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The impact of minimum wage on the spatial distribution of exporting hazard rate

---the empirical research using the data from the annual survey of Chinese industrial firms over the period 1998-2007

Churen Sun¹ Tao Zhang² Ruili Zhao³

Abstract: As cities play important roles in economic growth, the competitive power of foreign trade of cities has gained more and more attentions. Exporting hazard rate, as one dimension of foreign competitive power, shall be specifically measured. And its spatial distribution across cities shall be analyzed. However, few literatures investigate spatial distribution of export hazard rate. This paper estimates firm-level export hazard rates using the Cloglog model based on the data from the Annual Survey of Industrial Enterprises in China, and then aggregate them to city-level. We then analyze the impact of different factors on city-level export hazard rate using the spatial econometrical method. Empirical results show that minimum wage and agglomeration economy spatially affect city-level export hazard rate. Minimum wage significantly increases while agglomeration economy reduces a city's export hazard rate. However, the spatial relevance of minimum wage and agglomeration economy across space has accordingly significantly contrary impacts. These results imply apparently the existence of the count-competition system in China.

Key word: Export hazard rate, spatial distribution, agglomeration, minimum wage

1. Introduction

As most production and trade activity take place in cities, the trade between countries is becoming the trade among cities in fact. For China, the case is extremely true. In the region level, the east region has account for half of export volume of the whole country. In the city level, the coastal cities' export volume is largest and some typical cities such as Shanghai, Zhejiang, Jiangsu et al have contribute a lot. This reveals the unbalance of China export distribution on one hand, in other hand, it also suggests the city has play a important role in the composition of China's export. Besides, as a export-orientated country, Chinese government and city administrator has paid a high attention on export performance, it is not only because the export connects so closely to the growth of economic, but also the export is linked to the efficiency of administration. As an important dimension of export performance, export hazard provide us a indicator measuring the city's trade competitiveness. However, few literatures investigate this topic. Our paper is aimed to estimate city-level export hazard using the Annual Survey of Industrial Enterprises. We have estimated the firm-level export hazard rate in our working paper (Churen Sun, Ruili Zhao & Tao Zhang) at present. we are prepared to calculate the city-level export risk by accumulating the firm-level hazard rate and investigate the effect of the minimum wage on the city-level export

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conditioned on the agglomeration level ,the degree of trade liberation and city-specific variables(like size, population, the distance from the harbor and so on). By doing so ,we can observe the spatial distribution of city hazard rate and estimate the export competitiveness and the comparative advantage of city.

The contribution of our research will fall into two broad areas. First, as far as we know, we are the first to explore the city-level export rate and investigate the impact of minimum wage on the export risk. Second, our result will present directly the spatial distribution of the export rate and compare the competitiveness of different cities. Third, the firm-level survival rate may reveal the firm-specific competitive advantage but it may ignore the function of city. A city will attract many firms to locate and the city agglomeration may affect the hazard rate of exporting .our paper will establish a bridge between macro-city and micro-firm jointly to address the trade activity and trade performance.

2 Empirical Methodology

Our empirical analysis is partitioned into two part: the first part is to calculate Chinese exporting firms' survival time and hazard rate; In the second part , we will aggregate the city level hazard rate and explore whether the minimum wage has effect on the spatial distribution of cities' hazard rate conditioned on the city-specific variable and agglomeration using the spatial econometrics . Let's first introduce the method of survival analysis.

2.1 Survival Analysis

Survival analysis is a technique that model the time an event happen. In our paper, the event is the Chinese exporting firm stops to export, which is also called 'failure' customarily. The trade duration is defined as the time elapsed until the failure occurs. But when measuring the trade duration , there are two common problems :the first is that some observations in the sample period is censored, which implies the time an subject entries to or exits from the state is unknown, we do not know the complete spell exactly . If the start time of the spell is not observed , we call this case as 'the left censored', which can be solved by selecting the new exporter firms. While the relevant event hasn't yet occurred at the last time of observation, we call this case as ' the right censored', which is tractable by econometric techniques;The second problems is multiple spell .Generally, one subject has one spell time , but in some cases, one may have more than one spell, this is to say a subject reentries the sample after the first failure event. In our data, More than one third of observations have multiple spell. The number of that is so large that you can't ignore it. There are some methods to handle the multiple spell issue. The simple way is to examine the time to first event, ignoring the additional failures. This method, however, is usually not adequate because it wastes possibly relevant information and can't include more entry and exit which will result in the overestimation or underestimation of the survival rate. Alternative method is developed that make use of all available data while accounting for the lack of independence of the failure times. Here, we use competing risk set model proposed by Prentice, Williams, and Peterson (1981) to handle multiple spell. The model assumes that a subject is not at risk of a second event until the first event has occurred and so on. Thus the conditional risk set at time t for event k , is made up of all subjects under observation at time t , that have had event $k-1$.This approach allows for the recurrence of event and can calculate the survival rate more correctly. In our paper, we will adopt this two methods to examine the survival rate and compare the results for robust. In the following part, we will model our data using the survival analysis technique.

Our analysis is based on the annual survey of China industrial enterprises data. The data is

organized as the discrete time through it is continuous in fact. Let time T is a new exporter's survival time in the sample period, which is the set of some positive integers, $t=(1, 2,3,...)$. Note that at the beginning time $t=0$ all the firms are observed exporting. The observation continues until time t_i , at which time the exporting firm are observed exiting the exporting market or censored. Assume the X_i and C_i be the new exporter's failure and censoring time, then $T_i=\min[X_i, C_i]$. Thus, the value of survival rate can be described as:

$$S(t)=Pr(T>t), \text{ for } t=0, S(0)=1$$

The rate of survival at time t is the probability of not experiencing event up to and including the current time t . Let d_i represents the number of firms observed to exit the exporting market at time t , m_i is defined the number of firms which are observed duration is censored at time t , n_i symbolizes the number of firms at risk of making a transition immediately prior to t , then the survival rate at time t can be estimated using the non-parametric estimator method---Kaplan-Meier function:

$$S(t)= \prod_{i=1|t_i < t}^t (1 - \frac{d_i}{n_i})$$

2.2 Hazard rate function

Corresponding to the survival rate, the discrete time hazard at t , $h(t)$, is the conditional probability of the event at t , with conditioning on survival until the time $(t-1)$ but exiting the market at time t :

$$\begin{aligned} h(t) &= Pr(t < T < t + \Delta t | T > t) \\ &= \frac{Pr(t)}{S(t-1)} \end{aligned}$$

it is another side of survival issue, which can be also estimate using Kaplan-Meier function:

$$\widehat{h}(t) = \frac{d_i}{n_i}$$

In our paper, we will use the survival rate and hazard rate simultaneously to characterize the China exporting firms' survival circumstance.

After defining the survival function and hazard function, we will focus on the modeling the hazard function and explanatory variables next. According to Jenkins (2005), a popular method which can estimate the relationship between the hazard rate and explanatory variables is Cox's proportional hazard model that has been used in many fields. The advantage of this model is that it doesn't need to make any assumptions about the shape of the baseline hazard function, and only depends on the order of the event time using the *partial likelihood* to derive the results. But when the data contains tied survival time, the neat Cox results don't hold exactly, especially when the incidence of tied survival time is high. In our data, it is common that more than two enterprises have the same survival time (not including censored individuals), so our paper tends to choose the *cloglog*(complementary log-log transformation) or the *logit* method to handle our data. Of course, we also will use the Cox method to process data for robust check. In the following, we will introduce these survival techniques in detailed. If the data is continuous time, the hazard function in a Cox model is specified as:

$$h(t, X) = h_0(t)exp(\beta X)$$

$h_0(t)$ is the baseline hazard rate which is common to the exporting firms which, X denotes the vector of explanatory variables, β is the corresponding vector of coefficients to be estimated, $exp(\beta X_i)$ reflects the heterogeneous characteristics of the exporting firms which may contribute

to the hazard rate.

