DW	1.6567	1.4975	1.8551	1.8198
LM-LAG	0.2380(0.626)	44.1031(0.000)	1.998(0.157)	11.678(0.001)
RLM-LAG	0.0681(0.794)	1.9565(0.162)	0.984(0.321)	5.787(0.016)
LM-ERROR	8.1760(0.004)	112.46(0.000)	2.025(0.155)	5.962(0.015)
RLM-ERROR	8.0061(0.005)	70.3209(0.000)	1.011(0.315)	0.0725(0.788)

In summary, this paper selects the individual and time fixed effect model for analysis. After determining the form of the ordinary panel model, it is also necessary to test which kind of spatial panel model the model is suitable for, that is, to judge whether the model uses the spatial lag model or the spatial error model through the four indexes of LM-lag, RLM-lag, LM-error, RLM-error. From the test results, it can be seen that the four indexes significantly reject the non-spatial model and support the spatial lag or spatial error model, and which of the two models needs to be further judged.

4.2.3 Spatial panel model

According to the common panel data regression model, there are spatial effects in the panel regression model, that is, the spatial lag, spatial error model or spatial doberman model can be established. Among them, the spatial doberman model is the combination of spatial lag and spatial error model, that is, the spatial doberman model can be established first. Then the LM and LR tests can be used to determine whether the spatial doberman model can be reduced to a spatial lag model or a spatial error model. Failure to pass the test indicates the need to use the spatial doberman model. Therefore, the individual fixed effect space panel doberman model is further established. For comparison, this paper also establishes a random effect space panel doberman model. The regression and test results are obtained by using Matlab 2014a software, and the specific results are shown in TABLE IV.

TABLE IV. Space doberman panel model

Index	SPATIAL AND TEMPORAL FIXED EFFECT SPATIAL DOBERMAN MODEL	RANDOM EFFECT SPACE DOBERMAN MODEL
W*LNpgdp	0.512(0.000)	0.191(0.071)
LNSE	0.266(0.000)	0.222(0.000)
LNHC	0.675(0.000)	0.451(0.013)
LNSE*LNHC	-0.086(0.005)	-0.069(0.011)
LNL	0.238(0.000)	0.241(0.000)
LNP	-0.731(0.000)	-0.323(0.000)
LNPC	0.699(0.000)	0.816(0.000)
AG	-0.001(0.760)	0.001(0.560)
W*LNSE	-0.305(0.002)	-0.234(0.024)
W*LNHC	-1.081(0.001)	-0.586(0.076)
W*LNSE*LNHC	0.163(0.005)	0.073(0.196)
W*LNL	0.231(0.188)	0.054(0.744)
W*LNP	0.744(0.170)	0.078(0.666)
W*LNPC	-0.105(0.629)	0.0310(0.893)
W*AG	0.002(0.882)	-0.012(0.239)

SIGMA^2	0.0031	0.0033
R^2	0.9912	0.9802
LOGL	655.849	-5793.596
WALD-LAG	16.6609(0.019)	6.9057(0.438)
LR-LAG	16.5423(0.020)	
WALD-ERROR	23.0545(0.001)	7.7852(0.351)
LR-ERROR	25.6925(0.000)	
HAUSMAN	23.874(0.073)	
THEAT	0.115(0.000)	

The table shows the regression results of the spatial panel doberman model for the individual and time-fixed effects and the spatial panel doberman model for the random effects. First, Hausman test the model, the results significantly reject the original assumption that the individual effect is not related to the explanatory variable, that is, the fixed effect model should be selected. Therefore, the regression results of individual fixed effect spatial model are analyzed. From the fitting effect, the model goodness of fit is 0.99, which indicates that the model fitting effect is better. And the logarithmic probability function value is 655.849, and its value is relatively large. Indicating that the individual fixed effect spatial panel doberman model fits well. Illustrated by Wald test and LR tests: the spatial doberman model cannot be simplified as a spatial error model and a spatial lag model. Therefore, this paper chooses the spatial panel doberman model for empirical analysis.

It can be seen from the regression coefficient of spatial panel measurement. The effect of social security expenditure on economic growth is significantly positive. For every one percentage point increase in social security expenditure, the per capita GDP will increase by 0.266 percentage points. It shows that the level of social security plays a significant role in promoting the economic development of various regions. The level of human capital plays a relatively large role in economic growth. That is, for every one percentage point increase in the number of years of education per capita, the per capita GDP will increase by 0.675 percentage points. It shows that China's current economic development comes more from the improvement of human capital level. The coefficient of the interaction between social security and human capital is significantly negative. In other words, with the improvement of the level of human capital, the role of social security in promoting the economy will be reduced. The main reason is that at present, the driving force of economic growth in various regions is still driven by capital. In order to obtain short-term capital gains, local governments tend to invest limited financial funds in the economic field. This undoubtedly has a significant negative inhibitory effect on social security expenditure. Thus weakening the positive effect of social security on economic growth. From the results of controlling variables, employment and per capita consumption expenditure significantly promote regional economic growth. The dependency ratio of the resident population and the elderly population at the end of the year in each region has an inhibitory effect on economic growth. Among them, the role of elderly dependency ratio is not significant. Although the current population aging problem is significant, the improvement of human capital and social security can effectively alleviate the impact of population aging on economic growth. The economic development of each region does not necessarily require a large population. More importantly, the quality of human capital and the level of social security.

