Analysis on Beijing's Policy of Restricting Motor Vehicle Use

by

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Policy Connotation

- A series of restriction measures on the usage of motor vehicles, in particular those based on the tail license number;
- A strategy of transportation demand management targeting at decreasing the total number of on-road motor vehicles;
- A policy put into trial in succession in 2006 and 2007 and kept in force since 2008 after the Beijing Olympic Games;

6-Day Trial Policy Implementation in Nov. 2006

Measures

- Sealing up 50% of the motor vehicles belonging to the Central Government and its departments, the army, and the state-owned enterprises and institutions in Beijing, 80% belonging to Beijing Municipal Government and its departments and institutions, and 80% belonging to the government representative offices in Beijing of other provinces and municipalities (20% of total motor vehicle possession);
- Promoting the public movement of “Green Travel for Olympics: One Day Off-Road” of private cars (410,000 people involved);

Effects

- Decrease of traffic flow by 6.4% on urban expressways;
- Increase of running speed by 7.3% in average on urban expressways;
- Increase of public transportation volume by 6.7% for bus and 15.9% for subway;

4-Day Trial Policy Implementation in Aug. 2007

Measures

- Alternative running of all the motor vehicles licensed in Beijing (except those specified), as well as those licensed in province yet running in Beijing, in either an even or an odd number day based on the even or odd tail license number, from 6am to 24pm per day;
- Further reduction of motor vehicle use by 20% by the departments and institutions of Beijing Municipal Government;

Effects

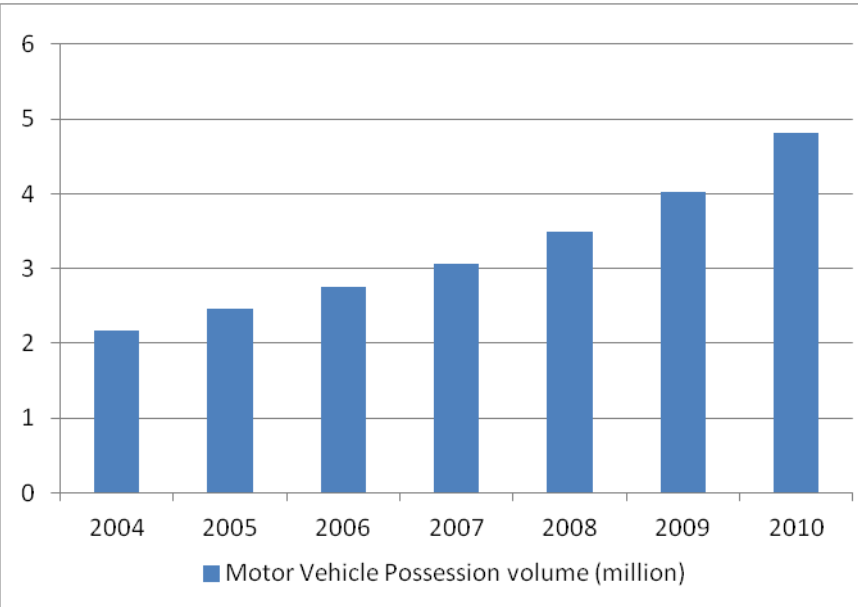
- Decrease of traffic flow by 1.3 million per day in average, more than 1/3 of the total motor vehicle possession;
- Increase of running speed, reaching 38.6 km/h in average in the first day;
- Improvement of air quality;

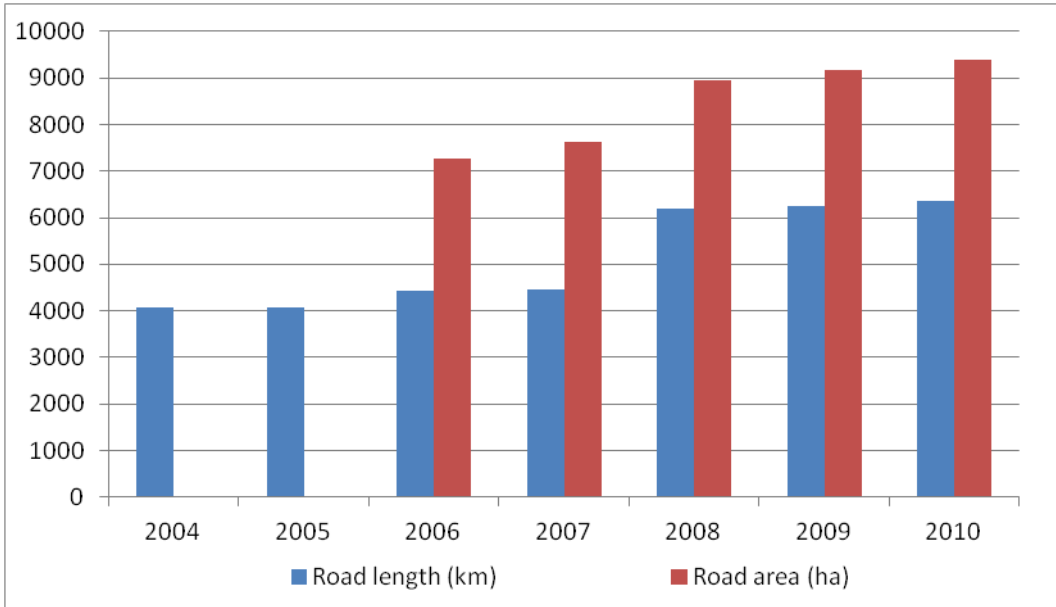
Policy Implementation During & After Olympics Games

