

Research on farmers' income structure in Heilongjiang province

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Abstract—Heilongjiang, as an important grain production base in China, its farmers make significant contributions to food production. The paper divides farmers' income structure into three levels and analyzes them, and ultimately comes to the following conclusions: (1) Income from household operations is the main source of farmers in Heilongjiang; income from primary industry is the main source of income from household operations; agricultural income is the main source of the primary industry. (2) The source of farmers' income is too single in Heilongjiang. (3) The diversification trend of farmers' income has been formed in Heilongjiang; however, its speed is still slow.

Keywords-Heilongjiang; farmers' income structure; single; diversification; tertiary structure.

I. INTRODUCTION

Heilongjiang is one of the few super major grain-producing provinces in China which plays a decisive role in our nation's food contributions [1,2]. Especially since 2004, comprehensive grain production capacity has increased substantially in Heilongjiang, which has spanning the stage from 35 million t, 40 million t to 50 million t. Meanwhile, farmers' income also increases rapidly [3]. However, whether farmers' income structure is reasonable or not still needs to be tested. The paper analyzes farmers' income structure and the growth trend, finds out the characteristics of farmers' income structure and provides the reference for future development in Heilongjiang.

II. ANALYSIS ON THE FIRST LEVEL OF FARMERS' INCOME STRUCTURE IN HEILONGJIANG

The first level of income structure refers to the proportion of income from wages and salaries, income from household operations, income from properties and income from transfers. Through farmers' income structure, we can see that Heilongjiang is a major agricultural province [5].

(1) The proportion of income from wages and salaries increases continually which has become an important source of farmers' income

Firstly, according to the changing income from wages and salaries, farmers' income from wages and salaries in Heilongjiang is only 64.5 yuan in 1993, the income amounts to 1496.5 yuan in 2011 which has an increase of 1,432 yuan during 18 years and the average annual growth is 79.56 yuan, representing an increase of 22.2 times comparing with 1993 (shown in Table 1).

Secondly, according to the proportion of income from

wages and salaries, the proportion rises from 6.27% in 1993 to 19.71% in 2011 which has an increase of 13.44% during 18 years and the average annual growth is 0.75% (shown in Table 1).

(2) The proportion of income from household operations decreases continually which is still the main source of farmers' income

Firstly, according to the changing income from household operations, farmers' income from household operations in Heilongjiang is only 943 yuan in 1993, the income amounts to 4784.1 yuan in 2011 which has an increase of 3841.1 yuan during 18 years and the average annual growth is 213.39 yuan, representing an increase of 4.07 times comparing with 1993 (shown in Table 1).

Secondly, according to the proportion of income from household operations, the proportion decreases from 91.7% in 1993 to 63.03% in 2011 which has a decrease of 28.67% during 18 years and the average annual decrease is 1.59% (shown in Table 1).

(3) The proportion of income from properties increases stably which isn't still the major source of farmers' income

Firstly, according to the changing income from properties, farmers' income from properties in Heilongjiang is only 3.9 yuan in 1993, the income amounts to 545.2 yuan in 2011 which has an increase of 541.3 yuan during 18 years and the average annual growth is 30.07 yuan, representing an increase of 138.79 times comparing with 1993 (shown in Table 1).

Secondly, according to the proportion of income from properties, the proportion rises from 0.38% in 1993 to 7.18% in 2011 which has an increase of 6.8% during 18 years and the average annual growth is 0.38%, representing an increase of 17.89 times comparing with 1993 (shown in Table 1).

(4) The status of income from transfers increases stably which has become the stable source of farmers' income

Firstly, according to the changing income from transfers, farmers' income from transfers in Heilongjiang is only 17 yuan in 1993, the income amounts to 764.9 yuan in 2011 which has an increase of 747.9 yuan during 18 years and the average annual growth is 41.55 yuan, representing an increase of 43.99 times comparing with 1993 (shown in Table 1).

