Asian Agricultural Research 2018, 10(11): 9 – 13 DOI: 10.19601/j.cnki.issn1943 – 9903.2018.11.002

Agricultural Total Factor Productivity and Income Gap between Urban and Rural Residents——An Empirical Study Based on Provincial Panel Data

Chen CHEN *

International College of Jiangxi University of Finance and Economics, Nanchang 330013, China

Abstract Taking the relevant data of 27 provinces in China during 2013 and 2017 as samples, this paper firstly measured the agricultural total factor productivity (TFP) using Malmquist index method. Then, it built the panel data model, and empirically tested the impacts of agricultural TFP on the income gap between urban and rural residents. The results show that the improvement in agricultural TFP can promote the narrowing of the income gap between urban and rural residents, and the factors such as urbanization level and industrial structure also have significant impacts on the income gap between urban and rural residents. On the basis of these, it came up with recommendations, including increasing agricultural human capital investment and establishing agricultural production research institutions.

Key words Malmquist index, Panel data, Total factor productivity (TFP), Income gap

1 Introduction

In the process of economic development, the total factor productivity (TFP) is gradually increasing, which includes not only the enrichment of technical knowledge, the improvement of management level, but also the improvement of production skills, as well as the transformation of means of labor. Technical progress has continuously promoted the evolution of the structure of three industries. The agriculture, industry, and service industries have prospered and become the leading industries at that time. Besides, the intensification of market competition has promoted the integration of three industries. China has gradually entered a new normal in which both cutting-edge technologies and backward production capacity coexist, and high stocks and low growth coexist. In this process, the consumption expansion has become the key layout of economic structural transformation in the context of new normal. However, the consumption expansion should not merely focus on the supply-front reform, but it is also required to narrow the income gap between urban and rural residents, because narrowing the gap between urban and rural residents is an essential precondition for raising the consumption ability of residents. In the past five years, the income gap between urban and rural residents in China has been widening, but the overall trend has been shrinking. This, on the one hand, is benefited from China's policy inclination to rural areas and low-income areas, and on the other hand, it is benefited from the improvement of total factor productivity in China at the current stage. In addition, the government has issued policies such as promoting the construction of agricultural industrial chain, optimizing the structure of agricultural production, and improving the efficiency of agricultural production. The essence is to raise the agricultural TFP, and these policies have become key factors influencing the income distribution and balance of urban and rural residents in China, and narrowing the gap between urban and rural residents.

Received: September 21, 2018 Accepted: November 5, 2018
* Corresponding author. E-mail: jyxiao85@126.com

2 Literature review

Joseph Schumpeter was the first economist to form a systematic theory of technological contributions in economic growth. He proposed the classic theory of technological innovation in 1912, which has now become an important branch of economic growth theory. Later, in the book *The Theories of Wages* published by British scholar Hicks in 1932, according to the degree of influence of technology on the labor factor and the marginal productivity of capital elements, the types of technical progress were classified into the following three types: labor saving, capital saving, and neutral technical progress. From the perspective of Hicks' neutral technical progress, Solow improved the Cobb-Douglas production function and built the economic growth rate equation to calculate the total factor productivity in the economic growth process[1]. On this basis, the follow-up studies of scholars mainly focus on empirical analysis. For example, Dollar and Kraay carried out empirical analysis on large sample data of 92 countries. The results show that the improvement of agricultural production technology can promote rural economic growth and bring farmers huge benefits, which are important measures to eliminate farmer poverty[2]. On the basis of the panel data of Ethiopia in 1994 – 2000, Geda *et al.* found that the improvement of total factor productivity can significantly increase the income of low-income groups, accordingly enhancing their resistance to risks and promoting the narrowing of the income gap[3]. Bittencour carried out a study in Brazil and found that improving agricultural technology in low-income rural areas would at least help 20% of farmers increase their income[4]. Using a similar approach to the United Nations Human Development Index (HDI), Sarma measured the total factor productivity index by selecting multiple indicators, and analyzed the relationship between agricultural total factor productivity levels and income gap between urban and rural residents in different countries, the results indicated that the higher the national agricultural total factor productivity index, the smaller the income gap between urban and rural residents[5].