For discrete time data, the hazard function can be expressed as:

$$\log(-\log[1 - h_j(X)]) = \beta X + \gamma_j, \text{ where } \gamma_j = \log(H_j - H_{j-1})$$

This expression is known as the complementary log-log transformation, here, γ_j represents the log of the difference of the integrated baseline hazard of the interval $[j-1, j]$, which summarizes how the baseline hazard vary with time. By using the interval-censored survival time, we can derive the regression coefficients β . A positive (negative) coefficient increases the value of the hazard rate, which implies a negative (positive) impact on the survival rate. Besides, in order to observe the pattern of duration dependence, we need to set the parametric of γ_j , here

The method to estimate the coefficients is maximum of the log-likelihood function. Specially, for a inflow sample with the right censoring just like our data, the likelihood contribution for a censored spell is given by the discrete time survivor function:

$$\begin{aligned} L_i &= Pr(T_i > j) = S_i(j) \\ &= \prod_{k=1}^j (1 - h_{ik}) \end{aligned}$$

the likelihood contribution for a censored spell is given by the discrete time density function:

$$\begin{aligned} L_i &= Pr(T_i = j) = f_i(j) \\ &= h_{ij} S_i(j - 1) \\ &= \frac{h_{ij}}{1 - h_{ij}} \prod_{k=1}^j (1 - h_{ik}) \end{aligned}$$

The likelihood for the whole sample is:

$$\begin{aligned} L &= \prod_{i=1}^n [Pr(T_i = j)]^{c_i} [Pr(T_i > j)]^{1-c_i} \\ &= \prod_{i=1}^n \left[\left(\frac{h_{ij}}{1 - h_{ij}} \right)^{c_i} \left[\prod_{k=1}^j (1 - h_{ik}) \right]^{1-c_i} \right] \\ &= \prod_{i=1}^n \left[\left(\frac{h_{ij}}{1 - h_{ij}} \right)^{c_i} \prod_{k=1}^j (1 - h_{ik}) \right] \end{aligned}$$

This implies:

$$\log L = \sum_{i=1}^n c_i \log \left[\frac{h_{it}}{1 - h_{it}} \right] + \sum_{i=1}^n \sum_{j=1}^t \log(1 - h_{ij})$$

Now define a binary indicator variable y_{it} , which equals to 1 if firm i exits the exporting market at the time t ($t=Ti$) and zero if otherwise, the function can be written as:

$$\log L = \sum_{i=1}^n \sum_{j=1}^t y_{it} \log(1 - h_{it}) + \sum_{i=1}^n \sum_{j=1}^t (1 - y_{it}) \log(1 - h_{ij})$$

By substituting the discrete hazard function, and maximize $\log L$ with respect to γ_j and β , we can obtain the relationship between the explanatory variables and hazard rate.

2.3 spatial econometric

2.3.1 the diagnosis of spatial association

It is popular that the economic activity has spatial associations because of the geographic

proximity, competition, copy act or the spillover effect. So for the city's hazard rate, there may be also exist the spatial correlation. Spatial econometric as a branch of modern micro-econometrics, it handle the spatial effect, spatial dependence and spatial heterogeneity in cross data and panel data well. In order to diagnosis the spatial dependence, the Moran's I index has been developed to test the spatial correlation, which can be expressed as:

$$I = \frac{\sum_{i=1}^n \sum_{j=1}^n W_{ij} (Y_i - \bar{Y})(Y_j - \bar{Y})}{\sum_{i=1}^n (Y_i - \bar{Y})^2}$$

In our case, the y_i is the i th city's hazard rate, the \bar{y} is the average hazard rate of all cities, W_{ij} is the spatial weighted matrix which measures the distance of random two cities.

Assume the null hypothesis is no spatial correlation, the standard normal statistic of Moran's I is:

$$Z = (I - E(I)) / \sqrt{Var(I)}$$

If z is positive significantly, it implies the positive spatial autoregression which means the similar observation tend to agglomerate; when z is negative significantly, the similar observation are likely to disperse in space; when the z is equal to zero, there is no spatial correlation.

But the global Moran's I index has its limitation. If some area tend to agglomerate and the other area tend to disperse, the offset effect may result in the none correlation in space. So the local indicators of spatial association (LISA) and Moran scatter plot (MSP) need to be explored, which can further characterize the local spatial dependence and heterogeneity. LISA can be expressed as:

$$I_i = \frac{(Y_i - \bar{Y})}{\sum_{i=1}^n (Y_i - \bar{Y})^2} \cdot \sum_{j \neq i}^n W_{ij} (Y_j - \bar{Y})$$

Where the y_i , \bar{y} and W_{ij} has the same definition. The expected value of Moran's I is:

$$E_i(I_i) = - \sum_{j=1}^n W_{ij} / (n-1)$$

When the Moran's I index is greater than the $E(I)$, it indicates the i th city has been surrounded by the similar indicator value; when the Moran's I index is less than the $E(I)$, documenting that the cities shared with similar geography location has large different and display the negative spatial dependence.

The key issue to implement the diagnosis is to calculate the spatial weighted matrix, which can be obtained from the real geographic distance. There are three common methods to estimate: contiguity method, K-nearest neighbors and distance threshold method. Given that our data is based on the geographic coordinate, we will use the distance threshold method to calculate the spatial weighted matrix:

according to the distance standard, W_{ij} is defined as:

$$W_{ij} = \begin{cases} 1 & \text{if distance between the city } i \text{ and city } j \text{ is less than } d \\ 0 & \text{if distance between the city } i \text{ and city } j \text{ is larger than } d \end{cases}$$

d is the bandwidth we set on what distance the two cities can be regarded as the neighbours.

2.3.2 the spatial regression

The most popular model in the spatial econometric is the spatial autoregression which is proposed by the Cliff&Ord(1981), the general function is:

$$\begin{cases} y = \rho W_1 y + X\beta + \varepsilon \\ \varepsilon = \lambda W_2 \varepsilon + \mu \end{cases}$$

Where, the W_1, W_2 is the n vector of spatial weighted matrix, the $W_1 y$ is the lag dependent variable, the β is the corresponding coefficients of independent variables, the ρ and λ are the coefficient of spatial correlation. In our paper, the y is the city's hazard rate, the x is the city-macro variables including the minimum wage and the agglomeration. When the $\rho \neq 0$, $\beta \neq 0$, $\lambda = 0$, the model can be called the spatial lag mode (SLM), which implies the the city's dependent variable is not only affected by the independent variables in itself area, but also the factor from the other cities; when the $\rho = 0$, $\beta \neq 0$, $\lambda \neq 0$, the model is named as the spatial error mode (SEM), which indicates the targeted dependent variable is not only linked to the itself specific variables, but also other places' dependent variable and independent variables. Whether the former model or the latter model is fitted to our data depend on the significant level of LM statistic. When LM statistic of both two model can't refuse the null hypothesis, then we should persist on the result of OLS. When LM statistic of one model refuses the null hypothesis and the other is not, the data should apply the refused model; if the LM statistic of two model both refuse the null hypothesis, both two model can be used to do the spatial regression, but what is needed is to consider which model is more significant. Later.

3. Data

3.1 Data source and processing

Our dataset has three sources:

The first is originated from the annual survey of Chinese industrial firm dataset over the period 1998-2007, Which is collected as a sequence of cross sections by National Statistics Bureau. The objective of the dataset is the manufacturing firms with the prime operating income more than 5 million RMB. It records rich and comprehensive information of firm specific characteristic and export data: the firm id, register type, established time, industry, capital, labor size, industrial value added, minimum wage, welfare, subsidy, export value and so on. This data enables us to construct the valid variables to parameterize the model.

