

The Development of Higher Education in Northeast Three Provinces of China

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Abstract. Northeast China is a geographical region of China, the development of higher education is crucial to the economic and social development of Northeast China. This paper use the data from China Statistical Yearbook to analyze the development of higher education in Northeast China in recent years, analyzed the proportion of Northeast China to the whole country, and also compared the three northeast provinces. The result shows that, from 2000 to 2015, the higher education of Northeast China has improved a lot. The number of universities and colleges in Northeast China has increased from 133 to 255; the number of university teachers has increased from 146640 to 237053; and the number of undergraduate students on campus has increased from 699096 to 2373524. In the proportion of Northeast China to the whole country, the proportion of universities and colleges of Northeast China to the whole country has decreased from 12.78% to 9.96%; the proportion of number of teachers has decreased from 13.18% to 10.01%; and the proportion of number of undergraduate students on campus has decreased from 12.57% to 9.04%. In the comparison of the three northeast provinces, on the indicator of proportion of numbers of universities and colleges, teachers and undergraduate students on campus, Liaoning province always takes over 40% of Northeast China, Jilin province is about 25%, and Heilongjiang province is about 35%.

Introduction

Northeast China is a geographical region of China. It consists specifically of the three provinces of Liaoning, Jilin and Heilongjiang. Northeast China is the cradle of Chinese industry, and has obvious geographical advantages, abundant resources and great potential for development.^[1]

The development of higher education is crucial to the economic and social development of Northeast China. There are many universities and research institutes located in this area, such as Harbin Institute of Technology, Jilin University, Dalian University of Technology, Northeastern University, Liaoning University, and institutions from Chinese Academy of Sciences, such as Dalian Institute of Chemical Physics, Shenyang Institute of Metal Research, Shenyang Institute of Applied Ecology, Changchun Institute of Optics, Fine Mechanics and Physics and so on.^[2-9]

This paper use the data from China Statistical Yearbook^[10] to analyze the development of higher education in Northeast China in recent years, analyze the proportion of Northeast China to the whole country, and also compare the three northeast provinces.

The Development of Higher Education in Northeast China in Recent Years

The Number of Universities and Colleges. From 2000 to 2015, the number of universities and colleges in Northeast China has increased from 133 to 255; it is nearly two times of the original. From 2000 to 2010, the number increased very fast, but in recent 5 years, Northeast China only increased 8 universities and colleges (refer with: Fig. 1).

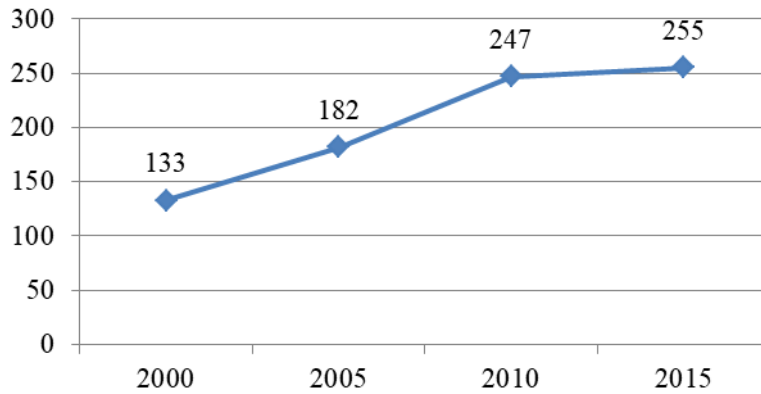


Figure 1. The number of universities and colleges in Northeast China

The Number of University Teachers. From 2000 to 2015, the number of university teachers in Northeast China has increased from 146640 to 23705 (including full-time teacher, administrative staff, support staff, and service staff), increased by 61.66%. From 2000 to 2010, the number of teachers also increased very fast, in recent 5 years, the growth is slowdown (refer with: Fig. 2).