Among domestic scholars, Yi Gang *et al.*[6] believed that economic growth is not simply a quantitative expansion, but also a major increase in human capital, institutional changes, and technological advances. Besides, they also believed that economic growth will also be affected by changes in the foreign exchange reserves and the exchange rate. On the basis of the panel data of 31 provinces (cities) in China during 1987 and 2001, Lu Ming *et al.*[10] carried out an empirical research and the results indicated that the total factor productivity has a significant effect on the narrowing of the income gap between urban and rural residents in statistics, and the factors such as degree of economic openness and the participation of government economic activities are not favorable for the balance of income between urban and rural residents[7]. Guo Qingwang calculated the contribution of total factor productivity to China's economic growth and found that in areas with low contribution rate of total factor productivity, the economic development mode is still dominated by extensive production, and the income gap is still very big between urban and rural residents[8]. Taking the provincial panel data of China during 1987 and 2006 as the research samples, Tang Lizhi *et al.* found that the characteristics of Kuznets inverted U-shaped curve are presented between the level of agricultural total factor productivity and the income gap between urban and rural residents[9]. Yang Fan measured the total factor productivity index of 16 cities in Yunnan Province, and through empirical analysis, it concluded that there is a long-term cointegration relationship between total factor productivity and the income of urban and rural residents[10]. Xu Min *et al.* carried out an empirical study through building a vector autoregressive model and the results show that the total factor productivity level can narrow the income gap between urban and rural residents, but the effect is not obvious[11].

3 Theoretical model

3.1 Total factor productivity accounting method Considering that the technical level will change over time, Jan Tinbergen assumed in 1942 that the contribution of technical progress would change exponentially over time, and the Cobb-Douglas production function was revised and expressed as: $Y_t = A_0 e^{mt} K_t^{\alpha} L_t^{\beta}$. Based on the study of Jan Tinbergen, Solow built an economic growth accounting equation and studied the relationship between economic growth rate, the total factor productivity and the input factor productivity. The total factor productivity here is also known as the Solow surplus, which includes all the contributions of elements other than labor and capital.

3.2 Model setting In this study, it assumed that the production function is the most common C-D production function, $Y_t = F(L, K) = A_t L_t^{\alpha} K_t^{\beta} e^{\mu}$, where Y_t, A_t, K_t, and L_t denote the total output of the national economy, the technical level, the capital input amount, and labor input, respectively. Take $A_t = A_0 e^{mt}$, where A_0 is the initial technical level, m is technical progress rate, and the production function can be expressed as:

$$Y_t = A_0 e^{mt} L_t^{\alpha} K_t^{\beta} e^{u} \quad (1)$$

Then, calculated the differential of the Equation (1) and further converted the equation to:

$$\dot{Y} = \dot{K} \times \frac{dY}{dK} + \dot{L} \times \frac{dY}{dL} + m \times A_0 \times F(F, L) \quad (2)$$

Divided Y in both ends of the Equation (2), obtained:

$$\frac{\dot{Y}}{Y} = \frac{\dot{K}}{K} \times \frac{dY}{dK} \times \frac{K}{Y} + \frac{\dot{L}}{L} \times \frac{dY}{dL} \times \frac{L}{Y} + m \quad (3)$$

Assume the output elasticity of labor $\alpha = \frac{dY}{dL} \times \frac{L}{Y}$, the output elasticity of capital $\beta = \frac{dY}{dK} \times \frac{K}{Y}$, the Equation (3) can be written as:

$$G_Y = m + \alpha G_L + \beta G_K \quad (4)$$

where G_Y, m, G_L, and G_K denote the national economic growth rate, total factor growth rate, labor factor growth rate, and capital factor growth rate, respectively. From Equation (4), it can be seen that the factors of national economic growth can be divided into two categories: the contribution of production factor input and the contribution of technical progress. Thus, the Equation (4) can be rewritten as:

$$m = GY - (\alpha G_L + \beta G_K) \quad (5)$$

Divided G_Y in both ends of the Equation (5), and obtained the following form:

$$\frac{m}{GY} = 1 - \alpha \frac{GL}{GY} - \beta \frac{GK}{GY} \quad (6)$$

where $EA = \frac{m}{GY} \times 100\%$, $EL = \alpha \frac{GL}{GY} \times 100\%$, $EK = \beta \frac{GK}{GY} \times 100\%$, $EA = 1 - EL - EK$, where EA, EL, and EK denote the total factor productivity, labor factor input productivity, and capital factor productivity.

