Risk for Transportation of 2019 Novel Coronavirus Disease from Wuhan to Other Cities in China

Appendix

Data

We analyzed the daily number of passengers traveling between Wuhan and 369 other cities in mainland China. We obtained mobility data from the location-based services of Tencent (https://heat.qq.com). Users permit Tencent to collect their realtime location information when they install applications, such as WeChat (\approx 1.13 billion active users in 2019) and QQ (\approx 808 million active users in 2019), and Tencent Map. By using the geolocation of users over time, Tencent reconstructed anonymized origin–destination mobility matrices by mode of transportation (air, road, and train) between 370 cities in China, including 368 cities in mainland China and the Special Administrative Regions of Hong Kong and Macau. The data are anonymized and include 28 million trips to and 32 million trips from Wuhan, during December 3, 2016–January 24, 2017. We estimated daily travel volume during the 7 weeks preceding the Wuhan quarantine, December 1, 2019–January 22, 2020, by aligning the dates of the Lunar New Year, resulting in a 3-day shift. To infer the number of new infections in Wuhan per day during December 1, 2019–January 22, 2020, we used the mean daily number of passengers traveling to the top 27 foreign destinations from Wuhan during 2018–2019, which were provided in other recent studies (*1–3*).

Model

We considered a simple hierarchical model to describe the dynamics of 2019 novel coronavirus disease (COVID-19) infections, detections, and spread.

Epidemiologic Model

By using epidemiologic evidence from the first 425 cases of COVID-19 confirmed in Wuhan by January 22, 2020 (4), we made the following assumptions regarding the number of new cases, $dI_{\omega}(t)$, infected in Wuhan per day, t.

• The COVID-19 epidemic was growing exponentially during December 1, 2019– January 22, 2020, as determined by the following:

 $dI_{\omega}(t) = i_0 \times \exp(\lambda \times t)$

in which i_0 denotes the number of initial cases on December 1, 2019 (5), and λ denotes the epidemic growth rate during December 1, 2019–January 22, 2020.

After infection, new cases were detected with a delay of D = 10 days (6), which comprises an incubation period of 5–6 days (4,7–11) and a delay from symptom onset to detection of 4–5 days (12,13). During this 10-day interval, we labeled cases as infected. Given the uncertainty in these estimates, we also performed the estimates by assuming a shorter delay (D = 6 days) and a longer delay (D = 14 days) between infection and case detection (Appendix Table 2).

Our model can be improved by incorporating the probability distribution for the delay between infection and detection, as reconstructed linelists (14-17) and more granular epidemiologic data are becoming available.

Under these assumptions, we calculated the number of infectious cases at time, *t*, by the following:

$$I_{\omega}(t) = \int_{u=t-D}^{t} dI_{\omega}(u) du$$

The prevalence of infectious cases is given by the following:

$$\xi(t) = \frac{I_{\omega}(t)}{N_{\omega}}$$

in which $N_{\omega} = 11.08$ million, the population of Wuhan.

Mobility Model

We assumed that visitors to Wuhan have the same daily risk for infection as residents of Wuhan and constructed a nonhomogenous Poisson process model (18–20) to estimate the risk for exportation of COVID-19 by residents of and travelers to Wuhan. In this model, $W_{j,t}$ denotes the number of residents of Wuhan that travel to city *j* on day *t* and $M_{j,t}$ denotes the number of from city *j* traveling to Wuhan on day *t*. Then, the rate at which infected residents of Wuhan travel to city *j* at time *t* is given as $\gamma_{j,t} = \xi(t) \times W_{j,t}$ and the rate at which travelers from city *j* get infected in Wuhan and return to their home city while still infected is $\Psi_{j,t} = \xi(t) \times M_{j,t}$. This model assumes that newly infected visitors to Wuhan will return to their home city while still infectious. By using this model, the probability of introducing ≥ 1 case of COVID-19 from Wuhan to city *j* by time *t* is given by

$$1 - \exp\left[-\int_{u=t_0}^t (\gamma_{j,u} + \Psi_{j,u}) du\right]$$

in which t_0 denotes the beginning of the study period, December 1, 2019.

Inference of Epidemic Parameters

We applied a likelihood-based method to estimate our model parameters, including the number of initial cases i_0 and the epidemic growth rate λ , from the arrival times of the 19 reported cases transported from Wuhan to 11 cities outside of China, as of January 22, 2020 (Appendix Table 1). All 19 cases were Wuhan residents. We aggregated all other cities without cases reported by January 22, 2020 into a single location (j = 0).

In this model, N_j denotes the number of infected residents of Wuhan who were detected in location *j* outside of China, and $\chi_{j,i}$ denotes the time at which the *i*-th COVID-19 case was detected in a Wuhan resident in location *j*; $\chi_{j,0}$ denotes the time at which international surveillance for infected travelers from Wuhan began, January 1, 2020 (21); and *E* denotes the end of the study period on January 22, 2020. As indicated above, the rate at which infected residents of Wuhan arrive at location *j* at time *t* is $\gamma_{j,t}$. Then the log-likelihood for all 19 cases reported outside of China by January 22, 2020 is given by:

$$\prod_{j=0}^{11} exp(-\int_{\chi_{j},N_{j}}^{E} \gamma_{t,j}dt) \prod_{i=0}^{N_{j}} \gamma_{\chi_{j,i},j} \exp(-\int_{\chi_{j,i-1}}^{\chi_{j,i}} \gamma_{t,j}dt)$$

which yields the following log-likelihood function:

$$\sum_{j=1}^{11} \sum_{i=1}^{N_j} \log(\gamma_{j,\chi_{j,i}}) - \frac{\sum_{j=0}^{11} W_{j,t}}{N_{\omega}} \times \frac{i_0}{\lambda^2}$$
$$\times \left[\exp(\lambda \times E) - \exp(\lambda \times \chi_{j,0}) + \exp(\lambda \times (\chi_{j,0} - D)) - \exp(\lambda \times (E - D)) \right]$$

Parameter Estimation

We directly estimated the number of initial cases, i_0 , on December 1, 2019, and the epidemic growth rate, λ , during December 1, 2019–January 22, 2020. We infer the epidemic parameters in a Bayesian framework by using the Markov Chain Monte Carlo (MCMC) method with Hamiltonian Monte Carlo sampling and noninformative flat prior. From these, we derive the doubling time of incident cases as $d_T = \log(2)/\lambda$ and the cumulative number of cases and of reported cases by January 22, 2020. We also derived the basic reproduction number, by assuming a susceptible-exposed-infectious-recovery (SEIR) model for COVID-19 in which the incubation period is exponentially distributed with mean *L* in the range of 3–6 days and the infectious period is also exponentially distributed with mean *Z* in the range of 2–7 days. The reproduction number is then given by $R_0 = (1 + \lambda \times L) \times (1 + \lambda \times Z)$.

We estimated the case detection rate in Wuhan by taking the ratio between the number of reported cases in Wuhan by January 22, 2020 and our estimates for the number of infections occurring ≥ 10 days prior (i.e., by January 12, 2020). We truncated our estimate 10 days before the quarantine to account for the estimated time between infection and case detection, assuming a 5–6 day incubation period (4,7–11) followed by 4–5 days between symptom onset and case detection (12,13). Given the uncertainty in these estimates, we also provide estimates assuming shorter and longer delays in the lag between infection and case reporting (Appendix Table 3).

We ran 10 chains in parallel. Trace plot and diagnosis confirmed the convergence of MCMC chains with posterior median and 95% CrI estimates as follows:

- Epidemic growth rate, λ: 0.095 (95% CrI 0.072–0.111), corresponding to an epidemic doubling time of incident cases of 7.31 (95% CrI 6.26–9.66) days;
- Number of initial cases in Wuhan on December 1, 2019: 7.78 (95% CrI 5.09– 18.27);
- Basic reproductive number, *R*₀: 1.90 (95% CrI 1.47–2.59);
- Cumulative number of infections in Wuhan by January 22, 2020: 12,400 (95% CrI 3,112–58,465);
- Case detection rate by January 22, 2020: 8.95% (95% CrI 2.22%–28.72%). This represents the ratio between the 425 confirmed cases in Wuhan during this period (22) and our estimate that 4,747 (95% CrI 1,480–19,151) cumulative infections occurred by January 12, 2020 (i.e., ≥10 days before the quarantine to account for the typical lag between infection and case detection).

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Country	City	Date, 2020
Thailand	Bangkok	Jan 8
Thailand	Bangkok	Jan 17
Thailand	Bangkok	Jan 19
Thailand	Bangkok	Jan 21
Thailand	Chiang Mai	Jan 21
Nepal	Kathmandu	Jan 9
Vietnam	Hanoi	Jan 13
United States	Chicago	Jan 13
United States	Seattle	Jan 15
Singapore		Jan 21
Korea	Seoul	Jan 19
Korea	Seoul	Jan 22
Japan	Tokyo	Jan 18
Japan	Tokyo	Jan 19
Taiwan	Taipei	Jan 20
Taiwan	Taipei	Jan 21
Taiwan	Taipei	Jan 21
Australia	Sydney	Jan 18
Australia	Sydney	Jan 20

Appendix Table	1. Cases of 2019 novel	coronavirus detected outs	side of China'
Country	City	Data 2020	

*As of January 22, 2020.

