ROOTED IN POVERTY?: THE POLITICAL ECONOMY OF TERRORISM IN XINJIANG

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Abstract

Whether poverty is the cause of terrorism has been one of the most debated puzzles in the study of political economy of terrorism. In Xinjiang, a multi-ethnic region in West China, it is widely believed that higher income level can decrease the likelihood of terrorism conducted by Uyghur separatists or extremists. However, the county-level data in the year of 2013 shows that better economic performance cannot work as is expected. Instead, empirical evidence indicates that income is positively associated with the probability of terrorist attacks, and the effect is statistically significant. An instrumental variable approach also supports that economic growth is hardly a cure to terrorism. A discussion on the causal mechanism between higher income level and terrorist incidents is provided after the empirical analysis. Both the grievance theory and the opportunity structure theory are credited in the causal mechanism. Projects that are aimed at boosting local economic growth result in migrant flood, thus the local Uyghurs are disadvantaged in the employment market. Consequently, economic grievances are generated, along with preexisting political grievances as a result of exclusion from state power. The Uyghurs have a shared motivation to resist, but tight social control in the region constraints the form of resistance, in the sense that neither mass protests nor armed rebellion is feasible. Terrorist attacks that come with a lower cost become the preferable choice. In the end of this paper some alternative causal mechanisms are also discussed.

Key Words: Terrorism, Ethnic Conflict, Political Economy, Xinjiang, Uyghurs, China
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“We fight against poverty because hope is an answer to terror. We fight against poverty because opportunity is a fundamental right to human dignity. We fight against poverty because faith requires it and conscience demands it. And we fight against poverty with a growing conviction that major progress is within our reach.”

——Former U.S. President George W. Bush

“Development is the answer to all puzzles, as well as the key solution to all problems in Xinjiang … Only economic development can alleviate social contradictions, consolidate unification, and achieve people’s happiness.”

——People’s Daily

I Introduction

Facing the threat of terrorism, many practitioners in different countries have been claiming that there is a direct link between poverty and terrorist activities. Berrebi (2007) collects the speeches given by a number of politicians from the U.S., European countries, and Middle East, and shows the argument that poverty is responsible for terrorism has already been prevalent even before the 9/11. Now they are joined with fellows from a country that used to be kept off “the radar of the international jihadist movement” (Potter, 2013), the People’s Republic of China (PRC).

Although currently nowhere in China is comparable to the situation in Palestine, Iraq or Afghanistan, what is for sure is that China is facing an increasing threat from terrorist attack, mainly in its western borderland, Xinjiang Uyghur Autonomous Region, where some Uyghur

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separatists have been seeking independence ever since the early days of PRC. The violent events reached a peak in the 1990s, but then saw a significant drop in the first decade of the 21st century. The bloody riots that broke out in Urumqi, the capital city of Xinjiang on July 5th, 2009 served to be a turning point (See Figure 1). After that, terrorist activity organized by Uyghur separatists becomes much more salient, not only in the region but also in other provinces of China. On October 2nd, 2013, one day after the National Day of China, a car crashed and exploded in the Tiananmen Square, a politically sensitive place in Beijing, causing 5 people dead including three attackers in the car. It is reported that they were Uyghurs and “a flag imprinted with religious slogans” was found.3 6 months later, the Kunming Railway Station, which is located in Southwest China and more than 3000 kms away from Xinjiang, was attacked by 8 Uyghurs with knives, who killed 31 civilians and injured other 141. The incident was so astonishing that media in the West even named it “massacre” when reporting.4

Similar to the claim of George W. Bush, the Chinese leaders respond to increasing terrorist risk with projects that try to promote economic growth. 19 prosperous provinces and cities in East China have been assigned to aid the development of specific areas in Xinjiang. For example, Shanghai’s task is to contribute to improving people’s livelihood and promoting sustainable development in four counties of Kashgar, a big but poor city in South Xinjiang

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where most local residents are Uyghurs.5

Can these projects be effective as expected? The answer lies in whether poverty (and relevantly, the lack of education) is really the root of terrorism. Although there has been a great volume of literature in the field of terrorism studies on the causal relationship between income and terrorist activities, there is still no similar effort in examining this causality in Xinjiang empirically and systematically. In this paper, I intend to fill this gap by applying the theories and methods of social scientists. I would like to examine the within-region variation of the occurrence of terrorist attacks in Xinjiang. Using the county-level cross-sectional data in 2013, which is the latest available sources, I find that a higher income level measured by GDP per capita cannot decrease the likelihood of terrorist attack in Xinjiang. Its effect is either statistically insignificant or positive, depending on different model specifications, controlled with other variables. Moreover, average years of schooling are statistically indistinguishable from zero at conventional test levels. Since terrorism may also affect economic prosperity, the endogeneity problem exists. An instrumental variable approach is adopted to overcome it, and does not falsify the conclusions mentioned above. My causal chain will also show that income growth without distributional equality is the cause of widespread economic grievance, and because of tight social control, terrorist attacks, rather than mass protests or armed rebellion, becomes the most feasible and influential way to express grievances in the region.

5 A completely list of matching can be found in: http://news.eastday.com/china/kpyj/yuanjiang/.
It is beyond doubt that the case of Xinjiang is worthy of careful examination. Not only can it directly contribute to answering the theoretical question whether higher income is a cure to terrorism, and to deepening the scholastic debate between grievance theory (both political and economic) and opportunity theory in explaining the onset of civil conflicts, it also has significant policy implications. Xinjiang is playing a decisive role in the so-called “Rise of China”. Being part of Mackinder’s “Heartland”, its strategic importance has attracted the expansion of great powers ever since the thrilling era of “The Great Game”. Xinjiang has recently become one of the two cores of “One Belt One Road” initiative, the so-called China’s “Marshall Plan”. Chine expects to strengthen cooperation with Eurasian countries and export its capital and capacity through this initiative, for which a Silk Road Fund with 40 billion USD has been established and the Asian Infrastructure Investment Bank (AIIB) is awaiting. Therefore, if the ethnic conflicts in the region cannot be handled properly, Xinjiang will become the “Achilles Heel” of China’s rise. For instance, the 2014 Kashgar Central & South Asia Commodity Fair was forced to close earlier than planned because of the riots in the nearby Shache County.

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6 The grievance theories mainly include Ted Gurr’s “deprivation school” and Charles Tilly’s “political opportunity school” both of which “have inspired a generation of scholars to search for the empirical roots of terrorism and political violence (Piazza, 2006).” For the opportunity theory, according to Cederman et al. (2011), it emphasizes more on logistical and power-related conditions, such as low state-level per capita income, weak state institutions, and peripheral and inaccessible territory, which allow for insurgency. For the finding that civil conflicts are not caused by ethnic fractionalization or political grievances, but by the opportunity structure for the organization of rebellion, see Collier and Hoeffler (2001), Fearon and Laitin (2003).


The structure of this paper is as follows. Section II reviews the background of Xinjiang, focusing on contemporary political, economic and social situations of the region, and introducing briefly some active terrorist organizations such as ETIM (East Turkestan Islamic Movement). Section III provides a literature review on the political economy of terrorism, and presents the hypothesis based on theories in the field and some empirical observations about Xinjiang. Section IV sets out the estimation results from the empirical models. The next section is the discussion on the causal mechanism on how projects that are designed to boost local economic development, with the help of political repression, can increase terrorist risk. The paper concludes with section VI with some further discussions.
II Background of Xinjiang

In this section some background information about Xinjiang is provided (See Figure 2). As the Chinese Government White Paper titled “History and Development of Xinjiang” describes,

The Xinjiang Uygur Autonomous Region (also called Xinjiang for short),\(^1\) situated in the border area of northwest China and the hinterland of the Eurasian Continent, occupies an area of 1.6649 million sq km, accounting for one sixth of Chinese territory. It has a land border of 5,600 km bounded by eight countries.\(^2\)

It seems that the paragraphs cited above is the only content in the White Paper that is free from controversies, since the Uyghurs separatists and the Chinese government have completely opposite interpretations not only on the current situation, but also on the history of Xinjiang. They both claim that Xinjiang has been part of their “own land” since ancient times. For example, the White Paper indicates that “[s]ince the Western Han Dynasty (206 B.C.-24 A.D.), it has been an inseparable part of the unitary multi-ethnic Chinese nation.”

This position cannot be simply dismissed as propaganda because the Han Dynasty at that time did establish certain kind of control in what is today’s Xinjiang (Millward, 2007: 17-25), though the military and political influence of central dynasties would disappear when they became weaker. On the other hand, some Uyghur intellectuals have tried to contest this official position, particularly after the 1980s when the political atmosphere was relatively

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10 Uighur, Uyghur, and Uygur are used interchangeably to translate the name of this ethnic group to English. I will use “Uyghurs” in this paper unless the sources cited use different translations, following the academic mainstream.

open, claiming that Central Asia is “the motherland of the Uyghurs from earliest times (Bovingdon, 2004: 364).” In fact it has been widely accepted that the Uyghurs originated in the Mongolian core lands of the Orkhon River valley (Millard and Perdue, 2004: 40). Mummified bodies found in the Tarim Basin suggests that the very first residents of Xinjiang may have been Caucasian, but this is not what the two sides really care about in their interpretations of history.

The integration of Xinjiang into the modern China nation can be dated back to General Zuo Zongtang’s conquer in the 1870s. His victory against local rebellions supported by the Russian Empire led to the establishment of Xinjiang Province in 1884. This was also how the name of Xinjiang was fist introduced, which can be translated to “New Territory” or “New Frontier” in English. After the Qing Dynasty collapsed in 1911, Xinjiang was under the control of warlords. The Uyghurs, along with other local Turk people founded The First East Turkestan Republic in 1933, which soon fell down in the next year because of warlords’ intervention. The more famous Second Republic, supported by the Soviet Union, existed from 1944 to 1949. It is portrait as “Revolution in Three District” against the KMT rule by the Chinese Communists, instead of an independent movement. In 1949 General Wang Zhen of the People’s Liberation Army occupied Xinjiang, who was notorious for his iron hand policy. In 1954, in order to maintain the stability, Xinjiang Production and Construction Corps (XPCC) came into being, which is a semi-military provincial-level organization that has its own administrative and judicial system in certain cities and settlements in Xinjiang. One year

12 A comprehensive study on the history of the Second East Turkistan Republic can be found in Wang (2013).
later, the Autonomous Region government was established.

According to the statistics of Chinese government, in 2013 Xinjiang has a population of 22.643 million. Among them approximately 47% are Uyghurs, 38% are Han Chinese, the ethnic majority in China. The remaining 15% are mostly Kazak and Hui. Han Chinese are usually dominant in the more prosperous North Xinjiang, such as Urumqi (73%), Karamay (75%), Shihezi (94%), etc., while the Uyghurs are mostly concentrated in the relatively poor South Xinjiang, like Kashgar and Hotan, where approximately 95% of local residents are Uyghurs (Xinjiang Statistical Yearbook 2014). Even so an undeniable fact is that Han Chinese was flooding into the region: The proportion of Han Chinese back in the 1940s was estimated to be only 5% or so in Xinjiang. Thus some observers blame that the policy of Chinese government to practice “integration through immigration” should be responsible for the “minoritization” of the indigenous Uyghurs who have been turned into “internal colonial subjects” (Gladney, 1998).

