4/18/2023

Krause Fund Research
Spring 2023

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Crown Castle Inc. (NYSE:CCI)
Real Estate

Current Price: $129.81
Target Price: $142 - 148

HOLD

Investment Thesis

We recommend a **HOLD** rating as Crown Castle Inc. will experience predicable growth in the near-term fueled by long-term lease contracts and the expanding need for 5G technology. However, long-term performance will remain modest due to the firm's concentrated revenue and limited expansion of communications infrastructure.

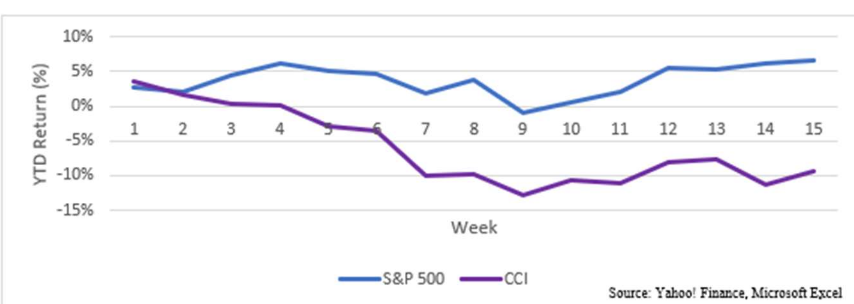
Drivers of Thesis

- **Revenue & Expense Predictability:** Relative to non-communications infrastructure REITs, CCI has a large portion of revenue and expenses that originate from long-term leases on land and towers.[1] These leases offer consistent cash in- and out-flows for the firm, which allows CCI to operate more efficiently and without large income statement or cash flow statement fluctuations.
- **Growth in 5G & C-Band Technology:** Within three years, 5G is expected to overtake its predecessor by reaching five billion subscriptions.[2] This growth and further maturity of US wireless networks will allow CCI to maintain steady revenues. Our model has reflected this forecast by maintaining a strong 8.53% growth of site rental revenues until 2025.
- **Demand for Fiber Optics:** As the US continues to become more densely populated, the implementation of fiber optic cables is expected to grow steadily.[3] Assumptions in our revenue decomposition reflect this growth by a 2% increase in miles of fiber and a 5.04% increase in fiber rental revenues.

Risks of Thesis

- **Concentrated Revenue**: CCI is heavily dependent on a small number of tenants, most notably AT&T, Verizon Wireless, and T-Mobile.[1] While these are established firms, any loss of a tenant due to a change in financial performance or business model could dramatically impact CCI.
- **Slow Expansion of Towers**: While CCI's portfolio is growing, the firm's increase in the number of towers has remained minimal; 40,000 total towers have been reported since first publicized in 2014. Forecasted years' revenue have suffered as a result of this stagnant growth.
- **Significant Near-Term Debt Maturity**: CCI's capital structure consists of 33% debt, two billion dollars of which is maturing in 2023.[1] If a recession causes reduced income growth, CCI risks default.

CCI vs. S&P500



Source: Yahoo! Finance, Microsoft Excel

Company Description

CCI is a REIT that owns, operates, and leases communications infrastructure to telecommunication companies. The firm focuses on two primary income-generating areas, towers and fiber (including small cells and fiber optic services). In total, CCI's communications infrastructure portfolio consists of 40,000 towers (including rooftop solutions) and 80,000 miles of fiber optic cables.[1]

At a Glance

Valuation Methods

DCF, EP:	$146
DDM	$143

Historical Performance

52-Week Low:	$121.71
52-Week High:	$199.97
YTD Return	-9.29%
TTM Return	-31.66%

Firm Overview

Market Capitalization:	57.062B
2022 Revenue:	6.986B
2023E Revenue:	7.741B
2022 FFO:	3.379B
2023E FFO:	$3.663B
Dividend Yield:	4.76%

Key Ratios

Current Ratio:	0.45
Dividend Payout Ratio:	1.55
ROE:	0.20

Company Analysis

Company Description

Crown Castle Inc. is a well-established REIT headquartered in Houston, TX. Its offices located throughout the United States employ approximately 5,000 employees. CCI specializes in wireless solutions including towers & small cells and fiber solutions for private networks and metro area coverage.[5]

The firm operates its portfolio of towers, small cells, and fiber optics almost exclusively in the United States, with the exception of Puerto Rico, a US territory. Its infrastructure is dispersed throughout the US but is focused on highly populated areas such as New York and Los Angeles.[5]

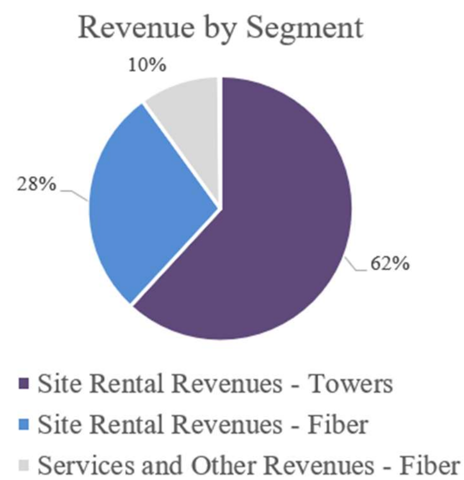
At the corporate level, CCI's executives focus on maximizing profits from existing infrastructure, expanding their portfolio through construction and acquisitions, and generating shareholder value through dividends.[1]

Revenue Analysis and Decomposition

Crown Castle Inc.'s revenue is generated within two major segments: site rental revenue and services & other revenues. Site rental revenue, which has comprised between 60% and 75% of total revenues, involves two components, towers, and fiber.[1, 4] CCI owns and leases land, constructs a tower, and then leases space to wireless network providers like AT&T, T-Mobile, and Verizon Wireless via long-term contracts. Fiber site rental revenues are generated in a similar way but are used to transmit data through densely populated areas.[4] Fiber revenues have historically comprised between 5% and 31% of revenues.[5] Between 2014 and 2018, the proportion that fiber site rental revenues made up of total revenue increased exponentially and have come to a steady state of about 28%, a trend we continued through all ten forecasted years.[5] Furthermore, total site rental revenues have made up between 81% and 91% of total revenues since 2014. To reflect this growth, total site rental revenues comprise between 90% and 93% of total revenues in forecasted years.

The amount of revenue generated from site rentals depends on the amount of infrastructure CCI has access to, the revenue per tower, and revenue per mile of fiber the firm can generate. Even though CCI's number of towers has remained at 40,000 since 2014, CCI has been able to extract more revenue per tower in prior years. Between 2020 and 2022, revenue per tower increased an average of 8.53% per year. While an increase in revenue per tower is likely to continue, we do not believe CCI can sustain the 13.62% increase in revenue per tower they generated last fiscal year and instead forecasted the average.

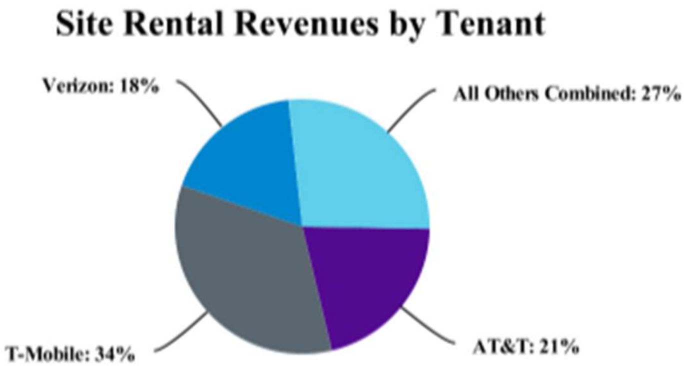
We also believe CCI will reach a ceiling in which they cannot extract any more revenue out of each tower. Our model reflects these assumptions by maintaining an 8.53% growth in revenue per tower until 2025E. Subsequently, this growth steadily decreases to its steady state value in 2032E of a more sustainable 2.03%.[5]



Fiber is another component to site rental revenues. Unlike the number of towers, the miles of fiber CCI has access to has grown substantially since it was first reported in 2015.[5] While 2016-2019 growth in the miles of fiber was significant, the past three years have only had some growth at an average of 2% per year.[5] While the use of fiber is continuing to increase, we anticipate CCI's growth in miles of fiber will more closely match recent years. Therefore, we have applied an annual growth rate of 2% per year to the miles of fiber in CCI's portfolio. Unlike total miles of fiber, the revenue CCI has generated per mile of fiber has been highly volatile, sometimes decreasing by 16% and increasing by 92%. Between 2020 and 2022, CCI has been able to maintain a relatively steady growth in revenue per fiber at an average of 3%. To reflect this, our model's revenue per mile of fiber increases at the same 3% until CCI reaches its steady state in 2032E.

Services and other revenues are generated by providing site development services and installation services to new and existing customers.[4] Historically, services & other revenues have consisted between 9% and 19% of total revenues, a proportion which has been declining steadily since 2014.[5] Services & other revenues' tower segment comprises almost all the total services & other revenues that CCI generates, with the fiber segment making up less than 1% at times. Our model reflects both of these trends by continuing to decline the portion of services and other revenues that makes up total revenue from 9% in 2023E to 7% in 2032E.

Given the nature of the industry and its barriers to entry, revenue is concentrated to few tenants. Last fiscal year, CCI's revenue was primarily earned from T-Mobile, AT&T, and Verizon, which made up 34%, 21%, and 18% of total site rental revenues, respectively.[5] The remaining 27% was comprised of other tenants.



Source: 2022 Form 10-

If any tenant was to change their business model or decide to end a significant portion of the leases with CCI, overall revenue would drop substantially. While this is a material risk, CCI's geographically-diversified portfolio will help maintain long-term partners. Therefore, we have not included any expected decrease in revenue due to the loss of a major tenant for our model.

Cost of Operations

Crown Castle Inc.'s cost of operations consists of the same two components of revenue: site rental costs and services & other costs. Site rental costs consist of expenses associated with ground leases, access to fiber, property taxes, maintenance, wages, and utilities.[5] Approximately 50% of site rental costs are related to ground leases. Given that ground leases are highly predictable, overall site rental costs have not increased dramatically since 2013. These costs also make up about 25% of total site rental revenues, a figure we maintained in all forecasted years.

Services & other costs are related to expenses incurred while performing site development services and installation services and are largely compromised of payments to contractors and other third-party service providers.[5] Due to the limited growth in services & other revenues, services & other expenses have remained steady. In the prior 10 years, services & other expenses have been between 56% and 86% of total services & other revenues. Our model reflects this by forecasting services & other expenses as 65.64% of total services and other revenues.

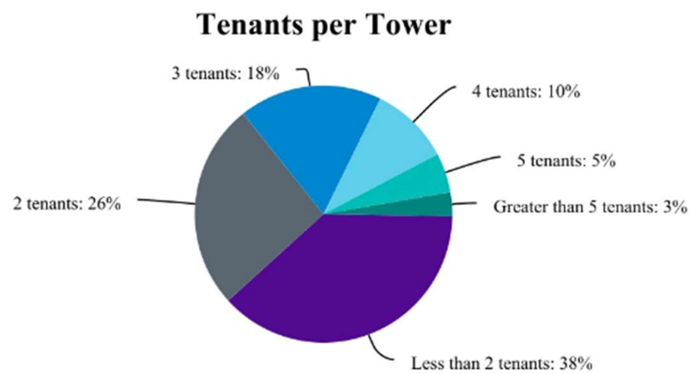
Profit Margin

The firm's overall operating profit margin has been between 65% and 76% since 2012. In 2021 and 2022, operating profit margin fell 6% and 3%, respectively.

We expect profit margin to continue to decline, though not dramatically. Our forecasts reflect this in that our expected profit margin begins at 65% and gradually declines to a steady state of 57% in 2032E.

Capital Expenditures

Firm-wide capital expenditures increased in 2022 due to the expansion of CCI's fiber network. In 2022, CCI had $1.2 billion in discretionary capital expenditures and spent a total of $1.3 billion including sustaining capital expenditures. This was primarily used for building new communications infrastructure and advancing current infrastructure.[5] By developing current towers in their portfolio, CCI is able to increase the average number of tenants each tower can occupy, a key initiative to improving the amount of revenue generated per tower.



Source: 2022 Form 10-k

Management has indicated that the firm's capital expenditures are based on a percentage of net revenues. In the prior three years, capital expenditures have comprised an average of 22% of net revenues. Management also believes that capital expenditures will remain high as the firm expands on the network of nation-wide small cells.[5] As a result, our model's yearly capital expenditures were on average 22% of net revenues.