Appendix Table 2. Sensitivity analysis for the delay	between infection and case confirmation,	assuming that cases were confirmed
either 6 d, 10 d (baseline), or 14 d after infection		

Delay (D) from infection to case reporting	Posterior median (95% Crl)
D = 6 d	
Epidemic doubling time, d	6.79 (5.88-8.64)
Initial number of cases on December 1, 2019, i_0	7.95 (5.10–18.43)
Basic reproduction number, R_0	1.98 (1.54–2.71)
Cumulative cases by January 22, 2020	17,376 (4,410-80,915)
Cumulative cases by January 16, 2020 ($D = 6$ d before January 22, 2020)	9,362 (2,696–39,705)
Reporting rate through January 22, 2020	4.54% (1.07%–15.8%)
<i>D</i> = 10 d	
Epidemic doubling time, d	7.31 (6.26–9.66)
Initial number of cases on December 1, 2019, i_0	7.78 (5.09–18.27)
Basic reproduction number, R_0	1.90 (1.47–2.59)
Cumulative cases by January 22, 2020	12,400 (3,112–58,465)
Cumulative cases by January 16, 2020 ($D = 6$ d before January 22, 2020)	4,747 (1,480–19,151)
Reporting rate through January 22, 2020	8.95% (2.22%–28.72%)
<i>D</i> = 14 d	
Epidemic doubling time, d	7.64 (6.49–10.36)
Initial number of cases on December 1, 2019, i_0	7.62 (5.09–18.13)
Basic reproduction number, R_0	1.86 (1.44–2.52)
Cumulative cases by January 22, 2020	10,229 (2,564–48,681)
Cumulative cases by January 16, 2020 ($D = 6$ d before January 22, 2020)	2,805 (957–10,758)
Reporting rate through January 22, 2020	15.15% (3.95%–44.41%)

Appendix Table 3. Mobility between Wuhan and 369 cities in China during December 3, 2016–January 24, 2017*

					2016 population,
ID	City	Total trips	From Wuhan	To Wuhan	millions
1	Xiaogan	9,646,286	5,333,682	4,312,604	4.90
2	Huanggang	7,786,732	4,436,928	3,349,804	6.32
3	Xianning	3,987,334	2,149,524	1,837,810	2.53
4	Beijing	3,921,153	1,956,195	1,964,958	1.07
5	Ezhou	3,858,883	1,508,938	2,349,945	21.73
6	Jingzhou	3,439,123	2,216,479	1,222,644	5.70
7	Xiangyang	3,160,473	1,959,413	1,201,060	5.64
8	Huangshi	2,787,922	1,521,685	1,266,237	2.47
9	Guangzhou	2,555,286	705,205	1,850,081	14.04
10	Yichang	2,266,974	1,420,349	846,625	4.13
11	Shenzhen	1,675,478	188,316	1,487,162	11.91
12	Suizhou	1,536,742	934,564	602,178	2.20
13	Xiantao	1,492,596	856,578	636,018	1.15
14	Shiyan	1,252,190	897,666	354,524	3.41
15	Chongqing	1,177,096	720,442	456,654	30.48
16	Enshi	869,910	610,937	258,973	4.56
17	Tianmen	716,794	447,408	269,386	1.29
18	Changsha	644,273	318,784	325,489	7.65
19	Shanghai	571,458	72,150	499,308	24.2
20	Xinyang	564,841	338,180	226,661	6.44
21	Qianjiang	489,747	288,200	201,547	0.96
22	Jingmen	408,465	269,703	138,762	2.90
23	Yueyang	352,512	185,672	166,840	5.68
24	Zhumadian	316,181	214,425	101,756	6.99
25	Nanchang	301,903	123,239	178,664	5.37
26	Jiujiang	229,539	106,873	122,666	4.85
27	Baoding	205,124	126,334	78,790	11.63
28	Nanyang	173,653	127,666	45,987	10.07
29	Hengyang	155,591	32,443	123,148	7.29
30	Luohe	153,337	103,153	50,184	2.64
31	Sanya	151,726	29,147	122,579	0.75
32	Lijiang	121,669	33,825	87,844	1.29
33	Dazhou	120,983	120,983	0	5.60
34	Luan	117,242	53,698	63,544	4.77
35	Qingyuan	116,218	35,704	80,514	3.85
36	Chengdu	113,938	50,532	63,406	15.92
37	Kunming	108,452	46,613	61,839	6.73
38	Chenzhou	102,565	18,274	84,291	4.71
39	Guilin	100,723	92,078	8,645	5.01

