# Taxi and Ridesharing Services in New York City

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## Abstract

We obtained data for ridesharing and taxi services in New York City to explore potential data sources and methods for constructing price deflators for taxi services (NAICS 485310) and found that price indexes constructed under different assumptions can show very different patterns. In particular, excluding ridesharing from the sample shows appreciably faster growth than an index that includes it. Moreover, there is a potential substitution bias problem: indexes that treat ridesharing and taxi services as the same service show slower price increases than those that treat them as different services.


## Introduction

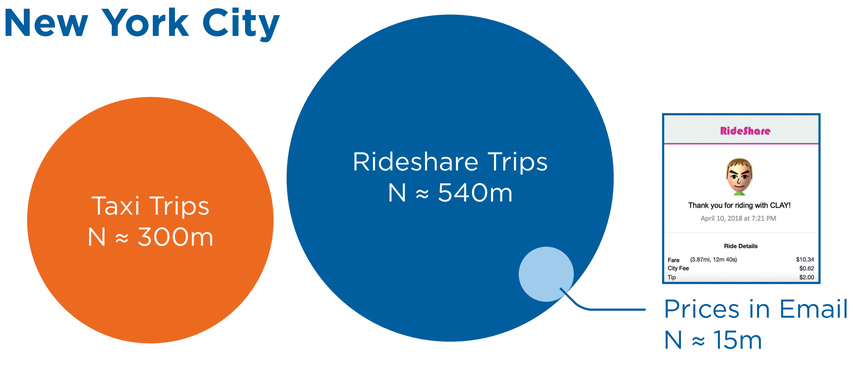
The rapid growth in platform-enabled services has raised questions about the ability of our standard data sources and methods to keep up with the rapid changes in this sector. With regard to nominal spending, the concern is that new providers of these services may be missed from the establishment surveys typically used to collect revenue data. There is a similar issue for price indexes. At the same time, the digital revolution has brought with it novel data sources that could supplement the data underlying the national accounts. BEA is exploring new data sources that could be used to assess any potential biases in our measures of spending and the price deflators that we use to translate that spending into real output.

## Methods

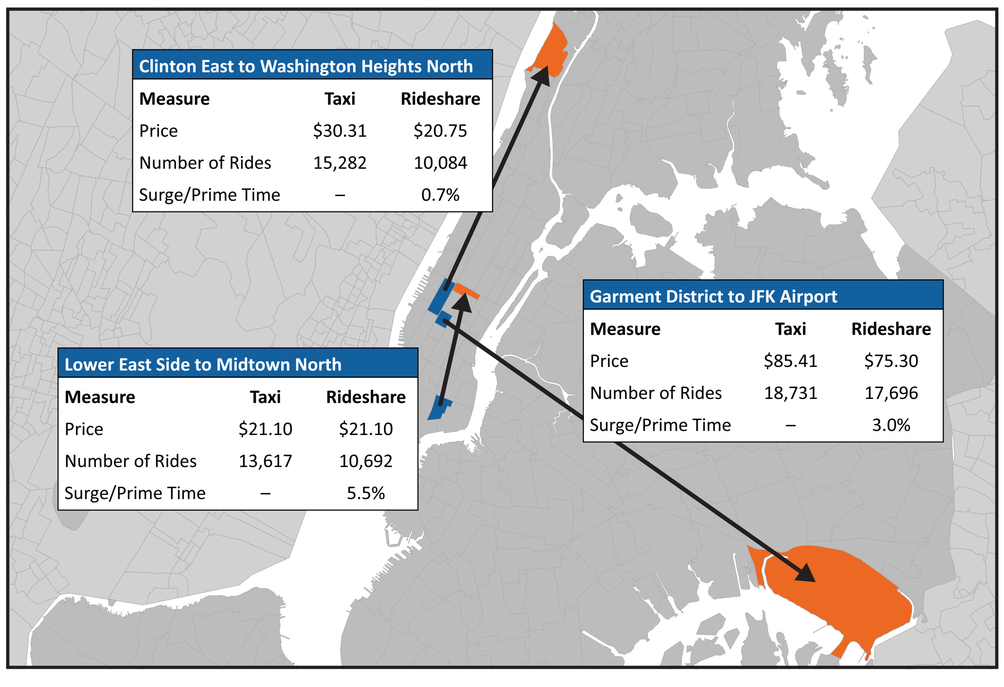
Our price indexes use ride-level data for ridesharing trips from Slice, a company that collected information on 15 million ride-share trips by harvesting email boxes with each user's consent. We combined those data with the following publicly available data from the New York City Taxi and Limousine Commission:

- Counts of 540 million rideshare trips by route and time of day, used to create sampling weights for the Slice sample
- Full pricing details and counts for the full population of 300 million yellow and green cab rides, to represent rides on conventional taxis

### All Transactions in New York City




### Defining Routes Using Taxi Zones




Example personal transportation services routes by average price differentials of +$10, $0, and –$10 in 2017.

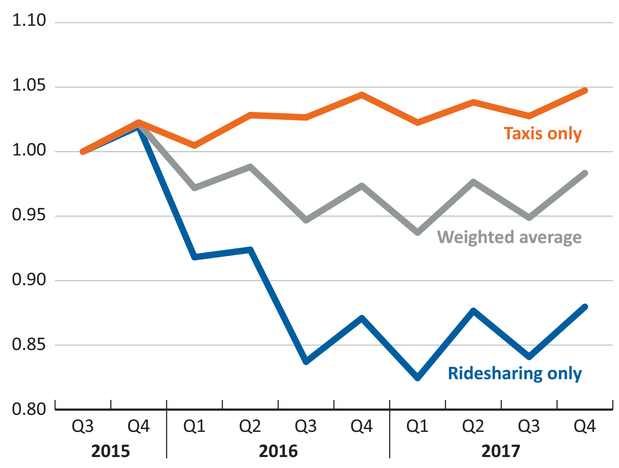
Statistical summaries compare the price differences, number of rides, and estimated proportion of rides affected by a pricing multiplier (e.g., surge or prime time).

Price index comparisons:

- Index that treats ridesharing and taxi rides as *different* services (different quality) and tracks their price changes separately
- Index that treats ridesharing and taxi rides as the *same* service and tracks price change as a unit value calculated over all merchants

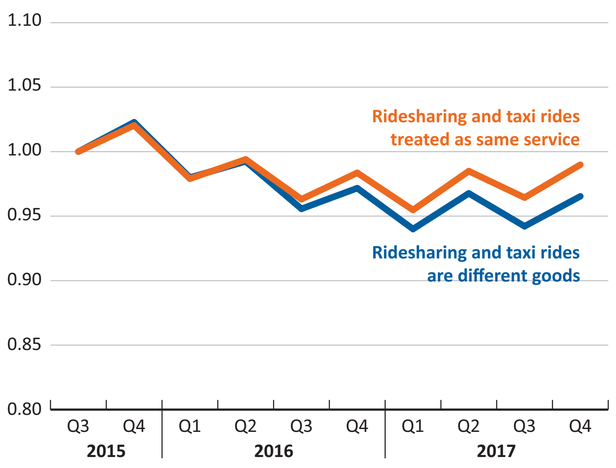
## Preliminary Results

### Price change for taxi rides is very different from that of ridesharing




*Source: Aizcorbe and Chen (2019)*

### Price indexes depend on assumption of quality differences in taxi versus ride sharing services




*Source: Aizcorbe and Chen (2019)*

## Conclusions

- Data for New York City illustrate the (upward) biases that could arise when ridesharing prices are not included in the sample.
- The data also suggest that price indexes that treat ridesharing and taxi services as the same quality service show faster price declines than indexes that treat them as different goods.
- Caveat: Data from other cities could well show different results.

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