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Felix Salmon

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How driving a car into Manhattan costs $160

JUL 3, 2009 10:07 EDT

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In the world of urban planning, there are few things hairier than transportation hypotheticals. When NYC pedestrianized Broadway in Times Square and Herald Square in May, the transportation commissioner said that traffic speeds would go up — but now it seems that we won't know until December at the earliest whether that's actually true.

At the same time, however, a smart model of what exactly would happen if you changed this or charged for that is a prerequisite for making any kind of informed improvements to a snarled-up central business district. And so, ladies and gentlemen, let me introduce you to Charles Komanoff's absolutely astonishing Balanced Tranportation Analyzer — a 3.5 MB Excel spreadsheet which is the product of many years of research and analysis into the question of New York City traffic.

This thing is so big and so complicated that even with all of the detailed explanations in it, it's hard to understand — you really need Komanoff himself to walk you through it. But he recently did just that for me, and so I can point you to the "Delays" sheet, for instance, where Komanoff attempts to quantify the externalities imposed by any given car in NYC traffic.

Being a cyclist, I'm acutely aware of the issue of externalities — it generally costs you nothing to blindly step off the sidewalk and into the bike lane, or to open your taxi door without looking behind you, but it can affect me greatly. Komanoff's a cyclist too, but he's concentrating in this spreadsheet mainly on vehicular traffic. After crunching the numbers, he calculates that on a weekday, the average car driven into Manhattan south of 60th Street causes a total of 3.26 hours of delays to everybody else. (At weekends, the equivalent number is just over 2 hours.) No one car is likely to suffer excess delays of more than a few seconds, of course, but if you add up all those seconds for the thousands of affected cars and trucks, it comes to a significant amount of time.

Many of those hours are very valuable things, especially when you consider big trucks, staffed with two or three professionals, just idling in traffic. Komanoff calculates (check out the "Value of Time" tab) that the average vehicle has 1.97 people in it, and that the average value of an hour of saved vehicle time south of 60th Street in Manhattan on a weekday is $48.89. Which means, basically, that driving a car into Manhattan on a weekday causes about $160 of negative externalities to everybody else.

Of course there are lots of variables here; for one thing, the externalities associated with driving your car into Manhattan go up with the total amount of traffic in the CBD. If you think there's 5% less traffic in New York now than there was a year or two ago, for instance, the cost imposed goes down by 14%, from 3.26 hours to 2.79 hours. Or, to put it another way, if you could somehow implement a policy which resulted in 10% fewer vehicles driving into Manhattan, any given vehicle would impose "only" 2.38 hours of externalities — an improvement of about $43 over the base case.

Komanoff, of course, isn't just analyzing the present, he also has a plan for the future. First of which, necessarily, involves congestion pricing. To drive into Manhattan south of 60th Street, you pay a toll: on weekdays, the toll is $3 at night, then rises to $6 for most of the day, and for peak periods (6am to 10am, and 2pm to 8pm) goes up to $9. At weekends, there's a similar but smaller toll, at $1/$3/$5 prices.

Then there's the subway fare: that too changes according to the time of day. At night subways are free; sometimes they're 50 cents, and most of the time they're $1. At ultra-peak hours

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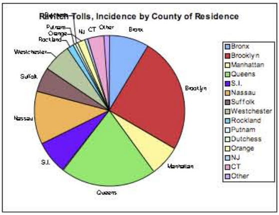
(between 8am and 9am, and between 5pm and 6pm) a subway fare rises to $2, dropping to $1.50 the following hour.

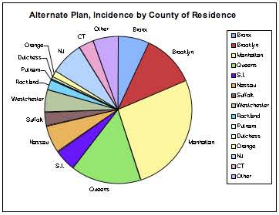
One of the most interesting parts of Komanoff's plan is the bus fare: always $0, all the time. That speeds up buses considerably, since it basically eliminates long lines at the fare box as people hunt for their MetroCard. In turn that makes buses more attractive, and a lot of people, attracted by the free fare and faster speeds, will start taking the bus rather than driving or taking a taxi or a subway. In-city commuter rail, on Metro-North and the LIRR, also goes free.