Secondly, according to the proportion of income from transfers, the proportion rises from 1.65% in 1993 to 10.08% in 2011 which has an increase of 8.43% during 18 years and the average annual growth is 0.47%,

representing an increase of 5.11 times comparing with 1993. The lowest proportion is 1.02% in 2003 and the highest one is 11.9% in 2009, which exists the difference of 10.98 percentage point (shown in Table 1).

In summary, the farmers' income structure has taken place great changes during 18 years in Heilongjiang. The proportion of income from household operations decreases continually, but the proportion of income from wages and salaries, income from properties and income from transfers increases continually (shown in Table 1). During 18 years, the proportion of income from household operations has a decrease of 28.67% and the average annual decrease is 1.59%; the proportion of income from wages and salaries has an increase of 13.44% and the average annual growth is 0.75%; the proportion of income from properties has an increase of 6.8% and the average annual growth is 0.38%; the proportion of income from transfers has an increase of 8.43% during 18 years and the average annual growth is 0.47%. The dominant position of income from household operations has not been changed yet, but diversification trend of income has been much clearer. The proportion of income from wages and salaries has become a major part of farmers' net income and its proportion will continue to grow in the future. Relatively speaking, income from transfers gradually becomes a new income growth force which will become a stable source of the farmers' income in the future. The fluctuation of the proportion of income from properties is still large, indicating that it hasn't become a stable source of income, but it still has a large space for development in the future.

III. ANALYSIS ON THE SECOND LEVEL OF FARMERS' INCOME STRUCTURE IN HEILONGJIANG

The second level of income structure refers to the proportion of income from primary industry, second industry and tertiary industry in the income from household operations [6]. Income from farming, forestry, animal husbandry and fishery belong to the primary industry income according to China Statistical Yearbook; industry and construction belong to the secondary industry and the rest income belongs to the tertiary industry. In the process of analyzing the income structure of farmers' household operations in Heilongjiang, according to the definition of China Statistical Yearbook, the paper divides its income into primary industry, second industry and tertiary industry and analyzing them respectively.

(1) The proportion of primary industry income remains high which is still the first pillar of income from household operations.

Firstly, according to the amount of primary industry income, primary industry income is 1,594 yuan in 2000 in Heilongjiang, it amounts to 3713.3 yuan in 2010, which has an increase of 2119.3 yuan during 10 years and the average annual growth is 211.93 yuan. Primary industry income has maintained a rising trend, especially entering 2006, which has an accelerate growth (shown in Table 2).

Secondly, according to the proportion of primary

industry income, the proportion rises from 93.8% in 2000 to 94.21% in 2010 which has an increase of 0.41% during 10 years. The lowest proportion is 93.12% in 2001 and the highest one is 96.96% in 2009, which exists the difference of 3.84 percentage point (shown in Table 2).

(2) The proportion of second industry income continues to decrease which isn't the main source of income from household operations

Firstly, according to the amount of second industry income, second industry income is 18 yuan in 2000 in Heilongjiang, it amounts to 27.7 yuan in 2010, which has an increase of 9.7 yuan during 10 years and the average annual growth is 0.97 yuan; from 2000 to 2010, the lowest income is 4.4 yuan in 2007 and the highest one is 27.7 yuan in 2010 which exists the difference of 23.3 yuan (shown in Table 2). Farmers' second industry income shows a steady fluctuation trend in Heilongjiang. Although the fluctuation is very frequent during 10 years, the maximum fluctuation isn't more than 10 yuan (shown in Table 2).

Secondly, according to the proportion of second industry income, the proportion decreases from 1.06% in 2000 to 0.7% in 2010. From 2000 to 2010, the lowest proportion is 0.15% in 2007 and the highest one is 1.23% in 2001. The proportion of farmers' second industry income is relatively stable as a whole. Although the fluctuation is frequent, the fluctuation range is extremely limited.

(3) The tertiary industry income is stable which is not the main source of income from household operations.

