Why rapid urbanization can't improve employment absorption capacity of service industry in China: reflections on innovating the model of interaction between service industry development and urbanization under economic transformation and upgrading

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Mathematical models show that the urbanization process is an important factor affecting the transfer of labor among economic sectors. The regression results using time-series data since China's reform and opening up show that there is significant positive correlation between urbanization and the service industry's ability to create jobs. However, there is no Granger Causation between them. Therefore, China should shift from focusing on industry park construction to paying more attention to improving urban functions by increasing their employment density of urban services.

Keywords: service industry's job creation capacity, transformation of city functions, employment density of urban services

1. Introduction

The joint development of China's service industry and urbanization is an interesting story. There are two indicators for measuring urbanization, the growth rate of the size of urban built-up area and the growth rate of the proportion of urban jobs. In China, the former (9.74%) is significantly higher than the latter (3.13%), suggesting that the main force pushing forward urbanization in China is land enclosure, while the growth of urban jobs falls behind. In China, urbanization has not significantly increased the service industry's share of job creation, as can be illustrated by the share of jobs for three industries. For instance, at the end of 2012, China's tertiary industry accounts for 38.5% of jobs, which is obviously lower than the average level in countries and regions in the mid- and late period of industrialization. If the main purpose of China's urbanization is to absorb surplus rural labor force, then the current situation shows that there exists remarkable non-virtuous interaction between China's present model of urbanization and the development of modern service industry.

Compared with traditional agriculture and manufacturing, although modern service industry has relative higher employment elasticity, what exactly are the reasons for the

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weak job-creation capacity of China's service industries? A review of current literature on the job-creation capacity of the service industry shows that the current cenflict focuses on the following two aspects. One is whether relative lower productivity leads to increases in the share of service industry job out of the total, and the other is whether China's urbanization process and the development of service industry follow the laws of co- evolution.

1.1. Does relatively low labor productivity explain the high proportion of service industry jobs

Based on Baumol's (1962) classical theory, the reason the service industry can absorb large numbers of surplus labor is its relative low labor productivity. This is manifested by the combination of the relative stability of the output of the service industry as a share of the total and increases in the number of service industry jobs as a share of the total. However, with higher income elasticity and lower price elasticity for the service industry, the price of services can be rather high, and consumers will have to pay more for them. But Baumol's theoretical hypothesis is questioned by many scholars. Skeptics point out that in reality labor productivity in the service industry is not as low as presupposed by the theory, nor is it true that services constitute a final economic output. The theory does net explain this.

On the alternative theory proposed by Liang and Zhang (2013) lack does not explain the facts luster growth of labor productivity in the service industry could lead to a decline in the share of service industry jobs. However, demand income elasticity leads to an increase of the same no matter what its value is. Growth in labor productivity in the service industry improve its competitiveness, which in turn help increase its share of the job market. Therefore, it rises in income and the derivative increase in demand, not lagging growth in labor productivity, that boost the service industry's ability to create jobs and absorb surplus labor. Therefore, rising income promotes job creation and labor absorption by the service industry.

1.2. Do the urbanization process and the development of service industry follow the laws of co-evolution in China

Compared with developed economies, urbanization rates is not high in China. But after the implementation of the policy of China's reform and opening up, especially in the last ten years, the process of urbanization has significantly accelerated. What is driving this process? Through regression analysis, Liu (2007) finds that the job share of China's service industry is highly correlated with urbanization rate, and the rapid growth of China's service industry has facilitated the urbanization process. Growth of the service industry is a key driving force of urbanization, especially in the middle and late phases of industrialization. Therefore, to promote the latter we must take the former seriously.

Others (Hu, et al, 2010) maintain that since China's experience with respect to the impact of urbanization on service industry jobs since reform and opening

up is at variance with those of western developed countries. Unlike in these countries, in China, urbanization rate, urban population size and urban income make negative contribution toward the compositional structure of employment, labor productivity in the service industry and growth rate of the service industry, respectively.