Capital Structure

CCI attempts to achieve a capital structure that promotes value for stockholders and a strong WACC. Management targets a leverage ratio equal to five times adjusted EBITDA. Currently, CCI consists of 33% debt and 67% equity. In this estimate, market value of equity is equal to the firm's market capitalization. The market value of debt was approximated by aggregating the book values of short-term and long-term debt including current portions and the present value of operating leases.

A significant portion of CCI's debt is maturing this fiscal year. Current maturities of debt & other obligations for 2023E are $2.06 billion, the highest number the firm has seen in its history.[5] Furthermore, large amounts of debt will also reach maturity in 2025E and 2026E.[5] Our model reflects this maturity schedule and evenly distributes the "thereafter" amount equally to subsequent years.

Material Cash Requirements							
	2023	2024	2025	2026	2027	Thereafter	Total
(a)	2,060	831	593	2,771	3,558	12,078	21,891
(b)	734	690	670	640	541	5,613	8,888
(c)	568	561	545	538	531	5,660	8,403
(d)	3,362	2,082	1,808	3,949	4,630	23,351	39,182

Source: 2022 Form 10-k, Microsoft Excel

(a) Debt and Other LT obligations
(b) Interest Payments on Debt and Other LT Obligations
(c) Lease Obligations
(d) Total Material Cash Requirements

While CCI has a substantial amount of debt, principal and interest payments are relatively predictable given most of the firm's debt is fixed rate. Floating rate debt can make firms vulnerable, especially given the current interest rate environment. Even though CCI has floating rate debt, their limited exposure is a strong advantage. Furthermore, CCI has no variable rate debt that matures after 2026.

Future Principal Payments							
	2023	2024	2025	2026	2027	Thereafter	Total
Fixed Rate Debt	789	786	532	2,680	2,277	12,078	19,142
Variable Rate Debt	1,271	45	60	91	1,281	-	2,748
	2,060	831	592	2,771	3,558	12,078	21,890

Source: 2022 Form 10-k, Microsoft Excel

Industry Analysis

Infrastructure REITS as an Industry

A real estate investment trust (REIT) is a publicly or privately traded company that owns, operates, and/or finances income-generating real assets and follows strict procedures to maintain REIT status. The income produced by a REIT is not taxed until it is passed to its shareholders as dividends—at least 90% of taxable income must be distributed to shareholders each year.[6] REITs must also have a minimum of 75% of their assets in real estate, cash, or treasuries and generate a minimum of 75% of gross income from rental income, mortgage interest, or real asset dispositions. Most REITs specialize in a specific class of real estate. [1]

Infrastructure REITs, or Real Estate Investment Trusts, are a type of investment vehicle that allows individuals to invest in infrastructure assets through the stock market. REITs pool together capital from multiple investors and use it to purchase and manage income-generating infrastructure assets, such as toll roads, airports, ports, communication towers, and pipelines.[6]

Infrastructure REITs typically generate revenue by leasing their infrastructure assets to tenants, such as transportation companies, energy providers, and telecommunications firms. They may also generate revenue through tolls, fees, and other usage-based charges.[6]

Investing in infrastructure REITs can provide investors with exposure to the growing demand for infrastructure assets, which is driven by population growth, urbanization, and the need for upgraded and modernized infrastructure. Infrastructure REITs can also offer attractive dividend yields, as they are required to distribute at least 90% of their taxable income to shareholders in the form of dividends.

Regulations

Real Estate Investment Trusts, or REITs, are regulated by the Securities and Exchange Commission (SEC) in the United States. REITs are required to comply with certain regulations to maintain their status as a REIT, which allows them to avoid paying federal income tax on their taxable income if they distribute at least 90% of their taxable income to shareholders as dividends. [6]

The following are the key regulations that REITs must comply with:

- Income Requirements: At least 75% of a REIT's gross income must be derived from real estate rents, mortgage interest, or other real estate related activities, such as the sale of properties. Additionally, at least 95% of a REIT's gross income must come from these sources, as well as dividends, interest, and gains from the sale of securities.
- Ownership Requirements: A REIT must be owned by at least 100 shareholders and no more than 50% of the shares can be owned by five or fewer individuals or entities.
- Diversification Requirements: No more than 50% of a REIT's assets can be invested in a single property or real estate project. Additionally, a REIT must invest at least 75% of its assets in real estate or real estate-related assets.
- Distribution Requirements: A REIT must distribute at least 90% of its taxable income to shareholders annually in the form of dividends.
- Organizational Structure: A REIT must be structured as a corporation, trust, or association.

These regulations are designed to ensure that REITs are primarily invested in real estate and are distributing income to shareholders, while also promoting diversification and preventing concentrated ownership. By complying with these regulations, REITs can maintain their tax benefits and provide investors with a way to invest in real estate without directly owning property.

Tenants

REITs own and operate income-generating real estate assets, such as office buildings, shopping centers, apartment buildings and industrial facilities. As a result, the tenants of REITs can vary widely depending on the type of real estate owned by the REIT.

For infrastructure REITS, tenants typically sign long-term leases ranging from 5 to 15 years or more to use a firm's wireless communications infrastructure. These leases provide infrastructure REITS with a stable source of rental income, which is a key driver of financial performance.[9] In addition to wireless carriers, infrastructure REITS also lease space on its towers to other customers, such as government agencies, utility companies, and Internet of Things (IoT) providers.

The tenants of infrastructure REITs can vary depending on the type of infrastructure asset owned by the REIT. For cell tower REITs, the primary tenants are wireless carriers who lease space on the towers to transmit wireless signals to their customers. In addition to wireless carriers, cell tower REITs may also lease space to other companies that provide wireless services, such as cable providers or internet service providers. Data center REITs lease space to a wide range of tenants, including technology companies, financial institutions, healthcare organizations, and government agencies. These tenants use data centers for secure storage and processing of digital data.[9]

Infrastructure REITs like CCI tend to have long-term leases with their tenants, providing a stable source of rental income and reducing the risk of vacancy or turnover.

Barriers to Entry

The infrastructure REIT industry can be challenging to enter due to significant barriers that exist. One of the primary barriers is the high capital requirements needed to acquire, develop, and operate infrastructure assets such as toll roads, airports, and data centers.

These assets require large financial investments, which can limit the number of new players entering the market. Additionally, infrastructure assets are often heavily regulated by federal, state, and local governments, which can create complex and time-consuming regulatory hurdles for new entrants. Another potential barrier is the limited availability of suitable infrastructure assets for acquisition or development, which can further restrict new players' entry into the market.[9]

These barriers make it challenging for new entrants to establish a foothold in the infrastructure REIT industry. The high capital requirements, regulatory hurdles, and a limited supply of infrastructure assets can create significant obstacles for new players looking to enter the market. As a result, established infrastructure REITs like CCI have a competitive advantage over new entrants due to their financial resources, regulatory expertise, and access to a broader range of infrastructure assets.[10]

Growth in 5G

The development and rollout of 5G technology is transforming the telecommunications industry, offering faster and more reliable connectivity that can support a wide range of emerging technologies. This expansion is driving significant growth opportunities for infrastructure REITs that own cell towers and other wireless infrastructure assets.[2]

The deployment of 5G networks requires a denser network of small cell sites to provide faster and more reliable connectivity. As a result, wireless carriers are expanding their infrastructure to include more small cell sites to support their 5G networks. This trend is creating an opportunity for infrastructure REITs that own cell towers and other wireless infrastructure assets to lease their assets to wireless carriers, providing a stable source of rental income.[9]

Furthermore, some infrastructure REITs such as CCI are investing in small cell sites themselves to capture a higher return on investment compared to traditional cell towers. By investing in small cell sites, these REITs can generate higher revenue per square foot compared to traditional cell towers, while also positioning themselves to benefit from the growth of 5G networks.[9]

Additionally, the growth of 5G technology is not limited to wireless infrastructure. The increase in data usage and demand for faster processing speeds is also driving growth in data center infrastructure, which can support the processing and storage needs of 5G networks. This presents an opportunity for data center REITs to expand their offerings and attract new tenants.[2]

Overall, the growth potential for CCI in the 5G market is significant, and many REITs are actively pursuing these opportunities to grow their businesses. By investing in and expanding their wireless and data center infrastructure assets, the firm can position themselves to benefit from the ongoing development and expansion of 5G technology.

C-Band Technology

C-Band technology is a type of wireless spectrum that is used for satellite communication and has recently gained attention in the telecommunications industry due to its potential for 5G deployment. In February 2021, the Federal Communications Commission (FCC) held an auction for C-Band spectrum, which generated over $80 billion in revenue from wireless carriers. This auction has created new opportunities for infrastructure REITs that own wireless infrastructure assets, such as cell towers and fiber optic networks. [11]

Wireless carriers require wireless infrastructure assets to deploy C-Band technology for 5G networks, which are expected to provide faster and more reliable connectivity. As a result, infrastructure REITs that own cell towers and fiber optic networks are well-positioned to benefit from the deployment of C-Band technology. These REITs can lease their assets to wireless carriers, providing a stable source of rental income.[3]

Additionally, the deployment of C-Band technology is expected to increase demand for fiber optic networks, which can provide the necessary connectivity for the transmission of data between cell towers and data centers. This presents an opportunity for data center REITs to expand their offerings and attract new tenants. By investing in and expanding their wireless and fiber optic infrastructure assets, infrastructure REITs can position themselves to benefit from the ongoing deployment of C-Band technology.[11]

The deployment of C-Band technology is expected to drive significant growth opportunities for CCI. By leasing their assets to wireless carriers and investing in the expansion of their infrastructure assets, the firm can position itself to benefit from the ongoing development and deployment of C-Band technology.

Competitive Analysis

Overview

Crown Castle operates in the highly competitive wireless tower industry and faces competition from companies such as American Tower (AMT), SBA Communications (SBAC) and Uniti Group Inc. (UNIT). Despite the competition, these four companies dominate the infrastructure REIT industry, which includes wireless towers and other communication infrastructure. The industry is subject to regulatory constraints that could impact growth and profitability. Crown Castle differentiates itself from its competitors through a strong focus on customer service, strategic investments in small cell technology, and diversified revenue streams.

American Tower Corporation (AMT)

American Tower, one of the largest global REITs, is a leading independent owner, operator, and developer of multitenant communications real estate, with a portfolio of approximately 225,000 communications sites, including more than 43,000 properties in the United States and Canada and more than 181,000 properties internationally. The company's focus on providing reliable wireless infrastructure solutions has made it an essential partner to wireless carriers, broadcasters, and government agencies. AMT has a diversified customer base that includes leading wireless carriers in various countries, providing the company with steady revenue streams. Additionally, the company has been expanding into new markets, making strategic acquisitions, and investing in new technologies to meet the evolving needs of its customers.

Company	Market Cap	2022 Revenue (millions)	Forward Dividend & Yield	Return on Assets (ROA)	Operating Margin
Crown Castle International Inc. (CCI)	57.322B	6,986	$6.26 (4.84%)	3.95%	35.23%
American Tower Corporation (AMT)	97.322B	10,711	$6.24 (3.02%)	2.86%	29.30%
SBA Communication (SBAC)	28.508B	2,633	$3.40 (1.32%)	5.94%	36.77%
Uniti Group, Inc. (UNIT)	849.363M	1,128	$0.60 (18.02%)	7.52%	51.52%

Source: Yahoo! Finance

SBA Communication (SBAC)

SBA Communications Corporation (SBAC) is a wireless infrastructure company that owns and operates a portfolio of cell towers and small cells primarily in the US. The company has been expanding its operations internationally, with a growing presence in Central and South America, Europe, and Africa. SBAC's focus on owning and operating wireless infrastructure and investing in new technologies, such as fiber assets, has positioned it as a leader in the wireless infrastructure industry. The company's strong relationships with its customers and its focus on providing reliable connectivity solutions have helped it maintain a competitive edge in the market.

Uniti Group, Inc. (UNIT)

Uniti Group Inc. (UNIT) is a diversified communication infrastructure company that owns and operates a portfolio of fiber and copper-based networks, cell towers, and small cells. The company's focus on providing connectivity solutions to wireless carriers, cable companies, and data center operators has helped it establish a diversified customer base. In recent years, the company has been undergoing a strategic transformation, focusing on deleveraging and simplifying its business. This has included divesting some non-core assets and streamlining its operations. The company's focus on deleveraging and strengthening its balance sheet has been a key priority, allowing it to pursue growth opportunities in the future.