The GDP in Xinjiang has witnessed a rapid growth ever since the launch of Great Western Development Drive (GWDD for short, xibu dakaifa in Chinese) in 2000, and it has reached 836 billion RMB in 2013 (See Figure 3). The implementation of GWDD highly relies on two pillars, the so-called “One Black One White”: oil exploitation and cotton cultivation (Becquelin, 2000). Thus in the past decade we also witness a growth in these products (See Figure 4). Unlike most other provinces in China where economic growth has been export-led,
Xinjiang’s economy is highly dependent on natural resource extraction. As a result, “oil and gas exploitation represents almost half of Xinjiang’s fiscal revenues (Becquelin, 2004).” But the revenue generated in resource exploitation is not distributed equally, since Han Chinese “fill approximately four fifths of all jobs in manufacturing, the oil and gas industries, transport, communications, and science and technology, and fully nine-tenths of jobs in the burgeoning field of construction (Fuller and Starr, 2004: 18).” That is the reason why there exists a significant income gap not only between North Xinjiang and the South, but also between Han Chinese and the Uyghurs, particularly in employment sectors that are more marketized (e.g., the self-employed sector) (Wu and Song, 2014). Thus, the “economic grievances” are widespread among the Uyghurs (Reed and Raschke, 2010: 24-26).

Besides demographic pressure and economic grievances, contemporary Xinjiang is also characterized by political exclusion and religious repression. Almost all literatures on Xinjiang discuss these aspects and I am not going to review the details except for the fact that unlike the former Soviet republics where the First Secretaries were usually locals, Uyghur cadres have seldom become top leader of the Autonomous Region, with only one exception of Seypidin Ezizi (in 1972-1978). Similarly, Han Chinese occupy most key positions in the regime, leaving the Uyghurs the less important positions in different institutions. In terms of religious repression, there are many new limitations since the “Strike Hard” Campaign (yanda) in 2014. For example, students and civil servants were not allowed to participate in fasting
during the month of Ramadan in 2014. Later in August it was reported that men with long bears were banned from boarding public buses in Karamay. Earlier this year in Urumqi the authority started to ban women from wearing the burqa, in “an effort to curb growing extremism.”

Before we try to build up the causality between factors mentioned above and terrorist activity, we must clarify one thing first: Is there really the threat of terrorism in Xinjiang? After all, it has been questioned whether the “East Turkistan Islamic Movement” (ETIM), a militant organization that has been blamed by the Chinese government for a series of violent events and placed on two terrorism blacklists by the U.S. government, is still active or not, or even existed at all. Despite the fact that the Chinese government is making use of the threat from ETIM to suppress the not-so-violent independent movements of Uyghurs, there are amply evidences that suggest the threat is real. Reed and Raschke (2010) investigates the ETIM’s “origin, evolution, ideology, rhetoric and activities” in their book, which is up to now the most comprehensive research on this organization. According to their findings, the ETIM “has been blamed or claimed responsibility for a variety of terrorist attacks dating back to 1989 (Reed and Raschke, 2010: 46);” ETIM members detained at Guantanamo also provided information that supported the existence of the organization (Ibid., 3); Finally, the ETIM

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claimed the responsibility for a series of attacks that occurred from August 4th to 27th in 2008, when almost at the same time China was holding the Summer Olympics (Ibid., 64-67).

The claim of the Chinese government that the ETIM has been assisted by Taliban is also to some extent valid. Potter (2013) investigates the connection among ETIM, Taliban, al-Qaeda, and other terrorist organizations that have been active in Central Asia, Afghanistan, and Pakistan (See Figure 5). He finds that “cross-fertilization” has occurred between ETIM and other terrorist organizations in the region:

According to Karachi Islam, a jihadist newspaper, the recently\(^{16}\) killed leader of the ETIM/TIP,\(^{17}\) Abdul Shakoor Turkistani, also commanded al-Qaeda forces and training camps in the federally administered tribal regions of Pakistan... Shakoor assumed control after Abdul Haq al Turkistani was killed in a 2010 US Predator drone strike in North Waziristan. Haq was also central in al-Qaeda activities and a member of al-Qaeda’s Shura Majlis (executive council) (Potter, 2013).

Therefore, the link between ETIM and external terrorist organizations is more or less confirmed. At the very least, “both the Chinese government and Al-Qaeda apparently believe the ETIM is real (Reed and Raschke, 2010: 3).” In other words, China is obviously no more free from the threat of international jihadist element as it used to be, because of its global economic and political emergence, and technological and social changes within the country (Potter, 2013). But in this paper I am not going to attribute the terrorist threat, which has been proven to be real, solely to external factors. There are two reasons. First, although ETIM and

\(^{16}\) Abdul Shakoor Turkistani was killed on August 24th, 2012 in North Waziristan in a CIA drone strike.

\(^{17}\) TIP refers to Turkistan Islamic Party, a name that ETIP has begun to use in recent years. See Potter (2013).
other Uyghur militant organizations are responsible for a number of incidents with no doubt, in more cases we hardly find strong evidence indicating that ETIM has been involved. In other words, many perpetrators simply conducted terrorist attack spontaneously without the guidance or assistance from external entities. The Tiananmen car crash mentioned above may be included in this category, since reportedly the attackers were just motivated by a forceful demolition of a mosque in their hometown. Second, even it is confirmed that terrorist organizations are playing an innegligible role in the incident, a simple counterfactual analysis implies that they would not be able to recruit so many supporters had the latter were satisfied with the life in Xinjiang. Protests and violence are not just a result of “blackhand (heishou)” and “separatist organizations” involvement. Instead, they are more of the “authentic expressions of mass sentiment (Bovingdon, 2010: 121).” To understand the root of such sentiment, it is necessary to explore the casual effect of internal factors.

Ⅲ Literature Review

This section will review the literatures that are aimed at studying the internal factors that account for terrorist risk, with an emphasis on economic and social variables. This review is not going to be exhaustive, but tries to combine the theories in the field and relevant empirical observations from Xinjiang, in order to frame the hypotheses for testing in the next section.

1. Income

One of the major focuses in the field is the effect of income. De Mesquita (2008) offers a selective but informative overview of the recent political economy literature on terrorism. Generally there are two camps concerning whether poverty is the root of terrorist risk, and whether economic development can cure terrorism as is expected by many practitioners.

One camp is in favor of this intuitive argument. In the model of Blomber et al. (2004), a group’s perception on current economic status quo is the explanatory variable, while the possibility to bring about drastic institutional changes is the conditional variable. More importantly, their model describes the links between the economy and the type of conflict: Unhappy with the economic status quo, a group can choose a “rebellion attack” or a “terrorist attack”, which is much less costly than the former. Since it is too costly to overthrow a rich country with rebellion, terrorism is more preferable. Their cross country analysis using the
ITERATE data set supports the theory that economic variables can affect the probabilities of terrorist activities conditioned on the power of the state. Drako and Gofas (2006b) also reports that terrorist attack venue is on average characterized by low trade openness, adopting a Zero-inflated Negative Binomial Model to capture the statistical properties of terrorist activity. If we expand the range of dependent variable to include other forms of political violence, such as coups (Alesina et al., 1996) and civil wars (Collier and Hoeffer, 2004; Miguel et al., 2004), income is a statistically significant predictor of political conflicts across the world or in Africa, according to these authors.

Recently many scholars challenge the findings of the first camp, which are mainly cross-country analysis. Instead, this new camp studies the effect of income using micro-level data, particularly those collected in Palestine. For example, Berrebi (2007) finds that both higher standards of living and higher levels of education are positively associated with participation in Hamas or Palestinian Islamic Jihad (PIJ), using individual-level data. One of the surprising findings is that even suicide bombers tend to be richer and more educated than average, though they usually come from lower socio-economic groups when compared to non-suicidal terrorists. Krueger and Malečková (2003) gives an explanation why the connection between poverty, education and terrorism is “indirect, complicated and probably quite weak.” They believe that terrorist attack is similar to hate crimes that are defined as “crimes against members of religious, racial or ethnic groups because of their group membership, rather than their characteristics or actions as individuals.” What the perpetrators
do is a response to “political conditions and long-standing feelings of indignity and frustration that have little to do with economics (Krueger and Malečková, 2003).” The two authors also present the results of public opinion pulls conducted in the West Bank and Gaza Strip, as well as a comparison between the characteristics of Hezbollah militants and Lebanese population of similar age to confirm their argument. Similarly, Piazza (2006) proposes a “social cleavage theory” that rejects the relevance of poor economic performance in explaining the causes of terrorism. In sum, the conclusions made from micro-level evidence collected in specific areas are often contradictory to the theoretical generalization of country-level analysis.

Can income and education decrease terrorist activities as the first camp suggests, or are they simply irrelevant in Xinjiang? We can obtain some hints from both macro-level and micro-level observations. In terms of the effect of income, we see an upward trend not only in the graph of Xinjiang’s GDP growth and resource output, but also in the frequency line graph about Xinjiang’s terrorist attacks since 2000, particularly after 2009 (See Figure 1 and Figure 3). Therefore, it seems that economic growth are correlated positively with terrorist risk. Considering that “economic grievances” which exist widely among Uyghurs are generated during the period with rapid economic growth, we can form the following hypothesis to be tested in the empirical model:

**Hypothesis 1:** Economic indicators, such as GDP per capita, are not negatively associated with the probability of terrorist activities in Xinjiang.
2. Education

Besides the micro-level evidence mentioned above, some cross-country analyses also cast doubt on the negative effects of education on terrorism. For example, Brockhoff et al. (2010) finds that for 119 countries during the period 1984 to 2007, education neither fosters nor retards terrorism on its own, and the precise effect of education on terrorism depends on country-specific conditions.

If this argument based on aggregate-level data is valid, we should examine carefully the specificities of Xinjiang concerning the effect of education. A Uyghur scholar in China (Tursun, 2014) surveys the individual features of “Eastern Turkistan” terrorists, based on the data announced by the Ministry of Public Security and cases trialed by the courts. The author finds that among the 55 terrorists investigated, 80% of them did not receive senior high school education, and a significant proportion of them did not continue their study after primary school. She also describes the poor education among Uyghurs youth in South Xinjiang:

In 2012, only 33.61% junior high school graduates in Kashgar continue their study in senior high school … In Aksu, this number is 45.5% … In Kuche County it is only 32%, leaving approximately 7000 junior high school graduates to the society unemployed. They have become a cause for social instability (Tursun, 2014).
Thus Tursun (2014) believes that the low education level among Uyghurs youth in South Xinjiang benefits the recruitment of terrorist organizations. However, it would be too imprudent to jump to the conclusion that education is definitely a cure to terrorism. As Bovingdon (2010) indicates,

The profile of individuals arrested in 1997 challenged a centerpiece of propagandists’ belief against separatists. Instead of the uneducated, unemployed, religious lumpen described in antiseparatist propaganda, the organization turned out to be young and well educated—and growing more so over time. Suspects apprehended in connection with a spate of arson attacks in late May 1998, reportedly aimed at turning Urumc into “a sea of fire” and causing Hans to flee, were found to include female students from two of Xinjiang’s top universities, Xinjiang University and the Medical College (Bovingdon, 2010: 122).

