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Income and Poverty Gaps between Han and Ethnic Minorities in Rural China, 2002 and 2013

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Abstract

In this chapter, using selected rural samples of the CHIP 2002 and CHIP 2013 surveys that cover a total of fourteen provinces, we focus on income and poverty differentiation among Chinese ethnic minorities and changes over time in atypical ethnic regions, that is, outside of China's five autonomous regions. As shown by our analysis as well as in other literature, the incomes of ethnic minorities have always been lower than those of Han. However, the income gap between ethnic minorities and Han narrowed during the 2002–2013 period in atypical ethnic areas. At the same time, it should be noted that during this period inequality increased more for ethnic minorities than it did for Han. Our decomposition of the inequality index shows that the income gap between Han and ethnic minorities can mainly be attributed to factors such as household characteristics and residence location rather than ethnic identity. Between 2002 and 2013 the pattern of poverty changed both for Han and ethnic minorities, but the changes in absolute poverty and relative poverty were the opposite. At the absolute poverty level, the poverty rate, poverty depth, and poverty strength narrowed. But in terms of relative poverty, the poverty rate, poverty depth, and poverty strength increased. Descriptive analysis reveals that ethnic differences in terms of poverty narrowed from 2002 to 2013. Regression analysis suggests that this might be attributed to the fact that ethnic minorities are mainly located in less-developed regions where their ethnic identity does not make any difference. In fact, when controlling for the regional variables, the level of poverty among Han is even more serious than that among ethnic minorities. It is also worth noting that the coefficient of education among ethnic minorities is significantly larger than that among Han, indicating that the development of education may be a very effective anti-poverty strategy for ethnic minorities.

Keywords: China, rural, poverty, ethnic minority

JEL Classification: J15, P25, P36

I. Introduction

As a vast country with many ethnic minorities, China is bound to have social and economic inequalities among different regions and ethnicities. Restricted by natural resources, geographic locations, and historical and cultural factors, Chinese ethnic minorities have often experienced economic underdevelopment to varying degrees. In general, research has revealed that rural ethnic areas have a higher poverty rate than non-ethnic areas and that ethnic minorities living in rural areas have a higher poverty rate than Han. Based on the rural data from the CHIP 2002 and the CHIP 2013 surveys, we have verified some conclusions from previous research, but we have also come up with some different results. Like other research, the results of both the CHIP 2002 and the CHIP 2013 surveys show that minorities and ethnic regions face more serious poverty than Han and non-ethnic areas. However, when we control for variables such as household characteristics and region, in 2002 ethnic minority households had a lower risk of poverty than Han households, whereas, unlike the findings in previous research, in 2013 there was no significant difference between ethnic minority and Han households.

This chapter uses data from both the CHIP 2002 and the CHIP 2013 surveys to examine poverty patterns and trends for ethnic minorities and Han living in rural areas. To outline the status and changes in poverty for ethnic minorities and Han, we have selected those provinces that are included in both the two surveys (except for Xinjiang) to estimate how the distribution of poverty and its changes differ among ethnic minorities from an income perspective. A

Blinder-Oaxaca decomposition reveals that after controlling for household characteristics and regional differences, ethnic minority households have a statistically significant lower rate of both absolute and relative poverty than Han households. All else being equal, the rewards of higher education are a more crucial factor in reducing the risk of poverty among ethnic minority households than they are among Han households.

According to most empirical studies of poverty alleviation, income is the main measure for defining poverty. Therefore, an analysis of income inequality, especially inequality between Han and ethnic minorities, will contribute to an understanding of poverty distribution among the various ethnic groups. Björn Gustafsson and Li Shi (2003) use the rural sample from the CHIP 1988 and the CHIP 1995 surveys to analyze the income gap and trends between Han and ethnic minorities. They find that between 1988 and 1995, Han and ethnic minorities both increased their per capita income, but the increase among the Han was 1.4 times that of the increase among minorities. However, mainly due to geographical and historical reasons, the per capita income gap between Han and ethnic minorities has since expanded. Based on the above empirical studies, we can say that there are differences in the distribution of poverty and its changes even when the definition of poverty is based solely on income. Wang Xiaolin (2012) uses rural household survey data from thirteen counties in the Ngawa Tibetan and the Qiang Autonomous prefectures to show that the poverty rate among ethnic minorities is 1 percent higher than that among the Han; in this research, the poverty rate shows obvious ethnic patterns. In 2013 Liu Xiaomin used data from the "2011 Economic and Social Development Survey in the Western Ethnic Areas" to examine the differences in poverty and the contributing factors in rural ethnic areas of Hunan,

Guizhou, and Guangxi. The study concludes that minority households in these rural areas are more likely to be living in poverty than Han households, and the depth and the intensity of the poverty are also higher than that of the Han.

The mechanism for poverty differentiation among ethnic minorities is a topic that demands serious attention, and the extent to which we become aware of this issue should determine specific anti-poverty schemes and measures. Some Chinese scholars have begun to study this subject. For example, Wang Xiaolin (2012) finds that ethnic identity, the number of people in the labor market from the same household, the education level of the household head, and ownership of an agricultural vehicle are important determinants of a household's poverty. Liu Xiaomin (2013) finds that ownership of human capital, social capital, and economic capital either increases or reduces the rate of poverty of ethnic minorities in rural areas of Hunan, Guizhou, and Guangxi. She finds that imbalanced regional development is also a key factor.

In summary, based on theoretical and empirical studies of variations in the patterns of poverty distribution among Chinese ethnic minorities, Chinese and foreign scholars have reached varying conclusions. Since implementation of the Western Development Program, the Chinese Government has strongly supported poverty alleviation for ethnic minorities and ethnic minority areas; however, poverty alleviation policies may have differing effects depending on the area. Due to a limited number of datasets, there are few quantitative studies on the mechanisms of poverty distribution among ethnic minorities and ethnic minority areas after the launch of the Western Development Strategy. Therefore, this chapter seeks to contribute to current research based on the following: 1.) Using the rural sample of the 2002–2013 CHIP surveys and focusing

on a quantitative study of the status and distribution of poverty among ethnic minorities and in ethnic minority areas after the launch of the Western Development Strategy, it assesses current Chinese anti-poverty policies and provides reference for further anti-poverty policy making in the rural areas; 2.) In our samples, the ethnic minority areas do not include the five autonomous regions, i.e., Xinjiang, Tibet, Ningxia, Guangxi, and Inner Mongolia (detailed data sources and definitions of the ethnic minority areas are discussed in Section III) because they are typical minority regions. Unlike previous research, we analyze the status and distribution of poverty among ethnic minorities in atypical ethnic areas to determine different patterns of ethnic poverty.

The remainder of this chapter includes the following. Section II reviews the preferential policies that aim to promote economic development and to reduce poverty rates among ethnic minorities in ethnic areas. This provides background to understand how poverty patterns have changed among the various ethnic minorities. Section III discusses data issues and provides descriptive statistics of important regional, household-level, and individual-level variables. Section IV discusses differences in the composition of the income gap between Han and ethnic minorities as well as the contribution of the ethnic income gap to rural income inequality. Section V, in a discussion of both absolute and relative poverty, analyzes poverty differences between Han and ethnic minorities and the changes over time. Section VI summarizes our findings and evaluates the policy implications.