Crown Castle's Competitive Advantage

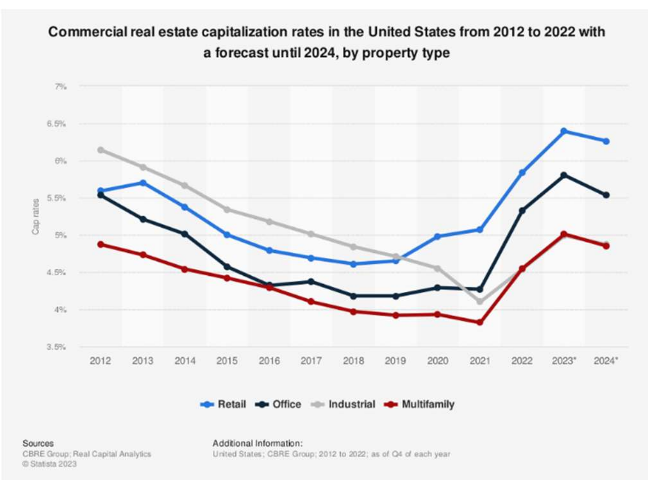
Crown Castle International Inc. has a competitive advantage in the infrastructure REIT industry, with the second highest revenue and the second largest portfolio of towers among the four companies, indicating its strong market position. Additionally, the company has the second highest operating margin, which suggests it is effectively managing costs and generating profits. CCI also has the highest dividend yield among the four companies, which may attract income investors and contribute to shareholder returns. However, the company may need to address its lower ROA compared to Uniti Group, Inc., indicating that UNIT is more efficient in generating profits from its assets. Moreover, American Tower Corporation has a higher market cap than Crown Castle International Inc., which means that American Tower Corporation is valued more highly by the market. Uniti Group Inc. has the highest forward dividend and yield, indicating that Uniti Group Inc. is prioritizing shareholder returns through dividend payments. However, it is important to note that Uniti Group Inc. has a much lower market cap and a smaller portfolio of towers than Crown Castle International Inc., which may indicate a lower overall strength and value of the company.

In summary, Crown Castle has a large market share in comparison to AMT, SBAC, and UNIT because of the number of cell towers and small cell sites that it owns and operates. Crown Castle has a more established and extensive network, which can make it a more attractive partner for wireless carriers and other companies that need access to telecommunications infrastructure. Crown Castle has a stable business model with long-term contracts that provide predictable cash flows. This can make it a more appealing investment for investors who are looking for steady, reliable returns over the long term. Additionally, Crown Castle has a reputation for being a well-run company with a strong management team and a focus on growth and innovation. This can inspire confidence in investors and contribute to a positive perception of the company.

Economic Analysis

Capitalization Rates

The capitalization rate (cap rate) is a fundamental measure of risk in real estate. [12] Cap rates tend to rise with interest rates and borrowing costs, although not as dramatically. Higher cap rates are associated with a greater return but also indicate greater risk



due to falling market values of properties. A forecasted decrease or stability in cap rates typically indicates a steady economy and property market values, while rising cap rates reduce confidence in commercial real estate markets.

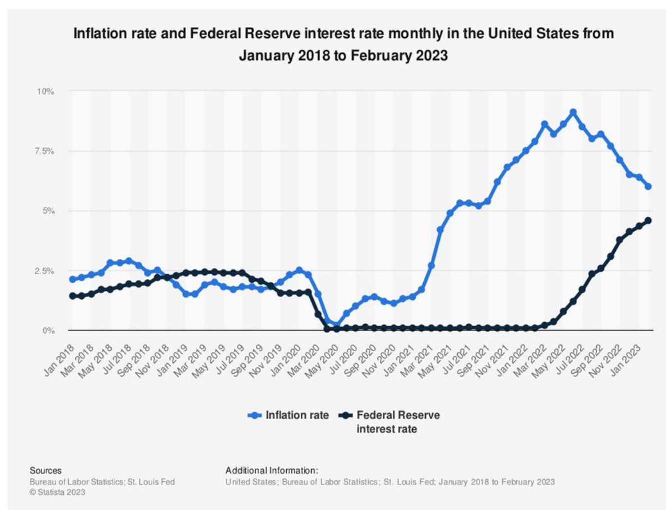
Cap rates are also driven by demand for a specific sector, and historical data shows that they tend to trend downward over time as the value of properties increase. However, cap rates have expanded slightly during the first half of 2022 due to rising bond yields. The 6–12-month outlook suggests that cap rates will increase moderately across all sectors, with office investments predicted to be especially poor due to the work-from-home trend creating high vacancy rates among office properties. Industrial investments are expected to remain strong with only a minimal increase in cap rates. [13]

In general, cap rates are important to infrastructure REITs like Crown Castle International because they provide a measure of risk and return associated with the underlying real estate assets. A rising cap rate may indicate a decrease in the value of the company's assets, which could negatively impact on its financial performance. Conversely, a stable or decreasing cap rate may indicate a steady or growing market for Crown Castle's assets. Therefore, monitoring cap rates is an important part of assessing the performance and potential of Crown Castle's investments. [14]

Inflation

Inflation can be beneficial for real estate investors since it tends to drive up rents, but the key to its effectiveness lies in landlords' ability to raise rents in markets with low vacancy rates. Historical data shows that real estate has been a strong inflation hedge, with US REITs' aggregate dividend growth outpacing inflation in all but one year between 2004 and 2018.[15]

In June 2022, the CPI grew by 9.1% year over year, which was the largest increase in 40 years.[16] If REIT dividend growth continues to outpace inflation as it has historically, dividend yields should continue to grow by significant amounts[15]. However, it's worth noting that rising inflation can also lead to higher interest rates, which could increase borrowing costs for infrastructure REITs like Crown Castle International and reduce their profitability.



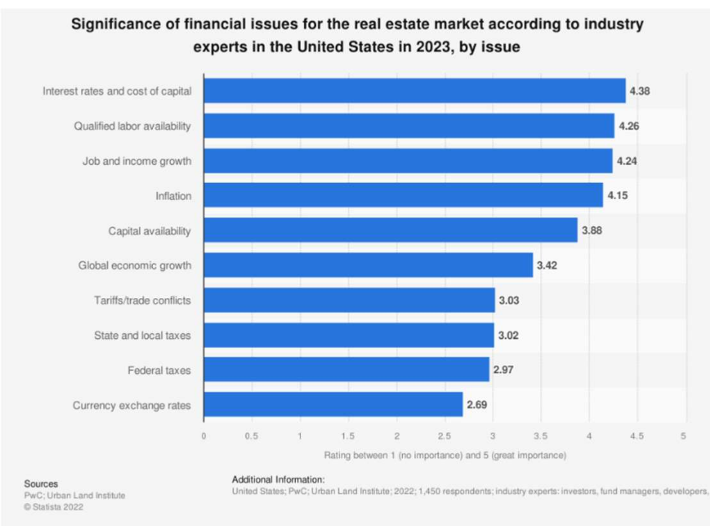
Looking ahead, inflation is expected to decrease substantially in 2023 to around the 3% level, driven by the Fed's determination to raise rates until "the job is done". While this may reduce the benefits of inflation for real estate investors, it could also indicate a more stable economic environment, which could be positive for infrastructure REITs like Crown Castle International. It's important for investors to monitor inflation trends and their potential impact on the real estate market when evaluating infrastructure REITs.[15]

Interest Rates

This year is expected to be challenging for commercial real estate due to high interest rates and a possible recession.[17] Even though inflation has decreased slightly, it remains at over 7%, prompting the Federal Reserve to continue raising interest rates until inflation is closer to its target of 2%.[18] While real estate is generally attractive during times of high inflation, rising interest rates can lead to a decline in property values as tighter financial conditions dampen economic activity and demand for real estate.[10]

The impact of rising interest rates on real estate prices is mainly because of buyers who use leverage. As interest rates increase, so do monthly payments, leading to a decrease in property valuations.[17] However, historical data indicates that even during periods of high interest rates, real estate prices tend to continue growing, although at a slightly slower pace.[18]

Infrastructure REITs like Crown Castle International may be affected by rising interest rates, as it could lead to a decrease in the value of their real estate assets. As such, closely monitoring interest rates is crucial in assessing the performance and potential of infrastructure REIT investments.[10]



Vacancy Rates

Vacancy rates are a crucial metric in the real estate market as they indicate the availability of rental properties and the level of demand for them. High vacancy rates suggest an oversupply of rental properties with low demand, resulting in lower rental prices and difficulties for landlords to find tenants. Conversely, low vacancy rates signal a tight market with high demand and rising rental prices.[20]

Vacancy rates can be influenced by various factors such as economic conditions, population growth, job market, and housing supply.[21] They vary across asset classes, locations, and price ranges. For instance, most real estate investors in metropolitan areas aim for a vacancy rate of 2-4%, while those in rural areas can expect higher average rates.

Historical data shows that vacancy rates tend to decrease during a strong economy with low unemployment rates and increasing demand for rental properties. However, during economic downturns, vacancy rates tend to increase as people lose their jobs and can no longer afford rent.[22]

Looking ahead, vacancy rates are predicted to increase as the US economy moves towards a recession. Despite signs of economic recovery from the COVID-19 pandemic, rising inflation and expected interest rate hikes by the Federal Reserve are expected to drive vacancy rates higher.[20] Using unemployment rates as a main indicator, we predict that unemployment rates will rise from 3.5% to 5% in the next 6 months, causing the national vacancy rate to increase from 6.0% to 8%. In the long term, as the economy stabilizes, inflation lowers, and interest rates settle, vacancy rates are expected to lower to around 5%.[22]

Capital Markets Outlook

The real estate investment trust (REIT) industry has historically outperformed the broader market over various time horizons, including in 2021. However, the potential recession looming over the market has resulted in REIT values dropping more than the S&P, with equity REITs losing 27.46% in value compared to the S&P's 19.44% loss in 2022.[23]

Despite the current market downturn, it may be a fair time to invest in REITs. Historically, REITs have performed well following the easing of the Federal Reserve's interest rate hikes, and with the consensus among economists being that the interest rate hike stoppage will occur in 2023, the REIT market could see an increase in demand and outperform the broader market.[24] Additionally, REITs often offer appealing dividend yields, averaging around 4.3%, which could provide positive cash flow for investors during a recessionary environment.

In addition, infrastructure REITs may offer some inflation protection, as the value of the underlying assets and cash flows may increase with inflation. This can be particularly appealing for long-term investors who are looking for investments that can help them maintain purchasing power over time.[12]

Valuation Analysis

Weighted Average Cost of Capital (WACC)

To estimate CCI’s weighted average cost of capital (WACC), we began with determining the firm’s cost of equity by utilizing the capital asset pricing model (CAPM). Given that the current yield curve is inverted, and 10 years provides a time horizon identical to the cash flows our model is discounting, we used a risk-free rate equal to the 10Y treasury note.[7] For our beta, which scales the equity market risk premium to appropriately reflect the return needed for to the stock's level of risk, we calculated the average of the two-, three-, four-, and five-year weekly beta using the S&P 500 as the relative index.[7] We believe that multiple time lengths and weekly returns capture performance better because our average considered a high number of data points. Lastly, to estimate the equity risk premium, we utilized the S&P 500's geometric average return from 1928-2020. This substantial time horizon is important because it includes many economic cycles. Furthermore, a geometric average was chosen because its counterpart, an arithmetic average, tends to overstate return. After scaling the equity market risk premium by CCI's risk relative to the S&P 500 and adding the risk-free rate, we calculated a cost of equity of 6.79%.

While the cost of debt is the risk-free rate plus a premium for default risk, the latter is difficult to determine. Instead, to estimate overall cost of debt, we began by determining a pre-tax cost of debt by using the yield-to-maturity on a 30Y corporate bond. This yield, which was 5.20%, encompasses the risk-free rate and an implied default risk premium of 1.73%. Then, to capture the tax implications of the interest associated with debt, we multiplied the pre-tax cost of debt by our average marginal tax rate from the prior five years, 1.68%. We chose these particular years because they had the steadiest marginal tax rates, which we believe will accurately represent CCI's future marginal rates. After applying the tax savings, our after-tax cost of debt was 5.11%.

The market value of equity was estimated by CCI's current market capitalization, total shares outstanding multiplied by its current stock price. Due to the difficulty of calculating the true market value of debt, we approximated the value by totaling the book value of CCI's debt including short-term debt (accounts payable), current portion of long-term debt, long-term debt, and the present value of operating leases. Our model estimated a $56.2 billion market value of equity and a $28.2 billion dollar value of debt. The subsequent weights for equity and debt were 66.59% and 33.41%, respectively. After multiplying the cost of debt and cost of equity by their respective weights, we determined WACC to be 6.23%.

Discount Cash Flow (DCF) & Economic Profit (EP) Models

Our DCF and EP models both yielded a price of $146.70 per share by discounting ten years of free cash flow and economic profit, respectively. A ten-year time horizon will achieve the best results because we believe it will take nine to ten years for CCI to reach its steady state. Although the firm is well-established, we believe growth will continue until 2032E with new technologies like 5G and C-Band.