The second is coming from the China City Statistical Yearbook between 1998 and 2007 collected by China National Bureau of Statistics which contains the macro data of 285 cities: the regional gross product value, GDP index, population, land area, workers, the total wage, fdi, the number of taxi and bus, the government's fiscal expenditure, the minimum month wage, the minimum hour wage and so on. This data allows us to establish the effect of city-macro variables on the city hazard rate.

The third data is the geographic coordinate of the 285 China city. It will help us to calculate the distance of two cities and estimates the spatial weight matrix to investigate whether the hazard rate of cities has the correlation in spatial.

Because the main method we adopt in the study is survival analysis, so our key and first step is to convert the data into survival data using the ASIF data. Considering the existing of firms which are no continuous in the market (not the exporting market) during the observation period, we balance the panel by dropping these firms and keep the enterprises who survive all the time

over the different observation period. By this way ,we don't need to distinguish the firm's exit originating from the failure in the exporting market or the inability in the domestic market , and allow us to focus on survival firms' behavior of entering and exiting the exporting market. This approach of processing data may exist selection bias; we will recheck the results of Chinese exporting firms' survival time by considering the non-balanced data in the robustness part. Meanwhile, In order to avoid the left-censored problem, we choose the new exporting firm which begins to export at the starting observation date. For our sample period 1998-2007, the new exporter are defined as firms who don't export at 1998 but begin to export at the period 1999 to 2007, which is the common with many survival literatures. Besides, in our data, there exist firms whose employment is below zero or total capital equals to zero or record has no related information to estimate TFP. In order to obtain the unbiased result, we drop observations which have wrong accountant information or incomplete information or inconsistent geographic code.

Finally, there are 39632 new exporters in our dataset. Because the existing of multiple spell, our dataset consists on a total of 43654 records, while 35859 observations have one spell, 3459 individuals have two spells, 287 observations have three spells and 4 subject has four spells. The proportion of multiple spell accounts for 17.86%(see the table1), which is so high that we can't ignore it. Meanwhile, we also present the distribution of the trade duration using the single spell sample. We can see nearly half of enterprises' survival time (40.53%) has only one year. Most firms exit the exporting market in 2 to 4 years. And only 1.33% firms can survival the whole observation period in the exporting market(see the table2). Here, we can have a basic intuition that the trade duration of Chinese firms are short, which is consistent to the Chen et al(2011). But as for the cities survival time and hazard rate, there are seldom been explored. Next, we will use the survival analysis techniques to estimate the firm-level hazard rate and aggregate to the city-level.

The distribution of spell

strr	Freq.	Percent	Cum.
1	35,859	82.14	82.14
2	6,918	15.85	97.99
3	861	1.97	99.96
4	16	0.04	100
Total	43,654	100	

The distribution of survival time

time	Freq.	Percent	Cum.
1	14,535	40.53	40.53
2	9,450	26.35	66.89
3	4,268	11.9	78.79
4	2,881	8.03	86.82
5	1,538	4.29	91.11
6	1,290	3.6	94.71
7	730	2.04	96.75
8	690	1.92	98.67
9	477	1.33	100
Total	35,859	100	

4 Empirical model and explanatory variables

In our paper, we aim at to find some links between the minimum wage and the city's exporting hazard rate, the first is to estimate the firm-level hazard rate and then aggregate to the city-level. For the firm-level hazard rate, we choose the following variables to estimate the hazard rate using the cloglog model:

Firm-specific variables

The initial export value: Rauch and Watson(2003) argues that the initial export can represent the confidence for the trade partner which may lower the likelihood of failure.

Firm size: Agarwal & Audretsch(2001) shows that the small firms have a lower likelihood of survival than the larger counterpart and the greater is the "size at entry" in a given industry , the higher the rate of survival of new entrants. Since the larger firms tend to be a good quality firm and are less likely to exit. This positive relationship is also examined by recent survival literatures (Esteve-Perez, Pallardo & Requena (2008) ,Abdul-Rahim Adada Mohammed,2007). In our paper, it will be expressed by the logarithm of initial exporter ' employment.

Firm productivity: The firms productivity is a important factor in determining the firms' hazard rate. the higher the firm's productivity, the high probability to enter the market and persist the external risk to remain in the exporting market(Wagner, 2011; and Eaton et al., 2008). Here, we will use lp method to estimate it.

Age : Pakes and Ericson (1998) suggests that hazard rate depends on the age since older firms have more precise perceive about their attributes and they are more likely to make reasonable expectation of cost efficiency which will be not easily to exit the market. But some literatures have the opposite opinion.

City-specific variables

The firm's survival rate is also affected by the location factors:

the development level of city: we will use the city's GDP per capita to characterize;

the city's scale: we use city's population and the size of landarea to represent

the agglomeration degree:here, we will use the urbanization economy, the localization economies, the strength of competitive pressure which is popular in urban economy to measure it according to Martin et al(2011):

(a) Localization economy: we calculate the number of worker by year, industry and area using the ASIF data. For firm i, in industry s, city z and time t, the Localization economy is defined as the follow: $loc_{it}^{sz} = \ln(employee_{it}^{sz} - employees_{it}^{sz} + 1)$

(b) Urbanization economy: the urbanization economy is defined as the number of workers in other industries on the area z where a firm is located: $urb_t^{sz} = \ln(employees_t^z - employees_t^{sz} + 1)$

(c) The diversity index: the industrial diversity index is the logarithm of the reciprocal of H_t^{sz} , which is defined as: $H_t^{sz} = \sum_{s^* \neq s} (\frac{employment_t^{s^*z}}{employment_t^z - employment_t^{sz}})^2$

(d) The degree of competition: the competition index is the logarithm of the reciprocal of the Herfindahl-Hirschman Index:

$$comp_t^{sz} = \ln(\frac{1}{Herf_t^{sz}}), \text{ where, } Herf_t^{sz} = \sum_{j \in S_t^{sz}} (\frac{employment_t^{sz}}{employees_t^{sz}})^2$$

the local infrastructure : it can be represented by the number of city's bus and taxi

the human capital: we will use the share of population with more than secondary schooling as a proxy for human capital in the city-level workforce

the distance from the harbor: The harbor has the natural advantage to export. So we expect the nearer the city is to the harbor, the higher odd the firm will have.

By controlling the firm-specific variables and city-specific variables, we can establish the following cloglog function to estimate the fitted hazard rate and then aggregate to the city-level weighting the share of firm employment to the city's whole employment

$$\text{cloglog}[h(t, X|\lambda)] = \beta_0 + \beta X + \alpha C + \gamma_j + \epsilon$$

Where the X is a vector of covariates, including the firm-specific variables we have mentioned above; the C is also a vector of covariates which contains the city-specific variables; Z is collection of dummy variables such as the ownership of firm, industry, region and year.

Using the above cloglog model we can estimate the every firm's fitted hazard rate and then the city's hazard rate can be computed using the following function:

$$\text{city} - \text{hazardrate}_j = \sum_{i=1}^n \frac{\text{employment}_{ij}}{\text{employment}_j} \text{hazardrate}_{ij}$$

The jth city's hazard rate is the sum of the jth city ith firm's fitted hazard rate multiplied by the share of the ith firm's employment to the jth city's whole employment

5 The basic survival result

5.1 the firm level hazard rate

Using the method of Kaplan-Meier function, we calculate the new exporters' survival duration and hazard rate, which is shown in Figure 3 and Figure 4, respectively. From the figure 3, we can see that the median length of trade duration is 2 years and almost 50% new exporters exit the market after three years. When we use the first spell data to estimate, the median survival time is 2 years, too, and the whole survival rate is lower than the multiple spells' result, which implies the first spell may underestimate the survival rate without considering the reentry firms. But the difference is not that significant, so we can treat the first spell results equivalent to the multiple spell results. Comparing to the classic survival papers mentioned above, our spell length seems to be a little longer. The reason comes from the data we use. Our data is firm-level data which has no information of exporters' destinations or the kinds of products. So we can just calculate the firm-level trade duration which neglects the failure happened in some exporting market or the some kind of product. In other words, if a firm remain in exporting market despite how many destination it enters and exits or how many product it produces or give up, we treat it as active exporter in the market. So the final export length is longer than the common length, we think the extensive margin as the allocation of firms' internal resource.

