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Introduction and Impact of Preferential Policies on Ethnic Minority Groups in China

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INTRODUCTION AND IMPACT OF PREFERENTIAL POLICIES ON ETHNIC MINORITY GROUPS IN CHINA*

I. INTRODUCTION OF ETHNIC MINORITY GROUPS IN CHINA

The People's Republic of China has been a united multi-ethnic country since ancient times. There are a total of 56 nationalities in China, with 55 of them being ethnic minorities (and the total population being 113.79 million in 2010). While the Han ethnic group has the largest population, the other 55 ethnic groups are relatively small, which is why they are customarily referred to as 'ethnic minorities'. According to the sixth national census conducted in 2010, the population of Han accounted for 91.51 per cent of the total population of the mainland, and for 8.49 per cent of the total population of ethnic minorities. The distribution of the population indicates that members of the Han group mainly live in the Yellow River Valley, Yangtze River Valley, Pearl River Valley, and the Songliao Plains, while the ethnic minorities are mainly concentrated in the Western areas of China, that is, the northeast, northwest and southwest regions. Most of the ethnic groups in China live together over vast areas while some of them live in individually concentrated communities in small areas. In some cases, members of the minority communities can be found to be concentrated groups in areas inhabited mainly by the Han group, while in other cases, the situation is just the opposite.

In the past, the socio-economic development of the minority areas was relatively neglected as compared to that of Han areas. Even the poor people in the areas inhabited by the ethnic minority live in worse macro-social and economic environments than the poor people in the Han nationality areas. It is estimated that 257 ethnic minority groups live in 592 poverty-stricken counties at the state level,

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which are distributed across 19 provinces and autonomous regions of China, including some developed coastal provinces like Zhejiang, Guangdong, and Liaoning. Among these, 83.6 per cent (215 counties) of the poverty-stricken counties dominated by ethnic minorities are mainly concentrated in the central and western parts of China, primarily the western areas, that is, Inner Mongolia (31), Xinjiang (25), Ningxia (8), Guangxi (28), Tibet (5), Yunnan (51), Guizhou (34), Qinghai (12), Sichuan (21), and Gansu (12). The poverty incidents in these counties are as follows: Ningxia, 20.69 per cent, Shaanxi, 12.25 per cent, Gansu, 19.92 per cent, Xinjiang, 22.19 per cent, Sichuan, 9.37 per cent, Yunnan, 17.1 per cent, Inner Mongolia, 10.9 per cent, Guizhou, 17.4 per cent, Guangxi, 11.9 per cent, Tibet, 19.0 per cent, and Qinghai, 21.8 per cent.

II. PREFERENTIAL POLICIES FOR ETHNIC MINORITIES AND ETHNIC MINORITY AREAS

1. Ethnic Minorities

A. Adherence to Equality and Unity among Ethnic Groups

The Chinese government has adopted preferential policies and measures to guarantee the right to equality for all ethnic groups, which is prescribed by the Constitution and law, in social life and government activities. As a result, a favorable social environment has been created for ethnic groups whereby they can treat each other on an equal footing and develop a relationship of unity, harmony, friendship and mutual assistance amongst themselves.

(i) Protection of the Personal Freedom of Ethnic Minorities:

After the founding of the People's Republic of China, the Chinese government adopted a number of measures to initiate democratic reform in the minority areas in accordance with the will of establishing minority communities in these areas, and completed the reform in the late 1950s. This reform abolished all the privileges enjoyed by the elite classes, including the feudal lords, nobles and tribal chiefs, as also the erstwhile system that encouraged the exploitation and oppression of the

under-privileged classes by the elite. Consequently, tens of thousands of people belonging to the minority communities won emancipation and personal freedom, and became masters of their homelands and their own destinies.

(ii) All Ethnic Groups Participate in State Affairs on an Equal Footing:

In areas where ethnic minorities live in concentrated communities, each of them may have its own deputy or deputies sitting in the local people's congresses. Ethnic minorities living in scattered groups may also elect their own deputies to the local people's congresses, and the number of people represented by each of their deputies may be less than the number of people represented by each of the other deputies to such congresses.

The State has made great efforts to train ethnic minority cadres and enlist their service. To date, there are well over 2,700,000 minority cadres throughout the country. The ethnic minorities also have a fairly large number of personnel working in the central and local state organs, administrative organs, judicial organs, and procuratorial organs, who participate in the administration of national and local affairs.

(iii) Identification of Ethnic Minorities:

After the founding of the People's Republic of China, the State has organized large-scale investigations since 1953 to identify the ethnic groups in order to comprehensively implement the policy of equality among them. Every group which fulfills the requisite criteria for scientific identification as an ethnic group, including the past and present conditions under which it exists, and its aspirations and desires, is identified as a single ethnic group, regardless of its level of social development and the sizes of its inhabited area and population. Currently, in New China, many ethnic minority groups, which had not been recognized as such by the rulers of China before 1949, have been accorded due recognition, thereby ensuring that all of them enjoy equal rights with other ethnic groups in China.

B. Regional Autonomy for Ethnic Minorities

In China, granting regional autonomy to ethnic minorities is a basic policy adopted by the Chinese government in accordance with the actual conditions prevalent in the country, which also constitutes an important part of the political system of China. Regional autonomy for ethnic minorities implies that under the unified leadership of the State, regional autonomy is practiced in areas wherein people belonging to the ethnic minorities live in concentrated communities; in these areas, organs of self-government are established for ensuring autonomy and for enabling the members of these ethnic minorities to undertake the task of administration and manage the internal affairs of their own regions.

The autonomous areas for ethnic minorities in China include autonomous regions, autonomous prefectures and autonomous counties (banners). By the end of 1998, 5 autonomous regions, 30 autonomous prefectures and 120 autonomous counties (banners) had been established, in addition to 1,256 ethnic townships. Among the 55 ethnic minorities, 44 have their own autonomous areas, accounting for 75 per cent of the total population of ethnic minorities and 64 per cent of the total area of the whole country. The number and distribution of the autonomous areas are basically the same as the distribution and composition of the ethnic groups nationwide.

The system of regional autonomy for ethnic minorities has been established after a long period of exploration and trial. The Programme for the Implementation of Ethnic Regional Autonomy of the People's Republic of China, issued on 8 August 1952, embodied the overall arrangements for the implementation of regional autonomy for national minorities. The Constitution of the People's Republic of China, which was adopted in 1954 and later amended and promulgated, defines this autonomy as being an important political system of the State. The Law of the People's Republic of China on Ethnic Regional Autonomy, promulgated in 1984, contains systematic provisions on the political, economic and cultural rights and duties of the ethnic minority autonomous areas. After the founding of the People's Republic of China, four autonomous regions were established successively: the

Xinjiang Uygur Autonomous Region, founded in October 1955; the Guangxi Zhuang Autonomous Region, founded in March 1958; the Ningxia Hui Autonomous Region, founded in October 1958; and the Tibet Autonomous Region, founded in September 1965.

C. Preservation and Development of the Cultures of Ethnic Minorities

China's ethnic minorities have evolved their unique cultures during the long process of historical development. China respects and preserves the traditional cultures of ethnic minorities, and all of them are free to pursue and develop their respective cultures, which are accorded due respect by the State. The various ethnic minority groups in China differ widely in terms of the folk traditions and customs they follow. They have different modes of production and lifestyles, manifested in their different forms of dress and adornments, diet, homes, etiquette, and rituals followed during marriages and funerals. The minority peoples also have the right to retain or change their folk traditions and customs, and the government protects such rights in every aspect of social life.

In order to preserve the traditional cultures of the ethnic minorities, the State has formulated plans and appointed specialists to oversee the collection, editing, translation, and publishing of documents pertaining to their cultural heritage and to protect of their famous historical monuments, scenic spots, rare cultural relics and other important items of the historical and cultural heritage. The Chinese government has also set up special institutions for carrying out the collection, editing, translation, and research of the major epics of the following three ethnic minorities: Gesars of the Tibetan, Jianggar of the Mongolians, and Manas of the Kirgiz. The three epics and treatises of these minority groups have been published in the appropriate ethnic minority languages, as well as in Chinese and foreign languages. The publication of the Corpus of Gesar Studies, a treatise of more than three million words, for instance, also highlighted the academic contribution of many distinguished experts on Gesar studies. In recent years, the State has earmarked tens of millions of

yuans for publishing the Zhonghua Dazang Jing, an encyclopedia of Tibetan studies in 150 volumes.