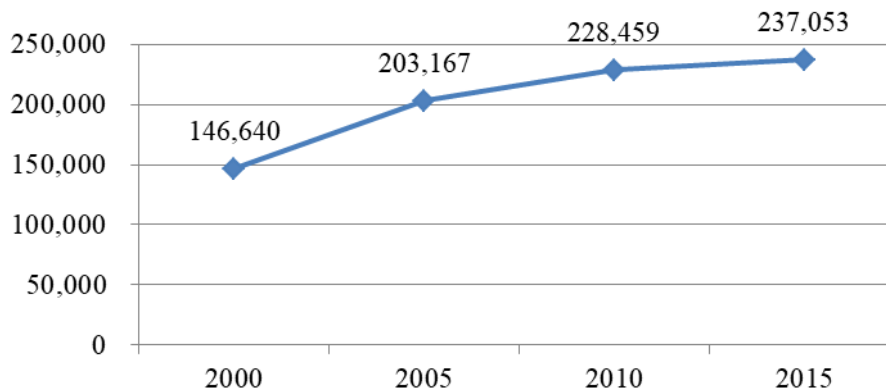


Figure 2. The number of university teachers in Northeast China

Distribution of Full-Time Teachers' Titles. Full-time teachers' titles include professor, associate professor, lecturer, teaching assistant and non-professional titles. The numbers and distribution of full-time teachers' titles is listed in Table 1 and Table 2. (No data in 2000)

Table 1 The number of full-time teachers' titles

Title	2005	2010	2015	Changed in 10 years
Professor	12552	18529	22686	+80.74%
Associate professor	33814	41273	48164	+42.44%
Lecturer	32299	50368	61109	+89.20%
Teaching assistant	23713	21326	14679	-38.10%
Non-professional	4838	4088	4499	-7.01%

Table 2 The distribution of full-time teachers' titles (%)

Title	2005	2010	2015	Changed in 10 years
Professor	11.71	13.67	15.01	+3.30%
Associate professor	31.54	30.44	31.87	+0.33%
Lecturer	30.13	37.15	40.43	+10.31%
Teaching assistant	22.12	15.73	9.71	-12.40%
Non-professional	4.51	3.02	2.98	-1.54%

The Numbers of Undergraduate Students on Campus. In the absence of statistics on graduate students, this section examines only undergraduate students. From 2000 to 2015, the number of undergraduate students on campus in Northeast China has increased from 699096 to 2373524, increased by 239.5%. (refer with: Fig. 3).

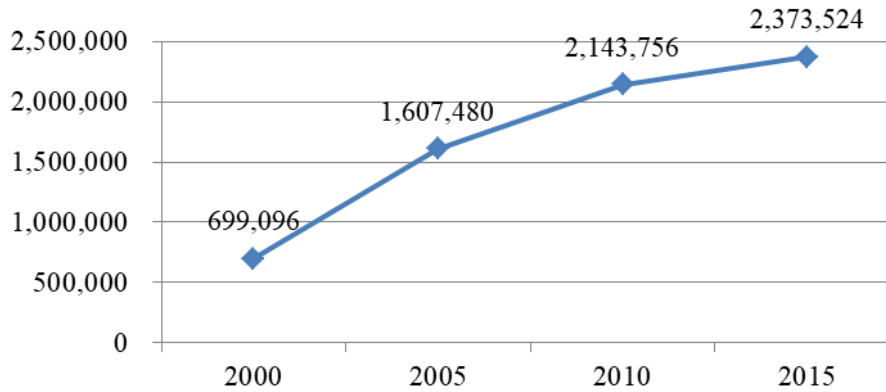


Figure 3. The number of undergraduate students on campus in Northeast China

The Proportion of Northeast China to the Whole Country

The Proportion of Number of Universities and Colleges. From 2000 to 2015, the number of universities and colleges in China has increased from 1041 to 2560. The proportion of universities and colleges of Northeast China to the whole country has decreased from 12.78% to 9.96%, it means the growth speed of the number of universities in the whole country is more faster than the Northeast China (refer with: Fig. 4).

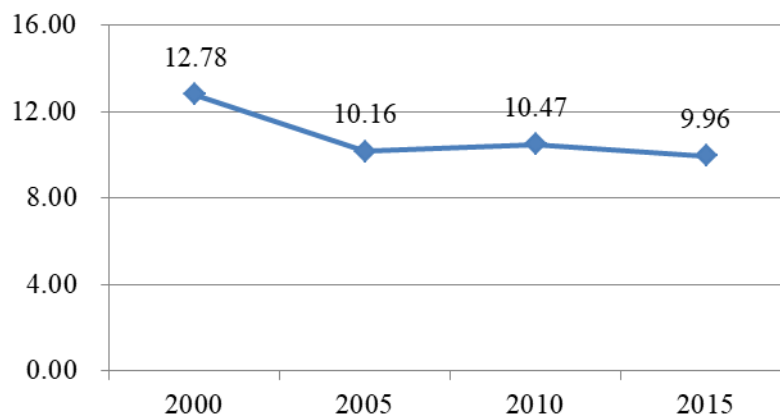


Figure 4. The proportion of universities and colleges of Northeast China to the whole country (%)