In other words, similar to Middle East, in Xinjiang we can also find micro-level evidence that suggests education level is not negatively associated with participation in terrorist activities.

According to Krueger and Malečková (2003) and De Mesquita (2005)’s demand-supply theory, education level should be positively associated with the participation in terrorist activities. From the “demand side”, terrorist organizations prefer to recruit more educated individuals because they are more capable in launching the attacks; From the “supply side”, better educated individuals care more about politics, not just economic subsistence, thus more willing to join terrorist organizations. This theory may also be applied to our analysis on Xinjiang with some modifications. From the “demand side”, the terrorist organization in Xinjiang also prefers to recruit people with better education, thus we have the observation of Bovingdon (2010: 122) mentioned above. But considering the fact that most Uyghurs youth
are relatively less educated, it is not possible to recruit exclusively better educated individuals. Thus, concerning the educational background of the perpetrators, we can find both the more educated and the less, as Xinjiang area experts have shown in their descriptive analysis. Therefore, education level is not a good predictor of terrorism incidents. Here comes our second hypothesis:

_Hypothesis 2: Average years of education have no linear relationship with the probabilities of terrorism activities in Xinjiang._

3. Unemployment

Scholars who study the political economy of terrorism have not reached a consensus on the effect of unemployment either. While the results depend on the sample they collect, the timespan they cover, and the methods they use, most empirical researches (particularly those that use an aggregate level dataset) treat unemployment rate as an indicator of economic performance (Sambanis, 2004; Caruso and Gavrilova, 2012). In other words, the authors assume that unemployment rate is negatively associated with income. For example, Krueger and Malečková (2003) regards the downward trend of unemployment rate in Palestine since 2000 as an indication of improvement of local economy.

Such understanding on the relationship between income and unemployment rate may be
misleading and cannot be applied to studying places experiencing rapid growth like Xinjiang, where an increase in unemployment rate and growth in income both exist at the same time, particularly at the aggregate level. Compared to other indicators of income, such as GDP per capita, unemployment rate can more directly measure the degree of relative deprivation (Gurr, 1970) that is a cause of economic grievances. One reason why rapid economic growth cannot buy off all Uyghurs is that economic development is worsening the employment environment for local Uyghurs. Natural resource exploitation and cotton cultivation have attracted too many Han Chinese migrants from other provinces of China, and well-earning jobs that are created in the boom are mostly occupied by Han Chinese. According to Layne and Liang’s (2008) study, Han Chinese occupy 71% of the high-end jobs such as officials and managers and 57% of professional jobs, while Uyghurs only comprise 17% of government officials. Zhu and Balchford (2012) also finds that Han Chinese are particularly overrepresented in two major economic sectors: the oil industry and the Xinjiang Production and Construction Corps (XPCC), which together had Han Chinese as over 95% of their labor force.

On the other hand, the Uyghurs are struggling with unemployment. Many Uyghurs believe that they are discriminated in the job market. In December 2012, many ethnic minority parents went to streets to protest against oil companies in Karamay, who believed that the

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19 Migrants can be categorized as two groups: permanent migrants and floating migrants (floating workers). While the former have local household registration status (hukou), the latter is living without it. According to population census conducted in 2000, Xinjiang has 1.917 million floating migrants, approximately 10.4% of the provincial population. The share of floating population in Xinjiang is the highest among all western provinces, and one of the highest across the nation (Liang and Ma, 2004).

recruitment process was unfair to ethnic minority young people, as oil companies imposed too many restrictions on ethnic ratio, maximum age, etc. Besides, they also complained about the lower salaries for minorities. The protest lasted for almost half a year, and in February and May 2013, some parents even resorted to petitioning (shangfang) twice, on behalf of the 5000 unemployed ethnic minority youth. The parents were also worried about the increasing crime rate, divorce rate, and the proliferation of drugs among minority young people, which, they believe, are all attributed to unemployment. Therefore, the variable of unemployment that is supposed to be a cause of widespread economic grievances should be included in our regression analysis.

Language policy of China is partly responsible for the unemployment problem. According to a survey, only 19.88% of the Uyghurs have the ability to speak Mandarin, ranking the 50th among the 54 minorities surveyed (Han, 2013b). In fact, the Chinese government’s language policy before the 1990s should be responsible for the poor Mandarin Chinese knowledge of many Uyghurs youth. In Mao Zedong’s era, the Uyghurs were not required to learn Mandarin. Such language policy continued under Hu Yaobang and Zhao Ziyang’s liberalization. As Dwyer (2005) puts it, the 1980s were “a period of enormous expansion of support for minority languages, with central and local governments establishing and revising writing systems and creating many new language materials and programs.” In a relatively free market, the ability to speak Mandarin fluently does give Han Chinese much advantage in many

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aspects including searching for jobs compared to local ethnic minorities, for whom Mandarin is a completely different language. That is the reason why the ADB report of 2001 identifies language issue in Xinjiang as one of the most fundamental obstacles to the upward mobility of the Uyghurs (Asian Development Bank, 2002: 276-277).

Hypothesis 3: The unemployment rate is positively correlated with the probability of terrorist attacks.

4. Ethnic Fractionalization

Since the terrorist attacks are a form of ethnic conflicts between the local Uyghurs and the Han Chinese, it is reasonable to think of including the rate of Uyghur population or the one of Han Chinese in the regression analysis. Political Scientists and economists working in the field have been trying to measure ethnic fractionalization. For example, Abadie (2006) uses the measures for linguistic, ethnic and religious fractionalization in the right-hand side of the equation, which “reflect the probability that individuals chosen from the same country at random belong to different linguistic, ethnic, or religious group.” This measurement, referred as ethnolinguistic fractionalization index (ELF), is commonly adopted in quantitative scholarship. Although it is widely used, it is now facing more and more theoretical challenges. The representative discussion can be found in Cederman and Girardin (2007). The authors theorize ethnonationalist civil wars and generalize two explanations of ethnic conflicts that
are not compatible with the ELF-approaches. First, the state plays a central role for the evolution of conflict, in the sense that parties in the conflict struggle over the ownership of the state. Second, conflict proceeds among groups rather than among individuals. These two explanations imply that “competition for state resources is seen as a matter concerning not just individuals or associations of shared interests, but rather whole ethnic groups (Wimmer, 2002: 103).” As a consequence, ethnic conflicts are more likely to happen in places “where the dominant group is a demographic minority: The more demographically significant ethnic groups are excluded from state power, the more likely it is that there will be violent attempts at overcoming such imbalance (Cederman and Girardin, 2007).” Recent empirical researches (Buhaug et al., 2008; Cederman et al., 2009; Wimmer et al., 2009; Cederman et al., 2010) using newly established datasets like Ethnic Power Relations (EPR) tend to offer support for the exclusion theory that the probability of ethnic conflicts increases with the demographic power of the politically marginalized group.

Such theorization may also be applicable in explaining the ethnic conflicts in Xinjiang. First of all, political exclusion from state power does exist as is described in the background section. Despite the fact that the name of the region is “Uyghur Autonomous Region”, the head of different levels of government are mostly Han Chinese. Second, in Xinjiang it is indeed the more demographically significant group in the region, the Uyghurs, that is excluded from state power. Thus, according to Cederman and Girardin’s theory, places with more Uyghurs should be prone to terrorist attacks. Therefore, in the regression analysis, we
are not going to use the ELF index nor other modified versions because they fail to capture the two theoretical explanations mentioned above. Besides, these indexes do not suit the specificities of Xinjiang, where the population of Uyghurs and Han Chinese, the two major parties of ethnic conflicts, is so predominant (85% combined). Thus a simple calculation of the ratio of Uyghur over total population is sufficient in representing ethnic fractionalization and the potential effect of exclusion from state power.

Hypothesis 4: The ratio of Uyghurs over total population is positively associated with the probability of terrorist attacks.

5. Controlled Variables

One potential candidate for controlled variable is population density (or density-weighted population), which is also frequently treated as a predictor for terrorist attacks in both empirical and descriptive analysis of the field (Willis et al., 2006; Berrebi and Lakdawalla, 2007; Willis, 2007; Chatterjee and Abkowitz, 2011). The logic is fairly straightforward: Higher population density means higher competitiveness for resources and probably more victims caused by attacks, thus terrorism incidents are much more likely to take place. When we examine the specificities of Xinjiang, this factor is also relevant. Despite the fact that Xinjiang is the 8th largest country subdivision in the world, and that its population density is
one of the lowest among all provinces in China,\textsuperscript{22} we should keep in mind that only 8.5% of Xinjiang’s territory is habitable, while other lands are mostly deserts or mountainous areas.\textsuperscript{23} Besides land resources, residents of Xinjiang are also suffering from the lack of water. The in-migration flood and the GWDD are both responsible for water shortage in many traditional oasis and settlements (Shen and Lein, 2005). According to a report,

Urumqi’s existing water resources are estimated at 1.12 billion cubic meters (39.6 billion cubic feet), according to the report. Already, Urumqi’s total annual consumption of “pure” water—1.10 billion cubic meters (38.8 billion cubic feet) in 2011—has surpassed the amount of the larger total considered fit to drink.\textsuperscript{24}

Thus population density that measures the competitiveness for resources such as land and water would be an informative controlled variable.

What is more, past terrorist activity may also be influential. People have the impression that a country that has experienced terrorist attacks in the past is more likely to experience attacks in the future. This is due to logistical advantages and economies of scale upon which they can build in order to lower the cost of planning their activities (Drakos and Gofas, 2006b). Davis et al. (1978) conceptualizes such phenomenon as “addictive contagion”, which is treated as an internal permissive/enabling factor in Drakos and Gofas’s (2006b) taxonomy framework. Thus a dummy variable of past activity can also be counted as one of the

\textsuperscript{22} “Xinjiang,” Wikipedia. See: \url{http://en.wikipedia.org/wiki/Xinjiang}.
\textsuperscript{23} “Xinjiang de shengtai huanjing jianshe yu kechixu fazhan [Environment Protection and Sustainable Development in Xinjiang].” See: \url{http://ads.sits.cn/zt/xjgk/xjgk/huanjin-01.htm}.
\textsuperscript{24} “Xinjiang's Capital Urumqi Faces Water Crisis Fueled by Migration,” Radio Free Asia, January 8\textsuperscript{th} 2014. See: \url{http://www.rfa.org/english/news/uyghur/crisis-01082014181334.html/}. 
In this section we propose the hypotheses to be tested in the empirical model, based on a review on general theories, observations from other regions, and some descriptive information about the specificities of Xinjiang. The major concerned explanatory variables include income, education level, unemployment, and ethnic fractionalization, while the possible controlled variables are previous activity and population density. The next section will be devoted to testing these hypotheses empirically.
IV Empirical Analysis

In this section I will introduce, first the research design of empirical analysis, then briefly the data I use, followed by the results of various estimation methods and models. It ends with discussion and interpretation of the results.