There are a large number of cultural groups and organizations in the autonomous areas, including 534 art troupes, 194 sites for art performances, 661 libraries, 82 mass art centers, 679 cultural centers, 7,318 culture dissemination stations, and 155 museums. Furthermore, there are 24 art colleges and secondary level art schools in the five autonomous regions and in the provinces of Yunnan, Guizhou and Jilin, especially for fostering artistically talented people among China's ethnic minorities.

2. Preferential Policies for Minority Areas

A. Special Preferential Policies

Since the ethnic minority areas have traditionally suffered from low economic development, and cultural and educational levels, as also a shortage of human resources, the State implements special preferential policies in terms of finance and taxation for these areas. Simultaneously, it also pursues appropriate favorable policies to promote their population development, culture, and education, and provides human resources training to encourage economic development, thus wholeheartedly helping the ethnic minorities in developing their economy and culture.

(i) Preferential financial policies:

The ethnic minority areas not only cover vast tracts of land catering to a large number of unique minority groups, but are also characterized by rigorous natural conditions, and apparent differences in social customs among different ethnic minorities, and entail large-scale expenditures in terms of administration and various production and living expenses. It is for this reason that the State began implementing preferential financial policies for the ethnic minority areas. According to these policies, in addition to the costs of implementing an autonomous system, the balance of receipts of finances incurred in the ethnic minority areas are to be submitted to the Central Government, and the deficit is subsidized by the State, which offers special subsidies for these areas including production subsidy, health subsidy, social

welfare money, and interest-free loans. After the adoption of a policy of financial subsidy, soon after the founding of the People's Republic of China, the Government also played a significant role in ensuring the stabilization of the social economy and in restoring and promoting production of various goods and services. In the 1960s, with the gradual restoration of economic development in the ethnic minority areas, the State implemented the preferential policies of 'appropriate favorable financial treatment, and necessary subsidies'. It has stipulated that the balance during the previous year and extra dividends earned from the implementation of the annual budget in the autonomous ethnic minority areas would be collected and used by the local governments of such areas.

(ii) Preferential Taxation Policies:

Different preferential taxation policies have also been adopted for the ethnic minority areas on the basis of their typical characteristics, the unique features of the different industrial departments, and different phases of their social and economic development. These policies are aimed at alleviating the economic burden of the ethnic minorities, as well as ensuring the smooth functioning of various departments in the ethnic minority areas including agriculture, livestock farming, industry, traffic, and construction works. From the 1950s till date, the Chinese government has been implementing light tax policies, that aim "to collect tax according to laws, to reduce and exempt tax according to laws, and not to increase tax even when production increases" for the purpose of accelerating development in basic industries including agriculture, and livestock farming in the ethnic minority areas. The tax policy being pursued in these areas is, in fact, more liberal than that adopted for the agricultural and urban areas, and it also stipulates 'less reduction [of tax] in case of light disaster, more reduction in case of serious disaster, and exemption in case of grand disaster' in the ethnic minority areas and in poverty-stricken areas, which are characterized by low living standards, poor production levels, and haphazard traffic conditions. Further, industrial and commercial taxes have also been reduced, and in some cases completely exempted, in the ethnic minority areas. The implementation of these

policies, especially the lighter tax policies for the agriculture and livestock farming, therefore, promotes rehabilitation and accelerated production in the vast agricultural and pastoral areas inhabited by various ethnic minority populations.

(iii) Population Education Policies:

In order to improve the quality of the population and living standards of the ethnic minorities, and to facilitate the economic and cultural progress of the areas inhabited by these groups, the Chinese Government has also taken proactive measures to formulate appropriate policies for population education. As part of this objective of promoting the accelerated economic development of the ethnic minority areas, the Government implemented the ‘Population Boom’ policy in the 1950s, with its core contents being ‘to encourage childbirth, improve fertility rate, lower [the] mortality rate, and increase the quantity of population and labor forces’. Since the middle of the 1960s, this policy has ensured a favorable turn from the slow growth, or even negative growth of the ethnic population witnessed over a long period, a much faster growth. During this period, the State not only attached great importance to multiplying the ethnic population, but also implemented the necessary cultural and educational policies so as to improve the cultural levels of the ethnic population.

B. Industrial Development Policies

The production enterprises dealing in the trade and marketing of ethnic articles of daily use constitute both the key economic industries and the main sectors of the tertiary industry in the ethnic minority areas, which also have the maximum potential for development. Since the very founding of the People’s Republic of China, the State has been conducting diversified trade activities in the ethnic minority areas. It has been not only focusing on resolving the problems facing the ethnic trade including sluggish sales of specialized local products, low production figures, shortage of items of daily need, and irrational pricing of commodities, but also formulating a series of ethnic trade policies with inherent Chinese characteristics in order to enable the trade to cater to typical Chinese markets.

The ethnic trade policies adopted by the State have played a key role in promoting communication and unity among ethnic groups, establishing a people's government, and restoring and rebuilding the economy in the ethnic minority areas. The preferential policies for the ethnic minority areas include extension of the prime lending rate for working capital loans to commercial companies, companies dealing in traditional Chinese medicines, supply and marketing cooperatives, the Xinhua Bookshop, and production enterprises marketing articles of daily use in the ethnic minority counties. At the end of the 1990s, the State further amended the preferential policies for ethnic trade and production of ethnic articles through the introduction of various measures such as reduction of interest on current capital loans, exemption of tax, and permitting of special investment for ethnic trade and production enterprises dealing in ethnic articles, which allowed more than 400 ethnic trade counties and over 2000 production enterprises of ethnic articles to enjoy the benefits of these preferential policies.

C. Development-oriented Poverty Reduction Policies

Since the 1980s, the Chinese Government has been according special attention to the implementation of poverty alleviation programmes and economic development in the ethnic minority areas. Furthermore, in the 1990s, the State transferred its focus to the poverty-stricken ethnic minority areas for facilitating their development-oriented poverty reduction. For this purpose, the ethnic minorities and ethnic minority areas are being accorded preferential treatments in terms of both capital allocation and policy enforcement. At the time of initiation of the State's Seven-year Priority Poverty Alleviation Programme (which was designated to lift 80 million people out of absolute poverty during the seven-year period from 1994 to 2000), China decided that 592 counties would be considered as the key poverty alleviation counties, of which 257 were ethnic minority counties, constituting 43.4 per cent of the total number of key poverty alleviation counties, and 38.9 per cent of the total number of counties and cities in the ethnic minority areas. The poverty-stricken people among the ethnic minorities, who comprise 35 per cent of the

total population of the Chinese ethnic minorities, need special policies for combating poverty and traditional backwardness.

D. Opening-up and Integration Policies

Since the advent of economic reforms and liberalization in China, the Chinese ethnic minority areas have adopted a system of bidirectional opening up or ‘overall opening up, whereby policies of horizontal integration and aid are being implemented in the domestic market, while policies of overall opening up and development of foreign trades along the border are being enforced in the international market. Both domestic and foreign capital, resources and technologies are being used to vigorously explore the domestic and international markets, and consequently strengthen economic development in the ethnic minority areas.

E. Employment Policy of Ethnic Minorities

In order to promote cordial relations with the ethnic minorities, accelerate the economic and cultural development of the ethnic minority areas, and ensure the equality, unity and common prosperity all communities, the State has laid down special regulations for the employment of ethnic minority groups. These regulations are stipulated in the Law of the People's Republic of China on Ethnic Regional Autonomy, which was promulgated in 1984.

The above law specifies the exact percentage of the population of minority communities that should be enlisted for employment in the respective ethnic autonomous areas. In some places, the conditions to recruit workers of the minority communities may be relaxed further, thus facilitating an increase in the number of minority staff members to be employed. This law signifies an important step forward in guaranteeing equal rights and equitable employment opportunities for ethnic minority groups.