The Proportion of Number of Teachers. From 2000 to 2015, the number of teachers in China has increased from 1112776 to 2369326 (including full-time teacher, administrative staff, support staff, and service staff). The proportion of number of teachers of Northeast China to the whole country has decreased from 13.18% to 10.01%, so the growth speed of the number of teachers of Northeast China is less than the whole country (refer with: Fig. 5).

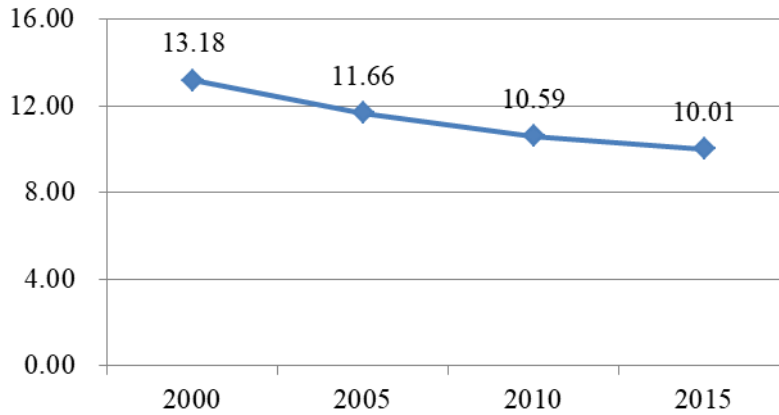


Figure 5. The proportion of teachers of Northeast China to the whole country (%)

The Proportion of Number of Undergraduate Students on Campus. From 2000 to 2015, the number of undergraduate students on campus in China has increased from 5.56 million to 26.25 million. The proportion of number of undergraduate students on campus of Northeast China to the whole country has decreased from 12.57% to 9.04%, so the growth speed of the number of undergraduate students on campus of Northeast China is less than the whole country (refer with: Fig. 6).

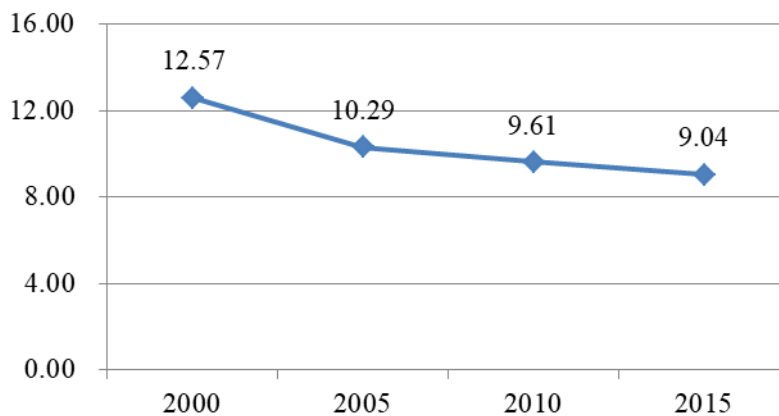


Figure 6. The proportion of undergraduate students on campus of Northeast China to the whole country (%)

The Comparison of the Three Northeast Provinces

The Comparison of Number of Universities and Colleges. The numbers of universities and colleges in three northeast provinces are listed in Table 3. From 2000 to 2015, the numbers of universities and colleges are all increased in the three provinces. Liaoning increased 52 universities and colleges, increased by 81.25%; Jilin increased 24 universities and colleges, increased by 70.59%; Heilongjiang increased 46 universities and colleges, increased by 131.43%.

Table 3 The comparison of number of universities and colleges in three northeast provinces

Province	2000	2005	2010	2015	Increased number	Changed in 15 years
Liaoning	64	76	112	116	52	+81.25%
Jilin	34	44	56	58	24	+70.59%
Heilongjiang	35	62	79	81	46	+131.43%
Total	133	182	247	255	122	+91.73%

The reason of low growth of Jilin is the university merger. In 2000, Jilin University merged with the former Jilin University of Technology, the former Norman Bethune University of Medical Sciences, the

former Changchun University of Science and Technology and Changchun Institute of Posts and Telecommunications. In 2004, the former University of Military Logistics also joined. ^[4]

The proportion of three provinces is listed in Table 4. Liaoning province is all over 40%, Jilin province is about 25%, Heilongjiang province is about 35%.