3.3 Descriptions of the model In the specific estimation, since it is difficult to accurately measure the factor input, the following explanations were made for the variables. (i) Determination of the yield. The yield level was substituted with the gross domestic product (GDP), and the effects of inflation were removed. (ii) Determination of the labor amount. At present, the lack of statistical data on labor input in China is not operational in practice. Therefore, the number of employees in the whole society at the end of the year was selected as a substitute for labor input. (iii) Determination of the capital amount. For the determination of the capital amount, the prevailing practice is selecting capital stock of a base year, then making estimation using the perpetual inventory method. However, for different kinds of assets, using the same depreciation rate will distort the regularity of the original data. Therefore, this paper selected the substitution variable of capital input as the input of fixed asset investment. (iv) Output elasticity of factor inputs. In the previous research literature, scholars did not specifically estimate the output elasticity of input of production factors, and they generally set the output elasticity directly to a certain empirical value. However, in different levels of industry, the output elasticity is different, so it is necessary to quantitatively estimate the values of α and β.

4 Research design

4.1 Data selection and variable description Considering the data availability, the relevant data of 27 provinces in China during 2013 and 2017 were selected. All the original data in this study were selected from the *China Statistical Yearbook*, statistical yearbooks of provinces and the official website of the National Bureau of Statistics. The main variables were described as follows.

4.1.1 Explained variables. Most domestic scholars used the ratio of disposable income of urban and rural residents to measure the income gap. However, this calculation method cannot reflect the impact of changes in the proportion of urban and rural populations, while the Thiel index, which reflects the income changes in urban and rural residents, is more statistically significant. Therefore, the Theil index was used to calculate the income gap between urban and rural residents. The specific formula is:

$$\mathrm{GAP} = \sum_{i=1}^{2}\left(\frac{y(i,t)}{y(t)}\right) \times \mathrm{LN}\left[\left(\frac{y(i,t)}{y(t)}\right) / \left(\frac{x(i,t)}{x(t)}\right)\right] \quad (7)$$

where $i=1$ denotes urban areas, and $i=2$ denotes rural areas. $y(i, t)$ represents the disposable income of urban or rural areas in the t-th year, $y(t)$ represents the total disposable income of the t-th year; $x(i, t)$ represents the number of urban or rural population in the t-th year, and $x(t)$ represents the total population of the t-th year.

4.1.2 Core explanatory variables. Based on the Equation (6), this paper measured the agricultural total factor productivity in 27 provinces in 2013 – 2017, and took the measured result EAi as the core explanatory variables (Table 2).

4.1.3 Control variables. (i) The urbanization rate (*URBAN*). Through an empirical analysis, Xue Baogui *et al.* [12] concluded that the rising urbanization level plays a role in shrinking the income gap between urban and rural residents. This paper used the proportion of urban population at the end of the year to the total population of the region to express the urbanization rate (*URBAN*), and it is expected that this variable will narrow the income gap between urban and rural residents.

(ii) Industrial structure (*IS*). In China, the single agricultural economic structure is an important factor in widening the income gap between urban and rural residents. Farmers have not obtained corresponding economic benefits from the development of agricultural productivity and the increase of yield. This study used the proportion of agricultural added value to GDP to represent the industrial structure (*IS*), and it is expected that the industrial structure can narrow the gap between urban and rural residents.

(iii) The degree of openness (*OPEN*). Xu Min *et al.* [11] believed that the degree of openness will widen the income gap between urban and rural residents. Xue Baogui *et al.* [12] showed different opinions and carried out an empirical analysis, and found that the effect of this variable is to be tested. This paper used the ratio of the total import and export volume to GDP to represent the degree of openness (*OPEN*).

(iv) Financial expenditure. Excessive financial expenditure will widen the income gap between urban and rural residents, while the increase in the proportion of financial support for agriculture has the potential to reverse this trend. This paper used the ratio of financial expenditure to GDP to represent the financial expenditure level (*FE*), and used the ratio of financial expenditure for agriculture to total financial expenditure to represent the financial expenditure structure (*AFE*).

(v) Economic development level (*RGDP*). Some scholars stated that economic growth will benefit the poor and achieve poverty reduction[2]. In this study, the per capita GDP was used to represent the economic development level (*RGDP*).