ID City Total trips From Wurhan To Wurhan Murhan Murhan 40 Shiagunua 94,4847 11,483 83,864 2.964 41 Shiagunua 93,102 70,128 22,974 10,78 42 Ankang 81,065 6 0 2.66 43 Xurxiang 73,246 54,707 18,529 5.73 44 Hankou 64,477 30,448 30,955 8.29 46 Hankou 64,474 30,448 30,555 8.29 47 Shenyang 65,680 43,180 13,460 3.96 50 Dongguan 57,672 44,125 13,547 8.26 51 51 Luz/bou 56,640 43,180 13,460 3.96 7.05 52 Zhuzhau 53,890 27,321 26,563 4.02 3.65 54 Hancang 44,627 33,727 10,900 7.32 55 55						2016 population,
40 Shaoguan 94,847 11,483 83,864 2.96 41 Shijazituang 93,102 70,128 22,974 10,78 42 Ankang 81,065 81,065 0 2.66 43 Xinxiang 73,246 54,707 18,539 5,74 44 Shennongia 66,818 37,740 29,578 0.08 45 Suming 64,847 43,222 21,624 3,30 46 Hakou 64,772 30,848 30,828 2,24 46 Harayang 55,082 38,146 19,679 5,13 50 Dongguan 57,672 42,172 13,669 4,02 51 Luztou 50,264 11,069 39,195 7,57 55 Samming 44,857 33,727 10,300 7,32 57 Xingtai 44,357 33,764 14 46 40 56 Naming 47,505 33,764 14 <t< th=""><th>ID</th><th>City</th><th>Total trips</th><th>From Wuhan</th><th>To Wuhan</th><th>millions</th></t<>	ID	City	Total trips	From Wuhan	To Wuhan	millions
41 Shipazhuang 93.102 70.128 22.974 10.78 42 Ankang 81.065 0 266 43 Xinxiang 72.246 54.707 18.539 5.74 44 Shemongjia 66.818 37.240 29.578 0.08 45 Suining 64.847 43.223 21.824 3.30 46 Hakhuu 64.774 30.846 33.926 2.24 47 Shemyang 57.875 38.146 13.679 5.13 51 Dongguan 57.875 38.146 13.679 5.13 52 Dongguan 57.875 38.146 13.679 5.13 53 Dongguan 57.875 33.242 14.360 2.55 54 Fuzhouz 50.264 11.069 39.195 7.57 55 Saming 44.897 41.839 2.558 4.33 59 Anking 41.500 17.398 24.1912 4.61	40	Shaoquan	94.847	11,483	83,364	2.96
12 Arkang 81 (065 81 (065 81 (065 81 (065 81 (065 81 (065 91 (065) 95 (74) 44 Shennongjja 66,818 37,240 29,573 0.08 45 Suining 64,847 43,223 21,624 3.30 46 Halkou 64,774 30,648 33,326 2.24 47 Shenyang 64,258 33,645 33,655 8.29 48 Hanzhong 55,860 47,221 12,6569 4.02 51 Zhunzhou 57,872 44,1250 13,547 8.28 52 Zhunzhou 55,860 47,221 12,669 4.02 53 Handan 52,175 42,872 9,303 9.49 54 Fuzhou2 50,264 11,069 39,196 7.57 55 Saming 44,687 33,727 10,900 7.32 55 NanNing 47,505 33,242 14,864 9.20 56	41	Shijiazhuang	93 102	70 128	22 974	10.78
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4.3 Aminang 7.3.2.80 57.4/10 15.3.39 5.7.4 44 Shemongla 66.81 77.2.80 21.57.4 0.03 45 Shemongla 66.81 77.2.9 21.57.4 0.03 46 Shemongla 64.288 33.663 30.565 8.29 47 Shemongla 57.825 38.146 19.67.9 5.13 50 Dongguan 57.825 38.146 19.67.9 5.13 51 Liuztou 55.640 47.321 26.569 4.02 53 Handan 52.175 42.872 9.030 9.49 54 Fuzhouz 50.264 11.069 39.195 7.57 56 Namining 47.505 33.242 14.263 7.06 57 Xingtal 44.827 33.727 10.300 7.32 58 Xuchang 44.827 33.724 14.844 8.46 50 Aping 41.580 40.530 0	42	Xinuing	81,005	61,005	10 500	2.00
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46 Sunning 64,847 43,223 21,624 3.30 46 Hakabuu 64,774 30,446 33,926 2.24 47 Shenyang 64,258 33,663 30,595 8.29 48 Hanzhong 55,082 58,074 8 3.45 50 Dongguan 57,672 38,146 19,679 5.13 51 Liuzhou 56,660 43,180 13,460 3.36 52 Zhuzhou 56,660 43,180 13,460 3.60 7.57 55 Saming 44,667 30,105 7.57 56 56 46,007 33,242 14,283 7.68 56 Namhing 44,697 41,839 2,568 4.38 59 57 Xigmen 40,505 33,242 14,684 9.20 54 61 Yongzhou 40,503 17,398 24,192 4.61 60 Dalai 40,710 17,524 23,166 3.56 61 Yongzhou 40,530 0 547 56	44	Shennongjia	66,818	37,240	29,578	0.08
46 Haikou 64,274 30,848 33,926 2.24 47 Sheryang 64,288 33,663 30,595 8.29 48 Hanzhong 56,002 56,074 8 3.45 50 Dongguan 57,625 38,146 16,679 5.13 51 Liuzhou 53,680 27,521 25,689 4.02 54 Flandar 28,179 47,571 9,3095 9,47 54 Flandar 44,687 33,727 10,900 7,32 55 Manhing 44,867 33,727 10,900 7,32 58 Xuchang 44,393 2,558 4,38 60 Dali 40,730 40,530 0 5,47 61 Yongzhou 40,330 14,930 2,568 4,38 62 Xiamen 40,330 14,930 2,565 1,464 63 Gringdao 36,803 21,991 14,884 9,20 64 <td>45</td> <td>Suining</td> <td>64,847</td> <td>43,223</td> <td>21,624</td> <td>3.30</td>	45	Suining	64,847	43,223	21,624	3.30
47 Shenyang 64,288 33,663 30,595 8.29 48 Hanzhong 55,082 58,074 8 3.45 50 Dongguan 57,672 44,125 13,547 8.26 51 Luzhou 56,640 43,180 13,460 3.96 52 Zhuzhou 56,640 43,180 13,547 8.26 53 Handan 52,175 42,872 9,303 9.49 54 Fuzhou2 50,264 11,069 31,955 7.57 55 Samming 44,687 36,007 12,890 2,55 56 Nanking 47,505 33,242 14,283 7,06 57 Xingtai 44,627 33,727 10,900 7,32 58 Auchang 44,391 13,832 2,568 4,38 59 Auging 41,930 44,884 9,20 64 Nanchong 33,778 33,764 14 64 64 10019 14,893 25,046 3,65 1,66 1,3,975 9,18<	46	Haikou	64,774	30,848	33,926	2.24
Harzforg 58,022 58,074 1 8 3,46 49 Aryang 57,825 38,1146 19,679 5,13 50 Doroguan 57,672 44,125 13,547 8,26 51 Luzbrou 53,880 27,321 26,569 4,02 53 Handan 52,175 42,872 9,303 9,49 54 Fuzbou2 50,284 11,069 39,195 7,57 55 Samming 44,897 31,839 2,588 4,38 60 Dali 40,710 17,524 23,186 3,56 61 Yongzhou 40,530 0 5,47 3,564 14,884 9,20 64 Nanchong 33,778 33,764 14 6,40 3,22 64 Nanchong 33,778 33,764 14 6,40 3,45 66 Putan 30,807 13,535 17,272 2,65 3,66 7 Junal	47	Shenvang	64.258	33,663	30,595	8.29
avg Avg Avg F S2 38,146 19,679 5,13 50 Dongguan 57,672 44,125 13,547 8,28 51 Liuzhou 56,640 43,180 13,460 3,96 52 Zhuzhou 53,890 27,321 22,6569 4,02 53 Handan 52,175 42,872 9,303 9,49 54 Fizzbru2 50,264 11,069 9,3195 7,57 55 Samming 44,697 33,727 10,900 7,32 58 Xuchang 44,397 41,339 2,558 4,38 60 Dali 40,730 40,530 0 5,47 61 Yongzhou 40,530 40,530 0 5,47 62 Xiamen 40,033 25,945 4,88 4,98 62 Nanchong 33,778 33,757 14,84 9,20 64 Nanchong 33,785 21,727 2,655	48	Hanzhong	58 082	58 074	8	3 45
Ho Allysing J. Ac2J 36, 140 18,019 3.13 50 Dongguan 57,672 44,122 13,5477 8.26 51 Litzhou 56,640 43,181 13,460 3.36 52 Zhuzhou 56,640 43,181 13,460 3.36 54 Fuzhou2 50,257 42,072 8,305 7.77 55 Samming 46,657 33,242 14,260 7.26 57 Xinglai 44,287 41,339 2,598 4.28 59 Anchang 41,393 2,598 4.28 4.28 50 Anging 41,393 2,596 4.28 4.29 50 Anging 41,393 2,596 5.46 5.67 51 Dongguan 38,073 23,774 14,884 4.09 52 Anging 39,074 14,893 2.565 2.85 64 Nanoda 39,073 23,545 1.89 4.28	40	Apyong	57 925	29 1 46	10 670	5.40 F 12
50 Dongguan 5/22 44,125 13,547 8,26 51 Linzhou 53,680 27,521 26,569 4,02 52 Zhuzhou 53,880 27,521 26,569 4,02 54 Fuzhou2 50,265 11,069 33,185 7,57 55 Samming 44,567 33,577 14,600 7,32 56 Samming 44,567 31,857 1,569 4,38 59 Auraing 44,350 17,384 24,192 4,61 60 Dali 40,701 17,524 23,186 3,56 61 Yongzhou 40,530 40,530 0 5,47 62 Xiaren 40,039 1,4933 25,046 3,822 63 Oingdino 38,783 21,919 14,884 9,20 64 Nanchong 33,775 33,774 14 6,40 65 Pingdingshan 30,825 26,464 10 3,55	49	Allyang	57,825	30,140	19,079	5.13
51 Luznou 36,640 43,180 13,460 346 52 Zhuzhou 53,890 27,321 26,669 4,02 53 Handan 52,175 42,872 9,003 9,49 54 Fuzhou2 50,264 11,069 39,195 7,57 55 Samming 44,697 36,007 12,690 2,55 56 NanNing 41,590 17,388 24,192 4,61 60 Dal 40,710 17,524 23,186 3,56 61 Yongzhou 40,530 40,530 0 5,47 62 Xiamen 40,033 21,919 14,864 9,20 64 Nanchong 33,778 33,764 14 6,40 4,88 65 Pingdingshan 30,833 25,945 4,848 4,86 66 Wenzhou 29,609 15,634 13,975 9,18 71 Guangan 22,597 7,753 14,424 7	50	Dongguan	57,672	44,125	13,547	8.26
52 Zhuzhou 53,890 27,321 26,569 4.02 53 Handan 52,175 42,872 9,303 9,49 54 Fuzhou2 50,264 11,069 39,195 7,57 55 Samming 44,697 36,007 12,690 2,55 56 NanNing 47,505 33,242 14,283 7,06 57 Xinghai 44,397 41,339 2,558 4,38 60 Dali 40,710 17,524 23,186 3,56 61 Yongzhou 40,530 40 3,22 64 3,22 63 Qingdao 36,803 21,919 14,484 6,40 65 Pingdingshan 30,837 25,945 4,88 4,88 66 Tieing 30,407 13,535 17,272 2,65 67 Putian 30,423 20,698 9,565 1,68 69 Wenzbou 29,609 15,634 13,975 9	51	Liuzhou	56,640	43,180	13,460	3.96
53 Handan 52 1275 42.872 9.303 9.49 54 Fuzbou2 50.264 11.069 39.195 7.57 55 Samming 44.667 36.007 12.660 2.55 56 NanNing 44.397 41.393 2.558 4.38 59 Anqing 41.590 17.388 24.192 4.61 60 Dali 40.710 17.524 23.186 3.56 61 Yongzhou 40.630 40.530 0 5.47 62 Xiamen 40.039 14.933 25.046 3.92 64 Nanchong 33.778 33.774 14 6.40 65 Pingdingshan 30.833 25.945 4.88 4.88 66 Tieling 30.833 20.963 15.634 13.975 9.18 67 Putian 30.488 21.972 8.516 2.88 2.89 68 Zhunajan 22.597 2.4.285	52	Zhuzhou	53,890	27,321	26,569	4.02
54 Fuzhou2 50.264 11.069 39.195 7.57 55 Samming 48.697 36.007 12.690 2.55 56 NanNing 47.505 33.242 14.263 7.06 57 Xingtai 44.397 41.839 2.568 4.38 59 Anqing 41.500 17.388 24.192 4.61 60 Dali 40.710 17.524 23.186 3.56 61 Yongzhou 40.630 40.930 41.493 25.046 3.92 63 Qingdao 36.803 2.1919 14.884 9.20 5.46 64 Nanchong 33.778 33.764 14 6.40 6.6 67 Puritai 30.487 21.972 8.516 2.89 6.66 1.68 2.89 68 Zhuhai 30.486 21.972 7.634 1.4244 7.30 71 Guangan 25.577 7.763 14.424 7.30	53	Handan	52,175	42,872	9,303	9.49
55 Samming 48,697 36,007 12,690 2.55 56 NanNing 47,505 33,242 14,263 7,06 57 Xingtai 44,627 33,727 10,900 7,32 58 Xuchang 44,397 41,893 2,558 4,38 59 Anqing 41,590 17,388 24,192 4,81 60 Daii 40,710 17,524 23,186 3,56 61 Yongzhou 40,530 40,530 0 5,44 62 Xiamen 40,033 25,945 4,88 4,89 64 Nanchong 33,773 33,764 14 6,40 65 Pingdingshan 30,833 25,945 4,88 4,89 66 Daii 30,833 26,969 15,634 13,975 9,18 71 Guargan 25,597 24,288 1,309 3,26 72 Nantong 22,577 7,753 14,264 7,3	54	Fuzhou2	50,264	11,069	39,195	7.57
Fee Nanking 47,505 32,242 14,283 7.06 57 Xingtal 44,627 33,727 10,900 7,32 58 Xuchang 44,397 34,839 2,558 4,38 59 Anging 41,550 17,398 24,192 4,61 60 Dail 40,0710 17,524 23,186 3,56 61 Yongzhou 40,039 14,983 25,046 3,92 63 Qingdao 36,603 21,919 14,864 9,20 64 Nanchong 33,778 33,764 14 6,40 65 Pingdingshan 30,833 25,945 4,888 4,98 66 Teling 30,480 21,972 8,516 2.89 67 Putian 30,488 21,972 8,516 2.89 70 Jiaozuo 26,655 26,445 10 3.55 71 Guangan 22,577 7,730 14,824 7.30	55	Sanming	48,697	36,007	12,690	2.55
Sr Kining 14627 33227 10,000 7.32 55 Xuchang 44,397 41,839 2,558 4.38 59 Anqing 41,590 17,386 24,192 4.61 60 Dali 40,710 17,524 23,188 3.56 61 Yongzhou 40,330 14,993 25,046 3.92 63 Glingdao 36,803 21,919 14,884 9.20 64 Nanchong 33,778 33,764 14 6.40 65 Pingdingshan 30,833 25,945 4,888 4.98 66 Tieling 30,807 13,535 17,272 2.65 67 Putian 30,263 20,698 9,565 1.68 69 Wenzhou 29,609 15,634 13,975 9.18 71 Guangan 25,597 24,288 1,309 3,26 73 Xiangian 21,092 1,733 14,824 7,30 <td>56</td> <td>NanNing</td> <td>47 505</td> <td>33 242</td> <td>14 263</td> <td>7.06</td>	56	NanNing	47 505	33 242	14 263	7.06
57 Anglat 44,027 53,727 10,900 1.32 58 Xuchang 44,397 41,899 2,558 4,38 59 Anging 41,590 17,398 24,192 4,61 60 Dali 40,710 17,524 23,186 3,56 61 Yongzhou 40,530 40,530 0 5,47 62 Xiamen 40,039 14,993 25,046 3,92 63 Olngdao 36,803 21,919 14,884 9,20 64 Nanchong 33,778 33,764 14 6,40 65 Pingdingshan 30,833 25,945 4,888 4,98 66 Tieling 30,488 21,972 8,516 2.89 67 Putian 30,488 21,972 8,516 2.89 77 Jiaozuo 26,655 26,445 10 3,555 71 Guangan 22,567 7,753 14,824 7,30 <tr< td=""><td>50</td><td>Vingtoi</td><td>44 607</td><td>22 707</td><td>10,000</td><td>7.00</td></tr<>	50	Vingtoi	44 607	22 707	10,000	7.00
bb Auchang 44,397 41,839 2,588 4,38 59 Anging 41,590 17,388 24,192 4,61 60 Dali 40,710 17,524 23,188 3,56 61 Yongzhou 40,630 40,933 25,046 3,92 63 Olingdao 36,803 21,919 14,884 9,20 64 Nanchong 33,778 33,764 14 6,40 65 Pingdingshan 30,807 13,535 17,272 2,65 67 Putian 30,488 21,972 8,516 2,89 69 Wenzhou 29,609 15,634 13,975 9,18 71 Guangan 25,577 7,753 14,824 7,30 73 Xiangtan 22,223 7,879 14,464 2,84 74 Largtang 21,940 7,301 14,599 4,62 75 Tranjin 21,443 12,018 9,225 15,62	57	Xiriytai	44,027	55,727	10,900	1.32
b9 Anging 41,990 17,398 24,192 4.61 60 Dali 40,710 17,524 23,186 3.56 61 Yongzhou 40,630 40,530 0 5.47 62 Xiamen 40,039 14,993 25,046 3.92 63 Qingdao 36,803 21,919 14,884 9.20 64 Nanchong 33,778 33,764 14 6.40 65 Pingdingshan 30,833 25,945 4,888 4.98 66 Tieling 30,488 21,972 8,516 2.89 68 Zhuhai 30,263 20,698 9,565 1.68 69 Wenzhou 29,609 15,634 13,975 9,18 70 Jiaozuo 26,455 28,445 10 3,56 71 Guangan 22,577 7,753 14,404 2.84 74 Langfang 21,900 7,301 14,459 4,62 <t< td=""><td>58</td><td>Xuchang</td><td>44,397</td><td>41,839</td><td>2,558</td><td>4.38</td></t<>	58	Xuchang	44,397	41,839	2,558	4.38
60 Dali 40,710 17,524 23,186 3.56 61 Yongzhou 40,530 40,530 0 5.47 62 Xiamen 40,039 14,993 25,046 3.92 63 Qingdao 36,803 21,919 14,884 9.20 64 Nanchong 33,778 33,764 14 6.40 65 Pingdingshan 30,833 25,945 4,888 4.98 66 Tieling 30,263 20,696 9,565 1.68 69 Wenzhou 29,609 15,634 13,975 9.18 70 Jiaczuo 26,455 26,445 10 3.55 72 Nantong 22,577 7,753 14,824 7.30 74 Langtang 21,343 12,018 9,325 15,62 76 Zhenjiang 21,343 12,018 9,325 15,62 78 Huludao 19,114 18,044 1,070 2.55	59	Anqıng	41,590	17,398	24,192	4.61
61 Yongzhou 40,530 40,530 0 5.47 62 Xiamen 40,039 14,993 25,046 3.92 63 Qingdao 36,803 21,919 14,884 9.20 64 Nanchong 33,778 33,764 14 6.40 65 Pingdingshan 30,833 25,945 4,888 4.98 66 Tieling 30,407 13,535 17,272 2,655 67 Pulian 30,488 21,972 8,516 2,89 69 Wenzhou 29,609 15,634 13,975 9,18 71 Guangan 22,577 7,753 14,464 2,84 73 Xiangtan 21,900 7,301 14,599 4,62 75 Tianjin 21,343 12,018 3,225 15,62 76 Zhonjiang 17,782 3,610 14,172 3,20 77 Suzhou2 20,366 0 2,0366 10,022	60	Dali	40,710	17,524	23,186	3.56
62 Xiamen 40,039 14,993 25,046 3.92 63 Qingdao 36,803 21.919 14,884 9.20 64 Nanchong 33,778 33,764 14 6.40 65 Pingdingshan 30,833 25,945 4,888 4.98 66 Tieling 30,488 21,972 8,516 2.89 68 Zhuhai 30,263 20,698 9,665 1.68 69 Wenzhou 29,609 15,634 13,975 9,18 70 Jiaozuo 26,455 26,445 10 3.55 72 Nantong 22,577 7,753 14,824 7.30 74 Langfang 21,900 7,301 14,599 4.62 75 Tianjin 21,843 12,018 9,325 15,62 76 Zhenjiang 21,002 17,499 3,583 3,18 77 Suzhouz 20,366 0 20,366 10,62	61	Yongzhou	40,530	40,530	0	5.47
63 Qingdao 36,803 21,919 14,884 9.20 64 Nanchong 33,778 33,778 33,778 41,4 6,40 65 Pingdingshan 30,833 25,945 4,888 4,98 66 Tieling 30,807 13,535 17,272 2,655 67 Putian 30,488 21,972 8,516 2.89 68 Zhuhai 30,263 20,698 9,565 1.68 69 Wenzhou 29,609 15,534 13,975 9,18 71 Guangan 22,577 7,753 14,404 2.84 73 Xiangtan 22,283 7,879 14,404 2.84 74 Langfang 21,900 7,301 14,599 4,62 75 Tianjin 21,343 12,018 9,325 15,62 76 Zhengjang 17,782 3,610 14,172 3,20 78 Huludao 19,114 18,044 1,070	62	Xiamen	40.039	14.993	25.046	3.92
64 Nanchong 33,778 33,764 14.8 6.40 65 Pingdingshan 30,833 25,945 4,888 4,98 66 Tieling 30,833 25,945 4,888 4,98 67 Putian 30,488 21,972 8,516 2,89 68 Zhuhai 30,283 20,698 9,565 1,68 69 Wenzhou 29,609 15,634 13,975 9,18 70 Jiaozuo 26,455 26,445 10 3,55 71 Guangan 25,597 24,288 1,309 3,26 72 Nantong 22,577 7,753 14,404 2,84 74 Langfang 21,992 17,499 3,593 3,18 75 Tianjin 21,922 17,499 3,593 3,18 77 Suzhou2 20,866 0 20,366 10,65 78 Huludao 19,114 18,044 1,070 2,55	63	Qingdao	36,803	21,919	14,884	9.20
Kalisong Dialog Dialog <thdialog< th=""> <thdialog< th=""> <thdialog< <="" td=""><td>64</td><td>Nanchong</td><td>33 778</td><td>33 764</td><td>14</td><td>6.40</td></thdialog<></thdialog<></thdialog<>	64	Nanchong	33 778	33 764	14	6.40
D3 Findpungshall 30,833 20,940 4,865 4,865 66 Tieling 30,488 21,972 8,516 2,89 67 Putian 30,488 21,972 8,516 2,89 68 Zhuhai 30,263 20,698 9,565 1.68 69 Wenzhou 29,609 15,634 13,975 9,18 70 Jiaozuo 26,455 26,445 10 3,55 71 Guangan 22,577 7,753 14,404 2,84 74 Langfang 21,900 7,301 14,599 4,62 75 Tianjin 21,942 17,499 3,583 3,18 77 Suzhou2 20,366 0 20,366 10,65 78 Huludao 19,114 18,044 1,070 2,55 79 Jincheng 18,226 18,318 8 2,32 80 Spiring 17,782 3,610 14,172 3,20 <	65	Dingdingahan	20,922	25.045	1 000	4.09
bb Heing 30,807 13,333 17,272 2,653 67 Putian 30,488 21,972 8,516 2,889 68 Zhuhai 30,263 20,698 9,565 1,68 69 Wenzhou 29,609 15,634 13,975 9,18 70 Jiaozuo 26,455 26,445 10 3,55 71 Guangan 22,597 7,753 14,424 7,30 73 Xiangtan 22,283 7,879 14,404 2,84 74 Langfang 21,900 7,301 14,4599 4,62 75 Tianjin 21,343 12,018 9,325 15,62 76 Zhenjiang 17,782 3,610 14,173 3,223 79 Jincheng 18,326 18,318 8 2,322 80 Siping 17,782 3,610 14,172 3,20 81 Dalian 17,190 6,147 11,043 6,99	65	Finguingshan	30,833	20,940	4,000	4.90
67 Putnan 30,488 21,972 8,516 2.89 68 Zhuhai 30,263 20,698 9,565 1.68 69 Wenzhou 29,609 15,634 13,975 9,18 70 Jiaozuo 26,455 26,445 10 3,55 71 Guangan 22,577 7,753 14,824 7,30 73 Xiangtan 22,283 7,879 14,404 2.84 74 Langfang 21,900 7,301 14,599 4,62 75 Tianjin 21,343 12,018 9,325 15,62 76 Zhenjiang 21,922 17,499 3,593 3,18 77 Suzhou2 20,366 0 20,366 10,070 2,55 79 Jincheng 18,326 18,318 8 2,32 30 80 Siping 17,782 3,610 14,172 3,23 31 81 Dalian 17,1033 16,740	66	Tieling	30,807	13,535	17,272	2.65
68 Zhuhai 30,263 20,698 9,565 1.68 69 Wenzhou 29,609 15,634 13,975 9,18 70 Jiaozuo 26,455 26,445 10 3,55 71 Guangan 25,597 24,288 1,309 3,266 72 Nantong 22,577 7,753 14,404 2,84 74 Langfang 21,900 7,301 14,4599 4,62 75 Tianjin 21,933 12,018 9,325 15,62 76 Zhenjiang 21,092 17,499 3,938 3,18 77 Suzhou2 20,366 0 20,366 10,65 78 Huludao 19,114 18,044 1,070 2,55 79 Jincheng 13,226 3,610 14,172 3,20 81 Dalian 17,181 14,999 2,192 3,23 82 Zhongshan 17,181 14,729 0 3,44 <	67	Putian	30,488	21,972	8,516	2.89
69 Wenzhou 29,609 15,634 13,975 9,18 70 Jiaozuo 26,455 26,445 10 3.55 71 Guangan 25,597 24,288 1,309 3.26 72 Nantong 22,283 7,879 14,404 2.84 74 Langfang 21,900 7,301 14,599 4.62 75 Tianjin 21,343 12,018 9,325 15,62 76 Zhenjiang 21,092 17,499 3,593 3.18 77 Suzhou2 20,366 0 20,366 10.65 78 Huludao 19,114 18,044 1,070 2.55 79 Jincheng 18,326 18,318 8 2.32 80 Siping 17,782 3,610 14,172 3.20 81 Dalian 17,181 14,989 2,192 3.23 83 Shangluo 17,033 16,740 293 2.37	68	Zhuhai	30,263	20,698	9,565	1.68
70 Jiaozuo 26,455 26,445 10 3.55 71 Guangan 25,597 24,288 1,309 3.26 72 Nantong 22,577 7,753 14,824 7.30 73 Xiangtan 22,283 7,879 14,404 2.84 74 Langfang 21,900 7,301 14,404 2.84 75 Tianjin 21,343 12,018 9,325 15,62 76 Zhenjiang 21,092 17,499 3,593 3,18 77 Suzhou2 20,366 0 20,366 10,65 78 Huludao 19,114 18,044 1,070 2.55 79 Jincheng 18,326 18,318 8 2.32 80 Siping 17,782 3,610 14,172 3.23 81 Dallan 17,181 14,989 2,192 3.23 83 Shangluo 17,033 16,740 293 2.37	69	Wenzhou	29,609	15,634	13,975	9.18
71 Guangan 25,597 24,288 1,309 3.26 72 Nantong 22,577 7,753 14,824 7.30 73 Xiangtan 22,283 7,879 14,404 2.84 74 Langfang 21,900 7,301 14,599 4,62 75 Tianjin 21,343 12,018 9,325 15,62 76 Zhenjiang 21,092 17,499 3,593 3,18 77 Suzhou2 20,366 0 20,366 10,65 78 Huludao 19,114 18,044 1,070 2,55 79 Jincheng 18,326 18,318 8 2,32 81 Dalian 17,782 3,610 14,172 3,20 82 Zhongshan 17,118 14,989 2,192 3,23 83 Shangluo 17,033 16,740 293 2,37 84 Belhai 16,142 6,120 10,022 1,64 85 Changzhi 14,705 0 3,31 87	70	Jiaozuo	26,455	26,445	10	3.55
72 Nantong 22,577 7,753 14,824 7.30 73 Xiangtan 22,283 7,879 14,404 2.84 74 Langfang 21,900 7,301 14,599 4,62 75 Tianjin 21,343 12,018 9,325 15,62 76 Zhenjiang 21,092 17,499 3,593 3.18 77 Suzhou2 20,366 0 20,366 10.65 78 Huludao 19,114 18,044 1,070 2.55 79 Jincheng 18,326 18,318 8 2.32 80 Siping 17,782 3,610 14,172 3.20 81 Dalian 17,190 6,147 11,043 6.99 82 Zhongshan 17,181 14,989 2.192 3.237 84 Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,705 14,705 0 3.31 <tr< td=""><td>71</td><td>Guangan</td><td>25.597</td><td>24,288</td><td>1.309</td><td>3.26</td></tr<>	71	Guangan	25.597	24,288	1.309	3.26
Tanga Tanga <th< td=""><td>72</td><td>Nantong</td><td>22,577</td><td>7,753</td><td>14.824</td><td>7.30</td></th<>	72	Nantong	22,577	7,753	14.824	7.30
74 Langfang 21,900 7,301 14,599 4.62 75 Tianjin 21,343 12,018 9,325 15,62 76 Zhenjiang 21,092 17,499 3,593 3.18 77 Suzhou2 20,366 0 20,366 10,65 78 Huludao 19,114 18,044 1,070 2.55 79 Jincheng 18,326 18,318 8 2.32 80 Siping 17,782 3,610 14,172 3.20 81 Dalian 17,181 14,989 2,192 3.23 83 Shangluo 17,033 16,740 293 2.37 84 Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,729 14,729 0 3.31 87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17	73	Xianotan	22 283	7 879	14 404	2 84
Prime Langing 21,303 Prime Prim< Prim Prime <	74	Lanafana	21,200	7 301	1/ 500	4.62
73 Trainin 21,343 12,013 3,223 13,022 76 Zuenjiang 21,042 17,499 3,593 3,18 77 Suzhou2 20,366 0 20,366 10,65 78 Huludao 19,114 18,044 1,070 2,55 79 Jincheng 18,326 18,318 8 2,32 80 Siping 17,782 3,610 14,172 3,20 81 Dalian 17,190 6,147 11,043 6,99 82 Zhongshan 17,181 14,989 2,192 3,23 83 Shangluo 17,033 16,740 293 2,37 84 Beihai 16,142 6,120 10,022 1,64 85 Changzhi 14,729 14,729 0 3,44 86 Bazhong 11,453 5,823 5,630 7,45 90 Zhoukou 11,066 11,066 0 8.82 91 Urumqi 10,893 10,058 835 3.52	75	Tioniin	21,000	12 019	0.225	15.62
76 21 (heighting) $21,022$ $17,99$ $3,593$ $3,16$ 77Suzhou2 $20,366$ 0 $20,366$ 10.65 78Huludao $19,114$ $18,044$ $1,070$ 2.55 79Jincheng $18,326$ $18,318$ 8 2.32 80Siping $17,782$ $3,610$ $14,172$ 3.20 81Dalian $17,190$ $6,147$ $11,043$ 6.99 82Zhongshan $17,181$ $14,989$ $2,192$ 3.23 83Shangluo $17,033$ $16,740$ 293 2.37 84Beihai $16,142$ $6,120$ $10,022$ 1.64 85Changzhi $14,729$ $14,729$ 0 3.44 86Bazhong $14,753$ $9,224$ $4,949$ 1.61 88Xishuangbanna $11,767$ $6,146$ $5,621$ 1.17 89Hong Kong $11,453$ $5,823$ $5,630$ 7.45 90Zhoukou $11,066$ $11,066$ 0 8.82 91Urunqi $10,893$ $10,058$ 835 3.52 92Harbin $0,110$ $5,991$ $4,119$ 10.98 93Ningbo $9,964$ $5,272$ $4,692$ 7.88 94Weinan $9,743$ $9,743$ 0 5.37 95Changchun $9,379$ $6,040$ $3,339$ 7.51 96Laibin $9,200$ $8,652$ 548 2.20 97Panjin $9,130$ </td <td>75</td> <td>Zhanijang</td> <td>21,343</td> <td>17,010</td> <td>9,525</td> <td>0.10</td>	75	Zhanijang	21,343	17,010	9,525	0.10
7/7 Suznou2 20,366 0 20,366 10.65 78 Huludao 19,114 18,044 1,070 2.55 79 Jincheng 18,326 18,318 8 2.32 80 Siping 17,782 3,610 14,172 3.20 81 Dalian 17,190 6,147 11,043 6,99 82 Zhongshan 17,181 14,989 2,192 3.23 84 Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,729 14,729 0 3.44 86 Bazhong 14,705 14,705 0 3.31 87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 91 Urumqi 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98	76	Zhenjiang	21,092	17,499	3,593	3.16
78 Huiudao 19,114 18,044 1,070 2.55 79 Jincheng 18,326 18,318 8 2.32 80 Siping 17,782 3,610 14,172 3.20 81 Dalian 17,190 6,147 11,043 6.99 82 Zhongshan 17,181 14,989 2,192 3.23 83 Shangluo 17,033 16,740 293 2.37 84 Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,729 14,729 0 3.31 87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 11,066 10,058 835 3.52 91 Urumqi 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98 <	//	Suznou2	20,366	0	20,366	10.65
Jincheng 18,326 18,318 8 2.32 80 Siping 17,782 3,610 14,172 3.20 81 Dalian 17,190 6,147 11,043 6.99 82 Zhongshan 17,181 14,989 2,192 3.23 83 Shangluo 17,033 16,740 293 2.37 84 Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,729 14,705 0 3.31 87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 11,066 11,066 0 8.82 91 Urumqi 10,833 10,058 835 3.52 92 Harbin 9,743 9,743 0 5.37 95 Ch	78	Huludao	19,114	18,044	1,070	2.55
80 Siping 17,782 3,610 14,172 3,20 81 Dalian 17,190 6,147 11,043 6,99 82 Zhongshan 17,181 14,989 2,192 3,23 83 Shangluo 17,033 16,740 293 2,37 84 Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,729 14,705 0 3,31 86 Bazhong 14,705 14,705 0 3,31 87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7,45 90 Zhoukou 11,066 11,066 0 8.82 91 Urumaj 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98 <	79	Jincheng	18,326	18,318	8	2.32
81 Dalian 17,190 6,147 11,043 6,99 82 Zhongshan 17,181 14,989 2,192 3.23 83 Shangluo 17,033 16,740 293 2.37 84 Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,729 0 3.44 86 Bazhong 14,705 14,705 0 3.31 87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 11,066 10,066 0 8.82 91 Urumqi 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98 93 Ningbo 9,964 5,272 4,692 7.88 94 Wei	80	Siping	17,782	3,610	14,172	3.20
82 Zhongshan 17,181 14,989 2,192 3.23 83 Shangluo 17,033 16,740 293 2.37 84 Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,729 14,729 0 3.44 86 Bazhong 14,173 9,224 4,949 1.61 87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 11,066 11,066 0 8.82 91 Urumqi 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98 93 Ningbo 9,964 5,272 4,692 7.88 94 Weinan 9,743 9 7.51 9 95 Changchun 9,379 6,040 3,339 7.51 96	81	Dalian	17,190	6,147	11,043	6.99
83 Shangluo 17,033 16,740 293 2.37 84 Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,729 14,729 0 3.44 86 Bazhong 14,705 14,705 0 3.31 87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 11,066 10,058 835 3.52 91 Urumqi 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98 93 Ningbo 9,964 5,272 4,692 7.88 94 Weinan 9,743 9,743 0 5.37 95 Changchun 9,379 6,040 3,339 7.51 96 <td>82</td> <td>Zhongshan</td> <td>17,181</td> <td>14,989</td> <td>2,192</td> <td>3.23</td>	82	Zhongshan	17,181	14,989	2,192	3.23
Beihai 16,142 6,120 10,022 1.64 85 Changzhi 14,729 14,729 0 3.44 86 Bazhong 14,705 14,705 0 3.31 87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 10,066 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98 93 Ningbo 9,964 5,272 4,692 7.88 94 Weinan 9,743 9,743 0 5.37 96 Laibin 9,200 8,652 548 2.20 97 Panjin 9,130 8,398 732 1.44 98 Xiangxi 8,616 2,506 6,110 2.64 99 City of Yanta	83	Shangluo	17.033	16,740	293	2.37
benda 10, 12 0, 12 10, 14 10, 11 10, 11 10, 11 10, 11 10, 11 10, 11 10, 11 10, 13 10, 15 10, 13 10, 12 10, 13 10, 15 10, 11 10, 10 10, 11 <td>84</td> <td>Beihai</td> <td>16 142</td> <td>6 120</td> <td>10 022</td> <td>1 64</td>	84	Beihai	16 142	6 120	10 022	1 64
box box <thbox< th=""> <thbox< th=""> <thbox< th=""></thbox<></thbox<></thbox<>	95	Changzhi	14 720	14 720	0	2 4 4
ballbing 14,705 14,705 0 3.51 87 Hebi 14,703 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 11,066 10 8.82 91 Urumqi 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10,98 93 Ningbo 9,964 5,272 4,692 7.88 94 Weinan 9,743 9,743 0 5.37 95 Changchun 9,379 6,040 3,339 7.51 96 Laibin 9,200 8,652 548 2.20 97 Panjin 9,130 8,398 732 1.44 98 Xiangxi 8,616 2,506 6,110 2.64 99 City of Yantai 8,22	00	Deshang	14,725	14,725	0	0.44
87 Hebi 14,173 9,224 4,949 1.61 88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 11,066 11,066 0 8.82 91 Urumqi 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98 93 Ningbo 9,964 5,272 4,692 7.88 94 Weinan 9,743 0 5.37 95 Changchun 9,379 6,040 3,339 7.51 96 Laibin 9,200 8,652 548 2.20 97 Panjin 9,130 8,398 732 1.44 98 Xiangxi 8,616 2,506 6,110 2.64 99 City of Yantai 8,223 4,390 3,833 7.06 100 Yuxi 7,895 5,513 2,382 2.38 101 Tangshan	00	Daziloliy	14,703	14,705	1 0 1 0	3.31
88 Xishuangbanna 11,767 6,146 5,621 1.17 89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 11,066 11,066 0 8.82 91 Urumqi 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98 93 Ningbo 9,964 5,272 4,692 7.88 94 Weinan 9,743 9,743 0 5.37 95 Changchun 9,379 6,040 3,339 7.51 96 Laibin 9,200 8,652 548 2.20 97 Panjin 9,130 8,398 732 1.44 98 Xiangxi 8,616 2,506 6,110 2.64 99 City of Yantai 8,223 4,390 3,833 7.06 100 Yuxi 7,895 5,513 2,382 2.38 101 Tangshan 7,604 7,152 452 7.84 102	87		14,173	9,224	4,949	1.01
89 Hong Kong 11,453 5,823 5,630 7.45 90 Zhoukou 11,066 11,066 0 8.82 91 Urumqi 10,893 10,058 835 3.52 92 Harbin 10,110 5,991 4,119 10.98 93 Ningbo 9,964 5,272 4,692 7.88 94 Weinan 9,743 0 5.37 95 Changchun 9,379 6,040 3,339 7.51 96 Laibin 9,200 8,652 548 2.20 97 Panjin 9,130 8,398 732 1.44 98 Xiangxi 8,616 2,506 6,110 2.64 99 City of Yantai 8,223 4,390 3,833 7.06 910 Yuxi 7,895 5,513 2,382 2.38 101 Tangshan 7,604 7,152 452 7.84 102 Lingshui	88	Xishuangbanna	11,767	6,146	5,621	1.17
90Zhoukou11,06611,06608.8291Urumqi10,89310,0588353.5292Harbin10,1105,9914,11910.9893Ningbo9,9645,2724,6927.8894Weinan9,7439,74305.3795Changchun9,3796,0403,3397.5196Laibin9,2008,6525482.2097Panjin9,1308,3987321.4498Xiangxi8,6162,5066,1102.6499City of Yantai8,2234,3903,8337.06100Yuxi7,8955,5132,3822.38101Tangshan7,6047,1524527.84102Lingshui7,4771,7925,6850.36103Xining7,29103.63104Liyang7,2917,27402.04106Hangzhou7,1127976,3159.19107Nanping7,0533,8543,1992.66	89	Hong Kong	11,453	5,823	5,630	7.45
91Urumqi10,89310,0588353.5292Harbin10,1105,9914,11910.9893Ningbo9,9645,2724,6927.8894Weinan9,7439,74305.3795Changchun9,3796,0403,3397.5196Laibin9,2008,6525482.2097Panjin9,1308,3987321.4498Xiangxi8,6162,5066,1102.6499City of Yantai8,2234,3903,8337.06100Yuxi7,8955,5132,3822.38101Tangshan7,6047,1524527.84102Lingshui7,4771,7925,6850.36103Xining7,29103.633.63105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7.0533,8543.1992.66	90	Zhoukou	11,066	11,066	0	8.82
92Harbin10,1105,9914,11910.9893Ningbo9,9645,2724,6927.8894Weinan9,7439,74305.3795Changchun9,3796,0403,3397.5196Laibin9,2008,6525482.2097Panjin9,1308,3987321.4498Xiangxi8,6162,5066,1102.6499City of Yantai8,2234,3903,8337.06100Yuxi7,8955,5132,3822.38101Tangshan7,6047,1524527.84102Lingshui7,4771,7925,6850.36103Xining7,2747,27403.63105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7.0533,8543,1992.66	91	Urumqi	10,893	10,058	835	3.52
93Ningbo9,9645,2724,6927.8894Weinan9,7439,74305.3795Changchun9,3796,0403,3397.5196Laibin9,2008,6525482.2097Panjin9,1308,3987321.4498Xiangxi8,6162,5066,1102.6499City of Yantai8,2234,3903,8337.06100Yuxi7,8955,5132,3822.38101Tangshan7,6047,1524527.84102Lingshui7,4771,7925,6850.36103Xining7,4145,4601,9542.33104Liyang7,27402.04105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7,0533,8543,1992,66	92	Harbin	10,110	5,991	4,119	10.98
94Weinan9,7439,74305.3795Changchun9,3796,0403,3397.5196Laibin9,2008,6525482.2097Panjin9,1308,3987321.4498Xiangxi8,6162,5066,1102.6499City of Yantai8,2234,3903,8337.06100Yuxi7,8955,5132,3822.38101Tangshan7,6047,1524527.84102Lingshui7,4771,7925,6850.36103Xining7,4145,4601,9542.33104Liyang7,27402.04105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7,0533,8543,1992.66	93	Ninabo	9.964	5.272	4,692	7.88
bit bit <td>94</td> <td>Weinan</td> <td>9 743</td> <td>9 743</td> <td>0</td> <td>5 37</td>	94	Weinan	9 743	9 743	0	5 37
35 Chargenant 5,000 6,000 6,000 7,101 96 Laibin 9,200 8,652 548 2.20 97 Panjin 9,130 8,398 732 1.44 98 Xiangxi 8,616 2,506 6,110 2.64 99 City of Yantai 8,223 4,390 3,833 7.06 100 Yuxi 7,895 5,513 2,382 2.38 101 Tangshan 7,604 7,152 452 7.84 102 Lingshui 7,477 1,792 5,685 0.36 103 Xining 7,414 5,460 1,954 2.33 104 Liyang 7,274 0 2.04 105 Hezhou 7,274 7,274 0 2.04 106 Hangzhou 7,112 797 6,315 9.19 107 Nanping 7.053 3.854 3.199 2.66 <td>95</td> <td>Changebun</td> <td>9 379</td> <td>6 040</td> <td>3 330</td> <td>7 51</td>	95	Changebun	9 379	6 040	3 330	7 51
So Lability 9,200 8,002 546 2.20 97 Panjin 9,130 8,398 732 1.44 98 Xiangxi 8,616 2,506 6,110 2.64 99 City of Yantai 8,223 4,390 3,833 7.06 100 Yuxi 7,895 5,513 2,382 2.38 101 Tangshan 7,604 7,152 452 7.84 102 Lingshui 7,477 1,792 5,685 0.36 103 Xining 7,414 5,460 1,954 2.33 104 Liyang 7,271 7,271 0 3.63 105 Hezhou 7,274 7,274 0 2.04 106 Hangzhou 7,112 797 6,315 9.19 107 Nanping 7.053 3.854 3.199 2.66	06	Laibin	0,000	9,650	549	2.20
97 Parijin 9,130 8,396 7.32 1.44 98 Xiangxi 8,616 2,506 6,110 2.64 99 City of Yantai 8,223 4,390 3,833 7.06 100 Yuxi 7,895 5,513 2,382 2.38 101 Tangshan 7,604 7,152 452 7.84 102 Lingshui 7,477 1,792 5,685 0.36 103 Xining 7,414 5,460 1,954 2.33 104 Liyang 7,291 0 3.63 105 Hezhou 7,274 7,274 0 2.04 106 Hangzhou 7,112 797 6,315 9.19 107 Nanping 7,053 3,854 3,199 2,66	90	Daniin	9,200	0,002	700	2.20
95 Xiangxi 8,616 2,506 6,110 2.64 99 City of Yantai 8,223 4,390 3,833 7.06 100 Yuxi 7,895 5,513 2,382 2.38 101 Tangshan 7,604 7,152 452 7.84 102 Lingshui 7,477 1,792 5,685 0.36 103 Xining 7,414 5,460 1,954 2.33 104 Liyang 7,271 7,291 0 3.63 105 Hezhou 7,274 7,274 0 2.04 106 Hangzhou 7,112 797 6,315 9.19 107 Nanping 7.053 3.854 3.199 2.66	9 1		9,130	0,390	132	1.44
99 City of Yantai 8,223 4,390 3,833 7.06 100 Yuxi 7,895 5,513 2,382 2.38 101 Tangshan 7,604 7,152 452 7.84 102 Lingshui 7,477 1,792 5,685 0.36 103 Xining 7,414 5,460 1,954 2.33 104 Liyang 7,274 0 3.63 105 Hezhou 7,274 7,274 0 2.04 106 Hangzhou 7,112 797 6,315 9.19 107 Nanping 7.053 3.854 3.199 2.66	90	Xiangxi	8,616	2,506	6,110	2.64
100Yuxi7,8955,5132,3822.38101Tangshan7,6047,1524527.84102Lingshui7,4771,7925,6850.36103Xining7,4145,4601,9542.33104Liyang7,2917,29103.63105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7.0533.8543.1992.66	99	City of Yantai	8,223	4,390	3,833	7.06
101Tangshan7,6047,1524527.84102Lingshui7,4771,7925,6850.36103Xining7,4145,4601,9542.33104Liyang7,2917,29103.63105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7.0533.8543.1992.66	100	Yuxi	7,895	5,513	2,382	2.38
102Lingshui7,4771,7925,6850.36103Xining7,4145,4601,9542.33104Liyang7,2917,29103.63105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7.0533.8543.1992.66	101	Tangshan	7,604	7,152	452	7.84
103Xining7,4145,4601,9542.33104Liyang7,2917,29103.63105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7.0533.8543.1992.66	102	Lingshui	7,477	1,792	5,685	0.36
104Liyang7,2917,29103.63105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7.0533.8543.1992.66	103	Xining	7,414	5,460	1,954	2.33
105Hezhou7,2747,27402.04106Hangzhou7,1127976,3159.19107Nanping7.0533.8543.1992.66	104	Liyang	7,291	7,291	0	3.63
106 Hangzhou 7,112 797 6,315 9.19 107 Nanping 7.053 3.854 3.199 2.66	105	Hezhou	7.274	7,274	0	2.04
107 Nanping 7.053 3.854 3.199 2.66	106	Hangzhou	7.112	797	6.315	9.19
	107	Nanping	7.053	3,854	3,199	2.66

