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Highlights

- Ridesharing services are a disruptive transportation innovation, especially in major urban areas. While deflationary within the transportation category, their impact on broader inflation metrics is small.
- Inflation metrics can be slow to capture recent changes in consumer spending patterns, like the rise in usage of ridesharing services.
- The Bessemer Price Index (BPI) has trended slightly higher than the overall Consumer Price Index (CPI) in recent months; some of this differential is accounted for by trends in school tuition, housing costs, lodging away from home, and motor fuel.

Inflation trends may not be the hottest topic at the dinner table — but when you look beneath the surface, many of the drivers are interesting to watch. Additionally, inflation is one of the most important economic variables tracked by economists, policymakers, and investors. As a result, we work to provide our clients with periodic updates on current inflation trends and the Bessemer Price Index (BPI), which adjusts the weightings of items that make up CPI to better estimate how Bessemer clients experience inflation. In the past, we have written

reports discussing the Amazon effect and deflation, the Trump effect following the 2016 election, and how travel-related inflation is measured. In this *Investment Insights*, we review the rising trend of ridesharing services — driven by application (“app”) technologies — and how it is being captured in broad inflation metrics as well as the BPI.

The Explosion of Ridesharing Services

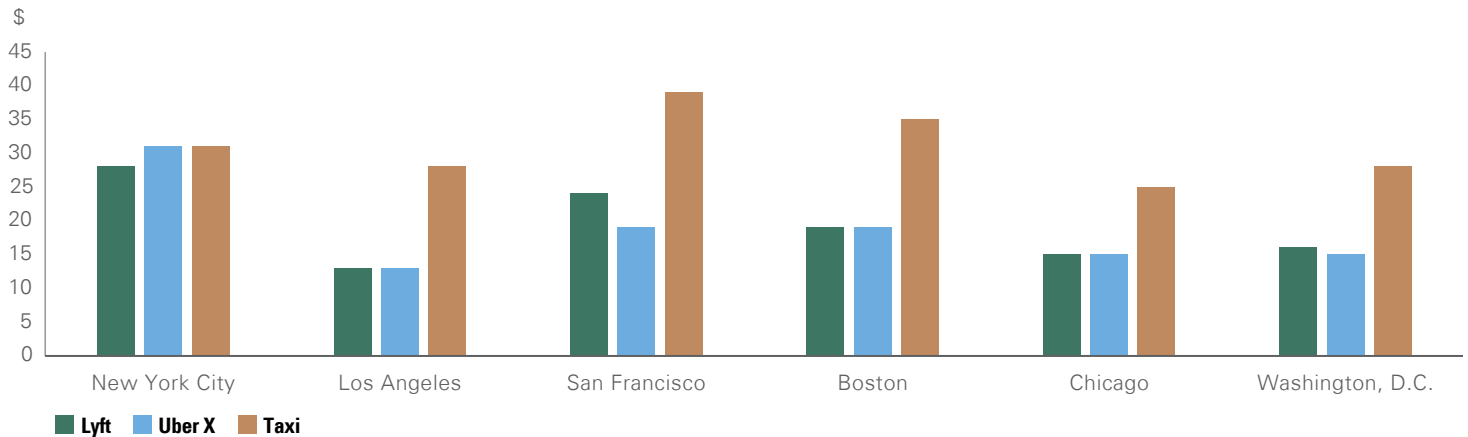
The introduction of programmed apps has played a pivotal role in shaping the shared economy that we live in. Today, there are over two million Apple and three million Google Android apps.

The rise of apps has propelled an explosion in ridesharing services, though from a historical perspective, the concept of ridesharing is nothing new. Arguably the first documented form of this concept was horse-drawn coach services in Europe in the 1600s. In 1897, electric battery-powered taxis first hit the market in London. That same month, 12 electric-powered cabs also appeared on the streets of New York. In recent decades, the taxi service industry has been found in almost every part of the country and world.

Today, smartphone application-based ridesharing service providers such as Uber, Lyft, and Via are becoming ubiquitous, as they appeal to consumers for cost, convenience, and accessibility. For instance, a recent price comparison of an estimated trip to one of Bessemer’s offices highlights the cost difference between ride-sharing services and taxis (Exhibit 1). Taxis were estimated to be about twice the price in the selected cities, with the exception of New York City. Other appealing features include promotional discounts, such as 30% off for a first-time rider, and more accessibility in areas that traditional taxi services do not frequent, such as outer-city or suburban neighborhoods.

