Rural labor market responses to large lumpy cash transfers: Evidence from Malawi

Kate Ambler, Alan de Brauw, and Susan Godlonton

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Abstract

We examine the impact of a lumpy agriculture-framed cash transfer on the day labor (*ganyu*) market using both spatial variation in the organization of households into farmer clubs and experimentally induced variation in transfers. In villages receiving larger cash disbursements, wages for agriculture day labor marginally increase, and overall employment falls. The employment results obscure important differential responses by transfer recipient (day labor supply falls) and non-recipient households (day labor supply increases). The village level wage impacts are driven by large, direct impacts of the transfer program on the demand for day labor and a reallocation of labor away from off-farm labor supply.

*Ambler: Markets, Trade, and Institutions Division, International Food Policy Research Institute (k.ambler@cgiar.org). de Brauw: Markets, Trade, and Institutions Division, International Food Policy Research Institute (a.debrauw@cgiar.org). Godlonton: Economics Department, Williams College, and Markets, Trade, and Institutions Division, International Food Policy Research Institute (sg5@williams.edu). We thank Michael Murphy and Phoebe Scollard for excellent research assistance, as well as Kelvin Balakasi and Misheck Mphande for dedicated project management. We also thank IPA Malawi and all survey team members who participated in making this project successful. We thank Kathy Bi, Naomi Medina-Jaudes, Sean Ninsing, Shadman Rahman for their contributions to the project as interns based in Malawi. This project would not have been possible without the incredible support of our partners, including Wycliffe Kumwenda, Frank Masankha, and Henderson Chikanaulanga. The project was primarily funded by DFID Brazil and has also received support from the CGIAR Research Program on Policies, Institutions, and Markets.

1. Introduction

Due to evidence demonstrating their effectiveness, cash transfer programs have become ubiquitous in developing countries. The direct impacts of these programs have been extensively studied in a variety of contexts including poverty reduction (e.g. Fiszbein et al., 2009), health (e.g. Gertler, 2004) education (e.g. Barrera-Osorio, et al. 2008), and nutrition (de Groot et al., 2015). Transfer programs recently designed to target agricultural outcomes have also shown promising results in improving agricultural production (e.g. Beaman et al. 2015, Ambler, de Brauw and Godlonton, 2017 and 2018).[1]

A commonly perceived drawback to cash transfer programs is that they could lead to a decline in labor supply; which has motivated the study of the direct impacts of such programs on labor supply (e.g. Ardington, Case and Hosegood 2009; Baird, McKenzie, and Ozler 2018). In general, the literature shows that conditional cash transfer programs do not have negative effects on labor supply per adult worker. In fact, Alzua, Cruces and Ripani (2013) find a slight increase in labor supply per adult worker in households receiving cash transfers in Nicaragua. Other papers either find no impacts or a reallocation of labor by sector. For example, Parker and Todd (2017) find no effect of *Oportunidades* transfers on labor supply in Mexico, while de Brauw et al. (2015) find that *Bolsa Familia* transfer recipients shift labor supply from the formal to the informal sector. Similarly, de Hoop et al. (2017) find that in Malawi and Zambia, unconditional transfer recipients shift labor onto their farms and out of day labor (commonly referred to as ganyu in Malawi).

In contrast to the large literature on direct impacts of transfers, a relatively small but growing set of papers further study indirect impacts of development interventions, but fewer

[1] Karlan et al. (2014) find that credit is more effective than cash to increase agricultural production in Northern Ghana.

papers study general equilibrium effects (e.g. Angelucci and Di Maro, 2015). Yet understanding whether such effects exist, and how large they are, are important to understanding overall impacts of development programs. Much of the literature derives from cash transfer programs. For example, Angelucci and De Giorgi (2009) show that cash transfers lead to higher consumption among non-beneficiaries in Mexico through gifts and loans. Cunha, De Giorgi, and Jayachandaran (forthcoming) show that Mexico's food-aid PAL program reduces village prices by 4 percent when transfers are in-kind relative to cash transfers. Alix-Garcia et al. (2013) demonstrate that communities with access to more cash transfer income have higher levels of deforestation. And Bergquist, Burke, and Miguel (2017) show that timely access to credit offered to maize farmers in Kenya can result in welfare increases among non-recipients.

In this paper, we extend the literature on the impacts of transfers on the local labor market, analyzing both the direct and indirect effects of a lumpy agriculture-framed transfer program in rural Malawi on wages and employment. Our analysis makes use of exogenous variation in the amount of money disbursed through cash transfers across villages in rural Malawi. Our underlying variation stems from two sources: variation in (large) resource transfers through a randomized control trial (RCT) conducted in partnership with the National Smallholder Farmers Association (NASFAM), and spatial variation in farmers' residential locations. Farmers self-organize into farming clubs and register with NASFAM. Critical to our empirical approach is that club members do not necessarily reside in the same village. The RCT included the 120 most recently registered NASFAM farmer clubs in two districts, and farmers in these clubs lived in 325 villages. In addition, many villages include households from multiple farmer clubs (with up to 6 clubs represented). Within each household, in most cases, there is only one household member who is the targeted NASFAM member.

The RCT included two sets of cross-cutting interventions: one set of interventions targeting resource constraints, the other targeting information constraints (broadly construed).[2] Clubs were assigned to one of three resource constraint arms: Control, Cash or Inputs. Clubs assigned to the control arm received no additional resources. Farmers in clubs assigned to the cash arm received cash through a series of three payments totalling $84, a large payment representing approximately 15% of the gross value of agricultural output of the sample at baseline. Farmers assigned to the input arm received a combination of cash and inputs equivalent in value to $84. Inputs included hoes, seeds, sacks and inoculant. The cash component for this group was $41. Ambler, de Brauw and Godlonton (2018) document the short-term direct impacts of the program. the gross value of agricultural output (GVAO) meaningfully increased among farmers assigned to either the Cash or Input arms. Production gains were driven, in large part, by the use of additional inputs, in particular day labor or ganyu. Further, agricultural gains in the first year are reinvested in farms in the second year despite the discontinuation of the transfers. Thus, in the second year we estimate sustained GVAO improvements primarily driven by increased ganyu use.

In this paper, we document program impacts on outcomes related to ganyu. Individuals in cash transfer households decrease the number of days worked in both agricultural and non-agricultural ganyu. Thus, among households in the cash arm, transfers resulted in a direct increase in the demand for agricultural ganyu coupled with a smaller direct reduction in the supply of agricultural ganyu.

The impacts of transfers the demand for and supply of ganyu in treatment group households motivates an examination of a more detailed examination of the impacts of the program on the broader local labor market. This analysis is the main contribution of this

[2] Unlike many information interventions in agriculture, the information intervention was designed to jointly target gaps in agricultural knowledge through technical advice as well as managerial gaps through farm management training. For more details refer to Ambler, de Brauw and Godlonton (2018).

paper. We use the experimentally induced variation in the assignment of transfers combined with the spatial variation in club formation to causally identify the impact of the amount of Malawian Kwacha (MWK) disbursed in a village on agricultural and non-agricultural ganyu employment and wages. As the amount of cash disbursed in a village increases, the prevailing village wage increases. Further, ganyu labor falls in communities where more cash is disbursed. Both findings are consistent with a competitive labor market in which labor markets within villages exhibit few frictions but operate as closed economies.[3] In such a setting, we would expect wages to increase while the net impact on employment is ambiguous.

The finding that ganyu labor declines as cash disbursements in the village increase obscures heterogeneity by household transfer status. Specifically, ganyu labor supply in recipient households declines as the level of disbursed funds to the village increases, , while labor supply in control households increases as village level disbursements increase. Within households, we further show that increased employment among control households occurs among adults rather than children. We also present suggestive evidence that reductions in ganyu employment in transfer households are driven by household members who are not NASFAM members.

We extend our analysis to compare the differential impact of one additional dollar of cash to one additional dollar of inputs. We find that as the value of inputs within the village increases, we observe no impact on village wages. However, we find that the impact of one additional dollar of cash on ganyu labor supply is significantly different than one additional dollar of inputs.

[3] Further, this type of model rationalizes not only the observed local labor market impacts, but also the considerable variation in wages across space.

Our results also contribute to a growing literature that estimates the impact of programs and policies on labor market equilibrium. For example, Imbert and Papp (2015) estimate the impact of the rollout of India National Rural Employment Guarantee Act (NREGA) on private employment and wages, finding positive indirect gains exceeding the direct gains to program participants. Dinkelman (2011) demonstrates that electricity expansion in South Africa raises hours worked among both men and women, but women's wages fall while men's wages rise. Mobarak and Rosenzweig (2014) show that an index insurance program in India makes labor demand more dependent on weather as farmers take more production risks. And Akram et al. (2017) exogenously induce variation in seasonal emigration among villages in Bangladesh, finding that a 10 percent increase in emigration leads to a 2.8 percent increase in the male agricultural wage rate. This paper contributes to this literature by studying both direct and local labor market impacts in the same context, and showing that even time-limited transfers can have large indirect impacts on wages.

Our work also contributes to the growing literature on the link between credit constraints and labor market equilibria (e.g. Jayachandran 2006; Mobarak and Rosenzweig 2014). Our paper is most closely related to Townsend and Kabowski (2012), Bandiera et al. (2016), and Fink, Jack and Masiye (2018). Townsend and Kabowski (2012) examine community level impacts of the rollout of a large-scale government microfinance initiative in in rural, predominantly agricultural communities in Thailand. They find important general equilibrium effects of the expansion of access to credit on prevailing wages in Thailand. Bandiera et al. (2016) study BRAC's Targeting the Ultra Poor program in Bangladesh using a large RCT, and find that direct female beneficiaries reduce agricultural and non-agricultural labor supply, while documenting an increase of 9% in female wage rates in agriculture and 11% among maids, both among women ineligible for transfers. Fink, Jack and Masiye (2018) use an innovative RCT that increases access to credit in Zambia, and they directly test for

seasonality in consumption and its implications for the local labor market. They find that increasing access to credit in the lean season results in wage increases through reductions in aggregate labor supply. Our results are complementary to these studies, in that we find similar labor market impacts in response to relaxed credit constraints. In addition, we generate novel evidence that these labor market impacts are also achievable in the context of transfer programs, albeit smaller in magnitude.