1. Research Design

The coding of terrorism events in Xinjiang has given us an impression that there exists a pattern in terms of the geographical allocation of these incidents. Raymond Lee has summarized the violent incidents in Xinjiang from 2008 to 2013 (see Appendix 1, which will also be used as the source of dependent variable), and we could find that the terrorism acts broke out frequently in Hotan and Kashgar, two major cities in South Xinjiang where income level is relatively lower than other cities, where most local residents are Uyghurs rather than Han Chinese, where the school dropout rates are higher, as is mentioned above. That is how the intuitive understanding that terrorism in Xinjiang is caused by poverty comes up. Thus, examining the geographical variation of terrorist attacks within Xinjiang may give us some insights to confirm or reject this intuitive understanding on the relation between poverty and terrorism.

Then we face the problem of choosing the appropriate unit level of observation. Unlike the
cross-national quantitative analysis, the unit level of which is naturally nation state, we can either treat a city or a county of Xinjiang as one observation (in China a city is an administrative unit below the province but above the county, thus a city is usually composed of a number of counties or county level districts). Because the sample size of cities is too small for quantitative analysis, I am going to use a county-level cross-sectional dataset with a sample size of approximately 80 (depending on the number of missing data). I combine the 9 county-level districts in Urumqi as one single observation, not only by doing so Urumqi will become more comparable to other counties, but also because some data is only available at the aggregate level. Because of missing data problem, I have to drop cities administered by the XPCC except Shiheizi City. Though leaving these observations out may cause biasedness, we can still justify it because these cities are not within the hierarchical system of the Autonomous Region Government, but are instead semi-militant organizations directly answering to the Central Government. Since they are so different from other counties, we can treat them as outliers.

In terms of the timing of the cross-sectional data, I will focus on incidents that happened in the year of 2013, because this is the latest year which Raymond Lees’ coding has covered. Moreover, in the year of 2013 there were more reported incidents than in other years. Thus, the data of year 2013 are our major focus, though we have to make some justifiable compromises on some variables, which will be elaborated more in the following part.
Before we conduct empirical analysis, we have to discuss one more tricky issue: How to deal with the mix of macro and micro levels of analysis in the research. This is the problem widely confronted by scholars who use quantitative methods and aggregate level dataset to study the causes of ethnic conflicts and civil wars. As Sambanis (2004) points out,

The already significant gap between the micro-level theories and their macro-level implications is magnified when the micro-macro relationships are studied solely through cross-national statistical analysis. Such studies often overlook information about the causal pathways that link individual or group behavior with the outbreak of civil war (Sambanis, 2004).

In the study of Xinjiang, we also face a similar micro-macro gap problem. On one hand, the data on the explanatory variables, such as income, years of education, unemployment rate, etc., are all at the aggregate level, since the unit of observation is a county. On the other hand, our dependent variable is about the terrorist attacks committed by individuals. In other words, we are using factors that are affecting a group of people in certain area to explain individual behavior in the same place. How can we justify this non-matchness?

We can justify the usage of an aggregate (county-level) dataset by referring to an emerging consensus in the field. Although terrorist attack seems to be an individual level behavior, it can also be treated as a form of ethnic conflict at the level of entire groups (Cederman and Girardin, 2007; De Mesauita, 2008). That is, despite that terrorist events involve much fewer participants compared to mass protests or civil wars, it is also mobilized based on

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25 For a detailed discussion on the choice of various forms of conflict in Xinjiang, see Section V on causal mechanism.
politicized ethnicity, preexisting identity, and shared motivation. Specifically speaking, the Uyghur terrorists act not out of their personal grievances, but out of the economic and political grievances of the local Uyghur groups. However, it is not true that the entire group of Uyghurs in Xinjiang shares the grievances at the same degree, otherwise it cannot explain why terrorist incidents are concentrated in certain part of Xinjiang rather than across the whole region: The grievance theory acutely applies to sub-groups in South Xinjiang, but not likely in the northern part. Therefore, a county-level analysis is justifiable because, on one hand, terrorist acts in a county do represent shared grievances and motivations of the local ethnic group, and on the other, it captures the heterogeneity within the Uyghurs in terms of the willingness to resist and links such heterogeneity to local economic, social, demographical and political conditions. As long as it is the locals who commit local terrorist attacks, the use of county-level database to predict the likelihood of terrorist incidents is well-grounded.  

2. Description of Variables and Summary Statistics

The data on the explanatory variables can be summarized as follows:

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>gdppc</td>
<td>85</td>
<td>3.3902</td>
<td>2.7419</td>
<td>.5404</td>
<td>14.9127</td>
</tr>
<tr>
<td>aveedu</td>
<td>85</td>
<td>8.9785</td>
<td>.7622</td>
<td>7.48</td>
<td>11.03</td>
</tr>
</tbody>
</table>

26 Of course there is no guarantee that all terrorist incidents are committed by local perpetrators. The terrorist responsible for acts in County A may actually come from County B. A more prudent discussion on this point will be provided in the final section.
I collect the data for GDP per capita, Uyghurs rate, and population density from the latest published Xinjiang Statistical Yearbook 2014, which consists of the statistics of 2013. For average years of education and unemployment rate, I rely on the result of the 6th national population census conducted in the year of 2010, because these two items are not included in the Xinjiang Statistical Yearbook, while the population census will only be conducted every 10 years. Despite the fact that the timing is not exactly the same for every explanatory variable, the two variables from the 2010 national population census are still useful since we can assume that there is unlikely to be a drastic change of these averages within two years when major policy intervention was largely missing. Xinjiang’s education policy has not changed until 2014, when the length of compulsory education was prolonged to 12 years, 3 years more than before and the national standard.28 Similarly, the project that is aimed at improving the employment prospects of locals in South Xinjiang has not been implemented.

Table 1: Descriptive Statistics of Explanatory Variables

<table>
<thead>
<tr>
<th></th>
<th>unemrate</th>
<th>uyrate</th>
<th>popden</th>
<th>preter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>74</td>
<td>.0282</td>
<td>.0222</td>
<td>.0046</td>
</tr>
<tr>
<td>Uyghurs rate</td>
<td>85</td>
<td>.4321</td>
<td>.3910</td>
<td>.0015</td>
</tr>
<tr>
<td>Population density</td>
<td>85</td>
<td>100.0386</td>
<td>361.0299</td>
<td>.1762</td>
</tr>
<tr>
<td>(person/km^2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dummy: terrorist incident</td>
<td>85</td>
<td>.0471</td>
<td>.2130</td>
<td>0</td>
</tr>
</tbody>
</table>
in 2010-2012 (1=yes)

27 I calculate the unemployment rate by adding up the numbers of those who do not work after graduation, those who lose their jobs because of work unit (danwei) reasons, those who lose jobs because of personal reasons, and those whose land is expropriated, leaving out those who lose ability to work. I then divide the sum by the population of those who have registered in the government as either “working” or “not working”.

until 2014. For the dummy variable, I use the coding of Raymond Lee, which I will elaborate more in the next paragraph.

I would like to examine whether these explanatory variables can explain the geographical variation of terrorism. Thus, my dependent variable has two outcomes: terrorist attack occurs or not in certain county in 2013. Regards to its data, as is mentioned above, I mainly rely on the coding of Raymond Lee, cross-referenced with media sources home and abroad (see Appendix 1). According to his coding, in 2013 8 terrorist attacks occurred in 7 counties of Xinjiang. However, the accuracy of the information is never guaranteed, because the violent events in Xinjiang are always considered to be a very “sensitive” issue by the Chinese government, which imposes all sorts of restrictions for scholars or journalists who want to conduct a field study there (Reed and Raschke, 2010: 14-16). Gardner Bovingdon (2010: 18) describes his stay in Xinjiang as an advanced postgraduate student a Xinjiang University back in the 1990s:

Personnel in the university’s Foreign Affairs Office (waishi bangongshi) made clear from the start that they were responsible for me and, in that capacity, offered strong advice about where I could travel and with whom I could interact. I lived in a student dormitory, and although I moved about quite freely during the day when not in language classes, I was expected to return home every night by 10 P.M. local time (midnight Beijing time) during the semester, which placed obvious (and obviously intentional) constraints on how far I could travel. I was able to make day trips to the suburbs and exurbs of Ürümqi, as well as to the more distant towns of Changji and Hutubi. During weekends, long holidays, and when school was not in

session, I traveled to other parts Xinjiang. I lived for short periods in private homes in periurban neighborhoods of Kashgar and Qumul and moved about those towns unimpeded. At one time, I was stopped by Public Security personnel, asked where I was staying, informed it was illegal for a foreigner to stay in a private home, and made to move into a hotel.

What can be expected is that under such strict constraints, the frequency of terrorist activities and violent events is likely to be underreported. Drakos and Gofas (2006a) try to deal with this problem rigorously. They notice two factors that are responsible for the biasedness: the so-called encouragement effect and underreporting bias. The former is stronger if the level of democracy is higher. More democratic polity means more press freedom. In order to maximize the publicity, terrorists prefer to carry out the attacks in places where it is more likely to be reported. In terms of the underreporting bias, it means that the complete number of terrorist incidents simply cannot find their way to publicly available sources. In other words, press freedom carries a dual effect: “a pure underreporting bias and an exacerbating effect via publicity seeking (Drakos and Gofas, 2006a).”

Once again, there is a piece of good news. The well-know existent “devil” of underreporting is not going to cause severe statistical problems in our analysis. The underreporting bias can be ignored because across the counties in Xinjiang we cannot find different level of information control: Generally the social control is very strict in the whole region. Thus, we can treat the unreported terrorist activities as random and unrelated with county characteristics. The cost for ignoring the underreporting bias is mainly the change of the intercept, providing that we are going to estimate a logistic regression. In other words, it will not fundamentally
change the significance level and the sign of the coefficients.

