Higher Pay, Safer Cabbies

An Analysis of the Relationship Between Driver Incomes and Taxi Crashes in New York City

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Overview

Taxicabs are a ubiquitous presence in Manhattan traffic, constituting as much as 30 to 50 percent of traffic on major Manhattan avenues. Not surprisingly, taxicabs are also involved in a substantial proportion of motor vehicle crashes in Manhattan. In 1999, medallion cabs were involved in 14.7 percent of all crashes in Manhattan and 16.2 percent of all injury crashes, including 15.5 percent of injuries to pedestrians and bicyclists. Citywide, a total of 4,478 people were injured in crashes involving medallion cabs in 1999. This figure includes 1,005 pedestrians and bicyclists, 875 taxi passengers, 772 taxi drivers and 1,687 people in other vehicles.

While there are undoubtedly many factors that contribute to crashes involving taxicabs, it would be logical to expect that driver incomes are one important factor. Better-paid cab drivers would be expected to be safer drivers. With pressure building for an increase in the taxicab rate of fare,[1] the potential for increasing traffic safety through higher incomes for cab drivers is a timely issue. Yet discussions about a fare increase, while focusing on driver earnings among other issues, have not highlighted the possible benefits for traffic safety.

This report examines data collected over the past decade to assess the relationship between driver earnings and motor vehicle crashes involving taxicabs. We find that, based on available data, *there appears to be a strong relationship between taxicab crash rates and driver incomes. Higher driver incomes are associated with lower crash rates.*

There are several reasons to expect that the incidence of motor vehicle crashes is related to taxi driver incomes. First, drivers who are under greater financial pressure tend to work longer hours, thus becoming more fatigued during their work shifts and more subject to making mistakes that result in motor vehicle crashes. Financial strains may also pressure drivers to exceed the speed limit, run red lights and take other risks. Conversely, it would be expected that drivers who are under less financial pressure would tend to work shorter hours, be less fatigued, and feel under less pressure to take risks.

Driver incomes also affect the overall attractiveness of the job. Higher incomes are likely to make driving a cab a more attractive profession, producing a more qualified and more experienced driver corps that is more committed to the job. Conversely, lower incomes may produce rapid turnover among drivers as they seek better-paying jobs. Several studies have shown that driver experience and full-time driving are directly related to the quality of drivers, as measured by passenger complaints and the number of summonses issued by law enforcement agencies.[2] It would seem likely that the same relationship would hold for full-time, experienced drivers and safer driving.

[1] See for example, David Seifman, "TLC Sets January Fare Hike," *New York Post*, December 7, 2003.
[2] See Schaller Consulting, *New York City Taxicab Fact Book*, September 2003. Available on-line at www.schallerconsult.com/taxi

Analysis

The relationship between driver incomes and traffic safety can be analyzed in two ways: (a) cross-sectionally, which involves comparing the characteristics and crash records of different groups of drivers for the same time period, and (b) longitudinally, examining changes in the number of taxis involved in crashes and changes in driver incomes. Each approach has complementary strengths and weaknesses in assessing possible causation between crashes and driver incomes, and thus are best used in tandem.

Table 1 shows crash rates for three groups of cabs for 1997:

- Owner-driven cabs, in which the medallion owner drives the cab (some cabs are also leased to a second driver).
- Cabs that are leased to drivers on a long-term basis, usually to two drivers, one of whom works the day shift and the other of whom works the night shift.
- Cabs that are leased to drivers on a shift basis, with the driver generally returning to a central garage to pick up and drop off the vehicle at the start and end of each 12-hour shift.

As shown in Table 1, crash rates, measured as crashes per million miles driven, are significantly lower for owner-driven cabs than for leased cabs – 2.2 crashes per million miles for owner-driven cabs compared with 3.0 crashes per million miles for cabs leased long-term and 4.0 crashes for cabs leased by the shift. Since owner-drivers generally have higher incomes, more experience and are more likely to drive full-time than lease drivers, these data tend to support the proposition that drivers who are better-paid, experienced and drive full-time are safer drivers.

Table 1. Crash rates by industry segment, 1997

	Crashes per million miles driven*	Percent of cabs
Owner-driven cabs	2.3	29%
Leased long-term	3.0	35%
Leased by shift	4.0	36%

*Does not include crashes where vehicle plate number is missing on DMV accident report.

Sources: Department of Motor Vehicles; Taxi and Limousine Commission licensing data.