The remainder of the paper is organized as follows: in the next section we provide some important contextual information, outline a simple conceptual framework and describe the program studied. Section 3 discusses the data used in our analysis, while also presenting the direct impacts of the program specific to ganyu labor supply. Section 4 presents our main indirect impacts. Section 5 discusses our findings, while Section 6 concludes.

2. Background and Program Design

2.1. Background: Ganyu labor market and transfer project

Despite a steady decline in the contribution of agriculture to Malawi's GDP over several decades, agriculture continues to be the cornerstone of the economy, and the agricultural sector dominates employment. In 2017, agricultural employment was estimated to account for 84% of total employment (World Bank, 2017). Most of the population is based in rural villages where the most common form of labor is day labor, commonly referred to as "ganyu". In the 2016 nationally representative Integrated Household Survey, 49% of individuals aged 15 to 64 in rural villages reported doing some ganyu in the previous 12 months. Ganyu is a critical source of income to very poor and poor households mostly conducted on local farms, as well as used by less poor households as a coping mechanism in the face of shocks (MVAC, 2016; Chirwa and Matita, 2005).

The project studied in this paper was implemented by NASFAM, a large smallholder-owned organization that promotes farming as a business. Smallholder farmers self-organize into groups of up to fifteen members (average size is 10) and register as NASFAM clubs. The 120 most recently registered mixed crop clubs (those growing soy, groundnuts and/or pigeon peas) in Dowa and Ntchisi districts in Malawi's Central region were selected to participate in the program. The program consisted of two cross-randomized treatments: the transfer treatment that is the focus of this paper and an intensive extension treatment.[4] Farmer clubs registered prior to their knowledge of the existence of these treatments.

Study farmers were randomly allocated to one of three transfer treatment arms: Cash, Inputs, or Control. Farmers assigned to the control arm received no additional resources (cash or in-kind). Farmers assigned to the cash group received a series of payments during the 2014/2015 agricultural season timed to coincide with strategic agricultural needs. Farmers received cash disbursements totaling $84 paid out in disbursements of $36 (November 2014), $22 (February 2015), and $26 (April 2015). The second and third payment coincide with the lean season. Transfers were unconditional but heavily framed to encourage investment in agricultural production. Finally, farmers assigned to the input arm received a combination of inputs and cash equivalent in value to the cash disbursements. For the first disbursement, farmers received either soy or groundnut seed. The second disbursement was entirely given out as cash, as the key input at this point in the agricultural season is ganyu. The final disbursement combined cash and inputs. Inputs included storage sacks and string for appropriate storage and topped up with cash to equilibrate the value of the cash transfer.

[4] The randomized control trial implemented a cross-cutting design with the transfer treatment (described above) and an extension treatment arm. The extension treatment arm randomized clubs to received either standard NASFAM extension services that follows a lead farmer model and an intensive extension treatment arm. The intensive extension provided farmers was designed to provide farmers both farm management advice as well as technical agricultural extension support. More information is provided in Ambler, de Brauw and Godlonton (2018).

Randomization took place at the club level stratified by NASFAM extension officer, an indicator for above the median share of females in the club, and an indicator for above the modal club size. Project data sources exploited in this paper include a baseline and two follow-up surveys, to be detailed in section 3. Further project details are described in Ambler, de Brauw and Godlonton (2018).

Table 1 presents some summary statistics on ganyu demand and supply in the study sample across survey rounds. Ganyu labor demand and supply varies significantly across households in our sample. At baseline, approximately one-sixth of households are engaged on both sides of the ganyu labor market, that is, they both used ganyu labor and worked in ganyu in the last 12 months. Another third of households report exclusively using ganyu labor, while 43% report exclusively supplying ganyu labor. The remainder (20%) are non-participants in the ganyu labor market.

Table 1 also provides evidence for the significant labor response to the transfer program. We observe shifts in both the demand for and supply of agricultural ganyu across survey rounds. In the follow-up surveys, post-program implementation, non-participation in the ganyu market falls by half, and the proportion of households both supplying and demanding labor dramatically increases. While these shifts are primarily driven by individuals in transfer households, stark differences are also observable among control households across time.[5]

2.2. Conceptual Framework: Local Ganyu Labor Markets with Lumpy Transfers

[5] Changes across time are in part attributable to variation in the severity of shocks across time, the agricultural season preceding follow-up survey 1 was a particularly poor season. However, as we will show these shifts also are partly attributable to indirect impacts of the FOMENTO program.

In this section we lay out a simple conceptual framework to generate predictions for the indirect impacts of the transfers. Households participate as suppliers to ganyu markets when they are cash constrained or to help overcome a shock, and hire labor when they both require help with labor on- or off-farm, and have cash available to pay workers. Households need not participate at all in the ganyu market; one might expect that household participation would only occur if the prevailing wage or the expected wage was higher than the value of leisure among household members. Since ganyu transactions occur on a daily basis, markets are typically local, so the clear majority of transactions occur within villages. So on any given day within a village, some households looking for additional labor, and other households willing to supply labor. If the number of households on either side of the market are roughly in balance, then wages would remain equal over time. In this market, wages might increase if fewer households looked to supply labor at important points in the agricultural season, since the households demanding labor would become a bit more willing to pay for labor to get it.

Such markets are not necessarily well spatially integrated. There are transaction costs to trying to find work on any given day, so it is much easier, and less risky, to stay within the same village to look for work. It is not therefore unreasonable to consider the ganyu labor market as a closed economy. Our data provides strong evidence that labor markets are not integrated across space, as the coefficient of variation of village agricultural ganyu wages exceeds 100% in both follow-up survey rounds.

Now, consider what happens to transfer recipients. Making the innocuous assumption ganyu and leisure are both normal goods, transfer recipients experience both an income and a substitution effect. When credit constraints are relaxed through the provision of transfers, households increase investments in their farm through their use of labor. That is, upon receipt of the transfer the income effect increases aggregate demand for ganyu labor at important points in the crop calendar. Simultaneously, receipt of transfers will result in a reallocation of

labor due to increases to individuals' reservation wages. Specifically, transfer recipient households will reduce their supply of ganyu labor. Their labor could be reallocated to own-farm labor or to leisure.

For the overall local labor market, we therefore expect an increase in wages operating through the transfer recipients' increased demand for ganyu laborers and their reduction in ganyu labor supplied to the market. For both transfer and control households, as local wages increase we would expect an increase in the supply of agricultural ganyu labor within the community. However, it is ambiguous whether this response would be sufficiently large to offset the reductions in ganyu labor supply among transfer recipient households. Predictions for ganyu employment are ambiguous for the transfer recipients due to the counteracting effects of the increase in their reservation wage and the increase in the prevailing wage. Among control households, we would expect ganyu employment to increase in response to increased market wages.

2.3. Identification

To identify the impacts of the transfer program on the local labor market, we use the random variation in transfers generated by the RCT combined with spatial variation in the location of NASFAM farmer-members in our study.

The random variation in the amount of cash disbursed to study farmers through the RCT is the first source of variation we use in this paper. Baseline data confirms that the treatment groups were well-balanced (see Appendix Table 1, reproduced from Ambler, de Brauw, and Godlonton 2018). Table 1 documents minimal differences in ganyu and salaried employment indicators between transfer and control households at baseline. The second source of variation we rely on for identification is the spatial variation in farmer location. Key to our identification strategy is the fact that members of the same club do not necessarily originate

from the same village. In 108 of the NASFAM clubs, members are resident in at least two villages, while 92 clubs include farmers who are resident in at least three villages. Because Malawi ganyu labor markets are quite localized, we define local labor markets at the village level. In total, 325 distinct villages are represented in the data, of which 112 villages have farmers from more than one farmer club. Panel A of Table 2 provides further descriptive information on variation at the farmer club level. The number of farmer clubs represented within a village ranges from 1 to 6 with a mean of 1.5. The combination of this spatial variation and the exogenously introduced variation in transfer receipt provides the basis for a causal interpretation of the impact of cash transfers on the local labor market.

We use the randomization and the spatial variation in farmer location to construct our treatment variable: the total amount of cash disbursed to the village. We limit this variable to include only physical cash received, excluding the cash value of inputs received, as there is no evidence that households sold these inputs. The average cash disbursement per village is 50,000 MWK (approximately USD 125) but ranges considerably from 0 to as much as 750,000 MWK (approximately USD 1,875) (Table 2, Panel A). Panel A of Figure 1 presents the cumulative distribution of money disbursed across villages, and Panel B splits the distribution by household treatment status. We observe considerable variation in the cash disbursement at the village level, supporting its usefulness as a treatment variable. In supplemental analysis, we consider the relative impact on the day labor market of an additional dollar of cash to that of inputs received in kind. To do so, we construct a secondary treatment variable, the total value of in-kind disbursements. The average value of in-kind disbursements, at 18,000 MWK, is as expected, lower. Notably, it also exhibits considerable variation across villages ranging from zero to 450,000 MWK (Table 2, Panel A).

The main treatment variable, *the value of cash disbursed*, identifies the causal impact of transfers on the day labor market; if the amount of transfers distributed to a village is not

conditional on the baseline labor market, and if farmer groups are formed without the knowledge of the transfer project. There are several potential threats to identification. If for example, transfers explicitly targeted villages or farmers with lower wages or lower employment; we would not be able to identify the causal effect. However, as shown in Table 1 and Appendix Table 1, the randomization of the transfers was successfully implemented.

