Towards A Cost Estimate of A NYC UberX Driver

A White Paper

By Lawrence Meyers

June 10, 2015

TABLE OF CONTENTS

1. Introduction

There has been a lot of media attention regarding the disruptive nature of ridesharing, yet very little actual data has been presented. To date, no studies have been authored that purport to show estimated revenues or costs of rideshare drivers, and only widely-varying anecdotal examples exist.

Reliable revenue and cost estimates are essential, so that individuals may calculate expected net income from ridesharing efforts, and determine if the opportunity presents a value proposition or not. As it stands, prospective drivers are subject to aggressive marketing by rideshare companies, including being lured with the promise of bonuses of several hundred dollars and high five-figure annual income, but without revealing the costs and risks associated with ridesharing.

Regrettably, the data necessary to build effective income models has proven difficult to come by. Uber Technologies, the largest rideshare company, has been evasive in providing comprehensive data. The company's obfuscation should raise the alarm for prospective drivers, for were the data unequivocal regarding the value proposition, it would seem to be in the company's favor to trumpet it.

Instead, drivers, analysts, and market observers are forced to rely on anecdotal evidence from third-parties regarding the opportunity afforded by rideshare. A detailed examination of internet resources yield far more complaints than adulation. A few independent analysts have provided expansive assessment of revenues and costs, which echo the anecdotal complaints.

Proponents of rideshare declare that driving provides revenue at "marginal additional cost" due to the dual use of already-utilized resources. That is far from true, although the exact additional cost has been difficult to assess.

Thus, this paper attempts to estimate the true per-mile costs for an UberX driver operating in New York City, the highest-profile and most controversial geographic location. New York provides the major battleground between an entrenched street-hail taxi system and rideshare. It may arguably be the most difficult environment for a rideshare driver to operate in.

The paper specifically focuses on the UberX driver, so as to provide data that can be eventually compared to that of a New York City taxi driver. Uber's other products are not considered direct competitors to yellow taxis, as they provide services closer to that of the traditional, more expensive, black-car service.

To address the deficiency on the cost side of the equation, we built an economic model based on existing survey data and cost information obtained from third parties.

As a starting point, we utilized a study commissioned by Uber Technologies, "An Analysis of the Labor Market for Uber's Driver-Partners in the United States", authored by Jonathan Hall and Alan Krueger ("H/K"). The H/K relies on survey results of 601 of Uber's drivers across the nation.

The H/K study found that 38% of drivers had no other job, 31% had a full-time job and drove for Uber part-time, and 30% had part-time jobs and also drove for Uber part-time.

Consequently, we derived a basic cost model for the full-time NYC UberX driver, additional models for the part-timer.

The findings reported in this white paper indicate a cost of 27 to 37 cents per mile for the UberX driver in NYC. However, there are possibly catastrophic costs associated with deficiencies in driver insurance. Carriers are likely to void policies of drivers that fail to disclose they are rideshare drivers, and those that do are subject to cost-prohibitive insurance premiums.

We therefore suggest all rideshare drivers, not only those in NYC, to exercise extreme caution before engaging in this line of work.

Our policy recommendations include suggestions that the insurance industry adapt as quickly as possible to this new mode of transportation, and that regulators decide the extent to which current insurance requirements fall short of those necessary to benefit the public.

2. Model Overview

Utilizing data available from third-parties, our model calculates costs from each of the following categories:

- Vehicle purchase, which includes financing and lease options
- Depreciation, in lieu of purchase for those who already own vehicles
- Fuel, derived from estimates of miles driven for rideshare and life of a model vehicle.
- Maintenance, derived from the same.
- Repairs, derived from the same.
- Tolls, for those commuting into NYC to operate/
- Insurance, derived from the difference paid for additional miles accrued as a rideshare driver versus what is paid when employed elsewhere.

We also assess intangible costs and undisclosed risks, with a focus on insurance liability.

3. Cost By Category

For all cost models, we assumed an UberX driver utilizing a black, baseline 2015 Toyota Camry (except when noted).

For the full-time driver, we assumed he would have roughly the same schedule as a NYC taxi driver, as reported by the NYC Taxi & License Commission in its 2014 Fact Book. That would amount to a 12-hour shift, six days per week, for fifty weeks per year.

For cost elements involving geography, we randomly selected three cities within a reasonable distance of New York City, based on the availability of a nearby Toyota dealer. We selected Clifton, NJ; Yonkers, NY; and Garden City, Long Island.

