	48.28	45.76	9.76	8.51
SBAC	SBA Communications	\$220.03	\$4.22	\$5.29	52.14	41.59	11.17	11.87
UNIT	Uniti Group Incorporated	\$4.72	\$0.27	\$0.41				
Average					50.21	43.68	10.47	10.19

CCI Crown Castle Inc. \$95.64 \$ 2.14 \$ 3.12 44.7 30.6 7.75 8.96

Implied Relative Value:

P/E (EPS23) \$ 107.42
P/E (EPS24) \$ 136.46
P/FFO 2023E \$ 81.10
P/FFO 2024E \$ 91.30

Crown Castle Inc.
Key Management Ratios

Fiscal Years Ending Dec. 31	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Liquidity Ratios:														
Net Working Capital to Revenue Ratio (NWC/Net Revenue)	\$ (0.12)	\$ (0.15)	\$ (0.12)	\$ (0.22)	\$ (0.35)	\$ (0.38)	\$ (0.43)	\$ (0.49)	\$ (0.56)	\$ (0.65)	\$ (0.74)	\$ (0.82)	\$ (0.91)	\$ (1.00)
Current Ratio (CA/CL)	\$ 0.63	\$ 0.56	\$ 0.62	\$ 0.45	\$ 0.16	\$ 0.04	\$ (0.10)	\$ (0.29)	\$ (0.54)	\$ (0.75)	\$ (1.03)	\$ (1.30)	\$ (1.60)	\$ (1.92)
Cash Ratio (Cash & Cash Equivalents)/CL	\$ 0.10	\$ 0.12	\$ 0.14	\$ 0.06	\$ (0.34)	\$ (0.46)	\$ (0.60)	\$ (0.77)	\$ (1.03)	\$ (1.21)	\$ (1.47)	\$ (1.73)	\$ (2.02)	\$ (2.32)
Asset-Management Ratios:														
Total Asset Turnover (Sales/Total Assets)	0.15	0.15	0.16	0.18	0.20	0.22	0.24	0.26	0.28	0.30	0.34	0.37	0.42	0.47
Fixed Asset Turnover (Net Revenue/PP&E Net)	0.39	0.39	0.42	0.45	0.51	0.56	0.59	0.63	0.66	0.70	0.75	0.80	0.85	0.91
Working Capital Turnover (Net Revenue/Average Working Capital)														
Financial Leverage Ratios:														
Debt to Equity (D/E)	1.718086	2.024205	2.489344	2.807088	3.878967	5.792931	11.18174	129.84	-12.8517	-5.98591	-3.88829	-2.89256	-2.30284	-1.90618
Debt to Assets Ratio (Total Debt/Total Assets)	0.468601	0.49399	0.526563	0.537242	0.569143	0.601035	0.635818	0.674596	0.720695	0.769602	0.829399	0.897024	0.978703	1.077903
Assets to Equity Ratio (Avg. Total Assets/Total SE)	3.666412	4.097664	4.727537	5.224997	6.815458	9.638259	17.58639	192.4708	-17.8324	-7.77793	-4.68808	-3.22462	-2.35295	-1.76841
Profitability Ratios:														
Return on Equity (NI/Beg TSE)	8.20%	11.16%	13.27%	22.49%	16.66%	35.27%	76.39%	988.62%	-102.26%	-50.06%	-35.63%	-29.77%	-26.17%	-23.56%
Operating Profit Margin (Operating Profit/Sales)	\$ 0.271	\$ 0.319	\$ 0.316	\$ 0.347	\$ 0.386	\$ 0.426	\$ 0.440	\$ 0.451	\$ 0.454	\$ 0.454	\$ 0.462	\$ 0.476	\$ 0.489	\$ 0.497
Return on Assets (NI/Assets)	2.24%	2.72%	2.81%	4.30%	2.44%	3.66%	4.34%	5.14%	5.73%	6.44%	7.60%	9.23%	11.12%	13.32%
Payout Policy Ratios:														
Dividend Payout Ratio (Total Dividends/Net income)	0.005326	0.004669	0.004982	0.00357	0.007044	0.005255	0.00496	0.004717	0.004789	0.004835	0.004689	0.00444	0.004279	0.00419
Dividend Cover Ratio (Net Income/Total Dividends)	0.45	0.50	0.46	0.65	0.33	0.44	0.46	0.48	0.48	0.47	0.48	0.51	0.53	0.54
Retention Ratio (Net Income-Dividends)/Net Income	0.994674	0.995331	0.995018	0.99643	0.992956	0.994745	0.99504	0.995283	0.995211	0.995165	0.995311	0.99556	0.995721	0.99581

Crown Castle Inc.*Valuation of Options Granted under ESOP*

Current Stock Price	\$95.64
Risk Free Rate	4.85%
Current Dividend Yield	6.72%
Annualized St. Dev. of Stock Returns	23.95%