Another potential concern for identification arises if farmer clubs are formed to maximize the chance of transfers received to any household within a village. For example, assume that when farmers formed their clubs they were aware of the upcoming transfer program. Specifically, assume they knew that transfers were to be distributed and that it would be done so in a randomized manner. In this scenario, farmers with the intent to smooth risk within their village may respond by forming clubs with members across villages to purposefully increase the probability that at least some households in their village are randomized into one of the transfer groups. While NASFAM did organize sensitization efforts, these activities occurred after the sample of farmer clubs had been determined. Also, while the RCT targeted the newest clubs, on average clubs had been operational for three years. Ten clubs were formed after a contractual agreement was put in place between IFPRI and NASFAM to implement the RCT; only two of which were formed after the RCT sensitization activities began. These two clubs comprised existing members of previously registered clubs; farmers were encouraged by NASFAM to re-organize themselves into two different groups (prior to the announcement of their treatment status) to minimize the travel distance between club members. In Appendix Table 2 we compare village level characteristics for villages that include exclusively farmers registered in "old" clubs (Column 1), those formed prior to the contractual agreement; with villages with at least one farmer that is registered with one of the "new" clubs (Column 3). The p-value associated with the t-test comparison of means in the two samples is presented in Column 5. We find no evidence to suggest that villages with at

least one farmer belonging to a newly formed club is different to villages which do not include any farmers that are members of new clubs. In Columns 6 to 10, we conduct a similar comparison for those villages with any members in the two clubs that were formed after sensitization activities began. Again, we see no difference across characteristics. Regardless, as a robustness check we run the analyses restricting the sample to the villages that exclusively include farmers who joined their respective club prior to the sensitization activities, and separately for project initiation. Results are similar.

3. Data and key outcomes

To estimate the indirect impacts of the large injections of cash on the local labor market, we utilize three rounds of data collected as part of the impact evaluation of the framed agricultural transfer program. A baseline survey was completed prior to program implementation in September 2014, and two follow-up surveys were completed in 2015 and 2016 around the same time of the year. Refer to Figure 2 for the project timeline. Panel B of Table 2 presents baseline descriptive statistics of our sample at the household level. All households own land, owning on average four acres. All households in our sample are also actively engaged in crop production, and they are not exclusively subsistence farmers. At baseline, farmers grow a variety of crops (average: 4.47) and household earnings from total crop production is close to $600 per annum.

For each household member older than 10 years of age, information is collected on their time use and participation in both salaried employment (which is rare, 8.7% overall and 12.7% among adults[6]) and the ganyu market (which is more common, 32% overall and 39% among adults). We disaggregate ganyu into agricultural ganyu and non-agricultural ganyu

[6] We define adults as those individuals aged 18 or older at the time of data collection. We use 18 as it is the age of majority in Malawi.

and ask household members about days worked and wages for each type of ganyu separately.[7, 8]

Table 3 presents some additional labor market information by survey round and labor-type at the individual level. Disaggregating ganyu by sector, we observe that about two-thirds of ganyu days worked are attributed to the agriculture sector. Ganyu wages are similar across sectors although non-agricultural ganyu wages exhibit higher variance, possibly attributable to the varied nature of work in the non-agricultural sector. The prevalence of working in the ganyu labor market is relatively consistent across time, albeit slightly higher in follow-up survey 2. The number of days worked in ganyu is somewhat lower in the follow-up surveys as compared to baseline in general. Ganyu wages are lower at follow-up survey 1, a likely consequence of a poor rainy season in the previous year.

4. Direct impacts of the transfers on ganyu labor

Before we can analyze the indirect impacts, we first consider the direct impacts of the transfers. The direct impact of the transfers on farmer production and investment is studied in Ambler, de Brauw and Godlonton (2018). In that paper we show that farmers receiving either the inputs or the cash transfer invest substantially more in their farms relative to the control group. Farmers dramatically increase input expenditures (primarily on ganyu) complemented by the acquisition of agricultural equipment (e.g. hoes). These investments led to an increase in overall production. We find limited differences between farmers receiving the inputs and the cash transfers. Overall increases in production in the first year are reinvested in the farm in the second year, during which we observe sustained increases in expenditure on ganyu. The increase in ganyu expenditures approximates MWK 6,000 per annum per transfer household. Using average reported daily ganyu wages, this equates to five additional person

[7] At baseline our survey instrument did not disaggregate by ganyu type.
[8] Our labor module mirrors the "Time Use and Labor" module of the second Integrated Household Survey (IHS2), though the IHS2 does not disaggregate by ganyu type.

days per annum. Due to the increased availability of resources for their own farm production, demand for own-farm labor increases as does the need for own-farm managerial labor.

Table 1 provides further support for the increase in demand for ganyu labor using individual-level data. The majority (84%) of individuals' resident in transfer recipient households report using ganyu at the first follow-up, compared to only 51% of individuals in control households. The differential persists, albeit smaller in magnitude, into the next season. Evidently, the transfers substantially increased the demand for ganyu labor.

Next, we consider the direct impact to labor supply attributable to the transfers disaggregated by transfer type. To do so we use only the randomized variation in the transfers (i.e. estimation of the direct impacts does not require the use of spatial variation) by estimating the following regression:

$$Y_{ihcvt} = \alpha + \beta_1 Cash_c + \beta_2 Inputs_c + \tau Y_{ihcv0} + X_i\gamma + X_h\delta + \delta_s + \varphi_t + \varepsilon_{ihcvt} \quad (1)$$

where: Y_{ivt} is an indicator of ganyu labor supplied for individual *i*, in household *h*, in farmer club *c*, in village *v* at survey round *t*. $Cash_c$ is an indicator variable that takes the value of one if the respondents' club was assigned to the cash transfer and $Inputs_c$ similarly indicates if the farmer was in a club assigned to receive the input transfer. X_h is a vector of household baseline covariates that includes household size, whether the household head is polygamous, whether the NASFAM member is female, and a series of education indicators for the NASFAM member's level of education.[9] We also control for the baseline value of the outcome variable, Y_{ihcv0}. δ_s represents stratification cell fixed effects, and standard errors are clustered by farmer club.

Table 4 presents these results. Households in the cash treatment group decrease their supply of ganyu labor on both the extensive margin (any employment) and intensive margin

[9] Results are robust to the exclusion of baseline covariates.

(number of days worked by all household members). The ganyu responses in the input households are generally smaller, not statistically different from zero, and statistically smaller than the cash coefficients in three of four regressions at the 10 percent level or better. Contractions in ganyu labor supply occur in both the agriculture (1.5 days) and non-agriculture (1 day) sectors. The estimated effects are smaller in magnitude than the increased demand for ganyu labor (5 days). The decline in labor supply is consistent with an increase in individuals' reservation wages in cash treatment households. These results imply that individuals in cash households reallocate labor from ganyu off-farm labor to their own farm (or to leisure activities) when credit constraints are relaxed. Finally, we see no changes in salaried employment attributable to the cash or inputs.

5. Indirect impacts of transfers on ganyu labor market

The previous section documented increased demand for ganyu labor and a more moderate reduction in the supply of ganyu labor among transfer households. In this section, we turn to the main focus of this paper, identifying the indirect impact of large cash disbursements to villages on the local labor market.

5.1. Wages

To begin, we examine if there is an impact of the level of funds disbursed into a village on village wages. For a given outcome Y_{vt} for village *v*, in survey round *t*, we estimate the following ANCOVA regression:

$$Y_{vgt} = \alpha + \theta Y_{v0} + \beta MWK\ disbursed_v + \varphi_t + \varepsilon_{vt}.$$

As dependent variables, we use the logged mean wage for both agricultural ganyu and non-agricultural ganyu. Individual-level data is aggregated at to the average, at the village- survey round level. For both agricultural and non-agricultural ganyu, we control for a proxy of the

outcome variable, Y_{vo}, the logarithm of the ganyu wage at baseline.[11] We control for survey round fixed effects, φ_t. $MWK\ disbursed_v$ is a continuous variable equal to the amount of Malawi kwacha disbursed in the village divided by 100,000.[12] We include both the cash received by households in the Cash treatment arm as well as the cash-component received by households in the Input treatment arm in a village. We only use the cash component because we have no evidence that inputs were sold or traded. The dollar-value of the Malawi kwacha varied considerably over the data collection period, motivating using the local currency. However, a reasonable approximation is to equate a one unit increase in $MWK\ disbursed_v$ as equivalent to a $250 increase in the cash infusion into the village.

Table 5 presents these results. The average ganyu wage increases with the amount of cash disbursed to the village. This relationship holds for wages in both the agricultural and non-agricultural sector. For every additional 100,000MWK disbursed, agricultural wages increase by approximately 7.8% (column 1). This is a reasonable finding: in villages where more households received transfers the direct impacts on labor demand and labor supply will be larger because more people are affected. These results show that these direct effects are in fact large enough to translate into village level wage impacts. We further find that wages in the non-agricultural ganyu market increase by a similar magnitude as cash disbursements increase (column 4).

Several robustness checks affirm these findings. Using the individual-level data we find similar results for logged wages (columns 2 and 5) and wages in levels (columns 3 and 6). More specifically, an increase of 100,000 MWK to the village increases average daily wages by approximately 88 MWK in the agriculture sector and 230 MWK in the non-agriculture sector. We construct village-level aggregates using only the balanced individual-

[11] We did not disaggregate the collection of ganyu wages by sector at baseline.
[12] We divide by 100,000 simply for ease of interpretation of the coefficients.

level panel data and find similar results (Appendix Table 3). Our findings are also robust to excluding village that either include farmers belonging to clubs that were formed after project initiation (Appendix Table 4) and to the exclusion of villages including farmers belonging to groups formed post-sensitization activities (Appendix Table 5).