It can be seen from the results of spatial overflow index. The indicators of economic development level have significant spatial spillover effect. That is, every 1 percentage point increase in the economic development level of the region will drive the economic development level of adjacent regions to increase by 0.512 percentage points. The level of social security and human capital water have a significant negative impact on the adjacent economic growth. At the same time, the results of the interaction between social security and human capital show that with the improvement of the level of human capital in the region, the inhibitory effect of social security on the economic growth of adjacent regions will be more obvious. The reason for this result is that the higher the level of social security and human capital in this region, the more it can attract the inflow of personnel from adjacent regions. Therefore, the economic development ability of adjacent areas is weakened. At the same time, human capital is a long-term process. The level of human capital in this region cannot affect the economic development level of adjacent regions in a short time.

V. CONCLUSION

Based on the existing literature research. Comprehensively considering the spatial effect of economic growth, this paper studies and analyzes the role of social security in promoting economic growth from the perspective of human capital.

It can be seen from the results of qualitative analysis. At present, the level of social security and economic development in various regions of China are in a growing trend. However, the regional distribution shows the phenomenon of uncoordinated regional development. Overall, the eastern region is better than the western region. According to the development of social security level and economic growth. There is a positive correlation between social security and economic growth, which is the main driving force of economic growth.

It can be seen from the quantitative analysis results. There is a significant positive spatial auto-correlation in regional economic growth in China. It presents the phenomenon that high economy and high economy, low economy and low economy regions converge. The spatial panel doberman model of individual and time fixed effects is established. The results show that the economic growth of this region will significantly promote the economic growth of adjacent regions. The level of social security and human capital have significantly promoted the economic growth of all regions. However, the promotion of social security will weaken with the improvement of human capital level.

Therefore, on the one hand, we can consider continuing to improve the per capita education level and give full play to the role of human capital in promoting economic growth. Give play to the spillover effect of economic growth and promote the balanced development of human capital level and regional economy. On the other hand, we should improve the social security system and achieve universal coverage. Fully release the redistribution function of social security and realize the goal of common prosperity while driving economic growth.

ACKNOWLEDGEMENT

REFERENCES

[1] Feldstein, M (1974) Social Security, Induced Retirement, and Aggregate Capital Accumulation. Journal of Political Economy 82(5):905-926

[2] Barro, R.J (1974) Are Government Bonds Net Wealth. Journal of Political Economy 82(6):1095-1117

[3] Gustman, A.L., and T.L. Steinmeier(2015) Effects of Social Security Policies on Benefit Claiming, Retirement and Saving. Journal of Public Economics 129:51-62

[4] Courtney Coile, Kevin S. Milligan, David A. Wise(2016) Social Security and Retirement Programs Around the World: The Capacity to Work at Older Ages-Introduction and Summary. NBER Working Paper No.21939

[5] Guo Yingtong, Guo Hui(2017) The impact of human capital quality on the convergence of regional economic growth from a spatial perspective. Social Science Research 06:31-38

[6] Eggleston,K.,A.Sun, and Z.G.Zhan(2018) The Impact of Reural Pensions in China on Labor Migration. Economic Modelling 32(1):64-84

[7] Chen Xi, Bian Shu, fan Lulu, Han Zhibin(2018) Urban-rural social security gap, human capital investment and economic growth. Population and Economy 04:77-85

[8] Sun Zao, Liu Lihua(2019) Social security, entrepreneurship and endogenous economic growth. Statistical Research 36 (01):77-91

[9] Tang Jue, Feng Jin(2019) The impact of social insurance payment on the capital labor ratio of Enterprises -- Taking the change of provincial endowment insurance collection institutions in the early 21st century as an example. Economic Research 54(11):87-101

[10] Feng Jin(2019) Population aging, social security and its impact on the labor market. China's Economic Issues 05:15-33

[11] Li Qiong, Zhao Yang, Li Songlin, Li Xiangling(2020) Analysis on the temporal and spatial characteristics and driving forces of the coupling between social security and economic development in China. Geographical Research 39(06):1401-1417

[12] Mou Juan(2020). Statistical test of social security and human capital expenditure on economic growth. Statistics and decision making 36(13):116-120

[13] Yu Xinliang, Zhang Wenrui, Guo Wenguang, Yu Wenguang(2021) Unification of pension insurance system and market-oriented allocation of labor factors -- An Empirical Study Based on the reform of pension integration in public and private sectors. China industrial economy 01:36-55

[14] Chen Qiang(2014) Advanced econometrics and stata applications (second edition). Beijing: higher Education Press 575-589