How Far Can You Travel by Metro for Five Yuan?

Xu Tianjie¹, Rao Ya¹

¹Shanghai Rail Transit Industry Information Center, Shanghai, 201103, China.
*Corresponding author: tjxu02@163.com

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With 5 Yuan, you can buy a small piece of bread or to know the metro ticket systems and pricing rules two bottles of water. If you are thinking about applied by the cities in China. There are two major travelling, public transportation will be the only dominating ticket systems in China, zone-based option; and if you want to reach the destination pricing and distance-based pricing. The detailed quickly and comfortably, the metro will be your first pricing methods and representative cities are choice. Then with 5 Yuan in hand, how far can you summarized in the table below.

travel by metro? To answer this question, Shanghai Rail Transit Industry Information Center has collected the latest data on metro fares in 33 cities in China and drawn the chart, as shown in figure 1.

As shown in figure 1, you can travel for at least 18km with 5 Yuan (in Guangzhou, Shenzhen, Wuhan, Chengdu, Hangzhou, Dongguan, Xiamen, Guiyang, and Lanzhou, where a trip longer than 18km will be charged from 6 Yuan); while in Zhengzhou you can travel the farthest – as long as it does not exceed 30km, 5 Yuan is enough.

However, passengers in Harbin, Tianjin, and Dalian may have some different opinions concerning the results. Why? Is there any intriguing knowledge to share? Let’s explore one by one. First, it is necessary
Table 1. Metro ticket systems and pricing rules in China.

<table>
<thead>
<tr>
<th>Ticket System</th>
<th>Pricing Method</th>
<th>Representative Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone-based Pricing</td>
<td>Metro lines are divided into zones, and fare is calculated by the unit of</td>
<td>Harbin</td>
</tr>
<tr>
<td></td>
<td>zone.</td>
<td></td>
</tr>
<tr>
<td>Distance-based</td>
<td>The total distance is divided into several sections, with each section</td>
<td>Most Chinese cities</td>
</tr>
<tr>
<td>pricing</td>
<td>varying from another. Following the principle that the longer the travel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>distance, the lower the unit fare, ticket is priced in a stepwise manner.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This system is applied by most metros in China, but there are differences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>between cities in terms of the base price and the number of additional</td>
<td></td>
</tr>
<tr>
<td></td>
<td>kilometers that passengers can travel for each 1 Yuan added.</td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>Both systems are applied to the municipal metro network.</td>
<td>Tianjin, Dalian</td>
</tr>
</tbody>
</table>

Zone-based pricing was once adopted by many cities. However, with the rapid expansion of metro networks in China, some cities have changed zone-based pricing to distance-based pricing. For the time being, zone-based pricing is only adopted in Harbin and some lines in Dalian and Tianjin (except the section between Zhongshanmen and Donghai Road of Line 9). Therefore, residents in these three cities may not agree with the analysis results above.

The pricing structures of the cities adopting distance-based pricing are not exactly the same. To more clearly present the differences, a color gradation chart was made. Figure 2 demonstrates the relationship between metro fare and travel distance in 33 cities (ranking from the longest distance that can be covered with 5 Yuan to the shortest).

It can be observed from figure 2 that there are great differences in the pricing structure of different cities, but they basically follow the principle of decreasing distance, that is, the further the distance, the more kilometers that passengers can travel for each additional 1 Yuan. In terms of the distance covered by the base price, Shanghai and Beijing metros offer a base price of 3 Yuan for 6km; in other cities, a 2-Yuan base fare for 4 to 7km.

Besides, it can also be observed from figure 2 that 8 cities, i.e., Guangzhou, Wuhan, Chengdu, Shenzhen, Hangzhou, Dongguan, Guiyang, and Lanzhou are almost of the same pricing structure, the base fare is 2 Yuan for 4km, and with each additional 1 Yuan passengers can take extra 4/4/6/6/8/8/8km (with a slight difference in Chengdu, which is 4/4/6/6/8/8/10/20km). Then, how does this fare structure represented by Guangzhou differ from those in Beijing and Shanghai?

- For a travel distance shorter than 9km, the fare in Guangzhou is the lowest, and those in Beijing and Shanghai are the same;
- For a travel distance of 9 to 12km, the fares are the same;
- For a travel distance of 12 to 18km, the fares in Beijing and Guangzhou are the same, and higher than that in Shanghai;
- For a travel distance longer than 18km, the fare in Guangzhou is the highest, that in Beijing is higher than that in Shanghai in part of the range, but lower when the distance is longer than 46km.
Figure 2. Schematic diagram of metro fares in cities using distance-based pricing China (Note: Fig. 2 represents the incomplete statistical information as of the end of 2019. The statistics covered the regular fare tickets of standard metro lines only, and special circumstances were excluded, such as the 2-Yuan ticket for Shanghai Metro Line 5 and the business class in Shenzhen Metro Line 11.).

In 2019, China ushered in a wave of intensive metro fare adjustments. Wuhan Metro and Nanjing Metro retained the distance-based fare system, as well as the original starting price but changed the fare structure. The kilometers covered by the base price was changed from the original 9km and 10km to 4km, so was the kilometers that can be traveled for each 1 Yuan added, as illustrated in figure 4.

Figure 3. Comparison of changes in metro fare with distance in Beijing, Shanghai, and Guangzhou.
Shenyang Metro shifted from zone-based pricing to the mainstream approach, i.e., distance-based pricing. Its current fare structure consists of a 2-Yuan base fare for 6km, and each additional 1 Yuan for an extra distance of 4/4/7/7/10/10km. At the beginning of 2019, Shenzhen Metro also published an alternative plan for fare adjustment and solicited opinions from the public. However, due to many objections, the plan was abolished.

In mid-2019, the Shenzhen Development and Reform Commission issued the *Shenzhen Rail Transit Fare Pricing Guideline (Draft for Comments)* for public consultation, intending to provide a basis for the adjustment of metro fares. The Guideline proposes that the adjustment rate of metro fare shall not be higher than the increase rate of the per capita disposable income of residents in the city, and the average metro expenditure of each commuter shall account for no more than 6% of the per capita disposable income of residents. Now introduction of this method, as an official document, has been included in the major administrative decision-making issues of the Shenzhen Development and Reform Commission, and it is likely to become the first guideline for urban rail transit fare pricing in China.

In fact, metro networks in some foreign cities have developed their own fare adjustment mechanisms, which are generally linked to the consumer prices, energy consumption, and wage income of the city. Shanghai Metro Information Center is delighted to keep sharing relevant data and information in subsequent papers for industry reference.

**Notes**

The information provided herein comes from the online public information collected; the data on some cities may not be the latest, please contact us if there are any errors.

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