4.2 Linear constraint test Before the calculation, Wald test method was firstly used to test the hypothesis that the return to scale is not changed, namely, $\alpha i+\beta i=1$. Wald test adopted the OLS regression results of unrestricted regression equation $\ln(Yi) = \ln(Ai) + mt + \alpha\ln(Li) + \beta\ln(Ki) + \varepsilon_t$ to conduct the linear constraint test, and the objects are $\ln(Li)$ and $\ln(Ki)$. The results are as follows:

It can be seen from Table 1 that at the 0.01 significance level, the test results cannot reject the null hypothesis. It can be considered that during 2013 and 2017, China's agricultural economic growth process generally conforms to the assumption of constant return to scale, that is, the technical progress is Hicks neutral.

Table 1 Results of Wald test

Null hypothesis	*F* statistics	*P* value
$\alpha0+\beta0=1$	0.022 021	0.883 6
$\alpha1+\beta1=1$	0.658 685	0.427 1
$\alpha2+\beta2=1$	0.248 959	0.623 5
$\alpha3+\beta3=1$	0.311 101	0.582 9

4.3 Calculation of the total factor productivity From the results of the above constraint test, it is known that the technical progress is Hicks neutral. Therefore, it can get the logarithm of the both ends of the Equation (1):

$$\mathrm{Ln}Y = \mathrm{Ln}A_0 + mt + \alpha\mathrm{Ln}L + \beta\mathrm{Ln}K + u \quad (8)$$

Further, it can be converted to:

$$\mathrm{Ln}(Y_i/L_i) = \mathrm{Ln}A_i + m_i t + \beta_i\mathrm{Ln}(K_i/L_i) + u_i \quad (9)$$

The OLS regression result of the Equation (9) is as follows:

$$\ln(Y_i/L_i) = 3.19 - 0.001\,5 \times t + 0.246 \times \ln(K_i/L_i) \quad (10)$$

Obtained $\alpha_i = 0.75$ and $\beta_i = 0.25$. Then, according to $EL_i = \alpha\frac{GL_i}{GY_i}\times 100\%$, $EK_i = \beta\frac{GK_i}{GY_i}\times 100\%$ and $EA_i = 1 - EL_i - EK_i$, then calculated the total factor productivity of 27 provinces in China during 2013 – 2017, and the specific results are listed in Table 2.

Table 2 Results of agricultural total factor productivity in 27 provinces during 2013 and 2017

Zone	2013	2014	2015	2016	2017
Anhui	0.241	0.275	0.316	0.337	0.565
Fujian	0.496	0.433	0.397	0.381	0.541
Gansu	0.221	0.325	0.433	0.412	0.436
Guangdong	0.559	0.520	0.616	0.573	0.563
Guangxi	0.312	0.548	0.160	0.389	0.160
Guizhou	0.110	0.233	0.381	0.434	0.370
Hainan	0.645	0.252	0.646	0.567	0.447
Hebei	0.453	0.496	0.428	0.578	0.362
Henan	0.319	0.233	0.497	0.408	0.288
Heilongjiang	0.144	0.236	0.350	0.397	0.290
China	0.207	0.287	0.325	0.418	0.526
Hunan	0.288	0.299	0.423	0.339	0.407
Jilin	0.321	0.309	0.352	0.319	0.350
Jiangsu	0.452	0.441	0.552	0.489	0.329
Jiangxi	0.132	0.232	0.174	0.316	0.177
Liaoning	0.100	0.212	0.405	0.392	0.333
Inner Mongolia	0.207	0.239	0.139	0.154	0.145
Qinghai	0.170	0.175	0.171	0.172	0.170
Shandong	0.611	0.553	0.689	0.668	0.636
Shanxi	0.241	0.275	0.316	0.337	0.065
Shaanxi	0.143	0.242	0.373	0.315	0.300
Sichuan	0.251	0.284	0.494	0.383	0.320
Tibet	0.097	0.203	0.274	0.272	0.179
Xinjiang	0.176	0.206	0.197	0.216	0.356
Yunnan	0.151	0.240	0.241	0.259	0.281
Zhejiang	0.476	0.443	0.577	0.566	0.561

5 Process of empirical analysis

5.1 Unit root test The unit root test results of the variable original data show that *GAP*, EA_i, *OPEN*, and *RGDP* are first order stationary, while *URBAN*, *FE*, *AFE*, and *IS* are not stationary. Therefore, after performing logarithmic processing on *URBAN*, *FE*, *AFE*, and *IS*, the unit root test was carried out, the results are stationary, as shown in Table 3.