					2016 population,
ID	City	Total trips	From Wuhan	To Wuhan	millions
108	Yinchuan	6,789	3,364	3,425	2.08
109	Changzhou	6,761	6,761	0	4.71
110	Zigong	6,705	6,681	24	2.78
111	Fushun	6,576	5,816	760	2.07
112	Puer	6,335	3,781	2,554	2.62
113	Taizhou2	6,269	2,362	3,907	6.08
114	Changde	6,131	4,946	1,185	5.84
115	Jinzhou	6,034	5,919	115	3.06
116	Chengde	5,937	5,786	151	3.53
117	Yangzhou	5,840	5,840	0	4.49
118	Qujing	5,396	5,041	355	6.08
119	Yangquan	5,313	5,269	44	1.40
120	Anshan	5,308	4,044	1,264	3.61
121	Guiyang	5,183	3,207	1,976	4.70
122	Zhangjiajie	5,157	4,112	1,045	1.53
123	Quanzhou	5,127	1,705	3,422	8.58
124	Jian	5,126	0	5,126	4.92
125	Wuwei	4,965	4,679	286	1.82
126	Ledong	4,807	3,014	1,793	0.53
127	Liaoyang	4,554	4,255	299	1.84
128	Jiangmen	4,550	4,439	111	4.54
129	LanZhou	4,154	2,226	1,928	3.71
130	Qinhuangdao	4,147	3,883	264	3.09
131	Ziyang	3,971	3,933	38	2.54
132	Jingdezhen	3,971	1,916	2,055	1.65
133	Diqing	3,933	1,123	2,810	0.41
134	Shengzhou	3,871	1,134	2,737	0.96
135	Dehong	3,645	1,735	1,910	1.29
136	Panzhihua	3,536	2,197	1,339	1.24
137	Neijiang	3,526	3,493	33	3.75
138	Foshan	3,422	3,157	265	7.46
139	Zhangjiang	3,377	1,426	1,951	7.27
140	Qionghai	3,287	1,321	1,966	0.51
141	Hohhot	3,278	2,905	373	3.09
142	Luzhou	3,155	2,974	181	4.31
143	Dandong	3,136	2,165	971	2.41
144	Deyang	3,135	2,962	173	3.52
145	Baoshan	3,114	1,767	1,347	2.61
146	Fangchenggang	2,967	1,486	1,481	0.93
147	Chuxiong	2,966	2,419	547	2.74
148	Datong	2,881	1,914	967	3.42
149	Zunyi	2,775	1,544	1,231	6.23
150	Jilin	2,464	1,031	1,433	4.24
151	Haidong	2,421	1,062	1,359	1.45
152	Baotou	2,378	1,947	431	2.86
153	Chengmai County	2,301	905	1,396	0.59
154	Huangshan	2,226	959	1,267	1.38
155	Benxi	2,166	1,886	280	1.71
156	Wenchang	2,087	1,124	963	0.56
157	Liupanshui	2,086	589	1,497	2.91
158	Lingao County	2,085	1,349	736	0.52
159	Daqing	2,062	715	1,347	2.76
160	Bozhou	2,031	1,014	1,017	0.48
161	Honghe	1,960	1,262	698	4.68
162	Lincang	1,901	927	974	2.52
163	Yancheng	1,855	790	1,065	7.24
164	Shan Tou	1,847	786	1,061	5.58
165	Fuzhou3	1,846	0	1,846	4.00
166	Zhangjiakou	1,845	1,743	102	4.43
167	Yiyang	1,820	1,365	455	4.43
168	Dongying	1,794	1,624	170	2.13
169	Tonghua	1,792	749	1,043	2.17
170	Jieyang	1,765	940	825	6.09
171	Dongfang	1,759	894	865	0.44
172	Huizhou	1,745	1,694	51	4.78
173	Weihai	1,744	677	1,067	2.82
174	Wanning	1,741	792	949	0.57
175	Jiyuan	1,555	1,461	94	0.73

