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Earned income tax credit experiments in the People's Republic of China

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ADB Working Paper Series

**EARNED INCOME TAX CREDIT
EXPERIMENTS IN THE PEOPLE'S
REPUBLIC OF CHINA**

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and Junhui Wang

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Abstract

As more households in the People's Republic of China (PRC) are lifted out of poverty, it becomes increasingly difficult to address the remaining poor by implementing traditional cash transfer programs due to inaccurate identification and the welfare dependency issue. One solution is to implement an incentive-compatible transfer program such as the Earned Income Tax Credit (EITC) in the United States. Starting in 2014, the China Household Finance Survey (CHFS) conducted a series of experiments. Evaluations present unambiguously strong evidence that EITC increases labor supply, earning, and expenditure in the PRC. Inspired by the early success, many Chinese local governments have been trying to come up with their own EITC-like programs or trials. This paper will discuss some of the ongoing experiments or trials in the PRC.

Keywords: People's Republic of China, anti-poverty, EITC, field experiment

JEL Classification: H24

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1. INTRODUCTION

The People's Republic of China (PRC) has one of the largest populations living under poverty lines in the world – around 70 million according to the World Bank's statistics (2016). In 2015, the government announced its ambitious plan to resolve all of the extreme poverty by 2020 in its 13th five-year plan. Consequently, government funds for poverty alleviation have been increasing sharply. By 2017, funds set up by the central government alone added up to over CNY86.1 billion (\$12.5 billion) (Department of Agriculture 2017). As more households and counties are freed from poverty, it becomes increasingly difficult to resolve the remaining poverty by implementing traditional cash assistance programs for two reasons. First, cash assistance programs may not accurately identify poor households since households may have incentives to disguise themselves as poor. Second, cash assistance programs discourage households from working. Because of the risk of losing guaranteed benefits, households refuse to increase their earnings, so that they can remain eligible for the guaranteed cash grant and government support.

One solution to these two issues is to implement an incentive-compatible transfer program. Earned Income Tax Credit (EITC), first launched by the United States (US) government in 1975, has been shown to be successful and effective. It has become a major anti-poverty policy in the United States. In 2017, 27 million eligible workers and families received about 65 billion in EITC (IRS 2019), at about \$2,400 per recipient. Studies have shown that EITC can effectively promote labor participation, increase income, and lift households out of poverty. Today, at least 16 countries, namely the United Kingdom, Canada, New Zealand, Austria, France, the Netherlands, Hungary, Ireland, Slovakia, Spain, Italy, Belgium, Denmark, Finland, the Republic of Korea, and Sweden, have adopted programs that are similar to EITC in the US.

Inspired by EITC, in 2014, the China Household Finance Survey (CHFS) at Southwestern University of Finance and Economics designed a Labor Income Reward Plan and conducted a field experiment in Wutongqiao District, Leshan City, Sichuan province, PRC. By randomly offering households an EITC-like scheme among a sample of 259 households (139 treated and the rest are in the control group), the experiment is able to show a positive effect on labor supply and household income. After several successful experiments and trials, the City of Leshan's government finally decided to take the next step and merge the Labor Income Reward Plan into its Project Endeavor for Low-income Families, which has become the first EITC-like program in the PRC. There has been a growing interest in EITC-like programs among local Chinese government officials, and many have been trying to come up with their own EITC-like programs or trials. Most of the experiments or trials conducted in the PRC are carried out in cooperation with the CHFS. This paper will discuss some of the ongoing experiments or trials in the PRC.

2. THE PRC'S WAR ON POVERTY

The PRC's current objective for anti-poverty policies is to lift all registered poor households and counties out of poverty and resolve the regional poverty problem by 2020. A poor household is considered as being lifted out of poverty if the household has a stable income source and income per capita higher than the national poverty line, does not have difficulty in obtaining food and clothing, and has guaranteed access to compulsory education, basic healthcare, and safe housing. The national poverty line was CNY2,300 in 2015 when the objective was announced. Estimation shows that there were

70 million people in the PRC who lived under the national poverty line. The goal is to lift all of them out of poverty by 2020. This section briefly discusses the relevant anti-poverty policies in the PRC.

2.1 Regional and Household Policies

The PRC's current anti-poverty policies can be categorized as regional and household policies. According to officials, the PRC has 14 poor areas, 832 poor counties (30% of the total number of counties), 148,000 poor villages (21% of the total), and 29.5 million registered poor households (7% of the total). These entities heavily overlap each other. Anti-poverty household policies only apply to registered poor households. Anti-poverty regional policies only apply to designated poor areas.