Similarly, we do not need to address the encouragement effect because none of the counties have a freer environment for media than others. Such encouragement effect does exist, but not in Xinjiang. In order to maximize their publicity in the country and in the world, some perpetrators have been planning terrorist attacks outside the Autonomous Region. The Tiananmen Car crash in 2013 and the Kunming Massacre in 2014 are good indication that terrorist organizations are now shifting their targets to places other than Xinjiang, where the level of press freedom is indeed much higher, and the information is more accessible to foreign media (at least in other provinces of China it is unimaginable that the Internet can be partially shut down for almost one year, which happened after the bloody riots on July 5th, 2009 in Xinjiang). Thus, the encouragement effect is not our concern either, unless we are going to perform a cross-province analysis: Encouragement effect is much stronger in the more prosperous and more internationalized coastal areas of China. Simply put, the underreporting of terrorist incidents in Xinjiang is not an severe obstacle for exploring the roots of terrorism using quantitative methods.

3. Empirical Results

Because the dependent variable has binary outcomes, I adopt the method of logistic

regression.\textsuperscript{32} The results are reported in the following Table:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
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<td>gdppc</td>
<td>.01630</td>
<td>.2690</td>
<td>.8202*</td>
<td>.3965+</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.13957)</td>
<td>(.2047)</td>
<td>(.3606)</td>
<td>(.2089)</td>
<td></td>
</tr>
<tr>
<td>aveedu</td>
<td>-.2233</td>
<td>.7548</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.5373)</td>
<td>(.8079)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>unemrate</td>
<td>111.3502*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(49.6138)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>uyrate</td>
<td>5.9968+</td>
<td>(6.4404)</td>
<td>(7.0842)</td>
<td>(3.2645)</td>
<td></td>
</tr>
<tr>
<td>popden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>preter</td>
<td>2.4843*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-2.4669***</td>
<td>-.4173</td>
<td>-14.3631+</td>
<td>-18.7724**</td>
<td>-8.0354*</td>
</tr>
<tr>
<td></td>
<td>(.6273)</td>
<td>(4.7844)</td>
<td>(8.4917)</td>
<td>(7.1227)</td>
<td>(3.2503)</td>
</tr>
<tr>
<td>Obs.</td>
<td>85</td>
<td>85</td>
<td>85</td>
<td>74</td>
<td>85</td>
</tr>
<tr>
<td>LR chi2</td>
<td>0.01</td>
<td>0.18</td>
<td>11.06</td>
<td>17.14</td>
<td>14.25</td>
</tr>
<tr>
<td>Prob&gt; chi2</td>
<td>0.9081</td>
<td>0.6743</td>
<td>0.0114</td>
<td>0.0007</td>
<td>0.0026</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.0003</td>
<td>0.0037</td>
<td>0.2287</td>
<td>0.3700</td>
<td>0.2947</td>
</tr>
</tbody>
</table>

Table 2: Logistic Regression Results
Standard deviation in the parenthesis.
+p<0.1, *p<0.05, **p<0.01, ***p<0.001.

<table>
<thead>
<tr>
<th></th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
<th>(10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>gdppc</td>
<td>.3729</td>
<td>.8041*</td>
<td>1.0701*</td>
<td>1.1507*</td>
<td>1.3924*</td>
</tr>
<tr>
<td></td>
<td>(.2316)</td>
<td>(.3808)</td>
<td>(.4929)</td>
<td>(.5348)</td>
<td>(.6235)</td>
</tr>
<tr>
<td>aveedu</td>
<td>.2332</td>
<td>-.10503</td>
<td>-1.5789</td>
<td>-2.1700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.9681)</td>
<td>(1.2413)</td>
<td>(1.4464)</td>
<td>(1.700)</td>
<td></td>
</tr>
<tr>
<td>unemrate</td>
<td>95.6541+</td>
<td>143.51*</td>
<td>137.7633*</td>
<td>139.4033+</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(53.0532)</td>
<td>(64.5642)</td>
<td>(68.7549)</td>
<td>(75.4675)</td>
<td></td>
</tr>
<tr>
<td>uyrate</td>
<td>6.3139+</td>
<td>14.4223*</td>
<td>17.3637*</td>
<td>16.2829*</td>
<td>18.4086*</td>
</tr>
<tr>
<td>popden</td>
<td></td>
<td></td>
<td></td>
<td>.0041</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(.0033)</td>
<td></td>
</tr>
<tr>
<td>preter</td>
<td>2.3578+</td>
<td>1.7384</td>
<td>2.1580</td>
<td>1.0974</td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{32} In the logistic regression, the dependent variable is "logit", defined as \( \log (p/(1-p)) \) conditioned on explanatory variables, where \( p \) is the probability of occurrence of the event.
Table 2: Logistic Regression Results (continue)

<table>
<thead>
<tr>
<th></th>
<th>(1.3123)</th>
<th>(1.4751)</th>
<th>(1.5493)</th>
<th>(1.9307)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-10.2289</td>
<td>-17.6656*</td>
<td>-12.5078</td>
<td>-7.4580</td>
</tr>
<tr>
<td></td>
<td>(9.7652)</td>
<td>(7.4808)</td>
<td>(9.9208)</td>
<td>(11.8791)</td>
</tr>
<tr>
<td>Obs.</td>
<td>85</td>
<td>74</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>LR chi2</td>
<td>14.31</td>
<td>18.51</td>
<td>17.91</td>
<td>19.88</td>
</tr>
<tr>
<td>Prob&gt; chi2</td>
<td>0.0064</td>
<td>0.0010</td>
<td>0.0013</td>
<td>0.0013</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.2959</td>
<td>0.3995</td>
<td>0.3865</td>
<td>0.4290</td>
</tr>
</tbody>
</table>

Standard deviation in the parenthesis.

+p<0.1, *p<0.05, **p<0.01, ***p<0.001.

Under some model specifications, the coefficient of GDP per capita is not statistically significant even at a 10-percent level, though they all have positive signs. Controlled with more variables, income becomes significantly associated with the probability of terrorist incidents, and they are associated positively. Thus, we can believe that all other things equal, the higher the income level of a county, the more possible it will suffer from terrorist attacks.

The expectation of the Chinese government that boosting economic growth can decrease terrorism activities is not supported by empirical evidence: These economic development projects may turn out to be the roots of terrorism that strengthen the economic grievances already widespread among the Uyghurs. Hypothesis 1 is confirmed.

The empirical results also show that increasing the education level is not a solution to terrorism either. The effect of average years of education on the probability of terrorism incidents is not significantly different from zero. Moreover, the inconsistent signs of aveedu in the models imply that terrorism risk may not be a linear function of education. Considering the observations that both the less educated and the more educated are active participants of
terrorist attacks, the probability of terrorist incidents may be in fact a quadratic function of education levels. At this stage we can confirm the validity of Hypothesis 2 as well.

What is more, unemployment is indeed a cause of terrorism as we hypothesize. Under most models unemployment rate is positively associated with the logit, and the effect is also statistically significant at conventional levels. Controlled with different variables, the positive sign does not change and the coefficients remain significant. Recently the Chinese government has realized the importance of employment issue, and invested 1.9 billion RMB to help college graduates find a job. Unlike the counter effect of economic development, and the uncertain effect of education, improving the employment situation is indeed a preferable and feasible cure to terrorism.

Last but not least, there is strong evidence for the positive effect of the rate of Uyghurs. In most models the effect is statistically significant at a 5-percent level. Thus, counties with higher ratio of Uyghurs are more likely to suffer from terrorist attacks as our Hypothesis 4 predicts.

4. An Instrumental Variable Approach

Empirical researches that try to examine the causal effects of economic performance on

terrorism face one potential problem: Not only can economy affects terrorist activities, the latter can also affect the former. Thus we are facing the problem of endogeneity.

As De Mesquita (2008) says, “it is very difficult to give a full accounting of the macro-economic effects of large scale terrorist attacks.” Indeed, it is hard to measure how much lost terrorism has generated for the economy of Xinjiang. However, the negative effect on economy may exist. The cancellation of the Kashgar Commodity Fair mentioned above is a good example. Besides, from the reaction of the Xinjiang Government, we can tell that tourism is one of the economic sectors that are severely hit. Facing a drop of tourists, the government responded by offering subsidies to travellers. People who visited Xinjiang before the May 1st Holiday in 2014 were given a subsidy of 500 RMB (approximately 80 USD). Later in 2015 those who chose to travel by train were also given a subsidy of 200 RMB (approximately 32 USD) per person, costing 2 million RMB in total. From the response of the government we can tell that the endogeneity problem may exist, and an instrumental variable is needed to address this problem.

Both Miguel et al. (2004) and Abadie (2006) adopt the instrumental variable approach in their cross-country analysis. The former uses an instrumental variable of rainfall for economic growth to study the impact of economic conditions on the likelihood of civil conflict in

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34 “wuyi qian qu xinjiang zuigao kehuo 500 yuan butie [Visit Xinjiang before May 1st Holiday will be given a maximal 500 RMB subsidy],” Changjiang Times, February 22nd 2014. See: http://www.changjiangtimes.com/2014/02/470016.html.
African, which is an ideal region for such identification strategy because weather shocks are closely related to income growth in sub-Saharan Africa, as is found in the first-stage regression in the paper. The latter introduces geographic landlock (the fraction of a country area distant to sea access) and uses it as an IV for economic variables. In both settings the IVs can affect economic performance, but are not affected by it. Moreover, they can affect the dependent variable only through its effect on income. The IVs adopted are usually variables of natural conditions.

In this paper I will use the distance to the capital city of Xinjiang, Urumqi, as the instrumental variable, since it can affect the economic performance—the farther from Urumqi, the worse of local economic development, because local goods are not accessible to a larger market—while terrorist attacks cannot change the distance. The results of endogeneity test (Hausman test) and logistic regression using IV are presented in the following table:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
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<td>.0737</td>
<td>.1113</td>
<td></td>
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<td></td>
<td>(.2760)</td>
<td>(.3995)</td>
<td>(.4121)</td>
<td>(.4190)</td>
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</tr>
<tr>
<td>uyrate</td>
<td>4.2660+</td>
<td>5.6603+</td>
<td>3.1335</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.3247)</td>
<td>(3.1379)</td>
<td>(2.0105)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>popden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.2663+</td>
</tr>
<tr>
<td>preter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

36 A simple linear regression gives: gdppc=5.9401-0.0046*dist, where dist indicates the distance of a county to Urumqi. The coefficient of dist is significant even at a 0.1-percent level. The R-squared of this model is 0.31. Thus we can conclude that the distance to Urumqi is indeed negatively and significantly associated with income.
Table 3: Logistic Regression Results with IV (per capita GDP is instrumented with distance to Urumqi)

<table>
<thead>
<tr>
<th></th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
<th>(10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.9161</td>
<td>-.4173</td>
<td>-14.6663*</td>
<td>-7.5109*</td>
<td>-4.9328*</td>
</tr>
<tr>
<td></td>
<td>(.7772)</td>
<td>(4.7844)</td>
<td>(7.2723)</td>
<td>(3.8173)</td>
<td>(2.4573)</td>
</tr>
<tr>
<td>Hausman Test</td>
<td>0.026</td>
<td>0.470</td>
<td>0.723</td>
<td>0.900</td>
<td></td>
</tr>
<tr>
<td>Obs.</td>
<td>85</td>
<td>85</td>
<td>74</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>LR chi2</td>
<td>3.89</td>
<td>0.18</td>
<td>9.44</td>
<td>9.07</td>
<td>10.09</td>
</tr>
<tr>
<td>Prob&gt; chi2</td>
<td>0.0486</td>
<td>0.6743</td>
<td>0.0240</td>
<td>0.0283</td>
<td>0.0178</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.0804</td>
<td>0.0037</td>
<td>0.1952</td>
<td>0.1959</td>
<td>0.2086</td>
</tr>
</tbody>
</table>

Standard deviation in the parenthesis.

