nuveen
A TIAA Company

Winter 2018

Parking infrastructure: Urban revitalization driving growth

PARKING INDUSTRY OVERVIEW

The U.S. parking industry generated $9.8 billion in revenues in 2017. The industry is highly fragmented with over 10,000 participants providing parking services as operators, parking facility owners and equipment and technology providers. Off-street parking services represent the largest segment of the U.S. parking sector generating about 72% of industry revenues in 2017. Revenues are typically generated through transient parking transactions (i.e. hourly and daily) and monthly or longer-term parking permits. With long-term permits, customers normally enter into a recurring weekly or monthly contract and gain unlimited parking access.

Parking demand drivers are diverse

The U.S. parking industry has multiple demand drivers that are highly dependent on the particular micro-market. Parking in central business districts ("CBD") represents the largest source of demand driven by office and apartment buildings, shopping, restaurants and entertainment. Other segments include dedicated parking facilities at hospitals, hotels or academic institutions. Airports represent another important demand source that includes on-airport parking adjacent to terminals or off-airport parking requiring shuttle service.

EXECUTIVE SUMMARY

- Parking garages — a category of infrastructure assets — benefit from strong demand for an essential service and high entry barriers limiting supply. Population growth and new construction in urban centers further increase demand and limit supply as parking lots are redeveloped.
- Parking assets provide stable, recurring and defensive cash flows for investors that are linked to inflation through price increases and capital appreciation. Experienced operators can increase cash flow and margins by expanding utilization, optimizing pricing and applying cost-saving technology.
- This primer provides a brief overview of the parking industry, the opportunity for infrastructure investors and the industry's major strengths and risks.

FOR INSTITUTIONAL INVESTOR AND FINANCIAL ADVISOR USE ONLY.

Exhibit 1: Parking market segments

Central Business District (CBD)	**Private**	• Generates 41% of industry revenue • Serves parkers in urban downtown cores including residents, office workers, retail shoppers, tourists and local visitors
Airport	**Off-Airport**	• Generates 12% of industry revenue • Serves travelers seeking discounted parking prices; parking services usually include shuttle buses run by parking operators
	On-Airport	• Generates 12% of industry revenue • Serves travelers willing to pay a premium for close to airport
Non-CBD	**College and University**	• Generates 14% of industry revenue • Serves captive students, faculty and staff
	Hotel	• Generates 10% of industry revenue • Serves travelers
	Hospital	• Generates 6% of industry revenue • Serves patients, medical employees and other staff
Govt-Owned	**Municipal**	• Generates 5% of industry revenue • Government-owned parking lots services parkers in urban downtown cores

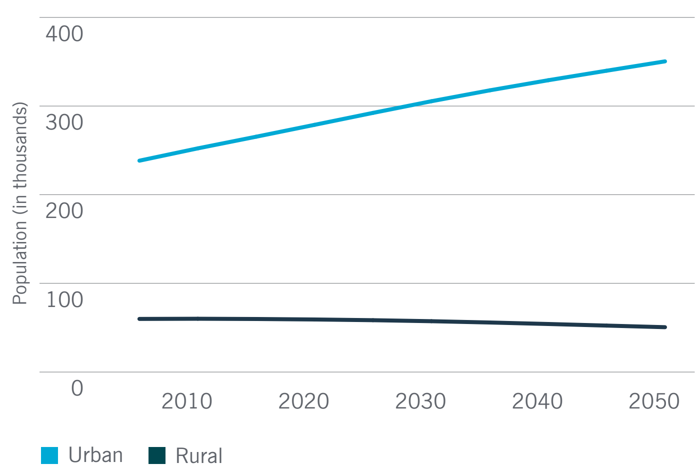
Source: IbisWorld, Parking Lots & Garages in the U.S., November 2017.