					2016 population,
ID	City	Total trips	From Wuhan	To Wuhan	millions
176	Longyan	1,535	508	1,027	2.63
177	Changjiang	1,535	953	582	0.23
178	Zhoushan	1,474	796	678	1.16
179	Xinvu	1.471	0	1.471	1.17
180	Nvingchi	1,448	260	1,188	0.20
181	Weifang	1.372	930	442	9.36
182	Oianvinan	1 371	514	857	2.84
102	Beichen	1,071	674	670	1.00
103	Daistiati	1,347	0/4	673	1.20
184	Changji	1,326	744	582	1.60
185	Chongzuo	1,203	///	426	2.07
186	Changdu	1,181	369	812	0.68
187	Baoting	1,168	460	708	0.17
188	Hotan	1,146	671	475	2.14
189	Linfen	1,118	793	325	4.46
190	Tunchang County	1,090	489	601	0.27
191	Qitaihe	1.087	569	518	0.87
192	Fuxin	1,065	823	242	1.78
193	Zhangzhou	980	335	645	5.05
194	Vulin4	967	461	506	5.00
105	Shihezi	945	802	1/3	0.70
195	Mataubara	945	002	600	0.00
196	Watsubara	930	330	000	2.70
197	JIXI	923	553	370	1.84
198	Qinzhou	902	491	411	3.24
199	Haibei	900	577	323	0.28
200	Tongren	893	893	0	3.14
201	Dingan County	882	494	388	0.29
202	Altay	824	446	378	0.62
203	Chaoyang	806	429	377	0.11
204	Wuzhishan	779	192	587	1.18
205	Karamay	760	392	368	0.42
206	Chaoyang	750	704	46	2.95
200	Baico Canzi	700	107	220	2.00
207	Nuijong	722	402	320	0.02
200	Nujiang	720	005	343	0.04
209	Arai	711	365	346	0.33
210	lower	705	481	224	1.35
211	Wuzhong	705	429	276	1.39
212	Yingkou	704	348	356	2.44
213	Ningde	690	446	244	2.89
214	Shizuishan	672	481	191	0.80
215	Ordos	630	458	172	2.06
216	Ximeng	629	458	171	1.00
217	Shuangyashan	609	185	424	1.46
218	Leshan	585	313	272	3.27
219	Hainan	585	253	332	0.48
220	Baivin	583	262	321	1 72
221	Chaozhou	570	230	340	2.65
2221	Haivi	566	159	109	2.00
222	Chifong	550	430	65	4.21
223	Vanhian	502	407	140	4.31
224	Yandan	522	379	143	2.10
225	Yanan	520	492	28	2.25
226	Liaoyuan	512	352	160	1.18
227	Wenshan	500	282	218	3.62
228	Yili	496	419	77	4.62
229	Shannan	494	212	282	0.34
230	Rizhao	485	326	159	2.90
231	Maoming	480	172	308	6.12
232	Qiongzhong	479	287	192	0.23
233	Guigang	475	261	214	4.33
234	Shuozhou	455	249	206	1.77
235	Baisha	451	262	189	0.12
236	Xian	450	450	0	8 83
237	Meishan	400	210	207	3 00
207	Vincon Looguo	440	C13	221 010	1 60
200	Mularshahu	409	31 000	340	1.00
239	vvulanchabu	434	33Z	102	2.11
240	Bayannaoer	423	2/5	148	1.68
241	Mianyang	398	288	110	4.81
242	Shigatse	397	288	109	0.72
243	Alxa League	389	286	103	0.25