Our DCF model estimated a continuing value (CV) of $122.4 billion. A key metric in estimating this value is the CV growth of NOPLAT. Since 2017, CCI has experienced actual NOPLAT growth between 4% and 20%. However, our estimated NOPLAT between 2023E and 2032E ranges from 2.91% to 11%, with growth in NOPLAT declining to its minimum value in 2032E. We believe this lower growth is more sustainable and offers a conservative stock price. With our estimated NOPLAT growth in 2032E of 2.91%, we believe CCI can sustain a slightly lower 2.75% CV growth in subsequent years. Our economic profit utilized the same CV growth of NOPLAT and estimated CCI's CV to be $86.7 billion.

After discounting each year's free cash flow & economic profit and each model's respective continuing value with enterprise-wide discount rates, we determined that current CCI shares are worth an estimated $146 after taking into account the time passed since December 31, 2022.

Dividend Discount Model (DDM)

Dividends are a key reason many investors hold stock but are even more valuable to REIT investors due to payout regulations. Our model utilized a 2.75% growth in EPS. We believe this amount is sustainable because our income statement forecasts yield a 3.32% growth in EPS in its final year. To remain conservative, we reduced this number by 57 basis points. After discounting each year's estimated dividend per share and our future stock price estimation by the cost of equity, we determined an intrinsic value of $143 after considering the time passed since last FYE.

Relative Valuation Models

While we conducted a relative valuation analysis, we do not believe this accurately represents CCI's stock price. After taking an average of competitors' average P/E and P/AFFO and applying it to CCI's estimated EPS and AFFO, we determined implied relative values between $161 and $222. While relative valuation is a strong method in some cases, infrastructure REITS are each highly unique and, as a result, have significantly different ratios. SBA Communications Corporation (SBAC), American Tower Corporation (AMT), and Uniti Group Inc. (UNIT) are CCI's closest competitors. While AMT and CCI and the two largest firms, AMT's market capitalization is almost two times that of CCI's because AMT's strategy is worldwide. Similarly, the next smallest, SBAC, is about half the size of CCI. Given that each firm implements different strategies, provides different services, and has substantial differences in market capitalizations, their ratios are different and cannot be applied to CCI with accuracy.

Sensitivity Analysis

Overview

To better understand how changes in our model's assumptions would impact stock price estimation, we created sensitivity tables. In particular, we focused on changes in both structural assumptions and operating assumptions.

Risk-Free Rate vs. Beta

Given that beta can be measured in many different ways, the number of years, time period of returns such as weekly or monthly, and the relative index used can all materially impact the final result. Our beta was 0.65 and any increase or decrease of .05 would change our DCF and EP implied intrinsic value by $9-14. In particular, a beta of .60 and .70 would result in a price of $158 and $136, respectively. Therefore, any small increase in volatility relative to the market as a whole would drastically impact the stock price.

Risk-free rates are consistently changing, which impacts the premium investors demand for equity market risk and the value added when determining cost of equity. The ten-year treasury is at an all-time high and is up over 60bps since April of 2022. If the ten-year treasury continues to remain high the cost of equity for CCI will increase, too. Our data tables showed that a mere 20bps increase in the risk-free rate would decrease our DCF and EP value by almost $9.

Combined, a 20bps increase in the risk-free rate and 0.05 increase in CCI's beta would yield a final estimated price of $129. While our beta and risk-free rate are representative of our forecasts and current market conditions, any small increase in either variance could reduce the stock's value.

Risk-Free Rate

Beta	146.19	2.87%	3.07%	3.27%	3.47%	3.67%	3.87%	4.07%
	0.50	223.62	209.05	195.84	183.81	172.82	162.73	153.44
	0.55	205.29	192.42	180.70	169.96	160.10	151.01	142.60
	0.60	189.09	177.65	167.17	157.53	148.64	140.40	132.76
	0.65	174.68	164.44	155.02	146.31	138.25	130.76	123.78
	0.70	161.77	152.55	144.03	136.13	128.79	121.94	115.55
	0.75	150.15	141.80	134.06	126.86	120.14	113.86	107.98
	0.80	139.62	132.03	124.97	118.37	112.21	106.42	100.99

WACC vs. CV Growth Rate of NOPLAT

In this scenario, we have tested how a change in the weighted average cost of capital (WACC) and growth of NOPLAT would impact the stock price. While we believe CCI's WACC is currently 6.23%, changes in variables such as the risk-free rate described above will affect the overall result. Most notably, if CCI cannot pay their upcoming debt, their credit rating will most likely fall. This reduction in credit rating will increase future cost of debt and therefore the firm's overall WACC. If CCI's WACC were to increase 30bps, we estimate their stock to be worth $129. Conversely, a decrease of 30bps to a WACC of 5.93% would cause a more significant change and increase our estimation to $167 per share.

The CV growth in NOPLAT is also important to understand because it affects all years after 2032E. If CCI is not able to maintain a profitable business model by failing to progress with wireless technology, NOPLAT may increase by less than our estimated 2.75%. However, even if their NOPLAT growth after 2023E fell 50bps, we estimate a value of $132 per share. Given that this number is above the firm's current trading price, the CV growth in NOPLAT is not as significant as a change in WACC.

WACC

CV Growth Rate of NOPLAT	146.19	5.33%	5.63%	5.93%	6.23%	6.53%	6.83%	7.13%
	2.00%	180.93	159.39	141.15	125.52	111.97	100.12	89.67
	2.25%	192.68	168.65	148.56	131.51	116.86	104.15	93.01
	2.50%	206.51	179.40	157.05	138.31	122.36	108.64	96.70
	2.75%	223.01	192.02	166.88	146.08	128.59	113.68	100.82
	3.00%	243.06	207.03	178.38	155.05	135.70	119.38	105.44
	3.25%	267.93	225.19	192.03	165.54	143.89	125.88	110.66
	3.50%	299.60	247.63	208.48	177.94	153.44	133.35	116.59

Growth in Miles of Fiber vs. Growth Rate of Revenue Per Tower Y1-Y3

While we predict revenue to grow 8.53% from 2023E to 2025E, if we enter a recession in 2023, short-term revenue growth may not be as strong. If growth were to fall one percentage point to 7.53%, we estimate the stock to be worth $132. While this is still above its current trading price, a growth of 6.53% each year yields a substantially lower price of $120. If we have a severe recession, CCI's response will dramatically impact the overall share price. Conversely, if CCI continues to benefit from the growth in 5G and C-Band technology or our economy is stimulated again, overall share price will be much higher. If the firm performs better than expected and instead earns 9.53% per year, we estimate an overall price of $160.

One of CCI's growing streams of site rental revenues is through their deployment of fiber optics. While the firm has not focused heavily on expanding their miles of fiber, the firm added an additional 5,000 miles last year. We expect an average of 2% per year until 2032E. If this estimate proves too conservative and management focuses heavily on expanding their fiber optic network or if fiber optics become even more mainstream, CCI's stock price will be heavily impacted. An increase of only one percentage point to 3.00% each year yields a price of $152. This is a significant change even though miles of fiber only increased by such a small amount. Conversely, if CCI expands their network even slower, we estimate only a small decrease in stock price; a decrease from 2.00% to 0.50% per year yields an overall price per share of $137. While this is a large decrease from our target price, it is still more than what the firm currently trades for in the market.

Growth in Miles of Fiber

Growth Rate of Revenue Per Tower Y1-Y3	146.19	0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%
	7.53%	124.30	127.05	129.94	132.97	136.14	139.46	142.94
	6.53%	112.20	114.96	117.84	120.87	124.04	127.36	130.84
	7.53%	124.30	127.05	129.94	132.97	136.14	139.46	142.94
	8.53%	137.54	140.30	143.19	146.22	149.39	152.71	156.18
	9.53%	152.04	154.79	157.68	160.71	163.88	167.20	170.67
	10.53%	167.87	170.63	173.52	176.55	179.72	183.04	186.51
	11.53%	185.16	187.92	190.81	193.84	197.01	200.33	203.80

Site Rental Costs % of Site Rental Revenue vs. Services & Other Costs % of Services & Other Revenues

Historically, site rental costs and services & other costs as a percentage of their respective revenues have remained relatively steady. However, if inflation is not continually managed and costs increase, CCI's stock price will be affected. Currently, we estimate that site rental costs will be 25.47% of site rental revenue. However, if this increases to 27.47%, overall estimated stock price becomes $137 and still remains above its current market value. Site rental costs could increase to approximately 29.00% of total site rental revenues before our estimated price becomes less than what it currently trades at.

CCI’s other main operating cost, services & other costs, show a different story. These costs, which we estimate to be 65.64% its revenue counterpart, could increase to 80.64% of services & other revenues and still yield an estimated value of $140. Therefore, site rental costs are much more impactful than services & other costs.

Site Rental Costs % of Site Rental Revenue

Services & Other Costs % of Services & Other Revenues

146.19	19.47%	21.47%	23.47%	**25.47%**	27.47%	29.47%	31.47%
50.64%	178.88	169.81	160.75	151.69	142.62	133.56	124.50
55.64%	177.05	167.98	158.92	149.86	140.79	131.73	122.67
60.64%	175.22	166.16	157.09	148.03	138.97	129.90	120.84
65.64%	173.39	164.33	155.26	146.20	137.14	128.07	119.01
70.64%	171.56	162.50	153.43	144.37	135.31	126.24	117.18
75.65%	169.73	160.67	151.60	142.54	133.48	124.41	115.35
80.64%	167.90	158.84	149.78	140.71	131.65	122.59	113.52