Firstly, according to the amount of tertiary industry income, tertiary industry income is 87.4 yuan in 2000 in Heilongjiang, it amounts to 200.6 yuan in 2010, which has an increase of 123.2 yuan during 10 years and the average annual growth is 12.32 yuan; from 2000 to 2010, the lowest income is 60.1 yuan in 2004 and the highest one is 200.6 yuan in 2010 which exists the difference of 140.5 yuan (shown in Table 2). Farmers' tertiary industry income shows a fluctuation rising trend in Heilongjiang. Although there is some fluctuation during 10 years, the rising trend hasn't changed (shown in Table 2).

Secondly, according to the proportion of tertiary industry income, the proportion decreases from 5.14% in 2000 to 5.09% in 2010. From 2000 to 2010, the whole income proportion is stable and fluctuates from 4% to 5% or so.

In summary, the main source of income from household operations in Heilongjiang is still the primary industry, as a large food production province, which has the inseparable relation with the nature of Heilongjiang [7, 8]. Because of the importance of agriculture in Heilongjiang, over 90% of farmers' income from household operations is from the primary industry. Comparing with the primary industry income, second industry income is basically negligible. But during 10 years, the proportion of second industry has not improved significantly, and even appears setbacks. Although the proportion of tertiary industry is limited, we can see that the tertiary industry still maintains an upward trend. In

general, the primary industry income is the main source of household operations income and its position is strong in household operations income. Although the growing scope of tertiary industry is limited, its developing trend is good. Second industry income isn't the main source in household operations income and its growth trend is not optimistic.

IV. ANALYSIS ON THE THIRD LEVEL OF FARMERS' INCOME STRUCTURE IN HEILONGJIANG

The tertiary level of income structure refers to the proportion of agricultural income from primary industry. Agricultural income is 1456.4 yuan in 2000 in Heilongjiang, accounting for 91.37 percent of primary industry income. Up to 2010, the income is 3545.2 yuan, accounting for 95.47 percent of primary industry income. The income increases 2088.8 yuan and the proportion of income increases by 4.1%. During 10 years, the proportion of the lowest agricultural income is 86.86% in 2003 and the highest income is 95.47% in 2010 (shown in Table 3). From the amount of agricultural income, it is always on the rise in Heilongjiang, since 2005, the rising trend is more obvious. From the proportion of agricultural income, agricultural income is the main income source in primary industry income, but there is still some fluctuation in different years.

Income is the fundamental part of the primary industry income in Heilongjiang and the changes about agricultural income has a great relevance with food production situation and food economic background. Before 2003, although there are higher food outputs, due to the unreasonable market price, farmers' agricultural income rises blocked, therefore, the proportion of agricultural income decreases at this stage. Since 2008, both Heilongjiang and our nation adopt a series of policies to stimulate food production which has better prospects for food production; coupled with rising food price steadily, it leads to the rising agricultural income directly, thus contributing to the rising of the proportion of agricultural income.

V. CONCLUSIONS

(1) The amount and proportion of income from wages and salaries, income from properties and income from transfers both shows a rising trend. Income from household operations shows an increase trend in amount and decrease trend in proportion. Although the income structure has changed a lot in Heilongjiang, the basic status of income from household operations has not changed all the time [9].

(2) The first level of income structure shows a diversified trend, the second level of income structure is mainly the primary income and the third level of income structure is mainly the agricultural income [10].

(3) Farmers' income structure shows that food production has an important impact on farmers' income in Heilongjiang. However, such income structure exists great risk latently. The farmers are putting all their eggs into one basket.