Population growth in urban centers increases parking demand

The U.S. parking industry has enjoyed stable, steady growth. From 2012 to 2017E, the industry grew at a 3.3% compounded annual growth rate that is expected to continue in the future.[1] Meanwhile, urban parking assets are likely to outperform as new construction increases the population in urban centers and reduces the supply of parking lots as they are redeveloped. The U.S. has experienced powerful urbanization trends over the last several decades that are projected to persist.

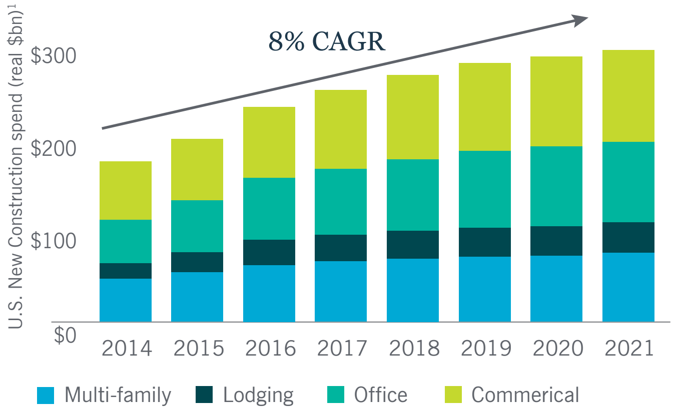
Exhibit 2: Growing urban population

U.S. Population: Urban vs. Rural 2005-2050E



Source: United Nations

Exhibit 3: Growth of new construction in urban centers



Source: FMI

OFF-STREET PARKING BUSINESS MODEL OVERVIEW

Investments in off-street parking use four different structures: leases, management contracts, concessions and full ownership. Notably, leases, management contracts and concessions are all exposed to re-leasing risk, while ownership faces risks related to owning the assets, such as liability. The majority of parking assets are owned by businesses and institutions — hotels, office buildings and hospitals — that outsource operation to third-party vendors. Therefore, the vast majority of parking companies operate asset-light business models with management contracts, leases or concessions with asset owners. The chart below provides a summary of key attributes of the different types of off-street parking business models and customers.

Exhibit 4: Four investment structures for parking assets

	Owned	Concessions	Leases	Management Contracts
Length of Contract	Perpetual	10-99 years	3-10 years	1-3 years (may be terminated without cause in 30 days)
Initial Investment	Purchase price of garage	Large upfront fee (similar to buying)	Minimal	None
Control of Parking Revenue Rates	Yes	Yes	Yes	No
Benefit From Revenue Increases	Yes	Limited	Partially	Partially through incentive payments
Income Model	Ticket fare less operating expense plus embedded property value	Ticket fare less opex; some terminal value if concession is sold	Ticket fare less fixed and variable rent	Management fee and incentive payments
Typical EBITDA Margin	40-60%	40-60%	10-20%	3-15%
Examples				

Source: InterPark.

FOR INSTITUTIONAL INVESTOR AND FINANCIAL ADVISOR USE ONLY.

Exhibit 5: Comparing parking customer relative value

Customer Type	Parking Habits	Rate Categories	Margin Value
Daily Parker - Occasional Visitor	Occasional Parker	Posted Rates	Most Valuable
Monthly Parker	Parks 15+ days per month	Bulk Rates	Valuable
Early Morning Parker	Parks 5-10 days per month	Discount Rates	Least Valuable
Online Parker	Various/ Dynamic	Various/ Dynamic	Various/ Dynamic

Source: InterPark, Nuveen, LLC.

Parking facilities span a range of configurations and structures. Off-street parking includes underground parking garages, stand-alone parking structures, parking structures attached to buildings, surface parking lots and stacked surface lots.

