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Results Not Guaranteed: A Tale of Road Pricing in New York and London

Jonathan R. Peters and Cameron Gordon

PRICING of roads has been a mantra in transportation economics for many decades. The basic economic reasoning is sound: optimal consumption of a road is set where price = marginal cost (P = MC) and the lack of a price or the presence of under-pricing will lead to economically inefficient levels of congestion.

However, the imposition of a road price is only a necessary, but not a sufficient condition for obtaining an optimal level of road use. Many proponents (and some opponents) seem to have missed this fact. An existing road network carrying particular patterns of traffic can just as easily be thrown off by the imposition of a toll as it can be streamlined, especially if the toll is imposed arbitrarily and without fully accounting for travel demand and alternative modes of transportation.

In this paper, we seek to analyze the elements of road pricing that might be effective in managing urban congestion. After our introductory section, we briefly discuss the general theory of road pricing and present theoretical arguments against arbitrary road pricing. In a third section, we examine tolling in New York City and its current and projected congestion levels as a case study of these principles in practice (In New York, pricing has been imposed on a piecemeal basis, without overall system performance goals in mind). In the fourth section, we

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assess the London cordon pricing scheme, focusing on the specific design elements that have been deemed to have made it successful in obtaining its objective of reduced automobile traffic on constrained urban roads. Then we compare the London scheme with the current situation in New York City and look at New York's proposed London-style cordon pricing scheme, which seems to have been put aside after failing to gain support in the state legislature. We close by offering conclusions and policy recommendations, noting that road pricing is economically sensible in generic terms but that it may often be detrimental, or at least inefficient, in many of its particular manifestations. To reduce congestion, pricing must be specifically designed to do so taking into account local conditions and institutions.

The Theory of Optimal Road Pricing

It is a precept of welfare economics that a social optimum in terms of consumption and production is reached where prices exist for goods and services and where such prices reflect the marginal cost that it took to produce those goods and services. Such an optimal condition is summarized by the formula $P = MC$.

This general argument holds for roads, though with some modifications. Roads are not pure "private" goods because they can be jointly consumed. An apple, for example, can only be consumed by one person at a time and that person's consumption will by definition make the apple unavailable to anyone else. Hence an apple is a private good. But a road can be "consumed" by multiple people at the same time and has a degree of "publicness" to it. However, after a certain point, congestion sets in and everybody's consumption of the road is degraded; they cannot travel as fast nor as reliably as they did when there was no congestion.

Obviously, "free" (i.e., untolled) roads will become more congested than a priced road, everything else being equal. So if we imagine two parallel roads, one tolled and one untolled, the priced road will be less congested than the free one for obvious reasons. If we then assume that there is only one road, it stands to reason that the road will be more efficiently used if a price exists because people will have to pay for consumption of the road where there is a toll and they will be more efficient in using it than if it is offered to them for nothing.

This reasoning is fine as far as it goes, but at this point the details of the real world intrude. First, to be efficient, P must equal MC. If the price is too low, or too high, a social optimum will not be reached. Second, the road itself must be able to carry the socially optimal amount of traffic. If a road's capacity is too small, for example, to carry the traffic it needs to, then imposition of a price at a sufficiently high level will certainly reduce traffic at some point but will not address the travel requirements of the economic area being served. Third, there is the issue of modal alternatives, which is really the second point on a broader scale: can the existing transport system handle all the traffic that it needs to, either overall or in specific parts of the system (e.g., passenger versus freight or north versus south)? If there is some structural deficiency in the system, pricing will not be a magic bullet for the system's problems though it might be an aid.

There is an additional real-world issue of administrative costs. Theoretical discussions of pricing assume costless administration, but tolling does have a deadweight loss component in the form of collection and other administrative burdens. Recent reports and papers by Short, Shackelford, and Murray and Peters and Kramer as well as further analysis by the authors of numerous toll authority financial statements tend to indicate a cost of collection for tolls in the range of 10–45 percent of revenue collected. These costs include the cost of administration (management, staff, and capital of toll collection systems), violation costs, as well as consumer time costs, and pollution costs. In London, the cost of administering the congestion pricing scheme is in the range of 35–45 percent of revenue collected. These direct costs currently compare very unfavorably with the direct costs of other forms of more indirect pricing, such as income or fuel taxes.

