

July 2013

Fair Hikes?

Comparing Rider Costs Using Two Ways of Raising Transit Fares Over the Next 10 Years

Summary

Four years ago, when the Metropolitan Transportation Authority faced a formidable budget shortfall, then-Governor David Paterson and the state Legislature agreed to provide the transportation authority with new sources of state revenues. The transportation authority also initiated a series of biennial fare and toll increases, a change from the sporadic fare and toll hikes of the past. Each of the two rounds of fare and toll increases to date has generated a combined 7.5 percent rise in revenues.

The second biennial increase was implemented in March and the authority's current financial plan assumes another rise in fares and tolls to generate an additional 7.5 percent in revenue in 2015, even though the authority's board of directors has not yet authorized any additional fare increases. Given that the continued fiscal challenges faced by the agency will likely result in future increases in fares, the NYPIRG Straphangers Campaign has asked IBO to estimate how much base and discount fares would grow over the next 10 years under the current pattern and to compare the increases that result with projections for fare increases that mirror the expected local rate of inflation over the same period.

Ridership typically declines, at least temporarily, following a fare increase, which means fares have to increase by more than 7.5 percent in order to yield a 7.5 percent increase in revenues. For the March increase, the MTA projected that an 8.4 percent fare increase would yield a 7.5 percent rise in revenue over two years. IBO has assumed that this relationship remains constant over the next decade and that the annual inflation rate will average 2.7 percent in the metropolitan area in 2013 through 2023. Among our findings:

- Fares would increase 50 percent by 2023 if there are five biennial fare increases of 8.4 percent. For example, the current \$2.50 base fare would reach \$3.75 in 2023, the price of a seven-day unlimited pass would increase from \$30 to \$45, and the 30-day pass from \$112 to \$168.
- Because the projected fare increases exceed the expected rate of inflation, fares in 2023 would be about 15 percent higher than they are today when measured in constant 2013 dollars. The base fare in 2023 (in constant 2013 dollars) would be \$2.87, the seven-day pass would be \$34, and the 30-day pass \$129.

The introduction of the MetroCard and free transfers and discount passes reduced the average fare paid by riders so much that after accounting for inflation, the typical amount paid per trip is 18 percent lower now than in 1996, when the average fare was at its peak. If inflation matches IBO's projections and the recent pattern of 8.4 percent biennial increases continue, the inflation-adjusted average fare paid by subway and bus riders would return to the 1996 level in 2027.

The Metropolitan Transportation Authority (MTA) faces major fiscal challenges as it seeks to maintain a high level of public transportation service in the context of rising operating expenses and continuing capital needs. Fare revenues for New York City Transit (NYCT) and MTA Bus were around \$3.8 billion in 2012, enough to cover around 55 percent of the almost \$6.9 billion in operating expenses for the city's subways and buses.¹

The MTA relies more heavily on fare revenue from riders than many other transit system operators. Using 2011 data from the Federal Transit Administration, IBO estimated that the overall farebox recovery ratio—passenger fare revenue divided by operating expenses—was 58 percent for New York City subway and buses, compared with ratios of 44 percent, 38 percent, and 36 percent for local transit in Chicago, Boston, and Philadelphia, respectively.² While the city's transit system receives a significant amount of [financial support](#) from direct state and local subsidies and (more importantly) dedicated taxes, fares will continue to be a major source of revenue for the foreseeable future.

In recent years, budgetary pressures have led the MTA to seek more frequent fare increases. At the request of the NYPIRG Straphangers Campaign, IBO computed the likely trajectory of city subway and bus fares over the next 10 years, if the Metropolitan Transportation Authority were to continue the pattern of 7.5 percent increases in fare revenues every two years that it has followed since the end of 2010. IBO then compared those results with the projected rate of inflation over the same period.

Background. The average fare paid per ride on New York City subways and buses, measured in 2013 dollars, is lower now than in 1996, the year before MetroCard fare innovations began. The expansion of free transfers and the introduction of unlimited cards both contributed to the declining average fare, particularly in the first few years after the innovations were introduced. In real (inflation-adjusted) terms, the average fare stood at \$2.14 in 1996, plunged to \$1.40 by 2002, and then gradually increased to its March 2013 level of \$1.76.³ In other words, since 2002 increases in the average fare have outpaced inflation. The same is true of