3.1 Vehicle Purchase

We surveyed the prices of 2015 Camrys using TrueCar.com's estimate, added appropriate sales tax, and averaged the three prices to find the purchase price. We then multiplied by 81% to find the portion of the car used for UberX driving (see Section 3.2 for how we arrived at that percentage). We then derived three scenarios: purchase, loan, and lease.

Vehicle Cost	*Cash*	*2.33%; 36 month*	*36 months*
		Excellent Credit	*$2,039 down*
		$2500 down	*10K mi /yr*
	Purchase[1]	Loan[2]	**Lease**[3]
Clifton, NJ	$22,501	$23,226	$7,687
Yonkers, NY	$22,790	$23,515	$6,853
Garden City, Long Island	$23,201	$23,926	$7,446
Average	$22,831	$23,556	$25,627
78% Uber usage	***$18,493***	***$19,080***	***$20,758***

Data used in final model

Purchase: $18,493, paid in full

Loan: $19,080. We assume a buyer with excellent credit, $2500 down payment on a 36-month loan at 2.33%.

Lease: $20,758. We assume a 36-month lease, with $2,039 down including all fees, an 10,000 mile allowance per year with a fee of 10 cents-per-mile over 30,000 total miles.

[1] TrueCar.com prices in Clifton, Yonkers, and Hempstead.
[2] Bankrate.com auto loan calculator
[3] inc. $0.1/mi. fee over 30,000 miles; prices from Prestige Toyota, Westchester Toyota, and Toyota of Huntington.

3.2 Annual Miles Driven

In order to determine total annual miles driven, we first had to derive several pieces of preliminary data: driver age, annual non-work miles driven, annual commuting miles, and annual work miles. We summarize that data here, and itemize each element in the sections below.

Total Annual Miles Driven	
Annual Non-Work Miles	*12,813*
Annual Commuting Miles	*10,200*
Annual Work Miles	*33,900*
Total Annual Miles	*56,913*

Data used in final model

TOTAL = 56,913 miles per year
Work + Commuting miles = 44,100 (81% of total miles)

3.2.1 Driver Age

We began by assessing the average UberX driver age. Using the H/K data, a weighted average of the mid-point of each age range provided in the study resulted in a male driver, 41 years of age.

Age	Midpoint	Percent	Multiplier
18-29	24	19%	4.584
30-39	34	30%	10.234
40-49	45	26%	11.835
50-64	57	22%	12.426
65+	67	3%	1.809
		Average	**41**

3.2.2. Annual Non-Work Miles Driven

To determine the average annual total miles driven annually when our UberX driver is not working, we first look to the U.S. Department of Transportation's Federal Highway Administration.

The FHA provides annual averages for *total* miles driven, based on age, as provided the Office of Highway Policy Information. Males between the ages of 35 and 54 drive an average of 18,858 miles per year.[4]

[4] http://www.fhwa.dot.gov/ohim/onh00/bar8.htm

We next determine the number of non-work miles driven annually. The 2009 National Household Travel Survey[5] provides the most recent data set, from which we derive the average commute length to be 12.09 miles each way[6], 250 days per year, for a total of 6,045 average commuting miles annually.

Annual Miles Driven	Miles
DOT, Men, Age 35-54[7]	18,858
Average Commute Length	12.09
Days per year commuting	250
Annual Commuting Miles	6,045
Annual Non-Work Miles	*12,813*

Annual non-work mileage = 12,813

3.2.3 Annual Commuting Miles

An UberX driver has two choices. Either he lives in New York City and pays for monthly parking, or he commutes. We present commuting costs now, and present storage costs later, in the "Variable Costs" segment, although the costs are virtually identical.

We first determine commuting costs by selecting the three cities previously mentioned. By coincidence, these three cities were almost the same distance from midtown Manhattan, as determined by TravelMath.com.

Distance to Midtown[8]	
Clifton, NJ	18
Yonkers, NY	19
Garden City, Long Island	16
Average	*17*
Annual Commuting Miles	*10,200*

Total annual commuting miles = 10,200

[5] http://nhts.ornl.gov/2009/pub/stt.pdf
[6] Table 27, Private Vehicle, 2009
[7] See Footnote 5.
[8] Travelmath.com

3.2.4 Annual Work Miles

As we hope other studies will eventually compare this data with that of NYC taxi drivers, we try to derive how many miles a NYC cabbie drives each day, as well as several other pieces of useful data. We utilized data from the New York City Taxi & License Commission's 2014 Fact Book.[9]

Industry participants report owner-operators own 40% of all taxi medallions in NYC, drive 320 shifts annually, and 77% of them lease their medallion to another driver 365 days per year, for 685 total shifts per year.