The figure 2 shows the shape decline of the hazard rate. In the early years of export, the hazard rate is quite high, but then falls rapidly over the sequent years and the risk rate is extremely low at the sixth year. It indicates a threshold effect. Once a firm chooses to export and has survival the first few years it is likely to survive longer. The first spell data indicates the same shape of hazard rate.

In figure 4, we report survival rate of different regions to have a basic look at the spatial distribution of hazard rate using multiple spell data. We can see that the three regions all display the negative duration dependence---the survival rate and fail rate decrease as the duration increase. For the different regions, the eastern area has the highest survival rate comparing to the middle and the western region, which is consistent with China fact. The eastern firms have the geographic advantage which is convenient to transport and export. Besides, firms located in these coastal

areas have higher productivity and size which may contribute to their survival time. But the middle and western region has the different story. The western region has higher survival time than the middle area. The possible explanation may come from the productivity and export cost. Assume all else is equal, firms located in the western area faces higher exporting cost (such as the transportation cost) than the middle region and only the higher productivity firms can surpass these cost to export. This kind of selection effect make the western firms behave better in exporting market. From the distribution of hazard rate in different region , the spatial correlation is not apparent, the following we will compute the hazard rate of 285 cities and present the spatial distribution to investigate whether the hazard rate has spatial link and whether the minimum wage and agglomeration level matters

By controlling the firm-specific variables and city-specific variables, we can estimate the fitted hazard rate, the regression result of Cloglog function is below:

	cloglog fail	cloglog fail	cloglog fail	logit fail
fail				
Total factor productivity $t-1$	-0.248 ^{***} (-14.31)	-0.244 ^{***} (-11.81)	-0.153 ^{***} (-6.48)	-0.163 ^{***} (-3.81)
Log of employment $t-1$	-0.0742 ^{***} (-7.51)	-0.0692 ^{***} (-6.67)	-0.105 ^{***} (-8.78)	-0.171 ^{***} (-7.65)
Log of initial export t	-0.136 ^{***} (-30.88)	-0.137 ^{***} (-29.56)	-0.0629 ^{***} (-11.58)	-0.0974 ^{***} (-9.47)
Log of firm age $t-1$	0.0456 ^{**} (3.01)	0.0353 [*] (2.21)	0.0703 ^{***} (3.74)	0.132 ^{***} (3.95)
Log of GDP per capita $t-1$		-0.280 ^{***} (-7.50)	-0.412 ^{***} (-9.30)	-0.728 ^{***} (-8.96)
Log of the distance from the harbor $t-1$		0.0411 ^{***} (3.74)	0.0174 (1.37)	0.00688 (0.30)
Log of population $t-1$		-0.262 ^{***} (-4.11)	-0.436 ^{***} (-5.80)	-0.802 ^{***} (-6.00)
Log of government expenditure $t-1$		0.128 ^{***} (5.75)	0.0662 [*] (2.54)	0.0397 (0.83)
Log of city's landarea $t-1$		-0.223 ^{***} (-14.15)	-0.198 ^{***} (-10.61)	-0.270 ^{***} (-7.81)
Log of road area $t-1$		0.135 ^{***} (5.51)	0.0418 (1.49)	-0.0215 (-0.42)
Log of number of bus in a city $t-1$		-0.136 ^{***}	-0.0759 ^{**}	-0.0560

		(-6.37)	(-3.01)	(-1.21)
Log of number of taxi in a city $t-1$	0.0833 ^{***}	0.159 ^{***}	0.282 ^{***}	
		(4.68)	(7.64)	(7.43)
Log of FDI $t-1$	-0.0612 ^{***}	-0.0596 ^{***}	-0.0924 ^{***}	
		(-5.30)	(-4.31)	(-3.60)
Log of human capital $t-1$	0.368 ^{***}	0.475 ^{***}	0.872 ^{***}	
		(8.04)	(9.12)	(9.38)
Localization economy $t-1$	-0.00958	-0.00521	0.00445	
		(-1.17)	(-0.58)	(0.25)
Urbanization economy $t-1$	0.195 ^{***}	0.197 ^{***}	0.330 ^{***}	
		(8.67)	(7.64)	(6.91)
Diversity index $t-1$	-0.454 [*]	-0.879 ^{***}	-1.411 ^{***}	
		(-2.47)	(-4.30)	(-3.54)
Competition degree $t-1$	0.0382 ^{***}	-0.0323 ^{***}	-0.0729 ^{***}	
		(9.11)	(-7.46)	(-7.99)
γ_j			-1.997 ^{***}	-3.888 ^{***}
			(-103.85)	(-92.88)
_cons	2.187 ^{***}	1.960 ^{***}	4.981 ^{***}	11.98 ^{***}
	(13.03)	(5.67)	(12.38)	(15.03)
The mean of yhat	0.52287	0.5352	0.5849	0.5249
N	35562	33946	33946	33946

In the above table, three cloglog model has been estimated. The first is added in only by the firm-specific variables, we can see the TFP, firm's size and the initial export volume can reduce firm's hazard rate in the exporting market apparently which is consistent to the many firm-level survival literature. But the age has significantly positive effect on the hazard rate the second model has captured the city-level variables based on the first cloglog model. In one hand, We can see the city's GDP per capita, population, the size of land area, the fdi, the diversity index, the number of bus can decrease the risk firm face in the exporting market, but the distance from the harbor, the human capital, the urbanization economy and competition degree can increase the exporting firm's risk. This may be result from the competitive degree. The nearer from the harbor, the higher urbanization level, the more likely firms is to locate in it, so the higher the competitive, the higher exit and entry rate of firm, so this factor will reduce the firms' survival rate. on the other hand, we can see the mean of fitted hazard rate is higher the first model. The first two mode doesn't set the function form of baseline hazard rate (γ_j) and include it into the intercept item. The difference of interval baseline hazard rate summarizes the pattern of duration dependence and can give us a straightforward scope on whether the hazard rate is decrease with the time and the survival circumstance of China firms can improvement as trade duration prolongs. Here, we use the *Weibull model* to set the baseline hazard rate which is represent by the logarithm of firm's survival time. we also use the logit model to estimate the fitted hazard rate which will be used for robust

check. Here, we mainly use the third model to compute the city-level hazard rate.

5.2 The city-level hazard rate

Now we have estimated the firm-level fitted hazard rate, then we will use the function mentioned above to estimate the city-level hazard rate. Because some observations don't have city-macro variables value we put into the function and therefore don't have estimated hazard rate, so we drop these observations and we have 208 cities finally. In the robust check, we will use the fitted value predicted only by the firm-specific variables because this will lose fewer observations compared with the whole model. Here is the summary description of city-level hazard rate.

Variable	Obs	Mean	Std. Dev.	Min	Max
wyhatsum	208	0.490534	0.172655	0.028202	0.913366

We also compute the mean survival time of city-level and draw the histogram of cities' average survival time (see the figure 4). We can see about 60% cities' survival time in the observation period is very short, just two to three years. But whether city in near location will have similar hazard rate, in other words, whether the cities' hazard rate have spatial correlation will be another important question.

Using the spatial econometric method, we first estimate the spatial weight matrix of 208 cities. Then we explore whether the cities' hazard rate has correlation in space using Moran's I index from the global spatial autocorrelation

the Moran's I of global spatial autocorrelation					
Variables	I	E(I)	sd(I)	z	p-value*
wyhatsum	0.311	-0.005	0.02	15.924	0.0000

From the above table, we can see that the spatial distribution of cities' hazard rate is correlated positively. But the global spatial autocorrelation can't reveal the local agglomeration and local spatial autocorrelation. So it is necessary to estimate the local spatial association. The following we use the Moran scatter and Local indicators of spatial autocorrelation to characterize it.