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

The number given here is the p-value of the coefficient of error predicted from the first-stage OLS (regression of gdppc on other explanatory variables and the instrumental variable) in the second-stage (regression of logit on all explanatory variables and the predicted error from the first-stage). The lower the p-value, the more likely endogeneity exists.
The results show that, per capita income, instrumented with distance to Urumqi, is not statistically associated with the probability of terrorist attacks, when other variables are controlled. Thus we can still conclude that promoting economic development is not likely to decrease terrorism. Considering that endogeneity problem seems absent except in Model (1), the following qualitative discussion will be based on the regression results in Table 2 rather than Table 3.
V Causal Mechanism

1. Why Choosing Terrorism?

Although we have proved that economic performance is positively associated with terrorist risk in Xinjiang, statistical analysis cannot provide a causal mechanism between economic as well as political grievances and terrorism, but only correlation. Specifically, we have not answered one question, which is also missing in most literatures that try to establish a link between income and terrorism: Why economic grievances sometimes do not lead to terrorism in many other places but other forms of domestic political violence such as civil wars? De Mesauita (2008) believes that a long-run goal of terrorism studies should be to connect more directly with the enormous literatures on civil wars and other forms of violence:

An open research question is when insurgents find terrorism to be a useful tactic and when other forms of insurgency are deemed more likely to be effective. To the extent that insurgents are making this choice endoneously, dividing our data into, for example, those data sets covering terrorism and those covering civil wars may be a serious mistake, introducing important sources of bias if factors that we use to explain various forms of violence also affect what type of violence is employed.

Therefore, we should also expand our vision to cover other forms of resistance in Xinjiang, if we want to fully clarify the causal mechanism. I will develop my explanation on the choice of forms of resistance partly based on the modification of the rational choice model built in Blomberg et al. (2004) mentioned above in the literature review, which discusses two types of
confliction: rebellion and terrorist attack. What is different is that I will include one more type of resistance in the following analysis that also exists in Xinjiang as a result of economic and political grievances along with rebellion and terrorism: mass protests.

In the model of Blomberg et al. (2004), a group that is not satisfied with the current economic status quo will choose rebellion when the government is so weak that overthrowing the government is possible. If not, a terrorist attack is a preferable option since its cost is much smaller. I will redefine the goal of the unsatisfied group: Overthrowing the government is not what they want in the end, it is only one of the means that can lead to the ends. Their ultimately goal, in the context of worsening economic and political conditions in places such as Xinjiang, may be the redistribution of wealth, an improvement in the employment environment, less political exclusion from state power, etc. Armed rebellions, terrorist attacks, and mass protests are three most frequently used methods in order to achieve these goals.

Mobilization depends on availability of collective identities, shared motivations, capacities and opportunities for collective action (Gurr, 2000: 65). In Xinjiang, the Uyghurs have a strong collective identity as well as a shared motivation to improve their political and

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38 According to Blomberg et al. (2004), in a rebellion a group seeking to disrupt the status quo overthrows the government and takes power, while terrorist attack is a less institutionally disruptive conflict type in which a dissident group seeks to increase their voice in the economy, yet are unable to take over power. According to their definitions, the violent incidents listed in Raymond’s coding, which we use as our dependent variable, can be regarded as terrorist attacks since these incidents at most involve tens of perpetrators and one cannot overthrow a government with such limited number, let alone the Chinese government. In other words, what they are seeking in these violent events is not state power, but to create the atmosphere of terror and express their anger. Besides, the incidents listed in Appendix 1 also meet the definitions of terrorism in the U.S. Code. According to 18 U.S.C. § 2331, the activities of “domestic terrorism” appear intended (i) to intimidate or coerce a civilian population; (ii) to influence the policy of a government by intimidation or coercion; or (iii) to affect the conduct of a government by mass destruction, assassination, or kidnapping. Thus, being targeted at governmental institutions such as police offices, which is frequently the case in Xinjiang, can also be regarded as terrorism attack, and not necessarily armed rebellion.
economic treatment, but they lack sufficient capacities and opportunities to mobilize and organize a collective action with mass participation. I would argue that it is much easier, much less costly and relatively more effective to conduct terrorist attacks, particularly so under a strictly controlled society, rather than rebellions or protests, both of which involve a substantially larger group of people. First, compared to terrorism, rebellions and protests are much less feasible \textit{per se}. The more people are involved, the bigger the problem of “collective action” (Olson, 2009; Also see Kuran, 1991). Therefore, even though many people are unsatisfied with the status quo, most of them are expecting others, instead of themselves, to burden the cost of voicing their anger. The Uyghurs are no different: In the riots of 1997, many Uyghurs were expecting others to take the initiative (Bovingdon, 2010: 130).

Thus, the Chinese government has developed a strategy to cope with potential protests: deterring would-be leaders from taking the initiative. As Bovingon (2010) indicates:

Security officials make a point of targeting the leaders of protests for prosecution and heavy sentences as a cautionary example to others. This practice broadcasts the message that potential movement leaders have nothing more to gain than do rank-and-file participants and they also have more to lose (Bovingdon, 2010: 129).

Second, besides the logic of collective action, organizing protests also face external constraints that makes it much less preferable: The Chinese government is not tolerant with any mass protests in Xinjiang. While public protests are labeled as “splittism” that are usually crushed harshly and punished severely, the Chinese government basically makes no
concession even if the Uyghurs successfully organize a street protest: Between 1980 and 1997, the government in Beijing and Urumqi made concessions in only 4 instances to matters raised during demonstrations (Bovingdon, 2010: 128). As a result, the frequency of protest events in Xinjiang drops sharply since the late 1990s, even though in other provinces of China the trend is heading towards the opposite direction (See Figure 6). Some data published by the Chinese scholars also present the same phenomenon. According to a report by Li and Tian (2014), Guangdong, which is supposed to be the most “open” and “freest” province partly because of its proximity to Hong Kong, has nurtured more mass protests in the past 13 years than any other provinces. There have been 267 mass protests with more than 100 participants in the past 13 years in Guangdong, counting 30.7% of the whole country. In contrast, at the same period, the number is 5 in Xinjiang. The numbers listed here are surely underestimated, but they are still informative in the sense that the report compares the frequency of protests across different provinces (See Figure 7).

In sum, the reason why terrorism is chosen is that it faces a lesser degree of collective action problem, while at the same time cost relatively less compared to mass protests that basically cannot make the government compromise, let alone armed rebellions, which is completely infeasible at current stage.39 Realizing the lack of both capacities and opportunities, rational perpetrators would substitute mass public forms of resistance with terrorist attacks that

39 Cederman et al. (2010) in their cross-country analysis argues that it is exclusion from state power of certain ethnic group, rather than the lack of capacity to suppress rebellions, that is the real cause of conflict with the government. While I agree that political exclusion is an influential factor in Xinjiang, as is introduced in the background section, the latter argument that failure to suppress is not relevant in explaining conflict is not supported by the evidence on Xinjiang. Moreover, the authors in fact fail to provide any test on this argument using their own dataset.
involve fewer people, are more difficult to detect, and easily publicized. That is what is now happening in Xinjiang. One policy recommendation for the Chinese government would be, even though they cannot eliminate the economic grievances and political exclusion of the Uyghurs in the short-run, it is still desirable to provide more channels for the Uyghurs to express their angers and economic appeals in a more moderate way. Indeed, not all problems in Xinjiang are related to separatism, and not all problems can be solved by state repression, as some Party scholars in China have realized.40

2. A Complete Causal Chain

After discussing how political repression is influencing (in fact, limiting) the choice of resistance forms, I would like to propose a complete causal chain that can fully capture the causal mechanism to explain the occurrence of terrorism in which income (grievance) is the explanatory variable and repression (opportunity structure) is the intervening variable (See Figure 8).

That is how higher income level and tighter social control are linked to higher probability of terrorist incidents in Xinjiang. Both the grievance theory and the opportunity structure theory have some merits. The former is correct in the sense that the distribution of wealth, which is operationalized as unemployment rate, is indeed a determinant of terrorism. Specifically, the

increase in total wealth without distributional equality among different ethnic groups has positive effect on terrorist risk. This echoes the new finding of Cederman et al. (2011) that brings economic grievance theory back to the debate and shifts explanatory focus to group-level accounts of inequality and conflict. The opportunity structure theory is insightful in the sense that economic variables cannot solely account for the occurrence of terrorist attack. Opportunities for conflict define the form of resistance: terrorist attacks, civil wars, or mass protests. The causal mechanism proposed in this paper is not going to defend any school, but tries to merge the merits of the two and provides a conditional, rather than deterministic, explanation for the one of the most intolerable crimes in human society.

One more final test for the causal chain. A “hoop test” of “congruence procedures” is applicable. “When using congruence procedures, the investigator explores the case looking for congruence or incongruence between values observed on the independent and dependent variable and values predicted by the test hypothesis (Van Evera, 1997: 58-63).” Thus, if the causal chain of our analysis is correct, a necessary condition is that we should observe the variation of key variables (including explanatory variables and dependent variables). As is discussed in the previous sections, we do see the temporal changes of income and the frequency of terrorist incidents. Moreover, such changes are also observable in the intervening variables. In terms of unemployment issue, under planned economy, ethnic minorities like all other citizens in the country, were guaranteed a job after graduation. But

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41 For a hoop test, passing affirms the relevance of hypothesis but does not confirm it, while failing eliminates the hypothesis, See Van Evera (1997: 31-32), Brady and Collier eds. (2010: 210).
this socialist policy did not continue when the irreversible process of marketization began. Since then we observe more inequality between Han Chinese and ethnic minorities, between the coastal provinces and the inlands, between urban and rural areas, etc. No wonder many Uyghurs, including Ilham Tohti, a Uyghur scholar who has been accused of secessionist movements by the Chinese government, prefer the Mao’s era to the current situation.\footnote{“China’s Fruitless Repression of the Uighurs,” \textit{New York Times}, September 29th 2014. See: \url{http://www.nytimes.com/2014/09/29/opinion/chinas-fruitless-repression-of-the-uighurs.html?_r=0}.}

In terms of the other intervening variable, political repression, a temporal variation is also existent. We simply need to refer to a representative indicator: According to official statistics, regional authorities allocated 9.34 billion RMB to the public security sector in 2012, a 23-percent increase over 2011.\footnote{“Xinjiang 2012 nian yusuan zhixing qingkuang he 2013 nian yusuan cao’an de baogao [Report on Xinjiang’s 2012 Budget Implementation and 2013 Draft Budget],” see: \url{http://www.gov.cn/gzdt/2013-02/19/content_2334747.htm}.} The number was increased to 9.86 billion RMB in 2013.\footnote{“Guanyu xinjiang weiwuer zizhiqu 2013 nian yusuan zhixing qingkuang he 2014 nian zizhiqu yusuan cao’an de baogao [Report on Xinjiang’s 2013 Budget Implementation and 2014 Draft Budget],” see: \url{http://www.mof.gov.cn/zhuantihuigu/2014yshb/201402/t20140219_1044563.html}.} It continued increasing in 2014, reaching 10.25 billion RMB.\footnote{“Guanyu xinjiang weiwuer zizhiqu 2014 nian yusuan zhixing qingkuang he 2015 nian zizhiqu yusuan cao’an de baogao [Report on Xinjiang’s 2014 Budget Implementation and 2015 Draft Budget],” see: \url{http://news.163.com/15/0130/10/AH6UT45V00014AED.html}.} Although the statistics for 2015 is not available yet, the ongoing “strike hard” campaign (\textit{yanda}) is likely to lift up the expenditure once again. Because we do observe the variation from our major explanatory variable to intervening variables to dependent variable, the causal chain passes the “hoop test”.