Leasing operators generally have a taxi leased all day, every day, each year, for a total of 730 shifts. They account for 60% of medallion owners.

Thus, the weighted average per taxi is 703 shifts per year.
The Fact Book reports the average taxi drives 70,000 miles per year.
This implies the average taxi drives 100 miles per shift.
The Fact Book states the average driver works a 9.5-hour shift (after deducting 2.5 hours from a 12-hour total shift for breaks).
The average speed of a taxi is thus 10.5 mph.

However, a comprehensive data set obtained from a third-party for all taxi trips in 2013[10] derived an average speed of 13.3mph, implying the average taxi travels 126 miles per shift.

We thus selected to average the two data sets to arrive at an average of 113 miles per shift.

We assign an UberX driver the same number of total work miles, and multiply by 300 days to arrive at an annual total.

Work Miles	
Fact Book Daily Miles	100
Third-Party Daily Miles	126
Average Daily Work Miles	113
Annual Work Miles	*33,900*

Total annual work miles = 33,900

[9] http://www.nyc.gov/html/tlc/downloads/pdf/2014_taxicab_fact_book.pdf
[10] http://animalnewyork.com/2014/data-reveals-worst-times-traffic-nyc/

3.3 Life of Vehicle

Research firm R.L.Polk has determined that the average vehicle is used 11.4 years[11] before disposal. When combined with the DOT's estimate of average annual miles driven for the 30-54 age range, we find:

Total miles driven over life of vehicle = 214,981

This estimate is deliberately placed at the high end of the possible mileage range in order to offer a conservative assessment of the life of an UberX driver's vehicle. It is also consistent with dozens of news articles stating that cars are now lasting 200,000 miles over their lifetimes.

Thus, we arrive at a final estimate of an UberX vehicle's life by dividing 214,681 miles by 56,913 annual miles driven, or 3.8 years.

Life of Vehicle	Years/ Miles
Average Life of Car	11.4
DOT Miles x Avg. Life	214,981
Total Annual Miles	56,913
Life of Vehicle	***3.8***

Data used in final model

Vehicle life span = 3.8 years

[11] http://www.autonews.com/article/20130806/RETAIL/130809922/average-age-of-u.s.-car-light-truck-on-road-hits-record-11.4-years

3.4 Repairs and Maintenance

We arrived at an assessment of costs for repairs and maintenance, respectively, by averaging the costs from three sources: Consumer Reports, Edmunds, and Intellichoice, and then multiplying by 78% to properly allocate the rideshare portion of these costs.

Edmunds only provided maintenance estimates for the first five years of ownership, assuming 15,000 miles driven per year, with maintenance as defined as both scheduled and unscheduled replacements (tires, alignment, etc), as well as a $6 daily average for car washes and interior cleanings[12]; and repairs defined as those not under warranty.

We used a conservative model by multiplying five-year cumulative costs by 2.28 to reflect 11.4 years of maintenance costs, accelerated into a 3.8-year ownership period.

Edmunds maintenance costs come to $6,443. Repair costs come to $1,409.
Intellichoice also offered costs for the first five years. Maintenance costs came to $3,826. Repair costs came to $1,272.
Consumer Reports did not provide repair costs, but did provide maintenance costs for the first eight years. We took the average annual cost, and multiplied by 11.4 to arrive at $4,275.

Edmunds	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**11.4 Years**
Maintenance	$56	$455	$406	$815	$1,094	**$6,443**
Repairs	$-	$-	$89	$215	$314	**$1,409**
Intellichoice	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**11.4 Years**
Maintenance	$-	$67	$428	$744	$439	**$3,826**
Repairs	$-	$-	$74	$160	$324	**$1,272**
Consumer Reports	**Year 1**	**Year 1-3**	**Year 1-5**	**Year 1-8**		**11.4 Years**
Maintenance	$150	$700	$1,400	$3,000		**$4,275**

Life of Vehicle Average	
Maintenance	**$10,621**
Repairs	**$1,046**

Data used in final model

Life of vehicle maintenance costs = $10,621
Life of vehicle repair costs = $1,046

[12] Assumes 2/3 of drivers do daily cleanings at a $15 car wash average, and 1/3 of those cleaned the vehicle at home, and rounded down to be conservative.