Regional anti-poverty policies help designated poor areas to develop their local economy, often in the form of government-supported construction projects, and subsidies. Industry policies support poor areas in developing agricultural production and tourism. For agricultural production, designated poor villages can apply for subsidies from governments to develop their own agricultural production projects for local specialty goods. For tourism, about 6,000 poor villages are chosen to receive investment in tourism-related infrastructure projects. Employment policies offer subsidized training programs. Education policies support kindergarten constructions in poor areas. Students in the compulsory education system are provided with a CNY4 (\$0.6) per capita, per day subsidy to improve nutrition intake. In higher education, poor areas enjoy special admission quotas among public universities. Healthcare policies support hospital constructions. Several large-scale restoration projects have been implemented to reverse the degeneration of the local ecosystem by planting vegetation. Poor households residing in habitat conservation areas are moved to other places with cash compensations and free new houses. Poor areas are also seen to have relatively more new infrastructure, such as roads, railways, airports, irrigation systems, drinking water systems, power plants, electricity transmissions, communication networks, farming, and public facilities. Governments have also invested and installed mini solar power stations and hydroelectric power stations for households in some areas. By selling unused electricity to the electricity grids, these power stations may continuously generate additional income for poor households.

Anti-poverty policies for households provide a minimum income guarantee, dilapidated house renovation, poverty relocation, a healthcare guarantee, subsidies for household agricultural production, and microfinance. Local government organizes farming technique training programs so that registered poor households with available labor are guaranteed to master at least one useful skill to enable them to start farming production. Registered poor households can enroll in technical or vocational schools for free. Meanwhile, these households can enjoy scholarships and subsidies for living costs while studying in the schools. Once graduated, there will be guaranteed employment arrangements. In terms of education, registered poor households can waive the miscellaneous fees if the households enroll in senior high schools. Some majors at some of the technical secondary schools have exclusive quotas specially allocated for poor households. In addition, poor households are guaranteed scholarships and student loans at universities. For healthcare, governments provide full subsidies to poor households for health insurance enrollments. These households also enjoy lower deductible and higher reimbursement rates as well as catastrophic disease aid. Lastly, poor households can apply for small loans without providing securities. Registered poor households can also apply for soft loans or loans with discounted interest rates.

2.2 Inaccurate Identification and Welfare Dependency

Regional anti-poverty policies try to address problems in poor areas in their underdeveloped economies, including the lack of public infrastructure, education, and healthcare facilities, natural resources, and a severely degenerated ecosystem. However, these policies have been criticized for their identification of poor regions and for their coverage. Wang et al.'s (2007) study shows that, in 2001, about 25% of designated poor counties did not meet the national criteria. About 48% of poor villages were not actually the poorest. The designated 14 poor areas and 832 poor counties only covered 50% to 60% of the poor population (Li et al. 2017). This means that almost half of the poor population cannot receive benefits directly via the regional policies. In addition to the identification and coverage, most regional policies are implemented in the form of government-supported projects and subsidies. The policies typically only mandate on the dates of completion and/or the amount of investment. Policies do not require evaluations of their effects on poverty reduction. Therefore, no data are available for quantitative evaluations. Since all projects are almost fully funded by the government, local governments have strong incentives to obtain these projects without concerns over their effectiveness, and thus become more and more dependent on transfers in the form of the projects of the upper governments.

Anti-poverty policies for households are aimed at helping poor families recover from extreme poverty. Most of the policies can be characterized as basic guarantees. Consequently, household policies can only help the poor to some extent. On top of that, the identification of registered poor households is also problematic. Many poor households are not registered as officially poor. Wang and Guo (2015) conducted a survey of 1,200 households. They found that about 40% of registered poor households do not meet the criteria for registration, and yet 58% of eligible households below the poverty line are not registered as poor. Moreover, there is almost no policy that provides households with incentives to increase their incomes. Thus, welfare dependency rises, and the pressure for households to return to poverty has been growing. For example, the rural minimum income guarantee is a typical cash transfer program that can be applied by any household whose income is below the poverty line. For poor households, an increase in income means facing a greater risk of losing cash grants. Some poor households have refused to be lifted out of poverty deliberately for this reason. Other households have decided to return to a state of poverty and start relying on welfare again after experiencing the loss of the cash grants. This has been reflected by the decrease in income among the low-income group on the macro level. From 2013 to 2016, the PRC's rural disposable income per capita increased by 7% per year on average. However, the income of the poorest decreased. This indicates that welfare dependency in the PRC has been a prevalent phenomenon.

3. SOLUTION: INCENTIVES-COMPATIBLE PROGRAMS FOR REGISTERED POOR HOUSEHOLDS

The PRC's current regional and household anti-poverty policies share two common issues, i.e. inaccurate identification and welfare dependency. New methods, such as dynamic identification to update the poor areas and more restrictions on eligibility for rural minimum income guarantee, have been adopted to alleviate these problems. However, as more and more households and areas are lifted out of poverty, the remaining areas and households exhibit more serious problems in terms of welfare dependence and inaccurate identification. The key to solving the problems for household policies once and for all is to implement an incentive-compatible transfer program/policy.

With the correct design, poor households will have positive incentives to increase their earnings, while other households will not have incentives to lie. Thus, it removes both the identification and the dependency problems for registered poor households at source.