II. Preferential Policies for Ethnic Minorities

China has a vast territory; it is a unified and multiethnic country with significant imbalances in terms of economic development. There are fifty-five ethnic minorities, with a population of 106 million according to the 2012 national census, accounting for 8.41 percent of the entire population. China has established 155 ethnic autonomous areas, including 5 autonomous regions/provinces, 30 autonomous prefectures, and 120 autonomous counties; together, these areas cover 6.16 million square kilometres of land, of approximately 63.9 percent of the entire country. Due to historical, cultural, and other reasons, the specific characteristics of the ethnic minorities and the ethnic minority areas in China include the following: 1.) In general, ethnic minorities reside with Han, but each minority also has its own small settlements. Though all ethnic groups have closely related habitats, they also interact with other groups. Ethnic minorities usually live in places far from the metropolitan areas, located in remote, inaccessible areas, such as drylands or grasslands (Fei 2004: 148);[1] 2.) Owing to geographic, historical, cultural, and other factors, ethnic minorities and ethnic minority areas are less developed both economically and socially, and ethnic minority areas tend to have the country's highest poverty rates and highest levels of poverty concentration; 3.) Because of the different histories of the various minorities, their natural resources, locations, and populations differ as well. In addition to the great disparities in the social resources of ethnic minorities in terms of historical evolution, possession of resources, natural habitation, and population size, there are major economic inequalities not only between ethnic and non-ethnic areas but also among ethnic minorities

[1] According to Fei Xiaotong (2004: 148), "the habitations of ethnic minorities are mostly places to which the Han cannot become accustomed, i.e., plateaus, prairies, ravines, arid areas, and remote locations. That is to say, ethnic minorities live in the places where the 'agriculture-based" Han cannot display their advantage.'"

themselves (Guan 2007). To close these gaps, after the establishment of the People's Republic of China (PRC) in 1949 the State Council adopted preferential policies for the ethnic minorities and the ethnic minority areas. In the Chinese political context, those subject to the preferential policies are the fifty-five ethnic minorities and their natural habitats. All preferential policies operate under the general principle that all ethnicities are equal, and policies should provide preferential treatment to ethnic minorities and ethnic minority areas to support their political, economic, social, cultural, and ecological well-being (Naribilige 2000). There are two major categories of preferential policies: the first is for ethnic minorities; the second is for ethnic minority areas. The former refers to the special benefits that ethnic minorities enjoy in terms of education, employment, fertility, and so on, whereas the latter relates to the social and economic development of the ethnic minority areas (Han 2012). The differentiation in the poverty levels of the minority groups is certainly affected by these preferential policies. In the following section, we focus on the specific preferential fiscal and taxation schemes as well as the education, poverty alleviation, and development policies.

A. Fiscal and Taxation Policies

Given that the ethnic minority areas have specific difficulties in terms of social and economic development, beginning in the 1950s the State Council launched a series of preferential treatments for fiscal and taxation policies (see Table 9.1). In addition to providing ethnic minority areas a certain degree of financial autonomy, the State Council required that only the balance should be turned over to the state and the state would pay any deficit. The state also

provided production subsidies, health subsidies, social assistance, and interest-free loans and other subsidies. Beginning in the 1960s, the ethnic autonomous areas could retain and use all the extra income generated from surplus funds from the previous year and from the budget of the current year, thus implementing a preferential treatment that was referred to as "appropriate financial care and necessary subsidies." The preferential treatment for ethnic minorities in the 1980s was referred to as "appropriate care": apart from implementing a subsidy system whereby the eight autonomous regions and prefectures could receive a 10 percent annual increase in fixed subsidies, the government also launched other programs, including "ethnic regional subsidies," "development funds for supporting underdeveloped areas," and "subsidies for Chinese border affairs." Beginning in 2000, China implemented the Western Development Strategy[2] to provide "prosperity to the border [regions] and to enrich the people" and other similar programs. The central government also increased financial support for ethnic minority areas: in addition to general transfer payments, the central government established special transfer payments for agriculture, social security, education, science and technology, health, birth control, planning, culture, and environmental protection. From 2000 to 2013, the transfer payments from the central government to the ethnic minority areas increased from 1 billion yuan to 46.4 billion yuan (Cai 2014), representing a forty-six-fold increase.

The Chinese government has also implemented long-term preferential tax policies for the ethnic minority areas (see Table 9.1). Beginning in the 1950s, the ethnic minority areas were

[2] The State Council implemented the Western Development Strategy to cover all 5 autonomous regions, 30 autonomous prefectures, and most of the 120 autonomous counties. Autonomous counties that are not included in the Western Development Strategy receive similar policy support.

subject to long-term lower agricultural and animal husbandry taxes, and the borders of the ethnic minority areas were subject to lower industrial and commercial tax burdens than the inland areas. At the end of the 1970s, the state implemented tax relief and preferential tax rates for the ethnic minority areas, and enterprises in border areas and autonomous counties were exempt from the industrial and commercial income tax for five years. Enterprises in the eight ethnic provinces and autonomous regions can retain 70 percent of their income after deducting non-operating expenses and extracting cooperative funds; the supply and marketing cooperatives in the three ethnic areas are subject to reduced income taxes, and ethnic handicraft enterprises are subject to periodic reduced income taxes. After the 1980s, the state expanded the preferential tax policies for the ethnic minority areas, and reduced and exempted from the income tax township enterprises in "old, small, border, and poor" regions. Since 2000, the western regions have been subject to more preferential taxation policies; the state now provides diverse levels of tax relief for local-funded enterprises and foreign-invested enterprises in industries that are encouraged by the state. To protect the environment, cropland has been converted to forests and grassland, but at the same time there was a ten-year agricultural product tax exemption for these lands to secure the income of the residents. Newly established transportation, electricity, water, postal and broadcasting enterprises in the western part of the country were also given a two-year tax exemption and a three-year one-half income tax exemption.

It is obvious that the financial and taxation preferential policies have played a significant role in promoting economic development, balancing the distribution of public services, coordinating regional development, and narrowing the income gap between minorities and

minority areas. At the same time, economic development contributed to poverty alleviation in the ethnic minority areas.

[Table 9.1 about here]

B. Population and Education Policies

To improve the skills of the minority populations, the Chinese government adopted various preferential and education policies in accordance with the various characteristics of the ethnic minorities during different periods. In the early years of the PRC, a "Population Prosperity" policy was adopted to increase fertility rates and to reduce mortality rates in order to increase the supply of labor. Meanwhile, the Chinese government adopted appropriate cultural and education policies and made earnest efforts to improve literacy among the minorities. There were special subsidies for ethnic education, seeking to improve school equipment, teacher benefits, student life, and specific requirements and difficulties for minority students. In the early 1980s, the state implemented a formal preferential population policy for ethnic minorities, which extended to both family planning and birth control (Zhang 1989). Additionally, beginning in the 1970s and especially in the 1980s, the state developed a series of "affirmative policies" for minority education. For example, ethnic minority students were given priority and allowed lower scores for admission to colleges and universities and minority students who face financial difficulties were given living allowances. These preferential policies to develop education in the ethnic minority areas included "preferential benefits for teachers who support education in the ethnic minority areas" (Guihua gangyao gongzuo xiaozu 2010). Implementation of the population and

education preferential policies for the ethnic minorities improved human resources in the ethnic minority areas and increased the employment and income of the ethnic minorities, thus accelerating the pace of poverty alleviation among the ethnic minorities and in ethnic minority areas.