It is likely that actual costs will be significantly higher, as major replacements of items such as a compress or transmission, will become increasingly likely over 214,981 miles.

3.5 Fuel Costs

We averaged the cost of one gallon of gasoline, as surveyed by AAA[13], for each month from May 2014 to May 2015 to arrive at $3.23 per gallon. The Toyota Camry is rated[14] at 25 mpg city and 35 mph highway. As we expect 60% of total miles driven to be within NYC, and assume half of the 19% of non-work miles to be city miles, we arrive at an average of 28 mpg.

Our UberX vehicle is driven 44,100 miles per year (work and commuting) for 3.8 years, or 167,580 work and commuting miles in total. Dividing by 28mpg, we arrive at total gas used of 5,985 gallons, for a total fuel cost of $19,336 over the life of the vehicle.

Annual Work Miles	33,900
Annual Commuting Miles	10,200
Annual Work + Commuting	44,100
Work + Commute/ Life of Vehicle	167,580
Camry MPG	28
Total Gallon	5,985
Fuel Cost/Life of Vehicle	**$19,336**

Data used in final model

Fuel Cost = $19,336

[13] http://fuelgaugereport.aaa.com/states/new-york/new-york-metro/
[14] https://www.truecar.com/prices-new/toyota/camry-pricing/

3.6 Insurance Costs

Insurance proves to be the most difficult category to estimate. Premiums depend on more variables besides driver age and gender. In addition, a driver would carry insurance regardless of whether or not they were also ridesharing, so the insurance cost of rideshare would have to be calculated.

We accomplished this by obtaining two quotes from insurance carriers.

The first quote assumed a 41 year old single male, with a clean driving record, no accidents, excellent credit, and a new 2015 Camry; applying for a $150,000/$300,000 liability and uninsured motorist coverage, plus comprehensive and collision coverage with a $500 deductible for each, as well as $5,000 in medical payments. We provided the carrier with total annual mileage driven of the DOT's 18,858 mile average, of which 12,813 were non-commute miles and the remainder were commuting miles.

We subtracted this quote from a second quote with the same parameters, except using 10,200 annual commuting miles and 33,900 miles used while working. We did not disclose that the vehicle owner's work was ridesharing (to be discussed below under "Insurance Risks of the Uber Driver").

We surveyed five major carriers in each of the three cities indicated earlier, and averaged the differences between the two quotes for each carrier in each city. The difference in insurance costs came to $1,633 annually, or $4,899 for the 3.8 years of the vehicle's life.

We then discounted the comprehensive and collision components of each quote by 15% in the second and third years to account for the declining residual value of each vehicle.

Insurance	Low Miles	High Miles	Differential
Clifton, NJ			
Carrier 1	$1,094	$2,711	$1,617
Carrier 2	$1,023	$2,687	$1,664
Carrier 3	$1,125	$2,788	$1,663
Carrier 4	$1,083	$2,707	$1,624
Carrier 5	$1,067	$2,688	$1,621
Average			**$1,638**
Yonkers, NY			
Carrier 1	$1,100	$2,718	$1,618
Carrier 2	$1,043	$2,689	$1,646
Carrier 3	$1,167	$2,835	$1,668
Carrier 4	$1,139	$2,799	$1,660
Carrier 5	$1,179	$2,813	$1,634
Average			**$1,645**
Garden City, NY			
Carrier 1	$1,044	$2,652	$1,608
Carrier 2	$1,001	$2,644	$1,643
Carrier 3	$1,031	$2,666	$1,635
Carrier 4	$1,022	$2,611	$1,589
Carrier 5	$1,002	$2,600	$1,598
Average			**$1,615**
Grand Average			**$1,633**
Life of Vehicle			***$6,204***

Data used in final model

Insurance differential = $6,204

3.7 Tolls

We averaged the toll cost from our three selected cities into NYC.

Tolls	Amount
From Clifton, NJ to NYC	$9.75
From Yonkers, NY to NYC	$5.54
From Garden City to NYC	$5.54
Average	$6.94
Annual	$2,083
Life of Vehicle	***$6,666***

Data used in final model

Tolls = $6,666

3.8 Residual Value

As we assume the car is disposed of after 3.8 years and 214,981 miles, we are left with the question of whether it maintains any residual value that could be subtracted from the total costs.