EITC, or Earned Income Tax Credit, is a typical incentive-compatible transfer payment policy in the United States (Nichols and Rothstein 2015). It is a refundable tax credit program that was launched during Ford's administration in 1975. The idea is to use tax credit as a reward and encourage households to increase their earnings. The more the households earn, the larger the credit they will receive. This design is incentive-compatible. It may resolve the inaccurate identification issue since there will be less incentive for households to disguise themselves as poor since underreporting income will reduce the credits. It may also resolve the welfare dependency issue since credit is no longer guaranteed, and households may try to increase their earnings to gain more credit.

EITC originated from President Lyndon Johnson's idea to end poverty as a part of his initiative of the Great Society in 1964. Johnson argued, in his 1964 Economic Report, that providing cash grants to the poor would not solve the problem from the root. As he put it, it would be far better, albeit more difficult, to equip and permit the poor of the nation to produce and earn the additional money required to escape from poverty (Ventry, 2000). His advocacy was closely related to the heavy welfare dependency at the time. One of the widely discussed cash grant alternatives is the Negative Income Tax (NIT) scheme. However, it has been criticized for its self-contradictory design, and more importantly its expensive budget. In order to resolve the dispute, starting from 1968, the Office of Economic Opportunity conducted several large-scale social experiments in New Jersey, Iowa, Washington, Colorado, and Indiana. However, much of this effort has been wasted due to data manipulation, after which NIT was terminated. It was not until 1975 that EITC came out with a low profile, and it was considered to be a huge success. After this, EITC continued to expand and has become one of the major anti-poverty policies today in the United States and in many countries in the world.

4. EXPERIMENTS AND POLICIES IN THE PRC

In 2014, the CHFS started an EITC-like experiment. The initial funding for the experiment was raised through a local state-owned bank (Leshan Commercial Bank). Since then, many local governments have been working together with the CHFS team to implement similar programs. Together, these efforts provide valuable evaluations and policy implications for nationwide implementation at a later time.

4.1 Wutongqiao Experiment (2015–2017)

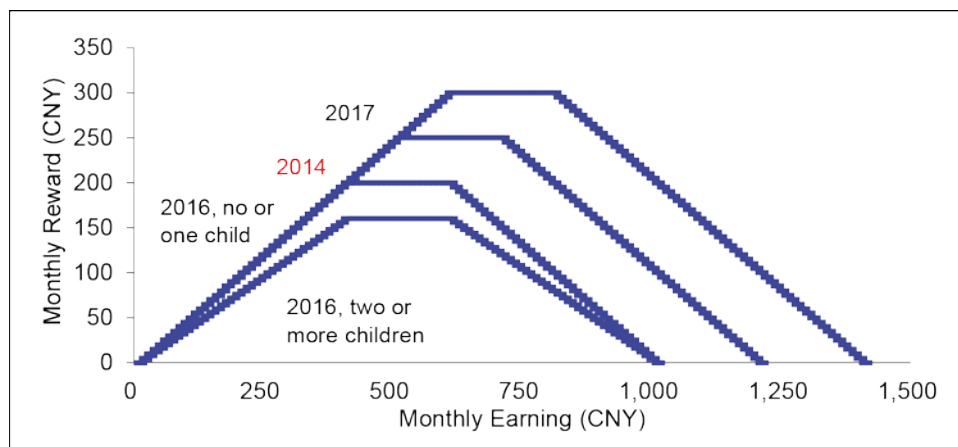
The Wutongqiao Experiment was the first EITC field experiment in the PRC. It was conducted in Wutongqiao District in Leshan City in Sichuan province, PRC. The purpose of the experiment was to evaluate the effect of the Labor Income Reward Plan, which is an EITC-like program, and test whether it provides work incentives for poor households and improves their economic conditions.

The project began in June 2014. The first stage was a baseline survey. The actual intervention started at the end of the year. The pilot sample comprised 65 households, with 28 in the treatment group. It was expanded with an additional 194 households 12 months later.

The Wutongqiao Experiment-Labor Income Reward Plan is similar to EITC in the US. Enrolled households receive a monthly reward that is equal to a fixed proportion of its earnings in the last month. The reward increases with earnings until it reaches a maximum level (phase-in stage), after which the reward remains the same regardless of the change in earnings (plateau stage). The reward will eventually start to diminish as the earnings continue to grow until the household earnings exceed the break-even point, after which the household is no longer eligible for the reward (phase-out stage). Specifically, for the first CNY500 (\$72) earned, the reward will be a fixed 50% of the earnings. When the earning is between CNY500 and CNY700, the reward remains at CNY250 (\$36). Finally, the reward will start to decline as the earnings exceed CNY700 (\$101). The rate of decline is also 50%. At this rate, the reward will decline to zero once the earnings reach CNY1,200 (\$173).

Although the general setup is similar to EITC, there are two important differences between the rewarding plans and a typical EITC. First, the calculation is different: After all the household members have reported their earnings, the earnings will be accumulated on the household level. Next, per capita earnings will be calculated by dividing the total earnings by family size. Then, the reward per person will be calculated by applying the rules in the three-stage scheme. The final amount of reward will be the reward per person multiplied by the number in the household. Second, the Labor Income Reward Plan is distributed once every month rather than once every year in the US.

Figure 1: Labor Income Reward Plan (2015–2017)



Source: CHFS (2017).