Most literature on the subject mainly adopt the static regression equation to test the relation between the service industry's labor absorption capacity and various exogenous variables, such as income level, urbanization rate, and the rate of industrialization, etc, while overlooking the causal relationship and dynamic interactions between the service industry's labor productivity, service industry jobs employment and urbanization (He, 2009). To overcome the shortcomings of existing research methods, we try to in this paper offer an explanation of the temporal-spatial interactions in China between the urbanization process and service industry's ability to absorb surplus labor using structure vector auto-regression model(SVAR). We will draw on previous studies on the the development of the service industry and urban development, and look closely at typical cases of discordance between the two, with an aim of arriving at a better understanding of what innovative measures the government should take improve coordination between the two processes.

2. The theory analysis of how the urbanization process influence the service employment absorption

2.1. Reasons for service employment being able to gather in large and medium-sized cities

Developed Countries in Europe and north America, rapid increase in the proportion of service industry jobs and their gravitation toward urban areas did not happen until the late phase of industrialization (Audretsch, 2011). The main reason is that, as the process of industrialization neared completion, important changes in the way production was organized led to an escalation in the demand for modern services and related changes in the spatial distribution of the manufacturing and service industries (Huallacháin, 1989). The organization of production changed in the following three main aspects. First, the way production organization is in fragmentation. The division of labor is structured in a way to reflect the relative value of the various points in the change of production, turning some parts of traditional industrial production into production services (Li, 2013). Second, as informatization plays an increasingly prominent role in production organization, greater precision is being achieved in the production process, which features smart and real-time monitoring, further encouraging the growth of the information, computer data processing and software service industry. Thirdly, while the operating costs of production have increased, expanding production capacity has pushed up the costs of production factors, such as urban labor, land, resources and environment etc, making some newly constructed medium-sized and small cities more appealing to manufacturing companies because of the overall lower costs associated with them. Meantime, technology- and knowledge-

intensive modern service industry has replaced traditional manufacturing, where high concentration of these companies in large and medium-sized cities has led to the formation of headquarters economy(Li & Qian, 2007).

Trade and Comsumption have large impact on the growing concentration of the service industry in large and medium-sized cities. As urban population and income grow, there is an increasing demand both in quantity and quality, for non-basic public services such as urban education, healthcare, culture, environment, and pension etc. This in turn lead to increase concentration of consumer services, professional and technical services and other social services in cities (Jacobson, 2009). The rise of e-commerce and new ways of shopping among urban residents have also driven the transformation of traditional postal delivery into modern logistical services, and the latter's rapid growth in large and medium-sized cities. Meanwhile, government deregulation and financial model innovations have helped to diversify urban residents' demand for financial and insurance services.

From the point of view of the supply side, city networks contain some factors that are conducive to the preferential placement of the service industry (Yang, 2003). Industrial life cycle theory shows that when technological changes in the production process lead to shifts in the areas in which an enterprise can own comparative advantage, the enterprise will gravitate towards industrial clusters participation in which facilitate the development of economy of scale (Franciso & Kaboski, 2012). There exist in industrial clusters divisions of labor based on networks, which delivers positive externalizations in terms of supply, demand and knowledge. These externalizations help enterprises optimize operational management of and innovations in value chain, reduce production and marketing costs and increase competitive advantage.

Specialized industrial cluster calls for a larger professional labor reserve. As a result of changes in post-industrialized societies in the production, trading and consumption patterns, new forms of services will emerge. Correspondingly, the type of labor in increasing demand by specialized industrial cluster must be suitable for high-tech and knowledge-intensive service sectors. These include R & D design, marketing, warehouse, logistics, accounting, management, consulting, after-sales service, information service, etc.

Based on the above theoretical analysis, we can reach the following conclusion.

Proposition1: Essentially, rapid urbanization is the result of transformative changes in industrial production, exchange and consumption. As new forms of service emerge in these areas, more service industry jobs will be created in large and medium-sized cities.

