

TO: Kyoto Municipal Transportation Bureau Board Members
FROM: Yasuyo Tsukamoto
DATE: May 6, 2016
SUBJECT: Alternative Plan to Increasing Fares in Kyoto City

I am strongly against the idea that the Kyoto Municipal Transportation Bureau (KMTB) increase the subway fare. Although the subway's operating budget currently faces an \$8 billion deficit¹, we need to think more about an alternative plan before raising the fares. The fare increase will be an unnecessary burden to 359,000 subway riders in Kyoto city. In this memo, I propose increasing revenues by leasing dead spaces for commercial use and selling unused properties, reducing costs such as personnel cost, and transferring subsidies from bus department to subway department in order to offset the deficit of KMTB.

History of Subway in Kyoto

Kyoto is the 9th largest populous cities in Japan. Historically, Kyoto has functioned as the crossroads of Japanese history, and people from all over the world visit its Buddhist temples and Shinto shrines, 17 of which are World Heritage Sites². The value of these sites made subway construction difficult. For this reason, the subway system in Kyoto city is newer than other Japanese cities. To shift from the inefficient combination of city trams and buses to a combination of efficient rapid urban railways and buses, Kyoto city constructed the first subway line, the Karasuma, in 1981³. The entire subway system was completed in January 2008⁴.

Although Kyoto citizens and city officials hesitate to interfere with Heritage sites, the construction of the subway is important. Kyoto is the first city in Japan to enact a Local Global Warming Countermeasure Ordinance based on the Kyoto Protocol adopted at the 3rd Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP3)⁵. Based on its responsibility to lower dependence on automobiles and reduce fuel consumption, the city is promoting a model change from automobiles to safe and comfortable public transport⁶.

However, the construction cost in Kyoto became higher due to the bubble economy period, and the number of customers are fewer than what was expected, which cause the financial problem, KMTB deficits⁷.

Fares of Subway

Subway department of KMTB highly depends on its rider fares regardless of its history -- fare is covered 72% of operative expenses⁸. Although this proportion is lower than the other cities such as Tokyo (106%) and Yokohama (101%)⁹, it seems difficult to raise the fares because the minimum fare in Kyoto is 210 yen (= \$1.9), the most expensive fare among the other cities such as Tokyo (170 yen = \$1.5) and Yokohama (180 yen = \$1.6).

KMTB increased its fares twice for 10 years. The 7.4% fare increase was introduced in order to cover the deficit in the operating budget in January 2006¹⁰. Recently, the 3% fare increase occurred in April 2014¹¹, so KMTB would hesitate to raise its fares.

The current Kyoto city subway fares vary by distance -- \$1.9 until 3 kilometers, \$2.3 from 3 kilometers to 7 kilometers, \$2.6 from 7 kilometers to 11 kilometers, \$2.9 from 11 kilometers to 15 kilometers and \$3.1 over 15 kilometers¹². In addition to the standard coupon tickets (eleven tickets for the fare equal to ten standard tickets), there are discounted coupon tickets commonly usable in the day time (twelve tickets for the fare equal to ten standard tickets)¹³.

Funding the Kyoto Municipal Transportation Bureau

There are several reasons KMTB faces deficit.

Operating Budget

Of the Kyoto city subway's \$293 million operating costs, 72% comes from fare revenue, 8% from subsidies from general account, and 20% from other means such as commercial use of stations¹⁴. In March 2015, the KMTB reported \$7.7 million deficit¹⁵.

Capital Budget

The subway was constructed spending \$7.6 billion and since the KMTB had constructed Tozai Line until 2008, it still had the large capital cost¹⁶. In 2008, the balance of revenue bond was \$4.5 billion, and it still remained \$3.6 billion in March 2015¹⁷. Its annual payment is \$134 million¹⁸.

However, the fare revenue in 2015 was increased \$4.5 million higher than the previous year, and the number of customers increased over five years, reaching 359,000 riders per day in 2015, which has come close to KMTB's goal of 375,000 riders per day¹⁹.

Before Increasing Fares

The KMTB could raise fares, but this decision may encourage people to use their private cars or the other forms of privately owned trains and buses. Instead of increasing the fares, there are several possible ways to increase the operating budget and to decrease cost.

First, as some subway stations still have large dead spaces, the KMTB should focus on increasing revenues by leasing these spaces for commercial use. Its estimated revenue would be \$4.5 million per year²⁰. The Bureau has leased these spaces for ATM, juice stands, convenience stores, and cake stores at Kyoto Station and Sijyo Station, and generated \$1 million in 2008²¹. Also, as KMTB still has some land near the stations to construct subway systems, selling unused property at market-value prices would be helpful. Its estimated revenue in 2016 would be \$2.5 million²². Since the number of citizens in Kyoto city has declined over five years and the population shrinking is the major problem in entire Japan, the expanding lines is unlikely.