Using Edmunds, we first determined the purchase price of five different Camry vehicles from different model years, by averaging their invoice and MSRP prices.

Then we determined the residual value of each vehicle, sold after five different ownership periods, designed to reflect a spectrum of possible values based on vehicle year, length of ownership, and miles driven.

Avg. Price	**Edmunds**	**Value Retained**
2010 Camry	Sold in 5 yrs	
$19,800	$10,715	54%
2005 Camry	Sold in 10 yrs	
$18,200	$3,892	21%
2003 Camry	Sold in 12 yrs	
$18,050	$3,070	17%
2012 Camry	Sold in 3 yrs	
$21,600	$8,444	39%
2004 Camry	Sold in 11 yrs	
$18,800	$3,366	18%
Average Retained Value		**30%**

The 2015 Camry average purchase price (from Section 3.1) is $22,831, leaving a residual value of $6,822. However, as a matter of practicality, used vehicles with 200,000+ miles were difficult to find within a 500-mile radius of each of our three base cities. Those we did find were being sold by dealers, for which the average price from model years 1994 to 2012, was $3,126, obviously a mark-up from whatever price the car was obtained at.

We assume a conservative residual sale price of our 2015 Camry at 50% of this average:

2015 Camry	$22,831
Residual Value	$6,822
Avg. Sale Prices	$3,126
Adjustment	$(1,563)
Residual Value	***$1,563***

Data used in final model

Residual Value = $1,563.

3.9 Other Costs

We regard Uber's commission of 20% of the total fare as a cost, similar to the leasing fee paid by a NYC leased taxi cab. NYC drivers also pay 8.15% sales tax, and 2.44% to the city's Black Car Fund.

This adds 30.59% of total fare to the driver's costs.

4. Total Base Cost Per Mile: Full Time UberX Driver

We refer to this base model, the full-time UberX driver, as "Driver A". We find the costs to be roughly equivalent across each option.

DRIVER A	**Purchase**	**Loan**	**Lease**
Vehicle	$18,493	$19,080	$20,758
Fuel	$19,336	$19,336	$19,336
Insurance	$6,204	$6,204	$6,204
Maintenance	$10,621	$10,621	$10,621
Repairs	$1,046	$1,046	$1,046
Tolls	$7,915	$7,915	$7,915
Residual Value	$(1,563)	$(1,563)	$-
Per Mile	***0.3703***	***0.3738***	***0.3931***
	Plus 30.59% of Total Fare		

5. Part-Time Driver Costs

The H/K study revealed that 42% of UberX drivers in NYC worked 1 -15 hours per week, and 35% worked 16-34 hours. Thus, we also modeled two more typical "sharing economy" drivers -- those who already had a vehicle and used it to generate more income.

5.1 Full-time job, Part-time UberX Driver ("Driver B")

We assumed a 41-year old male, driving a 2013 black Toyota Camry LE, who has a full-time job but chooses to drive one 12-hour, 147-mile shift (inc. commute) on one weekend day, each week, for fifty weeks. He begins driving at the start of year three of ownership, and will dispose of the car at end of year five.

In this scenario, we use the DOT's average for miles driven annually, and add 7,350 annual miles to usage for UberX driving.

The model changes, as there is little material difference to insurance costs from that of an ordinary driver. In addition, there is no vehicle purchase. The car instead will depreciate at a slightly accelerated pace to account for the additional 22,050 miles driven. To determine depreciation, we utilized a combination of Edmunds' depreciation chart[15] and the market value of 2013 Camrys presently on sale in Clifton, NJ with comparable mileage.

We used the maintenance and repair data from Section 3.4 to account for these costs, and the same toll data from Section 3.7

Driver B	Purchase	Loan	Lease
Depreciation	$2,513	$2,513	$-
Fuel	$2,544	$2,544	$2,544
Insurance	$904	$904	$904
Maintenance	$1,224	$1,224	$1,224
Repairs	$310	$310	$310
Tolls	$1,042	$1,042	$1,042
Lease Cost	$-	$-	$2,205
Per Mile	***0.3871***	***0.3871***	***0.3732***

There is a potential additional intangible cost. If the driver intended to dispose of the car after five years, regardless of circumstance, he is merely squeezing additional revenue out of the vehicle in the same time period. There is no additional cost in this case.