2.2. How does urbanization affect the employment of service industry

Urbanization will be a key driving force of structural transformation in the long run. What is the underlying mechanism? Michaels *et al* (2012) estalishes a simple mathematical model capturing the relation between urbanization and structural transformation, basically showing that the shift of rural labor into other sectors is

due mainly to agriculture's low labor demand elasticity, high growth rate of labor productivity and high degree of land dependence. Therefore, with the rise in labor productivity and income, agricultural activities become increasingly geographically confined to rural areas, characterized by lower population density, while non-agricultural activities move into urban areas that typically have higher population density. However, this model does not adequately explain the co-evolution of the service industry and urbanization. We demonstrate this co-evolutionary process by using a simple mathematical model.

Proposition 1 supposes that the output of each department needs service as the intermediate input. That is, each department output is the function of intermediate service input. Assuming that each department production function is Cobb-Douglas production function, $y_i=P_i e_i^{\alpha} n_i^{\beta}$, where e_i is labor input of department, n_i is land input, P_i is labor productivity, and α,β are the share of labor input and land input, respectively. A simple algebraic transformation of the above production function would yield:

$$\frac{\hat{y}_i}{y_i} = \frac{\hat{P}_i}{P_i} + \alpha \frac{\hat{e}_i}{e_i} + \beta \frac{\hat{n}_i}{n_i} \tag{1}$$

or

$$\frac{\hat{y}_i}{y_i} - \frac{\hat{P}_i}{P_i} = \alpha \frac{\hat{e}_i}{e_i} + \beta \frac{\hat{n}_i}{n_i} \tag{2}$$

Substitute $\hat{p}/p = \hat{y}/y - \hat{e}/e$ into equation (2),

$$\frac{\hat{e}_i}{e_i} = \frac{\beta}{(1-\alpha)} \frac{\hat{n}_i}{n_i} \tag{3}$$

The equation $c_i = \frac{e_i}{n_i}$ means that population density is the ratio of labor input to land input. Assume that the higher the population density of department production, the higher demand for rapid urbanization, or higher urbanization rate. Through simple algebraic operation, we get:

$$\frac{\hat{c}_i}{c_i} = \frac{\hat{e}_i}{e_i} - \frac{\hat{n}_i}{n_i} \tag{4}$$

So , there it is:

$$\frac{\hat{e}_i}{e_i} = \left[\frac{-\beta}{1-(\alpha+\beta)}\right] \frac{\hat{c}_i}{c_i} \tag{5}$$

From equation (5), we know:

$$\frac{\partial(\hat{e}_i/e_i)}{\partial(\hat{c}_i/c_i)} = \frac{-\beta}{1-(\alpha+\beta)} \tag{6}$$

Equation (6) indicates that when $\alpha+\beta>1$, there is $\frac{\partial(\hat{e}_i/e_i)}{\partial(\hat{c}_i/c_i)} > 0$, and when $1>\alpha+\beta>0$, we have $\frac{\partial(\hat{e}_i/e_i)}{\partial(\hat{c}_i/c_i)} < 0$, which means if department production function is diminishing return at scale, the employment growth for this department and its demand for urbanization process or urbanization rate are negatively correlated. We can conclude in proposition 2 formly as follows.

Proposition 2: Rapid urbanization or high urbanization rate is necessary for the development of high-tech and knowledge-based service sectors. And rapid urbanization is able to absorb the surplus labor transfering from traditional agriculture sector for the diminishing return of scale, or from manufacter sector with rising productivity.

Based on propositions 1 and 2, the rest part of this paper is mostly to test whether the development of China's service industry meets the employment needs generated by rapid urbanization.

3. Descriptive statistics

3.1. Evolution of the job shares among manufacturing, agricultural and service industry in China

Table 1 shows the descriptive statistics of changes in job shares of agricultural, manufacturing and service industry in China, represented by ESHARE1, ESHARE2, and ESHARE3 respectively.