3. Effect of Policies

After the founding of the People's Republic of China, the implementation of favorable policies for the ethnic minorities and ethnic minority areas by both the State

and the Communist Party has helped to significantly improve both the socio-economic condition and living standards of the ethnic minorities. However, due to various reasons, the level of socio-economic development of many ethnic minority communities is still considerably low, and many of them are still reeling under extreme poverty with no access to even adequate food and clothes. The main reasons for this state of affairs are as follows:

1. Some ethnic minority areas are exposed to severely adverse natural and geological environments. Most of these areas are border areas, which are hostile to traffic movement and thereby less conducive to development.

2. These areas lack adequate infrastructural facilities and function under a weak economic system.

3. The social development of the ethnic minority areas has also lagged behind that of the other areas. During the initial period after the founding of the People's Republic of China, these areas were mainly inhabited by the Oroqen, Lhoba, Yugur, Blang, Nu, Drung, and Jino tribes, all of which followed primitive socio-economic systems. Subsequently, others like the Moinba, Achang, Deang, and Tibetan tribes, which were following the feudal system of serfs and slaves, came to be found in these areas. While the socio-economic conditions of these tribes have vastly improved over the years, their original primitive social systems are still prevalent to a certain extent, thereby hampering their overall development.

4. The population sizes of the ethnic minorities are small and scattered over large areas, making it difficult to administer them effectively. Further, many of them are poverty-stricken and both the lack both the resources and the inclination to foster their own growth. All the above factors make the development of the ethnic minority areas an uphill task for the State administration.

IV. CASE STUDIES: GANSU AND GUIZHOU—WESTERN CHINA

1. Gansu

A. Comparison of Economic and Social Development Levels

Gansu Province is characterized by hostile natural conditions and a weak economy. Being one of the poorest provinces in China, Gansu also contains 42 of the State's key poverty alleviation counties. There are 54 ethnic minorities throughout the whole province. According to the fifth national census conducted in 2000, the population of ethnic minorities was 2,184,000, accounting for 9.52 per cent of the total population in Gansu. Under the provincial administration, there are two autonomous prefectures of Linxia and Gannan in Gansu (with each of them having eight county-level administrative areas, respectively), five ethnic minority autonomous counties of Tianzhu, Sunan, Subei, Ekesai, and Zhangjiachuan, and 39 ethnic minority autonomous townships. The total land under the ethnic minority areas is 179,000 square km, accounting for 39.8 per cent of the total area of Gansu. Among the ethnic minorities, sixteen have populations of over one thousand each, of which the major ones include the Hui, Tibetan, Dongxiang, Tu, Yugur, Bonan, Mongolian, Salar, Kazak, and Manchu communities. In addition, members of 38 other ethnic minorities also live in Gansu. As regards the distribution of these communities, the Hui people are mainly concentrated in the Linxia Hui and Zhangjiachuan Hui Autonomous Prefectures, and scattered in Lanzhou, Pingliang and Dingxi. The Tibetan community is mainly concentrated in the Gansu Tibetan Autonomous Prefecture, and in the east and middle sections of Hexi Corridor and Qianlian mountainous areas. The Dongxiang, Bonan and Salar communities are mainly distributed in the Linxia Hui Autonomous Prefecture, while the Yugur, Mongolian, and Kazak communities are largely found in the eastern and middle sections of the Hexi Corridor and Qianlian mountainous areas.

Of all the 86 counties (including county-level cities and districts) in Gansu, 21 are ethnic minority autonomous counties, wherein 57 per cent of the population comprises the ethnic minorities, accounting for about 80 per cent of the total ethnic minority population in Gansu. For the sake of convenience, in the subsequent sections of this paper, the ethnic minority autonomous counties and the non-ethnic minority counties are referred to as EM counties and NEM counties, respectively.

Table 1: Comparison of Basic Situations of NEM Counties and EM Counties in Gansu Province

	<i>No. of administrative areas at the level of the county</i>	<i>Average population of counties (10,000)</i>	<i>Average area per county (sq. km)</i>	<i>No. of State's key poverty alleviation counties</i>	<i>No. of hilly counties</i>	<i>No. of mountainous counties</i>	<i>No. of plain counties</i>	<i>No. of counties in the pastoral and semi-pastoral areas</i>
Total of Gansu	86	29.95	5475	42	12	49	15	20
Total of NEM counties	65	34.74	4482	28	10	31	14	10
Total of EM counties	21	15.13	8547	14	2	18	1	10

Sources: Calculated on the basis of the relevant data in the County (City) Statistic Yearbook of Society and Economy in China 2005, and Gansu Yearbook 2006.

Table 1 lists details of the area and population characteristics of the EM and NEM counties in Gansu Province. According to this table, the EM counties have small populations but vast areas of land. The natural conditions prevailing in the EM counties are worse than those in the NEM counties are worse. The twenty-one EM counties include eighteen mountainous counties, two hilly counties, and only one plain county. Half of the EM counties are pastoral and semi-pastoral areas, while two-thirds of them comprise the State's key poverty alleviation counties.

Table 2 compares the gap between the NEM and EM counties in terms of the level of their economic development in 2005. According to multiple indicators reflecting economic development and their economic structures, the EM counties are largely backward economically. In 2005, the CDP per capita and average net income per peasant in the EM were about 44 per cent and 70 per cent, respectively, of the corresponding figures for the NEM counties. Agriculture accounts for a higher percentage of the economic structure in these counties.

Table 2: Comparison of the Economic Development Levels between NEM Counties and EM Counties in 2005

	<i>GDP per capita (yuan)</i>	<i>average income per peasant (yuan)</i>	<i>Percentage of agricultural population (%)</i>	<i>Percentage of agriculture in the total GDP (%)</i>
Mean value of NEM counties	8139	2108	76.72	28.69
Mean value of EM counties	3574	1474	79.30	29.99

Sources: Calculated on the basis of the relevant data in the Gansu Yearbook 2006; the GDP per capita and average net income per peasant refer to the prices of current year, and the mean values refer to the weighted mean value calculated on the basis of the weight of population in each county.

Tables 3 and table 4 compare the gaps between the EM and NEM counties in terms of health and education. All the indicators of the EM counties are lower than those of the NEM counties, there is a large gap in the enrolment rates between the EM and NEM counties, especially in the field of education.

Table 3: Comparison of Health Development Levels between NEM and EM Counties

Year	Number of beds in health organizations per 1000 persons (bed)		Number of practicing doctors and assistant practicing doctors per 1000 persons (person)		Life expectancy (year)	
	NEM counties	EM counties	NEM counties	EM counties	NEM counties	EM counties
2000	2.42	1.65	2.76	2.39	70.61	67.30
2006	2.65	1.80	3.32	3.02	—	—

Sources: Calculated on the basis of the relevant data in the Gansu Yearbook 2000 and 2006.

Table 4: Comparison of Education Development Levels between NEM and EM Counties

Year	Enrolment rate of school-age children in primary schools (%)		Enrolment rate of junior middle schools (%)		Enrolment rate of senior middle schools (%)		Illiteracy ratio (%)	
	NEM counties	EM counties	NEM counties	EM counties	NEM counties	EM counties	NEM counties	EM counties
2000	98.66	97.24	60.40	33.44	21.12	21.46	11.17	30.56
2006	98.71	97.62	84.39	57.10	42.49	35.14	—	—

Sources: Calculated on the basis of the relevant data in the Gansu Yearbook 2006; the illiteracy ratio and life expectancy are based on the population census of 2000.

B. Comparison of the Rate of Economic Growth

Table 5 compares the gaps in GDP per capita and average net income per peasant in the years 1994, 1999 and 2005 between the NEM and the ethnic minority counties. According to the gaps in GDP per capita, the ratio between two groups tends to reduce gradually, and was down to 2.28 times in 2005 from 2.48 times in 1994. However, the difference between two groups tends to increase gradually, and was up to 3,148 yuan in 2005 from 1,386 yuan in 1994. As regards the gaps in the average net income per peasant, the gaps between two groups, both relatively and absolutely, are smaller than the gaps between two groups in terms of the GDP per capita; however,

the relative gap and absolute gap in terms of the average net income per peasant between two groups tends to increase gradually, and was up to 1.43 times in 2005 from 1.36 times in 1994, while the differences between these two indicators increased to 437 yuan in 2005 from 198 yuan in 1994.