From the Moran scatter, we can see that the local hazard rate presents positive correlation. As in the first quartile, the cities with higher hazard rate is surrounded by the cities whose risk is similar high. In the third quartile, the cities with lower hazard rate gather together. In the second quartile, the cities with lower hazard rate is agglomerated by the higher hazard rate, the fourth quartile is the opposite story. This implies the heterogeneity in space is significant and the local positive spatial association is apparent. We also display every city's Moran's I index and the p-value indicating the significant level. We find 87 cities have positive significant local spatial correlation, 11 cities display the negative significant correlation, and 110 cities' hazard rate is not associated with the near cities in statistics. In the whole, the cities' hazard rate has positive spatial correlation

5.3 The analysis of spatial econometric of city's hazard rate

Now we have found the cities' hazard rate has spatial dependence, but we can't identify the factors resulting in the distribution of city's risk. So the next we will use the spatial error model and spatial lag model to explore the effect of city-macro variable especially the minimum wage and the agglomeration level on the city's hazard rate. We first need to have a test judging whether the spatial lag model or the spatial error model is proper for our research.

Test	Statistic	p-value
Spatial error:		
Moran's I	15.13	0.000

Lagrange multiplier	141.313	0.000
Robust Lagrange multiplier	26.643	0.000
Spatial lag:		
Lagrange multiplier	119.827	0.000
Robust Lagrange multiplier	5.158	0.023

From the above table, we can see the spatial error model' Lagrange multiplier and the robust LM is 1% level significantly ,while the spatial lag model' Lagrange multiplier is 1% level significantly, the robust LM is 5% level significantly. The former significant level is higher than the latter ,so we will use the spatial error model to estimate the model.

	SEM wyhatsum	SEM wyhatsum	SEM wyhatsum	SEM wyhatsum	SLM wyhatsum	OLS wyhatsum
main						
Log of monthminiwage _{t-1}	-0.168* (-2.52)	-0.0698 (-1.09)	-0.0504 (-0.72)	0.0121 (0.17)	0.0171 (0.22)	-0.00742 (-0.09)
Lag of the log of monthminiwage _{t-1}		-1.099*** (-4.98)	-1.151*** (-5.50)	-0.837*** (-3.67)	-0.221 (-1.29)	-0.637** (-3.04)
Localization economy _{t-1}			0.00714 (0.35)	0.0142 (0.80)	0.0107 (0.56)	0.0121 (0.53)
Urbanization economy _{t-1}			0.0172 (0.79)	-0.00997 (-0.43)	-0.0242 (-0.98)	-0.0147 (-0.51)
Diversity index _{t-1}			0.151 (1.57)	0.204* (2.15)	0.160 (1.67)	0.149 (1.39)
Competition degree _{t-1}			-0.0218** (-2.68)	-0.0163* (-2.27)	-0.0120 (-1.62)	-0.0212* (-2.34)
Log of GDP per capita _{t-1}				-0.0587 (-1.93)	-0.0710* (-2.03)	-0.116** (-2.92)
Log of the distance from the habor _{t-1}				0.0337** (2.66)	0.0290* (2.34)	0.00793 (0.40)
Log of population _{t-1}				-0.0353 (-0.52)	-0.0771 (-1.20)	-0.172* (-2.10)
Log of government expenditure _{t-1}				0.0419 (1.69)	0.0518* (2.10)	0.0385 (1.41)
Log of city's landarea _{t-1}				-0.0661*** (-5.45)	-0.0668*** (-5.54)	-0.0691*** (-4.72)
Log of road area _{t-1}				-0.0219 (-0.83)	-0.0311 (-1.19)	-0.00366 (-0.13)
Log of number of bus in a city _{t-1}				-0.0288 (-1.47)	-0.0118 (-0.61)	0.00263 (0.11)
Log of number of taxi in a				0.0469* (2.54)	0.0251 (1.72)	0.0151 (0.96)

city _{t-1}						
Log of human capital				0.0841	0.119*	0.177**
				(1.47)	(2.56)	(3.01)
Log of FDI _{t-1}				0.00176	0.0126	0.0232
				(0.15)	(0.99)	(1.60)
_cons	1.444***	7.376***	7.299***	5.370***	1.595	5.066***
	(3.44)	(6.43)	(6.37)	(4.40)	(1.76)	(4.37)
lambda						
_cons	0.851***	0.832***	0.836***	0.853***		
	(9.99)	(10.62)	(10.79)	(12.58)		
sigma						
_cons	0.136***	0.128***	0.124***	0.110***	0.114***	
	(17.23)	(16.74)	(16.35)	(15.30)	(15.99)	
rho						
_cons					0.781***	
					(8.80)	
N	208	208	208	208	208	208

The column 1 has regressed the city's hazard rate on the city's minimum wage without controlling other city-macro variables, we can see the minimum wage has negative effect on the city's risk. After we control the other cities' minimum wage, the local minimum wage is not significant, which may indicates the city's hazard rate is inherently effected by the surrounding cities' minimum wage, the higher the near cities minimum wage, the higher the other city's export risk, the lower the local city's hazard. This result is robust after we control the city's other macro variables like the agglomeration index, the GDP per capita, the population, the city's land area , the distance from the harbor, the fundamental infrastructure the human capital ,the fdi volume, we also find the competition degree, the city's land area can reduce the city's risk which may come from the positive effect of competition. But the distance from the harbor have improve a city's risk, we think it is because the city near the harbor face more entry and exit o f new exporting firms so the whole city hazard is high. But this result is not hold significant in the SLM model, when we use the SLM model whose result is shown in column 4,the lag of minimum wage and competition degree is not significant, but the GDP per capita, the human capital , the government expenditure is significant, the city's land area is apparent too. But it is worth to mention that though the minimum wage is not significant in the SLM model, the ρ is not equal to zero significantly all the time which indicates that the city i's hazard rate is not only affected by the other cities hazard rate, but also the other cities macro variables like minimum wage.

The conclusion

Using the ASIF data in the period 1998 and 2007, we can find that the city's exporting risk has the spatial correlation, which can be affected by the other cities' hazard and macro variables. As for the minimum wage, the local city' minimum has no significant on the city's exporting hazard, but the other cities minimum wage matters conditioned on controlling other macro variables. The city's land area and the competition degree can significantly reduce the city's risk, but the other agglomeration index is not significant. The paper documents the spatial association of cities, so in the policy advisement, the government should strengthen the function of main cities to driving the periphery areas' development by promoting these core cities development. For the further

extension, we think the paper should be further identify which city is the core function areas to promoting the other cities development, it will also be interesting if we extend it to the province level. We expect the spatial correlation will be more apparent and the provinces link will be closer.