Table 1
The descriptive statistics of the changes in China's agriculture, manufacturing and services (unit: %)

Statistics Value	ESHARE1	ESHARE2	ESHARE3
mean	54.23235	22.43824	23.32941
median	53.25000	22.35000	23.9000
maximum	70.5000	29.5000	35.7000
minimum	34.8000	17.3000	12.2000
S.D.	10.18786	3.032252	7.41004
skewness	-0.134688	0.475809	0.050213
kurtosis	2.057947	3.017309	1.662814
sample size	35	35	35

It shows that the proportion of agricultural jobs owns the highest standard deviation, while manufacturing jobs the lowest, which means that the largest changes

in job share took place in agriculture(35.7%), and the smallest change in manufacturing (12.2%), and service industry jobs (23.5%). The growth in service industry jobs is main from agricultural surplus labor.

3.2. The relationship between urbanization and employment in the service industry

In order to match with previous theoretical model analysis, we test China's urbanization process using rates of change in urban population density, and analyze the relationship in China between urbanization and service industry employment. Because China's Hukou system implies huge welfare, we do not use the portion of urban population as the measure of urbanization. Workers with urban Hukou can enjoy a range of institutional welfare, such as education, health care, pension etc. On one hand, big cities, especially those with rich resource, a considerable part of workers who work in them are not counted in the official statistics (Zhang et al, 2013). On the other hand, because of the potential huge relocation compensation, the farmers are not inclind to apply for urban Hukou. All these refer to the undercounting of the size of urban workforce, and leading to underestimating the speed of the urbanization process (Zeng & Xiang, 2013).

Using the growth rate of urban population density to measure China's urbanization can not only overcome the distortion effects of household registration on urban workforce statistics, but the method also takes into account the problems of simply using urban built-up area to measure urbanization. It allows both changes in urban population scale and rise in urbanization rate, showing that co-evolution of urbanization and industrialization takes place only in cities with increasing population density.

When the growth rate of urban population density (LNURBDP) is used to measure the relationship in China between urbanization and service industry jobs, we find correlation coefficient is 0.34 with R^2=0.56. However, descriptive statistical analysis of the rate change for China's urban population density and job share of service industry reveals that in China the increase of urbanization (7.19%) is significantly higher than that of the share of service industry employment (3.17%), as shown in the Table 2 below.

Table 2

The descriptive statistics of the change rate of urban population density and that of service employment proportion in China (unit: %)

Statistics	LNURBDP	ESHARE3
mean	7.191171	3.169534
median	1.968747	2.639296
maximum	157.2414	11.80124
minimum	-39.05579	-0.740741
S. D.	32.08735	2.482270
skewness	3.394799	1.439001
kurtosis	17.39919	5.864691
sample size	35	35

Descriptive statistical analysis of the job share of tertiary industry and the evolution of urbanization in China leads us to conclude a positive correlation between them in China. But the mean and standard deviation shown in Table 2 indicate that the "service turn" of China's industrial structure falls behind the speed of urbanization in China.

The next step is to explore the kind of causality between the surplus labor absorption capacity of the service industry and urbanization through empirical tests, and try to offer a theoretical explanation for why urbanization in China does not improve the service industry's labor absorption capacity. Finally, this paper would provide some insight, through international comparison, into why the service turn of China's industrial structure lags significantly behind the process of urbanization.

4. Empirical test

4.1. Testing method

Economic theories are generally inadequate for offering a rigorous mathematical derivation of the dynamic connection between variables. In the second part of this paper we finish only a simple mathematical derivation to demonstrate the effect of urbanization on the improvement of service industry's labor absorption capacity, without establishing a dynamic mathematical model to illustrate the dynamic connection between these two variables. In order to test empirically the dynamic mutual influence between the two processes in China, we intend to adopt the structure vector auto-regression model (SVAR). VAR model is usually used to forecast associated time series system and analyze the dynamic impact of stochastic disturbance on variable system, revealing the effect of every economic shock on economic variables. However, we cannot get the exact form of the correlation between variables from this VAR model. Such correlation was hidden in the structural relationships of unexplainable error terms of stochastic disturbance, while SVAR model can overcome the shortcomings of the VAR model (Gao, 2005).