Table 4 The proportion of numbers of universities and colleges in three northeast provinces (%)

Province	2000	2005	2010	2015	Changed in 15 years
Liaoning	48.12	41.76	45.34	45.49	-2.63
Jilin	25.56	24.18	22.67	22.75	-2.82
Heilongjiang	26.32	34.07	31.98	31.76	+5.45
Total	100	100	100	100	-

The Comparison of Number of Teachers. The numbers of teachers (including full-time teacher, administrative staff, support staff, and service staff) in three northeast provinces are listed in Table 5. From 2000 to 2015, the numbers of teacher are all increased in the three provinces. Liaoning increased by 58.69%; Jilin increased by 50.77%; and Heilongjiang increased by 76.45%.

Table 5 The comparison of number of teachers in three northeast provinces

Province	2000	2005	2010	2015	Increased number	Changed in 15 years
Liaoning	61707	82816	93183	97924	36217	+58.69%
Jilin	41813	54689	59535	63043	21230	+50.77%
Heilongjiang	43120	65662	75741	76086	32966	+76.45%
Total	146640	203167	228459	237053	90413	+61.66%

The proportion of three provinces is listed in Table 6. Liaoning province is all over 40%, Jilin province is about 25%, Heilongjiang province is about 35%.

Table 6 The proportion of numbers of teachers in three northeast provinces (%)

Province	2000	2005	2010	2015	Changed in 15 years
Liaoning	42.08	40.76	40.79	41.31	-0.77
Jilin	28.51	26.92	26.06	26.59	-1.92
Heilongjiang	29.41	32.32	33.15	32.10	+2.69
Total	100	100	100	100	-

The Comparison of Number of Undergraduate Students on Campus. The numbers of undergraduate students on campus in three northeast provinces are listed in Table 7. From 2000 to 2015, the numbers of undergraduate students on campus are all increased a lot in the three provinces. Liaoning increased by 226.58%; Jilin increased by 249.53%; and Heilongjiang increased by 249.83%, the increased ratio are very close.

Table 7 The comparison of number of undergraduate students on campus in 3 northeast provinces

Province	2000	2005	2010	2015	Increased number	Changed in 15 years
Liaoning	307931	659351	880247	1005650	697719	+226.58%
Jilin	181019	407262	544392	632723	451704	+249.53%
Heilongjiang	210146	540867	719117	735151	525005	+249.83%
Total	699096	1607480	2143756	2373524	1674428	+239.51%

The proportion of three provinces is listed in Table 8. Liaoning province is all over 40%, Jilin province is about 25%, Heilongjiang province is about 35%.

Table 8 The proportion of undergraduate students on campus in three northeast provinces (%)

Province	2000	2005	2010	2015	Changed in 15 years
Liaoning	44.05	41.02	41.06	42.37	-1.68
Jilin	25.89	25.34	25.39	26.66	+0.76
Heilongjiang	30.06	33.65	33.54	30.97	+0.91
Total	100	100	100	100	-

Summary

This paper uses the data from China Statistics Yearbook, research on development of higher education in Northeast China. The result shows that, from 2000 to 2015, the higher education of Northeast China has improved a lot, but the growth speed is less than the whole country.

The number of universities and colleges in Northeast China has increased from 133 to 255; the number of university teachers has increased from 146640 to 237053; and the number of undergraduate students on campus has increased from 699096 to 2373524.

In the proportion of Northeast China to the whole country, the proportion of universities and colleges of Northeast China to the whole country has decreased from 12.78% to 9.96%; the proportion of number of teachers has decreased from 13.18% to 10.01%; and the proportion of number of undergraduate students on campus has decreased from 12.57% to 9.04%.

In the comparison of the three northeast provinces, on the indicator of proportion of numbers of universities and colleges, teachers and undergraduate students on campus, Liaoning province always takes over 40% of Northeast China, Jilin province is about 25%, and Heilongjiang province is about 35%.

Acknowledgements

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