Table 5: Comparison of GDP per Capita and Average Net Income per Peasant between the NEM and EM Counties of Gansu Province

Year	<i>GDP per Capita</i>				<i>Average net income per peasant</i>			
	<i>NEM counties (yuan)</i>	<i>EM counties (yuan)</i>	<i>Differences between two groups of counties (yuan)</i>	<i>Ratio between two groups of counties</i>	<i>NEM counties (yuan)</i>	<i>EM counties (yuan)</i>	<i>Differences between two groups of counties (yuan)</i>	<i>Ratio between two groups of counties</i>
1994	2320	934	1386	2.48	751	553	198	1.36
1999	2685	1102	1584	2.44	1143	802	340	1.42
2005	5613	2465	3148	2.28	1454	1017	437	1.43

Sources: Calculated on the basis of the Gansu Yearbook of the various years; for arriving at the GDP per capita and average net income per peasant, the comparable prices of 1994 were adopted.

Table 6 compares the growth rates of the GDP per capita and of the average net income per peasant between the NEM and EM counties during the period 1994 to 2005. These two growth rates have different changing characteristics. As regards the growth rate of GDP per capita, it was as low as 9 per cent for both the areas during the period 1994 to 1999, but it was as high as 15 per cent in the NEM counties, and over 16 per cent in the EM counties during the period 1999 to 2005. This high growth rate was the result of the implementation of the Western Development Programme in China from the year 2000 onwards. If one were to compare the growth rates of GDP per capita between the NEM and EM counties, one would find that the growth rate in the NEM counties would always be higher than that in the EM counties. As regards the growth rate of the average net income per peasant, it was about 14 per cent in both areas during the period 1994 to 1999, but fell to 6 per cent during the period 1999 to 2005. This indicates that the rate of growth of the average net income per peasant in Gansu Province has slowed down in recent years. A comparison of the growth rate of the average net income per peasant between the

NEM and EM counties indicates that the rate prevalent in the NEM counties has always been slightly higher than that in the EM counties.

Table 6: Comparison of Growth Rate of GDP per Capita and Growth Rate of Average Net Income per Peasant between the NEM and EM Counties of Gansu Province

Year	Growth rate of GDP per capita (%)		Growth rate of average net income per peasant (%)	
	NEM counties	EM counties	NEM counties	EM counties
1994-1999	8.68	9.09	14.79	13.70
1999-2005	15.00	16.32	5.87	5.80
1994-2005	12.09	12.98	9.84	9.32

Sources: Calculated on the basis of the Gansu Yearbook of the various years.

C. Comparison of Fiscal Expense and Investment

In literature, the commonest method of comparing fiscal disparity among regions is to compare the disparity of fiscal income and expense per capita between different regions. Figure 1 shows the situation of fiscal income and expense per capita in the EM and NEM counties. The large gap between fiscal expense per capita and fiscal income per capita is complemented by fiscal transfers from the higher echelons of government. The distribution of fiscal transfers is preferential in the ethnic minority areas in Gansu Province, which is why, as shown in Figure 1, the EM counties get more fiscal transfers per capita.

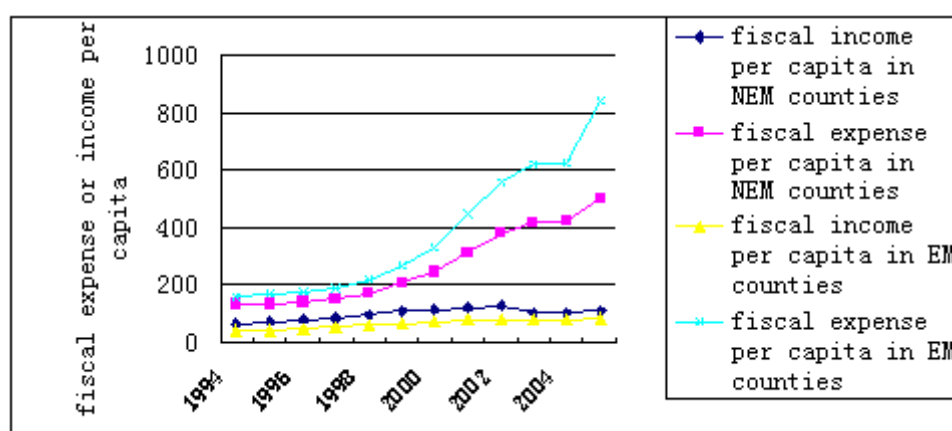
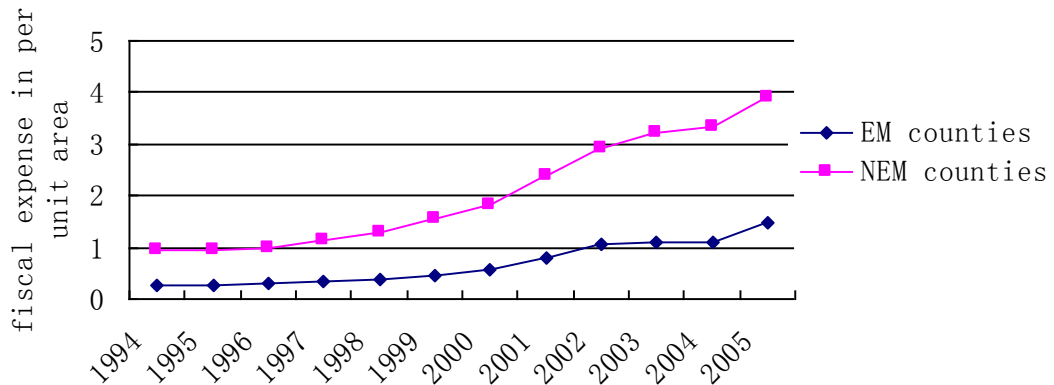


Figure 1: Fiscal Income and Expense per Capita in the NEM and EM Counties in 1994-2005 in Gansu Province

During the period 1994 to 2005, the annual growth rate of fiscal income per capita was very low in all the counties, but the annual growth rate of fiscal expensive per capita was high, and stood at 12.1 per cent in the NEM counties, and 15 per cent in the EM counties. As shown in Figure 1, the fiscal expense per capita in the EM counties was much higher than that in the NEM counties.



**Figure 2: Fiscal Expense in per Square Km Area
in the NEM and EM Counties**

A comparison of the fiscal expense per capita between the NEM and EM counties seems to indicate that the level of public expense in the EM counties is higher than that in the NEM counties. However, since the differing costs in producing similar public goods in different areas have not been factored in, this indication cannot be accepted. In fact, the EM counties need more funds for providing public services to local residents due to their lower population densities and more hostile natural conditions than those prevalent in the NEM counties. A comparison of the fiscal expense in per unit area—arrived at by dividing the amount of fiscal expense by the county’s total area—in Figure 2 shows that the fiscal expense in a per square km area in the NEM counties is about threefold of that in EM counties.

It is very difficult to measure the exact cost of producing public goods in different regions, so we were unable to accurately compare the level of public expense between the NEM and EM counties. The above analysis suggests that we could not draw a firm conclusion by just comparing the levels of fiscal expense per capita.

However, from Figure 1, we can draw the conclusion that the EM counties have a higher growth rate of fiscal expense than the NEM counties.

**Table 7: Total Investment per Capita in Fixed Assets
(at a Comparable Price of 1998: RMB yuan)**

<i>Year</i>	<i>NEM counties</i>	<i>EM counties</i>	<i>Disparity between NEM and EM counties</i>	<i>Ratio of NEM to EM counties</i>
1998	1072.61	281.20	791.41	3.81
1999	1296.87	281.69	1015.19	4.60
2000	1519.90	522.72	997.17	2.91
2001	1759.59	764.91	994.67	2.30
2002	2160.80	967.84	1192.96	2.23
2003	2422.23	1264.47	1157.75	1.92
2004	2617.88	1580.36	1037.52	1.66
2005	3056.64	2023.67	1032.98	1.51
2006	3545.45	2429.74	1115.72	1.46
<i>Annual growth rate (%)</i>				
1998-2006	16.12	30.94		

Source: Gansu Yearbook, China.