Assuming that there exists mutual influence among stochastic disturbances, and SVAR(p) of p order among these three variables as follows,

$$B_{0y_t} = \Gamma_0 + \Gamma_1 y_{t-1} + \Gamma_2 y_{t-2} + \cdots + \Gamma_p y_{t-p} + \mu_t, \quad t = 1, 2, \cdots T \tag{7}$$

Equation (7) gives the variable matrix and parameter short constraint matrix,

$$y_t = \begin{bmatrix} \ln(URBDP)_t \\ \ln(ESHARE3) \end{bmatrix} B_0 = \begin{bmatrix} 1 & b_{12} \\ b_{21} & 1 \end{bmatrix} \Gamma_0 = \begin{bmatrix} \Gamma_{10} \\ \Gamma_{20} \end{bmatrix} \Gamma_i = \begin{bmatrix} \gamma_{11}^{(i)} & \gamma_{12}^{(i)} \\ \gamma_{21}^{(i)} & \gamma_{22}^{(i)} \end{bmatrix} \mu_t = \begin{bmatrix} \mu_{1t} \\ \mu_{2t} \end{bmatrix}$$
$$(i=1, 2, \ldots p)$$

μ_{1t} and μ_{2t} respectively stands for the structural shocks on ln (*URBDP*) and ln (*ESHARE*3) namely, the structured disturbance term μ_t:*VMN* (O_k, I_k) . If B_0 is invertible, the structured equation (7) can be simplified as follows:

$$A\varepsilon_t = B\mu_t \tag{8}$$

A and B are the estimated parameter matrix with short-term constraint form. Generally speaking, reduced-form disturbance term ε_t is the linear combination of structured disturbance term, standing for a kind of composite shock. There are two endogenous variables in this model. So it needs to exert k (k-1) /2=1 short-term constraints to make Expression (7) meet recognizable condition. That is to say, the service industry's labor absorption capacity can't exert any influence on the process of urbanization.

In order to avoid severe fluctuating of various data, we test elasticity coefficient among variables. The first step is to logarithmize each time series variable, and the new sequences are respectively marked as ESERVICE and LNURBDP. Testing through the lag length criteria of independent variables is to define 2 as the largest lag interval for endogenous variables. Unit root test on the above three variables reveals that these three time-series data have relative stability, thus able to establish the above SVAR(2) model.

4.2. Testing results

If model (7) meets the condition of recognizability, we can estimate and get all the unknown parameters of above structure vector auto-regression model by full information maximum likelihood(FIML) method, and then get the linear combination of matrix B_0, ε_t and μ_t. And the specific result is,

$$\hat{B}_0\varepsilon_t = \begin{bmatrix} 1 & 0 \\ 0.21 & 1 \end{bmatrix}\begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \end{bmatrix} = \begin{bmatrix} \mu_{1t} \\ \mu_{2t} \end{bmatrix}$$

Or, expressed as,

$$\begin{aligned} \varepsilon_{1t} &= \mu_{1t} \\ \varepsilon_{2t} &= 0.21\varepsilon_{1t} + \mu_{2t} \end{aligned} \tag{9}$$

The combination of equation (7) and (9) shows that in China urbanization has a positive impact on the service industry's labor absorption capacity when structural shocks exist. However, further information, after doing Granger Causality Test to these two variables, shows that China's urbanization is not the Granger Cause for the improvement of the service industry's labor absorption capacity when 2 is the largest lag interval for endogenous variables.

5. Further analysis of the empirical test results

5.1. Mechanical analysis of why in China urbanization fails to improve significantly the service industry's labor absorption capacity

The expansion of urban land area is the main driving force of urbanization

in China. It does not rely on the coordination between urban development and industrial development for the transformation and upgrade of traditional cities. The expansion of urban land area reflects the local goverments' efforts on promotion under the performance evaluation system focusing on GDP. An expedient way to maintain high growth rate would be hosting manufacturing plants and developing real estate industry. Constructing new industrial cities is the optimal strategy (Jiang &Li , 2004).