Appendix

Figure1- the survival function of the multiple spell and the first spell

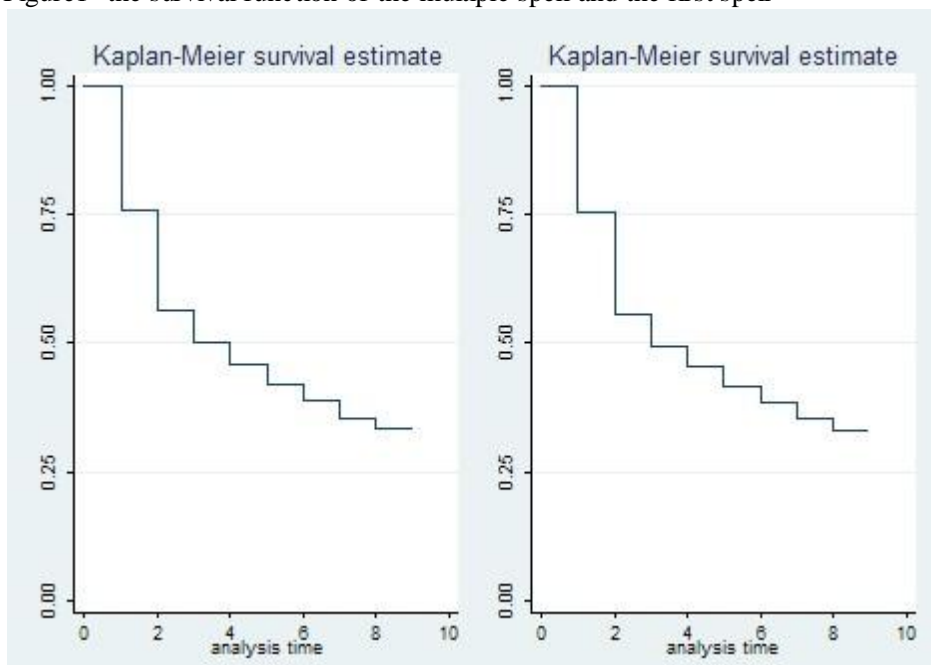


Figure2- the hazard function of the multiple spell and the first spell

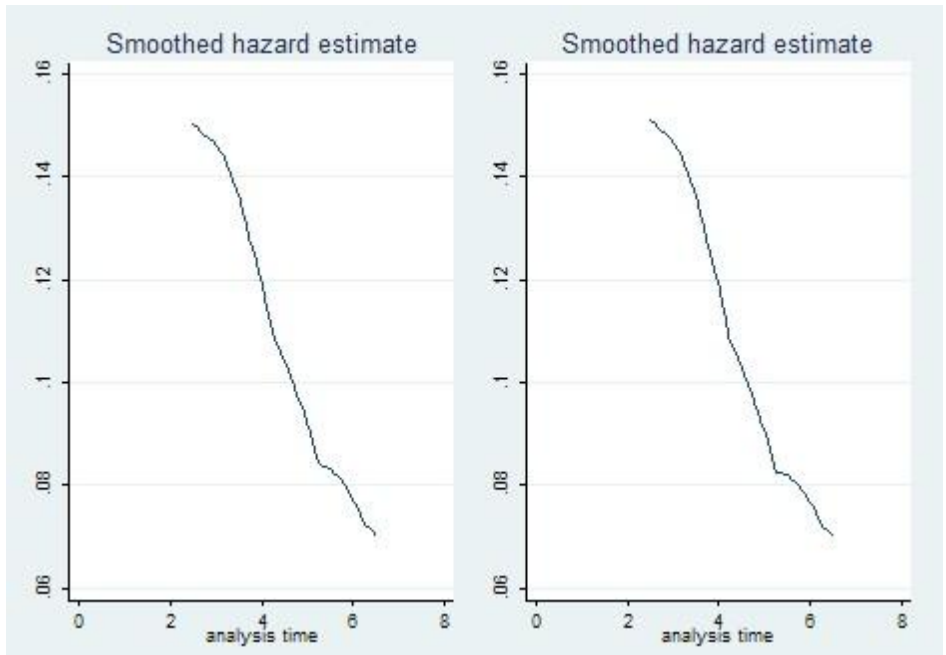


Figure3- the survival time of different areas

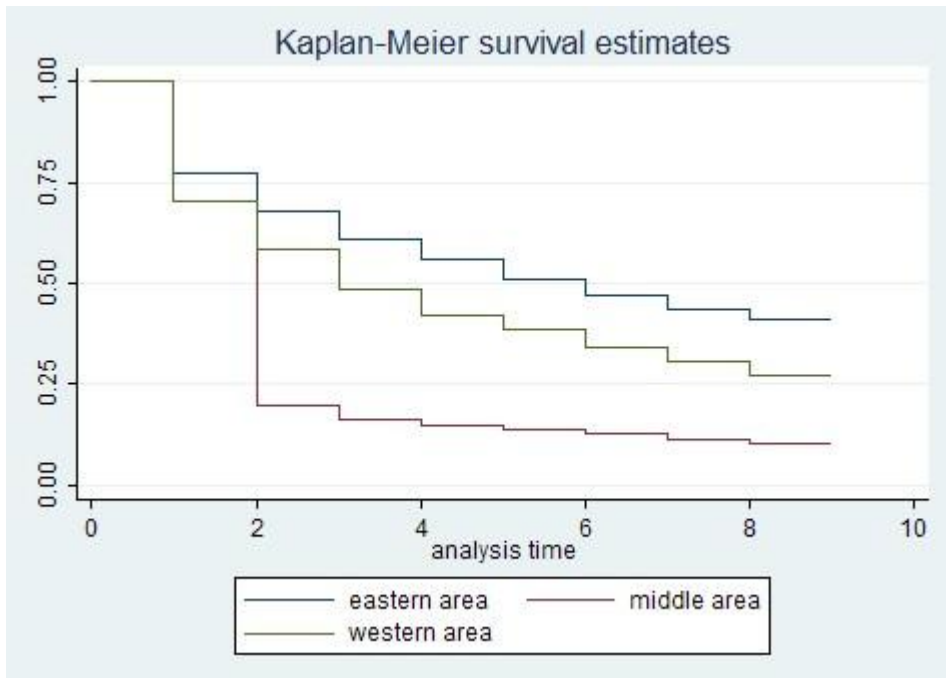


Figure4- the distribution of cities' average survival time

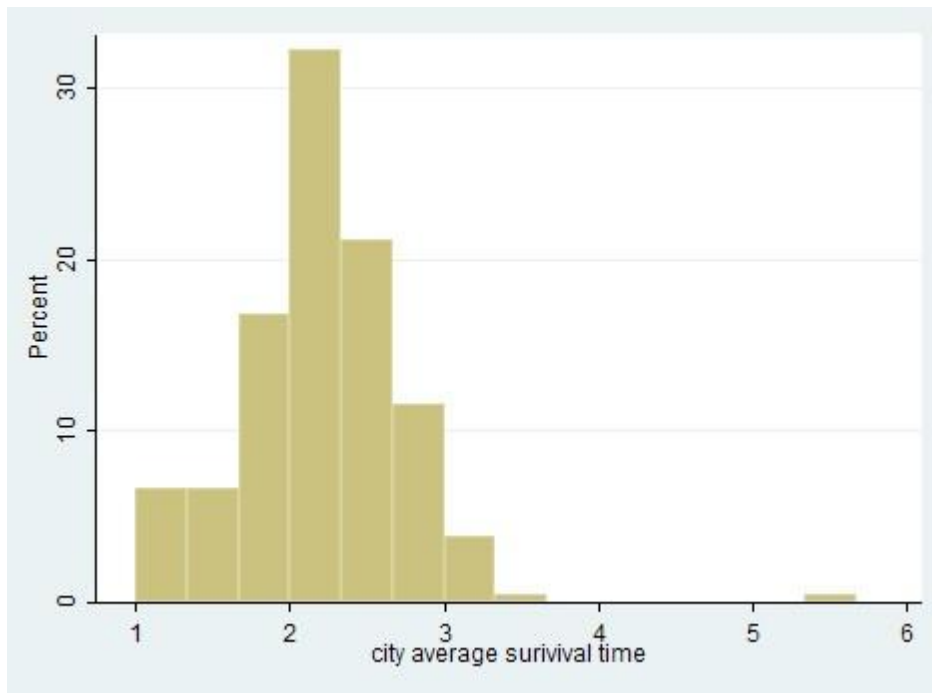


Figure5 the Local indications of spatial association

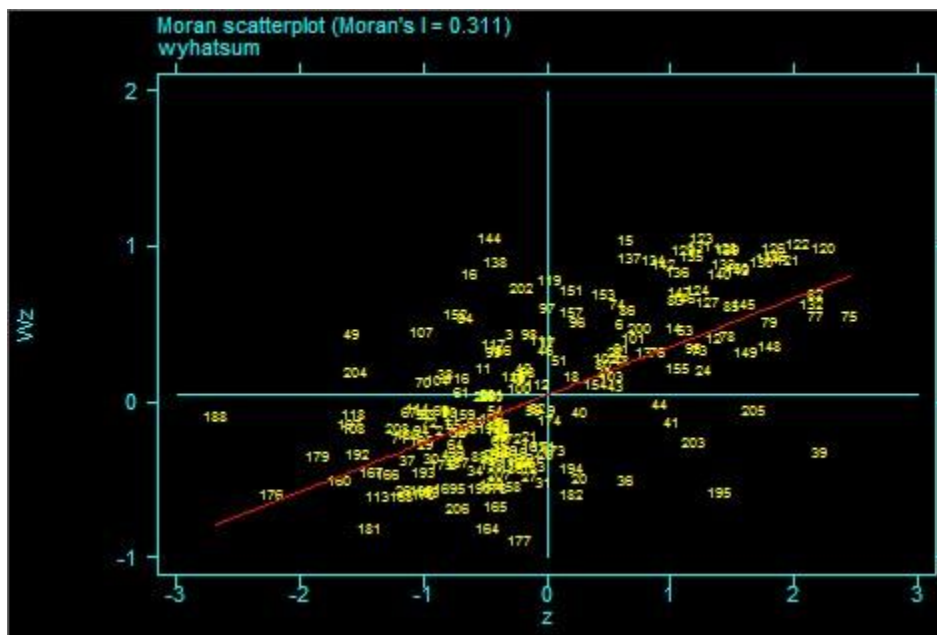


Table the local spatial association of every city in sample

Location	Ii	E(Ii)	sd(Ii)	z	p-value*	citycode
1	0.142	-0.005	0.182	0.802	0.211	1100
2	0.189	-0.005	0.159	1.215	0.112	1200
3	-0.119	-0.005	0.143	-0.796	0.213	1301
4	0.315	-0.005	0.146	2.186	0.014	1302
5	0.417	-0.005	0.154	2.731	0.003	1303
6	0.266	-0.005	0.131	2.068	0.019	1305
7	-0.027	-0.005	0.14	-0.161	0.436	1306
8	0.341	-0.005	0.161	2.146	0.016	1308

9	-0.004	-0.005	0.135	0.008	0.497	1309
10	0.167	-0.005	0.181	0.948	0.172	1310
11	-0.091	-0.005	0.141	-0.611	0.270	1311
12	0.501	-0.005	0.24	2.106	0.018	1401
13	0.217	-0.005	0.184	1.203	0.114	1402
14	0.442	-0.005	0.152	2.934	0.002	1403
15	0.646	-0.005	0.15	4.339	0.000	1405
16	-0.489	-0.005	0.23	-2.104	0.018	1407
17	0.003	-0.005	0.232	0.033	0.487	1501
18	0.027	-0.005	0.258	0.122	0.451	1502
19	0.085	-0.005	0.355	0.252	0.400	1503
20	-0.14	-0.005	0.176	-0.769	0.221	1504
21	0.037	-0.005	0.203	0.204	0.419	1505
22	0.152	-0.005	0.576	0.273	0.392	1507
23	0.005	-0.005	0.364	0.027	0.489	1508
24	0.208	-0.005	0.227	0.938	0.174	1509
25	0.171	-0.005	0.259	0.68	0.248	2101
26	0.707	-0.005	0.162	4.405	0.000	2102
27	0.073	-0.005	0.303	0.257	0.399	2103
28	0.003	-0.005	0.279	0.029	0.488	2104
29	0.314	-0.005	0.262	1.216	0.112	2105
30	0.383	-0.005	0.229	1.696	0.045	2106
31	0.011	-0.005	0.228	0.07	0.472	2107
32	0.289	-0.005	0.201	1.461	0.072	2109
33	0.265	-0.005	0.305	0.883	0.189	2110
34	0.279	-0.005	0.205	1.385	0.083	2111
35	0.095	-0.005	0.273	0.365	0.358	2112
36	-0.346	-0.005	0.199	-1.718	0.043	2113
37	0.47	-0.005	0.211	2.258	0.012	2114
38	-0.117	-0.005	0.224	-0.501	0.308	2201
39	-0.822	-0.005	0.237	-3.452	0.000	2204