The wage effects are small, but larger in magnitude to the findings of Cunha et al. (2016) where they find that food prices increase by approximately 0.2% in communities receiving the PAL program. The size of the transfer in the PAL program represents an increase of 8% in income to households, whereas the transfer in this setting is approximately 15% of GVAO. Further, most households were eligible for transfer receipt in the PAL program, unlike in this setting.[14]

5.2. Employment

To estimate the local labor market impacts on employment we conduct analysis at the individual level. Our primary analysis uses an unbalanced panel of household members. Due to attrition, some households are not found every survey round, but even when a household is interviewed across survey rounds, the roster of household members varies across time. For example, household members who migrate out of the village either due to marriage or in search of better economic opportunity no longer form part of the household. In addition, individual members may be included on the household roster consistently across time, and still not consistently appear in the individual labor panel. For example, young children age into the labor module, and therefore are only present in the individual labor panel for some survey rounds. Nonetheless, all analysis is robust to using a balanced panel of individuals.

[14] Due to the sampling strategy employed we cannot quantify the eligibility rate in the villages studied here.

Using the spatial and exogenously induced variation in transfers we estimate the following ANCOVA regression for individual *i,* in household *h,* in village *v,* in survey round *t*:

$$Y_{ihvt} = \alpha + \beta MWK\ disbursed_v + \theta Y_{ihv0} + X_i\gamma + X_h\delta + \varphi_t + \varepsilon_{ihvt} \qquad (2)$$

Our outcomes of interest (Y_{ihvt}) include: an indicator for whether the household member performed any ganyu in the preceding 12 months and the number of days the household member worked in the ganyu market. Both indicators are measured for agricultural and non-agricultural ganyu separately. In the absence of sector disaggregated ganyu data at baseline, we control for the outcome indicator at baseline for any ganyu participation (Y_{ihv0}). X_i is a vector of individual-level controls (age, age squared, sex, and a set of education dummies), $MWK\ disbursed_v$ is defined as before, X_h is a vector of household-level controls (household size, a dummy if the NASFAM member is female, a set of NASFAM member education dummies, a dummy which indicates if a household head is polygamous), and φ_t indicates survey round fixed effects. Standard errors are clustered at the village level.[15]

Our main results are presented in Table 6. Overall, agricultural ganyu participation decreases on the extensive margin (Panel A Column 1) and on the intensive margin (Panel B Column 1), though results for the intensive margin are insignificant. For every additional 100,000 MWK disbursed, ganyu participation falls by 0.9 percentage points. The pattern of results for non-agricultural ganyu mirrors that of the agricultural ganyu coefficients, but, as expected the coefficients are smaller and less precise (Column 4).

Disaggregating the results by transfer-recipient status, we consider households to be transfer recipients if they received cash or input transfers. We find that the direct impact of individual household members reducing their own labor supply is amplified if they are

[15] We also run analyses clustering instead for farmer club and the results are robust.

resident in communities that receive larger total disbursements (Column 3). On the other hand, for individuals in control households, as the total village level disbursement increases, employment increases (Column 2). The increase in labor supply among control households is meaningful, for every additional $250 disbursed to the village individuals in control households increase labor supply by 1.27 days, an increase of approximately 30%. As with the overall results, the transfer status disaggregated findings are similar but smaller and noisier for non-agricultural ganyu. While many studies document increased labor supply to smooth consumption in the presence of negative shocks (Kochar, 1995 and 1999; Fink, Jack and Masiye, 2018), our results demonstrate increased labor supply in the presence of a positive shock, that of, an exogenously induced increase to wages.

Previous research finds evidence for temporary migration into households in response to a household member becoming eligible for a transfer (e.g. Posel, Fairburn and Lund, 2006); but also that transfers can also result in out migration (e.g. Ardington, Case and Hosegood 2009; and Angelucci, 2015). From Appendix Table 6 we learn that cash treatment households self-report more male adults (0.2) resident in the households, at follow-up, compared to the control group, suggesting household composition changes might affect our results. Reassuringly, we find similar results using the balanced panel of individuals (Appendix Table 7).

This pattern of results is robust to a number of additional sensitivity checks. We further disaggregate the results to examine the impacts on input and cash recipient households separately (Appendix Table 8). The pattern of results exists for both transfer types but suggestively indicates that the results are more pronounced for cash households. However, we are limited by power to draw stronger conclusions. Also, we examine how the results vary across survey rounds (Appendix Table 9). In general, results are similar across survey rounds. This pattern of results is consistent with the persistence in increased

agricultural ganyu use among transfer recipient households. However, results are not statistically detectable in the second year in the non-agricultural ganyu market. Finally, we examine whether the results are sensitive to the inclusion of individuals that joined clubs after the project was initiated (Appendix Table 10) and after sensitization activities commenced (Appendix Table 11). In both cases, we find very similar results.

The increase in ganyu labor supply among the non-transfer recipient households is not necessarily a positive outcome. For example, Beegle, Galasso, and Goldberg (2017) find no impact of employment in the Malawi public works program on consumption. Fink, Jack and Masiye (2018) find that in Zambia the increased provision of ganyu labor (to smooth consumption) negatively affects own agricultural production. However, our results document increased ganyu labor market participation in response to a village level *positive* shock. Who responds in these circumstances as compared to those who respond in the presence of a negative shock may be quite different, and may have very different implications for household welfare. We examine this question in the following section.

6. Discussion

6.1. Who changes their labor supply?

To further unpack these results, we examine whether specific types of individuals within households drive the overall findings. We focus on three individual attributes: status as the NASFAM member, the gender of the transfer recipient, and whether the individual is a child (defined as individuals younger than 18 years old).

Transfers received in this program were given directly to the NASFAM member. Models of the of household predict that receiving the additional resources shifts power to those receiving the transfers. This is particularly relevant as approximately 60% of the NASFAM members are female, most of whom were not considered the household head (see

Table 2). Restricting the sample to adults (>= 18 years of age), we find that among control households, those induced into the labor market tend to be the NASFAM members; whereas among transfer households it is non-NASFAM farmers who reduce their labor supply as total community cash disbursements increase (Table 7, columns 1 and 2). Columns 3 through 6 explore the differential responses in households in which the transfer recipient is female as compared to male. Here we consider NASFAM members and other household members separately. We do not observe robust evidence of differential impacts by NASFAM member gender, among both the NASFAM members and among other household members.

As a final heterogeneity specification check, we consider whether labor supply responses are driven by adults or children in the household. This sheds light on the likely outcome of other programs that specifically target reducing child labor through asset or cash transfers (e.g. Edmonds and Theoharides, 2018). We find that the labor supply response is primarily driven by adults. Our findings, that labor supply increases within control households is purely driven by adults. On the other hand, reductions in labor supply among transfer households is significant among both adults and children.

6.2. Land and Labor constraints

Impacts on the local labor market are also likely to be heterogeneous by household type. Of primary interest is how land and labor-constrained households are differently affected. Ideally, we could also study the indirect impacts of transfer programs on landless households, but, that is infeasible in this particular study. We classify households as land constrained if they own less than the median sized land holdings at baseline; similarly, we define labor constrained households as those households with less than the median number of prime age adults (18 – 49). Results are presented in Table 8. These definitions are somewhat crude, but provide some useful descriptive insights.

Individuals in land constrained control households are less likely than individuals in non-constrained households to enter the agricultural ganyu labor market as village cash disbursements increase (Panel A Column 1). On one hand, if own-household labor is preferred to hired labor then the opportunity cost of working outside the farm is higher when there is more land to farm. On the other hand, households with more land require more inputs, and ganyu is one way of raising funds to cover farm expenses. Our results suggest the latter is more important; the wage is sufficiently high to induce individuals into the labor market (Table 8, column 1). Among transfer-recipient households, we find larger (albeit not statistically significant) reductions in labor supply among land constrained households (column 2).

Turning to labor constraints (columns 3 and 4), we find limited differences in the labor supply response among control households. However, among transfer households we consistently and sensibly find that labor constrained households are less responsive to the village level disbursements.

6.3. Transfer modality and indirect impacts

Both theory and empirical evidence suggest that the modality of transfers matter with respect to the size of price effects of food-aid programs (Cunha et al. 2018). Due to the experimental design of this program, we can unpack whether the modality of the resource transfer matters in our setting. The direct impacts of the cash and input transfers are similar across most agricultural outcomes across time. However, the path to achieving these outcomes may differ, so different transfer modalities may have different indirect impacts. For example, in Ambler et al. (2018) we show the magnitude of the increase in input expenditures, largely driven by increased ganyu expenditures, is typically larger for cash transfer households relative to input

transfer households, although only in the second year are they statistically different (p=0.154 in year 1; p=0.056 in year 2).

In Table 9 and 10, we document the extent to which indirect impacts differ by transfer modality. To do so, we estimate a slightly modified version of equations (1) and (2) that includes the additional variable, $MWK\ value\ of\ inputs_v$. Specifically, we estimate the following ANCOVA specification to examine the impact on village-level wages:

$$Y_{vt} = \alpha + \beta_1 MWK\ disbursed_v + \beta_2 MWK\ value\ of\ inputs_v + \theta Y_{v0} + \varphi_t + \varepsilon_{vt} \quad (3)$$

We additionally estimate the following specification to examine the impact on individual-level wages and employment indicators:

$$Y_{ihvt} = \alpha + \beta_1 MWK\ disbursed_v + \beta_2 MWK\ value\ of\ inputs_v + Y_{ihv0} + X_i\gamma + X_h\delta + \varphi_t + \varepsilon_{ihvt} \quad (4)$$

$MWK\ value\ of\ inputs_v$ measures the cash equivalent of the inputs received in the village divided by 100,000. This approach enables us to easily compare β_1 and β_2. If $\beta_1 = \beta_2$, then an additional dollar of transfers disbursed in the community in the form of inputs or as cash has an equivalent impact on the ganyu labor market.

Table 9 presents the wage results, and Table 10 presents the employment results. Average wages do not respond to additional inputs available in the village. Given the smaller increases in ganyu labor demanded by input households, and the results in Table 4 demonstrating no direct impact of the input transfer on their own supply of ganyu labor, these results are expected. An alternative explanation for these findings is that households did not or could not monetize the inputs.