The monotony of the industrial cities being built has led to urban sprawl and imbalance in industrial development. First, the clustering of industrial parks, inducing local governments to compete for manufacturing plants through preferential policies, can easily lead to a proliferation of uncompetitive enterprises that provide similar products and the homogenization of industrial structure. Second, the rapid expansion of new industrial cities has intensified the competition among local governments for manufacturing plants eligible for relocation. In the post financial crisis era in particular, the re-industrialization strategies adopted by many developed countries have led to changes in both the scale and structure of geographical reshuffling of industries, and turned a considerable number of new industrial cities into ghost towns. Third, new industrial cities have been expainding so fast. Institutional barriers that obstruct the smooth flow of surplus rural labors into urban areas have not been removed.

It can be concluded, therefore, that there are a number of crucial problems with China's current urbanization strategy relying largely on the construction of new industrial cities. On one hand, these cities have tended to become home to low-end manufacturing factories, while failing to develop rigorously the producer service industry. On the other hand, the persistence of institutional barriers and the large gap between the living conditions in new and old cities make the latter unappealing to job hunters. Consumer services, whose development would mitigate the situation, are struggling within limited space for further development.

5.2. International experiences and comparative analysis

For China to become a member of the club of developed economies, the relative proportion of service industry, agricultural and industrial jobs should be 65%, 10% and 25%, respectively. This compositional structure is in accordance with the general pattern of industry development around the world. In China, achieving this structural pattern would mean that 190 million workers need to transferred from agriculture and 30 million from manufacturing, assuming that the total size of the labor force remains constant. The service industry receives just an infusion of a total of 220 million workers.

Measured by the proportion of urban population, the average urbanization rate of developed countries is around 70%, while in China it is 53%. To reach the level of developed countries, China needs to add 400 million to its urban population. Assuming that the workforce makes up 56.72% of the total population, urbanization will add another 227 million workers. This means that in China, urbanization and the

development of the service industry can be in sync with each other.

Now the question is how to allocate the 220 million new service industry workers. Should most of them be absorbed by new industrial cities, or by entering modern service industry to enhance urban transformation? Comparing with other countries on the job share of service industry in urban areas, the employment density is 0.39 in 2012. By contrast, the average is 0.74 for developed countries and regions, such as the US, the UK, Canada, Japan, German, France, Singapore, South Korea, and Taiwan of China. In China, the population of conurbations with more than 1 million residents accounts for 22% the country's total population, while the percentages for the US, the UK, Canada, South Korea, Brazil, Japan, France, and Australia are 48%, 26%, 44%, 47%, 40%, 51%, 23%, 60%, respectively, indicating that there is no need for China to rely on large-scale construction of new industrial cities to advance urbanization. Instead, the focus should be on promoting service industry in cities.

6. Main conclusions and policy implication

Urbanization in China, relying heavily on the construction of new industrial cities, is proceeding at a faster pace than that of China's industrial restructuring, which can be demonstrated by the lagging of the creation of jobs of service industry in urban areas behind new industrial city construction. This inconsistency has caused serious over-capacity in some sectors. It not only exacerbates the energy resource and environmental bottleneck, but also impedes the development of producer and consumer services, which in turn constrains the development of China's advanced manufacture industries.

Maybe it's too early to say with certainty that the service industry will become the driving force of economic growth in China soon, but the experience of developed countries shows that economic growth in post- industry era depends on the mutually beneficial interactions between modern services and advanced manufacturing. In post-industry era, the "service turn" will be a basic feature of production and consumption. It is only a matter of time before modern services become the main driving force of future economic growth.