It should also be noted that this theoretical discussion is a partial equilibrium analysis. Roads provide the means of obtaining the service of transportation, which is a derived demand based on general equilibrium across all markets, including demand for land and housing. In that sense a $P = MC$ condition met on an individual road taken as an individual market may nonetheless result in a sub-optimum condition from a general equilibrium point of view. The discussion below is focused on road pricing in isolation. This analytical simplification should not, however, be taken as deeming other policies, especially housing and land development, to be unimportant. System-wide economic optimality requires attention to all relevant policies.

Tolling and Congestion in New York City

When people think of New York City, one thing that certainly comes to mind is traffic.

However, what might be surprising is that the five boroughs of New York City and the counties of the New York Metropolitan Area have some of the highest tolls in the nation. Over 28 percent of the tolls in the United States are collected on trips into, out of, or around New York City. Another 10 percent are collected on toll roads in New Jersey. The Triborough Bridge and Tunnel Authority (also known as MTA Bridges) had toll revenue of $1,241,551,000 in 2006 on 302,059,000 vehicles, while the Port Authority of New York and New Jersey collected revenue of $750,195,000 in 2006 on 254,040,000 vehicles.

Metropolitan Transportation Authority
Port Authority of New York and New Jersey

Does this mean that New York City is less congested? The statistics bear out the popular perception of New York as a very traffic-clogged area. New York City's outer boroughs have the longest average commute in the nation—40+ minutes each way—according to the 2003 U.S. Census *American Community Survey* (ACS). According to the ACS, eight of the twelve worst commutes in the nation are in the New York Metropolitan Area, i.e., the counties of Bronx, Queens, Staten Island, Brooklyn, Nassau, Monmouth, NJ, Westchester, and Suffolk.

So one has the odd situation of extensive pricing and yet heavy auto travel demand in New York City, a place that also happens to have one of the largest transit systems in the world and which accounts for half of all the transit trips in the United States. One cannot blame pricing for this situation, but it is also clear that the presence of pricing by itself does not guarantee low congestion levels or even optimal congestion levels.

What is going on in New York City? There are a variety of issues driving the city's traffic congestion which include density (dense urban areas are, by definition, going to have some congestion), changing patterns of economic activity that do not match the infrastructure in place, and various institutional rigidities, all of which are discussed briefly below. But there is also road mispricing in the region, which, far from alleviating existing congestion, or at least being neutral with respect to it, is arguably contributing to the problem.

It must be said that New York City is a tale of two cities: Manhattan and the outer boroughs. The city's existing road, rail, and transit system was largely completed by the middle of the 1960s, a period in which Manhattan constituted the CBD of the region, However, as Table 1shows, population growth in the city has taken place outside of Manhattan, which in fact lost population over the period 1950–2000. Growth was especially strong to the east (Queens) and south of the city (Staten Island) and projected growth is expected to continue there.

To be sure, there is still significant commuting in from the periphery to the center that is Manhattan. But there are a number of infrastructural problems driven by the fact that commutes that avoid Manhattan entirely are increasing in proportional terms while transit links (especially fixed rail but also including bus service that is fast and reliable) are not.

For simplicity, consider commuting in New York City as an either/or choice of transit or automobile. How fast and reliable is transit within New York City and is there variation in quality as one moves away from the center?

The authors benchmarked the performance of common forms of mass transit travel from various points in New York City to the CBD (Manhattan from 33rd to 42nd Street). The distance of the trip is compared to the scheduled trip time as presented in the route schedule from the operating agency. The times of the New York City Transit and NYC DOT systems that serve New York City residents were compared to service on the Metro North (that serves counties north of New York City, including Connecticut) to service on the Long Island Railroad (that serves counties east of New York City) and to service on the Bay Area Rapid Transit Service in San Francisco. Table 2 shows the results.

The clear results of this analysis shows that New York City residents in the outer boroughs have relatively short commutes in terms of distance (7–25 miles) to the CBD; however, in terms of commute time and reliability, these modes travel at extremely

TABLE 1
1950 To 2000 Population Growth New York City Boroughs

Place	*Percentage Growth*
United States	+86.0
New York State	+28.1
Manhattan	−21.5
The Bronx	−8.1
Brooklyn	−9.9
Queens	+43.9
Staten Island	+132.6

TABLE 2
Comparison of Selected Transit Trip Times within New York City and Benchmarked with Selected San Francisco Transit Routes