Two changes were made after the treatment started. The first change was made in January 2016. The upper threshold (of earnings) of the phase-in stage was reduced from CNY500 to CNY400. The rate (both phase-in and phase-out) was still 50%. The plateau range was changed to “400 CNY to 600 CNY.” In addition, the new scheme varies depending on the number of children in the household. Households with no or one child will receive rewards to a maximum of CNY200 per member. Households with two or more children will receive rewards to a maximum of CNY160. Finally, the upper threshold (of earnings) of the phase-out stage was set at CNY1,000. The second change was made later in March 2017. The upper bound (of earnings) of the phase-in stage was changed to CNY600, while the lower bound (of earnings) is still CNY0, and the negative income tax rate remains at 50%. The plateau range was changed from “400 CNY to 600 CNY” to “600 CNY to 800 CNY.” Households within the plateau stage

will receive a fixed amount of CNY300 reward per member. However, the reward no longer distinguishes the number of children in households. The upper bound of the phase-out stage was extended to CNY1,400. Figure 1 illustrates the changes in reward plans.

4.2 Mabian/Muchuan Experiment (2017–2018)

The Mabian/Muchuan Experiment was a quasi-experiment conducted by the CHFS in 2017. Compared with the Wutongqiao Experiment, the Mabian/Muchuan Experiment focused on rural areas and minorities. There are several aspects to the importance of this experiment. First of all, rural households in the PRC are very different from urban households in many ways. Besides demographics, rural households often rely on different income sources. Moreover, one can often expect the job opportunities in rural areas not to be as lucrative as they are in urban areas. This implies that the impact of labor supply decisions among rural households could be very different from that among their counterparts in urban areas. Given that most extreme poverty in the PRC is located in rural areas, it is important to expand the samples and the rural areas to test the effectiveness of EITC.

The Experiment started in April 2017. Four villages, namely Boxiang, Gantianba, Ciwan, and Qianguang, were chosen as treatment villages. Another four villages, Fengxi, Erping, Hejia, and Jinpen, were chosen as control villages. Boxiang and Fengxi have a mixture of *Han* and *Yi* people. The other villages have only *Yi* people. All eight villages are located on the outskirts of Leshan City in Sichuan province. Table 1 summarizes selected demographics and statistics among the treatment villages.

Table 1: Demographics and Poverty Statistics of Treatment Villages

County	Village	Total Households	Poor Households	Poverty Rate	Family Size
Mabian	Boxiang	566	134	23%	3.89
	Gantianba	313	70	22%	5.39
Muchuan	Ciwan	214	42	18%	3.73
	Qianguang	297	41	16%	3.60

Note: Poverty incidence is the proportion of the population whose per capita income is less than the per capita poverty threshold.

Source: CHFS (2018).

The offered reward plan for the treatment villages is quite different from the one in the Wutongqiao Experiment. To simplify the calculation for implementation, the reward scheme no longer has a decreasing stage as in Figure 1, but only a fixed proportion of labor income. The proportion varies from 6% to 10% depending on the type of income.

Labor income includes income from planting or breeding products, wage income, and self-employed business income. The sales of planting or breeding products reported by farmers are difficult to verify. However, the amount of planting or breeding products is relatively easy to verify. The income from planting or breeding is equal to the amount of planting or breeding products sold by farmers multiplied by the market price. To be more operational, specific planting and breeding products are listed. Table 2 and Table 3 show the detailed scheme in Mabian and Muchuan.

Table 2: Mabian Labor Income Reward Plan

Product	Calculation (CNY)	Payment
Livestock		
Chicken/Duck/Goose	8%*market value	Quarterly
Cow	6%*market value	Quarterly
Sheep	10%*market value	Quarterly
Pig	8%*market value	Semi-annually
Beehive	50 per box	Annually
Planting		
Tea	8% of the sales	Semi-annually
Potato	8% of the sales	Quarterly
Nonagricultural income (wages and business income)	6% of nonagricultural income	Quarterly

Note: The maximum reward is CNY4,000 each year for a household.

Source: CHFS (2017).

Table 3: Muchuan Labor Income Reward Plan

Product	Calculation (CNY)	Payment
Livestock		
Chicken/Duck/Goose	10%*market value	Quarterly
Sheep	10%*market value	Quarterly
Pig	10%*market value	Semi-annually
Planting		
Tea	10% of the sales	Semi-annually
Edible Bamboo Shoots	10% of the sales	Semi-annually
Plum	10% of the sales	Annually
Kiwifruit	10% of the sales	Annually
Nonagricultural income (wages and business income)	10% of work-related income	Quarterly

Note: The maximum reward is CNY7,000 each year for a household.

Source: CHFS (2017).

The baseline survey was conducted among eight villages between 27 March and 4 April, in which households were asked about farming production, employment, income, assets, and consumption. The sample consists of around 1,100 households (596 treated). One year later, a follow-up survey was conducted so that the evaluation could be carried out.