Important Disclaimer

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Crown Castle International

Revenue Decomposition

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Revenue:													
Towers - site rental revenues	3,497	3,804	4,322	4,691	5,091	5,525	5,885	6,240	6,585	6,883	7,126	7,306	7,454
Growth rate	3.19%	8.78%	13.62%	8.53%	8.53%	8.53%	6.53%	6.03%	5.53%	4.53%	3.53%	2.53%	2.03%
Number of towers	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Growth rate	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Revenue per tower	0.0874	0.0951	0.1081	0.1173	0.1273	0.1381	0.1471	0.1560	0.1646	0.1721	0.1781	0.1827	0.1864
Growth rate	3.19%	8.78%	13.62%	8.53%	8.53%	8.53%	6.53%	6.03%	5.53%	4.53%	3.53%	2.53%	2.03%
Fiber - site rental revenues	1,823	1,915	1,967	2,065	2,167	2,274	2,387	2,506	2,630	2,760	2,897	3,041	3,192
Growth rate	6.98%	5.05%	2.72%	4.96%	4.96%	4.96%	4.96%	4.96%	4.96%	4.96%	4.96%	4.96%	4.96%
Miles of Fiber	80,000	80,000	85,000	86,700	88,434	90,203	92,007	93,847	95,724	97,638	99,591	101,583	103,615
Growth rate	0%	0%	6%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Revenue per mile of fiber	0.0228	0.0239	0.0231	0.0238	0.0245	0.0252	0.0259	0.0267	0.0275	0.0283	0.0291	0.0299	0.0308
Growth rate	7%	5%	-3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Total site rental revenues	5,320	5,719	6,289	6,755	7,257	7,799	8,272	8,746	9,215	9,643	10,023	10,347	10,646
Growth rate	4.46%	7.50%	9.97%	7.41%	7.44%	7.46%	6.07%	5.72%	5.36%	4.65%	3.94%	3.23%	2.89%
Towers - services and other reveneus	500	601	685	698	711	724	737	751	765	779	794	809	824
Growth rate	-23.43%	20.20%	13.98%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%
Services and other revenues per tower	0.0125	0.0150	0.0171	0.0174	0.0178	0.0181	0.0184	0.0188	0.0191	0.0195	0.0198	0.0202	0.0206
Growth rate	-23.43%	20.20%	13.98%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%
Fiber - services and other revenues	20	20	12	19	19	19	20	20	20	21	21	22	22
Growth rate	17.65%	0.00%	-40.00%	54.42%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Services and other revenues per mile of fiber	0.0003	0.0003	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Growth rate	17.65%	0.00%	-43.53%	51.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total services and other revenues	520	621	697	716	730	743	757	771	786	800	815	830	846
Growth rate	-22.39%	19.42%	12.24%	2.77%	1.87%	1.87%	1.87%	1.87%	1.87%	1.87%	1.87%	1.87%	1.87%
Total Revenue	5,840	6,340	6,986	7,471	7,987	8,542	9,030	9,517	10,000	10,444	10,838	11,177	11,492
Growth rate	1.34%	8.56%	10.19%	6.95%	6.90%	6.95%	5.70%	5.40%	5.08%	4.43%	3.78%	3.13%	2.81%
Segment revenue as proportion of total revenue:													
Towers - site rental revenues	60%	60%	62%	63%	64%	65%	65%	66%	66%	66%	66%	65%	65%
Fiber - site rental revenues	31%	30%	28%	28%	27%	27%	26%	26%	26%	26%	27%	27%	28%
Total site rental revenues	91%	90%	90%	90%	91%	91%	92%	92%	92%	92%	92%	93%	93%
Towers - services and other reveneus	9%	9%	10%	9%	9%	8%	8%	8%	8%	7%	7%	7%	7%
Fiber - services and other revenues	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total services and other revenues	9%	10%	10%	10%	9%	9%	8%	8%	8%	8%	8%	7%	7%
Total Revenue	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Crown Castle International
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	5,320	5,719	6,289	6,755	7,257	7,799	8,272	8,746	9,215	9,643	10,023	10,347	10,646
Services & other revenues	520	621	697	716	730	743	757	771	786	800	815	830	846
Net revenues	5,840	6,340	6,986	7,471	7,987	8,542	9,030	9,517	10,000	10,444	10,838	11,177	11,492
Operating expenses:													
Cost of operations													
Site rental	1,521	1,554	1,602	1,721	1,849	1,987	2,107	2,228	2,347	2,456	2,553	2,636	2,712
Services and other	448	439	466	470	479	488	497	506	516	525	535	545	555
Selling, general & administrative	678	680	750	824	880	942	995	1,049	1,102	1,151	1,195	1,232	1,267
Asset write-down charges	74	21	34	28	28	28	28	28	28	28	28	28	28
Acquisition & integration costs	10	1	2	-	-	-	-	-	-	-	-	-	-
Depreciation, amortization and accretion	1,608	1,644	1,707	1,781	1,765	1,764	1,777	1,801	1,835	1,877	1,925	1,978	2,034
Total operating expenses	4,339	4,339	4,561	4,824	5,001	5,208	5,405	5,612	5,828	6,038	6,236	6,419	6,595
Other operating expense (income)	(362)	-	-	-	-	-	-	-	-	-	-	-	-
Operating income (loss)	1,863	2,001	2,425	2,648	2,986	3,334	3,625	3,905	4,172	4,406	4,602	4,759	4,897
Interest expense & amortization of deferred financing costs	(689)	(657)	(699)	(734)	(690)	(670)	(640)	(541)	(1,372)	(1,402)	(1,433)	(1,463)	(1,492)
Gains (losses) on retirement of long-term obligations	(95)	(145)	(28)	-	-	-	-	-	-	-	-	-	-
Interest income	2	1	3	0	5	1	0	5	10	5	4	4	4
Other income (expense)	(5)	(21)	(10)	-	-	-	-	-	-	-	-	-	-
Income (loss) before income taxes	1,076	1,179	1,691	1,914	2,301	2,666	2,985	3,369	2,811	3,008	3,173	3,300	3,408
Provision (benefit) for income taxes	20	21	16	32	39	45	50	57	47	51	53	56	57
Income (loss) from continuing operations	1,056	1,158	1,675	1,882	2,263	2,621	2,935	3,313	2,763	2,958	3,120	3,244	3,350
Discontinued operations:													
Income (loss) from discontinued operations, net of taxes	-	(62)	-	-	-	-	-	-	-	-	-	-	-
Less: net income (loss) attributable to the noncontrolling interest	-	-	-	-	-	-	-	-	-	-	-	-	-
Net income (loss) attributable to Crown Castle International Corp. stockholders	1,056	1,096	1,675	1,882	2,263	2,621	2,935	3,313	2,763	2,958	3,120	3,244	3,350
Dividends or distributions on preferred stock	57	-	-	-	-	-	-	-	-	-	-	-	-
Net income (loss) attributable to Crown Castle International Corp. common stockholders	999	1,096	1,675	1,882	2,263	2,621	2,935	3,313	2,763	2,958	3,120	3,244	3,350
Net income (loss)	1,056	1,096	1,675	1,882	2,263	2,621	2,935	3,313	2,763	2,958	3,120	3,244	3,350
Other comprehensive income (loss):													
Foreign currency translation adjustments	1	-	(1)	-	-	-	-	-	-	-	-	-	-
Comprehensive income (loss) attributable to CCIC stockholders	1,057	1,096	1,674	1,882	2,263	2,621	2,935	3,313	2,763	2,958	3,120	3,244	3,350
Net income (loss) attributable to CCIC common stockholders, per common share:													
Net income (loss) per common share - basic	2.36	2.54	3.87	4.34	5.21	6.03	6.75	7.62	6.36	6.80	7.18	7.46	7.71
Weighted-average common shares outstanding:													
Basic	423	432	433	433	434	435	435	435	435	435	435	435	435
Year end shares outstanding:													
Basic	431	432	433	434	435	435	435	435	435	435	435	435	435
Dividends/distributions declared per share:													
Common stock	4.98	5.49	6.01	5.24	5.74	6.25	6.72	7.29	6.54	6.89	7.19	7.44	7.67

Crown Castle International

Balance Sheet

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Assets													
Current Assets:													
Cash & cash equivalents	232	292	156	2,152	573	113	2,176	3,949	1,822	1,653	1,535	1,419	1,306
Restricted cash	144	169	166	171	176	181	186	191	197	202	208	214	220
Receivables, net	431	543	593	609	651	696	735	775	814	851	883	910	936
Prepaid expenses	95	105	102	118	126	135	143	150	158	165	171	177	182
Deferred income tax assets	-	-	-	-	-	-	-	-	-	-	-	-	-
Other current assets	202	145	200	217	232	248	262	277	291	304	315	325	334
Total current assets	1,104	1,254	1,217	3,266	1,757	1,372	3,502	5,342	3,282	3,175	3,112	3,045	2,978
Deferred site rental receivables	1,408	1,588	1,954	1,922	2,064	2,218	2,353	2,488	2,621	2,743	2,851	2,943	3,028
Total gross property & equipment	25,965	27,206	28,478	30,120	31,876	33,754	35,739	37,831	40,029	42,325	44,707	47,164	49,690
Less: accumulated depreciation - property & equipment	10,803	11,937	13,071	14,852	16,618	18,382	20,159	21,961	23,796	25,673	27,598	29,576	31,610
Property & equipment, net	15,162	15,269	15,407	15,268	15,258	15,372	15,579	15,870	16,233	16,652	17,109	17,588	18,080
Operating lease right-of-use assets	6,464	6,682	6,526	6,467	6,463	6,511	6,599	6,722	6,876	7,053	7,247	7,450	7,658
Goodwill	10,078	10,078	10,085	10,085	10,085	10,085	10,085	10,085	10,085	10,085	10,085	10,085	10,085
Site rental contracts & tenant relationships, net	4,365	3,982	3,535	4,681	5,029	5,404	5,732	6,060	6,385	6,682	6,946	7,170	7,377
Other intangible assets, net	68	64	61	57	54	50	46	43	39	35	32	28	24
Deferred income tax assets	-	-	-	-	-	-	-	-	-	-	-	-	-
Other assets, net	119	123	136	148	158	170	179	189	198	207	215	222	228
Total assets	38,768	39,040	38,921	41,895	40,869	41,183	44,077	46,799	45,720	46,633	47,596	48,531	49,459
Liabilities and Equity													
Current liabilities:													
Accounts payable	230	246	236	352	376	402	425	448	471	491	510	526	541
Accrued interest	199	182	183	192	180	175	167	141	358	366	374	382	390
Deferred revenues	704	776	736	759	813	881	939	1,003	1,068	1,117	1,174	1,205	1,226
Other accrued liabilities	378	401	407	458	490	524	554	584	614	641	665	686	705
Current maturities of debt & other obligations	129	72	819	2,060	831	593	2,771	4,548	2,416	2,416	2,416	2,416	2,416
Current portion of operating lease liabilities	329	349	350	332	332	335	339	345	353	362	372	383	393
Total current liabilities	1,969	2,026	2,731	4,153	3,022	2,910	5,195	7,070	5,279	5,394	5,512	5,598	5,671
Debt & other long-term obligations	19,151	20,557	20,910	21,699	22,000	22,421	22,874	23,391	23,963	24,553	25,143	25,715	26,283
Operating lease liabilities	5,808	6,031	5,881	6,135	6,131	6,177	6,260	6,377	6,523	6,691	6,875	7,067	7,265
Deferred income tax liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Other long-term liabilities	2,379	2,168	1,950	2,849	2,888	2,944	3,003	3,071	3,146	3,223	3,301	3,376	3,451
Total liabilities	29,307	30,782	31,472	34,835	34,041	34,451	37,332	39,908	38,911	39,861	40,830	41,756	42,669
CCIC stockholders' equity:													
Common stock & additional paid-in capital	17,937	18,015	18,120	18,247	18,375	18,413	18,413	18,413	18,413	18,413	18,413	18,413	18,413
Accumulated other comprehensive income (loss)	(4)	(4)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)
Dividends or distributions in excess of earnings	(8,472)	(9,753)	(10,666)	(11,055)	(11,286)	(11,383)	(11,370)	(11,225)	(11,306)	(11,343)	(11,349)	(11,340)	(11,325)
Total CCIC stockholders' equity	9,461	8,258	7,449	7,187	7,083	7,025	7,038	7,183	7,102	7,065	7,059	7,068	7,083
Noncontrolling interest from discontinued operations	-	-	-	-	-	-	-	-	-	-	-	-	-
Total equity	9,461	8,258	7,449	7,187	7,083	7,025	7,038	7,183	7,102	7,065	7,059	7,068	7,083
Total liabilities and equity	38,768	39,040	38,921	42,022	41,124	41,476	44,370	47,092	46,013	46,926	47,889	48,824	49,752

Crown Castle International

Historical Cash Flow Statement

Fiscal Years Ending Dec. 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Cash flows from operating activities:											
Income (loss) from continuing operations	201	94	399	525	357	445	671	860	1,056	1,158	1,675
Adjustments to reconcile income (loss) from continuing operations to net cash provided by (used for) operating activities:											
Depreciation, amortization & accretion	623	774	1,013	1,036	1,109	1,242	1,528	1,572	1,608	1,644	1,707
Losses (gains) on retirement of long-term obligations	132	37	45	4	52	4	106	2	95	145	28
Losses (gains) on settled swaps	-	-	-	(54)	3	0	-	-	-	-	
Amortization of deferred financing costs & other non-cash interest, net	109	99	81	37	14	9	7	1	6	13	17
Stock-based compensation expense	42	39	51	61	79	92	103	117	138	129	156
Asset write-down charges	16	15	15	33	34	17	26	19	74	21	34
Deferred income tax provision (benefit)	(110)	180	(26)	(61)	9	15	2	2	3	4	3
Other non-cash adjustments, net	1	3	(26)	(9)	2	(2)	2	(2)	5	21	5
Changes in assets and liabilities, excluding the effect of acquisitions:											
Accrued interest	(14)	13	1	0	30	35	16	21	31	(17)	-
Accounts payable	35	29	10	(5)	11	(34)	37	19	(77)	15	(5)
Deferred revenues, deferred ground lease payables, other accrued liabilities & other liabilities	99	242	401	326	196	176	223	254	(65)	(118)	(281)
Receivables	(99)	(60)	(77)	13	(59)	61	(105)	(96)	166	(113)	(49)
Decrease (increase) in prepaid expenses, deferred site rental receivables, long-term prepaid rent & other assets	(261)	(228)	(222)	(112)	(55)	(15)	(114)	(71)	15	(113)	(412)
Net cash flows from operating activities	773	1,238	1,666	1,794	1,782	2,044	2,502	2,698	3,055	2,789	2,878
Cash flows from investing activities:											
Capital expenditures	(441)	(568)	(780)	(909)	(874)	(1,228)	(1,741)	(2,057)	(1,624)	(1,229)	(1,310)
Payments for acquisitions, net of cash acquired	(3,759)	(4,960)	(466)	(1,102)	(557)	(9,260)	(42)	(17)	(107)	(111)	(35)
Receipts from foreign currency swaps	-	-	-	54	8	(0)	-	-	-	-	-
Other investing activities, net	1	7	3	(3)	12	(5)	(12)	(7)	(10)	8	(7)
Net cash flows from investing activities	(4,200)	(5,521)	(1,243)	(1,960)	(1,410)	(10,494)	(1,795)	(2,081)	(1,741)	(1,332)	(1,352)
Cash flow from financing activities:											
Proceeds from issuance of long-term debt	5,250	1,618	846	1,000	5,201	3,092	2,742	1,894	3,733	3,985	748
Net proceeds from issuance of preferred stock		951									
Principal payments on debt & other long-term obligations	(81)	(101)	(116)	(103)	(96)	(119)	(105)	(86)	(105)	(1,076)	(74)
Purchases & redemptions of long-term debt	(1,979)	(763)	(837)	(1,069)	(4,045)	-	(2,346)	(12)	(2,490)	(2,089)	(1,274)
Borrowings under revolving credit facility	1,253	976	1,019	1,790	3,440	2,820	1,820	2,110	2,430	1,245	3,495
Payments under revolving credit facility	(251)	(1,855)	(698)	(1,360)	(4,565)	(1,840)	(1,725)	(2,660)	(2,665)	(870)	(2,855)
Net issuances (repayments) under commercial paper program	-	-	-	-	-	-	-	155	130	(20)	976
Payments for financing costs	(79)	(30)	(16)	(20)	(42)	(29)	(31)	(24)	(38)	(42)	(14)
Net proceeds from issuance of common stock	0	2,981	-	-	1,326	4,221	841	-	-	-	-
Net proceeds from issuance of preferred stock	-	-	-	-	-	1,608	-	-	-	-	-
Purchases of common stock	(36)	(99)	(22)	(30)	(25)	(23)	(34)	(44)	(76)	(70)	(65)
Dividends & distributions paid on common stock	-	-	(624)	(1,116)	(1,239)	(1,509)	(1,782)	(1,912)	(2,105)	(2,373)	(2,602)
Dividends & distributions paid on preferred stock	(2)	-	(44)	(44)	(44)	(30)	(113)	(113)	(85)	-	-
Net (increase) decrease in restricted cash	(289)	386	30	16	(8)	4	-	-	-	-	-
Net cash flows from (used in) financing activities	3,787	4,063	(463)	(935)	(96)	8,195	(733)	(692)	(1,271)	(1,310)	(1,665)
Net increase (decrease) in cash, cash equivalents, & restricted cash from continuing operations	360	(220)	(40)	(1,101)	276	(255)	(26)	(75)	43	147	(139)
Discontinued Operations:											
Net cash provided by (used for) operating activities	-	-	-	3	-	-	-	-	-	(62)	-
Net cash provided by (used for) investing activities	-	-	-	1,104	113	-	-	-	-	-	-
Effect of exchange rate changes on cash	1	2	(8)	(2)	(0)	1	(1)	-	-	-	-
Cash, cash equivalents, & restricted cash at beginning of period	80	441	223	176	179	568	440	413	338	381	466
Cash, cash equivalents, & restricted cash at end of period	441	223	176	179	568	314	413	338	381	466	327