The Cost to Ride: New York City Transit Fares, 1996-2013

	Base Fare	Volume Bonus (%/Min. Purchase)	Base Fare With Discount	7-day Unlimited Pass	30-day Unlimited Pass	Average Fare Paid per Trip (Includes Free Transfers)
In Current Dollars:						
1996	\$1.50	-	-	-	-	\$1.38
1997	1.50	-	-	-	-	1.32
1998	1.50	10%/\$15	1.36	17.00	63.00	1.16
2003	2.00	10%/\$15	1.82	21.00	70.00	1.19
2005	2.00	20%/\$10	1.67	24.00	76.00	1.27
2008	2.00	15%/\$7	1.74	25.00	81.00	1.33
2009	2.25	15%/\$8	1.96	27.00	89.00	1.41
2010	2.25	7%/\$10	2.10	29.00	104.00	1.49
2013	2.50	5%/\$5	2.38	30.00	112.00	1.76
In Constant 2013 Dollars:						
1996	\$2.33	-	-	-	-	\$2.14
1997	2.27	-	-	-	-	2.00
1998	2.24		\$2.03	\$25.35	\$93.94	\$1.73
2003	2.62		2.38	27.48	91.61	1.56
2005	2.43		2.03	29.21	92.50	1.55
2008	2.20		1.91	27.45	88.93	1.46
2009	2.46		2.14	29.51	97.27	1.54
2010	2.42		2.26	31.16	111.76	1.60
2013	2.50		2.38	30.00	112.00	1.76

SOURCE: Metropolitan Transportation Authority

NOTES: Average fares for 2013 refer to March only. Fare increases went into effect on March 3, 2013. Free transfers between subway and bus began in 1997. The volume bonus and unlimited-ride passes were introduced in 1998.

New York City Independent Budget Office

the base fare, which has risen from \$1.50 in 2002 (\$2.02 in constant 2013 dollars) to its present level of \$2.50.⁴

In recent years, budgetary pressures have led the MTA to seek more frequent fare increases. As part of the 2009 agreement reached by Governor David Paterson and the state Legislature to provide new revenue sources for the MTA, there was an understanding that the MTA would implement biennial fare and toll hikes that each time would increase revenues by 7.5 percent. The arrangement covers all divisions of the MTA, including bridges and tunnels, commuter rail, New York City Transit, and MTA Bus. The MTA has generally raised fares and tolls within each division to generate 7.5 percent more revenue for that unit. The first of these increases took place at the end of 2010, followed by another round in March 2013. The February 2013 MTA Financial Plan assumes a third increase of 7.5 percent in 2015.

IBO's analysis looks at the impact of continuing these biennial increases at New York City Transit and MTA Bus through 2023.⁵ The MTA Board has not formally proposed or approved any future fare increases, and the level of fare hikes implemented will ultimately be determined by the authority's financial condition in the coming years.

Fare Projection Assumptions. While there are many combinations of fare increases that could generate an overall increase of 7.5 percent in revenue every two years for NYCT, IBO assumed that going forward, NYCT would maintain the current relationship between the different types of fares. In other words, the assumption is that almost 15 years after the introduction of volume discounts and unlimited-ride passes, the current structure of NYCT fares represents what the authority considers the appropriate balance between raising revenue, encouraging ridership, and mitigating the impact of fare increases on the lowest-income customers. While we keep the ratio between different fare types as close as possible to their 2013 levels, fare increases are constrained to increments of \$0.25 in the case of the base fare, and \$1 in the case of the passes.

Commuter Incomes and the Fare. When determining fare increases, NYCT takes into account the interrelationships between different types of fares, as well as differences in the average income levels of customers who purchase each fare type. Not surprisingly, the authority has found that their lowest-income customers, those with a reported income under \$25,000, are more likely than higher-income customers to pay fares that are not discounted because they require the smallest initial cash outlay.

In recent years, NYCT has gradually reduced both the amount of the volume bonus, and the minimum purchase required to take advantage of the bonus. For example, from February 2005 through March 2008, customers received a bonus of 20 percent on purchases of \$10 or more, meaning that customers had to pay for at least five trips upfront. Following the most recent fare increase, the bonus has been reduced to just 5 percent, but the minimum purchase necessary to receive a bonus has been lowered to \$5. The minimum purchase is now two trips at \$2.50 each, with the bonus leaving a balance of \$0.25 remaining on the card. In order to get one bonus ride, customers now have to put \$50 on their pay-per-ride card, compared with just \$10 during 2005-2008. The practical effect of this policy has been to blur the distinction between regular pay-per-ride and bonus pay-per-ride fares.

New York City Transit has found that the market share of the seven-day pass is greatest among customers with incomes of \$50,000 or less, while the market share of the 30-day pass is greatest among customers with income over \$50,000.⁶ Relative changes in the price between the two unlimited fare cards since 2003 have favored users of the seven-day pass.

While all fares have increased at a rate greater than the rate of inflation since 2002, there appears to have been some effort to lessen the impact on lower-income customers during recent rounds of fare increases, including the most recent one in March 2013. Prices for unlimited-ride passes generally grew faster than the base fare, and prices for a 30-day pass have risen faster than for the seven-day pass.

Methodology. In general, empirical studies have found that demand for public transportation is strongly price inelastic, meaning that a fare increase of x percent causes ridership to fall, but by much less than x percent.⁷ Based on its own empirical studies and modeling of customer responses to fare increases, the MTA projected that an increase in fare revenues of 7.5 percent in March 2013 would require an average fare increase of 8.4 percent.