4.3 Leibo Experiment (2017–2018)

In 2017, Leibo County started a trial for a Labor Income Reward Plan in cooperation with the CHFS. The Leibo Experiment is characterized by its focus on the minority. This territory is mainly occupied by ethnic minorities. This makes conducting the experiment even more challenging since local residents have their own unique culture and language. Most importantly, poor households in the PRC are heavily concentrated in areas with a high proportion of minorities. This emphasizes the importance of the Leibo Experiment.

Similarly to the Mabian/Muchuan Experiment, two villages (Moshi and Shuikouba) were picked by the CHFS as the treatment villages. The other two villages, Meiyi and Luohangou, were chosen as the control villages. The treatment villages were offered the Labor Income Reward Plan. Households had to be registered or previously registered as poor households to be eligible for the program. In addition, the household had to engage in either farming, livestock raising, small business, or employed jobs.

In the treatment villages, eligible households were offered a Labor Income Reward Plan that was similar to other experiments. However, the plan that was offered in Leibo also identified the number of dependent children. Like EITC in the US, households with more dependent children were offered a more generous plan. Table 4 summarizes the Labor Income Reward Plan that was offered to households with at most one dependent child and households with more than one dependent child. Finally, the earnings reward was distributed once every three months.

Table 4: Leibo Labor Income Reward Plan

Per Capita Earning (CNY)	Reward per Capita (CNY)
No or one dependent child	
Less than 1,500	0.2*earnings per capita
1,500 to 2,500	300
2,500 to 5,500	$300 - 0.1 * (\text{earnings per capita} - 2,500)$
More than one dependent child	
Less than 1,500	0.33*earnings per capita
1,500 to 2,500	495
2,500 to 5,800	$495 - 0.1 * (\text{earnings per capita} - 2,500)$

Source: CHFS (2017).

The program also offered rewards for sales from selling crops and stock animals as well as small businesses. The amount of the reward is a fixed 15% of the total earnings from the three activities combined. There would be a minimum of CNY100 reward if the household earned any positive amount of income from any of the three productions. The maximum reward is CNY2,000 per quarter. When the amount of reward for one quarter exceeds CNY1,000, the reward that exceeds CNY1,000 will be forwarded to the next quarter. Finally, the reward is to be distributed at the beginning of each quarter. Table 5 summarizes the reward plan for farming production and small business income.

Table 5: Reward Plan for Farming Production and Small Business Income

Combined Earnings (CNY)	Reward (CNY)
Less than 666	100
666 to 13,333	combined earnings* 0.15
More than 13,333	2,000

Source: CHFS (2017).

4.4 Project Endeavor for Low-Income Families

After several successful experiments and trials with inspiring results, the Leshan government finally decided to take the next step and merge the Labor Income Reward Plan into its Project Endeavor for Low-income Families, after which it became the first EITC program in the PRC. Project Endeavor for Low-income Families is a bundle of various means-tested programs that are designed to lift households out of poverty.

Table 6: Project Endeavor for Low-Income Families

Region	Bundle	Start Date	Payment
Downtown	Employment reward; Production input subsidy; Entrepreneur reward	Oct 2017	Annually
Gaoxin	Employment reward	Oct 2017	Annually
Emeishan	Employment reward; Production input subsidy; Entrepreneur reward	Mar 2018	Annually
Wutongqiao	Labor Income Reward Plan; Production sales revenue reward	Feb 2017	Monthly
Jingyan	Employment reward; Production input subsidy; Microfinance; Production working capital grant	Apr 2018	Annually
Qianwei	Employment reward; Production input subsidy	Mar 2018	Semi-annually
Muchuan	Employment reward	Sep 2017	Annually
Jiajiang	Employment reward; Production input subsidy	Apr 2018	Annually
Jinkouhe	Employment reward; Production input subsidy; Entrepreneur reward	Jan 2018	Quarterly/ Semi-annually
Ebian	Income compliance reward	Oct 2017	Annually
Shawan	Employment reward; Production input subsidy; Entrepreneur reward	Oct 2017	Annually

Note: Programs that are not work related, such as the Youth Education Improvement Project (YEIP) and drug-free citations, are excluded from this table.

Source: CHFS (2019).

By the end of 2017, there were 67,171 registered poor households in Leshan City, among which 14,523 households were still in poverty. Although other registered poor households had already been confirmed as being out of poverty, they were also eligible for some pro-poor benefits until 2020.

Leshan has 12 counties/districts, namely downtown district, Jinkouhe, Shawan, Gaoxin, Wutongqiao, Jingyan, Qianwei, Muchuan, Jiajiang, Emeishan, Mabian, and Ebian. The bundle changes across different areas. Households have to be registered as poor households to be eligible for these bundles. In addition, Wutongqiao offers the program to households whose income is close to the poverty line and urban households that receive minimum income guarantees. Table 6 summarizes the bundles in different areas in Leshan.

Employment reward is a cash reward for earnings from employment. The purpose is to provide work incentives for poor households and increase their earnings. All 12 regions have implemented this type of policy. The amount of reward is either fixed or a percentage of the earnings (phase-in stage). Jiajiang uses an evaluation method to determine the amount of reward to be given. Calculations also vary across regions. Some regions only consider earnings from employment. Other regions consider earnings that are related to any type of work. Table 7 summarizes the calculation rules for employment reward programs across different regions in Leshan City.