Exhibit 1: Estimated Cost for a Trip via Ridesharing App or Taxi to a Bessemer Office in Selected Cities

Key Takeaway: Ridesharing services like Lyft and Uber are typically cheaper than taxis.



As of March 21, 2019. The estimated cost is based on a seven- to eight-mile ride.
Source: Ride Guru

There is plenty of room for growth, given current patterns of how people travel and who utilizes ridesharing services. Surveys conducted in 2018 by Pew Research and Gallup looked into the characteristics of ridesharing consumers and the frequency of ridesharing usage. About half of all younger consumers (ages 18 to 29) have used ridesharing services, while about 75% of consumers ages 50 and over have never used a ridesharing service. Additionally, consumers with high annual incomes and residents of urban or suburban areas are more likely to have used the service compared to lower-income earners and rural residents. Overall, only about 4% of U.S. adults used ride-sharing services weekly in 2018, a small increase from 3% from 2015. Most Americans — even those residing in urban areas — continue to drive alone to work (Exhibit 2).

Unique services, promotions, and incentives may drive future demand for ridesharing services and other innovative forms of transportation. For example, Uber recently launched a loyalty program in select cities to reward frequent users of its app; it also purchased a bike and scooter hire services company called Jump. Lyft launched a promotional campaign last year called “Ditch Your Car” to incentivize consumers

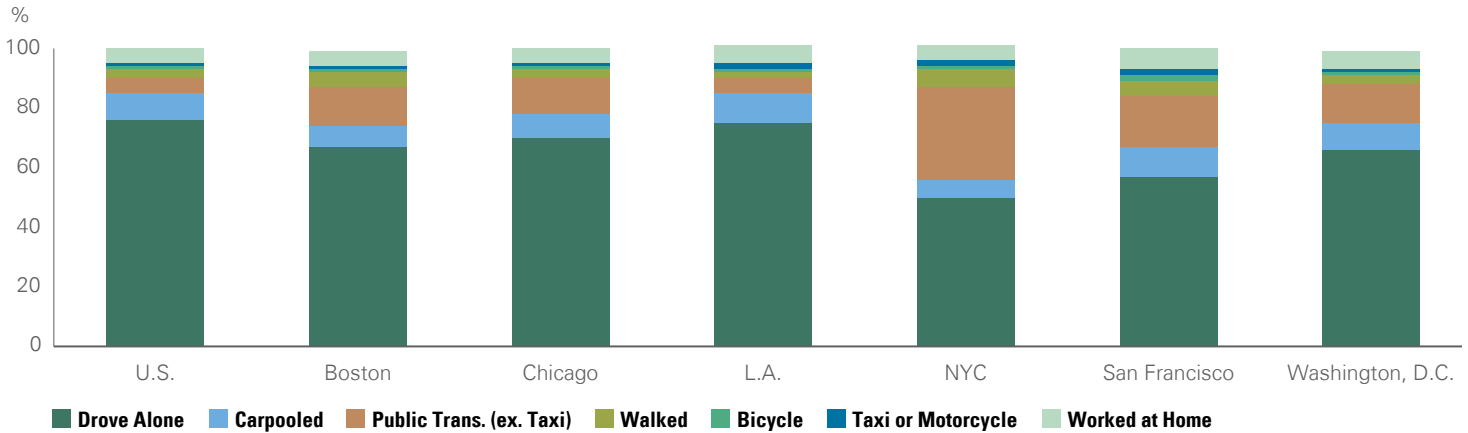
to utilize Lyft Shared, bikesharing, Zipcar, or public transportation instead of their personal cars for 30 days in exchange for transportation credit. Lyft and Uber are also integrating public transportation options into their apps. In January, Via and the Los Angeles County Metropolitan Transportation Authority partnered to offer consumers a ride in a Via carpool to a bus or train station using a TAP card for \$1.75 or for free for eligible low-income individuals for one year.

Additionally, urban areas are investing in alternative forms of transportation, such as bike and scooter sharing, to reduce congestion and pollution. These services are partially in response to the success of ridesharing services and can, at times, serve as a substitute for mass transit and ridesharing services. In this way, the expansion and widespread accessibility of services may put some downward pressure on ridesharing service prices. Recent developments in this area include the following:

- New York City added 20 miles of bike lanes last year, bringing the total to 1,217 miles.
- Lyft is planning to triple the number of Citi Bikes to around 40,000 and double its current service area over the next five years in New York.

Exhibit 2: Transportation to Work in Metro Areas — Percent of Workers Ages 16 and Over Within Each Metro Area

Key Takeaway: Despite a rise in transportation options, most U.S. commuters in metro areas drive alone to work.