Using this new fare structure as the point of departure, IBO assumed that customer response would be similar in the future and applied biennial fare increases of 8.4 percent in 2015, 2017, 2019, 2021, and 2023 in order to generate a net increase of 7.5 percent in each case. As noted above, fares are rounded to the nearest increment of \$0.25 for the base fare or \$1 for the unlimited-ride passes. The resulting nominal fares are then compared with the projected rate of inflation, using IBO's forecast of the consumer price index (CPI) for the New York metropolitan area.

Fare Projections Assuming 8.4 Percent Biennial Increases						
	2013	2015	2017	2019	2021	2023
In Current Dollars						
Base Fare	\$2.50	\$2.75	\$3.00	\$3.25	\$3.50	\$3.75
Discounted Base Fare	2.38	2.62	2.86	3.10	3.33	3.57
7-Day Pass	30.00	33.00	35.00	38.00	41.00	45.00
30-Day Pass	112.00	121.00	132.00	143.00	155.00	168.00
In Constant 2013 Dollars						
Base Fare	\$2.50	\$2.60	\$2.69	\$2.76	\$2.82	\$2.87
Discounted Base Fare	2.38	2.48	2.56	2.63	2.69	2.74
7-Day Pass	30.00	31.25	31.37	32.30	33.08	34.48
30-Day Pass	112.00	114.57	118.30	121.55	125.05	128.71
<i>Independent Budget Office</i>						

Results. Five biennial fare increases of 8.4 percent each would lead to a 50 percent increase in fares over the period 2013 through 2023. The base fare (currently \$2.50) would rise by \$0.25 every two years to reach \$3.75 in 2023. The discounted base fare would increase to \$3.57 in 2023, up from its current level of \$2.38. The price of the seven-day unlimited pass, currently \$30, would rise to \$45, and the 30-day pass would increase from \$112 to \$168.

The increases are significantly larger than the projected 30 percent rise in the cost of living as measured by the local CPI over the 10-year period—inflation is expected to average around 2.7 percent per year through 2023. If fares simply tracked projected inflation over the period, IBO estimates that customers in 2023 would pay \$3.25 for the base fare, \$3.10 for the discounted base fare, \$38 for the seven-day pass, and \$145 for the 30-day pass.

After adjusting for projected inflation, the 50 percent rise in fares implies a 15 percent increase in real (ie, constant 2013 dollar) terms. In constant 2013 dollars, which allows one to see the effect of the projected fare hikes after accounting for inflation, the projected 2023 base fare would be \$2.87 in 2013 dollars, compared with the current level of \$2.50. The discounted pay-per-ride fare would be \$2.74 in 2023, while the seven-day pass would be \$34.48, and the 30-day pass \$128.71.

Fare Considerations. The fare innovations that New York City Transit introduced in 1997 (free transfers) and 1998 (volume discounts and unlimited ride passes) reduced the average fare so much that after accounting for inflation, the fare paid per trip is now 18 percent lower than in 1996. However, at the end of 2010, the MTA began a policy of biennial fare increases that are significantly above the projected rate of inflation. IBO was asked to model the

effects on the fare of continuing this policy over the next 10 years. If inflation matches IBO's projections (2.7 percent annually through 2023, and 2.6 percent thereafter), fare increases yielding 7.5 percent revenue gains every two years would return the inflation-adjusted average fare to its pre-MetroCard level by 2027.⁸

Given the financial pressures the MTA will face over the next decade, some fare increases are likely. The timing and amount of those increases, however, may be very different from those analyzed here.

Report prepared by Alan Treffeisen

Endnotes

¹Expenses exclude debt service to support the capital program, depreciation, and the costs of Access-a-Ride, the paratransit program administered by NYCT. Fare revenues exclude the value of MetroCards held by the public but not yet used, as well as city and state reimbursements for reduced or free fares offered to the disabled, elderly, and students.

²http://www.ntdprogram.gov/ntdprogram/pubs/dt/2011/excel/T26_Pass_Fare_Recovery_Ratio.xls Accessed June 24, 2013. The farebox recovery ratios cited in the text combine bus and subway service. In the case of Boston they also include light rail and trolleybuses, and in the case of Philadelphia, streetcars and trolleybuses. In all cities, transit service that primarily serves commuters living outside the city is not included.

³IBO has used the consumer price index for the New York metropolitan region to convert fares into constant 2013 dollars.

⁴Note that in real terms the base fare jumps each time there is an increase in the nominal fare and begins to decline until the next increase in the base fare.

⁵In what follows, all references to New York City Transit are assumed to include the MTA Bus Company as well.

⁶MTA Fares and Tolls. Presentation to the Chairman. http://new.mta.info/sites/default/files/pdf/chairman_budget_pres.pdf Accessed April 11, 2013.

⁷See, for example, Litman, Todd. *Transit Price Elasticities and Cross-Elasticities*. <http://www.vtpi.org/tranelas.pdf> Accessed June 17, 2013.

⁸As noted in the text, the average fare paid in constant 2013 dollars peaked at \$2.14 in 1996. IBO projects that if NYCT continues to implement a fare yield increase of 7.5 percent every two years, and inflation continues at a 2.6 percent annual rate after 2023, by 2027 the average fare paid in constant 2013 dollars will reach \$2.17.