Second, reducing costs must be helpful to decrease the deficit. For example, reducing personnel cost such as salaries, introducing a more efficient operating system, and implementing the operation by elderly people who retired transportation companies with lower wages, allows the KMTB to reduce the operating cost. Due to the aging society, many Japanese companies raised the retirement age to sixty in response to the Law Concerning the Stabilization of Employment of Older Persons. However, some over sixty still want to continue to work to supplement inadequate pension incomes and to keep in touch with society. They work generally at reduced wages, so hiring these elderly people would help to reduce the personnel cost of KMTB.

Third, since the bus department of KMTB has begun to make the profit constantly, using bus's subsidy for the subway department of KMTB, would help to reduce deficit. \$47 million transfer from the bus department to the subway department will be expected for 8 years, and \$21 million annual transfer will be expected transferred 9 years later²³.

Alternative Plans Which Cannot Be Applicable in Kyoto's Case

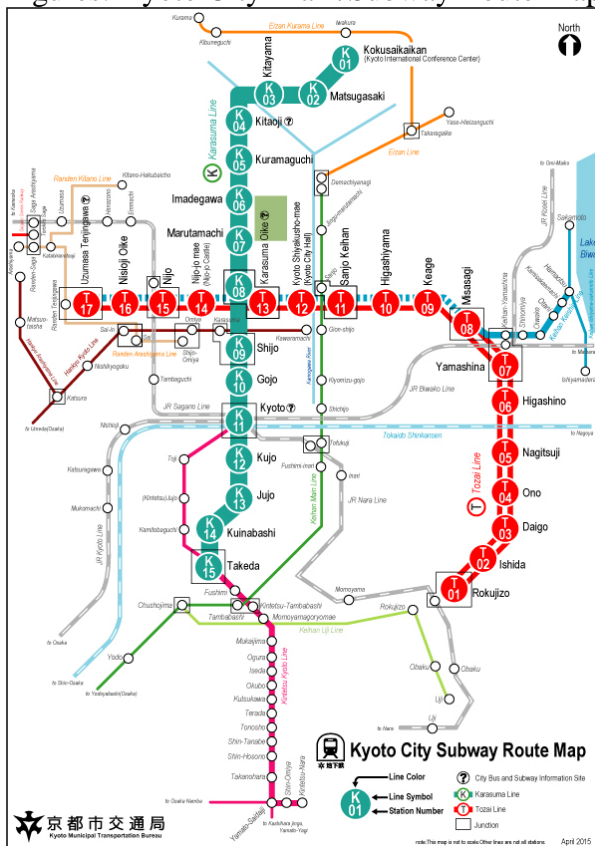
Several alternative plans have been proposed based on the New York City and Washington DC cases, but these are not applicable in Kyoto's case. For example, increasing gas tax is not applicable since gas tax is the national tax in Japan. Another instance is a commuter tax like NYC, but introducing a commuter tax has the same problem with increasing fares. Also, compared to the commuters in NYC, commuters in Kyoto usually live in Kyoto city, which contradicts the purpose of a commuter tax.

Introducing the peak-load pricing like Washington DC seems most attractive plan among other plans since the commuter trains in Kyoto are always crowded during peak-load times. However, this plan will not work in Kyoto for the following reasons. First, most peak-load riders use subways based on their needs to go to their office or schools on time, which cannot be determined by riders but their business customs, personnel management and so on. Hence, without the help of these companies, it is difficult to change the commuters' behaviors. Second, since Kyoto city has several alternative routes for commuters (see the figures), it is not sufficient to introduce the peak-load pricing only by KMTB. At the same time, changing the system is also accompanied with a huge capital budget burden, and decreasing the deficits are more urgent. Finally, the peak-load pricing may promote the usage of private cars, which contradicts the Kyoto's model change from automobiles to public transportation.