Crown Castle International

Forecasted Cash Flow Statement

	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Cash flows from operating activities:										
Net Income	1,882	2,263	2,621	2,935	3,313	2,763	2,958	3,120	3,244	3,350
Changes in working capital:										
Depreciation, amortization & accretion	1,781	1,765	1,764	1,777	1,801	1,835	1,877	1,925	1,978	2,034
Changes in assets and liabilities, excluding the effect of acquisitions:										
Receivables, net	(16)	(42)	(45)	(40)	(40)	(39)	(36)	(32)	(28)	(26)
Prepaid Expenses	(16)	(8)	(9)	(8)	(8)	(8)	(7)	(6)	(5)	(5)
Other current assets	(17)	(15)	(16)	(14)	(14)	(14)	(13)	(11)	(10)	(9)
Deferred site rental receivables	32	(143)	(154)	(135)	(135)	(133)	(122)	(108)	(92)	(85)
Other intangible assets	4	4	4	4	4	4	4	4	4	4
Other assets	(12)	(10)	(11)	(10)	(10)	(10)	(9)	(8)	(7)	(6)
Accounts payable	116	24	26	23	23	23	21	19	16	15
Accrued interest	9	(11)	(5)	(8)	(26)	217	8	8	8	8
Deferred revenues	23	54	69	57	64	65	49	57	31	21
Other accrued liabilities	51	32	34	30	30	30	27	24	21	19
Net cash flows from operating activities	3,837	3,912	4,277	4,613	5,003	4,732	4,757	4,991	5,160	5,319
Cash flows from investing activities:										
Capital expenditures (change in gross PPE)	(1,642)	(1,756)	(1,878)	(1,985)	(2,092)	(2,198)	(2,296)	(2,382)	(2,457)	(2,526)
Operating lease right-of-use assets	59	4	(48)	(88)	(123)	(154)	(177)	(194)	(203)	(209)
Site rental contracts & tenant relationships, net	(1,146)	(348)	(375)	(328)	(328)	(325)	(297)	(263)	(224)	(207)
Operating lease liabilities (current & LT)	236	(4)	48	88	123	154	177	194	203	209
Restricted cash	(5)	(5)	(5)	(5)	(5)	(5)	(6)	(6)	(6)	(6)
Net cash flows from investing activities	(2,498)	(2,109)	(2,258)	(2,318)	(2,425)	(2,529)	(2,598)	(2,651)	(2,687)	(2,739)
Cash flows from financing activities:										
Debt and other obligations (current & LT)	2,030	(928)	183	2,631	2,294	(1,561)	590	590	572	568
Other long-term liabilities	899	40	55	59	68	75	77	77	75	75
Dividends distributions	(2,271)	(2,494)	(2,718)	(2,922)	(3,167)	(2,845)	(2,995)	(3,126)	(3,235)	(3,336)
Net cash flows from financing activities	657	(3,382)	(2,479)	(231)	(805)	(4,330)	(2,327)	(2,458)	(2,588)	(2,694)
Net increase (decrease) in cash, cash equivalents, & restricted cash	1,996	(1,579)	(460)	2,063	1,773	(2,127)	(169)	(118)	(115)	(114)
Cash, cash equivalents, & beginning of period	156	2,152	573	113	2,176	3,949	1,822	1,653	1,535	1,419
Cash, cash equivalents, & end of period	2,152	573	113	2,176	3,949	1,822	1,653	1,535	1,419	1,306

Crown Castle International

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%	90.41%	90.86%	91.30%	91.61%	91.90%	92.14%	92.34%	92.48%	92.57%	92.64%
Services & other revenues	8.90%	9.79%	9.98%	9.59%	9.14%	8.70%	8.39%	8.10%	7.86%	7.66%	7.52%	7.43%	7.36%
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													
Site rental	26.04%	24.51%	22.93%	23.03%	23.15%	23.26%	23.34%	23.41%	23.47%	23.52%	23.56%	23.58%	23.60%
Services and other	7.67%	6.92%	6.67%	6.29%	6.00%	5.71%	5.50%	5.32%	5.16%	5.03%	4.94%	4.88%	4.83%
Selling, general & administrative	11.61%	10.73%	10.74%	11.02%	11.02%	11.02%	11.02%	11.02%	11.02%	11.02%	11.02%	11.02%	11.02%
Asset write-down charges	1.27%	0.33%	0.49%	0.37%	0.35%	0.32%	0.31%	0.29%	0.28%	0.26%	0.25%	0.25%	0.24%
Acquisition & integration costs	0.17%	0.02%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation, amortization and accretion	27.53%	25.93%	24.43%	23.84%	22.10%	20.65%	19.68%	18.93%	18.35%	17.97%	17.76%	17.70%	17.70%
Total operating expenses	74.30%	68.44%	65.29%	64.56%	62.61%	60.97%	59.85%	58.97%	58.28%	57.81%	57.54%	57.43%	57.39%
Other operating expense (income)	-6.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Operating income (loss)	31.90%	31.56%	34.71%	35.44%	37.39%	39.03%	40.15%	41.03%	41.72%	42.19%	42.46%	42.57%	42.61%
Interest expense & amortization of deferred financing costs	-11.80%	-10.36%	-10.01%	-9.82%	-8.64%	-7.84%	-7.09%	-5.68%	-13.72%	-13.43%	-13.22%	-13.09%	-12.99%
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%	0.01%	0.07%	0.02%	0.00%	0.06%	0.10%	0.04%	0.04%	0.03%	0.03%
Other income (expense)	-0.12%	-0.48%	-0.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Income (loss) before income taxes	24.80%	27.17%	37.08%	39.68%	46.02%	51.18%	55.24%	60.03%	48.23%	49.82%	50.89%	51.40%	51.67%
Provision (benefit) for income taxes	0.34%	0.33%	0.23%	0.43%	0.48%	0.52%	0.56%	0.60%	0.47%	0.48%	0.49%	0.50%	0.50%
Income (loss) from continuing operations	18.08%	18.26%	23.98%	25.19%	28.33%	30.68%	32.50%	34.81%	27.63%	28.32%	28.79%	29.02%	29.16%
Discontinued operations:													
Income (loss) from discontinued operations, net of taxes	0.00%	-0.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Less: net income (loss) attributable to the noncontrolling interest	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Net income (loss) attributable to Crown Castle International Corp. stockholders	18.08%	17.29%	23.98%	25.19%	28.33%	30.68%	32.50%	34.81%	27.63%	28.32%	28.79%	29.02%	29.16%
Dividends or distributions on preferred stock	0.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Net income (loss) attributable to Crown Castle International Corp. common stockholders	17.11%	17.29%	23.98%	25.19%	28.33%	30.68%	32.50%	34.81%	27.63%	28.32%	28.79%	29.02%	29.16%
Net income (loss)	18.08%	17.29%	23.98%	25.19%	28.33%	30.68%	32.50%	34.81%	27.63%	28.32%	28.79%	29.02%	29.16%

Crown Castle International

Balance Sheet

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Assets													
Current Assets:													
Cash & cash equivalents	3.97%	4.61%	2.23%	28.80%	7.17%	1.32%	24.10%	41.49%	18.22%	15.83%	14.16%	12.70%	11.36%
Restricted cash	2.47%	2.67%	2.38%	2.29%	2.20%	2.12%	2.06%	2.01%	1.97%	1.94%	1.92%	1.92%	1.92%
Receivables, net	7.38%	8.56%	8.49%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%
Prepaid expenses	1.63%	1.66%	1.46%	1.58%	1.58%	1.58%	1.58%	1.58%	1.58%	1.58%	1.58%	1.58%	1.58%
Deferred income tax assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other current assets	3.46%	2.29%	2.86%	2.91%	2.91%	2.91%	2.91%	2.91%	2.91%	2.91%	2.91%	2.91%	2.91%
Total current assets	18.90%	19.78%	17.42%	43.72%	22.00%	16.06%	38.79%	56.13%	32.82%	30.40%	28.71%	27.25%	25.91%
Deferred site rental receivables	24.11%	25.05%	27.97%	25.72%	25.85%	25.97%	26.06%	26.14%	26.21%	26.27%	26.31%	26.33%	26.35%
Total gross property & equipment	444.61%	429.12%	407.64%	403.14%	399.09%	395.14%	395.79%	397.51%	400.27%	405.26%	412.49%	421.96%	432.40%
Less: accumulated depreciation - property & equipment	184.98%	188.28%	187.10%	198.79%	208.06%	215.19%	223.26%	230.75%	237.94%	245.82%	254.63%	264.61%	275.06%
Property & equipment, net	259.62%	240.84%	220.54%	204.35%	191.04%	179.95%	172.54%	166.76%	162.33%	159.45%	157.86%	157.35%	157.33%
Operating lease right-of-use assets	110.68%	105.39%	93.42%	86.56%	80.92%	76.22%	73.08%	70.63%	68.76%	67.54%	66.86%	66.65%	66.64%
Goodwill	172.57%	158.96%	144.36%	134.98%	126.27%	118.06%	111.69%	105.97%	100.85%	96.57%	93.05%	90.23%	87.76%
Site rental contracts & tenant relationships, net	74.74%	62.81%	50.60%	62.65%	62.96%	63.27%	63.48%	63.68%	63.85%	63.98%	64.08%	64.15%	64.19%
Other intangible assets, net	1.16%	1.01%	0.87%	0.77%	0.67%	0.59%	0.51%	0.45%	0.39%	0.34%	0.29%	0.25%	0.21%
Deferred income tax assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other assets, net	2.04%	1.94%	1.95%	1.98%	1.98%	1.98%	1.98%	1.98%	1.98%	1.98%	1.98%	1.98%	1.98%
Total assets	663.84%	615.77%	557.13%	560.73%	511.69%	482.10%	488.13%	491.75%	457.18%	446.52%	439.15%	434.19%	430.39%
Liabilities and Equity													
Current liabilities:													
Accounts payable	3.94%	3.88%	3.38%	4.71%	4.71%	4.71%	4.71%	4.71%	4.71%	4.71%	4.71%	4.71%	4.71%
Accrued interest	3.41%	2.87%	2.62%	2.57%	2.26%	2.05%	1.85%	1.48%	3.58%	3.51%	3.45%	3.42%	3.39%
Deferred revenues	12.05%	12.24%	10.54%	10.15%	10.17%	10.32%	10.40%	10.54%	10.68%	10.70%	10.84%	10.78%	10.67%
Other accrued liabilites	6.47%	6.32%	5.83%	6.14%	6.14%	6.14%	6.14%	6.14%	6.14%	6.14%	6.14%	6.14%	6.14%
Current maturities of debt & other obligations	2.21%	1.14%	11.72%	27.57%	10.40%	6.94%	30.69%	47.79%	24.15%	23.13%	22.29%	21.61%	21.02%
Current portion of operating lease liabilities	5.63%	5.50%	5.01%	4.45%	4.16%	3.92%	3.75%	3.63%	3.53%	3.47%	3.44%	3.42%	3.42%
Total current liabilities	33.72%	31.96%	39.09%	55.58%	37.83%	34.06%	57.53%	74.29%	52.79%	51.65%	50.85%	50.08%	49.35%
Debt & other long-term obligations	327.93%	324.24%	299.31%	290.42%	275.44%	262.47%	253.32%	245.79%	239.62%	235.10%	231.98%	230.07%	228.71%
Operating lease liabilities	99.45%	95.13%	84.18%	82.11%	76.76%	72.31%	69.33%	67.00%	65.22%	64.07%	63.43%	63.23%	63.22%
Deferred income tax liabilities	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other long-term liabilities	40.74%	34.20%	27.91%	38.13%	36.16%	34.46%	33.26%	32.27%	31.46%	30.86%	30.46%	30.20%	30.03%
Total liabilities	501.83%	485.52%	450.50%	466.24%	426.19%	403.30%	413.43%	419.34%	389.09%	381.68%	376.72%	373.58%	371.30%
CCIC stockholders' equity:													
Common stock & additional paid-in capital	307.14%	284.15%	259.38%	244.23%	230.05%	215.55%	203.92%	193.48%	184.12%	176.31%	169.89%	164.74%	160.23%
Accumulated other comprehensive income (loss)	-0.07%	-0.06%	-0.07%	-0.07%	-0.06%	-0.06%	-0.06%	-0.05%	-0.05%	-0.05%	-0.05%	-0.04%	-0.04%
Dividends or distributions in excess of earnings	-145.07%	-153.83%	-152.68%	-147.97%	-141.31%	-133.26%	-125.92%	-117.94%	-113.06%	-108.61%	-104.71%	-101.46%	-98.55%
Total CCIC stockholders' equity	162.00%	130.25%	106.63%	96.20%	88.68%	82.23%	77.94%	75.48%	71.02%	67.65%	65.13%	63.23%	61.63%
Noncontrolling interest from discontinued operations	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total equity	162.00%	130.25%	106.63%	96.20%	88.68%	82.23%	77.94%	75.48%	71.02%	67.65%	65.13%	63.23%	61.63%
Total liabilities and equity	663.84%	615.77%	557.13%	562.44%	514.88%	485.53%	491.38%	494.82%	460.11%	449.33%	441.85%	436.81%	432.94%