					2016 population,
ID	City	Total trips	From Wuhan	To Wuhan	millions
244	Aksu	373	202	171	2.46
245	Wuhai	369	230	139	0.56
246	Tongliao	367	201	166	3.12
247	Wujiaqu	357	103	254	0.09
248	Bazhou	357	216	141	1.28
249	Qiannan	348	299	49	3.26
250	Yichun	332	29	303	1.10
251	Ali	326	178	148	0.10
252	Zhongwei	324	217	107	1.15
253	Jiaxing	321	45	276	4.61
254	Zhengzhou	319	83	236	9.72
255	Huangnan	318	142	176	0.27
256	Kashqar	309	177	132	4 21
257	White	306	253	53	1 91
258	Cangzhou	303	187	116	7.51
250	Oingyang	204	256	20	2.01
209	Ciligyarig	294	200	20	2.24
200	Dijie	200	227	30	0.04
261	Ansnun	261	206	55	2.33
262		241	134	107	4.69
263	Jiuquan	235	144	91	1.12
264	Nagqu	233	231	2	0.48
265	Dingxi	227	128	99	2.79
266	Hechi	220	107	113	3.50
267	Chizhou	214	191	23	1.44
268	Tumshuk	210	32	178	0.17
269	Yangjiang	204	96	108	2.53
270	Jinchang	203	147	56	0.47
271	Liangshan	199	84	115	4.82
272	Turpan	197	157	40	0.63
273	Hulunbeir	196	151	45	2.53
274	Jinzhong	187	18	169	3.35
275	Yaan	184	130	54	1 54
276	Pingliang	175	129	46	2 10
277	Golow	175	167	8	0.20
278	Davinganling	175	107	113	0.20
270	Vulin2	155	70	62	2 20
279	Binzbou	135	60	77	2.00
200	Zhooging	140	110	21	3.09
201	Zhaoqing	143	F0	31	4.08
202	Zhangye	143	52	91	1.22
283	Qiqinar	143	85	58	5.05
284	Linxia	142	58	84	2.03
285	Jiayuguan	130	55	75	0.25
286	Lishui	127	41	86	2.17
287	Suinua	121	81	40	5.21
288	Guyuan	119	99	20	1.22
289	Heyuan	110	37	73	3.08
290	Mudanjiang	110	59	51	2.63
291	Wuzhou	108	61	47	3.02
292	Kezhou	107	11	96	0.62
293	Luliang	107	11	96	3.85
294	Taiyuan	103	0	103	4.34
295	Tianshui	101	82	19	3.32
296	Heihe	99	38	61	1.64
297	Yushu	94	87	7	0.41
298	Baoji	94	94	0	3.78
299	Laiwu	94	65	29	1.38
300	Yunfu	93	44	49	2.48
301	Yingtan	88	9	79	1.16
302	Tongchuan	81	60	21	0.85
303	Pingxiang	76	0	76	1.91
304	liamusi	76	38	38	2 36
305	Shaoving	76	44	30	1 99
206	Vinzbou	70	10	52	7.00
300	AIIIZIIUU Shanwa ⁱ	12	19	00	0.10
307	Snanwel	70	43	21	3.04
308		68	24	44	5.79
309	Jinnua	63	U	63	5.52
310	Meizhou	61	41	20	4.36
311	Hami	61	31	30	0.61