[Table 9.2 about here]

C. Alleviating Poverty and Development Policies

The Chinese government has paid close attention to poverty alleviation among ethnic minorities and in ethnic minority areas. Beginning in the 1950s, the government shifted the focus of poverty alleviation and development to ethnic minorities and ethnic minority areas by granting them more preferential treatment in terms of both funding and policies. Among the 592 poverty counties identified in the "August 7th Poverty Relief Program," 257 of such counties were located in ethnic minority areas. This represented 43.4 percent of the total number of nationwide poverty counties and 38.9 percent of the total number of counties and cities in ethnic minority areas. The nationwide population living in absolute poverty totaled 80 million, of which 40 percent were ethnic minorities, and 35 percent of all ethnic minorities were living in poverty (Kang 1995: 147–50). In addition to general preferential policies for people living in poverty, the state also adopted a series of special preferential policies to support the development of ethnic minorities (see Table 9.3). Implementation of these poverty alleviation and development policies has played a significant role in revitalizing the ethnic economy, accelerating poverty alleviation, and promoting economic prosperity for all ethnic groups.

The above policies constitute only part of the national preferential policies for ethnic minorities. These policies, targeting the population living in poverty, have had positive effects in alleviating poverty for ethnic minorities and for ethnic minority areas. According to the official Chinese poverty line, from 2000 to 2014 the number of people living in poverty in eight ethnic provinces and autonomous regions decreased from 31.44 million to 22.05 million. The poverty-alleviation effects of the preferential policies for ethnic minorities and for ethnic minority areas depend on whether they are designed to address the actual situations and how policies are implemented. Therefore, under the same policy framework there could be different policy outcomes and there could be variations among the beneficiaries (Jian 2008). Some scholars have pointed out that it is necessary to make policy adjustments according to the different situations, and the preferential policies can be abolished in a timely manner "for those ethnic minorities who already are no different than the Han, or even have surpassed the Han (Wang 2009).

[Table 9.3 about here]

III. Data and Descriptions of the Sample

A. Data, Sample Selection, and Weights

For our analysis, we use data from the CHIP 2002 and the CHIP 2013 rural household surveys. Based on the CHIP 2002 and the CHIP 2013 this chapter discusses the status and changes of poverty among ethnic minorities and Han between 2002 and 2013. The 2002 survey includes twenty-two provinces and the 2013 survey includes fifteen provinces, all of which are included

in the 2002 survey. To outline the status and changes in poverty for ethnic minorities and Han, we select those fifteen provinces that are included in both surveys. Ethnic information is not available for individuals who lived in Xinjiang in 2002, so we have excluded Xinjiang. The remaining fourteen provinces are Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Shandong, Henan, Hubei, Hunan, Guangdong, Chongqing, Sichuan, Yunnan, and Gansu. The 2007 CHIP survey was mainly conducted in the central and eastern areas of the country, where there were very few provinces that were included in the 2002 and 2013 surveys, so we did not include the CHIP 2007 survey in our analysis. The respondents' ethnic and county-level locations are important for our analysis, so we dropped those observations that did not include any ethnic or county-level location information. There are 22,751 individual cases in the fourteen provinces in the 2002 survey and 38,961 individual cases in the corresponding provinces in 2013.

Although the sampling of the CHIP survey considers representatives from the eastern, central, and western areas of the country, there is still some regional bias. Therefore, we have adopted weights to address the sampling bias. All our analyses in the following sections use weights that consider the regional (eastern/central/western) and rural/urban/migrant populations of the country.

B. Ethnic Minority Regions and Counties

The State Ethnic Affairs Commission of the PRC defines ethnic minority areas as those where ethnic populations are highly concentrated. Ethnic autonomous areas include 5 autonomous regions/provinces, 30 autonomous prefectures, and 120 autonomous counties. In addition, the

Chinese government and academics refer to the five autonomous regions, including the Uygur, Ningxia, Guangxi, Inner Mongolian, and Tibetan autonomous regions, and the three multi-ethnic provinces, including Yunnan, Guizhou, and Qinghai, as the 'eight ethnic minority regions/provinces." All these autonomous areas and provinces, prefectures, and counties are subject to preferential policies. The autonomous counties in this chapter include some from counties in the eight ethnic minority provinces as well as some counties in other provinces. Because the fourteen provinces we have selected do not include the Uygur, Ningxia, Guangxi, Inner Mongolian, and Tibetan autonomous regions, but do include Yunnan, we cover very few typical ethnic autonomous areas; as a result, the selected areas are primarily atypical ethnic autonomous areas. Within this context, there were 836 ethnic minority counties in 2002 and 792 ethnic minority countries in 2013 in China. In the entire country, most ethnic minority counties are located in the eight ethnic minority provinces; only about 10 percent are located in autonomous counties of non-autonomous provinces (i.e., 48 ethnic autonomous counties located in non-autonomous provinces).

The CHIP 2002 contains eight ethnic minority counties and the CHIP 2013 dataset contains ten ethnic minority counties, as shown in Table 9.4. Yunnan is the only province from the sampled eight ethnic minority regions/provinces included among the fourteen provinces in our CHIP samples. The CHIP 2002 survey includes five counties, one autonomous county, and two counties under the jurisdiction of an autonomous prefecture, and the CHIP 2013 includes eleven counties and one autonomous county under the jurisdiction of an autonomous prefecture.

Based on the distribution of the ethnic minority counties in our sample, this chapter covers only a small portion of the typical ethnic minority areas; hence, we mainly focus on the income and poverty differences among Han and ethnic minorities in atypical ethnic minority areas.

[Table 9.4 about here]

C. Poverty Areas

This chapter uses two criteria to define whether a county is considered poor; any county that meets either one or both of the following criteria is considered poor. 1.) The counties given priority for poverty alleviation are commonly known as state-level poverty-stricken counties. According to the "2006 China Rural Poverty Alleviation and Development Report' by the State Council, there were 592 state-level poverty-stricken counties, of which 341 were ethnic autonomous counties. 2.) Based on the guidance of the "Outline of China's Rural Poverty Alleviation and Development Program (2011-2020)" and given the increasing demand for the poverty alleviation in the old revolutionary base areas, the ethnic minority areas, and the borderlands, the Chinese government has classified fourteen joint impoverished areas that are subject to special policies. They number 676 counties, among which 440 counties have been designated by the state as key counties requiring economic development and poverty alleviation. Those counties, numbering 828 nationwide, that meet both criteria are defined as poverty-stricken counties.