Crown Castle International
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	6,340	6,986	7,471	7,987	8,542	9,030	9,517	10,000	10,444	10,838	11,177	11,492
- Cost of operations (site rental)	1,521	1,554	1,602	1,721	1,849	1,987	2,107	2,228	2,347	2,456	2,553	2,636	2,712
- Cost of operations (services and other)	448	439	466	470	479	488	497	506	516	525	535	545	555
- Selling, general, & administrative	678	680	750	824	880	942	995	1,049	1,102	1,151	1,195	1,232	1,267
- Depreciation, amortization, and acretion	1,608	1,644	1,707	1,781	1,765	1,764	1,777	1,801	1,835	1,877	1,925	1,978	2,034
+ Other operating income	362	-	-	-	-	-	-	-	-	-	-	-	-
+ Implied interest on opearting leases	319	336	347	339	336	336	339	343	350	358	367	377	387
EBITA	2,266	2,359	2,808	3,015	3,350	3,698	3,991	4,276	4,550	4,791	4,997	5,163	5,312
Less: Adjusted taxes													
Tax provision (benefit)	20	21	16	32	39	45	50	57	47	51	53	56	57
+ Tax shield on asset write-down charges	1	0	0	0	0	0	0	0	0	0	0	0	0
+ Tax shield on acquisition & integration costs	0	0	0	-	-	-	-	-	-	-	-	-	-
+ Tax shield on interest expense & amortization of deferred financing costs	11	9	5	12	12	11	11	9	23	24	24	25	25
+ Tax shield on losses on retirement of long-term obligations	2	2	0	-	-	-	-	-	-	-	-	-	-
- Tax on interest income	0	0	0	0	0	0	0	0	0	0	0	0	0
- Tax on other income				-	-	-	-						
+ Tax shield on other expense	0	0	0					-	-	-	-	-	-
+ Tax shield on implied interest on operating leases	5	5	3	6	6	6	6	6	6	6	6	6	7
Total adjusted taxes	39	38	25	51	56	62	67	72	77	81	84	87	89
Add: Change in Deferred Taxes	3	4	3										
NOPLAT	2,230	2,325	2,787	2,964	3,294	3,636	3,924	4,204	4,473	4,711	4,913	5,076	5,222
Invested Capital (IC):													
Operating current assets:													
+ Normal cash	130	142	156	2,152	573	113	2,176	3,949	1,822	1,653	1,535	1,419	1,306
+ Receivables, net	431	543	593	609	651	696	735	775	814	851	883	910	936
+ Prepaid expenses	95	105	102	118	126	135	143	150	158	165	171	177	182
+ Other current assets	202	145	200	217	232	248	262	277	291	304	315	325	334
Operating current liabilities:													
- Accounts payable	230	246	236	352	376	402	425	448	471	491	510	526	541
- Deferred revenues	704	776	736	759	813	881	939	1,003	1,068	1,117	1,174	1,205	1,226
- Other accrued liabilities	378	401	407	458	490	524	554	584	614	641	665	686	705
Operating Working Capital	(454)	(488)	(328)	1,527	(97)	(616)	1,399	3,116	933	723	554	414	285
Net PPE, Net other operating assets:													
+ Deferred site rental receivables	1,408	1,588	1,954	1,922	2,064	2,218	2,353	2,488	2,621	2,743	2,851	2,943	3,028
+ Property & equipment, net	15,162	15,269	15,407	15,268	15,258	15,372	15,579	15,870	16,233	16,652	17,109	17,588	18,080
+ Site rental contracts & tenant relationships, net	4,365	3,982	3,535	4,681	5,029	5,404	5,732	6,060	6,385	6,682	6,946	7,170	7,377
+ Other intangible assets, net	68	64	61	57	54	50	46	43	39	35	32	28	24
+ PV of operating leases	6,464	6,682	6,526	6,467	6,463	6,511	6,599	6,722	6,876	7,053	7,247	7,450	7,658
Invested Capital	27,013	27,097	27,155	29,922	28,771	28,940	31,709	34,299	33,088	33,889	34,739	35,593	36,454

Free Cash Flow (FCF):	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
NOPLAT	2,230	2,325	2,787	2,964	3,294	3,636	3,924	4,204	4,473	4,711	4,913	5,076	5,222
Change in IC	307	83	58	2,767	(1,150)	168	2,769	2,590	(1,211)	801	850	854	861
FCF	**1923**	**2242**	**2728**	**197**	**4444**	**3467**	**1155**	**1614**	**5684**	**3909**	**4063**	**4222**	**4361**
Return on Invested Capital (ROIC):													
NOPLAT	2,230	2,325	2,787	2,964	3,294	3,636	3,924	4,204	4,473	4,711	4,913	5,076	5,222
Beginning IC	26,707	27,013	27,097	27,155	29,922	28,771	28,940	31,709	34,299	33,088	33,889	34,739	35,593
ROIC	**8.35%**	**8.61%**	**10.28%**	**10.92%**	**11.01%**	**12.64%**	**13.56%**	**13.26%**	**13.04%**	**14.24%**	**14.50%**	**14.61%**	**14.67%**
Economic Profit (EP):													
Beginning IC	26,707	27,013	27,097	27,155	29,922	28,771	28,940	31,709	34,299	33,088	33,889	34,739	35,593
x (ROIC - WACC)	2.12%	2.38%	4.06%	4.69%	4.78%	6.41%	7.33%	7.03%	6.81%	8.01%	8.27%	8.38%	8.44%
EP	**567**	**643**	**1,099**	**1,273**	**1,430**	**1,844**	**2,122**	**2,229**	**2,337**	**2,650**	**2,802**	**2,913**	**3,005**

Funds from Operations:	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
FFO	2,662	2,801	3,379	3,663	4,023	4,384	4,712	5,108	4,588	4,830	5,041	5,218	5,381
AFFO	1,038	1,572	2,069	2,021	2,267	2,506	2,727	3,016	2,390	2,534	2,659	2,761	2,854

Crown Castle International
Weighted Average Cost of Capital (WACC) Estimation

Cost of Equity:		*ASSUMPTIONS:*
Risk-Free Rate	3.47%	*10Y Treasury Note (3/31)*
Beta	0.65	*Average of 2, 3, 4, and 5-year weekly beta (relative index: S&P 500)*
Equity Risk Premium	5.10%	*S&P 500 1928-2020 geometric average over 10-year Treasury*
Cost of Equity	**6.79%**	
Cost of Debt:		
Risk-Free Rate	3.47%	*10Y Treasury Note (3/31)*
Implied Default Premium	1.73%	
Pre-Tax Cost of Debt	5.20%	*YTM on company's 30Y corporate bond*
Marginal Tax Rate	1.68%	
After-Tax Cost of Debt	**5.11%**	

Market Value of Common Equity:		**MV Weights**
Total Shares Outstanding	433	
Current Stock Price	$129.81	
MV of Equity	**56,208**	66.59%
Market Value of Debt:		
Short-Term Debt	236	
Current Portion of LTD	819	
Long-Term Debt	20,910	
PV of Operating Leases	6,231	
MV of Total Debt	**28,196**	33.41%
Market Value of the Firm	**84,404**	100.00%

Estimated WACC **6.23%**

Crown Castle International

Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models

Key Inputs:	
CV Growth of NOPLAT	2.75%
CV Year ROIC	14.67%
WACC	6.23%
Cost of Equity	6.79%

Fiscal Years Ending Dec. 31	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
DCF Model:										
Free Cash Flow (FCF)	197	4,444	3,467	1,155	1,614	5,684	3,909	4,063	4,222	4,361
Continuing Value (CV)										121,998
PV of FCF	186	3,938	2,892	907	1,193	3,956	2,561	2,506	2,451	70,825
Value of Operating Assets	91,415									
Non-Operating Adjustments:										
+ Restricted cash	166									
- Accrued interest	(183)									
- Debt & other obligations	(21,965)									
- PV of operating leases	(6,231)									
- PV of ESOP	(20)									
Value of Equity	63,183									
Shares Outstanding	435									
Intrinsic Value of Last FYE	$ 145.33									
Implied Price as of Today	$ 146.19									
EP Model:										
Economic Profit (EP)	1,273	1,430	1,844	2,122	2,229	2,337	2,650	2,802	2,913	3,005
Continuing Value (CV)										86,405
PV of EP	1,198	1,267	1,538	1,666	1,648	1,626	1,736	1,728	1,691	50,162
Total PV of EP	64,260									
Invested Capital (last FYE)	27,155									
Value of Operating Assets:	91,415									
Non-Operating Adjustments										
+ Restricted cash	166									
- Accrued interest	(183)									
- Debt & other obligations	(21,965)									
- PV of operating leases	(6,231)									
- PV of ESOP	(20)									
Value of Equity	63,183									
Shares Outstanding	435									
Intrinsic Value of Last FYE	$ 145.33									
Implied Price as of Today	$ 146.19									

Crown Castle International

Dividend Discount Model (DDM) or Fundamental P/E Valuation Model

Fiscal Years Ending Dec. 31	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
EPS	$ 4.34	$ 5.21	$ 6.03	$ 6.75	$ 7.62	$ 6.36	$ 6.80	$ 7.18	$ 7.46	$ 7.71
Key Assumptions										
CV growth of EPS	2.75%									
CV Year ROE	0.47									
Cost of Equity	6.79%									
Future Cash Flows										
P/E Multiple (CV Year)										23.33
EPS (CV Year)										$ 7.71
Future Stock Price										$ 179.79
Dividends Per Share	5.24	5.74	6.25	6.72	7.29	6.54	6.89	7.19	7.44	
Discounted Cash Flows	4.91	5.04	5.13	5.17	5.25	4.41	4.35	4.25	4.12	99.55
Intrinsic Value as of Last FYE	$ 142.18									
Implied Price as of Today	$ 143.01									