Off-street parking demand drivers

Demand sources are highly dependent on particular micro-markets in central business districts:

- **Location:** Proximity to nearby demand drivers — theaters, office buildings, stadiums and shopping centers — and parking availability are key factors. Barriers to entry in the form of zoning restrictions, development approval processes and available land impact the local parking supply and are important for assessing the attractiveness of a location.
- **Population growth:** Regional population and employment growth as well as urbanization trends are key determinants of parking demand. Higher density in the urban core increases demand for off-street parking.
- **Parking rates and services offered:** Absolute and relative costs of parking — hourly, daily, and monthly rates — impact customer demand. Superior locations close to customer destinations can justify higher prices.
- **Transportation alternatives:** The availability of public transportation, bicycling, walking and ride-sharing impact demand for parking.
- **Enforcement:** When comparing off-street and on-street parking costs, customers may consider the limited duration of on-street parking as well as the probability and costs of receiving a parking fine.
- **Facility condition, safety and security:** Customers often prefer well-lit, clean and secure parking environments. Off-street parking typically provides better safety, security and protection from weather conditions.
- **Technology:** The parking industry is becoming more technologically savvy. Customer experience can be improved with automated garage systems and alternative payment options, such as online and mobile phone applications. Further, digital marketing strategies and data analytics can help optimize the parking industry.

Off-airport demand drivers

Similar to off-street CBD parking, airport parking is partially tied to local economic indicators, such as GDP growth, employment and disposable income. In addition, the cost of air travel, including fuel prices, typically impact the frequency of air travel and demand for airport parking. Finally, concerns about terrorism or diseases may also adversely affect the airline and airport parking industry. The attractiveness of a particular off-airport market is driven by passenger growth, the local supply of parking as well as the accessibility and cost of alternative transportation options.

Parking industry strengths

- **Monopolistic attributes and high barriers to entry:** Parking garages and lots represent essential core infrastructure services. Barriers to entry in the form of zoning restrictions, land scarcity and development approval processes limit new supply of parking lots in attractive micro markets.
- **Strong industry fundamentals:** Long-term trends of urban revitalization and densification have resulted in sustained demand for parking services, while reducing the supply of parking lots and garages as they are replaced with residential and commercial high-rises.
- **Diversified drivers of demand:** Parking garages or lots typically have multiple sources of demand — shopping centers, theater, office building and hospitals — and multiple types of customers — hourly, daily, and monthly users.
- **Compelling value proposition with limited alternatives:** Customer typically have limited convenient parking options available in CBD location or near airports and view parking as a necessary service.
- **Attractive financial profile:** Parking garages and lots in attractive locations deliver recurring, recession-resistant revenues and free cash flow.
- **Embedded property value provides upside potential:** Urban densification and revitalization trends may increase the value of existing lots or garages for redevelopment. For example, a surface parking lot may be sold to an apartment building developer.
- **Opportunities for consolidation:** The parking industry is highly fragmented and consists primarily of small, undercapitalized local operators and asset owners. New technology in data analytics, payment systems and digital marketing have made it increasingly difficult for smaller companies to compete, while providing immediate synergies for experienced parking asset buyers.

POTENTIAL RISKS

- **Potential long-term decline in car ownership and parking trends:** The proliferation of ride-sharing and car-sharing services as well as the advent of self-driving cars may discourage car ownership and reduce demand for parking garage services.

  Mitigating factor: Services such as Uber, Lyft, and Zipcar have been available for several years and have failed to displace car ownership or reduce demand for off-street parking. Additionally, widespread adoption of self-driving cars is several decades away. Carmakers will need to resolve technological, regulatory, legal and insurance hurdles before they are able to exclusively manufacture autonomous vehicles. Further, off-street CBD parking benefits from powerful urbanization trends as American cities become more densely populated. Underutilized assets in valuable locations may be redeveloped for alternative uses.

- **Alternative parking services:** On-demand valet services, such as Lux, Zirx, and Valet Anywhere, are seeking to disrupt the traditional parking model and may reduce demand for CBD parking garages.

  Mitigating factor: On-demand valet services have failed to disrupt the traditional parking model due to difficulties executing these services at competitive prices. Their strategy of parking cars further away to take advantage of lower rates at less in-demand facilities faces logistical challenges, including traffic, in an urban environment. Several on-demand valet services have already gone out of business.