In the CHIP 2002 rural survey, there were 16 poor counties among the 74 counties in the dataset: 1 in Shanxi, 3 in Anhui, 1 in Hubei, 2 in Hunan, 1 in Chongqing, 1 in Sichuan, 3 in

Yunnan, and 4 in Gansu. There were 4 ethnic minority counties among the 16 poor counties in 2002. Among the 199 counties in the CHIP 2013 survey, 32 counties were considered poor: 5 in Shanxi, 2 in Anhui, 3 in Henan, 4 in Hubei, 4 in Hunan, 1 in Chongqing, 1 in Sichuan, 6 in Yunnan, and 6 in Gansu. There were 6 ethnic minority counties among the 32 poor counties in 2013.

[Table 9.5 about here]

D. Summary Statistics in the Sample

Table 9.6 is a summary of the individual- and household-level statistics based on the selected rural sample in the fourteen provinces of the CHIP 2002 and the CHIP 2013 surveys. Ethnic minorities constituted 7.2 percent of the 2002 sample, with Manchu, Yi, and Miao making up the three main ethnicities and accounting for 1.4 percent, 1.4 percent, and 0.4 percent respectively. Observations of the Manchu, Yi and Miao in 2002 total 580, 257, and 92, respectively. Ethnic minorities constituted 8.1 percent of the 2013 sample, with the Yi, Manchu, Zhuang, and Hui representing the main minorities, accounting for 1.8 percent, 0.9 percent, 0.5 percent, and 0.4 percent respectively. The corresponding observations totaled 666, 327, 179, and 157 respectively.

The share of individuals living in poor countries was 25.3 percent in 2013, roughly 5 percentage points higher than that in 2002, meaning that coverage of the 2013 survey might be somewhat more biased towards poor localities. The percentage of individuals living in ethnic minority counties was 8.4 percent in 2013, slightly lower than that in 2002. Compared with Han,

ethnic minorities apparently tended to live in poor counties and ethnic areas in both 2002 and 2013.

Individual and household characteristics in the two surveys are quite different. Comparing 2013 and 2002, the proportions of children were lower and the proportions of elderly were higher in 2013 as opposed to 2002. In the 2013 sample there was a slightly larger proportion of those who had finished senior high school or higher-level education, and a larger percentage of the sample was located in the western regions. Households were smaller in 2013 than they were in 2002. The percentage of households with village cadres decreased from 34.2 percent in 2002 to 6.4 percent in 2013. The percentage of households with Communist Party members decreased from 21.6 percent in 2002 to 15 percent in 2013. The proportion of households with at least one laborer working outside increased from 35.2 percent in 2002 to 45.7 percent in 2013.

[Table 9.6 about here]

IV. Income Inequality and its Changes in Selected Rural Samples of the Fourteen Provinces

The general income of ethnic minorities is apparently lower than that of Han, but the income gap between ethnic minorities and Han narrowed from 2002 to 2013 in the selected samples from the fourteen provinces. Table 9.7 reports the annual income for Han and ethnic minorities in the 2002 and 2013 surveys; the income is in nominal values, but we compare the differences

between 2002 and 2013 (considering the inflation) and the 2002 value is adjusted to the 2013 value to provide comparable prices.[3]

As shown in Table 9.7, the average annual income for Han in 2002 was 2,694 yuan; for ethnic minorities it was 1,934 yuan, or 72 percent that of Han income. The average Han income increased to 7,847 yuan in 2013 and the average ethnic minorities income increased to 6,120 yuan in 2013, which was 78 percent of Han income. The income of ethnic minorities increased 193 percent from 2002 to 2013, higher than the increase in Han income (160.6 percent). Although the income of ethnic minorities was lower than that of Han, its growth was faster, and therefore the income gap narrowed between 2002 and 2013. Furthermore, if we compare their quintile income ratios the degree of deviation of Han income and that of ethnic minorities was similar.

The income composition among Han and ethnic minorities was very different (see Table 9.8). The leading source of income was agricultural for both Han and ethnic minorities in 2002, but it was especially important for ethnic minorities, accounting for about 70 percent of the ethnic minority income in 2002. Wage income accounted 37.7 percent of Han income in 2002, whereas the corresponding rate for ethnic minorities was 17.9 percent—much less than that of Han. In 2013, wage income became the most important income source for both Han and ethnic minorities. It is striking that wage income for ethnic minorities from increased 4.7 times 2002 to 2013, and non-agricultural income increased 4.4 times during the same period. Moreover, the

[3] According to the National Bureau of Statistics (2015), 1985 was the starting year for the CPI. The 2002 rural consumer price fixed base index was 315.2 and the 2013 rural consumer price fixed base index was 449.9. Therefore, from 2002 to 2013, the coefficient of rural consumer price inflation was 1.43.

shares of property income, transfer income, and pension income also became more important in 2013 as compared to 2002.

In addition, it is worth noting that the shares of transfer and pension income for ethnic minorities were lower than the shares for Han in 2013. The literature indicates that redistributive policies, such as public transfers, play a key role in reducing inequality and poverty created by market forces. The two kinds of income sources mentioned above accounted for only 5.5 percent of the total income of ethnic minorities, whereas the corresponding number for Han was 10.7 percent. The mean amount of transfer income for ethnic minorities was roughly 260 yuan, which was only 43 percent of the corresponding amount for Han. The mean amount of pension income was

170 yuan, which was only 38 percent of the corresponding amount for Han.

[Table 9.8 about here]

Table 9.9 displays the income inequality indicators and their decomposition by ethnic group in selected samples of the fourteen provinces for 2002 and 2013. Compared to 2002, the Gini coefficient in 2013 increased by 14.8 percent for the entire sample. But the inequality of ethnic minorities increased more rapidly, with its Gini coefficient increasing by 24.3 percent, higher than the change for Han (14.8 percent). Inequality in ethnic minority areas also increased more rapidly than that in non-ethnic minority areas. This implies that inequality among ethnic minorities deteriorated during this period in atypical ethnic areas.

Regardless, the income gap between Han and ethnic minorities contributes little to the overall inequality in the rural areas of the fourteen provinces. We decomposed the inequality

index of the rural areas by Han and ethnic areas and found that the contribution of between-group ethnic inequality to inequality was less than 2 percent in 2002 and less than 1 percent in 2013.

[Table 9.9 about here]

V. Empirical Analysis of the Distribution of Poverty Households and Contributing Factors

A. Poverty Rate

Table 9.10 reports the poverty distribution and its change in the rural areas of the fourteen provinces from 2002 to 2013.[4] No matter whether we consider absolute poverty or relative poverty, ethnic minorities had a higher poverty rate, average poverty distance, and squared poverty distance than Han in both 2002 and 2013. Ethnic minority areas had a higher poverty rate, average poverty distance, and squared poverty distance than non-ethnic minority areas. The western areas had higher poverty rates, average poverty distance, and squared poverty distance than the central areas, and even a higher rate than the eastern areas. Children between the ages of 0 and 14 and seniors over 60 years old were much more likely to be living in poverty than the working-age population between the ages of 16 to 59 years old; people without any schooling exhibited a higher poverty rate than people with some education.