However, if he intended to dispose of the vehicle after 6.5 years, and the additional miles alters his plan to dispose of it 18 months earlier, then he experiences opportunity cost on the use of capital during those 18 months.

[15] http://www.edmunds.com/toyota/camry/2013/cost-to-own/

5.2 Part-time job, Part-time UberX Driver ("Driver C")

We used the same parameters as in Section 5.1, but gave this driver a part-time job three days per week, and driving for UberX twice a week in 12-hour shifts, including commuting. We decreased his regular part-time job annual total commuting miles to 3,627 from 6,045 per the DOT estimate. Then, we added 11,300 annual miles for UberX driving.

Driver C	Purchase	Loan	Lease
Depreciation	$3,867	$3,867	$-
Fuel	$3,911	$3,911	$3,911
Insurance	$1,519	$1,519	$1,519
Maintenance	$2,437	$2,437	$2,437
Repairs	$590	$590	$590
Tolls	$2,083	$2,083	$2,083
Lease Cost	$-	$-	$6,300
Per Mile	***0.2881***	***0.2881***	***0.3368***
	Plus 30.59% of Total Fare		

5.3 An Uber-Provided Model

How do our estimates compare to an estimate provided by Uber to business author Felix Salmon[16]? Using Uber's data, we will create a new model and refer to it as "Driver D".

Uber provided a model of a 2014 Toyota Camry averaging 40 hours per week driving at 1,000 miles per week, or 40,000 miles per year; 25 mpg, gasoline at $3.72 per gallon, annual fuel expense of $5,952, annual maintenance of $679, and Insurance of $2,676. Depreciation was set at $5,774.

This resulted in a total annual cost of $15,080, or $0.377 per mile.

However, Uber does not account for tolls, and that maintenance and repair costs are significantly under-reported. We adjusted Uber's model to align with our own. We took Driver C, utilized Uber's numbers, calculated them to fit the same 3-year time period, increased maintenance and repairs correspondingly, and added tolls. Although Uber did not specify how many days per week for their model, we assume seven days per week at our daily total miles driven of 147.

The result is nearly equivalent to our models.

[16] https://medium.com/@felixsalmon/the-economics-of-everyones-private-driver-464bfd730b38

DRIVER D	Purchase	Loan	Lease
Lease Cost	$-	$-	$3,000
Fuel	$17,856	$17,856	$17,856
Insurance	$8,028	$8,028	$8,028
Maintenance	$3,037	$3,037	$3,037
Repairs	$590	$590	$590
Tolls	$7,603	$7,603	$7,603
Depreciation	$5,774	$5,774	$-
Per Mile	***0.3574***	***0.3574***	***0.3343***

6. Variable Costs

Storage Costs: For drivers living in NYC, commuting and tolls are replaced by storage costs. There are a variety of monthly fees depending on area. In surveying three meta-search parking websites, true 24/7 access with unlimited entry/exit does not cost less than $350, and often exceeds $550. Annual storage costs thus range from $4,200 to $6,600 or more, with an average of $5,400. Over 3.8 years, the total cost is $20,520.

This exceeds the $18,013 generated by 3.8 years of commuting 10,200 miles annually @ $0.33 per mile, plus $7,915 in tolls.

Higher Financing Rates: Using Bankrate.com's auto loan amortization tool, each additional 1% APR in interest charges increases total interest paid over three years by $325, costing an additional $0.002 per mile. Some sources allege[17] that Uber has been steering drivers to high-interest financing deals for vehicles, with rates as high as 24% APR. If true, that driver would experience an additional $0.046 per mile cost increase.

Fuel: Gasoline is the most significant cost factor for an UberX driver. For each ten-cent change in price, the cost per mile changes by $0.0036.

Insurance: Drivers with poor driving records can expect significantly higher costs. A driver with one accident in the past three years can see 20-30% higher premiums.

Maintenance and Repairs: We believe actual costs for vehicles driven over 200,000 miles will be significantly higher than projected, as the likelihood of expensive replacement costs are higher.

As an example, we modeled the same driver, but one who obtained financing at 6.29%, when gas prices average $3.73, with 20% higher insurance premiums, and 20% higher maintenance and repair costs. We refer to this as "Driver E".