Origin	*Destination*	*Mode*	*Road Mileage*	*Travel Time Minutes*	*Mode Shifts*	*MPH*	
Tottenville, SI, NY	42nd Street & 5th Avenue	SIRT – SI Ferry – 1&9 Subway	33.2	83	3	24.00	
St George, SI, NY	42nd Street & 5th Avenue	SI Ferry and 1&9 Subway	17.6	41	2	25.76	
Tottenville, SI, NY	42nd Street & 5th Avenue	Express Bus-X-22	33.2	97	1	20.54	*8:05 AM Bus
Tottenville, SI, NY	42nd Street & 5th Avenue	Express Bus-X-22	33.2	72	1	27.67	*5:00 AM Bus
Eltingville Transit Center, SI, NY	42nd Street & 5th Avenue	Express Bus-X-1	20.8	100	1	12.48	*8:05 AM Bus
Eltingville Transit Center, SI, NY	42nd Street & 5th Avenue	Express Bus-X-1	20.8	70	1	17.83	*5:00 AM Bus
Castleton Ave & Jewett, SI, NY	42nd Street & 5th Avenue	Express Bus-X-10	17.3	109	1	9.52	*8:06 AM Bus
Castleton Ave & Jewett, SI, NY	42nd Street & 5th Avenue	Express Bus-X-10	17.3	78	1	13.31	*5:35 AM Bus
Victory Blvd, Travis, SI, NY	42nd Street & 5th Avenue	S-62 – SI Ferry – 1&9 Subway	19.3	82	3	14.12	*8:35 AM Bus-Misses Boat
Victory Blvd, Travis, SI, NY	42nd Street & 5th Avenue	S-62 – SI Ferry – 1&9 Subway	19.3	96	3	12.06	*8:35 AM Bus – Actual Travel Time – 9:30 Boat
16th Street, San Francisco	Freemont, CA	BART	38.8	52	1	44.77	
16th Street, San Francisco, CA	Bay Point, CA	BART	39.1	59	1	39.76	
Flatbush Ave, Brooklyn	42nd Street & 5th Avenue	#2 Subway	9.5	44	1	12.95	
242nd Street, Bronx	42nd Street & 5th Avenue	# 2 Subway	13.2	50	1	15.84	

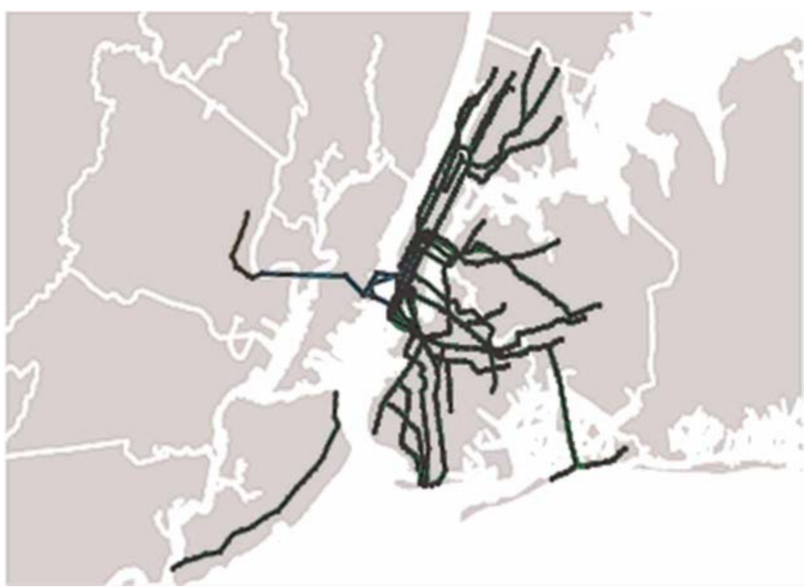
slow speeds (9–25 miles per hour) and with variation in travel time of 7–9 miles per hour slower during peak periods.

A large cause of this variation is the existing transit infrastructure, both in terms of its geographic distribution and its age and operability. The fastest mode of travel for mass transit commuters inside New York City is the subway. Yet large sections of New York City are served primarily by local and express bus as well as some ferry routes. This is especially true outside of Manhattan. Figure 1 shows some of the outer borough gaps graphically.

Subway travel was less affected by peak period load (as it has a separate right of way), but general travel speed was still only in the 12–15 miles-per-hour range. Express buses that operate mostly on local streets and highways without dedicated bus lanes average 17–27 miles per hour in off-peak times. Their speed drops to 9–21 miles per hour in peak periods. Speed variation depends upon route examined, with buses that are slow in the off-peak being even slower during peak periods.

