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Empirical analysis to fitness of social security level and economic level development in Liaoning province

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ABSTRACT

The paper analyzes the social security expense level in Liaoning Province from many aspects of financial social security expense, non-financial social security scale and social security financial investment, etc. based on 2000-2010 social security expense data in Liaoning Province. At the same time, measures the appropriate level of social security in Liaoning Province according to existing computational formula of social security appropriate level. The results show that, under powerful fund and policy support of finance to social security expenses, the total expense scale of social security between finance and non-finance in Liaoning increases year by year and speed is faster, the development speed can meet the speed of economic development basically.

KEYWORDS

Social security expense; Social security appropriate level; Social security development coefficient; Economic appropriate degree; Population aging.



DEFINITION OF RELEVANT BASIC THEORY

The basis of evaluating social security level is to compute total expenses of social security. In different countries or regions, the total expenses of social security is different due to different definition and recognition to social security, even if in different period of the same country, the increase or decrease of specific security project is often occurred.

Theoretically, our social security expense range has been determined in ‘Seventh Five-year Plan’, namely, it is composed of four parts: social insurance, social welfare, social help, social special care and allocation. However, actually, the statistics specifications of our social security expense are complex and unclear mainly because that, our social security is managed separately by the departments of civil administration, labor, human resource, sanitation and labor union, etc. What can’t accurately and comprehensively reflect overall situation of our social security even sum the Figures of responsible departments. Besides, our social security system is in continuous perfecting, the theoretical field and actual operation departments lack unified understanding to relevant work of social security, what bring great difficulty to statistics of total social security expense. Therefore, define and measure index system of total social security based on social security range and combined with current statistics index.

The research year of paper is limited to 2001-2010, which is selected based on three considerations: First is reality basis, after 1998, social security system becomes a basic social system, the central government newly established National Social Security Fund Council and Ministry of Labor and Social Security on the basis of reserving original Ministry of Civil Affairs, the management relation of social security is smooth gradually. Second is town’s social security pilot point work in Liaoning Province, what has been begun since 2001 and has certain scale after several years’ development. Third is for consistent specification of statistical yearbook, convenient for sum and comparison. For measurement range of total expense level of social security, based on actual situation and fully consider the problems of omission and repeated computation to determine index items designed by social security expense. Therefore, the statistical specification of our social security expense in 2001-2006 should involve pension and social welfare relief expense, social security subsidy expense, social insurance expense, retired and resigned personnel insurance welfare expense and medical health expense, etc. After implantation of new financial subject in 2007, the social security expense in finance only includes one item of social security and employment expense.

Currently, the qualitative and quantitative researches to national social security level are more but few scholars researched social security level of Liaoning Province. The paper not only researches its appropriate region in theory, but also puts forward keep social security’s appropriate level and economic development’s appropriate level of Liaoning Province starting from the relationship between social security level and economic development level, summarizes results of pilot point through multi-angle analysis. Look forward to the results more meet objective practice of Liaoning Province and really achieve the purpose of solving objective practice and guiding objective fact.

ANALYSIS TO SOCIAL SECURITY LEVEL IN LIAONING PROVINCE

Here sort out various relevant data of social security expenses in Liaoning Province according to relevant data of China Financial Yearbook, China Statistical Yearbook, Liaoning Statistical Yearbook and Liaoning Province Human Resource and Society.

Social security expense scale in Liaoning province

Based on current financial expense statistics specification, social security expense is divided into financial social security expense and non-financial social security. In the paper, the non-financial social security expense only means social insurance expense. The social security expense scales over the years in Liaoning Province are as follows:

TABLE 1 : 2001-2010 Social security level in Liaoning province

Year	Financial social security expense (One hundred million)	Non-financial social security expense (One hundred million)	Total social security expense (One hundred million)	Per capita social security expense (Yuan)
2001	171.23	198.8	370.03	892.2949
2002	188.43	232.9	421.33	1013.933
2003	211.66	276.9	488.56	1173.981
2004	229.35	325.8	555.15	1330.401
2005	278.59	385	663.59	1584.051
2006	327.49	483	810.49	1924.965
2007	411.30	529.9	941.20	2224.166
2008	479.59	658.3	1137.89	2679.837
2009	526.77	823.5	1350.27	3172.621
2010	592.44	966.2	1558.64	3665.922