					2016 population,
ID	City	Total trips	From Wuhan	To Wuhan	millions
312	Lhasa	60	60	0	0.60
313	Yuncheng	59	42	17	5.31
314	Gannan	51	26	25	0.71
315	Liaocheng	36	0	36	6.04
316	Zhaotong	35	35	0	5.48
317	Jinan	30	30	0	7.23
318	Guangyuan	28	19	9	2.64
319	Hegang	26	19	7	1.04
320	Luoyang	21	0	21	6.80
321	Tongling	18	0	18	1.60
322	Chuzhou	17	0	17	4.04
323	Huzhou	16	0	16	2.98
324	Bozhou	13	7	6	5.10
325	Taian	11	0	11	5.64
326	Quzhou	10	0	10	2.16
327	Huaibei	10	0	10	2.21
328	Zaozhuang	9	0	9	3.92
329	Huaihua	8	0	8	4.92
330	Bengbu	7	0	7	3.33
331	Huainan	7	0	7	3.46
332	Xuancheng	6	0	6	2.60
333	Hengshui	6	0	6	4.45
334	Longnan	6	0	6	2.60
335	Hefei	0	0	0	7.87
336	Ganzhou	0	0	0	8.59
337	Shuanghe	0	0	0	0.05
338	Maanshan	0	0	0	2.78
339	Bazhou	0	0	0	0.94
340	Linyi	0	0	0	10.44
341	Beitun	0	0	0	0.08
342	Yibin	0	0	0	4.51
343	Shangqiu	0	0	0	7.28
344	Taizhou4	0	0	0	4.65
345	Shaoyang	0	0	0	7.32
346	Heze	0	0	0	8.62
347	Yichun	0	0	0	5.53
348	Wuxi	0	0	0	6.53
349	Fuyang	0	0	0	7.99
350	Yutian County, Xinjiang	0	0	0	0.22
351	Xuzhou	0	0	0	8.71
352	Suqian	0	0	0	4.88
353	Hetian County, Xinjiang	0	0	0	0.28
354	Huaian	0	0	0	4.89
355	Kaifeng	0	0	0	4.55
356	Nanjing	0	0	0	8.27
357	Loudi	0	0	0	3.89
358	Suzhou4	0	0	0	5.6
359	Macau	0	0	0	0.63
360	Jining	0	0	0	8.35
361	Qiandongnan	0	0	0	3.51
362	Kokodala	0	0	0	0.08
363	Xianyang	0	0	0	4.99
364	Lianyungang	0	0	0	4.5
365	Gejiu, Yunnan	0	0	0	0.47
366	Shangrao	0	0	0	6.75
367	Moyu County, Xinjiang	0	0	0	0.53
368	Wuhu	0	0	0	3.67
369	Sanmenxia	0	0	0	2.26