We do however find suggestive evidence that as the level of inputs provided to a community increases, individual ganyu labor supply increases (Table 10). This is the case for

both agricultural and non-agricultural ganyu. However, when we disaggregate the results by transfer status we find different patterns of results by ganyu-type. In the agriculture sector, among control households, as the level of inputs in the village increases there is no statistically significant impact on ganyu labor. But, among transfer households, as the level of inputs increases in the village, agricultural ganyu labor supply increases (both on the intensive and extensive margin). Importantly, comparing β_1 and β_2 we see that more cash disbursed to the village has significantly different impacts on the local labor market as compared to the same value of inputs, for both treatment and control households. Finally, in the non-agricultural ganyu labor market we see that as the level of inputs increases so too does employment by both transfer and control households.

7. Conclusion

Our results document an important consequence of large transfers on rural labor markets. While local labor market effects have been studied in the context of credit markets, we are unaware of any such study that has examined the local wage effects of a framed agricultural transfer program. Similar to studies that relax credit constraints through access to loans (Townsend and Kabowski, 2012 and Fink, Jack, and Masiye, 2018) overall ganyu wages increase, although to a lesser extent. Ganyu employment increases among those households that do not receive transfers and decreases in households that do receive transfers. These findings suggest additional community benefits attributable to transfer programs that target agricultural production. The framed nature of the transfers as well as the size are both important factors to consider with respect to the generalizability of these findings. It is also important to note that our estimates are based entirely on NASFAM farmers in the both the control and transfer groups. We cannot speak to the impacts on other village residents.

Several features of the transfer program here are likely important factors for why we find local labor market effects similar to the existing credit literature. First, the transfer program studied here is sizeable and lumpy. It is unlikely that smaller, regular cash transfers would result in similar effects. Second, the transfer program was heavily framed as an agricultural cash transfer program and timed to the agricultural calendar. Thus, to the extent that the framing mattered and heavily nudged farmers to spending on agricultural expenses one might not expect similar results in other contexts. Third, the local ganyu labor markets are quite isolated from one another, thus, the amounts disbursed are relatively large to the local market even if they are tiny in comparison to the overall national market.

8. References

Ambler, K., A. de Brauw, and S. Godlonton. 2017. "Cash Transfers and Management Advice for Agriculture: Evidence from Senegal." IFPRI Discussion Paper 1659. Washington, DC: International Food Policy Research Institute.

———. 2018. Agricultural Support Services: Direct Effects, Complementarities, and Time Dynamics. IFPRI Discussion Paper 01725.

Akram, Agha Ali, Shymal Chowdhury, and Mushfiq Mobarak, 2017. "Effects of Emigration on Rural Labor Markets," NBER Working Paper no. 23929.

Alix-Garcia, J., C. McIntosh, K.R.E. Sims, and J.R. Welch. 2013. The Ecological Footprint of Poverty Alleviation: Evidence from Mexico's Oportunidades Program. Review of Economics and Statistics 95(2): 417-435.

Angelucci, M. 2015. Migration and financial constraints: Evidence from Mexico. Review of Economics and Statistics, Vol. 97(1): 224 – 228.

Angelucci, M., and G. De Giorgi. 2009. Indirect Effects of an Aid Program: How do Cash Injections Affect Ineligibles' Consumption?, American Economic Review 99(1): 486-508.

Angelucci, M. and V. DiMaro. 2016. Program Evaluation and Spillover Effects. Journal of Development Effectiveness 8(1): 22-43.

Ardington, C., A. Case and V. Hosegood, 2009. Labor Supply Responses to Large Social Transfers: Longitudinal Evidence from South Africa. American Economic Journal: Applied Economics 1(1):22-48.

Baird, S., D. McKenzie, and B. Ozler. 2018. The Effects of Cash Transfers on Adult Labor Market Outcomes. IZA Journal of Development and Migration.

Baird, S., J.A. Bohren, C. McIntosh, and B. Ozler. 2014. Designing Experiments to Measure Spillover Effects, working paper.

Bandiera, O., R. Burgess, N. Das, S. Gulesci, I. Rasul, and M. Sualiman. 2017. "Labor markets and poverty in village economies. Quarterly Journal of Economics, Vol. 132(2): 811 – 870.

Barrera-Osorio, F., M. Bertrand, L. Linden and F. Perez-Calle. 2008. Conditional cash transfers in education: design features, peer and sibling effects evidence from a randomized experiment in Colombia. NBER Working Paper No. 13890.

Beaman, L., D. Karlan, B. Thuysbaert, and C. Udry. 2015. Selection into Credit Markets: Evidence from Agriculture in Mali. Working paper.

Beegle, K., E. Galasso, and J. Goldberg. 2017. Direct and Indirect Effects of Malawi's Public

Works Program on Food Security. *Journal of Development Economics*, 128: 1-23.

Bergquist, L., M. Burke and E. Miguel. 2018. Sell Low and Buy High: Arbitrage and Local Price Effects in Kenyan Markets. *Quarterly Journal of Economics*, forthcoming.

Chirwa, E. and M. Matita. 2015. Space, Markets and Employment in Agricultural Development: Malawi country report. PLAAS Institute for Poverty, Land and Agrarian Studies Research Report 45.

Cunha, J. M., G. De Giorgi, and S. Jayachandran. 2011. The Price Effects of Cash Versus In-Kind Transfers.Working Paper. National Bureau of Economic Research, September 2011.

de Groot, R., T. Palermo, S. Handa, L.P. Ragno, and A. Peterman. 2017. Cash Transfers and Child Nutrition: Pathways and Impacts. Development Policy Review 35(5): 621-643.

de Hoop, J., V. Groppo, and S. Handa, 2017. "Household Micro-Entrepreneurial Work and Child Work: Evidence from Two African Unconditional Cash Transfer Programs," working paper.

Dinkelman, T. 2011. The Effects of Rural Electrification on Employment: New Evidence from South Africa. American Economic Review 101(7):3078-3108.

Edmonds, E. and C. Theoharides. 2018. The Short Term impact of a productive asset transfer in families with child labor: Experimental evidence from the Philippines, Journal of Development Economics.

Fink, G., B. Kelsey Jack, and Felix Masiye, "Seasonal Credit Constraints and Agricultural Labor Supply: Evidence from Zambia," NBER Working Paper, 2014, No. 20218.

Fiszbein, A., N. Schady, F.H.G. Ferreira, M. Grosh, N. Keleher, P. Olinto, and E. Skoufias. 2009. Conditional Cash Transfers : Reducing Present and Future Poverty. World Bank Policy Research Report. Washington, DC: World Bank. © World Bank. https://openknowledge.worldbank.org/handle/10986/2597 License: CC BY 3.0 IGO.

Gertler, P. S. W. Martinez, and M. Rubio-Codina. 2012. "Investing Cash Transfers to Raise Long-Term Living Standards", American Economic Journal: Applied Economics, Vol. 4(1): 164 – 192.

Imbert, C. and J. Papp. 2015. Labor Market Effects of Social Programs: Evidence from India's Employment Guarantee. American Economic Journal: Applied Economics, Vol. 7(2): 233-263.

Kochar, Anjini, 1995. "Explaining household vulnerability to idiosyncratic income shocks," The American Economic Review, 1995, pp. 159–164.

Kochar, Anjini, 1999. "Smoothing consumption by smoothing income: Hours-of-work responses to idiosyncratic agricultural shocks in rural India," Review of Economics and Statistics, 1999, 81 (1), 50–61. (2), 227–255

Jayachandran, Seema, "Selling labor low: Wage responses to productivity shocks in developing countries," Journal of Political Economy, 2006, 114 (3), 538–575.

Johnston, B.F., and J.W. Mellor. 1961. The Role of Agriculture in Economic Development. *American Economic Review*, 51(4): 566-593.

Karlan, Dean, Robert Darko Osei, Isaac Osei-Akoto, and Christopher Udry, "Agricultural decisions after relaxing credit and risk constraints," Quarterly Journal of Economics, 2014,129 (2).

Mobarak, Ahmed Mushfiq and Mark Rosenzweig, "Risk, insurance and wages in general equilibrium," Working Paper, 2014.

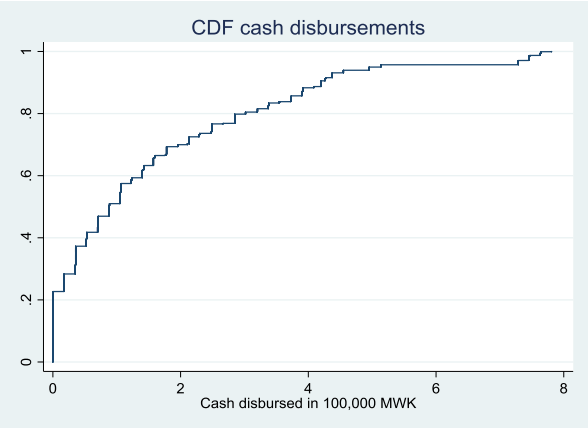
Malawi Vulnerability Assessment Committee (MVAC). 2016. Malawi Livelihood Baseline National Overview Report.

Posel, D., J.A. Fairburn and F. Lund. 2006. Labour migration and households: A reconsideration of the effects of the social pension on labour supply in South Africa. Economic Modelling, Vo. 23(5): 836 – 853.

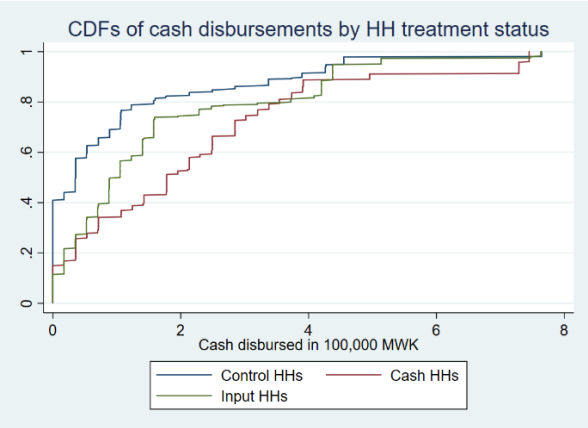
World Bank. 2017. World Bank Indicators.