Medallion taxis do not pay the congestion charge, but there is a 33% taxi-fare surcharge. One tenth of that (around 3%) goes to the taxi drivers and owners; the rest (30%) goes to the MTA; the taxi surcharge alone raises enough money to make in-city commuter rail free.

Add it all up, and it's pretty much revenue-neutral, says Komanoff: the biggest line items are that you lose $1.46 billion in transit fares, while gaining $1.31 billion in congestion charges. But total time savings are the biggie: implement this plan and New Yorkers get over $2.5 billion of time back which would otherwise be spent wasted in traffic. Vehicle speeds in general rise about 20%, and as much as 25% between 9am and 10am.

All in all (see the "Cost-Benefit" tab), Komanoff sees $5.3 billion in gains and just $2 billion in losses. Sounds good to me. What's more, it's politically more acceptable than the last attempt to introduce congestion pricing into NYC, where the brunt was disproportionately borne by Brooklyn. This plan puts much more of the cost of the plan onto Manhattanites, largely thanks to that taxi surcharge. Here are Komanoff's charts (from the "Incidence" tab):





Komanoff's still working on this spreadsheet, but the main message is pretty clear — that smart congestion charging would be great news for New York, and probably for most other dense cities as well. If you're feeling really ambitious, you can even try playing around with the numbers yourself. Enjoy!

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JUL 3, 2009
3:04 PM EDT

"That speeds up buses considerably, since it basically eliminates long lines at the fare box as people hunt for their MetroCard."

An alternative approach, used in Europe, is random checks (if you don't have a card, you owe a fine).

Posted by Max | Report as abusive

JUL 4, 2009
8:27 AM EDT

i believe that free buses were tried for a while in madison wisconsin, i believe. i read one article about it a long time ago and only have a sketchy memory of it. anyone remember this?

but would making the buses free actually have a big effect? buses are still going to be much slower than cars even without having them waste time taking fares. they will still have to go to the right lane and stop at almost every bus stop. they will still have to idle when ahead of schedule.

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Posted by q | Report as abusive

JUL 4, 2009
10:22 AM EDT

@Q....

When you implement congestion pricing, and free buses, you dramatically reduce the number of cars on the road... So while buses would take longer than a car on the same day, the bus would probably take as long (if not less) time than a car today...Also, how does Madison come even close to comparing to Manhattan, traffic-wise?

Posted by addicted | Report as abusive

JUL 4, 2009
10:35 AM EDT

to speed buses all they have top do is put a ticket-taker on them.

everone piles in and the bus takes off and then the ticket-taker checks their tickets.

it can be done with a portable scanner scanning the metrocard.

each bus can be a double, and drivers could have some shifts driving and some collecting fares.

also: eliminate 50% of the stops: every other block is way WAY too many stops.

Posted by DANIEL ARONSTEIN | Report as abusive

JUL 4, 2009
11:06 AM EDT

Buses would become the perfect place for the homeless to spend a day out of the elements.

There would need to be some mechanism for buses to keep out undesirables or nobody would go on them even if you paid them.

Posted by Walter Pemican | Report as abusive

JUL 4, 2009
11:16 AM EDT

All this sound and fury does not nullify the pesky fact that it is fundamentally immoral for a government to coerce non-consumers of a non-public good to subsidize the consumers of that non-public good. (And "public" transportation is NOT a public good, since it is perfectly excludable.)

Those who ride the bus should be the ones — and the only ones — who pay for it. Period. No different than the notion that those who ride a cab should be the ones — and the only ones — who pay for it. Period.

The poor, meanwhile, can be subsidized through discounted cards (i.e., welfare) no different from seniors and students.

Concocting faux "externalities" where none exist (congestion is NOT an externality, as it only affects those on the road in the first place) is nothing more than a thinly veiled excuse for central planning favoritism.

Posted by KipEsquire | Report as abusive

JUL 4, 2009
12:24 PM EDT

Felix, I've lived in the New York City area for several years, and take the subways often, and the fares do not change as you say they do. The fare to get into the subway system is $2, day or night, peak times or not peak times. I assume Komanoff was making some kind of point about the cost of taxpayer subsidy of the subways, and you misunderstood him.