Driver E	**Purchase**	**Loan**	**Lease**
Vehicle	$18,493	$20,380	$20,758
Fuel	$22,314	$22,314	$22,314
Insurance	$7,444	$7,444	$7,444
Maintenance	$11,378	$11,378	$11,378
Repairs	$1,255	$1,255	$1,255
Tolls	$7,915	$7,915	$7,915
Residual Value	$(1,563)	$(1,563)	$-
Per Mile	**$0.4012**	**$0.4125**	**$0.4241**
	Plus 30.59% of Total Fare		

[17] http://valleywag.gawker.com/uber-and-its-shady-partners-are-pushing-drivers-into-su-1649936785

The total additional costs are $0.03 - $0.04 per mile.

7. Final Approximate Cost Per Mile

Averaging the costs of all five models together yields:

Grand Average	
Purchase	$0.3608
Loan	$0.3638
Lease	$0.3723
Plus 30.59% of Total Fare	
Plus Opportunity Cost	

We therefore suggest NYC UberX drivers consider $0.37 per mile when determining the value proposition. Those wishing to make conservative estimates may wish to use the Driver E model of $0.41 per mile.

8. **Insurance Risks of the UberX Driver**

There is a significant insurance risk that is infrequently discussed. Most carriers require drivers to obtain more expensive commercial insurance when operating a vehicle for business use, which includes ferrying passengers. Depending on various underwriting factors and coverage, this insurance can cost more than $9,000 annually, or at least $0.08 per mile additional.

Although some carriers now offer hybrid policies in limited states, the insurance industry has not yet caught up with the concept of rideshare. As a result, we believe few rideshare drivers inform their carriers that they utilize their vehicle for commercial purposes.

Most carriers will not cover ridesharing claims, and possibly cancel an entire policy if a client does not disclose that they drive their vehicle commercially. It is likely that any carrier, in the course of investigating a rideshare accident, will discover this fact. In addition to obtaining insurance quotes from the five selected carriers for our model, we also inquired how they would handle any claim if it were discovered the insured were ridesharing, *whether or not a claim occurred when the rideshare app was on or if the insured was ferrying a passenger.*

All five carriers said the policy would be voided, and the driver would be left responsible for all damages to himself and others.

To that end, there are two distinct periods during which all Uber drivers are exposed to significant costs, which could expose 100% of their personal assets.

When driving to or carrying a passenger, Uber provides $1 million in liability and uninsured motorist coverage, and contingent collision and comprehensive insurance, with a $1,000 deductible.

However, drivers are at risk during two other periods. During the period in which a driver has the Uber app on but does not yet have a client, Uber only offers contingent liability coverage of $50,000 per person ($100,000 total) and $25,000 in property damage. This leaves the driver to rely solely on his own insurance policy, which is subject to cancellation, as discussed above. Should the driver's carrier refuse to pay, Uber's limits are severely deficient in the event of a serious accident. This exposes all of the driver's assets.

The same situation exists even when the Uber app isn't even on. As mentioned, the carrier's investigation is likely to reveal the driver's ridesharing employment. Although unlikely to deny a payout to a third party if the claim is relatively small, a large claim could be entirely denied, exposing the driver's assets.

More than one driver has had to resort to crowdfunding to cover his deductible, and in this case[18], also had his claim denied because he was ridesharing.

[18] http://www.gofundme.com/savealyftdriver

9. Conclusion

Depending on the situation, a NYC UberX driver can expect anywhere from 29 to 42 cents per mile in expenses, a far cry from being a "marginal" increase as some sources have claimed.

Prospective drivers may wish to consider an average of 37 cents per miles when calculating potential costs.

In addition, UberX drivers are subject to Uber's 20% commission, 8.15% sales tax, and 2.44% Black Car Fund fee.

There is also Opportunity Cost, an expense consideration that may elude most individuals. Simply put, if a full-time UberX driver had not deployed his capital into a vehicle purchase and earned a return on that investment, what else might have he used that capital for? Are there uses for that capital that would bring him a higher return on investment?

Most significantly, however, are the intangible costs associated with the risk UberX drivers take on the insurance front. We caution all current and prospective drivers that they are in danger of having their policy rendered inert should an accident occur, and that they may be liable for unlimited damages.

Although revenue estimates remain anecdotal, we are able to derive the percentage of revenue per mile that is lost on a pre-tax basis. If drivers are able to calculate their revenue per mile, they will find this chart useful. One thing appears likely: UberX drivers may not be aware just how much revenue is lost from fees and operating costs.