And many commuters who had to use buses as the primary mode of transit had to switch modes, exposing them to additional potential problems arising from the mode shift. Routes that used

FIGURE 1
Subway, PATH, Newark City Subway, and Ferry Network



multiple subway lines, subway-ferry-train combinations exhibited speeds in the range of 20–25 miles per hour, but these are theoretical times and likely in many cases to be lower because the potential for delay is heightened significantly for multimodal routes.

In stark contrast, the Metro North, Long Island Railroad, and BART report moving people to their respective central business districts (Manhattan 33rd to 42nd or San Francisco, 16th Street) at about 42 MPH. This results in, for example, a commute time of 52 minutes for a 38.8-mile commute from Fremont, CA to San Francisco.

This leads to an interesting conundrum in New York City: a core that has access to and uses transit, and a periphery within the city that is much more car-dependent, yet still transit-oriented as compared to the rest of the United States. There is also the interesting quirk that in some cases people living outside New York, say in Stamford, Connecticut, which is 33 miles from the CBD, may have faster transit commutes with fewer modal switches than people living within the city (as is clear from the Tottenville commuters referred to in Figure 2 who live approximately the same distance from the Grand Central Station and yet do not have access to the Metro North express trains that take roughly 50 minutes straight in).

The consequences of this are illustrated by Table 3, which shows commuting patterns for New York City's boroughs, including Brooklyn (Kings County). One can see that Brooklynites drive much less than U.S. residents in general, but much more than Manhattanites. Including carpooling, roughly 31 percent of Brooklyn residents used a car to commute, compared to 10 percent of those living in Manhattan. Yet those living in Brooklyn were far more likely to take transit than those in the rest of the United States, and in proportions roughly equal to Manhattan. Other outer boroughs are not as transit-oriented as Brooklyn, but even in car-friendly Staten Island, which has less than half Manhattan's population but more car registrations, there was still a transit penetration rate of roughly 30 percent (231,101 standard [private] vehicles were registered on Staten Island in 2000, as compared to 227,043 in Manhattan and 52.1 vehicles per 100 persons on Staten Island versus 14.8 in Manhattan). Overall, New York City had an average of 23.2 car registrations per 100 persons.

So there are rigidities and imperfections in transit alternatives to automobile travel which induce more such travel. Moreover, if one drives, as roughly one-third of Kings County residents do, then one will meet lots of tolls along the way, but the tolls will be part of a system with little overall rhyme or reason. There are free bridges

FIGURE 2
(a) Flatbush, Brooklyn to 42nd Street by Subway – 9.5 Miles and 44 Minutes (b) Fremont, CA to 16th Street, San Francisco by BART - 38.8 Miles in 52 Minutes