The table also shows a lower crash rate for long-term lease drivers as compared with shift lease drivers. This difference may be explained by different rates of full-time driving. Drivers who lease by the shift are more likely to be part-time drivers than drivers who lease long-term, which by definition involves driving full-time. Thus, to the

extent that driver incomes affect whether drivers work full-time, driver incomes can be seen to affect crash rates.

While Table 1 takes a cross-sectional approach, Table 2 presents longitudinal data showing the number of taxicab crashes and driver incomes for selected years between 1990 and 1999. Driver incomes are shown in 1998 dollars, thus adjusting for the effects of inflation, which erodes the value of driver incomes in nominal dollars.

Table 2 shows a clear relationship between driver incomes and the incidence of taxicab crashes. Driver incomes declined from $115 per shift in 1990 to $94 per shift in 1993. Over the same period, crashes per million miles increased by 16 percent, from 5.3 to 6.1 crashes per million miles.

Although precise data on taxi driver incomes are not available for 1995 and 1996, driver incomes undoubtedly increased due to the fare increase that took effect in March 1996. The crash rate reversed direction at the same time the fare increase took effect, declining from 6.2 crashes per million miles in 1995 to 5.8 crashes per million miles in 1996.

Crash rates continued to decline through 1999 (latest year that data are available). Although exact data on driver incomes are not available for 1997 or 1999, it is likely that driver incomes increased during this period due to growth in taxi demand, which produced a 2.9 percent increase in taxicab revenue per mile from 1997 to 1999.

Table 2. Taxi driver incomes, mileage and crashes, 1990-99

	Driver income per shift*	Taxicab crashes involving personal injury	Total taxicab mileage (million miles)	Crashes per million miles
1990	$115	3,568	674	5.3
1993	$94	4,434	725	6.1
1995	n.a.	4,398	712	6.2
1996	n.a.	4,077	709	5.8
1998	$115	3,143	758	4.1
1999	n.a.	3,041	768	4.0

*In 1998 dollars.

n.a. = Not available.

Sources: Schaller Consulting, New York City Taxicab Fact Book, September 2003, page 36; Schaller Consulting, "Taxi and Livery Crashes in New York City, 1990-99," February 2001, page 17.

Conclusions

In summary, based on two sets of data there appears to be a strong relationship between taxicab crash rates and driver incomes. Higher driver incomes are associated with lower crash rates.

First and most importantly, this result supports petitions submitted to the Taxi and Limousine Commission by taxi industry groups that request a fare increase. A fare increase can result in substantial increases to driver incomes.

This result also underscores the importance of ensuring through lease cap increases that drivers receive a fair portion of the additional revenue generated by a fare increase. Current Taxi and Limousine Commission regulations cap leases at $103 per shift, except for $112 per shift on Thursday, Friday and Saturday nights, $617 per week.

New lease caps should balance the desirability of increasing driver incomes with the desirability of covering increased costs of taxicab operations. The largest operating costs – vehicle purchase, vehicle maintenance and auto insurance – also directly relate to safe operations and compensation to injured parties in the event of accidents.

Further research

Additional research should be conducted to refine and strengthen the analysis of driver incomes and taxicab safety and bring the analysis up to date. The research should be conducted on an ongoing basis to document the effects of changes in driver incomes, particularly after a fare increase.

Data sources that can be utilized for the analysis are:

- Crashes involving taxicabs – data are compiled by the New York State Department of Motor Vehicles based on accident reports submitted to DMV by the police and individual motorists. Taxicab owners are required by TLC rules to submit accident reports to TLC, although it is not clear whether these data are compiled or complete.

- Driver income – data can be compiled based on fare revenue (see next item) and lease fee and other expenses. Lease fees are readily available through surveys of lease management companies and fleets. Other driver expenses need to be estimated.

- Fare revenue – TLC collects taximeter readings during each taxicab's thrice-annual taxicab inspection. These meter readings can produce reliable data on fare revenue per cab.

- Driver experience and days driven per year – this information could be collected by TLC as part of the biannual driver license renewal process, either as a standard part of the process or on a survey sample basis.

Utilizing these data, further research can show the current (cross-sectional) relationship between driver incomes and driver safety, and the longitudinal impacts of changes in driver incomes on changes in the number of motor vehicle crashes involving taxicabs. Results from this research should be used to assess the impact of income and other factors such as experience and full-time driving on driver safety, pinpoint situations or categories of drivers that are particularly prone to crashes, and formulate appropriate regulatory responses.