Table 7 shows a comparison of the amount of total investment per capita in fixed assets between the NEM and EM counties during the period 1998 to 2006. It is obvious that the NEM counties had a higher investment per capita in fixed assets than the EM counties, but the EM counties, on the other hand, had a higher annual growth rate of total investment per capita in fixed assets.

D. Analysis of Impact of Ethnic Minority Factors upon Economic Growth and Growth of Peasants' Income

In the following sections, the Neoclassical Growth Model is used for conducting a thorough analysis of the growth rates of the GDP per capita and of the average net income per peasant by counties of Gansu Province, irrespective of whether or not there are significant gaps in the growth rates between the ethnic minority areas and other areas, and whether or not the factor of ethnic minority is the main cause for the gaps in economic growth rate between the different areas.

1. Framework of Analysis

According to the Neoclassical Economic Growth model, the economies with similar preferences and technologies may be converged to the same steady-state, and the growth rate of backward economies would be faster than that of the rich economies. In the Neoclassical Growth theory, there are two convergence concepts of regional economic growth: one is σ convergence; if the standard deviation of the real income per person in each area is in a decreasing series, it indicates that there exists σ convergence in the regional economy. The second concept is β convergence: if the backward region has a faster growth rate than a comparatively richer region, then the income (or output) per person in the backward region would catch up with that in the richer region, which indicates that there exists β convergence. The econometric model of calculating β convergence factors built by Barro, *et al.* (1991) is as follows:

$$[\ln(Y_t / Y_0)]/t = a + \beta \ln Y_0 + \mu \quad (1)$$

In this model, Y_t and Y_0 , respectively, refer to the ending and starting economic indicators (for example, the GDP per capita, income per person, etc.), t refers to the year of the observation period. If the estimated $\beta < 0$, then there exists convergence (the regional gaps become smaller); if $\beta > 0$, then there exists divergence (the regional gaps become larger). If one only depends upon the starting economic indicator, β in the above model is irrelevant with other variables in the economy. Therefore, the coefficient of β convergence measured and calculated via model (1) actually reflects a type of unconditional convergence, that is, absolute convergence.

If the other impact factors are considered, some new variables may be designed and added into the model as follows:

$$[\ln(Y_t / Y_0)]/t = a + \beta \ln Y_0 + \sum \gamma_j Z_j + \mu \quad (2)$$

In the above equation, Y_t , Y_0 , and t have the same definitions as those in model (1): Z_j refers to other parameters; γ_j is the coefficient of Z_j . When these new variables are added, actually, the coefficient of β only measures a kind of conditional

convergence, that is, the speed of convergence would also depend upon the other variables.

In model (2), the left variables actually refer to the output (or income) growth rate. If the coefficient of one right variable is significantly positive, then such a variable has a positive impact upon the growth of output (or income); if the coefficient is significantly negative, then it has a negative impact upon the growth of output (or income). This research will use model (2) to estimate the impact upon economic growth and the growth of the average net income per peasant by the factors of ethnic minority.

In order to control the impact upon output (or income) growth by other variables as much as possible, the following variables would also be added into this model:

(i) Industrial structure variable: In this case, it is indicated by the proportion of agriculture in the GDP.

(ii) National condition variable: In this case, it uses two variables to indicate firstly, the terrain of all the areas, and secondly whether it is a pastoral or semi-pastoral area.

(iii) Human resources variable: In this case, it is indicated by uses the proportion of educated people at various levels in the total local population.

2. Data

In this research, the data for the entire Gansu Province is used, including that pertaining to all counties, cities, and districts of Gansu Province. All the data are derived from official publications. The statistical data by counties prior to 1993 are incomplete (due to lack of GDP indicators for some counties and cities). Therefore, we use the data for the period 1994 to 2005. Since Hezuo City was established in 1998, it has been deleted from the samples, and only the data of the other 85 counties (cities and districts) are used.

(i) GDP per capita—This has been calculated on the basis of the population and the total amount of GDP of each county; the data have been derived from the Gansu Yearbook. In this research, the GDP per capita by counties in 1994 is used as

the starting indicator, while that in 2005 is used as the ending indicator.

(ii) Average net income per peasant—The data for this have been derived from the Gansu Yearbook. In this research, the average net income per peasant by counties in 1994 is used as the starting beginning indicator, while that in 2005 is used as the ending indicator.

(iii) Proportion of ethnic minority population—The researcher uses the statistical data from the total population and population of the ethnic minority in each county as recorded in the data of the fifth national population census in 2000.

(iv) EM counties—There are two ethnic minority autonomous prefectures in Gansu Province, in which 16 counties (cities and districts) are included. There are 5 ethnic minority autonomous counties in the other region of Gansu Province. There are a total of 21 EM counties.

(v) Terrain—In the County (City) Statistic Yearbook of Society and Economy in China 2005, the terrains at all regions are divided into three categories: plains, hills, and mountainous areas. According to the principle that each county belongs to one category of terrain, there are 15 plain counties, 12 hilly, and 49 mountainous. However, 10 districts at the level of counties were not categorized into any type of terrain in the Statistic Yearbook. Since all these districts are located in the region that is largely inaccessible to traffic, they are deemed as plain counties in this research.

(vi) Whether the areas are pastoral or semi-pastoral—As per the statistics on the pastoral or semi-pastoral areas given in the County (City) Statistic Yearbook of Society and Economy in China 2005, 20 counties of Gansu Province are located in the pastoral areas or semi-pastoral areas.

(vi) Proportion of populations at various educational levels— The fifth national population census conducted in 2000 contained statistical data on population at various educational levels by counties and by urban and rural areas. In the statistical data, the educational levels are classified into four types: university or above, senior high school or technical secondary school, junior high school, and primary school. In the regression model of growth rate of GDP per capita, the

research uses the proportion of populations at various educational levels by counties at large; while in the regression model of the growth rate of the average net income per peasant, this research uses the proportion of population at various education levels by townships and villages of counties.

3. Results

In this research, two regressions were made in the regression equation of growth rate of GDP per capita. The differences between the two equations are that different variables pertaining to the ethnic minority are used. In Equation 1, the proportion of the ethnic minority population is used as a variable of ethnic minority, while in Equation 2, the data on ‘whether it is an EM county or not’ is used as a variable of ethnic minority. The purpose of adopting two different variables of ethnic minority is to verify whether the impact upon economic growth by the variables of ethnic minority is steady. Please refer to Table 8 for the regression results.

According to the regression results of the two equations, in both the equations, both variables of ethnic minority have a positive impact upon the growth rate of GDP per capita. In Equation 1, the proportion of ethnic minority is significant at a level of 5 per cent; in Equation 2, the dummy variable of EM counties is significant at a level of 1 per cent. This result indicates that the implementation of many preferential policies by China in the ethnic minority areas over the past several decades has played a remarkably significant role in the promotion of economic growth in the ethnic minority areas. These policies have helped in effectively accelerating the economic development of the ethnic minority areas.

In the regression, it can be seen that there is no significant impact upon the local economic growth by the starting industrial structures, terrains and ‘whether or not the areas are pastoral’ of each place. The economic growth rate in the plain areas is slightly higher than in the other areas. However, there is no significant gap with other areas. Human capital has a comparatively significant impact upon economic growth: the educational background in terms of senior high school or technical secondary school and junior high school has a significant positive impact upon

economic growth; and though the educational background of primary school also has a positive impact upon economic growth, it is not significant according to the statistical data; inexplicably, the regression coefficient of the proportion of university education and above is significantly negative in both the equations.

Table 8: Robustness Regression Result of Growth Rate of GDP per Capita

<i>Explanation of variables</i>	<i>Equation 1</i>		<i>Equation 2</i>	
	<i>Coefficient</i>	<i>t-value</i>	<i>Coefficient</i>	<i>t-value</i>
Logarithm of GDP per capita in 1994	-0.0268*	-3.20	-0.0228*	-2.86
Proportion of agriculture in GDP in 1994	-0.0389	-0.73	-0.0154	-0.66
Proportion of ethnic minority population	0.0331**	2.07	-	-
Whether or not the county is EM				
Yes	-	-	0.0277*	3.08
No	-	-	-	-
Terrain				
Plain	0.0294	1.52	0.1869***	1.72
Hill	-	-	-	-
Mountainous areas	0.0143	1.22	0.0136	1.35
Whether or the areas are pastoral or semi-pastoral				
Yes	0.0089	1.21	0.0067	0.79
No	-	-	-	-
Proportion of populations at various educational levels				
University or above	-0.3165*	-2.94	-0.2746**	-2.55
Senior high school or technical secondary school	0.5651*	3.30	0.4844**	2.44
Junior high school	0.1531***	1.83	0.1132**	2.27
Primary school	0.1124	1.53	0.1157	1.53
Number of values observed	85		85	
Adj-R ²	0.240		0.276	
F-value	9.32		10.07	

Note: No report of intercept; *, **, *** indicate that it is significant at the level of 1%, 5%, and 10%, respectively.