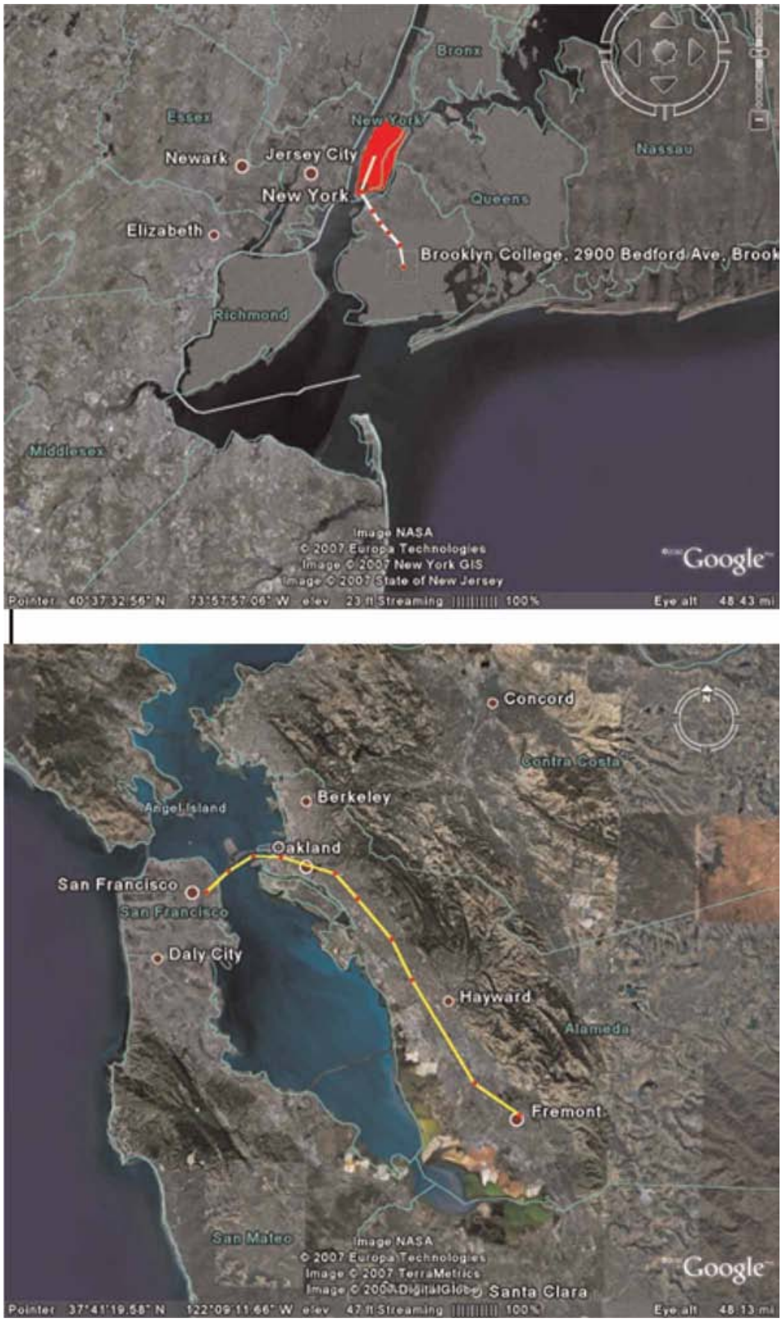


TABLE 3
Automobile Registrations by Borough

County	*Standard*	*Commercial*	*Trailer*	*Motorcycle*	*Moped*	*Bus*	*Taxi*	*Ambulance*	*Rental*	*Farm*	*Total*
BRONX	248,197	9,393	1,622	2,154	87	659	6,381	56	360	1	268,910
KINGS	440,510	19,842	2,591	4,468	217	2,230	13,419	606	3,104	0	486,987
NEW YORK	227,043	14,263	1,030	4,923	431	183	7,606	126	172	3	255,780
QUEENS	706,843	32,860	5,524	7,121	320	2,438	19,354	217	10,170	1	784,848
RICHMOND	231,101	5,559	3,263	3,357	101	2,665	1,658	75	69	0	247,848
NEW YORK CITY	1,853,694	81,917	14,030	22,023	1,156	8,175	48,418	1,080	13,875	5	2,044,373

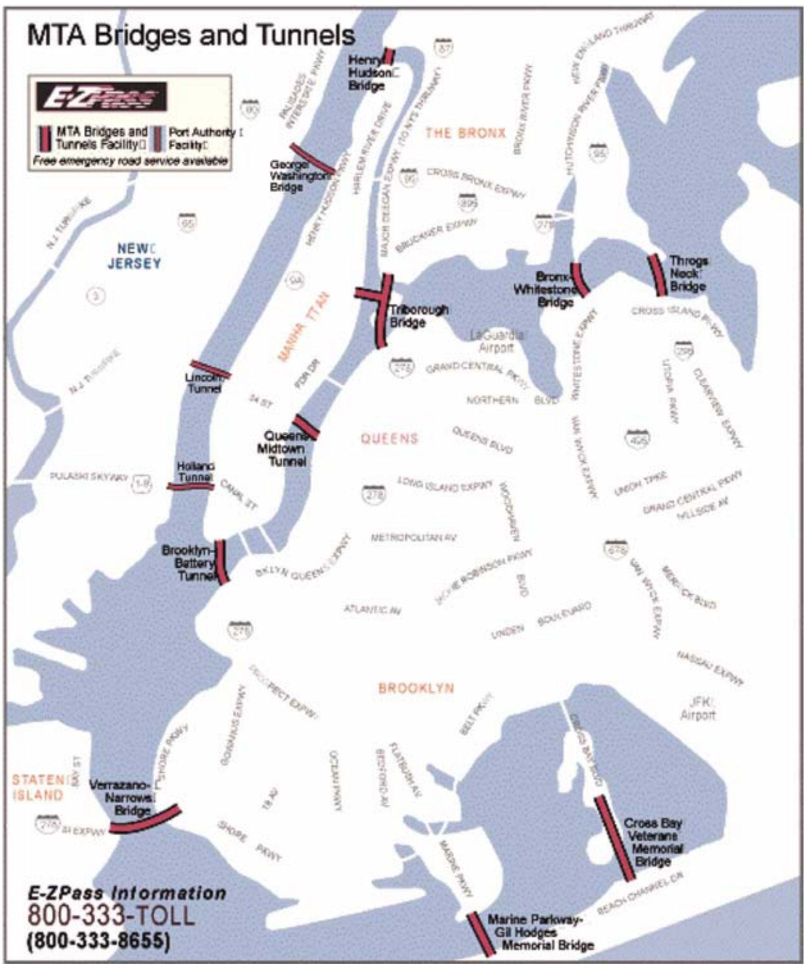
Commuting Patterns, Population, and Mode Usage by New York City Borough