VI Further Discussions

Although we have more or less clarified the causal mechanism from economic development, economic grievance, to terrorism in Xinjiang, its validity may be weakened by two alternative explanations.

First, it may be possible that places with higher income are more likely to suffer from terrorist attacks not because the locals are more dissatisfied with distributional inequality during development, but simply because these places are more attractive for terrorists. In our analysis we have not distinguished between the origins and the targets of terrorism. In other words, we have to assume that local people commit local terrorist acts, which does not necessarily hold. For example, Krueger and Laitin (2008) finds that the origins of terrorism are in countries that suffer from political oppression, while the targets are countries that enjoy a measure of economic success. If this is also true in Xinjiang, we may have to reconsider the explanatory power of economic grievance theory and invest more to examine what are the determinants of the venue’s attractiveness for terrorists. Micro-level data on the individual features of terrorists in Xinjiang can give us some hints on whether terrorist attacks are really committed by local perpetrators (See Table 4).

<table>
<thead>
<tr>
<th>Name in English</th>
<th>Place of Origin</th>
<th>Affiliated Organization</th>
<th>Place of Activity</th>
<th>Sites of Organized Terrorist Acts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hasan Mahsum</td>
<td>Shule County, Kashgar</td>
<td>ETIM</td>
<td>Afghanistan</td>
<td>Hotan; Urumqi</td>
</tr>
<tr>
<td>Name</td>
<td>Place of Origin</td>
<td>Organization</td>
<td>Region</td>
<td>City, Province</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------</td>
<td>--------------</td>
<td>-----------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Muhanmet Emin Hazret</td>
<td>Moyu County, Hotan</td>
<td>ETLO</td>
<td>West Asia, Central Asia</td>
<td>Urumqi; Kirgizstan</td>
</tr>
<tr>
<td>Dolqun Isa</td>
<td>Aksu City, Aksu</td>
<td>ETLO</td>
<td>German, Turkey</td>
<td>Xinhe County, Aksu, Hotan</td>
</tr>
<tr>
<td>Abudujelili Kalakash</td>
<td>Moyu County, Hotan</td>
<td>WUYC</td>
<td>Africa; Railway between Lanzhou and Hami</td>
<td></td>
</tr>
<tr>
<td>Abudukadir Yapuquan</td>
<td>Shele County, Kashgar</td>
<td>ETIM</td>
<td>West Asia, South Asia</td>
<td>Moyu County, Hotan; Urumqi</td>
</tr>
<tr>
<td>Abudumijit Muhammatkelim</td>
<td>Shele County, Kashgar</td>
<td>ETIM</td>
<td>West Asia, South Asia</td>
<td>Akto County, Qizilsu, Wensu County, Aksu, Kuqa County, Aksu; Kashgar City, Kashgar</td>
</tr>
<tr>
<td>Abudula Kariaji</td>
<td>Shache County, Kashgar</td>
<td>ETIM</td>
<td>South Asia</td>
<td>Seeding terrorists to penetrate</td>
</tr>
<tr>
<td>Abulimit Turxun</td>
<td>Urumqi</td>
<td>ETLO</td>
<td>Kazakhstan; Kirgizstan; Urumqi</td>
<td></td>
</tr>
<tr>
<td>Hudaberdi Haxerbik</td>
<td>Yining County, Ili</td>
<td>ETLO</td>
<td>Yining City, Ili</td>
<td></td>
</tr>
<tr>
<td>Yasen Muhammat</td>
<td>Zepu County, Kashgar</td>
<td></td>
<td>Zepu County, Kashgar</td>
<td></td>
</tr>
<tr>
<td>Atahanabudunani</td>
<td>Yecheng County, Kashgar</td>
<td>Central Asia</td>
<td>Xayar County, Aksu</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: First Batch of Terrorists Identified by Public Security Ministry

From Table 4 we can tell that among 11 listed terrorists 9 were responsible for organizing terrorist attacks within Xinjiang. Among these 9 terrorists, over half of them (underscored below their names and italics for their places of origin) were responsible for the attacks in

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46 ETLO is short for East Turkestan Liberation Organization.
47 WUYC is short for World Uyghur Youth Congress.
48 The Public Security Ministry identified three batches of terrorists respectively in 2003, 2008 and 2012. I did not list the second or the third batch because their jiguan (place of origin, not necessarily the place of birth) is not specified. Moreover, the second batch consists exclusively of perpetrators who were responsible for the series of attack before the 2008 Summer Olympics, and half of them (4 out of 8) were actually targeting Chinese citizens outside the country. See the website of the Ministry of Public Security of the PRC: http://www.mps.gov.cn/n16/n983040/n1988498/index.html.
their places of origin. Although the information about the perpetrators is not fully known to us because the terrorists listed above are only organizers who stay abroad, it seems that the planners of terrorist acts do have the preference to target places where they have more associations.

In the aggregate level, we can also work on causal identification by controlling one more variable in our regression analysis. If terrorists would like to maximize publicity and causalities, then the preferable venue for terrorist attacks is the urbanized area with more people crowds, instead of remote villages. Thus, a controlled variable of urbanization rate (urrate), defined as the ratio between urban population and total population can capture such attractiveness.

<table>
<thead>
<tr>
<th></th>
<th>(11)</th>
<th>(12)</th>
<th>(13)</th>
<th>(14)</th>
<th>(15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>gdppc</td>
<td>.4136</td>
<td></td>
<td>1.1691*</td>
<td>1.3516*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.2503)</td>
<td></td>
<td>(.5240)</td>
<td>(.6029)</td>
<td></td>
</tr>
<tr>
<td>aveedu</td>
<td>.0406</td>
<td>-2.4545</td>
<td>-2.7916</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.0521)</td>
<td>(1.7743)</td>
<td>(1.9911)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>unemrat</td>
<td>42.2997</td>
<td>153.147*</td>
<td>137.3745+</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(36.8034)</td>
<td>(70.1449)</td>
<td>(76.5033)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>uyrate</td>
<td>4.5798*</td>
<td>8.9220*</td>
<td>5.7717*</td>
<td>17.3752*</td>
<td>17.6889*</td>
</tr>
<tr>
<td></td>
<td>(1.8474)</td>
<td>(4.5270)</td>
<td>(7.3398)</td>
<td>(8.9626)</td>
<td></td>
</tr>
<tr>
<td>popden</td>
<td>.0036</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0034)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>preter</td>
<td>.8440</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.2306)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>urrate</td>
<td>3.2315*</td>
<td>3.5468*</td>
<td>2.2862</td>
<td>3.6474</td>
<td>2.5297</td>
</tr>
<tr>
<td></td>
<td>(1.5179)</td>
<td>(1.6886)</td>
<td>(1.9071)</td>
<td>(2.5677)</td>
<td>(3.0775)</td>
</tr>
<tr>
<td>Constant</td>
<td>-7.1626***</td>
<td>-11.9593*</td>
<td>-8.7403</td>
<td>-2.7967</td>
<td>-.2305</td>
</tr>
</tbody>
</table>
From the regression results of Model (11) and (12) in Table 5, we may infer that the rate of urbanization is positively associated with the likelihood of terrorist attacks, which support the theory of attractiveness. But the effect disappears when we try to include more variables, such as education level, unemployment rate, and other controlled variables. Thus, we cannot find strong evidence in Xinjiang that suggests the necessity of disaggregating target and origin of terrorism. In particular, in Model (14) and (15), even when urbanization rate is controlled, the effect of income on the probability of terrorist incidents is still statistically significant, and positive. In other words, the proposition that economic development is not an effective cure to terrorism still holds.

The other alternative explanation emphasizes the importance of external factors. When we examine the situation of Xinjiang, we basically focus on internal variables while ignore the

Table 5: Logistic Regression Controlled with Urbanization Rate  
Standard deviation in the parenthesis.  
+p<0.1, *p<0.05, **p<0.01, ***p<0.001.  

<table>
<thead>
<tr>
<th>VIF (gdppc)$^{49}$</th>
<th>1.5413</th>
<th>2.2391</th>
<th>2.3685</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIF (urrate)</td>
<td>1.1312</td>
<td>1.3879</td>
<td>1.6736</td>
</tr>
<tr>
<td>Obs.</td>
<td>85</td>
<td>85</td>
<td>74</td>
</tr>
<tr>
<td>LR chi2</td>
<td>11.54</td>
<td>15.01</td>
<td>11.62</td>
</tr>
<tr>
<td>Prob&gt; chi2</td>
<td>0.0031</td>
<td>0.0018</td>
<td>0.0205</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.2385</td>
<td>0.3103</td>
<td>0.2507</td>
</tr>
</tbody>
</table>

---

$^{49}$ VIF, which stands for Variance Inflation Factor, is calculated by setting $VIF=1/(1-R^2),$ where $R^2$ is the $R$-squared for the regression of one explanatory variable on all other explanatory variables. $VIF(gdppc)$ means that the $R$-squared is obtained by regressing gdppc on all other explanatory variables, while $VIF(urrate)$ means that it is obtained by regressing urrate on others. VIF is an indication of the severity of multicollinearity problem since it measures how much the variance of an estimated regression coefficient is increased. As income and urbanization rate may be correlated (and the correlation between gdppc and urrate is 0.5146), it is necessary to diagnose the multicollinearity problem. A VIF smaller than 2.5 implies that it does not constitute a major problem in the sense that in our case the validity of the predicted coefficients of gdppc and urrate is not severely affected.
influence of external ones, though we did briefly mention the connection between ETIM and other terrorist organizations in Central Asia. However, some findings have indicated that external factors can also make a difference. According to Han (2013a), ethnic groups with extensive external kinship networks are more likely to politically mobilize to contest national identity. The reason why the Uyghurs challenge the assimilation of the state is that Uyghurs believe the Turkish, which are ethnically and culturally much closer to Uyghurs than Han Chinese, are enjoying a better living conditions and life opportunities than themselves in Xinjiang. Moreover, Soviet Central Asia has historically been perceived as a better alternative for the Uyghurs as well. In contrast, the absence of such contestation from Mongolians can be attributed to fact that the development of Inner Mongolia in China is much better than in the independent Mongolia country that has no attractiveness for ethnic Mongolians in terms of economic well-being. This argument can supplement our causal chain and offers a policy recommendation for the Chinese government: In order to alleviate the economic grievances among the Uyghurs and decrease the terrorist risk, it is necessary to promote shared prosperity, to stimulate economic growth without causing inequality. It implies that the current development strategy that highly relies on natural resource exploitation is no longer sustainable if the government really wants to address the problem of terrorist attacks, and more broadly, ethnic conflicts in Xinjiang in the long-term.