In the ten years, total social security expense of Liaoning Province is increased to 155.864 billion in 2010 from 37.003 billion in 2001, increased 3.2 times. In which, financial social security expense is increased to 59.244 billion in 2010 from 17.123 billion in 2001, increased 2.46 times; Non-financial social security expense is increased to 96.62 billion from 19.88 billion in 2001, increased 3.86 times. Per capita social security expense is increased to 1665.92yuan in 2010 from 892.30yuan in 2001, increased 3.10 times. We can find that, both total social security expense and per capita social security expense, etc. in Liaoning Province present rapid growth trend. In which, the increase range of non-financial social security expense is larger.

Investment scale of governmental finance to social security

The government should give certain support to social security career according to our conditions and functions of public finance. TABLE 2 is the scale of finance expense used as social security expense during 2001-2010 in Liaoning.

TABLE 2 : Ratio of financial social security expense over the years

Year	Financial social security expense (One hundred million)	Ratio in financial expense (%)	Ratio in total social security expense (%)
2001	171.23	26.95	46.28
2002	188.43	27.23	44.72
2003	211.66	26.98	43.32
2004	229.35	24.91	41.31
2005	278.59	23.56	41.98
2006	327.49	23.09	40.41
2007	411.30	23.33	43.70
2008	479.59	22.29	42.15
2009	526.77	19.64	39.01
2010	592.44	18.55	38.01

According to decision of State Council Pilot Plan on Perfecting Town Social Security System, Liaoning Province has become the pilot point of perfecting social security system since 2001, and obtained abundant support from state no matter policy or fund. In 2001-2008, the ratio of financial social security expense in financial expense was greatly higher upper limit standard of 15% -20% required by *Pilot Plan*, and the ratio in total social security expense was more than 40%. After 2009, the ratio in financial expense was decreased, but still met basic requirement of *Pilot Plan*, close to upper limit, and the ratio in total social security expense also decreased to 38%. We can find that, Liaoning Province finance gives great support to establishment of social security system.

Social security level development coefficient in Liaoning province

In 2001-2010, Liaoning's economics achieved rapid growth, especially during 'Eleventh Five-year', the old industrial base of Liaoning was comprehensively promoted and obtained staged achievements, economic development performance was brilliant. The average increase of total output value of regions in the whole province was more than 13%, per capita region total output value was more than 6000 dollars. The abundant economic base provides enough substance guarantees for improvement of social security system.

TABLE 3 : Social security level development coefficient in Liaoning province over the years

Year	Social security expense (One hundred million)	Social security expense growth rate (%)	GDP (One hundred million)	GDP growth rate (%)	css
2001	370.0347	—	5033.08	—	—
2002	421.3298	13.86	5458.22	8.45	1.64
2003	488.5638	15.96	6002.54	9.97	1.60
2004	555.1497	13.63	6672	11.15	1.22
2005	663.5908	19.53	8047.3	20.61	0.95
2006	810.4872	22.14	9304.5	15.62	1.42
2007	941.2005	16.13	11164.3	19.99	0.81
2008	1137.8857	20.90	13668.6	22.43	0.93
2009	1350.2673	18.66	15212.5	11.30	1.65
2010	1558.64	15.43	18457.3	21.33	0.72

Based on thinking way of economics deciding distribution and distribution deciding social security level, and according to social security level development coefficient, i.e.,

$$CSC = \frac{\text{Growth rate of social security expense}}{\text{GDP growth rate}}$$

, to express the reflection degree of social security level growth to economic growth.^[1]

TABLE 3 shows that, in 2001-2010, the growth rate of social security expense in Liaoning Province was in 13.63%-22.14%, GDP growth rate was in 8.45%-22.43%, the ups, downs and trend of them were same, what show that, social security expense is close to economic development.