40	-0.027	-0.005	0.218	-0.101	0.460	2208
41	-0.179	-0.005	0.272	-0.641	0.261	2301
42	-0.034	-0.005	0.308	-0.094	0.463	2302
43	0.033	-0.005	0.507	0.075	0.470	2304
44	-0.048	-0.005	0.247	-0.173	0.431	2306
45	-0.027	-0.005	0.357	-0.064	0.475	2307
46	-0.002	-0.005	0.48	0.006	0.498	2308
47	0.063	-0.005	0.402	0.169	0.433	2309
48	0.14	-0.005	0.344	0.421	0.337	2310
49	-0.632	-0.005	0.3	-2.091	0.018	2312
50	0.088	-0.005	0.16	0.584	0.280	3100
51	0.021	-0.005	0.138	0.188	0.425	3201

52	0.069	-0.005	0.173	0.425	0.335	3202
53	0.484	-0.005	0.124	3.929	0.000	3203
54	0.04	-0.005	0.154	0.291	0.386	3204
55	0.141	-0.005	0.176	0.832	0.203	3205
56	0.07	-0.005	0.154	0.487	0.313	3206
57	-0.001	-0.005	0.118	0.036	0.486	3207
58	-0.022	-0.005	0.109	-0.16	0.436	3208
59	0.01	-0.005	0.129	0.113	0.455	3209
60	0.004	-0.005	0.187	0.047	0.481	3210
61	-0.017	-0.005	0.187	-0.065	0.474	3211
62	0.006	-0.005	0.151	0.069	0.472	3212
63	0.103	-0.005	0.157	0.69	0.245	3301
64	0.232	-0.005	0.169	1.403	0.080	3302
65	0.109	-0.005	0.152	0.75	0.227	3303
66	0.168	-0.005	0.165	1.047	0.148	3304
67	0.116	-0.005	0.154	0.785	0.216	3305
68	0.135	-0.005	0.162	0.863	0.194	3306
69	0.079	-0.005	0.142	0.59	0.278	3307
70	-0.091	-0.005	0.128	-0.675	0.250	3308
71	0.327	-0.005	0.181	1.836	0.033	3309
72	0.163	-0.005	0.151	1.111	0.133	3311
73	0.365	-0.005	0.139	2.669	0.004	3402
74	0.333	-0.005	0.117	2.899	0.002	3403
75	1.26	-0.005	0.114	11.084	0.000	3404
76	0.245	-0.005	0.144	1.735	0.041	3405
77	1.129	-0.005	0.131	8.66	0.000	3406
78	0.572	-0.005	0.127	4.543	0.000	3407
79	0.852	-0.005	0.119	7.229	0.000	3408
80	0.091	-0.005	0.115	0.832	0.203	3410
81	0.19	-0.005	0.126	1.542	0.062	3411
82	1.428	-0.005	0.091	15.705	0.000	3412
83	0.648	-0.005	0.128	5.097	0.000	3413
84	-0.325	-0.005	0.122	-2.616	0.004	3414
85	0.869	-0.005	0.094	9.274	0.000	3415
86	0.362	-0.005	0.134	2.745	0.003	3417
87	0.134	-0.005	0.189	0.732	0.232	3501
88	0.208	-0.005	0.198	1.074	0.141	3502
89	0.108	-0.005	0.202	0.56	0.288	3503
90	0.088	-0.005	0.138	0.675	0.250	3504
91	0.044	-0.005	0.209	0.232	0.408	3505
92	0.116	-0.005	0.141	0.851	0.197	3507
93	0.113	-0.005	0.142	0.83	0.203	3508
94	0.221	-0.005	0.164	1.381	0.084	3509