This research tries to examine whether income has a positive, negative or no effect on the
emerging terrorist incidents in Xinjiang. Quantitative analysis using county-level cross-sectional data for the year of 2013 shows that better economic performance is positively associated with the likelihood of terrorist attacks in Xinjiang. This relationship still holds when an instrumental variable approach is adopted. A causal mechanism is also provided. Both the grievance theory and opportunity structure theory have explanatory power in predicting the occurrence of terrorist incidents. Economic grievances as a result of recent development projects, along with preexisting political grievances caused by political exclusion from state power, motivate the Uyghurs, which is demographically more significant in the region and has their own collective identity, to resist. However, the opportunity structure in Xinjiang does not allow for some forms of resistance, notably armed rebellion and mass protests. Thus, terrorist attacks become the most feasible choice to respond to economic deprivation and political exclusion for the Uyghurs. In the end, the validity of two alternative explanations is discussed. While some believe that places with better economic performance are more attractive to terrorists, I argue that this is not applicable to explain the causes of terrorism in Xinjiang.

The causal mechanism can also be applied to explaining why terrorist attacks occur to some non-democracies but not others. It may give us some insights on the relationship between regime type and terrorism in general. The scholars conducting quantitative research on this relationship have not researched a consensus on whether dictatorship is more likely to confront with terrorist risk (Wade and Reiter, 2007; Aksoy et al., 2012), and in this paper I
propose a conditional theory on their relationship, which can be tested using cross-country datasets for future research: Divided societies without democracy are prone to marginalize economically and politically an ethnic minority and generate grievances among them, and they are more likely to respond with terrorism when the non-democratic regime is too strong to launch mass protests or armed rebellion.

In the end, the major task of this paper is to identify whether economic development emphasized by the Chinese government is effective in curbing terrorism in Xinjiang. One policy recommendation based on the empirical results is that the Chinese government should devote more resources for income equality between Han Chinese and other ethnic minorities in the region. This can never be achieved by simply discovering more oil and gas fields, but by developing programs that can alleviate the unemployment problem among the Uyghurs youth. While migrant restriction is not a viable policy option for both normative and practical reasons against the background of irreversible marketization (Zhu and Balchford, 2012), promoting the education of Mandarin Chinese is very likely to increase the human capital of Uyghurs and make them more competitive in the employment market, where they have to compete with Han Chinese. Thus, finding a way to balance the need for preserving traditional culture (e.g., the language of ethnic minorities) and the need for modernization (e.g., Mandarin Chinese education) is necessary.
Figures

Figure 1: Frequency of Terrorist Attacks in China
Source: Global Terrorism Database\textsuperscript{50}

Figure 2: Xinjiang in the Map of China
Source: Bovingdon (2010)

\textsuperscript{50} See: \url{http://www.start.umd.edu/gtd/search/Results.aspx?chart=country&casualties_type=&casualties_max=&country=44}. To our knowledge the coding is far from comprehensive.
Figure 3: GDP Growth in Xinjiang (100 million RMB)
Source: Xinjiang Statistical Yearbook 2014

Figure 4: Total Energy Production (including coal, crude oil, natural gas, hydro-power and wind power, 10000 tons of SCE)
Source: Xinjiang Statistical Yearbook 2014
Figure 5: ETIM’s Connection with Regional Terrorist Organizations
Source: Potter (2013)

Figure 6: Protest Events in China and Xinjiang (1993-2005)
Source: Bovingdon (2010: 115)
Figure 7: Geographical Allocation of Mass Protests (2000-2013)\textsuperscript{51}

Figure 8: Path Graph of the Causal Chain

\begin{itemize}
    \item Economic development drive (natural resource exploitation and cotton cultivation) since 2000
    \item Migrant flood and discrimination, creating economic grievances among the ethnic minority (Preexisting political grievances caused by political exclusion)
    \item Political repressions that constrain mass protests as means of voicing the dissatisfactory
    \item Higher terrorist risk but less mass protests in Xinjiang
\end{itemize}

\textsuperscript{51} The number means the frequency of mass protests with more than 100 participants in different provinces between 2000-2013.
References

Cederman, Lars-Erik, and Luc Girardin. “Beyond fractionalization: Mapping


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### Appendix 1

#### Summary of Xinjiang’s Violent Incident, 2008-2013

<table>
<thead>
<tr>
<th>Violent Incident</th>
<th>Time &amp; Place</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shache Violent Attack</td>
<td>2013.12.30, Kashgar</td>
<td>Shache public security bureau was attacked by nine ethnic minority Uyghurs. Eight suspects were shot dead by the Police, and one was arrested.</td>
</tr>
<tr>
<td>Shufu Violent Attack</td>
<td>2013.12.15, Kashgar</td>
<td>The police were under attack by an explosive device and a machete when arresting suspects. Two policemen were killed. Fourteen suspects were shot dead and eight were arrested.</td>
</tr>
<tr>
<td>Bachu Violent Attack</td>
<td>2013.11.16, Kashgar</td>
<td>The mob assaulted a police station by wielding knifes and axes. Two policemen were killed and two were injured. All nine suspects were all shot dead.</td>
</tr>
<tr>
<td>Tiananmen Square Car Blaze</td>
<td>2013.10.2, Beijing</td>
<td>A car crashed and exploded in the Tiananmen Square. Chinese police said they found knives, iron rods, canisters of gasoline, and a flag covered in religious slogans inside the car. Three suspects and two tourists were killed and 38 bystanders were injured.</td>
</tr>
<tr>
<td>Kashgar Violent Attack</td>
<td>2013.08.20, Kashgar</td>
<td>Deadly conflicts happened between local police and the Uyghurs who were accused as bomb makers and terror suspects. One policeman was killed, 22 suspects were shot dead, and four were arrested.</td>
</tr>
<tr>
<td>Hotan Violent Attack</td>
<td>2013.06.28 Hotan</td>
<td>Crowds of rowdy mobs gathered and made disturbance. Local police stopped the riot. There is no casualty in this case.</td>
</tr>
<tr>
<td>Shanshan Violent Attack</td>
<td>2013.06.26, Turpan</td>
<td>A group of people attacked a police station and a local government building. There were 24 people killed, including two policemen, 21 people injured. Eleven suspects were shot dead and four were arrested.</td>
</tr>
<tr>
<td>Bachu Violent Attack</td>
<td>2013.04.23, Kashgar</td>
<td>Three local officials were attacked while visiting homes and reporting &quot;suspicious persons and knives&quot;. There were 15 local officers killed, including ten Uyghurs, three Han</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Event Name</th>
<th>Date/Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korla Violent Attack</td>
<td>2013.03.07, Bayingolin</td>
<td>Two violent attacks happened in the Korla city. All suspects are Uyghurs. Five people were killed and ten injured.</td>
</tr>
<tr>
<td>National Day Attack</td>
<td>2012.10.01 Kashgar</td>
<td>A Uyghur young man launch a suicide bomb attack to the frontier forces in the Yecheng county. This incident caused about 20 casualties. The Chinese authority did not confirm this incident.</td>
</tr>
<tr>
<td>Hotan Plane Hijacking</td>
<td>2012.06.29, Hotan</td>
<td>Tianjin Airlines Flight 7554, a scheduled flight from Hotan to Urumqi, was hijacked by six ethnic Uyghur men on 29 June 2012. Passengers and crew successfully stopped the hijackers' attempt. Six suspects were arrested.</td>
</tr>
<tr>
<td>Yecheng Violent Attack</td>
<td>2012.02.28, Kashgar</td>
<td>Eight Uyghur men led by Abudukeremu Mamuti attacked pedestrians with axes and knives. There were fifteen people killed and fourteen injured. Eight suspects were shot dead and one arrested. One policeman was killed and four injured.</td>
</tr>
<tr>
<td>Pishan Hostage Crisis</td>
<td>2011.12.28, Hotan</td>
<td>Fifteen Uyghur young men kidnapped two people for directions. One policeman was killed and one injured. Seven suspects were shot dead, four injured, and four arrested.</td>
</tr>
<tr>
<td>Kashgar Violent Attack</td>
<td>2011.07.30 &amp; 2011.07.31, Kashgar</td>
<td>Two violent attacks happened in Kashgar. Turkistan Islamic Party claimed they were responsible for the attacks. There were 12 people killed and 40 injured.</td>
</tr>
<tr>
<td>Hotan Violent Attack</td>
<td>2011.07.18, Hotan</td>
<td>Eighteen Uyghur young men burst in a police station and assaulted security guards with knives and bombs. They took eight hostages and yelled slogans of Jihadism. There were 18 people killed and 6 injured.</td>
</tr>
<tr>
<td>Aksu Bomb Attack</td>
<td>2010.08.19, Aksu</td>
<td>A Uyghur drove an electric three-wheeled vehicle and ignited an explosive device targeting one police officer and fifteen security members. There were 7 people killed and 14 injured.</td>
</tr>
<tr>
<td>Needle Attack</td>
<td>2009.08.17, Urumqi</td>
<td>Three Uyghurs randomly assaulted people by syringe stabbings or needle attacks and triggered public scare in Urumqi. Official statistics showed more than 100 people were attacked.</td>
</tr>
<tr>
<td>2009 Urumqi Riots</td>
<td>2009.07.15, Urumqi</td>
<td>A large-scale violence that involves with a series of violent attacks targeted ethnic Han people. There were 198 people killed and 1700 injured.</td>
</tr>
<tr>
<td>2008 Kashgar Attack</td>
<td>2008.08.04, Kashgar</td>
<td>A terrorist attack initiated by two men who drove a truck and killed jogging police officers with grenades and machetes.</td>
</tr>
</tbody>
</table>
There were 16 officers killed and 16 injured. Two suspects were arrested.