As of 2017.
Source: U.S. Census

- In 2018, two shared e-scooter companies — Scoot and Skip — were granted permits for one year to operate in San Francisco under a pilot program.
- Bikesharing programs in other U.S. urban areas include Boston’s BLUEbikes, Pittsburgh’s Healthy Ride, and San Diego’s Discover® Bike.

Startups that offer shared e-scooter and e-bike services like Lime are also planning to expand in the U.S. and globally. In its 2018 annual report, Lime reported that 30% of its riders used a Lime scooter to replace an automobile trip. As more options become available and city infrastructure adapts to these new services, an increasing number of consumers will likely choose alternative forms of transportation, especially if they cost less and are faster. The question we want to explore is how metrics such as inflation are capturing the evolving consumer transportation experience.

The Art and Science Behind Measuring Inflation

The U.S. Bureau of Labor Statistics (BLS) is charged with measuring inflation via the Consumer Price Index (CPI, see Measuring Inflation as It Relates to

Transportation). As one can imagine, it is nearly impossible for the BLS (or any data producer) to maintain an index that can perfectly capture the economy at any given moment. New goods and services related to the sharing economy exemplify this issue. Specifically, ridesharing services like Lyft and Uber were first introduced to the market in 2009. Today, these companies and others like them are available in most U.S. urban areas, but they are difficult to capture within data collectors’ frameworks. When surveyed by the BLS, individuals are likely grouping their Uber and Lyft rides under the “taxi fare” category of intracity transportation, since they are considered substitutes by most consumers. Some new consumer services like bike or e-scooter-sharing are likely not being captured in BLS data as they don’t fall within the survey questions. That said, the BLS does include a very small weighting titled “unsampled public transportation” within the larger public transportation category where these services may show up.

It will take some time for items such as ridesharing and bikesharing services to have their own inflation categories. The BLS specifically states that it is hesitant to adopt sweeping changes to the structure of its index and large revisions are intentionally infrequent because of the large costs associated with them and the burden on CPI users.

Measuring Inflation as It Relates to Transportation

The U.S. Bureau of Labor Statistics (BLS) publishes and maintains one of the most important inflation metrics, the Consumer Price Index (CPI), which is intended to measure how the average U.S. urban consumer experiences inflation. The index is revised to adjust for changes in consumption patterns and has gone through six comprehensive revisions since its inception in 1921, with the most recent one in 1998.

Today CPI is constructed using data from 38 geographical areas and 211 goods and services categories. Each of these categories is then used to estimate price changes of larger groupings. For instance, intracity transportation is a services category item within the larger public transportation category and includes: “intracity mass transit,” “taxi fare,” and “car and vanpools.” The BLS publishes the price index and relative weighting importance for intracity transportation but not the items that make it up. This price index of intracity transportation is

constructed using a weighted average of pricing data from all 38 geographical areas. Headline CPI that is most heavily quoted in the press is a weighted average of all price changes of the 211 goods and services from the 38 regions.

The BLS employs various methods to construct CPI. One method is via the Telephone Point-of-Purchase Survey (TPOPS) to determine where to price data from. Another data source is the Consumer Expenditure (CE) Survey to formulate the weighting of goods and services within the index and also where pricing data should be collected from. Data collectors obtain prices of thousands of items used to measure CPI by visiting or calling thousands of establishments, like retail and service companies and hospitals. Prices for about 83,000 items are collected each month from around 23,000 establishments. The Housing Survey is used to price rent and owners’ equivalent of rent.

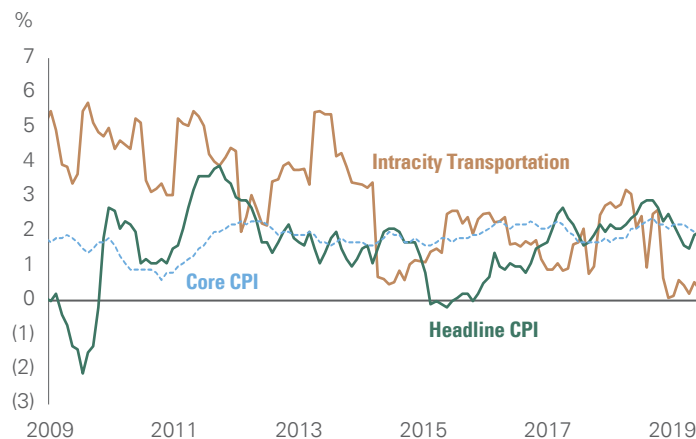
The inclusion of cellphones into CPI is a good example of the lag time between product introduction and inclusion into CPI. Cell phones first became available in the U.S. in 1983 and were not included in CPI until February 1998. By that time, there were around 55 million cellphones in use in the country. Similarly, it took the BLS about 15 years from the introduction of air conditioners to inclusion in CPI.