	USA	Bronx	Brooklyn	Manhattan	Queens	Staten Island
Population	281,421,906	1,332,650	2,465,326	1,537,195	2,229,379	443,728
Drove Alone –	73.2%	27.0%	22.5%	7.6%	34.3%	54.3%
Carpool –	13.4%	9.3%	8.8%	3.4%	10.2%	12.1%
Public Transit –	5.3%	53.7%	58.0%	59.6%	47.4%	28.4%
Bike or Walk –	4.3%	7.5%	8.6%	22.8%	5.9%	3.1%
Motorcycle or other –	0.9%	0.6%	0.5%	0.8%	0.4%	0.5%
Work at Home –	3.0%	1.9%	1.6%	5.8%	1.8%	1.7%

Source: New York State Department of Transportations, 2000.

from Brooklyn, Queens, and the Bronx into Manhattan. Yet from Staten Island to Brooklyn, to take one example, the toll is one of the highest in the nation. Anomalies such as these were identified by William Vickrey in his 1962 paper on time-of-day pricing as one of the most glaring examples of an error in pricing. To top it off, many of the free routes were originally tolled routes, but their current free status is a politically charged issue. Figure 3 shows the existing crossings, tolled and untolled, in the region.

FIGURE 3
New York City Bridge and Tunnel Crossings



Source: URS, Inc.

Some of the anomalies can be better seen by looking at the price elasticities of these crossings. These are summarized in Table 4. Several of these facilities have unpriced competitors less than a mile away and, not surprisingly, these facilities have higher price elasticities. In and of itself this situation is not bad, but it does speak to the fact that drivers are responding to price. But the system is not ensuring that such a response achieves desired system-wide objectives such as optimal travel time.

To be fair, New York City's bridge and road pricing was not created from any master plan. Pricing was imposed on an *ad hoc*, facility-by-facility basis, with a general aim of financing specific capital investments. This is true of most U.S. urban areas, in fact. But the comparison of this sort of unplanned pricing with the outcomes of the more systematic pricing exercise in London, and the suboptimal traffic flow patterns resulting from New York City's uncoordinated tolling nonetheless speak loudly to the fact that goal-oriented design of such tolling is important.

London's Cordon Pricing

First, it is important to note that there are at least three types of tolling schemes:

- General Toll – flat fee charged to use a facility.
- Time-of-Day Pricing – fee varies based on time of day.
- Cordon Toll – fee to enter a particular area of a city or region.

TABLE 4
Price Sensitivity of New York City Crossings

Location	*Elasticity Factors*
Bronx-Whitestone/Throgs Neck	−0.105
Brooklyn-Battery Tunnel	−0.358*
Cross Bay Bridge	−0.137
Henry Hudson Bridge	−0.289*
Marine Parkway Bridge	−0.101
Queens Midtown Tunnel	−0.192
Triborough Bridge	−0.208*
Verrazano-Narrows Bridge	−0.126

*Facility has free competitor route bridge within 1 mile.

London faced many of the same problems as New York in terms of congestion in its urban core and ultimately opted for the last option: cordon pricing. Mayor Ken Livingston adopted a comprehensive traffic management plan for London in 2003. This plan included a cordon price for vehicle entry into downtown London from 7:00 A.M.until 6:00 P.M. on weekdays. But significantly, it also invested resources into additional transit service to allow riders to more easily shift from their automobile to mass transit. The congestion charge was increased from five pounds to eight pounds in July 2005. The zone was expanded westward in February 2007.

The current charge to enter the zone is eight pounds, and once paid drivers can leave and reenter the zone as many times as they please over the next 24 hours. The congestion charge is enforced by photo recognition of license plates. Roughly half of the money collected is spent on toll collection and enforcement. Residents of the zone are granted a 90 percent discount on the charge for one vehicle. In addition, vehicles powered by alternative fuels and electric vehicles are exempt from the congestion charge.

To oversee this zone, Livingstone created Transport for London (TfL), a comprehensive transportation agency responsible for the Underground, buses, and the surface road system. TfL operates with a goal of coordinating policies on all modes to reduce traffic and promote mobility in London. Prior to the congestion charge, London had no tolls on any existing roads or bridges.