From the perspective of absolute poverty, the absolute poverty rate for the entire sample was 27.2 percent in 2002, but it declined to 8.8 percent at 2013, amounting to an 18 percentage point reduction; during the same period, the average poverty distance declined from 7.7 percent to 3.1

[4] We use the same poverty standards as those in Chapter 6 of this volume.

percent and the squared poverty distance decreased from 3.35 to 3 percent. The above reductions show that at the absolute poverty level the poverty rate, poverty depth, and poverty strength narrowed from 2002 to 2013.

But from the perspective of relative poverty, the poverty rate, poverty depth, and poverty strength increased 10.5 percentage points, 4.6 percentage points, and 3.2 percentage points respectively from 2002 to 2013. Thus, in terms of relative poverty, the poverty rate, depth, and strength were more serious. In sum, from 2002 to 2013 the income of people living in poverty increased, and two-thirds of the poor escaped absolute poverty. However, the income growth of people living in poverty was less than the growth in the median income, thus exacerbating relative poverty.

Based on a comparison between Han and ethnic minorities, from 2002 to 2013 there was a large decrease in absolute poverty among ethnic minorities. The number declined from 49.2 percent in 2002 to 13.1 percent in 2013, representing a 36 percentage point decrease. Absolute poverty among Han dropped from 25.5 percent in 2002 to 8.4 percent in 2013, representing a 17 percentage point decrease. However, both Han and ethnic minorities experienced an increase in their relative poverty rates; there was a 10.6 percentage point increase for Han and an 8.3 percentage point increase for ethnic minorities. The relative poverty rates for Han and the ethnic minorities in 2013 were 7.1 percent and 10 percent respectively.

Ethnic minority regions and areas witnessed significant decreases in absolute poverty rates. In 2002 the absolute poverty rate in ethnic minority areas was twice that in non-ethnic minority areas, whereas in 2013 the absolute poverty rate in ethnic minority regions had decreased by 49

percentage points. In 2013 the absolute poverty rate in both ethnic minority areas and non-ethnic minority areas was 8.8 percent.

But ethnic and non-ethnic minority areas showed different patterns in terms of their relative poverty rates. In non-ethnic minority areas, the relative poverty rate increased from 8.7 percent in 2002 to 21 percent in 2013, representing a 12.3 percentage point increase; the relative poverty rate in ethnic minority areas declined from 29.4 percent in 2002 to 25.1 percent in 2013. From 2002 to 2013 income growth for people living in poverty in ethnic minority areas helped 83.3 percent of the poor escape absolute poverty, exceeding the median income growth and alleviating their relative poverty levels.

The effects of poverty alleviation during the 2002–2013 period varied among the different population groups. There was a large decline in absolute poverty rates among the elderly and children. In terms of education, those with lower levels of education experienced a larger decline in absolute poverty. Among people without any formal education, absolute poverty declined by 46.8 percent and relative poverty declined by 1 percent. However, among people with primary school, junior high school, and senior school educations, the relative poverty rates increased. Among those with a junior high school education, the relative poverty rate increased to 13.3 percent. Broken down by regions, the central and western areas experienced a larger decline in absolute poverty, but the western areas experienced the largest increase in relative poverty, reaching 16.1 percent.

[Table 9.10 about here]

B. Poverty Equations

In this section, we discuss those factors that are associated with poverty as revealed in a regression analysis. Table 9.11 shows selected results of our Probit regression on absolute and relative poverty in 2002 and 2013. The table reports the marginal effect of the dummy ethnic variable from a regression that also includes various other control variables. When we do not include any control variables, in 2002 ethnic minorities had a 14.8 percent higher probability than Han to fall into absolute poverty, with the difference significant at the 10 percent level. The marginal effect declined slightly when we separately include education and household characteristics as controls and, as a result, the significance disappeared. Further, when we include regional characteristics, such as a provincial dummy, an ethnic minority county dummy, and a poverty county dummy, as controls there were dramatic changes in the marginal effect. In the regressions with controls for these regional effects, the estimated coefficient on the minority dummy variable became negative, and the Han had 6 percent higher probability than ethnic minorities to fall into absolute poverty. The results of regressions for relative poverty are similar to those for absolute poverty. In the relative poverty regressions that include the ethnic area and poverty area dummies, the Han had a roughly 5 percent higher probability than ethnic minorities to fall into relative poverty. The findings based on the 2013 dataset reveal a substantial narrowing of the difference between Han and ethnic minorities. There was no significant difference at all between Han and ethnic minorities in 2013 when we include all the controls.

Although we have observed that a higher proportion of ethnic minorities fell into poverty than Han both in 2002 and 2013 (see Table 9.10), the above regression analysis suggests that this may be attributed to the fact that ethnic minorities are mainly located in less-developed regions and the difference is not due to their ethnic identity.

It is worth noting that the marginal effect changes little when we include education as a control, but the difference in the marginal effect of the level of education between Han and ethnic minorities is interesting (see Table 9.9). The marginal effect of education on the probability of falling into poverty basically follows the principle that the higher the level of education, the lower the probability of poverty. The marginal effect for ethnic minorities at most levels of education is greater than the corresponding value for Han in both 2002 and 2013. This implies that in atypical ethnic minority areas, compared to Han improvements in education might be more effective in alleviating poverty among ethnic minorities.

[Table 9.11 about here]

[Table 9.12 about here]

C. Poverty Decomposition

Table 9.13 presents the Blinder-Oaxaca decomposition results for the risk of poverty among Han in 2002 and 2013. The decomposition is based on a Probit regression model; the reported coefficients are the logarithm of the ratio. The “explained” component of the decomposition is the share of the difference in the logarithm of the ratio between Han and ethnic minorities in the means of the characteristics, such as education, province, and so on. The remainder of the

difference is attributed to differences in the estimated coefficients and constants for Han and ethnic minorities. The “unexplained” component of the ethnic gap can reflect unobserved factors that are not captured by the regressions.

As shown in the Panel A of Table 9.13, education can only explain 2–4 percent of the Han and ethnic minority poverty differences in 2002, both in terms of absolute and relative poverty. This is even less in 2013. Most of the poverty gap between Han and ethnic minorities was unexplained in 2013, in other words, in 2013 the poverty gap between Han and ethnic minorities was associated with differences in the returns to the characteristics or to unobserved characteristics.

When we include the province dummy variables as control variables (Panel B of Table 9.13), in 2002 the proportion of the explained part increased to about 30 percent in both the absolute and relative poverty gaps. But in 2013 the unexplained part is still largely attributed to the returns from the characteristics or to unobserved characteristics. Further, in view of the fact that intra-provincial developmental levels varied greatly, we added ethnic county and a poverty county dummy variables as controls (Panel B of Table 9.13). The proportion of the explained part then increases. Roughly 45 percent of the absolute poverty gap and 36 percent of the relative poverty gap among Han and ethnic minorities in 2002 were explained. But the explained proportion in 2013 remained small. We can only explain 6 percent of the absolute poverty gap and 19 percent of the relative poverty gap between Han and ethnic minorities in 2013.