Table 7: Employment Reward Programs

Region	Calculation (CNY)	Base	Maximum (CNY)	Payment
Downtown	5% of earnings with social security contribution; 10% of earnings without social security contribution	Earnings from employment only	2,000	Annually
Gaoxin	5% of earnings with social security contribution; 10% of earnings without social security contribution	Earnings from employment only	1,000	Annually
Wutongqiao	See Figure 1	Work-related earnings	300 per capita	Monthly
Emeishan	10% of earnings	Earnings from employment only	1,500	Annually
Jingyan	1,000 if they are employed for more than six months and have earned more than 10,000 in total	Earnings from employment only	1,000	Annually
Qianwei	5% of earnings	Earnings from employment only	1,000	Semi-annually
Muchuan	300 if annual earnings are less than 20,000; 400 if annual earnings are between 20,000 and 30,000; 500 if annual earnings are more than 30,000	Earnings from employment only	500	Annually
Jiajiang	3,000 for first-prize winners; 2,000 for second-prize winners; 1,000 for third-prize winners	Earnings from employment only	3,000	Annually
Ebian	200 to 1,200 for each person in poor households if annual per capita income is more than 4,000	Work-related earnings	1,200	Annually
Jinkouhe	10% of earnings	Work-related earnings	2,400	Quarterly
Shawan	10% of earnings	Work-related earnings	500	Annually

Source: CHFS (2019).

Table 8: Production Input Subsidy Programs

Region	Calculation	Maximum (CNY)	Payment
Downtown	Fixed subsidy based on farming areas and the number of livestock	2,000	Annually
Wutongqiao (2017)	70% of the input cost	2,000	Monthly
Wutongqiao (2018)	Fixed subsidy based on farming areas and the number of livestock	2,000	Monthly
Emeishan	Fixed subsidy based on farming areas and the number of livestock	1,500	Annually
Jingyan	Fixed subsidy based on farming areas and the number of livestock	1,500	Annually
Qianwei	Fixed subsidy based on farming areas and the number of livestock sold	1,000	Quarterly/ Semi-annually
Jiajiang	Comprehensive evaluation	3,000	Annually
Jinkouhe	Fixed subsidy based on farming areas and the number of livestock/70% of the input cost for listed local specialty products	3,000	Quarterly
Shawan	Fixed subsidy based on farming areas and the number of livestock	500	Annually

Source: CHFS (2019).

Production input subsidy subsidizes input costs for farming production. Eight out of 12 regions in Leshan have offered this subsidy to eligible households. Gaoxin, Muchuan, and Ebian did not offer this type of subsidy to the enrolled households. Subsidy calculations also vary across regions. Some programs offer a one-time, fixed amount subsidy to eligible households. Others subsidize households with a fixed percentage of the input cost. In Jiajiang, the subsidy is given based on comprehensive evaluations. Table 8 summarizes the calculation rules of production input subsidy programs across different regions in Leshan City.

Production sales revenue reward is a cash reward for sales revenue from farming production. The amount of reward is a fixed percentage of the total annual production sales. However, only Wutongqiao is currently offering this type of program. Table 9 summarizes the calculation rules of the sales revenue reward program in Wutongqiao.

Table 9: Sales Revenue Reward Program in Wutongqiao

Region	Calculation	Maximum (CNY)
Wutongqiao (2017)	5% of the sales revenue	1,000
Wutongqiao (2018)	20% of the sales revenue	2,000

Source: CHFS (2019).

Houchi is a village in Mabian County, Leshan City. In 2018, it implemented a policy that is similar to Project Endeavor for Low-income Families in Leshan. Although the names are identical, it is implemented by a different authority. The policy incorporates a Labor Income Reward Plan and a sales revenue reward program, and reward for exemplary citations. Similarly to the policy in Leshan, households have to be registered as poor households in order to participate in the program. Table 10 shows how the sales revenue reward is calculated in detail.

Table 10: Sales Revenue Reward in Houchi

Product	Calculation (CNY)	Payment
Livestock		
Chicken/Duck/Goose	8%*market price	Quarterly
Cow	6%*market price	Quarterly
Sheep	10%*market price	Quarterly
Pig	8%*market price	Semi-annually
Beehive	50 per box	Annually
Planting		
Tea	8% of the sales	Semi-annually
Potato	8% of the sales	Quarterly
Other work-related income	6% of work-related income	Quarterly

Note: The maximum reward is CNY4,000 each year for a household.

Source: CHFS (2018).

In addition, exemplary households will also receive an extra bonus. Table 11 shows the amounts of reward for different citations.

Table 11: Rewards for Exemplary Households

Citations	Reward (CNY)
Production input	2,000
Production revenue award	10%*sales revenue
Entrepreneur award	10,000
Effort award	100

Source: CHFS (2018).

4.5 Shehong EITC Pilot

Shehong is a county located in the eastern area of Sichuan province. The county has recently initiated a trial called Project Shuangfu for Low-income Families in cooperation with the CHFS. The project is designed to use an EITC program and provide work incentives for households and increase their incomes as well as addressing the welfare dependency issue.