*Data derived from user geolocation data from Tencent (https://heat.qq.com). Cities are sorted according to the overall travel volume to and from Wuhan. These data also are available from github (https://github.com/ZhanweiDU/2019nCov.git).



Appendix Figure 1. The risk for introduction of 2019 novel coronavirus disease (COVID-19) from Wuhan to other cities in China before the January 23, 2020 quarantine of Wuhan. Lines indicate probabilities that at \geq 1 person infected with COVID-19in Wuhan arrived in a listed city by the date indicated on the x-axis. The estimates were calculated by using mobility data collected from the location-based services of Tencent (https://heat.qq.com) during December 10, 2017–January 24, 2018, the timeframe that corresponds to the Spring Festival travel period of December 8, 2019–January 22, 2020. All cities with an expected importation probability >10% by January 22, 2020 (n = 212) are shown.



Appendix Figure 2. Uncertainty analysis representing the number of 2019 novel coronavirus disease (COVID-19) exposures in Wuhan per day. Lines show the probability that ≥1 transportation of COVID-19 infection occurred from Wuhan to Beijing, Guangzhou, Shenzhen, and Shanghai during December 8, 2020–January 22, 2020. Error bars indicate 95% credible intervals.



Appendix Figure 3. Risk for transportation of 2019 novel coronavirus disease (COVID-19) from Wuhan to 130 cities in China by January 23, 2020. All cities represented have mean importation probability >50%. As of January 26, 2020, 82.3% (107/130) of these cities had reported cases. Grey circles indicate cities that were included in the quarantine as of January 24, 2020. Red circles indicate cities outside the quarantine area with confirmed cases; blue circles indicate cities outside the quarantine area with confirmed cases; blue circles indicate cities outside the quarantine area without confirmed cases as of January 26th, 2020.