Based on the above decompositions, we can conclude that compared to individual characteristics, such as education, the contribution of regional characteristics is more important

when explaining the poverty gap between Han and ethnic minorities. Furthermore, the differences and contributions of endowments to poverty between Han and ethnic minorities have changed over time. The differences in poverty rates between Han and ethnic minorities have narrowed. In 2002, education, province, ethnic area, and poverty area variables explain more than one-third of the different poverty levels between Han and ethnic minorities. But the corresponding contributions in 2013 were much smaller. The unexplained part in 2013 can largely be attributed to differences between Han and minorities in the returns from characteristics or to unobserved characteristics.

[Table 9.13 about here]

VI. Conclusions and Discussion

The central government has implemented a series of major policies to boost the economy and income of the ethnic minority population and ethnic minority regions during the past several decades. The amount of investment has been huge, especially after implementation of the Western Development Strategy in 2000. As a result, the income gap and the poverty differences between Han and ethnic minorities changed dramatically. The literature has generally discussed patterns within the western ethnic minority regions, and we know very little about patterns in atypical ethnic regions, such as those in the central or eastern regions, or even in non-ethnic minority areas in the western region. In this chapter, using a selected rural sample

from the CHIP 2002 and the CHIP 2013 surveys in fourteen provinces, we have focused on the ethnic differentiation of income and poverty and its changes over time in atypical ethnic regions.

The income of ethnic minorities has always been lower than that of Han, as shown by our analysis as well as in other literature, but the income gap between ethnic minorities and Han narrowed from 2002 to 2013 in atypical ethnic areas. At the same time, it is worth noting that inequality among ethnic minorities increased more when compared to inequality among Han during the same period. Our decomposition of the inequality index shows that the income gap between Han and ethnic minorities is mainly attributed household characteristics and location of residence rather than to their ethnic status. In addition, although public transfers have been proved to be an effective way to reduce income inequality, the share of transfer income and pension income in the total income for ethnic minorities has been significantly less than the share for Han.

Poverty patterns have changed for both Han and ethnic minorities. But the changes in absolute poverty and relative poverty have been in the opposite direction. The poverty rate, poverty depth, and poverty strength have narrowed at the absolute poverty level. But the poverty rate, poverty depth, and poverty strength have increased at the relative poverty level. From the perspective of ethnic differentiation, in terms of both absolute poverty and relative poverty ethnic minorities experienced higher poverty rates, average poverty distances, and squared poverty distances than Han in both 2002 and 2013. Descriptive analysis shows that the ethnic differentiation of poverty narrowed during the 2002–2013 period. Regression analysis suggests that this may be attributed to the fact that ethnic minorities are mainly located in less-developed

regions rather than being attributed to their ethnic identity. The poverty level among Han is even more serious than that among ethnic minorities when we control for all the regional variables. Although the contribution of education to the differences in poverty are not very large, it is worth noting that the coefficient for education of ethnic minorities is significantly larger than that for Han, meaning that the education may be more effective for poverty alleviation among Chinese ethnic minorities.

The conclusions from this research provide some policy suggestions to alleviate poverty and improve income equality among minorities: 1.) When dealing with the increase in income inequality among ethnic minorities, income redistribution policies should be tilted more toward the minority population; 2.) Ethnic identity is not a major factor when considering anti-poverty strategies among minorities who live in atypical ethnic areas. Since the location of residence is a key factor determining the level of poverty, two kinds of policy will contribute to alleviating poverty among minorities: either helping them migrate to more developed areas or providing those minorities living in underdeveloped regions with more resources; 3.) The development of education is an effective way to alleviate poverty among minorities.

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Table 9.1. ***Preferential economic policies in ethnic minority areas***

Preferential Policy	Period of Implementation
National Subsidies for Ethnic Minority Residential Areas	1955–present
National Preferential Fiscal Policies for Ethnic Minority Residential Areas	1964–present
National Subsidies for Construction in Border Areas	1977–present
National Subsidies and Development Funds for Underdeveloped Areas	1980–present
National Fiscal Transfer Payments for Ethnic Minority Residential Areas	1995–present
Lower Tax Rates for Agriculture and Animal Husbandry in Ethnic Minority Residential Areas	1953–present
Tax Reductions for Agriculture in Ethnic Minority Residential Areas	1958–present
Income Tax Exemptions and Reductions for "Old, Small, Border[land], and Poor" Areas	1985–present
Regulated Tax Reductions for Fixed-Asset Investments in Ethnic Minority Residential Areas	1992–present
Three-year Income Tax Exemptions for Newly Established Enterprises in "Old, Small, Border[land], and Poor" Areas	1994–present
10 percent Agricultural Product Tax for the Acquisition of Raw Tea Materials along the Borders	1994–present
Periodical Reductions or Exemptions of Enterprise Income Taxes for Local Enterprises in the Western Autonomous Regions	2001–2010
Two-year Tax Exemptions and Three-year Half Income Tax Exemptions for Newly Established Transportation, Electricity, Water, Post, and Broadcasting Enterprises in the Western Regions	2001–2010
Ten-year Agricultural Product Tax Exemption for Agricultural Products in Areas Where Farmland Has Been Converted to Forests and Grasslands	2001–2010

Sources: Wen 2004; Li 2011; Han 2012.

Table 9.2. ***Preferential population and education policies for ethnic minorities***

Preferential Policy	Period of Implementation
"Population Prosperity" policy for ethnic minorities	1951–1980
Family Planning and Birth Control Policies for Ethnic Minorities	1982– present
Family Planning and Birth Control in Ethnic Minority Residential Areas	1982– present
Preferential Family Planning and Birth Control Policies for Ethnic Minorities	1984– present
Ethnic Colleges and Universities	1950– present
Special National Funds and Subsidies for Ethnic Minority Education	1952– present
Launch of a Nationwide Education Administrative Organization for Ethnic Minorities	1952– present
Taking Ethnic Characteristics into Consideration when Establishing Ethnic Minority Education	1951– present
National Provisions for Education Expenditures at Ethnic Colleges and Universities	1963– present
Admission of Ethnic Minority Students to Colleges and Universities on the Basis of Lower Scores	1977– present
Special Education Benefits for Various Ethnic Minorities	1979– present
National Policy for Developing Ethnic Education	1981– present
Preferential Policies for Vocational and Technical Education in Ethnic Minority Areas	1992– present
National Exemptions of Education Fees for Children from Poverty Households	1985– present
Corresponding Support for Schools in Western China	2000– present
Comprehensive Training Program for Primary and Secondary School Teachers in Ethnic Poverty Areas	2000–2003
Comprehensive Training Program for Teachers and New Curricula for Primary and Secondary Schools in Ethnic Poverty Areas	2004–2008

Sources: See Table 9.1.