5.2 Model estimation In order to determine whether to use the fixed effect or the random effect model to estimate, the proposed model needs to be verified by Hausman test. The null hypothesis is that the random effect is independent of the explanatory variable. According to the results of the Hausman test, Chi-Sq statistic was 1.957976, Chi-Sq degree of freedom was 4, and the concomitant probability was 0.743 5. It can be seen that the *P* value is 0.7435, and the null hypothesis cannot be rejected at the 0.05 significance level. In other words, the individual effect in the random effect model is not related to the explanatory variable, so the model is set as a random model.

According to the results of Hausman's test, a random effect panel data model was established. The model regression results are shown in Table 4.

The results show that both coefficients of total factor productivity and industrial structure are negative, which has a significant effect on narrowing the income gap between urban and rural residents; the coefficient of financial expenditure level and economic development level is positive, which promotes the widening of the gap between urban and rural residents. Besides, the coefficient of financial expenditure structure is positive, indicating that the effects of the proportion of agricultural expenditure on the income gap between urban and rural residents in China is the same as that of financial expenditure, which has significantly promoted the widening of the income gap between urban and rural residents in China. The coefficient of degree of openness and urbanization rate is negative, indicating that the larger the value of these two indicators, the smaller the income gap between urban and rural residents.

Table 3 Results of the unit root test

Variable		Test form	LLC test	IPS test	ADF test	PP test	Results
Explained variables	*GAP*	(0, 0, 0)	−27.14***	−2.709	45.779***	39.368***	Stationary
Explanatory variable	EA_i	(C, 0, 0)	−16.74***	−3.403***	84.197**	21.631***	Stationary
Control variables	*RGDP*	(C, 0, 0)	−9.905***	−5.612***	15.406***	13.870***	Stationary
	FE	(C, T, 0)	−2.068**	0.304	38.167	62.706*	Not stationary
	ln*FE*	(0, 0, 0)	−9.204***	0.478	17.249***	178.53***	Stationary
	AFE	(C, T, 0)	−8.325***	−0.149	28.540	50.679**	Not stationary
	ln*AFE*	(C, 0, 0)	−13.59***	−2.610***	81.691**	11.015***	Stationary
	IS	(C, T, 0)	−9.461***	0.592	18.849	29.941	Not stationary
	ln*IS*	(0, 0, 0)	−13.56***	−1.092	22.519***	24.419***	Stationary
	OPEN	(C, T, 0)	−16.99***	−2.207**	79.220**	35.711***	Stationary
	URBAN	(C, T, 0)	−9.575***	−0.392	23.803	47.426***	Not stationary
	ln*URBAN*	(0, 0, 0)	−57.41***	−2.315	36.263***	62.932***	Stationary

Note: ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Table 4 Model regression results

Variable	Coefficient	Standard deviation	*t* statistic	Concomitant probability
Total factor productivity	−0.149 0	0.037 1	4.502 4	0.000 2
Financial expenditure level	0.483 4	0.454 5	1.191 5	0.011 2
Economic development level	0.077 3	0.275 5	−0.314 3	0.003 4
Industrial structure	−0.048 7	0.098 6	−0.553 3	0.082 7
Financial expenditure structure	0.309 0	0.758 6	0.456 2	0.140 8
Degree of openness	−0.045 6	0.015 2	3.352 3	0.050 4
Urbanization rate	−0.343 2	0.123 3	3.117 5	0.028 8
Constant term	10.260 1	0.219 3	8.792 2	0.013 4