Revenue Per mile	% of Revenue Lost
$1.00	68%
$1.25	60%
$1.50	55%
$1.75	52%
$2.00	49%
$2.25	47%
$2.50	45%
$3.00	43%
$4.00	40%
$5.00	38%

10. Policy Recommendations

We are not supportive of Uber, or any rideshare company, being required to disclose a driver's approximate cost. It is not government's place to alert prospective drivers of what an entrepreneurial effort may cost. Individuals are quite capable of caring for themselves and assessing these costs.

The issue of insurance, however, requires more circumspection.

Every state requires some minimum coverage for all private and livery drivers. We are not here to debate the merits or drawbacks of these policies. We do ask, however, if NYC livery drivers should carry significantly higher limits than required under state law.

The current auto insurance environment in New York State requires all motorists to carry a minimum liability insurance policy of $25,000 for bodily injury to one person, $50,000 for bodily injury to all persons, and $10,000 for property damage in any one accident. Mandatory Personal Injury Protection ("no-fault") coverage of $50,000 is also required.

Minimum limits for For-Hire Vehicles (FHV), able to seat 1-8 passengers, are $100,000 per person, $300,000 per occurrence, and $200,000 of Personal Injury Protection.

The disparity between what regular motorists and what FHV drivers must carry is stark. UberX drivers carry FHV-level insurance but are nonetheless not professional drivers.

The ensuing question then, is whether non-professional drivers have a significantly higher chance of being involved in an accident, and if so, whether government should demand higher levels of insurance coverage than even FHV requirements.

Limited data suggests what we would expect – that non-professional drivers have a significantly higher accident rate.

Schaller Consulting's "Taxicab and Livery Crashes in New York City, 2004" provides a comprehensive view of accidents from 1990 to 2004. Crash rates and injuries for those in FHVs were significantly lower than for those in other vehicles, lending credence to the notion that insurance is all the more vital when driving or riding in a rideshare vehicle.

The report found a crash rate of 4.6 taxis per million miles traveled and 3.7 for livery vehicles, as compared to 6.7 for other vehicles. That's a 33% difference. Likewise, for injuries, taxicabs passengers endured 1.6 injuries per million miles versus 2.0 for livery and 2.6 for other vehicles.

The data in not unexpected – professional drivers are more likely to avoid accidents because of their experience.

Schaller concluded that driver experience levels are a major factor for the lower accident incidences, and it was of "vital importance to continue to attract and retain qualified

taxicab drivers." Another major factor was the livery insurance industry changed its underwriting to burden the more accident-prone drivers to bear the weight of higher premiums, as opposed to underwriting to an entire fleet or industry as a whole.

This speaks all the more powerfully to the need for adequate insurance for both rideshare drivers and passengers. UberX drivers are unlikely to be professionals, although some likely have migrated from other FHV employment. Regardless, a passenger never knows the experience level of a driver when they enter a vehicle. Why take a risk when the statistics show one is 50% more likely to be in a crash with a non-professional driver who probably lacks sufficient insurance coverage?

Damages in even minor accidents can run into the thousands of dollars. Bodily injury claims, medical bills in an increasingly expensive healthcare environment, and property damage can easily reach six-figures in more serious accidents. The worst of all situations, where a victim ends up a vegetable or dead, would reach into the millions.

Although the National Association of Insurance Commissioners issued its own White Paper regarding these issues, we believe their recommendations fall short of what is necessary.

We prefer a private-industry solution over government intervention. Carriers need to innovate, and develop hybrid policies as quickly as possible to fill the existing insurance gap. Failing this, it would be regrettably incumbent upon regulators to require rideshare policies with limits higher than those carried by NYC FHVs in order to level the playing field for all participants.

In an ideal world, rideshare companies themselves could encourage drivers to carry higher limits, and even provide transparency to passengers by having those limits posted on each driver's profile. This would permit passengers to select drivers based on that information, should they so choose. Regrettably, however, this runs counter to a rideshare company's own interests in recruiting as many drivers as possible, since not every prospective driver can afford higher limits.

Until these issues are resolved, drivers are strongly cautioned against risking unlimited costs associated with serious accidents, and passengers are cautioned against climbing into a rideshare vehicle without certainty that Uber's liability policy is as claimed.

Let the driver beware.

Note: This paper was updated on June 18, to change inaccurate statements that UberX drivers in NYC are not required to carry FHV-level insurance.