Source: authors' calculation.

In this research, the processing of the equation of growth of average net income per peasant has been undertaken by adopting the same method as that used in the equation of growth of GDP per capita. It also estimates two equations respectively (Table 9). The regression results indicate that there is no significant impact upon the

growth of peasants' incomes by the factors of ethnic minority, industrial structure and terrain in each area; the income growth rate among peasants in pastoral areas and semi-pastoral areas is significantly higher than that in other areas. This is consistent with the rapid development of animal husbandry in China over the past several decades; among the factors of human capital, the population with an educational background of primary school has a significant negative impact upon the growth of peasants' incomes, while there is no significant impact upon the growth of peasants' incomes by the population with educational background above junior high school.

Table 9: Robust Regression of Growth Rate of Average Net Income/Peasants' Income

	<i>Equation 1</i>		<i>Equation 2</i>	
	<i>Coefficient</i>	<i>t-value</i>	<i>Coefficient</i>	<i>t-value</i>
Logarithm of average net income per peasant in 1994	-0.0256*	-3.54	-0.0256*	-3.45
Proportion of agriculture in GDP in 1994	-0.0097	-0.82	-0.0101	-0.83
Proportion of ethnic minority population	-0.0072	-0.83	-	-
Whether or not the county is EM				
Yes	-	-	0.0958	0.18
No	-	-	-	-
Terrain				
Plain	0.0105	1.49	0.0101	1.64
Hill	-	-	-	-
Mountainous areas	-0.0076	-1.34	-0.0074	-1.32
Whether or not the areas are pastoral or semi-pastoral				
Yes	0.0094**	2.13	0.0090**	2.07
No	-	-	-	-
Proportion of populations at various educational levels				
University or above	-0.2626	-0.33	-0.4377	-0.54
Senior high school or technical secondary school	0.1352	0.72	0.1097	0.61
Junior high school	0.0371	0.59	0.0559	0.93
Primary school	-0.1054*	-3.10	-0.0940*	-2.63
Number of values observed		85		85
Adj-R ²		0.354		0.348
F-value		6.95		6.84

Note: No report of intercept; *, **, *** indicate that it is significant at the level of 1%, 5%, and 10%, respectively.

Source: authors' calculation.

4. Conclusion

In summary, according to the results of the research, we find that the preferential policies for the ethnic minority areas adopted by the Chinese Government significantly promote the economic growth of the ethnic minority areas at large, while there is no significant impact upon the average net income per peasant by the factor of ethnic minority.

2. Guizhou

A. Introduction of Household Survey Pilot in Guizhou Province

Guizhou Province is a good choice for studying rural poverty since it is one of the poorest provinces in China. In 2009, the latest year for which data is available, the poverty rate in Guizhou was 16.5 per cent, dropping remarkably from 42 per cent in 1998, when the data was almost twice the national average of 22 per cent (Xian and Sheng, 2001). By the end of 2009, the amount of poor rural population in Guizhou was the highest in the country. In 2004, the per capita annual income in rural Guizhou, at 1,722 yuan, was the lowest among the 31 provinces in mainland China, as compared to 7,737 yuan in Shanghai, the richest province.

Puding County is one of the 592 counties officially designated as poor by the Central Government. It has 11 townships, 317 administrative villages, and a total population of 425,000. About 91 per cent of the total population in this county resides in rural areas, and the total number of agricultural laborers is 217,000, accounting for 63 per cent of the total labor. The county has more than 20 ethnic groups, including the Han, Miao, Blang, Bouyei, Gelao, and Yi communities, among others. The minority population, which consists of all ethnic groups other than the Han community, accounts for roughly 20 per cent of the total population. With the implementation of a national programme, the so-called '8-7 Poverty Alleviation Project', the number of people living below the poverty line in Puding has declined from 2,15,000 in 1993 to 88,000 in 2002 (Puding Poverty Alleviation and Development Office, 2003). By the end of 2002, there were 120,000 people or 31 per

cent of the total population, whose annual earnings were less than the official poverty line.

We first selected three representative administrative villages within Pudong County on the basis of their locations and levels of economic development. Then, a census-type household survey of 805 households in these three administrative villages was conducted.ⁱ This survey collected detailed information on each individual, such as age, education, and health. Household characteristics such as income sources (agricultural production, non-farm activities, and transfers) and expenditure components (including productive and living expenditures) in 2004 were also recorded.ⁱⁱ