Closer Look at Intracity Transportation Inflation Trends and the Bessemer Price Index

Over the last decade, the price index of intracity transportation services has been trending down and is currently below both headline and core CPI (Exhibit 3). Headline inflation increased by 2.0% year-over-year in April, and core CPI, which excludes food and energy, increased by 2.1%. Meanwhile, intracity transportation

Exhibit 3: Consumer Price Index for Intracity Transportation Versus Headline and Core — Year-Over-Year

Key Takeaway: Intracity transportation has been trending below overall inflation in recent times.



As of April 30, 2019.

Source: Bloomberg, U.S. Bureau of Labor Statistics

increased by 0.3% over the same time period. Ridesharing services have likely weighed on this item, but its impact is difficult to measure due to limited data availability and lagged consumer data.

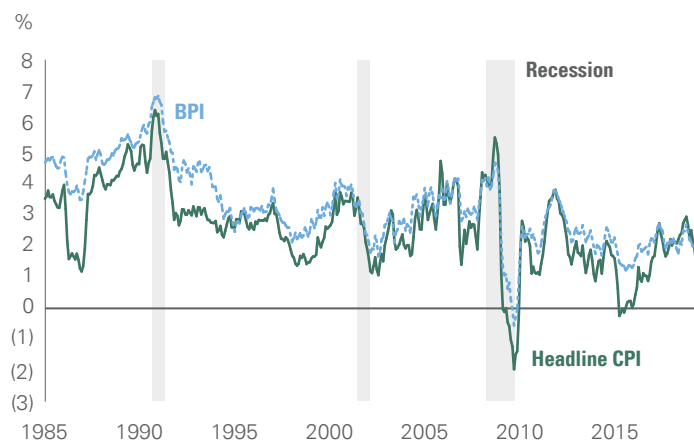
In terms of its larger impact on overall inflation, intracity transportation's weighting is only 0.28% of CPI — so its impact is very small in comparison to items like rent and automobile purchases. The Bureau of Economic Analysis (BEA) also publishes inflation data on taxicabs and other road transportation services in its monthly Personal Consumption Expenditures Price (PCE) Index. Here, trends are similar to CPI, with taxicab services trending identically and other road services exhibiting a deflationary trend. In the BEA study, both are assigned very small weightings within the larger price index, totaling under 0.2% of the PCE Index.

Turning to the BPI, we do not assign a specific weighting to intracity transportation but do for the larger category of public transportation, which also includes airline fares and other intercity transportation. CPI's weighting for this item category is 1.1% versus BPI's at 4.4%. Higher income earners tend to allocate a higher share of their overall spending to services like taxi and airline fares, hence the higher weighting to BPI. Over the past year, the public transportation component of CPI has decreased by 1.2%, and each subgroup of this category is also trending well below overall inflation. Given the higher weighting to BPI, this component of transportation is a greater drag on BPI's annual growth rate compared to CPI.

Despite the greater downward pressure of transportation on BPI, this inflation index has been trending higher than CPI recently (Exhibit 4). Contributors to this differential include higher weightings to tuition and other school fees, childcare, and lodging away from home, and a lower weighting to motor fuel. One of the other major category weighting differences is owners' equivalent of rent (BPI's weighting is about half that of CPI's). This consumer service item is trending well above overall inflation at over 3% year-over-year,

Exhibit 4: Bessemer Price Index Versus Consumer Price Index — Year-Over-Year

Key Takeaway: Inflation as measured by Bessemer's price index has trended slightly higher than CPI in recent months.



As of April 30, 2019.

Source: Bessemer Trust, Bloomberg, FactSet, U.S. Bureau of Labor Statistics

resulting in a greater positive impact on CPI versus BPI. That said, the other weighting differences and those products' inflation trends are large enough to offset this and result in a higher year-over-year BPI price change versus CPI.

Concluding Remarks

As investors, we are constantly examining the world around us to find the best opportunities to both protect and grow client capital with a long-term focus. Macroeconomic metrics like wage growth, business sentiment, and inflation shed light on important trends from a bird's-eye view and are inputs into our investment decision-making process. While ride, bike, and scooter sharing are unlikely to be material drivers of overall inflation trends today, the ongoing impact of growing, disruptive technologies is important to watch as we seek to understand how they affect inflation within their respective categories and more broadly.

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