Crown Castle International

Relative Valuation Models

Ticker	Company	Price	EPS 2023E	EPS 2024E	P/E 23	P/E 24	AFFO 2023E	AFFO 2024E	P/AFFO 23	P/AFFO 24
SBAC	SBA Communications Corpora	$255.03	$5.01	$5.71	50.90	44.66	1377.5	1420.7	0.19	0.18
AMT	American Tower Corporation	$203.88	$4.42	$5.04	46.13	40.45	4465.1	4673.0	0.05	0.04
UNIT	Uniti Group Inc.	$3.23	$0.26	$0.42	12.42	7.69	377.0	412.0	0.01	0.01
				Average	**48.52**	**42.56**			**0.08**	**0.08**
CCI	Crown Castle International	$129.81	$4.34	$5.21	29.9	24.9	2,020.7	2,266.9	0.06	0.06

Implied Relative Value:

P/E (EPS23)	**$**	**210.66**
P/E (EPS24)	**$**	**221.72**
P/AFFO (AFFO23)	**$**	**161.23**
P/AFFO (AFFO24)	**$**	**174.54**

Crown Castle International
Key Management Ratios

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Liquidity Ratios:													
Current Ratio = Current assets / Current liabilities	0.56	0.62	0.45	0.79	0.58	0.47	0.67	0.76	0.62	0.59	0.56	0.54	0.53
Cash Ratio = Cash & Cash Equivalents / Current Liabilities	0.12	0.14	0.06	0.52	0.19	0.04	0.42	0.56	0.35	0.31	0.28	0.25	0.23
Net Working Capital to Revenue Ratio = Net Working Capital / Net Revenue	(0.15)	(0.12)	(0.22)	(0.12)	(0.16)	(0.18)	(0.19)	(0.18)	(0.20)	(0.21)	(0.22)	(0.23)	(0.23)
Asset-Management Ratios:													
Total Asset Turnover = Net Revenue / Average Total Assets	0.15	0.16	0.18	0.18	0.19	0.21	0.21	0.21	0.22	0.23	0.23	0.23	0.23
Fixed Asset Turnover = Net Revenue / PP&E, net	0.39	0.42	0.45	0.49	0.52	0.56	0.58	0.60	0.62	0.63	0.63	0.64	0.64
Working Capital Turnover = Net Revenue / Average Working Capital	(7.39)	(7.75)	(6.11)	(6.23)	(7.43)	(6.10)	(5.59)	(5.57)	(5.37)	(4.95)	(4.69)	(4.51)	(4.38)
Financial Leverage Ratios:													
Debt to Assets Ratio = Total Debt / Total Assets	0.49	0.53	0.54	0.52	0.54	0.54	0.52	0.50	0.52	0.53	0.53	0.53	0.53
Debt to Equity Ratio = Total Debt / Total Equity	2.02	2.49	2.81	3.02	3.11	3.19	3.25	3.26	3.37	3.48	3.56	3.64	3.71
Debt to EBITA Ratio = Total Debt / EBITA	10.28	10.27	8.62	8.19	7.37	6.72	6.31	5.99	5.74	5.57	5.46	5.40	5.37
Profitability Ratios:													
Return on Equity = Net Income /Beg TSE	0.10	0.12	0.20	0.25	0.31	0.37	0.42	0.47	0.38	0.42	0.44	0.46	0.47
Return on Assets = Net Income / Total Assets	0.03	0.03	0.04	0.04	0.06	0.06	0.07	0.07	0.06	0.06	0.07	0.07	0.07
Operating Profit Margin = Operating Profit / Sales	0.32	0.32	0.35	0.35	0.37	0.39	0.40	0.41	0.42	0.42	0.42	0.43	0.43
Payout Policy Ratios:													
Dividend Payout Ratio = Total Dividends / Net Income	1.99	2.17	1.55	1.21	1.10	1.04	1.00	0.96	1.03	1.01	1.00	1.00	1.00
Retention Ratio = (Net Income - Dividends) / Net Income	1.00	1.00	1.00	2.21	2.10	2.04	2.00	1.96	2.03	2.01	2.00	2.00	2.00
Dividend Cover Ratio = Net Income / Total Dividends	0.50	0.46	0.64	0.83	0.91	0.96	1.00	1.05	0.97	0.99	1.00	1.00	1.00

Crown Castle International
Sensitivity Tables

Risk-Free Rate

Beta / 146.19	2.87%	3.07%	3.27%	**3.47%**	3.67%	3.87%	4.07%
0.50	223.62	209.05	195.84	183.81	172.82	162.73	153.44
0.55	205.29	192.42	180.70	169.96	160.10	151.01	142.60
0.60	189.09	177.65	167.17	157.53	148.64	140.40	132.76
0.65	174.68	164.44	155.02	146.31	138.25	130.76	123.78
0.70	161.77	152.55	144.03	136.13	128.79	121.94	115.55
0.75	150.15	141.80	134.06	126.86	120.14	113.86	107.98
0.80	139.62	132.03	124.97	118.37	112.21	106.42	100.99

Marginal Tax Rate

Cost of Debt / 146.19	0.78%	1.08%	1.38%	**1.68%**	1.98%	2.28%	2.58%
3.70%	173.54	173.84	174.15	174.46	174.77	175.08	175.39
4.20%	163.08	163.40	163.72	164.03	164.35	164.67	164.99
4.70%	153.69	154.01	154.33	154.66	154.98	155.31	155.64
5.20%	145.20	145.53	145.86	146.19	146.52	146.85	147.18
5.70%	137.50	137.83	138.16	138.49	138.83	139.16	139.50
6.20%	130.47	130.81	131.14	131.48	131.81	132.15	132.49
6.70%	124.05	124.38	124.72	125.05	125.39	125.73	126.07

WACC

CV Growth Rate of NOPLAT / 146.19	5.33%	5.63%	5.93%	**6.23%**	6.53%	6.83%	7.13%
2.00%	180.93	159.39	141.15	125.52	111.97	100.12	89.67
2.25%	192.68	168.65	148.56	131.51	116.86	104.15	93.01
2.50%	206.51	179.40	157.05	138.31	122.36	108.64	96.70
2.75%	223.01	192.02	166.88	146.08	128.59	113.68	100.82
3.00%	243.06	207.03	178.38	155.05	135.70	119.38	105.44
3.25%	267.93	225.19	192.03	165.54	143.89	125.88	110.66
3.50%	299.60	247.63	208.48	177.94	153.44	133.35	116.59

Growth in Miles of Fiber

Growth Rate of Revenue Per Tower Y1-Y3 / 146.19	0.50%	1.00%	1.50%	**2.00%**	2.50%	3.00%	3.50%
7.53%	124.30	127.05	129.94	132.97	136.14	139.46	142.94
6.53%	112.20	114.96	117.84	120.87	124.04	127.36	130.84
7.53%	124.30	127.05	129.94	132.97	136.14	139.46	142.94
8.53%	137.54	140.30	143.19	146.22	149.39	152.71	156.18
9.53%	152.04	154.79	157.68	160.71	163.88	167.20	170.67
10.53%	167.87	170.63	173.52	176.55	179.72	183.04	186.51
11.53%	185.16	187.92	190.81	193.84	197.01	200.33	203.80

Site Rental Costs % of Site Rental Revenue

Services & Other Costs % of Services & Other Revenues / 146.19	19.47%	21.47%	23.47%	**25.47%**	27.47%	29.47%	31.47%
50.64%	178.88	169.81	160.75	151.69	142.62	133.56	124.50
55.64%	177.05	167.98	158.92	149.86	140.79	131.73	122.67
60.64%	175.22	166.16	157.09	148.03	138.97	129.90	120.84
65.64%	173.39	164.33	155.26	146.20	137.14	128.07	119.01
70.64%	171.56	162.50	153.43	144.37	135.31	126.24	117.18
75.65%	169.73	160.67	151.60	142.54	133.48	124.41	115.35
80.64%	167.90	158.84	149.78	140.71	131.65	122.59	113.52

Capital Expenditures as % of Revenue

Debt & Other LT Obligations as % of Non-Cash Assets / 146.19	15.98%	17.98%	19.98%	**21.98%**	23.98%	25.98%	27.98%
39.83%	187.66	180.99	174.32	167.65	160.98	154.31	147.64
44.83%	181.17	174.28	167.39	160.50	153.61	146.72	139.83
49.83%	174.68	167.57	160.46	153.35	146.24	139.13	132.01
54.83%	168.19	160.86	153.53	146.20	138.87	131.53	124.20
59.83%	161.70	154.15	146.60	139.04	131.49	123.94	116.39
64.83%	155.20	147.43	139.66	131.89	124.12	116.35	108.58
69.83%	148.71	140.72	132.73	124.74	116.75	108.76	100.77

Crown Castle International

Present Value of Operating Lease Obligations

Fiscal Years Ending Dec. 31	2011	2012	2013	2014	2015	2016	2017	2018
Year 1	301.3	428.8	565.6	569.3	564.1	573.7	635.3	640.0
Year 2	305.3	430.3	573.1	574.7	571.3	577.6	632.8	631.0
Year 3	307.3	434.2	578.6	578.8	575.6	581.6	622.6	628.0
Year 4	308.8	437.7	582.2	580.2	579.4	579.2	618.0	623.0
Year 5	311.2	440.6	583.8	581.0	580.9	579.6	609.8	619.0
Thereafter	3,907.9	5,761.4	7,546.1	8,067.1	7,669.0	7,741.7	7,941.2	8,054.0
Total Minimum Payments	5,442	7,933	10,429	10,951	10,540	10,633	11,060	11,195
Less: Cumulative Interest	1934.7	2877.4	3760.1	4086.9	3839.4	3888.5	3973.4	4026.4
PV of Minimum Payments	**3507.1**	**5055.6**	**6669.3**	**6864.2**	**6700.9**	**6744.9**	**7086.3**	**7168.6**
Implied Interest in Year 1 Payment		**182.4**	**262.9**	**346.8**	**356.9**	**348.4**	**350.7**	**368.5**
Pre-Tax Cost of Debt	5.20%	5.20%	5.20%	5.20%	5.20%	5.20%	5.20%	5.20%
Years Implied by Year 6 Payment	12.6	13.1	12.9	13.9	13.2	13.4	13.0	13.0
Expected Obligation in Year 6 & Beyond	311.2	440.6	583.8	581	580.9	579.6	609.8	619
Present Value of Lease Payments								
PV of Year 1	286.4	407.6	537.6	541.2	536.2	545.3	603.9	608.4
PV of Year 2	275.9	388.8	517.8	519.3	516.2	521.9	571.8	570.2
PV of Year 3	263.9	372.9	497.0	497.1	494.4	499.5	534.8	539.4
PV of Year 4	252.1	357.4	475.3	473.7	473.1	472.9	504.6	508.7
PV of Year 5	241.5	342.0	453.1	450.9	450.8	449.8	473.3	480.4
PV of 6 & beyond	2187.2	3187.0	4188.4	4382.0	4230.1	4255.4	4398.0	4461.7
Capitalized PV of Payments	3507.1	5055.6	6669.3	6864.2	6700.9	6744.9	7086.3	7168.6

Crown Castle International

Effects of ESOP Exercise and Share Repurchases on Common Stock Account and Number of Shares Outstanding

Number of Options Outstanding (shares):	2
Average Time to Maturity (years):	2.30
Expected Annual Number of Options Exercised:	1
Current Average Strike Price:	$ 146.52
Cost of Equity:	6.79%
Current Stock Price:	$129.81

Fiscal Years Ending Dec. 31	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**	**2031E**	**2032E**
Increase in Shares Outstanding:	1	1	0.26	-	-	-	-	-	-	-
Average Strike Price:	$ 146.52	$ 146.52	$ 146.52	$ 146.52	$ 146.52	$ 146.52	$ 146.52	$ 146.52	$ 146.52	$ 146.52
Increase in Common Stock Account:	**127**	**127**	**38**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Share Repurchases ($)	0	0	0	0	0	0	0	0	0	0
Expected Price of Repurchased Shares:	$129.81	$ 132.49	$ 135.23	$ 138.03	$ 140.89	$ 143.80	$ 146.77	$ 149.81	$ 152.91	$ 156.07
Number of Shares Repurchased:	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Shares Outstanding (beginning of the year)	433	434	435	435	435	435	435	435	435	435
Plus: Shares Issued Through ESOP	1	1								
Less: Shares Repurchased in Treasury										
Shares Outstanding (end of the year)	**434**	**435**	**435**	**435**	**435**	**435**	**435**	**435**	**435**	**435**

Crown Castle International

Valuation of Options Granted under ESOP

Current Stock Price	$129.81
Risk Free Rate	3.47%
Current Dividend Yield	4.72%
Annualized St. Dev. of Stock Returns	23.26%

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	$ 9.76	20
Total	2	$ 146.52	2.30	$ 15.13	**20**