Social security level development coefficient in Liaoning Province is in 2001-2006, the coefficient in every year is more than 1 and in 0.95-1.64 basically, what show that, during this period, social security growth of Liaoning exceeds economic growth. However, since 2007, social security level development coefficient in Liaoning Province rapidly decreases and the minimum is 0.72 due to old industrial base’s rapid rise and time hysteresis of social security system soon afterwards.

Social participation degree of non-social security

Our country began to establish social security system since 1998 and Liaoning Province served as pilot point to perfect social security system since 2001. However, a majority of population is still not covered.

TABLE 4 : Participation rate of various social insurance during 2005-2010

Year	Basic endowment insurance	Basic medical insurance	Unemployment insurance	Maternity insurance	Employment injury insurance
2005	56.29%	40.76%	28.66%	10.38%	22.38%
2006	58.68%	45.08%	28.86%	17.80%	23.97%
2007	59.60%	49.88%	28.53%	19.40%	26.24%
2008	63.97%	55.01%	28.33%	20.94%	30.01%
2009	64.00%	59.16%	27.46%	23.33%	30.56%
2010	64.59%	60.79%	27.05%	25.59%	31.50%

TABLE 4 shows that, during 2005-2010, social security system in Liaoning Province perfected gradually and participation rate of various insurance expanded gradually, in which, the cover range of endowment and medical insurance has been more than 50%, higher than cover range of unemployment, maternity and employment injury insurance.

MEASUREMENT, COMPUTATION AND ANALYSIS TO SOCIAL SECURITY APPROPRIATE LEVEL IN LIAONING PROVINCE

Measurement and computation to social security appropriate level in Liaoning province

Mu Huaizhong deduces social security appropriate formula according to population structure theory and Cobb-Douglas production function, i.e. $\bar{S} = H(O_a + Z + J + M)$,^[2] in which: H means proportion of total wage income in GDP, also called as labor production factor distribution coefficient; O_a means proportion of aging population in total population; Z means proportion of unemployment insurance in total wage income; J means proportion of employment injury and maternity insurance in total wage income; M means proportion of social welfare relief and special care expense in total wage income. Labor production factor distribution coefficient is defined as 75% according to international experience and security policies taken by China; Generally, unemployment security expense proportion coefficient Z is about 1%-1.5%; Generally, employment injury and maternity security expense proportion coefficient J is about 0.016%-1.5%; Generally, social welfare special care expense proportion coefficient M is about 1%-1.5%. The appropriate region of social security level can be obtained through statistics to aging population proportion in different periods. Namely:

$$S^{lower} = 0.75(O_a^{lower} + Z^{lower} + J^{lower} + M^{lower}), \quad S^{upper} = 0.75(O_a^{upper} + Z^{upper} + J^{upper} + M^{upper}),$$

Define the people of more than 60-year old as aging population combined with international definition to aging population and regulations of our retiring age, make relevant parameter values into appropriate level upper and lower limit formula of social security, then we can obtain standard range of social security appropriate situation in Liaoning Province.