KipEsquire, Manhattan could not function without relatively inexpensive mass transit. You have no appreciation of the population density in Manhattan. Without it, there would be no getting around in the city at all. Thus, mass transit is a positive benefit to everyone in the city whether they choose to use it or not.

Posted by Barbara O'Brien | Report as abusive

JUL 4, 2009
12:39 PM EDT

Been reading some books on libertarianism, have we, Kip? While you may actually believe it is "fundamentally immoral" to have non-users subsidize users, I disagree — so do most people, and so might you too, if you actually took your argument to its logical extreme. It's among the reasons libertarians tend to do so poorly at the polls.

Yes, public transportation is not a "public good," as it's perfectly excludable. But then, so are public roads, public parks, even the broadcast spectrum (although that latter not so easily). Is it "immoral" for government to subsidize roads or parks? If you think so, then congratulations – you're a real libertarian, and good luck with that. But if you think perhaps those questions are more difficult, then you're in the same boat with the rest of us, trying to figure out a policy that works for both users and non-users. Subsidizing public transport provides a host of benefits even for those not using the subsidy. The midtown-Manhattan hedge funder with a car and driver gets to benefit from a system that allows the people who clean his office and make his lunch to get to work cheaply and quickly. And on a more "pedestrian" level, the middle-class Manhattanite (or poor one – any such are left) who chooses to walk everywhere still benefits, because public transportation allows the city to operate around him — the lady who bags his groceries is from the Bronx, and his haircutter is from Queens. And because (or assuming that) subsidizing public transport reduces congestion, that subsidy also benefits the non-user Manhattanite by allowing trucked in goods to get to him cheaper and quicker.

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To be honest, I'm not sure how well making buses free would work – not from a moral perspective, but an economic one. I'm all for reducing transaction costs (perhaps a card-check system as others have suggested, or at least a nice round, easy to count, fare), but making buses free would tend to make them oversubscribed. Not just with those seeking shelter in bad weather, but those who could be walking, or taking the subway. I realize it's a complicated issue, but it seems making NYC buses free would either make them resemble the overstuffed buses of Mumbai, or else require a lot more buses – either may reducing the congestion-reducing benefits being sought.

Posted by Pilgrim | Report as abusive

JUL 4, 2009
12:49 PM EDT

San Diego's transit system also uses the "spot check" method for collecting fares, I believe, rather than making everyone get their ticket punched.

Posted by Rafe | Report as abusive

JUL 4, 2009
12:58 PM EDT

Dear KipEsquire, "gay 42-year-old libertarian blogger" extraordinaire living in the stucco-strip-mall-ridden exurban hellhole of Glendale AZ:

You do not understand the concept of "public good." Roads are the *standard textbook example of public goods.*

You do not understand the concept of "externality." Any economic activity that imposes costs that are not captured in the price of the good is a negative externality.

Your deranged Ayn Rand views of the morality of taxation normal Americans find repugnant and insane.
That's why libertarians are lucky to get 0.5% of the vote. Why won't you dingbat trolls just take your stockpile of ammo and Krugerrands and "go Galt" already! Serious people are discussing serious proposals to address serious problems.

Posted by Bob | Report as abusive

JUL 4, 2009
5:01 PM EDT

I wouldn't drive a car into Manhattan if you paid me $ 160 and gave me the car for free. As far as the subways are concerned, they desperately need upgrading, but they'd be a good value at twice the price.

Posted by Carl | Report as abusive

JUL 4, 2009
6:54 PM EDT

This is a good start. In fact, I would take it one step further. Let's charge everyone entering into Manhattan $20. Getting into Manhattan is an inherent value because anyone who's everyone would want to be there. They all wear the right clothes and listen to the right music. The $20 would exclude the undesirables and if the hoi polloi would still want to get in, you could surround the island with velvet rope manned by burly guys with headsets.

Posted by mishu | Report as abusive

JUL 4, 2009
7:15 PM EDT

Let's take a deep breath and drop the ad hominem attacks. Kip certainly has a good point. Public transportation is excludable, so it seems very silly to subsidize it. Clearly, the sensible thing to do is charge "properly" for the roads. If I drive in Manhattan, I incur $x in congestion costs and cause $10*x (or whatever) costs on everyone else. People would certainly be willing to pay me some amount of money to stay off the road. The congestion charge achieves that to some degree.