The impact on travel into the congestion zone was dramatic. TfL reported a 33 percent reduction in cars entering the zone from 2002 (prior to charge) to 2003 (post charging). The number of cars entering the zone during charging hours dropped from almost 200,000 vehicles in 2002 to about 125,000 in 2003. Overall, the number of vehicles entering the zone decreased by 16 percent as compared to the pre-charging period. Total traffic entering the zone dropped from 378,000 in 2002 to 316,000 in 2006. Most recently, the zone has experienced some increase in congestion, with the minutes of travel per kilometer increasing from about 3.5 minutes per kilometer to 4.5 minutes per kilometer.

Transport for London 2006

Transport for London 2007

Transport for London 2007

Also, London has experienced an increase in the number of taxis and motorcycles that have entered the zone during the charging period (taxis increased from 55,000 to 65,000 per day and motorcycles increased from 26,000 to 32,000). Meanwhile, mass transit ridership jumped from 32 percent in 2000 to 36 percent in 2004, and road travel speeds in central and inner London have increased since 2003. Recent data indicates some increase in congestion in the 2006–2007 time period. Transport for London 2007

New York's Proposed Cordon Pricing and a Comparison with London

In 2007, New York City's Mayor Michael Bloomberg launched a planning effort designed to address a broad environmental agenda that would prepare the city for significant population growth in the next 25 years. One of the components of this plan, called PlaNYC30, was a comprehensive transportation program that included proposals for transit improvements and a congestion pricing scheme for Manhattan, south of 86th Street.

The basic elements of the proposed plan were as follows:

- An $8 dollar a day charge for passenger cars to travel into Manhattan south of 86th Street
- $4 reduced charge for driving only within the zone.
- $21 dollar a day charge for trucks traveling into the zone.
- $5.50 charge for trucks traveling only within the zone.
- Zone Charge: Monday –Friday from 6:00 AM until 6:00 PM.

The plan was fashioned for submittal to the U.S. Federal Highway Administration for possible award of a $354 million grant under its Urban Partnerships Program. But first the plan had to be approved by the New York City and State governments. The plan died, however, without even a vote in the New York State Assembly. Associated Press Nonetheless, the plan is still an interesting study, not least because some elements of it, mainly pricing on the East River Bridge crossings, are still being promoted by powerful organizations. Rogers

There is quite a lot of similarity between the areas covered by the existing London scheme and the proposed New York scheme. The two cities are actually spread out over a fairly similar-sized area, with Greater London covering 45 kilometers by 58 kilometers, roughly equaling New York City's area, although New York City has a slightly longer North-South and narrower East-West axis.

Meanwhile, Greater London and New York both have around eight million people and both have an extensive and extensively used mass transit network. Comparing New York City and Greater London, and using year 2000 data, 33.8 percent commuted by automobile in New York City (alone or in carpools) while 41 percent drove in London (carpooling not separated out from driving alone). Fifty-three percent took mass transit in New York as opposed to 45.0 percent in London. Comparing urban cores, the driving figures are more stark: only 10 percent drove in Manhattan, while 21percent drove in Central London. Yet in both places, transit usage was almost identical: 59.6 percent versus 59.0 percent

U.S. Census ACS 2003
Transport for London 2006

Rather interestingly, the current London Congestion Zone and the proposed New York City Zone are fairly similar in size and scope (and the original London Zone, being smaller, was closer in fit). The proposed New York City Zone was roughly 10 kilometers by 3.5 kilometers, while the current London Zone is roughly 11 kilometers by 6 kilometers.

Two major differences between London and New York arise at this point. First, New York City has many water crossings requiring bridges and tunnels, thus breaking up the physical plane. London sits in a broader plain with relatively few physical barriers to transport.

Second, London is a creature of the unitary state that is Great Britain and has been given broad and fairly complete powers over its geographic domain. New York City is a creature of one of the sovereign fifty U.S. states and sits in a regional economy that has a bi-State border crossing it. Thus, there is a much lower level of political autonomy within New York City than within London, especially with surrounding areas under diverse political control. In particular, there is regional infighting history: New York City vs the counties of Long Island; New York City vs New Jersey; Manhattan vs the outer boroughs. The politics and institutions of the region make it difficult to coordinate a general transportation policy for New York City and transit spending, transport planning,and service quality vary radically across the region.