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TABLE 1. VARIATION TENDENCY ON FARMERS' INCOME STRUCTURE IN HEILONGJIANG PROVINCE

year	income from wages and salaries		income from household operations		income from properties		income from transfers	
	Sum of money (yuan)	Proportion (%)	Sum of money (yuan)	Proportion (%)	Sum of money (yuan)	Proportion (%)	Sum of money (yuan)	Proportion (%)
1993	64.5	6.27	943	91.70	3.9	0.38	17.0	1.65
1994	82.1	5.90	1242.6	89.10	55.4	3.97	14.5	1.03
1995	130.3	7.38	1534.1	86.85	80.5	4.56	21.4	1.21
1996	171.4	7.85	1904.1	87.27	75.4	3.45	31.1	1.43
1997	219.8	9.52	2033.8	88.11	17.6	0.76	37.1	1.61
1998	235.4	10.45	1937.2	85.98	22.7	1.01	57.9	2.57
1999	285.3	13.17	1803.2	83.26	20.2	0.93	57.2	2.64
2000	338	15.73	1699.4	79.11	60.6	2.82	50.1	2.33
2001	333.4	14.62	1802.7	79.06	96.9	4.25	47.4	2.08
2002	376.6	15.66	1861.1	77.38	95.6	3.97	72.0	2.99
2003	394.2	15.71	1950.2	77.73	139.1	5.54	25.5	1.02
2004	413.1	13.75	2329.4	77.51	137	4.56	125.6	4.18
2005	464.3	14.41	2363.9	73.39	230.6	7.16	162.4	5.04
2006	654.9	18.43	2521.5	70.98	145.7	4.10	230.4	6.49
2007	773.9	18.74	2848.9	68.94	191.6	4.64	313.4	7.58
2008	916.8	18.88	3163.7	65.16	243.6	5.02	531.6	10.94
2009	1019.6	19.58	3326.7	63.89	241	4.63	619.4	11.90
2010	1241.6	19.99	3941.6	63.47	344.1	5.54	683.4	11.00
2011	1496.5	19.71	4784.1	63.03	545.2	7.18	764.9	10.08

Data sources: Calculation based on Heilongjiang Statistical Yearbook

TABLE 2 VARIATION TENDENCY ON FARMERS' INCOME STRUCTURE FROM HOUSEHOLD OPERATIONS IN HEILONGJIANG

year	Income from household operations (yuan)	Income from primary industry		Income from secondary industry		Income from tertiary industry	
		Sum of money (yuan)	Proportion (%)	Sum of money (yuan)	Proportion (%)	Sum of money (yuan)	Proportion (%)
2000	1699.4	1594	93.80	18	1.06	87.4	5.14
2001	1802.7	1678.6	93.12	22.2	1.23	101.9	5.65
2002	1861.1	1760.6	94.60	12.4	0.67	88.1	4.73
2003	1950.2	1874.6	96.12	7	0.36	68.6	3.52
2004	2329.4	2258.6	96.96	10.7	0.46	60.1	2.58
2005	2363.9	2274.1	96.20	8.8	0.37	81	3.43
2006	2521.5	2412.7	95.69	12.9	0.51	96	3.81
2007	2848.9	2736.8	96.07	4.4	0.15	107.7	3.78
2008	3163.7	3018.9	95.42	18.7	0.59	126.1	3.99
2009	3326.7	3168	95.23	18.7	0.56	126.1	3.79
2010	3941.6	3713.3	94.21	27.7	0.70	200.6	5.09

Data sources: Calculation based on Heilongjiang Statistical Yearbook

TABLE 3 VARIATION TENDENCY ON INCOME STRUCTURE OF FARMERS' PRIMARY INDUSTRY IN HEILONGJIANG

year	Income from primary industry (yuan)	Agricultural income (yuan)	Agricultural proportion in primary industry income (%)
2000	1594	1456.4	91.37
2001	1678.6	1493.2	88.96
2002	1760.6	1541.4	87.55
2003	1874.6	1628.2	86.86
2004	2258.6	2035.1	90.10
2005	2274.1	2043.6	89.86
2006	2412.7	2224	92.18
2007	2736.8	2449	89.48
2008	3018.9	2674.1	88.58
2009	3168	2895.6	91.40
2010	3713.3	3545.2	95.47

Data sources: Calculation based on Heilongjiang Statistical Yearbook