If that doesn't convince you, ask yourself why someone who walks to work should subsidize someone who takes the subway that same distance.

Posted by David | Report as abusive

JUL 5, 2009
12:07 AM EDT

Cars and trucks are needed to transport food and all the basics to move a city as big as nyc.
If they want to reduce co2.. give companies and people vouchers to replace their cars I bet most people will change their cars/trucks.. they only mention putting more tolls. basically making manhattan an elite ground.
Congestion can be deal with easily if you take out the politics and the big BIG ECONOMIC INTERESTS on this matter

Posted by Danny D | Report as abusive

JUL 5, 2009
12:51 AM EDT

it generally costs you nothing to blindly step off the sidewalk and into the bike lane, or to open your taxi door without looking behind you, but it can affect me greatly

If a pedestrian walks into a bike lane with you in it, the collision is VERY LIKELY to affect the pedestrian, as well as you.

Posted by nascardaughter | Report as abusive

JUL 5, 2009
1:48 AM EDT

Transit should not be free, that would encourage joy riders and people up to no good. We had that before with the farebeaters — they rode for free and and we know how that went. It would be better if everyone paid something. However, it could be free to children under 14 accompanied by parents or another adult and very low cost to the elderly, handicappped and pensioners with very low incomes.

Posted by harold | Report as abusive

JUL 5, 2009
2:04 PM EDT

@kip

If subsidizing buses is immoral, then so is subsidizing roads..

Congestion pricing is great but hard to do in practice (pisses voters off..).

Wich might mean we should stop being libertarian-anal about this and just accept the best possible solution.. (caveat: I don't live in the US so i might be wrong about the practical politics of this)

@Bob

there are private roads of all kinds; small streets in privately owned suburbs/towns, highways etc. Roadbuilding does represent a collective action problem, but it is one markets have solved before and is solving daily. While goverments in theory could do this job better than the market (assuming they had all the information (price signals) that would exist in a market availiable) that does not mean they actually do... A good example of this is traffic congestion and the reluctance (because of political considerations..) to implement road pricing schemes.

Posted by jizes... | Report as abusive

JUL 5, 2009
2:08 PM EDT

oh, and I think davids idea would be ideal and perhaps more and more feasiible as tecnology (sensors, computers, gps technology) improves and becomes cheaper

Posted by roadpricing | Report as abusive

JUL 5, 2009
2:11 PM EDT

http://en.wikipedia.org/wiki/Private_roa d

http://en.wikipedia.org/wiki/Free_market _road'

http://en.wikipedia.org/wiki/Private_hig hway

A private road system is possible. All the elements necescary for its functioning exists or have existed.

Posted by private roads | Report as abusive

JUL 6, 2009
4:23 AM EDT

Damn, I love it when knowledgeable people with attitude slap down a libertarian using actual facts and good examples. It's like antibodies protecting the body-politic. Thanks guys!

Posted by Dmajor | Report as abusive

JUL 6, 2009
12:30 PM EDT

This seems like a great set of ideas to implement. Flexible pricing – for subways or congestion – is something that should have been implemented a lon time ago. For example, express buses into Manhattan charge teh same fare all the time, so many of the buses ride virtually empty late at night and on weekends. Were the fare reduced slightly, with a bit of marketing, I am sure riderhsip would increae to compensate.

And marketing would need to be part of implementing the plan. The opposition to congestion pricing was against any congestion pricing, not the amount contemplated. Travel into Manhattan falls into the same category as water charges – something that a large number of people think should be free, no matter what. It's a big push to sell the benefits of congestion pricing and to nullify the perceived negatives (Manhattan is only for the rich).

The other problem is that in New York City, with all the competing interests, you might end up with a watered-down version of this plan, one that may not work if not left intact.

Posted by Bronxilla Da Bronx | Report as abusive

JUL 6, 2009
1:28 PM EDT

Vancouver has essentially free fares on it's cross-town express buses (B-Lines). There is a fare, but all four door sets open and no one ever checks.

Load times are much faster (Except people outside crowd the exits cuz they want to get on)

There are more homeless stinky people on the bus, as they don't have to pay.