Figures

Figure 1: Distribution of cash disbursements



Panel A: All households



Panel B: By household treatment status

Figure 2: Timeline of activities

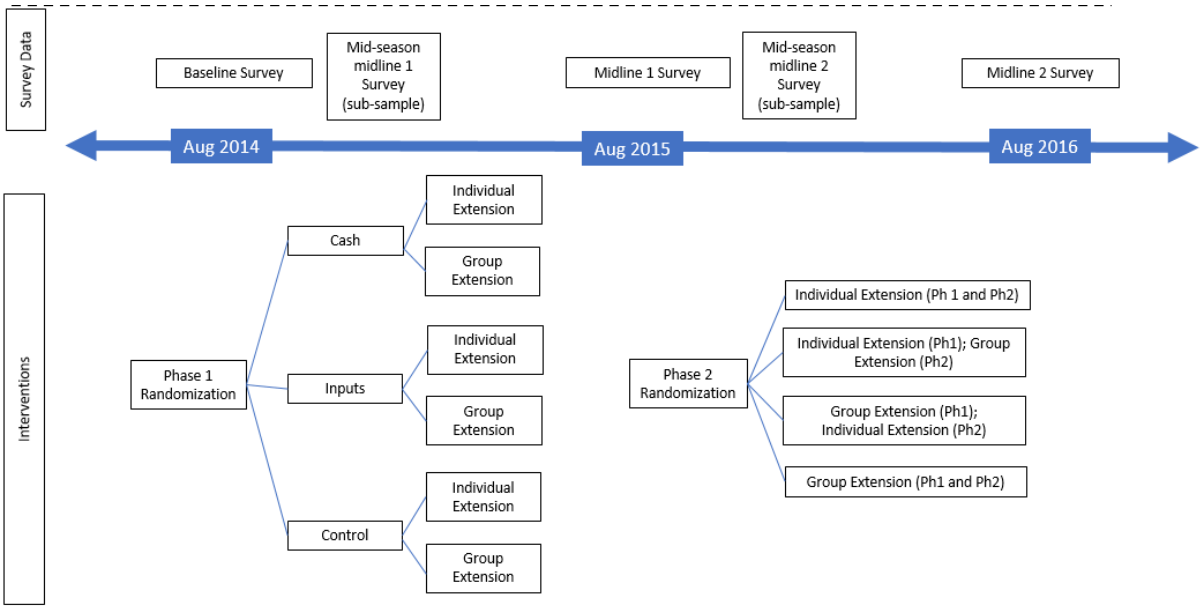


Table 1. Ganyu Supply and Demand across time

	Baseline			Follow-up 1			Follow-up 2		
	All	Non-transfer HH	Transfer HH	All	Non-transfer HH	Transfer HH	All	Non-transfer HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
HH used ganyu, no HH member supplied ganyu	0.169	0.150	0.179	0.297	0.210	0.340	0.235	0.173	0.261
HH supplied ganyu, no use of ganyu	0.431	0.449	0.421	0.175	0.319	0.104	0.317	0.391	0.294
HH used and supplied ganyu	0.157	0.158	0.154	0.436	0.305	0.500	0.351	0.313	0.366
Non-participant HH in ganyu market	0.200	0.197	0.204	0.091	0.165	0.055	0.095	0.124	0.078

Table 2. Descriptive Statistics (Full Sample)

	Mean	SD	Min	Max	N
Panel A: Village characteristics	(1)	(2)	(3)	(4)	(5)
# HHs in village	4.345	5.287	1	39	315
# individuals observed in village	27.181	32.876	1	199	315
# NASFAM farmer groups in village	1.559	0.916	1	6	315
MWK disbursed / 100,000	0.545	1.047	0	7.514544	315
MWK equivalent of inputs / 100,000	0.182	0.484	0	4.590487	315
Panel B: Household characteristics (at Baseline)					
HH size	5.673	2.449	1	21	1126
HHH is polygamous	0.103	0.304	0	1	1119
HHH is female	0.148	0.356	0	1	1119
NASFAM member is female	0.639	0.481	0	1	1121
Land owned	4.106	2.729	0	29.16	1121
Number of crops farmed	4.490	1.627	0	9	1126
GVAO of crop production	589.941	1084.266	0	28520.88	1126
Agricultural assets	36.496	90.325	0	964.2802	1120
Livestock value	198.964	977.599	0	25957.8	1121
Transfer HH	0.668	0.471	0	1	1192
Cash recipient HH	0.339	0.474	0	1	1192
Input recipient HH	0.329	0.470	0	1	1192
Panel C: Individual characteristics					
Age	29.621	17.683	1	93	8548
Child (Under 18 years)	0.346	0.476	0	1	8562
NASFAM member	0.252	0.434	0	1	8562
Male	0.492	0.500	0	1	8560
No schooling	0.007	0.083	0	1	8562
Some primary schooling	0.764	0.425	0	1	8562
Some secondary schooling	0.099	0.299	0	1	8562
Completed secondary schooling	0.094	0.291	0	1	8562
Some/completed tertiary	0.036	0.187	0	1	8562

Table 3. Labor variables descriptive statistics

	Baseline		*Follow-up survey 1*		*Follow-up survey 2*	
	Mean	SD	Mean	SD	Mean	SD
Panel A: Ganyu (all types)	(1)	(2)	(3)	(4)	(5)	(6)
Any ganyu (in last 12 months)	0.318	0.466	0.314	0.464	0.342	0.475
# ganyu days worked (in last 12 months)	7.596	22.078	6.612	24.570	6.746	19.421
Ganyu wage p/day (Unconditional)	357.71	3639.63	271.82	771.59	587.65	3084.63
Ganyu wage p/day (Conditional)	1200.38	6592.70	947.42	1198.17	1750.99	5130.86
Panel B: Agricultural Ganyu						
Any ganyu (in last 12 months)			0.302	0.459	0.296	0.456
# ganyu days worked (in last 12 months)			4.878	17.427	4.723	15.115
Ganyu wage p/day (Unconditional)			265.40	762.63	438.58	1890.92
Ganyu wage p/day (Conditional)			958.09	1198.60	1504.59	3266.18
Panel C: Non-agricultural Ganyu						
Any ganyu (in last 12 months)			0.107	0.309	0.097	0.296
# ganyu days worked (in last 12 months)			1.804	11.042	2.027	10.897
Ganyu wage p/day (Unconditional)			87.82	444.34	217.37	2539.18
Ganyu wage p/day (Conditional)			894.96	1136.71	2292.53	7961.06
Panel D: Salaried Employment						
Any salaried employment (last 12 months)	0.087	0.282	0.038	0.192	0.038	0.190
# days worked (in last month)	1.868	6.548	0.860	4.582	0.881	4.658
Salary p/day equivalent (Unconditional)	55.04	415.95	21.11	223.86	27.26	224.64
Salary p/day equivalent (Conditional)	703.65	1326.63	648.39	1067.55	815.63	934.00

Table 4. Transfer treatment impacts on labor (Direct impacts)

	Agricultural Ganyu		Non-Agricultural		Salaried employment	
	Any work	# days worked	Any work	# days worked	Any work	# days woked
	(1)	(2)	(3)	(4)	(5)	(6)
Cash	-0.036*	-1.442**	-0.024**	-1.043**	0.001	-0.003
	(0.021)	(0.663)	(0.010)	(0.450)	(0.006)	(0.136)
Inputs	-0.032	-0.327	0.004	-0.491	0.007	0.073
	(0.021)	(0.713)	(0.012)	(0.436)	(0.007)	(0.175)
Observations	8 240	8 240	8 222	8 222	8 261	8 258
R-squared	0.020	0.023	0.017	0.010	0.092	0.099
Control mean	0.311	5.226	0.107	2.307	0.036	0.864
p-value: Cash = Inputs	0.828	0.071	0.013	0.091	0.399	0.627

Table 5. Wage impacts of agricultural transfers

	Agricultural ganyu			Non-agricultural ganyu		
	Average Daily wage (logged, village level)	Daily wage (logged, individual level)	Daily wage (level, individual level)	Average Daily wage (logged, vilage level)	Daily wage (logged, individual level)	Daily wage (level, individual level)
	(1)	(2)	(3)	(4)	(5)	(6)
MKW disbursed in village/100,000	0.075***	0.019*	88.550***	0.092***	0.027	230.251***
	(0.024)	(0.010)	(27.599)	(0.035)	(0.021)	(77.422)
Observations	441	2 414	2 414	297	817	817
R-squared	0.063	0.064	0.043	0.075	0.107	0.055
Control mean	6.775	6.639	1 206.850	6.662	6.510	1 250.591

Table 6. Ganyu impacts of agricultural transfers

Panel A: In last 12 months did HH member do any...

	Agricultural ganyu			Non-agricultural ganyu		
Sample:	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.009**	0.015	-0.017***	-0.003	0.005	-0.006*
	(0.004)	(0.010)	(0.005)	(0.002)	(0.006)	(0.003)
Observations	8 212	2 509	5 703	8 194	2 494	5 700
R-squared	0.071	0.107	0.072	0.036	0.067	0.034
Control mean	0.282	0.285	0.277	0.104	0.097	0.115

Panel B: Average number of days worked in ...

	Agricultural ganyu			Non-agricultural ganyu		
	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.138	1.269***	-0.525***	-0.039	0.072	-0.128
	(0.147)	(0.235)	(0.189)	(0.106)	(0.257)	(0.127)
Observations	8 212	2 509	5 703	8 194	2 494	5 700
R-squared	0.042	0.077	0.048	0.018	0.040	0.019
Control mean	4.308	4.444	4.088	1.678	1.791	1.495

Table 7. Heterogeneity of employment responses

Panel A: In last 12 months did HH member do any...