FOR INSTITUTIONAL INVESTOR AND FINANCIAL ADVISOR USE ONLY.

- **Liability risk:** Parking garages typically face liability related to damages incurred at the parking location. The extent of this liability varies by state and depends on the specific circumstance of the claim.

  Mitigating factor: Parking companies vulnerable to litigation carry insurance to minimize the financial damage from claims. In addition, parking companies typically employ 24/7 video surveillance to effectively monitor garages as well as minimize exposure to unwarranted claims.

- **Potential cash leakage from business:** Some parking garages and lots receive a large portion of their revenues in cash. This creates opportunities for employee theft and cash leakage.

  Mitigating factor: New technology in the parking industry has substantially reduced cash transactions. Customers typically pay for their parking through vending machines, parking apps or license plate recognition systems.

- **Parking is a labor intensive business:** Labor costs represent a large portion of a parking garage's operating expenses. Therefore, the industry is subject to potential labor pressures or wage increases.

  Mitigating factor: Innovation has reduced the labor required to operate a parking company. Advancements in payment technologies and central monitoring surveillance systems have reduced labor expenditures in the parking industry.

CONCLUSION

- Parking infrastructure assets benefit from monopolistic characteristics, providing stable and defensive cash flows linked to inflation through price increases and capital appreciation.
- Urban population growth and new construction are expected to further increase demand for parking and limit supply as parking lots are redeveloped.
- Investments can meet a range of client risk-return needs depending on their structures, which include leases, management contracts, concessions and full ownership.
- Strong parking industry fundamentals and near-term demand trends outweigh risks, such as the potential for ride-sharing services and autonomous cars to weaken future demand.

About Nuveen

Nuveen, the investment manager of TIAA, offers a comprehensive range of outcome-focused investment solutions designed to secure the long-term financial goals of institutional and individual investors. Nuveen has $970 billion in assets under management as of 29 Dec 2017 and operations in 16 countries. Its affiliates offer deep expertise across a comprehensive range of traditional and alternative investments through a wide array of vehicles and customized strategies.

For more information, contact your Global Investment Advisory Services representative, or visit us at nuveen.com

Endnotes

1 IBISWorld Industry Report 81293: Parking Lots & Garages in the U.S., November 2017.

Risks and other important considerations

This material is presented for informational purposes only and may change in response to changing economic and market conditions. This material is not intended to be a recommendation or investment advice, does not constitute a solicitation to buy or sell securities, and is not provided in a fiduciary capacity. The information provided does not take into account the specific objectives or circumstances of any particular investor, or suggest any specific course of action. Financial professionals should independently evaluate the risks associated with products or services and exercise independent judgment with respect to their clients. Certain products and services may not be available to all entities or persons. Past performance is not indicative of future results.

Economic and market forecasts are subject to uncertainty and may change based on varying market conditions, political and economic developments. As an asset class, real assets are less developed, more illiquid, and less transparent compared to traditional asset classes. Investments will be subject to risks generally associated with the ownership of real estate-related assets and foreign investing, including changes in economic conditions, currency values, environmental risks, the cost of and ability to obtain insurance, and risks related to leasing of properties. Diversification is a technique to help reduce risk. There is no guarantee that diversification will protect against a loss of income.

The investment advisory services, strategies and expertise of TIAA Investments, a division of Nuveen, are provided by Teachers Advisors, LLC and TIAA-CREF Investment Management, LLC. Securities offered through Nuveen Securities, LLC.

©2018 Teachers Insurance and Annuity Association of America (TIAA), 730 Third Avenue, New York, NY 10017

FOR INSTITUTIONAL INVESTOR AND FINANCIAL ADVISOR USE ONLY.

GPE-PRKINF-0218P 429450-INST-Y02/19

nuveen

A TIAA Company