Overall it works pretty well

I lost my buspass, so it works well for me :)

Posted by el chief | Report as abusive

JUL 6, 2009
1:31 PM EDT

I am totally fine with congestion pricing, with the following restrictions:

1. all revenue (minus operational costs) must go to public transport

2. free or cheap parking at bus or subway stations so I can maybe drive a mile to the nearest subway, then hop on and get downtown. maybe i can use my buspass to pay for parking and it checks that I got on the subway within a reasonable time

Posted by el chief | Report as abusive

JUL 6, 2009
4:35 PM EDT

I dont know where the money our public transportation system goes specifically, but i'm sure alot of it goes to the salaries of the thousands of people employed by the MTA, and Bridge and Tunnel. Thats enough reason for me to be fine with paying $4 to get anywhere I want to go and back. For all of you who keep saying that making buses free would allow them to harbor "undesirables" aren't taking into account that it is only $2! i think anyone in dire need to shelter can scrounge up $2. and they have. haven't you been in the subway in manhattan EVER? I dont think making it free would affect this really. Presently, both the Staten Island train and Ferry are free (unless you transfer between the two) and they both seem to be operating fine and arent harboring the people you are so scared of.

Posted by Erin | Report as abusive

JUL 6, 2009
5:57 PM EDT

In Seattle, they do not charge any fares on busses in the downtown core area: http://metro.kingcounty.gov/tops/bus/are a_maps/m_seattle-rfa.html

It works pretty well for making stops very quick. The commuter train (www.soundtransit.org) that runs into and out of Seattle uses (very rare) random spot checks for tickets/passes. That also makes the stops very very quick.

Posted by Bob Montgomery | Report as abusive

JUL 6, 2009
8:25 PM EDT

@ Barbara O'Brien — of course the subway fares don't currently change by time of day … that's Komanoff's proposal. (Though of course the fares just changed on June 28, from $2 per single ride to $2.25.)

Posted by Helen | Report as abusive

JUL 7, 2009
3:06 AM EDT

If you're going to work with an ad-hominem attack, you ought to have the rest of your facts and logic straight:

"You do not understand the concept of 'public good.' Roads are the *standard textbook example of public goods.*"

Maybe in 1776 when Adam Smith asserted this. 50 years later, private roads laced the nation, before eventually getting taken over by the states. Oh, and by the way, charging for Manhattan roads is the idea of the post, not the commenter being criticized.

"You do not understand the concept of 'externality.' Any economic activity that imposes costs that are not captured in the price of the good is a negative externality."

Uh, that is not a workable definition of externality, since nearly every economic activity arguably fits that description. (By the way, most economic activities also create positive externalities.) You have to have a significance test, which Komanoff does, in order to qualify an externality.

"Your deranged Ayn Rand views of the morality of taxation normal Americans find repugnant and insane."

You must live in New York to have such a twisted view of what "normal Americans" think.

Posted by Marc Rich | Report as abusive

JUL 8, 2009
11:07 AM EDT

Nothing is free. Follow the link below for a partial list of the hidden costs of the current auto/sprawl system. Taking the fares off transit would save $trillions. http://freepublictransit.org/index.php?p r=Externalities

Posted by fpteditors | Report as abusive

JUL 8, 2009
1:00 PM EDT

I was just in Seattle where the city buses are free within a designated downtown area.

Posted by Nate | Report as abusive

JUL 9, 2009
9:24 AM EDT

I agree with Max on the first post. I like the European approach..sort of a good-buddy system. They should collect some value for fare and perhaps use the funds to pay for a new fleet of energy-efficient or electric powered buses?

Posted by Joseph | Report as abusive

JUL 9, 2009
3:07 PM EDT

A seemingly minor, but very telling mistake:

"Komanoff's a cyclist too, but he's concentrating in this spreadsheet mainly on vehicular traffic."

A bicycle is a vehicle.

Posted by Mark Peterson | Report as abusive

AUG 24, 2009
2:11 AM EDT

I hate buses and public transportation alltogether. Except for disney buses.

Posted by SuzetteC | Report as abusive

APR 14, 2010
11:24 PM EDT

Manhattan is just not the place to drive a car … Take the subway or ride a bike , but just not car

Posted by autotransport | Report as abusive

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