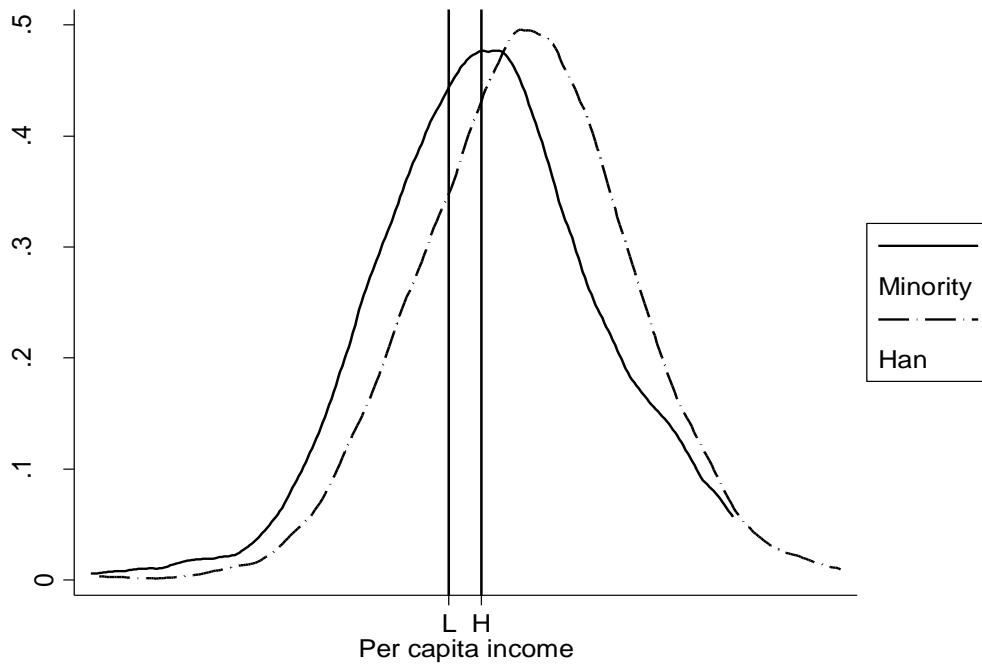
B. Empirical Analysis

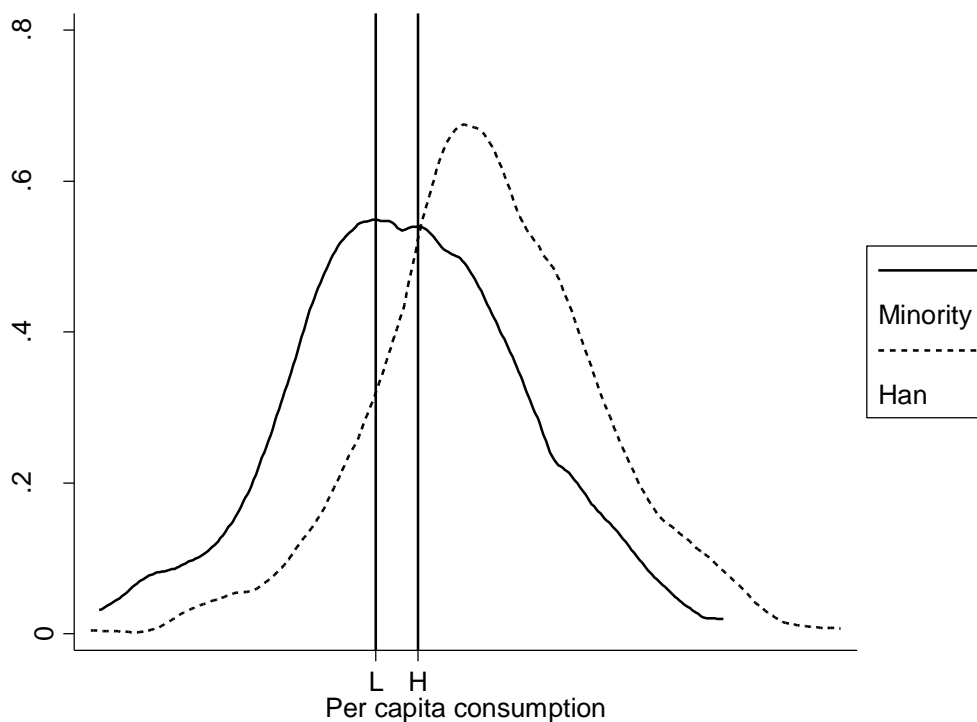
Separate poverty lines have been used to calculate the poverty incidence between other ethnic minority groups and the Han group. . The low and high poverty lines are set at 668 yuan and 892 yuan, respectively, in 2004. The figure of 668 yuan is calculated on the basis of the officially defined poverty line of 300 yuan per capita annual income in 1995 and the inflation during the period 1995 to 2004. China's official poverty line for rural areas is 300 yuan per capita income per year at 1990 prices (635 at 2001 prices and 668 at 2004 prices), equivalent to \$0.66 per day measured in purchasing power parity (PPP) for 1985 (World Bank, 2000). The poverty line is defined as the level below which the income (and food production in rural areas) is insufficient for subsistence levels of food intake, shelter, and clothing. In 2001, China also used a higher poverty line of 865 yuan per capita consumption per year at prices for the year 2000 (924 yuan at 2004 prices), which is equivalent to \$1.17 without adjusting for rural/urban differences in the costs of living (Xian and Sheng, 2001). If using a poverty line of \$1.08 consumption per capita per day (850 yuan per person per year in 2002 as shown in Ravallion and Chen, 2007), the poverty line would be 892 in 2004.

We estimate three poverty indices from the Foster, Greer and Thorbecke (1984) class. P0 is the headcount ratio (the proportion of poor); P1 is the average

normalized poverty gap; and P2 is the average squared normalized poverty gap. P2 is more sensitive to large poverty gaps among the poor than P1, which is, in turn, more sensitive than P0.

Figure 3 plots the income and consumption distribution between the ethnic minority group and the Han group. The two vertical lines in the graph represent the corresponding low and high poverty lines. It is apparent from the figure that those falling below the poverty lines in the first village significantly overtake those in the second and third villages in terms of both income and consumption. The areas underneath the distributional curves on the left poverty line in the bottom figure on consumption are larger than those in the top figure on income, suggesting that the proportion of poor measured in consumption is greater than that in income.





**Figure 3: Per Capita Income and Consumption
for the Minority and Han Groups**

Table 10 compares the summary statistics of the ethnic minority group and the Han group in several dimensions.ⁱⁱⁱ The minority group owns less per capita income than the non-minority group. The minority group also consumes less than the Han group, and cultivates 0.8 *mu* of land, which accounts for about 73 per cent of the non-poor group. Both the groups have a rather low level of school attainment with a narrow gap of 0.8 years.

Table10: Summary of the Ethnic Minority and Han Groups

	<i>Income per capita</i>	<i>Living per capita</i>	<i>Land per capita</i>	<i>Average education</i>
Han Group	1551.97	1520.41	1.06	3.24
Minority Group	1050.00	949.64	0.81	2.42
Total	1388.02	1334.12	0.98	2.97

Source: authors' calculation.

In the following paragraph, we estimate whether the minority group plays an important role in the income equation. Table 7 provides a statistical description of

variables in the regression. Among the variables are included the household characteristics, household size, religious beliefs of the respondents, being minority members, marital status of the household head, gender and age of the household head. For assessing human capital, we choose education, and whether at least one member of the family has received training, the share of primary age laborers in a household, the number of working days lost due to illness, and the number of years spent working outside the local county. We also selected two social capital variables, of which one is whether the household has relatives working in the government, or whether any of them is a member of the Communist Party member. The other variable concerns the assets of the household, including productive building or machinery, the number of livestock per capita, per capita contract land, per capita rent-in land, and geographical factors, such as the distance to township site, all of which were considered in the income equation.

Table11: Statistical Description of Variables

<i>Variable</i>	<i>Description</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
lnpincome	Per Capita Net Income (log)	801	7.01	0.84	3.70	9.57
hhsize	Household size	802	3.84	1.58	1.00	10.00
hhrelg	Have a religion belief (1=yes)	802	0.10	0.30	0.00	1.00
minority	Being a minority (1=yes)	802	0.30	0.46	0.00	1.00
hhmarg	Marriage status (1=yes)	802	0.96	0.20	0.00	1.00
hhsex	Gender of household head (1= male)	802	0.94	0.24	0.00	1.00
hhage	Age of household head	802	46.52	14.13	21.00	89.00
aveduh	Household average year of schooling	802	2.92	2.14	0.00	12.63
trainingh	Have received training	802	0.10	0.30	0.00	1.00
laborh	Share of primary age laborers in a household	802	0.59	0.28	0.00	1.00
bigssick	No. of working days lost due to illness	802	0.21	0.41	0.00	1.00
outexperience	Years of working outside the local county	802	0.35	0.84	0.00	7.50
sc	Having relatives working in the government	802	0.13	0.33	0.00	1.00
cpmh	With a communist party member	802	0.07	0.25	0.00	1.00
asset	Having productive building or machinery	802	0.42	0.49	0.00	1.00
plivstock	Number of livestock per capita	802	0.54	0.41	0.00	5.00
pcland	Per capita contract land	802	0.95	0.83	0.00	6.00
prentinland	Per capita rent-in land	802	0.16	0.52	0.00	6.50
dtown	Distance township site (log)	802	1.51	0.88	0.41	2.77

Source: authors' calculation.

Table 12 presents the regression results under four different specifications.^{iv} The first specification does not include any village-specific variables. In the second specification, we add the distance of each natural village to the county seat. The third regression replaces the distance variable with administrative village dummy variables. The last specification includes 25 natural village dummy variables. We use the adjusted R-square and Akaike's Information Criterion (AIC) to guide model selections. The lower the value of the AIC, the better fit is the model. According to AIC, the second and third models exhibit better performance than the first and the fourth models. But in terms of the AIC, the difference among the four models is minimal. The last three models provide very similar results. The variables with significant coefficients are similar and the magnitudes of the coefficients are comparable.

It should be noted that several variables on household characteristics are significant in the first regression but not in the other three specifications. In particular, the coefficient for the minority dummy is only statistically significant in the first regression. As a matter of fact, most ethnic groups live in remote areas. The correlation coefficient between the minority dummy and distance to natural villages is nearly 0.6. About 50 per cent and 70 per cent of the variation in the minority can be explained by two administrative village dummies or 25 natural village dummies, respectively. Not surprisingly, when the distance variable or village dummy variables are included in a regression, the coefficient for the minority variable becomes insignificant.

Among the set of household characteristic variables, only the household size is statistically significant in the specifications. Its value is negative. Among the human capital variables, the average year of schooling, and having acquired training and outside work experience are strongly related to a greater per capita income. The coefficient for the health shock variable is negative and insignificant. Being a Communist Party member or having a relative who works in the local government is positively related to income level though these variables are statistically insignificant.

Among the variables on household assets, the per capita contract land is highly significant. Since land allocation in Guizhou Province has not been re-adjusted since the rural reforms of the early 1980s, the distribution of land holdings has become increasingly uneven due to demographic changes. Since agricultural income is highly correlated with land holdings, the land tenure arrangement may be an important explanatory factor for the observed inequality among farmers in a village. This result is consistent with the current literature, which finds that the initial land allocation does matter in income distribution (Benjamin and Brandt, 1997). In principle, a well-functioning land rental market can help mitigate this problem. However, the coefficient for the variable of rented land is positive but insignificant. Further research is required to evaluate the development of land rental markets.