Heterogeneity variable of interest:	NASFAM Member		Female NASFAM member				Child	
Sample:	Adults only		Only NASFAM farmers		Only non-NASFAM farmer		All	
	Control HH	Transfer HH	Control HH	Transfer HH	Control HH	Transfer HH	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MWK disbursed in village/100,000	0.014	-0.024***	0.025	-0.014	-0.021	-0.018	0.019*	-0.014***
	(0.013)	(0.006)	(0.029)	(0.017)	(0.022)	(0.011)	(0.011)	(0.005)
Variable	0.065**	0.032	0.066	0.095**	-0.018	-0.006	-0.054**	-0.065***
	(0.025)	(0.020)	(0.058)	(0.043)	(0.035)	(0.029)	(0.026)	(0.022)
MWK disbursed X Variable	0.009	0.019**	-0.003	0.003	0.032*	-0.003	-0.025*	-0.007
	(0.014)	(0.007)	(0.037)	(0.017)	(0.017)	(0.012)	(0.015)	(0.006)
Observations	1 710	3 849	661	1 369	1 766	3 995	2 509	5 703
R-squared	0.136	0.090	0.166	0.139	0.094	0.064	0.113	0.078
Control mean	0.325	0.309	0.424	0.317	0.233	0.258	0.285	0.277
P-value: MWK + MWK X Var = 0	0.024	0.500	0.144	0.306	0.409	0.000	0.695	0.002

Panel B: Number of days spent on ...

Heterogeneity variable of interest:	NASFAM Member		Female NASFAM member				Child	
Sample:	Adults only		Only NASFAM farmers		Only non-NASFAM farmer		All	
	Control HH	Transfer HH	Control HH	Transfer HH	Control HH	Transfer HH	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MWK disbursed in village/100,000	1.431***	-0.705***	0.953	-1.236***	0.985*	-0.628**	1.484***	-0.524***
	(0.469)	(0.252)	(1.195)	(0.388)	(0.500)	(0.244)	(0.293)	(0.200)
Variable	1.170	0.062	-0.344	-1.039	0.414	-0.050	-2.291***	-2.297***
	(1.132)	(0.679)	(1.860)	(1.117)	(0.918)	(0.892)	(0.736)	(0.690)
MWK disbursed X Variable	-0.048	0.244	-0.278	1.023***	0.603	0.124	-1.191**	0.010
	(0.765)	(0.258)	(1.294)	(0.385)	(0.610)	(0.324)	(0.461)	(0.152)
Observations	1 710	3 849	661	1 369	1 766	3 995	2 509	5 703
R-squared	0.085	0.061	0.115	0.119	0.078	0.042	0.086	0.052
Control mean	5.756	4.581	6.742	3.919	3.375	4.023	4.444	4.088
P-value: MWK + MWK X Var = 0	0.006	0.073	0.208	0.375	0.000	0.059	0.364	0.013

Table 8. Land and Labor Constraints

Panel A: In last 12 months did HH member do any...				
Heterogeneity variable of interest:	Land Constrained		Labor Constrained	
Sample:	All		All	
	Control HH	Transfer HH	Control HH	Transfer HH
	(1)	(2)	(3)	(4)
MWK disbursed in village/100,000	0.036***	-0.010	0.011	-0.025***
	(0.013)	(0.007)	(0.019)	(0.006)
Variable	0.121***	0.075***	0.040	0.027
	(0.028)	(0.025)	(0.031)	(0.023)
MWK disbursed X Constraint	-0.032**	-0.012	0.000	0.013*
	(0.015)	(0.009)	(0.018)	(0.007)
Observations	2 427	5 364	2 429	5 374
R-squared	0.124	0.080	0.117	0.081
Control mean	0.281	0.273	0.281	0.273
P-value: MWK + MWK X Constraint = 0	0.689	0.000	0.210	0.023

Panel B: Number of days spent on ...				
Heterogeneity variable of interest:	Land Constrained		Labor Constrained	
Sample:	All		All	
	Control HH	Transfer HH	Control HH	Transfer HH
	(1)	(2)	(3)	(4)
MWK disbursed in village/100,000	1.684***	-0.313*	1.744***	-0.824***
	(0.619)	(0.167)	(0.623)	(0.281)
Variable	2.176**	2.093***	0.946	-0.063
	(0.890)	(0.785)	(1.262)	(0.934)
MWK disbursed X Constraint	-0.505	-0.327	-0.830	0.552*
	(0.785)	(0.261)	(0.894)	(0.284)
Observations	2 427	5 364	2 429	5 374
R-squared	0.083	0.054	0.082	0.054
Control mean	4.224	3.997	4.224	3.997
P-value: MWK + MWK X Constraint = 0	0.000	0.013	0.035	0.135

Table 9. Wage impacts of agricultual transfers

	Agricultural ganyu			Non-agricultural ganyu		
	Average Daily wage (logged, village level)	Daily wage (logged, individual level)	Daily wage (level, individual level)	Average Daily wage (logged, vilage level)	Daily wage (logged, individual level)	Daily wage (level, individual level)
	(1)	(2)	(3)	(4)	(5)	(6)
MKW disbursed in village/100,000	0.061**	0.014	89.760***	0.076**	0.049*	120.725
	(0.025)	(0.012)	(29.315)	(0.032)	(0.026)	(75.361)
MKW equivalent of inputs/100,000	0.038	0.023	-4.547	0.058	-0.078*	407.407
	(0.039)	(0.016)	(33.148)	(0.100)	(0.043)	(261.584)
Observations	515	2 416	2 416	329	818	818
R-squared	0.063	0.065	0.043	0.078	0.109	0.057
Control mean	6.775	6.639	1 206.850	6.643	6.510	1 250.591
p-value: MWK disbursed = MWK equivalent	0.675	0.693	0.068	0.881	0.048	0.358

Table 10. Ganyu impacts by transfer modality

Panel A: In last 12 months did HH member do any...

	Agricultural ganyu			Non-agricultural ganyu		
Sample:	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.013***	0.019*	-0.022***	-0.007***	0.001	-0.008**
	(0.005)	(0.011)	(0.006)	(0.002)	(0.006)	(0.003)
MWK equivalent of inputs/100,000	0.018*	-0.020	0.030**	0.019***	0.017*	0.015
	(0.010)	(0.016)	(0.012)	(0.005)	(0.009)	(0.010)
Observations	8 212	2 509	5 703	8 194	2 494	5 700
R-squared	0.072	0.107	0.073	0.038	0.067	0.037
Control mean	0.282	0.285	0.277	0.104	0.097	0.115
p-value: MWK disbursed = MWK equivalent	0.017	0.096	0.001	0.000	0.205	0.040

Panel B: Average number of days worked in ...

	Agricultural ganyu			Non-agricultural ganyu		
	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.350**	1.305***	-0.633***	-0.233***	-0.407**	-0.207
	(0.160)	(0.456)	(0.190)	(0.081)	(0.188)	(0.143)
MWK equivalent of inputs/100,000	0.884**	-0.495	0.729**	0.899***	2.162***	0.522**
	(0.372)	(1.677)	(0.324)	(0.325)	(0.349)	(0.259)
Observations	8 212	2 509	5 703	8 194	2 494	5 700
R-squared	0.037	0.060	0.048	0.019	0.041	0.021
Control mean	4.308	4.444	4.088	1.678	1.791	1.495

Appendix Table 1. NASFAM member and household characteristics and balance

	Full Sample	Control	Cash	Inputs	p-value for test: (2) = (3) = (4)
NASFAM Member Characteristics	(1)	(2)	(3)	(4)	(5)
Age	41.4	41.0	41.1	42.0	0.703
Is female	0.64	0.64	0.66	0.61	0.773
Is married	0.82	0.80	0.83	0.84	0.535
No education	0.18	0.16	0.16	0.21	0.231
Some primary	0.54	0.51	0.55	0.56	0.435
Completed primary	0.16	0.19	0.15	0.13	0.239
Some secondary	0.08	0.09	0.09	0.05	0.187
Completed secondary or higher	0.05	0.05	0.05	0.04	0.866
Household Head Characteristics					
Age	44.5	44.4	44.2	45.0	0.797
Is female	0.15	0.16	0.14	0.15	0.765
Household Characteristics					
Household size	5.5	5.4	5.6	5.5	0.568
Land owned (Acres)	4.1	4.0	4.2	4.1	0.822
Agricultural Production and Agricultural Investments					
Number of crops	4.5	4.5	4.6	4.4	0.416
Value of soy and groundnut production	162.24	155.68	176.07	154.73	0.803
GVAO (USD)	594.29	560.41	585.72	636.26	0.774
GVAO (USD) p/acre	126.46	123.56	121.65	134.16	0.823
Value of agricultural assets (USD)	37.21	31.12	44.79	35.52	0.336
Input expenditures (USD)	127.43	131.07	132.13	119.10	0.766
Livestock					
Livestock units	0.8	0.7	0.9	0.6	0.145
Value of total livestock (USD)	202.11	174.44	290.24	140.19	0.191
Attrition (relative to baseline)					
Followup survey 1	0.10	0.12	0.10	0.07	0.131
Followup survey 2	0.19	0.23	0.17	0.17	0.282

Notes: All values are from the baseline survey conducted in 2014. Sample is the 1,187 households interviewed at baseline. All money amounts expressed in USD.

Appendix Table 2. Do villages with farmers in "New" vs "Old" Clubs matter?