6 Conclusions

In the traditional sense, agriculture is a basic industry with relatively slow development. However, with the continuous improvement in the agricultural production technology, the mechanization and automation of production have been gradually realized, and the efficiency of transforming the technical level into productivity has also been greatly improved. According to the above empirical analysis results, the improvement of agricultural total factor productivity can promote the narrowing of the income gap between urban and rural residents in China, and it is of positive significance for promoting China's urban and rural development and stabilizing China's urban – rural relationship. In this paper, through review of the previous literature, several control variables are added in the empirical research process. The empirical results proved that the industrial structure and urbanization rate in China can promote the narrowing of the income gap between urban and rural residents, while the improvement of the economic development level has led to an increase in the income gap between urban and rural residents. The financial expenditure level and the financial expenditure structure can widen the income gap between urban and rural residents in China, indicating that financial expenditure is unevenly distributed between urban and rural areas and it restricts China's rural development. Theoretically, the promotion of degree of openness to the income of rural residents should be gradually weaker than that of urban residents. However, in recent years, various policies adopted by the government gradually offset the negative impact of this phenomenon and strive to narrow the gap between urban and rural areas. Therefore, the degree of openness has played a positive role in weakening this gap.

The development of total factor productivity has a significant effect on narrowing the income gap between urban and rural residents. Therefore, it is recommended to vigorously develop agricultural production technology, strive to improve the depth and breadth of scientific and technological development in the field of agriculture, to realize high speed and benign development in cooperation with policy incentives and effective supervision. Relevant departments need to give play to the role of the financial guarantee system, support the development of agricultural production technology, and implement appropriate incentives or restrictions to guide the sound development of the agricultural economy. Besides, it is recommended to optimize the external environment of rural economic development. The optimization of rural external environment is greatly helpful for their obtaining better financial services. Total factor productivity also needs to complement other factors to jointly narrow the income gap between urban and rural residents. Specifically, following measures can be taken. First, it is recommended to adopt positive urbanization and industrial restructuring policies to eliminate institutional barriers. Second, it is recommended to give full play to its advantages to attract foreign investment. Taking advantage of local favorable environment and resource advantages, rural areas can improve corresponding supporting mechanisms to attract foreign companies to build factories in the local area and seize opportunities to increase income. Third, it is recommended to optimize the internal structure of financial expenditure. Great financial expenditure to urban areas leads to low benefit of rural residents. Rural areas have few development projects and investment fields, so their financial resources are less. In this situation, relevant government should strengthen the financial expenditure for rural areas and give into play the guidance of financial expenditure in the amount, distribution, and utilization efficiency.

References

[1] SOLOW RM. Technical change and the aggregate production function[J]. The Review of Economics and Statistics, 1957, 39(3): 312 – 320.
[2] DOLLAR D, KRAAY A. Growth is good for the poor[J]. Journal of Economic Growth, 2002, 7(3): 195 – 225.
[3] GEDA YE, ROCCA WA, KNOPMAN DS, *et al.* The prevalence of neuropsychiatric symptoms in mild cognitive impairment: a population-based study. [J]. Journal of Investigative Medicine, 2006, 54(2): 375.
[4] BITTENCOURT LP, CARMO AC, LEAO AMM, *et al.* Estigma: percepes sociais reveladas por pessoas acometidas por hanseníase[J]. Rev. Enferm. UERJ, 2010, 18(2): 185 – 190.
[5] SARMA M, PAIS J. Financial inclusion and development[J]. Journal of International Development, 2011, 23(5): 613 – 628.
[6] YI G, FAN G, LI Y. A theoretical analysis on economic growth in China and total factor productivity[J]. Economic Research Journal, 2003, 5(8): 13 – 20. (in Chinese).
[7] LU M, CHEN Z. Urbanization urban-biased economic policies and urban-rural inequality[J]. Economic Research Journal, 2004, 6(3): 8. (in Chinese).
[8] GUO QW, JIA JX. Estimating total factor productivity in China[J]. Economic Research Journal, 2005, 7(6): 51 – 60. (in Chinese).
[9] TANG LZ, LIU XH, JIA X. An empirical study on the relationship between financial development and urban-rural income disparity in China [J]. Issues in Agricultural Economy, 2008, 29(11):44 – 48. (in Chinese).
[10] YANG F. An empirical study on the impact of total factor productivity on the income gap between urban and rural residents in Yunnan Province [D]. Kunming: Yunnan University of Finance and Economics, 2016. (in Chinese).
[11] XU M, ZHANG XL. The impacts of inclusive finance on urban-rural residents' income gap[J]. Finance Forum, 2014, 19(9):9 – 15. (in Chinese).
[12] XUE BG, HE LC. Market competition, financial exclusion and rural-urban income gap[J]. Finance and Trade Research, 2016, 37(1):1 – 8. (in Chinese).