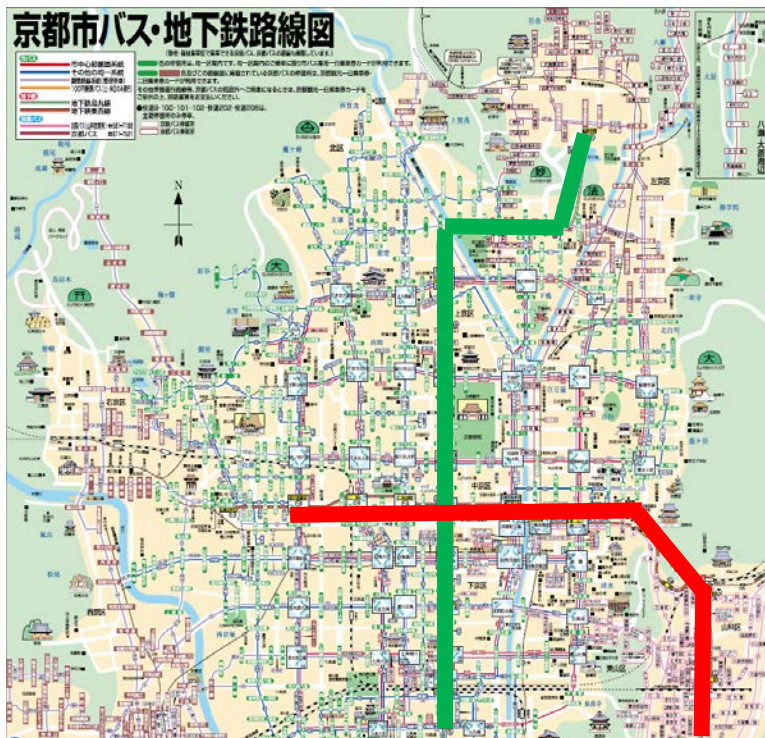
Conclusion

Increasing the fares will not make a big difference because of its inelasticity. The KMTB must find a new way to raise revenue, reducing operating costs, and transferring subsidies to fund its operating and capital budgets without introducing the peak-load prices.

Figures: Kyoto City Train/Subway Route Map



<https://www2.city.kyoto.lg.jp/koho/eng/access/subway.html>



https://t11537yc.files.wordpress.com/2012/01/kyoto_bus_map.png

References

- ¹ 1 USD is converted by 112 Japanese Yen.
- ² Kyoto Prefecture (http://www.pref.kyoto.jp/visitkyoto/en/theme/sites/shrines/w_heritage/)
- ³ Kyoto's first transportation was the city tram opened in 1912. However, after the rise in private car ownership and population migration away from the city center in 1960s, city buses became the chief public transport. At this time, the Kyoto municipal government viewed urban transport as part of overall urban administrative planning and decided to gradually shift the transport system away from a combination of city trams and buses to a combination of efficient rapid urban railways and buses. Kubota, Toshikazu, "Kyoto Subway Projects and Extension of Tozai Line," Japan Railway & Transport Review No.46 pp15-19, December 2006 (http://www.jrtr.net/jrtr46/f15_kub.html).
- ⁴ Kyoto Municipal Transportation Bureau, Transportation Management Policy 2011 (<http://www.city.kyoto.lg.jp/kotsu/page/0000100868.html>)
- ⁵ Kubota, Toshikazu, "Kyoto Subway Projects and Extension of Tozai Line," Japan Railway & Transport Review No.46 pp.15-19, December 2006 (http://www.jrtr.net/jrtr46/f15_kub.html).
- ⁶ Ibid.
- ⁷ Kyoto Municipal Transportation Bureau, Rehabilitation Plan, September 2015 (<http://www.city.kyoto.lg.jp/kotsu/page/0000156419.html>)
- ⁸ Ibid.
- ⁹ Tokyo (http://www.kotsu.metro.tokyo.jp/information/keiei/settlement_t1.html) and Yokohama (<http://www.city.yokohama.lg.jp/koutuu/kigyozaimu/yosan/>)
- ¹⁰ Kyoto Municipal Transportation Bureau, Rehabilitation Plan, September 2015 (<http://www.city.kyoto.lg.jp/kotsu/page/0000156419.html>)
- ¹¹ Kyoto Municipal Transportation Bureau (<http://www.city.kyoto.lg.jp/kotsu/cmsfiles/contents/0000160/160661/chika260305.pdf>)
- ¹² Kyoto Municipal Transportation Bureau (<http://www.city.kyoto.lg.jp/kotsu/page/0000164116.html>)
- ¹³ Ibid.
- ¹⁴ Kyoto Municipal Transportation Bureau (<http://www.city.kyoto.lg.jp/kotsu/page/0000020415.html>)
- ¹⁵ Ibid.
- ¹⁶ Kyoto Municipal Transportation Bureau, Rehabilitation Plan, September 2015 (<http://www.city.kyoto.lg.jp/kotsu/page/0000156419.html>)
- ¹⁷ Ibid.
- ¹⁸ Ibid.
- ¹⁹ Kyoto Municipal Transportation Bureau (<http://www.city.kyoto.lg.jp/kotsu/page/0000020415.html>)
- ²⁰ Kyoto Municipal Transportation Bureau, Rehabilitation Plan, September 2015 (<http://www.city.kyoto.lg.jp/kotsu/cmsfiles/contents/0000156/156419/2subway.pdf>)
- ²¹ Kyoto Municipal Transportation Bureau, Rehabilitation Plan, September 2015 (<http://www.city.kyoto.lg.jp/kotsu/page/0000156419.html>)
- ²² Kyoto Municipal Transportation Bureau (<http://www.city.kyoto.lg.jp/kotsu/page/0000193578.html>)
- ²³ Ibid.