95	0.37	-0.005	0.105	3.561	0.000	3602
96	0.116	-0.005	0.14	0.862	0.194	3603
97	0.005	-0.005	0.097	0.097	0.461	3604
98	-0.053	-0.005	0.125	-0.383	0.351	3605
99	-0.121	-0.005	0.117	-0.997	0.159	3606
100	-0.01	-0.005	0.116	-0.041	0.484	3607
101	0.262	-0.005	0.14	1.909	0.028	3609
102	0.111	-0.005	0.109	1.064	0.144	3610
103	0.067	-0.005	0.119	0.602	0.274	3611
104	-0.087	-0.005	0.136	-0.605	0.273	3701
105	0.291	-0.005	0.124	2.379	0.009	3702
106	0.065	-0.005	0.134	0.519	0.302	3703
107	-0.414	-0.005	0.114	-3.587	0.000	3704
108	0.326	-0.005	0.137	2.418	0.008	3705
109	0.625	-0.005	0.162	3.887	0.000	3706
110	0.088	-0.005	0.124	0.749	0.227	3707
111	-0.014	-0.005	0.109	-0.085	0.466	3708
112	-0.007	-0.005	0.132	-0.014	0.494	3709
113	0.889	-0.005	0.184	4.869	0.000	3710
114	0.08	-0.005	0.12	0.707	0.240	3711
115	-0.033	-0.005	0.109	-0.26	0.397	3713
116	-0.081	-0.005	0.133	-0.576	0.282	3714
117	-0.145	-0.005	0.12	-1.166	0.122	3715
118	0.189	-0.005	0.14	1.387	0.083	3716
119	0.01	-0.005	0.118	0.13	0.448	3717
120	2.13	-0.005	0.142	15.03	0.000	4101
121	1.698	-0.005	0.13	13.112	0.000	4102
122	1.987	-0.005	0.139	14.308	0.000	4103
123	1.26	-0.005	0.13	9.747	0.000	4104
124	0.834	-0.005	0.131	6.396	0.000	4105
125	1.679	-0.005	0.137	12.292	0.000	4107
126	1.757	-0.005	0.155	11.384	0.000	4108
127	0.779	-0.005	0.12	6.549	0.000	4109
128	1.38	-0.005	0.138	10.014	0.000	4110
129	1.044	-0.005	0.132	7.954	0.000	4111
130	1.491	-0.005	0.137	10.883	0.000	4112
131	1.189	-0.005	0.119	10.049	0.000	4113
132	1.279	-0.005	0.112	11.429	0.000	4114
133	1.208	-0.005	0.106	11.474	0.000	4115
134	0.757	-0.005	0.113	6.72	0.000	4116
135	1.065	-0.005	0.135	7.931	0.000	4201
136	0.838	-0.005	0.16	5.261	0.000	4202
137	0.592	-0.005	0.132	4.523	0.000	4203

138	-0.361	-0.005	0.137	-2.6	0.005	4205
139	1.373	-0.005	0.121	11.416	0.000	4206
140	1.095	-0.005	0.163	6.757	0.000	4207
141	1.589	-0.005	0.131	12.144	0.000	4209
142	0.792	-0.005	0.126	6.302	0.000	4210
143	1.238	-0.005	0.123	10.094	0.000	4212
144	-0.477	-0.005	0.118	-4.016	0.000	4213
145	0.938	-0.005	0.171	5.512	0.000	4301
146	0.694	-0.005	0.22	3.181	0.001	4302
147	0.713	-0.005	0.225	3.184	0.001	4303
148	0.574	-0.005	0.144	4.013	0.000	4304
149	0.459	-0.005	0.156	2.964	0.002	4305
150	1.257	-0.005	0.125	10.092	0.000	4306
151	0.132	-0.005	0.151	0.908	0.182	4307
152	-0.383	-0.005	0.139	-2.719	0.003	4308
153	0.301	-0.005	0.155	1.971	0.024	4309
154	0.027	-0.005	0.13	0.244	0.404	4310
155	0.192	-0.005	0.143	1.383	0.083	4311
156	-0.114	-0.005	0.139	-0.785	0.216	4312
157	0.106	-0.005	0.159	0.693	0.244	4313
158	0.178	-0.005	0.279	0.657	0.256	4401
159	0.079	-0.005	0.13	0.642	0.260	4402
160	0.929	-0.005	0.204	4.568	0.000	4403
161	0.037	-0.005	0.288	0.145	0.442	4405
162	0.259	-0.005	0.28	0.944	0.173	4406
163	0.6	-0.005	0.246	2.464	0.007	4407
164	0.405	-0.005	0.249	1.649	0.050	4408
165	0.301	-0.005	0.222	1.379	0.084	4409
166	0.649	-0.005	0.191	3.429	0.000	4412
167	0.706	-0.005	0.182	3.897	0.000	4413
168	0.766	-0.005	0.194	3.968	0.000	4417
169	0.493	-0.005	0.21	2.374	0.009	4419
170	0.635	-0.005	0.244	2.619	0.004	4420
171	0.011	-0.005	0.294	0.055	0.478	4451
172	0.083	-0.005	0.29	0.302	0.381	4452
173	-0.02	-0.005	0.161	-0.095	0.462	4502
174	-0.003	-0.005	0.15	0.01	0.496	4503
175	0.377	-0.005	0.161	2.364	0.009	4504
176	1.41	-0.005	0.251	5.637	0.000	4505
177	0.212	-0.005	0.242	0.898	0.185	4507
178	0.249	-0.005	0.19	1.338	0.090	4509
179	0.728	-0.005	0.201	3.647	0.000	4510
180	0.278	-0.005	0.149	1.904	0.028	4511

181	1.233	-0.005	0.24	5.155	0.000	4601
182	-0.122	-0.005	0.287	-0.408	0.342	5101
183	0.047	-0.005	0.303	0.17	0.432	5103
184	0.094	-0.005	0.264	0.375	0.354	5104
185	0.079	-0.005	0.248	0.338	0.368	5105
186	0.136	-0.005	0.295	0.477	0.317	5106
187	0.313	-0.005	0.28	1.134	0.128	5107
188	0.357	-0.005	0.213	1.698	0.045	5108
189	0.118	-0.005	0.303	0.405	0.343	5110
190	0.321	-0.005	0.292	1.117	0.132	5111
191	0.174	-0.005	0.209	0.856	0.196	5113
192	0.582	-0.005	0.295	1.988	0.023	5114
193	0.497	-0.005	0.278	1.805	0.036	5118
194	-0.093	-0.005	0.216	-0.41	0.341	5201
195	-0.87	-0.005	0.227	-3.806	0.000	5202
196	0.095	-0.005	0.191	0.525	0.300	5203
197	0.291	-0.005	0.23	1.289	0.099	5204
198	0.198	-0.005	0.281	0.719	0.236	5304
199	0.137	-0.005	0.319	0.444	0.328	5307
200	0.325	-0.005	0.208	1.588	0.056	6101
201	-0.007	-0.005	0.22	-0.01	0.496	6103
202	-0.146	-0.005	0.195	-0.725	0.234	6105
203	-0.359	-0.005	0.205	-1.728	0.042	6107
204	-0.231	-0.005	0.267	-0.849	0.198	6208
205	-0.159	-0.005	0.23	-0.67	0.251	6210
206	0.525	-0.005	0.348	1.522	0.064	6301
207	0.195	-0.005	0.431	0.464	0.321	6401
208	0.258	-0.005	0.417	0.631	0.264	6403