The pilot program includes a Labor Income Reward Plan that is offered to 1,000 selected households across 21 poor villages within the county. The amount of reward is calculated as a percentage of the total earnings. Similarly to the Wutongqiao Experiment, Shehong's program also recognizes the income from plant/livestock farming as earnings. The phase-in rate ranges from 8% to 12%, depending on the type of work. However, an important difference with the Labor Income Reward Plan in Shehong is that the calculation is based on earnings that exceed the minimum income guarantee. For migrant workers who work outside Shehong, the minimum income guarantee will be adjusted accordingly. The reward is to be distributed quarterly with a maximum of CNY750 for each household. For households that produce farming products with values over CNY50,000 a year, there will be a CNY3,000 lump sum reward. For entrepreneurs who have a business income of over CNY50,000, the amount of reward is CNY5,000.

Households are required to report their employment status and earnings monthly with supporting materials. A review committee will verify the validity and credibility of the materials before issuing the rewards. In addition, an inspection team will contact the employers to verify the reported earnings before the applications are approved.

5. IMPLEMENTATION: WUTONGQIAO EXAMPLE

The implementation procedures can be very different from each other. How an experiment was rolled out depends on the preference of the local government to a large extent, such as the amount of resources (fund and manpower) the local government has allocated for the experiment/trial, and whether a third-party organization (e.g., CHFS) is involved. Here we briefly demonstrate how the policy can be implemented in the PRC by discussing the example of the Wutongqiao Experiment.

Information sessions: Households in the treatment group were asked to participate in an information session to familiarize them with the reward mechanism before the experiment began. The sessions include an explanation about the responsibilities of households. Then, the reward plans were explained to households, emphasizing that the total amount of reward would increase as they worked more. An illustration of the reward application procedure was also introduced to enrolled households. In particular, it emphasized the importance of filing true earnings.

Enrollment: When applying for the first time, local community committee staff will visit the eligible households in person and deliver the forms to be prepared. Households will be asked to provide their household registers, IDs, and the bank account(s) of the household heads before completing the forms. Staff will help household heads to fill out the forms. As for illiterates, the forms will be completed via narration and filled in by staff.

Submission: Households are required to report their employment status and previous month's earnings during the first week of each month. Specifically, members in the enrolled households are required to submit earning certificates or payroll records. Then, the records are signed and sealed by their employers. Workers in less formal jobs, such as part-time workers, are required to provide payment certificates that indicate working hours and payments. Households that work in farming or have their own business are required to submit sales records or tax certificates, indicating daily costs and quantities along with profits. The certificate templates are designed and issued by the review committee. When the materials are ready, staff from the local community committees will visit the households and collect the documents.

Review: Upon submission, staff from the local community committees will begin checking the completeness and validity of the materials and see if the numbers make sense. This process is to be completed in three working days. First, staff will check whether the forms are completed. Then, they will check whether the documents have been signed and sealed by the employers and consider opportunities to forge the documents. For any incomplete submission or invalid material, the staff will document the records, reject them, and inform the households of the reasons before having them resubmitted. Meanwhile, if there is any significant difference in earnings between two adjacent months, the staff will also ask the households why and document the reasons. All the staff who participate in the program were enrolled in a brief training session one month prior to the implementation.

Monitoring: An inspection team with several members from the research center and student workers will verify the submitted materials during the reviewing stage. For employees who are hired by formal companies and organizations, the inspection team will contact them and inquire about their employment status and wage earnings for that particular month. For those who are hired by individuals or performing part-time jobs, the inspection team will contact their employers to verify their working hours and payments. Most inquiries were made by phone calls. The rest was done by field investigations. For individuals who perform farming activities or own small businesses, the inspection team will ask nearby households to verify their business hours first. Then, they will randomly visit the households two or three times per month (no less than one hour per visit) to see how well the business is doing. Specifically, the team will observe the type of business the household is in, the costs, and the revenue, etc. By comparing with other households who are also performing similar activities, the team will be able to find out a reasonable range of income. For businesses such as rickshaw taxis that do not have a fixed operating location, the team will visit the workers multiple times to inquire about their working hours and income to estimate the range.

Approval: When the inspection team has completed its work, the review committee will make the final approvals of the applications. The final decisions will be made based on several aspects, such as any unqualified material and the report from the inspection team. Based on the validity and authenticity of the materials, the final decision is made. All the decisions are well documented with the reasons for rejection. Then, the team will distribute the reward according to the submitted decisions within the first two weeks of each month. The distributions are to be accomplished by bank transfers through household heads' accounts in cooperation with Leshan City Commercial Bank.

Noncompliance: By setting reward plans, there are incentives for households to manipulate their earnings to get more rewards. For example, households within the phase-out stage have incentives to underreport their earnings. Households within the phase-in stage have incentives to overreport their earnings. Households also have incentives to overreport family sizes. In cases of intentional misreporting, a set of rules are made to prevent the households from doing so. Each rule describes a certain condition that will result in households being expelled from the program.