This institutional difference is why many analysts have doubted the feasibility of congestion pricing in New York City. Transport expert Anthony Downs felt it would not happen in New York City, and the Bloomberg proposal, after an auspicious start, did indeed implode after a strong round of political conflict.

Downs

These institutional issues raised a number of complications for the Bloomberg proposal, complications that were not present in London. The New York "Smart Authority" would have been responsible for administering the congestion charge. To be effective, this body would have to have had overarching authority, as is the case for TfL. However, the Smart Authority would not, in fact, have had that much power. For example, existing New York agencies would have kept revenue already collected by existing tolls. So the Smart Authority would have kept only that congestion charge revenue raised by it, minus the revenue of existing tolls. Drivers would pay the tolls and the congestion charge, and would get credit for existing tolls paid.

This raised a number of concerns. In particular, much commercial truck traffic involves repeat trips into and out of the zone, something that can get quite expensive—and potentially quite confusing—given the continued existence of agency tolls overlaid with the congestion charge. Repeat trips appeared to need repeated payment of existing tolls to agencies. What was needed was a once-a-day payment. This would have been very important for truckers making repeat trips for delivery or service. But the actual proposals were ambiguous.

Also, the Smart Authority would not have controlled existing transit or surface roads. The Smart Authority would have been able to raise revenue, but it would have had limited control on how to spend those funds for capital investments. It was proposed that the Authority would fund projects based on agency requests, but whether those requests would have made overall systemic sense or instead reflected parochial agency concerns remained to be seen. This situation was in marked contrast to TfL's authority.

Implementing, much less approving, a cordon pricing plan in New York, would have been quite involved. The city has limited home rule and needs many approvals from the State of New York. It was this approval that scuttled the plan. The Bi-State Agency, the Port Authority of New York & New Jersey, is a major player in the current regional transportation system and is not under direct control by the State of New York (or some would say the State of New Jersey as well). And within the state and the city, there are myriad agencies responsible for transportation in the city itself, i.e., state agencies such as the New York State Department of Transportation (NTS DOT) and the Metropolitan Transportation Authority (MTA) and city agencies such as the New York City Department of Transportation (NYC DOT).

To give a simple example, far simpler than cordon pricing, any proposal to improve local bus service in New York City requires approval and coordination across the following agencies:

- Buses – MTA or Private Operators
- Highway Network – NYS DOT

- Local Road Network – NYC DOT
- Bus Stop Signs – MTA
- Bus Stop Pavement – NYC DOT
- Bus Shelter – NYC DOT

Practically speaking, these institutional issues are paramount. But financially and economically, what has worked in London should be able to work in New York. The London Congestion Charge generated about 260,000,000 pounds (roughly $520,000,000) in 2006, far below the amount of tolls currently collected in New York City. (It is important to note that the cost of collection and administration was reported around 40 percent of revenue in London and is likely to be at least that much in New York). The proposed New York City charge would have raised, on a net basis, close to that amount, and if existing toll revenues were redeployed as well, the available revenue for new transit and transport investments would have been even greater.

Conclusions

A number of things become clear when comparing New York City and London with respect to pricing and urban congestion.

(1) Urban road pricing needs to be done on a systemic basis. In particular, one needs to delineate what the relevant transportation system is and what traffic flows through it as well as the existing capacity to carry traffic across all modes. Only at that point should pricing be imposed and designed accordingly. This point is reinforced by the fact that London has experienced significant congestion and vehicle count reductions into their center city through the use of congestion pricing while New York continues to face traffic at high levels with no reduction since 1998.

(2) The quality of transit service is important when seeking to reduce urban congestion. Not only must there be transit available as an alternative to automobile travel, but the service must be fast and reliable. In London, improved travel time for buses, in conjunction with pricing, has helped shift many drivers from the roads.

(3) Where there are decentralized institutions, as is the case in many large urban areas in the United States, institutional rigidities need to be considered and designed around.

Such cases may be "second-best" scenarios but at least represent improvements on the status quo. This also points out how important institutions are. In many respects the success of London's cordon pricing is due to the scale and scope of authority vested in TfL.

(4) Most recently, London has experienced a growth in congestion within the zone that is undermining some of the travel improvements that have been created by the congestion charge. This indicates that even good pricing plans need to be dynamic in nature, shifting with conditions rather than remaining static.

(5) The London scheme has created an additional 123 million pounds in revenue for transit investment; however the administrative costs of collecting this revenue has been high—roughly 40 percent of the revenue goes to collection costs. Any pricing scheme itself will not be costless and will have a significant deadweight administrative cost component.

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