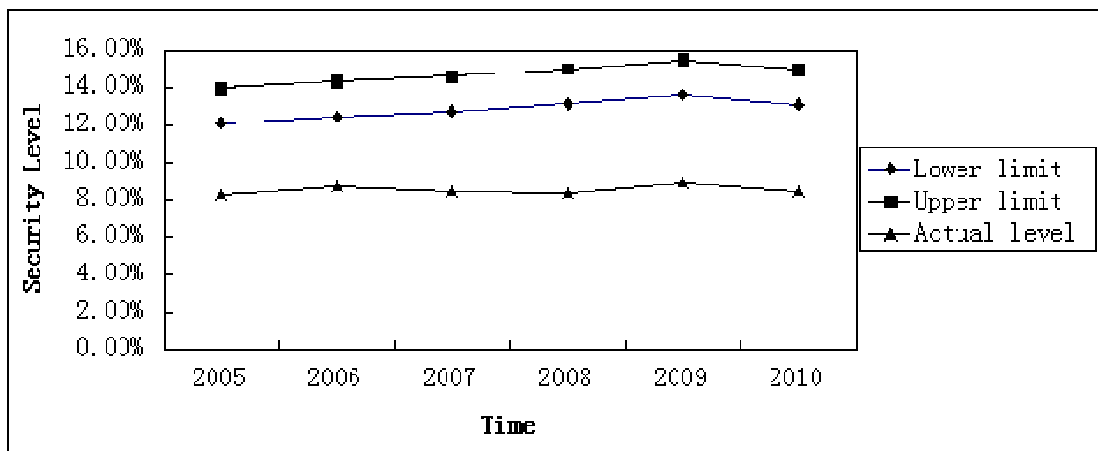


Figure 1 : Social security appropriate level and actual level in Liaoning province

Figure 1 shows that, the lower limit value of appropriate social security level during 2005-2010 of Liaoning Province is in 12.10%-13.61% and upper limit value is in 13.96%-15.47%. Compared with appropriate social security level, show that, actual social security level is not appropriate and the difference with lower limit of appropriate social security level is larger.

Analysis to measurement results

Degree and speed of population aging in Liaoning are huge pressure of social security appropriate development

International standard defines aging society as: 65-year old and above population is 7% of total population, 60-year old and above population is 10% of total population. In 1996, Liaoning Province entered aging society earlier 4 years than other provinces of China and the sixth national census in 2010 showed that, in Liaoning Province, 60-year old and above population is 6730228, occupying 15.43% of total population, belong to more serious province of 'aging society'. Estimate that in future, will increase aging population 200,000 every year and by 2015, the aging population will be more than 8.63 million and about 20.2% of total population. Aging pressure brings huge challenge for social security career development of Liaoning Province^[3].

Weak economic base is major obstacle of social security development

We can know from above data's sorting and computation that, from 2001 to 2010, the annual average growth rate of total social security expense in Liaoning Province is about 15.46% and annual average growth rate of total region output value is about 13.88%. The social security career of Liaoning Province is developing by the state of slightly higher than economic development speed, but can't meet increasing social security need due to economic base is weak. Economic development level becomes the root factor of restricting social security level.

Parameters setting of computation formula and definition of variable are technical difficulties of affecting accuracy of computation results

In the computation formula, the definition to financial social security expense and non-financial social security expense is given on the basis of current statistical index of statistical yearbook. Above measured social security expense is just called basic project because social security expense statistics certainly has problems of omission, repeat and lack of continuity, etc. due to our social security is managed by many departments and at the same time, social security system and governmental functions are in transformation. Besides, the following contents also lack authority demonstration under actual level: 0.75 setting of labor production factor distribution coefficient, the important parameter^[4], and international experience of upper and lower limit range of proportion of unemployment, employment injury and maternity insurance^[5] as well as social welfare relief and special care expense in total wage income. The above problems must affect accuracy of measurement and computation results.

CONCLUSION

We can get following conclusions based on above analysis:

First, the support level of Liaoning finance to social security is higher and it is an abundant and stable fund source since social security system reform. It is basic requirement to support healthy and sustained development of social security system, the safe net of market economy, and the support strength should not be weakened under severe aging background and larger transformation cost of old industrial base.

However, if the proportion of financial social security expense in total expense is too large, the development of social security system will excessively rely on the support of financial resource, to weaken social advantage of social security.^[6]

Second, the adaption degree between Liaoning Province social security development speed and economic development level is higher. For replying aging problem of Liaoning and ensuring social security appropriate level, the extremely important social economic condition is to greatly develop economic construction to keep sustained growth of economics.

At the same time, should pay attention to keep pace with speed of economic development, timely adjust relevant policies of social security system to shorten time hysteresis of social security system.

Third, the social security project in Liaoning Province is complete but the participation degree is not very high. The participation degree of social security will directly affect system's security ability and socialization degree. Therefore, social security participation rate's improvement should be regarded as an important thing to develop social security system.

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