Table 9.3. ***Poverty alleviation and development policies in ethnic minority areas***

Policy	Period of Implementation
Establishment of National Poverty Standards for Counties	1986–present
Poverty Ethnic Minority Areas Receive Special Consideration in Terms of the Allocation of Agricultural Materials	1989–present
Poverty Ethnic Minority Areas Receive Special Consideration in Terms of Funding Allocations	1989–present
Ethnic Minority Enterprises in Poor Ethnic Minority Areas are Subject to Low Interest Rates on Loans, Low Taxes, and Price Subsidies from the State	1989–present
Ethnic Minority Areas are Allowed Extended Periods for Loan Repayments	1989–present
The State Provides Financial Support for the Construction of Transportation in Poor Ethnic Minority Areas	1991–present
Scientific and Technical Personnel Working in Ethnic Minority Areas May Receive State Subsidies	1993–present
Nationwide Implementation of the "Work-for-Food" Program	1984–present
Nationwide Implementation of the “Adequate Food and Clothing” Program	1989–present
Nationwide Implementation of the “August 7th Poverty Relief Program”	1994–2000
Nationwide Implementation of Poverty Alleviation Loans	1983–present
Nationwide Implementation of Subsidized Loans for Poor Pastoral Areas	1987–present
Nationwide Implementation of Special Loans for Enterprises in Poor Counties	1988–present
National Funding for Adequate Food and Clothing in Poor Ethnic Minority Areas	1990–present
Western Development in the Eleventh Five-Year Plan	2006–2010
Western Development in the Twelfth Five-Year Plan	2011–2015
Bringing Prosperity to the Borderlands and Enriching the People in the Eleventh Five-Year Plan	2006–2010
Bringing Prosperity to the Borderlands and Enriching the People in the Twelfth Five-Year Plan	2011–2015
Development Plan for Support of Less Populous Ethnic Minorities	2005-2010
Development Plan for Support of Less Populous Ethnic Minorities	2011–2015
Ethnic Minority Public Affairs in the Eleventh Five-Year Plan	2006–2010
Ethnic Minority Public Affairs in the Twelfth Five-Year Plan	2011–2015
Outline of Chinese Rural Poverty Alleviation	2001–2010
Outline of Chinese Rural Poverty Alleviation	2011–2020

Sources: See Table 9.1.

Table 9.4. ***Counts of ethnic minority counties in China, the CHIP 2002 survey, and the CHIP 2013 survey***

	China	In the CHIP survey
2002		
Total number of ethnic minority counties	836	8
Counties in the eight ethnic minority provinces	700	5
Counties in ethnic autonomous prefectures	88	2
Ethnic autonomous counties	48	1
2013		
Total number of ethnic minority counties	792	12
Counties in the eight ethnic minority provinces	664	11
Counties in ethnic autonomous prefectures	80	0
Ethnic autonomous counties	48	1

Notes: The counts of the national ethnic minority counties are based on the administrative divisions reported on the official websites of the National Bureau of Statistics of China. http://www.stats.gov.cn/tjsj/tjbz/xzqhdm/ Accessed January 24, 2017.

Table 9.5. ***The counts of poverty counties in the CHIP 2002 and the CHIP 2013 surveys***

	Poverty counties		Not poverty counties		Total
	Ethnic minority county	Not ethnic minority county	Ethnic minority county	Not ethnic minority county	
2002	4	12	4	54	74
2013	6	26	6	161	199

Table 9.6. ***Summary statistics for the selected rural sample, 2002 and 2013***

Units: percent, persons

	2002			2013		
	All	Han	Ethnic minorities	All	Han	Ethnic minorities
Panel A: Individual level						
Percentage ethnic minorities	7.2	--	--	8.1	--	--
Percentage living in poverty areas	20.8	5.0	79.0	25.3	4.2	55.8
Percentage living in ethnic areas	10.9	19.1	40.6	8.4	21.8	64.2
Age structure						
0–14 years	19.7	19.3	24.2	15.3	15.0	18.4
15–59 years	72.1	72.5	66.7	67.7	67.8	66.4
60+ years	8.2	8.2	9.1	17.0	17.1	15.2
Total	100	100	100	100	100	100
Education						
No schooling	9.0	8.6	14.7	10.5	10.4	11.8
Primary school	33.1	32.3	41.2	30.4	29.7	39.2
Middle school	42.4	43.2	34.3	40.8	41.4	34.5
High school+	15.4	15.9	9.8	18.2	18.6	14.4
Total	100	100	100	100	100	100
Region						
Eastern	31.5	32.3	22.4	33.8	35.5	14.1
Central	42.4	44.3	20.8	38.2	38.7	31.8
Western	26.2	23.5	56.8	28.1	25.8	54.1
Total	100	100	100	100	100	100
Panel B: Household level						
Percentage with Chinese Communist Party (CCP) member	21.6	21.4	24.4	15.0	14.9	15.5
Percentage with cadre	34.2	34.4	31.9	6.4	6.5	6.1
Percentage with laborer working outside	35.2	36.1	24.7	45.7	46.0	42.2
Household size (persons)	4.0	4.0	4.3	3.7	3.7	4.0

Table 9.7. ***Annual income of Han and ethnic minorities, 2002 and 2013***

	All	Han	Ethnic minorities
2002			
Mean (yuan)	2633.3	2694.0	1934.4
Median (yuan)	2152.0	2202.8	1561.2
p90/p10	4.6	4.6	4.4
p75/p25	2.2	2.2	2.1
2013			
Mean (yuan)	9,882.6	10,039.6	8,109.4
Median (yuan)	7,676.4	7,847.7	6,120.2
p90/p10	6.7	6.6	6.4
p75/p25	2.7	2.7	2.6
2002–2013 change (percent）			
Mean	162.4	160.6	193.2
Median	149.4	149.1	174.1

Note: We used comparable prices when computing the rate of the increase in income between 2002 and 2013.

Table 9.8. ***The composition of income for Han and ethnic minorities***

	2002			2013			Increase in income, 2002–2013 (percent)		
	Total	Han	Ethnic minorities	Total	Han	Ethnic minorities	Total	Han	Ethnic minorities
Income composition (percentage)									
Wage income	36.5	37.7	17.9	47.1	47.8	36.7	229.5	222.4	476.8
Agricultural income	44.3	42.7	70.5	22.1	21.3	33.7	27.4	26.6	34.6
Non-agricultural income	13.7	14.0	7.7	13.0	12.8	14.7	142.2	132.1	436.1
Property income	4.7	4.8	3.7	7.5	7.3	9.3	304.9	290.3	605.9
Transfer income	0.8	0.8	0.1	5.9	6.1	3.3	1776.0	1727.0	6999.3
Pension income	0.0	0.0	0.0	4.4	4.6	2.2	-	-	
Total	100.0	100.0	100.0	100.0	100.0	100.0			

Table 9.9. ***Decomposition of income inequality by Han & ethnic minority***

	2002		2013	
	GE(0)	GE(1)	GE(0)	GE(1)
Theil index	0.204	0.215	0.279	0.276
within group	0.200	0.212	0.278	0.275
between group	0.004	0.003	0.001	0.001
% of between group	1.96	1.40	0.36	0.36
Gini coefficient	0.345		0.396	
Gini coefficient of Han	0.343		0.394	
Gini coefficient of Ethnic minorities	0.325		0.404	