Measures	During Olympics	After Olympics		
	Jul. 1st, to Sept. 20th, 2008	Oct. 11th, 2008 to Apr. 10th, 2009	Apr. 11th, 2009 to Apr. 10th, 2010	Apr. 11th, 2010 to Apr. 10th, 2012
Sealing up motor vehicles of public sectors	None	30% of those belonging to Beijing's local governments of various levels and their departments		
Restricting motor vehicle use of public sectors	None	All belonging to the Central Government and its departments in Beijing, the state-owned enterprises and institutions in Beijing, Beijing's local governments of various levels and their departments, and the institutions attached to Beijing Municipal Government should be off-road one day a week within the administration area of Beijing		
Restriction mode	Alternative running based on the odd or even tail license number	Off-road one day a week during rush hours based on the tail license number, alternating once a month	Off-road one day a week during rush hours based on the tail license number, alternating once every 13 weeks	
Validity	2.5 months	Half a year	One year	Two years
Valid time	24 hours	15 hours	13 hours	13 hours
Valid area	Beijing's administration area in early stage, and within the 5th ring road (included) later on	Within the 5th ring road (included)	Within the 5th ring road (excluded)	

Reasons for Policy Implementation

- Guarantee the performance of Beijing Olympic Games as immediate reason by achieving the required average running speeds;
- Relieve the traffic congestion of Beijing as underlying motivation;
  Sustained increase of motor vehicle possession bringing about a huge transportation demand;
  Slow growth of road infrastructures making the transportation supply comparatively insufficient;





Policy Effects During & After Olympic Games

During Olympic Games: Remarkable effects

- Decrease of traffic flow by 45% or 1.6 million per day;
- Increase of running speed reaching 43 km/h in average;
- Increase of public transportation volume by 4 million per day, making the public transportation travel ratio peak at 45%;
- Reduction of polluted gas emission by 60%;

Index	Level	Traffic situation	Time expenditure
0-2	Expedite	Excellent traffic situation without any roads congested.	On-road running at expected speed limits.
2-4	Expedite in general	Good traffic situation with few roads congested.	0.3 -0.5 times more for every single travel.
4-6	Slightly congested	Unsatisfying traffic situation with some ring roads and arteries congested.	0.5-0.8 times more for every single travel.
6-8	Moderately congested	Bad traffic situation with many ring roads and arteries congested.	0.8-1.0 times more for every single travel.
8-10	Severely congested	Extremely bad traffic situation with most roads congested.	1 times more for every single travel.

Policy Effects During & After Olympic Games

After Olympic Games: decreasing effects compared with previous periods

- Increase of traffic index implying the worsening of traffic situation;
- Decrease of running speed in average;
- Decrease of gas emission reduction;

Reasons for decreasing effects

- Restricting measures become more and more tolerant;
- Valid time of restricting measures is decreased;
- Valid area of restricting measures is narrowed;
- Sustained increase of motor vehicle possession,

Effects	During Olympics	After Olympics		
	Jul. 1st, 2008 to Sept. 20th, 2008	Oct. 11th, 2008 to Apr. 10th, 2009	Apr. 11th, 2009 to Apr. 10th, 2010	Apr. 11th, 2010 to Apr. 10th, 2012
Traffic index		5.15	6.05	
Running speed	43 km/h in average in the central urban area	25.2 km/h in average during morning rush hours	24.3 km/h in average during morning rush hours	
Gas emission reduction		375 ton per day	310 ton per day	

Public's Opinion on Policy Implementation

- Before Olympics: about 90% of Beijing's citizens were for implementing the policy during the Olympic Games;
- After Olympics: 68.9% of the 5058 interviewees were for the policy, 19% were against, and 12.1% were neutral;

  Supporting party: it may make public transportation a substitute of private cars as key travel mode, which will greatly reduce commuting time, remarkably relieve traffic congestion and promote air quality, and then significantly improve the living environment of the city;

  Opponent party: it may stimulate the consumption of the second car, which will counteract the effects of this policy in a certain period of time;

  Neutral party: the policy's objectives are desirable, yet the practical measures shall be modified, so as to be more flexible, for example, applicable during the weekdays rather than weekends and holidays;

Public's Opinion on Policy Implementation

Different surveys may show different results

- Survey done by a governmental agency: more than 85% of Beijing's citizens were for the policy, with 80% among car owners while 93% among non-car owners;
- Survey done by a web: given 80.8% of the interviewees being car owner, 81.4% of the interviewees were against the policy;

Conclusions

- The policy did have achieved some positive effects on relieving traffic congestion and improving air quality;
- Yet the comprehensive effects gradually decreasing along with the continuous growth of motor vehicle possession;
- As strategy of traffic demand management targeting at decreasing the number of on-road motor vehicles, the policy of restricting motor vehicle use could only be a temporary countermeasure to relieve traffic congestion, rather than a fundamental one;
- Efforts should be made in a comprehensive way in various aspects
  Restructure the functional layout so as to shorten commuting distance;
  Develop public transportation so as to reduce car use;
  Establish a green transportation system so as to promote green travels;