	Villages incl. farmers exclusively registered in an "old club"		Villages incl. at least one farmer registered in a "new club"		p-value	Villages incl. only farmers in clubs formed pre-sensitization activities		Villages incl. at least one farmer registered to a club formed post-sensitization activities		p-value
	Mean	SD	Mean	SD	(1)=(3)	Mean	SD	Mean	SD	(6)=(8)
Village characteristics	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
# HHs in village	4.141	0.337	4.435	1.140	0.805	4.206	0.311	6.455	3.463	0.518
# individuals observed in village	25.745	2.093	29.802	7.088	0.584	26.249	1.938	37.827	21.582	0.593
# NASFAM farmer groups in village	1.509	0.064	1.638	0.217	0.569	1.531	0.056	2.261	0.626	0.247
MWK disbursed / 100,000	0.514	0.065	0.652	0.219	0.546	0.538	0.060	0.525	0.673	0.985
MWK equivalent of inputs / 100,000	0.172	0.030	0.152	0.101	0.846	0.174	0.028	0.350	0.311	0.574

Appendix Table 3. Wage impacts of agricultural transfers (Balanced sample)

	Agricultural ganyu			Non-agricultural ganyu		
	Average Daily wage (logged, village level)	Daily wage (logged, individual level)	Daily wage (level, individual level)	Average Daily wage (logged, vilage level)	Daily wage (logged, individual level)	Daily wage (level, individual level)
	(1)	(2)	(3)	(4)	(5)	(6)
MKW disbursed in village/100,000	0.056**	0.007*	89.643**	0.090**	0.026	284.979***
	(0.027)	(0.013)	(40.692)	(0.025)	(0.025)	(103.973)
Observations	382	1 781	1 781	245	577	577
R-squared	0.046	0.083	0.046	0.078	0.115	0.065
Control mean	6.760	6.706	1 235.989	6.667	6.605	1 430.512

Appendix Table 4. Wage impacts of agricultural transfers (excl. clubs registered in 2014)

	Agricultural ganyu			Non-agricultural ganyu		
	Average Daily wage (logged, village level)	Daily wage (logged, individual level)	Daily wage (level, individual level)	Average Daily wage (logged, vilage level)	Daily wage (logged, individual level)	Daily wage (level, individual level)
MKW disbursed in village/100,000	0.087***	0.019*	88.550***	0.102***	0.027	230.251***
	(0.025)	(0.010)	(27.599)	(0.036)	(0.021)	(77.422)
Observations	415	2 414	2 414	280	817	817
R-squared	0.075	0.064	0.043	0.092	0.107	0.055
Control mean	6.774	6.639	1 206.850	6.688	6.510	1 250.591

Appendix Table 5. Wage impacts of agricultural transfers (excl. new clubs post-sensitization)

	Agricultural ganyu			Non-agricultural ganyu		
	Average Daily wage (logged, village level)	Daily wage (logged, individual level)	Daily wage (level, individual level)	Average Daily wage (logged, vilage level)	Daily wage (logged, individual level)	Daily wage (level, individual level)
MKW disbursed in village/100,000	0.076***	0.019*	88.550***	0.090***	0.027	230.251***
	(0.024)	(0.010)	(27.599)	(0.035)	(0.021)	(77.422)
Observations	439	2 414	2 414	296	817	817
R-squared	0.064	0.064	0.043	0.076	0.107	0.055
Control mean	6.770	6.639	1 206.850	6.670	6.510	1 250.591

Appendix Table 6. Transfer treatment impacts on household consumption (Direct impacts)

	HH size	# Female adults	# Male adults	# children
	(1)	(2)	(3)	(4)
Cash	-0.059	0.002	0.220***	0.013
	(0.106)	(0.057)	(0.078)	(0.133)
Inputs	0.106	-0.010	0.102	0.056
	(0.099)	(0.056)	(0.076)	(0.127)
Observations	8 562	8 562	8 562	8 562
R-squared	0.603	0.087	0.081	0.072
Control mean	6.385	1.466	1.459	3.460
p-value: Cash = Inputs	0.157	0.826	0.134	0.725

Appendix Table 7. Ganyu impacts of agricultural transfers (Balanced Sample)

Panel A: In last 12 months did HH member do any...

	Agricultural ganyu			Non-agricultural ganyu		
Sample:	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.012***	0.012	-0.018***	-0.005	-0.001	-0.005
	(0.004)	(0.012)	(0.006)	(0.003)	(0.006)	(0.004)
Observations	5 600	1 646	3 954	5 589	1 632	3 957
R-squared	0.079	0.110	0.090	0.042	0.080	0.041
Control mean	0.302	0.314	0.283	0.100	0.100	0.100

Panel B: Average number of days worked in ...

	Agricultural ganyu			Non-agricultural ganyu		
	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.198	1.596***	-0.611**	-0.046	0.185	-0.174
	(0.180)	(0.352)	(0.247)	(0.128)	(0.303)	(0.164)
Observations	5 600	1 646	3 954	5 589	1 632	3 957
R-squared	0.057	0.098	0.070	0.019	0.047	0.025
Control mean	4.317	4.767	3.565	1.679	1.861	1.378

Appendix Table 8. Ganyu impacts of agricultural transfers, by transfer type

Panel A: In last 12 months did HH member do any...

	Agricultural ganyu			Non-agricultural ganyu		
	Control HH	Cash HH	Inputs HH	Control HH	Cash HH	Inputs HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	0.015	-0.009	-0.011	0.005	-0.007	-0.001
	(0.010)	(0.011)	(0.010)	(0.006)	(0.006)	(0.008)
Observations	2 509	2 894	2 809	2 494	2 898	2 802
R-squared	0.107	0.084	0.084	0.067	0.038	0.050
Control mean	0.285	0.288	0.264	0.097	0.134	0.093

Panel B: Number of days worked in ...

	Agricultural ganyu			Non-agricultural ganyu		
	Control HH	Cash HH	Input HH	Control HH	Cash HH	Inputs HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	1.269***	-0.505*	-0.189	0.072	-0.156	0.306*
	(0.235)	(0.300)	(0.325)	(0.257)	(0.140)	(0.174)
Observations	2 509	2 894	2 809	2 494	2 898	2 802
R-squared	0.077	0.052	0.061	0.040	0.025	0.029
Control mean	4.444	4.573	3.497	1.791	1.788	1.137

Appendix Table 9. Labor market impacts of agricultural transfers (dynamics)

Panel A: In last 12 months did HH member do any...

	Agricultural ganyu			Non-agricultural ganyu		
	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.008*	0.014	-0.013**	-0.006*	0.000	-0.007*
	(0.004)	(0.012)	(0.005)	(0.003)	(0.007)	(0.004)
Year 2	0.005	-0.028	0.026	-0.018	-0.035**	-0.006
	(0.016)	(0.026)	(0.021)	(0.012)	(0.016)	(0.015)
MWK disbursed X Year 2	-0.003	0.002	-0.008	0.005	0.008	0.002
	(0.004)	(0.011)	(0.005)	(0.003)	(0.007)	(0.004)
Observations	8 212	2 509	5 703	8 194	2 494	5 700
R-squared	0.071	0.107	0.072	0.036	0.067	0.034
Control mean	0.282	0.285	0.277	0.104	0.097	0.115
P-value: MWK disbursed + MWK disbursed	0.016	0.169	0.001	0.788	0.252	0.181

Panel B: Number of days worked in...

	Agricultural ganyu			Non-agricultural ganyu		
	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	0.062	1.672***	-0.250	-0.060	0.154	-0.141
	(0.228)	(0.564)	(0.210)	(0.125)	(0.337)	(0.144)
Year 2	0.622	-1.168	1.691**	0.161	-0.176	0.388
	(0.542)	(0.735)	(0.729)	(0.346)	(0.532)	(0.409)
MWK disbursed X Year 2	-0.409	-0.762	-0.567**	0.041	-0.155	0.026
	(0.267)	(0.867)	(0.246)	(0.093)	(0.248)	(0.099)
Observations	8 212	2 509	5 703	8 194	2 494	5 700
R-squared	0.043	0.078	0.049	0.018	0.040	0.019
Control mean	4.308	4.444	4.088	1.678	1.791	1.495
P-value: MWK disbursed + MWK disbursed	0.034	0.033	0.001	0.860	0.996	0.368

Appendix Table 10. Ganyu impacts of agricultural transfers (excl. clubs registered in 2014)

Panel A: In last 12 months did HH member do any...

	Agricultural ganyu			Non-agricultural ganyu		
Sample:	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.007*	0.015	-0.014**	-0.002	0.003	-0.005
	(0.004)	(0.011)	(0.005)	(0.003)	(0.007)	(0.003)
Observations	7 540	2 304	5 236	7 518	2 289	5 229
R-squared	0.070	0.099	0.075	0.039	0.073	0.037
Control mean	0.278	0.275	0.284	0.100	0.094	0.108

Panel B: Average number of days worked in ...

	Agricultural ganyu			Non-agricultural ganyu		
	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.072	1.073***	-0.399**	-0.022	-0.235	-0.090
	(0.137)	(0.249)	(0.180)	(0.111)	(0.172)	(0.140)
Observations	7 540	2 304	5 236	7 518	2 289	5 229
R-squared	0.046	0.084	0.053	0.019	0.047	0.021
Control mean	4.081	4.004	4.215	1.594	1.683	1.443

Appendix Table 11. Ganyu impacts of agricultural transfers
(excl. new clubs post-sensitization)

Panel A: In last 12 months did HH member do any...

	Agricultural ganyu			Non-agricultural ganyu		
Sample:	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.009**	0.014	-0.017***	-0.003	0.004	-0.006*
	(0.004)	(0.012)	(0.005)	(0.002)	(0.007)	(0.003)
Observations	8 120	2 434	5 686	8 102	2 419	5 683
R-squared	0.071	0.108	0.072	0.036	0.070	0.034
Control mean	0.281	0.283	0.278	0.104	0.098	0.114

Panel B: Average number of days worked in ...

	Agricultural ganyu			Non-agricultural ganyu		
	All	Control HH	Transfer HH	All	Control HH	Transfer HH
	(1)	(2)	(3)	(4)	(5)	(6)
MWK disbursed in village/100,000	-0.171	1.018***	-0.525***	-0.047	-0.249	-0.128
	(0.146)	(0.260)	(0.189)	(0.099)	(0.173)	(0.127)
Observations	8 120	2 434	5 686	8 102	2 419	5 683
R-squared	0.042	0.076	0.048	0.018	0.046	0.019
Control mean	4.333	4.443	4.149	1.676	1.801	1.471