Having estimated the income generation equation, we next apply the Shapley value decomposition method to quantify the contributions of each factor to overall inequality. The Shapley value decomposition involves rather extensive computations, and details of this technique can be found in Shorrocks (1999). Since the estimations are rather similar for the last three regressions, Table 9 present only the Shapley decomposition results based on the first two regressions. We include only those significant variables in the decomposition. Several findings are apparent from Table 9. First, the contract land per capita is the largest contributing factor to overall inequality, explaining 27-32 per cent of the variation in overall inequality, followed by household size, which accounts for 18-21 per cent of the variation in overall inequality. This can be explained by the fact that land is scarce in the mountainous areas and that Guizhou Province has never re-adjusted land allocations since the rural reform in the early 1980s. Due to demographic changes, the situation of unequal access to land has worsened. Since agricultural production still serves as a major source of income, the uneven distribution of land naturally translates into income inequality.

Second, the distribution of human capital matters to overall inequality. The contributions of education, skill training, and acquisition of outside work experience,

all make a sizable contribution. In sum, these factors explain 34-43 per cent of the total income inequality depending upon the underlying model selection. In the

Table 12: Regression of Income per Capita

	<i>R1</i>	<i>R2</i>	<i>R3</i>	<i>R4</i>
Household size	-0.139 (6.23)***	-0.137 (6.46)***	-0.138 (6.36)***	-0.136 (6.13)***
Have a religious belief (1=yes)	0.016 -0.19	0.002 -0.02	0 0	-0.022 -0.18
Being a minority (1=yes)	-0.13 (2.10)**	-0.011 -0.16	-0.036 -0.45	0.044 -0.39
Marital status (1=yes)	0.123 (1.73)*	0.086 -1.27	0.082 -1.18	0.071 -0.97
Gender of household head (1= male)	-0.148 -1.3	-0.128 -1.18	-0.126 -1.16	-0.134 -1.19
Age of household head	0 -0.12	0 -0.06	0 -0.01	0 -0.16
Household average year of schooling	0.062 (3.85)***	0.052 (3.36)***	0.053 (3.38)***	0.054 (3.79)***
Have received training	0.314 (2.94)***	0.315 (3.06)***	0.315 (3.10)***	0.269 (2.52)**
Share of primary age labourers in a household	0.177 -1.49	0.173 -1.47	0.169 -1.42	0.185 -1.57
No. of working days lost due to illness	-0.048 -1.08	-0.05 -1.1	-0.049 -1.07	-0.062 -1.25
No. of years spent working outside local county	0.061 (1.76)*	0.064 (1.85)*	0.065 (1.87)*	0.055 -1.53
Having relatives working in the government	0.183 (2.89)***	0.195 (3.27)***	0.196 (3.25)***	0.205 (3.01)***
With a communist party member	0.259 -1.48	0.247 -1.38	0.252 -1.41	0.282 -1.55
Having productive building or machinery	0.043 -0.95	0.062 -1.45	0.064 -1.5	0.073 -1.67
Number of livestock per capita	0.079 -1.43	0.087 -1.59	0.089 -1.6	0.075 -1.24
Per capita contract land	0.167 (4.80)***	0.156 (4.45)***	0.152 (4.44)***	0.15 (4.29)***
Per capita rent-in land	0.087 -1.36	0.091 -1.38	0.093 -1.4	0.078 -1.11
Distance to township site (log)		-0.118 (3.44)***		
Administrative village dummies			yes***	
Natural village dummies				yes***
Observations	801	801	801	801
Adjusted R-squared	0.253	0.261	0.260	0.258
AIC	2.216	2.206	2.208	2.238

Note: Figures in parentheses are robust t statistics with cluster adjusted at the natural village level.

The symbols *, **, and *** stands for significance levels at 10%, 5%, and 1%, respectively.

Source: authors' calculation.

decomposition based on the first specification, the variation in minorities explains 4.25 per cent of the income inequality. In the first decomposition, the difference in distance to the county seat contributes to 12 per cent of the overall inequality. However, further research is needed to disentangle the impact of geography and ethnicity.

C. Policy Implication

On the basis of a primary survey of households in Guizhou Province, which is a nationally labeled poor county, we analyse the patterns and major correlates of village inequality in western China, especially the minority poverty issues. Several important findings emerge from this analysis. These findings are delineated below.

First, poverty is still a severe problem in some rural villages in western China. As regards the minority group, its income is still lower than that of the Han group.

Second, from the income equation, we find that the per capita land area has a positive impact on the household income. Since Guizhou Province has adopted a strict land policy of ‘never adjusting land regardless of birth or death’, access to land is likely to become increasingly unequal with the demographic changes expected in the future. The increasingly uneven distribution of land may turn out to be a key contributing factor to overall inequality. The manner in which the development of a land rental market can be fostered deserves more research and policy attention.

Apart from land, another important asset for farmers is their human capital, which includes health and education. Our decomposition of expenditure inequality shows that medical care expenses constitute the largest contributing factor to the overall expenditure inequality. Most farmers cannot afford to see a doctor when they fall sick because of the high medical expenses that entails, and especially in households with fewer family members of working age, falling sick is a financial disaster that can directly drive the household into poverty. The large proportion of households that reported donation of their blood to earn extra cash should also send alarm signals about the appalling financial condition of the farmers in these poor rural regions. Although income from blood donations can help generate the much-needed

funds to ease budget constraints in the short run, in the long run, it would negatively affect the donor's health, which is the most important element of human capital. This vicious circle may worsen the already high rate of income inequality. Therefore, there is an urgent need to establish a safety net for the inhabitants of these rural areas, especially for the rural poor.

Major reference:

1. Robert J. Barro. et al. (1991). Convergence across States and Regions. *Brookings Papers on Economic Activity*, 1991(1): 107-182.
2. Xian, Z. and L. Sheng, (2001). PRC's Rural Residents with Consumption Less Than 860 Yuan: Targeting Group and Characteristics. Memos, National Statistical Bureau, Beijing, China.
3. Puding Poverty Alleviation and Development Office, 2003. Summary on Puding County Antipoverty Project. Memos, Puding County, Guizhou Province, China.
4. World Bank. (2000). *China: Overcoming rural poverty*. Washington, D.C.: World Bank
5. Ravallion M, Chen S (2007). China's (Uneven) progress Against Poverty, *Journal of Development Economics*, 82(1): 1-42.
6. Foster, J.E., J. Greer, E. Thorbecke (1984). A Class of Decomposable Poverty Indices, *Econometrica*, 52:761-766.
7. Benjamin, D., Loren Brandt, (1997). Land, Factor markets and Inequality in Rural China: Historical Evidence, *Explorations in Economic History*, 3:460-94.
8. Shorrocks, A.F. (1999). Decomposition procedures for distributional analysis: A unified framework based on the Shapley value, mimeo, University of Essex.

Notes

ⁱ The official number of residents in the three villages is 987, but the survey could locate only 805 households. We visited the missing households at least three times. According to the neighbours of these households, most of them had already migrated away for a significant period. After data cleaning, 801 households were kept in our analysis.

ⁱⁱ The questionnaires on income and expenditures are modified versions of those used by the Rural Survey Organization of the National Bureau of Statistics of China. The total expenditure refers to the sum of expenses of rural households on agricultural production (including breeding, fertilizers, pesticides, and so on), living consumption (including food, clothes, durables, fuel, and so forth), and non-farm activities. The total income refers to the sum of the income earned from various sources by the rural households and their members during the reference period, including agricultural income, wage income, and income from household operations (self-employment and working outside), and transfers. Net income is equal to the total income minus corresponding expenses, such as household operation expenses, taxes and fees, depreciation of fixed assets for production, and gift expenditure. The expenditures on major production equipment and draft animals are not included as household operation expenses of the current period to avoid negative values.

ⁱⁱⁱ For simplicity, we present the results only for the low poverty line. The results for the high poverty lines are similar and are available upon request.

^{iv} The dummy variables for natural villages are statistically significant but are not reported in the table.