Table 9.10. ***Poverty rates and their changes, 2002 and 2013***

Unit: Percentages

	2002						2013						Change from 2002 to 2013	
	Absolute			Relative			Absolute			Relative			Absolute	Relative
	FGT (0)	FGT (1)	FGT (2)	FGT (0)	FGT (1)	FGT (2)	FGT (0)	FGT (1)	FGT (2)	FGT (0)	FGT (1)	FGT (2)	FGT (0)	FGT (0)
All	27.2	7.7	3.3	10.8	2.7	1.1	8.8	3.1	3.0	21.3	7.4	4.3	-18.4	10.5
Han	25.5	7.1	3.0	10.0	2.6	1.1	8.4	3.0	1.7	20.6	7.1	3.7	-17.1	10.6
Ethnic minorities	49.2	14.9	6.2	21.2	5.1	1.9	13.1	5.1	17.0	29.6	11.0	11.7	-36.1	8.3
0–14 years	31.8	9.3	4.0	13.3	3.4	1.4	10.5	3.6	2.1	25.2	8.8	4.6	-21.3	11.9
16–59 years	25.6	7.1	3.0	9.8	2.5	1.0	8.4	3.1	3.5	19.9	7.0	4.4	-17.2	10.1
60+ years	31.1	9.1	4.0	13.3	3.3	1.5	9.0	3.0	1.7	23.5	7.7	3.9	-22.1	10.1
No school	56.9	17.8	8.5	24.5	9.1	3.5	10.2	2.8	1.1	23.5	7.7	3.6	-46.8	-1.0
Primary	43.5	14.5	6.5	21.5	5.8	2.3	8.4	2.4	1.1	26.7	7.9	3.4	-35.1	5.2
Middle	29.8	8.2	3.5	11.2	2.9	1.2	10.2	3.6	4.6	24.4	8.5	5.5	-19.5	13.3
High school+	21.0	5.7	2.4	8.2	2.0	0.8	7.5	2.9	1.8	17.4	6.3	3.5	-13.5	9.2
Eastern	13.7	3.7	1.7	5.0	1.4	0.7	4.6	1.6	1.1	11.9	4.0	2.1	-9.1	6.9
Central	32.0	8.8	3.6	12.4	3.0	1.1	8.8	3.2	2.0	22.2	7.6	4.0	-23.2	9.8
Western	36.6	10.9	4.7	15.3	4.0	1.7	13.9	4.9	6.6	31.4	11.2	7.5	-22.7	16.1
Non-ethnic areas	23.8	6.3	2.6	8.7	2.1	0.8	8.8	3.1	1.8	21.0	7.3	3.9	-15.0	12.3
Ethnic areas	57.5	19.9	9.3	29.4	8.5	3.6	8.8	3.5	15.5	25.1	8.2	9.7	-48.7	-4.3

Notes: The absolute level was equivalent to 2,300 yuan in 2010 and the relative level was equivalent to 50 percent of the median income in 2010. The absolute poverty level and the relative poverty levels in 2002 were 1522 yuan and 1,045 yuan respectively. The corresponding levels in 2013 were 2,736 yuan and 4,308 yuan respectively.

Table 9.11. ***Marginal effect of the ethnic dummy variable (Han=0, ethnic minority=1) on the probability of poverty***

	2002	2013
Panel A: dependent variable=absolute poverty		
Marginal effect, no controls	0.146*	0.042***
Marginal effect, with education controls	0.125	0.043***
Marginal effect, with education and household characteristics controls	0.104	0.032**
Marginal effect, with education, household characteristics, province, ethnic area, and poverty area controls	-0.061**	0.021
Panel B: dependent variable=relative poverty		
Marginal effect, no controls	0.067	0.092***
Marginal effect, with education controls	0.055	0.088***
Marginal effect, with education and household characteristics controls	0.040	0.067**
Marginal effect, with education, household characteristics, province, ethnic area, and poverty area controls	-0.049***	0.031

Notes: 1.) The above estimates are from Probit regressions with the poverty dummy variable as the dependent variable, estimated using the pooled Han and ethnic minority household-level dataset. Education corresponds to the maximum attainment of education in the household. Household characteristics include the number of household members, the dependency ratio, if there are any cadres in the household, and if there are any CCP members in the household. Ethnic area corresponds to the ethnic county dummy and poverty area corresponds to the poverty county dummy. 2.) *** $p<0.01$, ** $p<0.05$, and * $p<0.1$.

Table 9.12. ***Marginal effect of educational attainment on the probability of poverty, base group=senior high school or above***

	2002	2002	2013	2013
	Han	Ethnic minorities	Han	Ethnic minorities
Panel A: dependent variable=absolute poverty				
No school	-0.048	-	0.085**	0.307*
Primary school	0.131***	0.262***	0.018	0.014
Junior high school	0.044***	0.134***	0.015**	0.000
Panel B: dependent variable = relative poverty				
No school	0.074	0.367***	0.200***	0.213
Primary school	0.061***	0.156***	0.095***	0.159***
Junior high school	0.018**	0.025	0.045***	0.042

Notes: 1.) The above estimates are from separate Han and ethnic minority Probit regressions with the poverty dummy variable as the dependent variable, estimated using the household-level dataset. The education variables index the maximum level of educational attainment in the household. 2.) "–" indicates cannot be estimated because all the corresponding observations fall under absolute poverty. 3.) *** $p<0.01$, ** $p<0.05$, and * $p<0.1$

Table 9.13. ***Oaxaca-Blinder poverty decomposition, based on a Probit model***

	If absolute poverty in 2002	If relative poverty in 2002	If absolute poverty in 2013	If relative poverty in 2013
Panel A: Only education is controlled				
Total coefficient differential (T = E+C)	-0.4507	-0.3217	-0.2478	-0.2919
Amount attributable to:				
endowments (E)	-0.0172	-0.0091	-0.0002	-0.0030
coefficients + constant term (C)	-0.4335	-0.3126	-0.2476	-0.2889
% of total explained by endowments (E/T)	3.8	2.8	0.1	1.0
% of total unexplained (C/T)	96.2	97.2	99.9	99.0
Panel B: Education and province are controlled				
Total coefficient differential (T = E+C)	-0.4784	-0.3825	-0.2695	-0.2760
Amount attributable to:				
endowments (E)	-0.1553	-0.1127	0.0028	-0.0062
coefficients + constant term (C)	-0.3231	-0.2698	-0.2722	-0.2698
% of total explained by endowments (E/T)	32.5	29.5	-1.0	2.3
% of total unexplained (C/T)	67.5	70.5	101.0	97.7
Panel C: Education, province, ethnic county, and poverty county are controlled				
Total coefficient differential (T = E+C)	-0.4956	-0.4243	-0.2648	-0.2877
Amount attributable to:				
endowments (E)	-0.2210	-0.1535	-0.0168	-0.0539
coefficients + constant term (C)	-0.2746	-0.2708	-0.2480	-0.2338
% of total explained by endowments (E/T)	44.6	36.2	6.3	18.8
% of total unexplained (C/T)	55.4	63.8	93.7	81.2

Notes: The reported coefficients are the logarithm of the ratio. The differential is the Han coefficient minus the coefficient of ethnic minorities. This is regressed on the household-level dataset and education, corresponding to the maximum education level in the household. We used a Probit regression in the decomposition, and education and province were treated as categorical independent variables.