Cities are the most natural home for modern services. The advantage of location is embodied in the high concentration of the factors of modern services in cities, especially large and medium-sized cities. Urbanization is a process that industrial workers move in large numbers into cities in essence. Generally speaking, China's rapid urbanization has done relatively little to advance the "service turn" of China's industrial structure Especially, in the eastern coastal areas, urbanization is almost delinked from the increase in geographical concentration of the service industry. Beside the expansion of new industrial cities, what's more noteworthy is that employment density of service industry in China's large and medium-sized cities is far below the average of developed countries and regions.

How to adjust the developing strategy of China's urbanization and make top-down design? We suggest taking strict control of the scale of new industrial cities

to increase labor productivity of service industry, improve the service industry's job creation capacity, increase the employment density of service industry. Therefore, promoting the transformation of urban functions, coordinating development of advanced manufacturing and modern service industry, and upgrading industrial structure are realized.

In short, China's urbanization should not take the form of a "great leap" through building new industrial cities. Instead, it should organically combine function and transformation of cities and development of modern service industry. Urbanization should make cities better, enhance the service industry's job creation capacity, and eventually, facilitate the restructuring of China's industries.

References

Audretsch, D., Oliver F., & Stephan, H. (2011). Who's got the aces up his sleeve? Functional specialization of cities and entrepreneurship. *Annual Region Science,* 46, 621–636.

Baumol, W. J. (1967). Macroeconomics of unbalanced growth: the anatomy of urban crisis. *American Economic Review, 57*(3), 415-426.

Breandán, Ó. H. (1989). Agglomeration of services in American metropolitan areas. *Growth and Change,* 2, 35-51.

Francisco, J., & Kaboski, J. P. (2012). The Rise of the Service Economy. *American Economic Review,* 102(6),2540-2569.

Gao, T. M. (2005). *The employment and example of Methods of econometric analysis and demonstration modeling.* Beijing: Tsinghua University Press (China).

He, D. X, Yao, Z.Q., & Cheng, J. (2009). Empirical analysis on the influencing factor of China's service employment. *Economics of finance and trade*(China), 8,99-107.

Hu, Y. J, Li, Z.Y., & Mao, S. (2010). Empirical Analysis about the Influence of China's Urbanization on services-Facts, Paradox, and Explanation. *Contemporary Manager (Dangdai Guanliren),* 11, 44-49.

Jiang, X.J., & Li, H. (2004). Services and Chinese Economy: Correlation and potential of promoting growth. *Economic Research (Jingji Yanjiu),* 1, 4-15.

Li, G. (2013). Can services be the motive industry of China's economy? *China Industrial economics (Zhongguo Gongye Jingji),* 4, 43-56.

Li, J.K., & Qian, C. (2007). The Spatial Distribution Characteristics of services and correlation analysis with urbanization—Take Zhejiang Province as a sample. *Zhejiang Academic Journal (Zhejiang Xuekan),* 1, 172-177.

Liang, D.L., & Zhang, G. (2013). Determinant to the proportion of service employment: restudy on "Baumol-Fox" mode. *Nanjing Social Science (Nanjing Shehui Kexue),* 8, 16-23.

Liu, W. Q. (2007). Study on the correlation between China's services and urbanization. *Journal of Beijing Polytechnic University (Beijing Gongye Daxue Xuebao)*, 6, 20-24.

Michaels, G., Rauch, F., & Redding, S. J. (2012). Urbanization and Structural Transformation. *The Quarterly Journal of Economics*, 127, 535–586.

Yang, X. K. (2003). *Economics: new classical versus neoclassical frameworks*. Beijing: Social Sciences Academic Press(China).

Zhang, Y., Pu, Y. J., & Chen, L.T. (2013). Urbanization and services gathering-based on the view of systematic coupling interaction. *China industrial economics(Zhongguo Gongye Jingji)*, 6, 57-69.

Zeng, S. H., & Xiang, G. C. (2013). High Profitability of Technology-based services: market power or innovation dividend-the impacts of structural tax cuts and coordinative innovation on technology-based service innovation. *Economics of finance and trade*(Caimao Jingji), 10, 118-126.