Range of Outstanding Options	Number of Shares	Average Exercise Price	Average Remaining Life (yrs)	B-S Option Price	Value of Options Granted
Range 1	2	146.52	2.30 \$	1.72 \$	3.44

Total	2 \$	146.52	2.30 \$	3.55 \$	3.44
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Crown Castle Inc.
Sensitivity Tables

		Risk-Free Rate							
		110.10	4.40%	4.55%	4.70%	4.85%	5.00%	5.15%	5.30%
Revenue Per mile of Fiber	2.06%	120.74	117.19	113.76	110.44	107.22	104.10	101.08	
	2.04%	120.62	117.08	113.65	110.33	107.11	103.99	100.97	
	2.02%	120.50	116.96	113.53	110.21	107.00	103.88	100.86	
	2.00%	120.38	116.84	113.42	110.10	106.89	103.77	100.76	
	1.98%	120.26	116.73	113.30	109.99	106.78	103.67	100.65	
	1.96%	120.14	116.61	113.19	109.88	106.67	103.56	100.54	
	1.94%	120.03	116.49	113.07	109.76	106.56	103.45	100.44	

		Equity Risk Premium							
		110.10	4.54%	4.64%	4.74%	4.84%	4.94%	5.04%	5.14%
Beta	0.89	109.59	107.68	105.81	103.97	102.17	100.39	98.65	
	0.87	111.58	109.67	107.81	105.97	104.17	102.40	100.66	
	0.85	113.60	111.71	109.84	108.02	106.22	104.46	102.72	
	0.83	115.66	113.78	111.92	110.10	108.31	106.55	104.82	
	0.81	117.77	115.89	114.04	112.23	110.44	108.69	106.97	
	0.79	119.92	118.05	116.21	114.40	112.62	110.88	109.16	
	0.77	122.11	120.25	118.42	116.62	114.85	113.11	111.40	

		Dividend Yield							
		110.10	5.22%	5.72%	6.22%	6.72%	7.22%	7.72%	8.22%
Marginal Tax Rate	1.53%	111.23	110.80	110.36	109.92	109.49	109.05	108.61	
	1.58%	111.29	110.86	110.42	109.98	109.54	109.11	108.67	
	1.63%	111.35	110.92	110.48	110.04	109.60	109.16	108.73	
	1.68%	111.41	110.98	110.54	110.10	109.66	109.22	108.78	
	1.73%	111.47	111.04	110.60	110.16	109.72	109.28	108.84	
	1.78%	111.53	111.09	110.66	110.22	109.78	109.34	108.90	
	1.83%	111.59	111.15	110.72	110.28	109.84	109.40	108.96	

		Risk Free Rate							
		110.10	4.55%	4.65%	4.75%	4.85%	4.95%	5.05%	5.15%
Cost of Equity	9.02%	117.26	114.87	112.53	110.23	107.99	105.80	103.65	
	8.97%	117.22	114.82	112.48	110.19	107.95	105.76	103.61	
	8.92%	117.17	114.78	112.44	110.15	107.91	105.72	103.57	
	8.87%	117.12	114.73	112.39	110.10	107.86	105.67	103.53	
	6.74%	115.13	112.78	110.48	108.23	106.03	103.88	101.77	
	4.61%	113.13	110.82	108.56	106.35	104.19	102.07	100.00	
	2.48%	111.13	108.86	106.64	104.46	102.34	100.26	98.23	

		CV Growth EPS							
		110.10	2.60%	2.65%	2.70%	2.75%	2.80%	2.85%	2.90%
Dividend Yield	6.78%	107.04	108.02	109.03	110.05	111.09	112.15	113.24	
	6.76%	107.06	108.04	109.04	110.07	111.11	112.17	113.25	
	6.74%	107.07	108.06	109.06	110.08	111.13	112.19	113.27	
	6.72%	107.09	108.08	109.08	110.10	111.14	112.21	113.29	
	6.70%	107.11	108.09	109.10	110.12	111.16	112.22	113.31	
	6.68%	107.13	108.11	109.11	110.14	111.18	112.24	113.33	
	6.66%	107.14	108.13	109.13	110.15	111.20	112.26	113.34	

		Revenue Per Mile of Fiber							
		110.10	0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%
Pre-tax Cost of Debt	8.24%	83.64	85.99	88.37	90.79	93.24	95.73	98.26	
	7.74%	89.25	91.71	94.21	96.75	99.32	101.93	104.58	
	7.24%	95.32	97.90	100.52	103.18	105.88	108.62	111.40	
	6.74%	101.90	104.61	107.37	110.17	113.01	115.89	118.81	
	6.24%	109.06	111.92	114.82	117.77	120.75	123.79	126.87	
	5.74%	116.87	119.89	122.95	126.06	129.22	132.42	135.67	
	6.24%	109.06	111.92	114.82	117.77	120.75	123.79	126.87	