6. EVALUATIONS

Between 2014 and 2018, the China Household Finance Survey (CHFS) at Southwestern University of Finance and Economics conducted a series of experiments that aimed to test the effects of an EITC-type policy – a Labor Income Reward Plan. The experiments primarily focus on the programs' impacts on labor supply, earning, and expenditure. Each experiment has a different design and population focus.

The designs have several important and unique features. First, the experiments implement a relatively strong treatment intensity compared to the existing studies. Second, the designs employed a comprehensive measure to audit and validate each earning claim. Given that the PRC has a large proportion (47%¹) of self-employed jobs, this validation process is particularly crucial for the experiments since it is relatively easier for the self-employed to manipulate earnings than for the employed to do so with their formal contracts. Third, the EITC policies were offered with either other supplemental components or different schemes, which provides unique opportunities for researchers to better understand how different households prefer one scheme to another, as well as how EITC interacts with other typical anti-poverty policies in the PRC.

So far, regression analysis has shown that EITC increases labor supply significantly in both extensive and intensive margins. In addition, estimates show that program participation increases the average number of employed persons per household, and monthly hours worked. Consequently, household monthly earning (without the benefit) and monthly expenditure have also increased (Table 12).

Table 12: Comparison of Results across Experiments

Treatment Effect	Wutongqiao	Mabian/Muchuan	Leibo
Bundle	EITC	EITC + Price sub. + Kickstart	EITC + Price sub.
Wage income	559	466	263
Total hours worked	86	77	–
# of earners	0.32	0.30	0.29
# of jobs	0.26	0.38	0.25
Sample size	259	1,151	388

Source: Guo (2020).

¹ Data source: World Bank (2019).

The Wutongqiao Experiment is the first-ever EITC experiment to be conducted in the PRC. Its sample focuses on the urban population. Results show that a Labor Income Reward Plan significantly increases labor supply significantly in both extensive and intensive margins. Namely, program participation increased the number of earners per household by 0.32, and the total hours worked increased by 86 hours per month. It also significantly increases the household earnings by RMB559 (\$84) per month. In addition, household expenditure increased by RMB436 (\$65) per month. The effects are persistent throughout the intervention period. A closer examination suggested that the effect on expenditure is mainly due to the increases in food and education spending. Finally, the evidence suggests that program participation not only encourages people to switch to better-paid jobs but also prevents households from quitting their jobs occasionally. This prevention effect is especially appealing among households with multiple earners.

The Mabian/Muchuan Experiment is the first EITC experiment to be conducted in the PRC with a focus on rural/minority populations. In addition, the EITC policies were offered with other supplemental components that vary across the counties. Results show that a Labor Income Reward Plan increases labor supply significantly in both extensive and intensive margins. Estimates show that the number of earners per household increased by 0.30 persons. The number of jobs per household increased by 0.38 jobs per household. The total hours worked increased by 77 hours per month. Consequently, households' monthly wage income (without the benefit) increased by RMB466 (\$63) per month. These results are consistent across different methods in terms of both magnitude and significance. Moreover, distribution tests suggest that EITC may have increased household expenditure on food and transportation and reduced expenditure on weddings and funerals.

The Leibo Experiment was an experiment that also focused on rural/minority populations. Moreover, the EITC that was offered to the households contained two different schemes. Results show that the Labor Income Reward Plan increased labor supply in the extensive margin. Estimates show that the number of earners per household increased by 0.29 persons, and the number of jobs increased by 0.25. Consequently, households' monthly wage income (without the benefit) increased by RMB263 (\$38) per month. These results are mostly consistent across different methods. Moreover, distribution tests suggest that the EITC may have increased intensive labor supply (total hours worked) and farm yield.

Most importantly, the three experiments yield similar results regardless of designs. Together, the EITC experiment series presents the first and unambiguously strong evidence that EITC has worked and achieved its designed purpose in the PRC. In other words, first, EITC increases the labor supply both in the extensive and intensive margins. Second, EITC increases earnings and works well as an anti-poverty policy. Finally, EITC will increase household consumption, especially in terms of food and education.

7. SUMMARY

The PRC has one of the largest populations living under poverty line in the world – around 70 million according to the World Bank's statistics. As more households and counties are freed from poverty, it becomes increasingly difficult to resolve the remaining poverty by implementing traditional cash grant programs. One solution to the two shortcomings is to implement an incentive-compatible transfer program/policy, such as Earned Income Tax Credit. Inspired by EITC, in 2014, the CHFS conducted the first series of EITC field experiments in the PRC. Evidence from field/quasi-experimental studies shows that EITC has significantly increased household employment, working

hours, earnings, and consumption. With these successful and inspiring results, Leshan's government finally decided to take the next step and merge the Labor Income Reward Plan into its Project Endeavor for Low-income Families, which has become the first EITC-like policy in the PRC. There has been a growing interest in EITC-like programs among government officials, and many have been trying to come up with their own EITC programs. The efforts and attempts have important policy implications and contribute to a large literature studying the effect of in-work benefits.

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